



ARIOSADOT

DUAL FLOW WALL-MOUNTED HRV UNIT



USE AND INSTALLATION MANUAL

			
DICHIARAZIONE CE DI CONFORMITÀ IL FABBRICANTE VALSIR S.p.A. Società a Socio Unico		EC DECLARATION OF CONFORMITY THE MANUFACTURER	
Azienda / Company Località Merlaro, 2		25078	
Indirizzio / Address Vestone		BS Provincia / Province Italy / Italy Stato / State	
DICHIARA SOTTO LA PROPRIA ESCLUSIVA RESPONSABILITÀ CHE LE MACCHINE		DECLARES UNDER ITS OWN RESPONSIBILITY THAT THE MACHINERY	
Unità di recupero calore / Heat recovery unit		Serie / Series	
Descrizione / Description ARIOSOTA DOT ARIOSOTA DOT E ARIOSOTA DOT HP		ARIOSOTA DOT ARIOSOTA DOT E ARIOSOTA DOT HP	
Modelli / Models Ariosa DOT e ARIOSOTA DOT E: unità di ventilazione meccanica controllata per installazione residenziale dedicate ad installazione a singolo ambiente con recuperatore di calore sensibile (ARIOSOTA DOT) e entalpico (ARIOSOTA DOT E) Ariosa DOT HP: unità di ventilazione meccanica controllata per installazione residenziale dedicate ad installazione a singolo ambiente con recuperatore di calore sensibile dotata di circuito frigorifero con gas naturale R290 per la deumidificazione dell'aria in ingresso al fabbricato.		Ariosa DOT and ARIOSOTA DOT E: heat recovery ventilation units for residential installation dedicated to single room installation with sensible heat exchanger (ARIOSOTA DOT) and enthalpic heat exchanger (ARIOSOTA DOT E) Ariosa DOT HP: heat recovery ventilation unit for residential installation dedicated to single room installation with sensitive heat recuperator equipped with a refrigeration circuit with R290 natural gas for the dehumidification of the intake air.	
Funzione Ventilazione forzata a doppio flusso con recuperatore di calore statico a flussi incrociati e filtrazione.		Function Double flow mechanical ventilation with static, cross flow heat exchanger and filtration.	
Denominazione commerciale SONO CONFORMI ALLE SEGUENTI DIRETTIVE: Direttiva 2006/42/CE del Parlamento Europeo e del Consiglio del 17 maggio 2006 relativa alle macchine; Direttiva 2014/30/UE del Parlamento Europeo e del Consiglio del 26 febbraio 2014 concernente il riavvicinamento delle legislazioni degli Stati membri relative alla compatibilità elettromagnetica; Direttiva 2014/35/UE del Parlamento Europeo e del Consiglio del 26 febbraio 2014 concernente il riavvicinamento delle legislazioni degli Stati membri relative al materiale elettrico destinato ad essere adoperato entro taluni limiti di tensione; Direttiva 2011/65/UE del Parlamento Europeo e del Consiglio del 8 giugno 2011, sulla restrizione dell'uso di sostanze pericolose nelle apparecchiature elettriche ed elettroniche (RoHS 2); Direttiva 2012/19/UE del Parlamento Europeo e del Consiglio del 4 luglio 2012 sui rifiuti di apparecchiature elettriche ed elettroniche (RAEE); Regolamenti della commissione (UE) N. 1253/2014 e 1254/2014 di attuazione delle Direttive 2009/125/CE e 2010/30/UE riguardo alle specifiche per la progettazione ecocompatibile delle unità di ventilazione residenziali;		Commercial name ARE IN COMPLIANCE WITH THE FOLLOWING DIRECTIVES Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery; Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the approximation of the laws of the Member States relating to electromagnetic compatibility; Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits; Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of hazardous substances in electrical and electronic equipment (RoHS 2); Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE); Commission Regulation (EU) 1253/2014 and 1254/2014 implementing Directive 2009/125/EC and 2010/30/EU regarding the specific eco-design of the residential ventilation units;	
La presente perde ogni validità in caso di uso improprio o di eventuali modifiche, da noi non autorizzate, apportate alle suddette macchine. È fatto divieto di mettere in servizio le unità oggetto di questa dichiarazione, prima che la macchina o l'impianto in cui saranno incorporate o assemblate siano conformi alle disposizioni della Direttiva Macchine 2006/42/CE.		In case of improper use or unauthorized modification of the machinery equipment, this document will lose its validity. It is forbidden to put the unit that is object of this declaration in service before the machine or the plant in which the machine will operate is in compliance with the dispositions of Machinery Directive 2006/42/EEC and following modifications	
MODELLO / MODEL MATRICOLA / SERIAL NUMBER DATA COLLAUDO / TESTING DATE		Vestone, 30 Agosto 2024 Vestone, 30 th August 2024 L'AMMINISTRATORE UNICO THE GENERAL MANAGER  PIERANDREINO NIBOLI	
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Dichiarazione CE di conformità
EC Declaration of Conformity

Serie / Series ARIOSOTA DOT

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1. GENERAL INFORMATION FOR USE

1.1 Welcome to the world of Valsir Heat Recovery Ventilation System!

From now on, this system will take care of you and your family through the constant exchange of clean air, thanks to a filtration system that prevents pollen, smog and dust from entering. Your new system will not only improve air quality, it will also save you money by recovering much of the heat that would be lost outside by opening windows. In addition, the HRV will help protect the value of your property: in addition to a better energy rating, rooms will be less prone to the problems that mould and moisture cause in the long run.

1.1.1 How best to use the HRV system?

To make the most of the comfort you can get with your new system, just follow a few simple but very important rules:



Remember to keep the system running at all times so that the air is well oxygenated and pollutants and moisture are constantly removed.



Keep windows and doors closed as much as possible. The HRV system is designed to ensure adequate air exchange: open windows or doors, on the other hand, introduce moisture or pollutants that take hours to be disposed of.



Perform periodic maintenance of the system. For the system to function at its best, filters must be cleaned or replaced every 3 to 6 months.

2. INTRODUCTION, WARNINGS AND SAFETY INSTRUCTIONS

Read this manual carefully before use.

This document will allow you to install and use the Ariosa DOT unit safely and efficiently. In this document, Ariosa DOT will be referred to as "the unit". The unit is subject to continuous development and improvement and may therefore show slight changes from the descriptions given here. For this reason, the manufacturer reserves the right to make any changes without prior notice. The machine has been designed and manufactured in accordance with current standards and is therefore equipped with prevention and protection systems for mechanical and electrical risks that may affect the operator or user. However, there are residual risks that may arise during transport, installation, use or maintenance. These risks can be reduced by scrupulously following the instructions in the manual, using appropriate personal protective equipment and complying with current safety regulations. The most important instructions concerning safety and the correct use of the machine are accompanied by symbols to make them more obvious:



WARNING



HAZARD



**DANGER OF
ELECTRIC SHOCK**



**CAUTION:
AUTHORISED
PERSONNEL ONLY**



PROHIBITION



HEAT HAZARD



**FLAMMABILITY
HAZARD**

2.1 Warnings and general rules

This instruction manual is an integral part of the unit. It must therefore be kept with care and must ALWAYS accompany the unit even if it is passed on to another owner or user, or transferred to another system. If it is damaged or lost, request another copy from the manufacturer. The installation and maintenance of these types of units can be dangerous, as they contain pressurised refrigerant gas (Ariosa DOT HP model) and live electrical components. For this reason, installation, initial start-up, and all subsequent maintenance must only be carried out by authorised and qualified personnel. In accordance with the indications contained in this booklet. Do not modify or tamper with the appliance as this can lead to dangerous situations and the manufacturer of the appliance will not be liable for any loss or damage. After unpacking, ensure the content is complete and not damaged. If this is not the case, please contact the Company that sold you the unit. The installation of the units must be carried out by a qualified company which, on completion of the work, will issue a declaration of conformity of the installation certifying that it has been carried out in a workmanlike manner, or rather in compliance with the Standards in force and the instructions contained in this manual. Any contractual or extra-contractual liability of the manufacturer for loss or damage caused to persons, animals or property by installation, adjustment and maintenance errors or improper use is excluded. The dissemination of this document is restricted by law, and it therefore may not be reproduced or transmitted to any third parties without the express authorisation of Valsir S.p.A.

This manual must be read carefully before performing any operations (installation, maintenance, or use), and the indications contained in the individual chapters must always be followed scrupulously.



ATTENTION!

The Ariosa DOT and Ariosa DOT HP units must only be switched on after they have been connected and mounted on the wall.



ATTENTION!

The unit must always have its filters installed during operation.



ATTENTION!

Some of the machine's internal components have high operating temperatures.

Use caution when performing any operations on the machine, and always give its parts sufficient time to cool.



ATTENTION!

Any work to be performed upon the units must only be carried out after disconnecting them from their power supplies.



ATTENTION!

(Only the Ariosa DOT HP model).

The unit contains flammable gas (R290).

Keep the unit away from heat sources and open flames.

Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.

The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater.)

Do not pierce or burn.

Be aware that refrigerants may not contain an odour.

2.1.1 Qualification of workers

Installation, repair, maintenance and decommission procedures are required when an appliance with FLAMMABLE REFRIGERANTS is affected. The training of these procedures is carried out by national training organizations or manufacturers that are accredited to teach the relevant national competency standards that may be set in legislation.

2.1.2 Information on servicing

- Checks to the area. Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimized. For repair to the refrigerating system.
- Work procedure. Work shall be undertaken under a controlled procedure so as to minimize the risk of a flammable gas or vapour being present while the work is being performed.
- General work area. All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out. Work in confined spaces shall be avoided.
- Checking for presence of refrigerant. The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially toxic or flammable atmospheres. Ensure that the leak detection equipment being used is suitable for use with all applicable refrigerants, i.e. non-sparking, adequately sealed or intrinsically safe.
- Presence of fire extinguisher. If any hot work is to be conducted on the refrigerating equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or CO₂ fire extinguisher adjacent to the charging area.
- No ignition sources. No person carrying out work in relation to a refrigerating system which involves exposing any pipe work shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion. All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which refrigerant can possibly be released to the surrounding space. Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks. "No Smoking" signs shall be displayed.
- Checks to the refrigerating equipment. Where electrical components are being changed, they shall be fit for the purpose and to the correct specification. At all times the manufacturer's maintenance and service guidelines shall be followed. If in doubt, consult the manufacturer's technical department for assistance. Marking to the equipment shall continue to be visible and legible. Markings and signs that are illegible shall be corrected.

2.1.3 Checks to electrical devices

Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used. This shall be reported to the owner of the equipment so all parties are advised.

Initial safety checks shall include:

- 1) that capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking;
- 2) that no live electrical components and wiring are exposed while charging, recovering or purging the system;
- 3) that there is continuity of earth bonding.

Cabling. Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects. The check shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.

2.1.4 Detection of flammable refrigerants

Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) shall not be used. The following leak detection methods are deemed acceptable for all refrigerant systems. Electronic leak detectors may be used to detect refrigerant leaks but, in the case of flammable refrigerants, the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.) Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used. Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed, and the appropriate percentage of gas (25% maximum) is confirmed. Leak detection fluids are also suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work.

Examples of leak detection fluids are:

- bubble method,
- fluorescent method agents.

If a leak is suspected, all naked flames shall be removed/extinguished.

If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak.

2.1.5 Removal and evacuation

When breaking into the refrigerant circuit to make repairs - or for any other purpose conventional procedures shall be used. However, for flammable refrigerants it is important that best practice is followed since flammability is a consideration. The following procedure shall be adhered to:

- 1) remove refrigerant;
- 2) purge the circuit with inert gas;
- 3) evacuate;
- 4) purge with inert gas;
- 5) open the circuit by cutting or brazing.

The refrigerant charge shall be recovered into the correct recovery cylinders. The system shall be purged with oxygen-free nitrogen to render the appliance safe for flammable refrigerants. This process may need to be repeated several times. Compressed air or oxygen shall not be used for purging refrigerant systems. Purging shall be achieved by breaking the vacuum in the system with oxygen-free nitrogen and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum. This process shall be repeated until no refrigerant is within the system. When the final oxygen-free nitrogen charge is used, the system shall be vented down to atmospheric pressure to enable work to take place. This operation is absolutely vital if brazing operations on the pipe-work are to take place. Ensure that the outlet for the vacuum pump is not close to any potential ignition sources and that ventilation is available.

2.1.6 Charging procedures

In addition to conventional charging procedures, the following requirements shall be followed.

- Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimize the amount of refrigerant contained in them.
- Cylinders shall be kept in an appropriate position according to the instructions.
- Ensure that the refrigerating system is earthed prior to charging the system with refrigerant.
- Label the system when charging is complete (if not already).
- Extreme care shall be taken not to overfill the refrigerating system.

Prior to recharging the system, it shall be pressure-tested with the appropriate purging gas. The system shall be leak-tested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.

2.1.7 Decommissioning

Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its detail. It is recommended good practice that all refrigerants are recovered safely. Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to re-use of recovered refrigerant. It is essential that electrical power is available before the task is commenced.

- 1) Become familiar with the equipment and its operation.
- 2) Isolate system electrically.
- 3) Before attempting the procedure, ensure that:
 - mechanical handling equipment is available, if required, for handling refrigerant cylinders;
 - all personal protective equipment is available and being used correctly;
 - the recovery process is supervised at all times by a competent person;
 - recovery equipment and cylinders conform to the appropriate standards.
- 4) Pump down refrigerant system, if possible.
- 5) If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
- 6) Make sure that cylinder is situated on the scales before recovery takes place.
- 7) Start the recovery machine and operate in accordance with instructions.
- 8) Do not overfill cylinders (no more than 80% volume liquid charge).
- 9) Do not exceed the maximum working pressure of the cylinder, even temporarily.
- 10) When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.
- 11) Recovered refrigerant shall not be charged into another refrigerating system unless it has been cleaned and checked

2.1.8 Labelling

Equipment shall be labelled stating that it has been de-commissioned and emptied of refrigerant. The label shall be dated and signed. Ensure that there are labels on the equipment stating the equipment contains flammable refrigerant.

2.1.9 Recovery

When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely. When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge is available. All cylinders to be used are designated for the recovered refrigerant and labelled for that refrigerant (i.e. special cylinders for the recovery of refrigerant). Cylinders shall be complete with pressure-relief valve and associated shut-off valves in good working order. Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs. The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of all appropriate refrigerants including, when applicable, flammable refrigerants. In addition, a set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak-free disconnect couplings and in good condition. Before using the recovery machine, check that it is in satisfactory working order, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of a refrigerant release. Consult manufacturer if in doubt. The recovered refrigerant shall be returned to the refrigerant supplier in the correct recovery cylinder, and the relevant waste transfer note arranged. Do not mix refrigerants in recovery units and especially not in cylinders. If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant. The evacuation process shall be carried out prior to returning the compressor to the suppliers. Only electric heating to the compressor body shall be employed to accelerate this process. When oil is drained from a system, it shall be carried out safely."

2.2 Observance of some basic rules

We would like to remind you that the use of products using electricity and water entails observing certain basic safety rules such as:

- 1) The unit must not be used by children under 8 years of age, by persons with reduced physical, sensory, or mental capabilities, or by anyone with insufficient experience or knowledge, unless they are properly supervised or have received appropriate instructions concerning the unit's safe use and understand the dangers involved.
- 2) Do not touch the unit if you are barefoot and have any wet or damp body parts.
- 3) Do not carry out any maintenance or cleaning operations until the system's main switch has been set to "off", thus disconnecting the unit from its power supply.
- 4) Do not modify the safety or control devices without the authorisation and instructions of the appliance manufacturer.
- 5) Do not pull, unplug or twist the electrical cables coming out of the appliance, even if it is disconnected from the mains.
- 6) Do not stand or sit on the appliance and/or place any kind of objects upon it.
- 7) Do not spray or splash water directly onto the appliance. This could result in fire, product failure, or electric shock.
- 8) It is forbidden to open the doors providing access to the appliance's internal components before the system's main switch has been set to "off", thus disconnecting it from its power supply.
- 9) Do not block the air intake or outlet, as this could damage the product.
- 10) Do not insert fingers or other objects into the air intake or outlet while the appliance is in operation.
- 11) Do not drink the water that comes out of the appliance. It is unsanitary, and could cause serious health problems.
- 12) Do not scatter or throw the packaging material, or leave it within the reach of children, as it can be a potential source of danger.
- 13) The appliance contains R290 gas (Ariosa DOT HP model). R290 is a highly flammable gas. Protective gloves and goggles must always be worn when working on the appliance's cooling circuit.
- 14) If there should happen to be any gas leaks from other equipment present, ventilate the room well.
- 15) Any routine cleaning and/or maintenance operations that the user intends to carry out must not be performed by unsupervised children.
- 16) If the power cable is damaged, it must be replaced by the manufacturer or its technical service department, or by a similarly qualified person, in order to prevent any risks.
- 17) Installation, initial start-up, and all subsequent maintenance operations (with the exception of the cleaning and washing of the air filters) must only be carried out by authorised and qualified personnel.
- 18) In order to prevent any risk of electrocution, it is essential to disconnect the electrical plug from the outlet and/or to turn off the main switch before performing any electrical connections and any maintenance operations on the appliances.
- 19) The Ariosa DOT HP unit contains a compressor connected to a cooling circuit, which can reach high operating temperatures and poses a risk of burns to any body parts with which it may come into contact. It is therefore essential to use caution, and to allow a sufficient cooling period to elapse before carrying out any operations on the unit's internal components.
- 20) Be sure to respect the minimum spatial indications during installation.
- 21) Always use original Valsir spare parts when replacing components.
- 22) In the event of abnormal operation (e.g. abnormal noise, foul odours, smoke, abnormal temperature increase, electrical leakage, etc.), immediately disconnect the power supply and contact Valsir Technical Support.
- 23) Do not use the appliance for any purposes other than those for which it has been designed.
- 24) Do not disperse the R290 gas contained within the cooling circuit into the atmosphere.
- 25) The Ariosa DOT HP model must be installed in a room with a minimum surface area of 4 m².
- 26) Do not install the machine inside a closet or any other confined space.

2.3 Important notes

The units are designed and manufactured exclusively for:

- Indoor installation in rooms with a minimum surface area of 4 m².
- For handling air of civil environments, incompatible with toxic, explosive, flammable and corrosive gases (including chlorine and salt atmospheres).

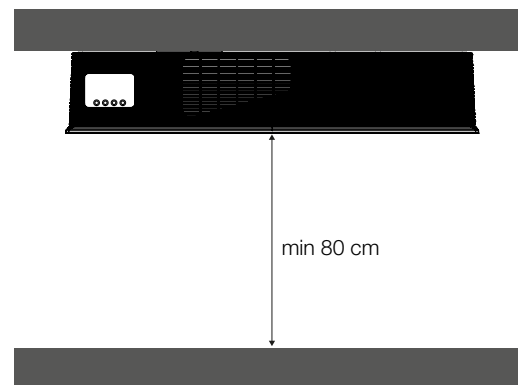
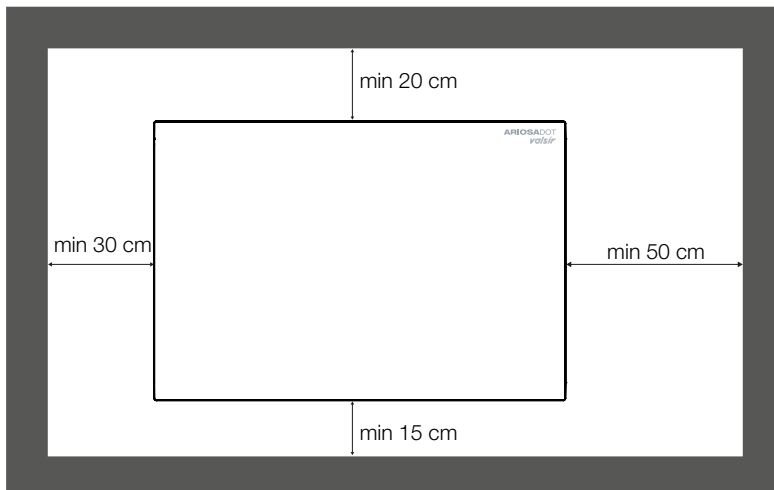
Therefore, its use is explicitly forbidden in those environments where the air is mixed and/or altered by other gaseous compounds and/or solid particles. Use for purposes other than those intended, and not in accordance with what is described in this manual, will automatically invalidate any direct and/or indirect liability as well as the manufacturer's warranty.

2.4 Safety instructions

Always comply with the safety regulations, warnings, notes and instructions provided in this document. Failure to observe the safety regulations, warnings, notes and instructions in this manual may result in personal injury or damage to the device. The installation of the unit must be carried out in accordance with the general and local construction, safety and installation regulations provided by the local administration, the electricity supply companies, and other authorities. The unit must always be mounted on the wall before switching on its power supply, taking care not to remove or alter the positions of its safety grilles. This will make it impossible to touch the motor while the unit is active. Do not switch on the unit until the mechanical installation is complete. After installation, ensure that all components capable of causing personal injury are secured within the frame. Tools are required to open the frame. Installation, commissioning and maintenance must be carried out by a qualified technician unless otherwise stated in the instructions. Unqualified technicians may cause personal injury or loss or damage to the operation of the ventilation system.

Do not modify the unit or the specifications given in this document. Any changes may cause personal injury or loss or damage to the operation of the ventilation system. Always disconnect all poles of the unit power supply before starting work on the ventilation system. If opened during operation, the unit may cause personal injury. Ensure that the unit does not accidentally switch on again.

Make sure there is sufficient space to the front and sides for maintenance work.



3. CHARACTERISTICS OF THE ARIOSIA DOT UNIT

The air renewal units for residential applications of the Ariosa DOT and Ariosa DOT HP series are characterised by their very high heat recovery efficiency, light weight, compactness and ease of use and maintenance.

The Ariosa DOT and Ariosa DOT HP series consist of models that can be installed vertically along the perimeter walls of buildings to cover air exchange requirements of up to approximately 100 m³/h.

The Ariosa DOT and Ariosa DOT HP units are equipped with:

- Expanded polypropylene frame with bracket system for wall-mounted installation (vertical installation). The internal design is designed for flow optimisation, best energy efficiency and acoustic performance.
- ISO 16890 ePM₁₀ 65% (G4 EN 779) efficiency class synthetic filters on interior air extraction and ePM₁ 55% (F7 EN 779) efficiency class filters with low air pressure drop; filter removal by means of independent covers, located behind the front panel.
- Air-to-air counterflow static heat recovery unit with up to 95% thermal efficiency, equipped with motorised partial bypass system and easily removable for cleaning.
- Intake and exhaust fans coupled with EC electric motors, individually and continuously adjustable using the on-board electronics.
- Electronic control complete with temperature and humidity probes on board the machine for managing ventilation, freecooling, and freeheating.
- LCD control panel for managing the unit's functions coupled with the unit's upper aesthetic grille.

3.1 Technical data: Ariosa DOT and Ariosa DOT HP

GB

Model		Ariosa DOT	Ariosa DOT E	Ariosa DOT HP
Maximum air flow	m³/h	100	100	100
Nominal air flow rate	m³/h	70	70	70
Maximum external static pressure at nominal flow	Pa	40	40	40
Electrical power supply	V/ph/Hz	220-240/1/50-60		
Total nominal power input	W	25.5	24.4	26.9
Total nominal load amperage	A	0.12	0.11	0.12
Maximum electric power input	W	40	40	330*
Total maximum load amperage	A	0.55	0.55	2
Unit weight	kg	24	24	28
Ingress Protection		IP20	IP20	IP20

Working limits

Outdoor temperature - humidity working limits	°C/%	-5 ... +45°C/5 ... 95%		
Outdoor temperature - humidity working limits	°C/%	+10 ... +35°C/10 ... 90%		

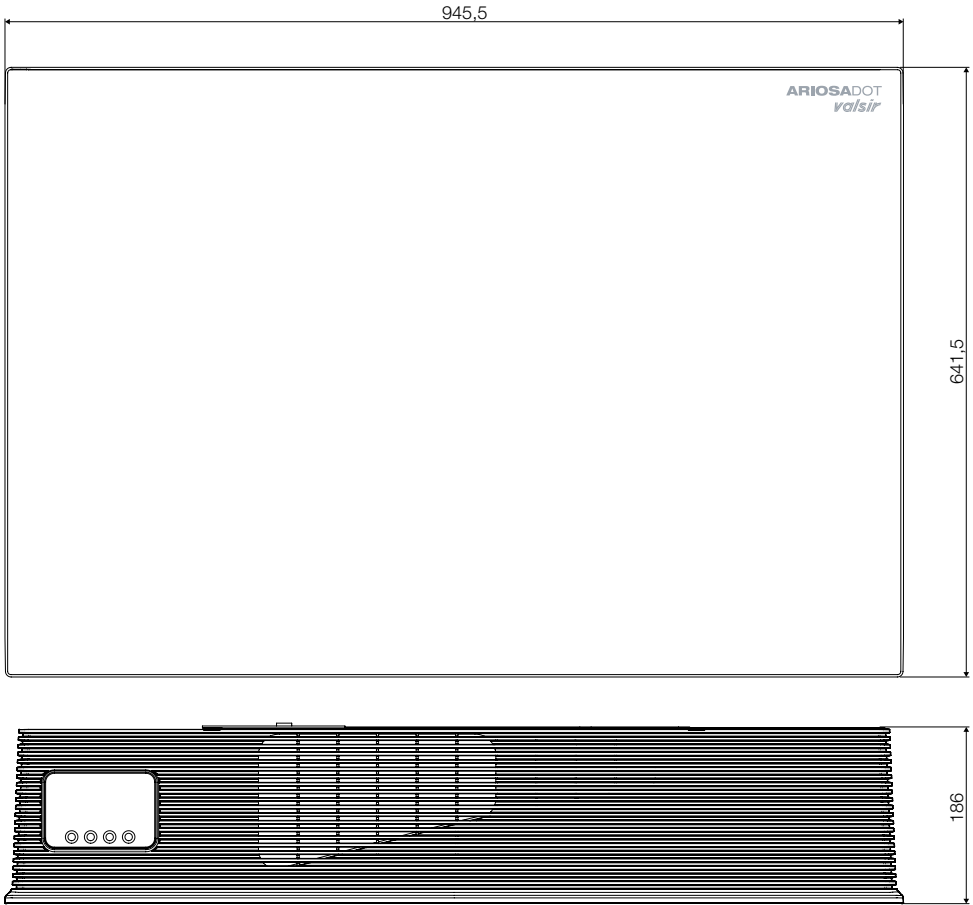
Specific ecodesign data⁽¹⁾

Declared typology		UVR-UVB (non-ducted)		
Type of drive installed or intended to be installed		>3 Multispeed		
Type of HRS		Recuperative		
SEC class average climate		A	A	A
Specific energy consumption average climate (SEC)	kWh/(m²a)	-35.79	-36.93	-34.82
SEC class cold climate		A+	A+	A+
Specific energy consumption cold climate (SEC)	kWh/(m²a)	-64.74	-60.09	-62.83
SEC class warm climate		E	E	E
Specific energy consumption warm climate (SEC)	kWh/(m²a)	-11.39	-10.65	-10.91
Thermal dry efficiency of heat recovery ht	%	88.0	78.0	85.0
Efficiency of humidity transfer to inlet flow	%	-	60.0	-
Reference flow rate	m³/s	0.0194	0.0194	0.0194
Specific fan power (SPl)	W/(m³/h)	0.367	0.341	0.370
Control factor and control typology (CTRL)	Environment Local environment	0.85	0.65	0.85
Annual electricity consumption per 100 m² floor area (AEC)	kWh/a	459.79	430.97	462.90
Annual heating saved average climate (AHS)	kWh/a	4,537.31	4,234.71	4,446.53
Annual heating saved cold climate (AHS)	kWh/a	2,051.71	1,914.88	2,010.66
Annual heating saved warm climate (AHS)	kWh/a	8,876.17	8,284.21	8,698.58
Air tightness class		U1	U1	U1
Sensitivity		S1	S1	S1
Declared maximum external leakage rates of the casing of ventilation units	%	4.20%	4.20%	5.60%
Declared maximum internal leakage rates for bidirectional ventilation units or carry over	%	2.40%	2.40%	2.40%
Sound power level (LWA)	dB(A)	55	55	55

(1) According to EU Regulation 1253/2014: at the reference flow rate of 70% of the maximum, at 50 Pa useful.

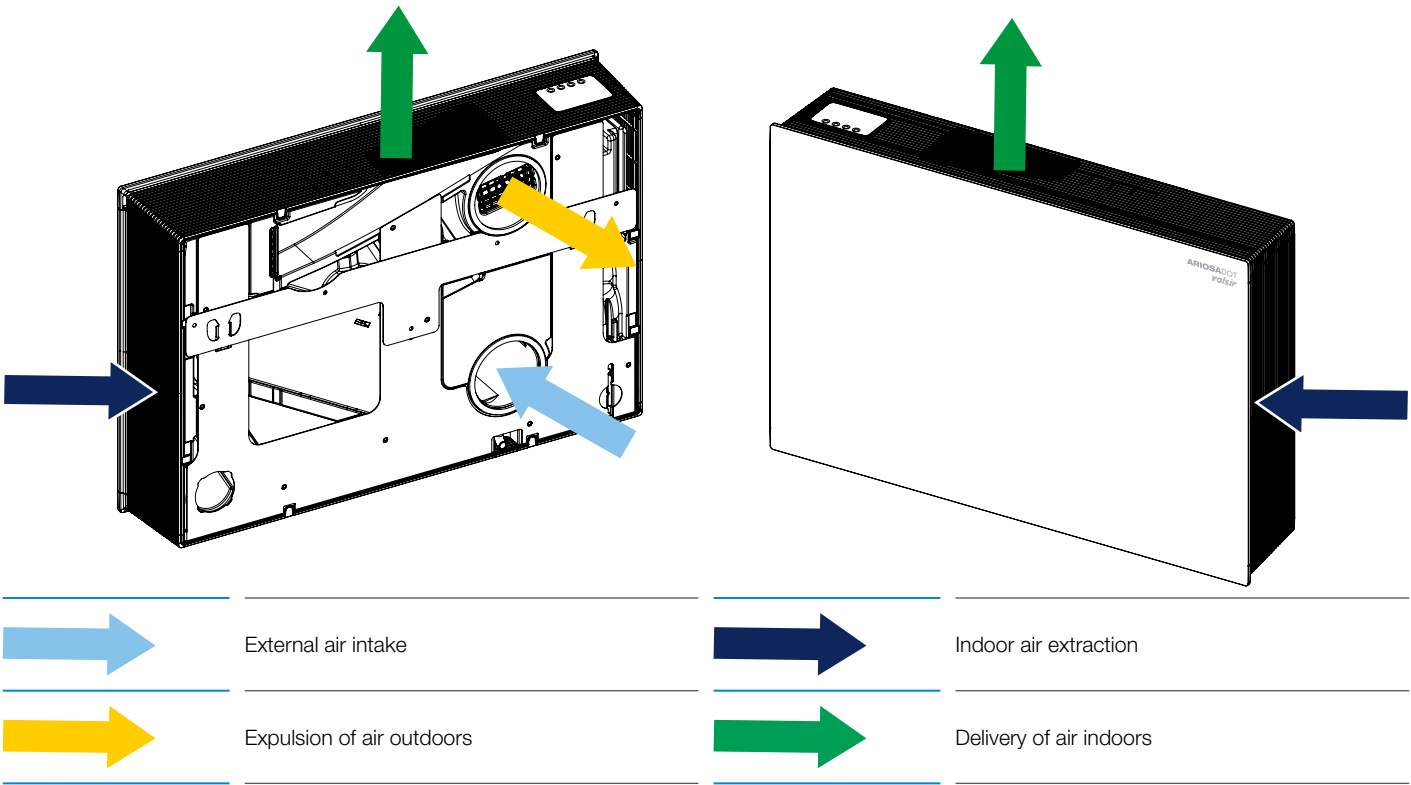
* Power absorbed with fans at 70% and compressor active.

3.2 Dimension drawings



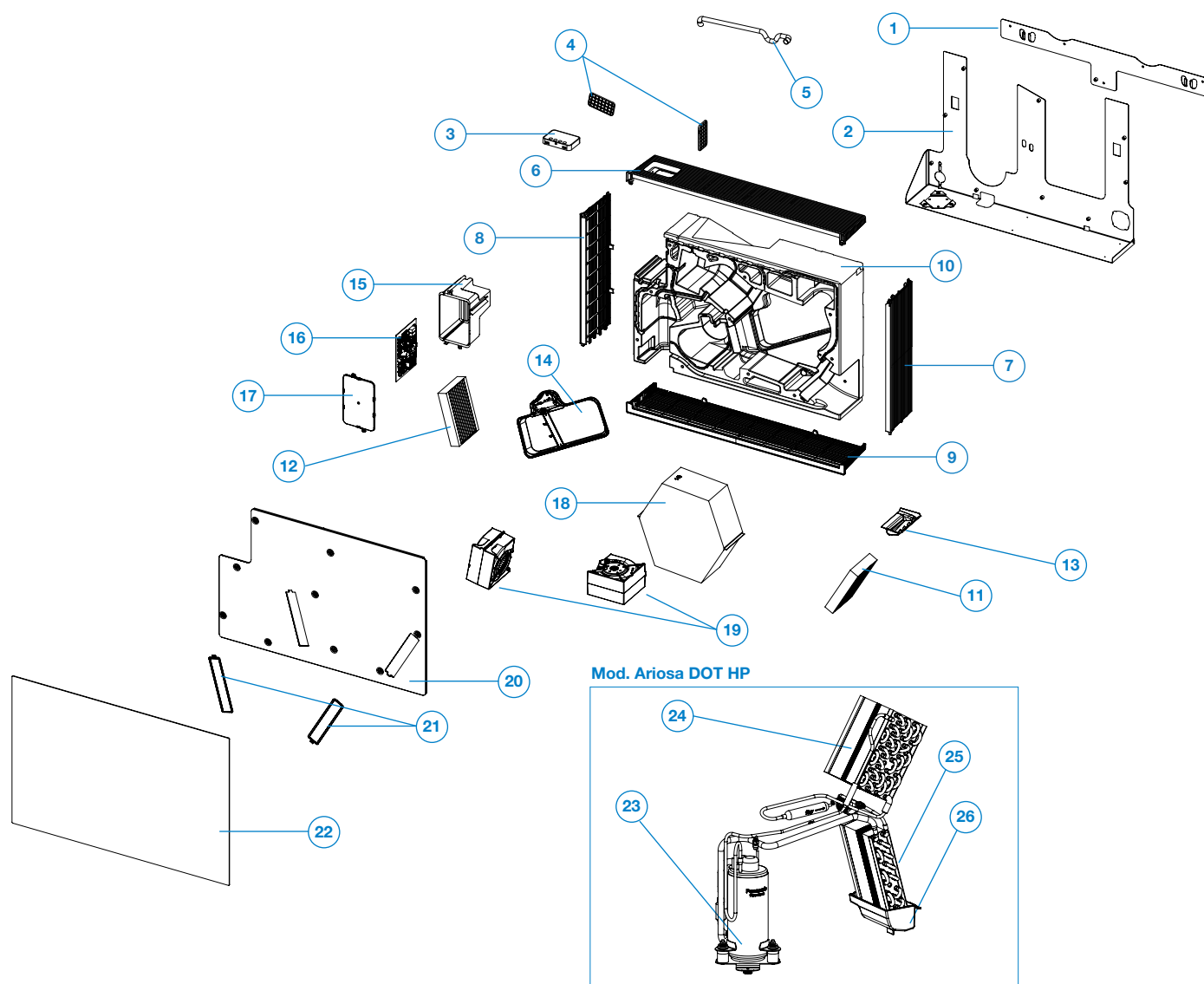
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3.3 Air flow diagram



3.4 Exploded view of the appliance

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ID	Description	No. of parts	ID	Description	No. of parts
1	Wall mounting bracket	1	14	Bypass actuator	1
2	Ariosia DOT metallic support	1	15	Ariosia DOT electronics housing	1
3	Control Panel	1	16	Ariosia DOT electronic control board	1
4	Protective grilles for fans	2	17	Cover for electronics housing	1
5	Condensate drain pipe	1	18	Heat recovery unit	1
6	Upper aesthetic grille	1	19	Ariosia DOT fans	2
7	Right aesthetic grille	1	20	Ariosia DOT unit cover	1
8	Left aesthetic grille	1	21	Filter compartment covers	2
9	Lower aesthetic grille	1	22	Ariosia DOT front panel	1
10	Ariosia DOT body made from expanded polypropylene	1	23	Compressor (for Ariosia DOT HP)	1
11	ISO Coarse 65% filter (internal air extraction)	1	24	Condenser (cooling circuit for Ariosia DOT HP)	1
12	ISO ePM ₁ 55% filter (delivery of air from outside)	1	25	Evaporator (cooling circuit for Ariosia DOT HP)	1
13	Condensate drain pan for plate heat exchanger	1	26	Condensate drain pan (cooling circuit for Ariosia DOT HP)	1

4. UNIT LABELLING

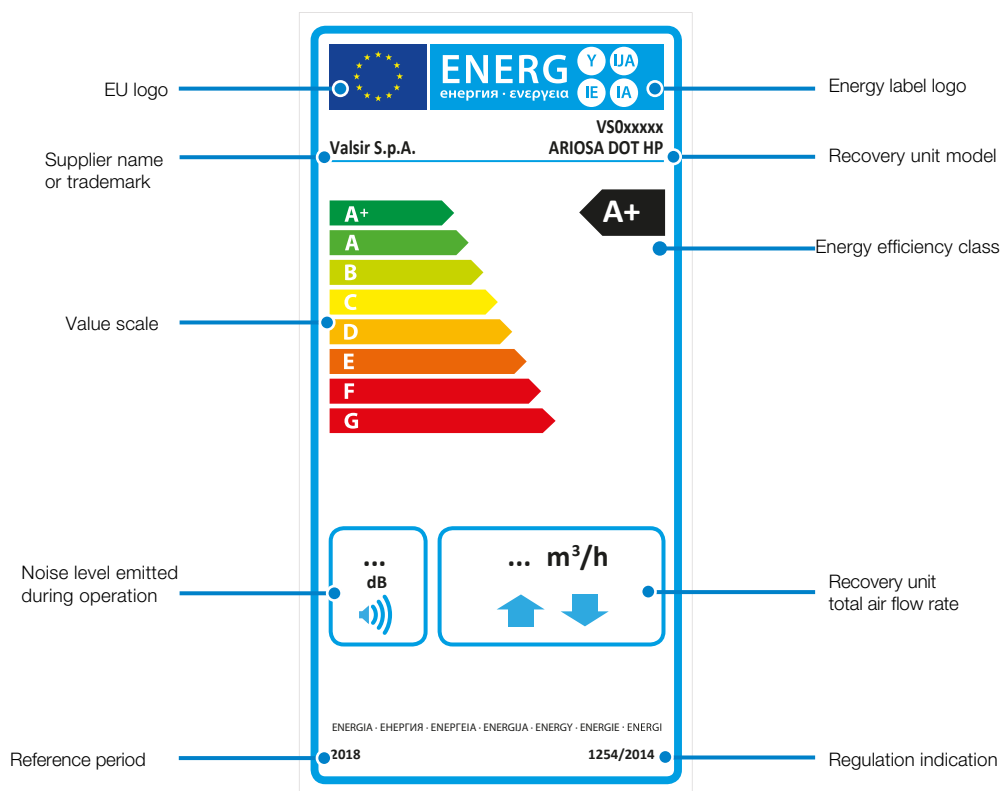
4.1 Product label

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4.2 Energy label

The following picture shows the label showing the energy classification according to the European Commission Regulation (EU) No. 1254/2014, implementing Directives 2009/125/EC and 2010/30/EU, for ecodesign and labelling requirements of residential ventilation units. If one or both labels are missing from the machine, the product is not compliant: in this case, contact the sales network immediately to report the problem.



5. TRANSPORTING THE ARIOSIA DOT UNIT

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5.1 Package contents

Inside the package you will find:

- Ariosa DOT/Ariosa DOT HP VMC unit depending on the model ordered, equipped with LCD control panel.
- Instruction manual for installation, operation, and unit maintenance.
- Installation template.
- Wall mounting bracket.
- Bag with accessories
- Reinforced sheets for the exterior connection pipe.

5.2 Packaging

The Ariosa DOT and Ariosa DOT HP units are supplied in single-pack cardboard boxes. The packaging itself must remain intact until installation.

- Gross product weight: 26 kg for the Ariosa DOT version, 30 kg for the Ariosa DOT HP version.
- Net product weight: 24 kg for the Ariosa DOT version, 28 kg for the Ariosa DOT HP version.
- Packaging weight: 2 kg.
- Packaging type: recyclable.
- Packaging material: cardboard (PAP).

5.3 Handling and transport

For handling, use appropriate means according to weight as provided for in the applicable directives. The weight of each individual machine can be found in the following manual. Avoid uncontrolled rotations. Careful attention must be paid to loading operations; all machines must be carefully loaded and stowed in the truck to avoid accidental damage that may affect the functionality or appearance of the unit.

The units, especially the Ariosa DOT HP model, must be kept in an upright position during handling, as indicated on the box.

The sealed cooling circuits on the Ariosa DOT HP units contain highly flammable R290 gas. These units must be transported using appropriate means, and in consideration of the number of units, in order to prevent any potential safety issues from arising due to accidental damage to the cooling circuits and potential gas leaks.

5.4 Inspection upon receipt

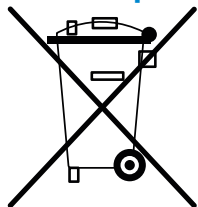
Upon receipt of the unit, an inspection of all parts must be carried out in order to verify that no damage has been caused during transport; any damage must be reported to the carrier by placing a reservation clause in the delivery note, specifying the type of loss or damage.

5.5 Storage

In the event of prolonged storage, keep the machines in their packaging, protected from dust and away from sources of vibration and heat. The manufacturer accepts no liability for loss or damage due to transport, poor unloading conditions or lack of protection from the weather. The units, especially the Ariosa DOT HP model, must be stored in an upright position, as indicated on the box.

The sealed cooling circuits on the Ariosa DOT HP units contain highly flammable R290 gas. These units must be stored in a well-ventilated location of an adequate size to house the number of units in question, in order to prevent any potential safety issues from arising due to accidental damage to the cooling circuits and potential gas leaks.

5.6 Disposal of packaging



At the end of its service life, the product must not be disposed of as mixed municipal waste but must be taken to an EEE collection point. Contact your local authorities for information on the nearest collection point.

When purchasing a new appliance, equivalent to the one to be disposed of, the latter can be handed over to the distributor who will take it back free of charge.

EEE register number: IT19030000011226.

The unit contains the following materials:

- Pre-painted sheet metal.
- Galvanised sheet.
- Expanded polypropylene.
- Talc-loaded polypropylene.
- ABS.
- Copper.
- PET.
- Polystyrene.
- Electronic components.
- Flammable gases (R290), for the Ariosa dot HP model only.

6. INSTALLATION AND COMMISSIONING OF THE UNIT

6.1 Definitions

- **User** - The user is the person, entity or company, who has purchased or rented the machine and who intends to use it for its intended purpose.
- **Operator** - The operator is the natural person who has been authorised by the user to operate the machine.
- **Specialised personnel** - As such, these are understood to be those natural persons who have undergone specific training and who are therefore able to recognise the dangers involved in using this machine and may be able to avoid them.

6.2 Safety rules

The Manufacturer accepts no liability for non-compliance with the health and safety regulations described below. It also declines all liability for loss or damage caused by improper use and/or unauthorised modifications of the recovery unit.

- Installation must be carried out by specialised personnel.
- During installation operations, use suitable clothing and personal protection equipment, e.g. goggles, gloves, etc., as specified by prevailing regulations.
- During installation, operate in a safe, clean and unobstructed area.
- Comply with the laws in force in the country in which the machine is installed, regarding the use and disposal of packaging materials and products used for cleaning and maintenance of the machine, and comply with the recommendations of the manufacturers of such products.
- Before commissioning the unit, check the perfect integrity of the various components and the entire system.
- Absolutely avoid touching moving parts or standing between them.
- Do not proceed with maintenance and cleaning work unless the power supply is switched off first.
- Maintenance and replacement of damaged or worn parts must only be carried out by specialised personnel following the instructions in this manual.
- Spare parts must correspond to the requirements defined by the Manufacturer.
- When disposing of the recovery unit, comply with the relevant anti-pollution regulations.

6.3 Preliminary details

- Transport the packed unit as close as possible to the installation site.
- Do not place any tools or heavy objects on top of the packed unit.
- Keep the unit positioned upright throughout all the transport and installation phases.
- Do not place any work site equipment on the unit.
- Avoid touching the moving parts and never use them as lifting/handling points.
- Make sure the various components of the unit and any accompanying accessories are not damaged.

6.4 Choice of installation site

- Ensure that the 230V/50Hz single-phase mains connection and condensate drainage connection are available at the place chosen for installation.
- The power supply sockets must be protected upstream by a residual current circuit breaker in accordance with the regulations in force.
- Consider the presence of accessories that may require separate power supply and additional connections to the drainage system.
- When placing the control panel unit in a different room, please note that the maximum length of the connection cable is 20 metres.
- Do not install the unit in rooms where there are flammable gases, acidic, aggressive or corrosive substances, which can damage the machine components irreparably; always prefer a dry place.
- The appliance must be installed in a frost-proof insulated room (> 10°C) in order to prevent freezing of the condensate drain.
- Newly built homes containing a lot of moisture from the construction work must be naturally ventilated before using the units. Do not use the Ariosia DOT unit to remove this type of moisture from the building.
- In the vicinity of the air connections, make sure that there is adequate space free of any obstacles for interfacing with the ducts and/or any other accessories.
- Provide a suitable space at the installation site for the complete disassembly of the unit, such as to allow routine and extraordinary maintenance activities to be carried out.
- Make sure that the unit can be shut off via an electrical switch or circuit breaker if it is not expected to be used for an extended period of time.
- The room chosen for the installation of the Ariosia DOT HP model must have a minimum surface area of at least 4 m².

Failure to comply with the minimum technical spaces may result in inaccessibility to machine components, making any maintenance work vain or impossible.

6.5 Types of installation

6.5.1 Vertical wall-mounted installation

Make sure that the wall is suitable for supporting the weight of the unit itself, as well as any accidental overloads to which the unit may be subjected. Place the unit in an upright position. Provide sufficient space to the side and front for connection and maintenance work. In any case, provide sufficient space to ensure accessibility to the machine and any channel accessories. Respect the distances indicated in this manual.

For optimal installation, you must:

Installation indications



- 1) Position the template included in the package to mark the spots for the anchoring holes.

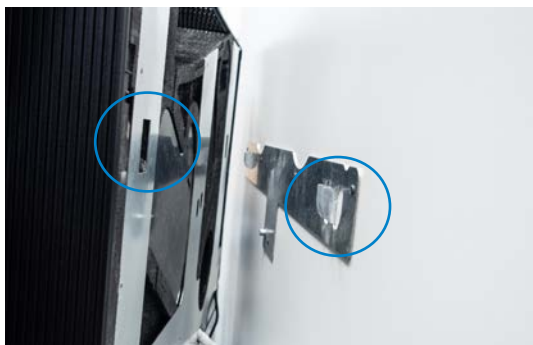
The template must be levelled using a spirit level. Respect the required distances from the walls and floor, as indicated in this manual under "Maintenance spaces"



- 2) Drill the connection holes to the outside (2x Ø 125 mm) for the air intake and exhaust, and the hole for the condensate drainage, if there is no drainage network to connect to. The holes must be drilled using a suitable hole cutter. Insert the 2 plastic sheets into the 2 air intake and outlet holes, taking care to roll them up and make them adhere to the perimeter of the hole. Shape and trim off any excess parts of the plastic sheets before inserting them into the holes.



- 3) Insert wall anchors (not supplied in the package) into the holes previously made using the template to mount the machine's support bar. Make sure that the wall anchors are of a suitable size and type to support the unit, also considering the type of wall upon which the unit is to be mounted.



- 4) Insert the condensate drain pipe into the hole for external connection or connect it to the condensate drainage network. Hang the Ariosa DOT unit onto the support bar using the appropriate anchors. For moving and positioning the unit, use the corresponding box as indicated in the graphics on the packaging.



- 5) Secure the unit to the support bar using the supplied bolt and an Allen key (not supplied).



- 6) Secure the front panel with the side anchors using a screwdriver (not supplied in the package).



Channel connection for air intake from an adjacent room.

It is possible to add ducting for air extraction from an adjacent room connected to the back of the Ariosa DOT unit using an AriaSilent Link connector with a bayonet attachment.

A hole must be made in the unit's body using a cutter, and then the connection can be established using a connector from the AriaSilent Link series.

To balance the airflow between the main environment and the adjacent room, use a deflector to properly distribute the airflow between the main and adjacent rooms.

The maximum length of the extraction duct is 5 meters.

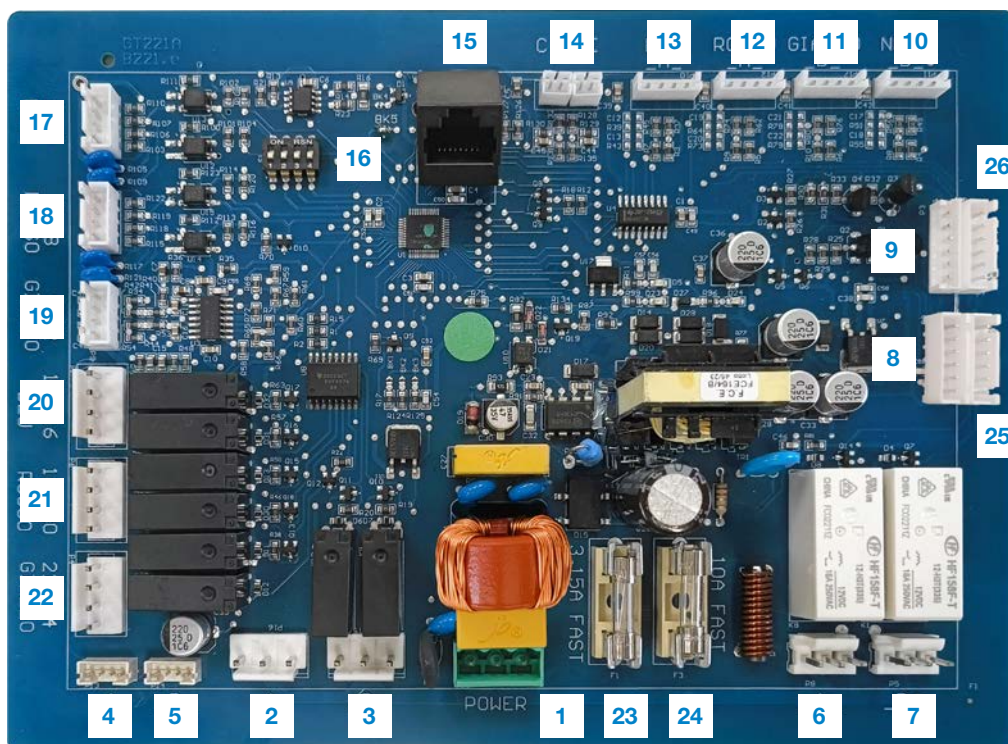
6.6 Electrical connections

The unit's wiring comes complete with a Schuko socket.

Provide a specific power supply line with a residual current circuit breaker for each machine, in accordance with the regulations in force. Before undertaking any operation, make sure that the main power supply line is disconnected. All electrical lines must be protected upstream by the installer; these must include not only the base unit but also any accessories that are electrically powered. Ensure that the electrical characteristics of the machine and its accessories, if any, are compatible with those of the mains line. Adapters, power strips and/or extension cords may not be used to power the unit.

Connect the unit and any accessories with cables having a cross-section suitable for the power used, and in compliance with local regulations, in accordance with the wiring diagrams supplied with the unit and this manual. The power supply of any electrical accessories must generally be kept separate from that of the base unit.

6.6.1 Electronic board



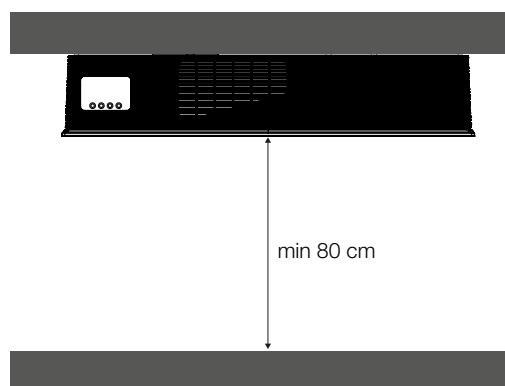
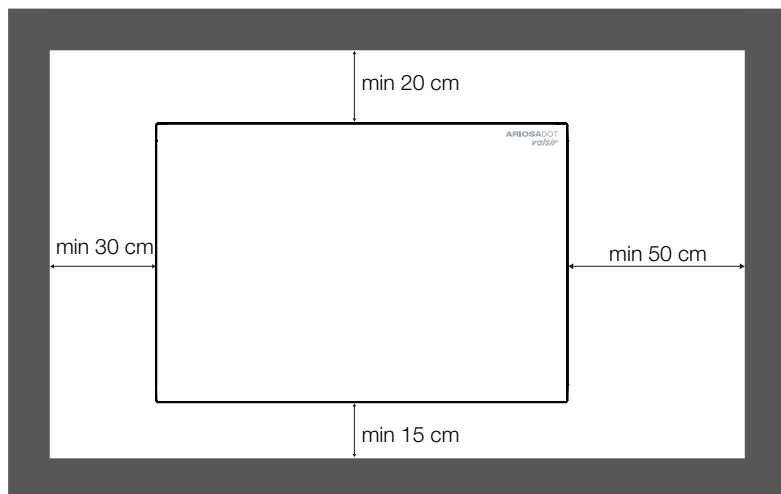
Components.

ID	Description
1	Input L - PE - 220 V power supply
2	Output L - PE - 220 V power supply, right fan
3	Output L - PE - 220 V power supply, left fan
4	Output/input fan signal right
5	Output/input fan signal left
6	Output L - N - PE 220 V compressor
7	Output L - PE - N 220 V bypass motor
8	Input signal T+RH 1 probe - ambient outlet
9	Input signal T+RH 2 probe - internal air return
10	Input signal T+RH 3 probe - exhaust
11	Input signal T+RH 4 probe - external air intake

ID	Description
12	Input probe T evaporator/condenser
13	LAN connector LCD control panel
14	2 inputs (unit alarm - summer/winter) dry contact
15	2 inputs (fan lock - fan boost) dry contact
16	2 outputs 0-10 V post-treatment - valve
17	2 outputs (dehumidifier - summer/winter) dry contact
18	2 outputs (unit alarm - Sanif-Ox) dry contact
19	2 outputs (AUX1 - AUX2) dry contact (unused)
20	Fuse 5x20 10 A
21	Fuse 5x20 3.15 A

6.7 Maintenance spaces

Make sure there is sufficient space to the front and sides for maintenance work.



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7. MAINTENANCE WORK

Lack of maintenance, starting with basic maintenance, can degrade the air and thermal performance of the appliance, resulting in a worsening of environmental comfort. Before undertaking any maintenance work, make sure that the unit and its accessories, if any, are not and cannot be accidentally energised; therefore, cut power upstream beforehand. Use appropriate accident prevention clothing and personal protective equipment (goggles, gloves, etc.).

7.1 Scheduled maintenance

Scheduled maintenance of the unit is mainly related to cleaning or replacement of filters and maintenance of the heat exchanger and internal parts of the unit. Filters should be inspected every two months and cleaned or replaced if necessary. The need for filter maintenance is indicated by an alarm on the control panel in the mobile application. On-board filters can be accessed through snap-on doors with ergonomic grip on the unit. For horizontally installed units, always accompany the down movement of the filter once its door has been removed. Use a vacuum cleaner or compressed air for cleaning; replace the filter after no more than 3 cleaning cycles. To replace the filter, it must be bagged appropriately and taken to appropriate collection centres for subsequent incineration. Always remember to properly install the filters before the next restart of the unit. Reset the filter cleaning warning indicator.



7.2 Unscheduled maintenance

Extraordinary maintenance operations are to be carried out annually.

7.2.1 Fans

Before inspecting the fans, proceed as follows:

- 1) Disconnect the unit's electrical power.
- 2) Remove both filters.
- 3) Access the fans to check and clean them.

For cleaning, do not use aggressive detergents or solvents.

For reassembly, proceed in the reverse sequence to that described.

7.2.2 Recovery unit

When opening the panel, check the state of cleanliness of the recovery unit and, if necessary, remove it by pulling it out of its seat using the grip. For cleaning, do not use aggressive detergents or solvents.

7.2.3 Condensate trap and drain

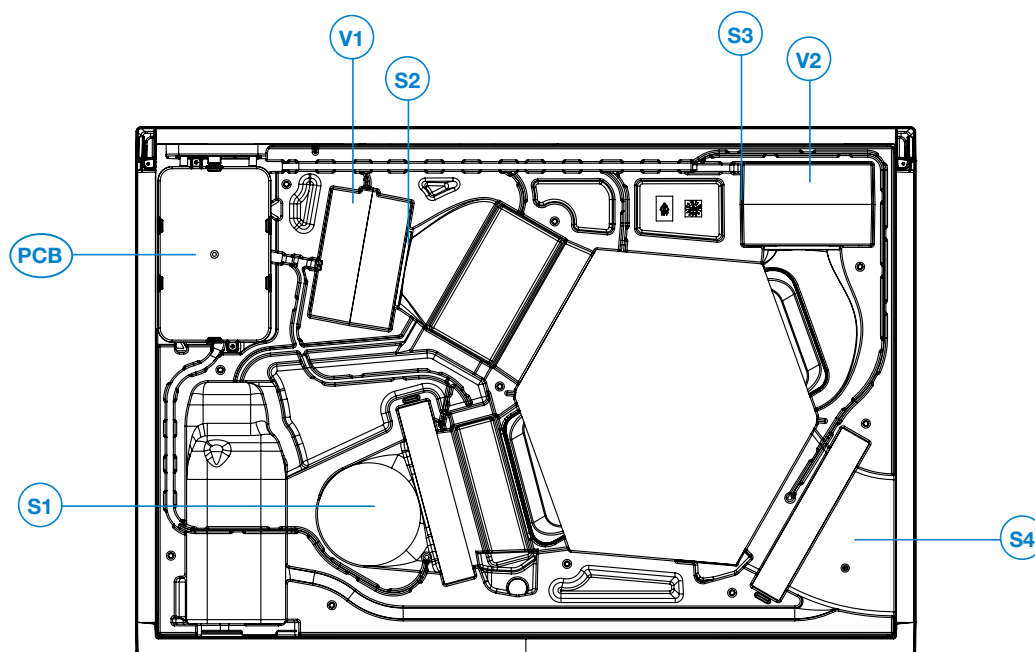
Check that the trap and its drainage pipe are free of obstructions; ensure that the trap is primed before putting the machine back into operation.

7.2.4 Internal machine cleaning

Once the machine has been opened, proceed to clean the inside. Use a damp cloth for this operation, taking care not to dislodge the internal components from their seats.

8. OPERATING PRINCIPLES OF THE HRV UNIT - ELECTRONIC MANAGEMENT

8.1 Components and legend



ID	Description
S1	Outside air temperature/RH probe
S2	Expelled air temperature/RH probe
S3	Delivered air temperature/RH probe
S4	Extracted air temperature/RH probe

ID	Description
V1	Air extraction fan
V2	Air delivery fan
PCB	Electronic board

8.2 Control systems

8.2.1 LCD Panel

Functions that can be set:

- ON - OFF.
- Manual speed adjustment.
- Programming of time slots with corresponding speeds.
- Night mode setting according to time slots (minimum or super minimum speed).
- Reading and displaying of the value of the 4 on-board probes S1 S2 S3 S4.
- Ambient temperature reading.
- Bypass status (open or closed).
- Filter cleaning indicator.

8.2.2 APP for smart phones/PC

The app can complement the presence of control panels.

Functions that can be set:

- ON - OFF.
- Manual speed adjustment.
- Programming of time slots with corresponding speeds.
- Night mode setting according to time slots (minimum or super minimum speed).
- Reading and displaying of the value of the 4 on-board probes S1 S2 S3 S4.
- Ambient temperature reading.
- Bypass status (open or closed).
- Filter cleaning indicator.
- Charts concerning efficiency, operating time and other parameters can be displayed.

8.2.3 MODBUS

Using the connector on the back of the LCD panel it is possible to connect the HRV machine to a home automation management system with Modbus communication. From the advanced menu it is possible to enable the management mode via Modbus. For the Modbus registers, refer to the dedicated manual.

8.3 Manual mode operation

The electronic system manages the operation together with the 2 fans (for air intake and exhaust from inside the building) V IMM and V EXP. The electronic system provides the possibility of setting several speeds for the 2 fans:

- 1) Minimum speed.
- 2) Medium speed.
- 3) Maximum speed.
- 4) Night mode speed (super minimum).
- 5) OFF - machine switched off.

The fan speeds can be changed from the advanced menu.

Once one of the speeds has been set, the machine continues to operate in this mode until a different control is pressed. On the display, evaluate signal indication in case of operation at maximum speed due to excessive pollutant content.

If the set humidity level is exceeded (RH of the T-RH INT probe > RH COM), the electronic system closes the dry contact for the possible connection of dehumidifiers or activates the dehumidification cooling circuit (Ariosa DOT HP model).

8.4 Night mode operation

Night mode can be set from the control panel or the APP.

In this mode, the V IMM and V EXP fans run at the settable super minimum speed.

Night mode can be set manually with a standard control panel or also automatically according to time slots (from ... to ...) when using an advanced LCD panel or the APP.

In night mode, the "Frost protection" mode remains active.

8.5 Automatic mode

The electronic system manages the operation together with the 2 fans (for air intake and exhaust from inside the building) SP_VIMM and SP_VEXP.

The electronic system provides for the possibility of setting different speeds for the 2 fans:

- MEDIUM SPEED (SP-VIMM 2 and SP-VEXP 2) as standard operation.
- NIGHT SPEED (SP-VIMM NIGHT and SP-VEXP NIGHT) if the night reduction time frame is set (from/to)
- MAXIMUM SPEED (SP-VIMM 3 and SP-VEXP 3) if the humidity comfort level or CO₂ level is exceeded (if present).

Once one of the speeds has been set, the machine will continue to operate in this mode until a different control is pressed or until the humidity or CO₂ limit values are exceeded (if RH or CO₂ sensors are present).

In the presence of one or more humidity or CO₂ sensors, limit values for these pollutants must be set.

In the case of external probes (CO₂), when the set level is exceeded, the electronic system takes the fans to maximum speed until the values drop below the set limit.

This feature is not active in night mode as the speed level must remain the same.

On the display, evaluate signal indication in case of operation at maximum speed due to excessive pollutant content.

If the set humidity level is exceeded (RH of the T-RH INT probe > RH COM), the electronic system closes the dry contact for the possible connection of dehumidifiers.

8.6 Timing modes

The electronic system must manage the operation of the 2 fans SP_VIMM and SP_VEXP (for air intake and exhaust from inside the building) simultaneously.

The electronic system provides for the possibility of setting different speeds for the 2 fans:

- 1) Minimum speed.
- 2) Medium speed.
- 3) Maximum speed.
- 4) Night mode speed (super minimum).
- 5) OFF - machine switched off.

The different modes must be able to be programmed in 1-hour time slots independently on the 7 days of the week.

8.7 Dehumidification mode

This mode is active on the Ariosa DOT HP model.

The user sets the desired comfort humidity level (RH COM SET) between 50% and 65% (default value is 55%). The dehumidification mode activates when both of the following conditions are met:

- Indoor humidity $\geq$ Comfort humidity + $\frac{1}{2}$ deadband.
- External humidity condition > refrigerant circuit operating limit.

After the startup time (standard 3 minutes), the compressor starts for dehumidification. In the case where:

- Indoor humidity $\geq$ Comfort humidity + $\frac{1}{2}$ deadband.
- External humidity condition < refrigerant circuit operating limit, the compressor does not turn on, and a green drop appears on the display, indicating "free dryer" mode, which means humidity reduction through ambient air renewal only.

8.8 Season

The season can be set manually (settable on the APP and LCD panel), automatically by detecting the average outside temperature (T-RH EXT probe) over a 5-day period, or via dry contact management.

In the automatic mode, if the daily average temperature is above 15°C, summer mode will be set; if it is lower, winter mode will be set.

8.9 Activating frost protection mode

When the outside temperature probe T-RH EXT (outside air intake) falls below -3°C, the V IMM fan stops until the temperature detected by the probe T-RH EXT (outside air intake) rises to 3°C.

This mode is activated in the absence of the preheating resistor. However, the maximum OFF time is 60 minutes, after which operation resumes.

8.10 Dew point protection function

In order to prevent condensation from potentially forming on indoor surfaces (in the case of using floor cooling, for example), in the case of both a VMC machine and a machine with dehumidification, the intake of air at undesirable conditions must be prevented.

If DELIVERY Temperature > SAFETY Temperature for a time >15 minutes, the machine will automatically decrease the fan speed until the correct operating conditions are restored.

The "dew point protection function" mode is disabled and can be activated from either the first start-up menu or the advanced menu.

8.10.1 Reference probe

The internal reference probe for the machine must be the indoor air extraction probe T RIF INT and RH RIF INT, with no possibility of setting the panel probe.

8.10.2 Air sampling

If the machine is in OFF mode and ambient air sampling is enabled on the menu, at every settable interval the machine will activate the fans at sampling speed for a duration equal to the air sampling time in order to detect the internal and external T and RH conditions.

If enabled, this mode will run whenever the unit is in OFF mode.

8.10.3 Incoming air temperature protection

If the supply air sensor T-RH IMM (supply air sensor) detects a temperature below 6°C, the unit stops and indicates a protection alarm (frost protection). If the supply air sensor T-RH IMM detects a temperature above 35°C, the unit stops and indicates a protection alarm (overheat protection).

8.10.4 Automatic speed adjustment for specific external conditions

To ensure the proper functioning of the refrigeration circuit, in particularly hot and humid external conditions, the unit can increase the fan speeds to guarantee its correct operation and performance. Under these conditions, the ability to reduce the fan speeds is inhibited to avoid compromising the functionality and lifespan of the internal components.

8.11 Bypass mode

Bypass mode is activated under two different conditions:

- 1) Freeheating mode, when:
 - $T\text{-RH INT} \leq T\text{ COM} - 1^{\circ}\text{C}$
 - $T\text{ INT} \leq T\text{-RH EXT} \leq (T\text{ COM} + 6^{\circ}\text{C})$
- 2) Freecooling mode, when:
 - $T\text{-RH INT} > T\text{ COM} + 2^{\circ}\text{C}$
 - $(T\text{ INT} - 6^{\circ}\text{C}) \leq T\text{-RH EXT} \leq T\text{ INT}$

Where:

- T-RH INT = indoor temperature.
- T COM = comfort temperature.
- T-RH EXT = outdoor temperature.

8.12 Filter cleaning indication

The filter cleaning warning is required by law.

There are 2 types of applicable solutions:

- Every 3000 operating hours (approx. 4 months) an indication (LEDs or indications on the control panels or APP notification) should be displayed indicating the need for filter maintenance.
- The filter notification frequency can be changed from the menu.

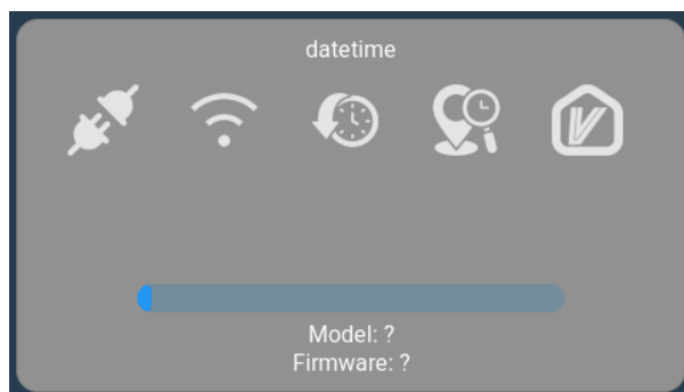
9. LCD TOUCH SCREEN CONTROL PANEL

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9.1 Switching on the unit for the first time

During the first start-up of the unit, the LCD touch screen control panel shows a sequence of screens for system settings and the presence or absence of system accessories and functions. During this phase, it is also possible to configure Wi-Fi, date and time of the unit.

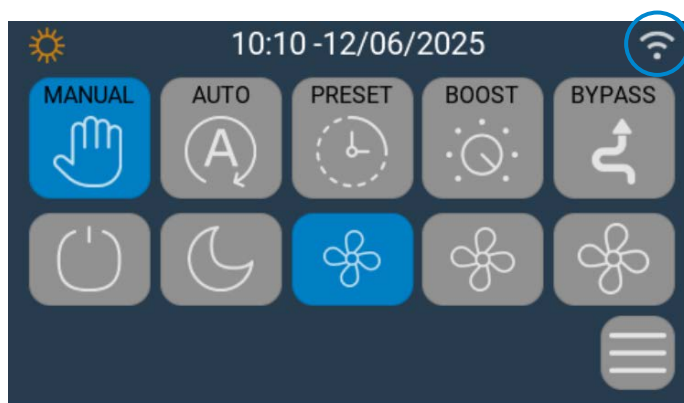


9.2 Wi-Fi connection

It is possible to connect the control panel to the Wi-Fi network in order to remotely manage the unit via APP on a mobile device and to allow firmware updates when new versions are released.

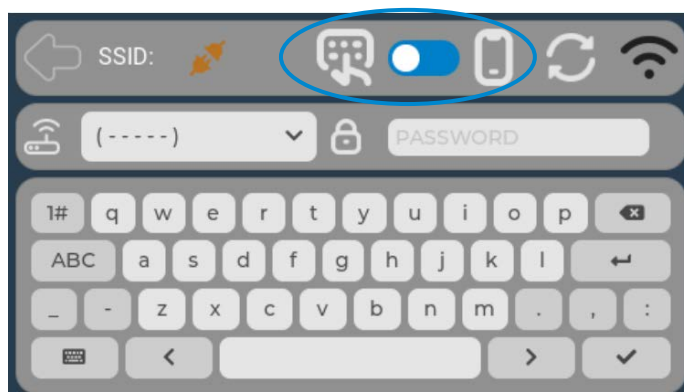
ATTENTION: the device can only be connected to 2.4 GHz Wi-Fi networks.

To set up the connection to the Wi-Fi network, it is either possible to click on the Wi-Fi symbol from the main screen, or access the "basic parameters - Wi-Fi" menu.



The Wi-Fi network can be set up in two ways:

- 1) Select it from the available networks and enter the password in the dedicated field
- 2) Use a mobile phone. In this case, the panel generates an "Ariosa_AP" Access Point network. It is necessary to connect to this network via mobile phone and follow the wizard to connect the panel to the local Wi-Fi network.

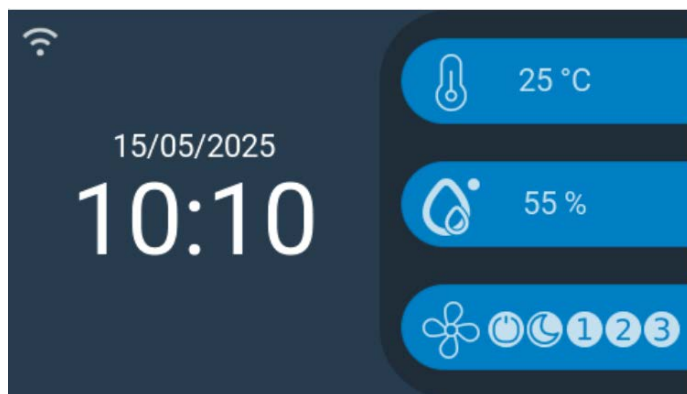


9.3 Standby

It is possible to set the display standby mode.

If this setting is active after the set number of seconds has elapsed, the panel switches to Standby mode and displays the main information:

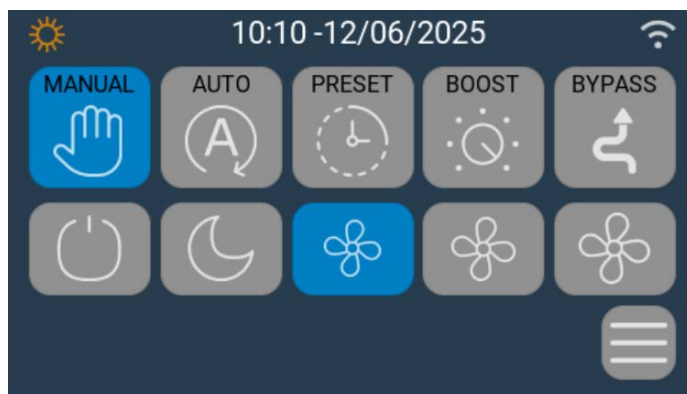
- Operating speed.
- Internal temperature and humidity conditions.
- Date and time.
- Wi-Fi connection symbol.
- Any alarms.



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9.4 Manual mode

In the case of the Manual setting, the fans will run at the speed set in the main screen. By pressing the manual mode symbol on the screen and then one of the 5 speeds, you can change the speeds through 3 levels or manually set the Night or OFF mode.

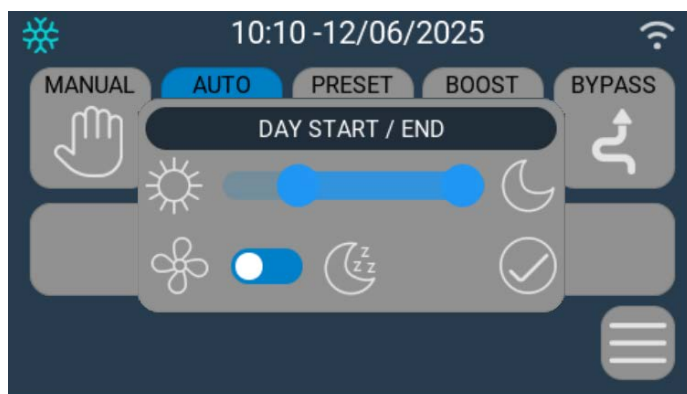
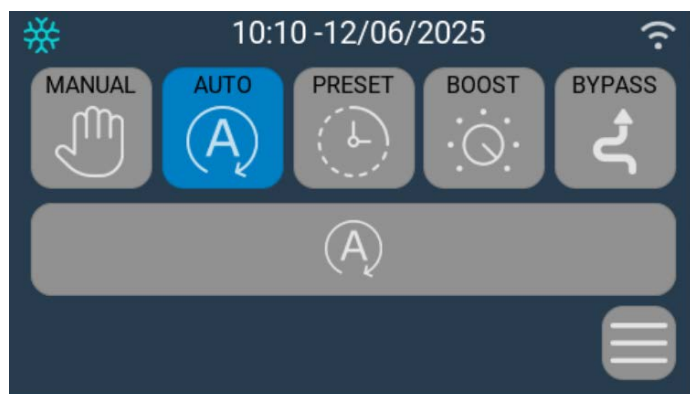


9.5 Automatic mode

In the case of the Automatic mode, the fans will run at speed 2. A time slot for daytime operation can be set. In this slot, the unit works at the average speed, possibly increasing the speed to the maximum when a higher humidity than set in the comfort parameters is detected. At night, if night reduction is enabled, the unit automatically reduces the speed to night speed. If the humidity or CO₂ level (if present) is detected to be higher than desired, the unit will set the maximum operating speed until comfort conditions are restored.

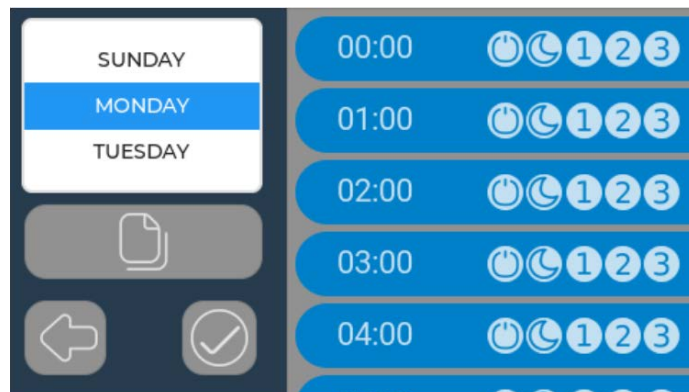
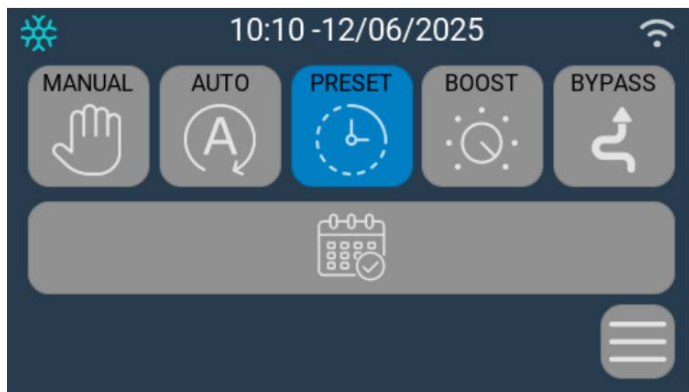
To enable Automatic mode, press the Auto button.

To change the parameters of Automatic mode, press button A and set night reduction and night mode preference over humidity control. In this case, the unit will work at night speed regardless of the humidity level in the room.



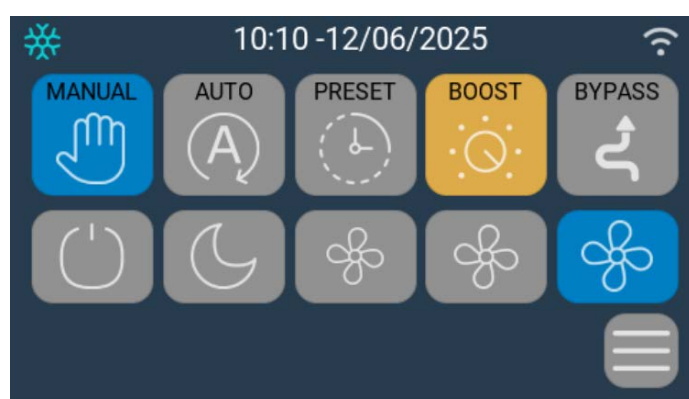
9.6 Timing mode

It is possible to set the speed of the machine fans at different times of the day, and days of the week, with hourly setting. The unit will follow the hourly and daily programming by checking and setting the set speed at each time change. Press the "Preset" button to enable the timing mode. Press the calendar and change the programming as shown in the screens below.



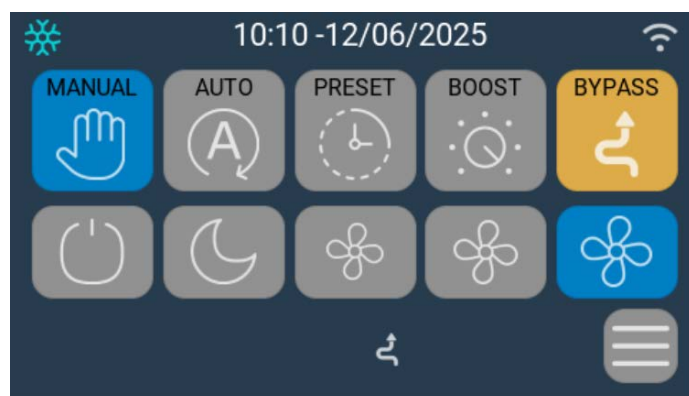
9.7 Boost mode

By pressing the Boost button, the unit runs at maximum speed for a set time. If set with the Lite panel, the unit activates the fans at maximum speed for 60 minutes. With the LCD touch screen control panel, the duration of Boost mode with timer can be set between 3 and 60 minutes. After this time has elapsed, the unit returns to the mode enabled before Boost was activated.



9.8 Manual bypass mode

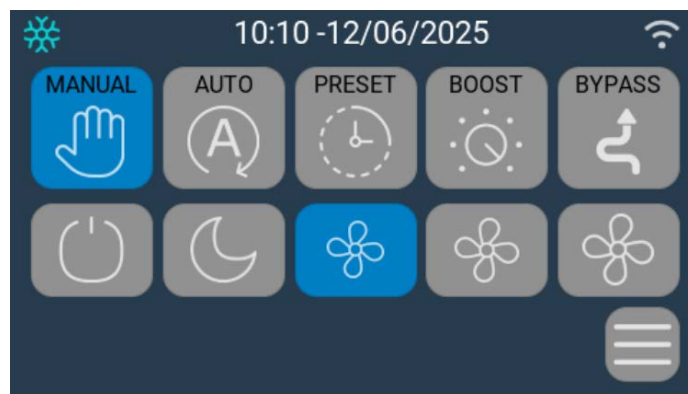
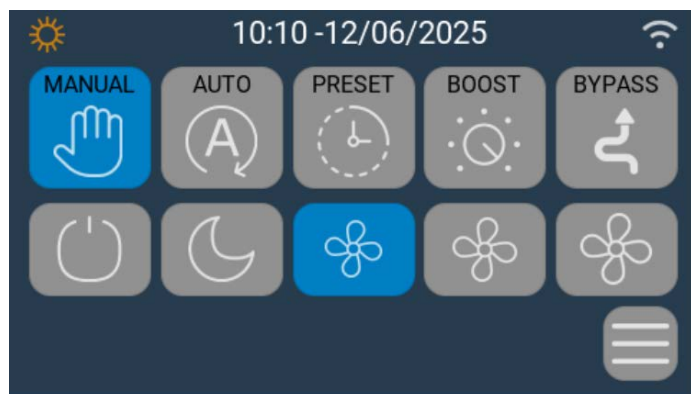
By pressing the Boost button, the unit maintains the currently set speed and activates the bypass to allow air to enter at the same conditions as outdoor air if the user so wishes. If set with the Lite panel, the unit activates manual bypass for 60 minutes. With the LCD touch screen control panel, the duration of manual Bypass mode with timer can be set between 3 and 60 minutes. After the set time has elapsed, the unit deactivates the bypass mode and returns to operation by monitoring the conditions for possible automatic bypass management.



9.9 Season management

The season can be set manually (settable on the APP and LCD panel) or automatically by detecting the average outside temperature (T-RH EXT probe) over a 5-day period, or via dry contact. In the automatic mode, if the daily average temperature is above 15°C, summer mode will be set; if it is lower, winter mode will be set. In manual mode, the machine operates in the set mode. With setting from external contact, if the contact is closed the unit is in winter mode, if the contact is open it is in summer mode. In this mode both SUM/WIN input and output are activated (connectors 20 and 21). The dry contact mode must be set, so it will be not taken into account unless selected, even if there is a physical cable connection.

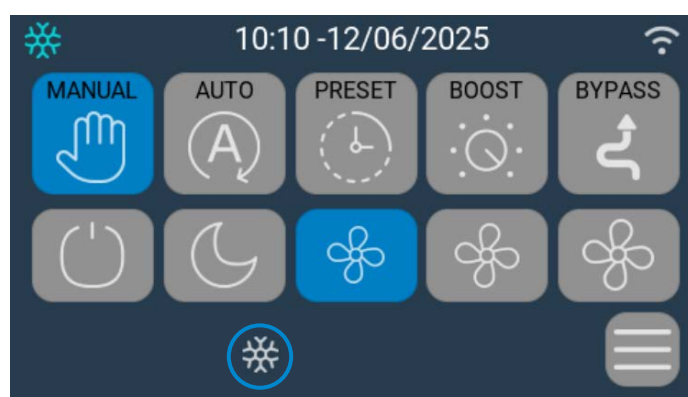
The display shows the sun symbol for summer season and the snowflake symbol for winter season.



9.10 Activating frost protection mode

If the optional pre-heating resistor is not present, when the outside temperature probe T-RH EXT (outside air intake) falls below -3°C, the V IMM fan stops until the temperature detected by the probe T-RH EXT (outside air intake) rises to 3°C.

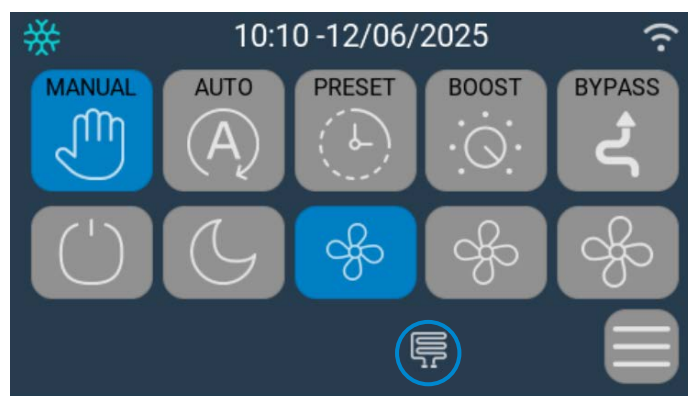
The display shows the defrost symbol (snowflake). Depending on the right- or left-hand configuration, the intake fan must stop until the required conditions are restored.



9.11 Pre-heating activation

With the pre-heating resistor installed and activated as accessory in the accessories menu of the touch screen LCD panel, if the T-RH EXT (outdoor air temperature) probe detects a temperature below -3.6°C, the resistor is activated until the temperature detected by the T-RH EXP (exhaust air temperature) probe rises above +5°C or until the outdoor air temperature rises above -3.6°C.

The display shows the pre-heating resistor activation symbol.



9.12 Output for dehumidifier activation

This mode is available on the Ariosia DOT HP model.

The user sets the desired humidity comfort level RH COM SET to a value between 50% and 65% (default value 55%).

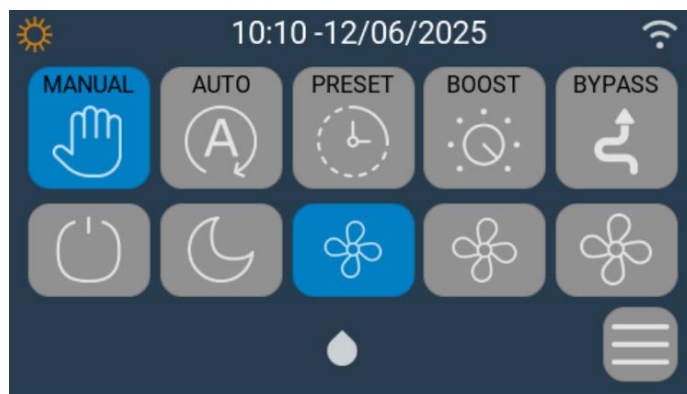
The dehumidification mode is activated when:

- Indoor humidity $\geq$ Comfort humidity + $\frac{1}{2}$ dead band.
- Outdoor humidity condition > cooling circuit operating limit.

After the start-up time has elapsed (3 minutes standard), the compressor is activated for dehumidification. If the unit is in OFF mode and the dehumidification priority function has been set in the menu, the machine will run in dehumidification mode whenever the conditions for dehumidification are present, even during the night-time speed reduction period.

The dehumidification symbol appears on the display.

If external conditions are adverse to the activation of the cooling circuit, the green drop symbol is displayed on the panel, indicating that the free dryer mode has been activated, i.e. dehumidification through the renewal of the ambient air only.



9.13 Bypass mode

Bypass mode is activated under two different conditions.

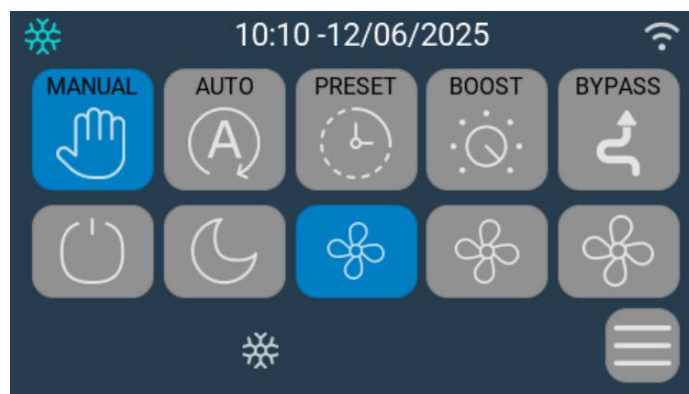
- 1) Freeheating mode, when:
 $T\text{-RH INT} \leq T\text{ COM} - 1^{\circ}\text{C}$
 $(T\text{ INT}) \leq T\text{-RH EXT} \leq (T\text{ COM} + 6^{\circ}\text{C})$
- 2) Freecooling mode, when:
 $T\text{-RH INT} > T\text{ COM} + 2^{\circ}\text{C}$
 $(T\text{ INT} - 6^{\circ}\text{C}) \leq T\text{-RH EXT} \leq (T\text{ INT})$

Where:

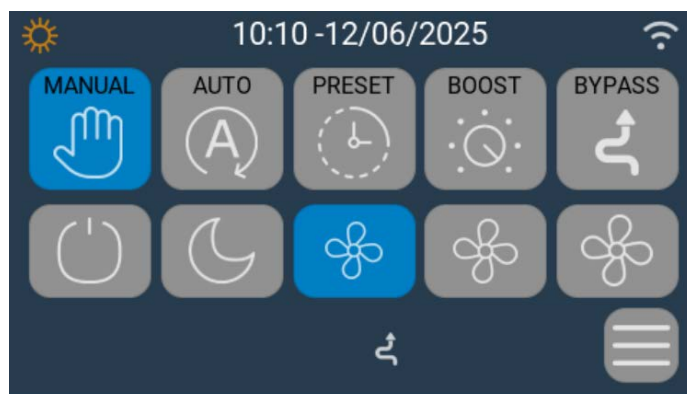
T-RH INT = temperature inside the house.

T COM = set comfort temperature.

T-RH EXT = temperature outside the house.



In both seasons, the bypass icon is displayed on the panel until the bypass activation conditions end. From the board, the bypass motors for closing the flaps are activated. Once conditions are satisfied again, the motors open the flaps to their initial position.

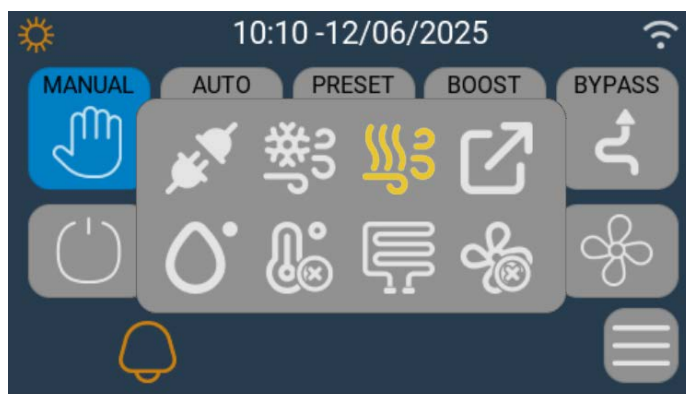
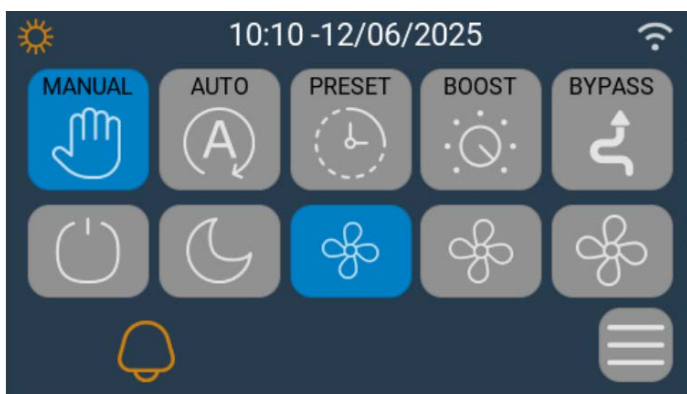


9.14 Filter cleaning indication

The need for filter maintenance is indicated by a timer that can be set between 1,000 and 5,000 hours of operation.

By pressing the bell symbol, the screen with the filter warning is displayed.

After filter maintenance, click on the icon to reset the warning

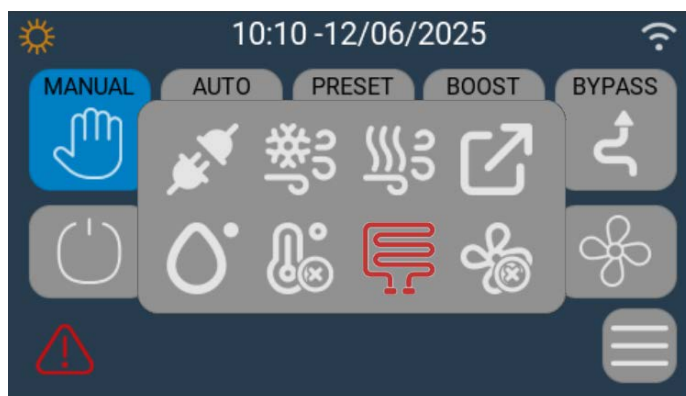
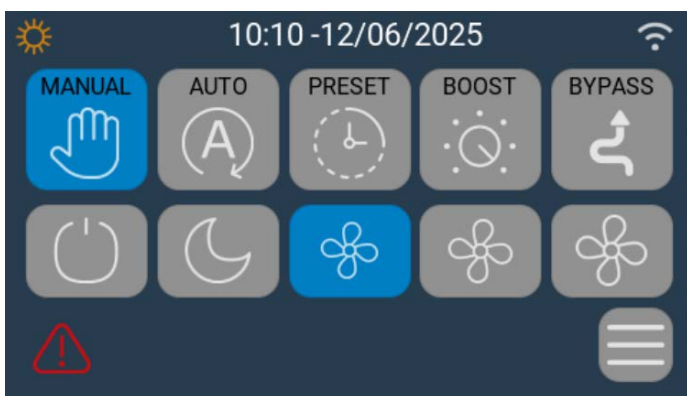


9.15 General fault alarm

If a fault is detected in an internal component: probes, fans, bypass motor, the alarm is shown on the display with the red triangle icon.

By pressing the triangle symbol, the following alarms are displayed:

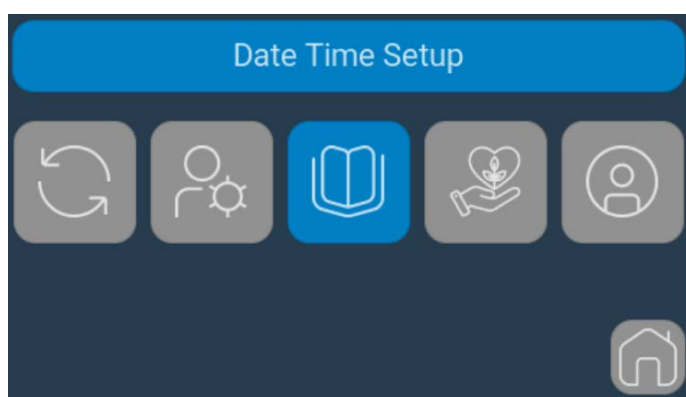
- 1) Probe error ...
- 2) Fan error ...
- 3) Bypass motor error.



9.16 Menus

Press the MENU button to access the parameters for setting the machine functions.

In the menu, it is possible to view unit information, set the presence of accessories, user parameters, desired comfort parameters and advanced unit parameters.



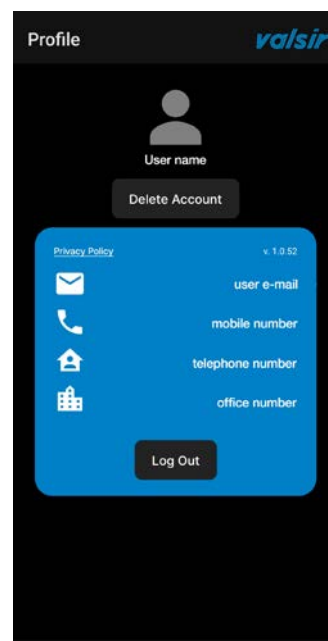
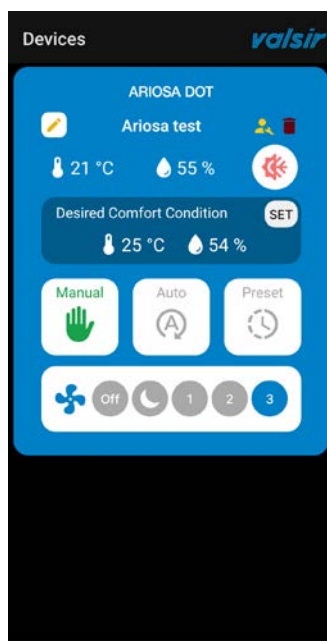
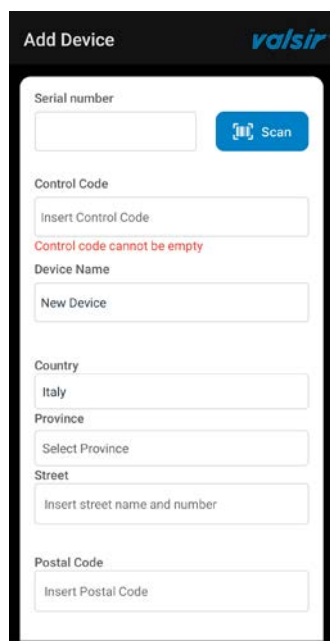
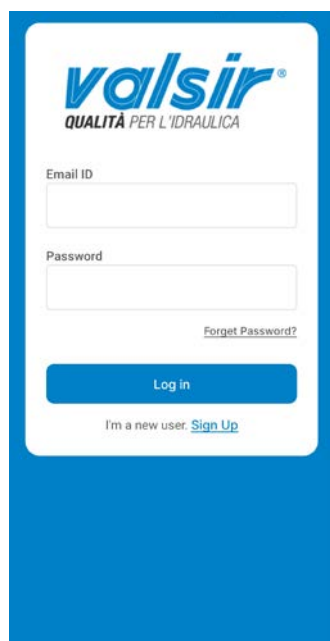
9.17 Alarm list

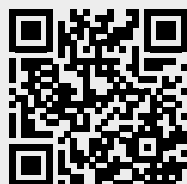
GB

Id alarm	Alarm description	Possible causes	Alarm message	Alarm reset
1	The machine stops due to the closure of the external clean contact	Closure of the contact on the terminal block	EXTERNAL ALARM	AUTOMATICALLY RESETS AFTER OPENING THE CLEAN CONTACT ON THE TERMINAL BLOCK
2	No feedback from the fan to the board	Damaged fan / disconnected connector	FAN	USER LEVEL
3	No communication between the electronic board and the control panel	Missing connection, disconnected cable, damaged panel or board	CONNECTION	USER LEVEL
4	The inlet temperature probe detects a temperature below 6°C	Cold internal temperature	FROST PROTECTION	USER LEVEL
5	One of the inlet temperature probes does not detect temperature or humidity values	Missing connection between probe and board, malfunctioning probe	T-RH PROBE CONNECTION	USER LEVEL
6	Operating time since the last filter reset exceeds the set filter timer	Excessive filter usage time	FILTER TIMER	USER LEVEL
X1	The temperature detected by the evaporator probe is below the minimum temperature limit set for the evaporator	Malfunctioning refrigeration circuit	LOW PRESSURE	SERVICE LEVEL
X2	The temperature detected by the condenser probe is above the maximum temperature limit set for the condenser	Malfunctioning refrigeration circuit	HIGH PRESSURE	SERVICE LEVEL
X3	The temperature is not detected by the evaporator probe	Missing connection between probe and board, malfunctioning probe	EVAPORATOR PROBE ERROR	SERVICE LEVEL
X4	The temperature is not detected by the condenser probe	Missing connection between probe and board, malfunctioning probe	CONDENSER PROBE ERROR	SERVICE LEVEL
X5	The temperature detected by the evaporator probe falls below the freezing temperature 3 times within 60 minutes	Malfunctioning refrigeration circuit	FREEZING HP	SERVICE LEVEL
X6	The compressor is not working properly	Malfunctioning refrigeration circuit	COMPRESSOR FAILURE	SERVICE LEVEL

9.18 Management via APP

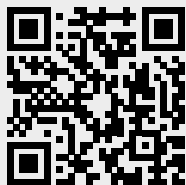
Machine parameters can be managed through the mobile APP that can be downloaded from the Play Store or Apple Store “VMC VALSIR”.





<https://www.valsir.it/u/video-ariosadot>

Watch the video for using the APP.



<https://www.valsir.it/u/doc-ariosadot>

Download the user manual in the other languages.



Download the APP "VMC VALSIR".

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