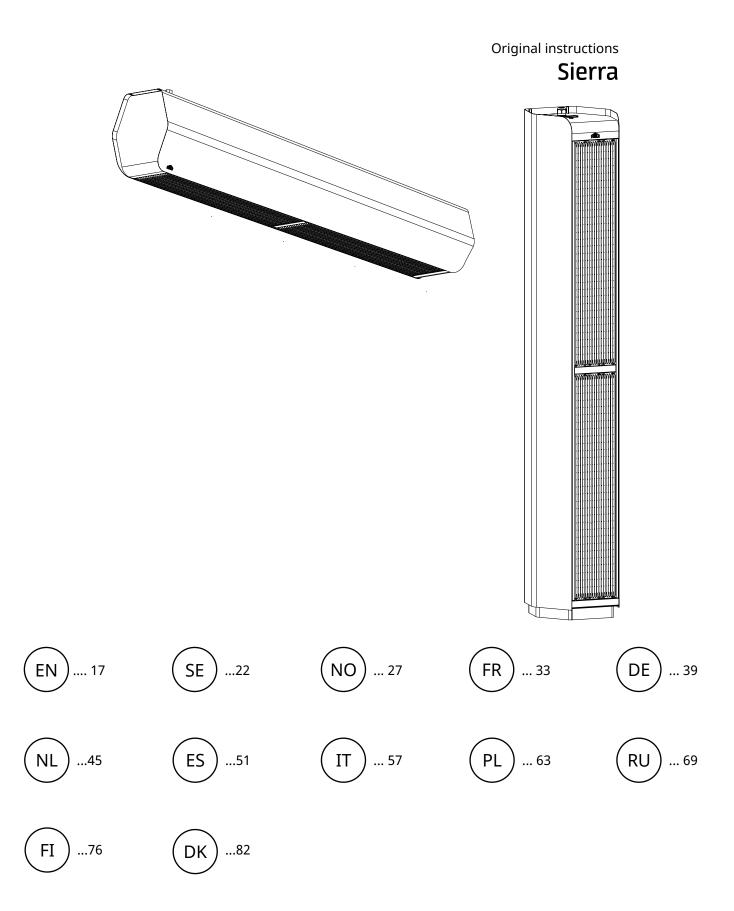
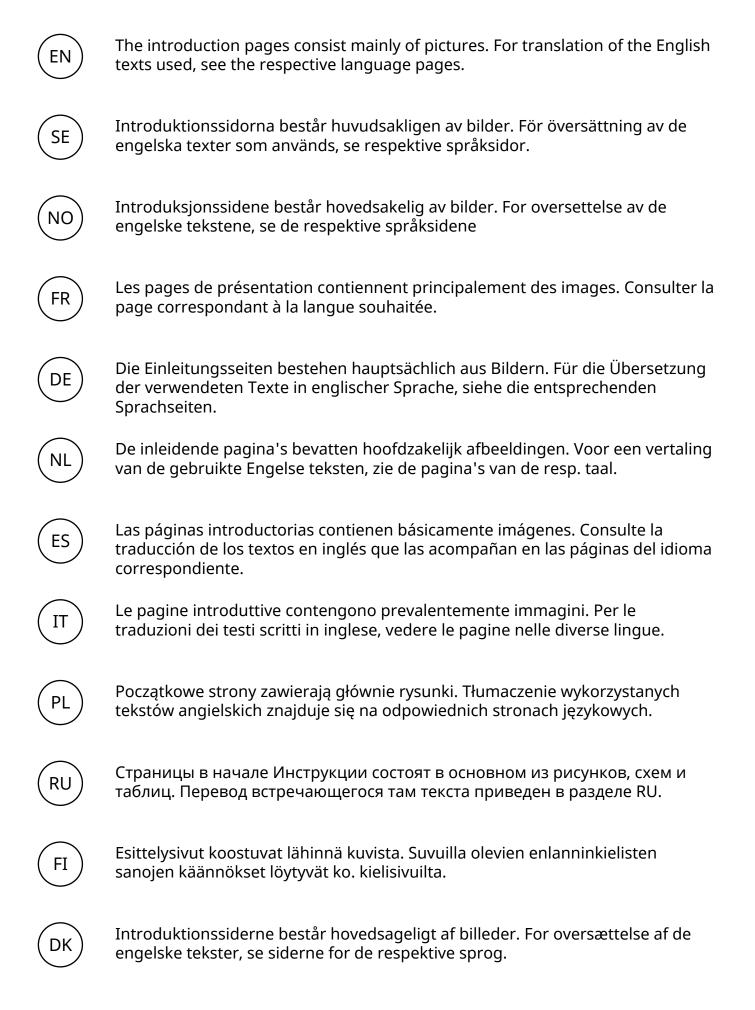
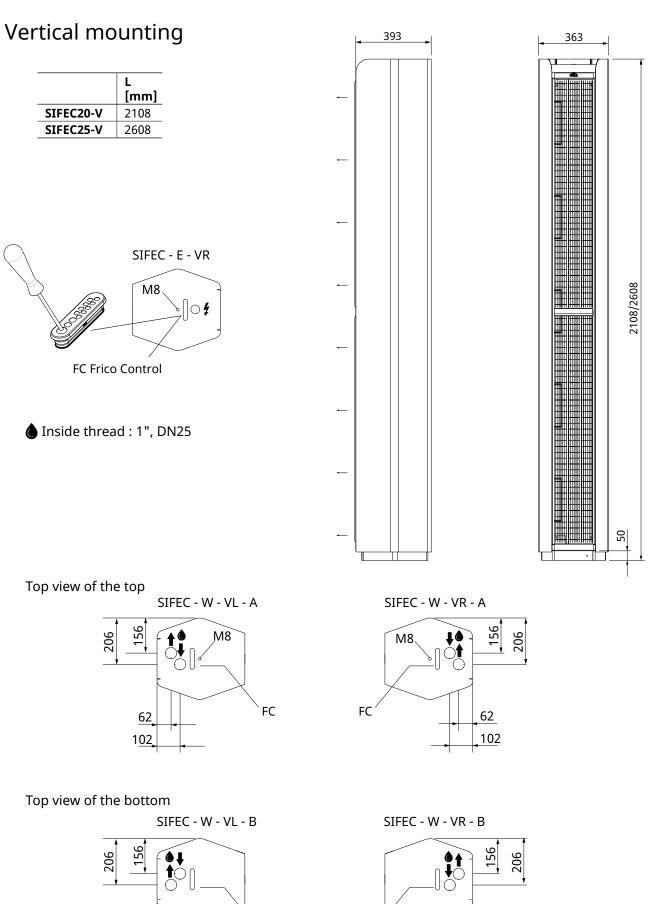
FRICD







FC

FC

62

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Sierra

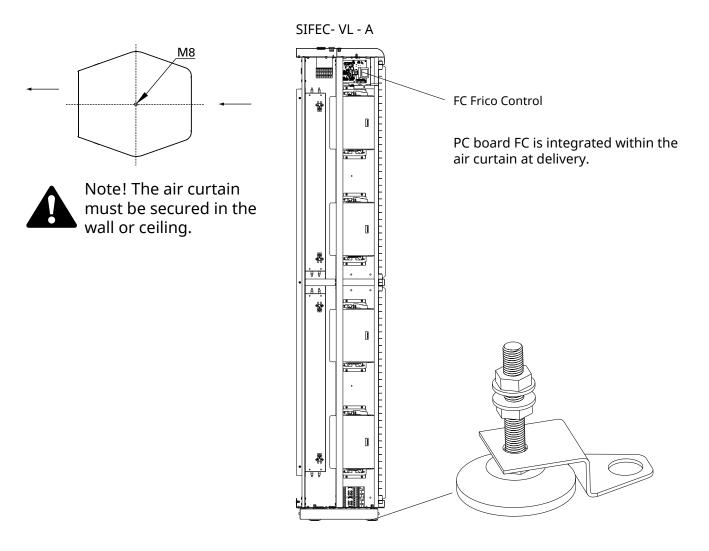
See Product key.

62

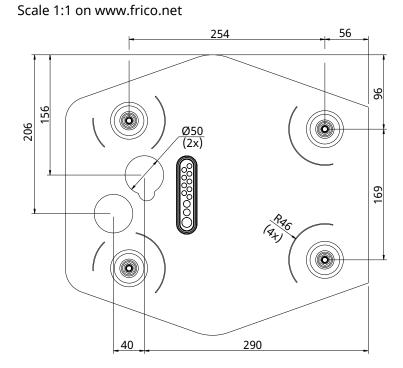
102

Sierra

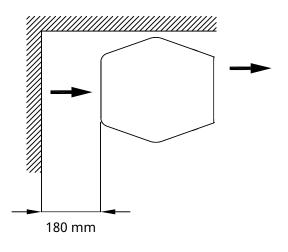
Vertical mounting



Drilling template

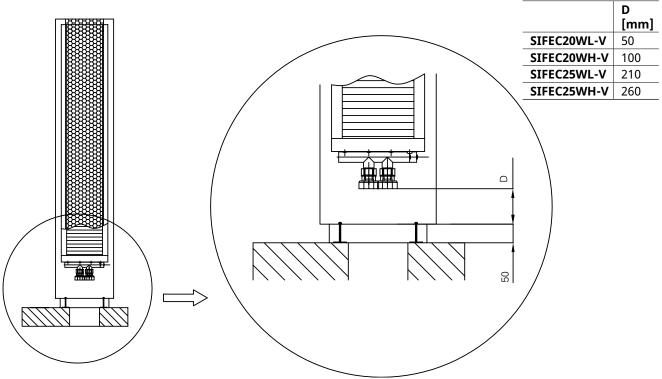


Minimum distance

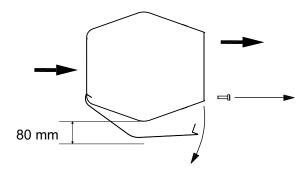


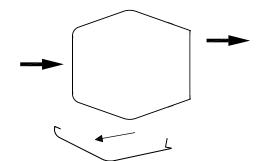
Vertical mounting

Distance water connections - end

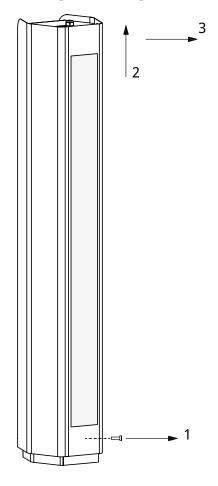


Removing the front





Removing the inlet grill

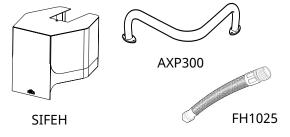


Vertical mounting

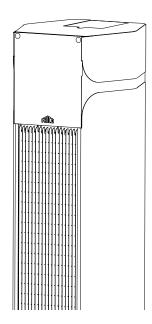
Accessories

Item number	Туре	Used for	Consists of
10234	SIFEH*	SIFEC-V	1
10028	AXP300	SIFEC-V	1
330955	FH1025	SIFECW-V	2

*See separate manual.

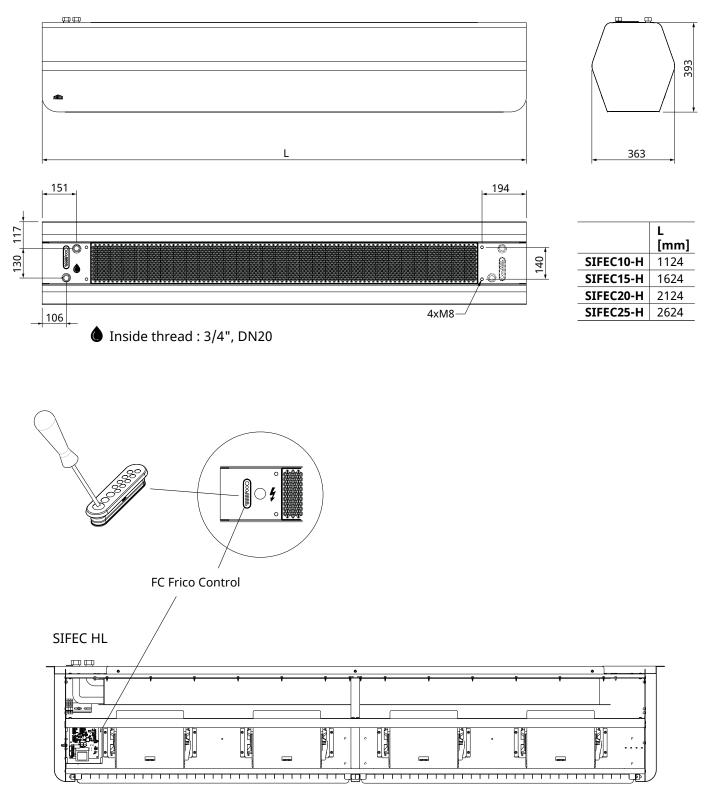


Extension hood SIFEH



Sierra

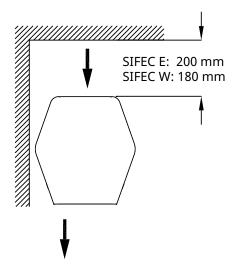
Horizontal mounting



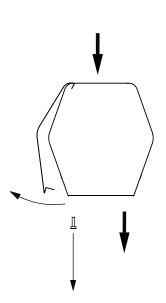
PC board FC is integrated within the air curtain at delivery.

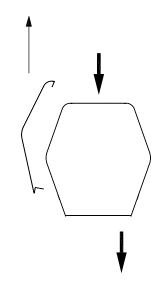
Horizontal mounting

Minimum distance

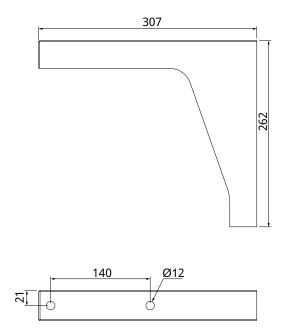


Removing the front

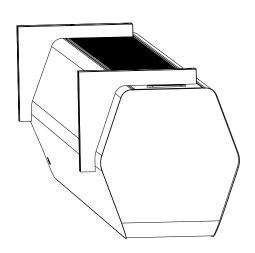




Wall bracket SIFWB







Horizontal mounting

Accessories

Item number	Туре	Used for	Consists of
251886	SIFWBB	SIFEC-H	1
251887	SIFWBP	SIFEC-H	1
251888	SIFWBMP	SIFEC-H	1
251889	SIFWB	SIFEC-H	1
18059	PA34CB15*	SIFEC10/15-H	4
18060	PA34CB20*	SIFEC20-H	6
18061	PA34CB30*	SIFEC25-H	8
18062	PA34WS15*	SIFEC10/15-H	4
18063	PA34WS20*	SIFEC20-H	6
18064	PA34WS30*	SIFEC25-H	8
18056	PA34TR15*	SIFEC10/15-H	4
18057	PA34TR20*	SIFEC20-H	6
18058	PA34TR30*	SIFEC25-H	8
18065	PA34VD15*	SIFEC10/15-H	4
18066	PA34VD20*	SIFEC20-H	6
18067	PA34VD30*	SIFEC25-H	8
237568	FH1020	SIFECW-H	2





PA34WS

PA34TR



SIFW

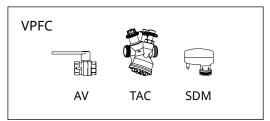


FH1020

See separate manual.

Valve systems

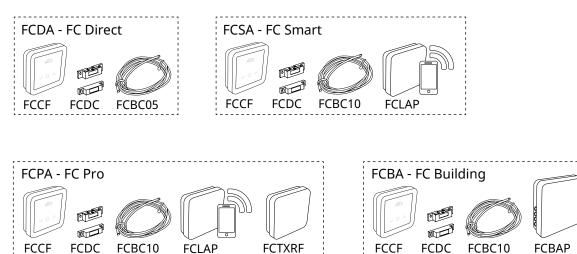
Item number	Туре	DN	Flow range [l/s]
238293	VPFC15LF	DN15	0,012-0,068
238294	VPFC15NF	DN15	0,024-0,13
238295	VPFC20	DN20	0,058-0,32
238296	VPFC25	DN25	0,10-0,60
238297	VPFC32	DN32	0,22-1,03



See separate manual.

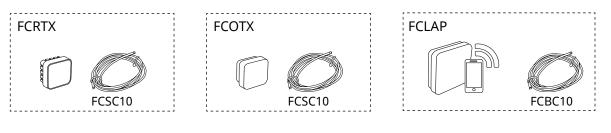
Control systems

The air curtain must be supplemented with a control system.



Item number	Туре	Name	Dimensions
74684	FCDA	FC Direct	89x89x26 mm (FCCF)
74685	FCSA	FC Smart	89x89x26 mm (FCCF)
74686	FCPA	FC Pro	89x89x26 mm (FCCF)
74687	FCBA	FC Building	89x89x26 mm (FCCF)

Accessories

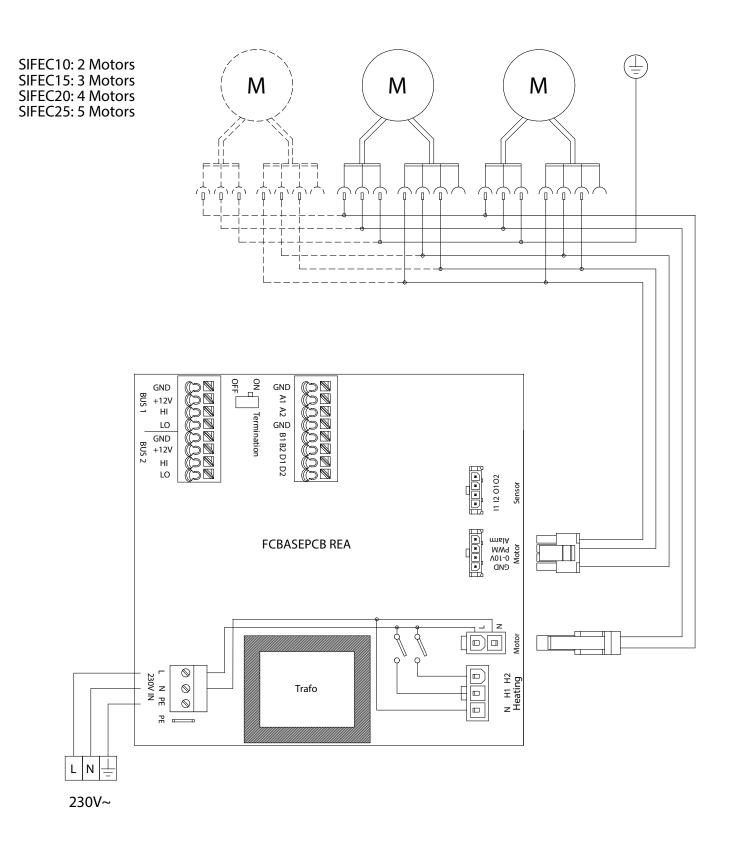


Item number	Туре		Dimensions		
74694	FCRTX		39x39x23 mm		
74695	FCOTX		39x39x23 mm		-
74699	FCLAP		89x89x26 mm	FCWTA	FCDC
74702	FCWTA	SIFEC W			~
17495	FCDC				
74718	FCBC05		5 m		
74719	FCBC10		10 m		
74720	FCBC25		25 m	FCBC05/10/25	FCTXRF
74721	FCSC10		10 m	FCSC10/25	I CI/M
74722	FCSC25		25 m		
74703	FCTXRF	for FC Smart, FC Pro	89x89x26 mm		

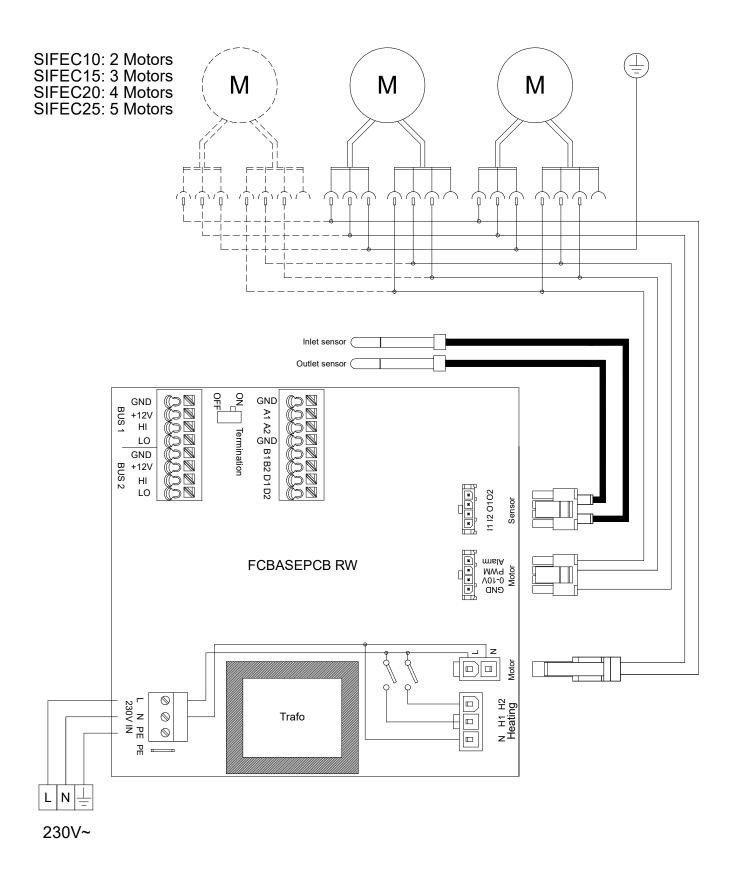
See separate manual for FC.

Sierra

SIFEC A

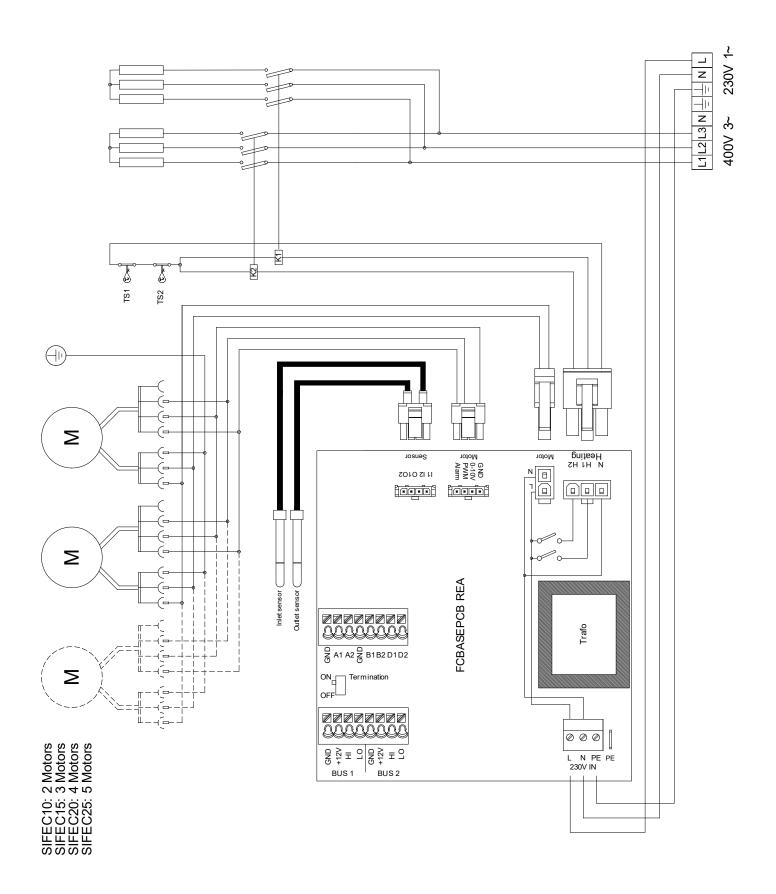


SIFEC W

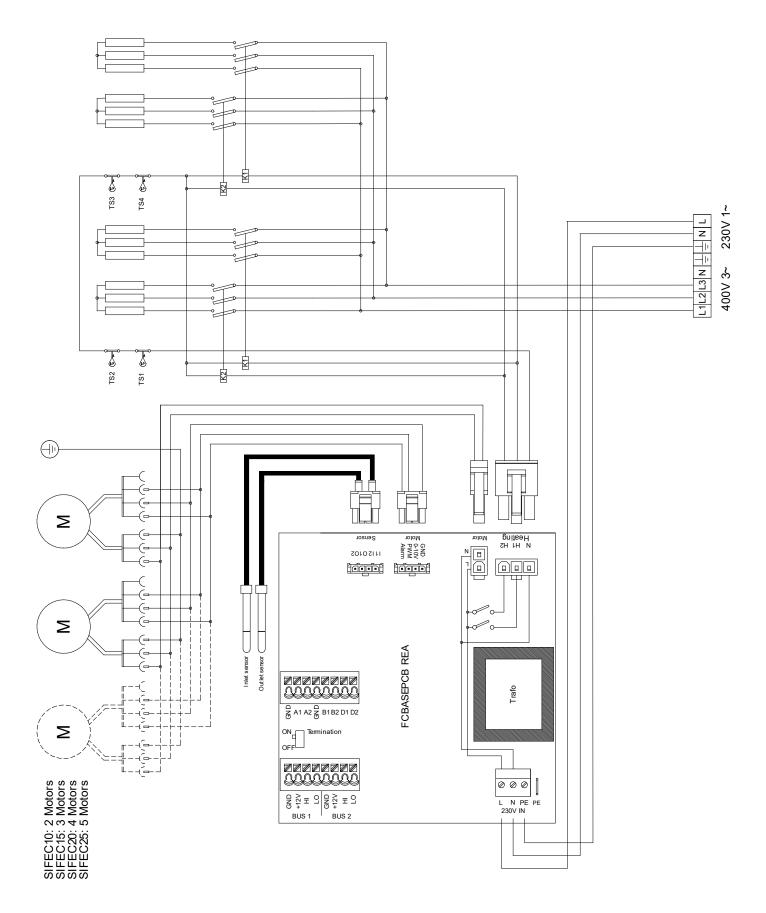


Sierra

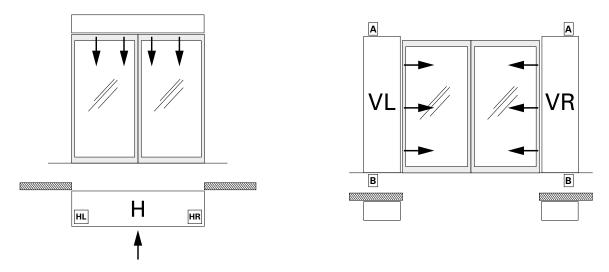
SIFEC10E / 15E



SIFEC20E / 25E



Product key



Type - Unit shape - Connections position - Material / Colour Example: SIFEC20WL - VL - A - P

Туре	See Technical specifications.				
Unit shape	HL (Horizontal, connections on the left) HR (Horizontal, connections on the right) VL (Vertical left) or VR (Vertical right) seen from inside				
Connection position*	A or B, see sketch				
Material / Colour	P = Polished stainless steel B = Brushed stainless steel MP = Mirror polished stainless steel State RAL code = Powder coating RAL State NCS code = Powder coating NCS				

Contact Frico before ordering for more information about the product and special adaptations.

EN Connection position*

- SE Anslutningsposition
- NO Tilkoblingsposisjon
- DE Position der Anschlüsse
- RU Место подключений
- FR Position du raccord
- ES Posición de la conexión
- NL Positie aansluitingen
- PL Położenie złączy
- IT Posizione di collegamento
- DK Tilslutningsposition
- FI Liitäntöjen sijainnit

Technical specifications

s Ambient, no	heat - SIF	Voltage motor: 230V~				
Туре	Output	Airflow*1	Sound power* ²	Sound pressure* ³	Amperage motor	Weight
	[kW]	[m³/h]	[dB(A)]	[dB(A)]	[A]	[kg]
SIFEC10A-H	0	900/1850	77	46/61	2,3	48
SIFEC15A-H	0	1400/2750	79	48/63	3,2	60
SIFEC20A-H/V	0	1850/3600	82	48/66	4,1	71
SIFEC25A-H/V	0	2400/4500	83	49/67	5,1	82

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✓ Electrical heat - SIFEC E (IP20)

Туре	Output steps	Airflow*1	Δt^{*4}	Sound power* ²	Sound pressure* ³	Amperage motor	Voltage [V] Amperage [A]	Weight
	[kW]	[m³/h]	[°C]	[dB(A)]	[dB(A)]	[A]	(heat)	[kg]
SIFEC10E8-H	2,7/5,5/8,1	900/1850	26/13	77	46/61	2,3	400V3~/11,7	48
SIFEC15E12-H	3,9/7,8/12	1400/2750	26/13	79	48/63	3,2	400V3~/16,9	62
SIFEC20E16-H/V	5,4/11/16	1850/3600	26/13	82	48/66	4,1	400V3~/23,4	75
SIFEC25E20-H/V	6,6/13/20	2400/4500	25/13	83	49/67	5,1	400V3~/28,6	89

♦ Water heat - SIFEC WL (IP20)

Туре	Outpu	t*5	Airflow*1	∆ t *4,5		Water	Sound	Sound	Amperage	Weight
	H* ⁷ [kW]	V* [®] [kW]	[m³/h]	H* ⁷ [°C]	V*° [°C]	volume [l]	power*² [dB(A)]	pressure* ³ [dB(A)]	motor [A]	[kg]
SIFEC10WL-H	8,5	-	850/1700	19/15	-	2,0	77	46/61	2,3	67
SIFEC15WL-H	14	-	1250/2600	24/19	-	3,2	79	48/63	3,2	79
SIFEC20WL-H/V	21	21	1650/3300	24/19	24/19	4,3	82	48/66	4,1	90
SIFEC25WL-H/V	28	25	2200/4250	24/20	22/17	5,4	83	49/67	5,1	101

♦ Water heat - SIFEC WH (IP20)

Туре	Outpu	t*6	Airflow*1	∆ t *4,6		Water	Sound	Sound	Amperage	Weight
	H*7	V*8		H*7	V*8	volume	power* ²	pressure* ³	motor	
	[kW]	[kW]	[m³/h]	[°C]	[°C]	[1]	[dB(A)]	[dB(A)]	[A]	[kg]
SIFEC10WH-H	11	-	850/1700	24/18	-	1,1	77	46/61	2,3	63
SIFEC15WH-H	15	-	1250/2600	23/17	-	1,9	79	48/63	3,2	75
SIFEC20WH-H/V	20	28	1650/3300	24/18	32/25	2,5	82	48/66	4,1	86
SIFEC25WH-H/V	26	32	2200/4250	23/18	29/22	3,3	83	49/67	5,1	97

*¹) Low/high airflow (2V/10V).

*²) Sound power (L_{WA}) measurements according to ISO 27327-2: 2014, Installation type E.

*³) Sound pressure (L_{nA}). Conditions: Distance to the unit 5 metres. Directional factor: 2. Equivalent absorption area: 200 m^2 . At low/high airflow (2V/10V).

 *4) Δt = temperature rise of passing air at maximum heat output and low/high airflow (2V/10V).

*5) Applicable at water temperature 60/40 °C, air temperature, in +18 °C.

*6) Applicable at water temperature 80/60 °C, air temperature, in +18 °C.

*⁷) Horizontal mounting

*⁸) Vertical mounting

*^{5,6}) See www.frico.net for additional calculations.

Installation and operating instructions

General Instructions

Read these instructions carefully prior to installation and use. Keep this manual for future reference.

The product may only be used as set out in the assembly and operating instructions. The guarantee is only valid should the product be used in the manner intended and in accordance with the instructions.

Application

Sierra creates an efficient temperature dividing air barrier in door openings. The recommended installation width of Sierra is 5 m with air curtains mounted on both sides of the opening and its recommended installation height is 3,5 m. The air curtain is available without heat, with electrical heating and with water heating. Protection class: IP20.

Operation

Air is drawn in at the top/rear of the unit and blown downwards/outwards shielding the door opening and minimizing heat loss. To achieve the optimum air curtain effect the unit must extend the full height/width of the door opening.

The grille for directing the outlet air is adjustable and is normally angled outwards to achieve the best protection against incoming air.

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

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

Mounting

The air curtain range includes units for vertical and horizontal installation. The product must be mounted in such a way to allow future service and maintenance. Ensure that the front is accessible and can be fully opened. A distance of 80 mm is required to remove the front.

When mounting a product in stainless steel, the protective plastic shall remain on the product. The plastic is removed only when mounting and installation are completed. Be careful to not damage the surfaces.

Vertical mounting

The air curtain is mounted vertically as close as possible to the door. For the best effect air curtains should be placed on both sides of the opening.

The air curtain is installed on adjustable feet which makes it possible to compensate for any surface undulations. The feet are attached to the floor with fasteners appropriate to the surface and covered by a frame. Fasteners are not included. A drilling template for the floor is included in delivery and also available at www.frico.net.

Note! The air curtain must be secured in the wall or ceiling. The M8 press nut on the top of the unit is used for this, see figure.

The extension hood (accessory) fills the space between the unit and the ceiling and provides a neater installation.

See the introduction pages.

Horizontal mounting

The air curtain is installed horizontally with the outlet air grille facing downwards as close to the door as possible. Minimum distance from outlet to floor for electrically heated units is 1800 mm. For other minimum distances, see fig.

Mounting with wall brackets

Wall brackets SIFW are available as accessories. Two brackets are required for each unit.

Horizontal mounting on the ceiling Threaded rods, wire suspension kits and ceiling brackets for ceiling mounting are available as accessories.

Opening the vertical unit

To proceed with electrical and water connections, the front must be removed. See the introduction pages. For a better accessibility, the inlet grille and the cover panel behind it can also by removed as well as the back of the unit.

• Disconnect the power supply.

Removing the front

- Remove the 4 screws accessibles through the outlet grill.
- Open the front and pull it sideways/outwards to remove it.

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Removing the inlet grille

- Remove the screw at the lower end of the grille.
- Pull the grille upwards to unhatch it and then outwards to remove it.

Removing the cover panel behind the inlet grill

- Remove the 2 screws of the panel.
- Remove the panel carefully, not to damage the sensor attached to it.

Opening the horizontal unit

To proceed with electrical connections, the front must be removed. See the introduction pages.

Disconnect the power supply.

Removing the front

- Remove the screws accessible through the outlet grill (SIFEC10/15: 2 screws, SIFEC20/25: 4 screws).
- Open the front and pull it outwards/upwards to remove it.

Removing the inlet grille

• Pull the grille upwards to remove it.

Electrical installation

The installation, which should be preceded by an isolator switch with a contact separation of at least 3 mm, should only be wired by a competent electrician and in accordance with the latest edition of IEE wiring regulations.

The air curtain has an integrated PC board which is connected to the selected external control system FC. FC must be ordered separately. FC is supplied pre-programmed. Communication- and sensor cables are connected to the PC board.

Should more than one air curtain be controlled by a single FC, an additional communication cable FCBC per unit will be required. See manual for FC.

Vertical mounting

Control is supplied by 230V~ to the terminal block. The PC board is accessed via cable glands on the top or bottom of the unit. Pierce the gland with a screwdriver before entering the cable. If necessary, the cables can be routed through the unit. Bundle the cables inside the unit to prevent that they will be drawn into the fans or get in contact with the heating elements. For units with electrical heating, the power supply for heating (400V3~) is connected to the terminal block. Power and control must be supplied separately. The electrical connection is made on the top or bottom of the unit depending on selection. See product key.

Connections made from below the unit must be prepared in the floor according to the drawing. A drilling template for the floor is included in delivery and also available at www.frico.net.

Horizontal mounting

The electrical connection is made on the top of the unit. Pierce the gland with a screwdriver before entering the cable. Control is supplied by 230V~ to the terminal block.

For units with electrical heating, the power supply for heating (400V3~) is connected to the terminal block. Power and control must be supplied separately.

The largest cable diameter for the terminal block is 16 mm². The cable glands used must meet the protection class requirements. In the distribution board, it is to be indicated that "the air curtains can be supplied from more than one connection".

Туре	Output	Voltage	Minimum area*
	[kW]	[V]	[mm ²]
Control	0	230V~	1,5
SIFEC10E8	8	400V3~	2,5
SIFEC15E12	12	400V3~	4
SIFEC20E16	16	400V3~	6
SIFEC25E20	20	400V3~	10

*) Dimensioning of external wiring shall comply with applicable regulations and local deviations may occur.

Start-up (E)

When the unit is used for the first time or after a long period of non-use, smoke or an odour may result from dust or dirt which has collected on the element. This is completely normal and disappears after a short time.

Connecting the water coil (W)

The installation must be carried out by an authorised installer.

The water coil has copper tubes with aluminium fins and is suitable for connection to a closed water heating system. The heating coil must not be connected to a mains pressure water system or an open water system.

Note that the unit shall be preceded by a regulating valve, see Frico valve kit.

Valves must be installed outside the unit. Note that the actuator needs power supply and control signal from the integrated PC board.

NOTE: Care must be taken when connecting the pipes. Use a pipe wrench or a similar

tool to grip the air curtain connections to prevent straining of the pipes and subsequent water leakage during connection to the water supply pipe-work.

The connections to the heating coil must be equipped with shut off valves to allow troublefree removal.

A vent valve should be connected at a high point in the pipe system. Flexible hoses are available as accessories.

Vertical mounting

The water coil is connected on the top or the bottom of the unit via connections DN25 (1''), internal thread. See product key.

Connections made from below the unit must be prepared in the floor according to the drawing. A drilling template for the floor is included in delivery and also available at www.frico.net. Note the distance between the water connections and the end of the unit. See the introduction pages.

Horizontal mounting

The water coil is connected on the top of the unit via connections DN20(3/4''), internal thread.

Adjustment of the air curtain and airflow

The direction and speed of the airflow should be adjusted considering the load on the opening. Pressure forces affect the airstream and force it inwards towards the premises (when the premises are heated and the outdoor air is cold).

The airstream should, therefore, be directed outwards to withstand the load. Generally speaking, the higher the load, the greater the angle required.

Basic setting fan speed

The fan speed when the door is open is set using the control. Note that the airflow direction and the fan speed may need fine adjustment depending on the loading of the door.

Filter (W)

The water coil is protected against dirt and blockage by an internal air filter which covers the coil face.

Service, repairs and maintenance

For all service, repair and maintenance first carry out the following:

- 1. Disconnect the power supply.
- 2. See previous section on how to remove front, inlet grill and cover panel behind it.
- 3. After service, repairs and maintenance fasten the parts that have been removed.

Maintenance

Unit with water heating

The appliance filter should be cleaned regularly to ensure the air curtain effect and heat emission from the device. How often depends on local circumstances. A clogged filter is not a risk, but the appliance function can fail.

- 1. Disconnect the power supply.
- 2. Remove the inlet grill to acces the filter.
- 3. Remove the filter and vacuum clean or wash it. If the filter is clogged or damaged, it may need to be changed.

All units

Since fan motors and other components are maintenance-free, no maintenance other than cleaning is necessary. The level of cleaning can vary depending on local conditions. Undertake cleaning at least twice a year. Inlet and exhaust grilles, impeller and elements can be vacuum cleaned or wiped using a damp cloth. Use a brush when vacuuming to prevent damaging sensitive parts. Avoid the use of strong alkaline or acidic cleaning agents.

Temperature control

Temperature control of FC maintains the exhaust temperature. Should the temperature exceed the preset value, the overheating alarm will activate. For more information see the FC manual.

EN

Overheating

The air curtain unit with electrical heating is equipped with an overheat protection. If it is deployed due to overheating, reset as follows:

- 1. Disconnect the power supply with the isolator switch.
- 2. Allow the electrical coil to cool.
- 3. Determine the cause of overheating and rectify the fault.
- 4. Reconnect the unit.

Replacing heating elements/heating package (E)

- 1. Mark and disconnect the cables to the heating elements/package.
- 2. Remove the mounting screws securing the heating elements/package in the unit and lift the heating elements/package out.
- 3. Install the new heating elements/package in reverse order to the above.

Replacing the water coil (W)

- 1. Shut off the water supply to the unit.
- 2. Disconnect the connections to the water coil.
- 3. Remove the mounting screws securing the coil in the unit and lift out.
- 4. Install the new coil in reverse order to the above.

Safety cut-out

All motors are equipped with an integrated safety cut-out. This will operate, stopping the air curtain should the motor temperature rise excessively or the electronics fail or overheat. The cut-out will automatically reset when the motor temperature has returned to within the motor's operating limits. Failure or damage to electronics components may require repair or replacement of such components or the entire product.

Fan replacement

To access the fans, the L-shaped profile must be removed by loosening its screws.

- 1. Determine which of the fans is not functioning.
- 2. Disconnect the cables from the relevant fan.
- 3. Remove the screws securing the fan and lift the fan out.
- 4. Install the new fan as above in reverse order.

Replacing the PC board

- 1. The PC board is located in the terminal box.
- 2. Mark and disconnect the cables to the PC board.
- 3. Unhatch the board from its PCB snap-in spacers and lift out.
- 4. Install the new PC board as above in reverse order.

Troubleshooting

If the fans are not running or do not perform properly, check the following:

- The power supply.
- That the intake grille/filter is not dirty.
- That the motor's safety cut-out has not been deployed.
- Functions and settings of the FC control system, see the FC manual.

If there is no heat, check the following:

• Functions and settings of the FC control system, see the FC manual.

For units with electrical heating, also check the following:

- Power supply to electric heater coil; check fuses and circuit-breaker (if any).
- That the overheat protection has not been deployed.

For units with a water coil, also check the following:

- That the water coil is air free.
- That there is sufficient water flow and pressure.
- That incoming water is heated adequately.

If the fault cannot be rectified, please contact a qualified service technician.

Residual current circuit breaker (E)

When the installation is protected by means of a residual current circuit breaker, which trips when the appliance is connected, this may be due to moisture in the heating element. When an appliance containing a heater element has not been used for a long period or stored in a damp environment, moisture can enter the element. This should not be seen as a fault, but is simply rectified by connecting the appliance to the main supply via a socket without a safety cut-out so that the moisture can be eliminated from the element. The drying time can vary from a few hours to a few days. As a preventive measure, the unit should occasionally be run for a short time when it is not being used for extended periods of time.

Packaging

Packaging materials are chosen with consideration to the environment and are therefore recyclable.

Handling of product at end of working life

This product may contain substances necessary for the functionality of the product but potentially dangerous for the environment. The product should not be disposed of mixed with general household waste but delivered to a designated collection point for environmental recycling. Please contact the local authority for further details of your nearest designated collection point.

Safety

- For all installations of electrically heated products a residual current circuit breaker 300 mA for fire protection should be used.
- Keep the areas around the air intake and exhaust grilles free from possible obstructions!
- The unit must not be fully or partially covered as overheating can result in a fire risk!
- Lifting equipment must be used to lift the unit.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.
- Children of less than 3 years should be kept away unless continuously supervised.
- Children aged from 3 years and less than 8 years shall only switch on/off the appliance provided that it has been placed or installed in its intended normal operating position and they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.
- Children aged from 3 years and less than 8 years shall not plug in, regulate and clean the appliance or perform user maintenance.

CAUTION — Some parts of this product can become very hot and cause burns. Particular attention has to be given where children and vulnerable people are present.

Main office

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