Aertesi airpower

CONTROL

EOS

USER MANUAL

CONTENTS

1- INTRODUCTION

The main features that can be managed through the control are the following:

- Selection of the operating mode (cooling/heating)
- Selection of the temperature set point (summer and winter), humidity and CO2
- Weekly programming of air change slots
- Weekly programming of air recirculation slots
- Setting of password-protected operating parameters of the unit

Some settings are instantly accessible because they are intended for the user, others are password-protected because they are intended for qualified personnel.

Adjustment concerns the following components:

- Unit motherboard: it is supplied as part of the standard equipment, installed inside the electrical panel of the unit.
- Console: it is supplied with the unit as part of the standard equipment and must be wall-mounted. Inside it there is a temperature probe for measuring the room temperature. It is the main user interface, which, through its display and keys, allows the unit's operating parameters to be viewed and set.
- Damper management motherboard: it is supplied with the (optional) multi-zone plenum in a separate electrical panel.
- T/H (temperature/humidity) probe: optional device, the control is able to manage up to 6 probes.
- CO2 probe: optional device, the control is able to manage up to 4 probes.

The control is able to manage the following possible system and accessory configurations:

	Motherboard + console	**Multi-zone plenum**	**T/H probes**	**CO2 probes**
Single-zone system	V			
Single-zone system with humidity probe	V		V (1 to 6 pcs)	
Single-zone system with CO2 probe	V			V (1 to 4 pcs)
Single-zone system with humidity and CO2 probe	V		V (1 to 6 pcs)	V (1 to 4 pcs)
Multi-zone system	V	V	V (2 to 6 pcs)	
Multi-zone system with CO2 probe	V	V	V (2 to 6 pcs)	V (1 to 4 pcs)

NOTE: in a single-zone system, the temperature is regulated on the basis of the temperature readings of the probe inside the console (or of the wire probe connected to the motherboard, based on the value of parameter P62). The T/H probe only functions as a humidity probe and the temperature probe contained inside it is not considered for regulation purposes.

In a multi-zone system, the temperature regulation of each zone is performed on the basis of the temperature probe readings of that zone's own T/H probe. The temperature probe inside the console is not considered for regulation purposes.

2- GENERAL INFORMATION

The unit has two independent functions: air change and recirculation.

During the fresh air change function, the delivery fan takes fresh air from the outside and delivers it to the room; the exhaust fan takes stale air from the bathrooms and the kitchen and exhausts it outside. The two air flows release heat through a cross-flow heat exchanger (recovery unit) in order to recover most of the energy (thermal or cooling energy, depending on the season) present in the exhausted air. The main purpose of this function is therefore to ensure that room air is always healthy and nice smelling.

During the recirculation function, the recirculation fan draws air from inside the room (from an area where air is not stale), and circulates it through a heat exchanger that heats or cools and dehumidifies the air. This heat exchanger can be supplied with water (hot or chilled according to the season) or connected to an external direct-expansion power condenser. For these two different uses (water supply and direct expansion) there are two different versions. The main purpose of this function is therefore to create temperature and humidity conditions ensuring user comfort in the room.

For each of the two functions (fresh air change and recirculation) there are two separate weekly time schedules (see following paragraphs).

GENERAL UNIT STATUS	AIR CHANGE TIME SCHEDULE SLOT		AIR CHANGE STATUS
OFF	Power on in progress	→	Off
OFF	Power off in progress	→	Off
ON	Power on in progress	→	On at rated speed (par. P1 and P2) (*)
ON	Power off in progress	→	On at reduced speed (parameter P63) (**)

(*) In the presence of a CO2 probe (optional), the exhaust and delivery fans continuously and automatically adjust their speed, reducing it if the CO2 level is lower than the pre-determined set point.

(**) Outside the power-on time slot, if the unit is ON, low speed air change is kept active in any case to always guarantee some fresh air delivery. It is possible, however, to bring this low speed down to zero by setting P63 = 0.

It is also possible to activate a "forced air change" function by closing the IN-AE contact of the motherboard (e.g. with a manual switch or a presence sensor located in the bathroom). When this function is activated, the air change and exhaust fans are forced to an operating speed higher than the rated speed, regardless of the time slot in the time schedule and the level of CO2 in the room. This function can therefore be used by the user to quickly deliver fresh air to the room (e.g. in the case of crowded rooms or bad smells). This function should only be activated for short periods, to avoid high electricity consumption and airborne noise.

GENERAL UNIT STATUS	AIR RECIRCULATION TIME SCHEDULE SLOT		RECIRCULATION STATUS
OFF	Power on in progress	→	Off
OFF	Power off in progress	→	Off
ON	Power on in progress	→	On at rated speed (parameter P8) (**)
ON	Power off in progress	→	Off

(***) Based on the temperature/humidity (optional humidity sensors) values set and detected in the room, the recirculation fan continuously and automatically adjusts its speed, until it stops when the set-point is reached.

3- MAIN SETTINGS

The main settings required from the user and the qualified personnel appointed to start-up the system are listed below. The other settings generally do not need to be changed from the factory settings.

3.1- User settings

The settings to be changed by the user, according to personal needs and comfort requirements, are as follows:

- Winter and summer temperature set-point (for each zone, in the case of multi-zone configuration)
- Humidity set-point (only applicable in the presence of optional humidity sensors)
- CO2 set-point (only applicable in the presence of optional CO2 sensors)
- Weekly air change time schedule (to be set 24/7 if continuous operation is required)
- Weekly air recirculation time schedule (to be set 24/7 if continuous operation is required)

3.2-Start-up settings

When the unit is first started up (which should be done by qualified personnel, based on the characteristics of the system and the configuration of the unit), the following settings, available in the "1st level parameters" and "2nd level parameters" menus, must be checked and correctly set:

1ST LEVEL PARAMETERS

- Delivery and exhaust fan speed (P1 and P2): these values must be set so as to ensure the required fresh air in the room.
- Recirculation fan speed (P8): this value must be set so as to ensure the unit's rated recirculating air flow rate
- Any temperature, humidity and CO2 probe readings corrections

2ND LEVEL PARAMETERS

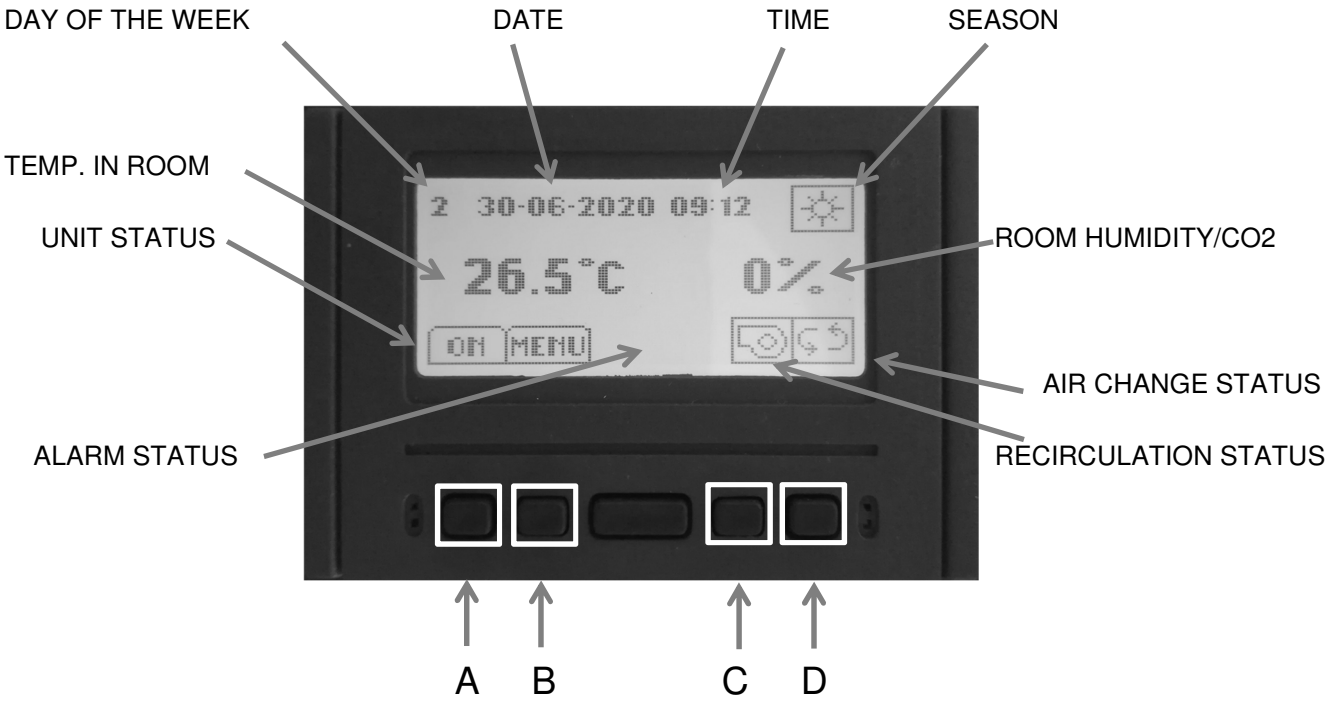
- Single-zone or multi-zone system configuration (P44): if a multi-zone configuration is set, the control will automatically detect the number of zones present (number of temperature probes connected)
- Multi-zone fan adjustment setting (P46 and P47): these values must be set appropriately depending on whether the system has 2 or 3 or 4 zones.
- Delivery and exhaust fan speed in "forced air change" mode (P58 and P59): these values must be set so as to ensure fast air change in the room during air change "forced" activation.
- Summer/Winter selection (P61): the season can be set manually from the console, automatically according to room air condition or via an external contact. In the case of multi-zone configuration, the automatic selection of the season may not reflect the user's real comfort needs, due to the different temperature conditions that may occur in different rooms.
- IN-TAUX temperature probe configuration (P62): this probe can be configured either as a water probe (to enable the fan in winter only in the presence of hot water) or as a remote air probe to replace the air probe inside the console.
- Delivery and exhaust fans speed outside time slots (P63): set to 0 if you wish to completely stop the fans outside the air change time slot; otherwise set the speed as required
- Fan start water temperature in winter (P64): set a correct value, based on the temperature of hot water supplied by the generator (boiler or heat pump). **In the case of units with direct expansion coil, this parameter must be set to 1.**

4- DISPLAY HOME SCREEN

On the Home screen of the display you can see the status of the main settings, such as date, time, room temperature, season, alarm status and unit status.

Pressing the A button turns the unit on/off manually.

Pressing the B button access is obtained to the first level menu.

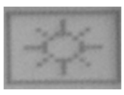


Day of the week: displayed from number 1 (Monday) to number 7 (Sunday)

Date: displayed in day-month-year format

Time: displayed in the hour-minute format

Season:

 SUMMER

 WINTER

Room temperature: this is the value read by the wall keypad temperature probe (single-zone) or the average value of the zone temperature probes (multi-zone)

Room humidity: average value of the connected humidity probes. If no humidity probe is connected, 0% in summer and 100% in winter is displayed.

Room CO2: max value of the connected CO2 probes. If no CO2 probe is connected, 2000ppm (sensor full scale value) is displayed.

Unit status: ON = unit on; OFF = unit off

Alarm status: if an alarm is active, the letter A flashes; in this condition, holding down the B button for 5 seconds, it is possible to view the type of alarm.

Air change status: icon on = fresh air change active; icon off = fresh air change not active

Air recirculation status: icon on = recirculation active; icon off = recirculation not active

5- FIRST LEVEL MENU

To access the first level menu, press the B button from the home screen.

Pressing the keys A and B (Λ V) you can scroll through the first level menu items.

1-SET TEMP. WINT → 2-SET TEMP. SUMM → 3-SET HUMIDITY → 4-SET QUAL. AIR → 5-SEASON → 6-CLOCK → 7-AIR CHANGE → 8-RECIRC → 9-PARAM. 1ST LEV → 10-PARAM. 2ND LEV → 11-UNIT STATUS → 12-LANG → 13-MENU CONSOLE → 14-TEST I-O

Press the C key (ENT) to access the second level menu item highlighted.

Press the D key (ESC) to return to the home screen of the display.

6- SECOND LEVEL MENU

6.1-Winter temperature setting

From this menu the winter set-point can be changed. In the case of a single-zone configuration, there is only one set-point; in the case of a multi-zone configuration, there is a set-point for each zone.

Press keys A and B (Λ V) to select the desired zone (only in the case of a multi-zone system).

Press the C (ENT) key to access the change options for the highlighted zone.

Press the D (ESC) key to return to the previous screen of the display.

Press A and B (- +) to change the value of the displayed set point.

Press the D (ESC) key to confirm and return to the previous screen of the display.

6.2-Summer temperature setting

From this menu the summer set-point can be changed. In the case of a single-zone configuration, there is only one set-point; in the case of a multi-zone configuration, there is a set-point for each zone.

Press keys A and B (Λ V) to select the desired zone (only in the case of a multi-zone system).

Press the C (ENT) key to access the change options for the highlighted zone.

Press the D (ESC) key to return to the previous screen of the display.

Press A and B (- +) to change the value of the displayed set point.

Press the D (ESC) key to confirm and return to the previous screen of the display.

6.3-Room humidity setting

From this menu the humidity set-point can be changed. The single humidity set-point is used both in summer and in winter. In multi-zone mode, too, the set-point is the same for all zones.

Press A and B (- +) to change the value of the displayed set point.

Press the D (ESC) key to confirm and return to the previous screen of the display.

6.4-Air quality setting

From this menu the CO2 set-point can be changed. In multi-zone mode, too, the set-point is the same for all zones.

Press A and B (- +) to change the value of the displayed set point.

Press the D (ESC) key to confirm and return to the previous screen of the display.

6.5-Season

From this menu the current season can be changed. Manual selection of the season is allowed only if P61 = 0 has been set (Summer/Winter selection from the console); it is not allowed if P61 = 1 or 2 (automatic Summer/Winter selection or selection from external input).

Press A and B (Λ V) to select the current season (SUMMER or WINTER).

Press the D (ESC) key to confirm and return to the previous screen of the display.

It is very important that the season is always correctly set as it significantly affects the unit's operating logic.

6.6-Time

From this menu the current time and date can be changed.

Press A and B (- +) to change the flashing value.

Press the C key (>) to move to the next value (day / month / year / hour / minute).

Press the D (ESC) key to confirm and return to the previous menu.

6.7-Air change

From this menu it is possible to set the air change times according to a weekly schedule. For each day of the week, up to 4 switch-ons and 4 switch-offs can be set. For correct operation of the time schedule, the on and off times on the same day must be set according to a correct time sequence. If you wish to have continuous operation (24/7), set a single switch-on at 00.00 and a single switch-off at 23.55. To make unused switching-on and -off times inactive, set them to 00.00.

Press A and B (Λ V) to select the day of the week to program.

Press the C (ENT) key to access programming of the selected day.

Press the D (ESC) key to return to the previous screen of the display.

Press A and B (- +) to change the time of the selected event.

Press the C (>) key to go to the next event; it is possible to program 4 switch-ons (ON) and 4 switch-offs (OFF) per day.

Press the D (ESC) key to return to the previous screen of the display.

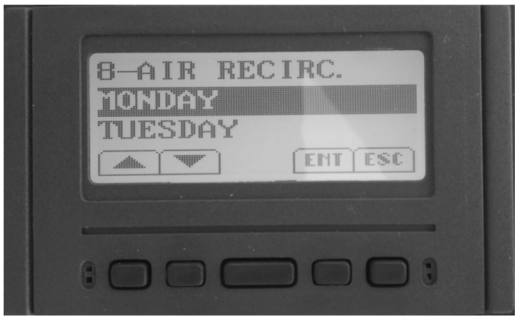
6.8-Recirculation

From this menu it is possible to set the air recirculation times according to a weekly schedule. For each day of the week, up to 4 switch-ons and 4 switch-offs can be set. For correct operation of the time schedule, the on and off times on the same day must be set according to a correct time sequence. If you wish to have continuous operation (24/7), set a single switch-on at 00.01 and a single switch-off at 23.45. To make unused switching-on and -off times inactive, set them to 00.00.

Press A and B (Λ V) to select the day of the week to program.

Press the C (ENT) key to access programming of the selected day.

Press the D (ESC) key to return to the previous screen of the display.



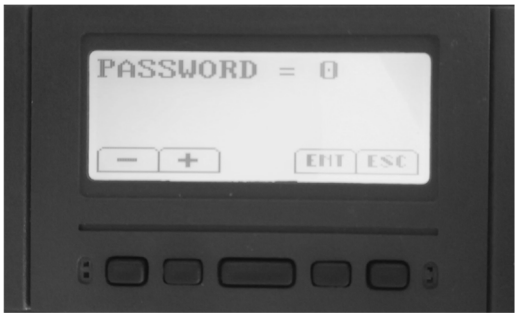
Press A and B (- +) to change the time of the selected event.

Press the C (>) key to go to the next event; it is possible to program 4 switch-ons (ON) and 4 switch-offs (OFF) per day.

Press the D (ESC) key to return to the previous screen of the display.

6.9-1st level parameters

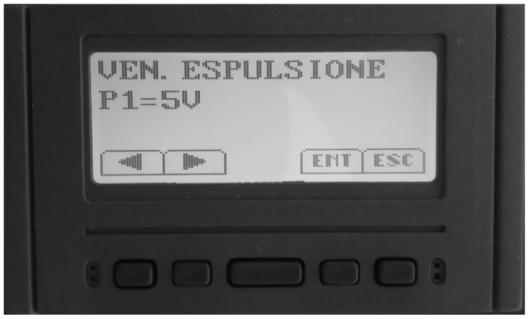
From this menu it is possible to change the value of certain parameters (fan speed and corrections of values read by the probes) which typically must be set during the unit initial start-up phase.



Press A and B (- +) to enter a value for the password.

Press the C (ENT) key to confirm it and access the next menu.

Press the D (ESC) key to return to the previous screen of the display.



Press A and B (< >) keys to select the desired parameter.

Press the C (ENT) key to access editing of the selected parameter.

Press the D (ESC) key to return to the previous screen of the display.

PAR.	DESCRIPTION	U.M.	DEF.	MAX	MIN
P1	Exhaust fan speed	V	5	10	1
P2	Air change fan speed	V	5	10	1
P8	Maximum recirculation fan speed	V	8	10	1
dUA1 ... 6	Correction of humidity probe reading zone 1 ... 6	%	0		
dTAC	Correction of console temperature probe reading	°C	0		
dTA1 ... 6	Correction of temperature probe reading zone 1 ... 6	°C	0		
dQA1 ... 4	Correction of CO2 probe 1 ... 4 reading	ppm	0		
dIN-TM	Correction of temperature probe reading dIN-TM	°C	0		
dIN-TS	Correction of temperature probe reading dIN-TS	°C	0		
dIN-TAUX	Correction of temperature probe reading dIN-TAUX	°C	0		
dIN-TE	Correction of temperature probe reading dIN-TE	°C	0		

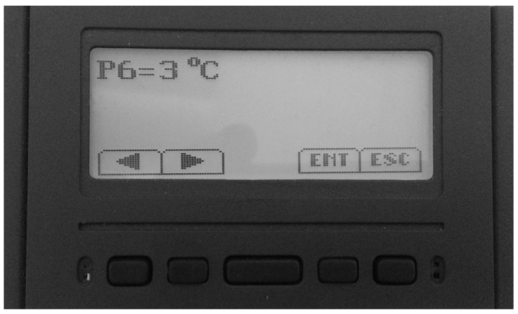
6.10-2nd level parameters

From this menu it is possible to change the value of all the other parameters not contained in the 1st level. They are protected by a password different from the previous level's as it is advisable to restrict access to qualified personnel only - in order to prevent malfunctions in the unit.

Press A and B (- +) to enter a value for the password.

Press the C (ENT) key to confirm it and access the next menu.

Press the D (ESC) key to return to the previous screen of the display.



Press A and B (< >) keys to select the desired parameter.

Press the C (ENT) key to access editing of the selected parameter.

Press the D (ESC) key to return to the previous screen of the display.

PAR.	DESCRIPTION	U.M.	DEF.	MAX	MIN
P6	Frost protection temperature (electric heater)	°C	3	10	-10
P7	Frost protection block delivery temperature	°C	2	10	0
P9	Minimum recirculation fan speed	%	50	100	10
P15	Proportional valve band	°C	4	5	1
P16	Proportional band for recirculation fan	°C	2	5	1
P19	Cooling delivery temperature	°C	15	25	5
P24	Heating delivery temperature	°C	45	50	30
P43	Dehumidification delivery temperature	°C	10	25	5
P44	Zone regulation: 0 = Single-zone 1 = Multi-zone		0	1	0
P46	Recirculation fan head 7.5: recommended value for a 2-3-4 zone system	V	10	1	6
P47	Proportional band for recirculation head	V	0.5	5	0.1

	2.2: recommended value for a 2- zone system 3.0: recommended value for a 3- zone system 3.6: recommended value for a 4- zone system				
P56	Proportional band for CO2 regulation	ppm	300	500	50
P57	Minimum fan speed for air change delivery/exhaust	V	1.5	5	0
P58	Air change delivery fan forced speed	V	5	10	1
P59	Air change exhaust fan forced speed	V	5	10	1
P60	Maximum sub-cooling in dehumidification	°C	2	5	1
P61	Summer/Winter selection: 0 = manual from console or App 1 = automatic acc. to room air 2 = from IN-AUX or BMS input	°C	0	2	0
P62	INT-AUX probe configuration: 0 = water delivery probe 1 = remote room probe	°C	0	1	0
P63	Delivery/exhaust fan speed on OFF	V	2	5	0
P64	Minimum water temperature for winter recirculation fan start 1: value for direct expansion version	°C	35	50	0

6.11-Unit status

From this menu it is possible to view all the input and output states of the unit (values read by the probes, relay status, etc.).

Press A and B (Λ V) to select the parameter to view.

Press the D (ESC) key to return to the previous screen of the display.

PAR.	DESCRIPTION	U.M.
IN-TM	Delivery temperature	°C
IN-TS	Exhaust temperature	°C
IN-TAUX	Remote air or water temperature	°C
IN-TE	Outside temperature	°C
OUTV-VB	Coil modulating valve output	V
OUTV-VM	Delivery fan output	V
OUTV-VE	Exhaust fan output	V
OUTV-VR	Recirculation fan output	V
OUT-SI	Integration damper output	Open/closed
OUT-CF	Electrostatic filter output	Open/closed
OUT-CU	Humidifier output	Open/closed
OUT-EI	Summer/Winter output	Open/closed
OUT-SN	Air change/exhaust damper output	Open/closed
OUT-SF	Free-cooling damper output	Open/closed
OUT-CG	Generator enable output	Open/closed
OUT-RE	Pre-heating electric heater output	Open/closed
IN-PM	Delivery air pressure switch input	V
IN-AF	Filter pressure switch input/electrostatic filter alarm	Open/closed
IN-AP	Pump alarm input	Open/closed
IN-AE	Forced air change input	Open/closed

IN-AUX	Summer/Winter input	Open/closed
TA	Room temperature regulation	°C
TAC	Console probe temperature	°C
TA1	Zone 1 probe temperature	°C
TA2	Zone 2 probe temperature	°C
TA3	Zone 3 probe temperature	°C
TA4	Zone 4 probe temperature	°C
TA5	Zone 5 probe temperature	°C
TA6	Zone 6 probe temperature	°C
UA	Relative humidity regulation	% (0-100)
UA1	Relative humidity zone 1	% (0-100)
UA2	Relative humidity zone 2	% (0-100)
UA3	Relative humidity zone 3	% (0-100)
UA4	Relative humidity zone 4	% (0-100)
UA5	Relative humidity zone 5	% (0-100)
UA6	Relative humidity zone 6	% (0-100)
QA	Air quality regulation	ppm
QA1	Air quality zone 1	ppm
QA2	Air quality zone 2	ppm
QA3	Air quality zone 3	ppm
QA4	Air quality zone 4	ppm

6.12-Language

From this menu the console language can be changed.

Press A and B (Λ V) to select the language to view.

Press the D (ESC) key to return to the previous screen of the display.

6.13-Console menu

From this menu it is possible to change the display contrast adjustment, set the display backlight level with the display on stand-by and in active mode, and backlighting duration. It is also possible to view the version of the software (Firmware) available in the console, motherboard and expansion.

Press A and B (Λ V) keys to select the desired parameter.

Press the C (ENT) key to access editing of the selected parameter.

Press the D (ESC) key to return to the previous screen of the display.

Press A and B (- +) to change the value displayed.

Press the D (ESC) key to confirm and return to the previous screen of the display.

6.14-I/O status

From this menu it is possible to force the status of the unit outputs; it is password-protected and reserved for specialized staff.

7- USE VIA APP

The unit can be controlled remotely via an App from a smartphone or tablet. In order to access this function, it is first of all necessary to fit a special Wi-Fi modem (accessory) to the unit according to the wiring diagram and upload the App to your mobile device (smartphone or tablet). In order to function properly, the building in which the EOS is to be installed must have a Wi-Fi network to which the modem can connect; the mobile device (smartphone or tablet) must have a data connection feature via SIM or Wi-Fi.

The “EOSB Wi-Fi” App is available for downloading to Android and IOS devices from the Google Play Store and the Apple App Store.

The App can be used to perform the following tasks:

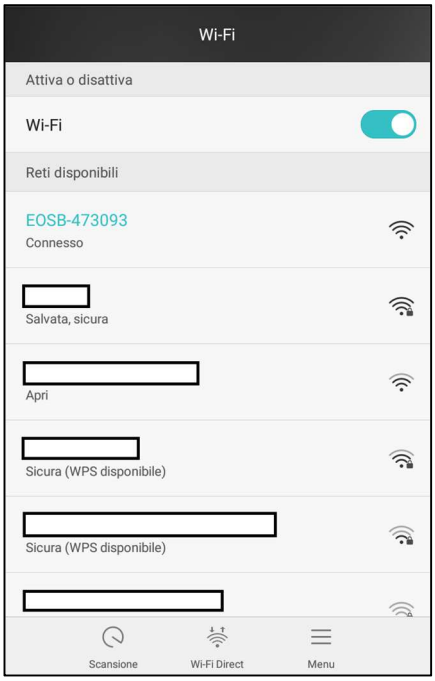
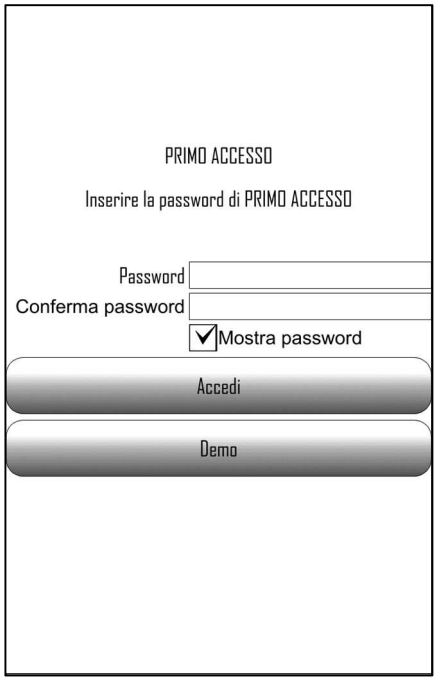
- turn the unit on and off
- switch the air change, forced air change and recirculation mode on and off
- display room temperature and humidity (of each zone, if in multi-zone mode) and CO2 values
- change the set-points relating to temperature (of each zone, if in multi-zone mode), humidity and CO2
- view the status of all inputs and outputs of the unit

7.1-Connection to the first mobile device

By carrying out the procedure described in this paragraph, you can:

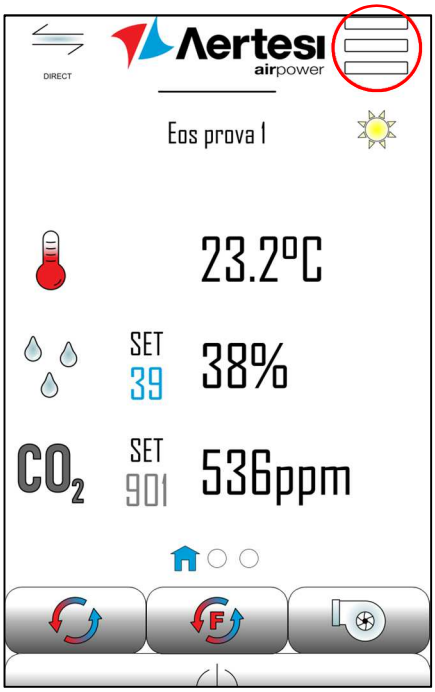
- Connect the unit's Wi-Fi modem to the home Wi-Fi network
- Connect the first mobile device to the unit

First of all, you must have correctly installed the Wi-Fi modem to the unit's motherboard (see the special installation manual) and installed the App on your mobile device. To connect the modem to a Wi-Fi network, a mobile device (smartphone or tablet) with Wi-Fi connection is required.

Activate the Wi-Fi of your mobile device and select the EOSB network (the procedure changes according to devices). 1 	Choose a password (5 characters) and enter it again for confirmation. <u>Please make a note of this password, as it will be needed to connect other mobile devices to the unit.</u> Hit "Login". 2 

Now the mobile device is connected to the unit's Wi-Fi modem via the Wi-Fi network generated by the modem (mode indicated by the "Direct" icon at the top left). Press the Menu icon (top right).

3

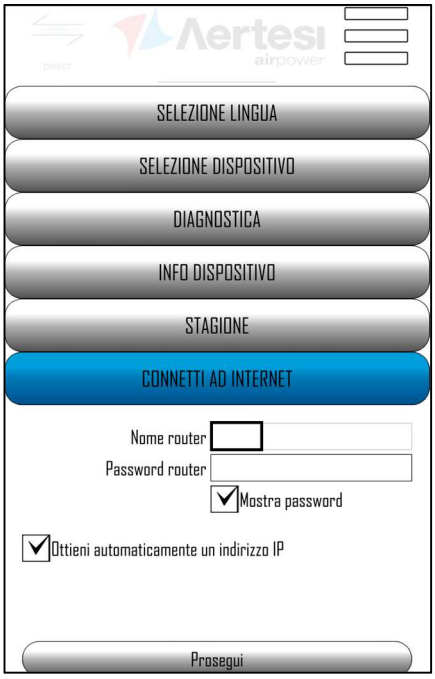


Press "Connect to the Internet" and then "Press to open the list". Select the Wi-Fi network to which you wish to connect the unit and then hit "Continue"

4

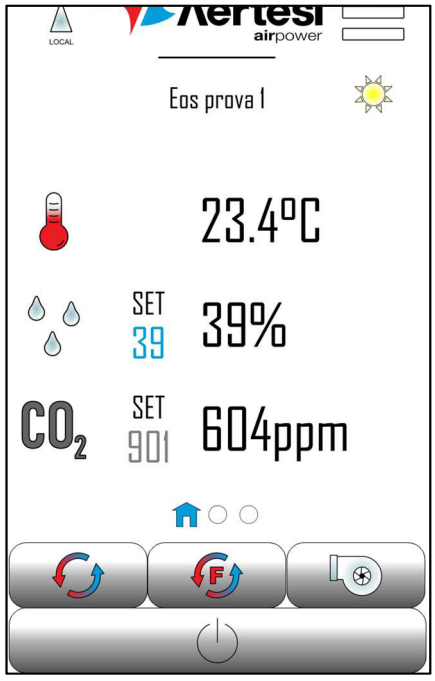
Enter the password of your Wi-Fi router and press "Continue".

5



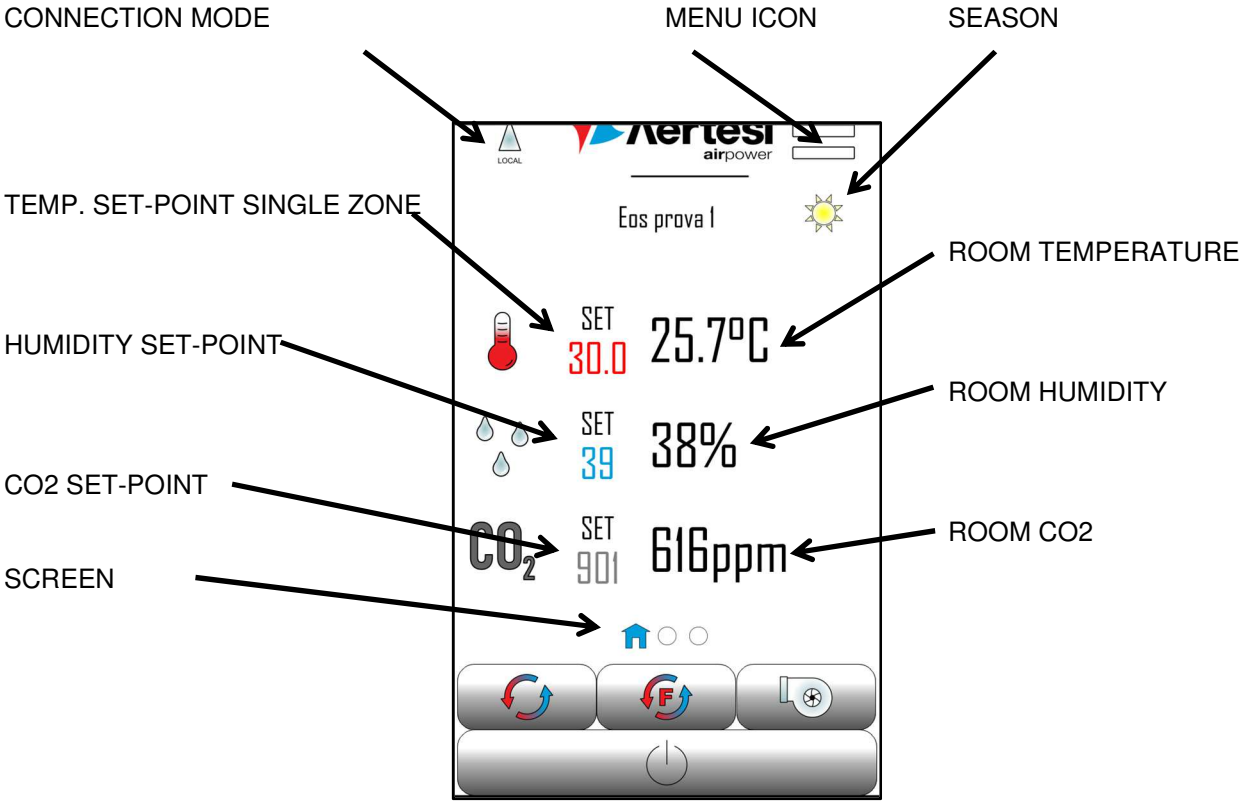
If the unit has connected to the Wi-Fi network, the App's "home" screen will be displayed and the icon at the top left will change from "Direct" to "Local". Otherwise close the App and repeat the procedure.

6



7.2-Home screen

On the home screen of the App the status of the main settings can be viewed and changed: these include the temperature, humidity, CO2, and season set points.



Connection mode: the icon indicates how the mobile device is connected to the unit's Wi-Fi router:

- LOCAL: the mobile device and the Wi-Fi router use the same Wi-Fi network. This connection mode is typically used when the mobile device is located inside the building where the unit is installed.
- REMOTE: the mobile device uses another Wi-Fi network (or a SIM data connection) than the Wi-Fi router. This connection mode is typically used when the mobile device is located outside the building where the unit is installed.
- DIRECT: the mobile device is connected directly to the Wi-Fi generated by the unit's router. To access this operating mode, the Wi-Fi generated by the unit's router must be selected from the list of available Wi-Fi networks on your mobile device. This connection is only possible if the mobile device is within the unit's Wi-Fi router working range.

Menu icon: pressing the menu icon you can access the App menu

Season: SUN = summer; SNOWFLAKE = winter

Single-zone temperature set-point: press the temperature set-point icon to change the set value. This icon is only available if the regulation is set for a single-zone environment.

Room temperature: this is the value read by the wall keypad temperature probe (single-zone) or the average value of the zone temperature probes (multi-zone)

Humidity set-point: press the humidity set-point icon to change the set value.

Room humidity: average value of the connected humidity probes. If no humidity probe is connected, 0% in summer and 100% in winter is displayed.

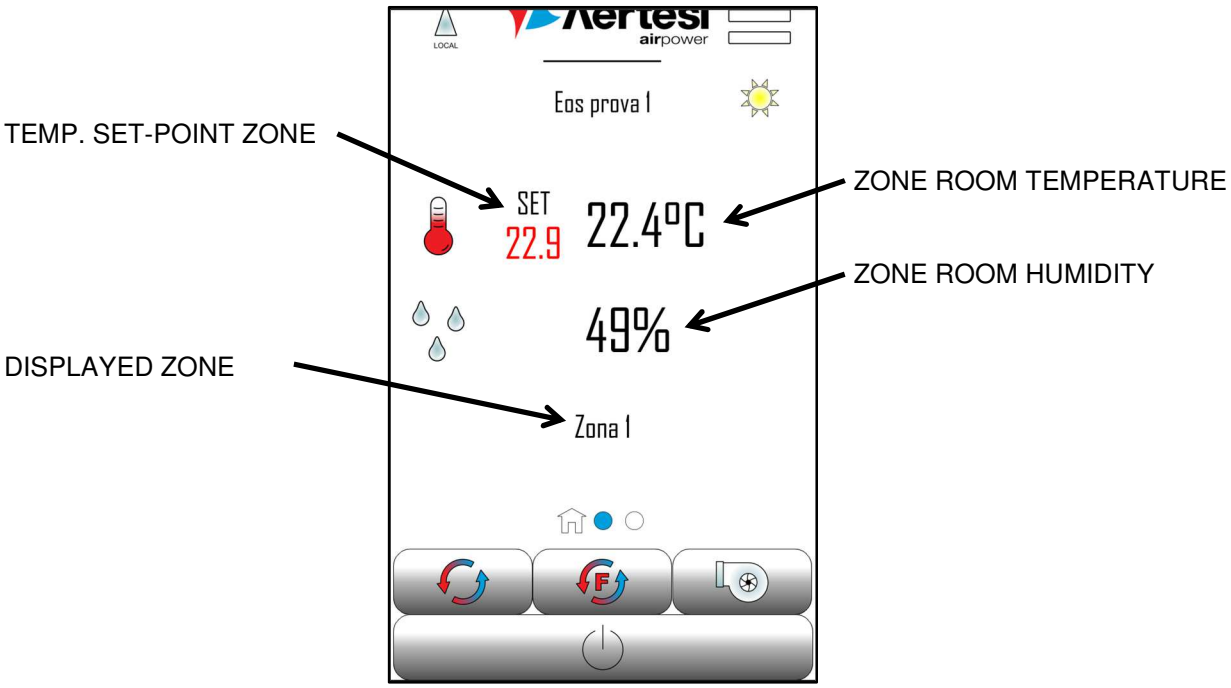
CO2 set-point: press the CO2 set-point icon to change the set value.

Room CO2: max value of the connected CO2 probes. If no CO2 probe is connected, 2000ppm (sensor full scale value) is displayed.

Screen: indicates whether the displayed screen is the "home" screen (house icon coloured blue) or one of the screens relating to zones (icon with the circle coloured blue). The screens relating to zones are visible only if there are temperature/humidity probes.

7.3-Zones screen

By swiping horizontally, the screen of your mobile device (from right to left or from left to right), you can scroll through the screens of the different zones. There is a screen relating to each connected temperature/humidity probe.



Zone temperature set-point: press the temperature set-point icon to change the set value. This icon is only available if the regulation is set for a multi-zone environment.

Zone room temperature: this is the value read by the zone temperature probe

Room humidity: this is the value read by the zone humidity probe

Displayed zone indicates which zone the values refer to on the current screen

7.4-Set-point setting

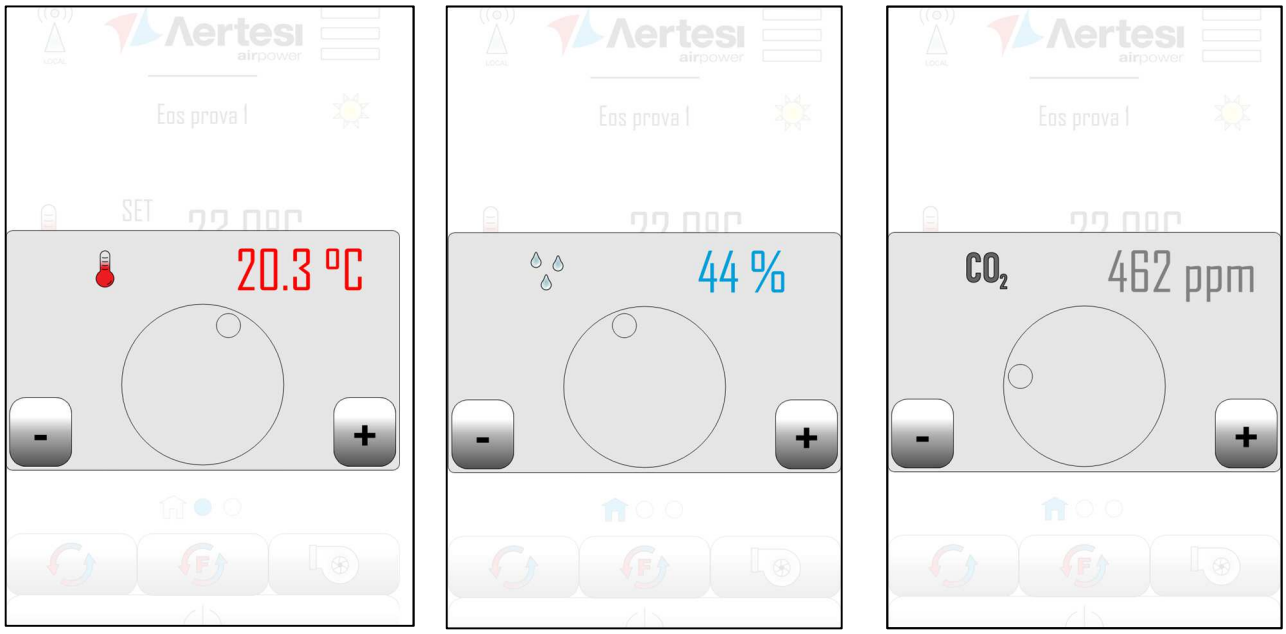
To set the temperature, humidity and CO2 set-points, press the corresponding icon. As described in previous paragraphs, the humidity and CO2 set-point icon can be found on the home screen; the temperature set-point icon is also found on the home screen (in a single-zone system) or on the zone screens (in multi-zone systems).

After pressing the icon, the set-point setting window will open. The set-point can be adjusted in two ways:

- By pressing the "+" and "-" icons for fine adjustment
- By pressing the central circle and turning it to the right or left for quick adjustment

If the mobile device screen is not touched for a few seconds, the set-point setting window closes, and the current value is saved.

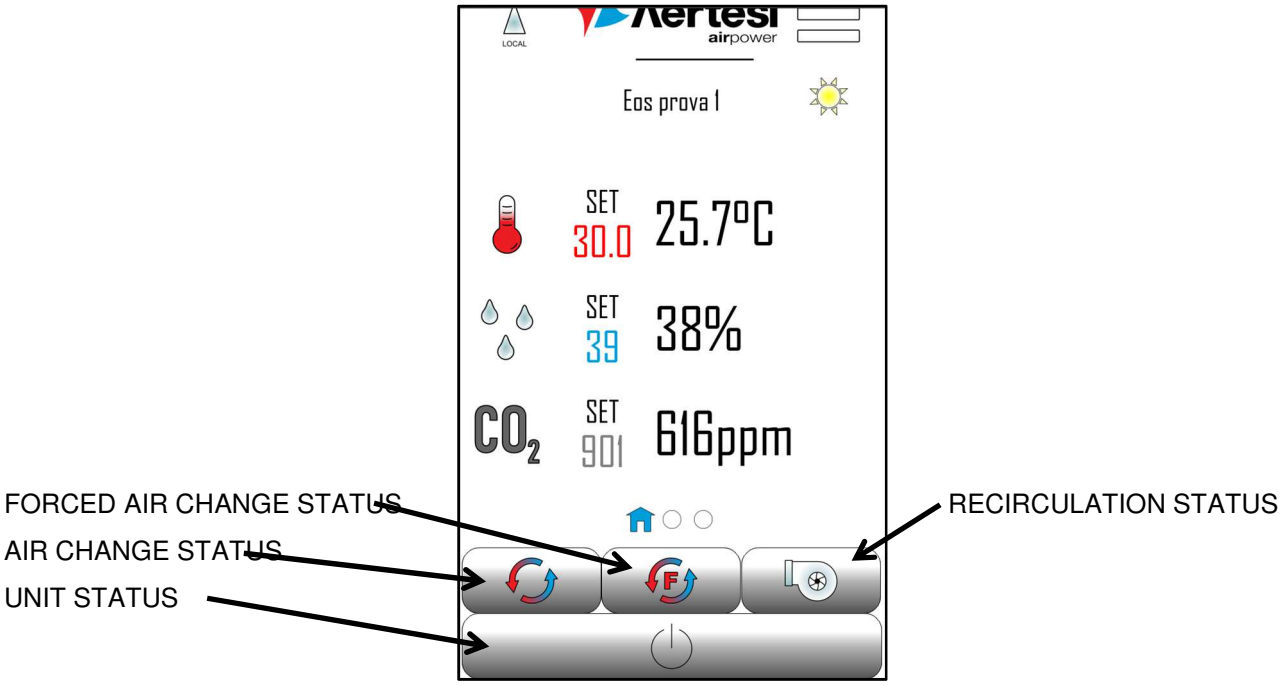
NOTE: if the current season is winter, the temperature set-point will be the winter set-point; if the current season is summer, the temperature set-point will be summer set-point.



7.5-Switching the unit on and off

By pressing the icons below, you can turn the unit on/off and activate/deactivate its main functions.

If the icon is grey, its function is deactivated; if it is blue, its function is activated.



Unit status: blue icon = unit on; grey icon = unit off

Air change status: blue icon = air change on; grey icon = air change off

Recirculation status: blue icon = recirculation on; grey icon = recirculation off

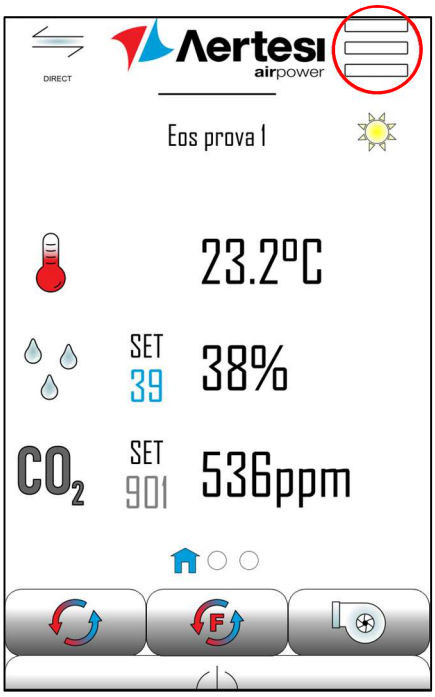
Forced air change status: blue icon = forced air change on; grey icon = forced air change off

If a weekly time schedule has been set for air change or recirculation, when the air change or recirculation status is changed from the App, this status remains unchanged until the time when the schedule requires a change in status.

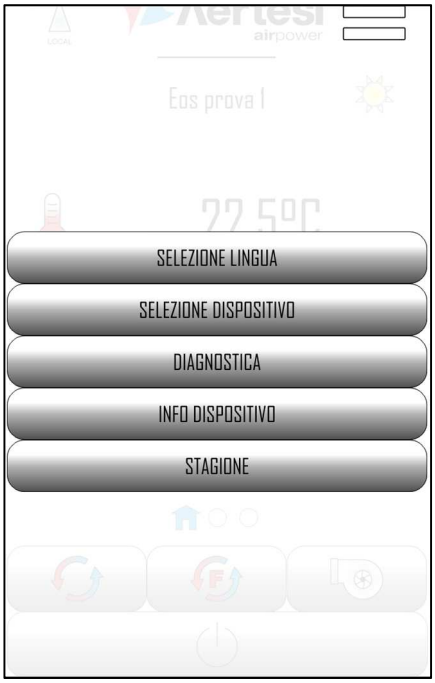
The status of the forced air change is not regulated by a time schedule, therefore, it remains unchanged until it is changed again from the App; forced air change is therefore active if it is activated by the App or by an external contact (IN-AE).

7.6-App menu

To enter and exit the App menu, press the menu icon at the top right of the screen.



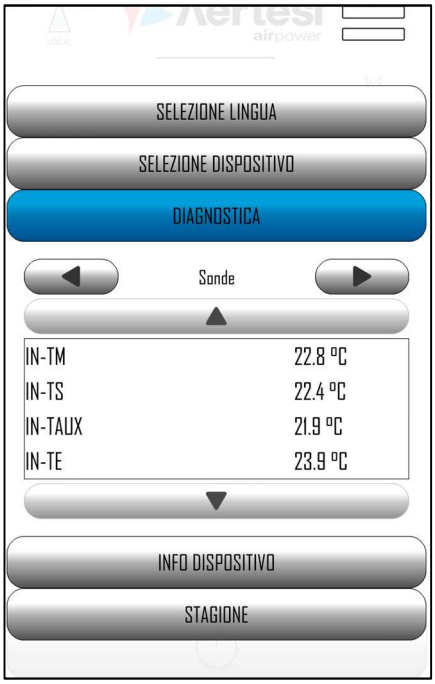
Press one of the icons below.



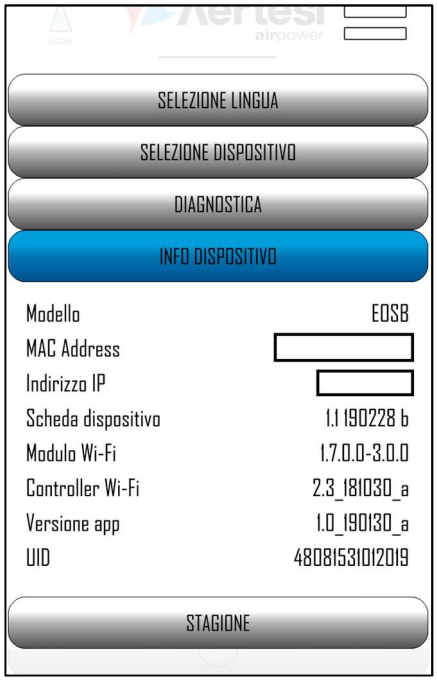
Language selection: press the desired language.

Device selection: if more than one unit are available for connection to the App, select which one to display.

Diagnostics: by pressing on the horizontal and vertical arrows, it is possible to view the status of all the inputs and outputs of the unit.



Device info: the connection data can be viewed; it is recommended to make a note of the MAC Address and IP address required to connect the unit to other mobile devices.



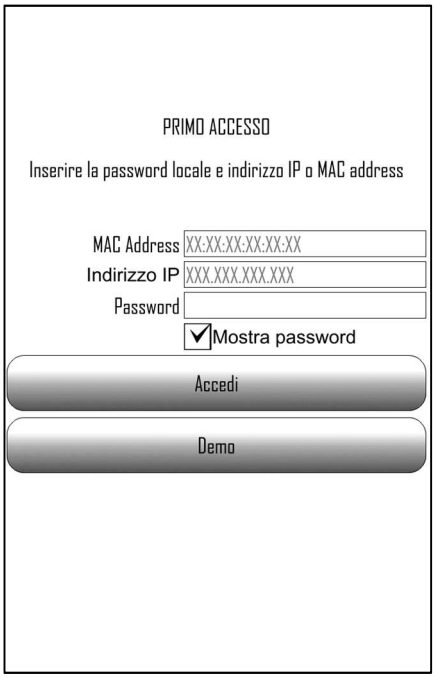
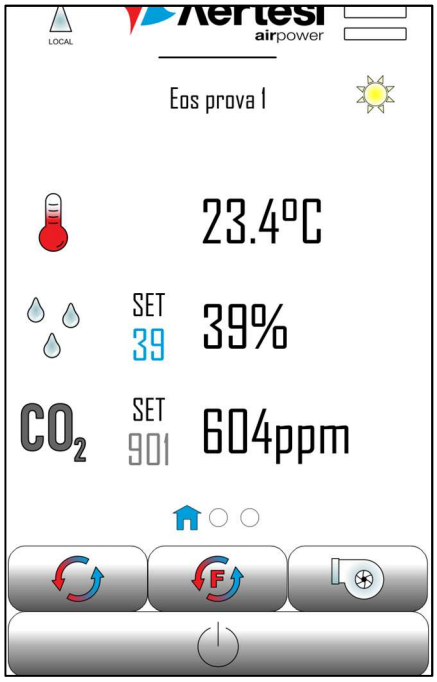
Season: select the current season, which will be displayed in blue.

7.7-Connection to other mobile devices

After connecting the unit to a first mobile device as described in the previous paragraphs, the unit can be connected to other mobile devices. After installing and launching the App from other mobile devices, the following data must be entered upon the first log-in:

- MAC Address and IP Address: to be entered following the correct syntax rules (: and .), these data can be obtained by clicking on “Device info” of the App menu (from a mobile device already connected) as described above.
- Password: this is a personal password, chosen by the user when connecting the first mobile device.

Obtain this information before beginning the procedure.

Make sure that the new mobile device has a SIM or Wi-Fi data connection service. Install and launch the App from the new mobile device; enter the MAC Address, IP Address and Personal Password. Hit "Login".	If the unit has connected to the new mobile device, the App's "home" screen will be displayed and the icon at the top left will be either “Remote” or “Local”. Otherwise close the App and repeat the procedure.
	

8- USE VIA MODBUS

The unit can be controlled from BMS via the Modbus communication protocol. In order to access this feature, the unit's motherboard must be equipped with the Modbus conversion module.

Modbus can be used to perform the following tasks:

- turn the unit on and off
- switch the air change, forced air change and recirculation mode on and off
- display room temperature and humidity (of each zone, if in multi-zone mode) and CO2 values
- change the set-points relating to temperature (of each zone, if in multi-zone mode), humidity and CO2
- view the status of all inputs and outputs of the unit

8.1-Modbus specifications

Supported protocol	Modbus RTU
Supported functions	03 (reading), 06 (single register writing) and 16 (multiple register writing)
Baud-rate	9600 bps
Data bits	8
Stop bit	1
Parity	None

Below is the list of registers and their functions:

REG. = Register IND. (ADD.) = Register address R or W: R/W = read/write; R = read only

REG.	IND. (ADD.)	R or W	Description	Possible values
1	0	R/W	System ON-OFF	0 = OFF; 1 = ON
2	1	R/W	Air change status	0=air change on 1=air change off
3	2	R/W	Forced air change status	0=forced air change on 1=forced air change off
4	3	R/W	Recirculation status	0=recirculation on 1=recirculation off
5	4	R/W	Season	0=summer 1=winter
6	5	R/W	Single-zone winter temperature set-point (TACSi)	For example: 210 = 21.0°C
7	6	R/W	Single-zone summer temperature set-point (TACSe)	For example: 210 = 21.0°C
8	7	R/W	Multi-zone winter temperature zone 1 set-point (TAS1i)	For example: 210 = 21.0°C
9	8	R/W	Multi-zone winter temperature zone 2 set-point (TAS2i)	For example: 210 = 21.0°C
10	9	R/W	Multi-zone winter temperature zone 3 set-point (TAS3i)	For example: 210 = 21.0°C
11	10	R/W	Multi-zone winter temperature zone 4 set-point (TAS4i)	For example: 210 = 21.0°C
12	11	R/W	Multi-zone winter temperature zone 5 set-point (TAS5i)	For example: 210 = 21.0°C
13	12	R/W	Multi-zone winter temperature zone 6 set-point (TAS6i)	For example: 210 = 21.0°C
14	13	R/W	Multi-zone summer temperature zone 1 set-point (TAS1e)	For example: 210 = 21.0°C
15	14	R/W	Multi-zone summer temperature zone 2 set-point (TAS2e)	For example: 210 = 21.0°C
16	15	R/W	Multi-zone summer temperature zone 3 set-point (TAS3e)	For example: 210 = 21.0°C

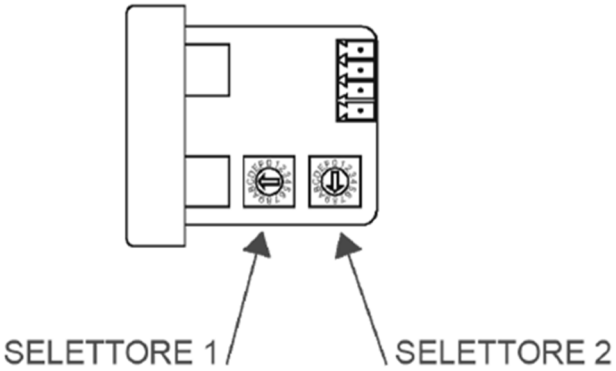
17	16	R/W	Multi-zone summer temperature zone 4 set-point (TAS4e)	For example: 210 = 21.0°C
18	17	R/W	Multi-zone summer temperature zone 5 set-point (TAS5e)	For example: 210 = 21.0°C
19	18	R/W	Multi-zone summer temperature zone 6 set-point (TAS6e)	For example: 210 = 21.0°C
20	19	R/W	Room humidity set-point (UAS)	For example: 50 = 50%
21	20	R/W	Room CO2 set-point (QAS)	For example: 750 = 750ppm
22...30	21..29		NOT USED	
31	30	R	IN-TM probe temperature	For example: 210 = 21.0°C
32	31	R	IN-TS probe temperature	For example: 210 = 21.0°C
33	32	R	IN-TAUX probe temperature	For example: 210 = 21.0°C
34	33	R	IN-TE probe temperature	For example: 210 = 21.0°C
35	34	R	Value at OUTV-VB output	For example: 45 = 4.5V
36	35	R	Value at OUTV-VM output	For example: 45 = 4.5V
37	36	R	Value at OUTV-VE output	For example: 45 = 4.5V
38	37	R	Value at OUTV-VR output	For example: 45 = 4.5V
39	38	R	OUT-SI output status	0 = contact open 1 = contact closed
40	39	R	OUT-CF output status	0 = contact open 1 = contact closed
41	40	R	OUT-CU output status	0 = contact open 1 = contact closed
42	41	R	OUT-EI output status	0 = contact open 1 = contact closed
43	42	R	OUT-SN output status	0 = contact open 1 = contact closed
44	43	R	OUT-SF output status	0 = contact open 1 = contact closed
45	44	R	OUT-CG output status	0 = contact open 1 = contact closed
46	45	R	OUT-RE output status	0 = contact open 1 = contact closed
47	46	R	Value at the IN-PM input	For example: 45 = 4.5V
48	47	R	Status of the IN-AF input	0 = contact open 1 = contact closed
49	48	R	Status of the IN-AP input	0 = contact open 1 = contact closed
50	49	R	Status of the IN-AE input	0 = contact open 1 = contact closed
51	50	R	Status of the IN-AUX input	0 = contact open 1 = contact closed
52	51	R	General room temperature used in the regulation logic (TA)	For example: 210 = 21.0°C
53	52	R	Console probe temperature (TAC)	For example: 210 = 21.0°C
54	53	R	Zone 1 probe room temperature	For example: 210 = 21.0°C
55	54	R	Zone 2 probe room temperature	For example: 210 = 21.0°C
56	55	R	Zone 3 probe room temperature	For example: 210 = 21.0°C
57	56	R	Zone 4 probe room temperature	For example: 210 = 21.0°C
58	57	R	Zone 5 probe room temperature	For example: 210 = 21.0°C
59	58	R	Zone 6 probe room temperature	For example: 210 = 21.0°C
60	59	R	General room humidity used in logic, zone average value (UA)	For example: 50 = 50%
61	60	R	Room humidity zone 1 (UA1)	For example: 50 = 50%
62	61	R	Room humidity zone 2 (UA2)	For example: 50 = 50%
63	62	R	Room humidity zone 3 (UA3)	For example: 50 = 50%
64	63	R	Room humidity zone 4 (UA4)	For example: 50 = 50%

65	64	R	Room humidity zone 5 (UA5)	For example: 50 = 50%
66	65	R	Room humidity zone 6 (UA6)	For example: 50 = 50%
67	66	R	General room CO2 used in logic, highest zone value (QA)	For example: 750 = 750ppm
68	67	R	Room CO2 zone 1 (QA1)	For example: 750 = 750ppm
69	68	R	Room CO2 zone 2 (QA2)	For example: 750 = 750ppm
70	69	R	Room CO2 zone 3 (QA3)	For example: 750 = 750ppm
71	70	R	Room CO2 zone 4 (QA4)	For example: 750 = 750ppm
72	71	R	Flag presence of T/H (temperature/humidity) probes	Bit1: 0 = no T/H 1; 1 = T/H 1 present Bit2: 0 = no T/H 2; 1 = T/H 2 present Bit3: 0 = no T/H 3; 1 = T/H 3 present Bit4: 0 = no T/H 4; 1 = T/H 4 present Bit5: 0 = no T/H 5; 1 = T/H 5 present Bit6: 0 = no T/H 6; 1 = T/H 6 present Bit7….Bit16: not used
73	72	R	Flag QA probe presence (air quality, CO2)	Bit1: 0=no QA 1;1=QA 1 present Bit2: 0=no QA 2;1=QA 2 present Bit3: 0=no QA 3;1=QA 3 present Bit4: 0=no QA 4;1=QA 4 present Bit5….Bit16: not used
74	73	R	System layout	0=single-zone 1=multi-zone
75	74	R	Alarm flag	0=error/alarm not active 1=error/alarm active Bit1: error of an internal probe Bit2: filter alarm Bit3: pump alarm Bit4: probe T/H 1 communication error Bit5: probe T/H 2 communication error Bit6: probe T/H 3 communication error Bit7: probe T/H 4 communication error Bit8: probe T/H 5 communication error Bit9: probe T/H 6 communication error Bit10: QA1 probe communication error Bit11: QA2 probe communication error Bit12: QA3 probe communication error Bit13: QA4 probe communication error Bit14: expansion communication error (multi-zone damper board) Bit5….Bit16: not used

9- PROBE CONFIGURATION

The temperature/humidity and CO2 probes must be connected according to the unit wiring diagram. They must also be configured as described below. When the probes are connected to the motherboard, they are automatically recognised. If some probes are disconnected or re-configured, their absence will be viewed as a fault by the motherboard; if this operation is not an actual fault (but if it is for example made necessary by a change in the system), it will be necessary to reset the motherboard to start the automatic probe recognition procedure again.

9.1-Temperature/humidity probes configuration

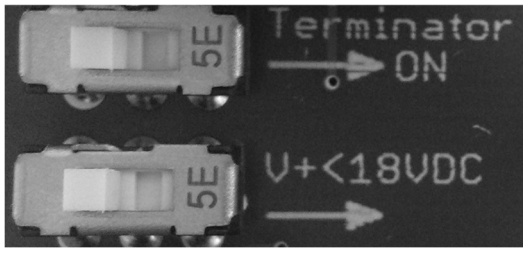


	SELECTOR 1	SELECTOR 2
PROBE n. 1	0	2
PROBE n. 2	0	3
PROBE n. 3	0	4
PROBE n. 4	0	5
PROBE n. 5	0	6
PROBE n. 6	0	7

9.2-CO2 probes configuration

	DIP 1	DIP 2	DIP 3	DIP 4	DIP 5	DIP 6	DIP 7	DIP 8
PROBE n. 1	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
PROBE n. 2	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
PROBE n. 3	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
PROBE n. 4	ON	ON	OFF	ON	OFF	OFF	OFF	OFF

DIP on OFF not to be changed :



NOTES:

Aertesi srl reserves the right to introduce any changes considered necessary to improve the product by editing the related technical data at any time.

AER.MU.C.EOSB1.GB.001.05.20

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something different

Aertesi srl
viale della tecnica, 6/a
35026 Conselve (PD) ITALY

t. +39.049.9501109
f. +39.049.9500823

www.aertesi.com
info@aertesi.c