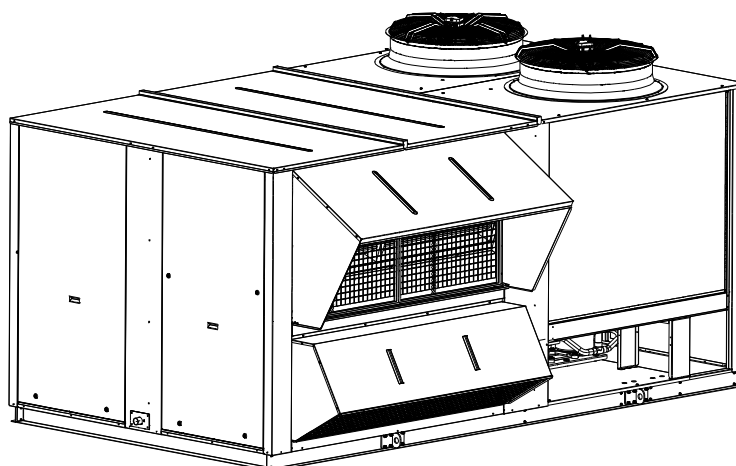




BY JOHNSON CONTROLS

# Exhaust fan for ROOF TOP ACTIVA 100/175



**Options and Accessories, Installation manual**

Ref.: N-40430\_EN 0913



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**Exhaust fan for ROOF TOP ACTIVA  
100/175**

## 1.1 General information

It consists of an assembly of axial fans (two in 100 / 125 models and three in 150 / 175 models), excess pressure dampers and rain protection, including a bird protection grille.

The system is suitable for units that use an economiser or a damper that is monitored in installations:

- With a ducted air return.
- With planned air exhaust above 25% of the total supply air flow.

Up to approximately 30% of outdoor air inlet opening, operating as a barometric damper. The fans become operational at this point and the air is discharged directly outdoors.

For transportation reasons, the assembly of fans and dampers is supplied fitted to the side panel of the unit. This is the correct location in the case of facilities where the connection of the return duct to the unit is at the lower part. See section *Installation in unit with lower return duct, see on page 3*.

In the case of facilities where the return duct connection to the unit is on the side, the assembly of fans and dampers must be installed directly on the front face of the return duct itself, as close to the unit as possible. See section *Installation in unit with side return duct, see on page 5*.

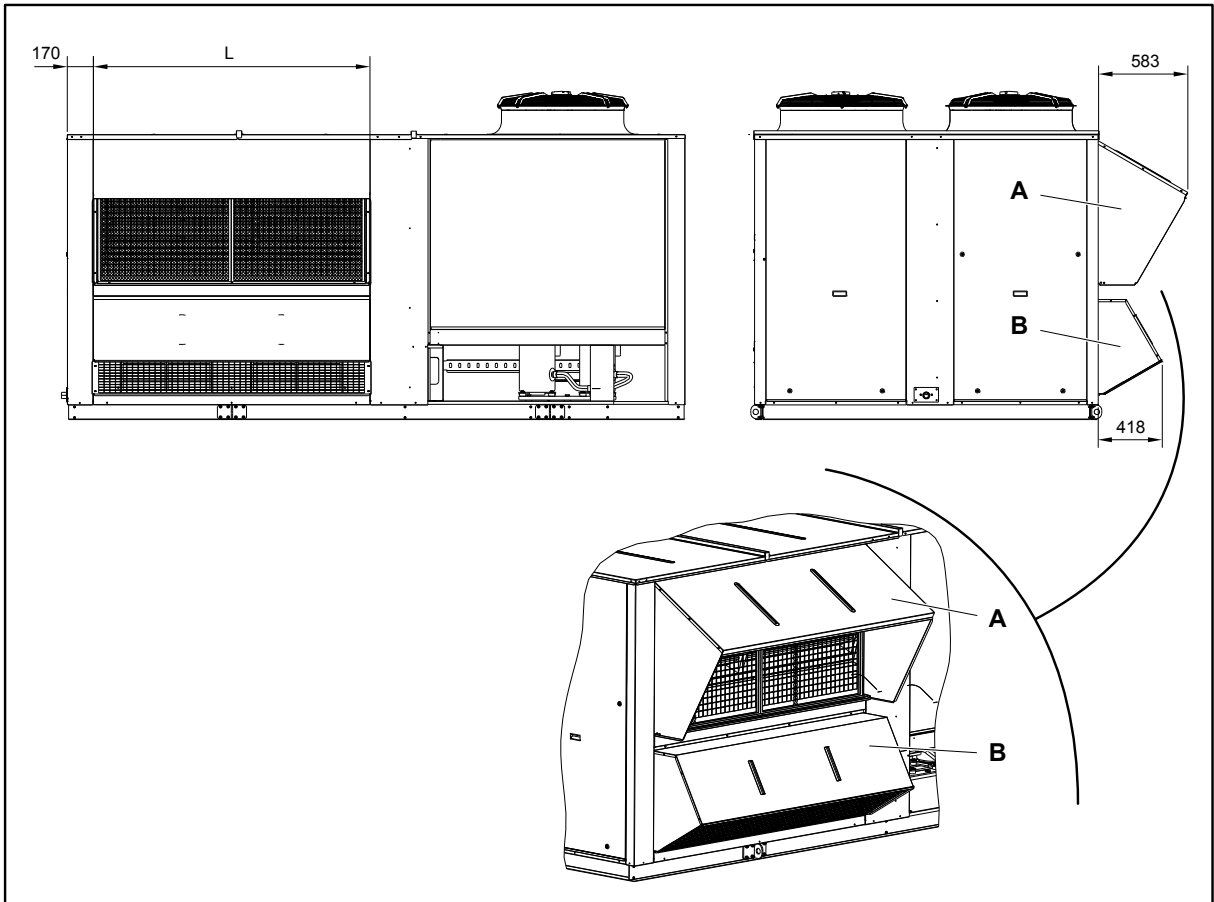
The rain protection is supplied separately for on-site installation.



### ATTENTION

*The two side panels, the upper panel, the protection grille, the bolts and the sealing strip required for installation are located inside the unit in the free space between the return damper and the exhaust fans.*

## 1.2 Dimensions



- A Rainhood economiser
- B Rainhood barometric damper or exhaust fan

Model	L
100 / 125	1805
150 / 175	2255

## 1.3 Installation

### 1.3.1 Installation in unit with lower return duct

The fan / excess pressure damper assembly is already installed on the side of the unit.

In this case, it is not necessary to add a seal in addition to that present on the unit supports.

Install the rain protection (rainhood):

1.3 Installation



**NOTE**

*The necessary nuts and bolts are supplied with the panels and the grille of the protection.*

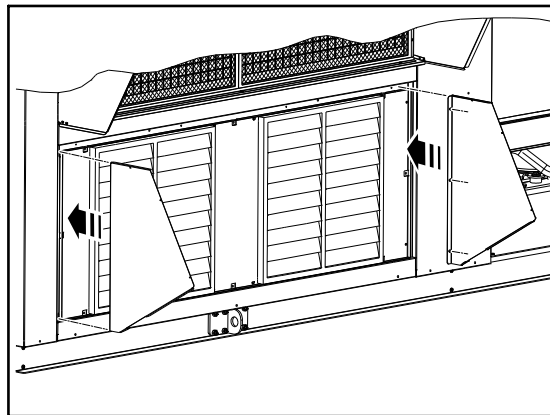
1. Place both side panels in the correct position and attach them to the supports of the side of the unit with three bolts for each one.



**NOTE**

*The fixing holes in the supports on the unit are hidden under the rubber sealing strip.*

2. Put in place the upper panel supported by the sides and slide it until it makes contact with the side of the unit.

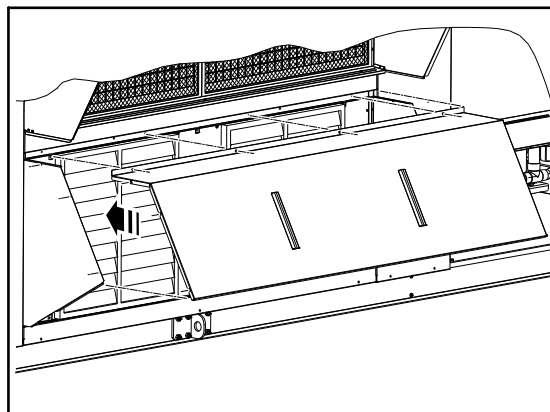


3. Attach the top flange to the unit and to both sides.



**NOTE**

*Use bolts and sealing washers.*

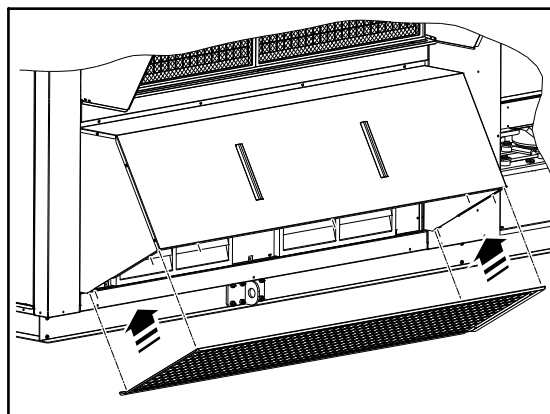


4. Place the lower grille in its position and attach it to both side panels and the upper panel.



**NOTE**

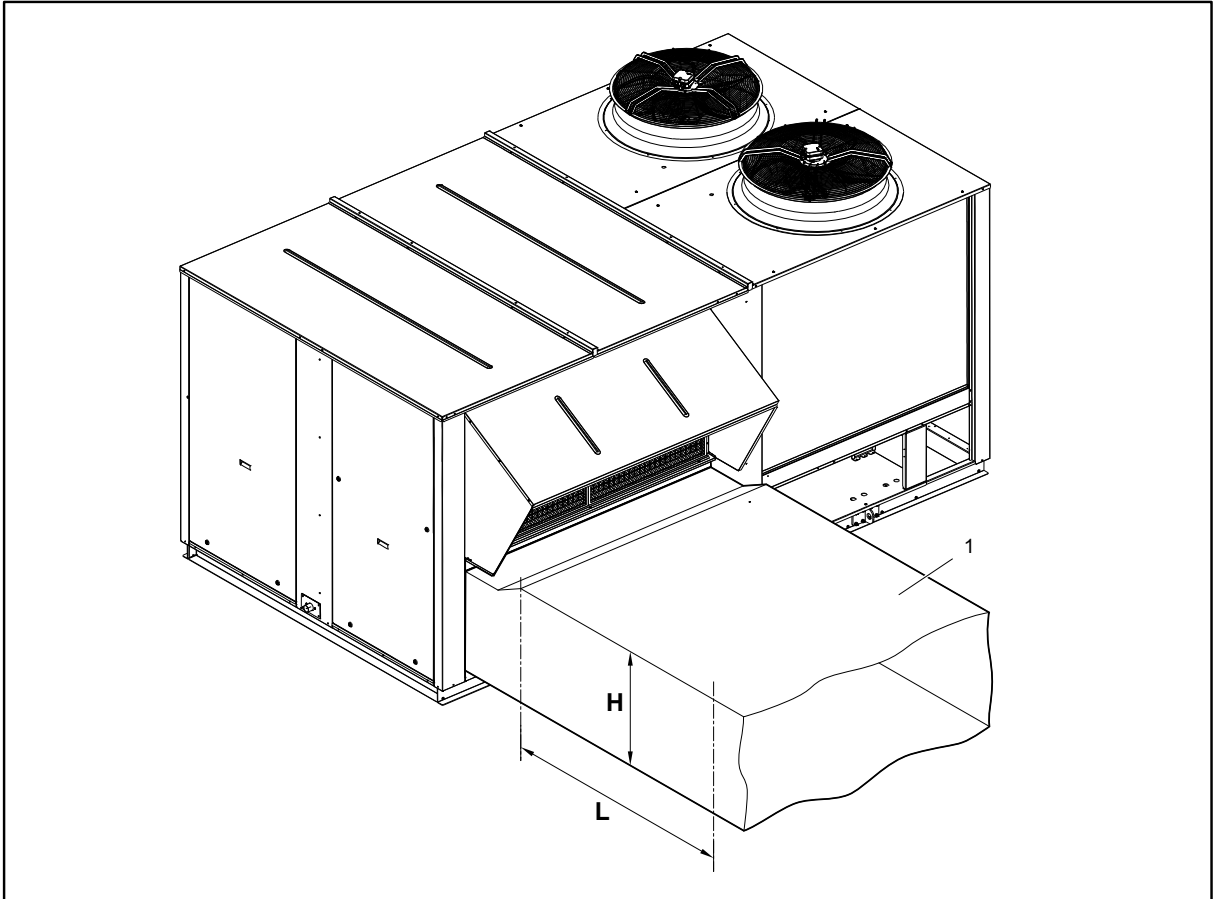
*Use bolts and sealing washers.*



### 1.3.2 Installation in unit with side return duct

Remove the fan / excess pressure damper assembly from the unit and then directly install it on the front face of the return duct itself, as close as possible to the unit.

A flat front surface is required on the return duct with minimal dimensions.



1 Side return duct

Model	L	H
100 / 125	1880	705
150 / 175	2330	705



#### ATTENTION

*The total weight of the fan assembly, excess pressure dampers and the rain protection is:*

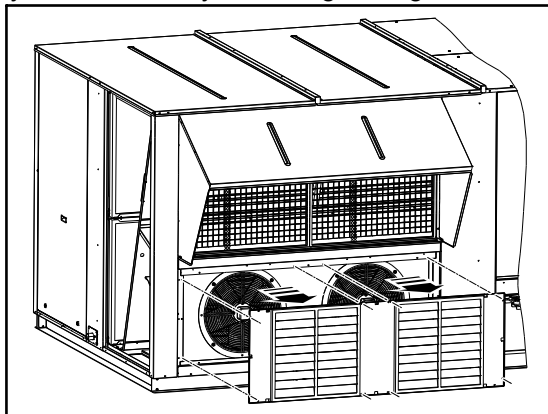
- 75 kg in 100 / 125 models.
- 106 kg in 150 / 175 models.

*If necessary, a reinforcing structure must be provided in the return duct, or an exterior support that is suitable for these weights.*

1.3 Installation

Installation process:

1. Remove the excess pressure damper panel assembly from the unit by loosening the eight bolts.
2. Disconnect and remove the electrical connections from the fans.

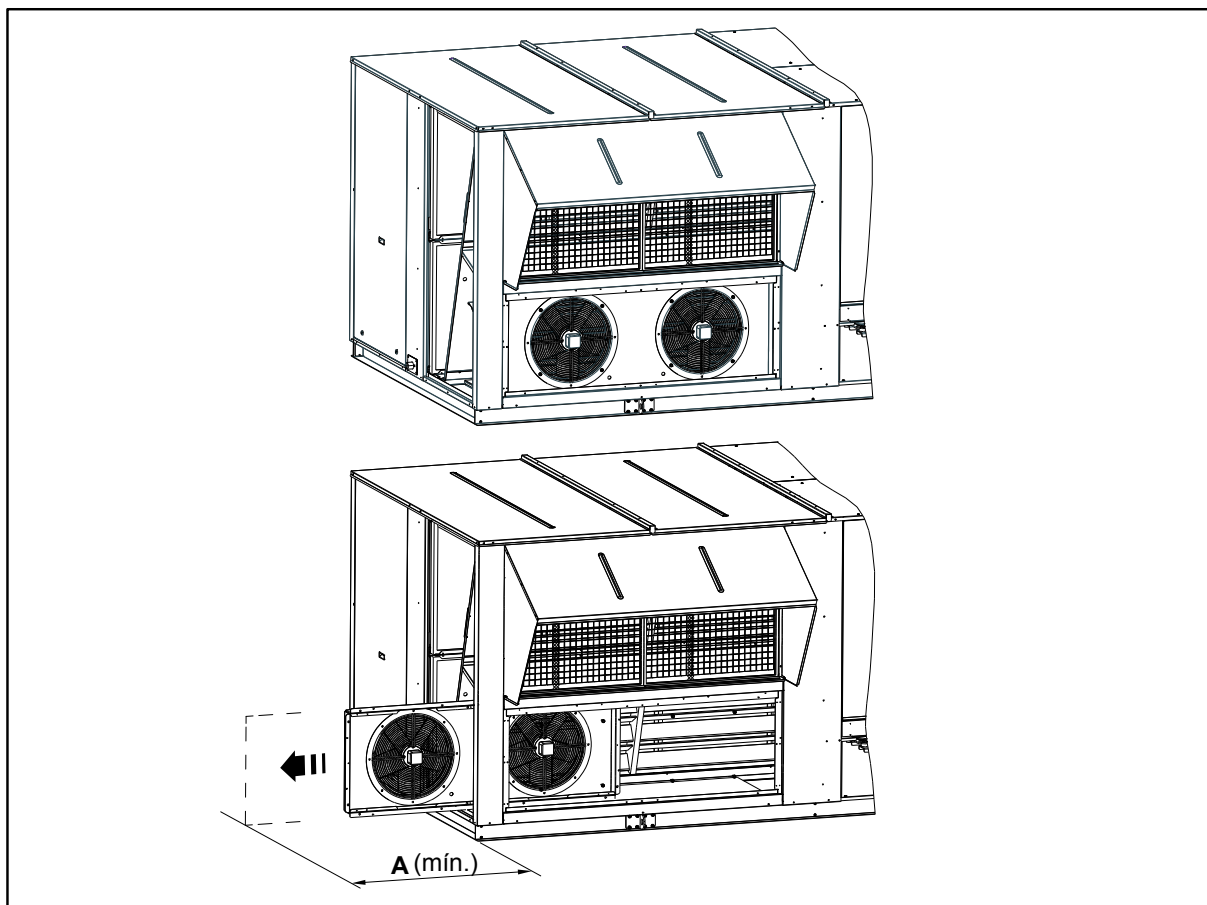


3. Remove the assembly of the panel and fans.
  - a. Secure the assembly with a support or protection inside the unit.

**i** NOTE

*The support or protection must prevent the panel assembly from impacting upon the economiser damper.*

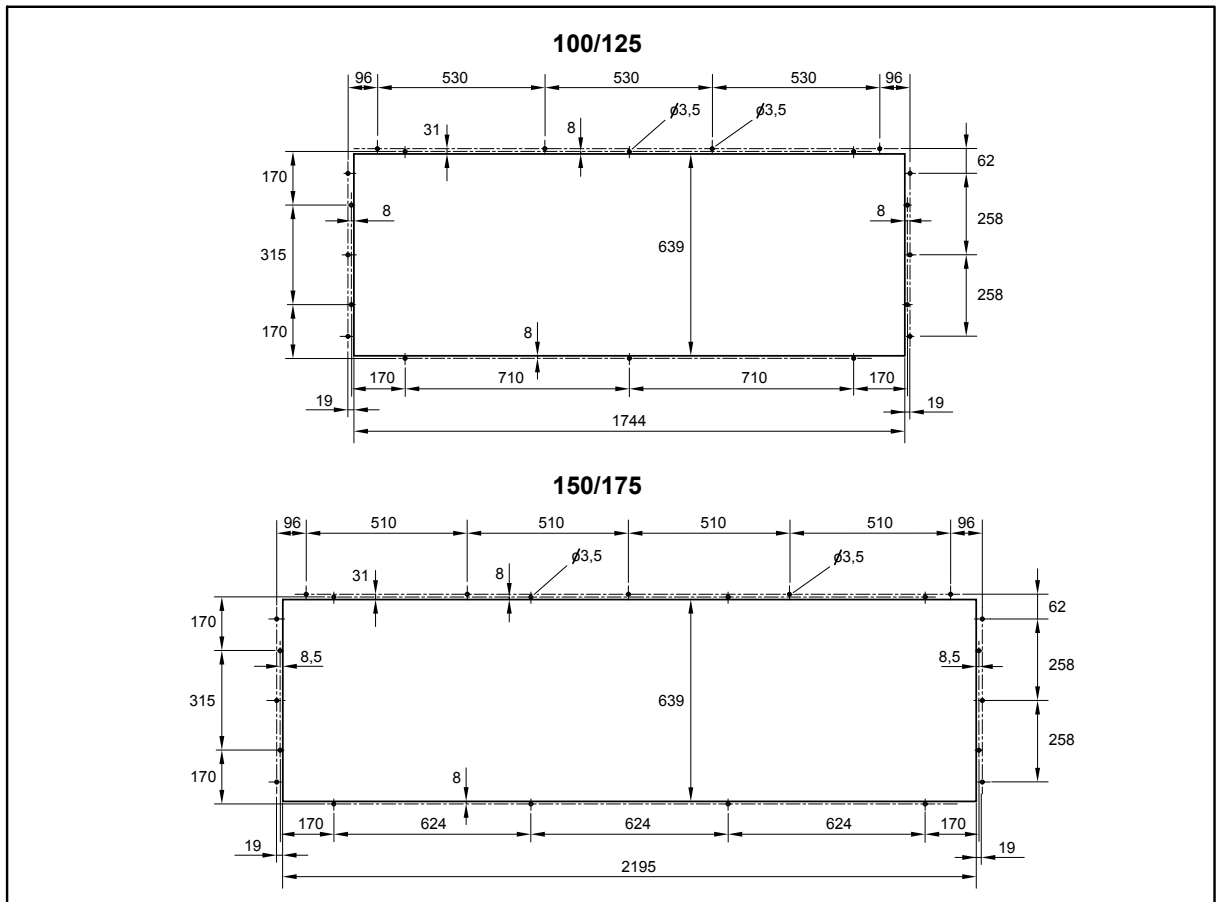
- b. Loosen the securing bolts.
  - c. Remove the assembly through the panel for access to the unit. Check the free space required.



Model	A
100 / 125	1800
150 / 175	2300



4. Drill the holes and make the rectangular opening necessary for attachment to the front face of the duct.



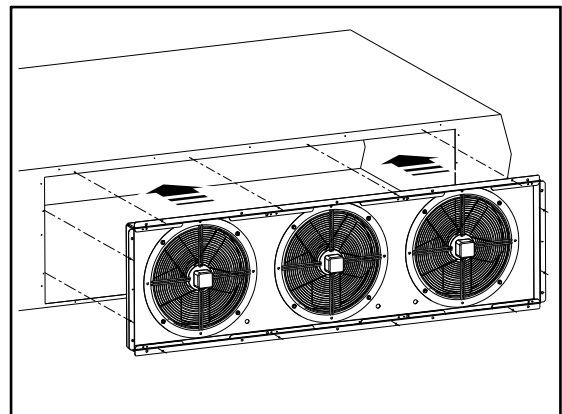
5. Install and attach the panel fan assembly in the rectangular opening.



**NOTE**

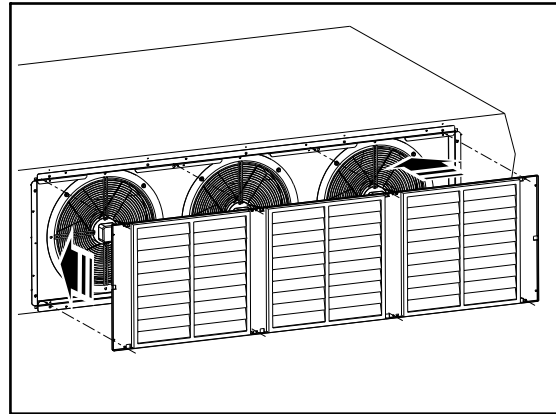
*Use the bolts supplied.*

- 10 bolts in 100 / 125 models.
- 12 bolts in 150 / 175 models.

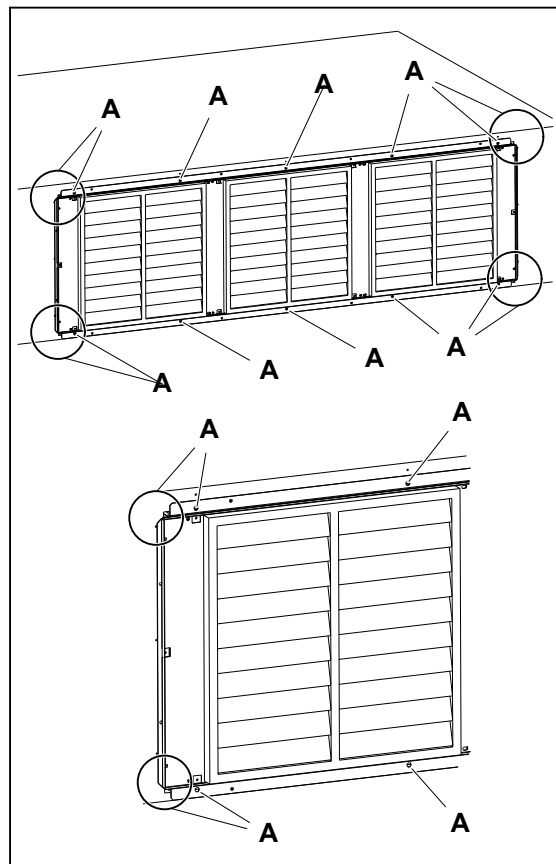


1.3 Installation

6. Place the damper panel assembly on the panel fan assembly and attach it with the eight securing bolts.



7. Use silicone to seal the four corners and the holes  $\phi 11$  -A-.

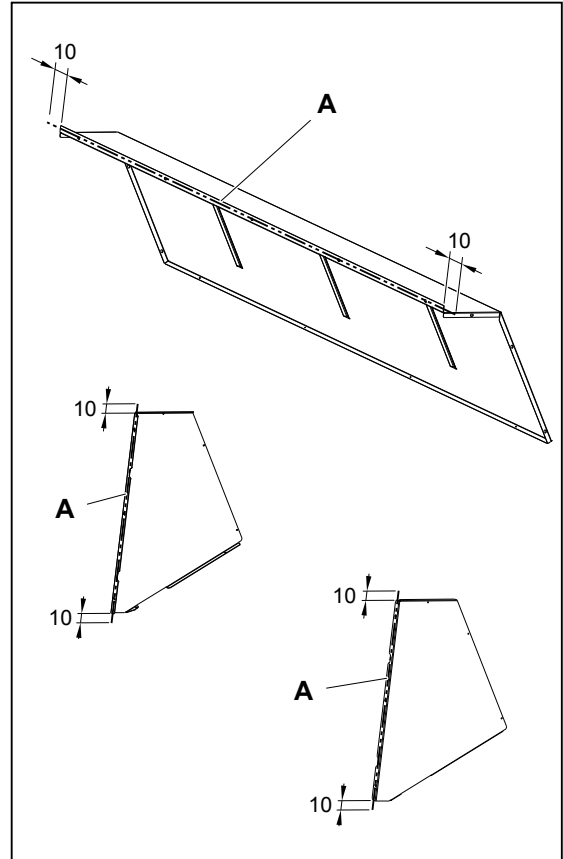


8. Make the electrical connections in the fans.
9. Install the rain protection.
  - a. Apply rubber sealing strip **-A-** (supplied with the nuts and bolts kit) in the supporting flanges of both side panels and the upper panel.

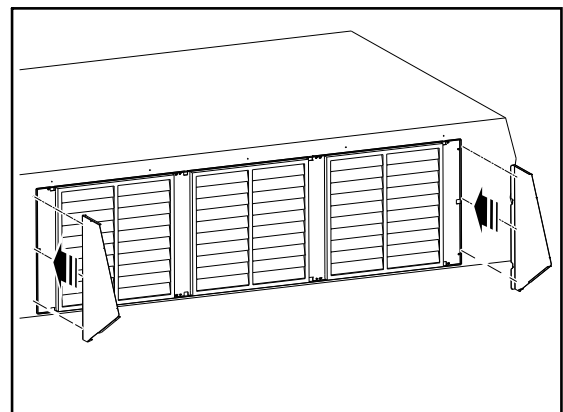


**NOTE**

- *It must be applied in a continuous strip, without cuts.*
- *There must be approximately a 10 mm excess on the end of the flange in all cases.*



- b. Place the side panels in the correct position and attach them to the front face of the duct with three bolts on each panel.
- c. Put in place the upper panel supported by the sides and slide it until it makes contact with the front face of the duct.



- d. Attach the top flange to the face of the duct and the sides.

1.4 Fan flow rate / pressure curves



**NOTE**

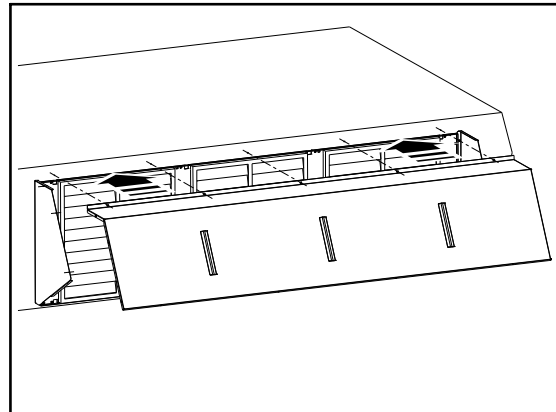
*Use bolts and a sealing washer.*

- e. Place the lower grille in its position and attach it to the side panels and the upper panel.

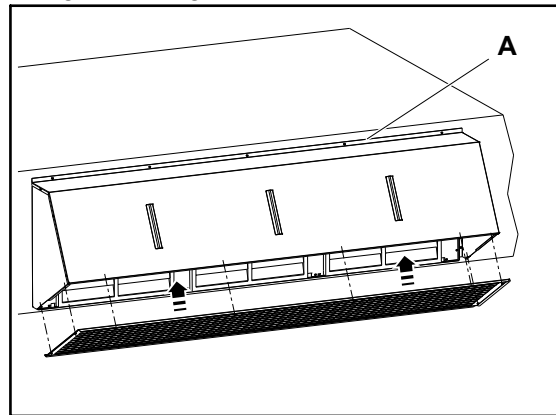


**NOTE**

*Use bolts and a sealing washer.*



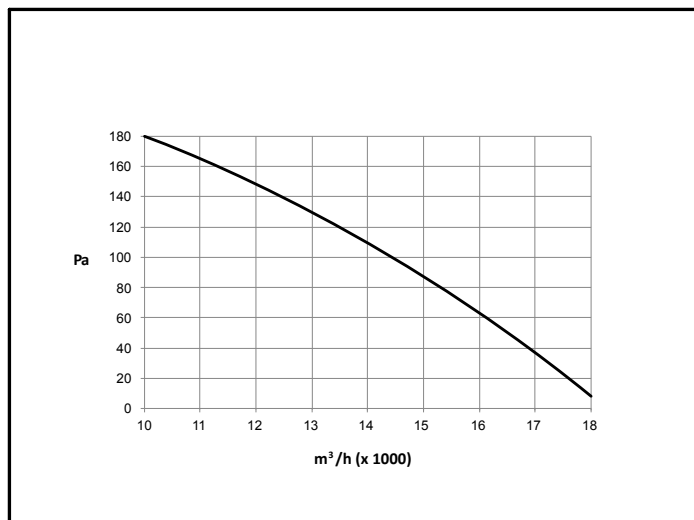
- f. Make sure that the joint of the upper panel with the contact surface of the duct is sealed.
  - If you have any doubts, apply a silicone bead along all its length **-A-**.



## 1.4 Fan flow rate / pressure curves

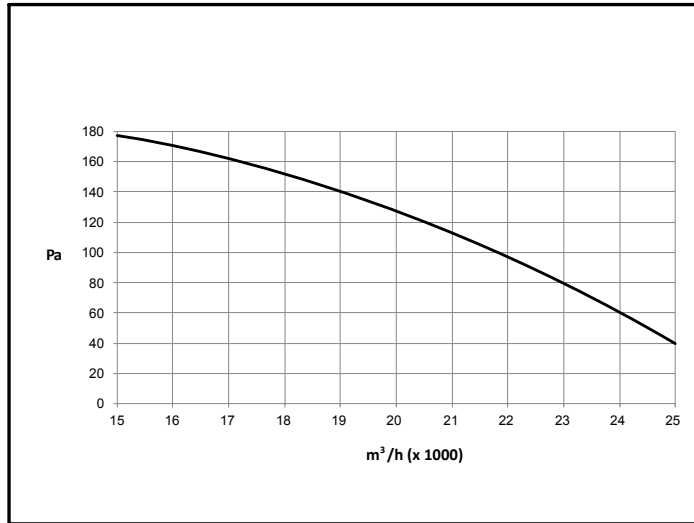
### 100 / 125 models (two fans)

- Motor rated power: 0.72 kW (x2)
- IP54 protection
- F insulation class



**150 / 175 models (three fans)**

- Motor rated power: 0.72 kW (x3)
- IP54 protection
- F insulation class



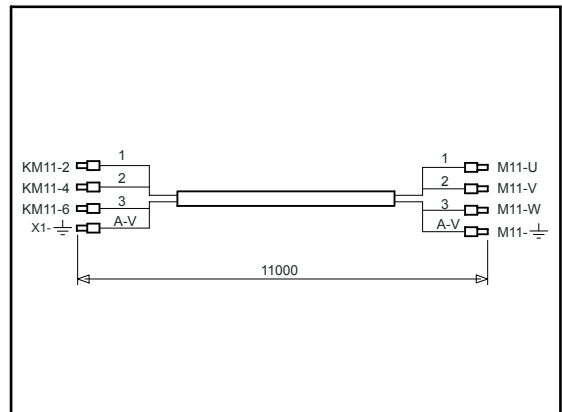
**1.5 Electrical connection**

Make the electrical connections according to the diagram.

Run the connection cable to the electrical box along the route of the economiser cables.

KM11: Box side.

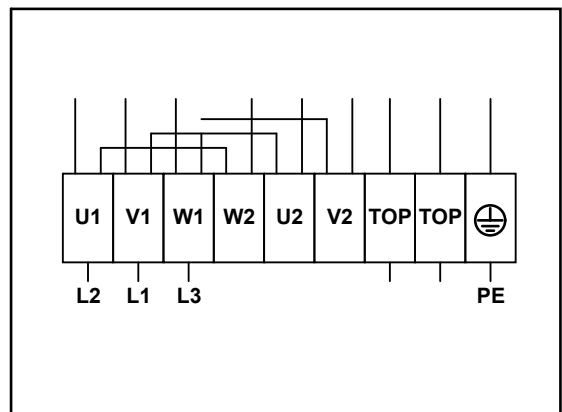
M11: Motor side.



If the fan does not turn in the correct direction, switch the position of cables L1 and L2 on its motor.

- Delta connection
 

L2	U1= black	V2	white
U2	green	L1	V1 = blue
PE	green / yellow	W2	yellow
L3	W1= brown	TOP	2 x grey



1.5 Electrical connection

**Close-up of connections in the electrical box**

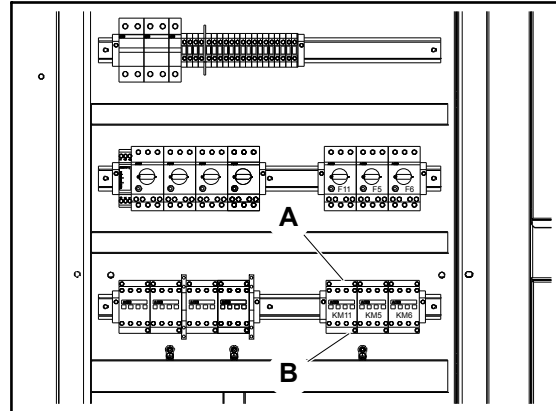
A: A1 to X2-7

B: A2 to X2-B

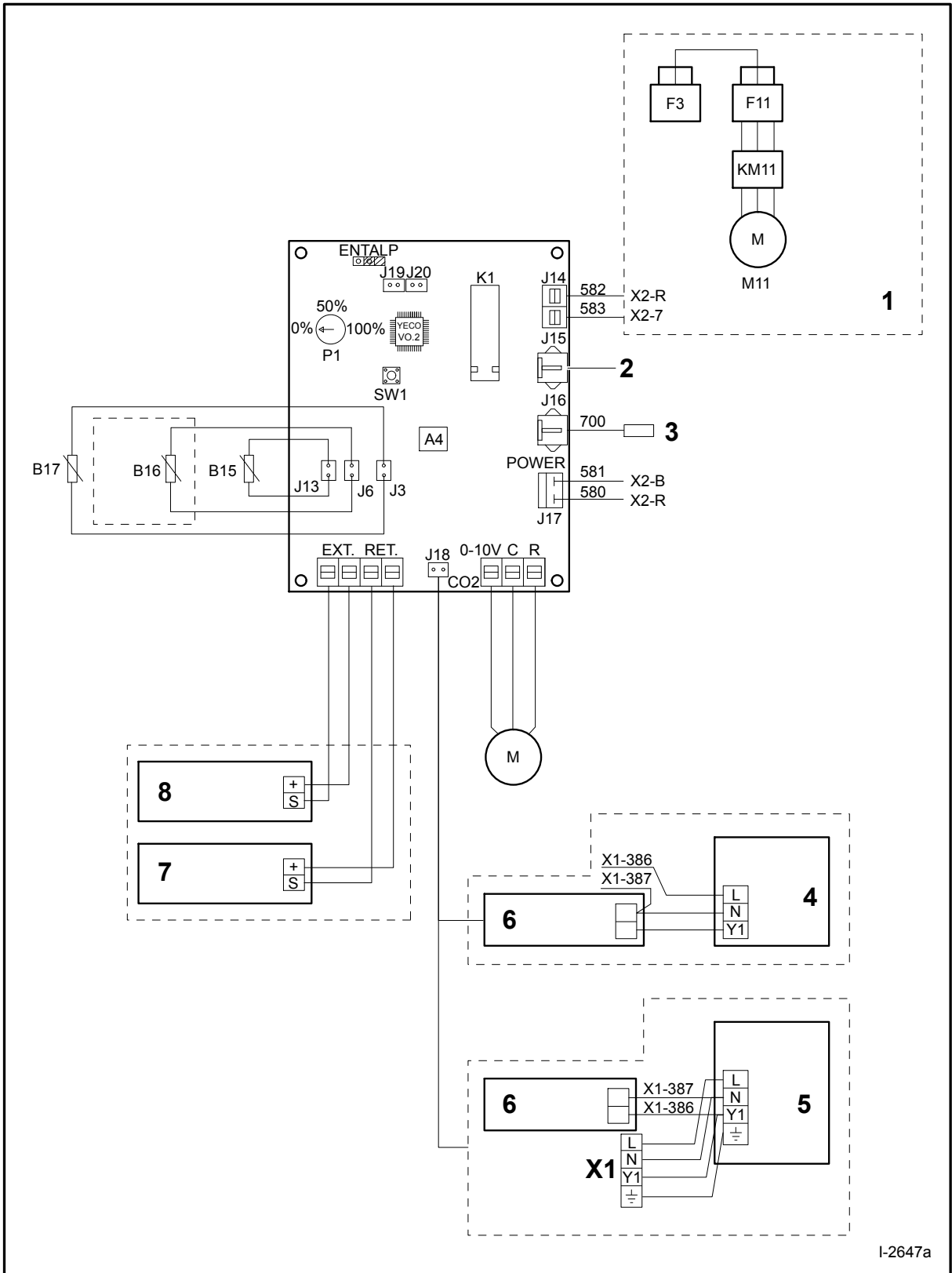
Connect the exhaust fan cables to contactor KM-11, terminals 2, 4 and 6.

Adjust motor trip switch F11:

- 100/125 models: 3.2 A.
- 150/175 models: 4,7 A.



## 1.6 Wiring diagram



## 1.6 Wiring diagram

1.	F11	Optional <ul style="list-style-type: none"> <li>• Reg. 2,5 A (017, 022).</li> <li>• Reg. 5,5 A (032, 040).</li> <li>• Reg. 1,4 A (045, 060).</li> <li>• Reg. 3A (0,75, 090).</li> </ul>	<ul style="list-style-type: none"> <li>• Reg. 3,2 A (100, 125).</li> <li>• Reg. 4,7 A (150, 175).</li> </ul>
	KM11	A1 to X2-7 (Cable 583) A2 to X2-B	
	M11	Exhaust fan	
	X2-R	24 VAC Phase-R switching	
	X2-7	To A1 from KM11	
2.	Accessories		
3.	Accessories		
4.	Air quality probe, optional, fitted on return (inside machine)		
	L	Black	
	N	Blue	
	Y1	Brown	
5.	Air quality probe, optional, fitted on ambient (machine exterior)		
	L	Black	
	N	Blue	
	Y1	Brown	
	⊥	Yellow-Green	
6.	Air quality board (green)		
7.	Enthalpy probe C7400A return, optional		
	+	Red	
	S	White	
8.	Enthalpy probe C7400A outside, optional		
	+	Red	
	S	White	
B15	Return probe (black)		
B16	Supply probe, optional depending on model (yellow)		
B17	Outdoor probe (white)		
M10	Damper		
	0-10 V	Grey	
	C	Black	
	R	Red	
X1	Cables to be installed on site (not supplied)		

Data and measurements subject to changes without prior notice.
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