

# Ostro®

Installation, commissioning  
and user manual







Air curtains

## 1. PURPOSE OF THE DEVICE

Ostro air curtains are designed for use in regions with moderate or cold climates in spaces where the temperature range is -10C to +40C, in conditions that are free from external contaminants such as pollen and hydrometeor (horizontal precipitation). In winter air curtains protect against heat loss in rooms by directing a warm air stream across door ways preventing cold air from entering the heated space. In summer, the air curtains can be used as cooling devices to prevent the entry of hot air and pollutants from the outside.

The air curtains are designed to protect against heat losses in buildings of medium and high capacity and with a required mounting height is of 4 m such as:

-  supermarkets, large retail space,
-  car showrooms and service stations,
-  sports and show halls,
-  exhibition surfaces

## 2. BASIC TECHNICAL PARAMETERS

Parametry		Ostro Curtain with water heater			Ostro Curtain with electric heater		
		100W	150W	200W	100E	150E	200E
Length of unit	m	1	1.5	2	1	1.5	2
Max. installation height	m	4	4	4	4	4	4
Max air output	m³/h	1200/1550/2000	2200/3000/3600	2900/4000/4800	1200/1550/2000	2200/3000/3600	2900/4000/4800
Heat output	kW	10-16	20-29	25-40	4-7	6.5-11	8.5-14
Max working pressure	MPa	1.6	1.6	1.6	-	-	-
Diameter of connection nozzles	inches	1/2"	1/2"	1/2"	-	-	-
Motor power supply, consumption	V/Hz A	230/50 1.95A	230/50 2.6A	230/50 2.6A	230/50 1.95A	230/50 2.6A	230/50 2.6A
Motor power	kW	51/106/220	75/162/320	75/162/320	51/106/220	75/162/320	75/162/320
Electric heating power supply, consumption	V/Hz A	-	-	-	400/50 11.0A	400/50 16.6A	400/50 22.4A
Weight filled with water/without water	kg	18.0/16.5	22.6/20.5	31.0/28.0	17	21.5	29
Volume level I/II/III*	dB (A)	44/49/59	45/49/61	46/49/61	44/49/59	45/49/61	46/49/61
Protection class IP	-	IP21	IP21	IP21	IP21	IP21	IP21

Parametry		Ostro Curtain without heater		
		100C	150C	200C
Length of unit	m	1	1.5	2
Max. installation height	m	4	4	4
Max air output	m³/h	1250/1600/2100	2250/3100/3700	3000/4200/5000
Heat output	kW	-	-	-
Max working pressure	MPa	-	-	-
Diameter of connection nozzles	inches	-	-	-
Motor power supply, consumption	V/Hz A	230/50 1.95A	230/50 2.6A	230/50 2.6A
Motor power	kW	51/106/220	75/162/320	75/162/320
Electric heating power supply, consumption	V/Hz A	-	-	-
Weight filled with water/without water	kg	15	18.5	25
Volume level I/II/III*	dB (A)	45/50/60	46/50/61	47/50/61
Protection class IP	-	IP21	IP21	IP21

\* Noise level measured in distance of 3m in an open space

### 3. HEAT OUTPUT RANGES

#### 100-150-200 W Ostro Air curtains with water heater

##### Ostro Air Curtain 100W

inlet/outlet water temperature	water 50/30 °C					water 60/40 °C					water 70/50 °C					water 80/60 °C					water 90/70 °C				
inlet air temperature	0	5	10	15	20	0	5	10	15	20	0	5	10	15	20	0	5	10	15	20	0	5	10	15	20
III max air flow - 2000 m³/h																									
heat output (kW)	6.6	5.6	4.6	3.6	2.6	9.0	7.9	6.9	5.8	4.8	11.3	10.3	9.2	8.1	7.1	13.7	12.6	11.5	10.5	9.4	16.0	14.9	13.9	12.8	11.7
outlet air temperature (°C)	11.4	14.9	18.3	21.9	25.4	14.9	18.3	21.8	25.2	28.7	18.4	21.8	25.2	28.7	32.1	21.9	25.3	28.7	32.1	35.5	25.4	28.8	32.2	35.6	39.0
water flow (m³/h)	0.2	0.2	0.2	0.1	0.1	0.4	0.3	0.3	0.2	0.2	0.5	0.4	0.4	0.3	0.3	0.6	0.5	0.5	0.4	0.4	0.7	0.6	0.6	0.5	0.5
pressure drop (kPa)	1.0	1.0	0.6	0.6	0.3	2.0	2.0	1.0	1.0	1.0	4.0	3.0	2.0	2.0	1.0	5.0	5.0	4.0	3.0	2.0	7.0	6.0	5.0	5.0	4.0
III max air flow - 1550 m³/h																									
heat output (kW)	5.9	5.0	4.2	3.3	2.4	7.9	7.0	6.1	5.3	4.4	10.0	9.1	8.2	7.2	6.3	12.0	11.1	10.2	9.2	8.3	14.0	13.1	12.2	11.2	10.3
outlet air temperature (°C)	12.5	15.8	19.1	22.4	25.8	16.4	19.6	22.9	26.2	29.5	20.3	23.5	26.8	30.0	33.3	24.2	27.4	30.6	33.9	37.1	28.0	31.3	34.5	37.7	40.9
water flow (m³/h)	0.2	0.2	0.1	0.1	0.1	0.3	0.3	0.2	0.2	0.2	0.4	0.4	0.3	0.3	0.2	0.5	0.4	0.4	0.4	0.3	0.6	0.5	0.5	0.5	0.4
pressure drop (kPa)	1.0	1.0	0.5	0.5	0.2	2.0	2.0	1.0	1.0	0.0	3.0	2.0	2.0	1.0	1.0	4.0	3.0	3.0	2.0	2.0	6.0	5.0	4.0	4.0	3.0
III max air flow - 1200 m³/h																									
heat output (kW)	5.3	4.5	3.8	3.0	2.3	7.0	6.3	5.5	4.7	3.9	8.8	8.0	7.2	6.4	5.6	10.5	9.7	8.9	8.1	7.3	12.2	11.4	10.6	9.8	9.0
outlet air temperature (°C)	13.7	16.8	19.9	23.0	26.2	18.0	21.1	24.1	29.2	30.3	22.3	25.3	28.4	31.5	34.5	26.6	29.6	32.7	35.7	38.8	30.9	33.9	36.9	40.0	43.0
water flow (m³/h)	0.2	0.2	0.1	0.1	0.1	0.3	0.2	0.2	0.2	0.1	0.3	0.3	0.3	0.2	0.2	0.4	0.4	0.4	0.3	0.3	0.5	0.5	0.4	0.4	0.4
pressure drop (kPa)	1.0	0.8	0.5	0.5	0.2	1.0	1.0	1.0	0.7	0.6	2.0	2.0	1.0	1.0	1.0	3.0	3.0	2.0	2.0	1.0	4.0	4.0	3.0	3.0	2.0

##### Ostro Air Curtain 150W

inlet/outlet water temperature	water 50/30 °C					water 60/40 °C					water 70/50 °C					water 80/60 °C					water 90/70 °C				
inlet air temperature	0	5	10	15	20	0	5	10	15	20	0	5	10	15	20	0	5	10	15	20	0	5	10	15	20
III max air flow - 3600 m³/h																									
heat output (kW)	13.5	11.7	10.0	8.2	6.4	17.4	15.6	13.8	12.1	10.3	21.3	19.5	17.7	15.9	14.1	25.1	23.3	21.6	19.7	18.0	29.0	27.2	25.4	23.6	21.8
outlet air temperature (°C)	11.9	15.4	18.9	22.5	26.0	15.1	18.6	22.1	25.7	29.2	18.3	21.8	25.3	28.9	32.4	21.5	25.0	28.6	32.0	35.6	24.7	28.2	31.7	35.2	38.7
water flow (m³/h)	0.5	0.4	0.3	0.2	0.2	0.6	0.6	0.5	0.4	0.3	0.8	0.7	0.7	0.6	0.5	1.0	0.9	0.8	0.7	0.7	1.2	1.1	1.0	0.9	0.8
pressure drop (kPa)	4.0	3.0	2.0	1.0	1.0	8.0	6.0	4.0	3.0	2.0	12.0	10.0	8.0	6.0	5.0	17.0	14.0	12.0	10.0	8.0	22.0	19.0	17.0	14.0	12.0
III max air flow - 3000 m³/h																									
heat output (kW)	12.5	10.9	9.3	7.8	6.1	16.1	14.4	12.8	11.2	9.6	19.6	17.9	16.3	14.7	13.1	23.1	21.4	19.8	18.2	16.6	26.5	24.9	23.3	21.6	20.0
outlet air temperature (°C)	12.7	16.1	19.5	22.9	26.3	16.2	19.6	23.0	26.4	29.8	19.7	23.1	26.5	29.9	33.2	23.2	26.5	29.9	33.3	36.7	26.6	30.0	33.4	36.7	40.1
water flow (m³/h)	0.4	0.4	0.3	0.2	0.2	0.6	0.5	0.4	0.4	0.3	0.7	0.7	0.6	0.5	0.5	0.9	0.8	0.8	0.7	0.6	1.1	1.0	0.9	0.8	0.8
pressure drop (kPa)	4.0	3.0	2.0	1.0	0.6	6.0	5.0	4.0	3.0	2.0	10.0	8.0	6.0	5.0	4.0	14.0	12.0	10.0	8.0	7.0	18.0	16.0	14.0	12.0	10.0
III max air flow - 2200 m³/h																									
heat output (kW)	11.0	9.7	8.4	7.0	5.7	14.0	12.6	11.3	9.9	8.6	16.9	15.5	14.2	12.9	11.5	19.8	18.4	17.1	15.7	14.4	22.7	21.3	20.0	18.6	17.3
outlet air temperature (°C)	14.2	17.4	20.6	23.7	26.9	18.2	21.3	24.5	27.7	30.9	22.1	25.3	28.5	31.6	34.8	26.1	29.2	32.4	35.6	38.7	30.0	33.1	36.3	39.5	42.6
water flow (m³/h)	0.4	0.3	0.2	0.2	0.1	0.5	0.4	0.4	0.3	0.3	0.6	0.6	0.5	0.4	0.4	0.8	0.7	0.6	0.6	0.5	0.9	0.8	0.8	0.7	0.6
pressure drop (kPa)	3.0	2.0	1.0	1.0	0.6	5.0	4.0	3.0	2.0	1.0	7.0	6.0	5.0	4.0	3.0	10.0	8.0	7.0	6.0	5.0	13.0	11.0	10.0	8.0	7.0

##### Ostro Air Curtain 200W

inlet/outlet water temperature	water 50/30 °C					water 60/40 °C					water 70/50 °C					water 80/60 °C					water 90/70 °C				
inlet air temperature	0	5	10	15	20	0	5	10	15	20	0	5	10	15	20	0	5	10	15	20	0	5	10	15	20
III max air flow - 4800 m³/h																									
heat output (kW)	19.5	17.2	14.8	12.4	9.9	24.7	22.3	19.9	17.5	15.1	29.8	27.4	25.0	22.6	20.2	34.9	32.5	30.1	27.7	25.3	40.0	37.6	35.2	32.8	30.4
outlet air temperature (°C)	12.5	16.0	19.5	23.0	26.5	15.7	19.2	22.7	26.2	29.7	18.9	22.4	25.9	29.4	32.9	22.1	25.6	29.1	32.6	36.1	25.2	28.7	32.2	36.7	39.2
water flow (m³/h)	0.7	0.6	0.5	0.4	0.2	0.9	0.8	0.7	0.6	0.5	1.1	1.0	0.9	0.8	0.7	1.4	1.2	1.1	1.0	0.9	1.6	1.5	1.4	1.3	1.2
pressure drop (kPa)	9.0	6.0	4.0	3.0	1.0	15.0	12.0	9.0	7.0	5.0	22.0	19.0	15.0	12.0	9.0	32.0	27.0	23.0	19.0	15.0	42.0	37.0	32.0	27.0	23.0
III max air flow - 4000 m³/h																									
heat output (kW)	18.2	16.0	13.8	11.7	9.4	22.8	20.7	18.5	16.3	14.1	27.5	25.3	23.1	20.9	18.8	32.1	29.9	27.7	25.5	23.4	36.6	34.5	32.3	30.1	27.9
outlet air temperature (°C)	13.3	16.7	20.1	23.5	26.8	16.8	20.2	23.6	27.0	30.3	20.3	23.7	27.0	30.4	33.8	23.7	27.1	30.5	33.8	37.2	27.1	30.5	33.9	37.3	40.6
water flow (m³/h)	0.6	0.5	0.4	0.3	0.2	0.8	0.7	0.6	0.5	0.4	1.0	0.9	0.8	0.7	0.6	1.2	1.1	1.0	0.9	0.8	1.4	1.3	1.2	1.1	1.0
pressure drop (kPa)	7.0	5.0	4.0	2.0	1.0	12.0	10.0	7.0	5.0	4.0	19.0	16.0	13.0	10.0	8.0	26.0	22.0	19.0	16.0	13.0	35.0	30.0	26.0	22.0	19.0
III max air flow - 2900 m³/h																									
heat output (kW)	15.9	14.1	12.3	10.5	8.7	19.8	18.0	16.2	14.4	12.6	23.6	21.8	20.0	18.2	16.4	27.4	25.6	23.8	22.0	20.2	31.2	29.4	27.6	25.8	24.0
outlet air temperature (°C)	15.0	18.1	21.3	24.4	27.5	18.9	22.1	25.2	28.4	31.5	22.9	26.0	29.2	32.3	35.5	26.8	29.9	33.1	36.2	39.4	30.7	33.8	37.0	40.1	43.3
water flow (m³/h)	0.5	0.4	0.4	0.3	0.2	0.7	0.6	0.5	0.4	0.4	0.8	0.8	0.7	0.6	0.5	1.0	0.9	0.9	0.7	0.7	1.2	1.1	1.0	1.0	0.9
pressure drop (kPa)	5.0	4.0	3.0	2.0	1.0	9.0	7.0	5.0	4.0	3.0	13.0	11.0	9.0	7.0	5.0	18.0	16.0	13.0	11.0	9.0	24.0	21.0	18.0	16.0	13.0

#### 100-150-200 E Ostro Air curtains with electric heater

	100E					150E			
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#### 4. GENERAL AND SAFETY PRINCIPLES

The air curtains are manufactured in compliance with the rules and standards concerning quality, ecology, utility and work comfort. Before using the device please ensure that you read the instruction manual carefully.

The air curtains are delivered ready-to-use in a cardboard package that to protect from any mechanical damages. The package consists of: the device, the Manual (Operation and Maintenance Documentation) and the Guarantee. If the optional automatic control ordered, it will be delivered in a separate package. Make sure all the aforementioned elements are in the package immediately after the delivery. In the absence of any element, please fill in the suitable carrier document.

##### NOTICE!

- » Do not use the curtain in rooms containing any flammable and/or combustible substances, biological substances or in environments with corrosive air components.
- » Do not use the curtain in rooms with relative humidity above 80%
- » Do not leave the curtain ON unattended for long periods
- » Do not use the curtain unless it is properly earthed
- » Do not turn the curtain on without protective cover in place
- » Before conducting any maintenance or cleaning work or during a break in operation for an extended period of time, make sure the air curtain is completely disconnected from the electrical supply.
- » To connect the Ostro air curtain to the mains power supply use a secure connector such as a cable gland to ensure that the power supply cannot be disconnected unintentionally
- » Please ensure a suitable RCD is used to protect the electrical circuit
- » Pay special attention while transporting the device not to damage the casing
- » When the device is being operated, ensure the safety rules in accordance with the labour standards relating to the operation of any electrical devices
- » Do not place any objects on the curtain or reduce the airflow in order to ensure the fire safety and if sparks or a damaged supply cable noticed, discontinue the operation immediately
- » Electricity network, to which the curtain is connected, should be protected against overloading and short circuit

##### CAUTION!

- » To avoid serious danger of electric shock, installation must be performed by a qualified electrician
- » To avoid the serious danger to electric shock disconnect the power supply prior to conducting any repair or maintenance work
- » Any leakage repairs of the heating medium in the device, of which pipes are under pressure, is strictly prohibited
- » Cut-off/stop valve must be used to supply a heating medium
- » It is prohibited to connect grounding-type plug to water pipe, gas tubes, lightning conductors, telephone or antenna network
- » Wait for at least 3 hours before connecting the device to the power supply if the temperature during transportation is below zero

##### NOTICE !

- ❶ Before mounting the device, read the manual carefully and adhere to the rules concerning the mounting procedures. Non-adherence to the procedures may cause the device to malfunction and invalidate the product warranty.
- ❶ Pay special attention when working with electrical elements of the device.

## 5. INSTALLATION

When deciding on here to position the air curtain attention should be paid to:

- ☞ Ease of access for servicing
- ☞ Access to water and electricity connections

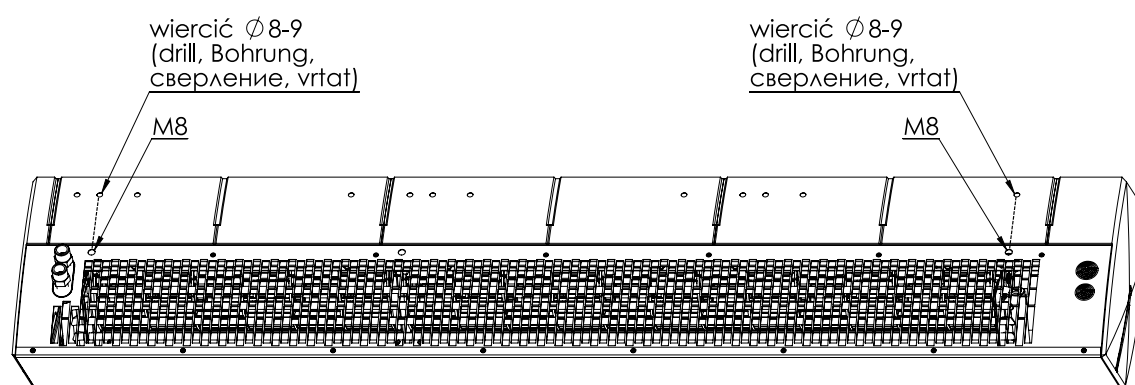
It is recommended to install the air curtain in position above the entrance opening, on the wall or under the ceiling, on support pins or horizontal mounting brackets. It is also possible to mount it vertically to a wall or other structure using vertical mounting brackets. It's important to make sure that the unit is properly level. If the air curtain is not level, either horizontal or vertical, damage to the fan may occur causing a malfunction.

Inlets and outlets cannot be blocked by any objects. When installing the curtains, ensure that access is clear to the control panel. With larger door openings, it is possible to mount more curtains of the same type, one above the other, to create an uninterrupted air flow. The curtain is permanently mounted in either a horizontal or vertical position (on the left/right side of the entrance).

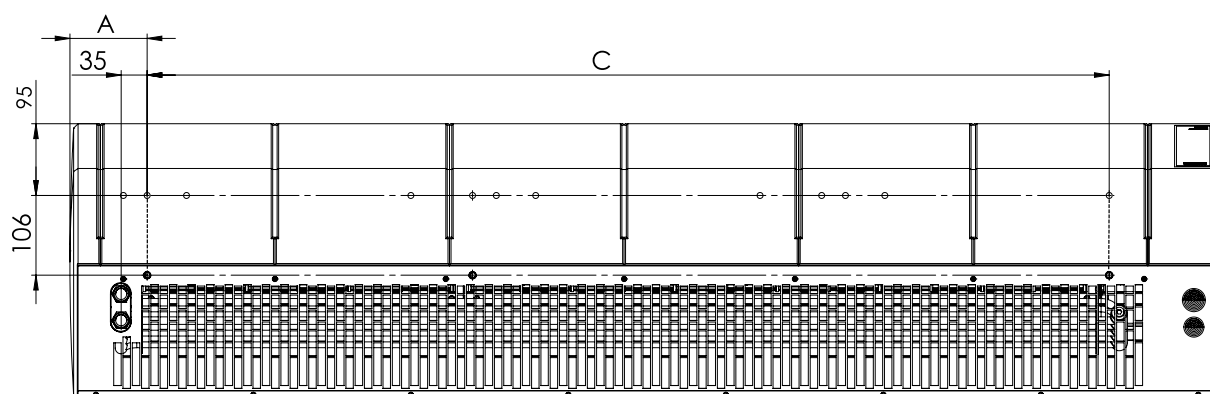
Connections to the air curtain should be accessible for servicing with manual shut-off valves on both the water connections for complete isolation of the unit. If a solenoid valve is fitted (option - automatics), it must be connected to the water outlet of the device or it may get damaged. When tightening the pie connections to the heat exchanger the connection care must be taken not to over tighten otherwise damage may occur to the heat exchanger.

### Horizontal installation under the ceiling using mounting pins

Installation under the ceiling is done by using 4 M8 pins. To hang the device on the pins, drill holes  $\varnothing$  8-9mm in the EPP housing directly in front of the existing holes in the steel inlet grille. The exact location is indicated by special tags on the EPP housing. The pins should be screwed into the nippers at a depth of 10-14mm.

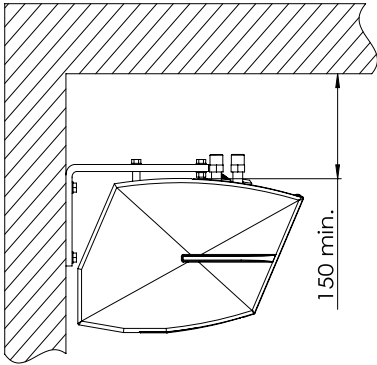


Drawing below shows the position of the mounting holes for the pins



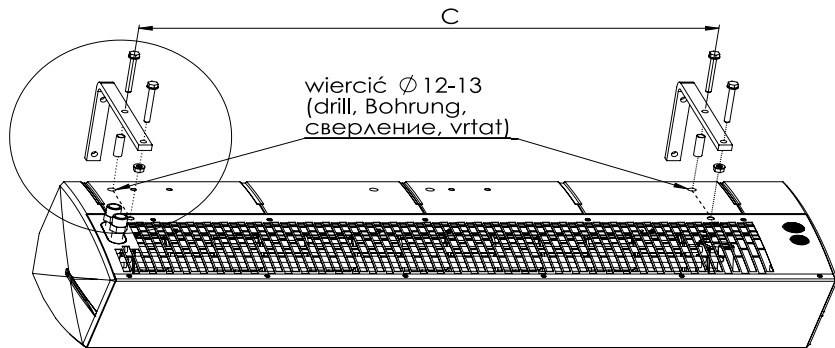
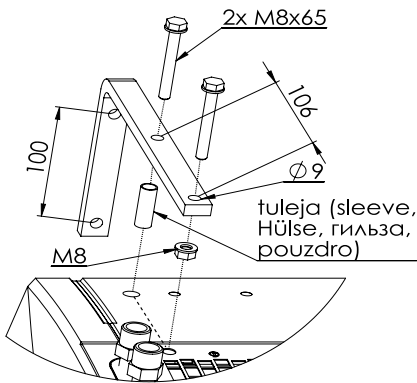
Curtain size	A(mm)	C(mm)	Nuber of pins M8
100	72	857	4
150	104	1295	4
200	157	1712	4

It is important to note that the minimum distance between the device and the ceiling is not less than 150 mm. This will ensure easy access to the water exchanger spigots, cable entries as well as free air flow to the inlet grille.



### Wall installation by means of horizontal brackets

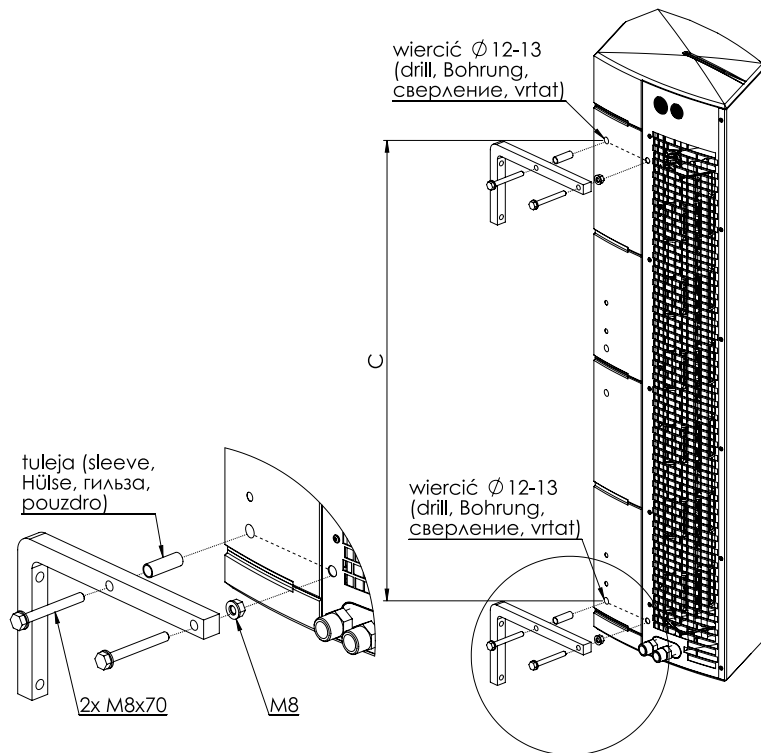
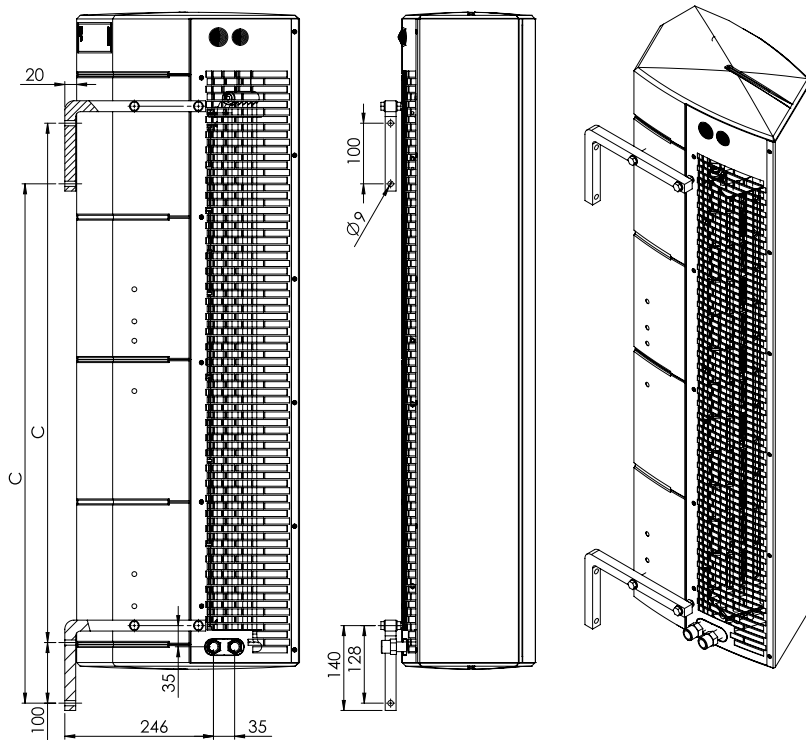
The curtain can be mounted on the wall in a horizontal position using 2 mounting brackets to the horizontal system. In the brackets there are Ø9mm holes for M8 screws. In the EPP housing, drill holes Ø 12-13mm in front of existing holes in the steel intake grille. The exact location is indicated by the special tags on the EPP housing and the figure below. Then insert the spacer sleeves into the holes and fix the brackets. Screw the remaining screws into the nuts under the steel intake grille so that both grips are in one plane. Locknuts under the handles are used to secure the screws from unscrewing.



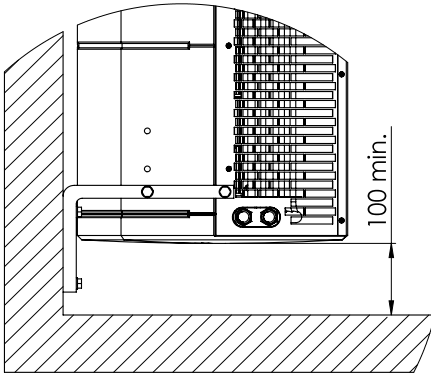
Curtain size	C(mm)	Number of brackets
100	857	2
150	1295	2
200	1712	2

### Installation using brackets for vertical mounting

It is also possible to install the unit vertically. Two vertical mounts are used for this purpose. In the brackets there are Ø9mm holes for M8 screws. In the EPP housing, drill holes Ø12-13mm in front of existing holes in the steel intake grille. The exact location is indicated by special tags on the EPP housing and the figure below. Then insert the spacer sleeves into the holes and fix the brackets. Screw the remaining screws into the nuts under the steel intake grille so that both grips are in one plane. Locknuts under the handles are used to secure the screws from unscrewing.



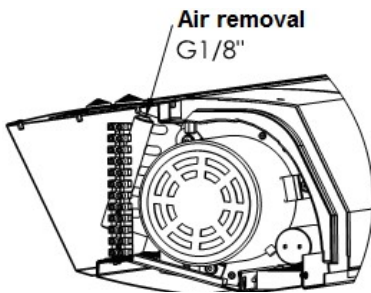
It is important to note that the minimum distance between the unit and the floor for installation with engine at the bottom is not less than 100mm. This allows access to the electrical terminal strip and to the water exchanger vent.



### Connection of heating medium

The connection of the heating medium to the heat curtain using G 1/2" threaded connections should be made on the basis of a design by an authorized designer. If the air curtain is connected to a district heating network without a mixing unit, a water filter is required.

In case of horizontal and vertical mounting with nozzles at the top, the exchanger is vented through the nozzles. If the device is mounted vertically with nozzles at the bottom to vent the exchanger, use a vent which is located on the exchanger collector on the engine side.

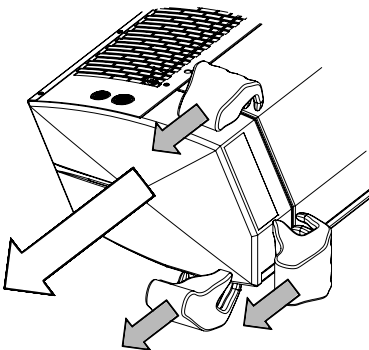


### ATTENTION !

The air curtain must be level. When it is mounted in a position other than vertical or horizontal there is a risk of fan damage and unit malfunction

### Connecting the power supply and control system of the curtain

To connect the power supply, control and/or bleed the Heat Exchanger move the right hand casing as per the diagram, which is fastened with the lock to the lower steel housing and the main housing EPP. The lid is disassembled in the direction shown by the arrows in the figure below. The lid should be grasped in the places indicated in the drawing and should be gradually "released" from the locks for several millimetres. Cable entries for power and control cables are located on the inlet grille.



### ATTENTION !

Ensure that no connection wire is clamped between the lid and the rest of the curtains before assembling the lid.



## 6. CONTROL PANEL

The curtain control is done by using the COMFORT control panel, which allows to adjust the flow and air temperature. The control panel should be located outside the curtain airflow zone. Up to 2 air curtains can be connected to one COMFORT panel.



### Description of the COMFORT control panel switches

**ON/OFF** - switching on/off of the machine

**I-II-III** - fan gear switches, COMFORT terminal strip clamps

⌘ clamp 8 - high speed III

⌘ clamp 7 - middle speed II

⌘ clamp 6 - low speed I

**HEAT** - when the room temperature is lower than the set value, the thermostat switches on the fan (W, E, C), the electric heater (E) and the valve actuator (W); When the set temperature is reached, the fan is switched off, the valve closes the water flow or the electric heater switches off

**FAN / COOL** - not supported function, in these settings the device does not work

To install the control panel, unscrew the screw, remove the front cover and panel board, fix the panel to the wall, and replace the panel and cover (installation instructions and fixing kit are included in the package).

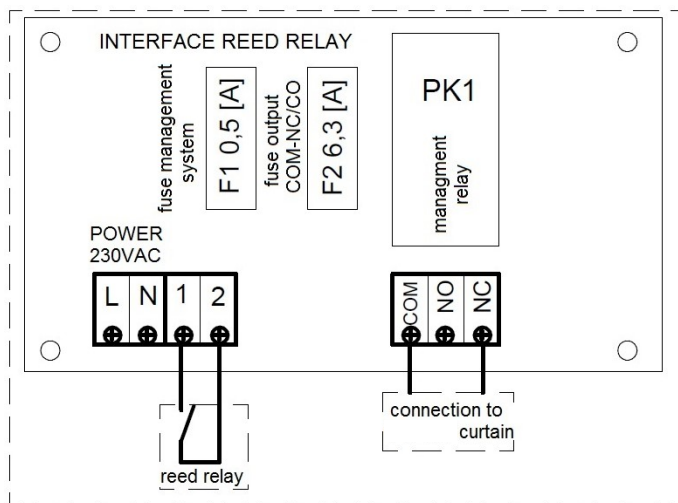
## 7. DOOR SWITCH

The **(DC)** door switch is an additional element for switching the curtain on/off, depending on the opening of the door. It is designed for indoor installation. It includes:

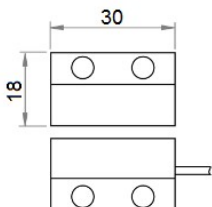
⌘ Relay cabinet - reed relay switchboard

⌘ Reed relay - Reinforcement for door-fitting, hermetic magnetic switch, consisting of a movable and fixed element

Scheme of the relay cabinet – reed relay interface



Dimensions of reed relay



Parameters of relay reed switchboard

- ⌘ Power supply 230V/50Hz
- ⌘ Inductive load relay contact 5(A)
- ⌘ NC magnetic sensor circuit NC
- ⌘ IP66

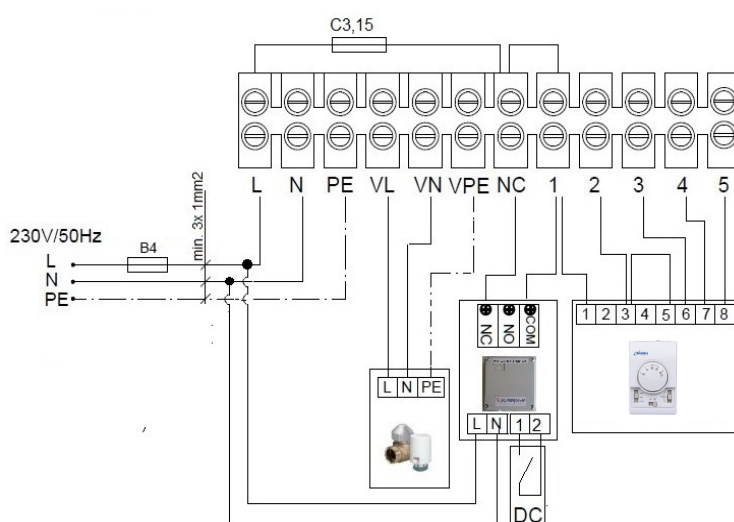
When installing the door switch, remove the factory-made jumper:

- ⌘ **NC-1** for air curtain W (curtain with a water heater) / C (curtain without a water heater)
- ⌘ **NC-COM** for air curtain E (curtain with an electric heater)

## 8. DIAGRAMS OF ELECTRICAL CONNECTIONS

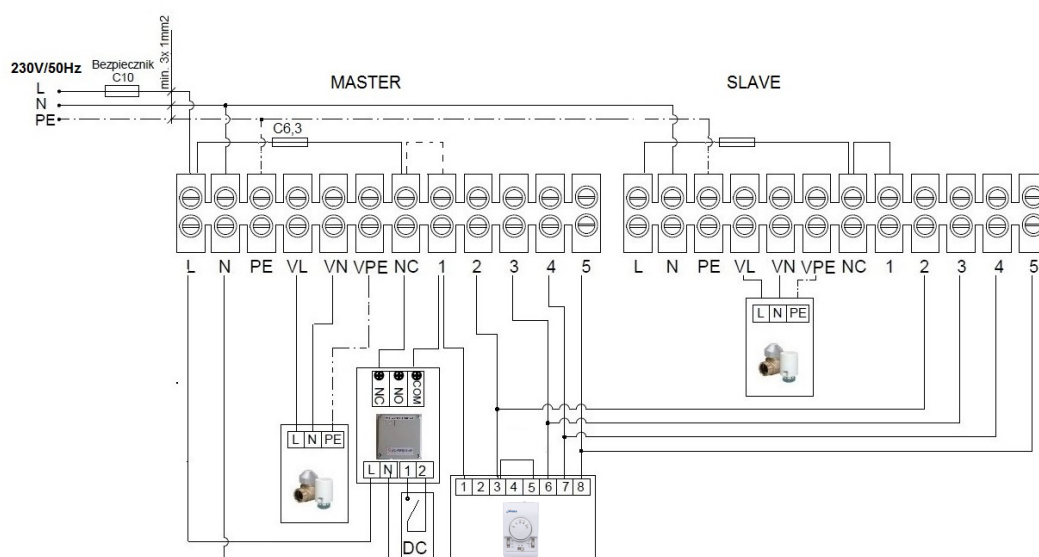
The electrical network to which the air curtain will be connected should provide protection against overheating and short circuiting. It is necessary to protect the air curtain by earthing. Electrical installation and connection to the air curtain must be in accordance with applicable building codes and regulations, electrical connection should be carried out by a qualified person familiar with the above instruction. The fan motor has standard internal thermal protection to protect the motor from overheating. The set does not include: power cord, or main switch

### 8.1 Diagram of connecting one 100-150-200 W (water heater) and C (without heater) to one COMFORT panel



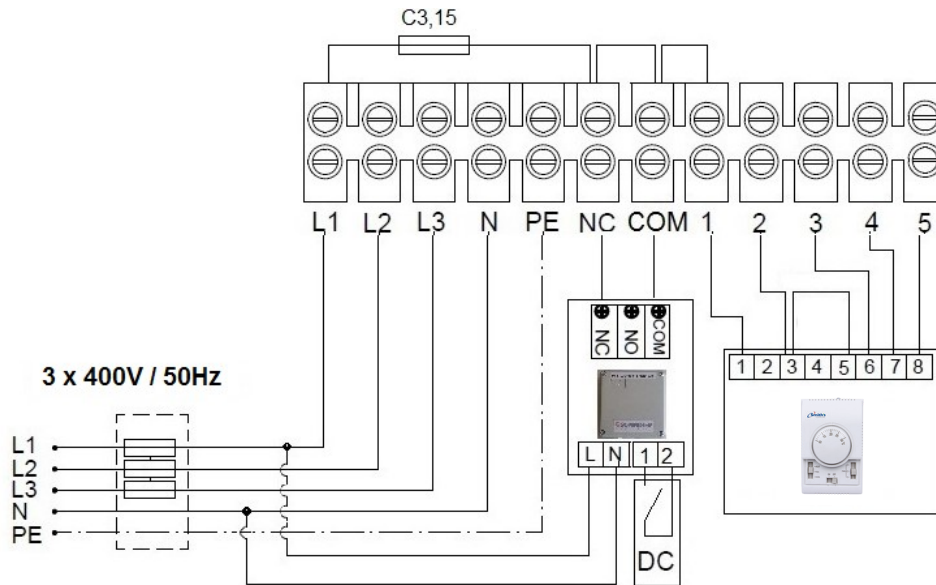
- ⚡ Power supply 230V / 50Hz; Security system B4; Cross section of power supply cables min. 3 x 1mm<sup>2</sup>
- ⚡ Control Panel COMFORT - 3-speed fan control with thermostat, (OMY 5x 1.0mm)
- ⚡ Actuator valve - control 230V/50Hz (OMY 2 x 0.75mm - TS Lite),

### 8.2 Diagram of connecting two 100-150-200 W (water heater) and C (without heater) to one COMFORT panel



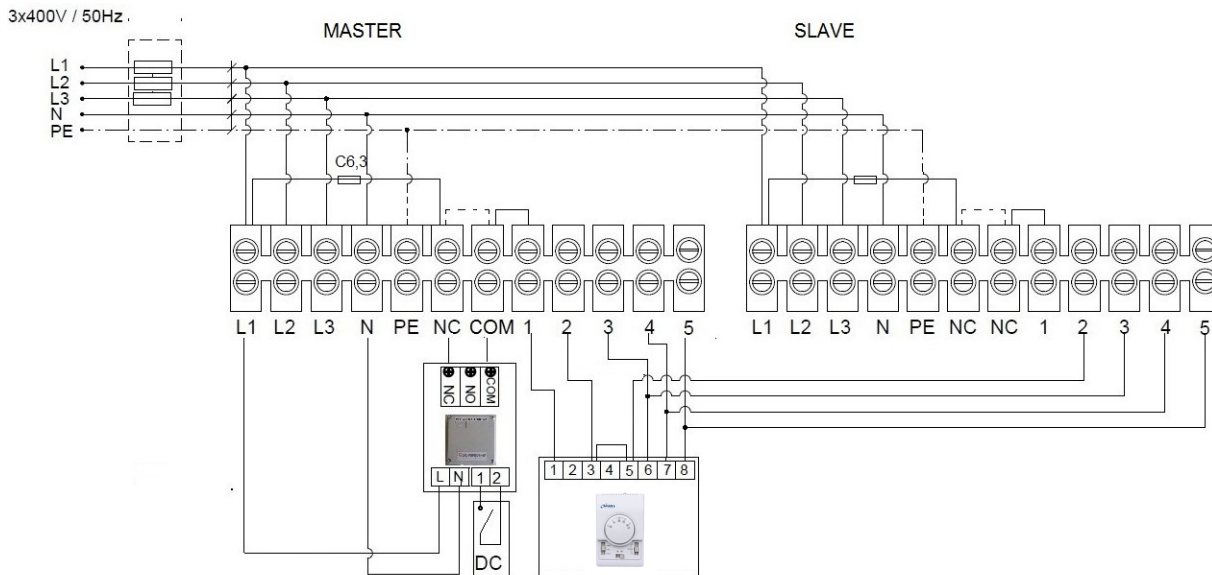
- ⚡ In the MASTER curtain between the L-NC terminals, replace the factory-made fuse (C 3.15) with C 6.3.
- ⚡ Power supply 230V/50Hz; protection of the C10 system; cross section of power supply cables min. 3 x 1.5 mm
- ⚡ COMFORT control panel - 3-speed fan control with thermostat (OMY 5x 1.0mm)
- ⚡ Actuator valve - control 230V / 50Hz (OMY 2 x 0.75mm - TS Lite),

### 8.3 Diagram of connection of one 100-150-200 E Ostro curtain (electric heater) to the COMFORT panel



- ⚡ 400V/50Hz power supply; wire cross section; current protection circuit
  - min. 5 x 2,5 mm<sup>2</sup> for G100E ; (B16)
  - min. 5 x 2,5 mm<sup>2</sup> for G150E; (B20)
  - min. 5 x 4 mm<sup>2</sup> for G200E; (B25)
- ⚡ Control Panel COMFORT - 3-speed fan control with thermostat, (OMY 5x 1.0mm<sup>2</sup>)

### 8.4 Diagram of connection of two 100-150-200 E Ostro curtain (electric heater) to one COMFORT panel

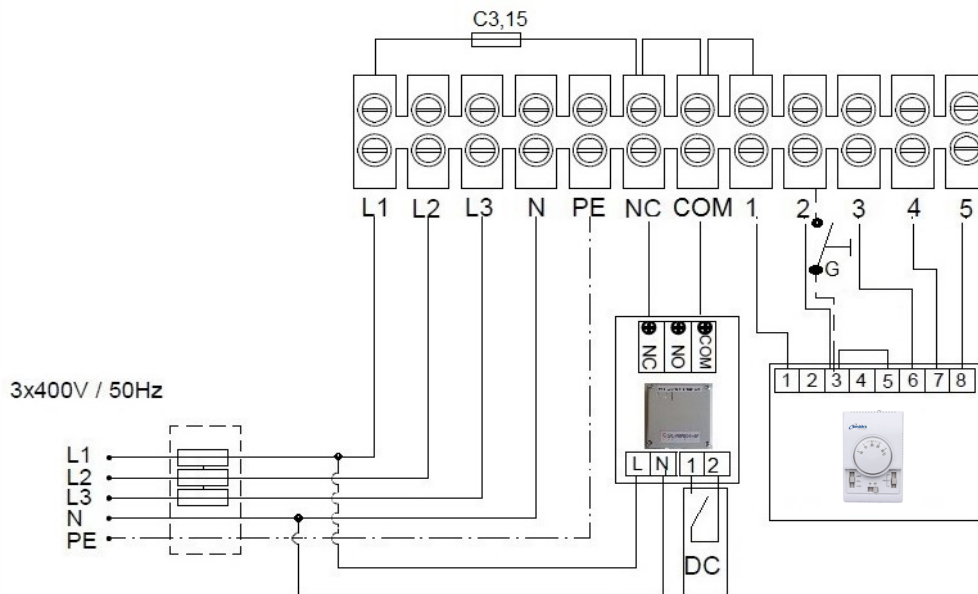


- ⚡ In the MASTER curtain between the L1-NC terminal, replace the factory-made fuse (C 3.15) with C 6.3
- ⚡ 400V / 50Hz power supply; wire cross section; current protection of the system - should be selected according to the parameters of the individual versions of the curtains
- ⚡ COMFORT control panel - 3-speed fan control with thermostat (OMY 5x 1.0mm<sup>2</sup>)

### 8.5 Diagram of connection of 100-150-200 E Ostro curtain in cold curtain mode (with electric heater switched off)

In the summer time, it is possible to switch off the electric heater and use the air curtain E curtain as a cold curtain (i.e., fan only, electric heater does not work). In this case, a simple power cut-off installation (shown in the dashed diagram below) must be made. The installation consist in inserting any on/off switch (labelled as "G") into the control circuit between **terminal 3 on Comfort Panel and Terminal 2 in the air curtain**. The on/off switch itself should be installed in a place suitable for the curtain user.

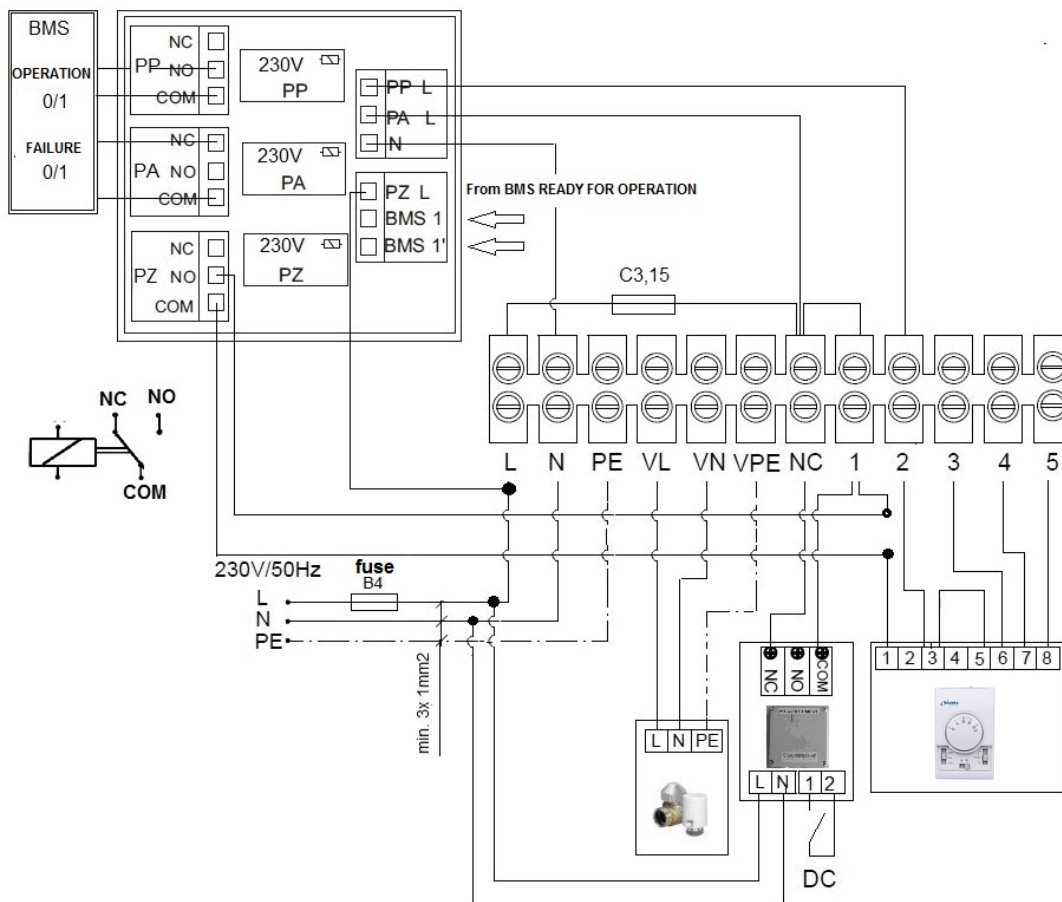
Warning! The Comfort Panel thermostat must be set to max. The on/off switch and the wires to the switch are not included in the scope of delivery



## Connection of air curtains based on BMS communication module

- 🔧 The BMS module for Ostro air curtains allows to monitoring the operation of the curtain (EMERGENCY/FAILURE signal) and switches the curtain on/off from the master BMS system.
- 🔧 With the use of digital signals 0/1 (potential free contact), the BMS module can work with any BMS master protocol without need to convert the signal

### 8.6 Connection diagram of 100-150-200 W and C with BMS module



## SIGNALS FROM BMS

### PZ „READY FOR OPERATION”

- 🔧 Digital signal "1" from the master BMS (potential-free contact) - Curtain ready for operation
- 🔧 Digital signal "0" from the master BMS system (potential-free contact open) - Curtain disabled

**SIGNALS TO BMS** - MONITORING THE CURTAIN WORK (NOTE - ON/OFF switch on the COMFORT panel in ON position, "READY FOR OPERATION" signal activated):

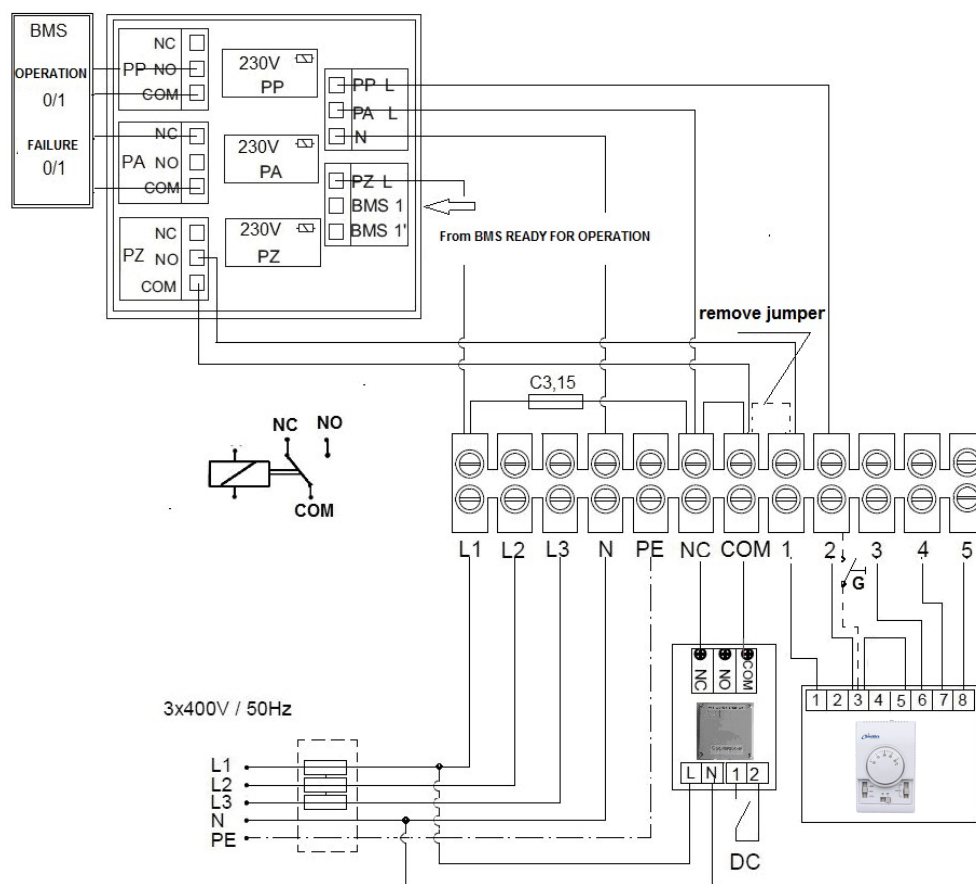
### PP „OPERATION”

- 🔧 Digital signal "1" (potential-free contact closed) - information about the operation of the curtain - reed relay on - door opened
- 🔧 Digital signal "0" (potential-free contact opened) - Reed relay off - door closed
- 🔧 If the contactor is not used - after the "OPERATION" signal is applied, the curtain operates continuously in the thermostat mode - digital signal "1" (potential-free contact closed)
- 🔧 When the curtain is switched off via the thermostat - digital signal "0" (potential-free contact open)

### PA „FAILURE”

- 🔧 With proper operation of the curtain - digital signal "0" (potential-free contact opened)
- 🔧 After triggering the fuse C3,15 - digital signal "1" - curtain failure (potential-free contact closed)

## 8.7 Diagram of connection of 100-150-200 E Ostro curtain with BMS module



### ATTENTION!

While using BMS communication module for electric series remove factory installed jumper between **COM-1**

#### SIGNALS FROM BMS

##### PZ „READY FOR OPERATION”

- 🔌 Digital signal "1" from the master BMS (potential-free contact closed) - Curtain ready for operation
- 🔌 Digital signal "0" from the master BMS system (potential-free contact opened) - Curtain disabled

#### SIGNALS TO BMS - MONITORING THE CURTAIN WORK (NOTE - ON/OFF switch on the COMFORT panel in ON position, "READY FOR OPERATION" 1 signal activated):

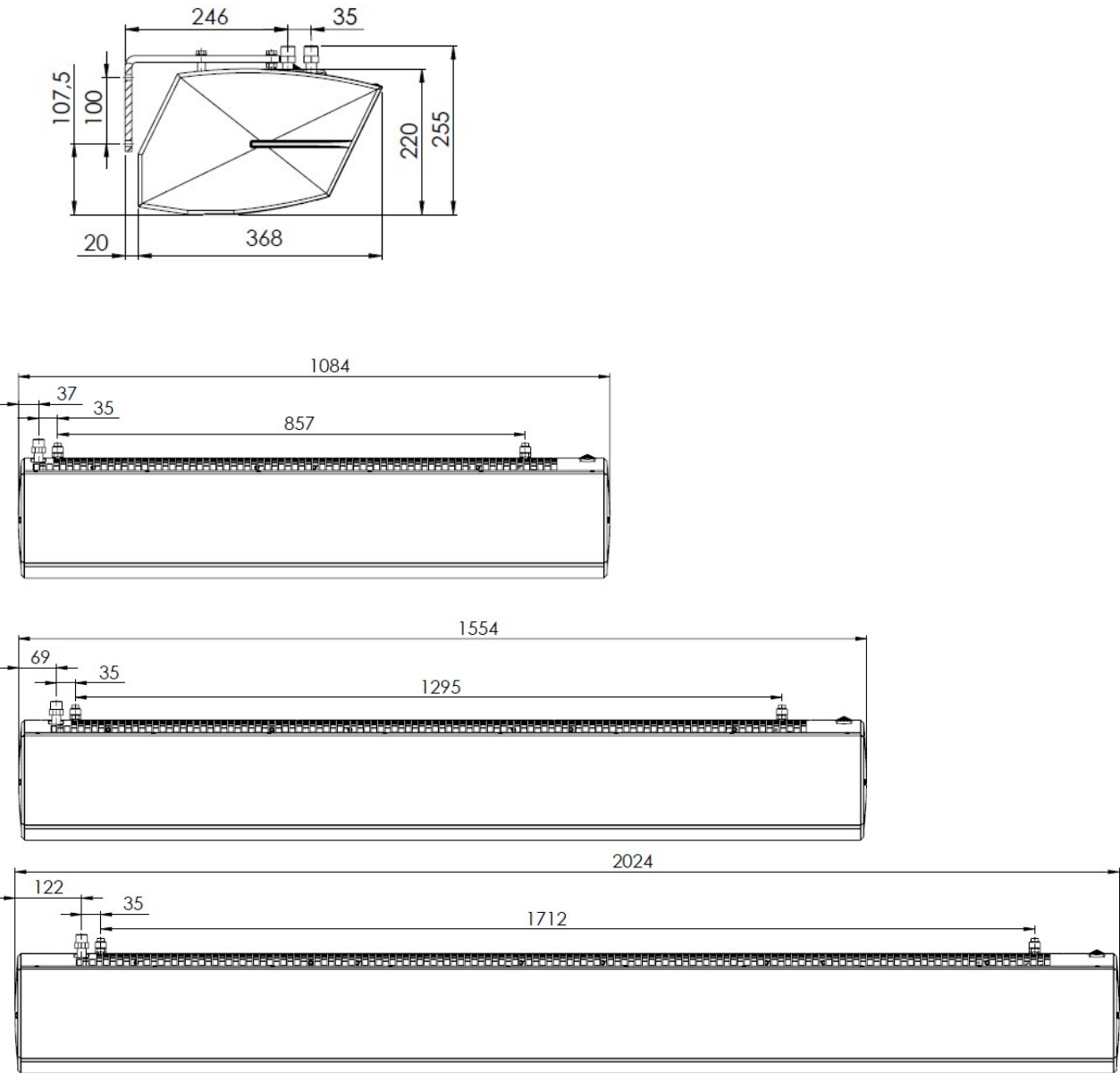
##### PP „OPERATION”

- 🔌 Digital signal "1" (potential-free contact closed) - information about the operation of the curtain- reed relay on - door opened
- 🔌 Digital signal "0" (potential-free contact opened) - Reed relay off - door closed
- 🔌 If the contactor is not used - after the "WORKING" signal is applied, the curtain operates continuously in the thermostat mode - digital signal "1" (potential-free contact closed)
- 🔌 When the curtain is switched off via the thermostat "0" digital signal (potential-free contact opened)

##### PA „FAILURE”

- 🔌 With proper operation of the curtain - digital signal "0" (potential-free contact opened)
- 🔌 After triggering the fuse C3,15 - digital signal "1" - curtain failure (potential-free contact closed)

9. DIMENSIONS OF THE 100-150-200 W, E, C OSTRO AIR CURTAINS



## 10. OPERATION AND MAINTENANCE

The engine and fan of the air curtains are maintenance-free devices but regular check-ups are advised, especially motor and bearing (fan's rotor should rotate freely, free from any axial and radial throws/run-outs and undesired knocks/rattles).

The heat exchanger requires systematical cleaning to remove all dirt and impurities. It is advised that after a period of shut down of the air curtain, prior to the start of the heating season, that the device should be cleaned with compressed air to remove debris from the air outlets. There is no need to dismantle the air curtain to do this. It is also advised that the heat exchanger should be cleaned but please be aware that the aluminium fins are delicate and can become easily damaged. If the fins are bent then a special tool should be used to repair them.

The heat exchanger is not equipped with any fire protection device. The heat exchanger may be damaged if the room temperature goes below 0°C; anti-freeze liquid must be added to the water circulation/system. Anti-freeze liquid must be appropriate for the material the exchanger which is made of copper, as well as other elements of the hydraulic system/circulation. The liquid must be diluted with water accordingly to the manufacturer's recommendation.

### NOTICE !

- ❶ Any and all repair and maintenance works must be conducted with the power off and the heat input disconnected.
- ❶ Only suitably qualified staff well acquainted with the safety regulations concerning handling with an electrical device must be employed when the device is being installed, started and operated
- ❶ In the event of coolant leak, when the water system is under pressure, any repairs of the leakage are strictly prohibited.
- ❶ Any repairs of the device must be conducted only if the device is disconnected from the power supply.
- ❶ If the device being operated gives metallic clatter, vibration or the level of noise is increasing, check if the mounting of the fan has not become loose – in case of any problems contact the installer of the device or the Authorised Service immediately.

## 11. TROUBLESHOOTING AND TECHNICAL PROBLEMS

Possible problems and solutions are shown below. To eliminate a problem encountered contact the Authorised Service.

Fault, symptoms	Potential causes	Solutions
No heating, fan not operating	No power supply	Check the power switch Check the power supply Check the power cable - if it is damaged - replace the cable
	Damage to the fan	Replace the motor
	Damage to the switches on control panel	Check the switches - if are damaged - replace
Heating medium leakage - leakage on joints with hot water supply system -leakage in collector	Loss of tightness	Sealing supply system; repairing the heat exchanger
Heat output drop	Temperature of the heating medium differs from the required one	Restore the temperature of the heating medium
	Contaminated heat exchanger's surface	Clean the surface of the heat exchanger



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## Notes

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