



ELECTRONIC REGULATION

USAGE MANUAL

**TBX**



EN



4471910\_00 - 1203

# TBX

SERIAL NUMBER

**DECLARATION OF CONFORMITY**

We, the undersigned, hereby declare under our own responsibility that the assembly in question, defined as follows:

**NAME** TBX  
**TYPE** AIR - WATER CHILLER  
**MODEL**

To which this declaration refers, complies with the following harmonised standards:

IEC EN 60335-2-40	Safety standard regarding electrical heat pumps, air conditioners and dehumidifiers.
IEC EN 61000-6-1 IEC EN 61000-6-3	Immunity and electromagnetic emissions for residential environments.
IEC EN 61000-6-2 IEC EN 61000-6-4	Immunity and electromagnetic emissions for industrial environments
EN378	Refrigerating system and heat pumps - Safety and environmental requirements.
UNI EN 12735 UNI EN 14276	Seamless, round copper pipes for air conditioning and refrigeration. Pressurised equipment for cooling systems and heat pumps.

**Thereby, compliant with the essential requirements of the following directives:**

- LVD Directive: 2006/95/CE
- Electromagnetic Compatibility Directive 2004/108/CE
- Machinery directive 2006/42/CE
- PED Directive regarding pressurised devices 97/23/CE

In agreement with Directive 97/23/EC, the product satisfies the Total quality Guarantee procedure (form H1) with certificate no. 09/021-QT6704 Rev. 02 issued by the notified body n.1131 CEC via Pisacane 46 Legnano (MI) - Italy

The person authorised to draw-up the technical file is: Massimiliano Sfragara - 37040 Bevilacqua (VR) Italy-Via Roma, 996

Bevilacqua

15/10/2010

Marketing Manager

Signature



---

# Index

---

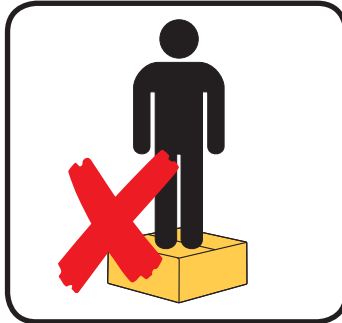
Safety Precautions and Standards.....	3
Features of the regulation.....	4
How to use this manual.....	5
PRELIMINARY OPERATIONS - set the system language.....	5
QUICK START - fundamental procedures.....	6
QUICK START - virtual keyboard.....	6
QUICK START- switches the unit on or off.....	7
QUICK START - set a work set-point.....	8
QUICK START - set a time band.....	10
User interface.....	13
Menus structure.....	14
MAIN page (ID1).....	15
STATUS menu (ID2).....	17
STATUS menu - COMPRESSORS page.....	19
STATUS menu - COMPRESSORS page - COMPRESSOR 1 (TCA3).....	21
STATUS menu - COMPRESSORS page - COMPRESSOR 1 (TCA6).....	23
STATUS menu - COMPRESSORS page - COMPRESSOR 1 (TCA9).....	25
STATUS menu - CONDENSATION page.....	27
STATUS menu - EEV VALVE page.....	29
STATUS menu - WATER CONTROL page (Evp3).....	31
STATUS menu - EVAPORATION page (Evp6).....	33
Menus selection page (ID3).....	35
SET menu.....	37
IN OUT menu - PROBES page (D03).....	39
IN OUT menu - DIGITAL INPUTS page (D06).....	41
IN OUT menu - DIGITAL OUTPUTS page (D09).....	43
CLOCK menu - SYSTEM DATE TIME page (C03).....	45
CLOCK menu - TIME BANDS page (C06).....	47
GRAPHICS menu - GRAPHICS page - WATER INLET/OUTLET (G01).....	49
GRAPHICS menu - GRAPHICS page - HIGH/LOW PRESSURE (G02).....	51
ALARMS menu - ACTIVE ALARMS page (A01).....	53
ALARMS menu - ALARMS LOG page (A02).....	55
Alarms summary list.....	57

# Safety Precautions and Standards

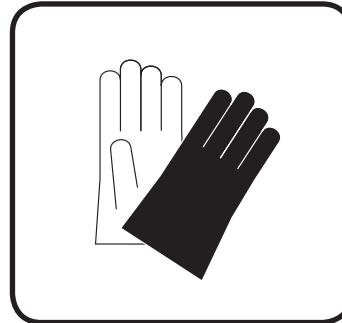
Do not wet the packaging



DO NOT walk n the packaging



Handle with care



Indications regarding disposal

**Attention: this product contains electric and electronic appliances that cannot be disposed of through normal municipal waste collection systems. There are separate waste collection centres for these products.**

The electric and electronic appliances must be handles separately and in-compliance with the laws in force in the country.  
Batteries or accumulators present in the appliances must be disposed of separately according to the provisions of the municipality.

Safety Symbols



Voltage hazard

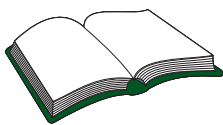


Attention



Moving parts hazard

Notes in the manuals



Keep manuals in a dry place to prevent deterioration, for at least 10 years, for future reference.

**Read all information contained in the manual carefully and thoroughly. Pay particular attention to the regulations for use accompanied by the wording "DANGER" or "ATTENTION" as, if not complied with, can cause damage to the machine and/or persons and objects. For anomalies not contemplated by this manual, contact the Area After-sales Service immediately.**

**The appliance must be installed in a way that maintenance and/or repairs can be carried out.**

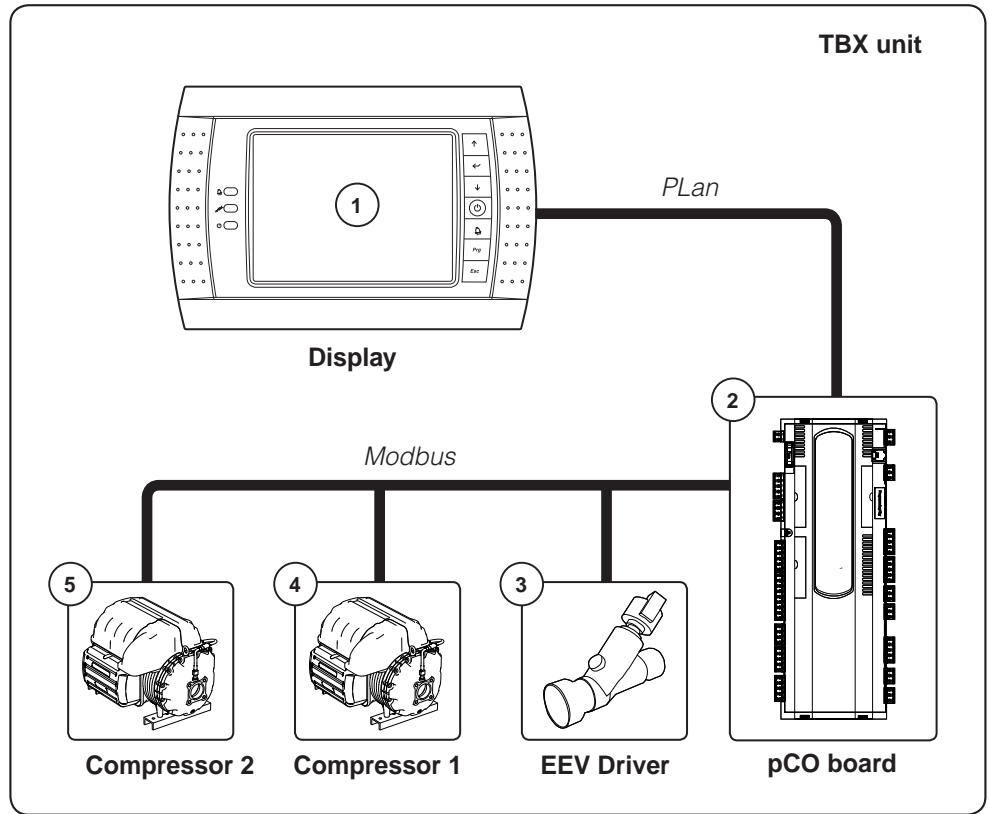
The appliance warranty does not cover the costs for ladders, scaffolding, or other elevation systems that may become necessary for carrying out servicing under warranty. AERMEC S.p.A. declines all liability for any damage due to improper use of the machine, partial or superficial reading of the information contained in this manual.

# Features of the regulation

OUTDOOR air-cooled chillers from the TBX range with R134a have been designed and manufactured to satisfy cooling requirements of medium- large utilities in residential, commercial and industrial buildings.

The appliances are characterised by extremely flexible and reliable operation, which easily adapts to different load requests, thanks to the accurate study of adjustment and use of the compressors with continuous speed variation. The compressor with magnetic levitation bearings and impeller speed control allows to obtain very high values also with partial loads. The units are managed via a display that allows quick setting of the machine operating parameters and their display. The colour graphic display has a touch screen interface in order to signal the type of operation, displaying set parameters and any alarms that have intervened. All default settings and any modifications are memorised in the board.

If there is a power cut, the unit can start automatically, thus preserving the original settings.



Index	Element
1	Display touch screen
2	TBX unit control board
3	Electronic thermostatic valve driver
4	Compressor 1
5	Compressor 2 (for sizes 2302, 2502, 2652, 2802, 3202, 3502, 3702, 3802, 4102)

# How to use this manual

This manual contains all of the information necessary for the user to use the TBX unit; the unit software is realised in a way that all information is as clear as possible; however the considerable amount of data available to the user has produced a great number of masks (mask means a “page” of the software shown on the unit display and organised in groups called menus); in order to facilitate the user’s search for information rela-

tive to each individual mask; these have been catalogued with an index (displayed in the upper right corner of each mask). In the tables below a page number of this manual will be associated to each index, so as to allow a quick search for information relative to any of the masks available.

Index mask	Number page	Notes
L03	6	Language selection
ID1	16	Main page
ID2	18	Status menu
Cmp3	20	Compressors menu
TCA3 / TCB3	22	Compressor 1/1A
TCA6 / TCB6	24	
TCA9 / TCB9	26	
Cnd3	28	Condensation
EEV3	30	EEV valve
Evp3	32	Water control
Evp6	34	Evaporation

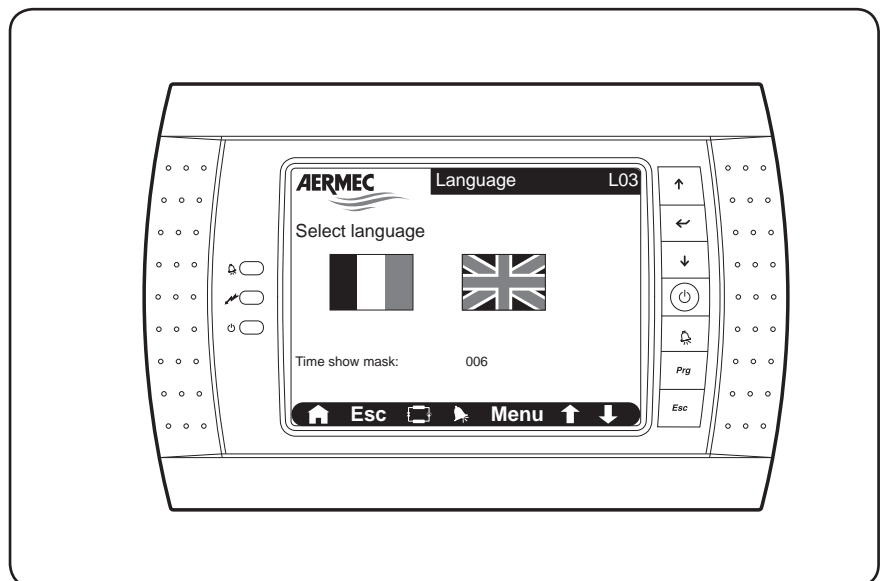
Index mask	Number page	Notes
ID3	36	Menu selection
S03	38	Set menu
D03	40	Probes
D06	42	Digital inputs
D09	44	Digital outputs
C03	46	Date and time
C06	48	Time bands
G01	50	Water in/out graphics
G02	52	Hi/lo pressure graphics
A01	54	Alarms menu
A02	56	Alarms log

## PRELIMINARY OPERATIONS - set the system language

Every time that voltage is applied to the unit (during commissioning or following power supply cut-off), on start-up, the software will show a mask for the selection of the system language; this display will remain active until the timer displayed on the same page expires.

In order to select a language to apply to the system, just touch the corresponding flag (the setting will be applied immediately);

**ATTENTION: the choice of language does not envision a confirmation of the choice made; the mask will disappear when the display time expires, applying the last setting selected to the system;**



## QUICK START - fundamental procedures

The TBX units are managed via colour touch screen display, thanks to which it will be possible to set the unit operational parameters and read the work status of the various components of the machine; all of these functions are gathered in the various ages of the application explained and documented in this manual. This initial section states the operations neces-

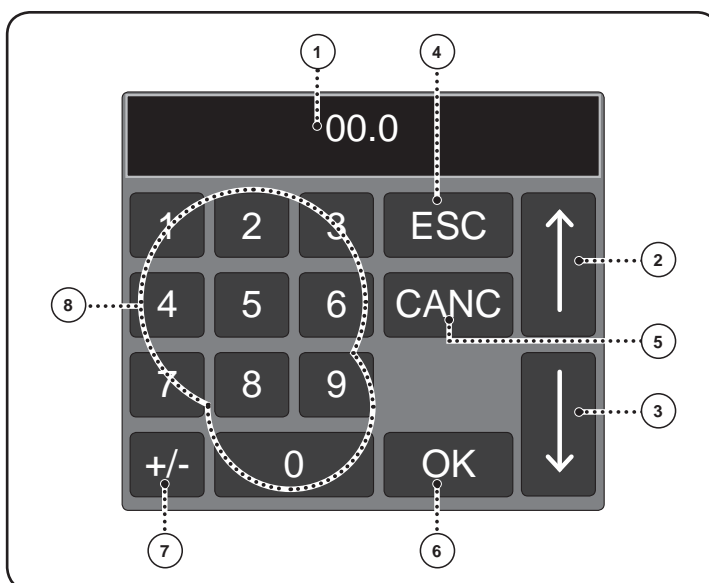
sary to perform some fundamental useful procedures (which will be documented in the successive pages of this manual), thus avoiding the necessity to search for them within the detailed documentation of the menus;

## QUICK START - virtual keyboard

The user can enter different parameters into the TBX unit (work set, time bands, etc...), which can be introduced or selected by the use of a virtual keyboard. This keyboard will appear automatically once the user presses a modifiable piece of data (this data will be easy to identify by as they have a different colour with respect to the rest of the page):

The virtual keyboard will be used to introduce numerical parameters (such as set values) and to select among several options (such as the days for the time bands). In both cases, use of the virtual keyboard envisions the same steps:

- 1) Setting the value or choice of option;
- 2) Confirmation or annulment of the value;



### Functions associated to the keys

①	The value currently set for the parameter appears in this area
②	This key allows to increase the parameter value or select the previous option with respect to that displayed;
③	This key allows to decrease the parameter value or select the previous option with respect to that displayed;
④	This key allows to exit parameter modification. Once this key is pressed, the virtual keyboard will disappear, without making any modification to the value of the previously-displayed parameter;
⑤	This key resets the value of the parameter currently selected; if it is a numerical value, it will be taken to 00.0. If the number is not numerical, the first option available will be taken.
⑥	This key allows to confirm the value or option currently displayed. The virtual keyboard will disappear once this key has been pressed;
⑦	This key (only in numerical values) allows to modify the sign to apply to the numerical value currently shown on the display;
⑧	These keys allow the insertion of numeric values;

# QUICK START- switches the unit on or off

Different procedures can be used to switch the unit on or off; the first envisions the use of the physical key present on the right of the display (Fig.1), while the second envisions the use of the virtual key present in the main page of the software (Fig.2). The ON/OFF status of the unit will be easily visible both from messages shown on the display in the main page and by the green LED (Fig.3) positioned on the left side of the display. If this LED is off, the unit is in OFF mode and if it is on the unit is in ON mode.

Fig.1

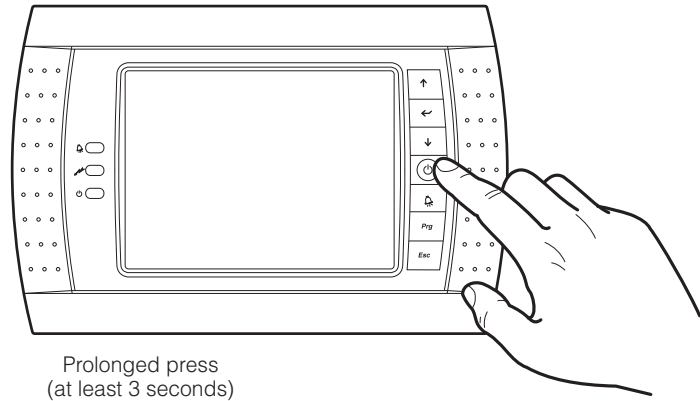


Fig.2

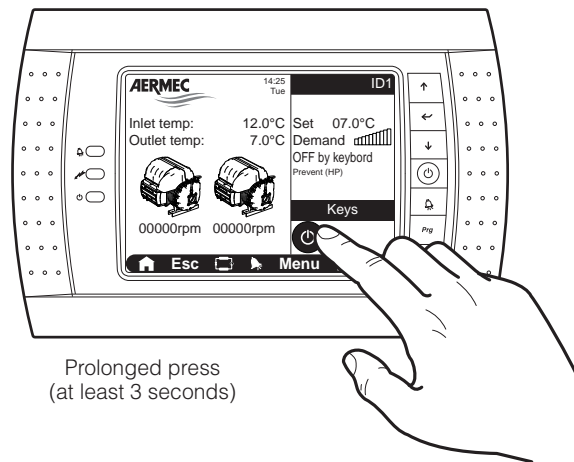
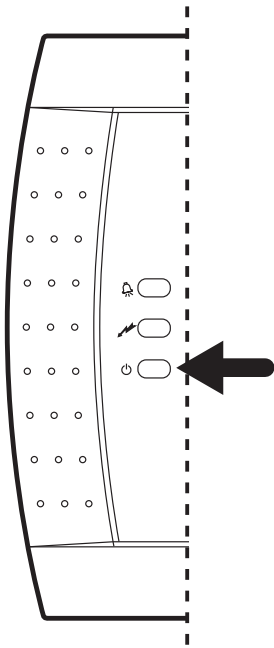


Fig.3





# QUICK START - set a work set-point

To set a work set-point (the unit can manage one primary set and one secondary set, from which to choose) the operations shown below must be followed:

- Enter the menus selection page (Fig.4);
- Select the SET menu (Fig.5);
- Set the set 1 value (Fig.6);
- Set the set 2 value (Fig.7);
- Select the type of control to use for chiller management (Fig.8);

**ATTENTION:** the procedure listed above envisions that the active page on the display is the main page, however, access to the menu page will be available from all the pages that have a navigation bar positioned on the lower part of the display.

**NOTES:** in order to conserve the display, after 5 minutes of non-use, as well as going back to the main page, the display is switched off; to re-activate, just press any key or touch the screen.

Fig.4

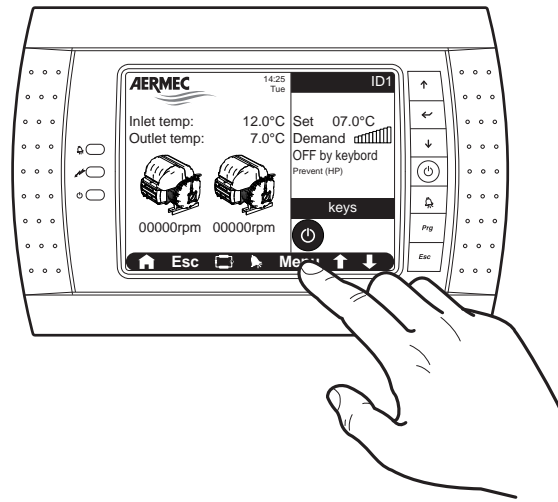


Fig.5

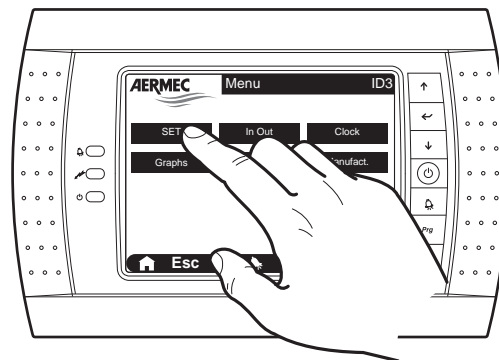
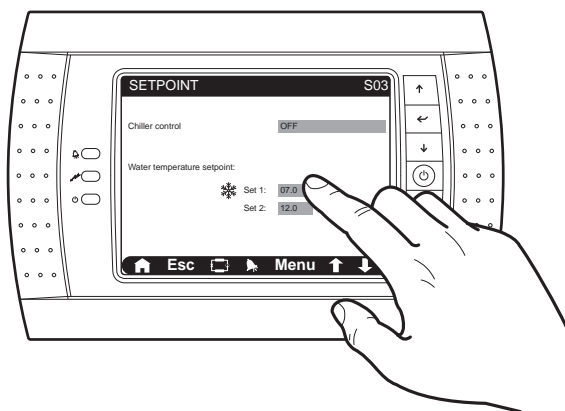
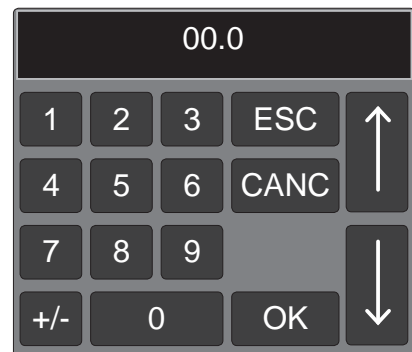


Fig.6

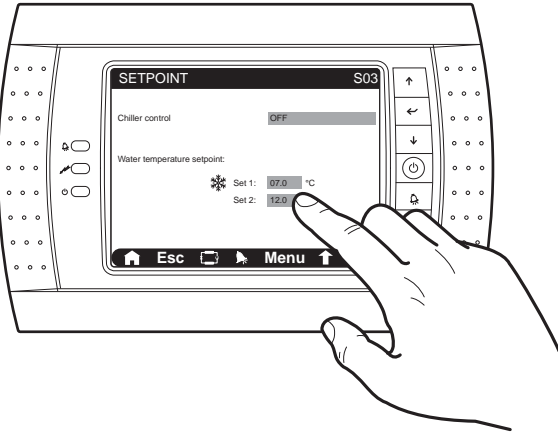


Virtual touch-screen keyboard:

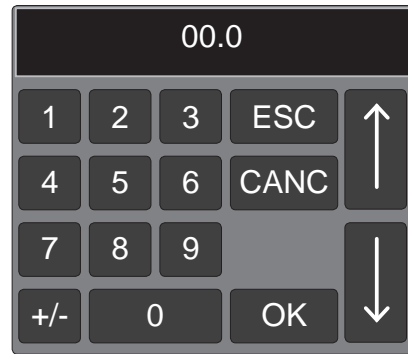


Pressing the blue area coinciding with the SET 1 value will make the virtual keyboard appear. This can be used to introduce the desired value for set 1; once the value has been confirmed by pressing the OK key, the virtual keyboard will disappear automatically;

Fig.7

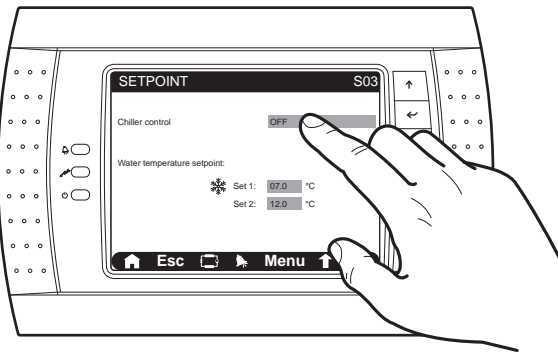


Virtual touch-screen keyboard:



Pressing the blue area coinciding with the SET 2 value will make the virtual keyboard appear. This can be used to introduce the desired value for set 2; once the value has been confirmed by pressing the OK key, the virtual keyboard will disappear automatically;

Fig.8



Virtual touch-screen keyboard:



Pressing the blue area coinciding with the Chiller control will make the virtual keyboard appear. Using the arrows on this keyboard, it is possible to select the logic that the unit will use to manage the chiller; the management logics can be:

- OFF: the unit is currently off (if it is switched on it will use the SET 1);
- YES FROM CLOCK: the unit is managed according to that specified in the time bands (ON/OFF times and set to use);
- YES WITH SET 2: the unit will produce water using the data specified at SET 2 with the work set-point;
- YES WITH SET 1: the unit will produce water using the data specified at SET 1 with the work set-point;

Once the value has been confirmed by pressing the OK key, the virtual keyboard will disappear automatically;

## QUICK START - set a time band

If the management logic via time band has been selected, the values can be set by performing the following operations:

- Enter the menu selection page (Fig.9);
- Select the CLOCK menu (Fig.10);
- Scroll to the TIME BANDS page (Fig.11);
- Set the day to which the current time band is to refer (Fig.12);
- Set the start and end values of the first time band and the type of action to associate to the first time band (Fig.13);
- Select the day/s into which eventually copy the data currently introduced (Fig.14);
- Confirm any command to copy the current time band into one or more days (Fig.15);

**ATTENTION:** the procedure listed above envisions that the active page on the display is the main page, however, access to the menu page will be available from all the pages that have a navigation bar positioned on the lower part of the display.

**NOTES:** in order to conserve the display, after 5 minutes of non-use, as well as going back to the main page, the display is switched off; to re-activate, just press any key or touch the screen.

Fig.9

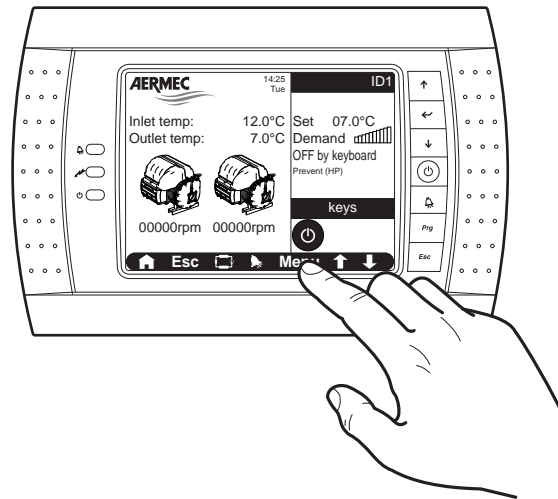


Fig.10

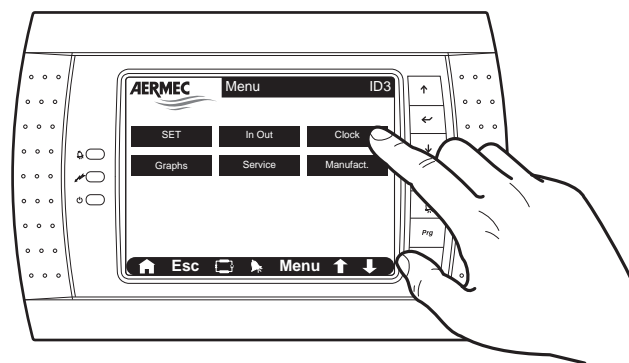


Fig.11

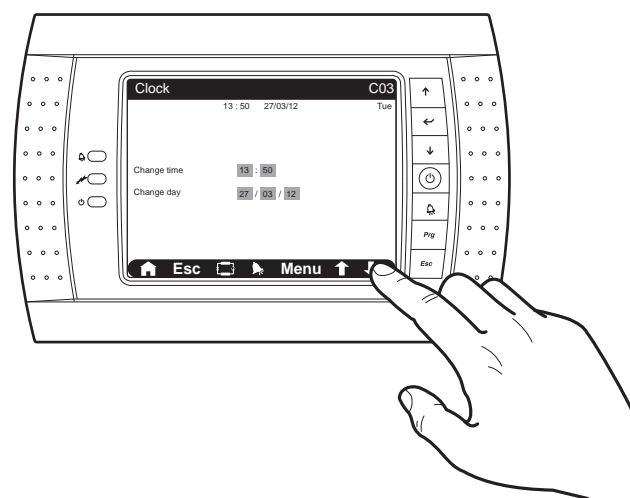
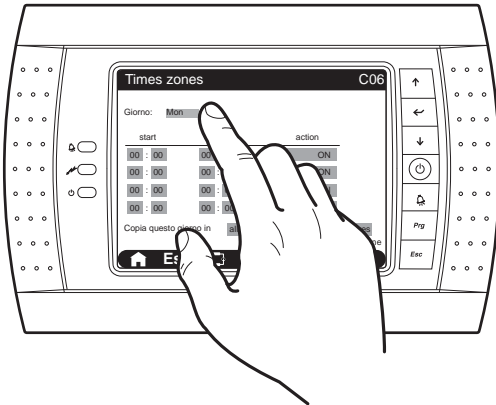
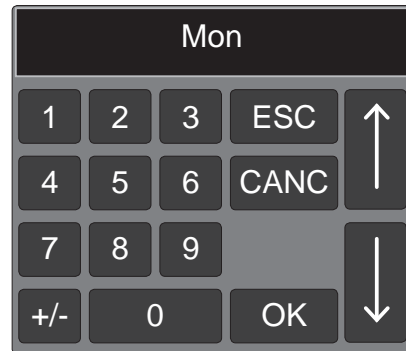


Fig.12

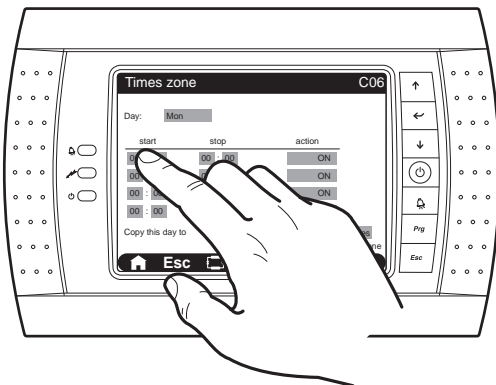


Virtual touch-screen keyboard:

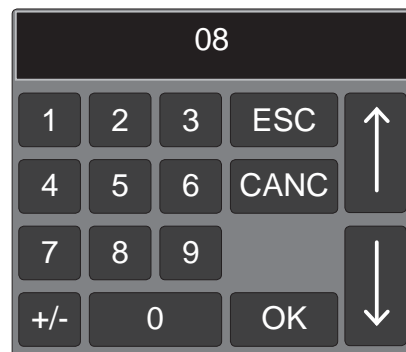


Pressing the blue area coinciding with the value of the Day will make the virtual keyboard appear. Use the arrows on this keyboard to introduce the day to which the values displayed in this window are to refer (the day can be: Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday or holiday); once the value has been confirmed by pressing the OK key, the virtual keyboard will disappear automatically;

Fig.13



Virtual touch-screen keyboard:



The first line indicates the start and end time of the time band; pressing the blue area coinciding with the value of each of these will allow the virtual keyboard to appear, via which it is possible to:

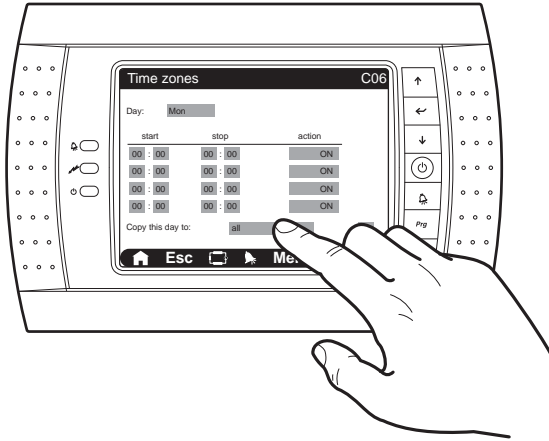
- Set time band start hour;
- Set time band start minutes;
- Set time band end hour;
- Set time band end minutes;
- Set the action to associate to the time band; the following actions are available:
  - ON: in this time band, the unit will be on and will use set-point 1;
  - OFF: the unit will be off in this time band;
  - Set2: in this time band, the unit will be on and will use set-point 2;

In the same way as that described for the first phase, the remaining lines represent the data relative to the second, third and fourth time band available. Once the value has been confirmed by pressing the OK key, the virtual keyboard will disappear automatically;

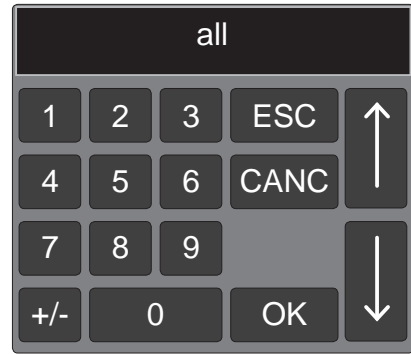
**ATTENTION:**

- If you do not wish to use one or more of the time bands available, the unused time bands must be set at zero;
- Each day can accept up to four time bands from 00:00 to 23:59;

Fig.14

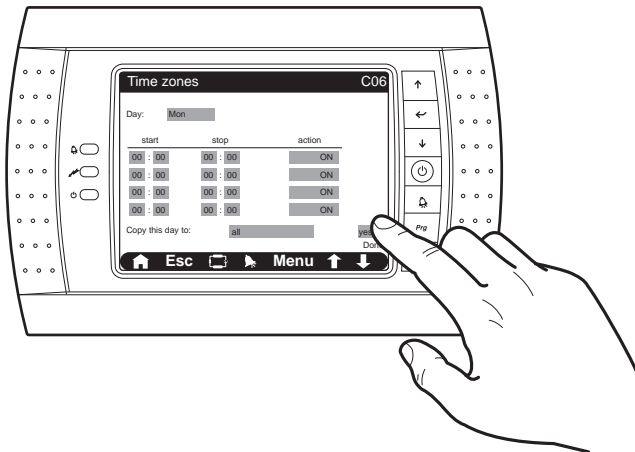


Virtual touch-screen keyboard:

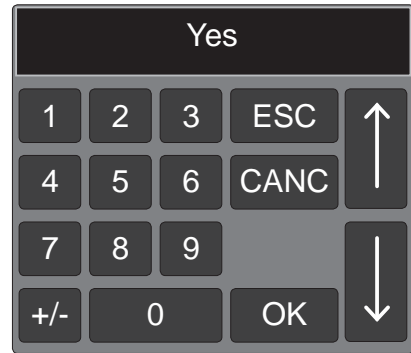


Pressing the blue area coinciding with the "copy this day into" value, will make the virtual keyboard appear. Use the arrows on this keyboard to introduce the day or days into which the values displayed in this window are to be copied. Once the value has been confirmed by pressing the OK key, the virtual keyboard will automatically disappear;

Fig.15



Virtual touch-screen keyboard:



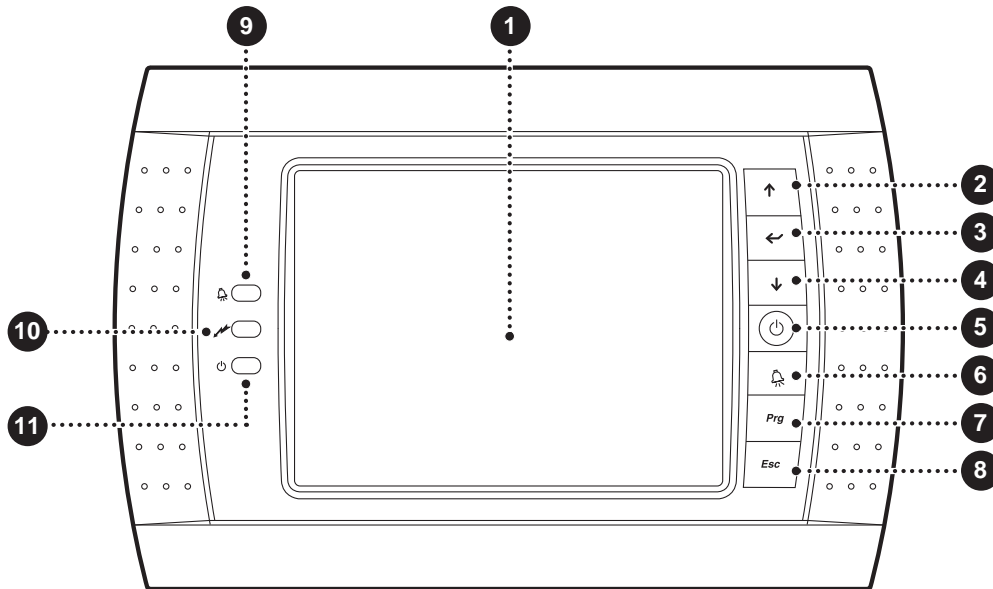
Pressing the blue area coinciding with the "copy this day into" value, will make the virtual keyboard appear. Use the arrows on this keyboard to CONFIRM the copy command of the data currently displayed into the day/s specified. Once the value has been confirmed by pressing the OK key, the virtual keyboard will automatically disappear;

ATTENTION: if the "copy this day into" function is not to be used, remember that each day can be set individually, by setting it in the relative field illustrated in Fig. 12;

# User interface

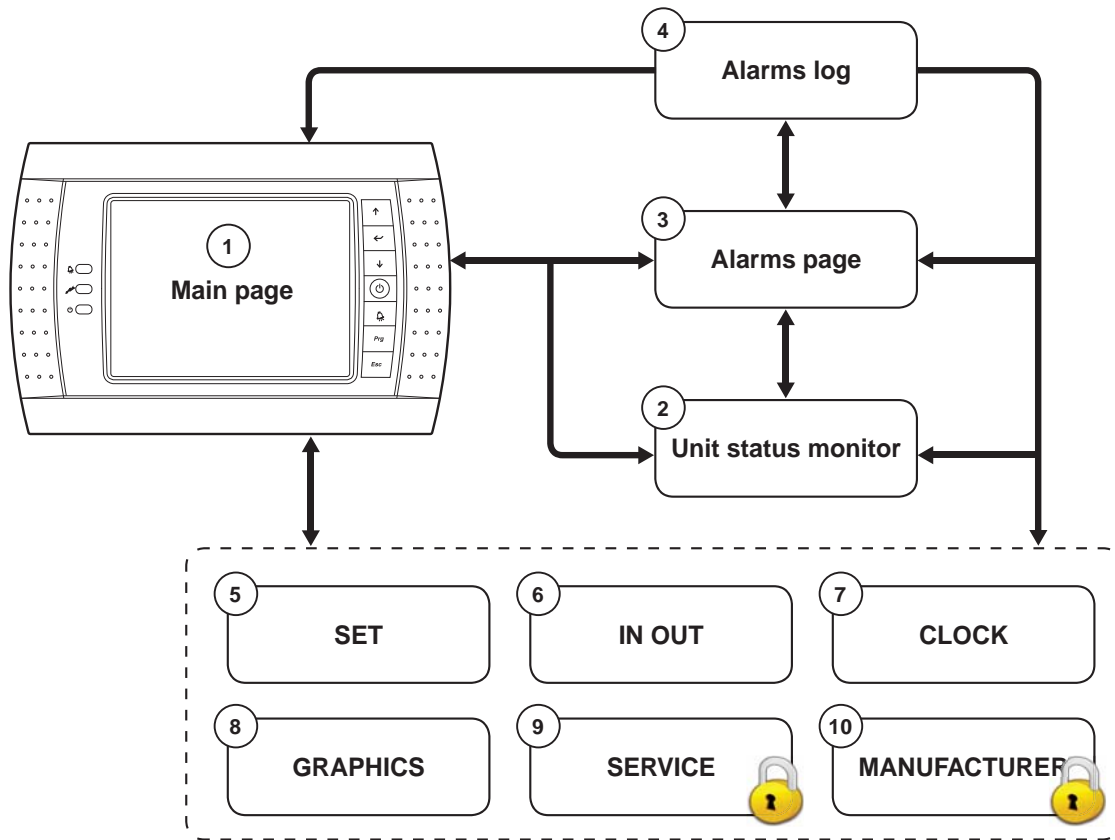
The TBX unit user interface is made up from a 5.7" resistive colour touch screen display; all functions and settings applicable to the unit can be performed via the use of touch screen functionalities. However the display is supplied with physical keys, which allow to repeat several functions managed by the touch screen interface.

The TBX unit software has been realised to easily manage the different unit settings. Moreover, the touch screen functionalities allow quick supervision of all operational aspects of its operation. The graphical interface allows intuitive management of the operational menus and the system messages (alarms etc....)



User interface		
index	type	Functions
1	Display	Resistive touch screen display
2	Physical keys	This key can be used to pass to the previous page of a menu (if the menu currently displayed has several pages) or to increase the value of a parameter (if an editable parameter is being modified)
3		This key can be used to confirm the value of a parameter if an editable parameter is being modified)
4		This key can be used to pass to the next page of a menu (if the menu currently displayed has several pages) or to decrease the value of a parameter (if an editable parameter is being modified)
5		Prolonged pressing of this key switches the unit on or off
6		This key leads to the display of the alarm page
7		This key leads to the display of the menu selection page
8		This key allows to exit the current menu, to pass to the upper level
9		Indication LEDs
10	This luminous LED (ORANGE) is on if the unit is powered	
11	This luminous LED (GREEN) is on if the unit is on	

# Menus structure



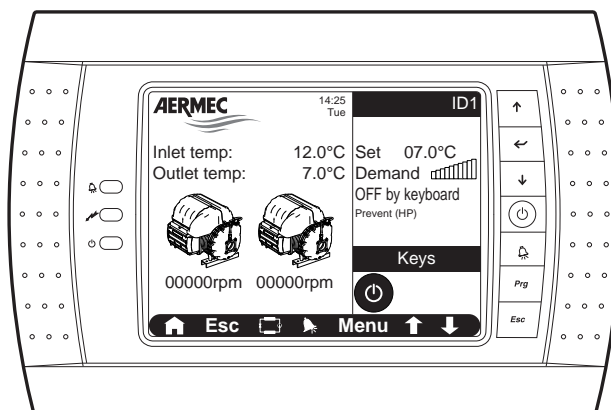
Menu and functions available	
①	The main page contains the general displays regarding unit operation
②	This menu allows to display temperature, pressures and other data relative to unit components
③	This unit contains the indication on the alarm currently active
④	This menu contains the list of the last 100 alarms; for every alarm the date, time and a complete list of system temperatures and pressures at the time the alarm occurs are recorded
⑤	This menu allows to display and set the work sets
⑥	This menu allows to read the values of all probes, the digital inputs and the outputs
⑦	This menu allows to set the date and time of the system
⑧	These pages contain the graphical representation of some operational aspects through time (Input Temperature/Output Temperature, High Pressure/Low Pressure)
⑨	This menu is protected by password and dedicated only to technical after-sales staff
⑩	This menu is protected by password and dedicated only to technical after-sales staff

# MAIN page (ID1)

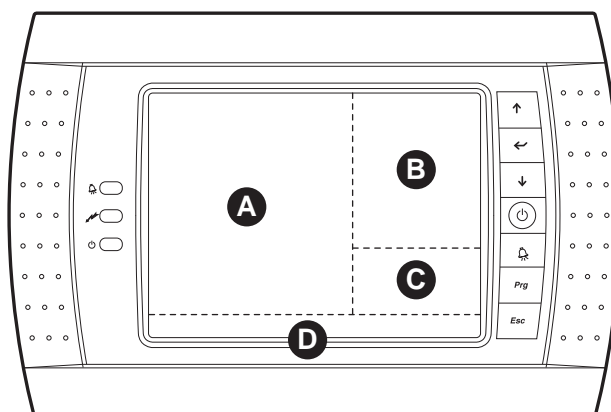
During normal operation of the unit, or after 5 minutes inactivity, the display automatically goes back to a screen identified as MAIN page; this page is divided into four distinct areas, which take information to the system regarding the main unit settings and the operation status.

**NOTES:** in order to conserve the display, after 5 minutes of non-use, as well as going back to the main page, the display is switched off; to re-activate, just press any key or touch the screen.

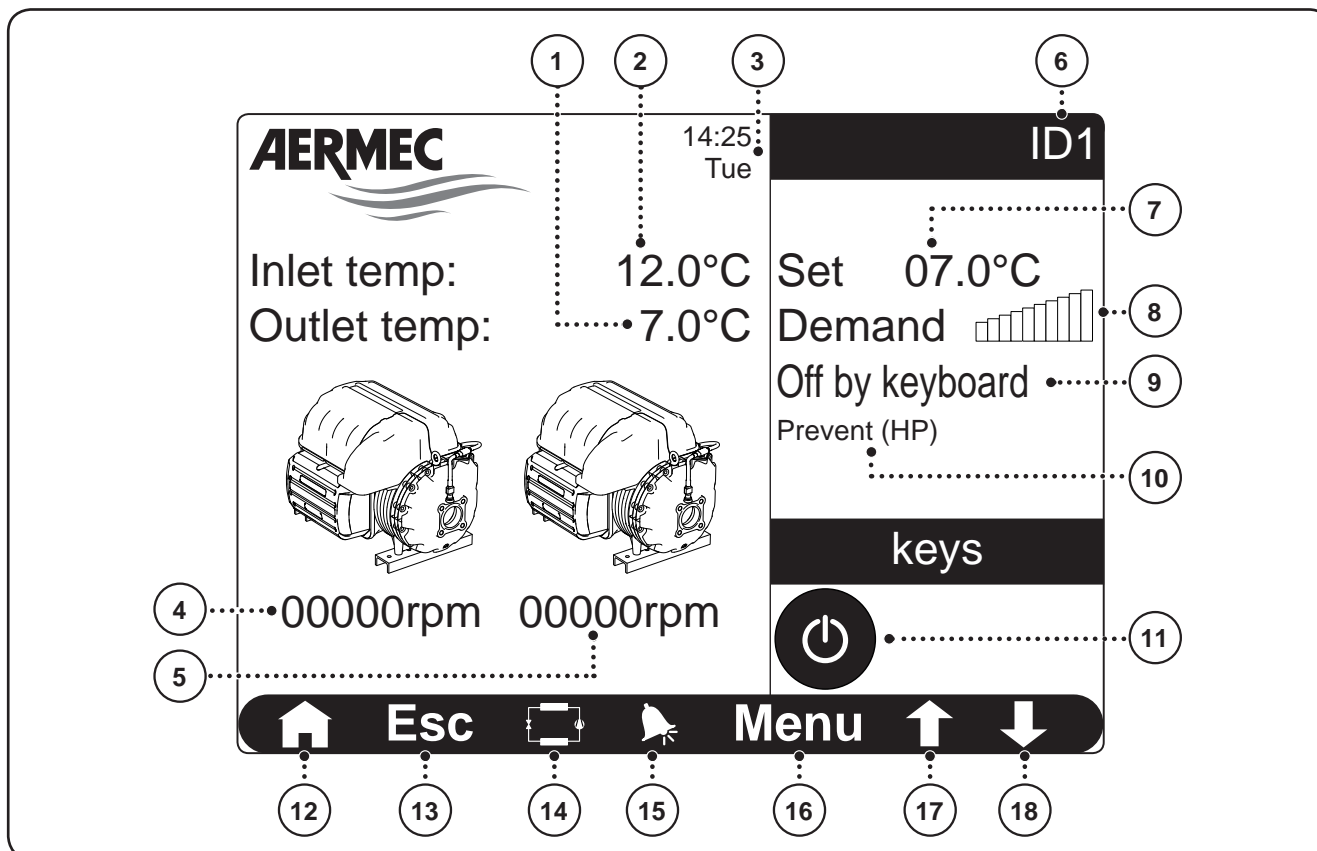
MAIN page:



Active areas of the display:



Readings and functions available from the MAIN page:





Readings and functions available from the MAIN page			
Index	Display area	Description	
①	<b>A</b> Monitor for the status of the water production	Temperature of the water produced by the unit	
②		Temperature of the return water from the system	
③		System day and time	
④		Number of revs. at which the first compressor is working	
⑤		Number of revs at which the second compressor is working; this element is also available on twin-compressor sizes	
⑥	<b>B</b> Monitor for current status of the unit	This string identifies the window currently active	
⑦		Indicates the current temperature set, set for the water production	
⑧		Represents the current request (every step represents 10% of the total power) for power of the compressor/s for the production of water at the set set	
⑨		Indicates the current status of the unit, which can be: <ul style="list-style-type: none"> <li>• ON: indicates the unit is on;</li> <li>• OFF from key: indicates that the unit has been switched off by the user via the relevant key;</li> <li>• OFF by alarm: indicates that the unit has been switched off automatically as one or more alarms have occurred, which prevent operation (the alarm condition is also indicated by the relative red LED on the left side of the display and in the appropriate menu, which can be consulted via key on the navigation bar);</li> <li>• OFF from time band: indicates that the unit has been switched off as specified by the time band currently active on the unit;</li> <li>• OFF from BMS: indicates that the unit has been switched off by a command sent from an external supervision system (BMS);</li> <li>• OFF by remote: indicates that the unit has been switched off from digital input ID1</li> </ul>	
⑩		Indicates any prevention message, which concerns: <ul style="list-style-type: none"> <li>• Prevent (HP): indicates that the high pressure has reached values above normal;</li> <li>• Prevent (LP): indicates that the low pressure has reached values below normal;</li> <li>• Prevent (LT): indicates that the water production temperature has dropped, therefore an anti-freeze alarm may be triggered.</li> </ul>	
⑪		<b>C</b> Quick controls <p>Prolonged pressing (at least 3 seconds) of the key displayed in this area allows to switch the unit on or off; on the basis of the colour of the icon (🟡) pressing the key will produce the following effects:</p> <ul style="list-style-type: none"> <li>• RED (🔴) key: the unit is currently off and pressing for a prolonged period will switch it on;</li> <li>• GREEN (🟢) key: the unit is currently on and pressing for a prolonged period will switch it off;</li> </ul> The on/off status of the unit is also represented by the green LED on the left side of the display	
⑫		<b>D</b> Navigation bar	Pressing this key leads to the MAIN page
⑬			Pressing this key leads to the upper level menu (for further information regarding the structure of the menus, refer to the Menu structure" section in this manual)
⑭			Pressing this key leads to the STATUS menu
⑮			Pressing this key leads to the ALARMS menu; Note: if an alarm is currently active in the unit, this key will have flashing edges until the alarm is solved or reset
⑯	Pressing this key leads to the menu selection page		
⑰	Pressing this key allows to display the previous page of the menu currently active		
⑱	Pressing this key allows to display the next page of the menu currently active		

**ATTENTION: by touching any of the areas dedicated to displays on the main page (excluding those dedicated to quick commands or the navigation bar), the STATUS menu is accessed;**

# STATUS menu (ID2)

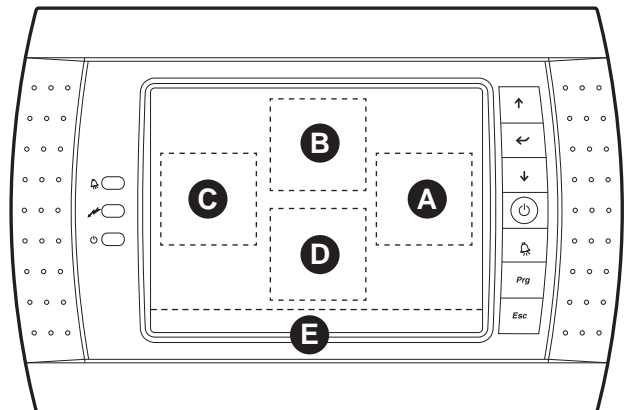
The status menu is one of the main pages of the control application; from this page it is possible to monitor all operational parameters divided by type:

- Parameters linked to the electronic valve;
- Parameters linked to the condenser;
- Parameters linked to the compressor;
- Parameters linked to the evaporator;

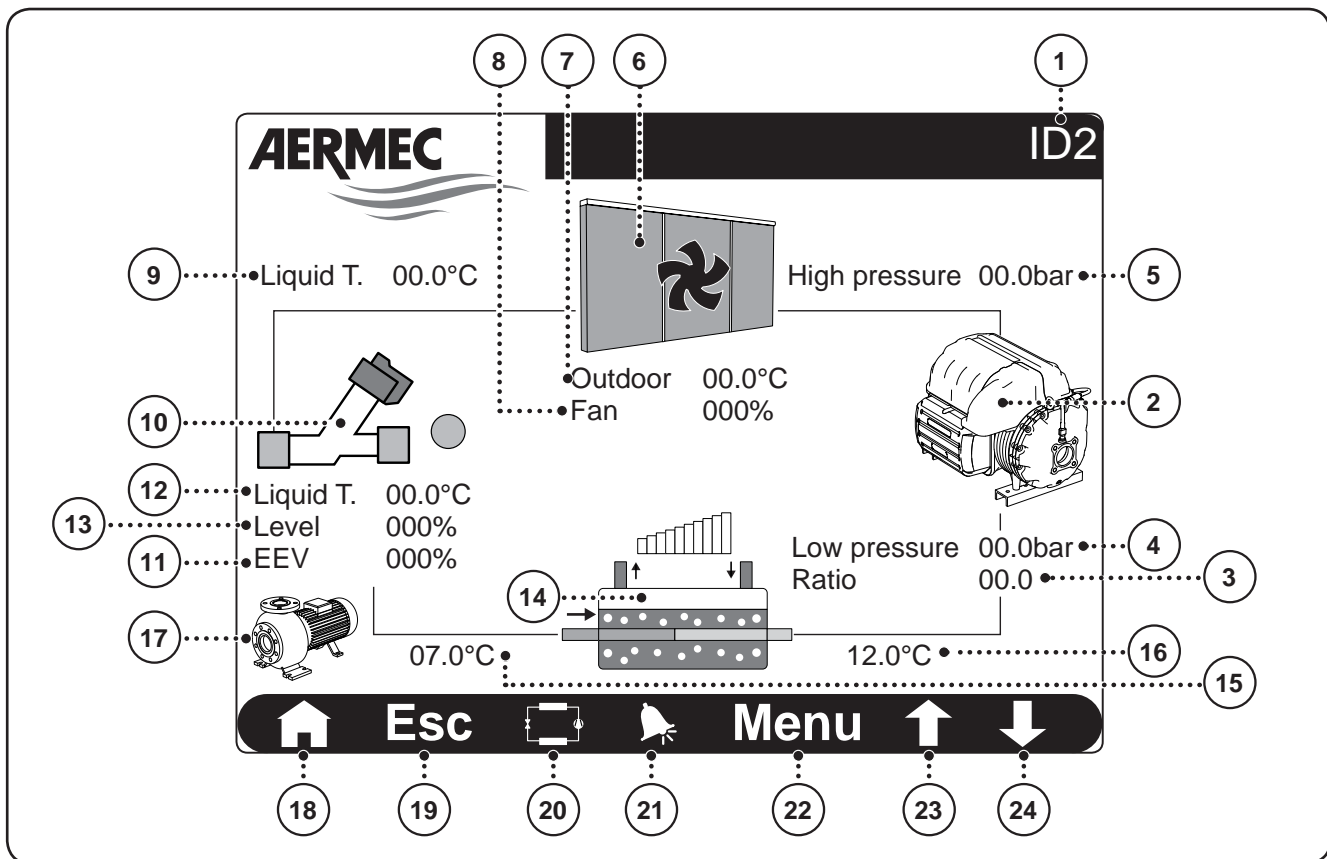
This page displays the main readings of the probes positioned on the unit. moreover, every group of parameters has one or more specific pages (which can be activated by touching the symbols relative to every group), which will be specified one by one in the following paragraphs;

**NOTES:** in order to conserve the display, after 5 minutes of non-use, as well as going back to the main page, the display is switched off; to re-activate, just press any key or touch the screen.

Active areas of the display:



Readings and functions available in the STATUS menu



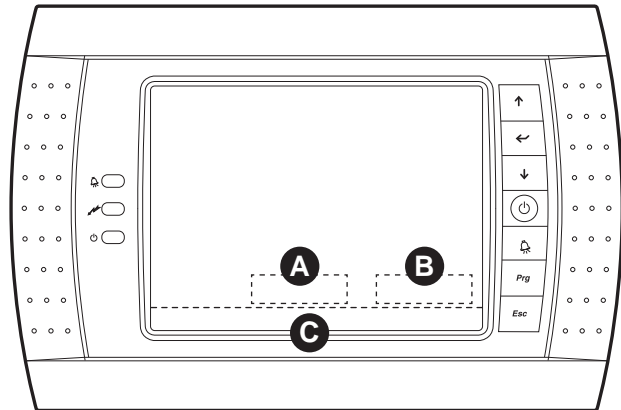
Readings and functions available from the STATUS menu		
Index	Display area	Description
①	---	This string identifies the window currently active
②	<b>A</b>	Pressing this page allows access to the Compressors page
③	---	This data indicates the current compression ration at which the unit is operating
④	---	This data indicates the suction pressure value to the compressor/s
⑤	---	This data indicates the flow pressure value to the compressor/s
⑥	<b>B</b>	Pressing this page allows access to the Condensation page
⑦	---	This data indicates the value read by the outdoor air probe
⑧	---	This data indicates fan speed as a percentage
⑨	---	This data indicates the temperature of the liquid refrigerant leaving the condenser
⑩	<b>C</b>	Pressing this icon will allow to access the EEV valve page; if the valve is operating, the LED on the right of the symbol turns green
⑪	---	This data indicates the percentage opening of the electronic valve
⑫	---	This data indicates the temperature of the liquid refrigerant entering the electronic valve
⑬	---	This data indicates the current level of liquid refrigerant inside the evaporator
⑭	<b>D</b>	Pressing this icon allows access to the water control pages, Evaporation
⑮	---	Temperature of the water produced by the unit
⑯	---	Temperature of the return water from the system
⑰	---	If this icon is displayed, it indicates that the system pump is operating
⑱	<b>E</b> Navigation bar	Pressing this key leads to the MAIN page
⑲		Pressing this key leads to the upper level menu (for further information regarding the structure of the menus, refer to the Menu structure" section in this manual)
⑳		Pressing this key leads to the STATUS menu
㉑		Pressing this key leads to the ALARMS menu; Note: if an alarm is currently active in the unit, this key will have flashing edges until the alarm is solved or reset
㉒		Pressing this key leads to the menu selection page
㉓		Pressing this key allows to display the previous page of the menu currently active
㉔		Pressing this key allows to display the next page of the menu currently active

# STATUS menu - COMPRESSORS page

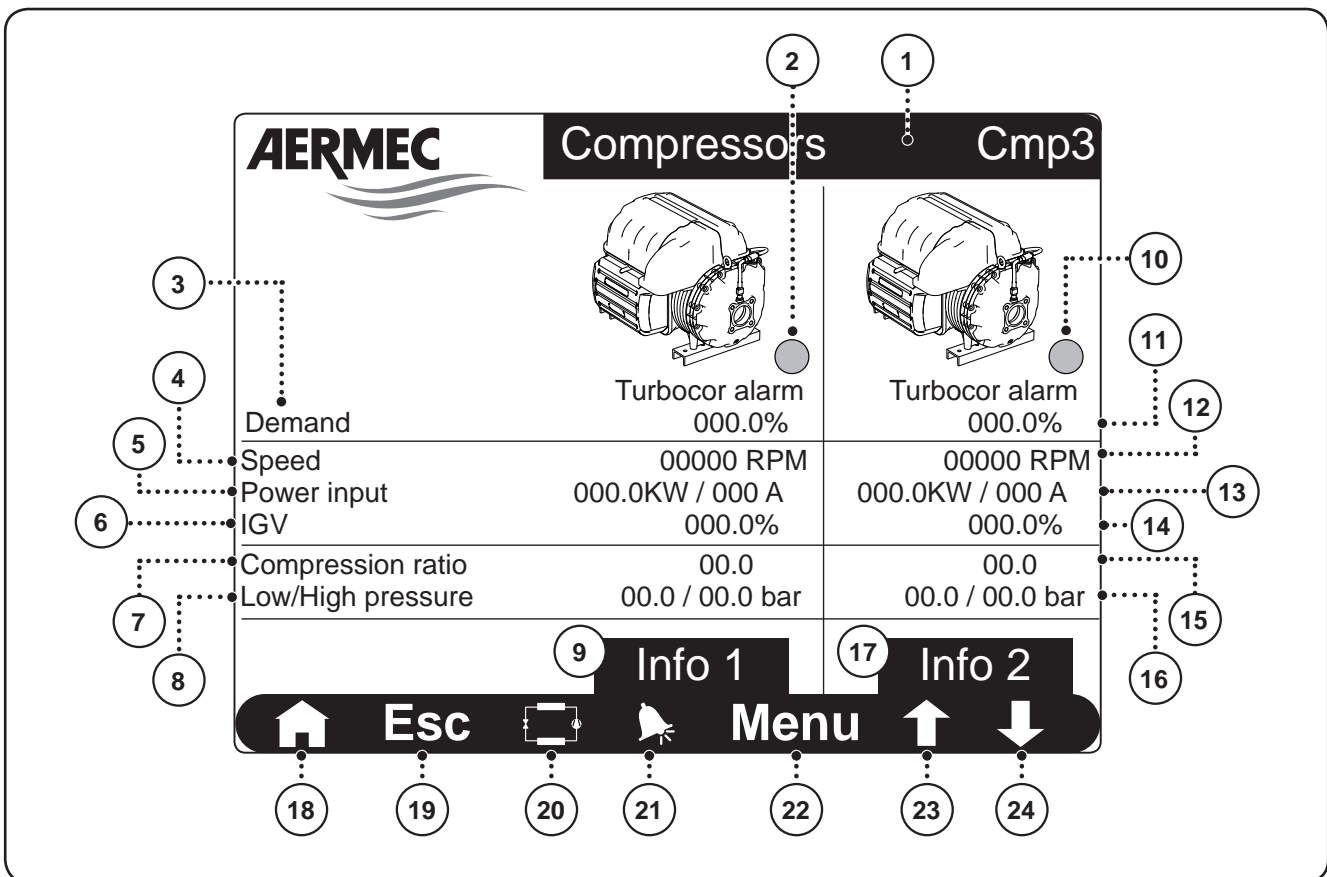
The status menu COMPRESSORS page contains some information regarding compressors operation in order to respond to the power request by the system. Moreover, every compressor has a page that contains further specific readings (which can be activated by touching the Info 1 or Info 2 symbols), which will be explained on the next page;

**NOTES:** in order to conserve the display, after 5 minutes of non-use, as well as going back to the main page, the display is switched off; to re-activate, just press any key or touch the screen.

Active areas of the display:



Readings and functions available in the STATUS menu - COMPRESSORS page



**Readings and functions available from the STATUS menu - COMPRESSORS page**

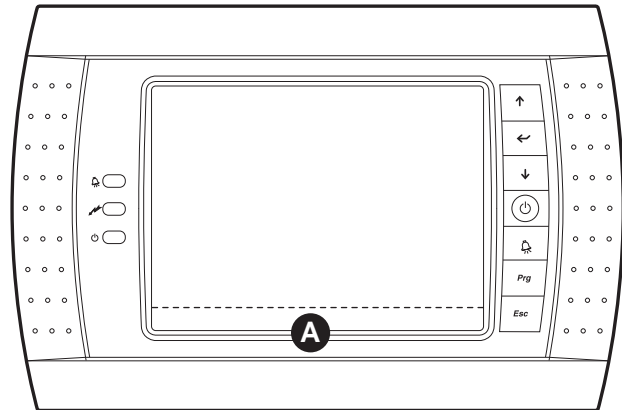
Index	Display area	Description
①	---	This string identifies the window currently active
②	---	The colour of this LED represents the status of compressor 1; (compressor OFF = blue, compressor ON = green)
③	---	This data indicates the percentage power requested at compressor 1, calculated on the work conditions (system return temperature, set, outdoor conditions, etc....)
④	---	This data indicates the number of revs at which compressor 1 is operating
⑤	---	These data indicate compressor 1 input, both input power (expressed in kW) and input current (expressed in Amps)
⑥	---	This data indicates the opening percentage of the valve positioned inside compressor 1 (intake); this value, along with the revs. adjustment, allows the compressor to dynamically modulate the intake gas flow rate (range 0~110%)
⑦	---	This data identifies the compression ratio at which compressor 1 is operating
⑧	---	These data represent the pressure values read on intake (Low pressure) and on flow (High pressure) of compressor 1
⑨	<b>A</b>	Pressing this key always leads to the COMPRESSOR 1 INFO pages
⑩	---	The colour of this LED represents the status of compressor 2, if present; (compressor OFF = blue, compressor ON = green)
⑪	---	This data indicates the percentage power requested at compressor 2, if present, calculated on the work conditions (system return temperature, set, outdoor conditions, etc....)
⑫	---	This data indicates the number of revs at which compressor 2 is currently operating, if present
⑬	---	These data indicate eventual compressor 2 input, both input power (expressed in kW) and input current (expressed in Amps)
⑭	---	This data indicates the opening percentage of the valve positioned inside compressor 2 (intake); this value, along with the revs. adjustment, allows the compressor to dynamically modulate the intake gas flow rate
⑮	---	This data identifies the compression ratio at which any compressor 2 is operating
⑯	---	These data represent the pressure values read on intake (Low pressure) and on flow (High pressure) of compressor 2, if present
⑰	<b>B</b>	Pressing this key leads to the COMPRESSOR 2 INFO pages, if present
⑱	<b>C</b> Navigation bar	Pressing this key leads to the MAIN page
⑲		Pressing this key leads to the upper level menu (for further information regarding the structure of the menus, refer to the Menu structure" section in this manual)
⑳		Pressing this key leads to the STATUS menu
㉑		Pressing this key leads to the ALARMS menu; Note: if an alarm is currently active in the unit, this key will have flashing edges until the alarm is solved or reset
㉒		Pressing this key leads to the menu selection page
㉓		Pressing this key allows to display the previous page of the menu currently active
㉔		Pressing this key allows to display the next page of the menu currently active

# STATUS menu - COMPRESSORS page - COMPRESSOR 1 (TCA3)

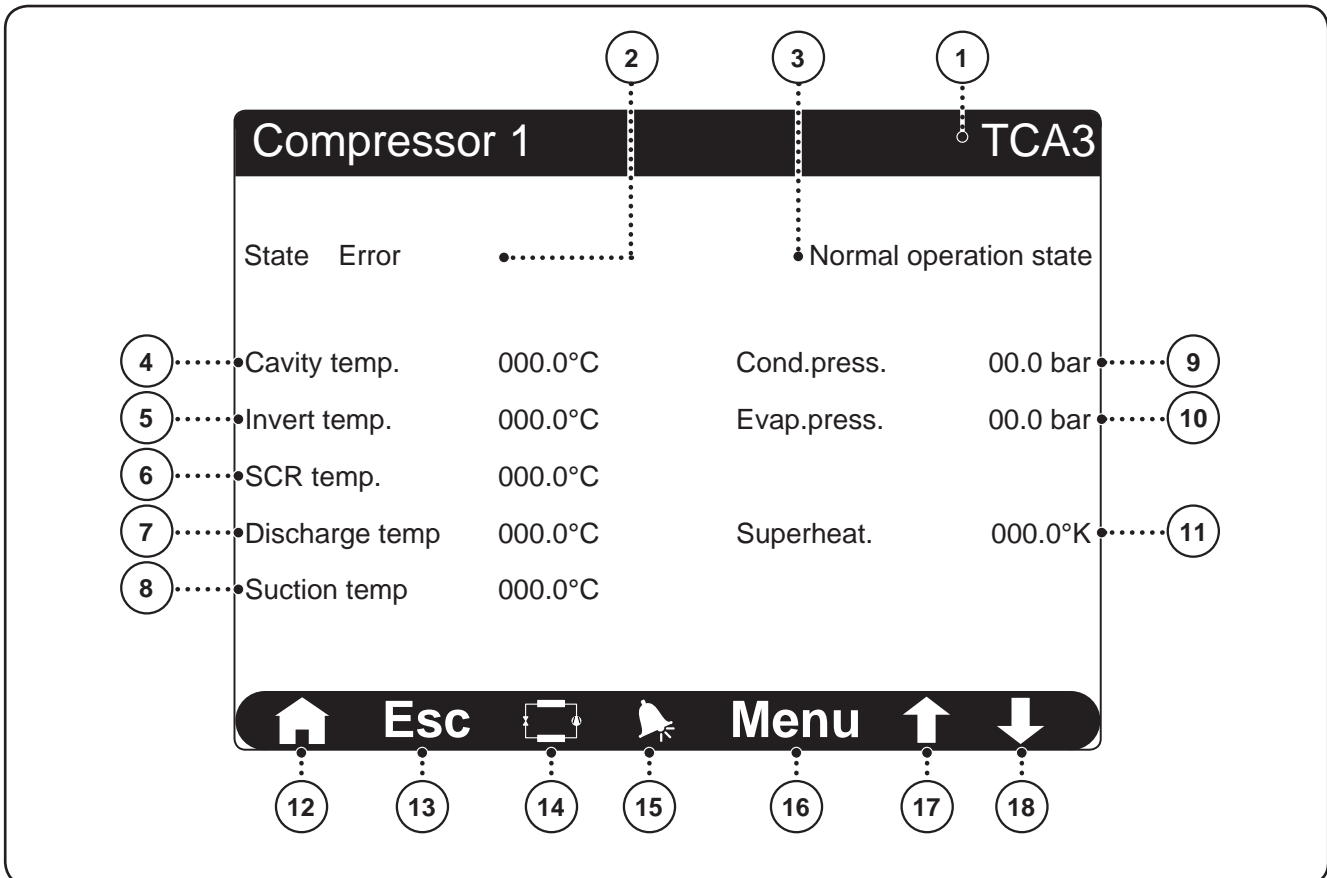
These pages (a total of 3 pages for each compressor: TCA3, TCA6 e TCA9 for compressor 1, while for compressor 2 they are: TCB3, TCB6 and TCB9). They contain information and readings given by sensors inside the compressor 1 or 2; all of this information allows the after-sales assistance staff to evaluate the correct operation of the compressor;

**NOTES:** The masks dedicated to compressor 1 and those dedicated to compressor 2 are specular, for this reason only those regarding compressor 1 will be explained, however the information will be the same also for the windows of eventual compressor 2;  
 In order to conserve the display, after 5 minutes of non-use, as well as going back to the main page, the display is switched off; to re-activate, just press any key or touch the screen.


Active areas of the display:



Readings and functions available in the STATUS menu - COMPRESSORS page - COMPRESSOR 1 INFO (TCA3)



Readings and functions available from the STATUS menu - COMPRESSORS page - TCA3 page

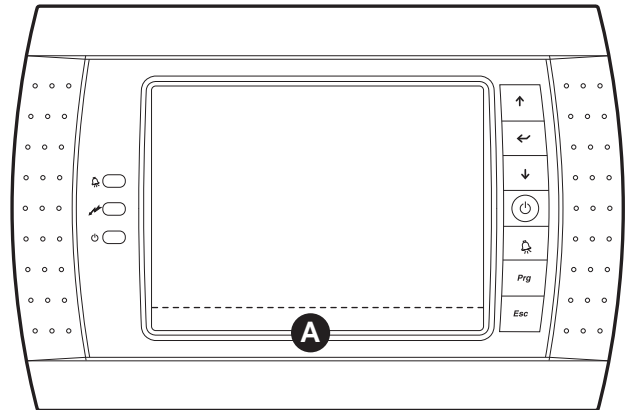
Index	Display area	Description
①	---	This index identifies the page currently active
②	---	This data indicates the current status of the compressor to which reference is made; the status can be: <ul style="list-style-type: none"> <li>• Error: the compressor indicates an error condition that prevents operation;</li> <li>• Calibrat.mode: The compressor is in calibration phase (assistance only);</li> <li>• Manual Mode: The compressor is active in manual mode (assistance only);</li> <li>• Analogue Mode: not used;</li> <li>• Modbus Mode: the compressor is activated via control from the unit control board;</li> <li>• Chiller mode: not used;</li> </ul>
③	---	This data specifies the operating status of the compressor to which reference is made; this information can be: <ul style="list-style-type: none"> <li>• Off: the compressor is off;</li> <li>• Locket out state: the chiller control board has not given consent for compressor start-up;</li> <li>• System Resetting: the compressor is in the reset phase (restart standby time);</li> <li>• Ramping Up: the compressor is in the start-up phase (start ramp);</li> <li>• Partially Closed Vane: the compressor is closing the intake valve (IGV);</li> <li>• Normal Operation State: the compressor is operating normally;</li> <li>• Maximum Flow State: the compressor is working at maximum speed allowed (data calculated by the compressor control board);</li> <li>• Minimum IGV% reached: minimum opening of the suction valve (IGV);</li> <li>• Interlock Open: the compressor is in stand-by for consent from unit control board;</li> <li>• Fault is active: the compressor is at a standstill due to alarm;</li> <li>• Inverter temp. High: indicates that the compressor is at a standstill due to overheating at the inverter inside the compressor;</li> <li>• Loading Up: indicates an acceleration during compressor operation</li> </ul>
④	---	This data indicates the temperature of the motor windings
⑤	---	This data indicates the temperature of the inverter on the compressor inside the same
⑥	---	This data indicates the temperature of the AC-DC rectifier device inside the compressor
⑦	---	This data indicates the compressor flow temperature
⑧	---	This data indicates the compressor suction temperature
⑨	---	This data indicates the value relative to the compressor outlet pressure
⑩	---	This data indicates the value relative to the compressor inlet pressure
⑪	---	This data indicates the overheating calculated at compressor inlet
⑫	<div style="text-align: center;">   Navigation bar </div>	Pressing this key leads to the MAIN page
⑬		Pressing this key leads to the upper level menu (for further information regarding the structure of the menus, refer to the Menu structure" section in this manual)
⑭		Pressing this key leads to the STATUS menu
⑮		Pressing this key leads to the ALARMS menu; Note: if an alarm is currently active in the unit, this key will have flashing edges until the alarm is solved or reset
⑯		Pressing this key leads to the menu selection page
⑰		Pressing this key allows to display the previous page of the menu currently active (TCA9)
⑱		Pressing this key allows to display the next page of the menu currently active (TCA6)

# STATUS menu - COMPRESSORS page - COMPRESSOR 1 (TCA6)

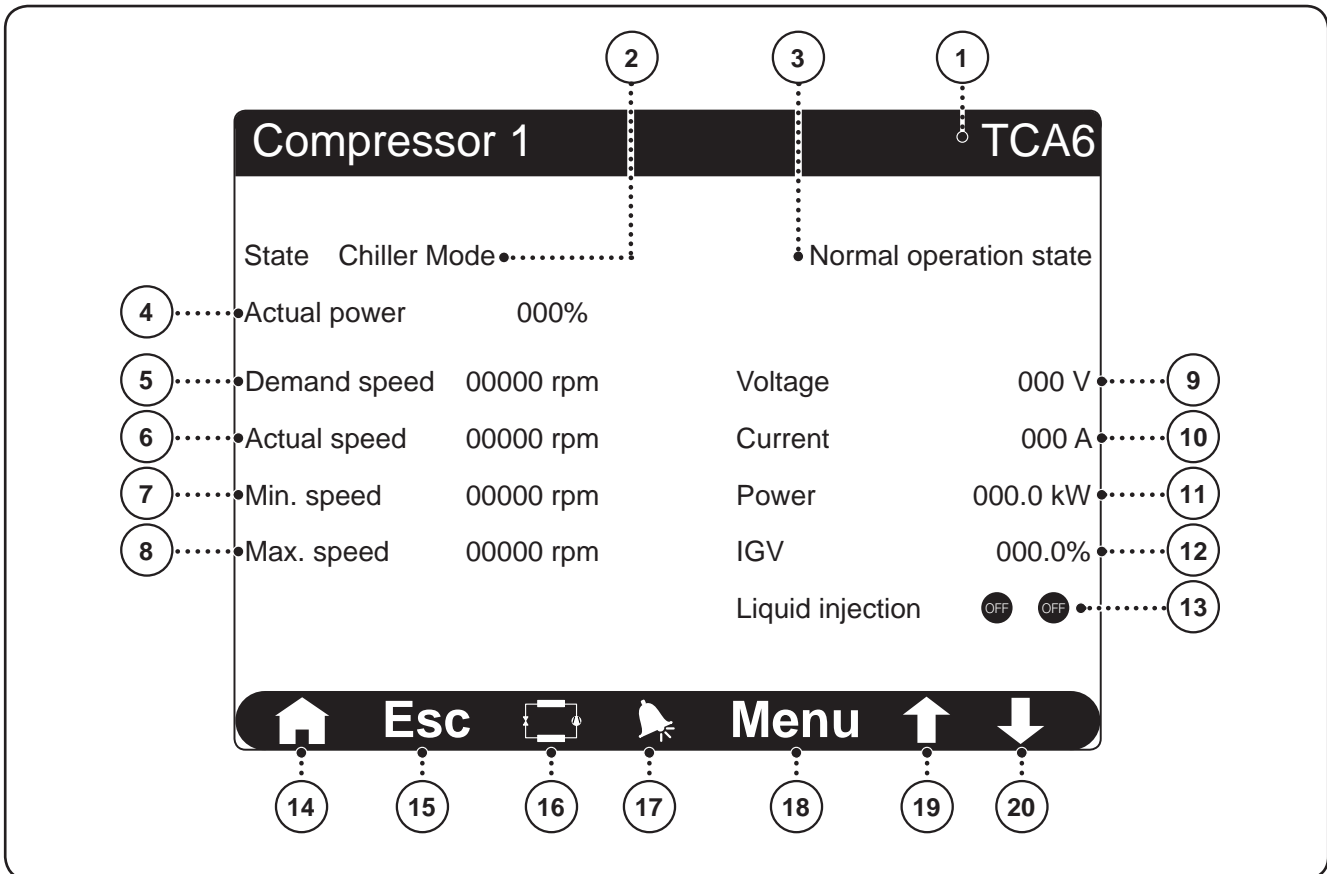
These pages (a total of 3 pages for each compressor: TCA3, TCA6 e TCA9 for compressor 1, while for compressor 2 they are: TCB3, TCB6 and TCB9). They contain information and readings given by sensors inside the compressor 1 or 2; all of this information allows the after-sales assistance staff to evaluate the correct operation of the compressor;

**NOTES: The masks dedicated to compressor 1 and those dedicated to compressor 2 are specular, for this reason only those regarding compressor 1 will be explained, however the information will be the same also for the windows of eventual compressor 2;**  
**In order to conserve the display, after 5 minutes of non-use, as well as going back to the main page, the display is switched off; to re-activate, just press any key or touch the screen.**

Active areas of the display:




Readings and functions available in the STATUS menu - COMPRESSORS page - COMPRESSOR 1 INFO (TCA6)





**Readings and functions available from the STATUS menu - COMPRESSORS page - TCA3 pag6**

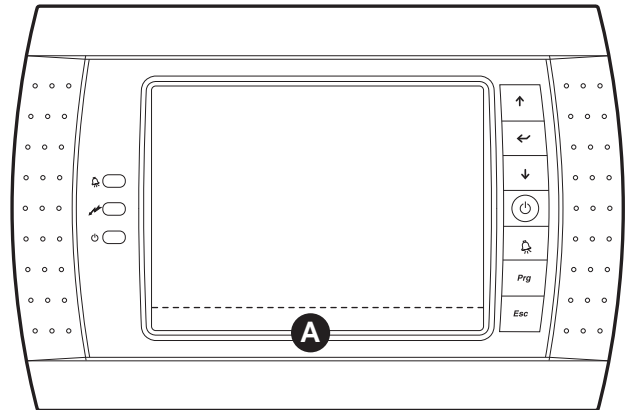
Index	Display area	Description
①	---	This index identifies the page currently active
②	---	This data indicates the current status of the compressor to which reference is made; the status can be: <ul style="list-style-type: none"> <li>• Error: the compressor indicates an error condition that prevents operation;</li> <li>• Calibrat.mode: The compressor is in calibration phase (assistance only);</li> <li>• Manual Mode: The compressor is active in manual mode (assistance only);</li> <li>• Analogue Mode: not used;</li> <li>• Modbus Mode: the compressor is activated via control from the unit control board;</li> <li>• Chiller mode: not used;</li> </ul>
③	---	This data specifies the operating status of the compressor to which reference is made; this information can be: <ul style="list-style-type: none"> <li>• Off: the compressor is off;</li> <li>• Locket out state: the chiller control board has not given consent for compressor start-up;</li> <li>• System Resetting: the compressor is in the reset phase (restart standby time);</li> <li>• Ramping Up: the compressor is in the start-up phase (start ramp);</li> <li>• Partially Closed Vane: the compressor is closing the intake valve (IGV);</li> <li>• Normal Operation State: the compressor is operating normally;</li> <li>• Maximum Flow State: the compressor is working at maximum speed allowed (data calculated by the compressor control board);</li> <li>• Minimum IGV% reached: minimum opening of the suction valve (IGV);</li> <li>• Interlock Open: the compressor is in stand-by for consent from unit control board;</li> <li>• Fault is active: the compressor is at a standstill due to alarm;</li> <li>• Inverter temp. High: indicates that the compressor is at a standstill due to overheating at the inverter;</li> <li>• Loading Up: indicates an acceleration during compressor operation</li> </ul>
④	---	This data indicates the current power requested at the compressor
⑤	---	This data indicates the speed that the compressor must reach in order to satisfy the plant request.
⑥	---	This data indicates the current compressor speed
⑦	---	This data indicates the compressor lower speed limit (dynamic data)
⑧	---	This data indicates the compressor upper speed limit (dynamic data)
⑨	---	This data indicates the compressor power supply voltage
⑩	---	This data indicates the compressor input current
⑪	---	This data indicates the compressor input power
⑫		This data indicates the current percentage opening of the suction valve (IGV)
⑬		This data indicates the status of the two integrated solenoid valves that adjust the cooling of the inverter on the compressor
⑭	<div style="text-align: center;">  <p>Navigation bar</p> </div>	Pressing this key leads to the MAIN page
⑮		Pressing this key leads to the upper level menu (for further information regarding the structure of the menus, refer to the Menu structure" section in this manual)
⑯		Pressing this key leads to the STATUS menu
⑰		Pressing this key leads to the ALARMS menu; Note: if an alarm is currently active in the unit, this key will have flashing edges until the alarm is solved or reset
⑱		Pressing this key leads to the menu selection page
⑲		Pressing this key allows to display the previous page of the menu currently active (TCA3)
⑳		Pressing this key allows to display the next page of the menu currently active (TCA9)

# STATUS menu - COMPRESSORS page - COMPRESSOR 1 (TCA9)

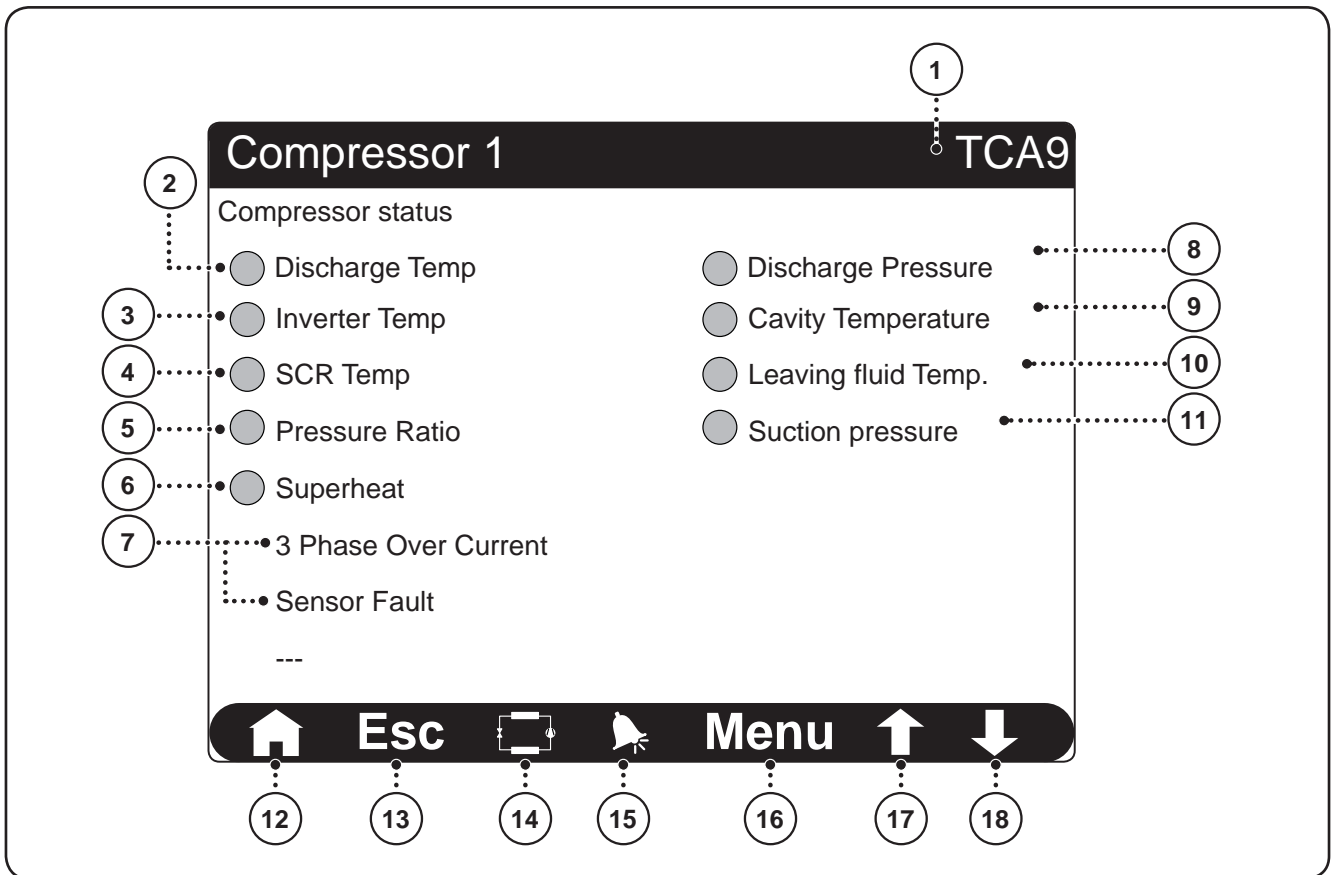
These pages (a total of 3 pages for each compressor: TCA3, TCA6 e TCA9 for compressor 1, while for compressor 2 they are: TCB3, TCB6 and TCB9). They contain information and readings given by sensors inside the compressor 1 or 2; all of this information allows the after-sales assistance staff to evaluate the correct operation of the compressor;

**NOTES: The masks dedicated to compressor 1 and those dedicated to compressor 2 are specular, for this reason only those regarding compressor 1 will be explained, however the information will be the same also for the windows of eventual compressor 2;**  
**In order to conserve the display, after 5 minutes of non-use, as well as going back to the main page, the display is switched off; to re-activate, just press any key or touch the screen.**


Active areas of the display:



Readings and functions available in the STATUS menu - COMPRESSORS page - COMPRESSOR 1 INFO (TCA9)



**Readings and functions available from the STATUS menu - COMPRESSORS page - TCA9**

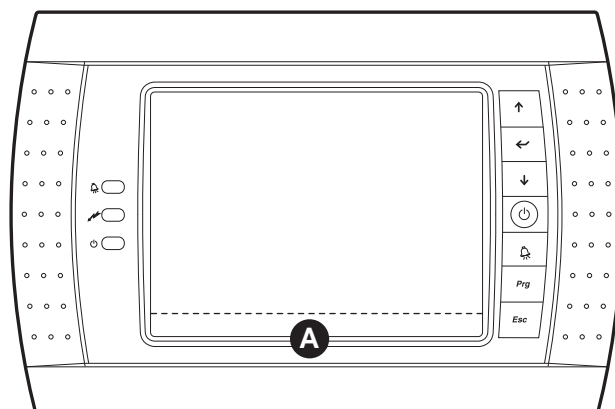
Index	Display area	Description
①	---	This index identifies the page currently active
②	---	This icon indicates the status of the flow temperature: <ul style="list-style-type: none"> <li>• Grey LED = temperature normal;</li> <li>• Yellow LED = temperature in warning mode (pre-alarm);</li> <li>• Red LED= temperature in fault (alarm);</li> </ul>
③	---	This icon indicates the status of the inverter temperature: <ul style="list-style-type: none"> <li>• Grey LED = temperature normal;</li> <li>• Yellow LED = temperature in warning mode (pre-alarm);</li> <li>• Red LED= temperature in fault (alarm);</li> </ul>
④	---	This icon indicates the status of the temperature of the AC-DC rectifier device: <ul style="list-style-type: none"> <li>• Grey LED = temperature normal;</li> <li>• Yellow LED = temperature in warning mode (pre-alarm);</li> <li>• Red LED= temperature in fault (alarm);</li> </ul>
⑤	---	This icon indicates the status of the compression ratio: <ul style="list-style-type: none"> <li>• Grey LED = data normal;</li> <li>• Yellow LED = data in warning mode (pre-alarm);</li> <li>• Red LED= data in fault (alarm);</li> </ul>
⑥	---	This icon indicates the status of the overheating temperature at compressor inlet: <ul style="list-style-type: none"> <li>• Grey LED = temperature normal;</li> <li>• Yellow LED = temperature in warning mode (pre-alarm);</li> <li>• Red LED= temperature in fault (alarm);</li> </ul>
⑦	---	Data not managed
⑧	---	This icon indicates the status of the flow pressure: <ul style="list-style-type: none"> <li>• Grey LED = pressure normal;</li> <li>• Yellow LED = pressure in warning mode (pre-alarm);</li> <li>• Red LED= pressure in fault (alarm);</li> </ul>
⑨	---	This icon indicates the status of the temperature for the motor windings: <ul style="list-style-type: none"> <li>• Grey LED = temperature normal;</li> <li>• Yellow LED = temperature in warning mode (pre-alarm);</li> <li>• Red LED= temperature in fault (alarm);</li> </ul>
⑩	---	Data not managed
⑪	---	This icon indicates the status of the suction pressure: <ul style="list-style-type: none"> <li>• Grey LED = pressure normal;</li> <li>• Yellow LED = pressure in warning mode (pre-alarm);</li> <li>• Red LED= pressure in fault (alarm);</li> </ul>
⑫	 Navigation bar	Pressing this key leads to the MAIN page
⑬		Pressing this key leads to the upper level menu (for further information regarding the structure of the menus, refer to the Menu structure" section in this manual)
⑭		Pressing this key leads to the STATUS menu
⑮		Pressing this key leads to the ALARMS menu; Note: if an alarm is currently active in the unit, this key will have flashing edges until the alarm is solved or reset
⑯		Pressing this key leads to the menu selection page
⑰		Pressing this key allows to display the previous page of the menu currently active (TCA6)
⑱		Pressing this key allows to display the next page of the menu currently active (TCA3)

# STATUS menu - CONDENSATION page

This page contains information and readings relative to the condenser; all of this information allows the after-sales assistance staff to evaluate correct operation of the unit;

**NOTES:** In order to conserve the display, after 5 minutes of non-use, as well as going back to the main page, the display is switched off; to re-activate, just press any key or touch the screen.


Active areas of the display:



Readings and functions available in the STATUS menu - CONDENSATION page

Condensin press.	00.0 bar
Actual setpoint	07.0 bar
Actual differential	10.0 bar
Speed	000 %
State	Alarm
Circuit state	NO

**Readings and functions available from the STATUS menu - CONDENSATION page**

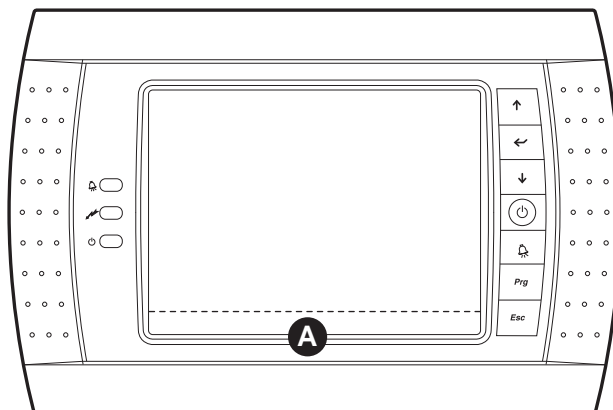
Index	Display area	Description
①	---	This index identifies the page currently active
②	---	This data indicates the current condensation pressure value
③	---	This value indicates the set-point calculated by the unit board for the condensation pressure
④	---	This value indicates the differential to apply to the set-point for the condensation pressure
⑤	---	This value indicates the current fans speed
⑥	---	This data indicates the current fan status; the status can be: <ul style="list-style-type: none"> <li>• Off: the fan is off;</li> <li>• On: the fan is on;</li> <li>• Start-up: the fan is performing the procedure envisioned during machine start-up;</li> <li>• Alarm: the fan is at a standstill due to unit alarm;</li> <li>• Forced to maximum: the fan is forced to maximum for switch-on of the second compressor</li> </ul>
⑦	---	This value indicates the status of the compressors: <ul style="list-style-type: none"> <li>• YES: at least one compressor is on;</li> <li>• NO: no compressor on</li> </ul>
⑧	 Navigation bar	Pressing this key leads to the MAIN page
⑨		Pressing this key leads to the upper level menu (for further information regarding the structure of the menus, refer to the Menu structure" section in this manual)
⑩		Pressing this key leads to the STATUS menu
⑪		Pressing this key leads to the ALARMS menu; Note: if an alarm is currently active in the unit, this key will have flashing edges until the alarm is solved or reset
⑫		Pressing this key leads to the menu selection page
⑬		Pressing this key allows to display the previous page of the menu currently active
⑭		Pressing this key allows to display the next page of the menu currently active

# STATUS menu - EEV VALVE page

This page contains information and readings relative to the electronic thermostatic valve; all of this information allows the after-sales assistance staff to evaluate correct operation of the unit;

**NOTES:** In order to conserve the display, after 5 minutes of non-use, as well as going back to the main page, the display is switched off; to re-activate, just press any key or touch the screen.

Active areas of the display:




Readings and functions available in the STATUS menu - CONDENSATION page

Parameter	Value
Liquid level	000 %
Setpoint	000 %
Position	000.0 % -> 000 Step
State	OFF
Digital input 1	OFF
EVD relay	OFF

The navigation bar at the bottom contains the following elements from left to right:

- Home icon (8)
- Esc (9)
- Power icon (10)
- Bell icon (11)
- Menu (12)
- Up arrow (13)
- Down arrow (14)

**Readings and functions available from the STATUS menu - EEV VALVE page**

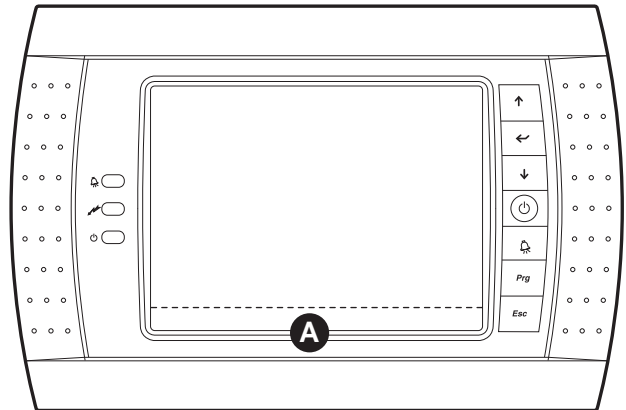
Index	Display area	Description
①	---	This index identifies the page currently active
②	---	This data indicates the current level of liquid inside the evaporator
③	---	This value indicates the set-point at which the liquid level in the evaporator must reach
④	---	This value indicates the position of the valve (opening), measured as a percentage and in steps (the valve range in steps is 0~480)
⑤	---	This data indicates the current electronic valve status; the status can be: <ul style="list-style-type: none"> <li>• Off: the valve is off;</li> <li>• On: the valve is on;</li> <li>• Start-up: the valve is performing the procedure envisioned during machine start-up;</li> <li>• Alarm: the valve is at a standstill due to unit alarm;</li> <li>• Forced to maximum: the valve is forced to maximum for switch-on of the second compressor</li> </ul>
⑥	---	This data indicates the status of the contact for electronic valve switch-on consent, this status can be: <ul style="list-style-type: none"> <li>• ON: the board gives consent for valve switch-on;</li> <li>• OFF: the board does not give consent for machine switch-on;</li> </ul>
⑦	---	This data indicates the status of the electronic valve alarm relay, this status can be: <ul style="list-style-type: none"> <li>• ON: the electronic valve driver is in alarm mode;</li> <li>• OFF: no alarm for the electronic valve driver</li> </ul>
⑧	<div style="text-align: center;">  <p>Navigation bar</p> </div>	Pressing this key leads to the MAIN page
⑨		Pressing this key leads to the upper level menu (for further information regarding the structure of the menus, refer to the Menu structure" section in this manual)
⑩		Pressing this key leads to the STATUS menu
⑪		Pressing this key leads to the ALARMS menu; Note: if an alarm is currently active in the unit, this key will have flashing edges until the alarm is solved or reset
⑫		Pressing this key leads to the menu selection page
⑬		Pressing this key allows to display the previous page of the menu currently active
⑭		Pressing this key allows to display the next page of the menu currently active

# STATUS menu - WATER CONTROL page (Evp3)

These pages (Evp3, Evp6) contain information and readings relative to the evaporator divided between the water control window and the evaporation window; all of this information allows the after-sales staff to evaluate correct operation of the unit;

**NOTES:** In order to conserve the display, after 5 minutes of non-use, as well as going back to the main page, the display is switched off; to re-activate, just press any key or touch the screen.

Active areas of the display:




Readings and functions available in the STATUS menu - WATER CONTROL page (Evp3)

<b>AERMEC</b>		<b>Water control</b>		<b>Evp3</b>		1	
		Antifreeze safety unloading				2	
3	Outlet temp	00.0°C					
4	Actual setpoint	00.0°C					
5	Act. Differential	00.0°C					
6	Prop. error	000.0%	integr. error	000.0%		7	
8	Total error	000%	Max demand	000%		9	
		<b>Esc</b>			<b>Menu</b>		
	10	11	12	13	14	15	16



### Readings and functions available from the STATUS menu - WATER CONTROL page (Evp3)

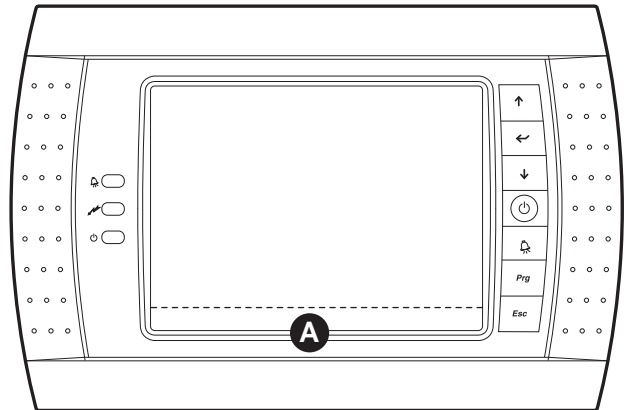
Index	Display area	Description
①	---	This index identifies the page currently active
②	---	This data indicates the status of the unit; this status can be: <ul style="list-style-type: none"> <li>• Off: the unit is off;</li> <li>• On: the unit is on;</li> <li>• High pressure prevention: the compressor is partialised to reduce the speed; the fan revs are also increased;</li> <li>• Low pressure prevention: the compressor is partialised to reduce the speed;</li> <li>• Low temperature prevention: the compressor is partialised to reduce the speed;</li> </ul>
③	---	This value indicates the temperature of the water produced
④	---	This value indicates the current set-point used for the water produced
⑤	---	This value indicates the current differential applied to the water produced set-point
⑥	---	This value indicates the PROPORTIONAL request of unit power
⑦	---	This value indicates the INTEGRAL request of unit power
⑧	---	This value indicates the total request of unit power
⑨	---	This value indicates the maximum limit of the power that can be supplied, calculated by the unit
⑩	 Navigation bar	Pressing this key leads to the MAIN page
⑪		Pressing this key leads to the upper level menu (for further information regarding the structure of the menus, refer to the Menu structure" section in this manual)
⑫		Pressing this key leads to the STATUS menu
⑬		Pressing this key leads to the ALARMS menu; Note: if an alarm is currently active in the unit, this key will have flashing edges until the alarm is solved or reset
⑭		Pressing this key leads to the menu selection page
⑮		Pressing this key allows to display the previous page of the menu currently active (Evp6)
⑯		Pressing this key allows to display the next page of the menu currently active (Evp6)

# STATUS menu - EVAPORATION page (Evp6)

These pages (Evp3, Evp6) contain information and readings relative to the evaporator divided between the water control window and the evaporation window; all of this information allows the after-sales staff to evaluate correct operation of the unit;

**NOTES:** In order to conserve the display, after 5 minutes of non-use, as well as going back to the main page, the display is switched off; to re-activate, just press any key or touch the screen.

Active areas of the display:








Readings and functions available in the STATUS menu - EVAPORATION page (Evp6)

AERMEC		Water control		Evp6	
	Off				
3	Demand total	000%	Max limit	000%	4
5				Off	0000
7	Compr. demand	000%		000%	8
9	Actual power	000%	ON ↑	000%	ON ↓
15	Actual speed	00000 rpm	13	10	00000 rpm
17	IGV	000.0 %			000.0 %
19	Compr.ratio	01.0			

Navigation bar: Home (20), Esc (21), [Icon] (22), [Icon] (23), Menu (24), Up (25), Down (26)

**Readings and functions available from the STATUS menu - EVAPORATION page (Evp6)**

Index	Display area	Description
①	---	This index identifies the page currently active
②	---	This data indicates the status of the unit; this status can be: <ul style="list-style-type: none"> <li>• Off: the unit is off;</li> <li>• On: the unit is on;</li> <li>• High pressure prevention: the compressor is partialised to reduce the speed; the fan revs are also increased;</li> <li>• Low pressure prevention: the compressor is partialised to reduce the speed;</li> <li>• Low temperature prevention: the compressor is partialised to reduce the speed;</li> </ul>
③	---	This value indicates the total request of unit power
④	---	This value indicates the maximum limit of the power that can be supplied, calculated by the unit
⑤	---	This data indicates the current phase in which the unit is found; this phase can be: <ul style="list-style-type: none"> <li>• Off: the unit is off;</li> <li>• Compressors switch-off: the unit is performing the procedure for compressor switch-off;</li> <li>• Just one compr. active: the unit is operating with just one compressor;</li> <li>• Two compressors active: the unit is operating with two compressors;</li> <li>• Start up individual compr.: the unit is performing the procedure for switch-on of a compressor;</li> <li>• Start up of two compressors: the unit is performing the procedure for switch-on of both compressors;</li> <li>• Start up of second compr.A: the unit is performing the procedure for switch-on of compressor 1;</li> <li>• Start up of second compr.B: the unit is performing the procedure for switch-on of compressor 2</li> </ul>
⑥	---	This data indicates the time (countdown) for which the phase in progress will last
⑦	---	This data indicates the power request to compressor 1
⑧	---	This data indicates the power request to compressor 2
⑨	---	This data indicates compressor 1 input power
⑩		This data indicates compressor 2 input power
⑪		This data indicates the status of compressor 1 (ON or OFF)
⑫		This data indicates the status of compressor 2 (ON or OFF)
⑬		This data indicates whether compressor 1 is in the switch-on (  ) or switch-off (  ) phase
⑭		This data indicates whether compressor 2 is in the switch-on (  ) or switch-off (  ) phase
⑮		This data indicates the number of revs at which compressor 1 is currently operating
⑯		This data indicates the number of revs at which compressor 2 is currently operating, if present
⑰		This data indicates the opening percentage of the valve positioned inside compressor 1 (intake); this value, along with the revs. adjustment, allows the compressor to dynamically modulate the intake gas flow rate
⑱		This data indicates the opening percentage of the valve positioned on intake of eventual compressor 2. This valve allows the compressor to dynamically modulate the intake gas flow rate
⑲		This data identifies the current compression ratio calculated by the control board
⑳	 Navigation bar	Pressing this key leads to the MAIN page
㉑		Pressing this key leads to the upper level menu (for further information regarding the structure of the menus, refer to the Menu structure" section in this manual)
㉒		Pressing this key leads to the STATUS menu
㉓		Pressing this key leads to the ALARMS menu; Note: if an alarm is currently active in the unit, this key will have flashing edges until the alarm is solved or reset
㉔		Pressing this key leads to the menu selection page
㉕		Pressing this key allows to display the previous page of the menu currently active (Evp3)
㉖		Pressing this key allows to display the next page of the menu currently active (Evp3)

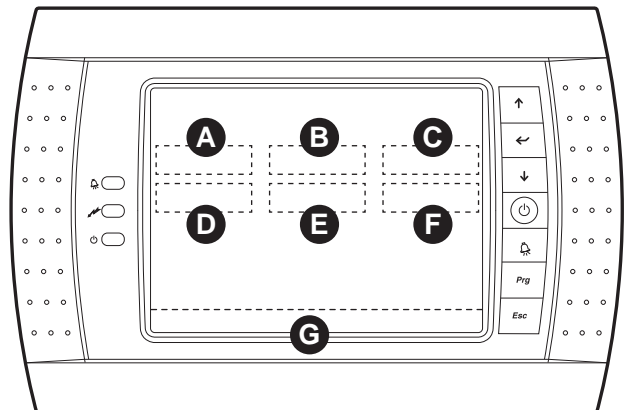
# Menus selection page (ID3)

This page allows to select one of the six menus available in the system, every menu includes the parameters or displays according to the different functions performed:

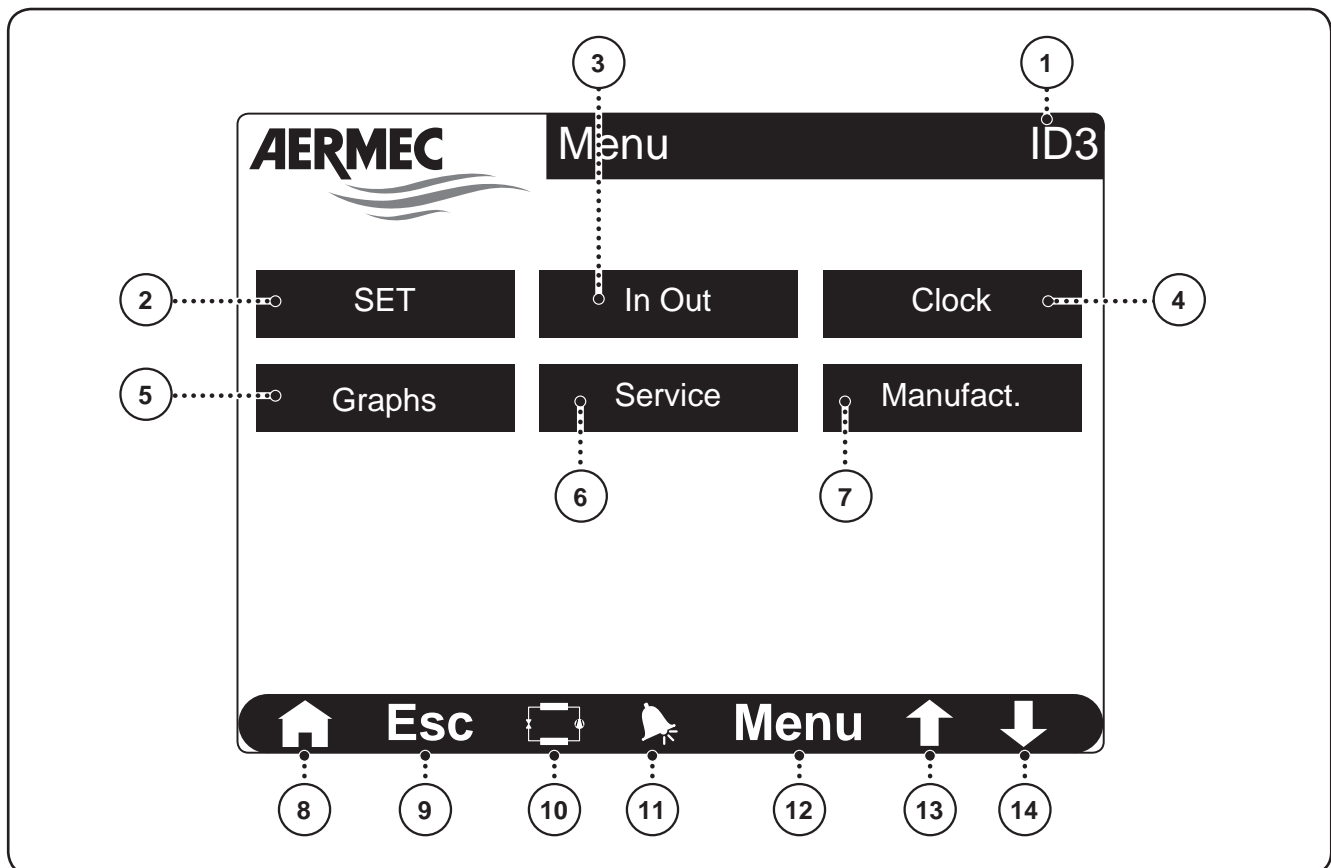
- Set: contains the settings on the work set-point;
- In out: contains the monitors on probes, digital inputs and outputs;
- Clock: allows to adjust the system date and time;
- Graphics: allows to display the unit operating graphics (Water Inlet/Outlet, High/Low pressure);
- Service: menu protected by password dedicated to the technical after-sales assistance;
- Manufacturer: menu protected by password dedicated to the technical after-sales assistance;

**NOTES:** In order to conserve the display, after 5 minutes of non-use, as well as going back to the main page, the display is switched off; to re-activate, just press any key or touch the screen.

Active areas of the display:



Readings and functions available in the menus selection page



**Readings and functions available from the menus selection page**

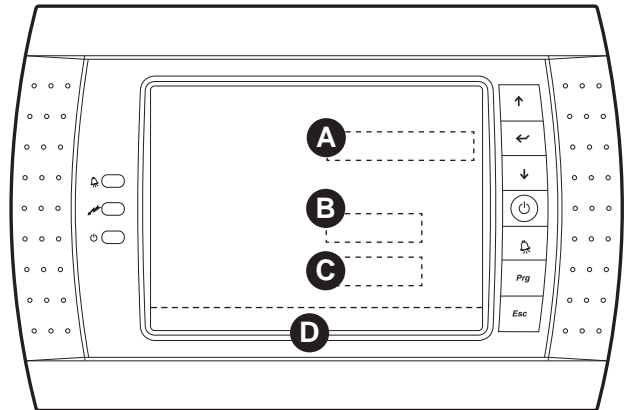
Index	Display area	Description
①	---	This index identifies the page currently active
②	<b>A</b>	This key allows to access the SET menu
③	<b>B</b>	This key allows to access the In Out menu
④	<b>C</b>	This key allows to access the Clock menu
⑤	<b>D</b>	This key allows to access the Graphics menu
⑥	<b>E</b>	This key allows to access the Service menu
⑦	<b>F</b>	This key allows to access the Manufacturer menu
⑧	<b>G</b> Navigation bar	Pressing this key leads to the MAIN page
⑨		Pressing this key leads to the upper level menu (for further information regarding the structure of the menus, refer to the Menu structure" section in this manual)
⑩		Pressing this key leads to the STATUS menu
⑪		Pressing this key leads to the ALARMS menu; Note: if an alarm is currently active in the unit, this key will have flashing edges until the alarm is solved or reset
⑫		Pressing this key leads to the menu selection page
⑬		Pressing this key allows to display the previous page of the menu currently active
⑭		Pressing this key allows to display the next page of the menu currently active

# SET menu

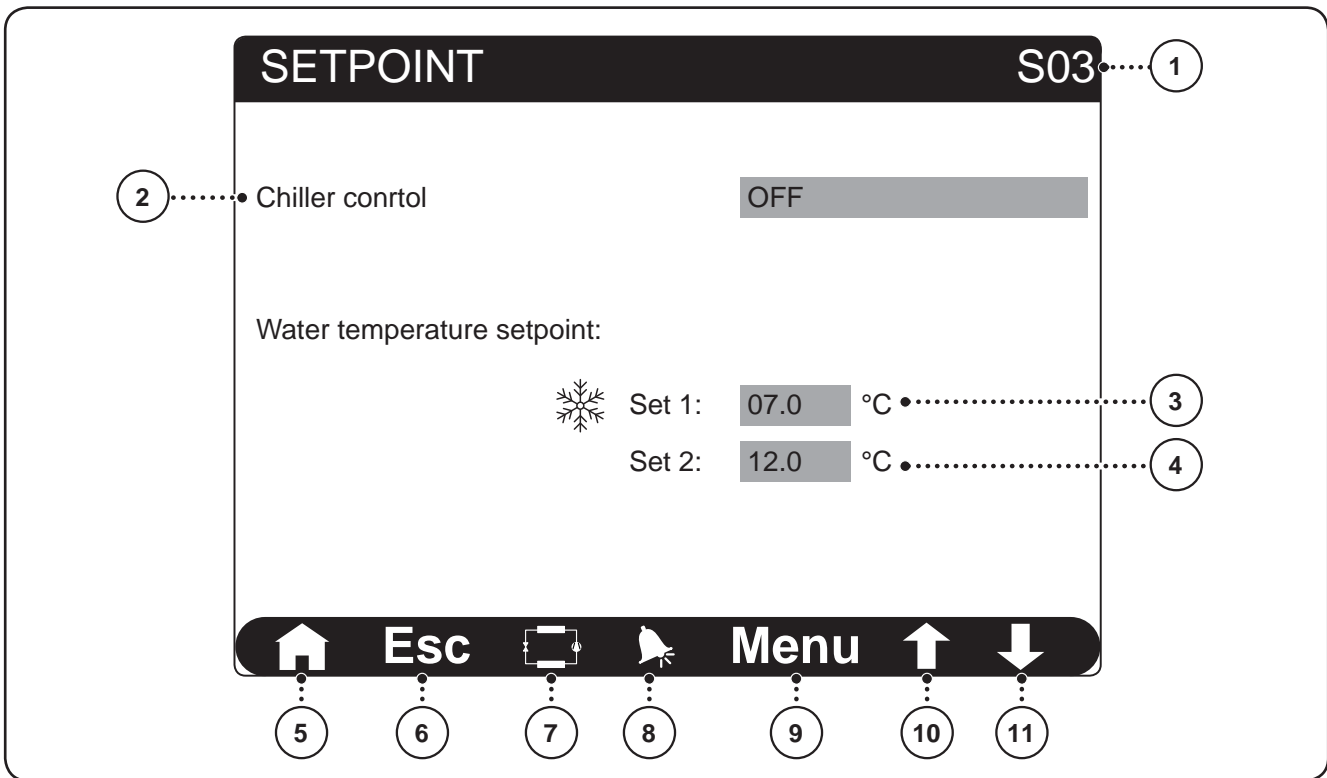
This page allows to set the values to associate to the two work sets available (remember however that the unit will always work using just one work set); it also allows to select the logic with which to manage the unit;

**NOTES:** In order to conserve the display, after 5 minutes of non-use, as well as going back to the main page, the display is switched off; to re-activate, just press any key or touch the screen.

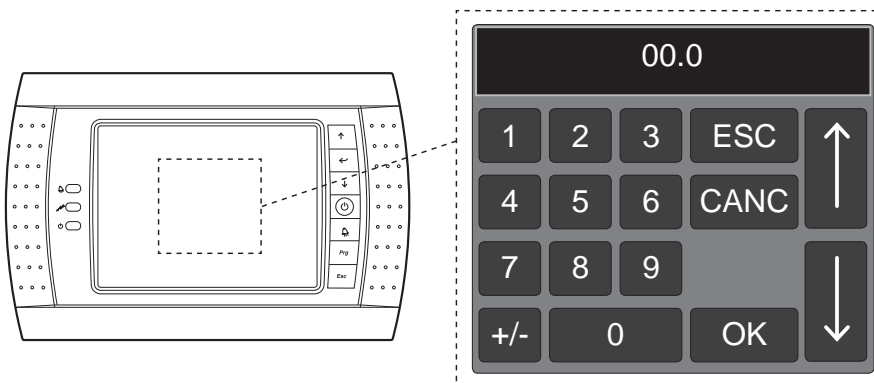
Active areas of the display:



Readings and functions available in the menus selection page



Virtual touch-screen keyboard:



Readings and functions available from the SET menu		
Index	Display area	Description
①	---	This index identifies the page currently active
②	<b>A</b>	This parameter allows to set the logic with which to manage the unit; the management logics possible are: <ul style="list-style-type: none"> <li>• OFF: machine off;</li> <li>• YES FROM CLOCK: unit operation is regulated by the time bands set in page C6 of the clock menu (this page is visible only if this management logic is selected);</li> <li>• YES WITH SET2: the unit will use the value specified on the SET 2 line as work set-point;</li> <li>• YES WITH SET1: the unit will use the value specified on the SET 1 line as work set-point</li> </ul>
③	<b>B</b>	This parameter specifies the temperature of the water produced associated to SET 1
④	<b>C</b>	This parameter specifies the temperature of the water produced associated to SET 2
⑤	<b>D</b> Navigation bar	Pressing this key leads to the MAIN page
⑥		Pressing this key leads to the upper level menu (for further information regarding the structure of the menus, refer to the "Menu structure" section in this manual)
⑦		Pressing this key leads to the STATUS menu
⑧		Pressing this key leads to the ALARMS menu; Note: if an alarm is currently active in the unit, this key will have flashing edges until the alarm is solved or reset
⑨		Pressing this key leads to the menu selection page
⑩		Pressing this key allows to display the previous page of the menu currently active
⑪		Pressing this key allows to display the next page of the menu currently active

**NOTES:** the parameters that can be modified are highlighted by a blue zone which states the current value of the parameter. Touch the blue area to enter modification mode; this mode will make a virtual touch screen keyboard appear in the centre of the display, through which it will be possible to set a value (using the numerical keys and using the arrow keys), or select from a series of options (using

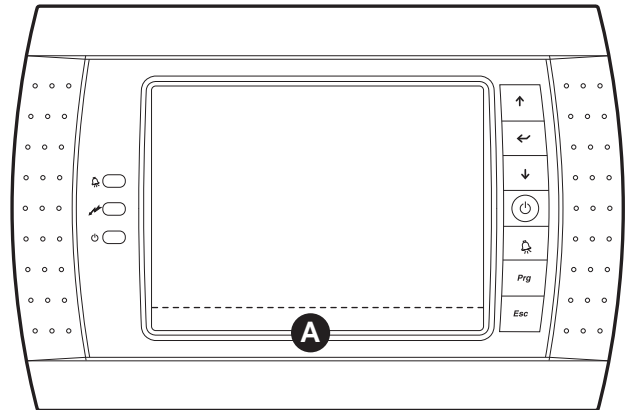
the arrow keys). Once the desired value has been entered (or the option selected), pressing the OK key confirms insertion, while pressing the CANC key will eliminate the current value, taking it to zero (or if it is a selection, to the first of the options). To exit the virtual keyboard without modifying and value, just press the ESC key.

# IN OUT menu - PROBES page (D03)

These pages contain the probe readings (page D03), the status of the digital inputs (page D06) and of the digital outputs (page D09);

**NOTES:** In order to conserve the display, after 5 minutes of non-use, as well as going back to the main page, the display is switched off; to re-activate, just press any key or touch the screen.

Active areas of the display:



Readings and functions available in the IN OUT menu - PROBES page (D03)


1

Sensor		D03
<span style="border: 1px solid black; border-radius: 50%; padding: 2px 5px;">2</span>	B1. Condensing pressure	00.0 bar
	B2. Evaporating pressure	00.0 bar
<span style="border: 1px solid black; border-radius: 50%; padding: 2px 5px;">4</span>	B3. ---	
	B4. Inlet water temperature	00.0 °C
<span style="border: 1px solid black; border-radius: 50%; padding: 2px 5px;">6</span>	B5. Outlet water temperature	00.0 °C
	B6. Refrigerant evaporating temperature	00.0 °C
<span style="border: 1px solid black; border-radius: 50%; padding: 2px 5px;">8</span>	B7. Multiple input	00.0 °C
	B8. Outdoor temperature	00.0 °C
<span style="border: 1px solid black; border-radius: 50%; padding: 2px 5px;">10</span>	B9. Refrigerant liquid temp. (cond.out)	00.0 °C
	B10. Refrigerant liquid temp. (EEV in)	00.0 °C

	<b>Esc</b>			<b>Menu</b>		
<span style="border: 1px solid black; border-radius: 50%; padding: 2px 5px;">12</span>	<span style="border: 1px solid black; border-radius: 50%; padding: 2px 5px;">13</span>	<span style="border: 1px solid black; border-radius: 50%; padding: 2px 5px;">14</span>	<span style="border: 1px solid black; border-radius: 50%; padding: 2px 5px;">15</span>	<span style="border: 1px solid black; border-radius: 50%; padding: 2px 5px;">16</span>	<span style="border: 1px solid black; border-radius: 50%; padding: 2px 5px;">17</span>	<span style="border: 1px solid black; border-radius: 50%; padding: 2px 5px;">18</span>



**Readings and functions available from the IN OUT menu - PROBES page (D03)**

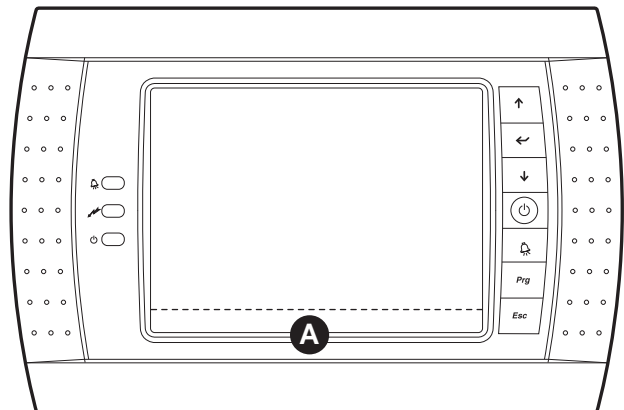
Index	Display area	Description
①	---	This index identifies the page currently active
②	---	This data indicates the condensation pressure; transducer positioned upstream from the condenser (TAP)
③	---	This data indicates the evaporation pressure; transducer positioned on the evaporator (TBP)
④	---	Data not managed
⑤	---	This data indicates the temperature of the water entering the unit (SIW)
⑥	---	This data indicates the temperature of the water leaving the unit (SUW)
⑦	---	This data indicates the inlet temperature at the gas side evaporator (SIEV)
⑧	---	This data indicates the temperature read by the probe connected to the multifunction input (MULTI IN)
⑨	---	This data indicates the temperature of the outdoor air (SAE)
⑩	---	This temperature indicates the temperature downstream from the condenser (SULC)
⑪	---	This data indicates the temperature upstream from the electronic valve EEV (SIOL)
⑫	<div style="text-align: center;">                       Navigation bar                 </div>	Pressing this key leads to the MAIN page
⑬		Pressing this key leads to the upper level menu (for further information regarding the structure of the menus, refer to the Menu structure" section in this manual)
⑭		Pressing this key leads to the STATUS menu
⑮		Pressing this key leads to the ALARMS menu; Note: if an alarm is currently active in the unit, this key will have flashing edges until the alarm is solved or reset
⑯		Pressing this key leads to the menu selection page
⑰		Pressing this key allows to display the previous page of the menu currently active (D09)
⑱		Pressing this key allows to display the next page of the menu currently active (D06)

# IN OUT menu - DIGITAL INPUTS page (D06)

These pages contain the probe readings (page D03), the status of the digital inputs (page D06) and of the digital outputs (page D09);

**NOTES:** In order to conserve the display, after 5 minutes of non-use, as well as going back to the main page, the display is switched off; to re-activate, just press any key or touch the screen.

Active areas of the display:




Readings and functions available in the IN OUT menu - DIGITAL INPUTS page (D06)

Digital inputs		D06
2	ID1 Remote ON/OFF	ID10 Compr.1 overload
3	ID2 Summer/winter	ID11 Fan overload
4	ID3 Alternat. setpoint	ID12 Compr.2 overload
5	ID4 External alarm	ID13 EEV alarm
6	ID5 Evap. flow switch	ID14 Multifunction input
7	ID6 Pump 1 overload	ID15 Pump 2 overload
8	ID7 Phase sequence	
9	ID8 High pressure	
10	ID9 Low pressure	
		11
		12
		13
		14
		15
		16

17	18	19	20	21	22	23
----	----	----	----	----	----	----

**Readings and functions available from the IN OUT menu - DIGITAL INPUTS page (D06)**

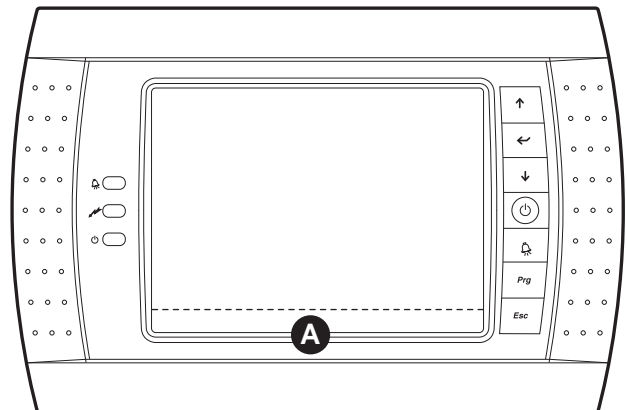
Index	Display area	Description
①	---	This index identifies the page currently active
②	---	This data indicates the status of the digital input ID1; the status of this input can be: <ul style="list-style-type: none"> <li>• Open (🔴): unit ON from remote;</li> <li>• Closed (🟢): unit OFF from remote</li> </ul>
③	---	This data indicates the status of the digital input ID2; the status of this input is not managed:
④	---	This data indicates the status of the digital input ID3; the status of this input can be: <ul style="list-style-type: none"> <li>• Open (🔴): the unit uses SET 2;</li> <li>• Closed (🟢): the unit uses SET 1;</li> </ul>
⑤	---	This data indicates the status of the digital input ID4; the status of this input can be: <ul style="list-style-type: none"> <li>• Open (🔴): external alarm ACTIVE;</li> <li>• Closed (🟢): no external alarm</li> </ul>
⑥	---	This data indicates the status of the digital input ID5; the status of this input can be: <ul style="list-style-type: none"> <li>• Open (🔴): flow switch and/or differential pressure switch alarm or unit off;</li> <li>• Closed (🟢): no flow switch and/or pressure differential alarm</li> </ul>
⑦	---	This data indicates the status of the digital input ID6; the status of this input can be: <ul style="list-style-type: none"> <li>• Open (🔴): Pump 1 circuit breaker alarm;</li> <li>• Closed (🟢): No pump 1 circuit breaker alarm;</li> </ul>
⑧	---	This data indicates the status of the digital input ID7; the status of this input can be: <ul style="list-style-type: none"> <li>• Open (🔴): phases monitor alarm;</li> <li>• Closed (🟢): no phases monitor alarm</li> </ul>
⑨	---	This data indicates the status of the digital input ID8; the status of this input can be: <ul style="list-style-type: none"> <li>• Open (🔴): High pressure alarm (from pressure switch);</li> <li>• Closed (🟢): no high pressure alarm (from pressure switch)</li> </ul>
⑩	---	This data indicates the status of the digital input ID9; the status of this input can be: <ul style="list-style-type: none"> <li>• Open (🔴): Low pressure alarm;</li> <li>• Closed (🟢): no low pressure alarm</li> </ul>
⑪	---	This data indicates the status of the digital input ID10; the status of this input can be: <ul style="list-style-type: none"> <li>• Open (🔴): Compressor 1 circuit breaker alarm;</li> <li>• Closed (🟢): No compressor 1 circuit breaker alarm</li> </ul>
⑫	---	This data indicates the status of the digital input ID11; the status of this input can be: <ul style="list-style-type: none"> <li>• Open (🔴): Fan circuit breaker alarm;</li> <li>• Closed (🟢): no fan circuit breaker alarm</li> </ul>
⑬	---	This data indicates the status of the digital input ID12; the status of this input can be: <ul style="list-style-type: none"> <li>• Open (🔴): Compressor 2 circuit breaker alarm;</li> <li>• Closed (🟢): No compressor 2 circuit breaker alarm</li> </ul>
⑭	---	This data indicates the status of the digital input ID13; the status of this input can be: <ul style="list-style-type: none"> <li>• Open (🔴): EEV valve alarm;</li> <li>• Closed (🟢): no EEV valve alarm</li> </ul>
⑮	---	This data indicates the status of the digital input ID14; the status of this input can be: <ul style="list-style-type: none"> <li>• Open (🔴): multifunction contact open;</li> <li>• Closed (🟢): multifunction contact CLOSED</li> </ul>
⑯	---	This data indicates the status of the digital input ID15; the status of this input can be: <ul style="list-style-type: none"> <li>• Open (🔴): Pump 2 circuit breaker alarm;</li> <li>• Closed (🟢): No pump 2 circuit breaker alarm;</li> </ul>
⑰	<div style="text-align: center;">                       Navigation bar                 </div>	Pressing this key leads to the MAIN page
⑱		Pressing this key leads to the upper level menu (for further information regarding the structure of the menus, refer to the Menu structure" section in this manual)
⑲		Pressing this key leads to the STATUS menu
⑳		Pressing this key leads to the ALARMS menu; Note: if an alarm is currently active in the unit, this key will have flashing edges until the alarm is solved or reset
㉑		Pressing this key leads to the menu selection page
㉒		Pressing this key allows to display the previous page of the menu currently active (D06)
㉓		Pressing this key allows to display the next page of the menu currently active (D09)

# IN OUT menu - DIGITAL OUTPUTS page (D09)

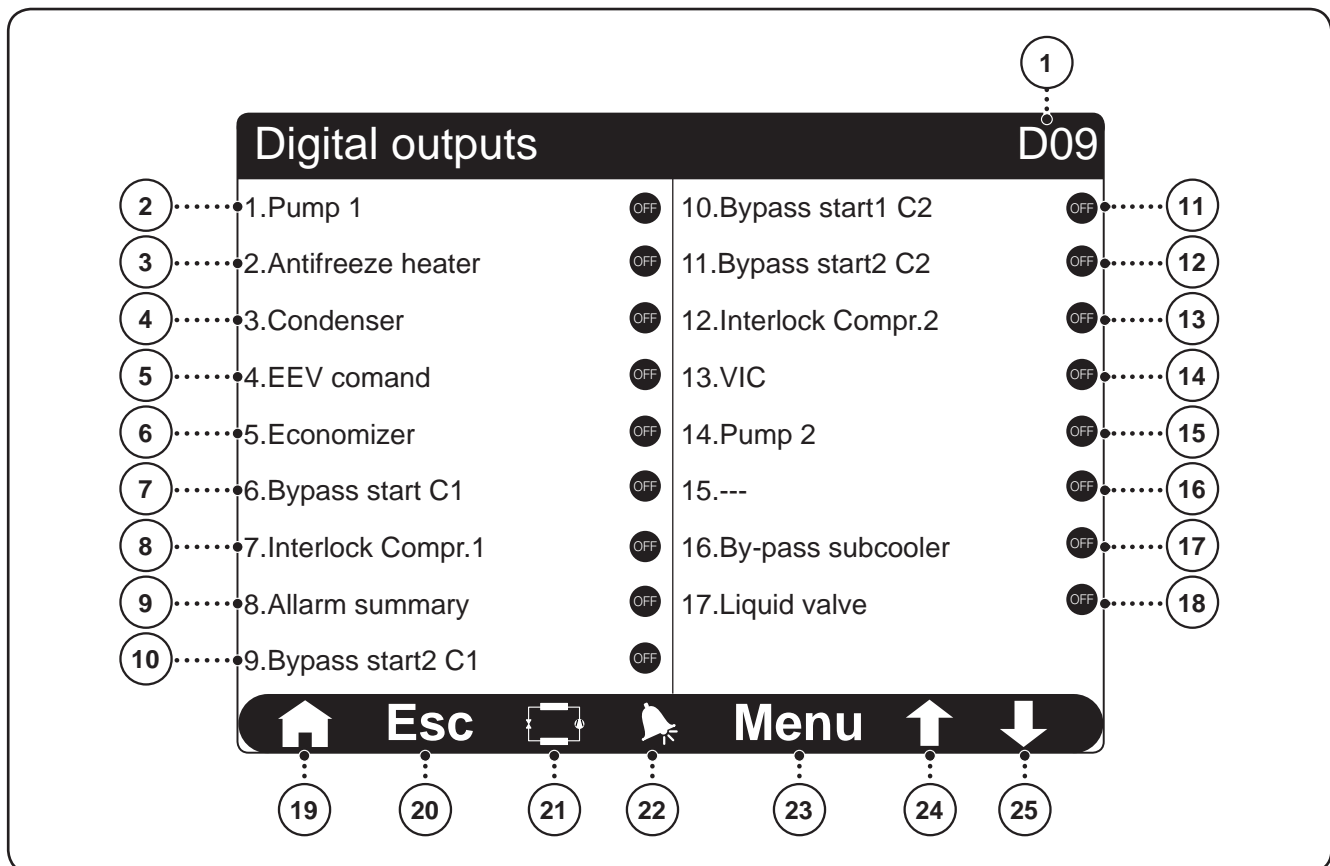
These pages contain the probe readings (page D03), the status of the digital inputs (page D06) and of the digital outputs (page D09);

**NOTES:** In order to conserve the display, after 5 minutes of non-use, as well as going back to the main page, the display is switched off; to re-activate, just press any key or touch the screen.

Active areas of the display:



Readings and functions available in the IN OUT menu - DIGITAL OUTPUTS page (D09)



**Readings and functions available from the IN OUT menu - DIGITAL OUTPUTS page (D09)**

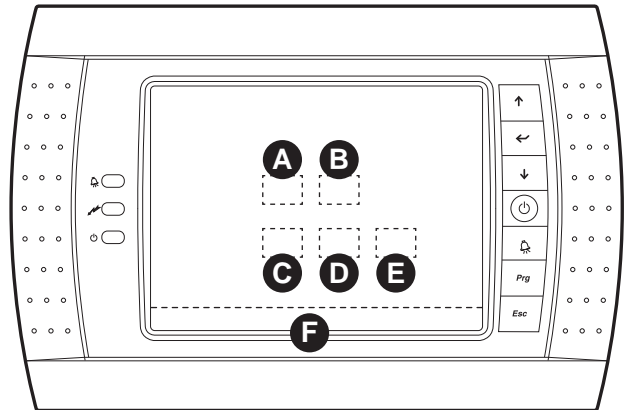
Index	Display area	Description
①	---	This index identifies the page currently active
②	---	This data indicates the status of the digital output connected to the plant pump 1: <ul style="list-style-type: none"> <li>• ON: plant pump 1 active;</li> <li>• OFF: plant pump 1 off;</li> </ul>
③	---	This data indicates the status of the digital output connected to the evaporator anti-freeze resistance: <ul style="list-style-type: none"> <li>• ON: anti-freeze resistance active;</li> <li>• OFF: plant pump off</li> </ul>
④	---	This data indicates the status of the digital output connected to the fans: <ul style="list-style-type: none"> <li>• ON: fans active;</li> <li>• OFF: fans off</li> </ul>
⑤	---	This data indicates the status of the digital output connected to the electronic valve EEV: <ul style="list-style-type: none"> <li>• ON: EEV valve active;</li> <li>• OFF: EEV valve off</li> </ul>
⑥	---	Data not managed
⑦	---	This data indicates the status of the first by-pass valve for start-up of compressor 1: <ul style="list-style-type: none"> <li>• ON: valve active;</li> <li>• OFF: valve off</li> </ul>
⑧	---	This data indicates the consent status on switch-on of compressor 1: <ul style="list-style-type: none"> <li>• ON: consent ACTIVE;</li> <li>• OFF: consent not active</li> </ul>
⑨	---	This data indicates the state of the alarm conditions on the unit: <ul style="list-style-type: none"> <li>• ON: alarm present on the unit;</li> <li>• OFF: no alarm on the unit</li> </ul>
⑩	---	This data indicates the status of the second by-pass valve for start-up of compressor 1: <ul style="list-style-type: none"> <li>• ON: valve active;</li> <li>• OFF: valve off</li> </ul>
⑪	---	This data indicates the status of the first by-pass valve for start-up of compressor 2: <ul style="list-style-type: none"> <li>• ON: valve active;</li> <li>• OFF: valve off</li> </ul>
⑫	---	This data indicates the status of the second by-pass valve for start-up of compressor 2: <ul style="list-style-type: none"> <li>• ON: valve active;</li> <li>• OFF: valve off</li> </ul>
⑬	---	This data indicates the consent status on switch-on of compressor 2: <ul style="list-style-type: none"> <li>• ON: consent ACTIVE;</li> <li>• OFF: consent not active</li> </ul>
⑭	---	Data not managed
⑮	---	This data indicates the status of the digital output connected to the plant pump 2: <ul style="list-style-type: none"> <li>• ON: plant pump 2 active;</li> <li>• OFF: plant pump 2 off;</li> </ul>
⑯	---	Data not managed
⑰	---	This data indicates the status of the by-pass solenoid valve on the subcooler: <ul style="list-style-type: none"> <li>• ON: by-pass valve ACTIVE;</li> <li>• OFF: by-pass valve not active</li> </ul>
⑱	---	This data indicates the status of the liquid solenoid valve: <ul style="list-style-type: none"> <li>• ON: valve ACTIVE;</li> <li>• OFF: valve not active</li> </ul>
⑲	<p align="center"><b>A</b></p> <p align="center">Navigation bar</p>	Pressing this key leads to the MAIN page
⑳		Pressing this key leads to the upper level menu (for further information regarding the structure of the menus, refer to the Menu structure" section in this manual)
㉑		Pressing this key leads to the STATUS menu
㉒		Pressing this key leads to the ALARMS menu; Note: if an alarm is currently active in the unit, this key will have flashing edges until the alarm is solved or reset
㉓		Pressing this key leads to the menu selection page
㉔		Pressing this key allows to display the previous page of the menu currently active (D06)
㉕		Pressing this key allows to display the next page of the menu currently active (D03)

# CLOCK menu - SYSTEM DATE TIME page (C03)

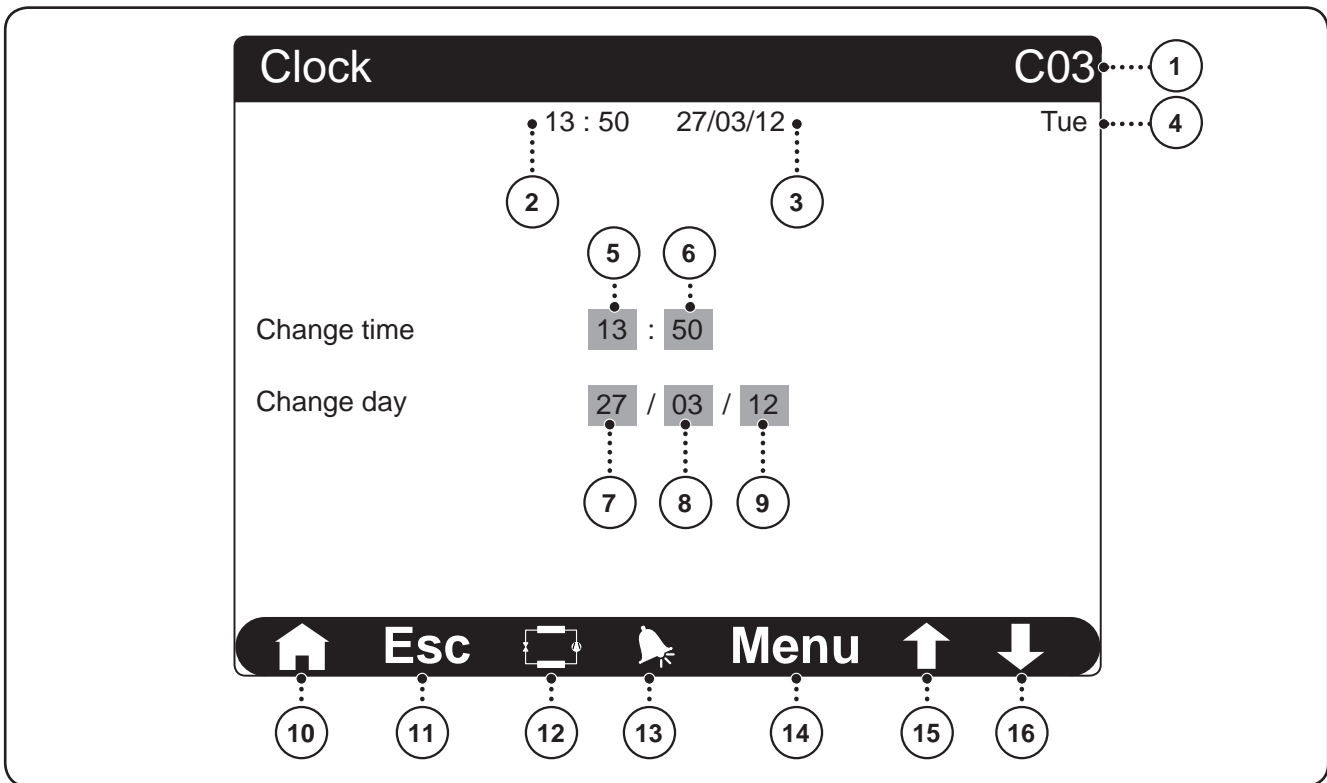
These pages allow to set the system date and time (Page C03); if time band management has been activated, in this menu it will also be possible to set the time bands to apply to the system (Page C06);

**NOTES:** In order to conserve the display, after 5 minutes of non-use, as well as going back to the main page, the display is switched off; to re-activate, just press any key or touch the screen.

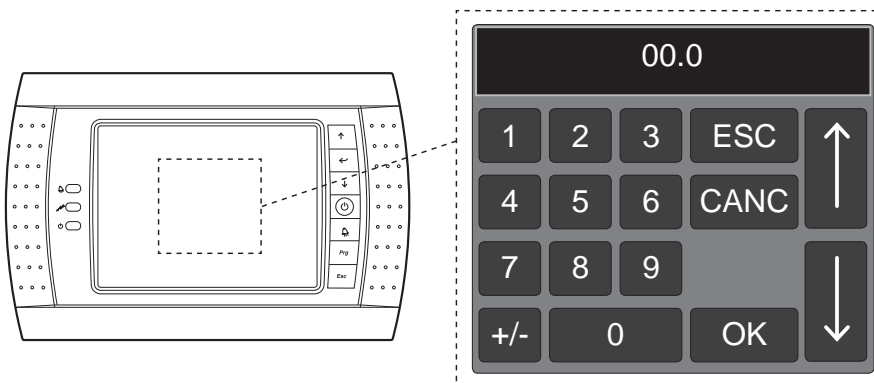
Active areas of the display:



Readings and functions available in the CLOCK menu - SYSTEM DATE TIME page (C03)



Virtual touch-screen keyboard:



Readings and functions available from the CLOCK menu - SYSTEM DATE TIME page (C03)		
Index	Display area	Description
①	---	This index identifies the page currently active
②	---	This value indicates the current system time
③	---	This value indicates the current system date
④	---	This value indicates the current system day
⑤	<b>A</b>	This parameter specifies the hour to set for the system time
⑥	<b>B</b>	This parameter specifies the minutes to set for the system time
⑦	<b>C</b>	This parameter specifies the day to set for the system date
⑧	<b>D</b>	This parameter specifies the month to set for the system date
⑨	<b>E</b>	This parameter specifies the year to set for the system date
⑩	<b>F</b> Navigation bar	Pressing this key leads to the MAIN page
⑪		Pressing this key leads to the upper level menu (for further information regarding the structure of the menus, refer to the Menu structure" section in this manual)
⑫		Pressing this key leads to the STATUS menu
⑬		Pressing this key leads to the ALARMS menu; Note: if an alarm is currently active in the unit, this key will have flashing edges until the alarm is solved or reset
⑭		Pressing this key leads to the menu selection page
⑮		Pressing this key allows to display the previous page of the menu currently active (C06, if the time band management mode is active)
⑯		Pressing this key allows to display the next page of the menu currently active (C06, if the time band management mode is active)

**NOTES:** the parameters that can be modified are highlighted by a blue zone which states the current value of the parameter. Touch the blue area to enter modification mode; this mode will make a virtual touch screen keyboard appear in the centre of the display, through which it will be possible to set a value (using the numerical keys and using the arrow keys), or select from a series of options (using

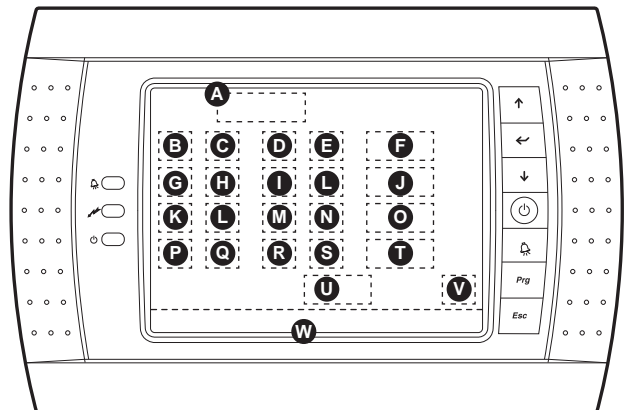
the arrow keys). Once the desired value has been entered (or the option selected), pressing the OK key confirms insertion, while pressing the CANC key will eliminate the current value, taking it to zero (or if it is a selection, to the first of the options). To exit the virtual keyboard without modifying and value, just press the ESC key.

# CLOCK menu - TIME BANDS page (C06)

These pages allow to set the system date and time (Page C03); if time band management has been activated, in this menu it will also be possible to set the time bands to apply to the system (Page C06);

**NOTES:** In order to conserve the display, after 5 minutes of non-use, as well as going back to the main page, the display is switched off; to re-activate, just press any key or touch the screen.

Active areas of the display:



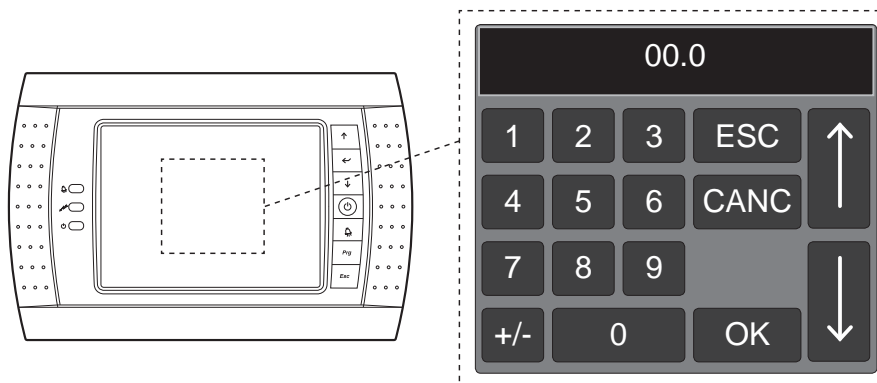
Readings and functions available in the CLOCK menu - TIME BANDS page (C03)

	start	stop	action
3	00 : 00	05 : 00	ON
8	00 : 00	10 : 00	ON
13	00 : 00	15 : 00	ON
18	00 : 00	20 : 00	ON

Copy this day to: all

Navigation bar: Home (26), Esc (27), USB (28), Bell (29), Menu (30), Up (31), Down (32)

Virtual touch-screen keyboard:





**Readings and functions available from the CLOCK menu - TIME BANDS page (C03)**

Index	Display area	Description
①	---	This index identifies the page currently active
②	<b>A</b>	This parameter specifies the day to which the time band set in this page refers
③	<b>B</b>	This parameter specifies the start time (HOURS) for the first daily time band
④	<b>C</b>	This parameter specifies the start time (MINUTES) for the first daily time band
⑤	<b>D</b>	This parameter specifies the end time (HOURS) for the first daily time band
⑥	<b>E</b>	This parameter specifies the end time (MINUTES) for the first daily time band
⑦	<b>F</b>	This parameter specifies the action to perform during the first time band; this action could be: <ul style="list-style-type: none"> <li>• OFF: the unit will be off during this time band;</li> <li>• SET1: the unit will be active and produce water using the SET1 as work set point;</li> <li>• SET2: the unit will be active and produce water using the SET2 as work set point</li> </ul>
⑧ ... ⑫	<b>G ... J</b>	This group of parameters equals the previous parameters (from parameter 2 to parameter 7), however this group of parameters describes the start, the end and the action to perform for the SECOND time band of the system
⑬ ... ⑰	<b>K ... O</b>	This group of parameters equals the previous parameters (from parameter 2 to parameter 7), however this group of parameters describes the start, the end and the action to perform for the THIRD time band of the system
⑱ ... ⑳	<b>P ... T</b>	This group of parameters equals the previous parameters (from parameter 2 to parameter 7), however this group of parameters describes the start, the end and the action to perform for the FOURTH time band of the system
㉓	<b>U</b>	This parameter indicates into which days the data inserted for the four time bands described on this page must be copied; the options available are: <ul style="list-style-type: none"> <li>• Monday, Tuesday... Friday: the settings will only be copied into the specific day;</li> <li>• HOLIDAY: the settings will only be copied into the holidays;</li> <li>• ALL: the settings will be copied onto all days;</li> </ul>
㉔	<b>V</b>	If this parameter is set at YES, it allows to copy the time settings into the days specified at parameter 23
㉕	---	Once copying of the time settings has started, the system displays the "DONE" string to inform the user that the time settings have been copied into the specified days
㉖	<b>W</b> Navigation bar	Pressing this key leads to the MAIN page
㉗		Pressing this key leads to the upper level menu (for further information regarding the structure of the menus, refer to the Menu structure" section in this manual)
㉘		Pressing this key leads to the STATUS menu
㉙		Pressing this key leads to the ALARMS menu; Note: if an alarm is currently active in the unit, this key will have flashing edges until the alarm is solved or reset
㉚		Pressing this key leads to the menu selection page
㉛		Pressing this key allows to display the previous page of the menu currently active (C06, if the time band management mode is active)
㉜		Pressing this key allows to display the next page of the menu currently active (C06, if the time band management mode is active)

**NOTES:** the parameters that can be modified are highlighted by a blue zone which states the current value of the parameter. Touch the blue area to enter modification mode; this mode will make a virtual touch screen keyboard appear in the centre of the display, through which it will be possible to set a value (using the numerical keys and using the arrow keys), or select from a series of options (using

the arrow keys). Once the desired value has been entered (or the option selected), pressing the OK key confirms insertion, while pressing the CANC key will eliminate the current value, taking it to zero (or if it is a selection, to the first of the options). To exit the virtual keyboard without modifying and value, just press the ESC key.

# GRAPHICS menu - GRAPHICS page - WATER INLET/OUTLET (G01)

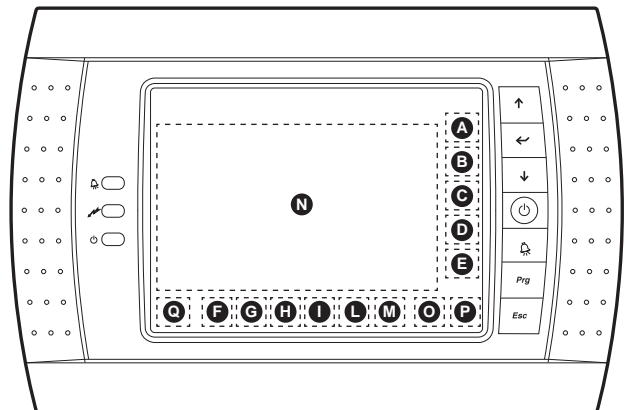
These pages contain the Cartesian graphics on which several work parameters are recorded through time (the sampling frequency of the data is 6 seconds); these parameters are grouped into two distinct graphics:

- WATER INLET/OUTLET graphics;
- HIGH/LOW PRESSURE graphics;

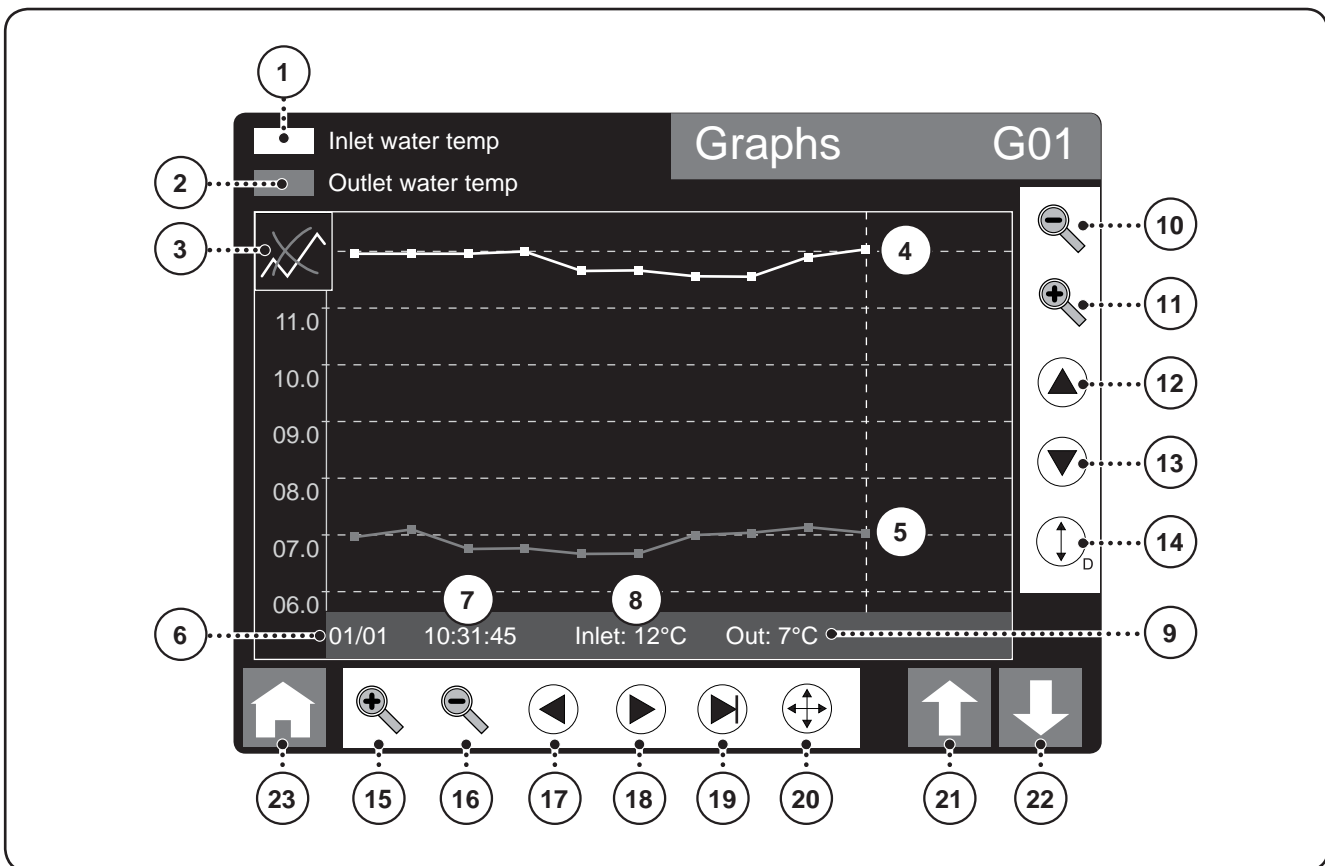
Every point of these graphics can be controlled and verified, supplying, as well as the value of the parameter under examination, date and time of the measurement. This function therefore allows to analyse unit operation through time;

**NOTES:** In order to conserve the display, after 5 minutes of non-use, as well as going back to the main page, the display is switched off; to re-activate, just press any key or touch the screen.

Active areas of the display:



Readings and functions available in the GRAPHICS menu - WATER INLET/OUTLET



**Readings and functions available from the GRAFICS menu - WATER INLET/OUTLET**

Index	Display area	Description
①	---	This data indicates the colour of the points and the curve that represent the temperature of the unit inlet water (SIW probe)
②	---	This data indicates the colour of the points and the curve that represent the temperature of the unit outlet water (SUW probe)
③	---	This icon indicates the status of the graphics display. The status can be normal (as indicated in the example image) or that which indicates stand-by for data (represented by the string "Zzz..")
④	<b>N</b> Selection point on the curve	This curve represents the data recorded by the probe positioned on evaporator inlet (SIW). The data is sampled by the unit board at a fixed frequency, i.e. one reading every 6 seconds. Therefore, this time period will be the time interval between one point and another within the curves; by touching any of these points, it will be possible to make a vertical dotted line appear, which will highlight the points selected, while in parameters 6, 7, 8 and 9 the values associated to the points selected will be stated
⑤	<b>N</b> Selection point on the curve	This curve represents the data recorded by the probe positioned on evaporator outlet (SUW). The data is sampled by the unit board at a fixed frequency, i.e. one reading every 6 seconds. Therefore, this time period will be the time interval between one point and another within the curves; by touching any of these points, it will be possible to make a vertical dotted line appear, which will highlight the points selected, while in parameters 6, 7, 8 and 9 the values associated to the points selected will be stated
⑥	---	This value indicates the date of recording (day/month) of the points currently selected on the curves
⑦	---	This value indicates the time of recording (hh:mm:ss) of the points currently selected on the curves
⑧	---	This value indicates the value of the point selected on the inlet water curve (SIW probe)
⑨	---	This value indicates the value of the point selected on the outlet water curve (SUW probe)
⑩	<b>A</b>	This key allows to decrease the scale of the Y axis (i.e. the axis that represents the temperature); on touching this key for the first time the ZOOM OUT option is activated (highlighted) by a red rectangle around the icon, after which, every press made on the graphical area will decrease the scale of the Y axis
⑪	<b>B</b>	This key allows to increase the scale of the Y axis (i.e. the axis that represents the temperature); on touching this key for the first time the ZOOM IN option is activated (highlighted) by a red rectangle around the icon, after which, every press made on the graphical area will increase the scale of the Y axis
⑫	<b>C</b>	This key allows to move the graphics display to the left, thus allowing to display values on the Y axis currently outside the display.
⑬	<b>D</b>	This key allows to move the graphics display downwards, thus allowing to display values on the Y axis currently outside the display.
⑭	<b>E</b>	This key allows to automatically centre the data on the display; this procedure automatically calculates the correct scale for displaying both curves on the display
⑮	<b>F</b>	This key allows to increase the scale of the X axis (i.e. the axis that represents the time); on touching this key for the first time the ZOOM IN option is activated (highlighted) by a red rectangle around the icon, after which, every press made on the graphical area will increase the scale of the X axis (however the sampling time of the data will remain fixed at 6 seconds)
⑯	<b>G</b>	This key allows to decrease the scale of the X axis (i.e. the axis that represents the time); on touching this key for the first time the ZOOM OUT option is activated (highlighted) by a red rectangle around the icon, after which, every press made on the graphical area will decrease the scale of the X axis (however the sampling time of the data will remain fixed at 6 seconds)
⑰	<b>H</b>	This key allows to move the graphics display to the left, thus allowing to display values on the X axis currently outside the display.
⑱	<b>I</b>	This key allows to move the graphics display to the right, thus allowing to display values on the X axis currently outside the display.
⑲	<b>L</b>	This key allows to centre (on the X axis) the last piece of data read at the centre of the display
⑳	<b>M</b>	This key allows to exit the ZOOM mode: the ZOOM modes X or Y is indicated by a red rectangle around the relative icon and during this mode it will not be possible to select any point on the curve (because every press made on the display will increase or decrease the zoom on the axes), therefore, if a point on the curves is to be selected, it is necessary to exit the ZOOM mode by pressing this key
㉑	<b>O</b>	Pressing this key allows to display the previous page of the menu currently displayed (HIGH/LOW pressure graphics)
㉒	<b>P</b>	Pressing this key allows to display the next page of the menu currently displayed (HIGH/LOW pressure graphics)
㉓	<b>Q</b>	Pressing this key will always go back to the Main page display

# GRAPHICS menu - GRAPHICS page - HIGH/LOW PRESSURE (G02)

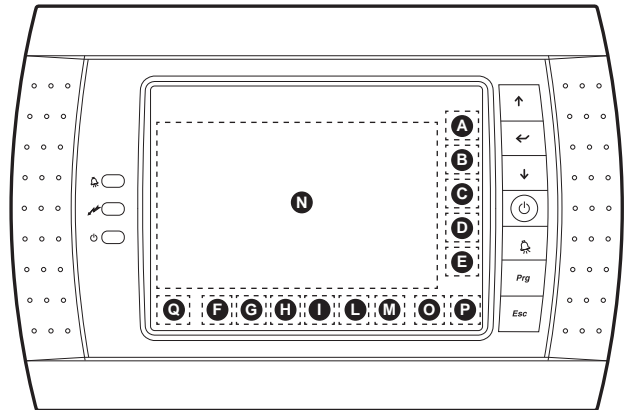
These pages contain the Cartesian graphics on which several work parameters are recorded through time (the sampling frequency of the data is 6 seconds); these parameters are grouped into two distinct graphics:

- WATER INLET/OUTLET graphics;
- HIGH/LOW PRESSURE graphics;

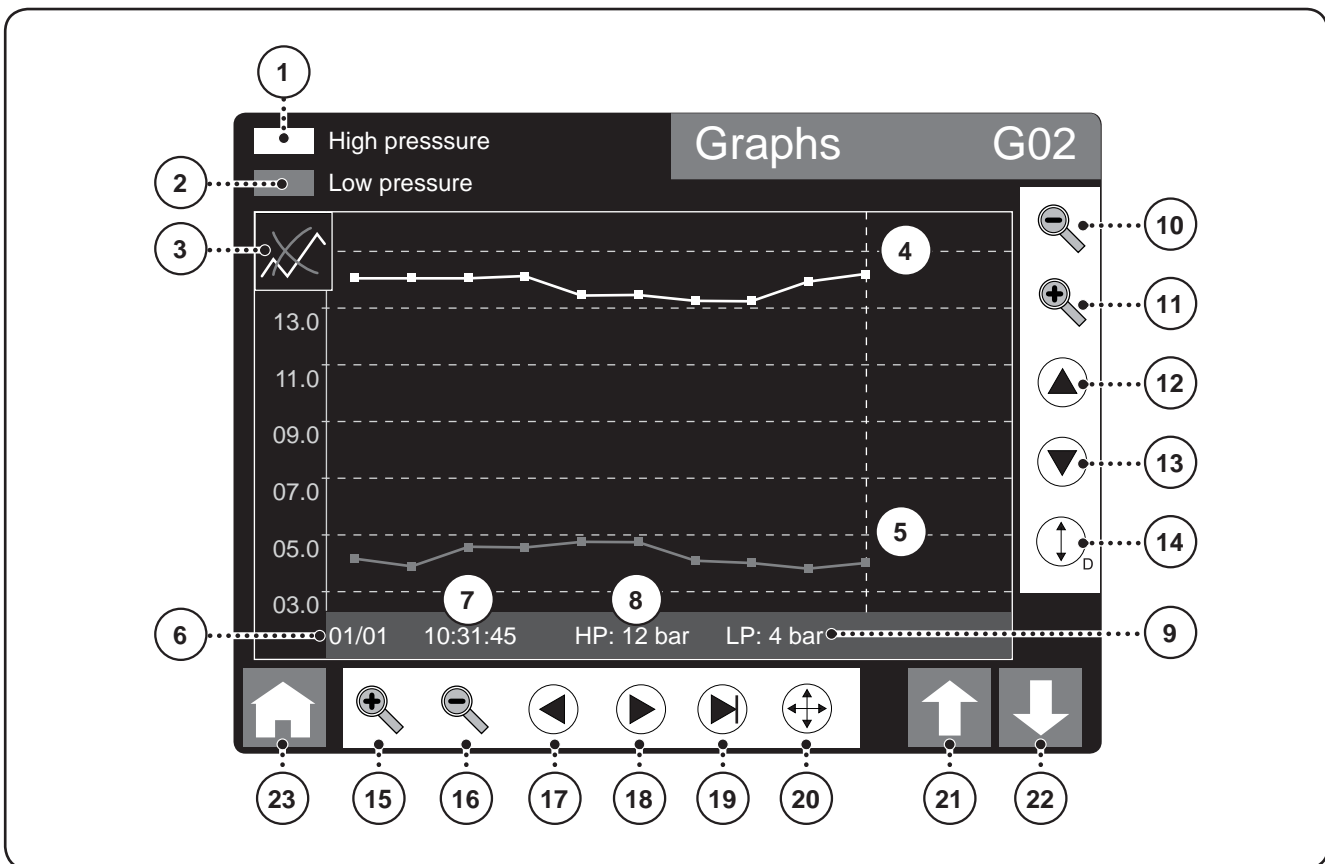
Every point of these graphics can be controlled and verified, supplying, as well as the value of the parameter under examination, date and time of the measurement. This function therefore allows to analyse unit operation through time;

**NOTES:** In order to conserve the display, after 5 minutes of non-use, as well as going back to the main page, the display is switched off; to re-activate, just press any key or touch the screen.

Active areas of the display:



Readings and functions available in the GRAPHICS menu - HIGH/LOW PRESSURE



**Readings and functions available from the GRAFICS menu - HIGH/LOW PRESSURE**

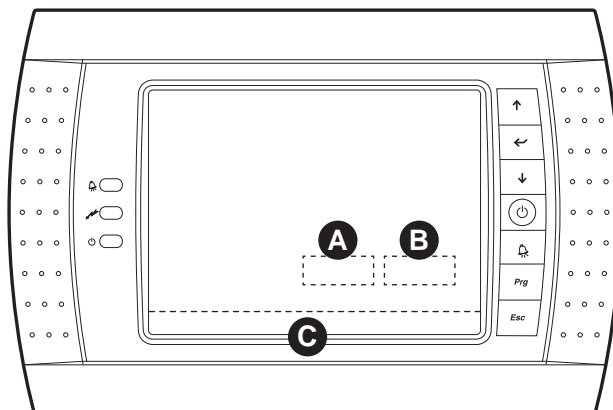
Index	Display area	Description
①	---	This data indicates the colour of the points and the curve representing the HIGH pressure (TAP transducer)
②	---	This data indicates the colour of the points and the curve representing the LOW pressure (TBP transducer)
③	---	This icon indicates the status of the graphics display. The status can be normal (as indicated in the example image) or that which indicates stand-by for data (represented by the string "Zzz..")
④	<b>N</b> Selection point on the curve	This curve represents the data recorded by the high pressure transducer (TAP Transducer). The data is sampled by the unit board at a fixed frequency, i.e. one reading every 6 seconds. Therefore, this time period will be the time interval between one point and another within the curves; by touching any of these points, it will be possible to make a vertical dotted line appear, which will highlight the points selected, while in parameters 6, 7, 8 and 9 the values associated to the points selected will be stated
⑤	<b>N</b> Selection point on the curve	This curve represents the data recorded by the low pressure transducer (TBP Transducer). The data is sampled by the unit board at a fixed frequency, i.e. one reading every 6 seconds. Therefore, this time period will be the time interval between one point and another within the curves; by touching any of these points, it will be possible to make a vertical dotted line appear, which will highlight the points selected, while in parameters 6, 7, 8 and 9 the values associated to the points selected will be stated
⑥	---	This value indicates the date of recording (day/month) of the points currently selected on the curves
⑦	---	This value indicates the time of recording (hh:mm:ss) of the points currently selected on the curves
⑧	---	This value indicates the value of the point selected on the high pressure curve (TAP)
⑨	---	This value indicates the value of the point selected on the low pressure (TBP) curve
⑩	<b>A</b>	This key allows to decrease the scale of the Y axis (i.e. the axis that represents the pressure); on touching this key for the first time the ZOOM OUT option is activated (highlighted) by a red rectangle around the icon, after which, every press made on the graphical area will decrease the scale of the Y axis
⑪	<b>B</b>	This key allows to increase the scale of the Y axis (i.e. the axis that represents the pressure); on touching this key for the first time the ZOOM IN option is activated (highlighted) by a red rectangle around the icon, after which, every press made on the graphical area will increase the scale of the Y axis
⑫	<b>C</b>	This key allows to move the graphics display to the left, thus allowing to display values on the Y axis currently outside the display.
⑬	<b>D</b>	This key allows to move the graphics display downwards, thus allowing to display values on the Y axis currently outside the display.
⑭	<b>E</b>	This key allows to automatically centre the data on the display; this procedure automatically calculates the correct scale for displaying both curves on the display
⑮	<b>F</b>	This key allows to increase the scale of the X axis (i.e. the axis that represents the time); on touching this key for the first time the ZOOM IN option is activated (highlighted) by a red rectangle around the icon, after which, every press made on the graphical area will increase the scale of the X axis (however the sampling time of the data will remain fixed at 6 seconds)
⑯	<b>G</b>	This key allows to decrease the scale of the X axis (i.e. the axis that represents the time); on touching this key for the first time the ZOOM OUT option is activated (highlighted) by a red rectangle around the icon, after which, every press made on the graphical area will decrease the scale of the X axis (however the sampling time of the data will remain fixed at 6 seconds)
⑰	<b>H</b>	This key allows to move the graphics display to the left, thus allowing to display values on the X axis currently outside the display.
⑱	<b>I</b>	This key allows to move the graphics display to the right, thus allowing to display values on the X axis currently outside the display.
⑲	<b>L</b>	This key allows to centre (on the X axis) the last piece of data read at the centre of the display
⑳	<b>M</b>	This key allows to exit the ZOOM mode: the ZOOM modes X or Y is indicated by a red rectangle around the relative icon and during this mode it will not be possible to select any point on the curve (because every press made on the display will increase or decrease the zoom on the axes), therefore, if a point on the curves is to be selected, it is necessary to exit the ZOOM mode by pressing this key
㉑	<b>O</b>	Pressing this key allows to display the previous page of the menu currently displayed (WATER INLET/OUTLET graphics)
㉒	<b>P</b>	Pressing this key allows to display the next page of the menu currently displayed (WATER INLET/OUTLET graphics)
㉓	<b>Q</b>	Pressing this key will always go back to the Main page display

## ALARMS menu - ACTIVE ALARMS page (A01)

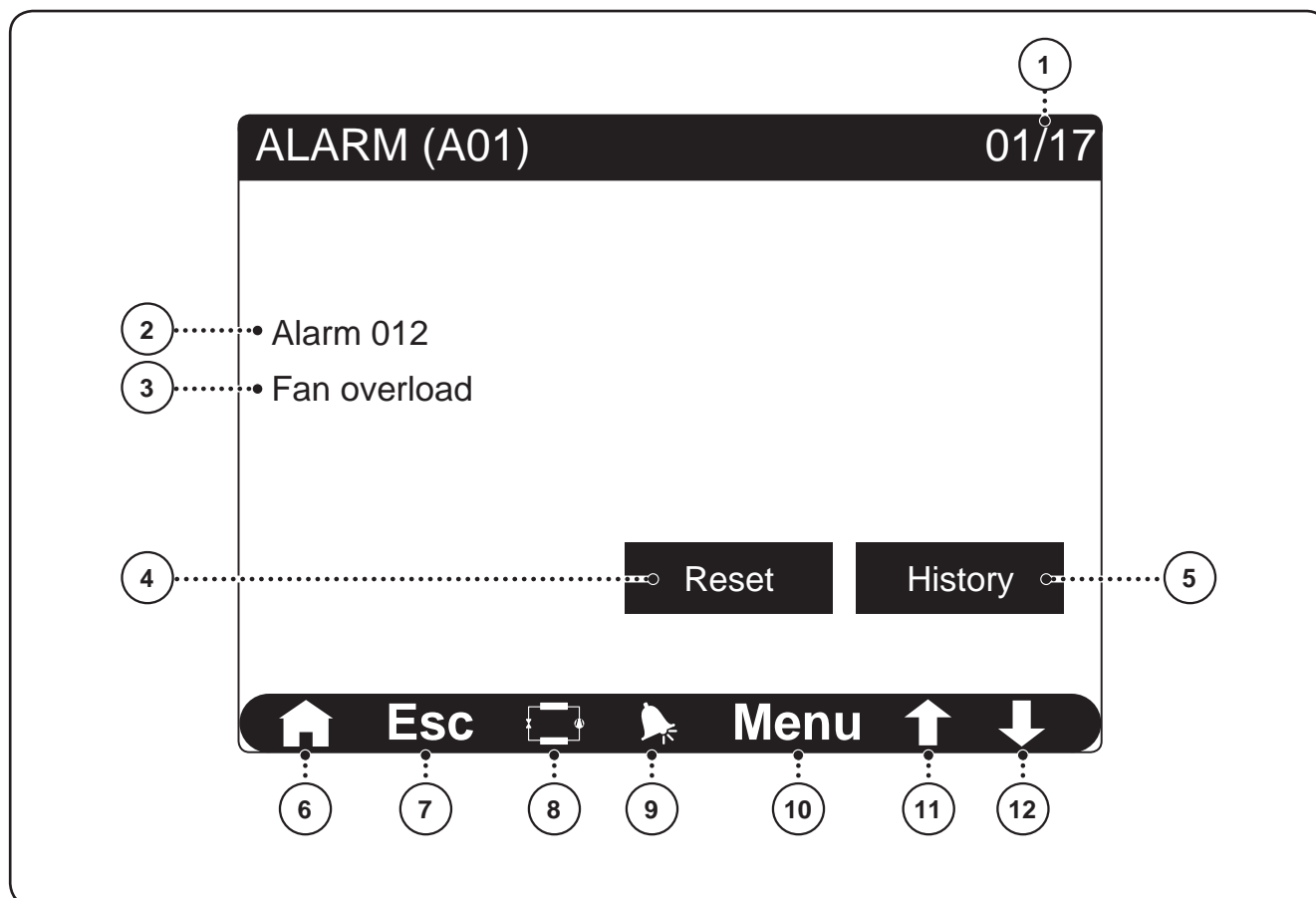
These pages contain any error messages generated by the alarm condition in progress; moreover, thanks to the ALARMS LOG it is possible to control the last 100 alarms occurring and the relative conditions of the unit on occurrence of each individual alarm memorised;

**NOTES:** In order to conserve the display, after 5 minutes of non-use, as well as going back to the main page, the display is switched off; to re-activate, just press any key or touch the screen.

Active areas of the display:



Readings and functions available in the ALARM menu - ACTIVE ALARMS page



**Readings and functions available from the ALARMS menu - ACTIVE ALARMS page**

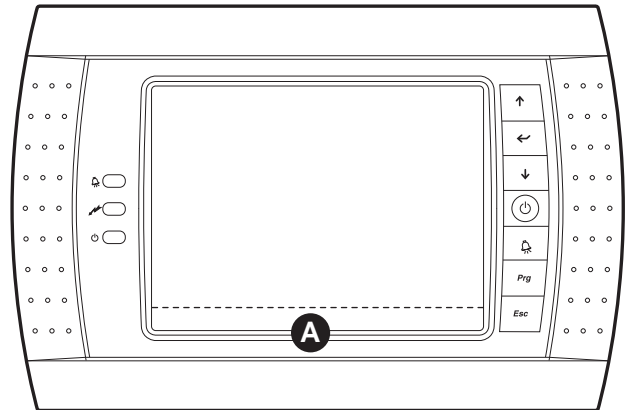
Index	Display area	Description
①	---	This index identifies which alarm is currently displayed among those currently active on the unit
②	---	This value indicates the alarm code (the next table states the correspondence between alarm code and relative cause)
③	---	This value indicates the description of the alarm currently displayed
④	<b>A</b>	This parameter allows to reset the alarm currently displayed; ATTENTION: The alarm can only be reset if the cause that generated it has been solved, otherwise the manual reset attempt via this key will not give any result
⑤	<b>B</b>	Pressing this key always leads to the alarm menu LOG
⑥	<b>C</b> Navigation bar	Pressing this key leads to the MAIN page
⑦		Pressing this key leads to the upper level menu (for further information regarding the structure of the menus, refer to the Menu structure" section in this manual)
⑧		Pressing this key leads to the STATUS menu
⑨		Pressing this key leads to the ALARMS menu; Note: if an alarm is currently active in the unit, this key will have flashing edges until the alarm is solved or reset
⑩		Pressing this key leads to the menu selection page
⑪		Pressing this key allows to display the previous page of the menu currently active
⑫		Pressing this key allows to display the next page of the menu currently active

# ALARMS menu - ALARMS LOG page (A02)

These pages contain any error messages generated by the alarm condition in progress; moreover, thanks to the ALARMS LOG it is possible to control the last 100 alarms occurring and the relative conditions of the unit on occurrence of each individual alarm memorised;

**NOTES:** In order to conserve the display, after 5 minutes of non-use, as well as going back to the main page, the display is switched off; to re-activate, just press any key or touch the screen.

Active areas of the display:



Readings and functions available in the ALARM menu - ALARMS LOG page

**HISTORY (A02) N°001**

13 : 50 28 / 03 / 12

4 .....•Codde AL 012

5 .....•Fan overload

6 .....•Water inlet	00.0°C	Comp 1 .....•14	Comp 2 .....•21
7 .....•Water outlet	00.0°C	Demand	000.0% .....•22
8 .....•High press.	00.0bar	Act. Power	00.0% .....•23
9 .....•Low press.	00.0bar	Speed	000000 rpm .....•24
10 .....•Outdoor temp.	00.0°C	IGV	00.0% .....•25
11 .....•Level liquid	0000%	Comp. rat	0.0 .....•26
12 .....•EEV	0000%	Voltage	000 V .....•27
13 .....•Fans	0000%	20	

15 .....•

16 .....•

17 .....•

18 .....•

19 .....•

20 .....•

21 .....•

22 .....•

23 .....•

24 .....•

25 .....•

26 .....•

27 .....•

28 .....•

29 .....•

30 .....•

31 .....•


32 .....•

33 .....•

34 .....•



**Readings and functions available from the ALARMS menu - ALARMS LOG page**

Index	Display area	Description
①	---	This index identifies the position of the alarm currently displayed in the memory
②	---	This index indicates the time at which the alarm displayed occurred
③	---	This index indicates the date on which the alarm displayed occurred
④	---	This value indicates the code of the alarm currently displayed
⑤	---	This value indicates the description of the alarm currently displayed
⑥	---	This value indicates the temperature of the inlet water at the time of the alarm.
⑦	---	This value indicates the temperature of the outlet water at the time of the alarm.
⑧	---	This value indicates the high pressure on the unit at the time of the alarm.
⑨	---	This value indicates the low pressure on the unit at the time of the alarm.
⑩	---	This value indicates the temperature of the outdoor air at the time of the alarm.
⑪	---	This value indicates the level of liquid in the unit evaporator at the time of the alarm.
⑫	---	This value indicates the opening of the EEV valve in the unit at the time of the alarm
⑬	---	This value indicates the speed of the fans in the unit at the time of the alarm
⑭ ⑰	---	These values represent the data concerning the compressor 1 and compressor 2
⑮ ⑳	---	These values represent the power request of compressor 1 (15) and 2 (22) at the time of the alarm
⑰ ㉑	---	These values represent compressor 1 (16) and 2 (23) input power at the time of the alarm
⑲ ㉒	---	These values represent the speed of compressor 1 (17) and 2 (24) at the time of the alarm
㉓ ㉔	---	These values represent compressor 1 (18) and 2 (25) IGV valve opening at the time of the alarm
㉕ ㉖	---	These values represent the compressor 1 (19) and 2 (26) compression ratios at the time of the alarm
㉗ ㉘	---	These values represent compressor 1 (20) and 2 (27) input voltage at the time of the alarm
㉙	<div style="text-align: center;">  <p>Navigation bar</p> </div>	Pressing this key leads to the MAIN page
㉚		Pressing this key leads to the upper level menu (for further information regarding the structure of the menus, refer to the Menu structure" section in this manual)
㉛		Pressing this key leads to the STATUS menu
㉜		Pressing this key leads to the ALARMS menu; Note: if an alarm is currently active in the unit, this key will have flashing edges until the alarm is solved or reset
㉝		Pressing this key leads to the menu selection page
㉞		Pressing this key allows to display the previous page of the menu currently active
㉟		Pressing this key allows to display the next page of the menu currently active

# Alarms summary list

The unit envisions the management of the alarm situation via the display of precise messages where the cause of the alarm is specified; these alarms are identified by their description, code, complete list of alarms managed by the unit and stated in the following tables:

ALARMS code	
Code	Description of the alarm
AL001	From digital input, Reset automatic
AL002	Voltage or phase monitor
AL003	Evaporator Anti-freeze
AL004	Compressor circuit breaker
AL005	Evaporator flow switch
AL006	From digital input, EEV
AL007	High pressure switch
AL008	Transducer high pressure
AL009	Low pressure switch
AL010	Transducer low pressure
AL011	Turbocor1 Pressing Line Gas High Temp.
AL012	Fan circuit breaker
AL013	Pump 1 circuit breaker
AL014	Pump 2 circuit breaker
AL015	Evaporator pump maintenance
AL016	Condenser pump maintenance
AL017	Compressor Maintenance
AL018	TAP probe (B1) faulty or disconnected
AL019	TBP probe (B2) faulty or disconnected
AL020	B3 probe faulty or disconnected
AL021	SIW probe (B4) faulty or disconnected
AL022	SUW probe (B5) faulty or disconnected
AL023	SEV probe (B6) faulty or disconnected
AL024	B7 probe faulty or disconnected
AL025	B8 probe faulty or disconnected
AL026	Condenser water filter
AL027	Low pressure LOW
AL028	Unit 1 offline
AL029	Unit 2 offline
AL030	Unit 3 offline
AL031	Unit 4 offline
AL032	Turbocor1 Inverter temp
AL033	Turbocor1 Discharge temp
AL034	Turbocor1 Suction pres
AL035	Turbocor1 Discharge pres
AL036	Turbocor1 Phase current
AL037	Turbocor1 Cavity temp
AL038	Turbocor1 Leaving water
AL039	Turbocor1 Compressor ratio

ALARMS code	
Code	Description of the alarm
AL040	Turbocor1 Bearing motor
AL041	Turbocor1 SCR temp
AL042	Turbocor1 System Locked out
AL043	Turbocor1 Calibration failed
AL044	Turbocor1 Startup failed
AL045	Turbocor1 Axial displacement
AL046	Turbocor1 Axial static load
AL047	Turbocor1 Front radial disp X
AL048	Turbocor1 Front radial disp Y
AL049	Turbocor1 Front radial load X
AL050	Turbocor1 Front radial load Y
AL051	Turbocor1 Back radial disp X
AL052	Turbocor1 Back radial disp Y
AL053	Turbocor1 Back radial load X
AL054	Turbocor1 Back radial load Y
AL055	Turbocor1 Single phase Overcurrent
AL056	Turbocor1 DC High voltage
AL057	Turbocor1 High current (Lw)
AL058	Turbocor1 High current (Le)
AL059	Turbocor1 Sensors error
AL060	Turbocor1 High current start-up
AL061	Turbocor1 Bearing error
AL062	Turbocor1 Bearing warning
AL063	Turbocor1 No current IGBT
AL064	Turbocor1 AVC data missing
AL065	Turbocor1 Motor Back EMF low
AL066	Turbocor1 EEprom error
AL067	Turbocor1 Generator mode
AL068	Turbocor1 SCR phase
AL069	Turbocor1 Communication error
AL070	EVD Offline
AL071	EVD low evap. temperature
AL072	EVD pLAN error
AL073	EVD Eeprom error
AL074	EVD Probe S1 error (level)
AL075	EVD Probe S2 error (temp)
AL076	EVD motor error EEV
AL077	EVD LOP
AL078	EVD MOP

ALARMS code	
Code	Description of the alarm
<b>AL079</b>	EVD low overheating
<b>AL080</b>	EVD High temp. condensation
<b>AL081</b>	Turbocor2 Pressing Line Gas High Temp.
<b>AL082</b>	Turbocor2 Inverter temp
<b>AL083</b>	Turbocor2 Discharge temp
<b>AL084</b>	Turbocor2 Suction pres
<b>AL085</b>	Turbocor2 Discharge pres
<b>AL086</b>	Turbocor2 Phase current
<b>AL087</b>	Turbocor2 Cavity temp
<b>AL088</b>	Turbocor2 Leaving water
<b>AL089</b>	Turbocor2 Compressor ratio
<b>AL090</b>	Turbocor2 Bearing motor
<b>AL091</b>	Turbocor2 SCR temp
<b>AL092</b>	Turbocor2 System Locked out
<b>AL093</b>	Turbocor2 Calibration failed
<b>AL094</b>	Turbocor2 Startup failed
<b>AL095</b>	Turbocor2 Axial OverOrbit
<b>AL096</b>	Turbocor2 Axial static load
<b>AL097</b>	Turbocor2 Front radial disp X
<b>AL098</b>	Turbocor2 Front radial disp Y
<b>AL099</b>	Turbocor2 Front radial load X
<b>AL100</b>	Turbocor2 Front radial load Y

ALARMS code	
Code	Description of the alarm
<b>AL101</b>	Turbocor2 Back radial disp X
<b>AL102</b>	Turbocor2 Back radial disp Y
<b>AL103</b>	Turbocor2 Back radial load X
<b>AL104</b>	Turbocor2 Back radial load Y
<b>AL105</b>	Turbocor2 Single phase Overcurrent
<b>AL106</b>	Turbocor2 DC High voltage
<b>AL107</b>	Turbocor2 High current (Lw)
<b>AL108</b>	Turbocor2 Winding Temp.
<b>AL109</b>	Turbocor2 IGBT inverter error
<b>AL110</b>	Turbocor2 Low Superheat
<b>AL111</b>	Turbocor2 Bearing error
<b>AL112</b>	Turbocor2 24Vdc Fault
<b>AL113</b>	Turbocor2 Rotor Lock
<b>AL114</b>	Turbocor2 Softstart error
<b>AL115</b>	Turbocor2 Motor Back EMF low
<b>AL116</b>	Turbocor2 EEprom error
<b>AL117</b>	Turbocor2 Generator mode
<b>AL118</b>	Turbocor2 SCR phase
<b>AL119</b>	Turbocor2 Communication error
<b>AL120</b>	Turbocor2 StartupMode
<b>AL121</b>	Turbocor1 Rotor Lock
<b>AL122</b>	Turbocor1 Softstart error
<b>AL123</b>	Turbocor1 in StartUp mode









---

I dati tecnici riportati nella presente documentazione non sono impegnativi.

AERMEC S.p.A. si riserva la facoltà di apportare in qualsiasi momento tutte le modifiche ritenute necessarie per il miglioramento del prodotto.

Les données mentionnées dans ce manuel ne constituent aucun engagement de notre part. Aermec S.p.A. se réserve le droit de modifier à tous moments les données considérées nécessaires à l'amélioration du produit.

Technical data shown in this booklet are not binding.

Aermec S.p.A. shall have the right to introduce at any time whatever modifications deemed necessary to the improvement of the product.

Im Sinne des technischen Fortschrittes behält sich Aermec S.p.A. vor, in der Produktion Änderungen und Verbesserungen ohne Ankündigung durchzuführen.

Los datos técnicos indicados en la presente documentación no son vinculantes.

Aermec S.p.A. se reserva el derecho de realizar en cualquier momento las modificaciones que estime necesarias para mejorar el producto.

---

**AERMEC S.p.A.**

I-37040 Bevilacqua (VR) - Italia

Via Roma, 996 - Tel. (+39) 0442 633111

Telefax (+39) 0442 93730 - (+39) 0442 93566

www.aermec.com - info@aermec.com

---