

INSTALLATION, OPERATION AND MAINTENANCE MANUAL



K7 purification and disinfection units



Please read the instructions carefully before installation. Give this manual to the end user.

SECURITY ADVISE SYMBOLS



Attention, Danger, Safety Warning!



High voltage or electric current hazard!



Danger of injury!



¡Attention! Do not stand under the load: Heavy weight.



Attention! Wear protective glasses UV-A: Ultraviolet radiation.



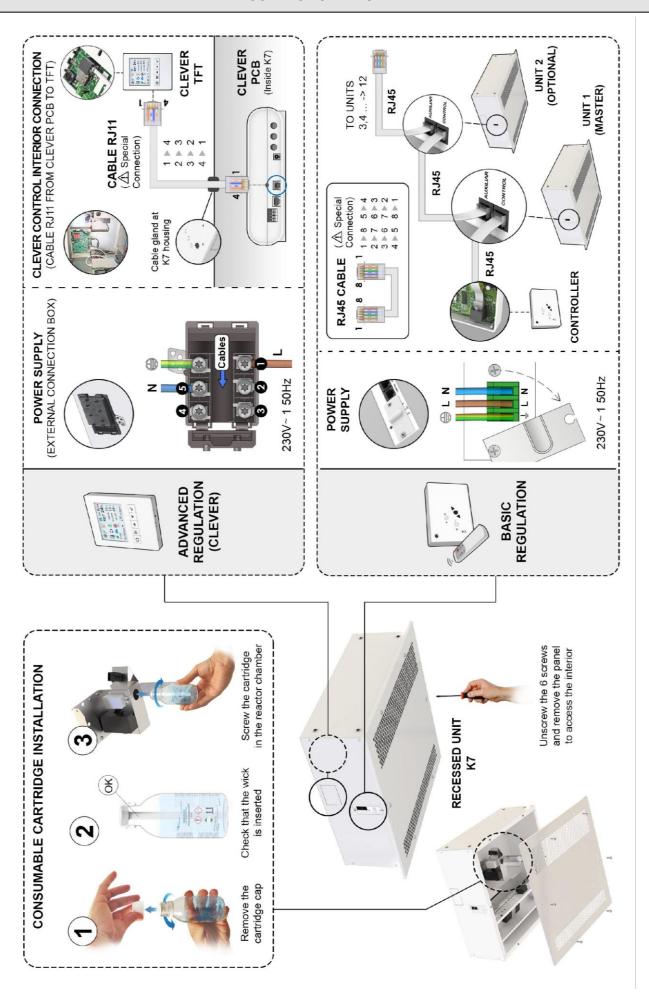
Important information.

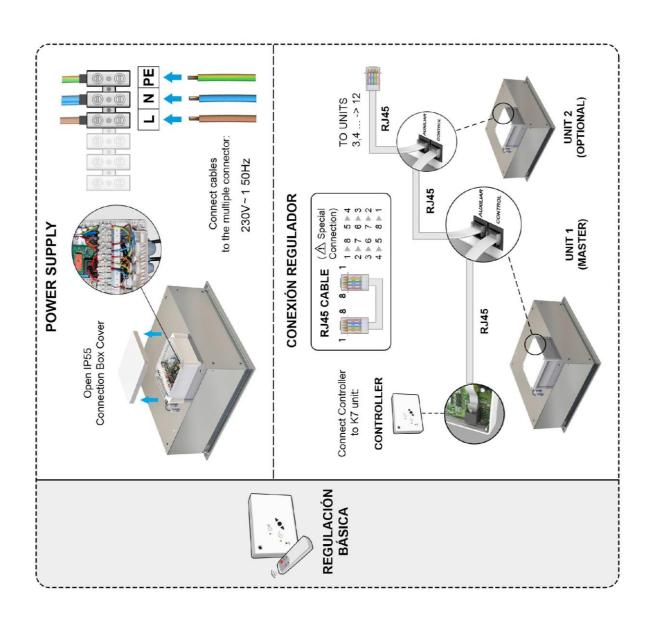
WELDOM10010-R5(16/07/21)

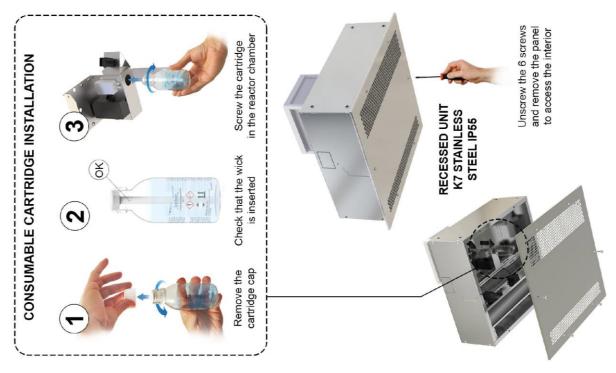
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CONNECTION DIAGRAM



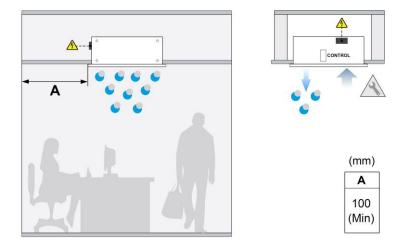




INSTALLATION

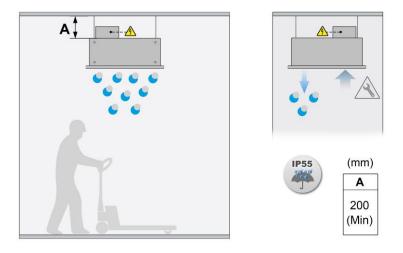
Valid for models: K7

Recessed unit K7



MAX. Maximum recommended height, MIN. Recommended minimum distance (**) Removable sides

Recessed unit K7 Stainless Steel IP55



MAX. Maximum recommended height, MIN. Recommended minimum distance (**) Removable sides

The minimum recommended distance between the intake grille and any obstacle is 200mm.



Assembly, connection and disconnection, electrical wiring and maintenance must be carried out exclusively by qualified personnel, observing these instructions and in accordance with the applicable standards. In case a special control is supplied, a specific manual is attached that must be used for its operation and installation.



Depending on the model it is not necessary to remove the service grill to connect the equipment. All the connections (power and control) and necessary fixings are external (in the standard case, located on the top or side of the purifier), internal (in the case of having Clever Control) or in the external waterproof box (in the case of having IP protection). The equipment has a service grid to place the consumable cartridge and carry out repairs (see repairs section).

Power supply

Depending on the model, you have to access different sites to make your connection:

K7 600 A OH+FC (with standard control) -> On one of the outer sides there is the power board, where the power must be connected.

K7 600 A OH+FC CL (with advanced Clever control) -> On one of the outer sides there is a black box where the power supply must be connected.

K7 600 A OH+FC SS (IP55 standard control) -> There is a waterproof box above the purifier where the power must be entered and connected to the internal terminal block by means of a cable gland.

PCB and control

Depending on the model, you have to access different sites to make your connection. All models include an RJ telephone cable to communicate with the control.

K7 600 A OH+FC (with standard control) -> using the 7-meter RJ45 cable, connect the power board (located on one of the outer sides of the purifier) and the control. In this case, it is not necessary to open the intake grille.

K7 600 A OH+FC CL (with advanced Clever control) -> using the 7-meter RJ11 cable, connect the Clever regulation board (located inside the equipment) and the TFT control of the Clever. In this case, it is necessary to open the intake grille (see section "repairs and replacements"). The RJ11 cable must be routed to the outside through a hole in the top of the housing.

K7 600 A OH+FC SS (IP55 standard control) -> using the 7-meter RJ45 cable, connect the power board (located in the waterproof box above the purifier) and the control (located inside an IP65 waterproof box). To enter the cable in each box, you must use the cable glands supplied with the purifier.

The communication between the controller and the board is digital and low voltage.

There are optional accessories and controllers designed to meet the needs of each client (Clever, brackets, etc.).

The new generation of total control is the Clever control. It leads the new generation of regulation with maximum control that provides maximum energy efficiency. In addition, it allows you to visually monitor the air quality and the status of the disinfection function. For more information request the Clever manual.

Fixings

The equipment has several external attachment points (see situation in the model characteristics section).

The anchor must be dimensioned according to the K7 weights indicated on the technical data page. Installation can be done using threaded rods, turnbuckles or other supports. See available supports in the accessories section.

TRANSPORT AND STORAGE



Attention! Heavy product.

Do not stand under the suspended equipment during transport or assembly.

Store in a dry place protected from the elements. If the packaging is open, cover the purifier to protect it from dust. Do not step on or place heavy load son it to avoid damage to he material. Storage temperatura between -20°C and +40°C.

When transporting the material, make sure that it is not damaged by the forklift (penetration of the fork in the packaging). The instructions on the packaging must be observed.

Includes a consumable with disinfectant liquid (hydrogen peroxide solution).





(EN) PRECAUTIONS: Causes skin irritation. Causes serious eye irritation. It can irritate the respiratory tract. Avoid breathing dust/fume/gas/mist/vapors/spray. Wash hands and forearms thoroughly after handling. Use only outdoors or in a well-ventilated área. Wear protective gloves/clothing/glasses/mask. IN CASE OF SKIN CONTACT: Wash with plenty of soap and water. IN CASE OF INHALATION: Remove person to fresh air

and keep in a position that facilitates breathing. IN CASE OF CONTACT WITH EYES: Rinse carefully with water for several minutes. Remove contact lenses when present and can be done easily. Continue with the wash. In case of skin irritation: Consult a doctor. Immediately call a POSISON CENTER or doctor. Remove contaminated clothing. Store in a well ventilated place. Keep the recipient hermetically sealed. Keep locked up. Dispose of contents/container to an approved waste disposal facility.

OPERATING INSTRUCTIONS

Control board features

The relay boards adjust the two fan speeds depending on the condenser connection.

Standard controller features



- 2 ventilation speeds.
- Memory: guarantees that, in the evento o fan interruption in the power supply, the speed that we had selected is preserved when the service is restored. This function can be connected-disconnected using the ON/OFF switch located inside the controller.



- RJ45 cable and digital communication: they have a fast connection with a telephone type cable and digital communication between the controller and the purifier. This
- type of communication is reliable even over long distances.
- External start-stop: inside the controller there is the possibility of connecting a normally open contact (1,2) that governs the on-off of the equipment through any external device. The contact is potential free. When the contact is open then the purifier is on. When the contact closes the purifier has a 30 second delay before stopping. It can be used for a timer, temperature sensor, fire alarm, PLC, etc.

- Remote control: all standards controls have an IR receiver that allows you to use a remote control.
- End of consumable: when the level sensor of the disinfectant cartridge sends the signal through the board, the control flashes the zero-speed led (red led). In this way the user is notified that the cartridge must be changed. The ventilation of the purifier continues its operation as it did before the consumable was finished. Only hydroxyl radicals stop working.

Special controls

If there is a need to control more parameters, there is an advanced control, the Clever. It has its own manual where all its functions are explained.

K7 with Clever control

Purifying and disinfection active and passive system control for air and surfaces.

Advanced Clever Control has a specific disinfection program with:

- Same functions as standard Clever control (see enclosed control manual).
- Indicates, on the TFT screen, when the OH disinfection system is working:



OH- and FC disinfection activated

Without icon OH· disinfection deactivated

When the cartridge/s are consumed, Clever Control warns it on the TFT screen:



+ warning message

OH· disinfection deactivated due to empty cartridge

Incorporates a 4-level air quality sensor by Volatile Organic Compounds (VOCs). It is installed inside the Advanced Clever Control and monitors the air quality that goes through the k7 as:



Optimal



Regular

Bad



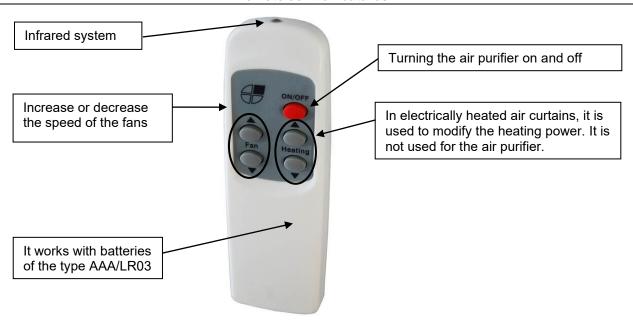
Good



- The control can be configured using the next menu "Basic Configuration → Parameters → Disinfection":
 - Kind of disinfection:
 - NO. Deactivated (it does not stop the photocatalysis disinfection, only hide the disinfection icons)
 - **OH+FC**. Double disinfection technology (Hydroxyl + Photocatalysis)
 - FC. Only photocatalysis disinfection.
 - Disinfection mode:
 - 24. Uninterrupted 24h/7 days.
 - ON. Active when k7 is running.
 - For the 24 mode, the user can configure the fan speed when one of the next conditions occurs:
 - OFF button is pressed
 - Automatic configuration is selected and the program determinates that the k7 should be stopped
 - The time programmer stops the k7
 - Activate or deactivate the air quality sensor.

- By default the control is only configurated with P1 manual, energy saving comfort and 24h disinfection with speed 1.

Remote control features



WIRING DIAGRAMS

The following diagrams are attached:

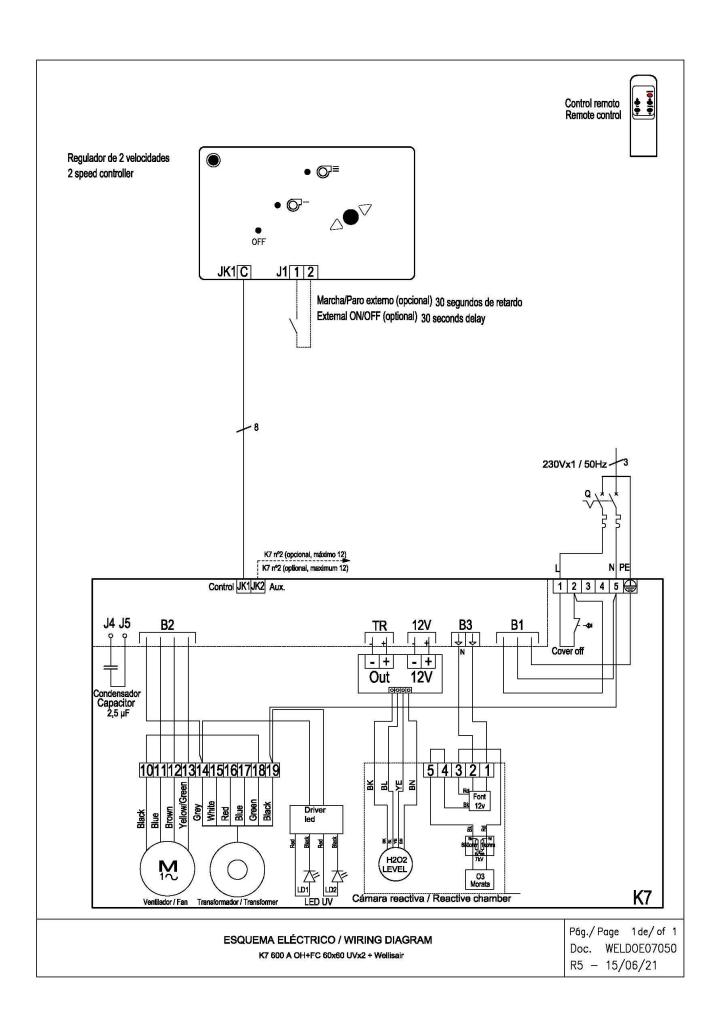
K7 600 A

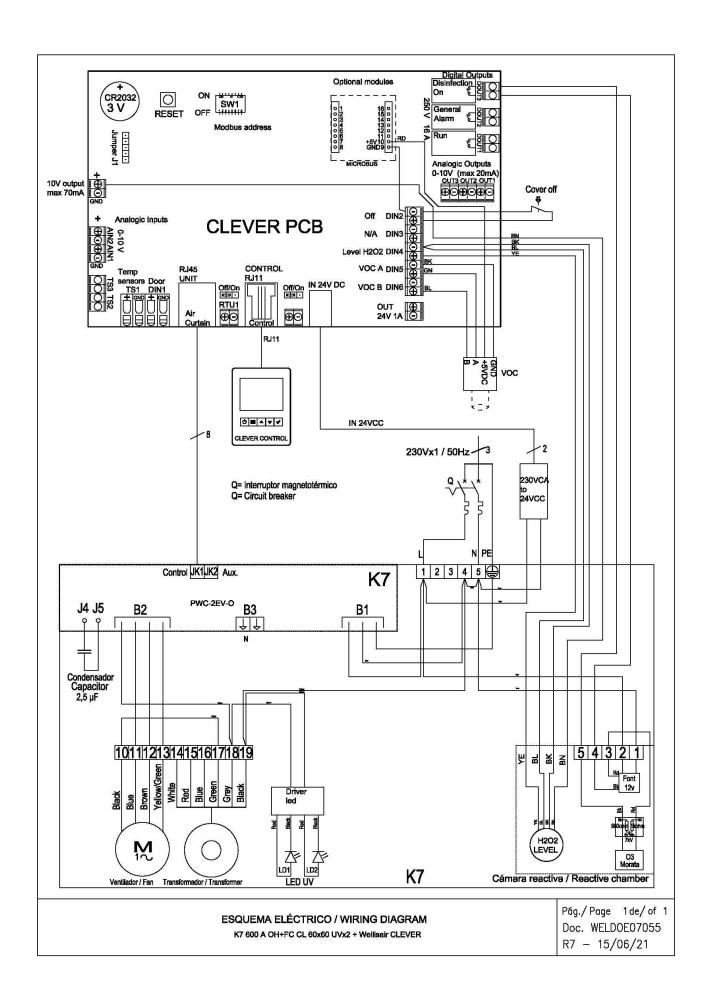
- Purifier and disinfectant K7 600 A OH+FC with standard control. Diagram WELDOE07050
- Purifier and disinfectant K7 600 A OH+FC CL with advanced Clever control. Diagram WELDOE07055

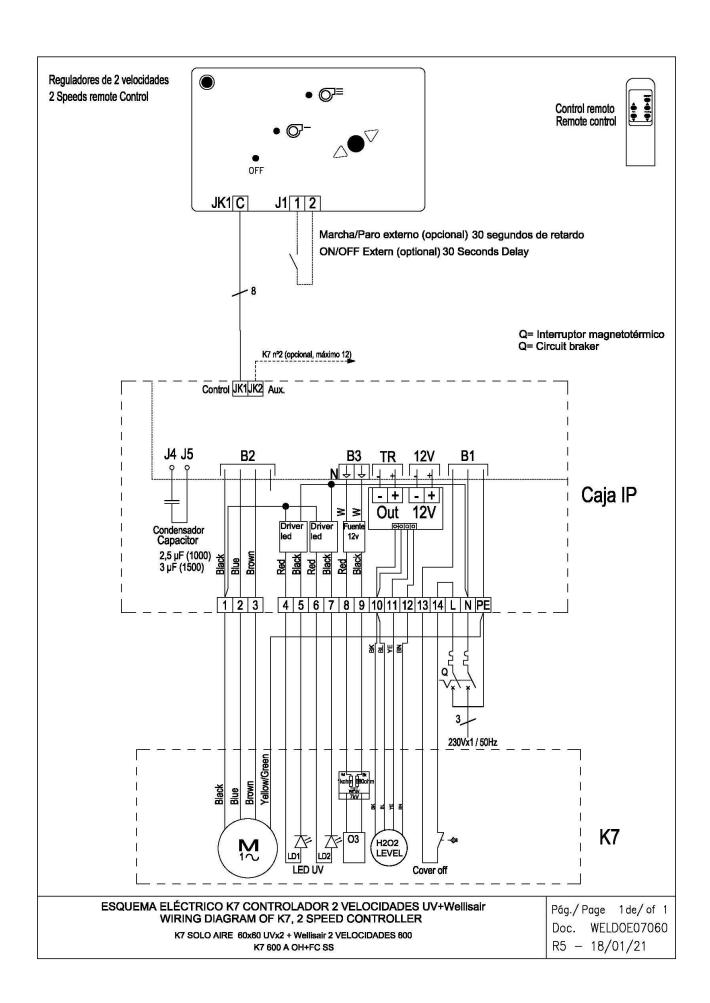
K7 600 A SS

Purifier and disinfectant K7 600 A OH+FC with standard control. Diagram WELDOE07060

In case there is a need to connect the purifier to a PLC, the corresponding diagram will be sent.







K7 600 A OH+FC | Purification Technology of Air and Surfaces



Characteristics



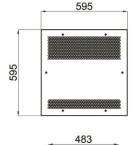
- Combines a double patented purification technology through the generation of hydroxyl radicals OH· and the effect of photocatalysis.
- Innovative OH active technology with efficient production of hydroxyl radicals, which sanitize both air and surfaces through a chain reaction.
 Through Advanced Oxidation Processes (AOP) inactivates up to 99.9% of pathogenic microorganisms (viruses and bacteria), improves air quality (reducing volatile organic compounds and suspended particles) and eliminates odours.
- Kleenfan technology with photocatalytic disinfectant action fans. UV-A rays, from the
 long-life LED, act on the titanium dioxide of the turbine generating Reactive Oxygen
 Species (ROS) that, through oxidation / reduction reactions, deactivate a wide range of
 pathogenic microorganisms (viruses and bacteria). It mineralizes most of the pollutants
 present in urban areas produced by vehicles and industry (NOx, SOx, COx,
 formaldehydes, VOCs, etc.).
- Medium range in open spaces of 1000 m³ (~ 300 m²).
- Includes Plug&Play control with 7m RJ45 cable and infrared remote control.
 Optional Advanced Clever control (programmable, automatic, intelligent, energy saving, Modbus RTU for BMS...) and air quality sensor monitor.
- Self-supporting casing construction made of galvanized steel plate, ready to be installed recessed in a false ceiling.
- Inlet grille (free of maintenance) integrated in a single white frame colour RAL 9016.
 Other colours are available on request.
- · Low noise twisted cross-flow fan driven by a 2-speed external rotor motor.

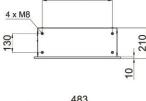
Specifications

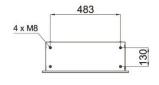
Model	Airflow	Fan Power 230V-50Hz	Fan Current 230V-50Hz	Noise Level (5 m)	Weight
	m³/h	W	A	dB(A)	kg
K7 600 A OH+FC	105 / 315	33,4	0,09/0,17	31/37	16

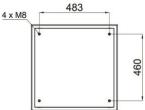
Dimensions





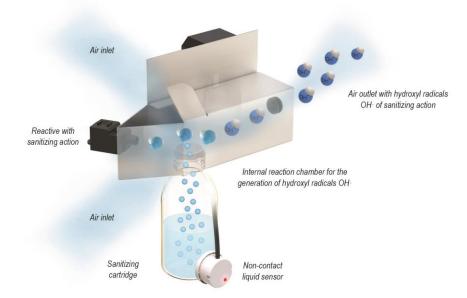








Technology with Hydroxyl Radicals OH-



Innovative and disruptive patented technology which effectively generates and expands hydroxyl radicals (OH·) that by oxidation:

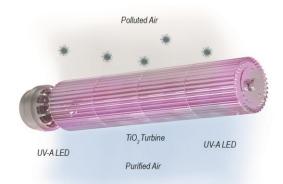
- · Inactivates up to 99.9% of pathogenic microorganisms both in the air and on surfaces (viruses and bacteria)
- · Improves air quality by reducing volatile organic compounds (VOCs) and suspended PM particles
- · Eliminates odours

The hydroxyl radical (OH-) is the most important natural oxidant in the troposphere. It is vital in the removal of greenhouse gases such as carbon dioxide or methane.

Clean and safe technology which constantly produces hydroxyl radicals (OH·).

Hydroxil radicals (OH·) are an active sanitizing technology that, through the effect called "respiratory explosion", create a series of chain reactions which quickly inactivate pathogenic microorganisms not only from the air but also from the surfaces.

Photocatalysis Fan Technology (UV-A Led & TiO₂)



- · Kleenfan technology with photocatalytic disinfectant action fans.
- Photocatalysis starts from the natural principle of decontamination of nature itself. It is a natural phenomenon that, mimicking
 photosynthesis, accelerates a photoreaction through the action of light on a catalyst.
- UV-A rays, from the long-life LED, act on the titanium dioxide in the turbine generating Reactive Oxygen Species (ROS) that cause advanced oxidation processes (AOP), deactivating a wide range of pathogenic microorganisms (viruses and bacteria).
- This catalytic reaction produces oxidation reactions in organic compounds and reduction in inorganic ones, in addition to significantly reducing suspended particles.
- · Mineralizes most of the pollutants present in urban areas produced by vehicles and industry (NOx, SOx, COx, formaldehydes, VOCs, etc.).

MAINTENANCE INSTRUCTIONS

\triangle	For safety, before cleaning, turn off the appliance using the controller.
	It is forbidden to open the service grille (risk of electric shock, trapping in fans and glare from UV-A light). Repairs must be carried out exclusively by authorized personnel.
0	The inside of the appliance must not be cleaned with water or steam.

Exterior cleaning

It is recommended to clean the intake grille weekly. In addition, it is important to make sure that the purifier is turned off, on the contrary, the mixture between dust and a damp cloth would form a kind of paste that could damage the fan rotor when it sucks in the air.

An annual cleaning of the discharge area should be performed.

Cleaning the body of the purifier should be done with a damp cloth and a conventional detergent. Do not use caustic or acid-containing detergents.

The intake grille prevents objects from entering the internal elements. It is advisable to periodically check that the intake grille is free of any object that could prevent the entry of air (papers, etc.).



Internal cleaning

In models with perforated grille, it is advisable to clean the inside of the unit with a vacuum cleaner at least once every 2 years (*), better to do it before winter, using qualified personnel. It is recommended to clean the inside of the equipment frequently with the help of a vacuum cleaner. (*)

(*) These periods are indicative depending on the conditions of each installation. In places with a high number of suspended particles it is desirable to increase the frequency of interior cleaning.

REPAIRS AND REEMPLACEMENTS



The assembly and the electrical connection must be carried out exclusively by specialized personnel and observing these instructions.

Before carrying out any repairs, you must:



- Notify staff and indicate that work is in progress.
- Disconnect the power and protect the termal magnet (so that no one can accidentally actuate it).
- Make sure there is no voltage on the purifier.
- Make sure that the fans have stopped.
- Use only original spare parts.



To **open the intake grille**, follow these steps:

Remove the screws from the intake grille.



Gently pull the grill down.



Replacement of the consumable

Before changing the consumable, notify and indicate that is working, stop the purifier with the control and make sure that the turbine has completely stopped.

Disassemble the intake grille as indicated in the previous step and proceed to unscrew the bottle from the reactor chamber.

Disassemble the intake grille as indicated in the previous step and proceed to unscrew the bottle from the reactor chamber.





Open the new consumable and insert the wick into the bottle. Then screw the bottle into the reactor chamber and close the suction grille again.





There is a safety switch, which deactivates the equipment when opening the grille. This way, the UV-A LED light can never be seen on while maintenance is being performed.

Standard purifier motor or turbine replacement

Before changing the motor, warn and indicate that is working, disconnect the power supply, make sure that there is no voltage and that the turbine has stopped.



Remove the side from the motor side.



Disconnect the motor connector on the power board (*)



Then loosen the turbine fixing screw (Allen 2.5mm) through the discharge port.

Remove the motor by loosening the fixing screws. Assemble the replacement one following the process in reverse order, making sure that the motor and turbine fit perfectly, the turbine screw must coincide with the flat part of the motor shaft.



Remove with a screwdriver the side of the motor side.

(*) In case of the K7 600 A OH+FC SS, the motor connection must be disconnected in the IP55 waterproof box located above the purifier.

Fuse replacement

Before doing any manipulations, warn and indicate that you are working, disconnect the power supply, make sure that there is no voltage and that the fans have stopped.

For K7 600 A OH+FC and K7 600 A OH+FC CL, open the intake grille and remove the fuse by hand or the help of a screwdriver and replace it.



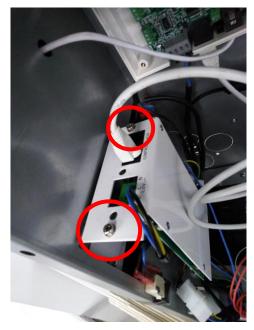
In the case of the K7 600 A OH+FC SS, the board is inside the waterproof box above the purifier. Simply unscrew the cap and remove the fuse by hand or the help of a screwdriver and replace it.

PCB replacement

K7 600 A OH+FC (standard control) -> Open the inspection door and disconnect the cables from the board that are visible and the capacitor. Unscrew the board located on one of the sides, disconnect the power supply and pull it:



K7 600 A OH+FC CL (advanced Clever control) -> Open the inspection door and disconnect the cables from the board that are visible and the capacitor. Unscrew the power board from the top and perform the necessary repair:



K7 600 A OH+FC SS (standard control IP55) -> Open the waterproof box above the purifier and disconnect all cables from the board. Unscrew the bracket clamp to the waterproof box and finally unscrew the bracket plate.





FAILURES AND SOLUTIONS

More than 95% of the complaints are submitted during the start of operation of the equipment and are due to installation errors. Reviewing the following 3 points, more than 90% of the incidents are solved:

- A) RJ45 cable manipulated: The cable that connects the controller to the air purifier is an 8 lines crossed RJ45 cable. If manipulated (cut or removed the connector) and incorrectly joined (reverse way) the purifier Will not work well. Moreover it can damage the electronics. To solve the problem just turn the connector of the cable (see connection diagram in the first page).
- B) Wrong connection of the RJ45 cable. Verify whether the connector position is the correct, between the "control" and "auxiliary", according to the installation diagram (particularly if there are several purifiers with a single controller).
- **C) Wrong current supply/input.** The purifier input depends on the type of current available and also on the heating type of the unit. Connect the unit according to the connection diagrams of the first page.

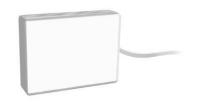
More common failures and solutions			
Effect	Problems	Solutions	
All lights of the controller are OFF	Is the RJ45/RJ11 cable the original (not manipulated), with no enlargements either shortenings?	Change cable or reconnect it correctly.	
	Does the current reaches the connection box?	Correctly connect the terminals of the connection box: Between L and N there must be 230V.	
	Is the controller connected to the purifier, to the connector "Control" of the PCBoard?	Connect the cable from the controller to the "Control", never to the "Aux".	
	Is the fuse of the PCBoard in good conditions?	Check the fuse and replace it in case it is necessary (type T, slow action)	
	Is the grille in place?	Place the grille in the corresponding position and close the equipment	
Some lights of the controller are flashing	Zero speed light blinks	The consumable has run out and needs to be replaced	
The speed changes continuously with no apparent reason but the lights of the controller are not flashing.	Probably the RJ45 cable is near interference sources, transmitters, cable plates, particularly those that supply current to motors, etc.	Pass the cable the furthest possible away from interference sources, particularly when long distances or use a screened table.	

ACCESSORIES



Clever Control

Intelligent proactive regulation, advanced functions, Automatic/manual working, door delay, timer, save energy program, multi equipment management, BMS Modbus connection, etc.



External temperature sensor

It permits to take the temperatura from a place different to the control.



Interface II

Allows the connection to a centralized management system (BMS, PLC, etc.).

Supports, vibration dampers, etc. depending on the model.









20m and 50m RJ45 cable



DECLARATION OF CONFORMITY



Declaration (€ of conformity / Declaración (€ de conformidad

Manufacturer

Motors i Ventiladors S.L. (AIRTÈCNICS) Conca de Barberà 6, Pol. Ind. Pla de la Bruguera 08211 Castellar del Vallès (Barcelona) Spain

We declare, under our sole responsibility, that the product Declaramos, bajo nuestra única responsabilidad, que el producto

> Air and Surfaces Purification and Disinfection Equipment Equipo de Purificación y Desinfección del Aire y Superficies

with models con los modelos

K7 OH+FC

is/are developed, designed and manufactured in accordance with the following directive(s) ha(n) sido desarrollado(s), diseñado(s) y fabricado(s) de acuerdo con la(s) siguiente(s) directiva(s)

Low Voltage Directive 2014/35/UE Directiva Baja Tensión 2014/35/UE

Electromagnetic Compatibility Directive 2014/30/UE Directiva Compatibilidad Electromagnética 2014/30/UE

Restriction Certain Hazardous Substances Directive 2011/65/EU (RoHS) Directiva Restricción Substancias Peligrosas 2011/65/EU

Eco-design Energy-related Products Directive 2009/125/EC Directiva Diseño Ecológico Productos Con Energía 2009/125/CE

applying the following harmonized standards in particular aplicando las siguientes normas harmonizadas en particular

LVD:

EN 60335-1:2012 / AC:2014 / A11:2014 / A13:2017 / A14:2020

EN 60335-2-30:2009 / A11:2012

EN 60335-2-65:2003 / A1:2008 / A11:2012

EN 62471:2008

EMC:

EN 61000-3-11:2000 EN 61000-3-12:2011 EN 55014-1:2017 EN 55014-2:2015

RoHS:

EN 50581:2012

Date / Fecha Name / Nombre Position / Cargo 13/11/2020 Jordi Hierro

Technical Manager I Director Técnico

MOTORS I VENTILADORS, S.L. 19858967183 - C/ Conca de Barberà, 6 08211 Castellar del Vallès Tel. 937159988 - Fax 937159969



Purifier identification

All air purifiers are identified by a unique serial number printed on a label located on the inside of the service door. It also indicates the model of the purifier and its technical characteristics (flow, technical data of the fans).

It is essential to have this number to provide possible spare parts or technical information for the purifier in question.

In case you detect errors or ambiguities in this manual, we Will be happy to receive your *feedback*, it helps us to improve our documentation even more.

Airtècnics reserves the right to change any of the specifications in this manual.

GUARANTEE

Our warranty extends for one calendar year from the date of delivery. The guarantee is limited to repairing or replacing from our warehouse the that eventually suffer failures attributable to production defects. Installation costs are borne by the buyer. Products that, in our opinion, have been used improperly, handled incorrectly, improperly installed, connected to voltages other than the nominal, modified or repaired by unauthorized personnel, or that have suffered damage during transport, are excluded from any guarantee.

To validate the guarantee, it should be correctly filled and enclosed with the invoice that vouches for the buying date. If its manipulated, it will lose all validity.

It is the buyer's responsibility to take the necessary safety measures because in case of a failure or mistake in one of one our products, no damages to third parties, sets, installations, or people will occur.

£ ______

Guarantee draft Purifier data: Series number: Model: Invoice date: Invoice number: Buyer data: Name: Country: Phone: Fax: Seller data: Name: Address: Country: Phone: Fax:

Buyer signature and stamp

Seller signature and stamp