TECNIPLAST

GATEWAY
THE WAY TO REMOTE CONTROL

INSTRUCTIONS FOR USE

Technical Support
For technical support, call +39-0332-809711 or send an E- mail to operative-service@tecniplast.it

PREFACE

Dear Customer,

This manual is aimed at providing the user with all the information and safety standards required for the correct and safe installation, use and maintenance of the equipment you have purchased.

Keep the manual in an easily accessible place, known by the Installer, the operator, the supervisor and the service technician who should carefully read it to have a clear understanding of the installation, use, and maintenance procedures as well as hazardous applications to avoid.

This manual is an integral part of the equipment and should follow it, even in the event of a change of ownership, until final decommissioning.
Should the manual get damaged or lost, a copy can be requested from TECNIPLAST.

In order to receive technical assistance, spare parts or optional extras not required on order, contact TECNIPLAST and give the equipment serial number, version, and year of manufacture (see label on the equipment).

The Operator, the Supervisor and the Service Technician must know all the standards reported in this manual before using the equipment or carrying out maintenance procedures.

COMPANY CONFORMITY TO ENVIRONMENTAL POLICIES

At TECNIPLAST both our production facilities and our end products reflect our commitment towards environmental policies in terms of:

- compliance with the principles and contents of current laws and regulations concerning the environment;

- reduction of the environmental impact deriving from our activities, maintaining the right balance between environmental, social and economic responsibilities;

- on-going quest for innovative applications in order to reduce the environmental impact deriving from waste materials, energy consumption and to improve the use of natural resources and raw materials.

- preventive evaluation of the environmental impact of new plants and processes and improvement of existing ones using all possible and economically sustainable solutions to increase our environmental performances.

- incentivation and co-responsibility of employees towards this policy by means of adequate training

- use of effective tools to communicate principles and goals of such an environmental policy to our dealers during meetings and training courses;

- defining during the design and development of new products the correct use and dismantling instructions to minimize environmental impact.

Please refer to the link below to download Tecniplast Environmental Responsibility Policy:
http://www.tecniplast.it/en/environmental-responsibility.html.

Table of Contents

1. GENERAL INFORMATION

1.1 MANUFACTURER'S DETAILS

TECNIPLAST S.p.A.
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Tel.+39 0332 809 711
Fax+39 0332 458 315
E-mail: operative-service@tecniplast.it

1.2 TECHNICAL DATA

Refer to ANNEX "TECHNICAL SPECIFICATIONS" at the end of this manual for accurate technical information on the machinery. TECNIPLAST S.p.A. reserves the right to modify the specifications to improve the product at any time.
FOR DETAILED INFORMATION ON THE PURCHASED MACHINE, REFER TO THE FACTORY TEST REPORT DOCUMENTATION PROVIDED WITH YOUR MACHINERY.

1.3 DECLARATION OF CONFORMITY

The equipment technical documentation includes the DECLARATION OF CONFORMITY in compliance with EU Equipmentry Directive 2014/53/EU Radio Equipment Directive (RED).

1.3.1 IDENTIFICATION PLATE POSITIONING

The machine described in this manual is CE marked. The identification plate is mounted on the left hand side of the machine and displays the information hereunder:
1.   Name and address of the manufacturer;
2.   The machine type and serial number;
3.   Year of manufacture.

4.   Symbol for the marking of electrical and electronic equipment that indicates separate collection.

1.4 RESPONSIBILITY OF THE CUSTOMER

Unless otherwise specified in the contract conditions, the Client shall supply:
 • Electrical supply complete with EARTH in the vicinity of the equipment.
 • Optional alarm system to be connected to the alarm dry contacts of the machinery
 • Room lighting in compliance with norms and regulations in force in the country of installation.

The Client is responsible for ensuring that all the people working with the machine wear adequate PPE in compliance with national laws and regulations and for carrying out a risk analysis according to the different type of pathogens used during the experiment and for applying all safety measures to avoid contamination.

1.4.1 ELECTRICAL CONNECTION

The equipment is set to work with the voltage and frequency level specified at the time of order and therefore it only accepts those percentage variations, which are standard in the country of installation.
The equipment is to be connected to the power supply protected by suitable protections in compliance with laws and regulations in force in the country where the machine is installed.
The use of EARTH compliant to regulations in force in the country where the machine is to be installed is compulsory.
 TECNIPLAST disclaims all responsibility for personal or material damage resulting from:

1.   **Missing or defective earth connection**

2.   **Lack of installation of suitable protections**

3.   **Non-compliance of the power supply with laws and regulations in force in the country where the machine is to be installed**.

It is advisable to connect the equipment to a dedicated power supply line with UPS.

 PLUG THE POWER SUPPLY CABLE INTO A SOCKET THAT IS EASILY ACCESSIBLE AT ALL TIMES.

1.5 UNAUTHORISED MODIFICATIONS

No modifications to the equipment or its components are to be made without written permission from TECNIPLAST.
Unauthorised modifications could cause changes to the original functioning and consequently all forms of warranty regarding the entire equipment will be null and void.
The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

1.6 SPARE PARTS AND TECHNICAL ASSISTANCE

In order to conform with the terms and duration of the Warranty and to ensure perfect inter-changeability, only original TECNIPLAST spare parts are to be used.
Requests for Technical Assistance should be addressed to TECNIPLAST by e-mail, telephone or fax using the numbers listed above this manual.

1.7 DECOMMISSIONING, FINAL DISMANTLING AND DISPOSAL

This product may contain substances that can be hazardous to the environment or to human health not disposed of properly.
Tecniplast is committed to meeting the requirements of the EU directive 2002/96/CE amended by 2003/18/CE on Waste Eletric and Electronic Equipment (WEEE) and, therefore, promotes "the reuse, recycling and other forms of recovery of such wastes (WEEE) so as to reduce the disposal of waste. It also seeks to improve the environmental performance of all operators involved in the life cycle of electrical and electronic equipment, e.g. producers, distributors and consumers...". Tecniplast has worked closely with its suppliers to eliminate hazardous materials from its products. There are instances, however, where it has not yet been possible to completely eliminate all such materials.
Consequently, some products are labelled with a crossed-out "wheelie" symbol, indicating that special care must be applied to their disposal and / or recycling.

- **DO NOT** dispose of WASTE ELECTRIC AND ELECTRONIC EQUIPMENT as unsorted municipal waste.
- Waste electric and electronic equipment is to be collected and disposed of separately as per decree 2002/96/CE amended by 2003/108/CE in the European Union or in compliance to any norm and regulation in force in the country where the equipment is installed.
- Access to the site is controlled and disposal activities are supervised by trained personnel; and records are maintained of the types, approximate quantities and point of origin of the wastes.
- **DO NOT** dispose of plastic material as unsorted municipal waste.
- Any plastic material is to be collected and disposed of separately in compliance to any norm and regulation in force in the country where the equipment is installed.
- **DO NOT** dispose of metallic material as unsorted municipal waste.
- Any metallic material is to be collected and disposed of separately in compliance to any norm and regulation in force in the country where the equipment is installed.
- At the end of life of the product contact your distributor to have information on the collection arrangements.
- It is possible to return, free of charge, other end of life equipment as long as it is of an equivalent type, and has fulfilled the same function as the supplied equipment.
- Disposal of a product different from that described above will be liable to the penalties prescribed by the national provisions in the country where the product is disposed of.
- Contact Tecniplast to obtain detailed specifications and procedures on how to disassemble the equipment.

2. SAFETY PRECAUTIONS

2.1 GLOSSARY OF SYMBOLS

The following words and symbols are used in order to explain safety procedures.

This symbol is used in safety messages and on labels when there is an imminently hazardous situation which, if not avoided, may result in death, serious injury or serious damage to the system. These safety messages also describe how the hazard can be avoided.

This symbol is used to explain any procedures which, if performed incorrectly, could cause damage to the equipment or potential problems that might shorten the operating life of the system.

This symbol is used for annotations made for information which requires specific consideration on any procedures, but for which there is no risk of damaging the system.

Pay special attention to all Safety Warnings given throughout the instructions
For any doubts regarding safety, contact TECNIPLAST.

2.2 SAFETY NOTES

2.2.1 GENERAL PRECAUTIONS

Follow all the precautions, procedures and safety measures prescribed by the standards in force to safeguard personal health and read the User's manual before using the equipment. Tecniplast disclaims all responsibility for any uses other than those stated in this User Manual unless previously authorised

- Install the product in accordance with the supplied installation instructions.

- The product is suitable for indoor use only. Protect the unit against high humidity and water.

- Do not obstruct air vents.

- Do not attempt to open the product. Avoid mechanical shock.
- Do not use the product if any part is damaged.

- DO NOT carry out modifications that might alter the performance or the working conditions of the product. TECNIPLAST disclaims all responsibility for personal injury or material damage caused by mishandling of the equipment.

- Keep in a cool, well-ventilated place away from sources of ignition.

- DO NOT use the product in an explosive environment.

- Avoid using metallic components - like paper clips, screws and similar - near the product when connected to a power supply, to avoid short circuits due to unwanted contacts with other board components.

- Check carefully that all cables are correctly connected and that they are not damaged.

- Switch off the unit when not used.

- Operating your device may interfere with medical devices like hearing aids and pacemakers. Please always keep the device more than 20 centimeters away from such medical devices when they are turned on. Turn your device off if necessary. Consult a physician or the manufacturer of the medical device before using your device.

- The equipment should be set up and used with a distance of approximately 8 inches (20cm) or more to user.
  L'équipement doit être installé et utilisé avec une distance d'environ 20 cm (8 pouces) ou plus pour l'utilisateur.

2.3 PERSONAL PROTECTIVE EQUIPMENT

Wear adequate personal protective equipment whenever servicing or cleaning the equipment in compliance with the risk analysis carried out by the customer and with laws and regulations on personnel health and safety, in force in the country where the machine is installed.

> The Client is responsible for ensuring that all the people working with the machine wear adequate PPE in com-pliance with national laws and regulations and for carrying out a risk analysis according to the different type of pathogens used during the experiment and for applying all safety measures to avoid contamination.

3. APPLICATIONS AND WORKING PRINCIPLE

Tecniplast GATEWAY has been developed to simplify the work of facility managers and operators by providing them with an easy-to-use monitoring of Tecniplast equipment and machines.
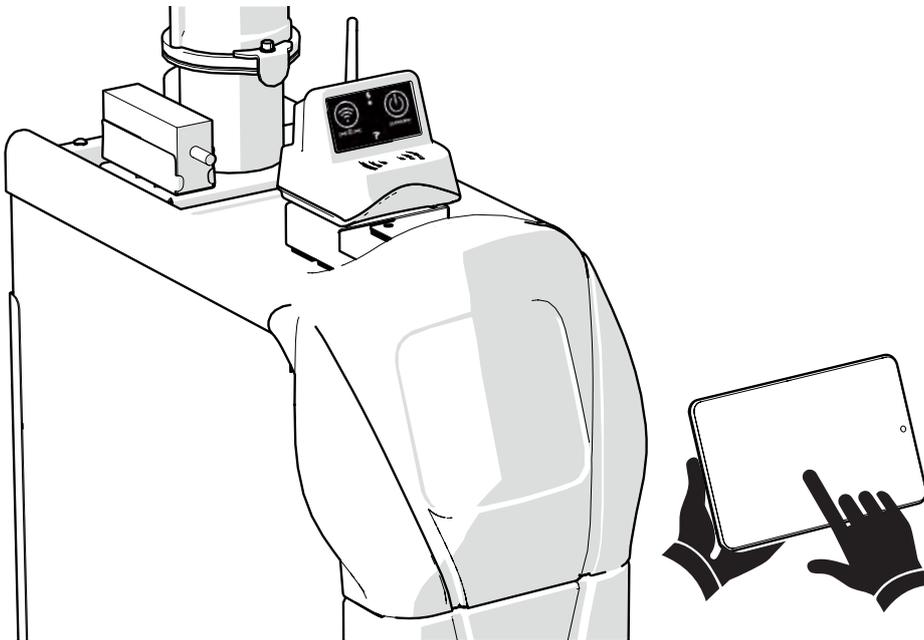
The GATEWAY is to be assembled on TECNIPLAST Air Handling Units[1], thus enabling the Air Handling Unit to be remotely controlled:

• by means of **a web browser-equipped device** (e.g. smartphone, tablet, laptop) directly connected to the unit thanks to the WiFi network generated by the unit:

ONE 2 ONE

> **The unit has been validated with the most common portable devices; the basic requirement is to be compatible with html 5.**

• through a **server-based application** (optional) which allows to remotely control all the Air Handling Units connected to the network: **GUARDIAN**[2]

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1   Tecniplast GATEWAY is designed to be assembled on Tecniplast Smartflow, Easyflow, Skyflow and Isocage.
2   The WIFLOW has been pre-set for the GUARDIAN application (optional application to be purchased separately).
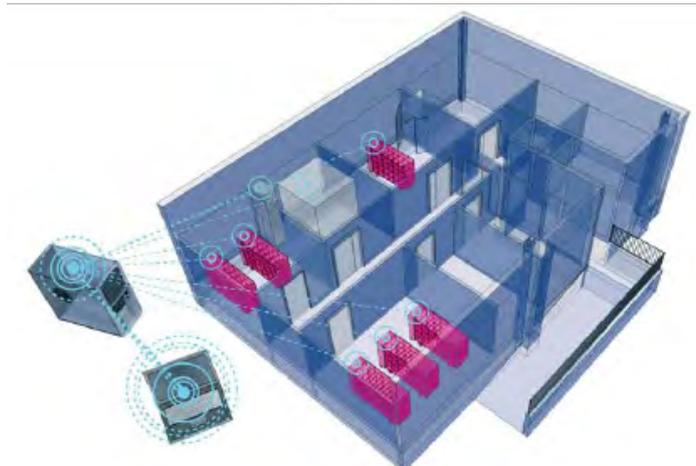
4. HANDLING

4.1 PACKAGING

The equipment and its accessories are shipped as agreed in the order, usually in carton boxes.
Dispose of the packaging in compliance with laws and regulations in force in the country where the equipment is installed.

4.2 STORAGE

The equipment is designed for indoor use only.
Always keep the equipment in a dry place, whether packaged or not.
If the equipment is not deemed to be used, cover it with a piece of cloth or plastic to protect it from dust and store it in an environment compliant with the environmental requirements specified in Technical data.

5. MAIN FEATURES

5.   **RS485 SOCKET**

6.   **POWER SUPPLY CABLE SOCKET**

7.   **GUARDIAN BUOY SOCKET**

8.   **GIGABIT ETHERNET SOCKET**

9.   **HDMI SOCKET**

10. **RESET BUTTON**

11. **ANTENNA FOR WIRELESS CONNECTION**

V6-RJ45/IP67
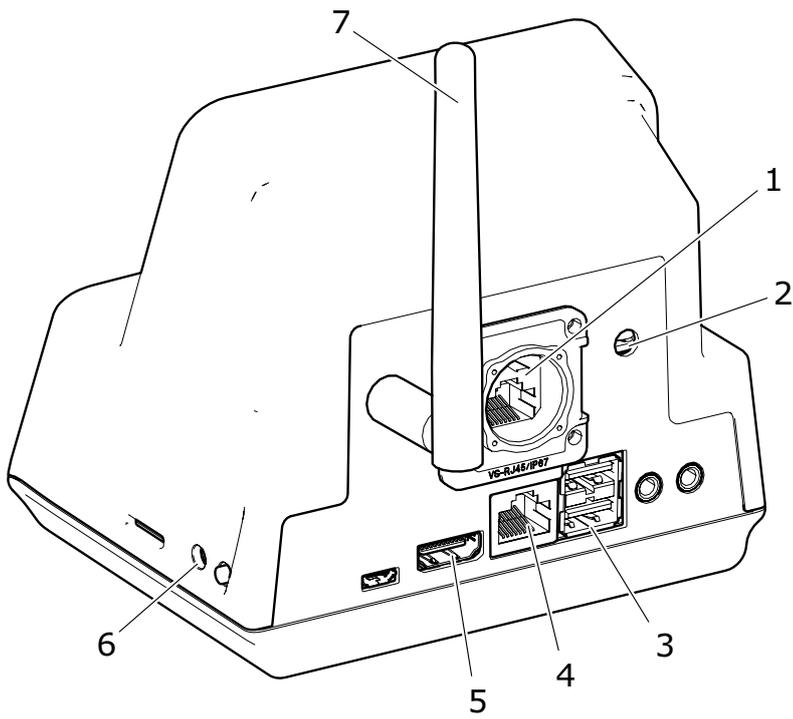
5.1 CONTROL PANEL
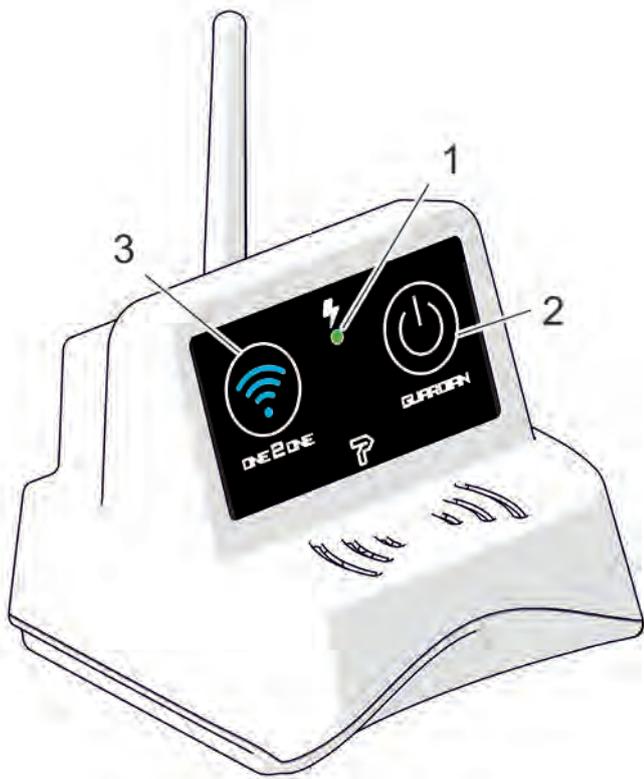
1. POWER ON LED
2. GUARDIAN LED
3. ONE 2 ONE LED

5.2 LEDS STATUS DESCRIPTION

LED	COLOUR	SYMBOL	STATUS	LED STATUS EXPLANATION

1	MAINS	GREEN		ON/OFF	LED ON WHEN GATEWAY IS POWERED
2	ONE 2 ONE	BLUE		STILL*	ONE 2 ONE NETWORK GENERATED
3	GUARDIAN (OPTIONAL) T h i s touchbutton/led is enabled only if the Guardian optional application has been installed.	GREEN		STILL	THE UNIT IS CONNECTED TO THE GUARDIAN SERVER
				BLINKING**	COMMUNICATION FAULT. THE UNIT CAN NOT CONNECT TO THE GUARDIAN SERVER. Contact Tecniplast authorised Service technicians/lab IT manager

* This led blinks whenever a device is connected to the Network and is reading/writing information, in order to show that the machine is being remotely controlled.

** If the machine is connected to the Guardian server **by means of a wireless connection** (led still) and the ONE 2 ONE network is enabled, this led starts blinking to show that the Guardian connection has been disabled until the ONE 2 ONE network is switched off.

6.   INSTALLATION GUIDELINES

Refer to the GATEWAY INSTALLATION PROCEDURES supplied for detailed reference on how to install the GATEWAY on your Air Handling Unit.

6.1   PRELIMINARY CHECKS

Images hereunder are purely indicative, refer to the GATEWAY installation procedure for further details.

Once the GATEWAY has been installed on your Air Handling Unit carry out the following preliminary checks:

1.   Ensure the power cable is connected (A) and that the power led is on (B).
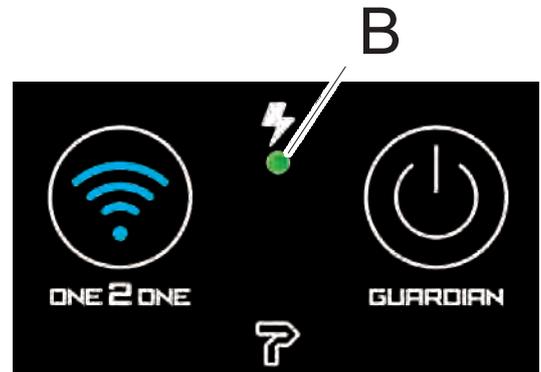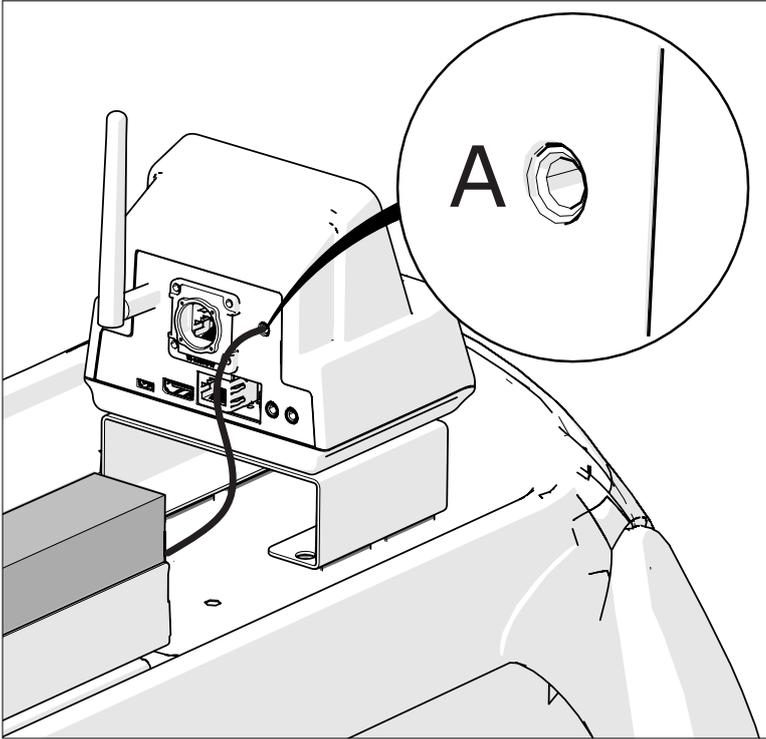
2. Ensure the RJ45 cable is connected to the RS485 port (C).
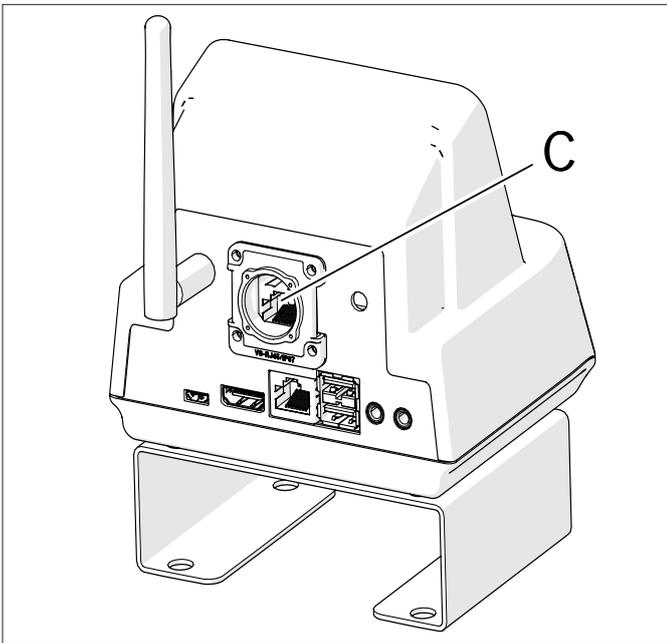
3. In case the GATEWAY is to be connected to the GUARDIAN SERVER:

    •   Plug the buoy into it socket (D) following the relevant instructions.

D
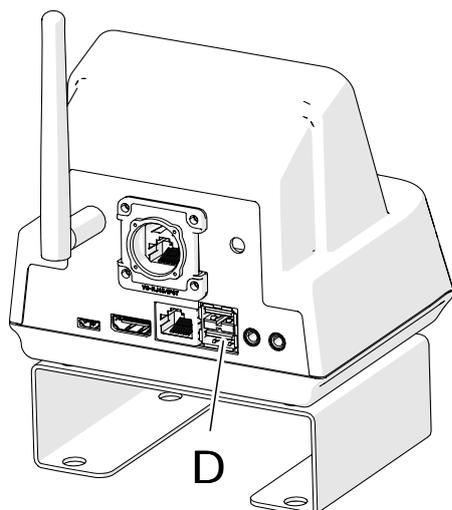
- In case a wired connection is required, ensure the Ethernet cable (RJ45, E) is plugged into its socket.

E

- In case a wireless connection is required, screw the antenna into position (F).

F

Refer to the Guardian User guide for the Guardian Software installation/usage.

7. USAGE

7.1 HOW TO CONNECT THE AIR HANDLING UNIT TO THE ONE 2 ONE NETWORK AND REMOTELY CONTROL IT BY MEANS OF A PORTABLE DEVICE

1. Plug the Air handling Unit to the mains and turn the main switch on. **Refer to the Air Handling Unit User Manual.**
2. Ensure that the GATEWAY is properly connected and that the power led is on.
3. Switch on your portable device.
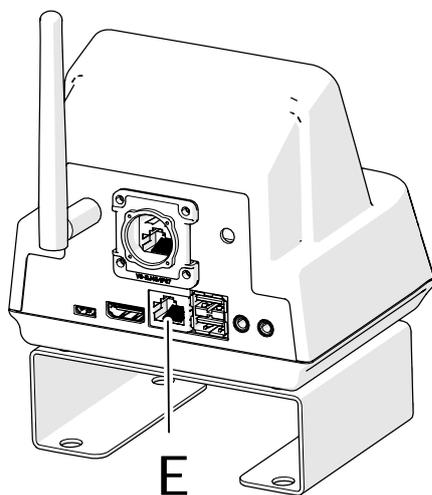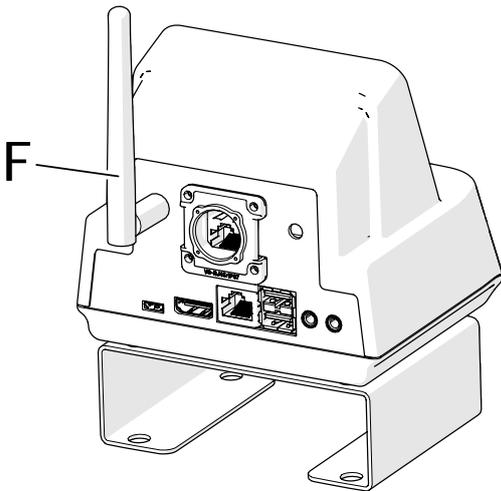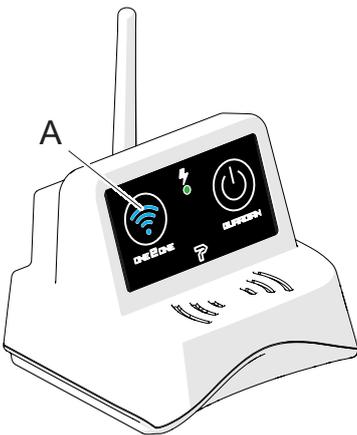4. Keep the ONE 2 ONE button pressed for at least 2 seconds on the Gateway front panel.

A

5. The led will show blue to indicate that the unit is generating the ONE 2 ONE wireless network.

THE WIFI GENERATED NETWORK IS TEMPORARY. IF NOT USED, AFTER 5 MINUTES HAVE ELAPSED THE NETWORK IS AUTOMATICALLY DISABLED. TO RESTORE THE NETWORK JUST PRESS THE ONE 2 ONE TOUCH BUTTON.

IF NECESSARY THIS OPTION MAY BE DISABLED AND THE WIFI NETWORK CAN BE SET TO INDETERMINED.

6. Connect your portable device to the just generated ONE 2 ONE wireless network (follow your portable device User Guide). Select the network identified by the purchased machine Serial Number (password: **tecniplast**).

Carry out this step only the first time you connect your portable device to the ONE 2 ONE network. Your portable device will connect automatically to the ONE 2 ONE network afterwards.

To change the default network SSID follow the procedure detailed in paragraph "8.4.7 how to change the default ONE 2 one wireless network

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PARAMETERS" on page 33.

7. Open your web browser and gain access to any website supporting **HTTP protocol**. You will be automatically redirected to the Software Home page. Refer to chapter "8. one2one software manual - gateway system for ahu" on page 18 for Software Usage.

HTTPS protocol is not supported during One 2 One communication**.**

7.2   HOW TO DISCONNECT THE AIR HANDLING UNIT FROM THE ONE 2 ONE NETWORK

1. Press the ONE 2 ONE button on the Gateway front panel. The touch button led will blink a few times and the ONE 2 ONE network connection will be disabled.

IMPORTANT: IT IS STRONGLY SUGGESTED TO SWITCH OFF THE ONE 2 ONE NETWORK AFTER COMPLETION OF USE IN ORDER TO AVOID GENERATING TOO MANY NETWORKS INSIDE THE ROOM.

7.3   HOW TO CONNECT THE AIR HANDLING UNIT TO THE GUARDIAN SERVER (OPTIONAL)

The GATEWAY has been pre-set for the GUARDIAN application. If the application is installed on a Server and the Air Handling Units where the GATEWAY is installed have been connected to it (by a wired or wireless connection), follow the procedure hereunder to connect to the GUARDIAN Server:

1. Plug the Air handling Unit to the mains and turn the main switch on. **Refer to the Air Handling Unit User Manual.**
2. Ensure that the GATEWAY is properly connected and that the power led is on.
3. **In case a wired connection is required**: ensure that the Ethernet cable is properly connected to its port on the GATEWAY rear side.

   In case a wireless connection is required:
   - ensure the antenna is properly fitted on the GATEWAY rear panel.
   - ensure a wireless network is available in the area.

   IN CASE OF WIRELESS CONNECTION, THE AIR HANDLING UNIT CAN NOT BE CONNECTED TO THE GUARDIAN SERVER AND TO THE ONE 2 ONE NETWORK AT THE SAME TIME. IF THE GUARDIAN WIFI IS ENABLED AND THE ONE 2 ONE IS ACTIVATED, THE GUARDIAN WILL BE TEMPORARILY DISCONNECTED (LED BLINKING GREEN).

4. If the led is off, keep the GUARDIAN button (A) pressed for at least 2 seconds to connect to the GUARDIAN Server. The GUARDIAN led will show green.
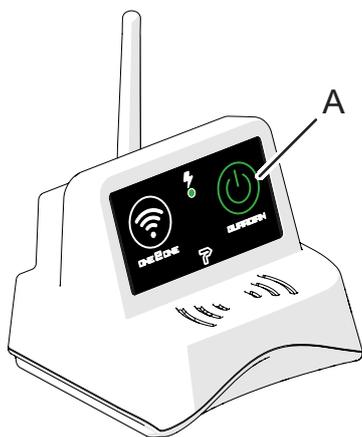
NOTE: IF THE LED BLINKS A COMMUNICATION FAULT HAS OCCURRED. THE UNIT CAN NOT CONNECT TO THE GUARDIAN SERVER.

Contact Tecniplast authorised Service technicians/lab IT manager

5. Read the Guardian User guide for further information on the Guardian Software.

PRIOR TO MOVING ONE UNIT OR SWITCHING IT OFF FOR ANY REASON, IT IS IMPORTANT TO DISCONNECT IT FROM THE GUARDIAN SERVER (SWITCHING OFF THE GUARDIAN BUTTON) IN ORDER TO AVOID FALSE ALARM MESSAGES AND NOTIFICATIONS.

7.4   HOW TO DISCONNECT THE AIR HANDLING UNIT FROM THE GUARDIAN SERVER

1. Keep the GUARDIAN button (A) pressed on the Gateway front panel.
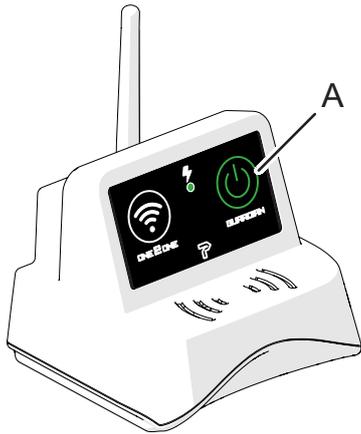
2. Ensure the button led switches off.
3. The Air Handling Unit will immediately disconnect from the GUARDIAN Server.

PRIOR TO MOVING ONE UNIT OR SWITCHING IT OFF FOR ANY REASON, IT IS IMPORTANT TO DISCONNECT IT FROM THE GUARDIAN SERVER IN ORDER TO AVOID FALSE ALARM MESSAGES AND NOTIFICATIONS.

8. ONE2ONE SOFTWARE MANUAL - GATEWAY SYSTEM FOR AHU

In case of peculiar configuration, such as those with convoluted/long connections, non-symmetrical or non-in-line layouts, an in-field test with the service monitor cage (Performance Qualification) should be carried out in order to establish and validate the best settings for that particular configuration.

8.1 PREFACE

The ONE2ONE Software control system allows to access any function and improves and simplifies all setting procedures enhancing the flexibility of the system.
Although default values are suggested, a simple procedure allows variable customisation to satisfy any specific needs.

A double password level defines the boundary between operators, who can set the air handling unit operating mode and supervisors who are entitled to carry out critical settings for the system.

The software has been designed to be user friendly and most functions are represented by visual symbols, thus making it comprehensible to any user, in spite of the nationality and spoken language.

8.2 HOME PAGE

The Home Page displays any relevant information on the air handling unit running conditions in real time:

A.   PERFORMANCE INDICATOR (PMD)

The indicator colours turn progressively from green to red as the HEPA filters gets clogged.

Hepa filter clogging is calculated considering the overall volume of cages connected to the system. The performance indicator shows the status of the filter which is more clogged between the two filters.

B.   PRESSURE OPERATING MODE

C.   AIR CHANGES PER HOUR + MINIMUM/MAXIMUM THRESHOLDS

D.   TEMPERATURE + MINIMUM/MAXIMUM THRESHOLDS

E.   HUMIDITY + MINIMUM/MAXIMUM THRESHOLDS

F.   TYPE AND NUMBER OF CAGES CONNECTED TO THE UNIT

G.   ALARM NOTIFICATION ICON (the number of active alarms is displayed. Tap the icon to display the alarm banner)

H.   [icon] ACCESS KEY TO THE HOME PAGE MENU which allows to monitor and control the air handling unit:

- [icon] SETUP PAGE
- [icon] SETTINGS PAGE
- [icon] SERVICE PAGE
- [icon] ALARM PAGE

I.   ALARM BANNER (in case of current alarms)
J.   ALARM ICON (in case of current alarms)

[i] **The Home page displays the unit parameters corresponding to the moment when the page was loaded. In case the Home page displays ACH values different from the expected ones or does not show active alarms, it might be necessary to reload the page.**

8.3 SETUP PAGE
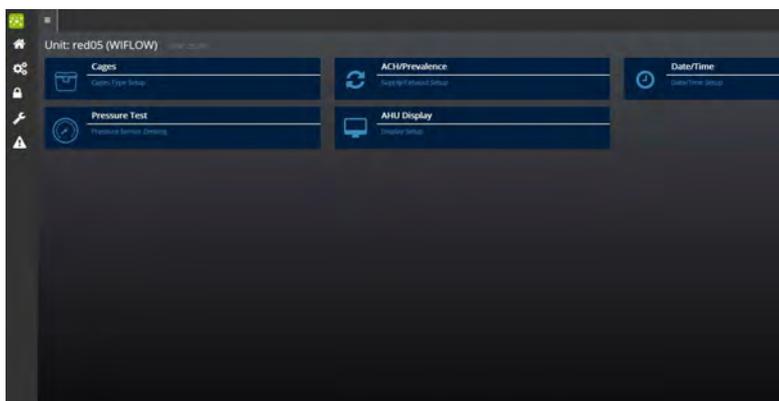
- Select SETUP ⚙ from the Home page.

- The system will ask to enter the user password.
- Enter **LEVEL 1** password on the numerical keypad to open the User setting pages

- Tap CAGES to set the number and type of cages connected to the air handling unit.
- Tap ACH/PREVALENCE to select the Air Handling Unit pressure mode , set the number of air changes per hour and the percentage differential.
- Tap DATE/TIME to set the current date/time
- Tap PRESSURE TEST to access the pressure reading zeroing page
- Tap AHU/DISPLAY to set the display night mode and screen saver

8.3.1 CAGES SETTING

- Tap CAGES from the SETUP page.
- Tap the numerical field next to the cage type.
- Enter the number of cage positions connected to the system on the numerical keypad.
- Tap UPDATE* to confirm settings and go on setting other cage types or go back to the home page.

 IN CASE OF MULTIPLE RACKS HOUSING THE SAME TYPE OF CAGES, ENTER THE TOTAL NUMBER OF CAGE POSITIONS.
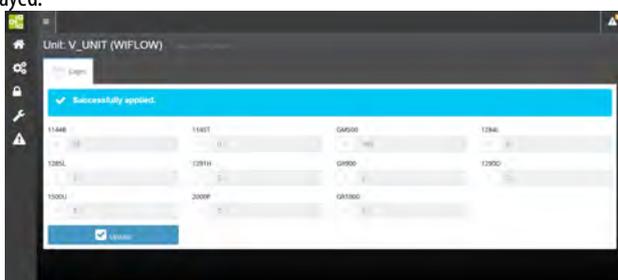
 If you select cages with different volumes, the warning label **CAGES UNBALANCED** will appear on the screen to warn of air change differences between larger and smaller cages that could arise with such a setting.
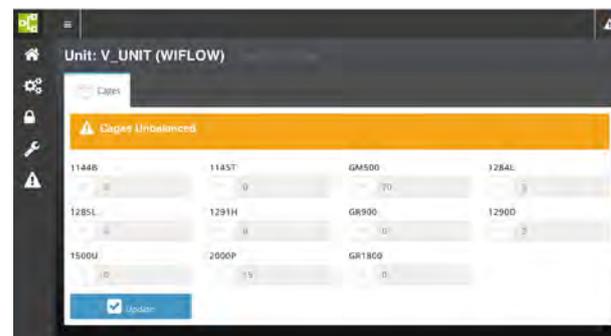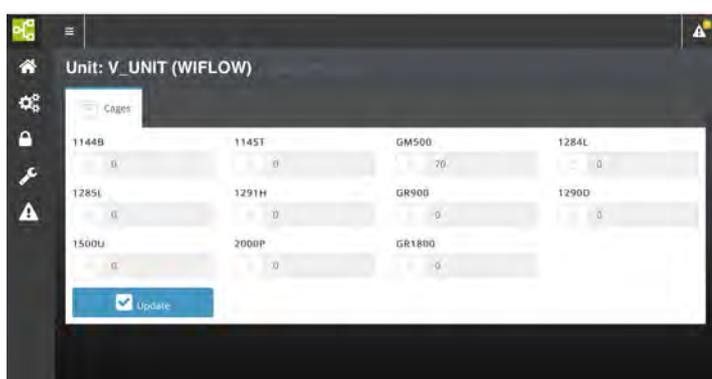
*SETTINGS CONFIRMATION (applicable to all settings)

Once settings have been carried out, the message SUCCESSFULLY APPLIED will be displayed.

If an error occurs and settings can not be carried out the following message will be displayed: ERROR DURING EXECUTION
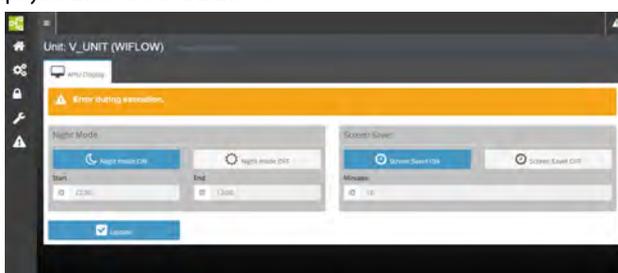
 If your settings require an airflow that exceeds the maximum flow rate of the system (200 m^3 on the SUPPLY UNIT and on the EXHAUST UNIT) the message
REQUIRED AIRFLOW OUT OF RANGE will be displayed to indicate the AIRFLOW overload.
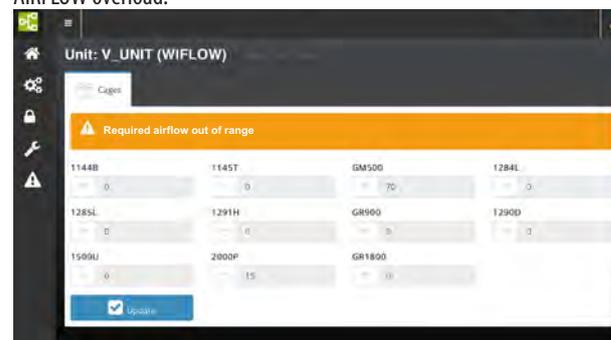
 If your settings require an airflow that is too low for the system the message REQUIRED AIRFLOW OUT OF RANGE will be displayed to indicate the AIRFLOW weak load.
The system will not carry on with the setting unless the parameters are changed.

8.3.2 ACH/PREVALENCE SETTING

- Tap ACH/PREVALENCE from the SETUP page.

TO WORK IN POSITIVE PRESSURE MODE:

1. Tap POSITIVE.
2. Enter the supply air changes per hour on the numerical keypad (Supply - Set Point).
3. Enter the percentage differential between supply and exhaust ACH on the numerical keypad (Exhaust - Differential).
4. Tap UPDATE to confirm

> **Suggested ACH setting for the machine optimal functioning in POSITIVE pressure mode:**
> - **75 ACH**
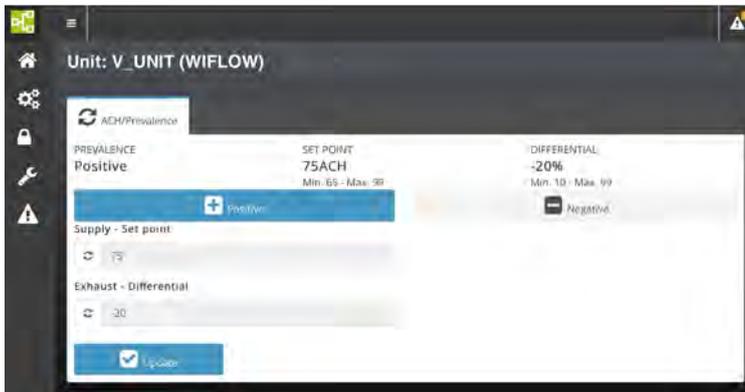> - **Percentage differential between supply and exhaust: -20%**
>
> **Suggested values may change according to the cages/racks connected to the unit or according to specific Research needs. Contact Tecniplast for further information.**

TO WORK IN NEGATIVE PRESSURE MODE:

1. Tap NEGATIVE.
2. Enter the exhaust air changes per hour on a numerical keypad (Exhaust - Set Point).
3. Enter the percentage differential between exhaust and supply ACH on the numerical keypad (Supply - Differential).
4. Tap UPDATE to confirm

> **Suggested ACH setting for the machine optimal functioning in NEGATIVE pressure mode:**
> - **75 ACH**
> - **Percentage differential between exhaust and supply: -20%**
>
> **Suggested values may change according to the cages/racks connected to the unit or according to specific Research needs. Contact Tecniplast for further information.**

If your settings require an airflow that exceeds the maximum flow rate of the system (200 m³ on the SUPPLY UNIT and on the EXHAUST UNIT) the message REQUIRED AIRFLOW OUT OF RANGE will be displayed to indicate the AIRFLOW overload.

If your settings require an airflow that is too low for the system the message REQUIRED AIRFLOW OUT OF RANGE will be displayed to indicate the AIRFLOW weak load.

8.3.3   DATE/TIME SETTING
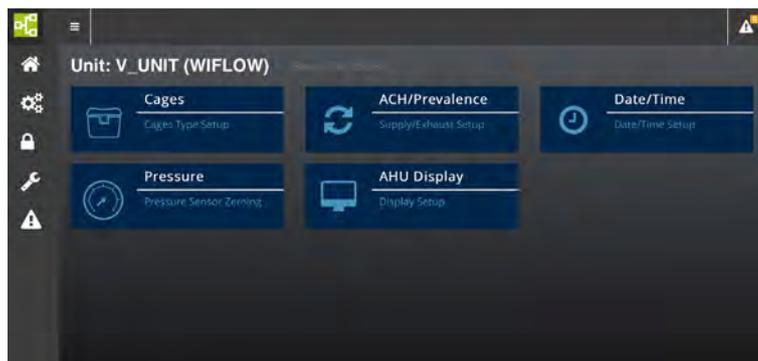
- Tap DATE/TIME from the SETUP page.

From this page it is possible to choose the date and time format.

Time:
Tap HH12 to enable the 00:00 AM – 11:59 AM, 12:00 PM – 11:59 PM time format.
Tap HH24 to enable the 00:00 – 23:59 time format.

Date:
Tap DDMM to enable the DD/MM/YY date format.
Tap MMDD to enable the MM/DD/YY date format.
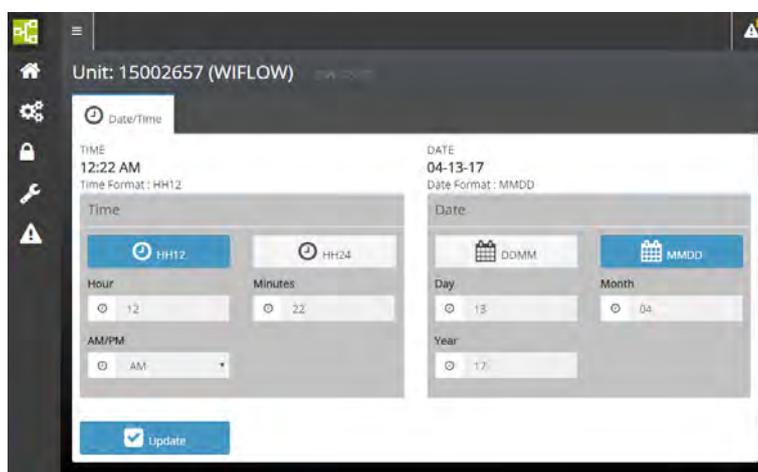
Tap the hour/minutes field and enter the current time. Select AM/PM in case the HH12 time format has been set.

Tap the day/month/year field and enter the current date.

Tap UPDATE to confirm settings.

8.3.4   PRESSURE ZEROING PAGE

When the optional pressure TEST CAGE is fitted to the rack, it might be necessary to calibrate (zero) the pressure reading.
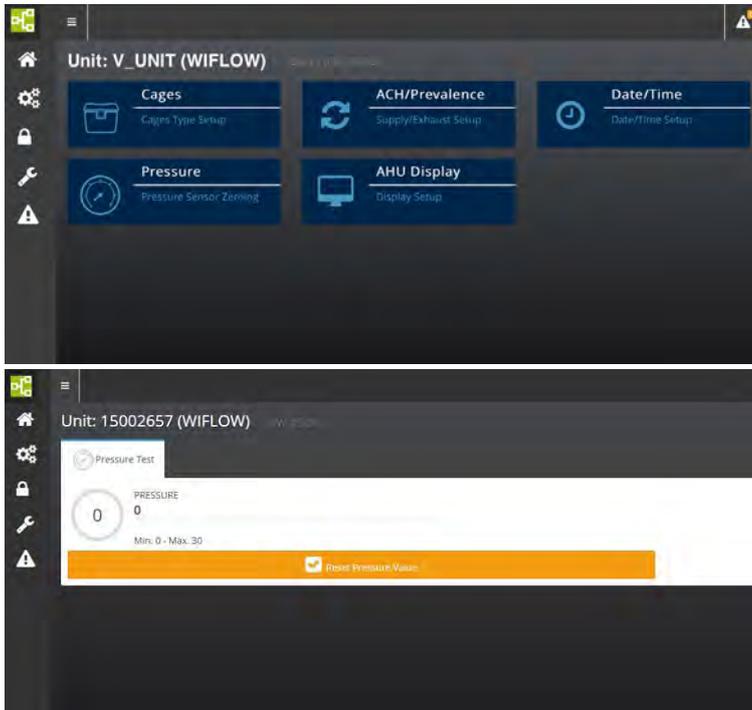
- Make sure the pressure test cage is properly connected.
- Tap PRESSURE from the SETUP page. Pressure zeroing page is displayed.
- Disconnect the pressure reader hose from the TEST CAGE.
- Tap RESET PRESSURE VALUE.
- Connect the TEST CAGE and put it back into position.

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8.3.5 NIGHT MODE AND SCREEN SAVER SETTING

- Tap AHU DISPLAY from the SETUP page.
- NIGHT MODE and SCREEN SAVER page is displayed.

NIGHT MODE SETTING

It is possible to set a time when the touchpad leds turn off (night mode) in the event that the night activity of the animals housed in the rooms where the units are installed is disturbed. The leds will automatically turn on at a pre-set time in the morning thus allowing the Operator to keep all parameters under control.

i If the machine display is in NIGHT MODE or SCREEN SAVER status, only the POWER ON/OFF led and the ALARM led (in case of triggered alarms) show. To go back to standard operating mode just tap the ONE 2 ONE/GUARDIAN touch button.

- Tap **NIGHT MODE ON**.
- Enter the night mode starting time (hh:mm) in the **START** numerical field.
- Enter the night mode ending time (hh:mm) in the **END** numerical field.
- Tap UPDATE to confirm settings.

i **TIME SETTING GOES FROM 00:00 TO 23:59. THE SYSTEM IS NOT ENABLED TO ACCEPT 24:00 AS A SETTING.**

SCREEN SAVER SETTING

- Tap **SCREEN SAVER ON** to enable the screensaver, **OFF** to disable it.
- Enter the timespan (minutes) after which the system leds turn off.
- Tap UPDATE to confirm settings.

i **THE SCREEN SAVER FUNCTION MAY BE ENABLED ONLY DURING THE NIGHT MODE. IN CASE THE SCREEN SAVER FUNCTION IS REQUIRED DURING DAY TIME, SET THE NIGHT MODE FROM 00:00 TO 23:59.**

8.4 SETTINGS PAGE

- Select SETTINGS 🔒 from the Home page.

- The system will ask to enter the user password.

- Enter **LEVEL 2** password on the numerical keypad to open the Super user settings page.

- Tap PASSWORD to change the default Password.
- Tap FILTERS to check the HEPA filters lifespan and to reset the filters residual lifetime after filter replacement.
- Tap METRIC SYSTEM to set the desired temperature metric system (°C or °F)
- Tap ALARM THRESHOLDS to set the minimum and maximum alarm thresholds.
- Tap H2O2 SANITIZATION to set the H2O2 cycle
- Tap LANGUAGE to set the desired language
- Tap WIFI ACCESSPOINT to change the default wireless nework SSID (Service Set Identifier)

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8.4.1 PASSWORD SETTING

- Tap PASSWORD from the SETTING page.

- Tap the password level you wish to change: USER or SUPERUSER and tap UPDATE to confirm.

- Enter the old password and confirm.

- Enter the new password and confirm.

- Enter the new password again and confirm.
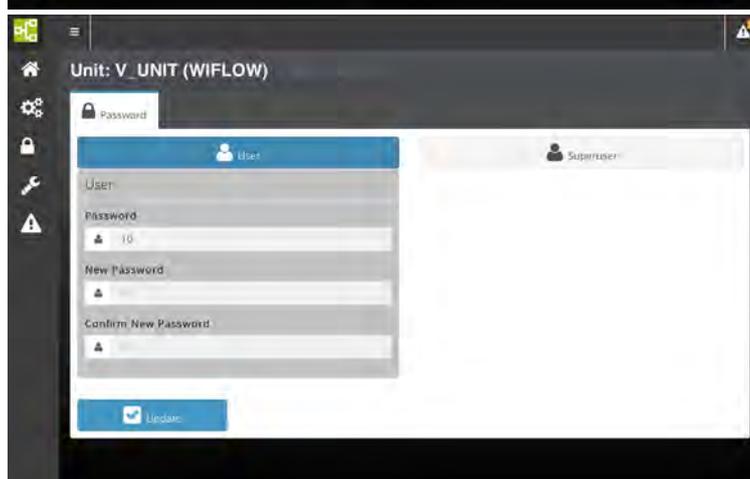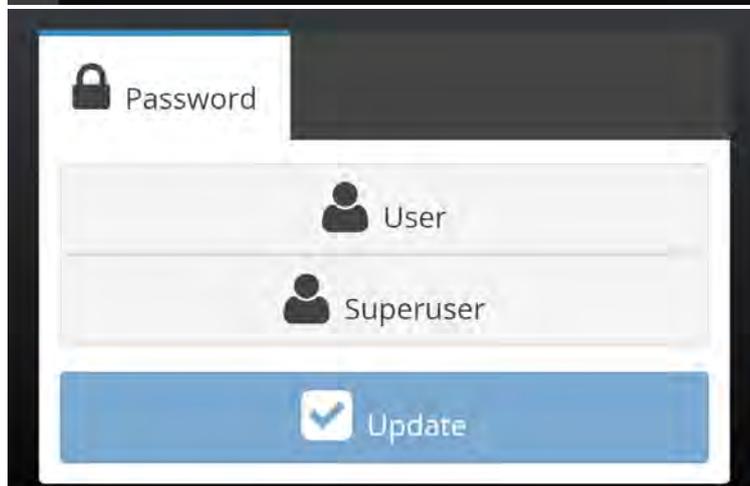
8.4.2   HEPA FILTERS MANAGEMENT
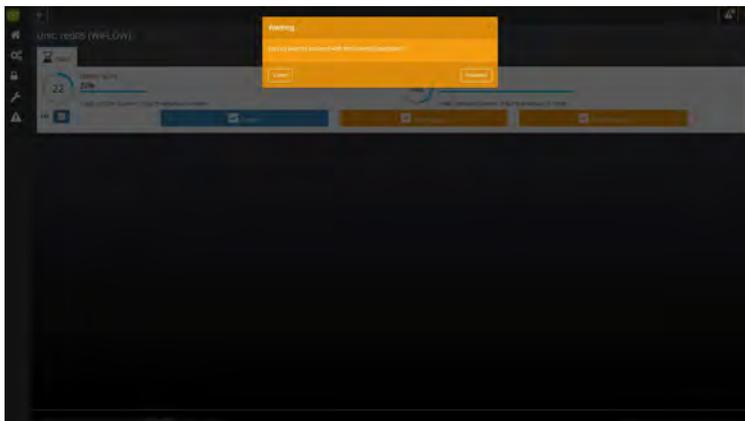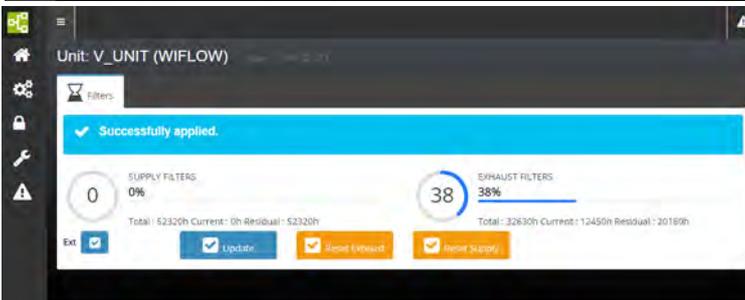
- Tap FILTERS from the SETTING page.

- The HEPA FILTERS management page is displayed. From this page it is possible to check the HEPA filter lifespan and to reset the filter residual lifetime after the HEPA filter has been replaced.

- To reset the counter, press **RESET SUPPLY** or **RESET EXHAUST**.

- Tap PROCEED to confirm the operation. The new filter residual lifetime is displayed (Residual).

- Flag **EXT** to enable the unit to send the alarm to the machine touchpad, to the ONE 2 ONE interface and to the (optional) alarm remote system.

If EXT is not flagged the system will only display the alarm on the touchscreen and log the message in the alarm log page. The ALARM LED on the machine touchpad will not show.

The Total life field displays the machine operating life.

720 hours before the date when one of the two HEPA filters is to be replaced, the home page displays a banner. Open the Service page to acknowledge which filter needs to be replaced.

8.4.3 TEMPERATURE METRIC SYSTEM SETTING

- Tap METRIC SYSTEM from the SETTING page.

- The TEMPERATURE METRIC SYSTEM SETTING PAGE is displayed.

- Tap the desired temperature metric system: International System of Units (°C) or Imperial System or British Imperial (°F).

- Tap UPDATE to confirm settings.
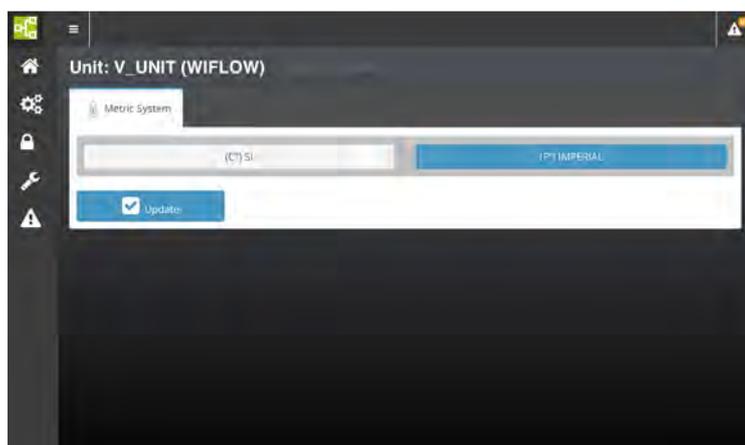
8.4.4 ALARM THRESHOLDS SETTING
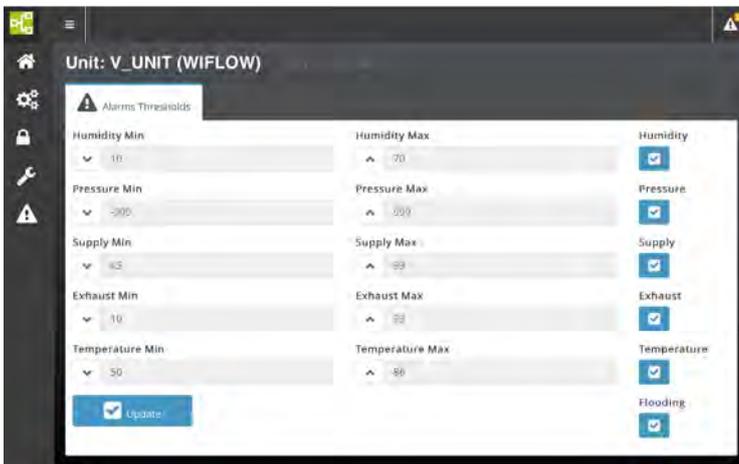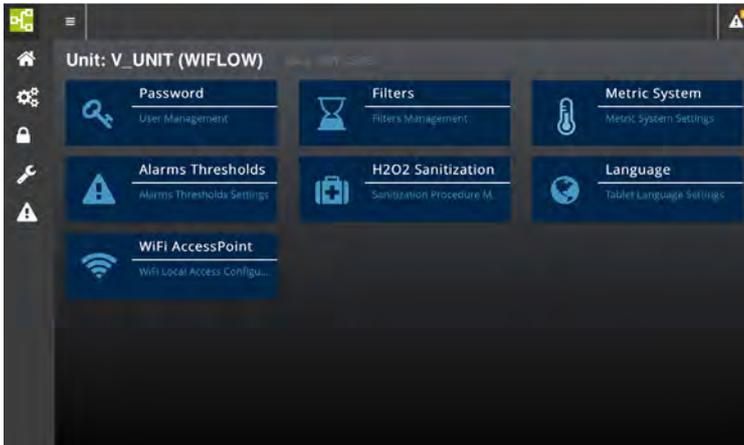
- Tap ALARMS THRESHOLDS from the SETTING page.

- The ALARMS THRESHOLDS SETTING PAGE is displayed. From this page it is possible to set the minimum and maximum alarm thresholds for SUPPLY AND EXHAUST AIR FLOW, HUMIDITY, PRESSURE and TEMPERATURE.

- To change the default alarm thresholds, tap the numerical field next to the value you wish to change and enter the new value from the input page.

- Flag the blue box next to each alarm to enable the unit to send the alarm to the machine touchpad, to the ONE 2 ONE interface and to the (optional) alarm remote system.

If EXT is not flagged the system will only display the alarm on the touchscreen and log the message in the alarm log page.

The ALARM LED on the machine touchpad will not show.

- Tap UPDATE to confirm settings.

The system has no control on TEMPERATURE and HUMIDITY levels inside the cage. It is simply set to monitor values and send an alarm whenever these values are lower or exceed the set ones.

8.4.5 AHU SETTING FOR HIGH LEVEL DISINFECTION WITH HYDROGEN PEROXIDE

The following settings are to be carried out whenever it is necessary to perform a high level disinfection cycle of the air handling unit using hydrogen peroxide.
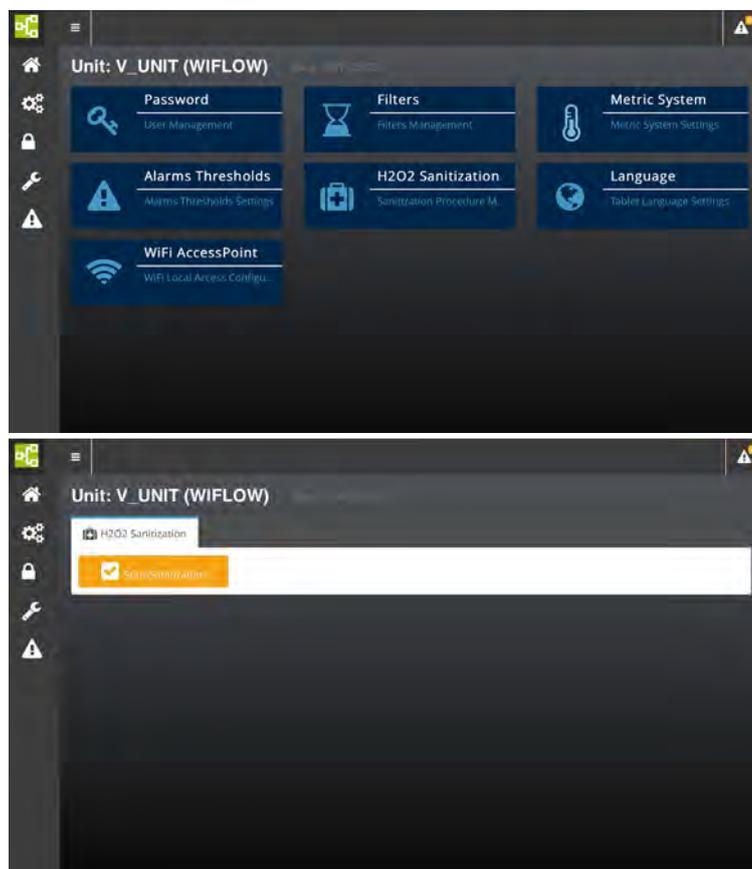
- Tap H2O2 SANITIZATION from the SETTING page.

- The H2O2 SANITIZATION page is displayed.

- Tap START SANITIZATION to setup the air handling unit for high level disinfection.

- The air handling unit will automatically set the supply and exhaust airflow values needed to carry out the disinfection cycle.

- As soon as the air handling unit has reached the pre-set airflow velocities on both the supply and exhaust modules it is possible to start the cycle.

- Follow the gas generator instruction manual to carry out the cycle.

- As soon as the cycle is over, switch off the unit and switch it on again to go back to the home page and the pre-set ACH.

8.4.6   LANGUAGE SETTING

- To change the language displayed by the system, tap LANGUAGE from the SETTING page.

- The LANGUAGE SETTING page is displayed.

- Tap the desired language.
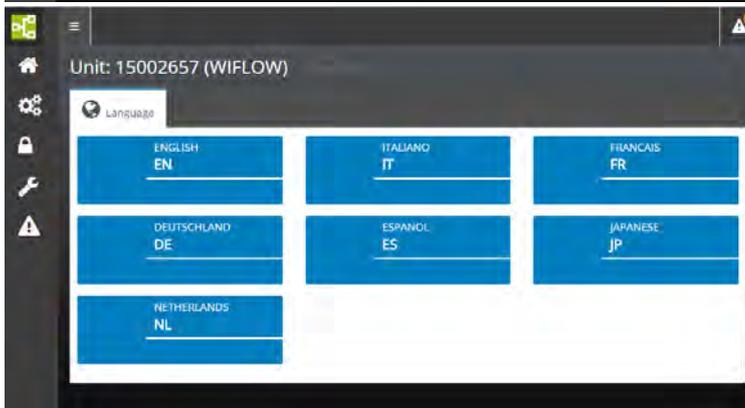
8.4.7 HOW TO CHANGE THE DEFAULT ONE 2 ONE WIRELESS NETWORK PARAMETERS

To change the deafult SSID carry out the following procedure:
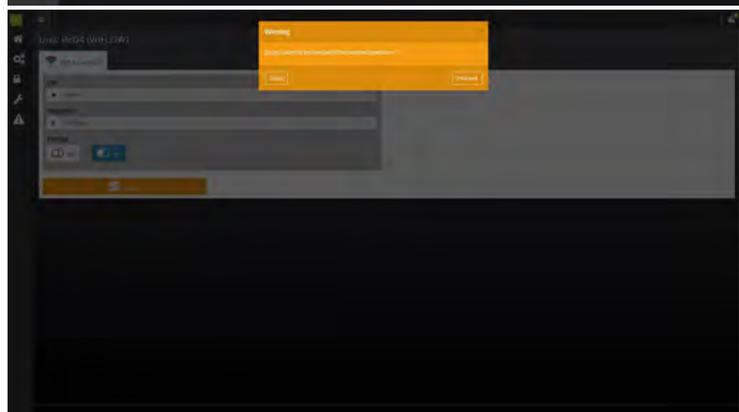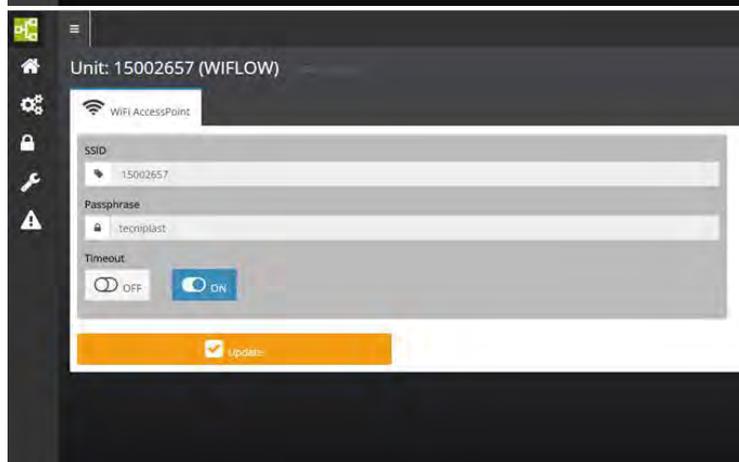
- Tap WiFi ACCESS POINT from the SETTING page.

- Enter the new SSID (Service Set IDentifier).

- If you want to set a password for the WiFi network, enter the new local WIFI PASSWORD.

- TIMEOUT:

  Select **ON** if you want the WiFi network to switch off automatically after 5 minutes.

  Select **OFF** if you do not want the WiFi netwotk to switch off automatically. In this case the WiFi will switch off after 5 minutes have elapsed without any user interaction with the network.

- Tap UPDATE to confirm settings.

- Tap PROCEED to confirm the operation.

8.5 SERVICE PAGE
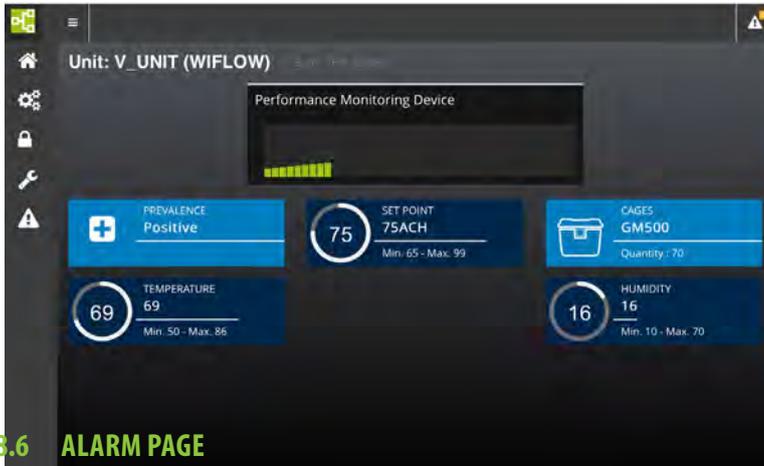
- Select SETTINGS 🔧 from the Home page.

- The system will ask to enter the SERVICE password.

- Access to SERVICE page is reserved to qualified and fully trained TP technicians.

8.6 ALARM PAGE

- Select ALARMS ⚠ from the Home page.

- A page with a list of all active alarms is displayed.

- Tap PREVIOUS/NEXT to scroll alarm pages.

ℹ️ Whenever the system triggers an alarm, the alarm icon on the page top shows that a new alarm has been triggered. Tap the alarm icon to display the current alarm. An alarm notification is displayed also on the Home page.

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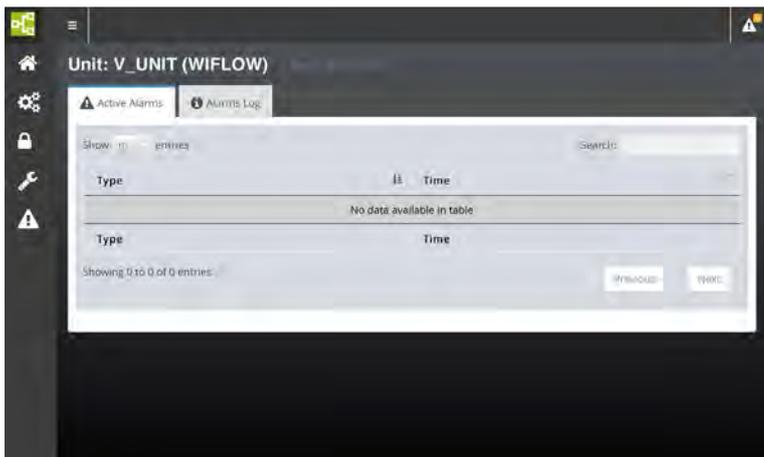
8.6.1 ALARM REPORT PAGES

- Tap ALARMS LOG from the ALARM PAGE to open the ALARM REPORT page.

The screen displays the list of all alarms with the date and time when the alarm occurred and when it was closed. Tap PREVIOUS/NEXT to scroll alarm pages.
See the troubleshooting for a complete list of all alarm and warning messages displayed by the system.

9. ONE2ONE SOFTWARE MANUAL - GATEWAY SYSTEM FOR ISO

In case of peculiar configuration, such as those with convoluted/long connections, non-symmetrical or non-in-line layouts, an in-field test with the service monitor cage (Performance Qualification) should be carried out in order to establish and validate the best settings for that particular configuration.

9.1 PREFACE

The ONE2ONE Software control system allows to access any function and improves and simplifies all setting procedures enhancing the flexibility of the system.
Although default values are suggested, a simple procedure allows variable customisation to satisfy any specific needs.
A double password level defines the boundary between operators, who can set the air handling unit operating mode and supervisors who are entitled to carry out critical settings for the system.
The software has been designed to be user friendly and most functions are represented by visual symbols, thus making it comprehensible to any user, in spite of the nationality and spoken language.

9.2 HOME PAGE
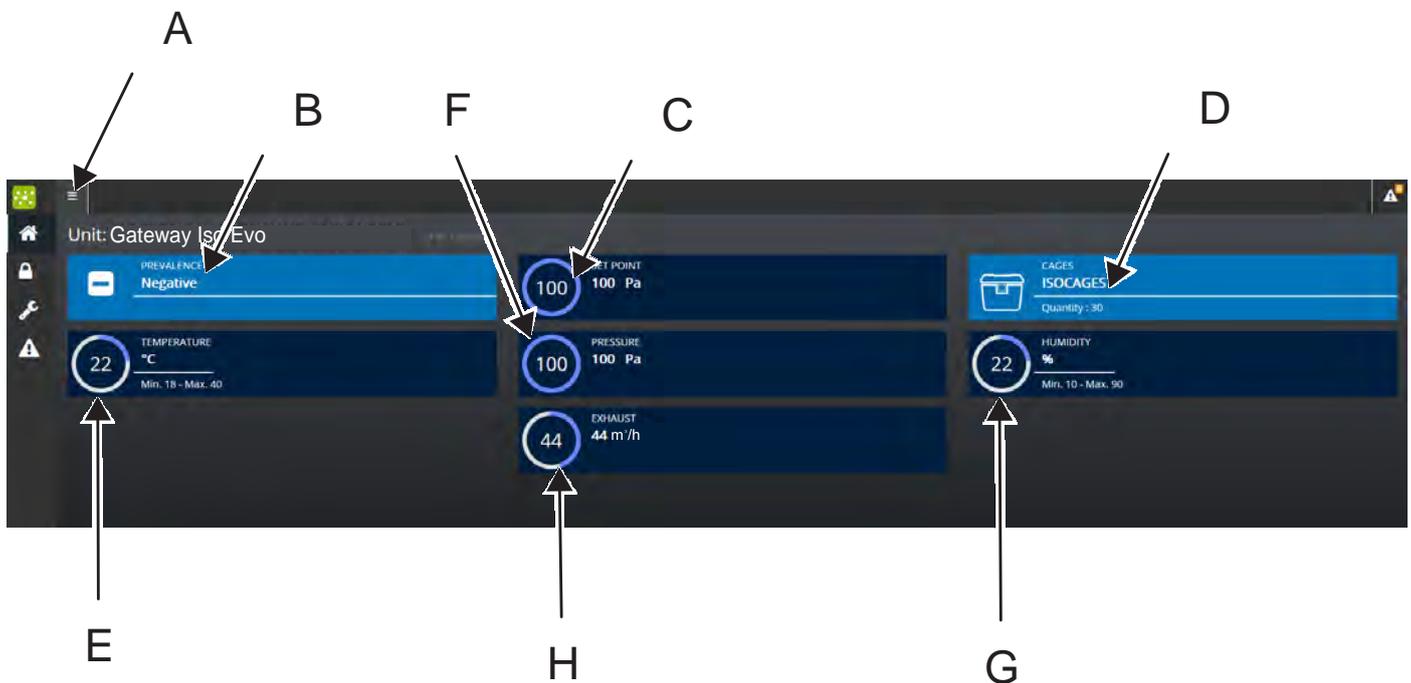
The Home Page displays any relevant information on the air handling unit running conditions in real time.

A. ☰ ACCESS KEY TO THE HOME PAGE MENU which allows to monitor and control the air handling unit:
   - 🔒 SETTINGS PAGE
   - 🔧 SERVICE PAGE
   - ⚠ ALARM PAGE

B. PRESSURE OPERATING MODE (READ ONLY - Please refer to the Guardian User Manual to carry out the current setting)

C. PRESSURE SET POINT (Pa) (READ ONLY - Please refer to the Guardian User Manual to carry out the current setting)

D. TYPE AND NUMBER OF CAGES CONNECTED TO THE UNIT (READ ONLY - Please refer to the Guardian User Manual to carry out the current setting)

E. TEMPERATURE + MINIMUM/MAXIMUM THRESHOLDS (READ ONLY - Please refer to the Guardian User Manual to carry out the current setting)

F. CURRENT PRESSURE (Pa) (READ ONLY)

G. HUMIDITY + MINIMUM/MAXIMUM THRESHOLDS (READ ONLY - Please refer to the Guardian User Manual to carry out the current setting)

H. EXHAUST AIR FLOW (READ ONLY)

   ℹ **The Home page displays the unit parameters corresponding to the moment when the page was loaded. In case the Home page displays exhaust air flow values (m³/h)different from the expected ones or does not show active alarms, it might be necessary to reload the page.**

9.3   SETTINGS PAGE
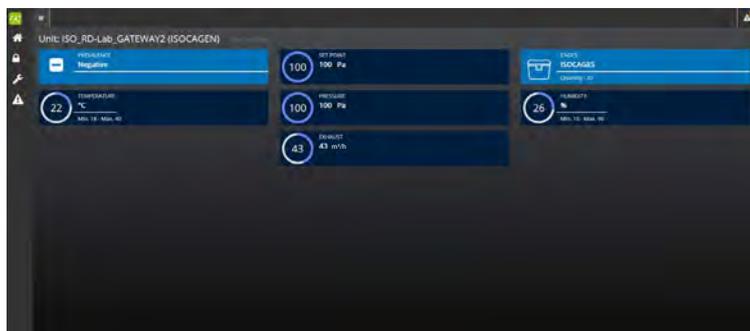
- Select SETTINGS ![lock] from the Home page.

- The system will ask to enter the user password.

- Enter **LEVEL 2** password on the numerical keypad to open the Super user settings page.

- Tap LANGUAGE to set the desired language
- Tap WIFI ACCESSPOINT to change the default wireless nework SSID (Service Set Identifier)

9.3.1   LANGUAGE SETTING

- To change the language displayed by the system, tap LANGUAGE from the SETTING page.

- The LANGUAGE SETTING page is displayed.

- Tap the desired language.

To change the deafult SSID carry out the following procedure:

- Tap WiFi ACCESS POINT from the SETTING page.

- Enter the new SSID (Service Set IDentifier).

- If you want to set a password for the WiFi network, enter the new local WIFI PASSWORD.

- TIMEOUT:

  Select **ON** if you want the WiFi network to switch off automatically after 5 minutes.

  Select **OFF** if you do not want the WiFi netwotk to switch off automatically. In this case the WiFi will switch off after 5 minutes have elapsed without any user interaction with the network.

- Tap UPDATE to confirm settings.

- Tap PROCEED to confirm the operation.

9.4   SERVICE PAGE

- Select SETTINGS 🔧 from the Home page.

- The system will ask to enter the SERVICE password.

- Access to SERVICE page is reserved to qualified and fully trained TP technicians.

9.5   ALARM PAGE

- Select ALARMS ⚠ from the Home page.

- A page with a list of all active alarms is displayed.

- Tap PREVIOUS/NEXT to scroll alarm pages.
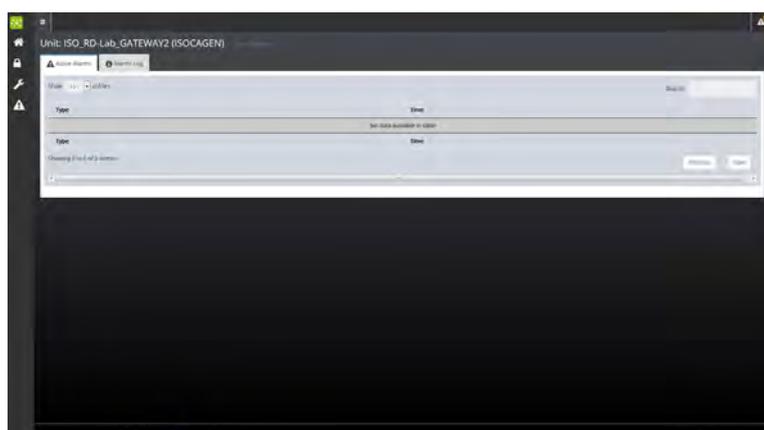
ℹ Whenever the system triggers an alarm, the alarm icon on the page top shows that a new alarm has been triggered. Tap the alarm icon to display the current alarm. An alarm notification is displayed also on the Home page.

9.5.1 ALARM REPORT PAGES

- Tap ALARMS LOG from the ALARM PAGE to open the ALARM REPORT page.

The screen displays the list of all alarms with the date and time when the alarm occurred and when it was closed. Tap PREVIOUS/NEXT to scroll alarm pages.
See the troubleshooting for a complete list of all alarm and warning messages displayed by the system.

10. MAINTENANCE PROCEDURES

10.1 GLOSSARY OF SYMBOLS USED IN THE PROCEDURES

Symbols are used throughout the following paragraphs to draw attention on critical operations, tools and equipment needed to carry out the procedure, personal protective equipment etc.:

ELECTRICAL HAZARD

GENERAL DANGER/WARNING/CAUTION

PERSONAL PROTECTIVE EQUIPMENT REQUIRED TO CARRY OUT THE MAINTENANCE PROCEDURE

TOOLS AND EQUIPMENT NEEDED TO CARRY OUT THE PROCEDURE

REFERENCES

10.2 HOW TO CLEAN THE UNIT

	One anti-static detergent suitable for plastic surfaces (ABS + polycarbonate) Demineralised water 1 refillable pump atomizer for water 1 refillable pump atomizer for detergent 1 refillable pump atomizer for demineralised water Anti-static cloth wipers (eg. soft, microfiber cleaning cloth)
	The following procedure may be safely performed by a trained operator.
	Laboratory SOPs Laws and regulations on personal health and safety in force in the country where the machine is installed. Detergent Technical Specifications
	DO NOT USE LIQUID OR STEAM JETS NEAR ELECTRICAL COMPONENTS.
	Disconnect the unit from the mains before cleaning. **DO NOT use ethyl alcohol, caustic soda, bleach, ammonia to clean the master plastic surfaces.** **DO NOT use alkaline detergents.** DO NOT use abrasive cleaners, scouring pads or strong oxidizing agents. Read the detergent technical specifications to settle the most appropriate contact time. Do not flush the machinery and electrical components with water! This may cause irreversible damage to the machinery and its components. DO NOT use abrasive cloths, paper towels, or tissue paper to clean the touchscreen. Keep the device dry. If it gets wet, immediately unplug it and allow it to dry. The GATEWAY unit is not autoclavable.
	Wear adequate personal protective equipment in compliance with your Laboratory SOPs and with laws and regulations in force in the country where the machine is installed in terms of personal health and protection. WEAR HEAVY DUTY PVC OR RUBBER GLOVES

PLASTIC SURFACES:

1. Disconnect the Gateway from the power supply.

2. Take a wiper, spray it with warm water and clean the Gateway plastic cover.

3. Take the specific anti-static detergent solution atomiser, spray it on an antistatic soft cloth wiper and clean the Gateway plastic cover.

4. Leave some time for the detergent to carry out its chemical action (refer to the detergent technical specifications to settle the most appropriate contact time).

5. Using a wiper sprayed with demineralised water rinse the Gateway and dry it.

6. Wipe the control panel with a dry soft cloth.

11. TROUBLESHOOTING

FOR ANY ANOMALIES NOT LISTED IN THE FOLLOWING PAGES, CONTACT TECNIPLAST

All maintenance actions on this machine must be performed by a competent, qualified and fully trained technician. Tecniplast provides specific courses to train qualified personnel for the maintenance required for this machine. All the qualified personnel is identifiable by a "Service Qualification Certificate" issued by Tecniplast.

Tecniplast disclaims all responsibility in case the maintenance actions are performed by not qualified personnel.

As per the "Standard Terms e Conditions", in order for the manufacturer's warranty to remain valid for the full period, a routine maintenance must be performed by competent, qualified and fully trained personnel at the recommended intervals.

11.1 PRECAUTIONS

When servicing the equipment, the Service Technician must display warning signs which clearly indicate that the machine is being serviced.

Service Technicians must follow all safety measures and precautions specified for personal health and safety, in particular apparel must comply with the safety requirements in force in the country in which the machine is installed.

Keep unauthorised people away from the operating area and the equipment when servicing the equipment.

11.2 ALARMS RAISED BY THE SYSTEM - GATEWAY SYSTEM FOR AHU

Whenever an alarm is triggered, safety conditions are no longer guaranteed.

Refer to the Air Handling Unit User Manual for further details on raised alarms and solutions.

CODE N.	ALARM MESSAGE	CAUSE AND SOLUTION
1	**MIN. SUPPLY FLOW** **Supply flow does not reach the minimum set threshold.**	Check supply air inlet is not obstructed Check prefilter is not clogged Check HEPA filter is not clogged. Call Tecniplast Authorised Service Technician.
2	**MAX. SUPPLY FLOW** **Supply flow exceeds the maximum set threshold.**	Check all openings are capped. Call Tecniplast Authorised Service Technician.
3	**MIN. EXHAUST FLOW** **Exhaust flow does not reach the minimum set threshold.**	Check Exhaust air outlet is not obstructed Check prefilter is not clogged. Check HEPA filter is not clogged. Call Tecniplast Authorised Service Technician.
4	**MAX. EXHAUST FLOW** **Exhaust flow exceeds the maximum set threshold.**	Check all openings are capped. If the case, check that the connection between the exhaust air release and the centralised building exhaust system is not airtight. Call Tecniplast Authorised Service Technician.
5	**MIN. PRESSURE ALARM** *i* **This section applies only when the optional pressure check is fitted**	Check minimum pressure alarm threshold setting. Check that the Supply Unit air inlet is not closed Check that he clamps of the TEST CAGE are fastened. Check whether an extraneous item has been trapped between the TEST CAGE and its top. Check that the TEST CAGE is in its position. Check that the pressure reader hose is properly connected. Calibrate pressure reading.
6	**MAX.PRESSURE ALARM** **Pressure exceeds the maximum threshold set in the SET ALARMS page**	Check maximum pressure alarm threshold setting Check air outlet of the EXHAUST UNIT is open.
7	**MIN. TEMPERATURE** **Temperature does not reach the minimum threshold**	Check environment temperature settings. Call Tecniplast Authorised Service Technician.
8	**MAX. TEMPERATURE** **Temperature exceeds the maximum threshold**	
9	**MIN. RH%** **Humidity does not reach the minimum threshold**	Check environment humidity settings. Call Tecniplast Authorised Service Technician.
10	**MAX. RH%** **Humidity exceeds the maximum threshold**	
11	**REPLACE SUPPLY HEPA** **Supply HEPA has reached expiry date and must be replaced**	Replace Supply HEPA filter
12	**REPLACE EXHAUST HEPA** **Exhaust HEPA has reached expiry date and must be replaced**	Replace Exhaust HEPA filter
13	**SUPPLY AIR FLOW ALARM** **Supply air flow does not reach the target value set in the ACH SET page**	Check supply air inlet is not obstructed Check prefilter is not clogged Check HEPA filter is not clogged. Call Tecniplast Authorised Service Tecnician.
14	**EXHAUST AIR FLOW ALARM** **Exhaust air flow does not reach the target value set in the ACH SET page**	Check Exhaust air outlet is not obstructed Check prefilter is not clogged. Check HEPA filter is not clogged. Call Techniplast Authorised Service Technician.
20	**HARDWARE FAULT**	Call Techniplast Authorised Service Technician.

CODE N.	ALARM MESSAGE	CAUSE AND SOLUTION
16	**FLOODING** **The LDS sensor has detected a flooding inside the cage.**	Gain access to the LDS Brain software and check which cage/s has raised the alarm. Check if there is any water inside the cage. Call Tecniplast Authorised Service Technician.

11.3 WARNING MESSAGES - GATEWAY SYSTEM FOR AHU

Warning messages are displayed in the alarm page but are not recorded in the alarm report page.

MESSAGE	CAUSE	SOLUTION
SUPPLY HEPA WARNING **EXHAUST HEPA WARNING**	30 days before the date when one of the two HEPA filters is to be replaced, the home page displays a blinking red logo corresponding to the expiring filter and the alarm page shows a warning message: SUPPLY HEPA WARNING or EXHAUST HEPA WARNING. If HEPA filters are not replaced after the expiry date, the system will trigger an alarm and the screen will display the alarm mode page.	Get in touch with the authorised service technician and make arrangements to replace the filter. Keep the filter lifespan monitored in order to replace it before it expires.
CAGES UNBALANCED ⚠ Cages Unbalanced	This banner will appear on the screen to warn of air change differences between larger and smaller cages that could arise with such a setting.	It is advisable to change cage configuration so as to make the air distribution inside cages uniform.
AIRFLOW OVERLOAD ⚠ Required airflow out of range	Whenever the user sets a volume that exceeds the maximum flow rate of the system (200 m^3 on the SUPPLY UNIT and on the EXHAUST UNIT), the banner REQUIRED AIRFLOW OUT OF RANGE will be displayed, to warn the user that the system will not carry on with the setting unless the parameters are changed to a suitable value.	Decrease air volume setting.
AIRFLOW WEAK LOAD ⚠ Required airflow out of range	Whenever the user sets a number of cages that is too low for the system to handle, the banner REQUIRED AIRFLOW OUT OF RANGE will be displayed to warn the user that the system will not carry on with the setting unless the parameters are changed to a suitable value.	Increase number of set cages.

11.4   ALARMS RAISED BY THE SYSTEM - GATEWAY SYSTEM FOR ISO

⚠️ **Whenever an alarm is triggered, safety conditions are no longer guaranteed.**

Refer to the Air Handling Unit User Manual for further details on raised alarms and solutions.

CODE N.	ALARM MESSAGE	CAUSE AND SOLUTION
1	MIN PRESSURE	Pressure does not reach the minimum set threshold. The supply air inlet is clogged.
2	MAX PRESSURE	Pressure inside cages exceeds the maximum set threshold. The exhaust air outlet is closed The Control Cage is not into its position. The clamps of the control cage are not fastened.
3	AIRFLOW	The airflow rate does not reach the minimum set. The supply HEPA filter is clogged. The exhaust HEPA filter is clogged. The cages HEPA filter is clogged The supply pre-filter is clogged. The exhaust pre-filter is clogged. Either or both fans are faulty.
4	SUPPLY HEPA	The set life span of the Supply HEPA filter has expired
5	EXHAUST HEPA	The set life span of the Exhaust HEPA filter has expired
6	UPS BATTERY LOW	The UPS battery level is lower than the minimum set
7	UPS FAULT	The UPS is faulty
8	MIN. TEMPERATURE	Temperature does not reach the minimum threshold Check environment temperature settings Call Tecniplast Authorised Service Technician.
9	MAX. TEMPERATURE	Temperature exceeds the maximum threshold Check environment temperature settings Call Tecniplast Authorised Service Technician.
10	MIN. RH%	Check environment humidity settings Call Tecniplast Authorised Service Technician
11	MAX. RH%	

11.5   WARNING MESSAGES - GATEWAY SYSTEM FOR ISO

ℹ️ **Warning messages are displayed in the alarm page but are not recorded in the alarm report page.**

MESSAGE	CAUSE	SOLUTION
SUPPLY HEPA WARNING EXHAUST HEPA WARNING	30 days before the date when one of the two HEPA filters is to be replaced, the home page displays a blinking red logo corresponding to the expiring filter and the alarm page shows a warning message: SUPPLY HEPA WARNING or EXHAUST HEPA WARNING If HEPA filters are not replaced after the expiry date, the system will trigger an alarm and the screen will display the alarm mode page.	Get in touch with the authorised service technician and make arrangements to replace the filter. Keep the filter lifespan monitored in order to replace it before it expires.

TECNIPLAST
innovation through passion

TECHNICAL SPECIFICATIONS

GATEWAY
THE WAY TO REMOTE CONTROL

TECNIPLAST

The following Technical Data refer to standard unit and are to be considered indicative.
TECNIPLAST reserves the right to modify the specifications to improve the product at any time.

I   DIMENSIONS AND WEIGHT

W x D x H	123 x 139 x 141 mm
NET WEIGHT	500 g

II   POWER SUPPLY AND UTILITIES

VOLTAGE		
230V - 50/60Hz	MAX LINE POWER ABSORPTION	< 180 W
115V - 50/60Hz	MAX LINE POWER ABSORPTION	< 180 W
100V - 50/60Hz	MAX LINE POWER ABSORPTION	< 180 W
ETHERNET CABLE RJ45 MAXIMUM LENGTH		3m

III   OPERATING ENVIRONMENTAL REQUIREMENTS

ALTITUDE	Up to 2000m
OPERATING TEMPERATURE	5°C to 40°C
HUMIDITY	80% at 31°C decreasing linearly to 50% relative humidity at 40°C.
POLLUTION DEGREE	II
OVER VOLTAGE CATEGORY II	As per IEC60364-4-443

IV   NETWORK SPECIFICATIONS

ONE 2 ONE WIRELESS NETWORK	
WIFI NETWORK STANDARD	802.11 g - 2,4 GHz
WIFI PROTECTION	WPA, WPA2 (optional)
PORTABLE DEVICE REQUIREMENT	Access to web browser. The unit has been validated with the most common portable devices; the basic requirement is html 5
GUARDIAN WIRELESS NETWORK	
NETWORK INFRASTRUCTURE	Good WIFI coverage (802.11 g - 2,4 GHz) or Ethernet socket
PORTABLE DEVICE REQUIREMENT	Access to web browser

V   TECHNICAL SPECS

COVER MATERIAL	ABS + POLYCARBONATE

- USB port (for buoy connection only)
- MicroSD (for servicing purposes)
- Serial Data Port
- Gigabit Ethernet Connector
- Compatible with 802.11g WiFi @ 2.4GHz
- Integrated access point 802.11g WiFi @ 2.4GHz

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VI   COMPLIANCE TO STANDARDS AND DIRECTIVES

2014/35/EU	Low Voltage Directive
2014/53/EU	Radio Equipment Directive (RED)
IEC 62368-1	Audio/video, information and communication technology equipment - Part 1: Safety requirements
2014/30/EU	Electromagnetic Compatibility Equipment Directive EN 61326-1:2013 ETSI EN 301 489-1 V1.9.2:2011 ETSI EN 301 489-17 V2.2.1:2012 EN 62311:2008 FCC 47 Cft. Part 15 B:2010, FCC 47 Cft. Part 15 B clause 15.107: conducted emissions, FCC 47 Cft. Part 15 B clause 15.109: radiated emissions

This device complies with **Part 15 of the FCC Rules.** Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined b turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measure:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The device complies with **Industry Canada licence-exempt RSS standard(s)**.

Operation is subject to the following two conditions:

(1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

VII   PACKAGING DETAILS

PACKAGING DETAILS	TYPE	CARTON BOX
	QUANTITY	1
	WIDTH	260 mm
	DEPTH	170 mm
	HEIGHT	180 mm
	WEIGHT	0,50 kg

TECNIPLAST