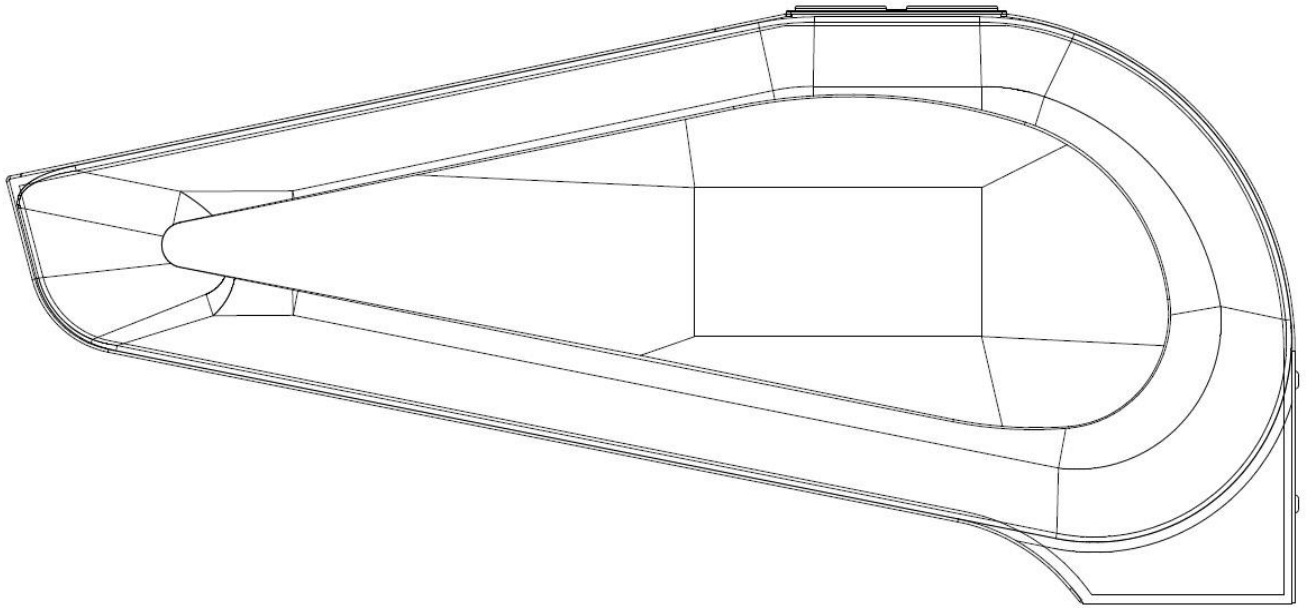
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Technical documentation

WING by VTS

Check us on

YouTube

WG2-ver.1.4 (11.2024)

WING II W100-200

WING II E100-200

WING II C100-200

The fallowing document refers to the listed equipment:

- WING II C100 EC air curtain
- WING II C150 EC air curtain
- WING II C200 EC air curtain
- WING II W100 EC air curtain
- WING II W150 EC air curtain
- WING II W200 EC air curtain
- WING II E100 EC air curtain
- WING II E150 EC air curtain
- WING II E200 EC air curtain
- WING II C100 AC air curtain
- WING II C150 AC air curtain
- WING II C200 AC air curtain
- WING II W100 AC air curtain
- WING II W150 AC air curtain
- WING II W200 AC air curtain
- WING II E100 AC air curtain
- WING II E150 AC air curtain
- WING II E200 AC air curtain

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1. INTRODUCTION

1.1. PRECAUTIONS, REQUIREMENTS, RECOMMENDATIONS

Detailed analysis of this documentation, as well as assembly and use of equipment, according to the descriptions contained therein, and following all safety requirements, is the basis for the correct and safe operation of the device. Any other use that contradicts this instruction may cause accidents with serious consequences. Unauthorised personnel should have limited access to the device, while the personnel should be properly trained. The term operational personnel refers to people, who, as the result of completed training, own experience and knowledge of important standards, documentation and provisions, concerning safety and working conditions, have been authorised to carry out necessary work and are able to recognise potential hazards and avoid them. This technical documentation must be delivered together with the device. The documentation contains information concerning all possible configurations of air curtains. Examples of air curtain assembly and installation, as well as activation, use, repair and maintenance. Provided that the device is operated according to the intended use, this documentation contains a sufficient number of instructions, required by the qualified personnel. The documentation should be placed near the device and be readily available to the service team. The manufacturer reserves the right to introduce changes to the instruction, as well as changes to the device that affect its operation, without prior notice. VTS POLSKA Sp. z o.o. shall bear no responsibility for on-going maintenance, inspections, programming of equipment and damage, caused by standstills of equipment related to the waiting for warranty services, all and any damage related to the Client's property, other than the device in question, as well as malfunctions that result from incorrect installation or improper use of the device.

WING air curtains are intended for indoor assembly only.WING air curtains are intended for indoor assembly only.

DO NOT COVER

WARNING: To avoid overheating - do not cover the device!

1.2. TRANSPORT

Prior to the installing and taking the device out of the cardboard box, it is required to check whether the cardboard box has not been damaged in any way and/or the adhesive tape (installed at the company) has not been broken off or cut. It is recommended to check whether the device's casing has not been damaged in transport. Should any of the above situation occur, please contact us through telephone or e-mail: Tel. 0 801 080 073, email: vts.pl@vtsgroup.com, fax: (+48) 12 296 50 75.
The device should be transported by two people. Use appropriate tools, when transporting the device, so as to avoid the damaging of goods and potential hazard to health.

1.3. INITIAL STEPS TAKEN BEFORE THE INSTALLATION

Record the serial number of the device in the warranty card, prior to the commencement of the installation process. It is required to properly fill-in the warranty card, after the completion of the assembly. Prior to the commencing of any installation or maintenance work, it is required to disconnect power supply and protect it against unintentional activation.

Assembly, connection and first start should be performed by qualified personnel, according to the guidelines provided in this manual.

The order of installation steps:
• Mount the device in its intended operation place
• Perform the hydraulic connection, check connections for tightness and vent the system
• Perform the electrical connection
• Make sure the device is correctly connected (according to the diagram)
• In the case of an electrical curtain, vacuum the heaters to avoid the unpleasant smell of burning dust
• Turn the power on and start the device.

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2. STRUCTURE, INTENDED USE, PRINCIPLE OF OPERATION

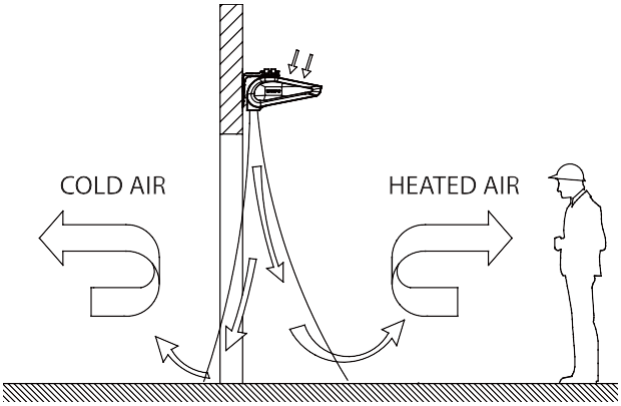
2.1. INTENDED USE

For the convenience of users as well as different types of installations in commercial and industrial facilities we have designed an air curtain in three different options and three sizes:
- a **WING II W100 EC** and **WING II W100 AC** curtains 1.0m wide with a water heater ((4-17 kW, 1850 m³/h)
- a **WING II E100 EC** and **WING II E100 AC** curtains 1.0m wide with electric heaters (2/4/6 kW, 1850 m³/h)
- a **WING II C100 EC** and **WING II C100 AC** curtains 1.0m wide (1880 m³/h)
- a **WING II W150 EC** and **WING II W150 AC** curtains 1.5m wide with a water heater (10- 32 kW, 3100 m³/h)
- a **WING II E150 EC** and **WING II E150 AC** curtains 1.5m wide with electric heaters (8/12 kW, 3100 m³/h)
- a **WING II C150 EC** and **WING II C150 AC** curtains 1.5m wide (3200 m³/h)
- a **WING II W200 EC** and **WING II W200 AC** curtains 2.0m wide with a water heater (17- 47 kW, 4400 m³/h)
- a **WING II E200 EC** and **WING II E200 AC** curtains 2.0m wide with electric heaters (10/15 kW, 4500 m³/h)
- a **WING II C200 EC** and **WING II C200 AC** curtains 2.0m wide (4600 m³/h)

The use of the WING air curtain enables the leaving of the room door open, regardless of weather conditions, thus providing a protective barrier. The curtain also enables a simultaneous keeping of the required heating comfort inside the room/facility. The modern design of the WING air curtain is a result of its wide range of application. The places in which it is possible to install the device include: malls, office buildings, supermarkets, cinema complexes, as well as shops, store-rooms, manufacturing facilities or warehouse rooms. Please notice that the use of an air curtain not only provides a protective barrier, but also it is an additional heat source in the room. **APPLICATION:** warehouse rooms, warehouses, sports facilities,
supermarkets, religious buildings, hotels, clinics, pharmacies, hospitals, office buildings, manufacturing facilities. **PRIMARY ADVANTAGES:** protection of climatic conditions in the room, reduction of heating/cooling costs, universal size, ability to work both in vertical and horizontal position; simple, quick and intuitive assembly.

2.2. PRINCIPLE OF OPERATION

WING II W100-200 - heating medium, for example hot heating water, returns heat through a heat exchanger with a wide heat-exchange surface, thus providing high heating output (4-47 kW). A transverse fan (880-4400 m³/h) sucks in the air in the room, and pumps it through the heat exchanger, back into the room. The jet of warm air is directed downstream at high velocity, thus providing an air barrier.
WING II E100-200 - electric heaters (4-15 kW) heat up, as a result of the flowing of electric current, and return the heat to the air; the air is blown off through the fan, which sucks in the air in the room. A jet of warm air is directed downstream at high velocity, thus providing an air barrier.



2.3. STRUCTURE (WING 100-200)

WING II W100-200 – WATER AIR CURTAIN

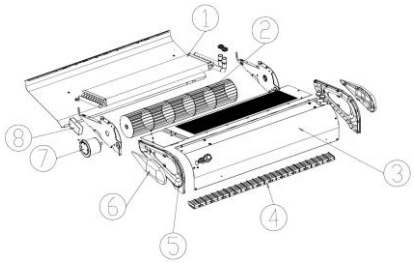
1. Heat exchanger
2. Transverse fan
3. Casing
4. Outlet grille
5. Side cover
6. Side cap
7. Motor
8. Control system

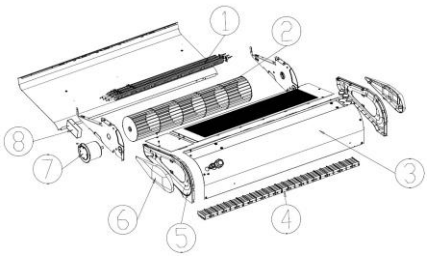
WING II E100-200 – ELECTRIC AIR CURTAIN

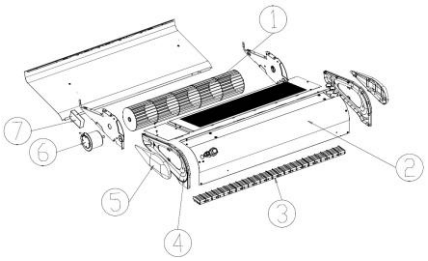
1. Electric heaters
2. Transverse fan
3. Casing
4. Outlet grille
5. Side cover
6. Side cap
7. Motor
8. Control system

WING II C100-200 – COLD AIR CURTAIN

1. Transverse fan
2. Casing
3. Outlet grille
4. Side cover
5. Side cap
6. Motor
7. Control system



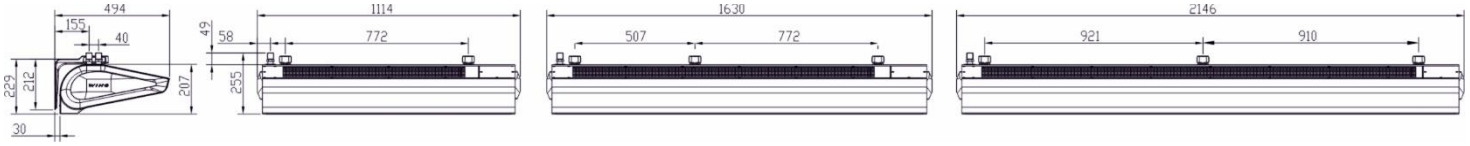




1. **HEAT EXCHANGER – WATER HEATER**: Maximum parameters of the heating agent for the heat exchanger are: 95°C, 1.6MPa. The aluminium and copper construction consists of copper pipes of the coil and aluminium lamellae. The connection manifold (¾`` male thread) is situated in the upper part of the housing. An optimally selected water exchanger was adapted to work in three positions: horizontally and vertically, with stub pipes facing upwards and downwards. Appropriate lead of hydraulic connections makes it possible for the curtain to be assembled directly by the wall as close to the door frame as possible. The air curtain with a water heater generates power from 4 to 47 kW.
   ELECTRIC HEATER: each electrical curtain consists of 3 electrical heaters of 2000W to 5000W, depending on the size of the curtain. The heaters are connected into two sections of 2 and 4 kW for a 1m curtain, 4 and 8 kW for a 1.5m curtain, and 5 and 10kW for a 2m curtain. The heating section is connected to form a 3x400V power supply star. There is a possibility of powering a 1m curtain with 1x230V for a 2kW heater.
   The heating stage is independent from the fan speed setting.
2. **CONTROL SYSTEM:** it is equipped with an outlet on the connection clamp block X0 for WING II W100-200 and on the X1 block for WING II E100-200 for connecting an on-wall controller as well as a valve actuator for WING II W100-200. WING air curtains can be additionally equipped with a wall-mounted WING/VOLCANO (AC) or HMI-WING EC controllers. The WING/VOLCANO (AC) controller has a three-position heating switch. In the case of a water curtain, to guarantee the proper functioning of the water valve, the heating switch must be set to position II (central) - otherwise the valve will not open.
   The system of WING II E100-200 is equipped with a safety device in the form of a fuse in the 230 V AC circuit. HMI-WING EC controller enables three-position regulation of rotational speed of the fans with EC motors, as well as two-position regulation of the heating power.
3. **HORIZONTAL FAN:** the maximum temperature of operation is 95°C, the rated voltage is 230 V/50 Hz. The motor protection level is IP20, F insulation class. The horizontal fan applied in the device with an advanced profile of blades and impeller geometry made of plastic makes it possible to obtain air capacities up to 4600 m³/h. The control of the electric motor as well as thermal protections of the winding has been coupled with the control system which resulted in increasing safety of operation. Due to optimum power of the motor the WING curtain is energy saving and durable.
4. **CASING**: Made of metal material resistant to temperature up to 95°C.
5. **INSTALLATION HANDLES:** WING is characterized by simple, quick and aesthetic assembly that can be performed on a wall in both horizontal and vertical position. There are from 2 to 3 installation handles attached (as an option) to the curtain (depending on the option (length)). Connections of electric wires and water channels has been especially designed not to interfere the general aesthetic values of the device. The name WING includes devices that are 1, 1.5 and 2 m long that, if necessary, can be additionally joined both horizontally and vertically to achieve different air supply options: from the left to the right and the opposite. the reach of the air stream is up to 4 m.

IMPORTANT! Possibility of the vertical assembly applies only to the cold curtains and with water heater. Curtains with electric heaters may only be installed in a horizontal position.

2.4. OVERALL DIMENSIONS (WING II E, W, C 100-200)



3. ASSEMBLY

IMPORTANT!

- The place of assembly should be carefully selected, taking into account the occurring of potential loads or vibrations.
- Prior to all installation or maintenance work, disconnect power supply and secure it against unintentional reactivation.
- It is recommended to use filters in the hydraulic system. It is recommended to clean/rinse the system, draining a few liters of water, prior to the connecting of hydraulic conduits (the supply conduits, in particular).

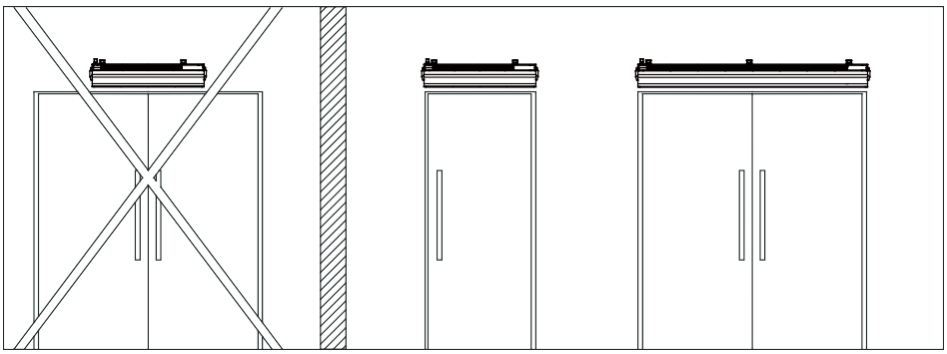
IMPORTANT!

The air is blown out of the curtain at high velocity, along the surface of the opening, thus creating a protective barrier. Air curtains should cover the entire width of the door opening, in order to obtain the maximum performance of the curtain.

IT IS RECOMMENDED TO TAKE INTO ACCOUNT THE FOLLOWING PARAMETERS, WHEN ASSEMBLING THE CURTAIN:

The width of the door frame should be less or equal to the width of the supplied air stream.

WRONG **CORRECT**



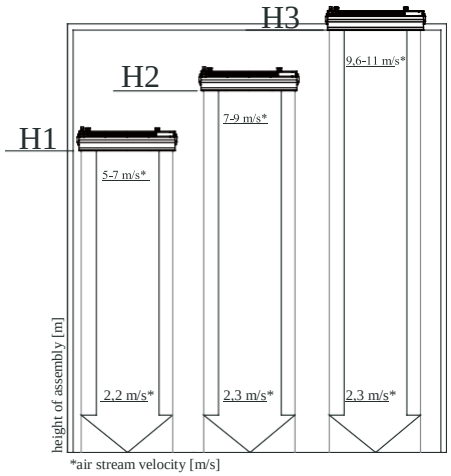
The range of the air jet - assembly height

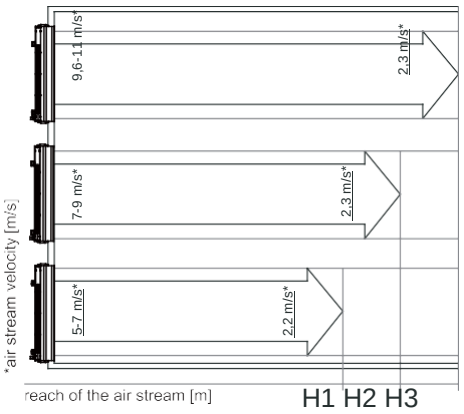
- horizontal installation

fan speed	III	II	I
height of assembly [m]	H3	H2	H1
WING W100, W150, W200	3.7	2.9	2.3
WING E100, E150, E200	3.7	2.9	2.3
WING C100, C150, C200	4.0	2.9	2.3

- vertical installation

fan speed	III	II	I
width of the door [m]	H3	H2	H1
WING W100, W150, W200	3.7	2.9	2.3
WING E100, E150, E200	3.7	2.9	2.3
WING C100, C150, C200	4.0	2.9	2.3





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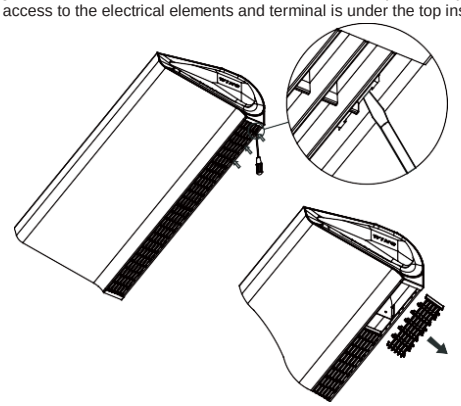
IMPORTANT! The heating output should be adjusted to the temperature inside the room, as well as the strength and direction of the wind outside. The primary criterion for the regulation of the heating power is the temperature inside the room, near the door. Should a room thermostat be used, WING activates the heating mode, depending on the temperature settings.

IMPORTANT! Please consider additional factors that affect device operation.

Factors that have a negative effect on curtain operation	Factors that have a positive effect on curtain operation
doors or windows that are constantly open in the room, thus creating a draft	presence of awning, roofs etc. on the outer side of the door
constant and open access to staircases, available through the room, the chimney draft effect	use of revolving doors

3.1. ASSEMBLY/ DISASSEMBLY OF SIDE COVERS

In order to remove the outlet grid you should carefully level the grid catches located with the use of a screwdriver and pull it away. Having installed the device and connected it to the electric supply put the grid back by clicking it on the catches. The main access to the electrical elements and terminal is under the top inspection panel (loop 1 on the fig. below)



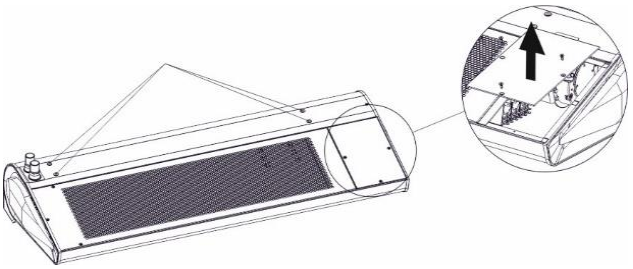
3.2. ASSEMBLY OF DEVICE

For directly installation use the threaded sleeves (M8) in the top of device

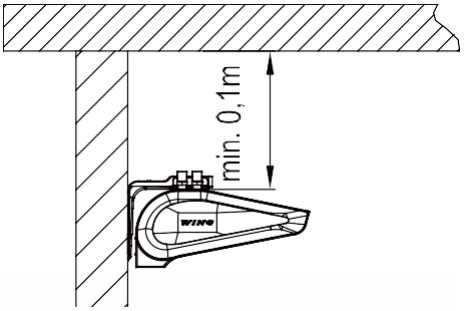
.

IMPORTANT! When mounting the device to any substructure or suspending the device on mounting pins, use all M8 mounting holes located in the upper housing. For mounting on mounting pins, use the following:
WING 100 – 4 mounting pins
WING 150 – 6 mounting pins
WING 200 – 6 mouting pins

IMPORTANT! The minimum distance between the unit and the ceiling should be 0.1m



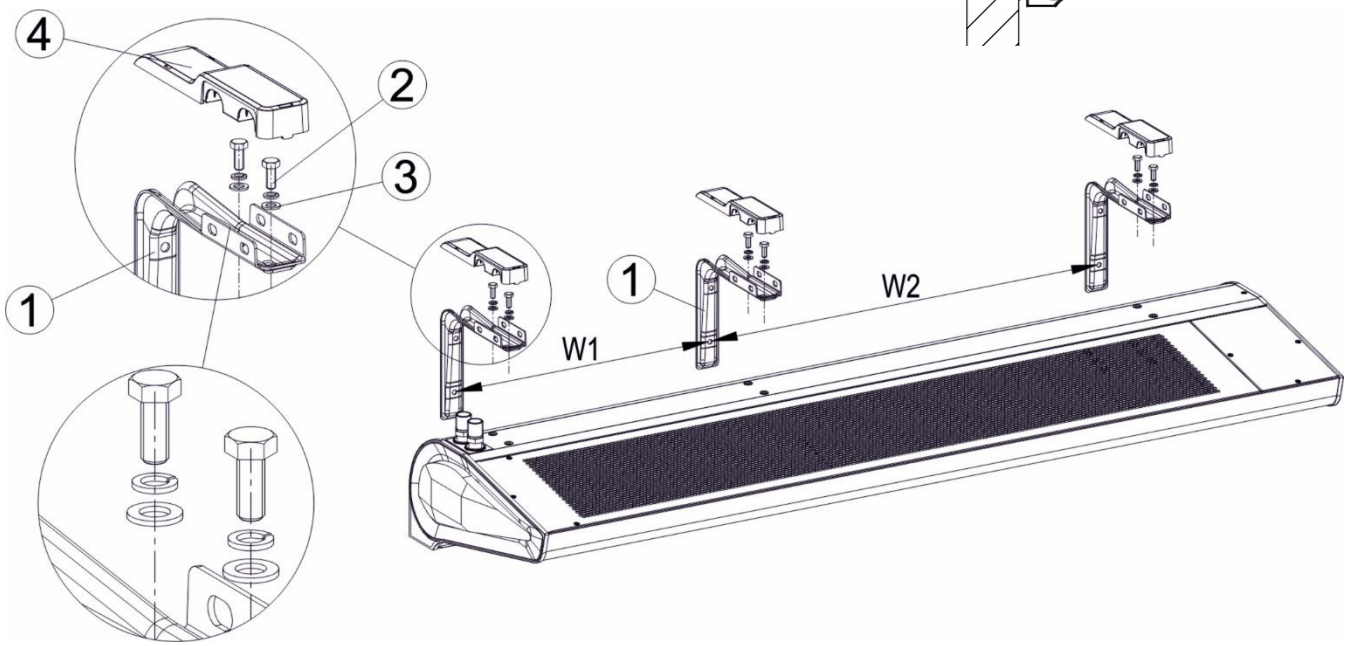
3.2.1. HORIZONTAL ASSEMBLY WITH USING INSTALATION HANDLES.



It is possible to assemble WING do the wall horizontally in two options:

OPTION I: Assembling handles with their arms faced downwards. In this option you should first screw the installation handles to the wall (1) with intervals W1 for a 1m curtain (there are 2 installation hanles) and W1, W2 for 1.5m and 2m curtain (there are 3 installation handles) so that the handles' arms are levelled.
Then lift the curtain and assembly with using screws (2) M8x20 and plain washers (3). Tighten the screws (2) and close the handle's covers (4).

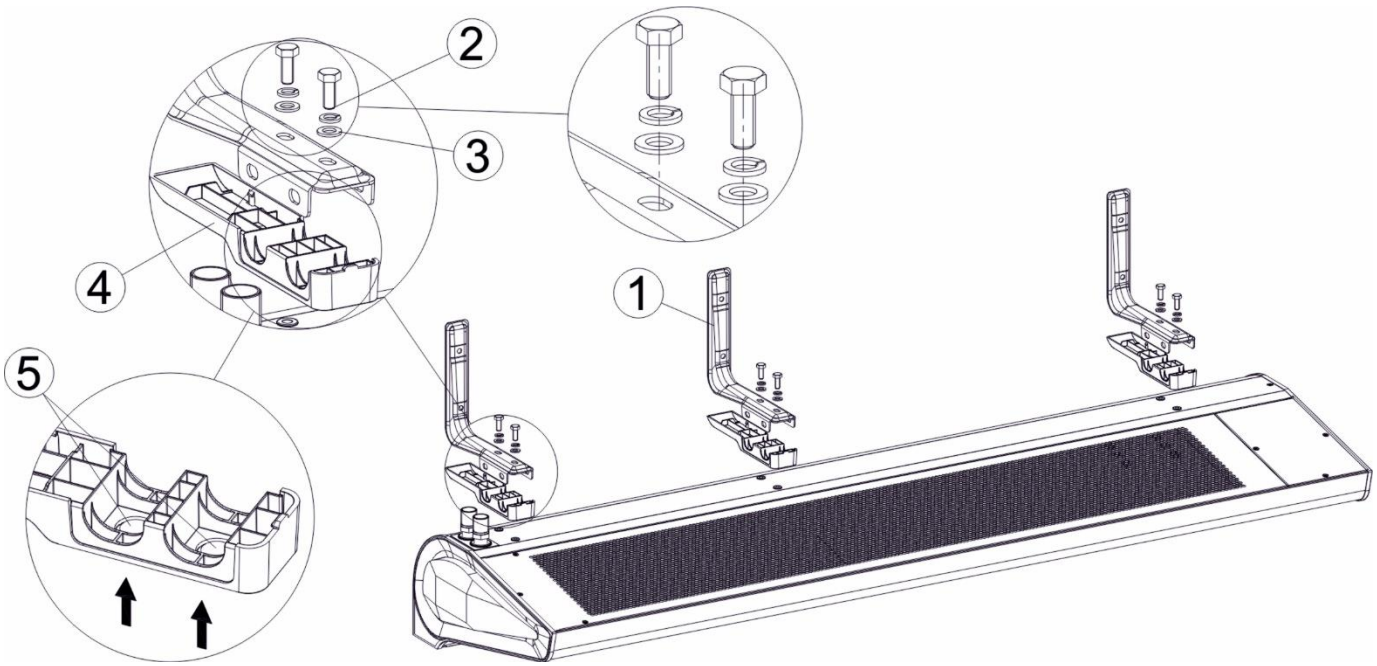
ATTENTION! The minimum distance between the unit and the ceiling should be 0.1m.



	W1 [mm]	W2 [mm]
WING II W, E, C100	772	-
WING II W, E, C150	507	772
WING II W, E, C200	921	910

OPTION II: Assembling handles with their arms faced upwards.
Assembly consists in screwing brackets to the curtain (1). To mount the brackets to the curtain, with the housing upside down, punch holes (5) from the outside in the shields (4) using a hammer and a screw. Click the shields on the brackers (1). Mount the brackets on the curtain using M8x20mm screws (2) and washers (3). This assembly option allows for mounting brackets to the curtain first, and then screwing the entire housing to the wall.

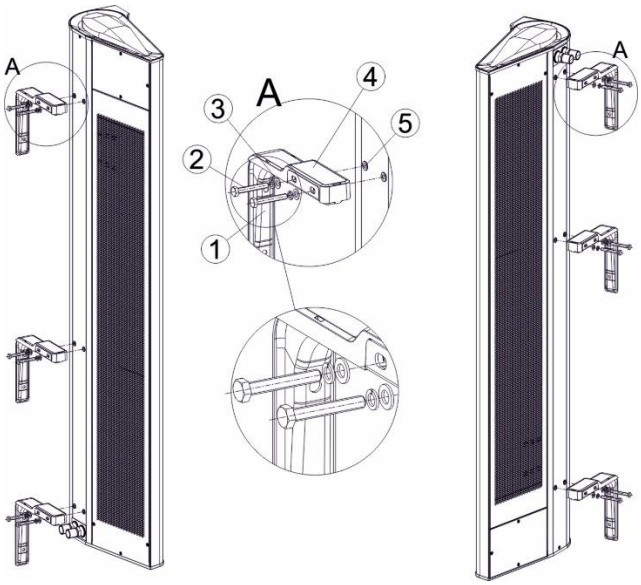
ATTENTION! The minimum distance between the unit and the ceiling should be 0.1m

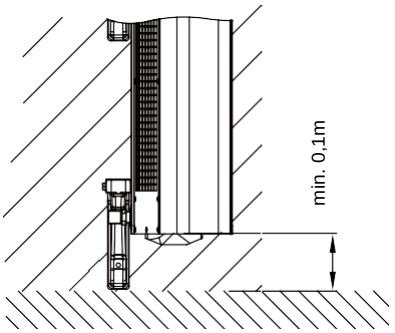


3.2.2. VERTICAL ASSEMBLY WITH USING INSTALATION HANDLES.

It is possible to assemble WING to a wall vertically on both sides of the gate (with the motor on the bottom or on the top).
For this option it is not important if you screw the handles down to the unit first and then screw the whole down to the wall or first attach the handles to the wall and then screw the curtain down to the handles.
To perform vertical assembly, use M8x70 (outside the scope of VTS delivery) screws. Screw 2 or 3 brackets using the screws, passing through flat washers (3), to the threaded sleeves mounted in the upper part of the housing.

IMPORTANT: In case of vertical assembly the minimal distance between the device and the floor (100mm) for access to the water coil blowdown connection and the cable terminal should be provide.





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IMPORTANT! The device is intended for the operation in dry rooms, exclusively. Thus, pay particular attention to the condensation of water vapour on engine elements, since it is not fitted for operating in humid environment.

IMPORTANT! The WING air curtains are not intended for the installation:
- Outdoors;
- In humid rooms;
- In rooms categorised as explosive environments;
- In rooms with very high levels of dustiness;
- In rooms with aggressive atmosphere (due to the presence of copper and aluminium structural elements in the heat exchanger and electric heaters).

IMPORTANT! The WING EH air curtains are not intended for the installation on suspended ceilings.

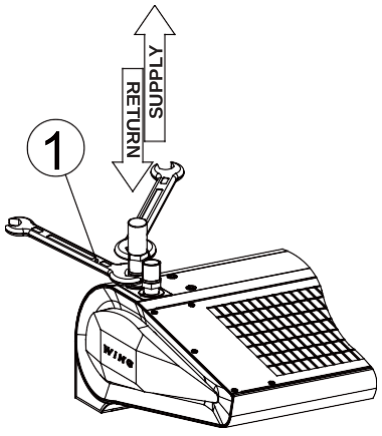
3.3. ASSEMBLY AND INSTALLATION GUIDELINES

CONNECTING OF HEATING MEDIUM

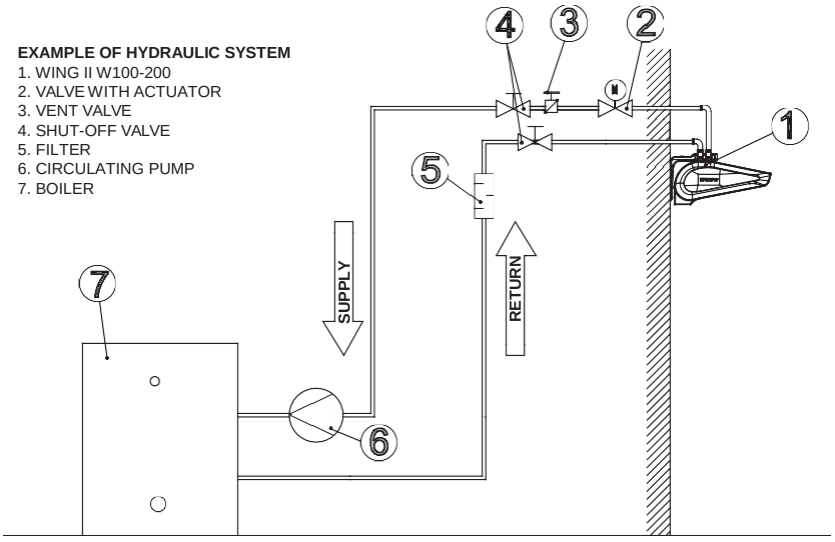
Protect the heat exchanger terminal against the impact of the torque moment 1, when installing a pipeline transporting a heating medium. The weight of installed pipelines should not impose a load on the heater's terminals.

IMPORTANT! Pay particular attention to the leak-tightness of connections, when filing the hydraulic system. Make sure that the water flowing from a leaky connection does not leak to the electric engine (at the vertical assembly)

IMPORTANT! It is recommended to use filters in the hydraulic system. It is recommended to clean/rinse the system, draining a few litres of water, prior to the connecting of hydraulic conduits (the supply conduits, in particular).



EXAMPLE OF HYDRAULIC SYSTEM
1. WING II W100-200
2. VALVE WITH ACTUATOR
3. VENT VALVE
4. SHUT-OFF VALVE
5. FILTER
6. CIRCULATING PUMP
7. BOILER



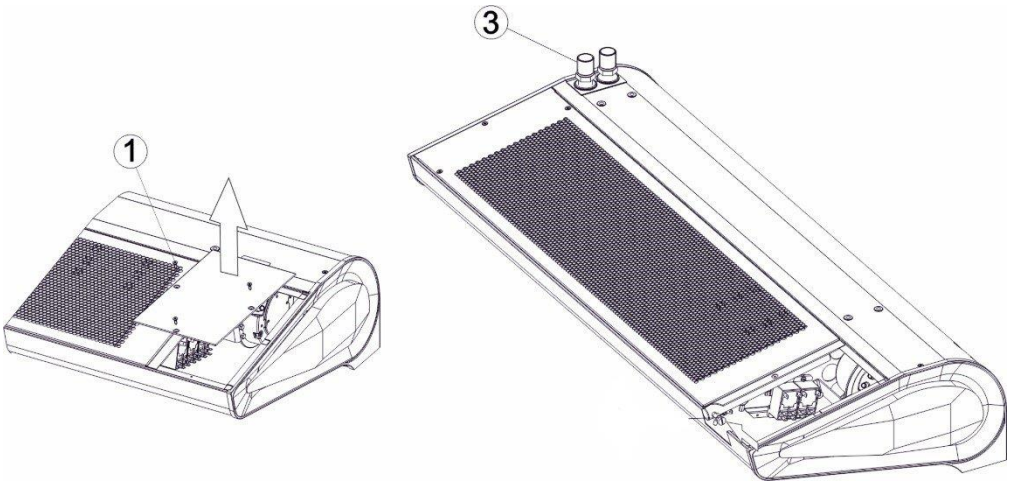
VENTING OF DEVICE/DRAINING OF HEATING MEDIUM
To perform horizontal and vertical assembly, the exchanger on the right-hand side of the door vents automatically. In the case of lateral assembly with the stub pipes facing downwards, to vent the exchanger, remove the side cover. Unscrew the screws (1) around the cover and remove the cover. A valve with a hose is situated below the cover.

Note! Maximum operating pressure of the medium for water coils is 16 bar, tested pressure: 21 bar	
Requirements of the quality medium for the water coils:	
Parameter	Value
Oil and grease	< 1 mg/l
pH at 25°C	8 to 9
Residual water hardness	[Ca2+, Mg2+]/[HCO3-] > 0.5
Oxygen	< 0.1 mg/l (as low as possible)

VENTING OF DEVICE/DRAINING OF HEATING MEDIUM

Ventilation of the water exchanger is carried out using the connection ferrules located on the left side of the unit (3). If the unit is not installed with the ferrules facing up, ventilation should be forced by installing vents on the hydraulic system. If the unit is not installed with the ferrules facing down, draining of the refrigerant should be mechanical using a suction pump

	WORKING POSITION	VENT/DRAIN MARKING
		3
A	horizontal (downward air feed)	automatic venting
B	vertical (air feed from left to right)	automatic venting
C	vertical (air feed from right to left)	drain



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IMPORTANT! While venting the exchanger you should pay special attention to securing the device against accidental penetration of water into electrical elements.

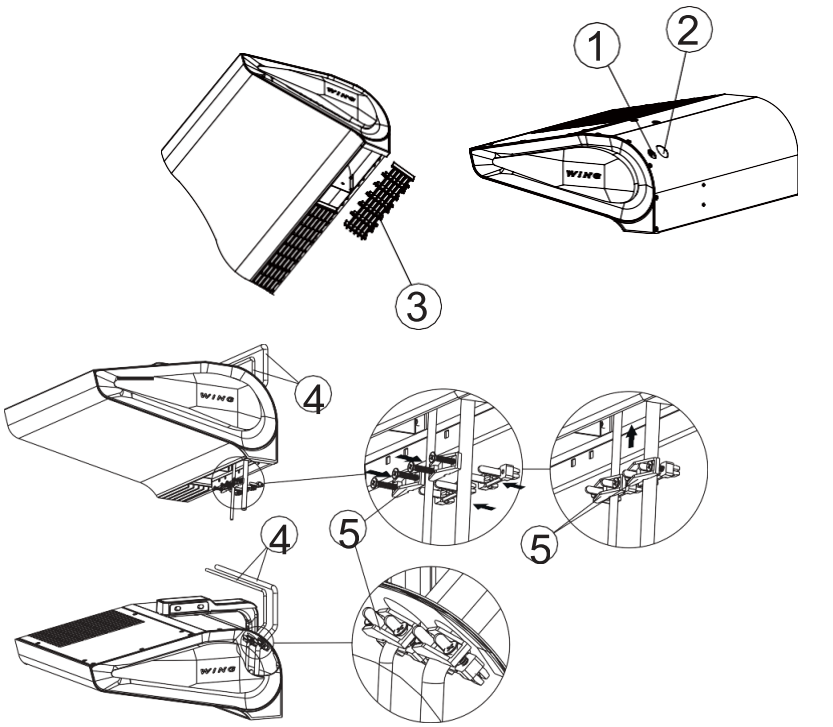
IMPORTANT! Remember to vent the heater, if it has been activated after a prior draining of the heating medium.

IMPORTANT! Pay particular attention to the leak-tightness of connections, when filing the hydraulic system. Make sure that the water flowing from a leaky connection does not leak to the electric engine (at the vertical assembly).

CONNECTING OF POWER SUPPLY

IMPORTANT! The system must be equipped with protective equipment that guarantees the disconnecting of the device on all poles of the power source.

Connection to the electric system must be performed by a duly authorized and qualified person .Wire passes are located on the back side of the curtain: (1) – control wire packing , (2) – power wire packing. The access to the terminal strip is obtained by means of removing the top inspection panel. It is required to mount the cable strain relief to protect the cable against pulling.



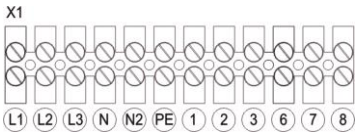
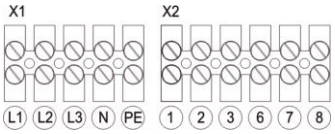
Recommended safety devices and wires

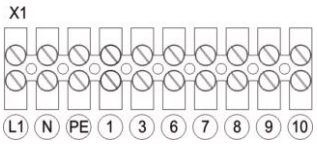
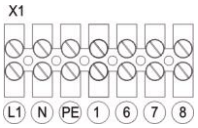
Device	WING II W100-200			WING II E100-200			WING II C100-200		
	1m	1,5m	2m	1m	1,5m	2m	1m	1,5m	2m
Overload and short circuit protection	C6/6kA			C16/3/6kA	C20/3/6kA	C25/3/6kA	C6/6kA		
Differential current protection	IDN=30mA type AC lub A			IDN=30mA type AC lub A			IDN=30mA type AC lub A		
	IN=16A			IN=40A			IN=16A		
Power wire cross-section	3x1,5mm^2			5x1,5mm^2	5x2,5mm^2	5x4,0mm^2	3x1,5mm^2		

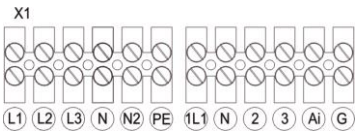
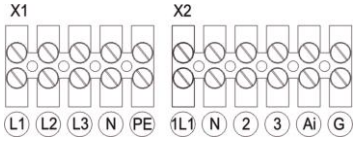
IMPORTANT! Control 0-10VDC: LiYCY 2x0,75 (shielded).

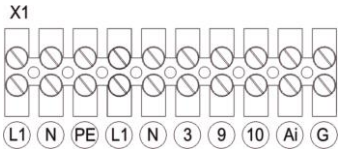
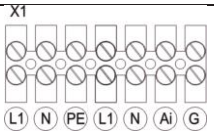
IMPORTANT! The specification of cables and protections refers to unbounded arrangement of cables (basic execution of the E installation according to the PN-IEC 60364-5-523 standard). One should always abide by the local laws and recommendations concerning device connection.

WING is equipped with a terminal strip adjusted to an appropriate thickness of wires.

WING II E100	
WING II E150-200	

WING II W100-200	
WING II C100-200	

WING II E100 EC	
WING II E150-200 EC	

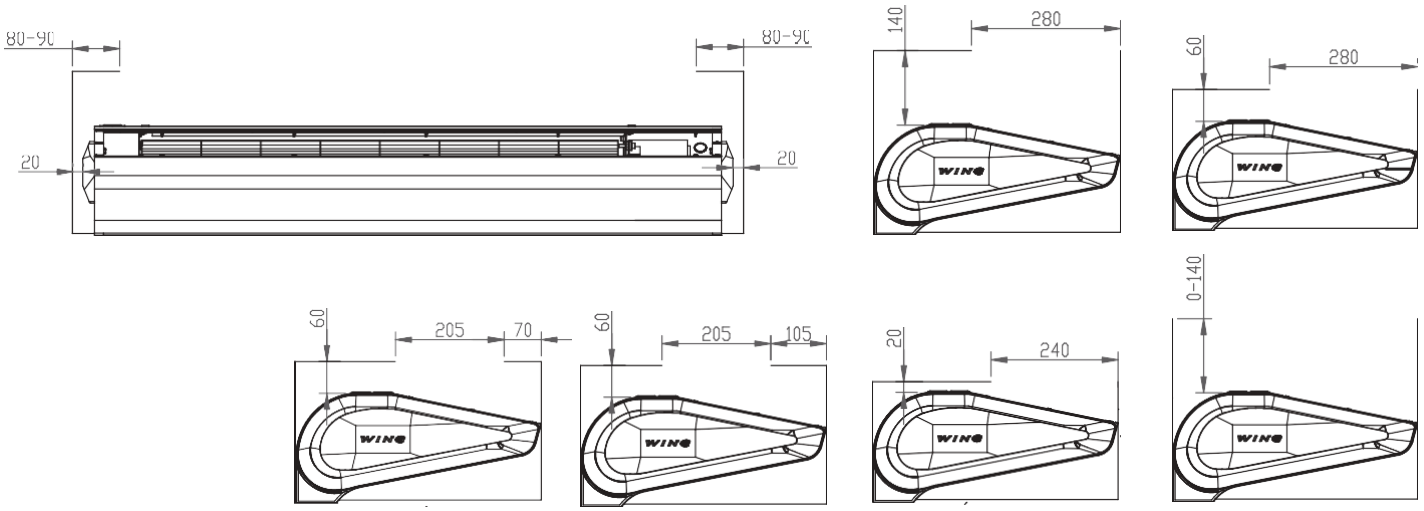
WING II W100-200 EC	
WING II C100-200 EC	

IMPORTANT!

- It is recommended to connect wires to the terminal strip with previously clamped appropriate clip ends.
- Make sure that the space around the place where the air is sucked in by the curtains, as well as around the exhaust grid, is free of any structural elements of the building, which might hamper the flow of air (e.g. suspended ceilings, covering development, ventilating ducts etc.).

3.4. BUILT INTO A SUSPENDED CEILING

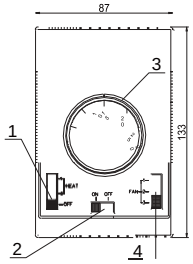
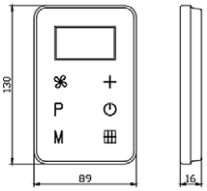
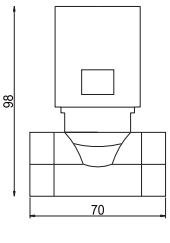
The installation of WING air curtains in the suspended ceiling is only possible if the appropriate minimum installation dimensions are maintained.
Permitted installation configurations:



4. ELEMENTS OF AUTOMATICS.

Electrical connections can be carried out only by qualified electricians, according to the binding regulations of:
- industrial safety;
- sssembly instructions;
- technical documentation for each individual element of automatics.

IMPORTANT! Study the original documentation delivered together with the elements of automatics, prior to the commencing of assembly and connecting of the system.

MODEL	DIAGRAM	TECHNICAL DATA	COMMENTS
WALL-MOUNTED DX CONTROLLER		**WALL-MOUNTED WING/VOLCANO CONTROLLER** • Supply voltage: 220-240 VAC • Permissible initial current: 6(3A) • Range of regulation: 10-30°C • Accuracy of regulation: +/- 1°C • Level of protection: IP 30 • Assembly method: on plastered walls • Parameters of working environment: from -10 to +50°C	• Used to control the operation of all types of WING curtains. – 1 - heating switch, 2 - main switch, 3 - thermostat crank, 4 - fan speed switch. The heating switch for the water curtain controls the work of an actuator installed on the valve, whereas for an electrical curtain - engages electrical heaters. An in-built thermostat automatically disables heating or the entire curtain, depending on the temperature set using the crank: – jumper "2-5" - control of fan work and heating, depending on thermostat setting; in this solution, the thermostat controls the operation of the entire device – jumper "4-5" - control of fan work, independently from thermostat setting One wall-mounted WING/VOLCANO controller can support the maximum of 1 curtain. • The maximum length of the conductor, from the curtain to the programming device, is 100 m. • It is recommended to make a connection using a conductor of the min. size 5 x 1 mm² or 6 x 1mm² depend on the option of connection (see the schemes) • The drawings with the elements of automatics contain only visualisations of sample products. • The controller does not constitute an integral part of the curtain. It is an optional device, which may be replaced with any programming device or switch that conforms to the 60335 standard.
Controller HMI WING EC VTS: 1-4-2801-0155		**HMI WING EC** • Device operation: Touch buttons • Power supply: 230 V AC • Temperature measurement: -10 °C ... +99 °C ; NTC10K • Outputs: - 1 analog output 0-10V (8 bit, Imax = 20 mA) - 2 relays outputs (250 VAC, AC1 500 VA dla 230 VAC) • Communication: Modbus RTU • Parameters of working environment: temperature: 0 - 60 °C, humidity: 10 - 90%, without condensation • Display: blue backlight • Dimensions: 86 mm x 86 mm x 17 mm • Protection level: IP20	• used for control all types of WING EC curtains • touch control panel • the main on / off switch (ON / OFF) • preset three-stage adjustable fan speed of the EC motor • built-in thermostat with possibility weekly programing • continuous mode • function of heating and ventilation • possibility of using a door sensor • three-stage adjustable of heating power • RS 485 with ModbusRTU • Suggested cross sections of electrical cables: - L, N: 2x1 mm² - H1, H2: 2x1 mm² - AO, GND: 2x0,5 mm² LIYCY - Door sensor: 2x0,5 mm² LIYCY - RS 485: 2x0,75 mm² LIYCY
WALL-MOUNTED CONTROL PANEL HMI-WING EC		**HMI-WING EC** • Device operation: Capacitive touch buttons • Power supply: 230 V AC • Temperature measurement: -10 °C ... +99 °C ; NTC10K • Outputs: - 1 analog output 0-10V (8 bit, Imax = 20 mA) - 2 relays outputs (250 VAC, AC1 500 VA dla 230 VAC) • Inputs: 1 digital input type “dry contact”, Imax = 20 mA • Communication: Modbus RTU • Parameters of working environment: temperature: 0 - 60 °C, humidity: 10 - 90%, without condensation	• used for control all types of WING EC curtains • touch control panel • the main on / off switch (ON / OFF) • three-stage adjustable fan speed of the EC motor • built-in thermostat with possibility weekly programing • continuous mode • function of heating and ventilation • obsługa czujnika drzwiowego • two-stage adjustable of heating power • RS 485 with ModbusRTU • Suggested cross sections of electrical cables:: - L, N: 2x1 mm² - H1, H2: 2x1 mm² - AO, GND: 2x0,5 mm² LIYCY - Door sensor: 2x0,5 mm² LIYCY - RS 485: 3x0,75 mm² LIYCY
TWO-WAY VALVE WITH ACTUATOR		**TWO-WAY VALVE** • Terminal diameter: 3/4” • Mode of operation: two-way ON/OFF • Maximum differential pressure: 90kPa • Pressure class: PN 16 • Kvs flow ratio: 4.5 m³/h • Maximum temperature of heating medium: 105°C • Parameters of working environment: from 0 to 60°C **VALVE ACTUATOR** • Power consumption: 1 W • Supply voltage: 230VAC +/-10% • Closing/opening time: 3/3 min • Position without power: closed • Level of protection: IP54 • Parameters of working environment: from 0 to 60°C	• It is recommended to install a two-way valve on the return pipeline. • The drawings with the elements of automatics contain only visualisations of sample products. • It is recommended to connect the supply, using a conductor of the min. size 2x0.75 mm². • The drawings with the elements of automatics contain only visualisations of sample products.

IMPORTANT! If required, the conductors that belong to additional elements of control automatics (thermostat, door switch, wall-mounted controller) should be installed in separate cable channels, out-of-parallel to the supply conductors.

5. START-UP, OPERATION, MAINTENANCE

5.1. START-UP/PUTTING INTO OPERATION

- Prior to the commencing of any installation or maintenance work, disconnect power supply and secure it against unintentional reactivation.
- It is recommended to use filters in the hydraulic system. It is recommended to clean/rinse the system, draining a few litres of water, prior to the connecting of hydraulic conduits (the supply conduits, in particular).
- It is advised to use vent valves in the highest point of the system.
- It is recommended to install shut-off valves directly after the device, should the disassembly of the device be necessary.
- All protective equipment is to be installed before the pressure increases, according to maximum the permissible pressure rating of 1.6MPa.
- Hydraulic connection should be free of any stresses and loads.
- Check the correctness of hydraulic connections (leak-tightness of the vent, collecting pipes, correctness of fittings installation), prior to the initial start-up of the device.
- It is recommended to check the correctness of electrical connections (of automatics, power supply), prior to the initial start-up of the device. It is advised to use an additional, external residual-current protection.

IMPORTANT! All connections should be carried out, according to this technical documentation and the documentation delivered with automation equipment.

EN

5.2. OPERATION AND MAINTENANCE

- It is advised to carefully analyse all the operational and assembly guidelines listed in chapter 3 and 4.
- The casing of the device does not require maintenance.
- The heat exchanger should be cleaned on a regular basis from dust and fat deposit. It is especially recommended to clean the exchanger before the heating season with the use of compressed air from the air intake side (after removing the inlet grid). You should pay special attention to the exchanger's lamellae which are very delicate.
- Should the lamellas be deformed (bent), straighten them with a special tool.
- The fan's motor does not require any exploitation service, the only service activities that may be necessary concern cleaning the air intakes from dust and fat deposit.
- Disconnect phase voltage, if the device is shut down for longer periods of time.
- The heat exchanger does not have any anti-freezing protections.
- It is recommended to provide a periodical purging of the heat exchanger, preferably using compressed air.
- Should the temperature in the room drop below 0°C, with a simultaneous drop of the heating medium temperature, there is a risk that the heat exchanger might freeze (crack).
- The level of air pollutants should meet the criteria allowable concentrations of pollutants in indoor air, for non-industrial areas, the level of dust concentration up to 0.3 g / m³.
- It is forbidden to use device for the duration of the construction works except for the start-up of the system.
- The equipment must be operated in rooms used throughout the year, and in which there is no condensation (large fluctuations in temperature, especially below the dew point of the moisture content). The device should not be exposed to direct UV rays.
- The device should be operated at the supply water temperature up to 90 °C with working fan.

6. SERVICING

6.1. PROCEDURE IN CASE OF DEFECTS

WING 100-200(II)		
Symptoms	**What to check**	**Description**
Leakage in the WING II W100-200 heat exchanger	• Fitting of the heat exchanger terminals, using two keys acting in two opposite directions (apply the keys on each terminal), which protects against the possibility of internal breaking of the collecting pipes. • Relation between the leaking and a potential mechanical damage to the exchanger. • Leaking of vent valve elements or drain plug. • Parameters of the heating medium (pressure and temperature) should not exceed the permissible values. • Correctness of the draining of the exchanger. • type of agent (it cannot be any aggressive substance Al or Cu active), • Circumstances in which leaking occurred (e.g. during the trial/initial start-up of the system; after having drained the heating medium, followed by the filling of the system) and the external ambient temperature at the moment of the defect taking place (freezing hazard to the exchanger). • Potentially aggressive atmosphere (air) in the place of work (e.g. high concentration of ammonia in the sewage-treatment plant).	• Pay particular attention to the possibility of the freezing of the heat exchanger in the winter. 99% of leaks occur during start-up/pressure checks. The rectifying of the defect consists in the pulling back of the vent/drain valve.
The fan of the device works too loudly WING II W100-200/ E100-200/C100-200	• Installation of the device, according to the guidelines in the Operation and Maintenance Documentation (among others, the distance from the ceiling).	• Minimum distance: 10 cm from the ceiling
	• Correctness of the horizontal alignment of the device. • Correctness of electrical connections and qualifications of • Parameters of the supply current (among others: voltage, frequency). • Incorrect covering of the curtain in the suspended ceiling. • Noise in lower speeds (damaged winding). • Noise present only in the higher speeds – blocking of the air outlet. • Type of other equipment working in the facility (e.g. exhaust fans) – increasing noise may be a result of several pieces of equipment working simultaneously.	• Louder operation of WING devices may be a result of inappropriate place of assembly: e.g. choking the fan or the acoustic specifics of a room.
The fan in the device is not operational WING II W100-200 /E100-200/C100-200	• Correctness and quality of electrical connections and qualifications of the fitter. • Parameters of the supply current (among others: voltage, frequency) on the terminal block of the fan's engine. • Operational correctness of other pieces of equipment present in the facility. • Correct fitting of the conduits on the engine side – information available from VTS Service Department. • Voltage on the PE conductor (if present, it may indicate a breakdown).	• The electrical connection of the device must be carried out, according to the diagrams found in the Operation and Maintenance Documentation.
	• Damage, incorrect connecting or fitting of a wall-mounted controller, other than the WING/VOLCANO or HMI-WING EC controllers	• It is recommended to check the device by means of connecting the curtain directly to the power supply and forcing the electric motor's operation by shorting appropriate clips of the device's terminal strip and then the terminal strip in the controller.
Damaged casing of the device WING II W100-200 /E100-200/C100-200	• Circumstances in which the defect occurred: remarks on the bill of lading, inventory issue, condition of cardboard).	• Should the casing be defective, it is required to present photos of the cardboard and device, as well as photos that confirm the compliance between the serial number on the device and cardboard. If the damage was done in transport, it is necessary to prepare a proper statement by the driver/forwarder that delivered the goods.
WALL-MOUNTED WING/VOLCANO or HMI-WING EC CONTROLLER does not work/is burnt	• Correctness and quality of electrical connections (tight clamping of conductorsin electric terminals, cross-section and material of electric conductors) and the qualifications of the fitter. • Parameters of the supply current (among others: voltage, frequency). • Operational correctness of the WING device, when connected directly to the power supply (ignoring the controller). • Whether the user has not damaged the "hand-wheel", e.g. by rotating it by 360˚, or the switch, e.g. by keeping it in the intermediate position.	• It is recommended to check the device by means of connecting the curtain directly to the power supply and forcing the electric motor's operation by shorting appropriate clips of the device's terminal strip and then the terminal strip in the controller.
Actuator does not open the valve	• Correctness of electrical connections and qualifications of the fitter. • Operational correctness of the thermostat (the characteristic "ticking" when switching the device). • Parameters of the supply current (among others: voltage).	• The most important step is to check whether the actuator has reacted to the electrical impulse within 11 s. When actuator damage is claimed, a complaint must be submitted for the damaged element, and the actuator must be deinstalled from the valve to open the valve mechanically (permanently).
The thermostat in the WING/VOLCANO controller does not send any signal to the actuator	• Correctness of electrical connections and qualifications of the fitter. • Operational correctness of the thermostat (the characteristic "ticking" when switching the device). • Operational correctness of the actuator. • Parameters of the supply current (among others: voltage). • Place of thermostat/actuator installation in the room.	• If the "ticking" sound is not heard, the thermostat has been mechanically damaged and should be subject to the complaint procedure. The thermostat can also be installed in an improper space, which is subject to temperature monitoring.



It is forbidden to place, dispose of and store worn-out electric and electronic equipment, together with other waste. Dangerous compound contained in electronic and electric equipment have a very adverse impact on plants, micro-organisms, and, most importantly, on humans, as they damage our central and peripheral nervous system, as well as circulatory and internal system. Additionally, they cause serious allergic reactions. Worn-out equipment is to be delivered to a local collection point for used electric equipment, which carries out a selective collection of waste.

REMEMBER!

The user of equipment intended for households, and which has been worn out, is obliged to transfer such equipment to a collecting unit that collects worn-out electric and electronic equipment. The selective collecting and further processing of waste from households contributes to the protection of environment, reduces the penetration of hazardous substances into the atmosphere and surface waters.

6.2. COMPLAINT PROCEDURE

In order to report a problem with the device or elements of automation, please fill in and send the appropriate form (p.74), using one of the three available ways:

1. E-mail: vts.pl@vtsgroup.com
2. Fax: (+48) 12 296 50 75
3. Website: www.vtsgroup.pl\PRODUKT\VTS Service\formularz zgłoszeniowy

Our service department will contact you immediately.
In the case of damage in transport, send a complaint notification, including the delivery documentation (bill of lading, inventory issue) and photographs showing the defects.
Should you have any questions, please contact us, using this telephone number: 0 801 080 073

IMPORTANT! The complaint procedure shall be initiated when the Service Department has received a correctly filled complaint notification, a copy of the purchase invoice and the Warranty Card, filled by the company that carried out the installation.

7. INDUSTRIAL SAFETY INSTRUCTION

Special instructions concerning safety

IMPORTANT!

- Prior to the commencing of any work related to the device, it is required to disconnect the system, secure it properly and wait, until the fan stops revolving.
- Use stable working platforms and hoists.
- Depending on the temperature of the heating medium, pipes, elements of casing and surfaces of the heat exchanger can be very hot, even after the fan has stopped revolving.
- Sharp edges may be present! Wear gloves, protective shoes and clothing, when transporting the device.
- Strictly observe safety guidelines and industrial safety regulations.
- Loads can be placed only in the previously selected areas on the transporting unit. Protect the edges of the device, when lifting it, using a set of machines. Remember to distribute weight evenly.
- The equipment must be protected against moisture and dirt, and kept in rooms protected against the impact of weather conditions.
- Utilisation of waste: make sure that operating and auxiliary materials, including packaging material and spare parts, are disposed of in a safe, environment friendly manner, according to the binding, local statutory regulations.

8. TECHNICAL DATA

8.1 WATER AIR CURTAIN – WING II W100-200

T_z – temperature of water at the inlet to the device
T_p – temperature of water at the outlet from the device
T_{p1} – temperature of air at the inlet to the device
T_{p2} – temperature of air at the outlet from the device
P_g – heating output of the device
Q_w – water flow
Δp – pressure drop in the heat exchanger

Parameters	WING II W100															
T_z/T_p [°C]	90/70				80/60				70/50				60/40			
T_{p1} [°C]	5	10	15	20	5	10	15	20	5	10	15	20	5	10	15	20
	*III/1850[m³/h]/57dB(A)**															
P_g [kW]	17,7	16,3	14,9	13,5	14,8	13,3	11,9	10,5	11,6	10,2	8,7	7,0	8,0	5,1	4,3	3,5
T_{p2} [°C]	32,0	35,3	38,5	41,7	27,5	30,7	33,8	36,8	22,8	25,8	28,7	31,3	17,2	17,9	21,8	25,6
Q_w [m³/h]	0,8	0,7	0,7	0,6	0,7	0,6	0,5	0,5	0,5	0,5	0,4	0,3	0,4	0,2	0,2	0,2
Δp [kPa]	0,5	0,4	0,4	0,3	0,4	0,3	0,2	0,2	0,2	0,2	0,1	0,1	0,1	0,1	0,04	0,03
	*II/1350[m³/h]/55dB(A)**															
P_g [kW]	15,0	13,8	12,6	11,4	12,5	11,3	10,1	8,8	9,8	8,5	7,2	4,7	5,4	4,6	3,9	3,2
T_{p2} [°C]	34,7	37,8	40,8	43,7	29,7	32,7	35,6	38,4	24,4	27,2	29,7	29,7	15,6	19,3	23,0	26,7
Q_w [m³/h]	0,7	0,6	0,6	0,5	0,6	0,5	0,4	0,9	0,4	0,4	0,3	0,2	0,2	0,2	0,2	0,1
Δp [kPa]	0,4	0,3	0,3	0,2	0,3	0,2	0,2	0,1	0,2	0,1	0,1	0,1	0,1	0,1	0,04	0,03
	*I/880[m³/h]/52dB(A)**															
P_g [kW]	11,9	10,9	9,9	9,0	9,8	8,9	7,9	6,9	7,6	6,5	4,6	4,0	4,6	4,0	3,4	2,8
T_{p2} [°C]	38,5	41,3	44,0	46,7	32,8	35,5	38,0	40,4	26,5	28,8	28,6	31,9	18,0	21,5	24,9	28,4
Q_w [m³/h]	0,5	0,5	0,4	0,4	0,4	0,4	0,4	0,3	0,3	0,3	0,2	0,2	0,2	0,2	0,2	0,1
Δp [kPa]	0,2	0,2	0,2	0,1	0,2	0,1	0,1	0,1	0,1	0,1	0,1	0,0	0,1	0,04	0,03	0,02

Parameters	WING II W150															
T_z/T_p [°C]	90/70				80/60				70/50				60/40			
T_{p1} [°C]	5	10	15	20	5	10	15	20	5	10	15	20	5	10	15	20
	*III/3100[m³/h]/59dB(A)**															
P_g [kW]	31,7	29,3	26,9	24,5	26,9	24,5	22,1	19,8	22,0	19,6	17,3	14,9	17,0	14,5	12,1	9,5
T_{p2} [°C]	33,9	37,2	40,4	43,6	29,5	32,7	35,9	39,0	25,1	28,2	31,3	34,3	20,5	23,5	26,4	29,1
Q_w [m³/h]	1,4	1,3	1,2	1,1	1,2	1,1	1,0	0,9	1,0	0,9	0,8	0,7	0,7	0,6	0,5	0,4
Δp [kPa]	2,1	1,8	1,6	1,3	1,6	1,4	1,2	0,9	1,2	1,0	0,8	0,6	0,8	0,6	0,4	0,3
	*II/2050[m³/h]/58dB(A)**															
P_g [kW]	26,5	24,5	22,5	20,5	22,5	20,5	18,5	16,6	18,5	16,5	14,4	12,4	14,2	12,1	10,0	7,7
T_{p2} [°C]	36,9	40,0	43,0	46,0	32,1	35,1	38,1	41,0	27,2	30,1	33,0	35,7	22,1	24,8	27,5	29,7
Q_w [m³/h]	1,2	1,1	1,0	0,9	1,0	0,9	0,8	0,7	0,8	0,7	0,6	0,5	0,6	0,5	0,4	0,3
Δp [kPa]	1,5	1,3	1,2	1,0	1,2	1,0	0,8	0,7	0,9	0,7	0,6	0,4	0,6	0,4	0,3	0,2
	*I/1420[m³/h]/53dB(A)**															
P_g [kW]	21,6	19,9	18,3	16,7	18,3	16,7	15,1	13,5	15,0	13,4	11,7	10,1	11,5	9,8	8,0	4,8
T_{p2} [°C]	40,4	43,3	46,1	48,9	35,1	37,9	40,6	43,3	29,6	32,3	34,9	37,4	23,9	26,3	28,5	28,3
Q_w [m³/h]	1,0	0,9	0,8	0,7	0,8	0,7	0,7	0,6	0,7	0,6	0,5	0,4	0,5	0,4	0,4	0,2
Δp [kPa]	1,1	0,9	0,8	0,7	0,8	0,7	0,6	0,5	0,6	0,5	0,4	0,3	0,4	0,3	0,2	0,1

Parameters	WING II W200															
T_z/T_p [°C]	90/70				80/60				70/50				60/40			
T_{p1} [°C]	5	10	15	20	5	10	15	20	5	10	15	20	5	10	15	20
	*III/4400[m³/h]/62dB(A)**															
P_g [kW]	46,9	42,7	39,3	35,9	39,4	36,0	32,6	29,3	32,6	29,2	25,8	22,5	25,7	22,3	18,9	15,4
T_{p2} [°C]	34,6	37,9	41,1	44,3	30,3	33,5	36,7	39,8	25,9	29,1	32,2	35,2	21,5	24,5	27,5	30,4
Q_w [m³/h]	2,0	1,9	1,7	1,6	1,7	1,6	1,4	1,3	1,4	1,3	1,1	1,0	1,1	1,0	0,8	0,7
Δp [kPa]	5,6	4,9	4,2	3,6	4,3	3,7	3,1	2,6	3,2	2,6	2,1	1,7	2,2	1,7	1,3	0,9
	*II/3150[m³/h]/61dB(A)**															
P_g [kW]	40,9	37,9	34,8	31,9	35,0	31,9	28,9	26,0	28,9	25,9	22,9	20,0	22,8	19,8	16,7	13,7
T_{p2} [°C]	36,6	39,8	42,9	46,0	32,0	35,1	38,2	41,2	27,4	30,4	33,4	36,3	22,6	25,6	28,4	31,1
Q_w [m³/h]	1,8	1,7	1,5	1,4	1,5	1,4	1,3	1,1	1,3	1,1	1,0	0,9	1,0	0,9	0,7	0,6
Δp [kPa]	4,5	3,9	3,4	2,9	3,5	3,0	2,5	2,1	2,6	2,1	1,7	1,4	1,8	1,4	1,0	0,7
	*I/2050[m³/h]/56dB(A)**															
P_g [kW]	34,0	31,4	28,9	26,4	29,0	26,5	24,0	21,6	24,1	21,6	19,1	16,6	19,0	16,4	13,9	11,3
T_{p2} [°C]	39,9	42,8	45,8	48,6	34,8	37,7	40,6	43,3	29,7	32,5	35,3	37,9	24,5	27,2	29,8	32,2
Q_w [m³/h]	1,5	1,4	1,3	1,2	1,3	1,2	1,1	1,0	1,1	1,0	0,8	0,7	0,8	0,7	0,6	0,5
Δp [kPa]	3,2	2,8	2,4	2,1	2,5	2,2	1,8	1,5	1,9	1,6	1,2	1,0	1,3	1,0	0,7	0,5

8.2 ELECTRIC AIR CURTAIN – WING II E100-200

T_{p1} – temperature of air at the inlet to the device
T_{p2} – temperature of air at the outlet from the device
P_g – heating output of the device

Parameters	WING II E100				WING II E150				WING II E200			
T_{p1} [°C]	5	10	15	20	5	10	15	20	5	10	15	20
	*III/1850[m³/h]/59dB(A)**				*III/3150[m³/h]/61dB(A)**				*III/4500[m³/h]/62dB(A)**			
P_g [kW]	2/4/6	2/4/6	2/4/6	2/4/6	8/12	8/12	8/12	8/12	10/15	10/15	10/15	10/15
T_{p2} [°C]	8/11/15	13/16/20	18/21/25	23/26/30	12/15	17/20	22/25	27/30	10/14	15/19	20/24	25/29
	*II/1400[m³/h]/48dB(A)**				*II/2050[m³/h]/48dB(A)**				*II/3200[m³/h]/48dB(A)**			
P_g [kW]	2/4/6	2/4/6	2/4/6	2/4/6	8/12	8/12	8/12	8/12	10/15	10/15	10/15	10/15
T_{p2} [°C]	9/12/16	14/17/21	19/22/26	24/27/31	14/19	19/24	24/29	29/34	12/16	17/21	22/26	27/31
	*I/920[m³/h]/44dB(A)**				*I/1450[m³/h]/43dB(A)**				*I/2150[m³/h]/45dB(A)**			
P_g [kW]	2/4/6	2/4/6	2/4/6	2/4/6	8/12	8/12	8/12	8/12	10/15	10/15	10/15	10/15
T_{p2} [°C]	11/16/21	16/21/26	21/26/31	26/31/36	19/26	24/31	29/36	34/41	15/21	20/26	25/31	30/36

8.3 WING II C100-200 – COLD AIR CURTAIN

Parameters	WING II C100			WING II C150			WING II C200		
Fan speed	III	II	I	III	II	I	III	II	I
Qp [m³/h]	1950	1500	1050	3200	2250	1500	4600	3400	2340
noise level [dB(A)]*	62	59	53	63	62	54	63	61	57

EN

EN: * The noise level has been measured within a 5 m distance from the device; reference conditions: semi-open space – wall-mounted device.

Parameters		WING II W100-200			WING II E100-200			WING II C100-200		
	unit of measure	1m	1,5m	2m	1m	1,5m	2m	1m	1,5m	2m
Maximum width of a single door for one device	m	1	1.5	2	1	1.5	2	1	1.5	2
Maximum height of door	m	3,7						4		
Heating output range	kW	4-17	10-32	17-47	2 lub 4/6	8/12	10/15	-		
Maximum flow rate	m³/h	1850	3100	4400	1850	3150	4500	1950	3200	4600
Maximum temperature of heating medium	°C	95			-			-		
Maximum working pressure	MPa	1,6			-			-		
Water volume	dm³	1,6	2,6	3,6	-			-		
Diameter of stub pipe connectors	"	3/4			-			-		
Supply voltage	V/ph/Hz	~230/1/50			~230/1/50 for 2kW ~400/3/50 for 4/6kW	~400/3/50		~230/1/50		
Power of the electric heater section	kW	-			2 and 4	4 and 8	5 and 10	-		
Rated current of the electric heater	A	-			6/max.9	11,5/ max.17,3	14,5/ max.21,4	-	-	-
AC Engine power	kW	0,235	0,375	0,58	0,235	0,375	0,58	0,235	0,375	0,58
AC engine rated current	A	1,2	1,7	2,6	1,2	1,7	2,6	1,2	1,7	2,6
EC Engine power	kW	0,2	0,3	0,47	0,2	0,3	0,47	0,2	0,3	0,47
EC engine rated current	A	1,1	1,3	1,9	1,1	1,3	1,9	1,1	1,3	1,9
Weight AC/EC	kg	20,8/21,2	27,8/24,5	34,6/30,4	20/17,3	26,8/23,4	33,3/29,1	17,9/15,3	23,8/20,4	29,3/25,1
IP	-	20								

9. TECHNICAL INFORMATION TO THE REGULATION (EU) NO 327/2011 IMPLEMENTING DIRECTIVE 2009/125/EC

	WING II 100	WING II 150	WING II 200
1.	24.2%	24.0%	24.6%
2.	B		
3.	Total		
4.	21	21	21
5.	VSD-No		
6.	2020		
7.	VTS Plant Sp. z o.o., CRN 0000144190, Poland		
8.	1-2-2801-0154	1-2-2801-0215	1-2-2801-0216
9.	0.41kW, 2826m³/h, 145Pa	0.48kW, 4239m³/h, 124Pa	0.68kW, 6006m³/h, 128Pa
10.	1376RPM	1370RPM	1372RPM
11.	1.0		
12.	Device disassembly should be performed and/or supervised by perperly qualified personnel having sufficient knowledge. Contact a certified waste disposal company in your region. Explain what is to take place in terms of device disassembly and subassembly securing. Disassemble the device using general procedures applied in mechanical engineering. WARNING The fan unit consists of heavy elements. These elements can fall down during disassembly, causing the death, severe injury of the staff, as well as material damages. Learn the following safety principles: 1. Disconnect the power, including all related subsystems. 2. Prevent the device from restarting. 3. Make sure the device is disconnected from power supply. 4. Secure or isolate all elements which are powered and situated nearby. To restore power supply, reverse the procedure. **Components:** In its dominant part, the device consists of of components made of steel, copper, aluminum and plastics, in varying proportions (the rotor is made of SAN - styrene, acrylonitrile, structural material with the addition of 20% of glass fiber) and rubber (neoprene) sockets/bearing hubs. The components must be sorted before recycling according to the following material categories: iron and steel, aluminum, copper, non-ferrous metals, e.g. winding (winding insulation will be burnt in the course of copper recycling, insulation materials, electrical wires, electronic waste (condenser, etc.), plastic elements (fan rotor, winding shields, etc.), rubber elements (neoprene). The same applies to textiles and cleaning substances used to disassemble the components. Elements should be separated according to local regulations or by a specialist recycling company.		
13.	Long period of defect-free operation depends on maintaining the product / device / fan in the scope of working parameters specified by the slection and usage software, according to the intended purposes specified in the operation and maintenance documentation enclosed to the device. To ensure correct operation of the device, always adhere to the technical documentation, and particularly chapters: assembly, startup, use and maintenance.		
14.	Fan housing, internal profiles		

EN

	WING II 100 EC	WING II 150 EC	WING II 200 EC
1.	28.5%	27.5%	28.0%
2.	B		
3.	Total		
4.	21	21	21
5.	VSD-No		
6.	2020		
7.	VTS Plant Sp. z o.o., CRN 0000144190, Poland		
8.	1-2-2801-0232	1-2-2801-0233	1-2-2801-0234
9.	0.36kW, 2826m³/h, 145Pa	0.43kW, 4239m³/h, 124Pa	0.61kW, 6006m³/h, 128Pa
10.	1376RPM	1370RPM	1372RPM
11.	1.0		
12.	Device disassembly should be performed and/or supervised by perperly qualified personnel having sufficient knowledge. Contact a certified waste disposal company in your region. Explain what is to take place in terms of device disassembly and subassembly securing. Disassemble the device using general procedures applied in mechanical engineering. WARNING The fan unit consists of heavy elements. These elements can fall down during disassembly, causing the death, severe injury of the staff, as well as material damages. Learn the following safety principles: 1. Disconnect the power, including all related subsystems. 2. Prevent the device from restarting. 3. Make sure the device is disconnected from power supply. 4. Secure or isolate all elements which are powered and situated nearby. To restore power supply, reverse the procedure. **Components:** In its dominant part, the device consists of of components made of steel, copper, aluminum and plastics, in varying proportions (the rotor is made of SAN - styrene, acrylonitrile, structural material with the addition of 20% of glass fiber) and rubber (neoprene) sockets/bearing hubs. The components must be sorted before recycling according to the following material categories: iron and steel, aluminum, copper, non-ferrous metals, e.g. winding (winding insulation will be burnt in the course of copper recycling, insulation materials, electrical wires, electronic waste (condenser, etc.), plastic elements (fan rotor, winding shields, etc.), rubber elements (neoprene). The same applies to textiles and cleaning substances used to disassemble the components. Elements should be separated according to local regulations or by a specialist recycling company.		
13.	Long period of defect-free operation depends on maintaining the product / device / fan in the scope of working parameters specified by the slection and usage software, according to the intended purposes specified in the operation and maintenance documentation enclosed to the device. To ensure correct operation of the device, always adhere to the technical documentation, and particularly chapters: assembly, startup, use and maintenance.		
14.	Fan housing, internal profiles		

EN

*1) general efficiency (η)
2) measurement category used to determine the energy efficiency
3) efficiency category
4) efficiency coefficient in the point of optimal energy efficiency
5) whether rotational speed regulation was taken into account in the calculation of fan efficiency
6) year of manufacture
7) manufacturer's name or trademark, business register number and place of manufacture
8) product model number
9) rated motor power consumption (kW), flow volume and pressure in the point of energy efficiency
10) rotations per minute in the point of energy efficiency
11) characteristic coefficient
12) essential information to facilitate disassembly, recycling or dispose of the product after the end of its use
13) essential information to minimize the effect on the environment and to guarantee optimum use period, referring to disassembly, use and technical service of the fan
14) description of additional elements used in determining the energy efficiency of the fan

EN: **IMPORTANT!** *The drawings with the elements of automatics contain only visualisations of sample products.*
IMPORTANT! *One wall-mounted WING/VOLCANO controller can support the maximum of 1 curtain.One wall-mounted HMI-WING EC controller can support the maximum of 8 curtain with EC motors.*
The maximum length of the conductor, from the curtain to the programming device, is 100 m.
***The device does not contain:** main switch, fuses and feeder cable*
Prior to the dismounting of any cover, shut down the electric power (at least by disconnecting the main switch). Electrical connection of the thermostat, door switch, valve actuator or control panel is to be carried out before the device is connected to the electric power supply. Any potential changes to the electrical connections between control equipment and control system of the device are to be carried out in the power off mode (disconnect at least the main switch). All electrical connection should be carried out by a qualified person, according to the documentation delivered with the device, as well as the afore-mentioned connection diagrams.

Complaint Form

VTS POLSKA Sp. z o.o. Al. Grunwaldzka 472 A 80-309 Gdańsk Polska EN www.vtsgroup.com						

The company submitting the notification:
The company that installed the equipment:
Date of notification:
Type of device:
Factory number*:
Date of purchase:
Date of installation:
Place of installation:
Detailed description of defect:
Contact person:
Name and surname:
Telephone:
E-mail:

* This field must be filled, if the complaint notification refers to the following equipment: VOLCANO VR1 and VR2 unit, and WING air curtains.