



## Unique energy-efficient air curtain for exclusive establishments

Sierra with a recommended installation height of 3,5 m or width of 5 m, has a striking design suitable for exclusive establishments. Sierra is equipped with energy-efficient EC motors which enable stepless control of the airflow. Customized to perfectly fit your entrance and make it unique, Sierra can be ordered with a finish in polished, brushed or mirror polished stainless steel or in the colour of your choice. The air curtain is available for horizontal or vertical installation.

### Energy efficient and sustainable

The air curtain is equipped with EC motors that are up to 50% more energy efficient than traditional AC motors, and have a lower weight which makes for easier installations and greener transports.

### Intelligent control options

Sierra is supplemented with an intelligent control system that allows you to optimize your comfort with minimum effort. Smart and automatic features enable simple set-up and operation for different Frico products groups.




### High performance

Frico air curtains are developed and manufactured in Sweden. The air curtains are tested in one of the most modern and advanced air and sound laboratories in Europe which means that we can guarantee a high performance product.

#### Sierra

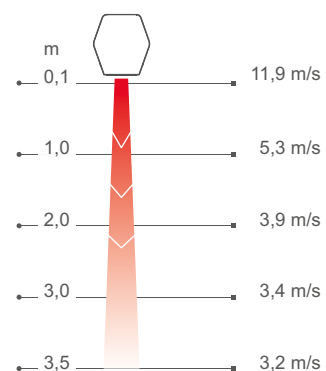


#### Available in 3 versions:

-  Ambient (without heat)
-  Electrical heating
-  Water heating

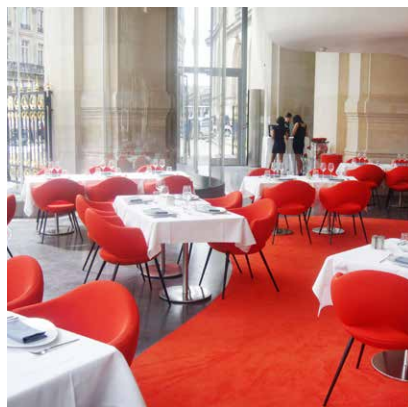


#### Air velocity profile



Measurements according to ISO 27327-1. Average values for products in the series.

Frico air curtains create an invisible barrier at openings and doors which separates different temperature zones without limiting access for people and vehicles. Thermozone technology creates a highly uniform air barrier with a perfect balance between air volume and air velocity, regardless of whether it is the heat or the cold that you want to keep inside.



## Great energy savings

In many premises doors remain open for a significant part of the day, this results in huge losses of expensively heated or cooled air, especially when the temperature difference between outdoor and indoor air is great. With correctly installed air curtains great energy savings can be obtained.

## Comfortable indoor climate

Air curtains with Thermozone technology have optimized performance to provide a comfortable indoor climate free from drafts. The air curtain also keeps out emissions and insects.

## Low sound level

With Thermozone technology Frico manufactures air curtains with very high airflow performance. This does not just make the air curtain more effective, but also has other advantages such as extremely low sound levels and reduced turbulence.

## Create the optimal solution to suit your specific needs

After you selected the air curtain to suit your specific needs (ambient, electrical heating, water heating) and length 1, 1,5, 2, or 2,5 m you assemble your control and accessory options:

### Select control system

Choose one of our FC Control systems.

### Add valve system

Water heated units must be supplemented with a valve system.

### Select mounting options

Add mounting accessories if needed.



☼ Ambient, no heat - SIFEC A (IP20)

Voltage motor: 230V~

| Type         | Output<br>[kW] | Airflow* <sup>1</sup><br>[m³/h] | Sound<br>power* <sup>2</sup><br>[dB(A)] | Sound<br>pressure* <sup>3</sup><br>[dB(A)] | Amperage<br>motor<br>[A] | Weight<br>[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             |

⚡ Electrical heat - SIFEC E (IP20)

| Type           | Output<br>steps<br>[kW] | Airflow* <sup>1</sup><br>[m³/h] | Δt* <sup>4</sup><br>[°C] | Sound<br>power* <sup>2</sup><br>[dB(A)] | Sound<br>pressure* <sup>3</sup><br>[dB(A)] | Amperage<br>motor<br>[A] | Voltage [V]<br>Amperage [A]<br>(heat) | Weight<br>[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, coil for low water temperature (≤80 °C) (IP20)

| Type          | Output* <sup>5</sup><br>H* <sup>7</sup><br>[kW] | V* <sup>8</sup><br>[kW] | Airflow* <sup>1</sup><br>[m³/h] | Δt* <sup>4,5</sup><br>H* <sup>7</sup><br>[°C] | V* <sup>8</sup><br>[°C] | Water<br>volume<br>[l] | Sound<br>power* <sup>2</sup><br>[dB(A)] | Sound<br>pressure* <sup>3</sup><br>[dB(A)] | Amperage<br>motor<br>[A] | Weight<br>[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, coil for high temperature water (≥80 °C) (IP20)

| Type          | Output* <sup>6</sup><br>H* <sup>7</sup><br>[kW] | V* <sup>8</sup><br>[kW] | Airflow* <sup>1</sup><br>[m³/h] | Δt* <sup>4,6</sup><br>H* <sup>7</sup><br>[°C] | V* <sup>8</sup><br>[°C] | Water<br>volume<br>[l] | Sound<br>power* <sup>2</sup><br>[dB(A)] | Sound<br>pressure* <sup>3</sup><br>[dB(A)] | Amperage<br>motor<br>[A] | Weight<br>[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             |

\*<sup>1</sup>) Low/high airflow (2V/10V).

\*<sup>2</sup>) Sound power ( $L_{WA}$ ) measurements according to ISO 27327-2: 2014, Installation type E.

\*<sup>3</sup>) Sound pressure ( $L_{pA}$ ). Conditions: Distance to the unit 5 metres. Directional factor: 2. Equivalent absorption area: 200 m². At low/high airflow (2V/10V).

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

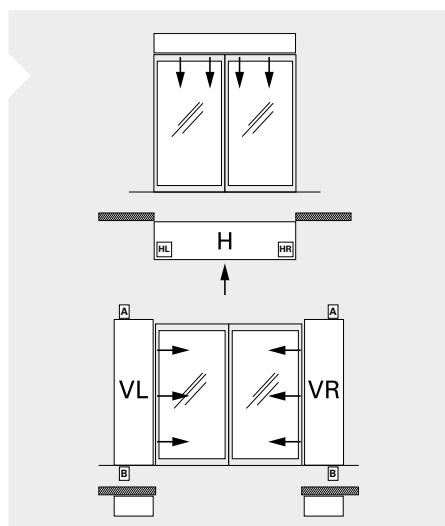
\*<sup>5</sup>) Applicable at water temperature 60/40 °C, air temperature, in +18 °C.

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

\*<sup>7</sup>) Horizontal mounting

\*<sup>8</sup>) Vertical mounting

\*<sup>5,6</sup>) See [www.frico.net](http://www.frico.net) for additional calculations.



### Product key

Type - Unit shape - Connections position - Material / Colour

Example: SIFEC20WL - VL - A - P

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

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

Manufactured in Sweden with a corrosion proof housing made of hot zinc-plate and powder coated steel panels. Front and back are made of polished or brushed stainless steel but also available in mirror-polished stainless steel or in powder coated steel, any RAL/NCS colour. Colour intake grille, outlet grille and ends: black, RAL 9005.



### Horizontal mounting

The recommended installation height of Sierra is 3,5 m. The air curtain can be installed on a wall or suspended from a ceiling. When the air curtain is mounted horizontally the outlet air grille must be facing downwards as close to the door as possible.

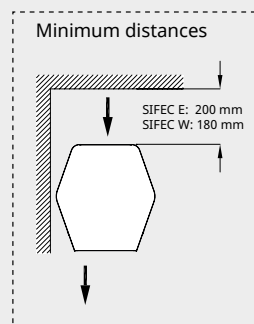
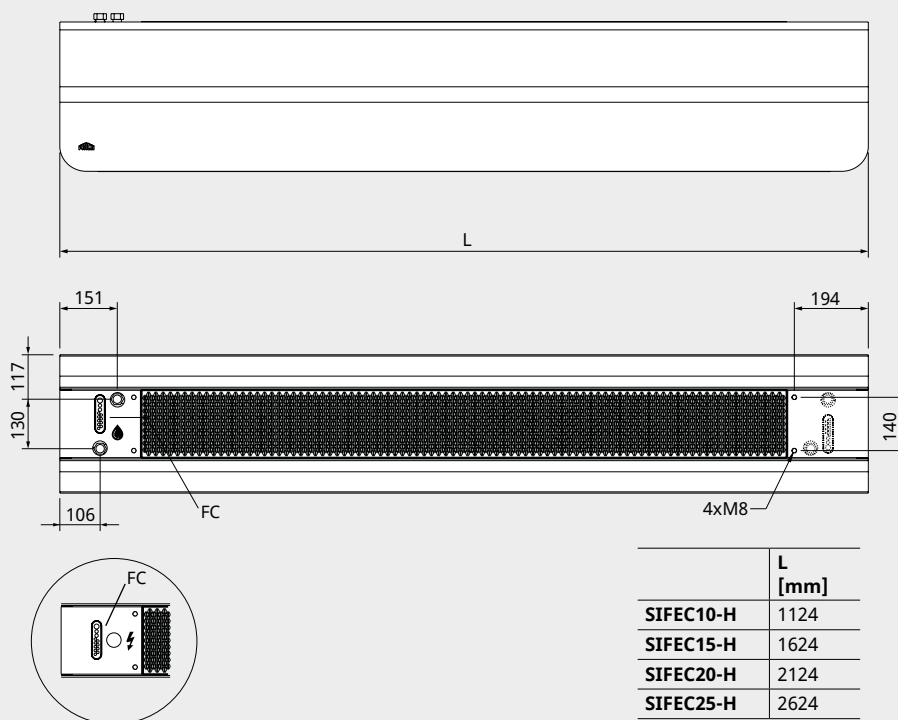
### Connection

An easy to open front and inlet grille allow quick access to facilitate both installation and maintenance.

The air curtain has an integrated PC board which is connected to the selected external control system FC. Control is supplied by 230V~ to the terminal block. The PC board is accessed via cable glands on the top of the unit. Communication- and sensor cables are connected to the PC board. The electrical connection is made on the top of the unit.

Water heated units are connected to the water system on top of the unit. Flexible hoses are available as accessories. Water heated units must always be supplemented with a valve kit mounted outside the unit. See Valves and Accessories.

Inside thread : 3/4", DN20



Minimum distance from outlet to floor for electrically heated units is 1800 mm.

For wiring diagrams and other technical information, please see the manual and [www.frico.net](http://www.frico.net).





### Vertical mounting

The recommended installation width of Sierra is 5 m with air curtains on both sides of the opening.

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

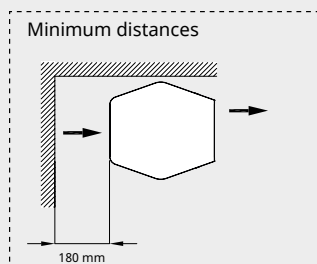
### Connection

An easy to open front and inlet grille allow quick access to facilitate both installation and maintenance.

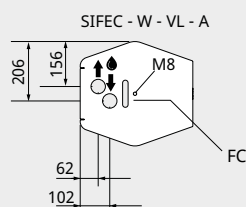
The air curtain has an integrated PC board which is connected to the selected external control system FC. Control is supplied by 230V~ to the terminal block. The PC board is accessed via cable glands on the top or bottom of the unit. Communication- and sensor cables are connected to the PC board.

The electrical connection is made on the top or bottom of the unit depending on selection.

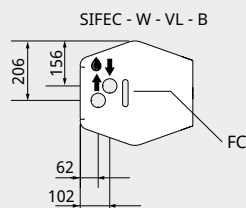
Water heated units are connected to the water system on top or bottom of the unit depending on selection. See product key. Flexible hoses are available as accessories. Water heated units must always be supplemented with a valve kit mounted outside the unit. See Valves and Accessories. Connections made from below the unit must be prepared in the floor according to the drawing.



Upper part of the unit seen from above.

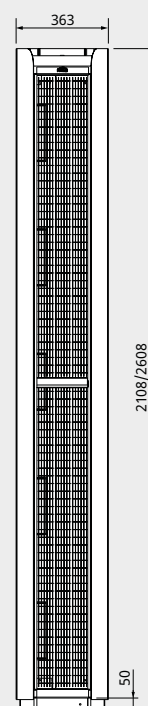
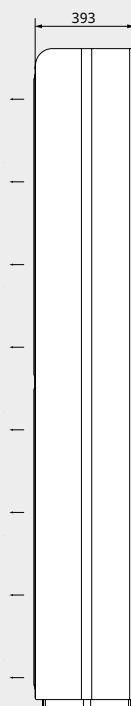
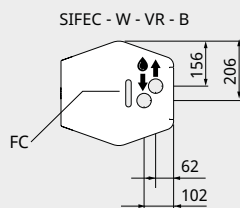
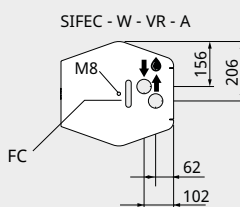
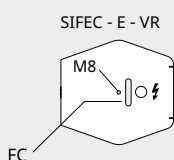


Bottom part of the unit seen from above.



Inside thread : 1", DN25

For wiring diagrams and other technical information, please see the manual and [www.frico.net](http://www.frico.net).



|                  | L<br>[mm] |
|------------------|-----------|
| <b>SIFEC20-V</b> | 2108      |
| <b>SIFEC25-V</b> | 2608      |

Frico air curtains come with an integrated PC-board and are supplemented with the intelligent control system FC of your choice, working together to create many smart and energy saving features. There are four different packages to choose from, depending on your requirements.

### FC Direct

#### Entry level

- Door contact
- Calendar function
- Filter timer
- Built-in temperature sensor

### FC Smart

#### FC Direct +

- Control via app (Bluetooth)
- Wireless sensors possible
- Adjustable calendar function
- Away and Boost function
- Adjustable filter timer
- Vestibule function
- Zone possibility
- Enhanced water control possible

### FC Pro

#### FC Direct + FC Smart +

- Automatic air flow control
- Automatic heat blocking

### FC Building - BMS

#### FC Direct +

- 0-10V, potential free contact or Modbus
  - Automatic air flow control\*
  - Automatic heat blocking\*
  - Heat and fan settings
  - Alarm indication
  - Read values
  - Enhanced water control possible
- \* Requires outdoor temp signal



### FC Direct

Entry level control system for a great start. The door contact provides an automatic energy-saving function, as the air curtain becomes active only when the door is open. When the door is closed, it remains on stand-by or runs on a lower fan speed if extra heat is needed. With the calendar function, you can choose periods of comfort and reduced mode. The control panel has a built-in temperature sensor, which is used for control when external sensors are not used.



### FC Smart

Second level control system for full freedom. FC Smart comes with all features from FC Direct plus additional energy saving features and the possibility of app control (Bluetooth). The app gives you access to all functions in the system, allowing you to set it up exactly the way you want it. It also enables you to create different zones with different settings in a larger system. The app FRICO CONTROL is available for both iOS and Android.



### FC Pro

Third level control system for maximum savings. FC Pro comes with all features from FC Direct and FC Smart plus additional automatic energy saving features. By receiving and reacting to information about indoor and outdoor temperatures, the right amount of heat and air flow is added to avoid overshoots and thus reducing energy consumption.



### FC Building - BMS system

Comprehensive control system for buildings, with the option to control via 0-10V, potential free contact (e.g. a relay) and/or Modbus RTU (RS485). FC Building enables you to receive product information status and alarms. Modbus allows for full use of all the energy saving features within the control system.

| Item number | Type | Description                           |
|-------------|------|---------------------------------------|
| 74684       | FCDA | FC Direct, first level control system |
| 74685       | FCSA | FC Smart, second level control system |
| 74686       | FCPA | FC Pro, third level control system    |
| 74687       | FCBA | FC Building, BMS system               |

FC Control system helps to create many smart and energy saving features. In addition to our four packages, components can be added to expand and customize the system. With the app levels (FC Smart and FC Pro) it is also possible to create and control different zones. Each added zone needs to be equipped with one FC Direct and can be designed to fit its specific needs by adding different accessories.



#### FC Direct, control kit

Control panel for fan and heat, door contact and 5 m communication cable. Used for additional zones with FC Smart and FC Pro. IP44.



#### FCRTX, external room temperature sensor

For reading of the room temperature on another location than that of the control panel, incl. 10 m sensor cable. IP20.



#### FCOTX, outdoor temperature sensor

Reading the outdoor temperature, incl. 10 m sensor cable. Enables automatic air curtain control and heat blocking. IP44.



#### FCLAP, local access point

Local access point for extra wireless sensors (when operating more than 8 sensors) and extended range for wireless sensors or app control (Bluetooth), incl. 10 m communication cable. IP44.



#### FCSC/FCBC, cable

FCSC Sensor cable available in 10 or 25 m for extra length. FCBC Communication cable for additional products within the same zone, available in 5, 10 or 25 m.



#### FCDC, door contact

The door contact regulates the airflow on/off. Allows you to control air curtains at different doorways individually within the same zone.



#### FCTXRF, indoor/outdoor wireless sensor

Indoor/outdoor wireless sensor with same features as FCRTX and FCOTX. The set up as outdoor or indoor sensor is made by a switch inside the sensor. Range up to 50 m. Battery life: 3-5 years. IP44.

#### FC Direct

##### Content

- FCCF control panel
- FCBC05
- FCDC

#### FC Smart

##### Content

- FCCF control panel
- FCBC10
- FCDC
- FCLAP

#### FC Pro

##### Content

- FCCF control panel
- FCBC10
- FCDC
- FCLAP
- FCTXRF

#### FC Building - BMS

##### Content

- FCCF control panel
- FCBC10
- FCDC
- FCBAP building access point

| Item number | Type   | Description  | Dimensions         |
|-------------|--------|--|--------------------|
| 74684       | FCDA   | FC Direct, first level control system                            | 89x89x26 mm (FCCF) |
| 74694       | FCRTX  | External room temperature sensor                                 | 39x39x23 mm        |
| 74695       | FCOTX  | Outdoor temperature sensor                                       | 39x39x23 mm        |
| 74699       | FCLAP  | Local access point for extra wireless sensors and extended range | 89x89x26 mm        |
| 74718       | FCBC05 | Extra communication cable, 5 m                                   | 5 m                |
| 74719       | FCBC10 | Extra communication cable, 10 m                                  | 10 m               |
| 74720       | FCBC25 | Extra communication cable, 25 m                                  | 25 m               |
| 74721       | FCSC10 | Extra sensor cable, 10 m   | 10 m               |
| 74722       | FCSC25 | Extra sensor cable, 25 m   | 25 m               |
| 17495       | FCDC   | Door contact   |                    |
| 74703       | FCTXRF | Indoor/outdoor wireless sensor (for FC Smart, FC Pro)            | 89x89x26 mm        |

Water heated units must be supplemented with valves. The valve system controls the water flow and activates maximum heat only when needed. By activating the built-in bypass feature, a small leakage flow is let through to make sure there is always hot water in the heating coil, providing frost protection and faster heating. The return water temperature sensor is making sure that as much energy as possible from the water in the coil is used, thus reducing energy consumption.



#### VPFC, pressure independent and modulating valve system

Two way pressure independent control and adjustment valve with modulating actuator and shut-off valve.



#### FCWTA, return water temperature sensor

Enables control of return water temperature and automatic bypass function, which provides extended frost protection and reduced energy consumption.

| Item number | Type     | 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      |
| 74702       | FCWTA    | Return water temperature sensor |                |

## Accessories - water heated units



#### FH1020, flexible hoses

Flexible hoses for easy and practical installation of water heated unit. Length 1 m. DN20, 1" inside/outside thread.



#### FH1025, flexible hoses

Flexible hoses for easy and practical installation of water heated unit. Length 1 m. DN25, 1" inside/outside thread.

| Item number | Type   | Used for            | Consists of |
|-------------|--------|---------------------|-------------|
| 237568      | FH1020 | SIFEC10/15/20/25W-H | 2           |
| 330955      | FH1025 | SIFEC10/15/20/25W-V | 2           |



**SIFW, wall bracket**

Brackets for installing a unit horizontally on a wall. Two brackets are required for each unit.

Available in four designs:

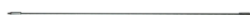
- SIFWBB, brushed stainless steel
- SIFWBP, polished stainless steel
- SIFWBMP, mirror polished stainless steel
- SIFWB, powder coated steel (state RAL/NCS code)

**PA34CB, ceiling brackets**

Ceiling brackets for installing the unit from the ceiling using wires or threaded bars (not included). Best combined with vibration dampers (PA34VD) when using threaded bars.

**PA34WS, wire suspension kit**

Galvanized wires with wire locks to secure the unit from the ceiling. Length 3 m. Used together with ceiling brackets (PA34CB).

**PA34TR, threaded bars**

Threaded bars for installing unit on to a ceiling. Length 1 m. Used together with ceiling brackets (PA34CB). Supplemented with vibration dampers (PA34VD) for reduced vibration.

**PA34VD, vibration dampers**

Reduces vibrations for ceiling installations with threaded bars.

| Item number | Type            | Used for           | Consists of |
|-------------|-----------------|--------------------|-------------|
| 251886      | <b>SIFWBB</b>   | SIFEC10/15/20/25-H | 1           |
| 251887      | <b>SIFWBP</b>   | SIFEC10/15/20/25-H | 1           |
| 251888      | <b>SIFWBMP</b>  | SIFEC10/15/20/25-H | 1           |
| 251889      | <b>SIFWB</b>    | SIFEC10/15/20/25-H | 1           |
| 18059       | <b>PA34CB15</b> | SIFEC10/15-H       | 4           |
| 18060       | <b>PA34CB20</b> | SIFEC20-H          | 6           |
| 18061       | <b>PA34CB30</b> | SIFEC25-H          | 8           |
| 18062       | <b>PA34WS15</b> | SIFEC10/15-H       | 4           |
| 18063       | <b>PA34WS20</b> | SIFEC20-H          | 6           |
| 18064       | <b>PA34WS30</b> | SIFEC25-H          | 8           |
| 18056       | <b>PA34TR15</b> | SIFEC10/15-H       | 4           |
| 18057       | <b>PA34TR20</b> | SIFEC20-H          | 6           |
| 18058       | <b>PA34TR30</b> | SIFEC25-H          | 8           |
| 18065       | <b>PA34VD15</b> | SIFEC10/15-H       | 4           |
| 18066       | <b>PA34VD20</b> | SIFEC20-H          | 6           |
| 18067       | <b>PA34VD30</b> | SIFEC25-H          | 8           |

Sierra

## Accessories - vertical mounting



### **SIFEH, extension hood**

Fills the space between the unit and the ceiling for vertical mounting and provides a neater installation. Height 150-1000 mm.



### **AXP300, collision protection**

Floor placed protection against impact from e.g. shopping trolleys.

| Item number | Type          | Used for     | Consists of |
|-------------|---------------|--------------|-------------|
| FE10234     | <b>SIFEH</b>  | SIFEC20/25-V | 1           |
| 10028       | <b>AXP300</b> | SIFEC20/25-V | 1           |