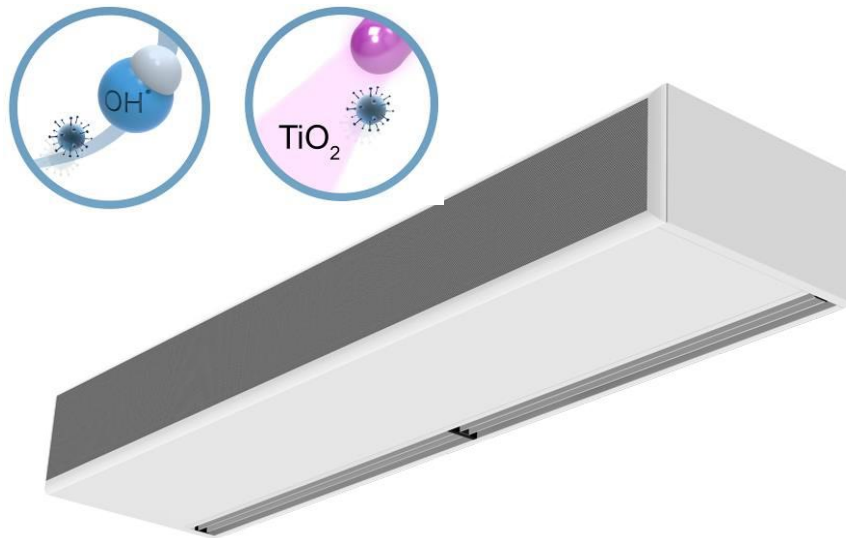




**ACCOMPANIMENT TO THE INSTALLATION, OPERATION
AND MAINTENANCE MANUAL**



Air curtain with disinfection technology



*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

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OUTSTANDING INSTALLATION INFORMATION



Disinfection air curtains are divided in two groups: hydroxyl radicals technology (OH·) and Photocatalysis technology (FC).

To know the installation, functioning and maintenance of double technology air curtains (OH+FC), read both manual categories.

For the FC air curtains, just read the corresponding category.

Air curtains with hydroxyl radicals' technology (OH·)



Air curtains with OH technology ONLY can be installed in HORIZONTAL position, because inside there is a bottle with disinfectant liquid which can be dropped.



This cartridge is placed between the air curtain's fans. Just open the door or panel service to identify its position.

Depending on the length, the air curtains include one or two reaction chambers:

Models: 1000 & 1500



Models: 2000, 2500 & 3000



To install the air curtain, follow the indications of the manual and connection diagram enclosed with the air curtain. Once it is installed, put the disinfection cartridge/s on the reaction chamber/s to activate the active purifying and disinfection function.

The air curtains include the Advanced Clever control¹ installed in the air curtain's housing (the position changes depending on the model), it only needs the TFT connection and the accessories which the user wants to use (temperature sensors, door contact, ModBus, etc):



Advanced Clever Control includes an air quality sensor² to monitor on the TFT screen the air pollution level that enters to the air curtain.

Air curtains with Photocatalytic technology (FC)



Air curtains with Photocatalytic technology (FC) can be installed in HORIZONTAL and VERTICAL position.

The components added to the standard air curtain are:

- Impeller with dioxide of titanium treatment (free of maintenance)
- Led UV-A + power supply PCB for the long-life Led (>40.000h)

These components are already integrated in the air curtain fans, there is no need to do any other installation. To install the air curtain, follow the indications of the manual and connection diagram enclosed with the air curtain.



¹ See Advanced Clever Control manual enclosed with the air curtain manual.

² See "Disinfection air curtains operation" section.

TRANSPORT AND STORAGE



¡Attention! Heavy load.

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 on it to avoid damage to the material. Storage temperature 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/vapours/spray. Wash hands and forearms thoroughly after handling. Use only outdoors or in a well-ventilated area. 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



For safety, air curtains never have to be stopped by disconnecting them from the main supply, always through the controller and wait for 10 minutes at least to disconnect the main supply. In case to not follow these instructions, the internal parts of the air curtain can be damaged.

Air curtains with hydroxyl radicals' technology (OH·)

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 air curtain as:



Optimal



Regular



Good



Bad

- The control can be configured using the next menu “Basic Configuration → Parameters → Disinfection”:
 - o Kind of disinfection:
 - **NO**. Deactivated (it does not stop the photocatalysis disinfection, only hide the disinfection icons)
 - **OH+FC**. Double disinfection technology (Hydroxyl radicals + Photocatalysis)
 - **FC**. Only photocatalysis disinfection.
 - o Disinfection mode:
 - **24**. Uninterrupted 24h/7 days.
 - **ON**. Active when air curtain is running.
 - o 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 air curtain should be stopped
 - The time programmer stops the air curtain
 - o Activate or deactivate the air quality sensor.

Air curtains with Photocatalysis technology (FC)

When the air curtain is running, the passive (air that goes through the fans) purification and disinfection is active.



Includes a standard five speed control (see enclosed air curtain manual)

Optional, Advanced Clever Control with a specific disinfection program to monitor the disinfection and the kind of functioning.

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 radicals + Photocatalysis)
 - **FC.** Only photocatalysis disinfection.
- Disinfection mode:
 - **24.** Uninterrupted 24h/7 days.
 - **ON.** Active when air curtain 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 air curtain should be stopped
 - The time programmer stops the air curtain
- Activate or deactivate the air quality sensor.

- 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 air curtain as:



Optimal



Regular



Good



Bad

ESQUEMAS ELÉCTRICOS

Find attached the following electrical wiring diagrams:

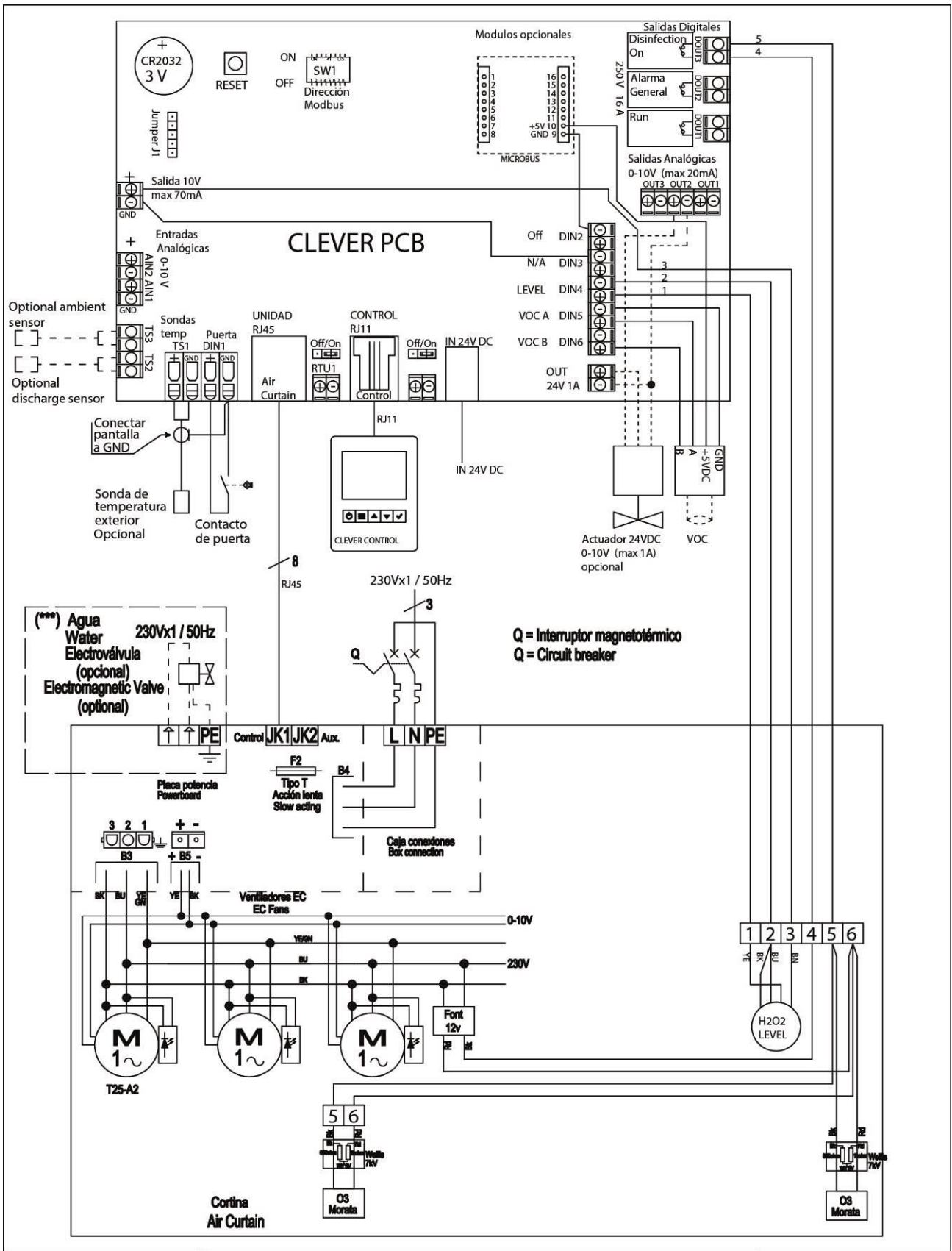
Disinfection OH+FC:

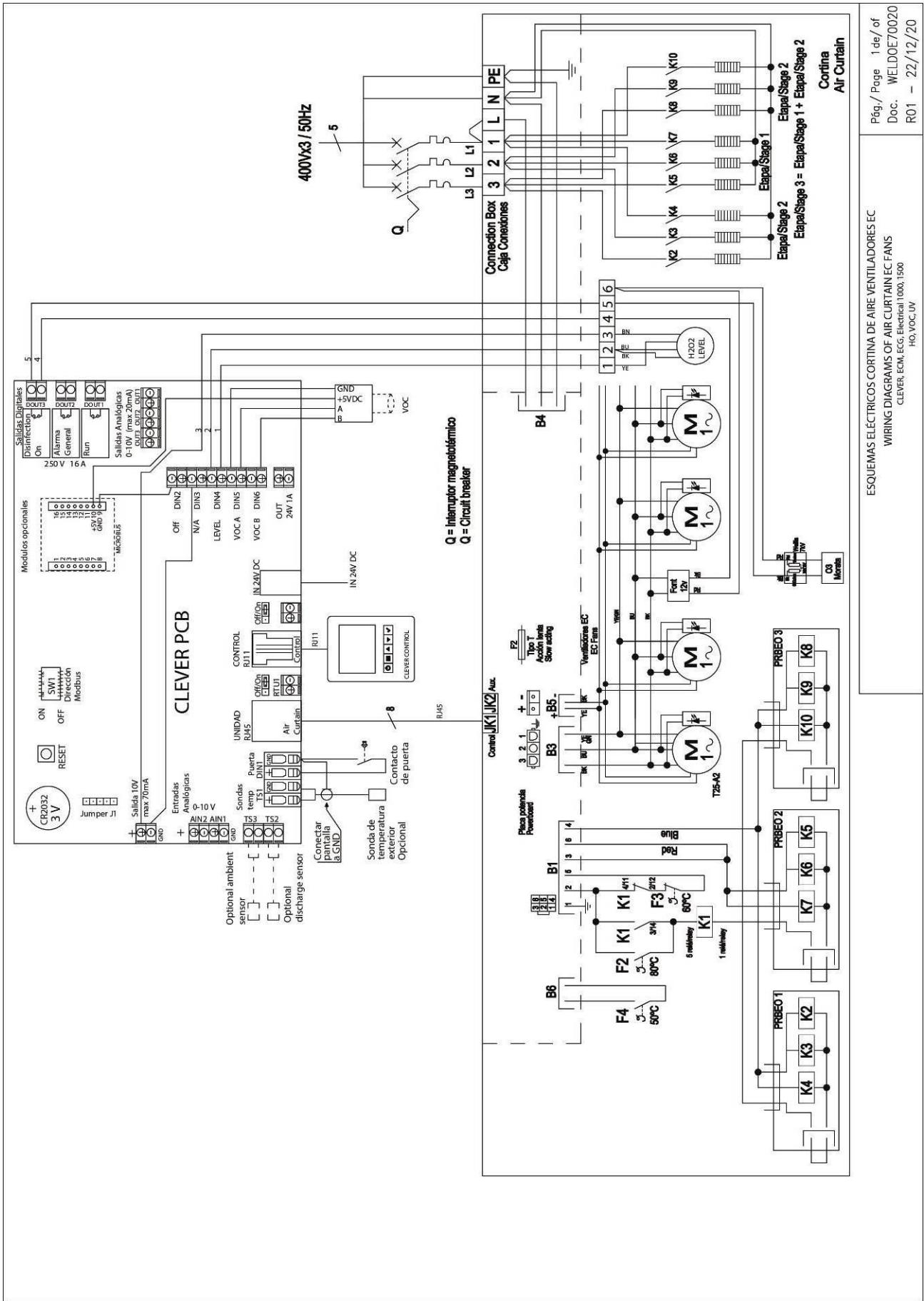
- Only air or water heated with Clever control models 1000-1500. Diagram: WELDOE70005
- Only air or water heated with Clever control models 2000-2500-3000. Diagram: WELDOE70015
- Electrical heated up to 27kW with Clever control models 1000-1500. Diagram: WELDOE70020
- Electrical heated up to 27kW with Clever control models 2000-2500-3000. Diagram: WELDOE70025
- Electrical heated 30kW with Clever control models 2000-2500-3000. Diagram: WELDOE70035

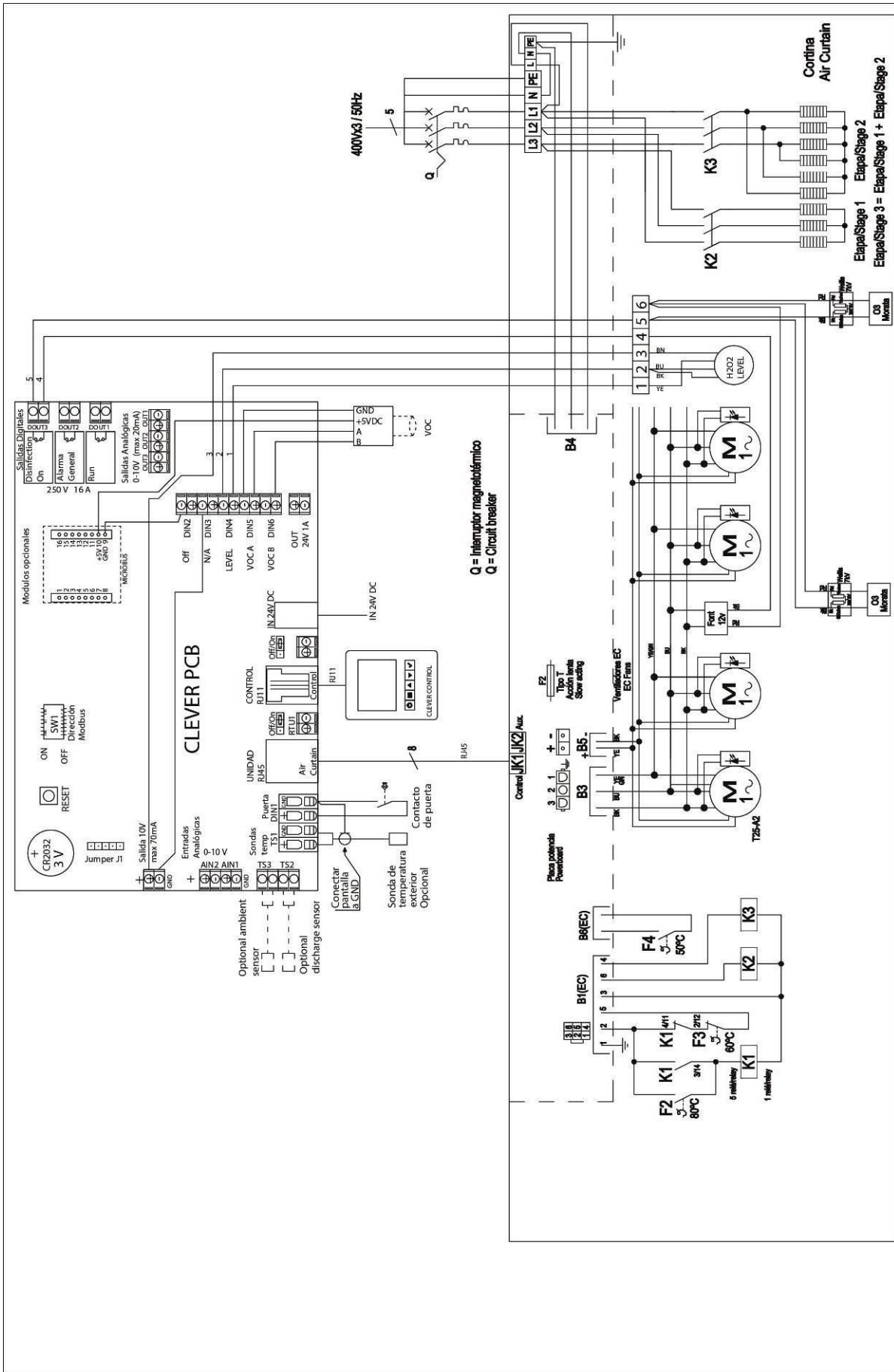
Disinfection FC:

- Only air or water heated with standard control. Diagram: WELDOE70006
- Electrical heated up to 27kW with standard control. Diagram: WELDOE70021
- Electrical heated 30kW with standard control. Diagram: WELDOE70031

In case you need to connect the equipment to a PLC, the corresponding wiring diagrams will be supplied.

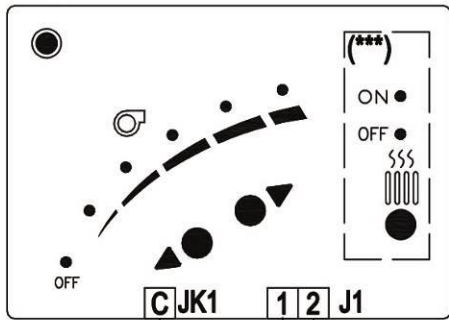






Reguladores de 5 velocidades
5 Speeds remote Control

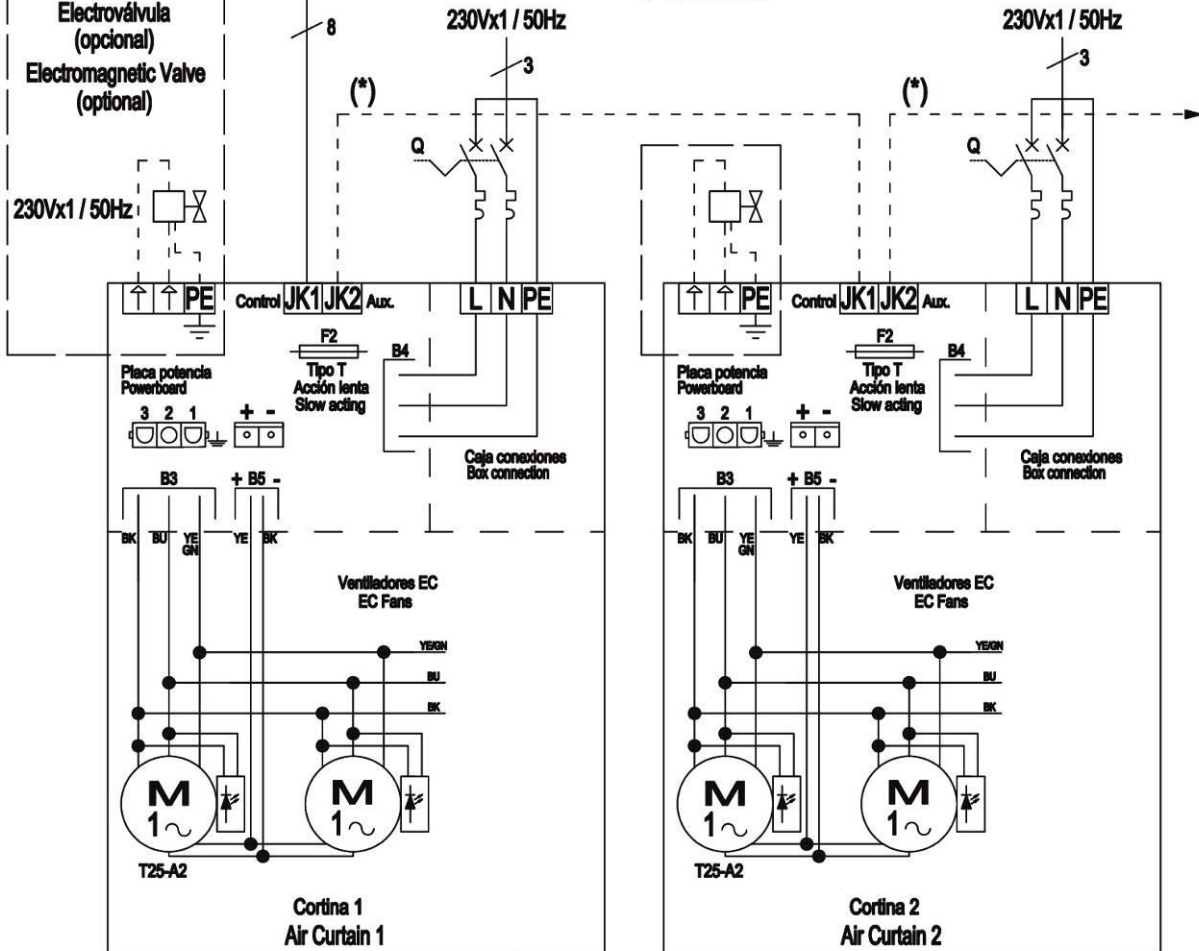
Control remoto
Remote control



Marcha/Paro externo (opcional) 30 segundos de retardo
ON/OFF Extern (optional) 30 Seconds Delay

(***) Agua
Water
Electroválvula
(opcional)
Electromagnetic Valve
(optional)

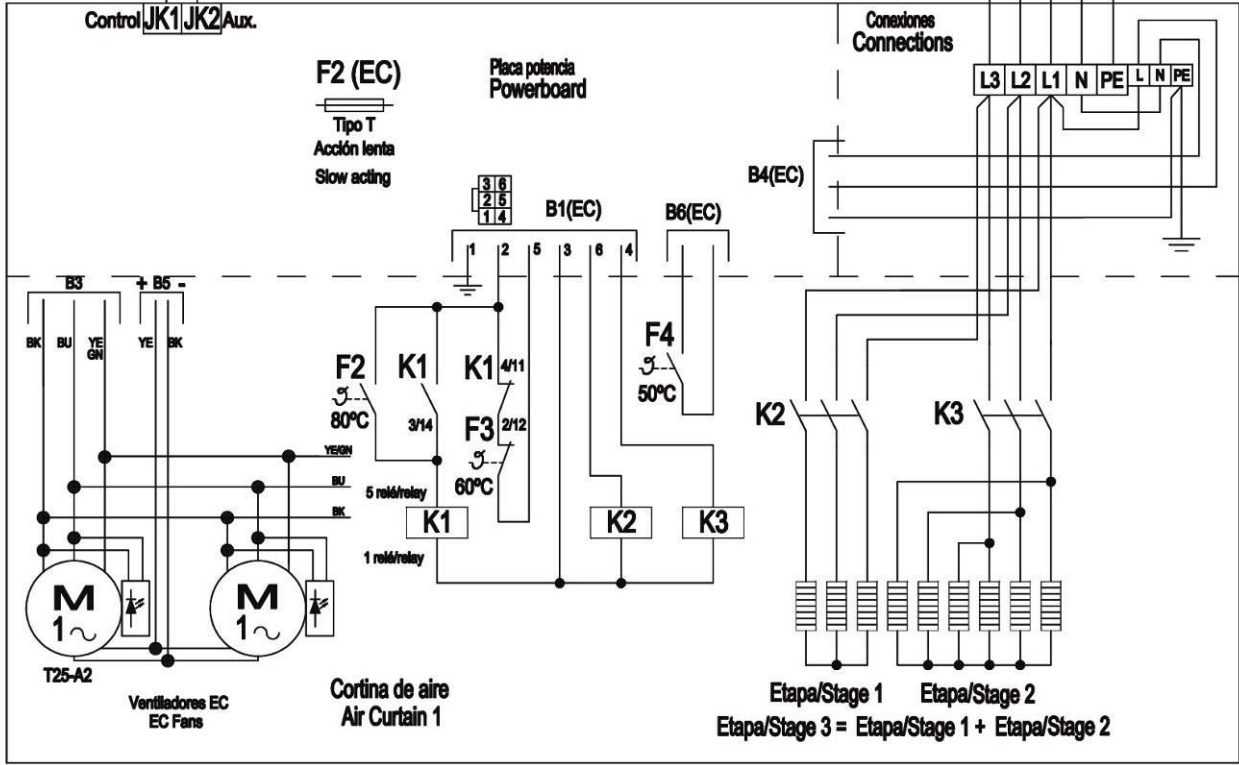
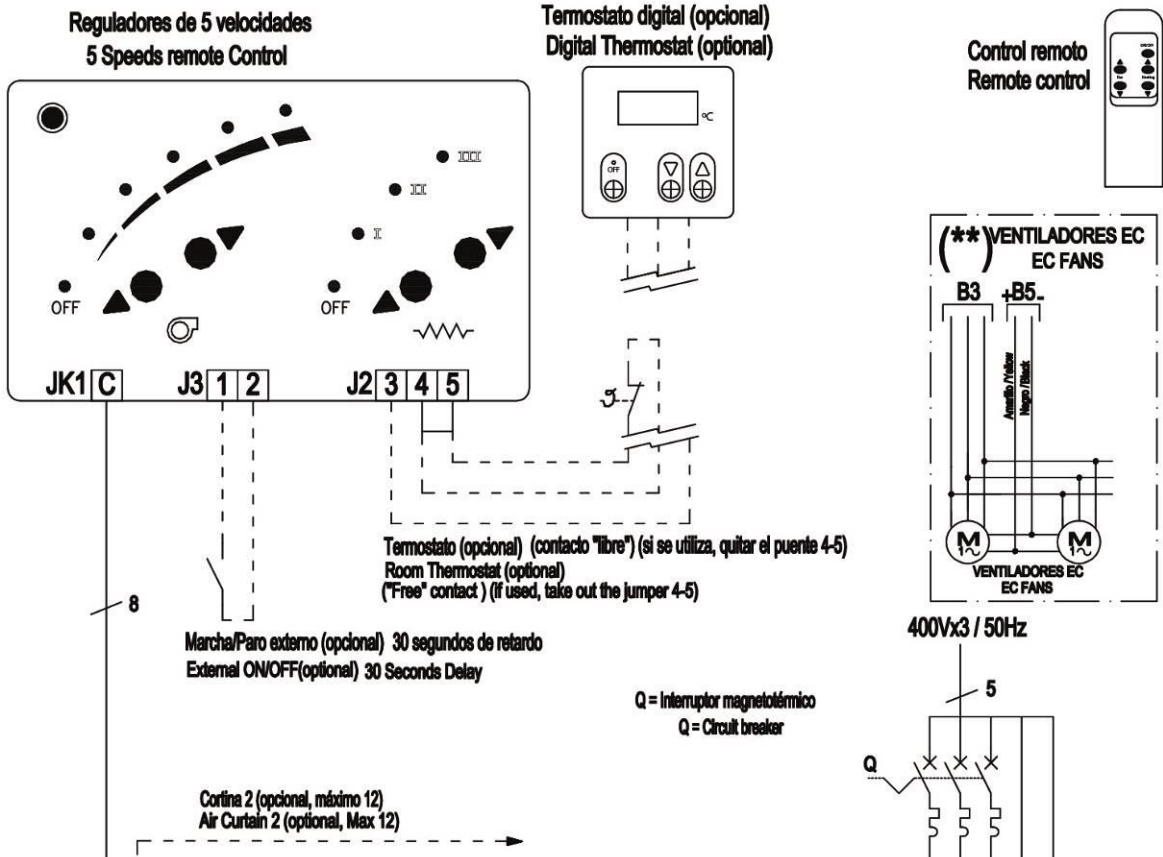
Q = Interruptor magnetotérmico
Q = Circuit breaker



(*) Cortina 2 (opcional, máximo 12)
Air Curtain 2 (optional, Max 12)

ESQUEMAS ELÉCTRICOS CORTINA DE AIRE VENTILADORES AC/EC
WIRING DIAGRAMS OF AIR CURTAIN AC/EC FANS
CONTROLADOR 5 VELOCIDADES AGUA O AIRE M, ECM, G, ECG KLEENFAN
WATER AND ONLY AIR, CONTROLLER 5 SPEEDS. M, ECM, G, ECG KLEENFAN

Pág./ Page 1 de/ of 1
Doc. WELDOE70006
R00 - 16/09/20



ESQUEMAS ELÉCTRICOS CORTINA DE AIRE VENTILADORES EC
 WIRING DIAGRAMS OF AIR CURTAIN EC FANS
 5 SPEED STANDARD CONTROL, ECM, ECG, Electrical 30kW
 UV

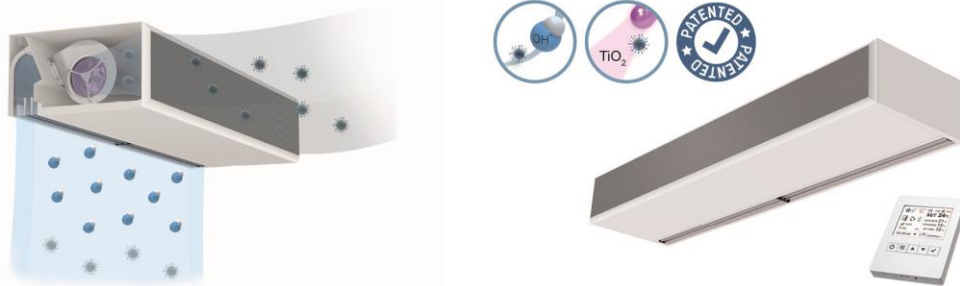
Pág./Page 1 de/of 1
 Doc. WELDOE70031
 R00 - 22/01/21

TECHNICAL SPECIFICATIONS

WINDBOX ECM, ECG OH+FC | Purification Technology of Air and Surfaces Air Curtains for Commercial and Industrial Doors



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.
- Includes one sanitizing cartridge with hydrogen peroxide solution to generate hydroxyl radicals.
- 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 (NO_x, SO_x, CO_x, formaldehydes, VOCs, etc.).
- Includes Advanced Clever Control with sanitization program operating 24h / day, 4 levels of air quality indicator and replacement alarm of hydrogen peroxide sanitizing cartridge (around 3 months duration, depending on conditions). Plug&Play, programmable, Intelligent, automatic, energy saving mode, Modbus RTU by PLC...
- Self-supporting casing construction made of galvanized steel plate, finished in structural epoxy-polyester painting white colour RAL9016 as standard. Other colours or stainless steel are available on request.
- Micro-perforated inlet grille with filter functions and easy service. It does not need prefilter.
- Anodized aluminium outlet vanes, airfoil shaped, adjustable from 0 to 15° each side.
- Double-inlet EC centrifugal fans driven by an external rotor motor with very low consumption and noise level. 5-speed selector.
- "P" type with water heated coil. "E" type with electrical shielded elements, three stages with integrated regulation. "A" type without heating, air only. "DX" with direct expansion coil, consult.

Specifications

AIR ONLY

Model	Airflow m ³ /h	Power Fans	Current Fans	Noise Level	Weight kg
		230V-50Hz kW	230V-50Hz A	(5m) dB(A)	
ECM 1000 A OH+FC	1840	0,142	1,24	56	31
ECM 1500 A OH+FC	2760	0,213	1,86	57	46
ECM 2000 A OH+FC	3680	0,284	2,48	58	58
ECM 2500 A OH+FC	4600	0,355	3,10	59	72
ECM 3000 A OH+FC	5520	0,426	3,72	60	86
ECG 1000 A OH+FC	2700	0,213	1,86	61	43
ECG 1500 A OH+FC	3600	0,284	2,48	62	51
ECG 2000 A OH+FC	5400	0,426	3,72	63	80
ECG 2500 A OH+FC	6300	0,497	4,34	64	84
ECG 3000 A OH+FC	7200	0,568	5,96	65	95

ELECTRICAL HEATED

Model	Airflow m ³ /h	Electrical Heating Capacity	Power Fans	Current Fans	Noise Level	Weight kg
		400Vx3-50Hz kW	230V-50Hz kW	230V-50Hz A	(5m) dB(A)	
ECM 1000 E OH+FC	1840	369	0,142	1,24	56	37
ECM 1500 E OH+FC	2760	48/12	0,213	1,86	57	57
ECM 2000 E OH+FC	3680	6/12/18	0,284	2,48	58	75
ECM 2500 E OH+FC	4600	6/12/18	0,355	3,10	59	94
ECM 3000 E OH+FC	5520	8/16/24	0,426	3,72	60	112
ECG 1000 E OH+FC	2700	5/10/15	0,213	1,86	61	52
ECG 1500 E OH+FC	3600	7,5/15/22,5	0,284	2,48	62	63
ECG 2000 E OH+FC	5400	10/20/30	0,426	3,72	63	100
ECG 2500 E OH+FC	6300	10/20/30	0,497	4,34	64	106
ECG 3000 E OH+FC	7200	10/20/30	0,568	5,96	65	120

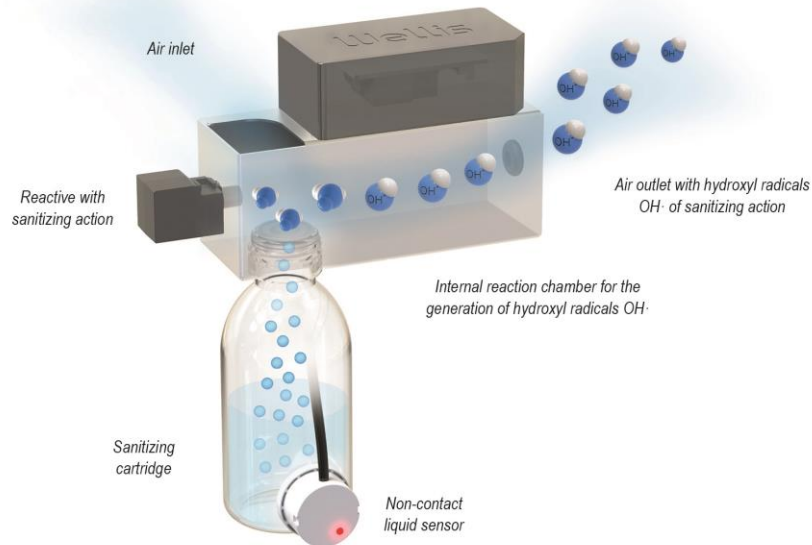
WATER HEATED

Model	Airflow m ³ /h	P86		P64		P54		Power Fans 230V-50Hz kW	Current Fans 230V-50Hz A	Noise Level (5m) dB(A)	Weight kg
		Heating Capacity 80/60°C kW	Water Drop Pressure 80/60°C Pa	Heating Capacity 60/40°C kW	Water Drop Pressure 60/40°C Pa	Heating Capacity 50/40°C kW	Water Drop Pressure 50/40°C Pa				
ECM 1000 P OH+FC	1720	9,38	920	8,77	4560	8,74	1280	0,142	1,24	56	35
ECM 1500 P OH+FC	2580	14,58	790	14,02	6730	14,71	4690	0,213	1,86	57	53
ECM 2000 P OH+FC	3440	21,12	2010	18,70	4990	19,13	2150	0,284	2,48	58	69
ECM 2500 P OH+FC	4300	27,53	3960	23,33	4010	24,95	4230	0,355	3,10	59	86
ECM 3000 P OH+FC	5160	33,99	6860	29,05	7050	30,54	5920	0,426	3,72	60	103
ECG 1000 P OH+FC	2550	11,89	1400	11,27	7110	11,50	2090	0,213	1,86	61	50
ECG 1500 P OH+FC	3400	17,29	1070	16,77	9240	17,86	6620	0,284	2,48	62	59
ECG 2000 P OH+FC	5100	26,86	3080	24,14	7850	25,24	3530	0,426	3,72	63	92
ECG 2500 P OH+FC	5950	33,63	5650	28,84	5840	31,38	6360	0,497	4,34	64	96
ECG 3000 P OH+FC	6800	40,34	9290	34,81	9710	37,16	8400	0,568	5,96	65	109

Water heated: connection pipes P86 and P64 are 2x3/4" female (male if lateral pipes), P54 2x1" male. P86 2 rows coil, P64 3 rows coil, P54 4 rows coil.



Technology with Hydroxyl Radicals OH·



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

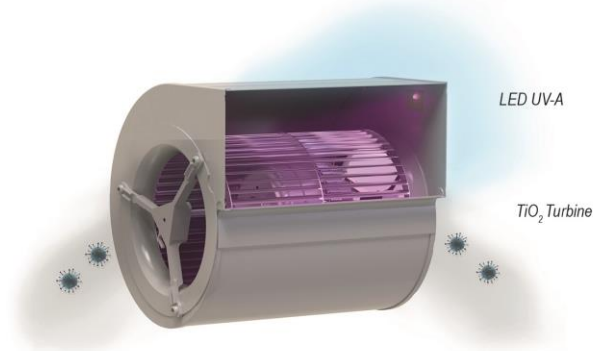
- Inactivates up to 99.9% of pathogenic microorganisms both in the air and on surfaces (viruses and bacteria)
- Improves air quality by reducing volatile organic compounds (VOCs) and suspended PM particles
- Eliminates odours

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·).

Hydroxyl radicals (OH·) are an active sanitization 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.

Kleenfan Technology with Photocatalysis



- Kleefan 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.).



Air quality

Sanitization function:

The TFT screen of the Clever control indicates by means of an icon that sanitization is activated and working.

ON mode: sanitization activated while the air curtain is running.

24h mode: sanitization activated 24 hours a day. When the air curtain is OFF, the ventilation continues to operate at a programmed minimum speed.

This extra sanitization function is compatible with all Clever control standard air curtains programs.



Sanitization activated

Flashing when empty cartridge alarm (without liquid)

Air quality:

Continuous monitoring of air quality by means of a volatile organic component sensor. Indicates air quality status with 4 colors.



Optimal



Good



Moderate



Poor

Cartridge alarm:

The level of the sanitizing cartridge is controlled by a sensor that will warn when the liquid runs out to replace it.

The sanitization icon will flash on the TFT screen of the Clever control indicating that the cartridge must be replaced.

Inside the equipment there is also a red indicator LED that will light up when the new cartridge is replaced.



Cartridge working



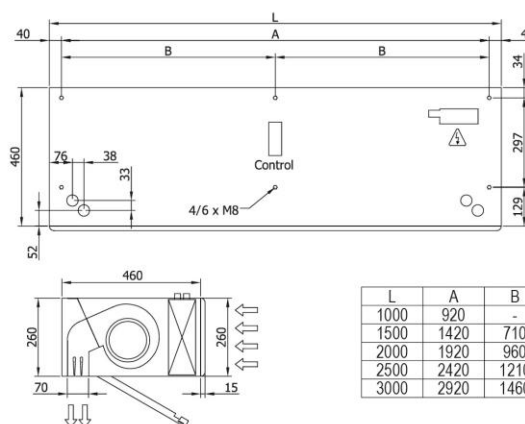
Cartridge empty



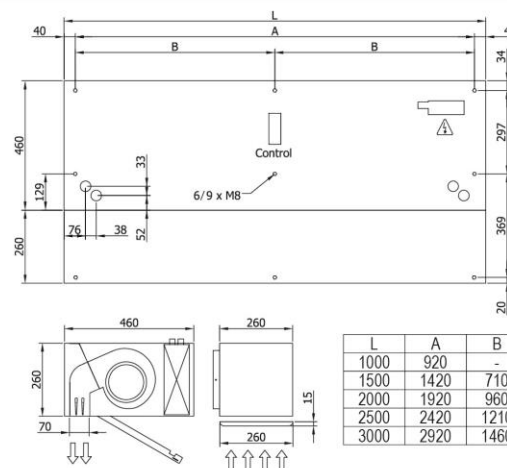
Replacing cartridge



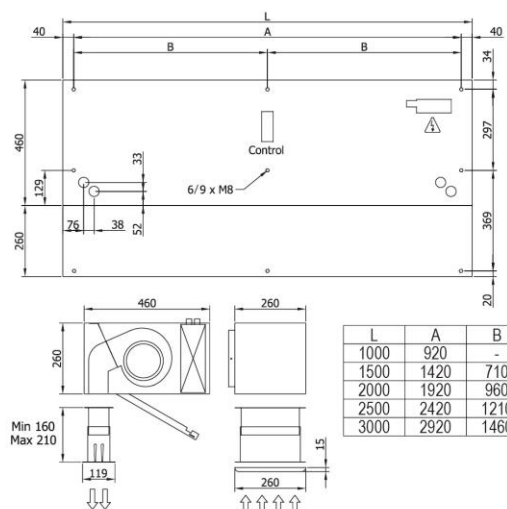
Layouts and dimensions



Free hanging mounting






Inside ceiling surface mounting



False ceiling invisible mounting

MAINTENANCE INSTRUCTIONS

	<i>For safety, before any cleaning, disconnect power supply using the controller.</i>
	<i>It is forbidden to open the service door (risk of electrical discharge and being trapped in fans). Service and maintenance should be done only by introduced and qualified workers.</i>
	<i>Do not use water or steam for cleaning the internal parts and components of the air curtain.</i>

Disinfectant cartridges replace (OH- technology)

The additional maintenance for the air curtains with radical hydroxyl disinfection is the cartridge replacement when it is empty.

To do that, just follow the next steps:

- 1. Stop the air curtain by disconnecting the RJ45 from the PCB Clever³**



- 2. Open the door or service panel**

See air curtain manuals, “Repairs and replacements” section
(Each model has a specific way to open the door or service panel)



³ Models: Windbox, Smart, Zen, Dam and Kool on top of the air curtain.
Models: Recessed Windbox, Recessed Dam and Recessed Compact inside air curtain, in the plenum zone.

3. Identify the OH⁻ reaction chambers

Depending on the length, the air curtains incorporate one or two chambers (see “Outstanding installation information” section)

4. Unscrew the empty cartridge



5. Take the new cartridge and remove the cap



6. Screw the cartridge in the reaction chamber



7. Close the door and start the air curtain by connecting the RJ45 cable



REPAIRS AND REPLACEMENTS



Installation and electrical connections must be done by qualified workers and following these instructions.



Before any repairs are undertaken, please:

- **Inform people that there is work in progress.**
- **Disconnect the power supply and protect the thermal magnet (so nobody can restart it accidentally).**
- **Make sure there is no tension in the air curtain.**
- **Make sure the fans are stopped.**
- **Use only original spare parts.**



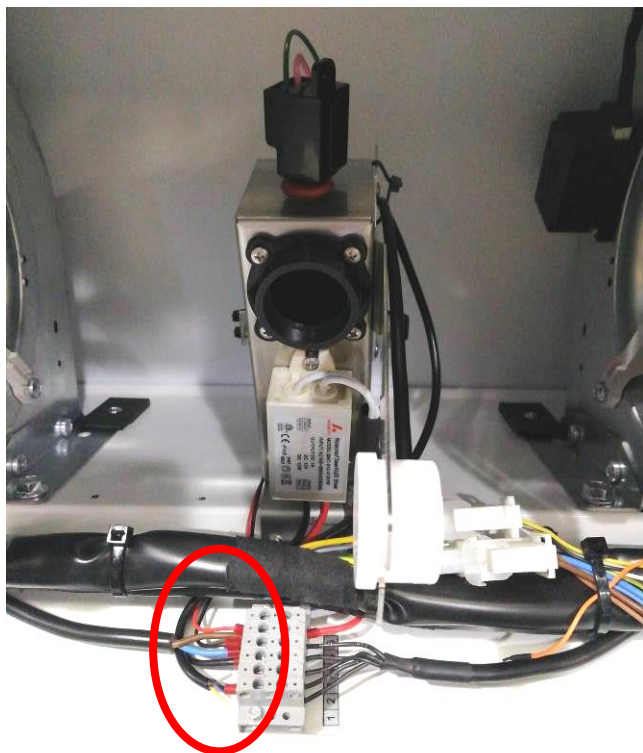
The repairs and replacements of the standard air curtain components (fan, PCB, fuse, heater) are done by the same way as a standard air curtain without disinfection.

Reaction chambers replacement

First of all, open the door or service panel⁴, identify, between the fans, the reaction chamber to be replaced and remove the cartridge⁵.

Models: Windbox, Recessed Windbox, Smart, Dam, Recessed Dam, Kool, Recessed Compact:

Disconnect the wires from the terminal block placed in the ventilation train Unscrew the fixing screws placed under the fan wires

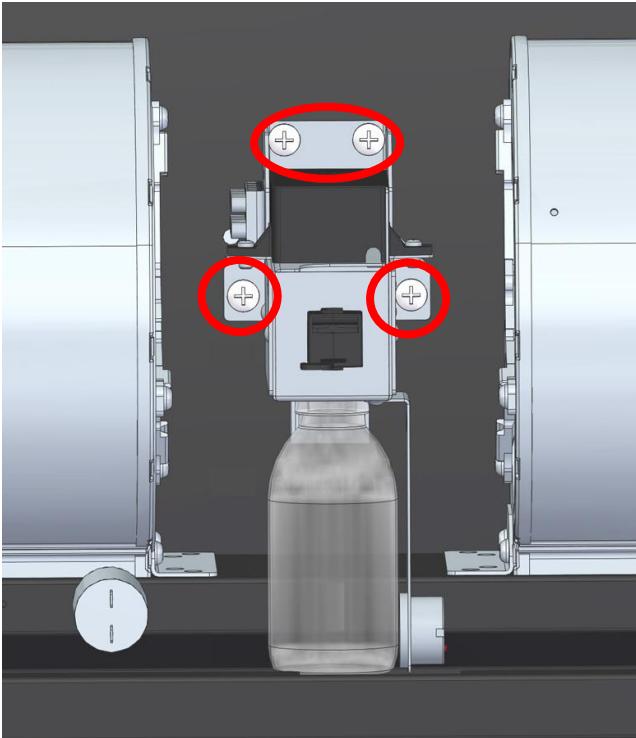


⁴ See attached air curtain manual, "Repairs and replacements" section

⁵ See "Maintenance instructions" section

Model: Zen

Unscrew the fixing screws of the reaction chamber



Disconnect the wires from the terminal block placed on the reaction chamber lateral





Declaration **CE** of conformity / Declaración **CE** de conformidad

Manufacturer **Motors i Ventiladors S.L. (AIRTÈCNICS)**
Fabricante **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 Curtains with disinfection and purification system
Cortinas de aire con Tecnología de Desinfección y Purificación

with models
con los modelos

**Windbox, Recessed Windbox, Smart, Dam, Kool, Rotowind, Invisair, Rund,
Zen, Recessed Dam, Recessed Compact.**

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 armonizadas en particular

LVD: EN 60335-1:2012 / AC:2014 / A11:2014 / A13:2017 / A:14:2020
EN 60335-2-30:2010 / A11:2012 / A1:2020
EN 60335-2-65:2003 / A1:2008 / A11:2012
EN 62471:2008

EMC: EN 61000-3-11:2002
EN 61000-3-12:2012
EN 55014-1:2017
EN 55014-2:2015

RoHS: EN 50581:2012

Date / Fecha **13/07/2020**
Name / Nombre **Jordi Hierro**
Position / Cargo **Technical Manager / Director Técnico**

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