

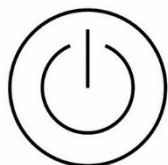
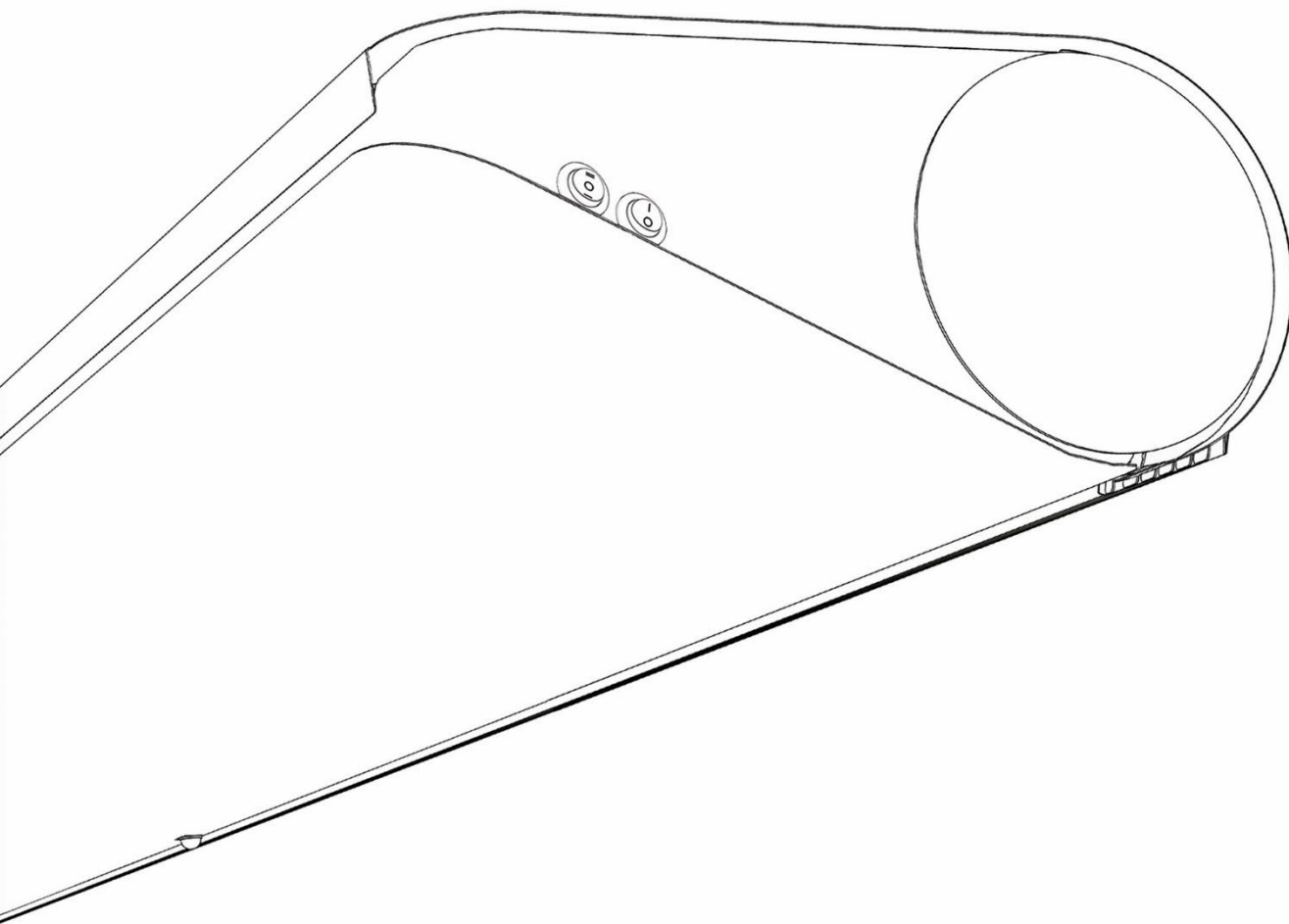
Slim air curtain

Technical documentation·Instruction manual

SLIM E/W/N-100

SLIM E/W/N-150

SLIM E/W/N-200



Plug & Play



Motion sensor



TECHNICAL DOCUMENTATION:

EN

1.	IMPORTANT INFORMATION.....	4
2.	GENERAL INFORMATION.....	5
3.	CONSTRUCTION.....	5
4.	TECHNICAL DATA SLIM N/W	6
5.	TECHNICAL DATA SLIM E.....	7
6.	DIMENSIONS	8
7.	INSTALATION	8
8.	MOUNTING - RECOMMENDED DISTANCES.....	9
9.	MOUNTING - CEILING MOUNTING INSTALLATION WITH THREADED RODS	9
10.	MOUNTING WITH BRACKETS.....	10
11.	CONNECTION OF ELECTRICAL INSTALATION	11
12.	BUILT-IN CONTROL	12
13.	BUILT-IN CONTROL – CONNECTION DIAGRAM SLIM E.....	13
14.	BUILT-IN CONTROL – CONNECTION DIAGRAM SLIM W; SLIM N	14
15.	CONTROLS - OPTIONAL ELEMENTS.....	15
16.	ADJUSTMENT OF OUTLET GRILLE.....	15
17.	CONNECTION OF HYDRAULIC INSTALLATION	16
18.	PARAMETERS OF THE HEATING MEDIUM	16
19.	FILTER INSTALLATION	17
20.	OPERATON.....	17
21.	CLEANING AND MAINTENANCE	17
22.	COMPLIANCE WITH 2009/125/EC.....	18
23.	CONFORMITY WITH WEEE DIRECTIVE 2012/19/UE.....	18
24.	TECHNISCHE DOCUMENTATIE – MONTAGE HANDLEIDING.....	18

1. IMPORTANT INFORMATION

We have made every effort to make this manual as easy to understand as possible. However, if you have any difficulties, problems or questions, please contact FLOWAIR support at: info@flowair.pl

Also visit our website www.flowair.pl where you will find mounting tips.

In this manual you will find important safety information and tips marked as below:



WARNING

- Dangerous practices which may result in serious injury or death. Read all warnings before starting work.



CAUTION

- unsafe practices which, if not avoided, may result in damage to property or minor injuries. Before starting work, read all cautions.



ADVICE

- Useful tips for the user and installer.

IMPORTANT SAFETY INFORMATION:



ADVICE

1. Before installing, connecting, starting up, using and maintaining the device, please read this manual completely.
2. After receiving the product, check that it has not been damaged during transport. If the product appears to be damaged, DO NOT START TO MOUNT THE DEVICE; instead, you must immediately report the damage to the carrier.
3. The device must be mounted in a stable way and in accordance with the instructions, in a place that can be easily accessed, thus ensuring the possibility of carrying out repairs and routine maintenance, as well as allowing easy and safe disassembly of the device.
4. The stability and durability of installation of the device depends on the structure of the building (in particular walls and ceilings). The person performing the assembly should take these conditions into account when mounting the device.
5. The technical documentation should be kept in a safe place, easily accessible to the user and service technician.
6. The nameplate is located next the cable glands on the top of the device.
7. Always test the operation of the device after installation.



CAUTION

1. The power connection shall be performed only by an authorized person.
2. The device may start automatically (when motion is detected in the sensor area).
3. The device is not equipped with a thermostat that controls the room temperature. Do not use the device in small rooms where there are people who are not able to leave the premises alone. Above mentioned does not apply to rooms with constant supervision.
4. The device requires periodic inspections in accordance with the instructions in this manual.
5. Do not hang/put pressure on the device.
6. Do not place any objects on the device or hang anything on the connection stubs.
7. The product should be stored and assembled out of the reach of small children.
8. The device is dedicated to work indoors with a maximum air dustiness of 0.3 g / m³. The device has elements made of aluminum, copper and galvanized steel and cannot be used in an corrosive environment.
9. Equipment cannot be used in an environment where oil mist is present.
10. This equipment may be used by children that are at least 8 years old, by persons with reduced physical and mental abilities and persons with no experience and knowledge of the equipment, on condition that the supervision or instruction regarding correct use of the equipment in a safe manner is provided and the possible threats are understood. The device cannot be used by children to play. Unattended children should not clean or maintain the equipment.
11. The device in electric version (SLIM E) may give off a smell of burning dust at first start up or if it is starting after a long standstill.



WARNING

1. The device is powered by dangerous voltage. Always disconnect the device from the power supply before servicing or accessing its internal components.
2. Do not insert your fingers or any objects inside the device.
3. Do not cover the device.

2. GENERAL INFORMATION

SLIM air curtain is a high-quality device that, by creating an air barrier, reduces heat exchange losses. The device is dedicated ONLY for indoor use. The Slim air curtain is intended for horizontal installation above a door opening or vertical installation with a door opening with a maximum height of 3.2 m.

The air curtain is available in a cold/ambient version (without heating), with electric heaters or with a water exchanger:

SLIM E-100; SLIM E-150; SLIM E-200 – air curtains with electric heaters with a maximum range of 3.2 m *;

SLIM W-100; SLIM W-150; SLIM W-200 – air curtains with a water heat exchanger with a maximum range of 3,2 m *;

SLIM N-100; SLIM N-150; SLIM N-200 - air curtains without water exchanger max. Stream range 3.2 m *.

* according to ISO 27327-1

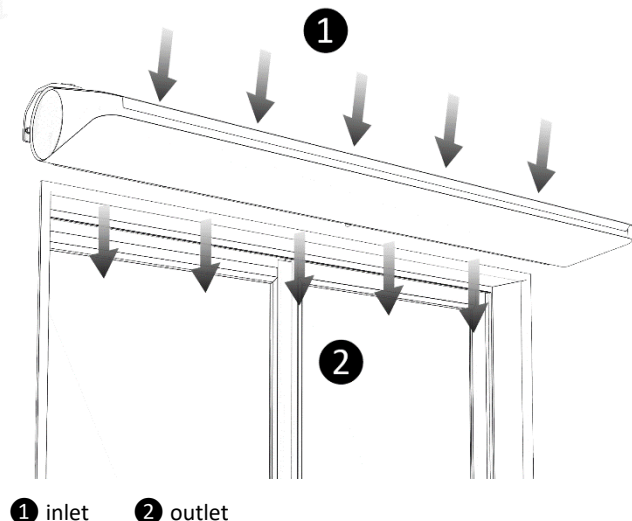


FIG. 2.1 DIRECTION OF AIR FLOW.

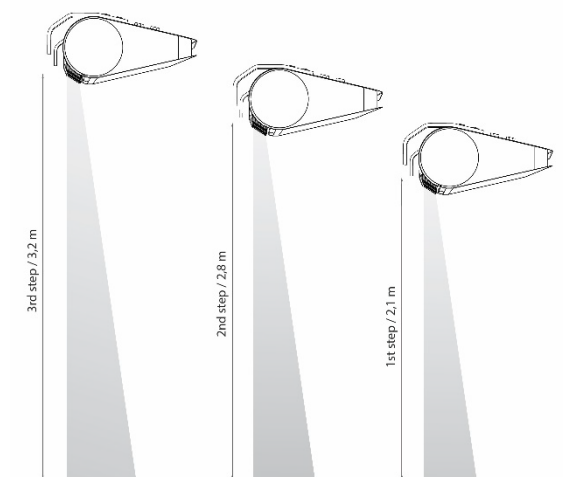


FIG. 2.2 AIR STREAM RANGE FOR DIFFERENT FAN STEPS.



ADVICE

1. The use of a heated air curtain (W or E) is recommended for public buildings .
2. Underpressure in the building significantly reduces the efficiency of the air barrier, the ventilation system should be balanced.
3. At a wind speed of more than 3 m / s, the heated version of air curtain should be used to increase user comfort.

3. CONSTRUCTION

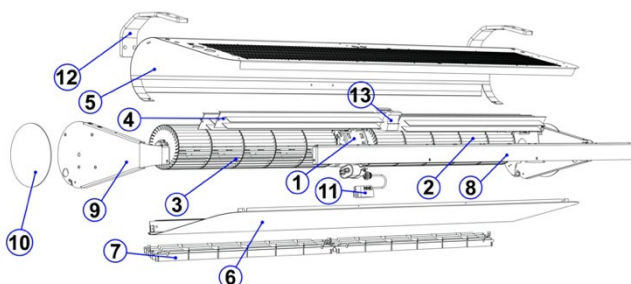


FIG. 3.1 CONSTRUCTION SLIM E.

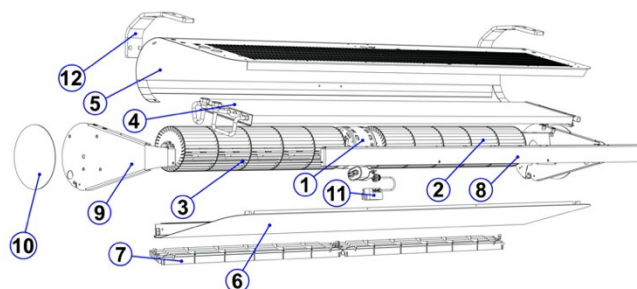


FIG. 3.2 CONSTRUCTION SLIM N/W.

1. Engine
2. Right rotor
3. Left rotor
4. Electric heater
5. Top cover *
6. Bottom cover *
7. Outlet grille
8. Front strip *
9. Side cover *
10. Side cover *
11. Motion sensor
12. Mounting bracket (optional element)
13. Contactor

1. Engine
2. Right rotor
3. Left rotor
4. Electric heater
5. Top cover *
6. Bottom cover *
7. Outlet grille
8. Front strip *
9. Side cover *
10. Side cover *
11. Motion sensor
12. Mounting bracket (optional element)

* Casing components made of powder coated steel in RAL 9003 and RAL 9005 color configuration

4. TECHNICAL DATA SLIM N/W

	SLIM N-100			SLIM N-150			SLIM N-200		
STEP	III	II	I	III	II	I	III	II	I
Power supply [V/Hz]	1N ~ 230/50								
Power consumption [W]	140	100	80	200	120	95	230	150	110
Current consumption [A]	0,6	0,4	0,3	0,8	0,5	0,4	1,0	0,6	0,5
Air volume [m³/h]*	1400	1000	800	2300	1550	1300	3000	1900	1300
Air volume with filter (Coarse 30%) [m³/h]*	1000	900	750	1600	1350	1200	2200	1800	1250
Range [m]*	3,2	2,8	2,1	3,2	2,8	2,1	3,2	2,8	2,1
Acoustic pressure level [dB(A)]** - 3 m	58	50	44	57	46	42	57	42	35
Acoustic pressure level [dB(A)]** - 5 m	57	49	43	56	45	41	56	41	34
Acoustic power level [dB(A)]***	73	65	59	72	61	56	72	57	50
Weight [kg]	14,7			19,0			23,8		
IP	20								
Max. operating temperature [°C]	30								

	SLIM W-100			SLIM W-150			SLIM W-200		
STEP	III	II	I	III	II	I	III	II	I
Power supply [V/Hz]	1N ~ 230/50								
Power consumption [W]	115	90	75	165	110	90	230	150	115
Current consumption [A]	0,5	0,4	0,3	0,7	0,5	0,4	1,0	0,6	0,5
Air volume [m³/h]*	1100	900	750	1950	1450	1200	2850	1800	1400
Air volume with filter (Coarse 30%) [m³/h]*	750	650	600	1300	1100	1000	1900	1600	1350
Range [m]*	3,2	2,8	2,1	3,2	2,8	2,1	3,2	2,8	2,1
Acoustic pressure level [dB(A)]** - 3 m	56	51	46	57	49	45	59	46	38
Acoustic pressure level [dB(A)]** - 5 m	55	50	45	56	48	44	58	45	37
Acoustic power level [dB(A)]***	70	66	61	72	64	59	74	61	53
Weight [kg]	16,2			21,5			26,9		
Weight of unit filled with water [kg]	16,8			22,4			28,1		
IP	20								
Max. operating temperature [°C]	30								
Connection stub ["]	½ internal thread connection								
Max. Water pressure [MPa]	1,6								
Max. Water temperature [°C]	110								
Heating power [kW]****	1,2 – 12,1			2,6 – 21,0			3,7 – 29,3		
Temperature increase (ΔT)[°C]****	3,0 – 32,5			4,0 – 32,0			4,0 – 30,5		

* according to ISO 27327-1;

** Acoustic pressure level has been measured in a 1500m³ space with a medium sound absorption coefficient, directional factor: Q=2;

*** Acoustic power level according to ISO 27327-2;

**** Range of heating powers and temperatures specified for the parameters: III fan speed, heating medium temperature 40/30 °C inlet temperature 20 °C - III fan speed, heating medium temperature 110/90 °C at the device inlet 0 °C.

5. TECHNICAL DATA SLIM E

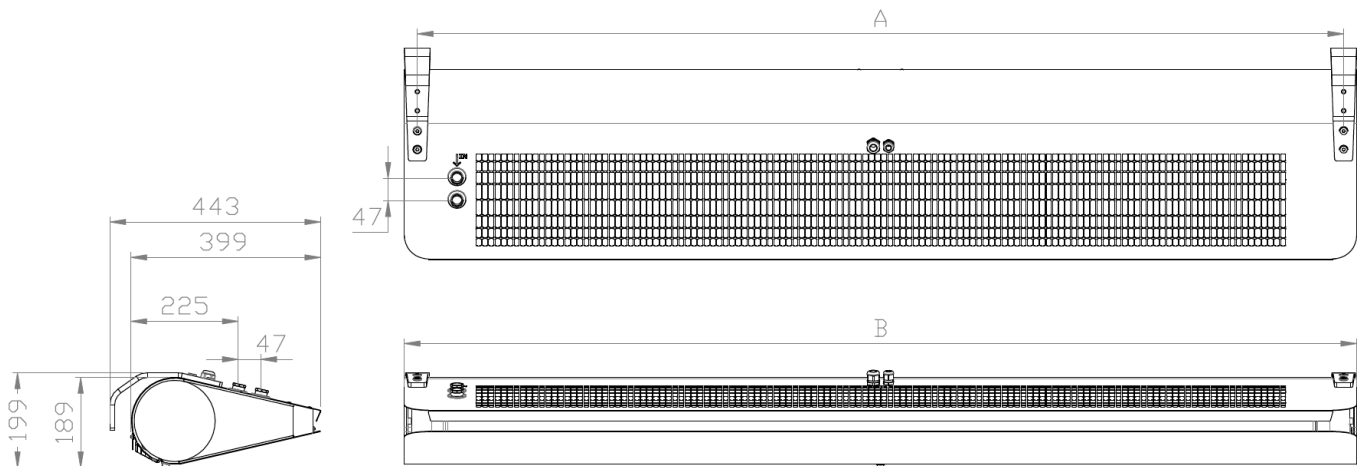
	SLIM E-100			SLIM E-150			SLIM E-200		
STEP	III	II	I	III	II	I	III	II	I
Power supply [V/Hz]	3N ~ 400/50 1N ~ 230/50								
Fan power consumption [W]	130	95	80	195	115	95	230	180	140
Fan current consumption [A]	0,5	0,4	0,3	0,8	0,5	0,4	1,0	0,8	0,6
Air volume [m³/h]*	1300	950	800	2200	1500	1250	3000	2500	1900
Range [m]*	3,2	2,8	2,1	3,2	2,8	2,1	3,2	2,8	2,1
Acoustic pressure level [dB(A)]** - 3 m	57	49	44	55	46	41	58	43	44
Acoustic pressure level [dB(A)]** - 5 m	56	48	43	54	45	40	57	42	43
Acoustic power level [dB(A)]***	72	64	59	70	61	56	73	67	60
Weight [kg]	15,1			19,6			24,6		
IP	20								
Max. operating temperature [°C]	30								
	3N ~ 400/50								
Heating elements power [kW]	5			9			12		
Heating elements current consumption [A]	8,5			13			17,3		
Temperature increase (ΔT) [°C]	20	22	24	20	26	32	19	22	26
	1N ~ 230/50								
Heating elements power [kW]	2			3			4		
Heating elements current consumption [A]	8,5			13			17,3		
Temperature increase (ΔT) [°C]	4	5	7	6	8	10	6	7	9

* according to ISO 27327-1;

** Acoustic pressure level has been measured in a 1500m³ space with a medium sound absorption coefficient, directional factor: Q=2;

*** Acoustic power level according to ISO 27327-2;

6. DIMENSIONS

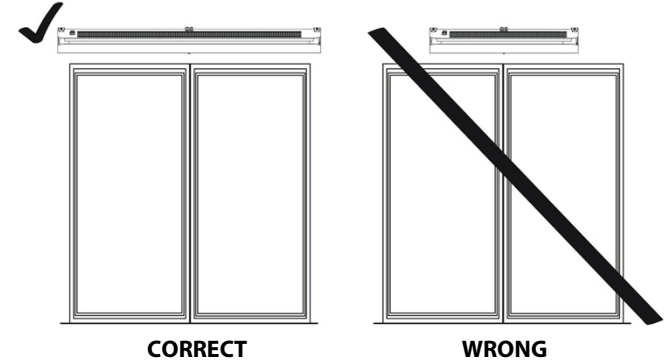


	A [mm]	B [mm]
SLIM N/W/E-100	946	1000
SLIM N/W/E-150	1446	1500
SLIM N/W/E-200	1946	2000

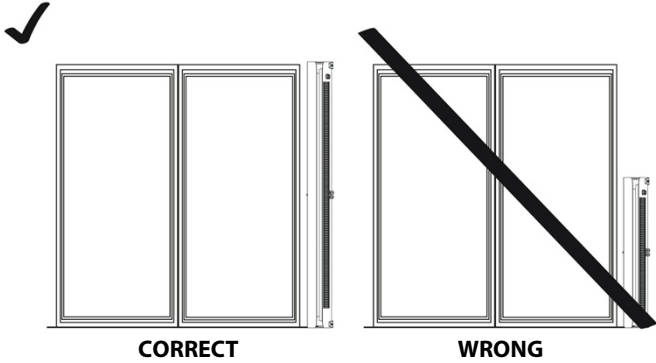
7. INSTALATION

Air curtains must be installed as close as possible to the door opening and cover:

- the entire width (applies to horizontal installation),
- full height (applies to vertical mounting).



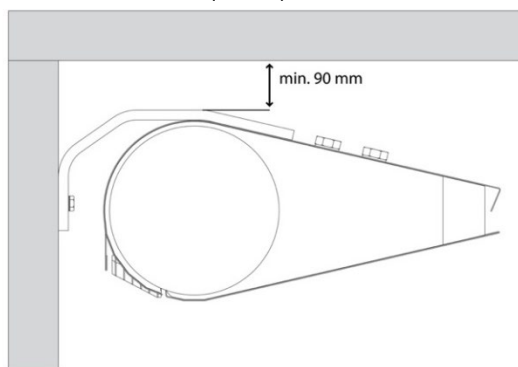
PIC. 7.1 PROPER HORIZONTAL INSTALLATION.



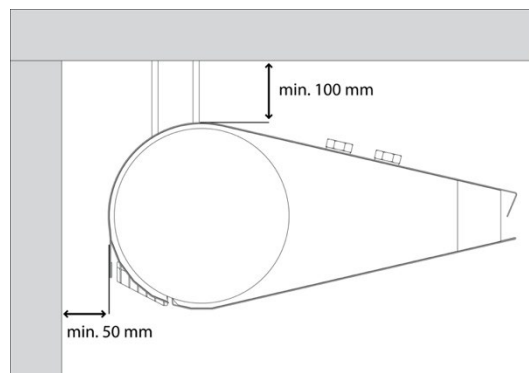
PIC. 7.2 PROPER VERTICAL INSTALLATION.

8. MOUNTING - RECOMMENDED DISTANCES

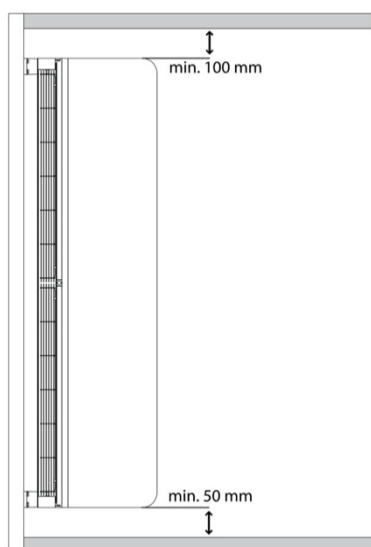
Slim curtains are designed for horizontal mounting using 2 dedicated brackets or 4 M8 threaded rods (max. threaded rods length 1m.). It is also possible to install the curtains vertically using 2 brackets. During assembly, keep the minimum distances from the partitions as shown in the figure below. In addition, when installing the curtain, free access to the side of the device should be taken into account (required minimum 100 mm). The electric curtain (SLIM E) cannot be installed directly under the power socket. The device must be leveled before starting work.



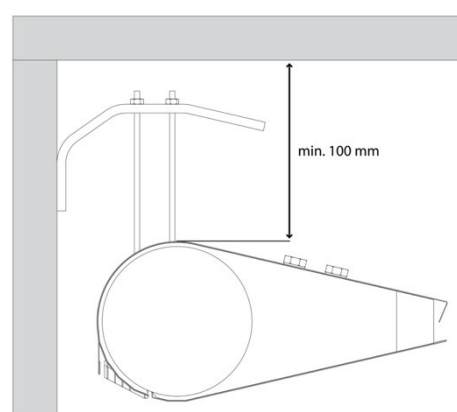
PIC. 8.1 HORIZONTAL INSTALLATION ON DEDICATED BRACKETS (M8).



PIC. 8.2 HORIZONTAL INSTALLATION ON 4 THREADED PINS M8.

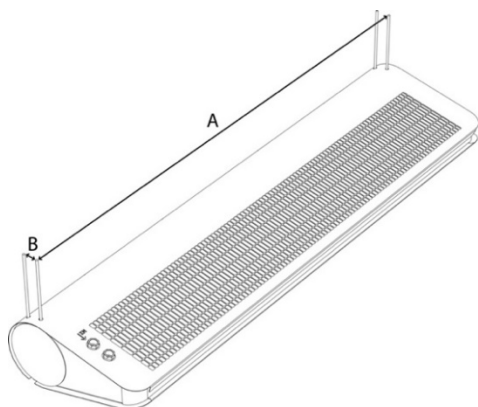


PIC. 8.3 VERTICAL MOUNTING WITH 2 PCS. DEDICATED BRACKETS.



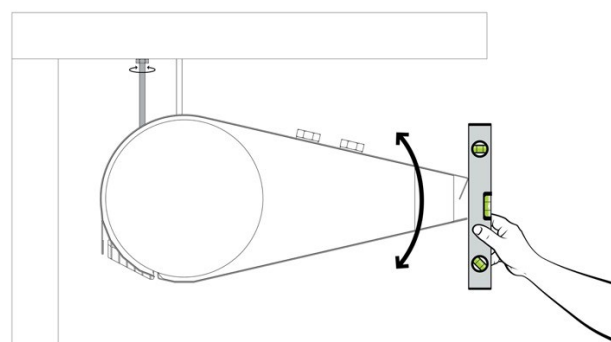
PIC. 8.4 HORIZONTAL INSTALLATION ON 4 THREADED RODS M8 WITH 2 PCS. DEDICATED BRACKETS.


9. MOUNTING - CEILING MOUNTING INSTALLATION WITH THREADED RODS



SLIM	Installation pins spacing AxB [mm]
N/W/E-100;	946x40
N/W/E-150;	1446x40
N/W/E-200;	1946x40

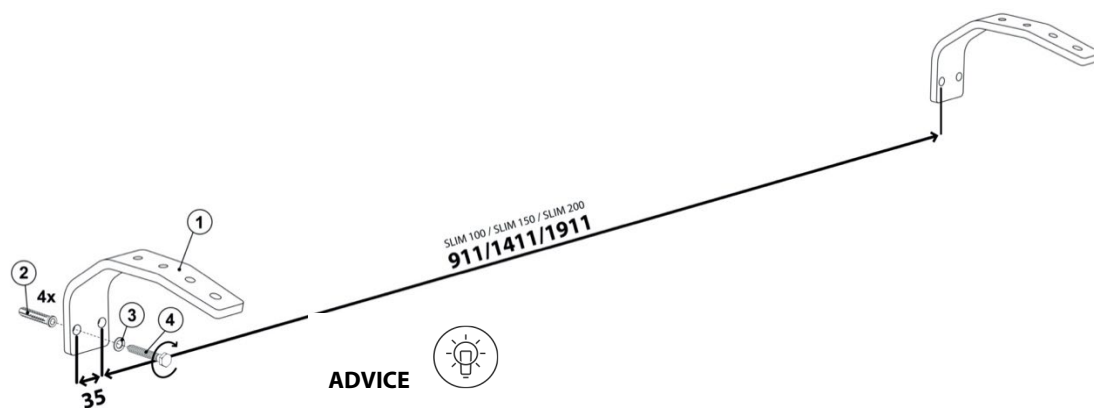
PIC 9.1 THREADED PIND SPACING.



CAUTION  Counter the rear rods using lock nuts.

PIC. 9.1 DEVICE LEVELING AND COUNTERING WITH LOCK NUT.

10. MOUNTING WITH BRACKETS

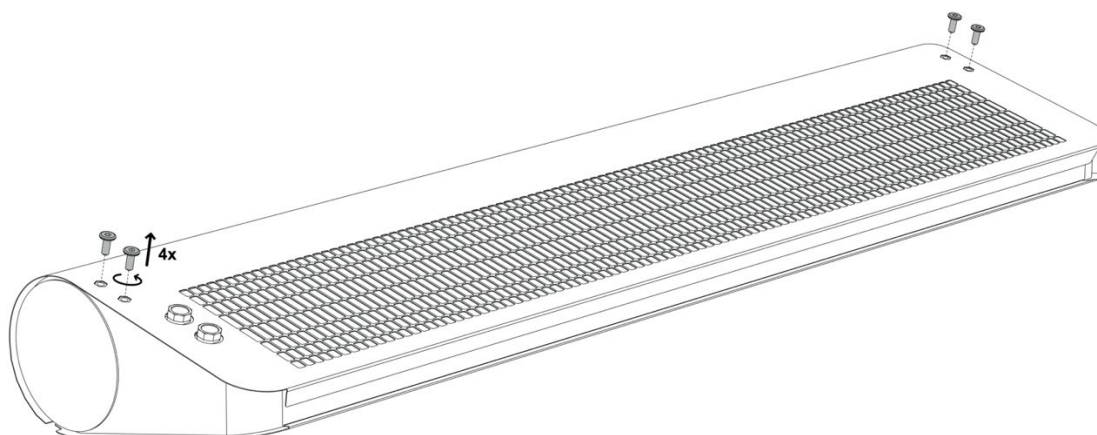


The brackets ① should be mounted to the wall with:

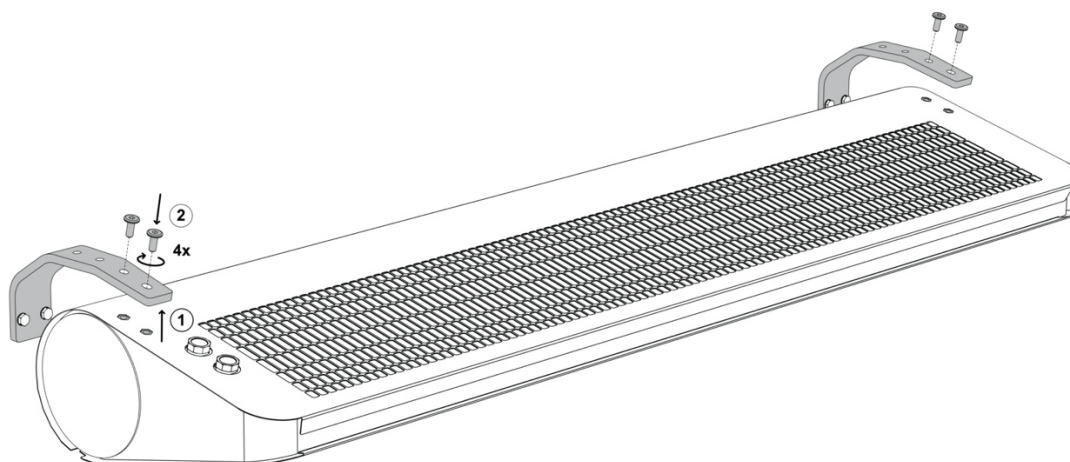
- ② Expansion fixings x 4 pcs * - properly selected for the type of partition
- ③ Washers x 4 pcs *
- ④ Anchor bolts x 4 pcs * - maximum size M10

* Not included

PIC 10.1. MOUNTING BRACKETS SPCING.

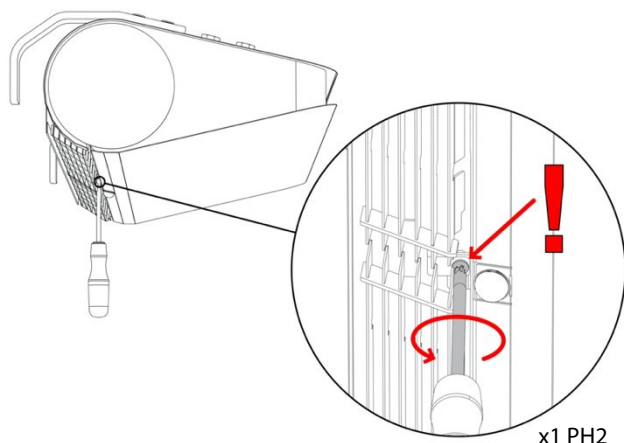


PIC 10.2. UNSCREW THE BOLTS.

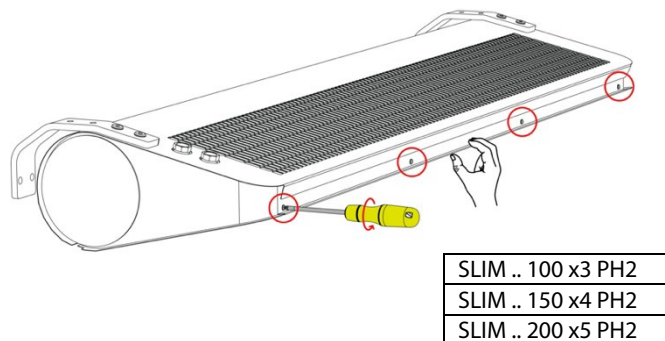


PIC. 10.3 MOUNTING THE UNIT WITH A BRACKET USING BOLTS.

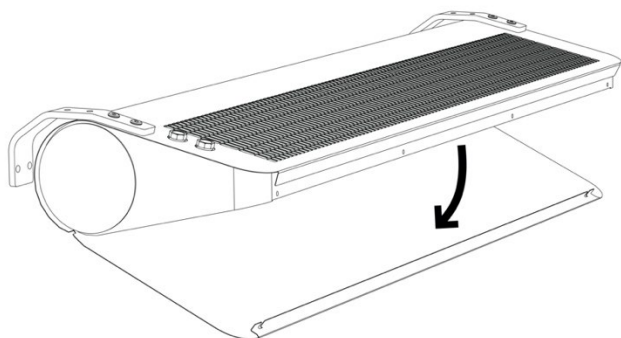
11. CONNECTION OF ELECTRICAL INSTALALTION



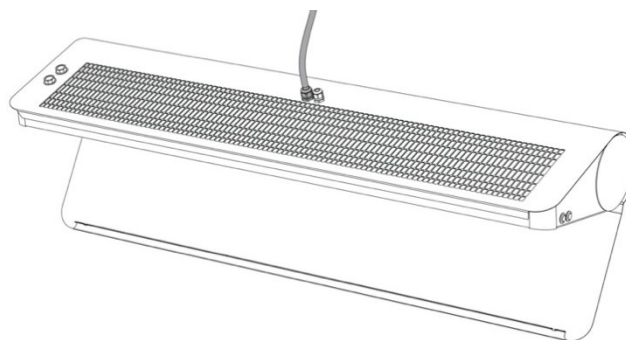
PIC. 11.1 REMOVE THE SCREW NEXT TO THE GRILLE.



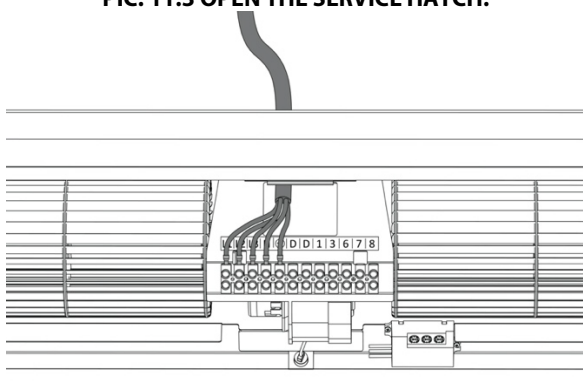
PIC. 11.2 REMOVE THE SCREWS FROM THE FRONT.



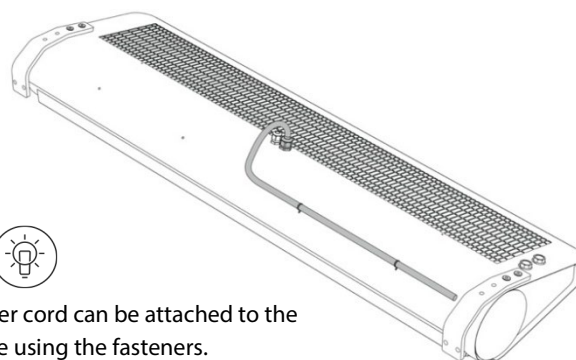
PIC. 11.3 OPEN THE SERVICE HATCH.



PIC. 11.4 PUT THE CABLE THROUGH THE GLAND.



PIC. 11.5 CONNECT THE CABLE.



ADVICE

The power cord can be attached to the enclosure using the fasteners.

PIC. 11.6 FASTEN THE CABLE TO THE DEVICE CASING.

WARNING



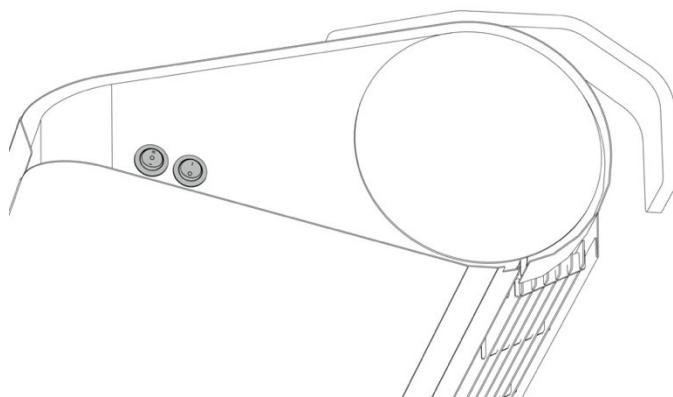
1. The power connection should be made in accordance with the technical documentation. The device installation should always be carried out in accordance with applicable local safety standards.
2. The cross-section and type of cable should be selected by the designer. (Always make sure that the disconnectors and protective switches are properly sized).
3. Make sure that the connection of power supply and controllers to the Slim curtain is made in accordance with the electrical specifications and the instructions included in the connection diagrams in the technical documentation.
4. Before connecting the power supply, check that the mains voltage corresponds to the voltage on the device's type plate.
5. Check the power connection before connecting the air curtain.
6. Starting the device without connecting the grounding wire is not allowed.
7. Protect the power cord against pulling out by clamping the PG16 or PG11 cable gland
8. Tighten all connection cables in the block properly
9. In the event of a hazard due to unintentional reset of the thermal switch, this curtain (SLIM E) should not be powered by an external connecting device such as a time switch, or connected to a circuit that is regularly switched off and switched on during use.
10. Do not start the device with the service hatch open.

12. BUILT-IN CONTROL

The curtain has a built-in automation system enabling automatic operation according to the signal from the motion sensor. The device has a fan step switch (1st step; OFF; 3rd step) and a ON-OFF switch for heating elements or valve opening. The switches are located on the right side of the device and require free access.

The device starts automatically when motion is detected in the sensor area and works according to settings selected on the switches.

FACTORY SETTINGS: C: 2000 lux; B: 10 s; A: 6 m; heating switch - lower position O; Fan speed selector - mid position O.



PIC. 12.1. FUNCTIONS OF BUTTONS/SWITCHES.



- II – fan 3 step;
- O – switching OFF the device, i.e. fan speed and heating;
- I – 1 fan step.

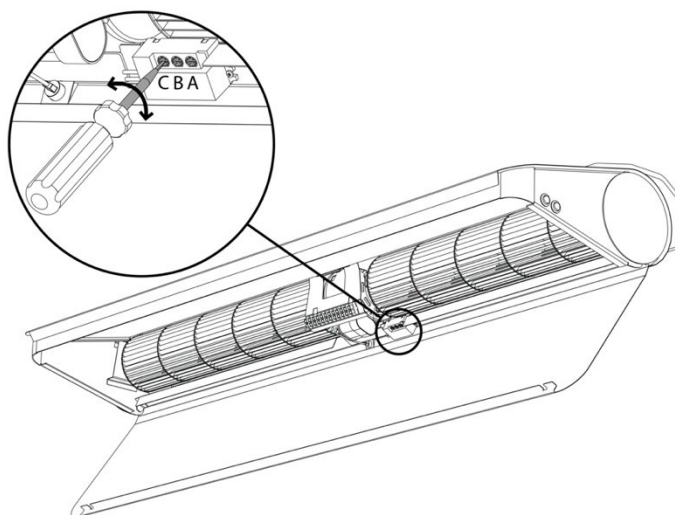


- I – heating elements (SLIM E)/valve (SLIM W) included;
- O – heating elements (SLIM E)/valve (SLIM W) switched off



ADVICE

activation of the heating signal is signaled by a red switch backlight



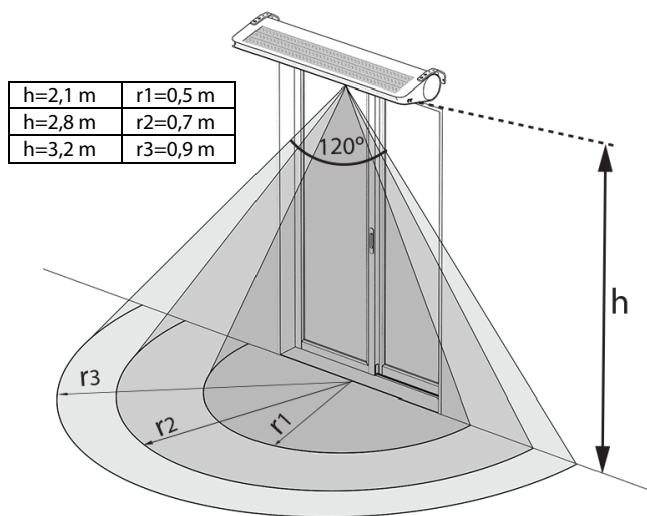
- C - light sensitivity; range [10 lux ... 2000 lux];
- B - switch off delay; range [10 s ... 420 s];
- A - sensor range adjustment; range [2-6 m].



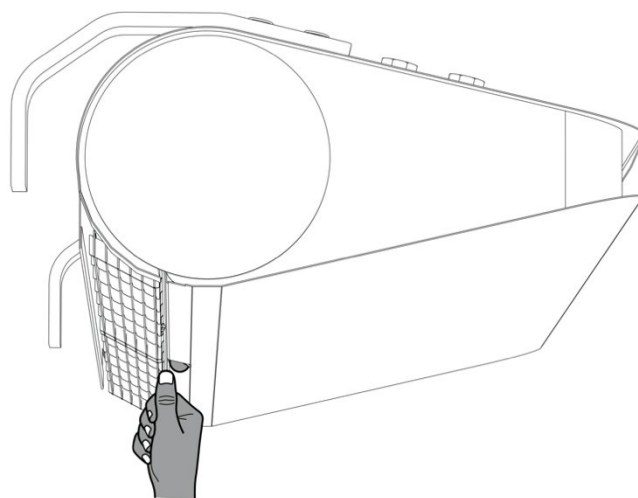
ADVICE

If the movement detection area is too large, the actuation area should be adjusted first (see PIC 12.3 and 12.4)

PIC. 12.2 ADJUSTMENT OF MOTION SENSOR PARAMETERS.

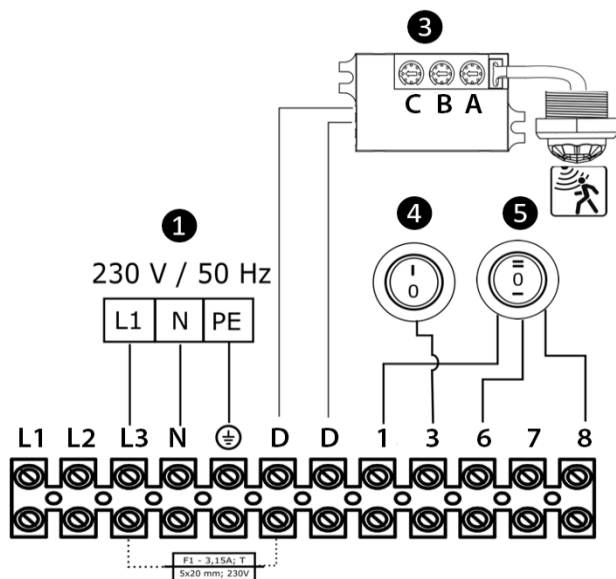


PIC. 12.3 AREA OF MOTION SENSOR OPERATION AT VARIOUS INSTALLATION HEIGHTS.

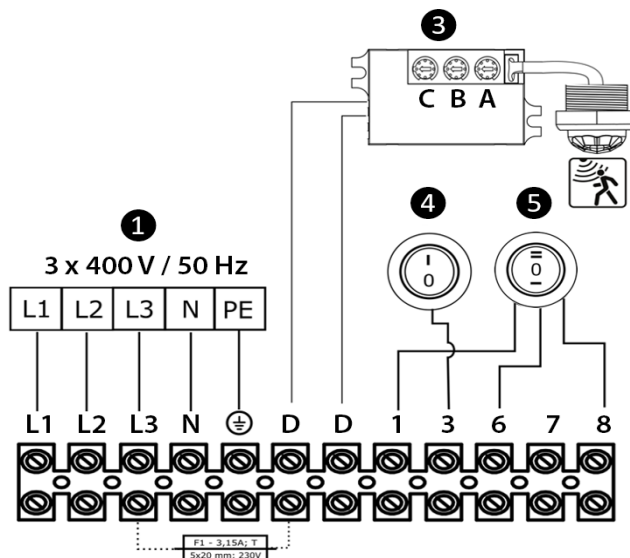


PIC. 12.4 ADJUSTMENT OF THE AREA OF MOTION SENSOR ACTIVITY.

13. BUILT-IN CONTROL – CONNECTION DIAGRAM SLIM E;



PIC. 13.1 POWER SUPPLY 1N ~ 230V/50 Hz



PIC. 13.2 POWER SUPPLY 3N ~ 400V/50 Hz

① Power supply:

1N ~ 230V/50Hz:

- SLIM E-100 (min.3x1,5 mm²; Protection B10)
- SLIM E-150 (min.3x1,5 mm²; Protection B16)
- SLIM E-200 (min.3x2,5 mm²; Protection B20)

3N ~ 400V/50Hz:

- SLIM E-100 (min.5x2,5 mm²; Protection B10)
- SLIM E-150 (min.5x2,5 mm²; Protection B16)
- SLIM E-200 (min.5x4,0 mm²; Protection B20)

ADVICE



- The maximum outer diameter of the cable sleeve is 14.0 mm;
- The minimum outer diameter of cable sleeve is 4.0 mm;
- Maximum wire diameter 4,0 mm².

③ Motion sensor; to omit/bypass the motion sensor; disconnect and insulate / secure wires from connectors D; D, a cable jumper (min. 1x1,0 mm²) or a door sensor (min. 2x1,0 mm²) should be connected in this place;

④ Heating switch (I – heating elements ON, O – heating elements OFF);

⑤ Fan step switch (I – 1st fan step, O – device OFF, II – 3rd fan step).

1) To connect the 2nd fan step, connect the cable from the 6th connector to the 7th connector. In this case, the I position on the switch will mean SWITCHING ON the 2nd fan step.

ADVICE



2) Each time the curtain is turned on by a motion sensor, it operates for a set time (10 s by default), unless motion is detected in the area covered by the sensor.

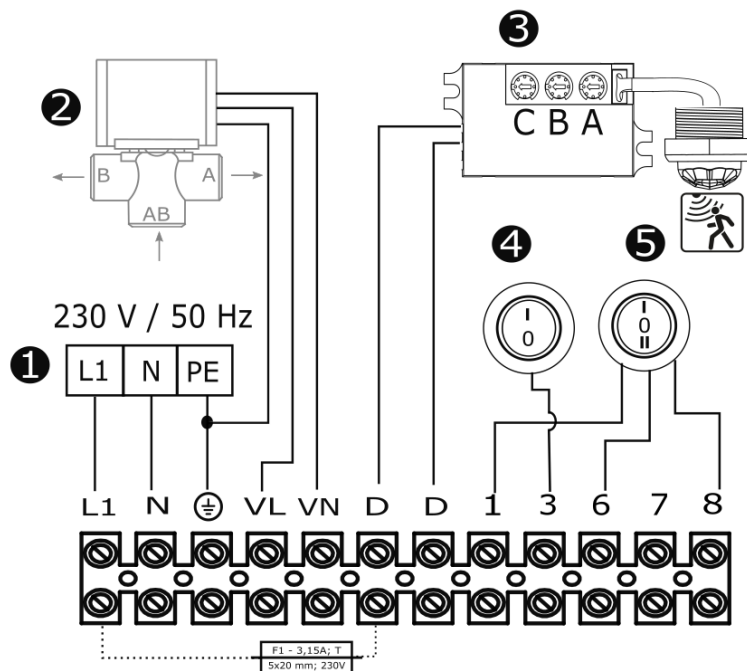
3) The device starts automatically when motion is detected in the sensor area and works according to settings selected on the switches.

WARNING



In the event of a hazard arising from the unintentional reset of the thermal switch, this equipment should not be powered by an external connecting device, such as a time switch, or a disconnector connected to the circuit, which is regularly switched OFF and ON during use.

14. BUILT-IN CONTROL – CONNECTION DIAGRAM SLIM W; SLIM N;



PIC. 14.1 POWER SUPPLY 1N ~ 230V/50 Hz

- ① Power supply: 1N ~ 230V/50Hz (min. 3x1,5mm²; Protection B4)
- ② SRQ3d 1/2"; SRQ2d 1/2" valve with actuator (min. 3x0,75mm²)



- The maximum outer diameter of the cable sleeve is 14.0 mm;
- The minimum outer diameter of cable sleeve is 4.0 mm;
- Maximum wire diameter 4,0 mm².

- ③ Motion sensor; to omit/bypass the motion sensor; disconnect and insulate / secure wires from connectors D; D, a cable jumper (min. 1x1,0 mm²) or a door sensor (min. 2x1,0 mm²) should be connected in this place;
- ④ Heating switch (SLIM W) (I – valve open, O – valve closed); Valve – an optional accessory;
- ⑤ Fan step switch (SLIM W/N) (I – 1st fan step, O – device OFF, II – 3rd fan step).

1) To connect the 2nd fan step, connect the cable from the 6th connector to the 7th connector. In this case, the I position on the switch will mean SWITCHING ON the 2nd fan step.

2) Each time the curtain is turned on by a motion sensor, it operates for a set time (10 s by default), unless motion is detected in the area covered by the sensor.

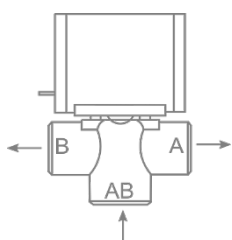
3) The device starts automatically when motion is detected in the sensor area and works according to settings selected on the switches.

ADVICE



VALVE PARAMETERS SRQ:

- SRQ3d 1/2" – Three-way valve 1/2" with actuator
- SRQ2d 1/2" – Two-way valve 1/2" with actuator



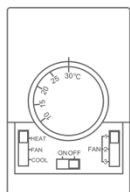
Class of protection: IP20
 Supply voltage: 230/50 Hz
 Max. Medium temperature: + 93oC Max. Operating pressure: 2.1Mpa
 SRQ2d 1/2 "Kvs: 3.0 m³/h
 SRQ3d 1/2 "Kvs: 3.4 m³/h
 Motor running time: 18 s

A – Return pipe water supply
 AB – Valve water supply
 B – Exchanger water supply

15. CONTROLS - OPTIONAL ELEMENTS

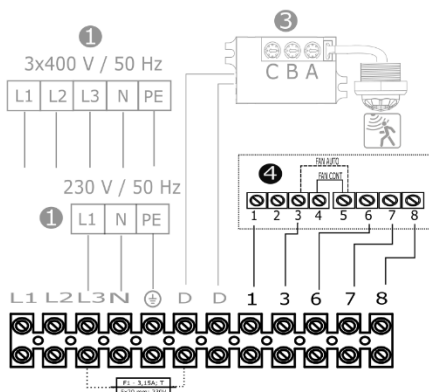
TS

3-step regulator with built-in thermostat

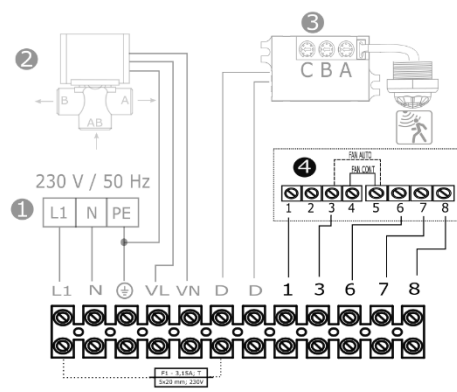


Temperature setting range: +10 ... +30°C
 Operating temperature range: 0 ... +40°C
 Protection degree: IP30
 Contact load: inductive: 5 A
 Supply voltage: 230 V/50 Hz

FAN AUTO - fan operation depends on the temperature.
 FAN CONT - continuous fan operation
 HEAT - heating function
 FAN - deactivate the thermostat for FAN CONT
 COOL - reversal of the operation logic of the thermostat



15.1. SLIM E + TS.



15.2. SLIM W/N + TS.

- ① ② ③ The connection diagram for the remaining elements, along with a description of the cables and protections, can be found in sections 12 and 13.
 ④ TS 3-step fan speed controller with thermostat TS (min. 5x1,0 mm²).

ADVICE

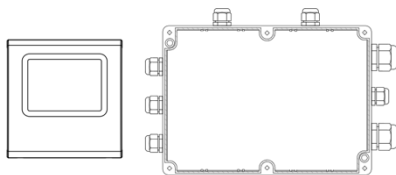
The curtain is activated automatically when motion is detected in the sensor area and works with the settings selected on the TS controller. In order to work only with the TS controller, a cable jumper should be made between the connectors: D D; - see ③ Chapters 13 and 14

WARNING

When connecting the TS controller to the air curtain, disconnect and isolate the wires from air curtain connectors 1; 3; 6; 8. In this case, the built-in switches are disconnected and not active.

T-box + DRV Slim (BMS possibility)

T-box + DRV Slim - touch screen controller + control system



T-box:
 Temperature setting range: +5 ... +35°C Operating temperature range: -10 ... +60°C Protection degree: IP30
 Supply voltage: 24 VDC

DRV Slim:
 Operating temperature range: -10 ... +60°C Protection degree: IP54
 Supply voltage: 230 V / 50 Hz

CONNECTION DIAGRAM IS IN DRV SLIM DOCUMENTATION

ADVICE

When cooperating with DRV Slim with a built-in motion sensor, the **AS** curtain version should be used: SLIM N/W/E-100/150/200 /**AS**

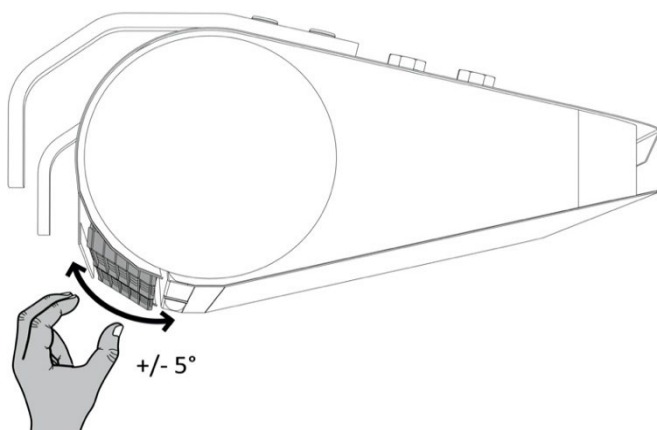
Connection diagram is in the DRV Slim documentation.

WARNING

When connecting the DRV Slim controller to the air curtain, disconnect and isolate /the wires from air curtain connectors 1; 3; 6; 8. In this case, the built-in switches are disconnected and not active.

Wires from connectors: D; D; should be disconnected and insulated only when the curtain cooperates with DRV Slim with and built-in motion sensor. In this case, the curtain works according to the logic contained in DRV Slim.

16. ADJUSTMENT OF OUTLET GRILLE



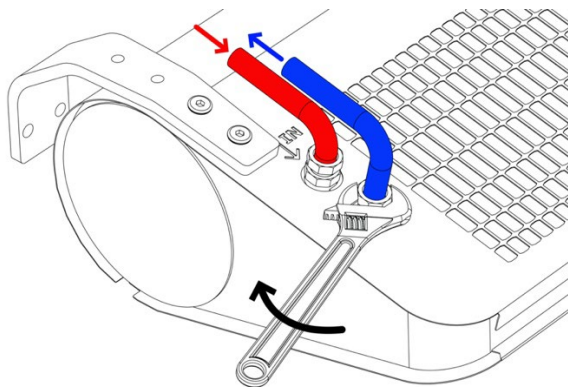
PIC. 16.1 MANUAL ADJUSTMENT OF OUTLET GRILLE.

The device is equipped with two independently adjustable outlet grilles. The angle should be set manually within +/- 5°. The airflow from the outlet grille should be directed as close as possible to the plane of the door opening (taking into account the conditions prevailing at the door opening).

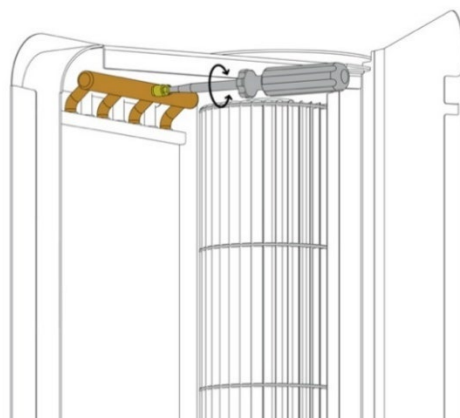
ADVICE

In order to increase the effectiveness of the air barrier during windy conditions, the curtain's air stream should be directed outside the door to create a more efficient air barrier to external factors.

17. CONNECTION OF HYDRAULIC INSTALLATION



PIC. 17.1 DELIVERY OF THE HEATING MEDIUM.



PIC. 17.2 BLEEDING/ AIR RELEASE VALVE.

WARNING

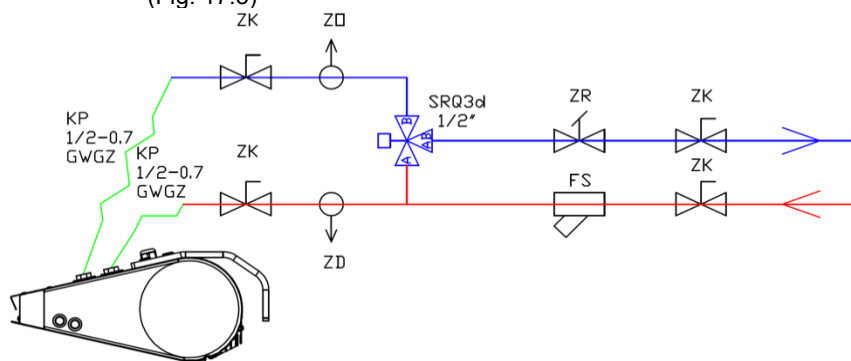


1. Disconnect the curtain power supply before connecting the water system.
2. The connection should be made without stress. It is recommended to use flexible ducts supplying the heating medium.
3. Water supply should be connected to the connector marked with the symbol ↓ IN.
4. The installation with the heating medium must be protected against the increase of the heating medium pressure above the permissible value (1.6 MPa).
5. Before starting the device, check the correct connection of the heating medium and the system for leaks.
6. During assembly of the installation it is absolutely necessary to immobilize the exchanger's connector pipes (counter)
7. After filling the system with heating medium, check the tightness of the hydraulic connections, including the built-in vent.

ADVICE



1. It is recommended to use bleeding/air release valves at the highest point of the installation. When installing the device vertically, bleeding should be done using the built-in valve (Fig. 17.2), while protecting the remaining elements of the device against water damage/flooding.
2. In the event that the water from the device is drained for a longer period of time, the exchanger tubes should be blown and dried with compressed air.
3. Installation should be carried out in such a way that in the event of a failure it is possible to dismantle the device (use of flexible hoses is recommended). For this purpose, use shut-off valves next to the device. (Fig. 17.3)



ZK - ball valve
ZO - bleeding valve
ZR - balancing valve
ZD - drainage valve
FS - mesh filter
KP - flexible hoses

PIC. 17.3 CONNECTION EXAMPLE OF HYDRAULIC COMPONENTS.

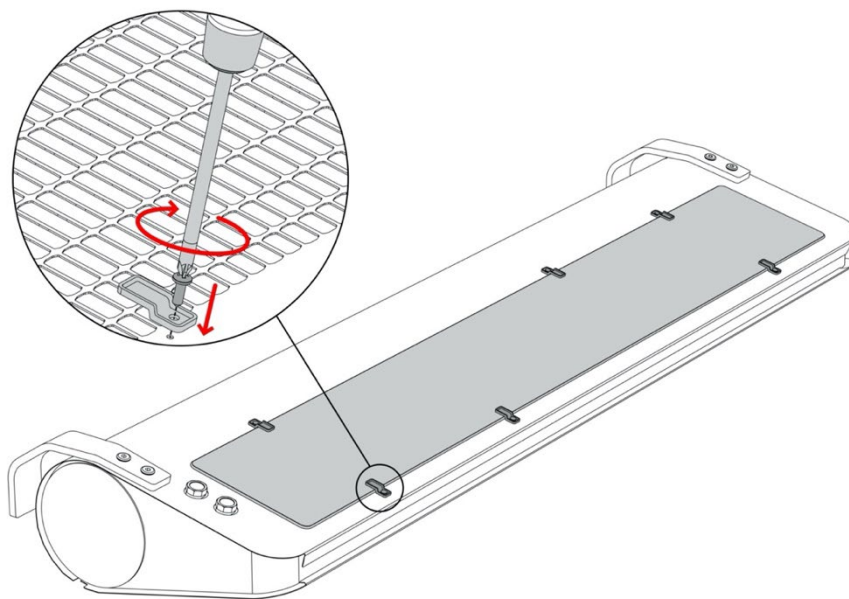
18. PARAMETERS OF THE HEATING MEDIUM

The water heat exchanger can be supplied with water or glycol solutions up to 60% . The heat exchanger tubes are made of copper. The heating medium should not cause corrosion of this material. In particular, the parameters as below should be provided.

Parameter	Value
pH	7,5-9,0
Pollution	Free of sediments/particles
Total hardness	[Ca ²⁺ ,Mg ²⁺]/ [HCO ₃ ⁻] > 0.5
Oil and grease	<1 mg/l
Oxygen	<0.1mg/l
HCO ₃ ⁻	60-300 mg/l
Ammonia	< 1.0 mg/l
Sulphides	< 0.05 mg/l
Chlorides, Cl	<100 mg/l

19. FILTER INSTALLATION

SLIM curtains in N and W versions are ready to operate with an external COARSE 30% filter mounted on the upper surface of the device. The filter should be replaced periodically, depending on the degree of dirtiness. When replacing the filter, loosen the mounting brackets and then rotate them.



PIC. 19.1 MOUNTING AND EXCHANGING THE AIR FILTER.

20. OPERATON

WARNING



1. The device must be periodically checked. These activities should be performed **ONLY** by qualified personnel. If the device malfunctions, turn it OFF immediately and contact FLOWAIR SERVICE SUPPORT.
2. Do not attempt to repair, move, modify, or reinstall the device yourself. Performing these activities by unauthorized personnel may result in electric shock or fire.
3. Do not use a damaged device. The manufacturer is not responsible for damages resulting from the use of a damaged device.
4. The device is intended for indoor use at temperatures above 0°C. At temperatures below 0°C there is a risk of freezing of the medium.

The manufacturer is not responsible for damage to the heat exchanger resulting from the freezing of the medium in the exchanger.

ADVICE



1. The heating elements are equipped with thermal protections, which in case of too high temperature in their surroundings will disconnect the heating. The heating can be switched on again after the temperature has dropped and:
 - a) manual reset is performed by switching OFF and ON the heating with built-in button/switch or external controller.
 - b) automatic reset: when motion is detected within the sensor range or when changing fan step to maximum. If the heating disconnects repeatedly, contact a qualified service center.
2. In the case of water supplied air curtains, when the water from the device is drained for a longer period of time, the exchanger tubes should be blown with compressed air.

21. CLEANING AND MAINTENANCE

Periodically check (at least twice a year) the dirtiness level of the heat exchanger (SLIM W), electric heaters (SLIM E). Clogging a part of the air intake causes a decrease in the heating power of the device and adversely affects the operation of the fan, and in the case of electric heaters it can cause permanent loss of rated parameters.

Cleaning the exchanger should be carried out in accordance with the following guidelines:

ADVICE



- The power supply must be disconnected during cleaning.
- Open the service flap.
- When cleaning the exchanger, be careful not to bend the aluminum fins.
- It is not recommended to use sharp objects for cleaning, due to the possibility of damage to the lamellas.
- Cleaning with compressed air is recommended.
- The exchanger cannot be cleaned with water!
- Cleaning should be carried out along the slats, with the blowing nozzle perpendicular to exchanger.

22. COMPLIANCE WITH 2009/125/EC

	SLIM 100	SLIM 150	SLIM 200
1.	Not applicable, power at the optimum energy efficiency point <0.125 kW	17,2	17,1
2.		B	B
3.		Total	
4.		21	21
5.		VSD - No	
6.		2020	2020
7.		FLOWAIR Głogowski i Brzeziński Sp.J., 0000278434, Poland	
8.			
9.		0,139 kW, 1242 m³/h, 58 Pa	0,197 kW, 2167 m³/h, 56 Pa
10.		1288 RPM	1298 RPM
11.		1,0	1,0
12.		Disassembly of the device should be performed by qualified personnel familiar with this device's documentation. To dispose of the device, please read the chapter: COMPLIANCE WITH WEEE DIRECTIVE 2012/19/UE	
13.		The service life of the device depends on compliance with the guidelines contained in this documentation, particularly those designated as CAUTION and WARNING	
14.		Device Casing	

23. CONFORMITY WITH WEEE DIRECTIVE 2012/19/UE

Running a business without harming the environment and observing the rules of proper handling of waste electrical and electronic equipment is a priority for FLOWAIR.

The symbol of the crossed out wheeled bin placed on the equipment, packaging or documents attached means that the product must not be disposed of with other wastes. It is the responsibility of the user to hand the used equipment to a designated collection point for proper processing. The symbol means that the equipment was placed on the market after August 13, 2005.



For information regarding recycling of waste electrical and electronic equipment, please contact your local distributor.

REMEMBER:

Do not dispose of used equipment together with other waste! There are financial penalties for this. Proper handling of used equipment prevents potential negative consequences for the environment and human health. At the same time, we save the Earth's natural resources, reusing resources obtained from the processing of equipment.

24. TECHNISCHE DOCUMENTATIE – MONTAGE HANDLEIDING

Please contact your dealer in order to get acquainted with the warranty terms and its limitation.

In the case of any irregularities in the device operation, please contact the manufacturer's service department.

The manufacturer bears no responsibility for operating the device in a manner inconsistent with its purpose, by persons not authorised for this, and for damage resulting from this!

**Made in Poland
Made in EU**

Manufacturer: FLOWAIR GŁOGOWSKI I BRZEZIŃSKI SP.J.
ul. Chwaszczyńska 135, 81-571 Gdynia
e-mail: info@flowair.pl
www.flowair.com