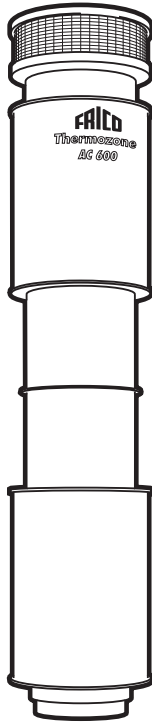


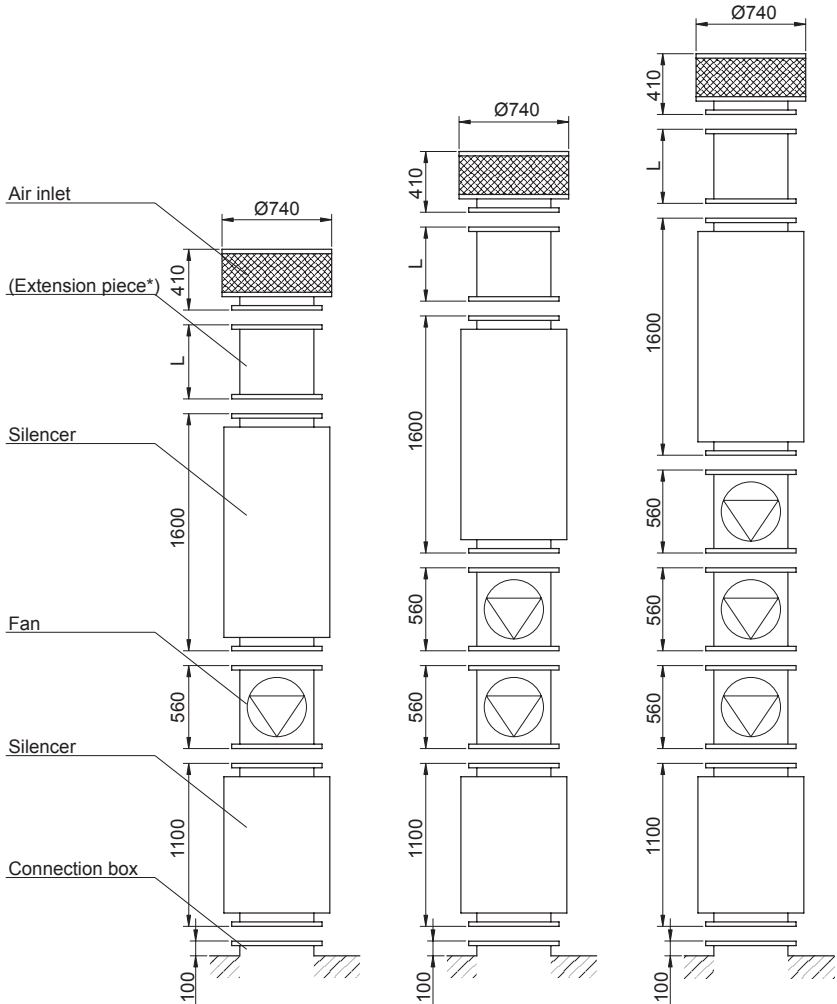
FRICO

Thermozone AC600



Thermozone AC600

AC600 Assembly



AC601

AC602

AC603

Total height:
(without extension piece)

3770 mm

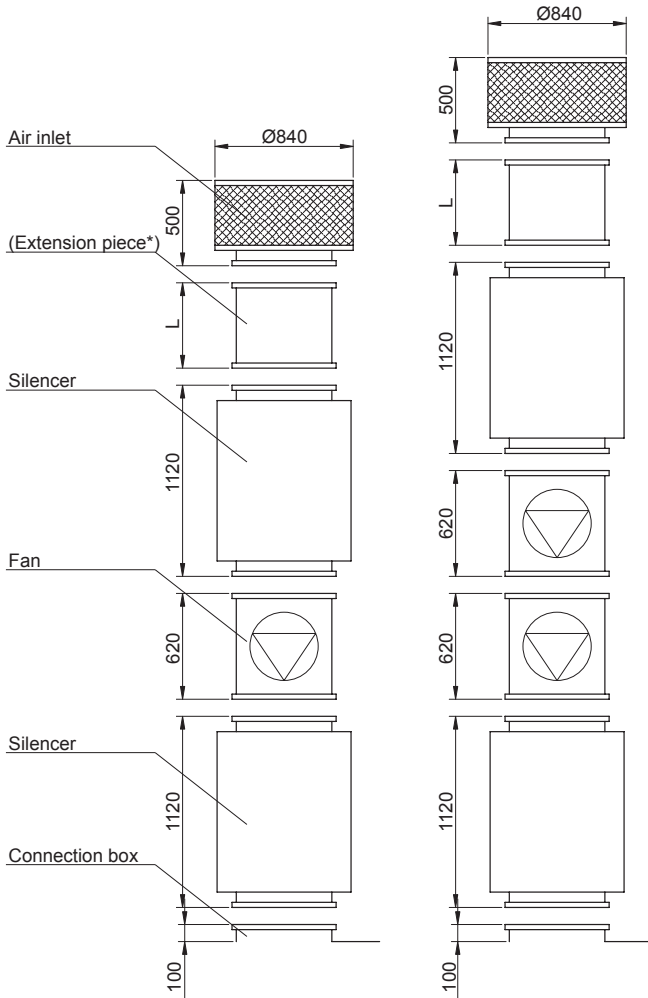
4330 mm

4890 mm

*) To make sure that the air inlet reaches above the top of the door an extension piece may have to be added. The length (L) is determined on site. The extension piece is not delivered by Frico. Please contact Frico for more information.

Thermozone AC600

AC600X Assembly



Total height:
(without extension piece)

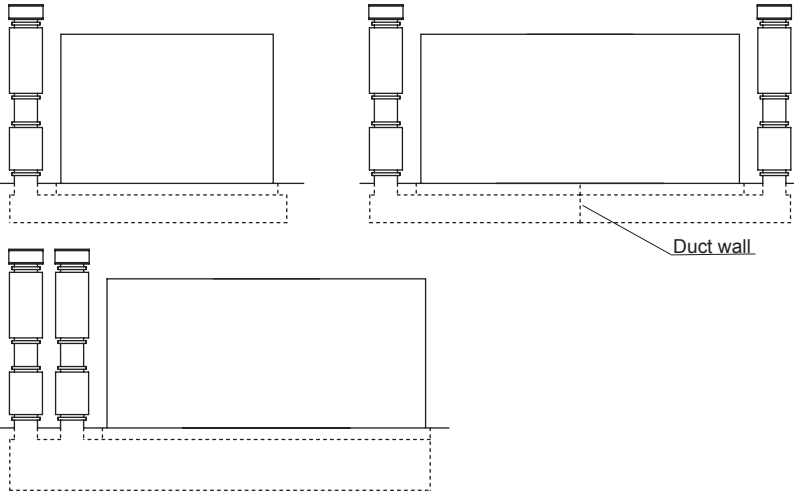
AC601X
3460 mm

AC602X
4080 mm

*) To make sure that the air inlet reaches above the top of the door an extension piece may have to be added. The length (L) is determined on site. The extension piece is not delivered by Frico. Please contact Frico for more information.

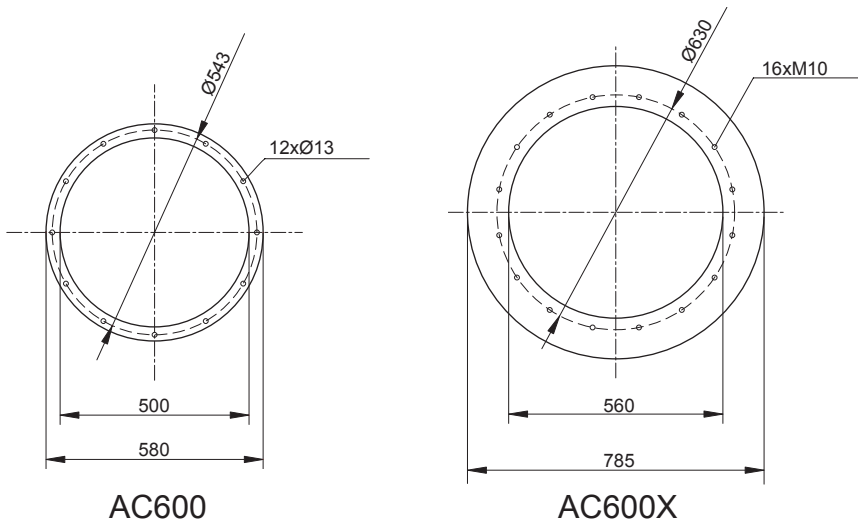
Thermozone AC600

Installation alternatives



The towers can be positioned on both sides of the door. For larger doors two towers are often required. They can be positioned one on each side or both on the same side. If they are mounted one on each side the floor duct needs to be divided with a steel wall in the middle to prevent the fans from working against each other.

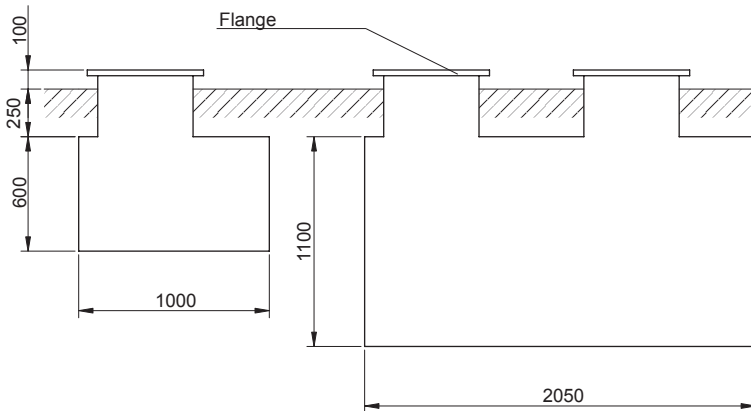
Flange sizes



The tower is connected to the connection box with flanges these sizes mounted on the silencers. The AC600 flange comes with $\text{\O}13$ mm holes, the AC600X flange with M10 welded nuts.

Thermozone AC600

Connection boxes (not delivered by Frico)

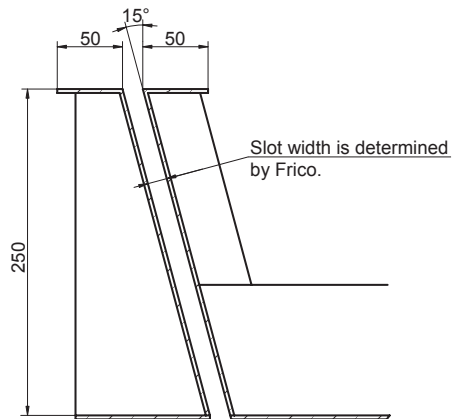


The connection box is where the tower is connected to the floor duct. The connection is done with flanges. The connection box and the flanges are not delivered by Frico. The height depends on the installation alternative chosen. Above are suggested measures. Please contact Frico for more information.

Floor duct (not delivered by Frico)

There are mainly two solutions to the floor duct. The first is the floor duct box that is a steel duct that is cast into the concrete floor. The box is made of sections that are welded together. They include the air outlet slot, connection box, an end section and an inspection hatch. The other solution is the floor duct lid, where the duct is cast in concrete and a steel lid is cast on top of the concrete box, including the air outlet slot, connections and inspection hatch.

The conditions on site determines which solution is the most suitable. The floor duct is not delivered by Frico. However, please contact Frico for more information.

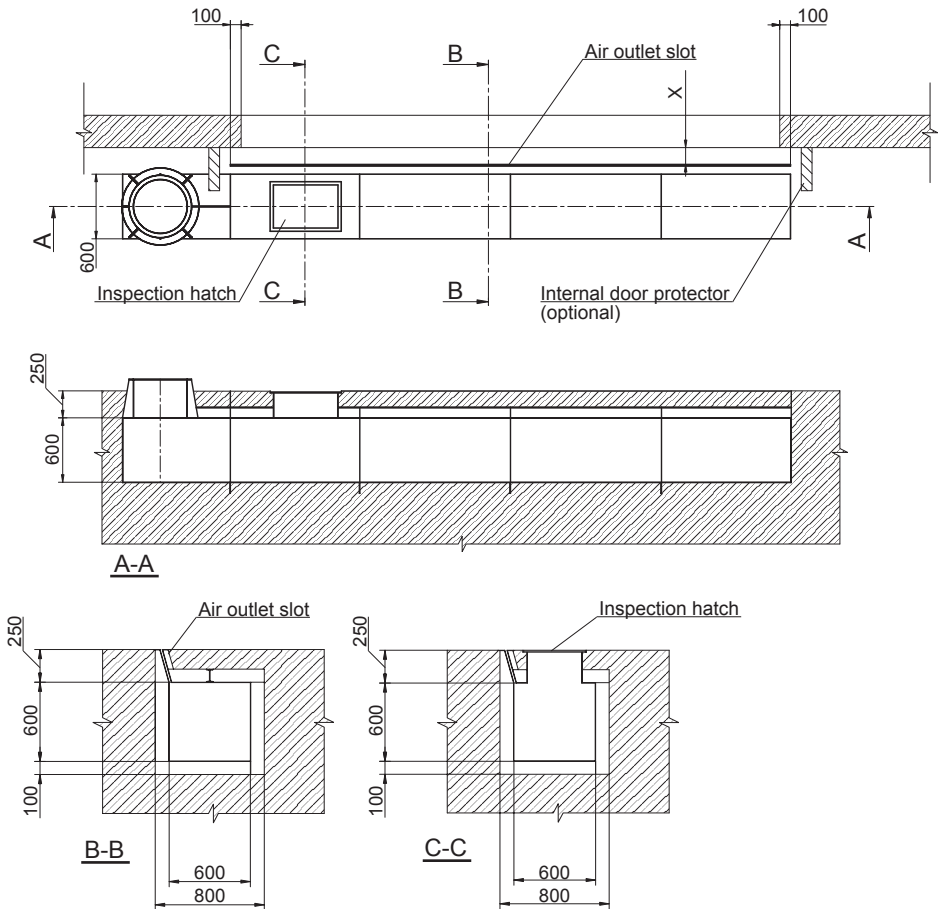


Detail of the air outlet slot

The air outlet slot should be designed with an approximate outlet angle of 15°. Measures above are suggestions.

Thermozone AC600

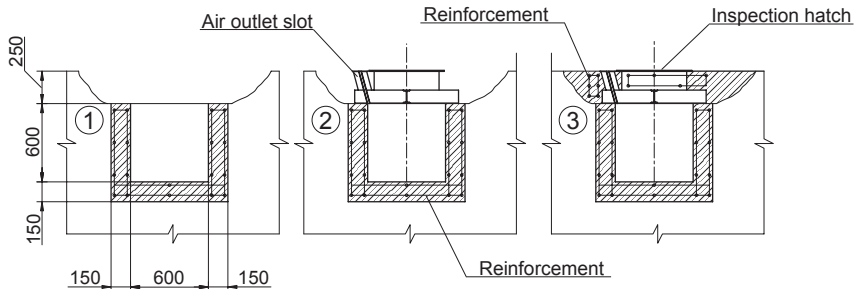
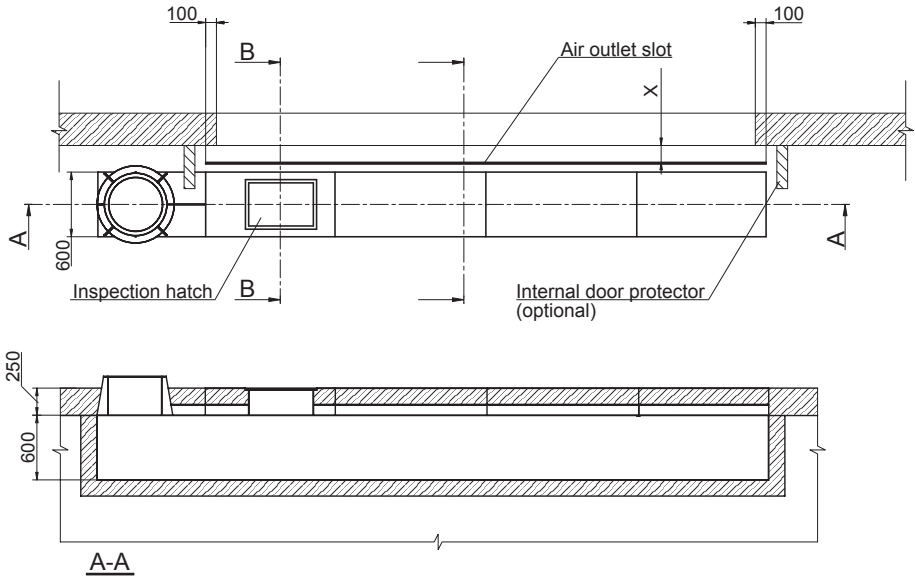
Floor duct box (not delivered by Frico)



The floor duct box is a steel box cast into the concrete floor. It is not delivered by Frico. Measures above are suggestions. The air outlet slot should extend approximately 100 mm outside the edge of the door. If the measure X exceeds 150 mm internal door protectors (optional) should be mounted on each side of the door. Please contact Frico for more information.

Thermozone AC600

Floor duct lid (not delivered by Frico)



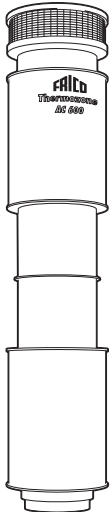
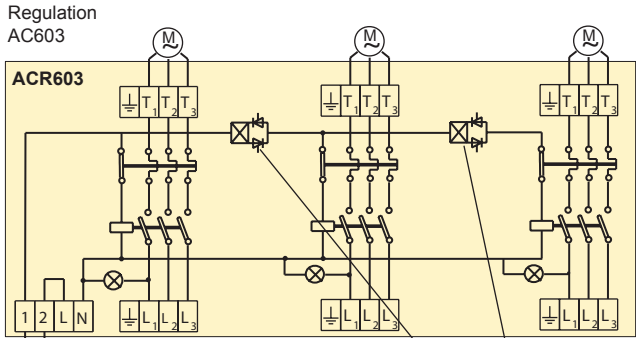
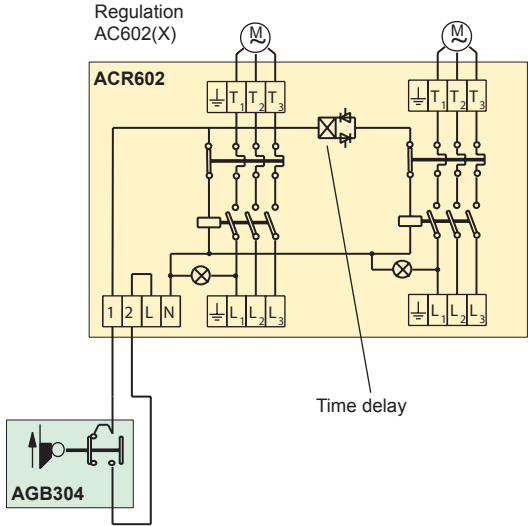
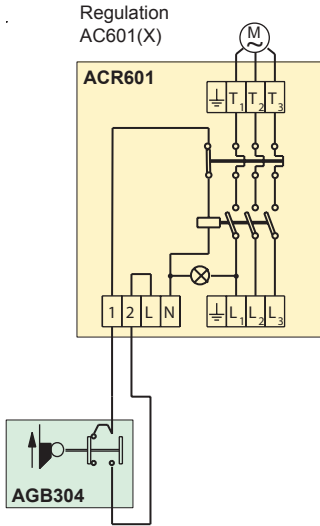
B-B

Suggested casting procedure

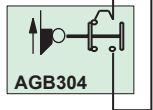
The floor duct lid is a steel lid cast on top of a reinforced concrete box which is cast in the floor. It is not delivered by Frico. Measures and cast procedure above are suggestions. The air outlet slot should extend approximately 100 mm outside the edge of the door. If the measure X exceeds 150 mm internal door protectors (optional) should be mounted on each side of the door. Please contact Frico for more information.

Thermozone AC600

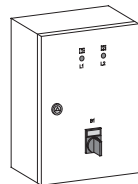
Connection of air curtain unit, start/stop with position limit switch AGB304



AC600
Air curtain unit



AGB304
position limit switch



ACR
control box

Thermozone AC600

Assembly and operating instructions

General recommendations

Carefully read this instruction manual before installation and use of the AC600 unit. Keep these instructions in a safe place for future reference.

Application area

The Thermozone AC600 air curtain unit is intended for permanent installation together with a floor duct. The floor duct is either made of a steel box cast into a concrete floor or a cast concrete duct with a steel lid. The AC600 unit is connected to the floor duct with flanges. The floor duct is NOT delivered by Frico.

The floor duct is equipped with a narrow air outlet slot through which the air is pressed out at high speed to create an effective air curtain protecting large industrial doors from cold air and draught. Protection class: IP24

Operation

The air is drawn in through the air inlet at the top of the unit and blown out through a narrow air outlet slot in the floor. The air is distributed at high velocity across the doorway, providing a protective air shield. The air shield minimises cold draughts and reduces heat loss through open doorways. The air outlet slot is angled outwards 15° to achieve the best protection.

The efficiency of the air curtain depends on the air temperature, pressure differences across the doorway and wind pressure.

NOTE! Negative pressure in the building considerably reduces the efficiency of the air curtain. Ventilation should therefore be balanced.

Mounting

The AC600 unit is assembled according to this manual and bolted together. The floor duct design chosen is cast into the floor complete with air outlet slot, inspection hatch and connection box. The air outlet slot should extend approximately 100 mm outside the door edges.

The AC600 unit is connected to the connection box with the flange shown in this manual. The AC600 unit may have to be prolonged with an extension piece to make sure the air inlet reaches above the top of the door. Otherwise the air curtain effect is reduced. The AC600 unit should be fastened in ceiling or wall to avoid the risk of tipping if the unit is hit by a vehicle.

If the air outlet slot is more than 150 mm away from the door opening internal door protectors should be mounted on both sides of the door to increase air curtain effect.

Electrical installation

The air-curtain should only be wired by a competent electrician, and in accordance with the latest edition of IEE wiring regulations.

Overheating

The ACR control unit is equipped with motor protection for each one of the fan motors. If there is an overload the motor protection will trip, stopping the air-curtain.

The motor protection must be reset manually.

If the motor protection is tripped repetitively please check the fuses and if the air inlet is blocked.

Start-up current

The external fusing must be adapted to the motor start-up current.

Fan	AF50040	AF50055	AF50056	
Start-up current	55,5	81,9	81,9	[A]

Fan	AF56075	AF56076	
Start-up current	123,7	123,7	[A]

Maintenance

To ensure performance and reliability of the air curtain, inspection and cleaning should be carried out regularly. The fans, motors and other components are maintenance free. However, inspection and cleaning (if needed) should be carried out at least once a year.

NOTE! The power supply must always be disconnected before disassembling any part of the unit.

Drainage

Drainage of the floor duct is normally not needed. An area which is frequently soaked with water should always be equipped with proper floor drains. The floor should be made in such a way that water reaches these drains before it reaches the air outlet slot.

However, if the risk still is apparent that larger amounts of water enters the floor duct it may be equipped with an internally threaded 1" coupler for drain pipe connection. The coupler is placed on the side of the duct, level with the duct bottom. This is done on site. The pipe is routed to the macadam layer underneath the building. Make sure the macadam is sufficiently drained itself. If the ground is not well drained the pipe may instead be routed to a drain basin. The pipe should be routed in conformity with valid sewage pipe regulations.

Security

Do not cover surfaces of the air curtain or obstruct air inlet, as this can cause excessive temperatures that can be hazardous and may cause fan motor malfunction.

Thermozone AC600

Technical Specifications

Type		AC601	AC602	AC603
Output	[kW]	5.5	11 (2x5.5)	15
Voltage, motor/manoeuvre	[V]	400V3~	400V3~	400V3~
Current, motor/manoeuvre	[A]	10.7	21.4	29.5
Airflow	[m³/h]	10 800	13 400	14 700
Noise level*	[dB(A)]	66	83	85
Weight**	[kg]	274	353	412
Total height**	[mm]	3 670	4 230	4 790
Protection class		IP 24	IP 24	IP 24

Type		AC601X	AC602X
Output	[kW]	7.5	15 (2x7.5)
Voltage, motor/manoeuvre	[V]	400V3~	400V3~
Current, motor/manoeuvre	[A]	15	30
Airflow	[m³/h]	15 500	18 000
Noise level*	[dB(A)]	74	86
Weight**	[kg]	274	364
Total height**	[mm]	3 360	3 980
Protection class		IP 24	IP 24

*) Measured 10 meters from the door with a room volume of 15000 m³.

**) Tower only. Extension piece not included.

Components List

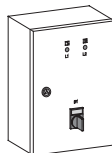
Component	AC601	AC602	AC603	AC601X	AC602X
Inlet hood	IH500	IH500	IH500	IH560	IH560
Extension piece	Not Included	Not Included	Not Included	Not Included	Not Included
Silencer 1	LD500L	LD500L	LD500L	LD560	LD560
Fan/Motor 1	AF50055/M55	AF50055/M55	AF50040/M40	AF56075/M75	AF56075/M75
Fan/Motor 2	-	AF50056/M55	AF50055/M55	-	AF56076/M75
Fan/Motor 3	-	-	AF50056/M55	-	-
Silencer 2	LD500S	LD500S	LD500S	LD560	LD560

Components are listed from top to bottom of tower.

Accessories

ACR, control box

On/off control box with lights indicating fan function individually. There is a time delay function during the start-up sequence. Features connection for AGB304, position limit switch.



Type	HxWxD (mm)
ACR601	300x200x150
ACR602	300x200x150
ACR603	300x300x150
ACR601X	300x200x150
ACR602X	300x200x150



AGB304, position limit switch

Starts the air curtain when the door opens. When the door closes, it shuts the air curtain off.

Thermozone AC600

Manufacturer

Our products are manufactured in accordance with applicable international standards and regulations.



Frico AB
Box 102
S-433 22 Partille

under own responsibility hereby declare that the following product(s)

Air-curtain

Type: AC601, AC601X, AC602, AC602X and AC603

which is(are) covered by this declaration of conformity comply with the

EC Electromagnetic Compatibility (EMC) Directive 89/336 /EEC & 92/31 EEC

EC Machinery Directive 89/392/EEC, 91/368/EEC and 93/68/EEC

and is(are) manufactured in accordance with the following stated harmonised standard(s) or other normative document(s).

EMC: EN 50 082-1: 1992
EN 60 555-2/3: 1991

EMD: EN 292-1: 1991
EN 292-2: 1991
EN 294: 1992
EN 60204-1: 1992

Partille, 15 january 1996

Mats Careborg
Technical Manager

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