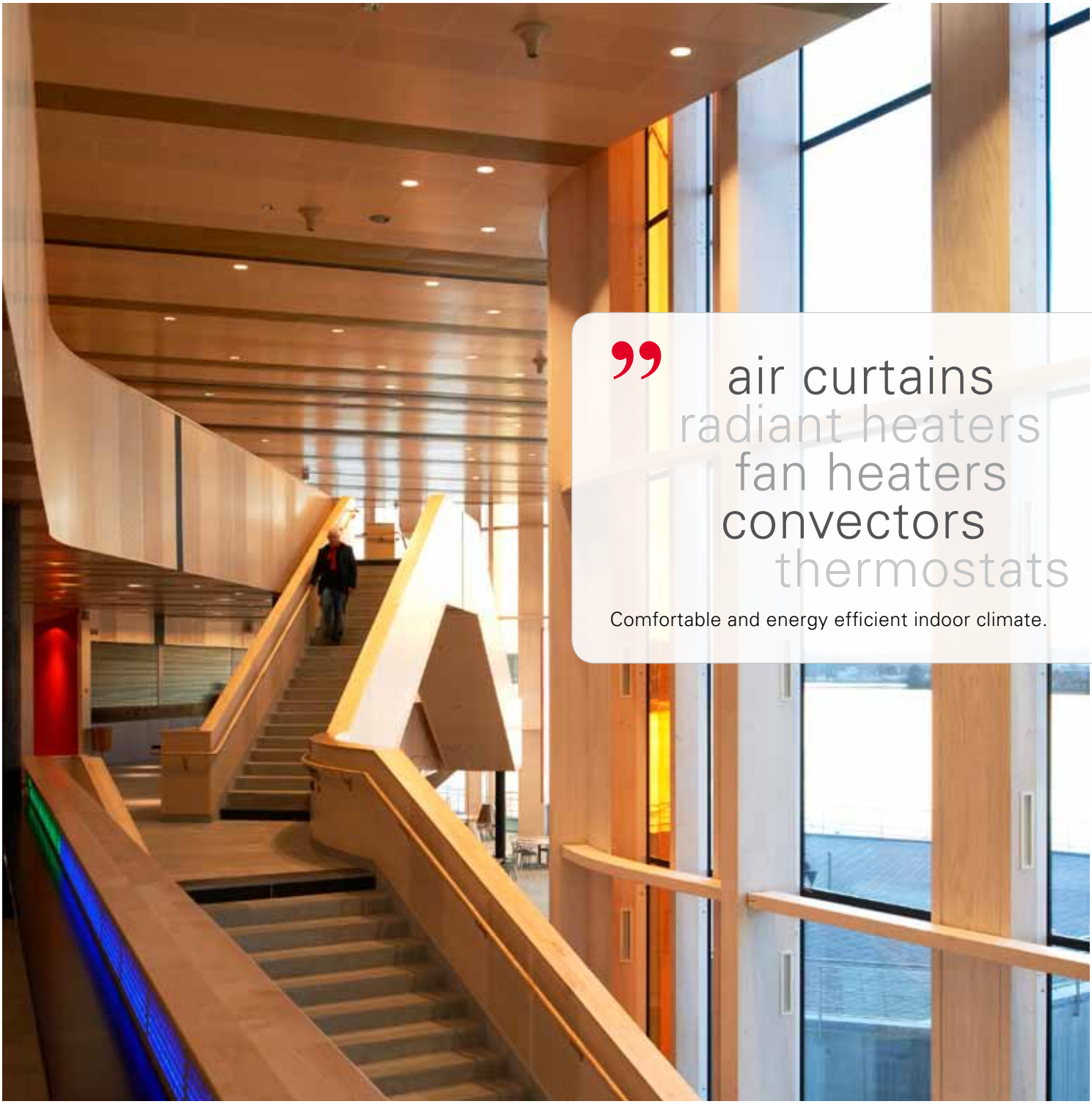
FRICO

# Mini catalogue 2014



air curtains
radiant heaters
fan heaters
convectors
thermostats

Comfortable and energy efficient indoor climate.

# Welcome

… to the 2014 edition of the Frico Mini Catalogue. At Frico we are proud to be able to offer energy-efficient products for a better indoor climate. This year we present our latest addition to the PA-range for air curtains – PA3200C, a compact version for entrances and larger doors. PA3200C makes our PA range complete and we are confident that we now are offering the markets best air curtain range.

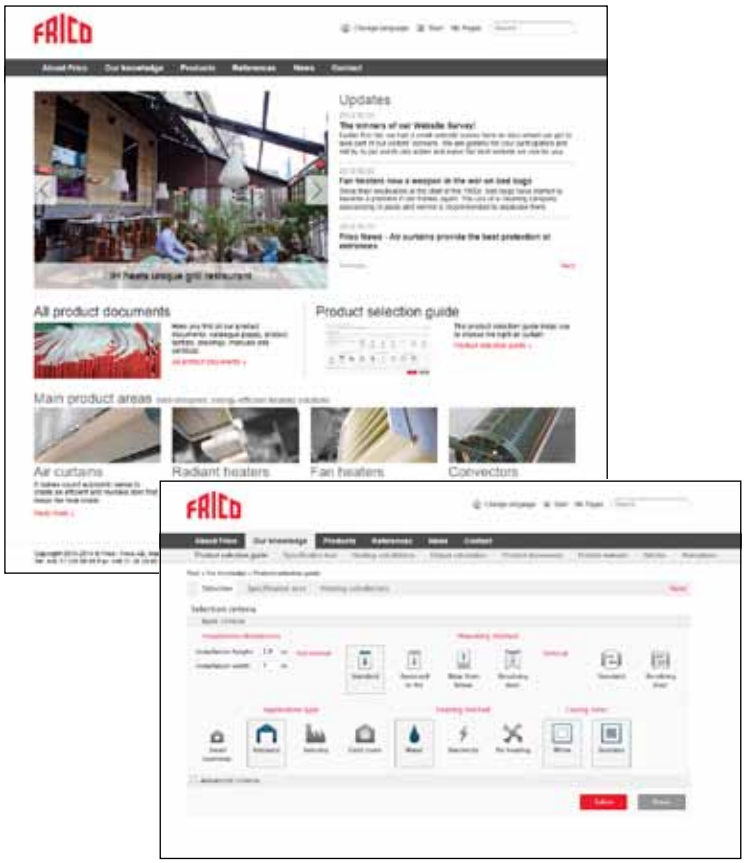
We have also extended our range of the popular and well designed radiant heater IH, with a larger version – IH20, perfect for any outdoor area.

In our products, the focus is on achieving the greatest possible function with the least possible energy consumption – always cherishing our core values of trust, competence and design.

We hope this Mini Catalogue will be a useful tool when choosing the correct product for each application. For more extensive product information, we welcome you to visit our website, www.frico.se, where all technical information regarding our products is available. Together with our product selection guide and our new search for all product documents, www.frico.se is the ideal source for full information regarding Frico's product range.

Looking forward hearing from you!

Pontus Grimberg
International Sales Director

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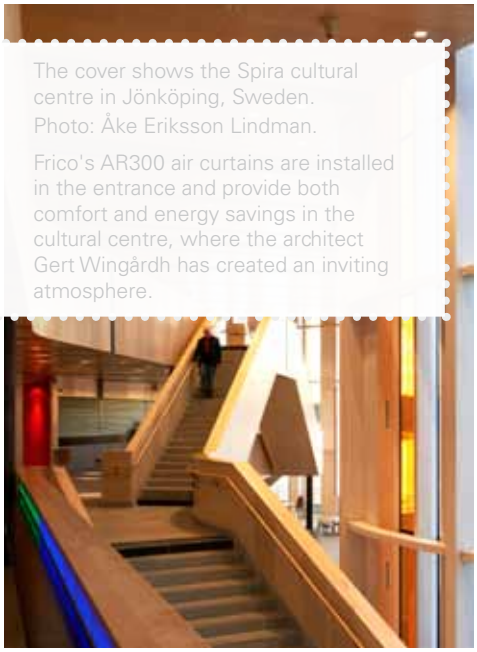
The cover shows the Spira cultural centre in Jönköping, Sweden.
Photo: Åke Eriksson Lindman.

Frico's AR300 air curtains are installed in the entrance and provide both comfort and energy savings in the cultural centre, where the architect Gert Wingårdh has created an inviting atmosphere.





Design and specifications are subject to change without notice. See www.frico.se for latest updated info.

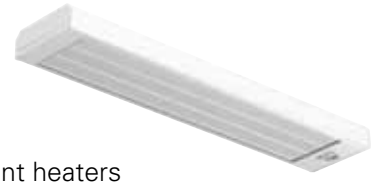
# Frico products

Today's high and increasing energy prices often make heating costs substantial. Frico strives to develop products and systems that provide energy saving heating solutions and better heating comfort at the same time. Reducing energy losses and making optimum use of the heat is also important. Air curtains in doorways and openings, radiant heaters or ceiling fans where the ceiling is high are examples of products that contribute to large energy savings.

## Air curtains

It makes sound economic sense to create an efficient and invisible door that keeps the heat inside. Air curtains can be even more effective when used in air conditioned or cold storage buildings.

Thermozone technology with its precisely adjusted air velocity gives even protection throughout the opening. Frico air curtains provide the most efficient separation with the lowest possible energy consumption, regardless of whether it is the heat or the cold that you want to keep inside.



## Radiant heaters

Frico radiant heaters imitate the sun, the most comfortable and efficient heat source available. The heat is emitted only when the rays hit a surface and the room temperature can thus be lowered while occupants experience a comfortable environment. This makes radiant heaters well suited not only for total heating but also for zone and spot heating, for example to avoid cold draughts from windows.

Radiant heaters are easy to install and require minimum maintenance. They heat directly when switched on and give no air movement.

## Fan heaters

We are proud of the worldwide fame Frico fan heaters have gained. They are reliable and are designed for long life. Our range covers all needs. The investment cost is low compared to other heating systems.

A great advantage of fan heaters is the option of combining heating and ventilation. Frico fan heaters are compact, silent and light weight. They are available for electrical heating as well as for water heating.

## Convectors

Convection is the term for the rotating air movement where the air is affected by a heat source. The air is heated - rises upwards - cools and comes back to then be reheated. This gives good comfort through good heat distribution and the warm air flow directed upwards can be used to counteract cold drafts from large glass surfaces.

## Ceiling fans

Ceiling fans force over-heated air from the ceiling down to the occupation zone in premises with high ceilings so that the heat is maximally exploited.

## Thermostats and controls

The key to energy efficient heating and good comfort is the combination of heating products and good controls. Frico offers a wide range of thermostats and controls, read more under each product or in the Frico Catalogues.

## More information

More information on Frico and Frico products can be found on our website www.frico.se, in our main catalogues and other printed material that you can order from us or from our distributors.

More than 75 years of experience of developing products for the varied Nordic climate has provided us with a unique knowledge bank. This is our foundation when creating today's energy efficient solutions for a comfortable indoor climate.

## Leading technology and design

Since we develop our own products, our knowledge on how to create an energy efficient indoor climate is constantly growing. We have one of Europe's most modern and advanced air and sound laboratories to aid us.

## Qualified local support

Frico is present locally in some 70 countries worldwide with a network of wholly-owned subsidiaries and independent distributors. Our highly qualified representatives are carefully chosen and together we are able to provide you with the best possible support. To find your nearest Frico subsidiary or distributor, please visit www.frico.se.

## Frico Academy

Frico Academy is an important platform for networking and sharing inspiration and knowledge between us and our distributors around the world. Through the Frico Academy we share our knowledge on theory and technology, as well as product knowledge and experience in manufacturing and product development.

## Quality and long life

Frico offers consistent and high product quality. Our product warranty is there for your safety. It covers manufacturing faults and is valid for three years and necessary components will be replaced.

Frico products are designed for long life and are easy to maintain. Through our distribution network we provide reliable maintenance and service support which includes the availability of spare parts for at least ten years.

## Frico saves energy

Thanks to our broad product range and our many years of experience, Frico is able to help you save energy. By offering total solutions, including both complete heating systems and products for additional heating, we can generate a comfortable indoor climate at a low energy cost. Our regulation systems for different levels ensure that you never use more energy than is required. Through our parent company, Systemair, we also possess knowledge about ventilation and can provide appropriate solutions.

## Climate-smart

At Frico, we are proud to be able to offer energy-efficient products for a better indoor climate. In our product development work, the focus is on achieving the greatest possible function with the least possible energy consumption – without compromising on our core values of trust, competence and design.

This means that our products not only manage the local climate in business complexes, industrial buildings, offices or summer cottages; with optimum energy efficiency, we ensure that our products are climate-smart.

Frico's headoffice is located outside Gothenburg in Sweden and we are a part of the Systemair Group. Today Frico is represented in 70 countries world wide either by subsidiaries or distributors. Updated information is always available on our website www.frico.se.

We manufacture at production units in Skinnskatteberg, Sweden and at other ISO-certified production units in Europe. Our warehouses are strategically placed in several places in Europe.

# Frico's Thermozone technology optimizes the air curtain

THERMOZONE TECHNOLOGY

Frico air curtains create an invisible barrier at openings and doors which separates different temperature zones without limiting access for people and vehicles. With Thermozone Technology an efficient air separation is created in combination with a low sound level, giving comfortable climate and large energy savings. Frico air curtains are appreciated worldwide for their quality and operating efficiency, and are currently used in over 70 countries.

## Energy savings and good indoor climate

In many premises, for example shops, department stores, industrial premises and goods terminals, doors remain open for a large part of the day. This means discomfort for customers and staff at the same time as there are significant losses of expensively heated or cooled air, especially when the temperature difference between outdoor and indoor air is great. Frico air curtains give a comfortable indoor climate, free from drafts, and the losses of heated or cooled air are significantly reduced with correctly installed air curtains. This means that the pay-off time is reduced, especially for large door openings. The air curtain also keeps out insects and emissions.

## Low sound level and high performance

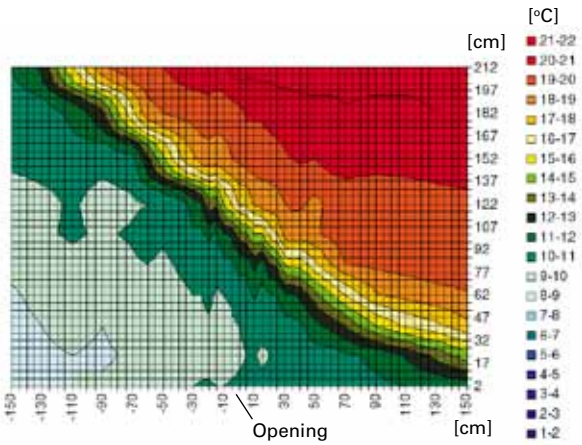
Air curtains with Thermozone technology are developed and manufactured in Frico's facility in Skinnskatteberg. They are tested at one of the most modern and advanced air and sound laboratories in Europe which means that we can guarantee the data stated in our product information. Thanks to the sophisticated equipment and our long experience we can build air curtains with extremely low sound levels and very high air flow performance.

## Design

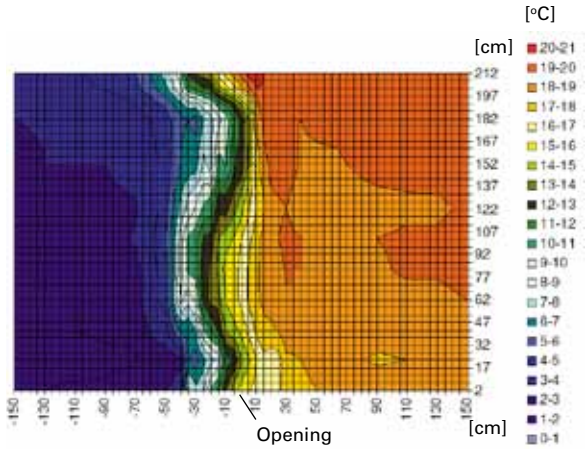
Frico collaborates with leading architects and product designs in the product development. The air curtains blends in well in the environment and the designed for fit into both exclusive shop interiors as industrial environments. With recessed installation the air curtains become nearly invisible, only the outlet grille is visible.

## Install and forget

With SIRe control system, the air curtain will always perform at its best. You'll never have to think about switching it on or off. It even adapts to the season outside, and with calendar function the air curtain automatically runs during the hours it is needed.




Opening without air curtain
The heated or conditioned air escapes through this unprotected opening. The result is energy loss and poor comfort.




Opening with correctly adjusted air curtain
A sharp separation between different temperature zones is obtained with a correctly set up air curtain. Thermozone creates a barrier that effectively prevents undesired air flows.

## Thermozone technology

Frico's air curtains have optimal curtain effect for doors and entrances. Thanks to Thermozone technology, performance can be precisely adjusted to obtain an air curtain with efficient separation that is also comfortable to pass through.

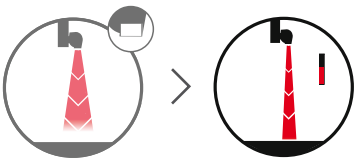
Thermozone air curtains are optimized in:

- Airflow geometry
- Performance
- Sound level

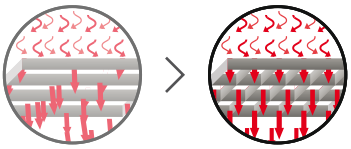
Read more about Thermozone technology in our air curtain catalogue and at www.frico.se.

## Air curtain experts

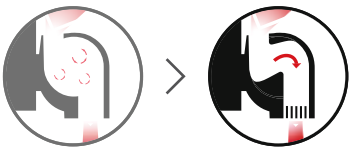
Frico knows air curtains. The company was founded in 1932 and we developed our first air curtains 40 year ago. We are happy to share our knowledge and experience and we are always available to help you choose the right product.



Thermozone technology creates the most efficient air barrier.



Frico's outlet grilles generate an even airflow that creates an efficient air barrier.



By reducing the turbulence inside the air curtain, the sound level is reduced.

## Our air curtains

| Type | Application | Recommended installation height | Elec | Heat Water | Heat None | Mounting | Extra | Page |
|---|---|---|---|---|---|---|---|---|
| **PA1006** | Door heater | - | ⚡ | | | Horizontal | | 15 |
| **PA1508** | Small openings | 1,5 m | ⚡ | | | Horizontal | Cable and plug. | 15 |
| **PA2200C** | Entrances | 2,2 m | ⚡ | 💧 | ✅ | Horizontal | Remote control. | 16 |
| **PA3200C** | Commercial | 3,2 m | ⚡ | 💧 | ✅ | Horizontal | Remote control. | 16 |
| **PA2500** | Entrances | 2,5 m | ⚡ | 💧 | ✅ | Horizontal | SIRe control system. | 18 |
| **Portier** | Entrances | 2,5 m | ⚡ | | ✅ | Horizontal | Brushed stainless steel. | 19 |
| **ADA** | Entrances | 2,5 m | | | ✅ | Horizontal | Cable and plug. | 20 |
| **ADA Cool** | Cold storage | 2,5 m | | | ✅ | Horizontal | Special terminales for easy connection of several units. Cable and plug. | 20 |
| **AR200** | Entrances | 2,5 m | ⚡ | 💧 | ✅ | Horizontal | Recessed mounting. | 21 |
| **AR300** | Commercial | 3,5 m | ⚡ | 💧 | ✅ | Horizontal | Recessed mounting. Built-in control. | 22 |
| **AR3500** | Commercial | 3,5 m | ⚡ | 💧 | | Horizontal | Recessed mounting. SIRe control system. | 23 |
| **Corinte** | Commercial | 3 m | ⚡ | 💧 | ✅ | Horizontal/Vertical | SIRe control system. Polished, mirror polished or brushed stainless steel. | 24 |
| **PA3500** | Commercial | 3,5 m | ⚡ | 💧 | ✅ | Horizontal/Vertical | SIRe control system. | 26 |
| **PA4200** | Commercial | 4,2 m | ⚡ | 💧 | ✅ | Horizontal/Vertical | SIRe control system. | 26 |
| **RDS** | Commercial | Revolving doors | ⚡ | 💧 | | Horizontal | For revolving doors. SIRe control system. | 30 |
| **SFS** | Commercial | Revolving doors | ⚡ | 💧 | | Vertical | For revolving doors. SIRe control system. | 30 |
| **AGS5000** | Industry | 5 m | | 💧 | ✅ | Horizontal | SIRe control system. Vertical unit is available as special order. | 31 |
| **AGS6000** | Industry | 6 m | | 💧 | ✅ | Horizontal | SIRe control system. Vertical unit is available as special order. | 31 |
| **AC500** | Industry | 5 m | | | ✅ | Horizontal/Vertical | | 32 |
| **UF600** | Industry | Large doorways | | | ✅ | Vertical | Air barrier blown from below | 32 |
| **AGI** | Industry | Large doorways | | 💧 | ✅ | Horizontal/Vertical | | 33 |

## 1 Choose air curtain

For optimal air curtain effect, it is important to choose the right air curtain. We have air curtains for all openings from small kiosk hatches to large industrial doors. They blow from above, from the side or from below. Choose between electrical, water heated or unheated versions.

To get the most out of the product, the following hints are important to bear in mind.

- To ensure that the air flow reaches the floor at the optimal air speed, the installation height (not the height of the opening ) determines the choice of air curtain.
- The air curtain units should cover the whole width (or height) of the opening. The air curtains can be obtained in different lengths. For wide (high) openings, several units are mounted beside (on top) of each other.
- The units should be positioned as close to the opening as possible.
- For optimal performance it is important that the pressure difference between outside and inside is not too big.

## 2 Choose controls

In order to obtain the optimum comfort and energy efficiency, it is important to choose the correct controls.

The vast majority of our air curtains are supplied with the SIRe intelligent control system, which is built in and controls the air curtain automatically. The air curtain adapts to the existing conditions in the entrance. There are three different levels with different functionality to choose from, Basic, Competent or Advanced. Read more about SIRe on page 12-14.

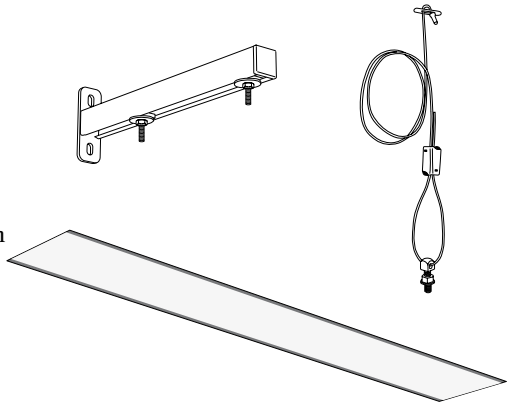
The ADA, PA2200C, PA3200C and AR300 air curtains have Plug & play controls; completely integrated controls that do not require any external components. PA2200C and PA3200C also have a remote control. Read more about Frico's other controls under the relevant air curtain and on page 34.

For water heated air curtains, the control system must be supplemented with a valve kit, see pages 65-66.

## 3 Choose accessories

Frico offers a range of mounting parts for the air curtains as well as a number of other accessories that improve or simplify installation and maintenance.

In this mini-catalogue, the accessories are shown together with the relevant air curtains. You can also find the information in the Product selection guide at www.frico.se.



# Quick selection guide Frico air curtains

## Horizontal mounting

The air curtains are mounted horizontally above the opening, creating a vertical air barrier.

### Surface mounting

These air curtains can be mounted on a wall or in the ceiling using threaded bars or cables.

#### Classic

Many of our models are classic designs that blend in well in most interiors.

| Installation height | Air curtain | Page |
|---|---|---|
| 2,2 m | PA2200C | 16 |
| 2,5 m | PA2500 | 18 |
| 2,5 m | ADA | 20 |
| 3,2 m | PA3200C | 16 |
| 3,5 m | PA3500 | 26 |
| 4,2 m | PA4200 | 26 |

#### Design

Our stainless steel air curtains are design elements well suitable for prestigious environments.

| | | |
|---|---|---|
| 2,5 m | Portier | 19 |
| 3 m | Corinte | 24 |

#### Industry

These robust and powerful units are specifically designed for large doorways.

| | | |
|---|---|---|
| 4,2 m | PA4200 | 26 |
| 5 m | AGS5000 | 31 |
| 5 m | AC500 | 32 |
| 6 m | AGS6000 | 31 |
| Large doorways | AGI | 33 |

### Recessed mounting

These air curtains are installed recessed into suspended ceilings.

| | | |
|---|---|---|
| 2,5 m | AR200 | 21 |
| 3,5 m | AR300 | 22 |
| | AR3500 | 23 |

## Vertical mounting

The air curtains are mounted vertically next to the opening, creating a horizontal air barrier. Two air curtains are installed, one on each side of the opening.

#### Classic

| Installation width* | Air curtain | Page |
|---|---|---|
| 5 m | PA3500 | 26 |
| 6 m | PA4200 | 26 |

#### Design

| | | |
|---|---|---|
| 5 m | Corinte | 24 |

#### Industry

| | | |
|---|---|---|
| 6 m | PA4200 | 26 |
| Large doorways | AGI | 33 |
| 12 m | UF600 | 32 |

*) Two units, one on each side of the opening.

## Air curtains for particular use

These air curtains are designed for a specific application area such as revolving doors, service hatches or cold storage.

| Application | Air curtain | Page |
|---|---|---|
| Revolving doors | RDS | 30 |
| | SFS | 30 |
| Service hatches | PA1508 | 15 |
| Door heater | PA1006 | 15 |
| Cold storage | ADA Cool | 20 |

The Product selection guide at www.frico.se will give you further assistance in selecting air curtains, controls and accessories.

Without heat  Electrical heat  Water heat

## Installation examples for air curtains

Frico air curtains are available for openings of different sizes and for different application areas. To facilitate your choice of product, you will find some typical cases on the following pages. More detailed information on important factors to consider when choosing an air curtain is found on the previous pages.

Please note that it is the installation height that is decisive and not the height of the opening.

### Basic criterias:

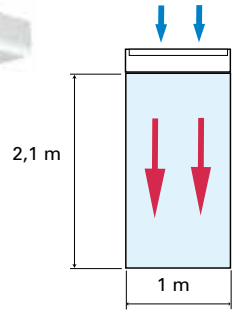
1. Type of premises: store, warehouse etc.
2. Height: installation height
3. Width: installation width
4. Mounting: horizontal or vertical
5. Connection: ambient, unheated (A), electrical (E), water (W)

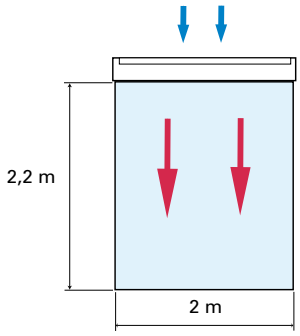
Entrances

### Shop

1. Type of premises: Shop
2. Installation height: 2,1 m
3. Installation width: 1 m
4. Mounting: Horizontal
5. Connection: Electrical

Recommendation: A PA2510E05 is recommended for these conditions.



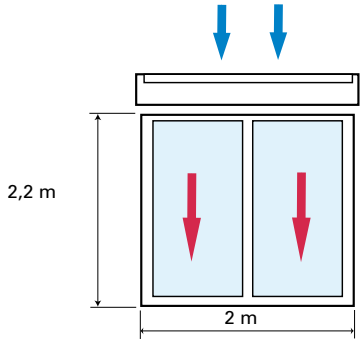

2. Installation height: 2,2 m
3. Installation width: 2 m

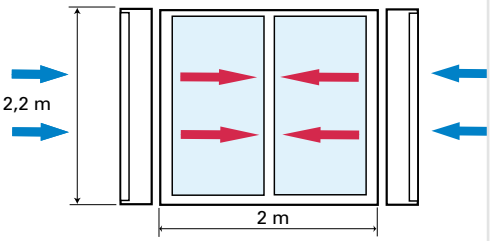
Recommendation: A shop with a large entrance and a lot of traffic through the opening requires a larger unit to obtain a comfortable climate. For these conditions we recommend a PA3520E16.

### Bank

1. Type of premises: Bank
2. Installation height: 2,2 m
3. Installation width: 2 m
4. Mounting: Horizontal or vertical
5. Connection: Water

Recommendation: For an opening with high demands on design and performance we recommend one or two Corinte depending on the premises. Corinte can be installed horizontally or vertically.



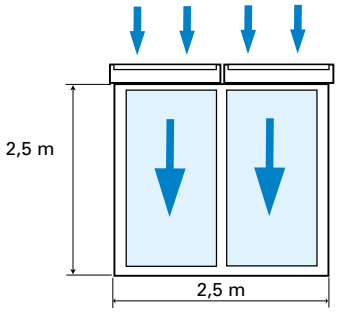




Cold storage

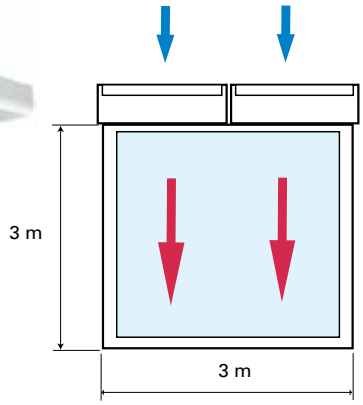
### Cold room

1. Type of premises: Cold room
2. Installation height: 2,5 m
3. Installation width: 2,5 m
4. Mounting: Horizontal
5. Connection: Ambient

Recommendation: Two ADA Cool are recommended for these conditions, mounted side by side above the opening.



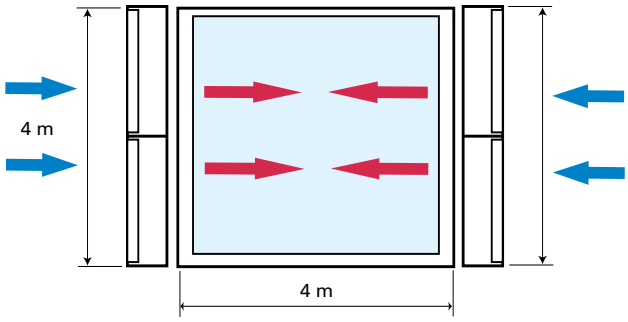
## Shopping centre




1. Type of premises: Shopping centre
2. Installation height: 3 m
3. Installation width: 3 m
4. Mounting: Horizontal
5. Connection: Electrical

Recommendation: Two PA3515E12 are recommended for these conditions, mounted side by side above the opening.

## Goods reception, grocery store

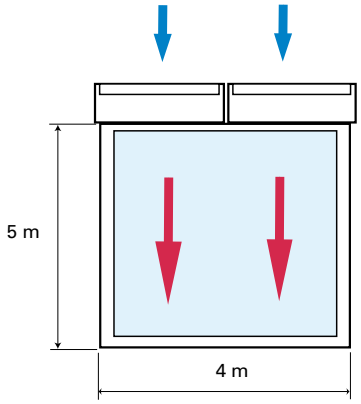



1. Type of premises: Goods reception, grocery store
2. Installation height: 4 m
3. Installation width: 4 m
4. Mounting: Vertical
5. Connection: Water

Recommendation: Four vertically mounted PA4220WL beside the opening, two at each side are recommended for these conditions.

Commercial

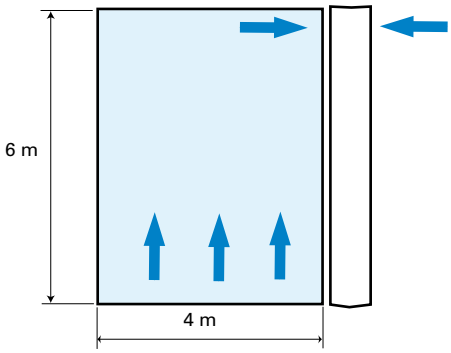
## Warehouse




1. Type of premises: Warehouse
2. Installation height: 5 m
3. Installation width: 4 m
4. Mounting: Horizontal
5. Connection: Water

Recommendation: Two AGS5020WL are recommended for these conditions, mounted side by side above the opening.

## Factory, heavy industry




1. Type of premises: Factory, heavy industry
2. Installation height: 6 m
3. Installation width: 4 m
4. Mounting: Vertical
5. Connection: Ambient

Recommendation: For these conditions we recommend UF600. Air at high speed is pressed out through the narrow slot in the floor at the door opening. UF600 provides nearly 100 % protection against cold draughts along the floor.

Industry

# Air curtains - SIRe Control system

The vast majority of our air curtains are supplied with the SIRe intelligent control system, which is built in and controls the air curtain automatically. The air curtain adapts to the existing conditions in the entrance. By sensing how often the door opens/closes, outdoor temperature, indoor temperature or even the return water temperature, the air curtain will give you the most effective protection with the highest energy efficiency.

## Install and forget

With SIRe control system, the air curtain will always perform at its best. You'll never have to think about switching it on or off. It even adapts to the season outside, and with calendar function the air curtain automatically runs during the hours it is needed.

## Intelligent

### Automatically adapts to your entrance

The air curtain automatically adapts to your entrance conditions. Depending on how often the door is opened/closed, or if it is left open continually, the integrated SIRe controls the air curtain operation so that optimal comfort and energy efficiency is achieved.

## BMS solutions

### Endless possibilities

With our intelligent SIRe control system, the possibilities to control your air curtains via BMS are endless. You can either choose to control your air curtain by 0-10 V signals (controlling on/off, fan speed, heating and alarm) or completely control all functions and receive indications from your air curtain via gateway (two threaded) BUS communication.

## Proactive

### Anticipates for quicker reactions

By measuring the outdoor temperature, the air curtain is always a step ahead. The integrated regulation ensures that the air curtain is prepared for changes in the outdoor temperature. For example, when a warm spring day turns into a chilly evening. The air speed is adjusted depending on the outdoor temperature change and stops the chill before it penetrates the premises.

## Simple installation

### "Plug and play"

An air curtain with integrated SIRe control system is easy to install. The different components are supplied together and are easy to assemble. The system self-checks that everything is correct and that it functions. Thanks to the preset default settings it is easy to start air curtain operation as soon as the system is in place.

## Adaptive

### Expert on your entrance

SIRe has the capacity to learn precisely what happens at your entrance. The air curtain adapts so that it is always ready to operate fully as soon as the door is opened. It also considers the acoustic comfort by ensuring that the air curtain does not switch between high and low speeds too often.

## Calendar function

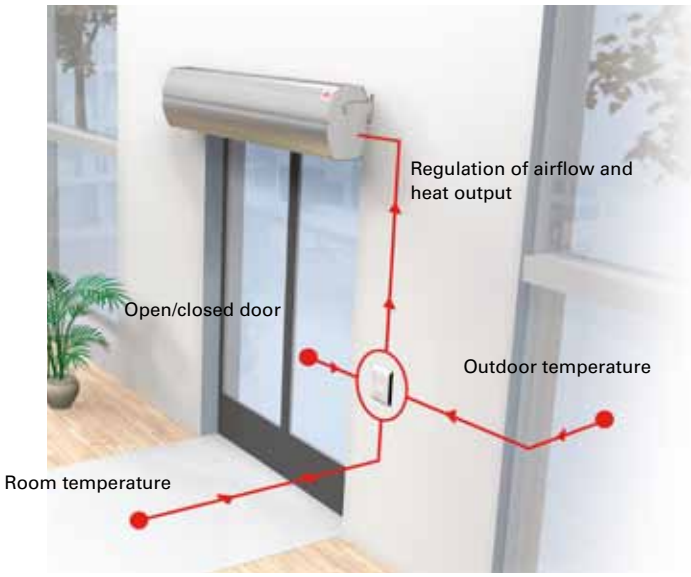
### Presets as required

SIRe has a calendar function for all the days of the week. The air curtain starts in the morning to ensure that it's always working to create a comfortable climate and save energy. Preset default setting may easily be adjusted by the user.

## Eco mode

### Save money and the environment at the same time

With SIRe intelligent regulation integrated in your air curtain, you get comfort in your entrance without wasting energy. If you want to increase the energy efficiency further, set SIRe in Eco mode. The air curtain then uses as little energy as possible without compromising too much on comfort. Energy savings of up to 35 percent are possible.




SIRe is an intelligent and well designed low voltage control system which can be customised for each unique application and environment. SIRe is supplied pre-programmed with quick fit plug connections and is very easy to use and install.

SIRe learns the requirements in the entrance it is installed in (e.g. opening frequency and outdoor temperature). It has calendar function and selectable switch off at set temperatures for up to nine units. Because the fan speed is adapted, the sound level is optimized and is never higher than is necessary for comfort. With SIRe Advanced it is possible to choose between Eco and Comfort mode dependent on whether energy savings or optimal comfort has been prioritised. The return water temperature can be limited, thus ensuring that the available heat is exploited to the maximum.

SIRe can control up to nine units. If more than one air curtain should be controlled by a single SIRe, an additional modular cable SIReCC RJ12 (6p/6c) per unit is needed. Cables between units can easily be joined together by using joint piece SIReCJ6.

There are three different levels with different functionality to choose from, Basic, Competent or Advanced.

## Control system SIRe

| Type | Description |
|---|---|
| **SIReB** | Control system SIRe Basic |
| **SIReAC** | Control system SIRe Competent |
| **SIReAA** | Control system SIRe Advanced |

The SIRe control system must be supplemented with a VOS(P), VOT, VMO(P) or VMT valve kit for water heated air curtains, see page 65.

### Included in SIReB Basic:

- SIReUB1, control unit with built in room temperature sensor. Wall unit cover included.
- SIReCC, modular cable, RJ12(6p/6c), 5 m

Options:

- SIReRTX, external room temperature sensor, RJ11 (4p/4c), 10 m
- VOS(P), (pressure independent) valve kit on/off or VOT, three way valve and actuator on/off

### Included in SIReAC Competent:

- SIReUA1, control unit with built in room temperature sensor. Wall unit cover included.
- SIReC1X, PC board HUB Competent
- SIReDC, door contact
- SIReCC, modular cables, RJ12(6p/6c), 3 m resp. 5 m

Options:

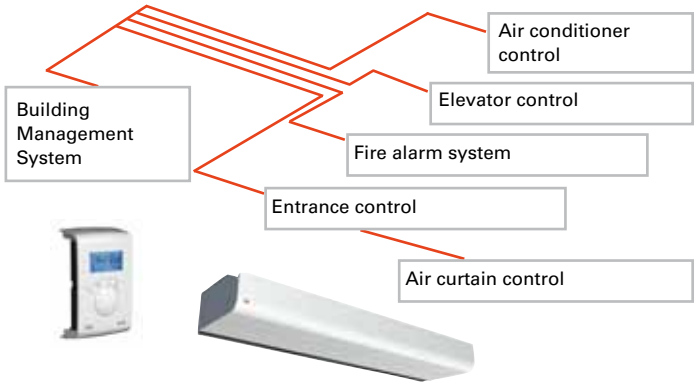
- SIReRTX, external room temperature sensor, RJ11 (4p/4c), 10 m
- SIReUR, kit for recessed installation
- VOS(P), (pressure independent) valve kit on/off or VOT, three way valve and actuator on/off

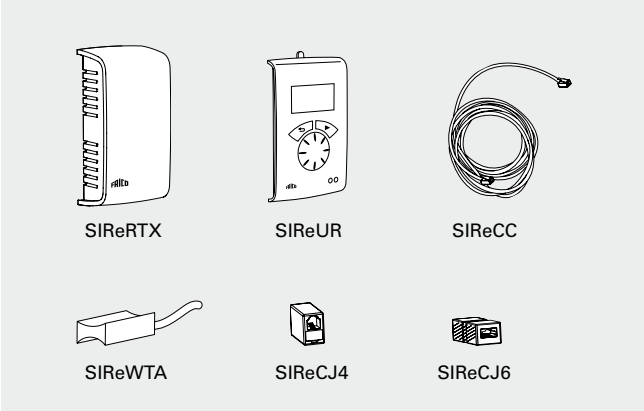
### Included in SIReAA Advanced:

- SIReUA1, control unit with built in room temperature sensor. Wall unit cover included.
- SIReA1X, PC board HUB Advanced
- SIReOTX, outdoor temperature sensor
- SIReDC, door contact
- SIReCC, modular cables, RJ12(6p/6c), 3 m resp. 5 m

Options:

- SIReRTX, external room temperature sensor, RJ11 (4p/4c), 10 m
- SIReUR, kit for recessed installation
- SIReWTA, clamp-on sensor, RJ11 (4p/4c), 3 m
- VMO(P), (pressure independent) modulating valve kit or VMT, three way valve and modulating actuator




## Integration of Frico air curtains in an overall control system (BMS)

### BMS-control - level 1
With SIRe Competent the air curtains can be integrated in an overall control system (BMS). The air curtain can be started/stopped and the fan speed regulated via the BMS system. A 5-30V control signal is required for starting/stopping. A 0-10V control signal is required to control the fan speed. Potential free contact for buzzer.

### BMS-control - level 2
With SIRe Advanced the air curtains can be integrated in an overall control system (BMS). The air curtain can be started/stopped, the fan speed and heating regulated smoothly via the BMS system. A 5-30V control signal is required for starting/stopping. A 0-10V control signal is required to control the fan speed and heating. Input for alarm and night reduction via external potential free contact. Potential free contact for buzzer and operation indication.

### BMS-control - level 3
With SIRe Advanced it is also possible to communicate via Modbus RTU (RS485). Contact Frico for more information.

## SIRe control system - options

### SIReRTX, external room temperature sensor
Used to obtain a better measuring point in the premises when the control unit is located so that the internal room temperature sensor does not show a relevant value. 10 m. cable with modular connector RJ11 (4p/4c).

### SIReUR, kit for recessed installation
Kit for installing SIReUA1 recessed in a wall. Only protrudes 11 mm from the wall.

### SIReWTA, clamp-on sensor
Clamp-on sensor for return water temperature control. 3 m. cable with modular connector RJ11 (4p/4c). Should be mounted on the return pipe on the heating coil.

### SIReCJ4/SIReCJ6, joint piece
Used to join two RJ11 (4p/4c) respectively RJ12 (6p/6c).

### SIReCC, modular cables
Modular cables RJ11 (4p/4c) respectively RJ12 (6p/6c). Available in lengths 3, 5, 10 and 15 m.

## Accessories - SIRe

| Type | Description |
|---|---|
| **SIReRTX** | External room temperature sensor |
| **SIReUR** | Kit for recessed installation |
| **SIReWTA** | Clamp-on sensor |
| **SIReCJ4** | Used to join two RJ11 (4/4) |
| **SIReCJ6** | Used to join two RJ12 (6/6) |
| **SIReCC603** | Modular cable RJ12 (6/6) 3 m |
| **SIReCC605** | Modular cable RJ12 (6/6) 5 m |
| **SIReCC610** | Modular cable RJ12 (6/6) 10 m |
| **SIReCC615** | Modular cable RJ12 (6/6) 15 m |
| **SIReCC403** | Modular cable RJ11 (4/4) 3 m |
| **SIReCC405** | Modular cable RJ11 (4/4) 5 m |
| **SIReCC410** | Modular cable RJ11 (4/4) 10 m |
| **SIReCC415** | Modular cable RJ11 (4/4) 15 m |

## Door heater PA1006

PA1006 is a compact door heater that heats the air around the door opening. This increases the comfort in the vicinity and gives personnel close to the opening a better working climate.

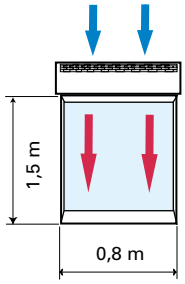
With its compact construction and timeless design the unit is easy to place in any doorway. The intuitive controls are easily accessible, placed on the gable end.

- Integrated selector for the fan and heating.
- Easy installation with 1,8 m cable and plug.
- The unit is easily angled on the bracket, which is used for both wall and ceiling mounting.
- Height: 153 mm
- Depth: 164 mm
- Colour front: white, RAL 9016, NCS S 0500-N. Colour grille, rear section, ends and brackets: grey, RAL 7046.
- CE compliant.
- Approved for 220V/1ph/60Hz. Product performance for 220V/1ph/60Hz will differ from stated data.

**Door heater PA1006, electrically heated (IP20)**

| Type | Voltage [V] | Output steps [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **PA1006E03** | 230V~ | 1.5/3 | 230 | 44 | 650 |

## PA1508




PA1508, is primarily intended for small openings, such as kiosk and service hatches and cashier benches where a long, narrow air flow is required. This creates a temperature separating air barrier that prevents cold air from pushing in and hot air from flowing out. PA1508 also gives additional heat and in this way also improves the working environment.

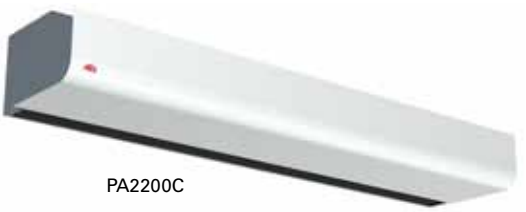
With its compact construction and timeless design the unit is easy to place in any doorway. The intuitive controls are easily accessible, placed on the gable end. The front can be finished in any colour to perfectly match the environment.

- Built-in control.
- Units with 2-3 kW are supplied with a 1,8 m cable and plug. Units with 4,5 kW are supplied with a 2,3 m cable without plug.
- Wall brackets included.
- Height: 153 mm
- Depth: 164 mm
- Colour front: white, RAL 9016, NCS S 0500-N. Colour grille, rear section, ends and brackets: grey, RAL 7046.
- CE compliant.

**PA1508, electrically heated (IP20)**

| Type | Voltage [V] | Heat output [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **PA1508E02** | 230V~ | 1/2 | 400 | 36/48 | 790 |
| **PA1508E03** | 230V~ | 2/3 | 400 | 36/48 | 790 |
| **PA1508E05** | 230V~ | 3/4,5 | 400 | 36/48 | 790 |

Conditions for sound level measurements, see page 67.



PA2200C

PA3200C

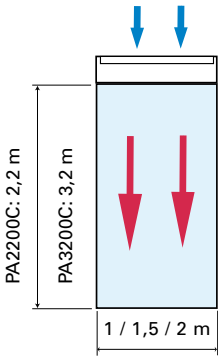
THERMOZONE TECHNOLOGY

## PA2200C and PA3200C

PA2200C and PA3200C are stylish and compact air curtains that are very easy to install and use. The air curtains have a control panel discretely integrated in the gable end and can also be controlled using the supplied remote control.

The timeless design makes the air curtains suitable for all entrances.

- Remote control and integrated regulation.
- 3 fan steps and 2 electrical heating steps.
- Wall brackets included.
- Colour front: white, RAL 9016, NCS S 0500-N. Colour grille, rear section, ends and brackets: grey, RAL 7046.
- CE compliant.




## PA2200C

PA2200C is a compact air curtain, suitable for most small entrances.

- Recommended installation height 2,2 m
- Units with 3 kW are equipped with 1,5 m cable and plug.
- Height: 210 mm
- Depth: 355 mm

## PA3200C

PA3200C is a compact air curtain for commercial buildings and small industrial entrances.

- Recommended installation height 3,2 m
- Height: 298 mm
- Depth: 468 mm

**PA2200C A, ambient, unheated (IP21)**

| Type | Voltage [V] | Heat output [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **PA2210CA** | 230V~ | 0 | 1200 | 42/51 | 1050 |
| **PA2215CA** | 230V~ | 0 | 1800 | 40/52 | 1560 |
| **PA2220CA** | 230V~ | 0 | 2400 | 43/53 | 2050 |

**PA3200C A, ambient, unheated (IP21)**

| Type | Voltage [V] | Heat output [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **PA3210CA** | 230V~ | 0 | 1750 | 46/57 | 1068 |
| **PA3215CA** | 230V~ | 0 | 2750 | 46/59 | 1578 |
| **PA3220CA** | 230V~ | 0 | 3500 | 50/60 | 2068 |

**PA2200C E, electrically heated (IP20)**

| Type | Voltage [V] | Heat output [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **PA2210CE03** | 230V~ | 2/3 | 1200 | 42/51 | 1050 |
| **PA2210CE05** | 230V~/400V3~ | 2,5/5 | 1200 | 42/51 | 1050 |
| **PA2210CE08** | 230V~/400V3~ | 5/8 | 1200 | 42/51 | 1050 |
| **PA2215CE08** | 230V~/400V3~ | 4/8 | 1800 | 40/52 | 1560 |
| **PA2215CE12** | 230V~/400V3~ | 8/12 | 1800 | 40/52 | 1560 |
| **PA2220CE10** | 230V~/400V3~ | 5/10 | 2400 | 43/53 | 2050 |
| **PA2220CE16** | 230V~/400V3~ | 8/16 | 2400 | 43/53 | 2050 |

**PA3200C E, electrically heated (IP20)**

| Type | Voltage [V] | Heat output [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **PA3210CE08** | 230V~/400V3~ | 5/8 | 1750 | 46/57 | 1068 |
| **PA3215CE12** | 230V~/400V3~ | 8/12 | 2750 | 46/59 | 1578 |
| **PA3220CE16** | 230V~/400V3~ | 10/16 | 3500 | 50/60 | 2068 |

**PA2200C W, water heated (IP21)**

| Type | Voltage [V] | Heat output* [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **PA2210CW** | 230V~ | 6,9 | 1200 | 39/52 | 1050 |
| **PA2215CW** | 230V~ | 11,1 | 1750 | 37/53 | 1560 |
| **PA2220CW** | 230V~ | 14,4 | 2400 | 43/53 | 2050 |

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

**PA3200C W, water heated (IP21)**

| Type | Voltage [V] | Heat output* [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **PA3210CW** | 230V~ | 8 | 1700 | 45/55 | 1068 |
| **PA3215CW** | 230V~ | 14 | 2700 | 46/57 | 1578 |
| **PA3220CW** | 230V~ | 18 | 3300 | 49/58 | 2068 |

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

## Controls

Unit without heating

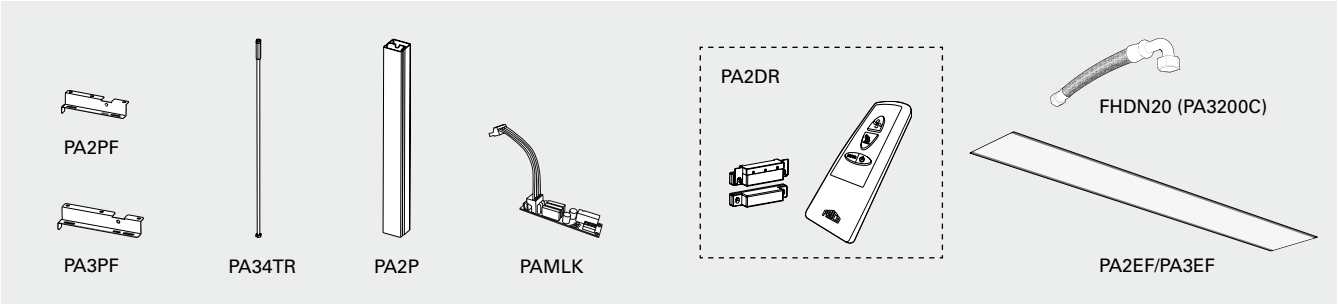
- Remote control.
- Integrated control panel on end of unit
  - 3 fan steps.
- Manual regulation of the fan.

Unit with electrical heating

Unit with water heating

- Remote control.
- Integrated control panel on end of unit
  - 3 fan steps, 2 electrical heating steps (electrical), heating on /off (water).
- Manual regulation of the fan.
- Automatic heating control.

## Accessories




PA2PF/PA3PF, ceiling mounting brackets
Mountings for installing the unit in the ceiling using hanging brackets or threaded bars (not included).

PA34TR, threaded bars
Threaded bars for installing unit on to a ceiling. Length 1 m. Used together with ceiling mounting brackets PA2PF/PA3PF.

PA2P, hanging brackets
Hanging brackets for installing the unit suspended from the ceiling. Length 1 m. The hanging brackets are covered by a white plastic trim to cover the cables. The brackets may be cut to shorter length, if required. Used together with ceiling mounting brackets PA2PF/PA3PF.

PAMLK, motor alarm board
Used for units that do not have withdrawn thermal contact. For units with SIRe, connect the board to the SIRe automatic for motor alarm indication. For other units the potential free alarm switch for external alarm is used.

PA2DR, door switch control
Contains a door switch for door indication and a special remote control intended to activate auto mode in the unit.

### Unit with water heating

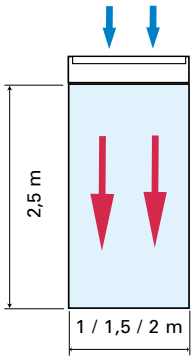
PA2EF/PA3EF, external intake filter
Fine mesh filter that prevents ingress of dirt and deposits to water heated units. The filter is easy to attach and remove thanks to the integrated magnetic strips. Makes maintenance easier since the unit does not need to be opened.

FHDN20, flexible hoses
Flexible hoses for easy and practical installation of water heated unit. (PA3200C).

Valve kit VOT or VOS is used to control the water flow. For more information see the "Controls" section.

| Type | Description |
|---|---|
| **PA2PF15** | Ceiling mounting brackets for PA2210 and PA2215, 4 pcs |
| **PA2PF20** | Ceiling mounting brackets for PA2220, 6 pcs |
| **PA3PF15** | Ceiling mounting brackets for PA3210 and PA3215, 4 pcs |
| **PA3PF20** | Ceiling mounting brackets for PA3220, 6 pcs |
| **PA34TR15** | Threaded bars for 1 and 1,5 metre units, 4 pcs |
| **PA34TR20** | Threaded bars for 2 metre units, 6 pcs |
| **PA2P15** | Hanging brackets for 1 and 1,5 metre units, 2 pcs |
| **PA2P20** | Hanging brackets for 2 metre units, 3 pcs |
| **PAMLK** | Motor alarm board |
| **PA2DR** | Door switch control |
| **PA2EF10** | External intake filter for PA2210C water heated units |
| **PA2EF15** | External intake filter for PA2215C water heated units |
| **PA2EF20** | External intake filter for PA2220C water heated units |
| **PA3EF10** | External intake filter for PA3210C water heated units |
| **PA3EF15** | External intake filter for PA3215C water heated units |
| **PA3EF20** | External intake filter for PA3220C water heated units |
| **FHDN20** | Flexible hoses DN20 for PA3200C water heated units, inside thread, 90° bend, 2 pcs |

## PA2500




The PA2500 creates a temperature dividing air barrier that effectively prevents cold drafts and gives excellent heating comfort in door ways, such as shops, offices and public offices.

The air curtain has many intelligent and energy saving features which provide fully automatic protection for the entrance, adaptable to each area of use.

The PA2500 has a modern and stylish design developed to fit all entrances.

- Recommended installation height 2,5 m
- 3 fan steps and 3 electrical heating steps, which give more even comfort and extra energy savings.
- Wall brackets included.
- Height: 210 mm
- Depth: 355 mm
- Colour front: white, RAL 9016, NCS S 0500-N. Colour grille, rear section, ends and brackets: grey, RAL 7046.
- CE compliant.

**PA2500A, ambient unheated (IP21)**

| Type | Voltage [V] | Heat output [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **PA2510A** | 230V~ | 0 | 1450 | 42/51 | 1050 |
| **PA2515A** | 230V~ | 0 | 2200 | 40/52 | 1560 |
| **PA2520A** | 230V~ | 0 | 2900 | 43/53 | 2050 |

**PA2500E, electrically heated (IP20)**

| Type | Voltage [V] | Heat output [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **PA2510E05** | 230V~/400V3~ | 1,7/3,3/5 | 1450 | 42/51 | 1050 |
| **PA2510E08** | 230V~/400V3~ | 3/5/8 | 1450 | 42/51 | 1050 |
| **PA2515E08** | 230V~/400V3~ | 3/5/8 | 2200 | 40/52 | 1560 |
| **PA2515E12** | 230V~/400V3~ | 4/8/12 | 2200 | 40/52 | 1560 |
| **PA2520E10** | 230V~/400V3~ | 3,4/6,7/10 | 2900 | 43/53 | 2050 |
| **PA2520E16** | 230V~/400V3~ | 6/10/16 | 2900 | 43/53 | 2050 |

**PA2500W, water heated (IP21)**

| Type | Voltage [V] | Heat output* [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **PA2510W** | 230V~ | 4,7 | 1300 | 42/53 | 1050 |
| **PA2515W** | 230V~ | 9,2 | 2100 | 41/54 | 1560 |
| **PA2520W** | 230V~ | 11,5 | 2600 | 43/55 | 2050 |

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

## Controls

This air curtain is supplied with an intregrated PC board SIRe. There are three different levels with different functionality to choose from, Basic, Competent or Advanced. Read more about SIRe on page 12-14. Valve kit VOS(P), VOT, VMO(P) or VMT is used to control the water flow. For more information see the "Controls" section.

## Accessories

PA2PF, ceiling mounting brackets
Mountings for installing the unit in the ceiling using hanging brackets or threaded bars (not included).

PA34TR, threaded bars
Threaded bars for installing unit on to a ceiling. Length 1 m. Used together with ceiling mounting brackets PA2PF/PA3PF.

PA2P, hanging brackets
Hanging brackets for installing the unit suspended from the ceiling. Length 1 m. The hanging brackets are covered by a white plastic trim to cover the cables. The brackets may be cut to shorter length, if required. Used together with ceiling mounting brackets PA2PF/PA3PF.

PAMLK, motor alarm board
Used for units that do not have withdrawn thermal contact. For units with SIRe, connect the board to the SIRe automatic for motor alarm indication. For other units the potential free alarm switch for external alarm is used.

## Unit with water heating

PA2EF, external intake filter
Fine mesh filter that prevents ingress of dirt and deposits to water heated units. The filter is easy to attach and remove thanks to the integrated magnetic strips. Makes maintenance easier since the unit does not need to be opened.

| Type | Description |
|---|---|
| **PA2PF15** | Ceiling mounting brackets for 1 and 1,5 metre units, 4 pcs |
| **PA2PF20** | Ceiling mounting brackets for 2 metre units, 6 pcs |
| **PA34TR15** | Threaded bars for 1 and 1,5 metre units, 4 pcs |
| **PA34TR20** | Threaded bars for 2 metre units , 6 pcs |
| **PA2P15** | Hanging brackets for 1 and 1,5 metre units, 2 pcs |
| **PA2P20** | Hanging brackets for 2 metre units, 3 pcs |
| **PAMLK** | Motor alarm board |
| **PA2EF10** | External intake filter for PA2210C water heated units |
| **PA2EF15** | External intake filter for PA2215C water heated units |
| **PA2EF20** | External intake filter for PA2220C water heated units |

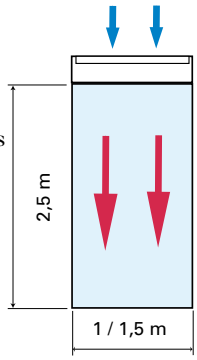

SIReB Basic


SIRe Competent


SIRe Advanced

| Type | Description |
|---|---|
| **SIReB** | Control system SIRe Basic |
| **SIReAC** | Control system SIRe Competent |
| **SIReAA** | Control system SIRe Advanced |

## Portier




Portier is an exclusive air curtain in brushed stainless steel intended for entrance doors in e.g. shops, banks, hotels and restaurants. The elegant design of the air curtain makes it particularly suitable for environments where demands are made on a high standard of design.

Portier has a unique symmetrical design in brushed stainless steel with black grille and ends.

- Recommended installation height 2,5 m
- Height: 280 mm
- Depth: 290 mm
- Housing in brushed stainless steel. Colour outlet grille and ends: black, RAL 9005.
- CE compliant.
- Approved for 220V/1ph/60Hz and 380V/3ph/60Hz. Product performance for 220V/1ph/60Hz and 380V/3ph/60Hz will differ from stated data.

**Portier 200A, ambient, unheated (IP21)**

| Type | Voltage [V] | Heat output [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **PS210A** | 230V~ | 0 | 1300 | 44/54 | 1020 |
| **PS215A** | 230V~ | 0 | 2000 | 46/56 | 1530 |

**Portier 200E, electrically heated (IP21)**

| Type | Voltage [V] | Heat output [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **PS210E03** | 230V~/400V3N~* | 1,5/3 | 1200 | 44/50 | 1020 |
| **PS210E06** | 400V3N~* | 3/6 | 1200 | 44/50 | 1020 |
| **PS210E09** | 400V3N~* | 4,5/9 | 1200 | 44/50 | 1020 |
| **PS215E09** | 400V3N~* | 4,5/9 | 1900 | 39/50 | 1530 |
| **PS215E14** | 400V3 + 230V~ | 6,7/13,5 | 1900 | 39/50 | 1530 |

*) Alternative 400 V3~ + 230 V~ (operating supply) if the current is greater than 16 A. Applies when connecting several units.

## Controls

Unit without heating

Level 1
- CB20, control box, 2 fan steps.

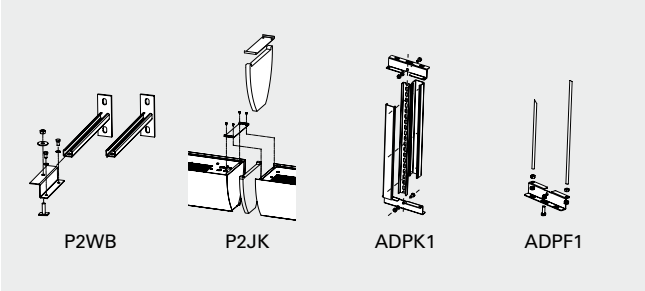
Level 2
- CB20, control box, 2 fan steps.
- MDC, magnetic door contact with a time relay.

Unit with electrical heating

Level 1
- CB22, control box, 2 fan steps and 2 heating steps.
- RTI2, electronic 2-step thermostat

Level 2
- CB22, control box, 2 fan steps and 2 heating steps.
- RTI2, electronic 2-step thermostat
- MDC, magnetic door contact with a time relay.

## Accessories




P2WB, wall mounting kit
Used for installing unit horizontally on a wall. Consists of wall brackets and mounting parts.

P2JK, joining kit
Used to join horizontal units together for a sleek and unified installation. Consists of joint bracket and mounting parts.

ADPK1, suspension kit
The hanging brackets are covered by a white plastic trim to cover the cables. The brackets may be cut to shorter length, if required.

ADPF1, suspension brackets
Ceiling brackets for installing the unit from the ceiling using wires or threaded bars (not included). Consists of 4 brackets, 2 for the unit and 2 for the ceiling.

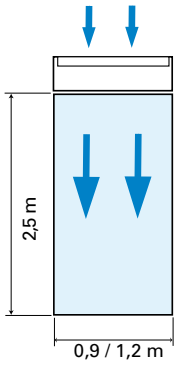
**Accessories - Portier**

| Type | Description |
|---|---|
| **CB20** | Control box (A) |
| **CB22** | Control box (E) |
| **RTI2** | 2-step room thermostat, IP44 |
| **RTI2V** | 2-step room thermostat with knob, IP44 |
| **MDC** | Magnetic door contact with time relay, IP44 |
| **ADPK1** | Suspension kit, max 1 m |
| **ADPF1** | Suspension brackets (4 pcs) |
| **P2WB** | Wall mounting kit |
| **P2JK** | Joining kit 2x1 m |

More information about accessories on pages 34 and 63-64.

Conditions for sound level measurements, see page 67.

## ADA




ADA is suitable to use, for example, to keep the cold air inside air conditioned premises. The air curtain creates an air barrier that prevents the intrusion of warm air and also insects, exhaust fumes, smoke, dust, etc. The cost of air conditioning will be substantially lower when the loss of conditioned air is reduced.

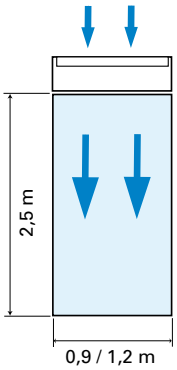
Thanks to compact design and air intake at the front, the air curtain can be mounted where space is limited between the ceiling and the upper edge of the doorway.

- Recommended installation height 2,5 m
- Built-in switch; high/low speed.
- Compact and easily positioned.
- Wall brackets included.
- Height: 235 mm
- Depth: 215 mm
- Colour: white, RAL 9016, NCS S 0500-N.
- CE compliant.
- Approved for 220V/1ph/60Hz. Product performance for 220V/1ph/60Hz will differ from stated data.

**ADA, ambient, unheated (IP21)**

| Type | Voltage [V] | Heat output [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **ADA090H** | 230V~ | 0 | 1150 | 43/54 | 900 |
| **ADA120H** | 230V~ | 0 | 1400 | 44/51 | 1200 |
| **ADA090L** | 230 V~ | 0 | 820 | 43/54 | 900 |
| **ADA120L** | 230 V~ | 0 | 1350 | 48/55 | 1200 |

## ADA Cool




ADA Cool keeps the cold air in cold stores and also makes it possible to have an open cold store area without doors.The air curtain creates an air barrier that prevents the intrusion of warm air and also insects, exhaust fumes, smoke, dust, etc. The cost of cooling is significantly reduced and the cold air stays where it is needed. ADA Cool reduces ice formation and condensation by the doorway and improves visibility when compared to plastic strips and fast folding doors.

Thanks to compact design and air intake at the front, the air curtain can be mounted where space is limited between the ceiling and the upper edge of the doorway. ADA Cool has a simple connection making it possible to easily link units together in order to cover wide openings.

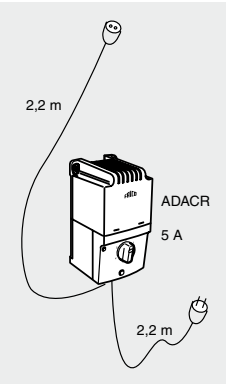
- Recommended installation height 2,5 m
- Wall brackets included.
- Height: 235 mm
- Depth: 215 mm
- Colour: white, RAL 9016, NCS S 0500-N.
- CE compliant.
- Approved for 220V/1ph/60Hz. Product performance for 220V/1ph/60Hz will differ from stated data.

**ADA Cool, ambient, unheated (IP21)**

| Type | Voltage [V] | Heat output [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **ADAC090** | 230V~ | 0 | 1150 | 54 | 900 |
| **ADAC120** | 230V~ | 0 | 1400 | 51 | 1200 |

## Controls

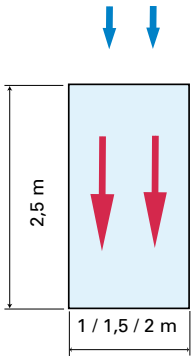
ADACR, 5-step fan speed control
ADACR is a control and connection set consisting of a 5-step fan speed control, flexible cable and earthed plug. Can control a maximum of 7-9 units (max. 7 units at 60 Hz). Max input: 5 A. Dimensions: 200x105x105 mm. IP30.




| Type | Description |
|---|---|
| **ADACR** | 5-step fan speed control |

Conditions for sound level measurements, see page 67.

## AR200




AR200 is a compact air curtain, suitable for most small entrances. A low height makes it possible to install AR200 where ceiling space is limited. The recessed installation and low sound level makes AR200 very discreet.

AR200 is designed for recessed installation and the visible bottom plate may be painted to make it blend in even better with the surroundings.

- Just one model per length, but electrical units are convertible between several outputs and 230V~/400V3N~ making it simple and flexible to adapt the output to current need.
- Recommended installation height 2,5 m
- Height: 198 mm
- Depth: 432 mm
- Colour bottom plate: white, RAL 9016, NCS S 0500-N.
- CE compliant.
- Approved for 220V/1ph/60Hz and 380V/3ph/60Hz. Product performance for 220V/1ph/60Hz and 380V/3ph/60Hz will differ from stated data.

**AR200A, ambient, unheated (IP20)**

| Type | Voltage [V] | Output [kW] | Airflow [m³/h] | Sound level [db(A)] | Length [mm] |
|---|---|---|---|---|---|
| **AR210A** | 230V~ | 0 | 1200 | 34/50 | 1042 |
| **AR215A** | 230V~ | 0 | 1750 | 34/50 | 1552 |
| **AR220A** | 230V~ | 0 | 2400 | 40/54 | 2042 |

**AR200E, electrically heated (IP20)**

| Type | Output steps 400V3N~ [kW] | Output steps 230V~ [kW] | Airflow [m³/h] | Sound level [db(A)] | Length [mm] |
|---|---|---|---|---|---|
| **AR210E09** | 0/3 | - | 1200 | 34/50 | 1042 |
| | 0/6/9 | - | | | |
| | - | 0/3 | | | |
| | - | 0/3/5 | | | |
| **AR215E11** | 0/4,5 | - | 1750 | 34/50 | 1552 |
| | 0/6,8/11,3 | - | | | |
| | - | 0/4,5 | | | |
| | - | 0/4,5/6,8 | | | |
| **AR220E18** | 0/6 | - | 2400 | 40/54 | 2042 |
| | 0/12/18 | - | | | |
| | - | 0/6 | | | |
| | - | 0/6/10 | | | |

AR200E is delivered as 9 kW, 11 kW and 18 kW (400 V3N~) models, but they are convertible to 230 V~ and different outputs as shown in above table.

**AR200W, water heated (IP20)**

| Type | Voltage [V] | Output* [kW] | Airflow [m³/h] | Sound level [db(A)] | Length [mm] |
|---|---|---|---|---|---|
| **AR210W** | 230V~ | 6,6 | 1000 | 41/49 | 1042 |
| **AR215W** | 230V~ | 10,4 | 1600 | 37/50 | 1552 |
| **AR220W** | 230V~ | 13,0 | 2000 | 44/53 | 2042 |

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

### Controls

Unit without heating

Level 1
- CB30N, control box, 3 fan steps.

Unit with electrical heating

Level 1
- CB32N, control box, 3 fan steps and 2 heating steps.
- RTI2, electronic 2-step thermostat

Level 2
- CB32N, control box, 3 fan steps and 2 heating steps.
- RTI2, electronic 2-step thermostat
- MDC, magnetic door contact with a time relay.

Unit with water heating

Note! A valve set VRS20/25 (option: TVVS20/25 with SD20) should be added for a complete control kit.

Level 1
- CB30N, control box, 3 fan steps.
- T10S, room thermostat IP30.

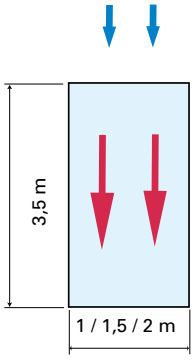
Level 2
- CB30N, control box, 3 fan steps.
- RTI2, electronic 2-step thermostat
- MDC, magnetic door contact with a time relay.

**Accessories - AR200**

| Type | Description |
|---|---|
| **CK01E** | Control kit Electric level 1 (CB32N, RTI2) |
| **CK02E** | Control kit Electric level 2 (CB32N, RTI2, MDC) |
| **CK01W** | Control kit Water level 1 (CB30N, T10S) |
| **CK02W** | Control kit Water level 2 (CB30N, RTI2, MDC) |
| **CB32N** | Control box (E) |
| **CB30N** | Control box (A/W) |
| **T10S** | Electronic thermostat, IP44 |
| **KRT2800** | 2-step room thermostat, IP55 |
| **RTI2** | 2-step room thermostat, IP44 |
| **RTI2V** | 2-step room thermostat with knob, IP44 |
| **MDC** | Magnetic door contact with time relay, IP44 |
| **MDCDC** | Magnetic door contact |
| **CBT** | Electronic timer, IP44 |
| **KUR** | Digital time switch, IP55 |
| **VRS20** | Valve set, DN 20 mm |
| **VRS25** | Valve set, DN 25 mm |
| **TVVS20** | 2-way control valve, DN 20 mm |
| **TVVS25** | 2-way control valve, DN 25 mm |
| **SD20** | Actuator |

More information about accessories on pages 34 and 63-66.

## AR300




AR300 is very discreet thanks to its concealed appearance in the ceiling and built-in control that requires no wiring. The IR-eye in the Plug & play control detects if the door is opened or closed and controls the air curtain accordingly.

AR300 is intended for recessed installation and the frame and hatch can be painted in colours that blend well with the premises.

- Recommended installation height 3,5 m
- Height: 302 mm
- Depth: 595 mm
- Colour frame and hatch: white, RAL 9016, NCS S 0500-N. Colour grille: grey, RAL 7046.
- Approved by SEMKO and CE compliant.
- Approved for 220V/1ph/60Hz and 380V/3ph/60Hz. Product performance for 220V/1ph/60Hz and 380V/3ph/60Hz will differ from stated data.

**AR300E, electrically heated (IP44)***

| Type | Voltage [V] | Heat output [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **AR310E09** | 400V3~ | 4,5/9 | 2000 | 43/59 | 1057 |
| **AR315E14** | 400V3~ | 7/13,5 | 2800 | 43/60 | 1567 |
| **AR320E18** | 400V3~ | 9/18 | 4000 | 46/63 | 2073 |

**AR300W, water heated (IP44)***

| Type | Voltage [V] | Heat output*¹ [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **AR310W** | 230V~ | 8,6 | 2000 | 43/58 | 1057 |
| **AR315W** | 230V~ | 12,6 | 2800 | 43/59 | 1567 |
| **AR320W** | 230V~ | 18,3 | 4000 | 46/62 | 2073 |

*¹) Applicable at water temperature 60/40 °C, air temperature, in +18 °C.

*) Protection class, recessed mounting above suspended ceilings: IP44, hanging on rods without suspended ceiling: IP20.

The thermostat setting and open door fan speed selection is hidden under the cover.

The IR-eye detects when the door is open and closed. The thermostat is located by the air intake and heat or ambient mode is set by a push button. Alarm indication by LED.

### Control

The built-in control of AR300 is designed to give the highest level of functionality while minimizing installation and daily operation. No additional wiring or external controls are needed.

The air curtain operates at its maximum performance in all situations and is not dependent on day-to-day adjustments.

When the door is open the air curtain separates outdoor and indoor air and provides heat if it is needed.

When the door is closed the air curtain operates as part of the heating system supplying additional heat if indoor temperature falls below desired temperature. There are also possibilities to connect the air curtain to a BMS system for on/off control and alarm indication.Note! A valve set VR20/25 (option: TVV20/25 with SD20) should be added for a complete control kit. TVV20/25 and VR20/25 have a closed valve in unpowered mode, for further descriptions see TVVS20/25 and VRS20/25 in the "Controls" section.

### Accessories

AR300DS

AR300ERS

AR300DS, external door contact

When the distance between the eye and the reflector is too long an external door contact AR300DS is needed. The external door contact is supplied with 7 m cable and a modular connector for easy and quick installation (no other adjustments are needed to get the accessories working). The connection of the door contact is done on the control box accessible by opening the service hatch of the AR300.

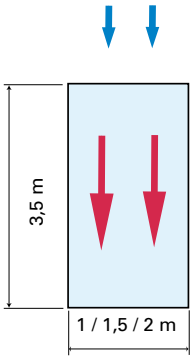
AR300ERS, external room sensor

If an external room sensor is needed, use the AR300ERS. The external room sensor is supplied with 7 m cable and a modular connector for easy and quick installation (no other adjustments are needed to get the accessories working). The connection of the room sensor is done on the control box accessible by opening the service hatch of the AR300.

| Type | Description |
|---|---|
| **AR300DS** | External door contact, with 7 m cable |
| **AR300ERS** | External room sensor, with 7 m cable |
| **VR20** | Valve set, DN 20 mm |
| **VR25** | Valve set, DN 25 mm |
| **TVV20** | 2-way control valve, DN 20 mm |
| **TVV25** | 2-way control valve, DN 25 mm |
| **SD20** | Actuator |

More information about accessories on page 66.

## AR3500




With its concealed location, AR3500 is very unobtrusive and with that particularly suitable for environments where the design is important.

The air curtain has many intelligent and energy saving features which provide fully automatic protection for the entrance, adaptable to each area of use.

AR3500 is intended for recessed installation and the frame and hatch can be painted in colours that blend well with the premises.

- Recommended installation height 3,5 m
- Height: 302 mm
- Depth: 595 mm
- Colour frame and hatch: white, RAL 9016, NCS S 0500-N. Colour grille: grey, RAL 7046.
- Approved by SEMKO and CE compliant.
- Approved for 220V/1ph/60Hz and 380V/3ph/60Hz. Product performance for 220V/1ph/60Hz and 380V/3ph/60Hz will differ from stated data.

**AR3500A, ambient, unheated (IP44)***

| Type | Voltage [V] | Heat output [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **AR3510A** | 400V3~ | 0 | 2100 | 39/58 | 1057 |
| **AR3515A** | 400V3~ | 0 | 2900 | 40/58 | 1567 |
| **AR3520A** | 400V3~ | 0 | 4200 | 41/61 | 2073 |

**AR3500E, electrically heated (IP44)***

| Type | Voltage [V] | Heat output [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **AR3510E09** | 400V3~ | 4,5/9 | 2100 | 39/58 | 1057 |
| **AR3515E14** | 400V3~ | 7/13,5 | 2900 | 40/58 | 1567 |
| **AR3520E18** | 400V3~ | 9/18 | 4200 | 41/61 | 2073 |

**AR3500W, water heated (IP44)***

| Type | Voltage [V] | Heat output*[1] [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **AR3510W** | 230V~ | 8,6 | 2100 | 39/58 | 1057 |
| **AR3515W** | 230V~ | 12,6 | 2900 | 40/58 | 1567 |
| **AR3520W** | 230V~ | 18,3 | 4200 | 41/61 | 2073 |

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

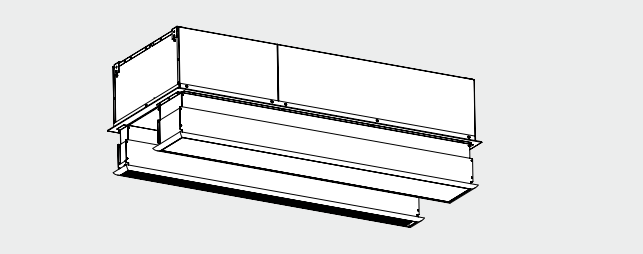
*) Protection class, recessed mounting above suspended ceilings: IP44, hanging on rods without suspended ceiling: IP20.

## Controls


This air curtain is supplied with an intregrated PC board SIRe. There are three different levels with different functionality to choose from, Basic, Competent or Advanced. Read more about SIRe on page 12-14. Valve kit VOS(P), VOT, VMO(P) or VMT is used to control the water flow. For more information see the "Controls" section.

| Type | Description |
|---|---|
| **SIReB** | Control system SIRe Basic |
| **SIReAC** | Control system SIRe Competent |
| **SIReAA** | Control system SIRe Advanced |

## Accessories



AR35XTT, extension

Outlet/inlet extension for a discreet installation with only the outlet and inlet visible in the ceiling.

| Type | Description |
|---|---|
| **AR35XTT10** | Extension for AR3510 |
| **AR35XTT15** | Extension for AR3515 |
| **AR35XTT20** | Extension for AR3520 |

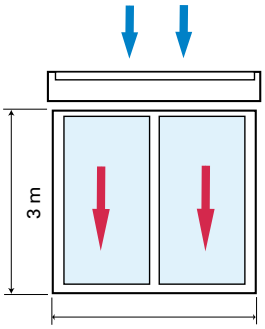
## Corinte

Corinte is intended for exclusive shop entrances and other environments with high demands in respect of design and soundlevel. Mounted with one unit on either side of the opening, thus creating a classic symmetry, the curtain effect and comfort is optimized.

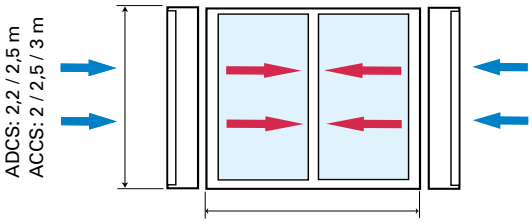
The air curtain has many intelligent and energy saving features which provide fully automatic protection for the entrance, adaptable to each area of use.

Corinte is a stylish and exclusive, stainless steel air curtain for horizontal or vertical installation. Corinte is available in two models; ADCS and ACCS that have varying dimensions and performance. The product key offers many options for the design and finish of both models.

- Recommended installation height 3 m
- Recommended installation width 5 m (2 units, one on each side)
- Available in polished, mirror-polished or brushed stainless steel. Colour intake and outlet grille: black, RAL 9005.
- CE compliant.




ADCS: 1,7 / 2,2 m
ACCS: 1 / 1,5 / 2 / 2,5 / 3 m




## Controls

SIReB Basic

SIRe Competent

SIRe Advanced

This air curtain is supplied with an intregrated PC board SIRe. There are three different levels with different functionality to choose from, Basic, Competent or Advanced. Read more about SIRe on page 12-14. Valve kit VOS(P), VOT, VMO(P) or VMT is used to control the water flow. For more information see the "Controls" section.

| Type | Description |
|---|---|
| **SIReB** | Control system SIRe Basic |
| **SIReAC** | Control system SIRe Competent |
| **SIReAA** | Control system SIRe Advanced |

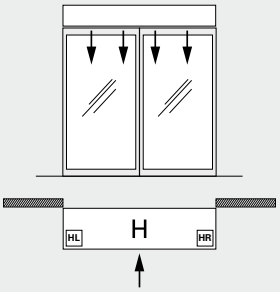
## Product key

Type - Unit shape - Connections position - Finish / Material
Example: ADCS22WL - VL - A - P

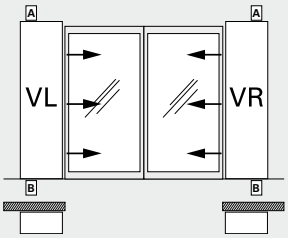
| | |
|---|---|
| **Type** | See technical specifications |
| **Unit shape** | HL (Horizontal, connections to the left),<br>HR (Horizontal, connections to the right),<br>VL (Vertical Left) or VR (Vertical Right) |
| **Connections position** | A or B, see figure. |
| **Finish / material** | P = Polished bright annealed<br>B = Brushed stainless steel<br>MP = Mirror polished stainless steel |

### Connections position

Horizontal




Vertical



## Corinte ADCS

- Wall brackets included.
- Height: 500 mm
- Depth: 350 mm
- Approved for 220V/1ph/60Hz and 380V/3ph/60Hz. Product performance for 220V/1ph/60Hz and 380V/3ph/60Hz will differ from stated data.

**Corinte ADCS A, ambient, unheated (IP20)**

| Type | Voltage [V] | Heat output [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **ADCS17A*1** | 230V~ | 0 | 3000 | 40/60 | 1700 |
| **ADCS22A** | 230V~ | 0 | 4000 | 42/61 | 2200 |
| **ADCS25A*2** | 230V~ | 0 | 4500 | 43/63 | 2450 |

**Corinte ADCS E, electrically heated (IP20)**

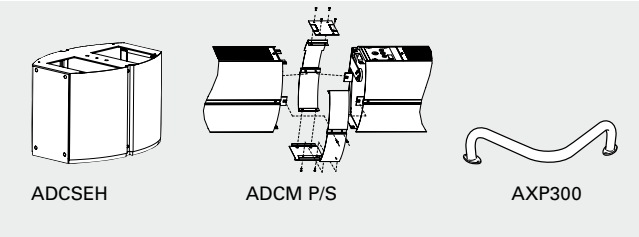
| Type | Voltage [V] | Heat output [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **ADCS17E*1** | 230V~/400V3~ | 0/7,5/15 | 3000 | 40/60 | 1700 |
| **ADCS22E** | 230V~/400V3~ | 0/10/20 | 4000 | 42/61 | 2200 |
| **ADCS25E*2** | 230V~/400V3~ | 0/11,2/22,5 | 4500 | 43/63 | 2450 |

**Corinte ADCS WL, water heated (IP20)**

| Type | Voltage [V] | Heat output*3 [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **ADCS17WL*1** | 230V~ | 17,3 | 3000 | 39/59 | 1700 |
| **ADCS22WL** | 230V~ | 24,5 | 4000 | 42/60 | 2200 |
| **ADCS25WL*2** | 230V~ | 28,0 | 4500 | 42/61 | 2450 |

*1) ADCS17 is available only for horizontal mounting.
*2) ADCS25 is available only for vertical mounting.
*3) Applicable at water temperature 60/40 °C, air temperature, in +18 °C.

## Accessories ADCS




ADCSEH, extension hood
Fills the space between the unit and the ceiling for vertical mounting and provides a neater installation. Special order to required dimension. Height 100-1000 mm.

ADCM P/S, joining kit
Used to join horizontal units together for a sleek and unified installation. ADCMP for suspended installation and ADCMS for wall installation.

AXP300, collision protection
Floor placed protection against impact from e.g. shopping trolleys.

**Accessories - Corinte ADCS**

| Type | Description |
|---|---|
| **ADCMP** | Joining kit for suspended mounting |
| **ADCMS** | Joining kit for wall mounting |
| **ADCSEH** | Extension hood 100-1000 mm |
| **AXP300** | Collision protection |

## Corinte ACCS

- Height: 395 mm
- Depth: 315 mm

**Corinte ACCS E, electrically heated (IP20)**

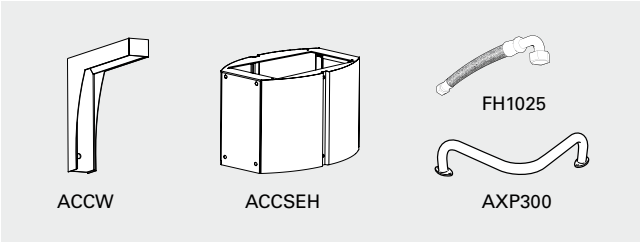
| Type | Voltage [V] | Heat output [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **ACCS10E08*1** | 230V~/400V3~ | 2,7/5,4/8,1 | 1900 | 44/61 | 1000 |
| **ACCS15E12*1** | 230V~/400V3~ | 3,9/7,8/11,7 | 2600 | 45/62 | 1500 |
| **ACCS20E16** | 230V~/400V3~ | 5,4/10,8/16,2 | 3800 | 47/64 | 2000 |
| **ACCS25E20** | 230V~/400V3~ | 6,6/13,2/19,8 | 4500 | 48/65 | 2500 |
| **ACCS30E23** | 230V~/400V3~ | 7,8/15,6/23,4 | 5100 | 48/65 | 3000 |

**Corinte ACCS WL, water heated (IP20)**

| Type | Voltage [V] | Heat output*2 [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **ACCS10WL*1** | 230V~ | 9,0 | 1900 | 44/61 | 1000 |
| **ACCS15WL*1** | 230V~ | 16,8 | 2600 | 45/62 | 1500 |
| **ACCS20WL** | 230V~ | 23,5 | 3800 | 47/64 | 2000 |
| **ACCS25WL** | 230V~ | 29,3 | 4500 | 48/65 | 2500 |
| **ACCS30WL** | 230V~ | 34,6 | 5100 | 48/65 | 3000 |

*1) Only available for horizontal mounting.
*2) Applicable at water temperature 60/40 °C, air temperature, in +18 °C and horizontal mounting.

## Accessories ACCS




ACCW, wall bracket
Brackets for installing unit horizontally on a wall. Two are required for 1 and 1.5 metre units, while 2 and 2.5 metre units need three and 3 metre units need four.
Available in three designs:
- ACCWBB, brushed stainless steel
- ACCWBP, polished stainless steel
- ACCWBMP, mirror polished stainless steel

ACCSEH, extension hood
Fills the space between the unit and the ceiling for vertical mounting and provides a neater installation. Special order to required dimension. Height 100-1000 mm.

AXP300, collision protection
Floor placed protection against impact from e.g. shopping trolleys.

FH1025, flexible hose
Flexible hose (DN25, 1" inside thread) for easy connection to the pipe system.

**Accessories - Corinte ACCS**

| Type | Description |
|---|---|
| **ACCWBB** | Wall bracket, brushed stainless steel |
| **ACCWBP** | Wall bracket, polished stainless steel |
| **ACCWBMP** | Wall bracket, mirror polished stainless steel |
| **ACCSEH** | Extension hood 100-1000 mm |
| **AXP300** | Collision protection |
| **FH1025** | Flexible hoses DN25, inside thread, 1 pcs |

PA3500

PA4200

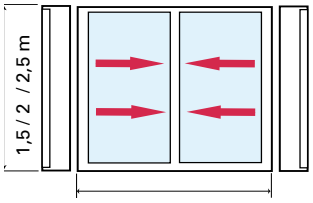
## PA3500 and PA4200

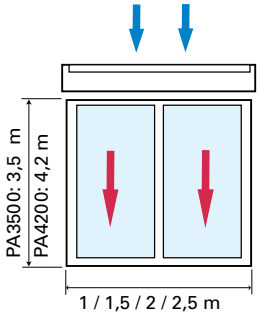
With air curtains PA3500 and PA4200 there are more opportunities than ever before, packed into the same product. There are therefore many areas of use.

The air curtain has many intelligent and energy saving features which provide fully automatic protection for the entrance, adaptable to each area of use.

The air curtain is available for horizontal, vertical and recessed installation.

- The air curtain is complemented with a vertical pack for vertical installation.
- The accessory Design kit enables a neat installation with concealed mountings, pipes and cables.
- Colour front and service hatch: white, RAL 9016, NCS S 0500-N. Colour grille, rear section and ends: grey, RAL 7046.
- CE compliant.




PA3500 PA4200

## PA3500

PA3500 is particularly suitable in entrances to stores, shopping centres and smaller industrial premises for example.

- Recommended installation height 3,5 m
- Recommended installation width 5 m (2 units, one on each side)
- Height: 270 mm
- Depth: 525 mm
- Approved for 220V/1ph/60Hz and 380V/3ph/60Hz. Product performance for 220V/1ph/60Hz and 380V/3ph/60Hz will differ from stated data.

## PA4200

PA4200 is specifically designed for doorways in for example, large commercial installations or industrial and warehouse buildings.

- Recommended installation height 4,2 m
- Recommended installation width 6 m (2 units, one on each side)
- Height: 295 mm
- Depth: 611 mm

**PA3500A, ambient, unheated (IP21)**

| Type | Voltage [V] | Heat output [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **PA3510A** | 230V~ | 0 | 1800 | 40/57 | 1039 |
| **PA3515A** | 230V~ | 0 | 2600 | 41/59 | 1549 |
| **PA3520A** | 230V~ | 0 | 3200 | 42/60 | 2039 |
| **PA3525A** | 230V~ | 0 | 4600 | 42/61 | 2549 |

**PA4200A, ambient, unheated (IP21)**

| Type | Voltage [V] | Heat output [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **PA4210A** | 230V~ | 0 | 2700 | 46/64 | 1039 |
| **PA4215A** | 230V~ | 0 | 3700 | 46/64 | 1549 |
| **PA4220A** | 230V~ | 0 | 5300 | 47/65 | 2039 |
| **PA4225A** | 230V~ | 0 | 6350 | 49/67 | 2549 |

**PA3500E, electrically heated (IP20)**

| Type | Voltage [V] | Heat output [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **PA3510E08** | 230V/400V3~ | 2,7/5,4/8,0 | 1800 | 40/57 | 1039 |
| **PA3515E12** | 230V/400V3~ | 3,9/7,8/12 | 2600 | 40,5/58,5 | 1549 |
| **PA3520E16** | 230V/400V3~ | 5,4/10,8/16 | 3200 | 42/59,5 | 2039 |
| **PA3525E20** | 230V/400V3~ | 6,6/13,2/20 | 4600 | 42/60,5 | 2549 |

**PA4200E, electrically heated (IP20)**

| Type | Voltage [V] | Heat output [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **PA4210E12** | 230V/400V3~ | 3,9/7,8/12 | 2700 | 46/63,5 | 1039 |
| **PA4215E18** | 230V/400V3~ | 6,0/12,0/18 | 3700 | 46/64 | 1549 |
| **PA4220E24** | 230V/400V3~ | 7,8/15,6/24 | 5300 | 47/64,5 | 2039 |
| **PA4225E30** | 230V/400V3~ | 9,9/19,8/30 | 6350 | 48,5/67 | 2549 |

**PA3500WL, water heated (IP21)**

| Type | Voltage [V] | Heat output* [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **PA3510WL** | 230V~ | 11,7 | 1800 | 40/57 | 1039 |
| **PA3515WL** | 230V~ | 18,1 | 2600 | 41/59 | 1549 |
| **PA3520WL** | 230V~ | 22,8 | 3200 | 42/60 | 2039 |
| **PA3525WL** | 230V~ | 32,6 | 4600 | 42/61 | 2549 |

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

**PA4200WL, water heated (IP21)**

| Type | Voltage [V] | Heat output* [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **PA4210WL** | 230V~ | 16,9 | 2700 | 46/64 | 1039 |
| **PA4215WL** | 230V~ | 24,7 | 3700 | 46/64 | 1549 |
| **PA4220WL** | 230V~ | 34,8 | 5300 | 47/65 | 2039 |
| **PA4225WL** | 230V~ | 43,8 | 6350 | 49/67 | 2549 |

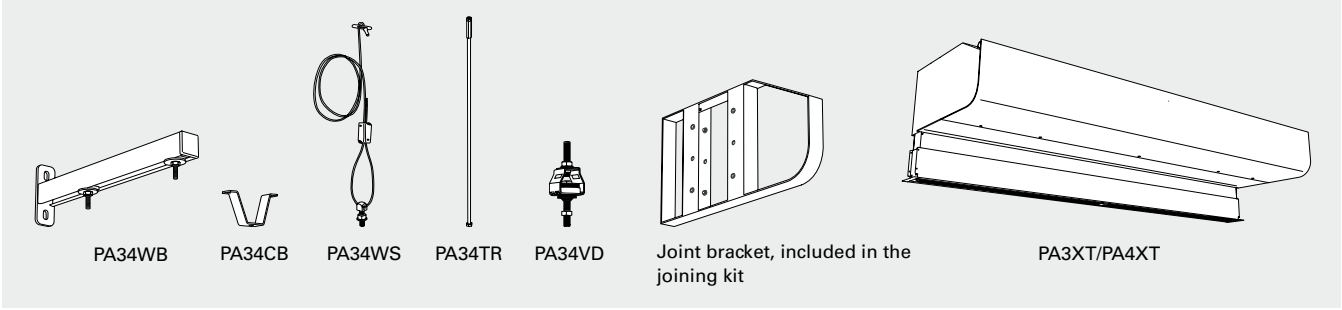
*) Applicable at water temperature 60/40 °C, air temperature, in +18 °C.

## Controls

This air curtain is supplied with an intregrated PC board SIRe. There are three different levels with different functionality to choose from, Basic, Competent or Advanced. Read more about SIRe on page 12-14. Valve kit VOS(P), VOT, VMO(P) or VMT is used to control the water flow. For more information see the "Controls" section.


| Type | Description |
|---|---|
| **SIReB** | Control system SIRe Basic |
| **SIReAC** | Control system SIRe Competent |
| **SIReAA** | Control system SIRe Advanced |

## Accessories PA3500/4200 - Horizontal mounting




PA34WB, wall brackets
Brackets for installing unit horizontally on a wall.

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.

PA3JK/PA4JK, joining kit
Used to join horizontal units together for a sleek and unified installation. Consists of joint bracket and mounting parts.

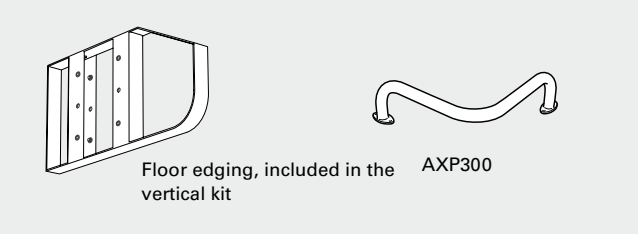
## Recessed mounting in suspended ceilings

PA3XT/PA4XT, outlet extension
Outlet extension with telescopic function. Used for recessed installation of units in suspended ceilings.

| Type | Description |
|---|---|
| **PA34WB15** | Wall brackets for 1 and 1,5 metre units, 2 pcs |
| **PA34WB20** | Wall brackets for 2 metre units, 3 pcs |
| **PA34WB30** | Wall brackets for 2,5 metre units, 4 pcs |
| **PA34CB15** | Ceiling brackets for 1 and 1,5 metre units, 4 pcs |
| **PA34CB20** | Ceiling brackets for 2 metre units, 6 pcs |
| **PA34CB30** | Ceiling brackets for 2,5 metre units, 8 pcs |
| **PA34WS15** | Wire suspension kit for 1 and 1,5 metre units, 4 pcs |
| **PA34WS20** | Wire suspension kit for 2 metre units, 6 pcs |
| **PA34WS30** | Wire suspension kit for 2,5 metre units, 8 pcs |
| **PA34TR15** | Threaded bars for 1 and 1,5 metre units, 4 pcs |
| **PA34TR20** | Threaded bars for 2 metre units, 6 pcs |
| **PA34TR30** | Threaded bars for 2,5 metre units, 8 pcs |
| **PA34VD15** | Vibration dampers for 1 and 1,5 metre units, 4 pcs |
| **PA34VD20** | Vibration dampers for 2 metre units, 6 pcs |
| **PA34VD30** | Vibration dampers for 2,5 metre units, 8 pcs |
| **PA3JK** | Joining kit PA3500 |
| **PA4JK** | Joining kit PA4200 |
| **PA3XT10** | Outlet extension for PA3510, 130-200 mm |
| **PA3XT15** | Outlet extension for PA3515, 130-200 mm |
| **PA3XT20** | Outlet extension for PA3520, 130-200 mm |
| **PA3XT25** | Outlet extension for PA3525, 130-200 mm |
| **PA4XT10** | Outlet extension for PA4210, 130-200 mm |
| **PA4XT15** | Outlet extension for PA4215, 130-200 mm |
| **PA4XT20** | Outlet extension for PA4220, 130-200 mm |
| **PA4XT25** | Outlet extension for PA4225, 130-200 mm |

# Air curtains - Commercial

## Accessories PA3500/4200 - Vertical mounting

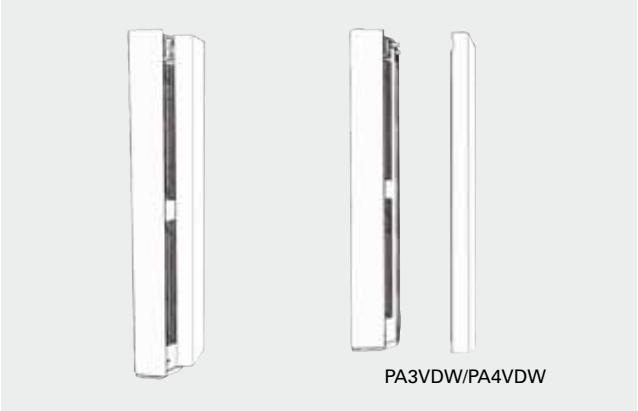



PA3JK/PA4JK, vertical kit
Used to adapt a horizontal unit for vertical installation. Includes floor frame and mounting parts to support the top. Vertical kit allows two units to be installed on top of each other. One vertical kit is needed per unit.

AXP300, collision protection
Floor placed protection against impact from e.g. shopping trolleys.

| Type | Description |
|---|---|
| **PA3JK** | Vertical kit PA3500 |
| **PA4JK** | Vertical kit PA4200 |
| **AXP300** | Collision protection |

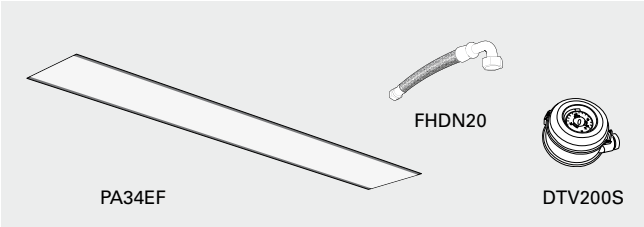
## Accessories PA3500/4200 - Design kit




PA3VDW/PA4VDW, design kit for vertical mounting
Used to conceal cables and pipes.

| Type | Description |
|---|---|
| **PA3VDW15** | Design kit for vertical mounting PA3515 |
| **PA3VDW20** | Design kit for vertical mounting PA3520 |
| **PA3VDW25** | Design kit for vertical mounting PA3525 |
| **PA4VDW15** | Design kit for vertical mounting PA4215 |
| **PA4VDW20** | Design kit for vertical mounting PA4220 |
| **PA4VDW25** | Design kit for vertical mounting PA4225 |

## Accessories PA3500/4200 - Unit with water heating



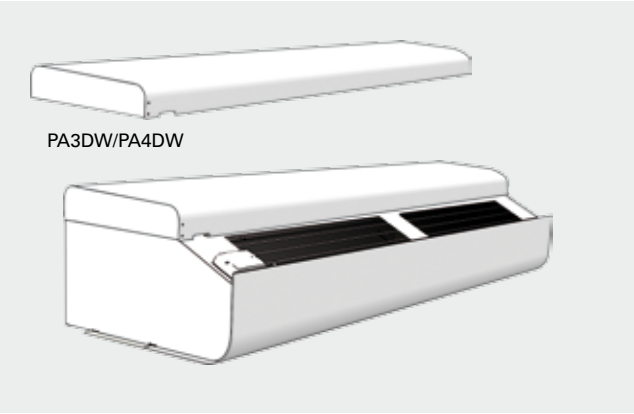

PA34EF, external intake filter
Fine mesh filter that prevents ingress of dirt and deposits to water heated units. The filter is easy to attach and remove thanks to the integrated magnetic strips. Makes maintenance easier since the unit does not need to be opened.

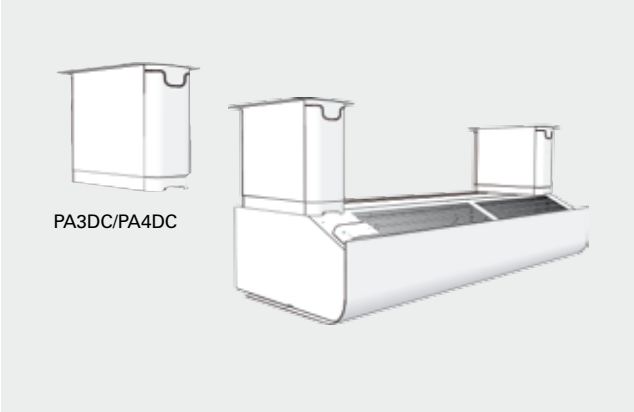
DTV200S, filter pressure guard
Measures the differential pressure, which indicates how dirty the filter is in water heated units. The metering hose is connected to the suction side of the unit (after the filter). Adjustment is performed on site depending on the unit and the environment. Adjustable range 20-300 Pa. Potential free, changeover alarm contact.

FHDN20, flexible hoses
Flexible hoses for easy and practical installation of water heated unit.

| Type | Description |
|---|---|
| **PA34EF10** | External intake filter for 1 metre units |
| **PA34EF15** | External intake filter for 1,5 metre units |
| **PA34EF20** | External intake filter for 2 metre units |
| **PA34EF25** | External intake filter for 2,5 metre units |
| **DTV200S** | Filter pressure guard |
| **FHDN20** | Flexible hoses DN20, inside thread, 90° bend, 1 pair |

## Accessories PA3500/4200 - Design kit



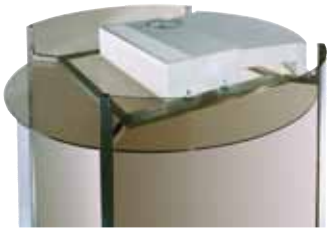

PA3DW/PA4DW, design kit for wall mounting
Used to conceal mountings, cables and pipes. Used together with ceiling brackets PA34WB.

| Type | Description | LxHxW [mm] |
|---|---|---|
| **PA3DW10** | Design kit for wall mounting PA3510 | 87x382x1006 |
| **PA3DW15** | Design kit for wall mounting PA3515 | 87x382x1516 |
| **PA3DW20** | Design kit for wall mounting PA3520 | 87x382x2006 |
| **PA3DW25** | Design kit for wall mounting PA3525 | 87x382x2516 |
| **PA4DW10** | Design kit for wall mounting PA4210 | 87x424x1006 |
| **PA4DW15** | Design kit for wall mounting PA4215 | 87x424x1516 |
| **PA4DW20** | Design kit for wall mounting PA4220 | 87x424x2006 |
| **PA4DW25** | Design kit for wall mounting PA4225 | 87x424x2516 |

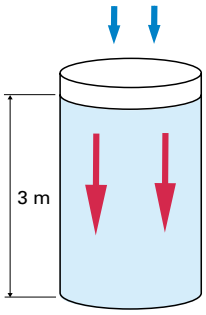
PA3DC/PA4DC, design kit for ceiling mounting
Used to conceal mountings, cables and pipes. The design kit has a telescope function that can be adapted for the installation. It can also be extended with one or more extension parts.

Two design kits are required for 1 and 1.5 metre units, while 2 metre units need three kits and 2.5 metre units needed four kits.

| Type | Description |
|---|---|
| **PA3DCS** | Design kit for ceiling mounting PA3500, small, 200-300 mm (1 piece) |
| **PA3DCM** | Design kit for ceiling mounting PA3500, medium, 300-500 mm (1 piece) |
| **PA3DCL** | Design kit for ceiling mounting PA3500, large, 500-900 mm (1 piece) |
| **PA3DXT** | Design kit for ceiling mounting PA3500, extension, 420 mm (1 piece) |
| **PA4DCS** | Design kit for ceiling mounting PA4200, small, 200-300 mm (1 piece) |
| **PA4DCM** | Design kit for ceiling mounting PA4200, medium, 300-500 mm (1 piece) |
| **PA4DCL** | Design kit for ceiling mounting PA4200, large, 500-900 mm (1 piece) |
| **PA4DXT** | Design kit for ceiling mounting PA4200, extension, 420 mm (1 piece) |



## RDS




RDS is an ideal air curtain solution for revolving doors. The air curtain is installed above the door and the exhaust duct is adapted to the diameter of the door, which gives a neat and discrete solution.

A revolving door prevents continuous drafts but still lets in a certain amount of cold air at every rotation. The air curtain prevents the cold air from penetrating and gives good heating comfort.

The RDS consists of a unit and an exhaust duct adapted to the shape and colour of the revolving door.

- Height: 270 mm
- Depth: 525 mm
- The front of the duct is covered by a duct panel that is available in polished high gloss, polished or brushed stainless steel. It is also available in powder coated steel, in any RAL/ NCS colour. Exhaust duct and air curtain in powder coated steel, white, RAL 9016. Aluminium louvres.
- CE compliant.

**RDS E, electrically heated (IP20)**

| Type | Voltage [V] | Heat output [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **RDS23E08** | 400V3~ | 2,7/5,4/8,1 | 2300 | 60 | 1000 |
| **RDS29E12** | 400V3~ | 3,9/7,8/11,7 | 2900 | 61 | 1000 |
| **RDS38E18** | 400V3~ | 6,0/12,0/18,0 | 3800 | 62 | 1500 |
| **RDS56E23** | 400V3~ | 7,8/15,6/23,4 | 5600 | 63 | 2000 |
| **RDS65E30** | 400V3~ | 9,9/19,8/29,7 | 6500 | 64 | 2500 |

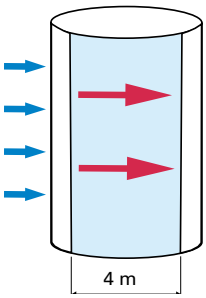
**RDS WL, water heated (IP20)**

| Type | Voltage [V] | Heat output* [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **RDS23WL** | 230V~ | 10,3 | 2300 | 60 | 1000 |
| **RDS29WL** | 230V~ | 11,7 | 2900 | 61 | 1000 |
| **RDS38WL** | 230V~ | 17,3 | 3800 | 62 | 1500 |
| **RDS56WL** | 230V~ | 25,5 | 5600 | 63 | 2000 |
| **RDS65WL** | 230V~ | 32,0 | 6500 | 64 | 2500 |

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

## Controls

This air curtain is supplied with an intregrated PC board SIRe. There are three different levels with different functionality to choose from, Basic, Competent or Advanced. Read more about SIRe on page 12-14. Valve kit VOS(P), VOT, VMO(P) or VMT is used to control the water flow. For more information see the "Controls" section.




## SFS

The SFS is an air curtain with many clever functions, specially designed for revolving doors. The air curtain is mounted vertically and its curved design integrates neatly with the door. SFS efficiently protects the exposed area just above the floor.

A revolving door prevents continuous drafts but still lets in a certain amount of cold air at every rotation. The air curtain prevents the cold air from penetrating and gives good heating comfort.

The SFS has a curved design that follows the shape of the revolving door and is available in powder-coat painted or stainless steel.

- Standard length is 2200 mm. Lengths up to 3 m can be ordered according to the product key (extension without fans). Extension hoods, for heights up to 4 m, are available as an accessory.
- Width: 580 mm
- Depth: 295 mm
- Available in polished high gloss, polished or brushed stainless steel. Also available in powder coated steel, any RAL/ NCS colour. Aluminium louvres. Colour intake grille: grey, RAL 7046.
- CE compliant.

**SFS E, electrically heated (IP20)**

| Type | Voltage [V] | Heat output [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **SFS23E08** | 400V3~ | 2,7/5,4/8,1 | 2300 | 60 | 2200 |
| **SFS30E12** | 400V3~ | 3,9/7,8/11,7 | 3000 | 61 | 2200 |
| **SFS38E16** | 400V3~ | 5,4/10,8/16,2 | 3800 | 62 | 2200 |
| **SFS56E23** | 400V3~ | 7,8/15,6/23,4 | 5600 | 63 | 2200 |

**SFS WL, water heated (IP20)**

| Type | Voltage [V] | Heat output* [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **SFS23WL** | 230V~ | 13,3 | 2300 | 60 | 2200 |
| **SFS30WL** | 230V~ | 19,9 | 3000 | 61 | 2200 |
| **SFS38WL** | 230V~ | 23,1 | 3800 | 62 | 2200 |
| **SFS56WL** | 230V~ | 29,4 | 5600 | 63 | 2200 |

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

SIReB Basic SIRe Competent SIRe Advanced

| Type | Description |
|---|---|
| **SIReB** | Control system SIRe Basic |
| **SIReAC** | Control system SIRe Competent |
| **SIReAA** | Control system SIRe Advanced |

AGS5000

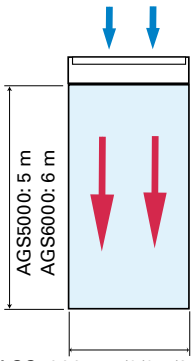
AGS6000

## AGS5000/6000

AGS is a powerful air curtain series intended for industrial doors but it can also be used for entryways in other large premises such as shopping malls.

With its many clever, energy saving functions, the air curtain gives effective protection, specially adapted for your door.

AGS has a timeless, clean design. The air curtain is intended for horizontal installation, models for vertical and recessed installation are available for special order.




AGS5000: 1,5/2/2,5/3 m
AGS6000: 1/1,5/2/2,5/3 m

- Unit with electrical heating is available as special order.
- Colour: white, RAL 9016, NCS S 0500-N.Colour grille: grey, RAL 7046.
- CE compliant.
- Ambient models are approved for 220V/1ph/60Hz. Product performance for 220V/1ph/60Hz will differ from stated data.

## Controls

SIReB Basic

SIRe Competent

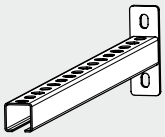
SIRe Advanced

This air curtain is supplied with an intregrated PC board SIRe. There are three different levels with different functionality to choose from, Basic, Competent or Advanced. Read more about SIRe on page 12-14. Valve kit VOS(P), VOT, VMO(P) or VMT is used to control the water flow. For more information see the "Controls" section.

| Type | Description |
|---|---|
| **SIReB** | Control system SIRe Basic |
| **SIReAC** | Control system SIRe Competent |
| **SIReAA** | Control system SIRe Advanced |

## Accessories

GWB640, wall bracket
Brackets for installing unit horizontally on a wall. Two are required for 1 and 1.5 metre units, while 2 and 2.5 metre units need three and 3 metre units need four.



GWB

| Type | Description |
|---|---|
| **GWB640** | Wall bracket, 1 pcs |

## AGS5000

- Recommended installation height 5 m
- Height: 450 mm
- Depth: 766 mm

**AGS5000 A, ambient, unheated (IP23)**

| Type | Voltage [V] | Heat output [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **AGS5015A** | 230V~ | 0 | 5300 | 48/67 | 1515 |
| **AGS5020A** | 230V~ | 0 | 7600 | 50/69 | 2010 |
| **AGS5025A** | 230V~ | 0 | 10200 | 52/71 | 2520 |
| **AGS5030A** | 230V~ | 0 | 12000 | 53/72 | 3030 |

**AGS5000 WL, water heated (IP23)**

| Type | Voltage [V] | Heat output* [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **AGS5015WL** | 230V~ | 25,0 | 4800 | 47/66 | 1515 |
| **AGS5020WL** | 230V~ | 41,4 | 7000 | 49/68 | 2010 |
| **AGS5025WL** | 230V~ | 53,7 | 9400 | 50/69 | 2520 |
| **AGS5030WL** | 230V~ | 64,6 | 11600 | 52/71 | 3030 |

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

## AGS6000

- Recommended installation height 6 m
- Height: 450 mm
- Depth: 766 mm

**AGS6000 A, ambient, unheated (IP23)**

| Type | Voltage [V] | Heat output [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **AGS6010A** | 230V~ | 0 | 4700 | 48/67 | 1010 |
| **AGS6015A** | 230V~ | 0 | 7100 | 50/69 | 1515 |
| **AGS6020A** | 230V~ | 0 | 9300 | 51/70 | 2010 |
| **AGS6025A** | 230V~ | 0 | 11600 | 52/71 | 2520 |
| **AGS6030A** | 230V~ | 0 | 13000 | 54/73 | 3030 |

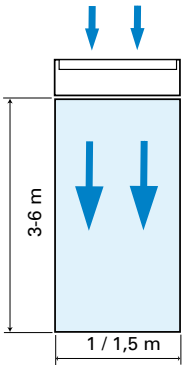
**AGS6000 WL, water heated (IP23)**

| Type | Voltage [V] | Heat output* [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **AGS6010WL** | 230V~ | 24,5 | 4200 | 47/66 | 1010 |
| **AGS6015WL** | 230V~ | 29,9 | 6500 | 49/68 | 1515 |
| **AGS6020WL** | 230V~ | 46,7 | 8500 | 50/69 | 2010 |
| **AGS6025WL** | 230V~ | 57,7 | 10600 | 51/70 | 2520 |
| **AGS6030WL** | 230V~ | 68,0 | 12600 | 53/72 | 3030 |

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

# Air curtains - Industry

## AC500




AC500 is a stable air curtain intended for use on high industrial and warehouse doors. The air curtain effectively prevents energy losses and drafts through the open door and gives excellent heating comfort. The working environment is further improved by the air curtain preventing exhaust emissions, dust and insects from entering the premises.

AC500 is a narrow and tall, splash proof air curtain equipped with a honeycomb grille. The air is blown out at high pressure through the grille, which results in a powerful and well defined laminar airflow.

- Recommended installation height 5 m
- Height: 785 mm
- Depth: 520 mm
- Colour: white, RAL 9016, NCS S 0500-N.
- CE compliant.
- Approved for 220V/1ph/60Hz and 380V/3ph/60Hz. Product performance for 220V/1ph/60Hz and 380V/3ph/60Hz will differ from stated data.

**AC500, ambient, unheated (IP24)**

| Type | Voltage [V] | Heat output [kW] | Airflow [m³/h] | Sound level [dB(A)] | Length [mm] |
|---|---|---|---|---|---|
| **AC501** | 230V~/400V3~ | 0 | 5200 | 63 | 1030 |
| **AC502** | 230V~/400V3~ | 0 | 7700 | 65 | 1550 |

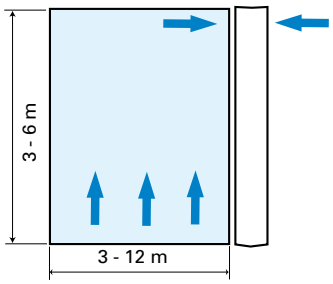
### Controls

Level 1
- RTRD7, RTRD14, 5-step fan speed control
- AGB304, position limit switch.

Level 2
- PKDM12, stepless fan speed control.

| Type | Description |
|---|---|
| **RTRD7** | 5-step fan speed control, Max 7 A |
| **RTRD14** | 5-step fan speed control, Max 14 A |
| **RTRDU7** | 5-step fan speed control, Max 7 A, high/low speed |
| **PKDM12** | Stepless fan speed control, high/low speed |
| **AGB304** | Position limit switch, IP44 |

More information about accessories on page 34.




## UF600

UF600 consists of one or two pillars with inlet hood, silencers and fans, as well as a floor channel with its slot at floor level. The pillars are placed inside or outside the door on either (or both) sides of the opening. Air at high speed is pressed out through the narrow slot in the floor at the door opening.
The width of the slot and the blow angle are adapted to the opening. Complete slot with inspection hatch could be custom made. UF600 creates a very effective air barrier at the door opening, when pressing air at high speed out through a narrow slot. The air curtain is angled upwards and gives best possible protection against colder and heavier air getting into the building.
Diameter: 700/900 mm
Colour: grey.
CE compliant.

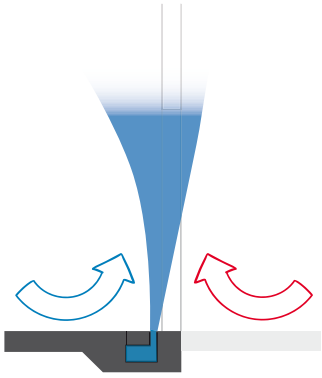
**UF600, ambient, unheated (IPX4)**

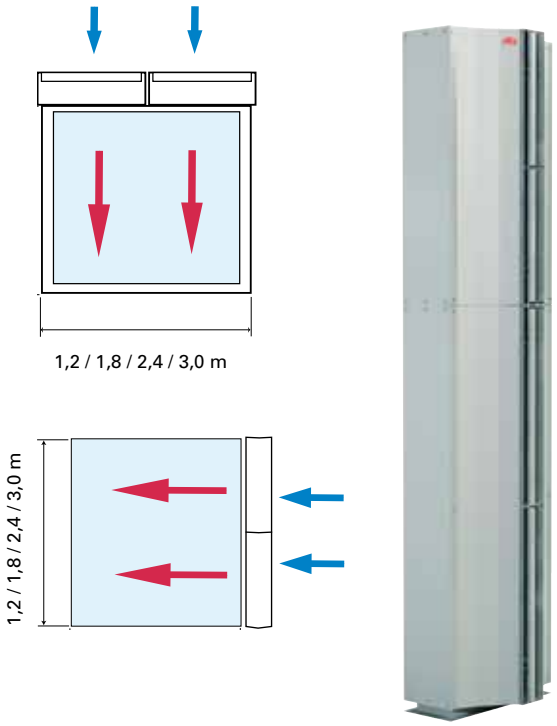
| Type | Output motor [kW] | Airflow [m³/h] | Amperage [A] | Length [mm] | Max door dimensions HxB [m] |
|---|---|---|---|---|---|
| **UF601** | 8 (2x4) | 10500 | 16,0 | 3900 | 3 x 4 |
| **UF602** | 11 (2x5,5) | 12000 | 22,4 | 3900 | 3 x 6 |
| **UF603** | 15 (2x7,5) | 15000 | 28,2 | 4145 | 4 x 5 |
| **UF604** | 22 (2x11) | 18000 | 42,0 | 4145 | 4 x 6 |
| **UF605** | 30 (2x15) | 23000 | 56,8 | 4145 | 6 x 6 |
| **UF606*** | 2x22 (4x11) | 36000 | 2x42,0 | 4145 | 6 x 12 |

*) UF606 correspnds to two UF604.

### Controls

| Type | Description |
|---|---|
| **UFC601** | Starter kit UF601 |
| **UFC602** | Starter kit UF602 |
| **UFC603** | Starter kit UF603 |
| **UFC604** | Starter kit UF604 |
| **UFC605** | Starter kit UF605 |
| **AGB304** | Position limit switch, IP44 |






## AGI

AGI is a robust air curtain intended for vertical or horizontal installation in large doorways. With its powerful fans and high enclosure classification it is specially suitable for industrial environments.

AGI has a stable and simple design. It is available in four different lengths of up to 3 metres, which makes it easy to create a continuous air curtain for large doors. In vertical installation two units can be put on top of each other.

- Height: 730 mm
- Depth: 485 mm
- Colour: grey, RAL 9006.
- CE compliant.
- Approved for 380V/3ph/60Hz. Product performance for 380V/3ph/60Hz will differ from stated data.

**AGI A, ambient, unheated, horizontal mounting, (IP54)**

| Type | Voltage | Heat Ouput [kW] | Airflow [m³/h] | Sound level [dB(A)] | Amperage [A] | Length [mm] |
|---|---|---|---|---|---|---|
| **AGIH2A** | 400V3~ | 0 | 7000 | 69 | 2,4 | 1200 |
| **AGIH3A** | 400V3~ | 0 | 10500 | 71 | 3,5 | 1800 |
| **AGIH4A** | 400V3~ | 0 | 14000 | 72 | 4,7 | 2400 |
| **AGIH5A** | 400V3~ | 0 | 17500 | 73 | 5,9 | 3000 |

**AGI A, ambient, unheated, vertical mounting, (IP54)**

| Type | Voltage | Heat Ouput [kW] | Airflow [m³/h] | Sound level [dB(A)] | Amperage [A] | Length [mm] |
|---|---|---|---|---|---|---|
| **AGIV2A** | 400V3~ | 0 | 7000 | 69 | 2,4 | 1200 |
| **AGIV3A** | 400V3~ | 0 | 10500 | 71 | 3,5 | 1800 |
| **AGIV4A** | 400V3~ | 0 | 14000 | 72 | 4,7 | 2400 |
| **AGIV5A** | 400V3~ | 0 | 17500 | 73 | 5,9 | 3000 |

**AGI WL, water heated, horizontal mounting, (IP54)**

| Type | Voltage | Heat Ouput* [kW] | Airflow [m³/h] | Sound level [dB(A)] | Amperage [A] | Length [mm] |
|---|---|---|---|---|---|---|
| **AGIH2WL** | 400V3~ | 33 | 7000 | 69 | 2,4 | 1200 |
| **AGIH3WL** | 400V3~ | 48 | 10500 | 71 | 3,5 | 1800 |
| **AGIH4WL** | 400V3~ | 64 | 14000 | 72 | 4,7 | 2400 |
| **AGIH5WL** | 400V3~ | 81 | 17500 | 73 | 5,9 | 3000 |

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

**AGI WL, water heated, vertical mounting, (IP54)**

| Type | Voltage | Heat Ouput* [kW] | Airflow [m³/h] | Sound level [dB(A)] | Amperage [A] | Length [mm] |
|---|---|---|---|---|---|---|
| **AGIV2WL** | 400V3~ | 33 | 7000 | 69 | 2,4 | 1200 |
| **AGIV3WL** | 400V3~ | 48 | 10500 | 71 | 3,5 | 1800 |
| **AGIV4WL** | 400V3~ | 64 | 14000 | 72 | 4,7 | 2400 |
| **AGIV5WL** | 400V3~ | 81 | 17500 | 73 | 5,9 | 3000 |

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

## Controls

Unit without heating

Level 1
- RTRD7, RTRD14, 5-step fan speed control
- AGB304, position limit switch.

Unit with water heating

Level 1
- RTRD7, RTRD14, 5-step fan speed control
- AGB304, position limit switch.
- T10S, room thermostat IP30.

Level 2
- RTRDU, 5-step fan speed control, high/low speed.
- MDC, magnetic door contact with a time relay.
- RTI2, electronic 2-step thermostat

Note! A valve set VRS25 (option: TVVS25 with SD20) should be added for a complete control kit.

| Type | Description |
|---|---|
| **RTRD7** | 5-step fan speed control, Max 7 A |
| **RTRD14** | 5-step fan speed control, Max 14 A |
| **RTRDU7** | 5-step fan speed control, Max 7 A, high/low speed |
| **T10S** | Room thermostat, IP30 |
| **KRT1900** | Room thermostat, IP55 |
| **AGB304** | Position limit switch, IP44 |
| **KUR** | Digital time switch, IP55 |
| **CBT** | Electronic timer, IP44 |
| **VRS25** | Valve set, DN 25 mm |
| **TVVS25** | 2-way control valve, DN 25 mm |
| **SD20** | Actuator |

More information about accessories on 34 and 63-66.

# Air curtains - Controls

CB22/ CB32N | CB20/ CB30N | PKDM12 | RTRD7 | RTRD14 | RTRDU7 | MDC | MDCDC | AGB304

CB20, control box
Controls the airflow in 2 steps. Can control several units. Max input 12 A. IP44.

CB22, control box
Controls the airflow in 2 steps and heat output in 2 steps. Can control several units. Max input 10 A. IP44.

CB30N, control box
Controls the airflow in 3 steps. Can control several units. Max input 10 A. IP44.

CB32N, control box
Controls the airflow in 3 steps and heat output in 2 steps. Can control several units. Max input 10 A. IP44.

CK01E, control kit
Contains control box CB32N and thermostat RTI2.

CK02E, control kit
Contains control box CB32N, thermostat RTI2 and door contact MDC.

CK01W, control kit
Contains control box CB30N and thermostat T10S.

CK02W, control kit
Contains control box CB30N, thermostat RTI2 and door contact MDC.

PKDM12, stepless fan speed control
For AC500 and AGI. The appropriate fan speed is set for open and closed door respectively (high/low speed). The fan speed can be controlled with an external 0–10 V signal. Max input 12 A. IP54.

RTRD7, 5-step fan speed control
For AC500 and AGI. With RTRD7 the air velocity is adjusted in 5 steps for optimum efficiency. The air velocity is set to accommodate different external conditions. Max input 7 A. IP21.

RTRD14, 5-step fan speed control
For AC500 and AGI. With RTRD14 the air velocity is adjusted in 5 steps for optimum efficiency. The air velocity is set to accommodate different external conditions. Max input 14 A. IP21.

RTRDU7, 5-step fan speed control (high/low speed)
For AC500 and AGI. With RTRDU7 the air velocity is set in 5 steps for maximum efficiency. When the door is closed the fan runs at a preset low speed to keep the room warm, when the door is open the fan is preset at a high speed to accommodate different external conditions. Max input 7 A. IP21.

MDC, magnetic door contact with time relay
Starts the air curtain or increases from low to high speed when the door is opened. When the door is closed, the fan continues to run for the preset time (2 s–10 min). This prevents the fan from starting/stopping continuously and is especially suitable for doors that are frequently opened. Three alternating volt-free contacts 10 A, 230 V~ activated when the contacts make. A MDCDC is included in MDC. IP44.

MDCDC, magnetic door contact
Indicates door status. Extra MDCDC are used when several doors are connected to a MDC. IP44.

AGB304, position limit switch
Starts the air curtain or activates a fan speed control when the door is opened. When the door closes, AGB304 stops the air curtain or changes fan speed through a fan speed control. Alternating contact 4 A, 230 V~. IP44.

| | | Portier | | AR200 | | | AC500 | | AGI | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | A | E | A | E | W | A | W | A | W |
| **CB20** | Control box | X | | | | | | | | |
| **CB22** | Control box | | X | | | | | | | |
| **CB30N** | Control box | | | X | | X | | | | |
| **CB32N** | Control box | | | | X | | | | | |
| **CK01E** | Control kit Electric level 1 (CB32N, RTI2) | | | | X | | | | | |
| **CK02E** | Control kit Electric level 2 (CB32N, RTI2, MDC) | | | | X | | | | | |
| **CK01W** | Control kit Water level 1 (CB30N, T10) | | | | | X | | | | |
| **CK02W** | Control kit Water level 2 (CB30N, RTI2, MDC) | | | | | X | | | | |
| **PKDM12** | Stepless fan speed control | | | | | | X | X | X | X |
| **RTRD7/14/7U** | 5-step fan speed control | | | | | | X | X | X | X |
| **MDC** | Magnetic door contact with time relay | X | X | X | X | X | | | | |
| **AGB304** | Position limit switch | | | | | | X | X | X | X |

# Radiant heaters

Heating with radiant heaters is indirect. The heat is transferred from the radiant heaters at the ceiling to surfaces such as floors, walls, fixtures and the like, which in their turn give off heat to the air in the room. No losses occur on the way from ceiling to floor. Radiant heating can be compared to ordinary light. Dispersion and reflection occur in relatively the same way.

Radiant heaters create a very equal temperature distribution between floor and ceiling. The expensive cushion of overheated air that is easily formed when using other heating systems can be avoided. In rooms with high ceilings, radiant heaters give significantly lower energy consumption.

## Total heating

Radiant heaters heat people first, then the air. The operative temperature, being the temperature a person senses, is therefore a little higher than the actual air temperature.

For a specific comfort level, use of a radiant heating system will allow a reduction in air temperature of a couple of degrees when compared to a conventional system, and every degree reduction will reduce energy consumption by approx. 5 %.

## Zone and spot heating

With a radiant heating system, different zones within the same room can have different temperatures. It is therefore possible to divide any area into smaller zones and maintain a different comfort level in each zone.

It is also possible to focus the heat on a certain spot, such as a single workstation. A spot heating application can be controlled much as spot lighting, with the level of heating being increased when needed.

## Complementary heating

As addition to other heating systems and when expanding an existing system, radiant heaters are often a simple, inexpensive solution. For a water heated building, putting up a single or a few electrical heaters is often a smoother and more flexible solution than extending the water pipe system.

## Cold draught protection

A cool surface such as a window has a chilling effect on the neighbouring air. Radiant heaters provide efficient and economical protection against cold draughts caused by windows by heating the window's surface. The colder the window, the more radiant heat it will draw. The radiated heat "automatically" migrates to where it is most needed, which facilitates the creation of a comfortable indoor climate.

There are many advantages with radiant heaters:

## Economy

- Heat people and objects first and then the surrounding air. This allows the temperature to be reduced while maintaining comfort.
- Produces instant heat, thus much quicker than traditional heating systems. This is especially useful outdoor and in buildings that is used occasionally such as sport centres and country houses.
- Heat at floor level, not at the ceiling.
- Reduced night temperture possible with right controls thanks to quick heat-up time.

## Safety

- By positioning the heaters at high level the risk of getting in contact with the heater is greatly reduced. The heater is also protected against damage.
- Some radiant heaters are ideal for premises with fire risk or highly explosive environments (see radiant heaters Comfort Panel SZ and SZR).

## Simplicity

- Easy and flexible installation.
- Requires a minimum of maintenance.

## Space

- By putting the heater on the ceiling, valuable wall and floor space is saved.

## Comfort

- Using the radiation principle air is not heated directly. This results in a soft, draught-free, comfortable indoor climate and an even temperature.
- Does not cause any air movement, as traditional heating systems often do. Reducing the spread of dust, bacteria or odours improves the quality of the indoor environment.

## Discreet

- The system is completely silent.
- Mounting on the ceiling or recessed in a false ceiling gives a discreet heating.

## Choose the right radiant heater

Radiant heaters are available in various designs – it is primarily the installation height, the surrounding environment and the type of heating wanted (see previous page) that determine the choice of product.

Our radiant heaters are divided into three main application areas: "Offices, shops and public premises", "Industry and large premises" and "Outdoors" but most of them can be used in several application areas as you can see in below table.

### Comfort

To acheive good comfort, it is essential to choose the right type of radiant heater.

An infrared heater equipped with halogen lamps at approx. 2000 °C provides intense, short-wave radiation. It is well-suited to outdoor use or in rooms with high ceilings. For a similar but softer heat an infrared heater with tube elements at approx. 750 °C can be used. The heat emitted from these radiant heaters can be compared to the radiant heat felt from an open fireplace.

A Thermocassette with a large element surface and a surface temperature of approx. 100 °C, provides long-wave heat radiation, giving comfortable heating and good dispersion in rooms of normal height (2,7 m).

In a building with high demands on comfort, a larger number of heaters with low output should be used instead of fewer heaters with high output.

When zone- or spot heating an area, the heaters should be placed so that the heat comes from at least two directions. This is especially important when the heaters are mounted at lower heights.

Below table and the examples on the following pages will help you to choose the right radiant heater.


## Quick selection guide radiant heaters

| Type | Heating | Installation height [m] | Output [W] | Surface temp. [°C] | Application area*1 Offices | Industry | Outdoors | Heating element | Page |
|---|---|---|---|---|---|---|---|---|---|
| **Thermoplus** | ⚡ | 2–3 | 300-900 | 180 | ++ | + | | Radiant aluminium panel | 38 |
| **Thermocassette** | ⚡ | < 3 | 300-600 | 100 | ++ | + | | Heating film | 39 |
| **Elztrip EZ100** | ⚡ | 2,5–4 | 600-1500 | 280 | ++ | + | | Radiant aluminium panel | 39 |
| **Elztrip EZ200** | ⚡ | 3–10 | 800-2200 | 340 | | ++ | | Radiant aluminium panel | 40 |
| **Elztrip EZ300** | ⚡ | 4–15 | 3600-4500 | 350 | | ++ | | Radiant aluminium panel | 40 |
| **Infrared IR** | ⚡ | 4,5–20 | 3000-6000 | 700 | | ++ | + | Infrared heating rod | 41 |
| **Infrared IRCF** | ⚡ | 3–5 | 1500-4500 | 2200*3 | | ++ | + | Halogen lamp | 41 |
| **Infrared CIR** | ⚡ | 2–2,5 | 500-2000 | 750 | | + | ++ | Infrared heating rod | 42 |
| **Infrared ELIR** | ⚡ | 2–3 | 1200 | 2200*3 | | + | ++ | Halogen lamp | 42 |
| **Infrared IH** | ⚡ | 1,8–3,5 | 1000-2000 | 2200*3 | | + | ++ | Halogen lamp | 43 |
| **Comfort panel SZR** | 💧 | 2,5–10 | 100-580*2 | 80 | ++ | | | Radiant steel panel | 44 |
| **Comfort panel SZ** | 💧 | 3–15 | 50-1900*2 | 80 | | ++ | | Radiant steel panel | 45 |

*1) Our products are divided into three main application areas: "Offices, shops and public premises", "Industry and large premises" and "Outdoors" but most products can be used in several application areas.
*2) Per meter, depending on water temperature.
*3) Filament temperature

# Radiant heaters

## Installation examples for radiant heaters

Frico radiant heaters are available for different kinds of heating and for different application areas. To facilitate your choice of product, you will find some typical cases on the following pages. More detailed information on important factors to consider when choosing a radiant heater is found on the previous pages.

Basic criterias:

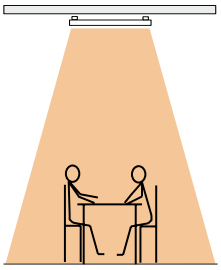
1. Type of premises – store, warehouse etc.
2. Type of heating - total heating, zone heating, cold draught protection
3. Height, installation height
4. Mounting: wall or ceiling
5. Connection: with electrical heat or water heat

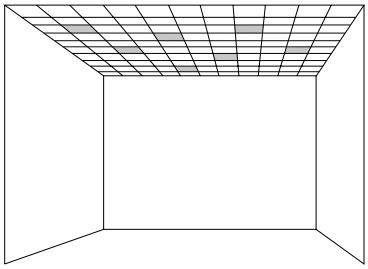
## Offices, shops and public premises

### Total heating, cafeteria

1. Type of premises: cafeteria
2. Type of heating: total heating
3. Height: 2,80 metres
4. Mounting: ceiling
5. Connection: electrical

Recommendation: Thermocassette can be recessed into a false ceiling. When using Thermocassette for total heating, the units should be spread out through the ceiling for example as shown.



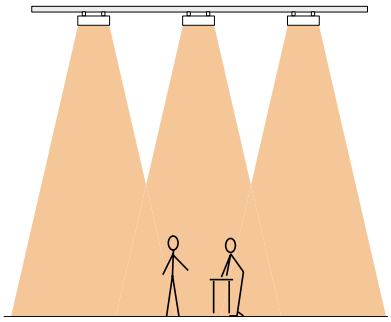


## Industry and large premises

### Total heating, workshop

1. Type of premises: workshop
2. Type of heating: total heating
3. Height: 5 metres
4. Mounting: ceiling
5. Connection: with electrical heat

Recommendation: A number of EZ300 evenly positioned over the area to be heated creates comfortable heat.

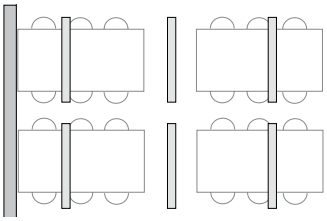


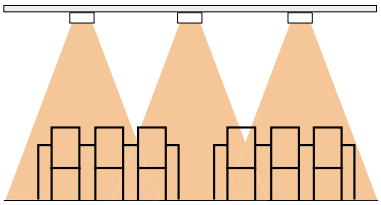
## Outdoors

### Zone heating, restaurant terrace

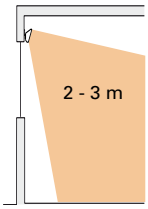
1. Type of premises: sheltered restaurant terrace
2. Type of heating: zone heating
3. Height: 2,5 metres
4. Mounting: ceiling (above the tables)
5. Connection: with electrical heat

Recommendation: Several CIR mounted in line above the tables ensure the comfort for all customers in deep terraces.





## Thermoplus EC




Thermoplus is mounted above windows and gives an effecient protection against cold draught. The slim shape also makes it suitable for heating areas with limited space, like for example bathrooms. Thermoplus can furthermore be a cost-effective and flexible alternative to floor heating.

Thermoplus is covered with white enamel which makes it discreet and schratch-resistant. The slim shape makes it practically invisible when mounted in the celing angle.

- Thermoplus is available in three versions:
  - **Type EC**, for dry rooms. Controlled by a separate thermostat or output control. IP20.
  - **Type ECVT**, for wet rooms. With a built-in cord switch and thermostat (+5 – +40 °C). IP44.
  - **Type ECV**, for wet rooms. Primarily designed for connection as slave device to ECVT, but can also be controlled separately using the same methods as for EC. IP44.
- Brackets for wallmounting are included. Fixtures for ceiling mounting are extra.
- Max. surface temperature: 180 °C.
- Colour: white, RAL9010, NCS 0502-B.
- CE compliant.

**Thermoplus EC for dry rooms (IP20)**

| Type | Voltage [V] | Heat output [W] | LxHxD [mm] | Weight [kg] |
|---|---|---|---|---|
| **EC45021** | 230V~ | 450 | 1076x100x90 | 2,6 |
| **EC45031** | 400V~ | 450 | 1076x100x90 | 2,6 |
| **EC60021** | 230V~ | 600 | 1505x100x90 | 3,7 |
| **EC60031** | 400V~ | 600 | 1505x100x90 | 3,7 |
| **EC75021** | 230V~ | 750 | 1810x100x90 | 4,4 |
| **EC75031** | 400V~ | 750 | 1810x100x90 | 4,4 |
| **EC90021** | 230V~ | 900 | 2140x100x90 | 4,8 |
| **EC90031** | 400V~ | 900 | 2140x100x90 | 4,8 |

**Thermoplus ECVT for wet rooms, with built-in switch and thermostat (IP44)**

| Type | Voltage [V] | Heat output [W] | LxHxD [mm] | Weight [kg] |
|---|---|---|---|---|
| **ECVT30021** | 230V~ | 300 | 870x100x90 | 2,6 |
| **ECVT55021** | 230V~ | 550 | 1505x100x90 | 4,3 |
| **ECVT55031** | 400V~ | 550 | 1505x100x90 | 4,3 |
| **ECVT70021** | 230V~ | 700 | 1810x100x90 | 5,0 |
| **ECVT70031** | 400V~ | 700 | 1810x100x90 | 5,0 |

**Thermoplus ECV slave unit to ECVT, for wet rooms (IP44)**

| Type | Voltage [V] | Heat output [W] | LxHxD [mm] | Weight [kg] |
|---|---|---|---|---|
| **ECV30021** | 230V~ | 300 | 870x100x90 | 2,3 |
| **ECV55021** | 230V~ | 550 | 1505x100x90 | 4,0 |
| **ECV55031** | 400V~ | 550 | 1505x100x90 | 4,0 |
| **ECV70021** | 230V~ | 700 | 1810x100x90 | 4,7 |
| **ECV70031** | 400V~ | 700 | 1810x100x90 | 4,7 |

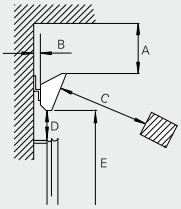
**Accessories - Thermoplus**

| Type | Description |
|---|---|
| **ERP** | Electric heating control, master, IP20 |
| **ERPS** | Electric heating control, slave, IP20 |
| **T10S** | Room thermostat, IP30 |
| **TKS16** | Room thermostat with knob and 1-pole main switch, IP30 |
| **TD10** | Room thermostat with digital display, IP30 |
| **KRT1900** | Room thermostat, IP55 |
| **TF1** | Fixtures for ceiling mounting (2 pcs) |
| **OS1** | Protection net 1070 mm |
| **OS2** | Protection net 1500 mm |

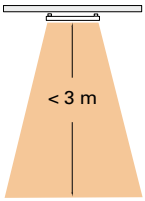
For controls, see pages 46 and 63-64.

**Min. distances EC [mm]**

| | | |
|---|---|---|
| Ceiling | A | 60 |
| Wall / long side of the unit (EC) | B | 25 |
| Flammable material/ front side (EC) | C | 90 |
| Flammable material/ lower side (EC) | D | 25 |
| Floor | E | 1800 |



## Thermocassette HP




Thermocassette is intended for discreet heating in offices, bathrooms, schools etc. Designed for either surface or recessed mounting it is well suited for total heating as well as for spot heating of for example a reception desk. Mounted in a false ceiling it is well protected against damage and can easily be moved if necessary (model with cable and plug).

Recessed mounting make the heater an integral part of the ceiling.

- Thermocassette is available in two versions:
  - **HP300/600**, for false ceiling systems. IP20.
  - **HP305/605**, standard model with brackets, approved for rooms where there is risk of fire and recommended for use in agricultural buildings. IP55.
- The low surface temperature (max. 100 °C) makes Thermocassette well suited for low ceiling heights. There is no risk of burns to the person(s) in this vicinity.
- Max. surface temperature: 100 °C.
- Colour: white, RAL 9016, NCS S 0500-N.
- Approved by SEMKO and CE compliant.

**Thermocassette HP for false ceilings, with cable and plug (IP20)**

| Type | Voltage [V] | Heat output [W] | LxHxD [mm] | Weight [kg] |
|---|---|---|---|---|
| **HP300** | 230V~ | 300 | 593x30x593 | 5,4 |
| **HP600** | 230V~ | 600 | 593x30x1193 | 10,3 |

**Thermocassette HP with mounting brackets and cable (IP55)**

| Type | Voltage [V] | Heat output [W] | LxHxD [mm] | Weight [kg] |
|---|---|---|---|---|
| **HP305** | 230V~ | 300 | 593x30x593 | 5,8 |
| **HP605** | 230V~ | 600 | 593x30x1193 | 10,7 |

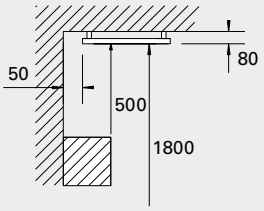
**Accessories - Thermocassette**

| Type | Description |
|---|---|
| **ERP** | Electric heating control, master, IP20 |
| **ERPS** | Electric heating control, slave, IP20 |
| **T10S** | Room thermostat, IP30 |
| **TKS16** | Room thermostat with knob and 1-pole main switch, IP30 |
| **TD10** | Room thermostat with digital display, IP30 |
| **KRT1900** | Room thermostat, IP55 |
| **74701** | Wire mounting kit |

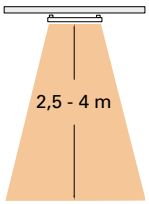
For controls, see pages 46 and 63-64.

**Min. distances HP [mm]**

| | |
|---|---|
| Ceiling | 80 |
| Wall / long side of the unit | 50 |
| Wall / short side of the unit | 50 |
| Flammable material | 500 |
| Floor | 1800 |




## Elztrip EZ100




EZ100 is intended for total and supplementary heating as well as protection against cold draughts from windows in environments such as offices, shops, restaurants etc.

EZ100 is a single panel radiant heater with clean and simple design that blends well with electrical fittings.

- Integrated elements and a surface structure for improved efficiency.
- The heaters are approved for serial connection.
- Fixtures for easy mounting on the ceiling are included.
- Bracket for wall mounting (EZMVK) is available as an accessory.
- Max. surface temperature: 280 °C.
- Heating panel of naturally anodised aluminium.
- Colour: white, RAL9010, NCS 0502-B.
- Approved by SEMKO and CE compliant.

**Elztrip EZ100 (IP44)**

| Type | Voltage [V] | Heat output [W] | LxHxD [mm] | Weight [kg] |
|---|---|---|---|---|
| **EZ106N** | 230V~ | 600 | 870x50x150 | 3,2 |
| **EZ111N** | 230V~ | 1050 | 1470x50x150 | 5,4 |
| **EZ115N** | 230V~ | 1500 | 1950x50x150 | 6,95 |

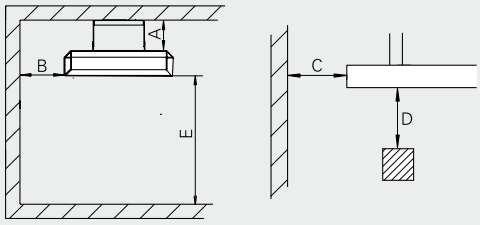
**Accessories - EZ100**

| Type | Description |
|---|---|
| **ERP** | Electric heating control, master, IP20 |
| **ERPS** | Electric heating control, slave, IP20 |
| **CIRT** | Stepless output control with timer, IP44 |
| **T10S** | Room thermostat, IP30 |
| **TKS16** | Room thermostat with knob and 1-pole main switch, IP30 |
| **TD10** | Room thermostat with digital display, IP30 |
| **KRT1900** | Room thermostat, IP55 |
| **EZMVK** | Wall mounting bracket |

For controls, see pages 46 and 63-64.

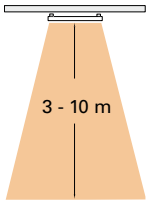
**Min. distances EZ100 [mm]**

| | | |
|---|---|---|
| Ceiling | A | 50 |
| Wall / long side of the unit | B | 50 |
| Wall / short side of the unit | C | 50 |
| Flammable material | D | 500 |
| Floor | E | 1800 |



# Radiant heaters - Industry and large premises

## Elztrip EZ200




EZ200 is intended for total and supplementary heating as well as protection against cold draughts from windows in environments such as, department stores, assembly halls, industrial premises etc.

EZ200 is a double panel radiant heater with clean and simple design that blends well with electrical fittings.

- Integrated elements and a surface structure for improved efficiency.
- The heaters are approved for serial connection.
- Fixtures for easy mounting on the ceiling are included.
- Max. surface temperature: 340 °C.
- Heating panel of naturally anodised aluminium.
- Colour: white, RAL 9016, NCS S 0500-N.
- Approved by SEMKO and CE compliant.

**Elztrip EZ200 (IP44)**

| Type | Voltage [V] | Heat output [W] | LxHxD [mm] | Weight [kg] |
|---|---|---|---|---|
| **EZ208** | 230V~ | 800 | 683x64x282 | 4,9 |
| **EZ212** | 230V~ | 1200 | 923x64x282 | 6,8 |
| **EZ217** | 230V~ | 1700 | 1221x64x282 | 8,8 |
| **EZ222** | 230V~ | 2200 | 1520x64x282 | 10,7 |
| **EZ20831** | 400V2~ | 800 | 683x64x282 | 4,9 |
| **EZ21231** | 400V2~ | 1200 | 923x64x282 | 6,8 |
| **EZ21731** | 400V2~ | 1700 | 1221x64x282 | 8,8 |
| **EZ22231** | 400V2~ | 2200 | 1520x64x282 | 10,7 |

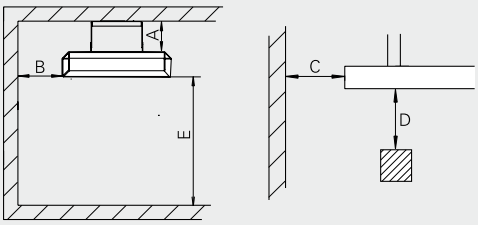
**Accessories - EZ200**

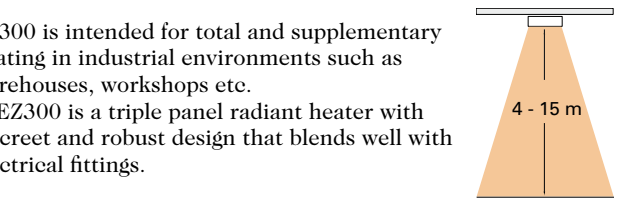
| Type | Description |
|---|---|
| **ERP** | Electric heating control, master, IP20 |
| **ERPS** | Electric heating control, slave, IP20 |
| **CIRT** | Stepless output control with timer, IP44 |
| **T10S** | Room thermostat, IP30 |
| **TKS16** | Room thermostat with knob and 1-pole main switch, IP30 |
| **TD10** | Room thermostat with digital display, IP30 |
| **KRT1900** | Room thermostat, IP55 |

For controls, see pages 46 and 63-64.

**Min. distances EZ200 [mm]**

| | | |
|---|---|---|
| Ceiling | A | 80 |
| Wall / long side of the unit | B | 150 |
| Wall / short side of the unit | C | 150 |
| Flammable material | D | 600 |
| Floor | E | 1800 |




## Elztrip EZ300

EZ300 is intended for total and supplementary heating in industrial environments such as warehouses, workshops etc.

EZ300 is a triple panel radiant heater with discreet and robust design that blends well with electrical fittings.

- Integrated elements and a surface structure for improved efficiency.
- The heaters are approved for serial connection.
- Fixtures for easy mounting on the ceiling are included.
- Max. surface temperature: 350 °C.
- Colour: Casing of grey alu-zinc coated steel panels with high corrosion resistance. Heating panel of naturally anodised aluminium.
- Approved by SEMKO and CE compliant.

**Elztrip EZ300 (IP44)**

| Type | Voltage [V] | Heat output [W] | LxHxD [mm] | Weight [kg] |
|---|---|---|---|---|
| **EZ336** | 230V3~/400V3N~ | 3600 | 1670x63x420 | 20 |
| **EZ345** | 230V3~/400V3N~ | 4500 | 2030x63x420 | 24 |

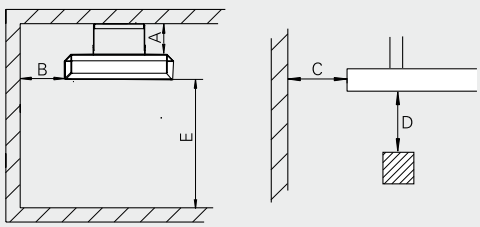
**Accessories - EZ300**

| Type | Description |
|---|---|
| **S123** | Manual switch for 1-2-3 steps, IP42 |
| **T10S** | Room thermostat, IP30 |
| **TK10S** | Room thermostat with knob, IP30 |
| **KRT1900** | Room thermostat, IP55 |
| **CBT** | Electronic timer, IP44 |

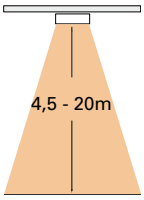
For controls, see pages 46 and 63-64.

**Min. distances EZ300 [mm]**

| | | |
|---|---|---|
| Ceiling | A | 115 |
| Wall / long side of the unit | B | 250 |
| Wall / short side of the unit | C | 250 |
| Flammable material | D | 700 |
| Floor | E | 1800 |



## Industrial infrared heater IR




IR is suitabe for total or supplementary heating of premises with large volume and high ceilings. It can also be used outdoors for example on sport arena stands or to keep loading bays dry and frostless.

IR has a robust industrial design.

- Reflectors of shiny anodised aluminium for optimal heat distribution.
- The mounting hinges allow the heater to be angled in five different positions.
- Max. surface temperature: 700 °C.
- Colour: Casing of grey alu-zinc coated steel panels with high corrosion resistance.
- Approved by SEMKO and CE compliant.

### Industrial infrared heater IR (IP44)

| Type | Voltage [V] | Heat output [W] | LxHxD [mm] | Weight [kg] |
|---|---|---|---|---|
| **IR3000** | 400V3N~* | 3000 | 1125x83x358 | 9,0 |
| **IR4500** | 400V3N~* | 4500 | 1500x83x358 | 11,1 |
| **IR6000** | 400V3N~* | 6000 | 1875x83x358 | 13,2 |

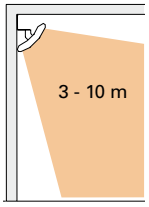
*) Can be connected without neutral, but then without output steps. With neutral, one elements at a time can be connected.

### Accessories - Industrial infrared heater IR

| Type | Description |
|---|---|
| **S123** | Manual switch for 1-2-3 steps, IP42 |
| **T10S** | Room thermostat, IP30 |
| **TK10S** | Room thermostat with knob, IP30 |
| **KRT1900** | Room thermostat, IP55 |
| **CBT** | Electronic timer, IP44 |
| **IRG3000** | Protection grille IR3000 |
| **IRG4500** | Protection grille IR4500 |
| **IRG6000** | Protection grille IR6000 |

For controls, see pages 46 and 63-64.

## Halogen infrared heater IRCF




IRCF is especially designed for spot heating of premises with large air volumes, such as churches, aircraft hangars and marquees. With its high efficiency and compact size it is perfect for many difficult applications.

IRCF has a discreet and compact design. Equipped with one to three halogen lamps and with glossy finished reflectors.

- Equipped with one to three halogen lamps and with glossy finished reflectors.
- Easy mounting with mounting bracket on the wall or ceiling. The heater can be angled.
- Protection grille available as an accessory.
- Max. element temperature:2200 °C.
- Colour: grey, RAL 9006.
- CE compliant.

### Infrared heater IRCF (IP20)

| Type | Voltage [V] | Heat output [W] | HxWxD [mm] | Weight [kg] |
|---|---|---|---|---|
| **IRCF1500** | 230V~ | 1500 | 490x230x140 | 2,0 |
| **IRCF3000** | 230V~ | 3000 | 490x375x140 | 2,5 |
| **IRCF4500** | 230V~/400V3~ | 4500 | 490x515x140 | 3,0 |

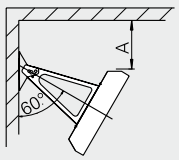
### Accessories - IRCF

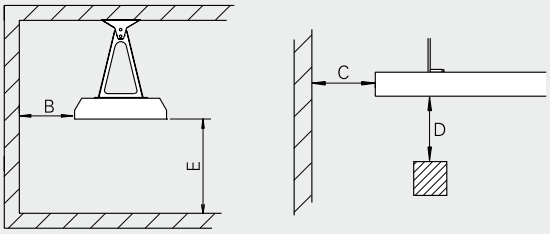
| Type | Description |
|---|---|
| **S123** | Manual switch for 1-2-3 steps, IP42 |
| **CBT** | Electronic timer, IP44 |
| **T10S** | Room thermostat, IP30 |
| **TK10S** | Room thermostat with knob, IP30 |
| **KRT1900** | Capillary room thermostat, IP55 |
| **LIRCF** | Extra lamp |
| **IRCG1** | Protection grille for IRCF1500. IRCF3000 require 2 pcs, IRCF4500 require 3 pcs. |

For controls, see pages 46 and 63-64.

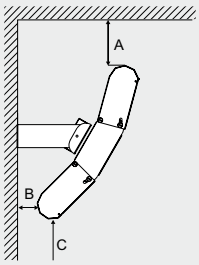
### Min. distances IR [mm]

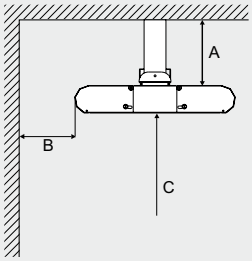
| | | |
|---|---|---|
| Ceiling | A | 400 |
| Wall / long side of the unit | B | 400 |
| Wall / short side of the unit | C | 400 |
| Flammable material | D | 700 |
| Floor | E | 2300 |




### Min. distances IRCF [mm]

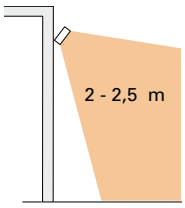



| | | |
|---|---|---|
| Ceiling | A | 500 |
| Wall | B | 50 |
| Floor | C | 2300 |

| | | |
|---|---|---|
| Ceiling | A | 180 |
| Wall | B | 500 |
| Floor | C | 2300 |

## Infrared heater CIR




CIR provide comfort all year around on terraces, balconies and open-air restaurants. CIR can also be used for spot heating in workshops and warehouses. Requires no protection against bad weather and has five-year corrosion warranty.

CIR is discreet with its slim design and silent, invisible operation and needs little space to fit in.

- Infrared heater CIR is available in two versions:
  - **CIR100** with outputs between 500 and 2000 W.
  - **CIR200** with the same outputs and built-in switch.
- Reflectors of high-gloss polished aluminium with maximum resistance against corrosion.
- Grey terminal boxes of heat and weather resistant polycarbonate.
- Adjustable mounting brackets for easy mounting on the wall or ceiling.
- Max. surface temperature: 750 °C.
- Colour: white, RAL 9002, NCS 1502-Y.
- Approved by SEMKO and CE compliant.

**Infrared heater CIR without built-in switch (IP24)**

| Type | Voltage [V] | Heat output [W] | LxHxD [mm] | Weight [kg] |
|---|---|---|---|---|
| **CIR10521** | 230V~ | 500 | 710x44x94 | 1,5 |
| **CIR11021** | 230V~ | 1000 | 1250x44x94 | 2,2 |
| **CIR11031** | 400V2~ | 1000 | 1250x44x94 | 2,2 |
| **CIR11521** | 230V~ | 1500 | 1755x44x94 | 3,0 |
| **CIR11531** | 400V2~ | 1500 | 1755x44x94 | 3,0 |
| **CIR12021** | 230V~ | 2000 | 2180x44x94 | 3,7 |
| **CIR12031** | 400V2~ | 2000 | 2180x44x94 | 3,7 |

**Infrared heater CIR with built-in switch (IP24)**

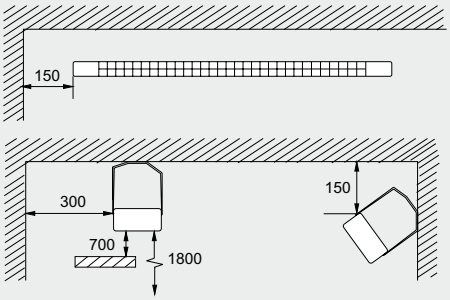
| Type | Voltage [V] | Heat output [W] | LxHxD [cm] | Weight [kg] |
|---|---|---|---|---|
| **CIR20521** | 230V~ | 500 | 710x44x94 | 1,5 |
| **CIR21021** | 230V~ | 1000 | 1250x44x94 | 2,2 |
| **CIR21031** | 400V2~ | 1000 | 1250x44x94 | 2,2 |
| **CIR21531** | 400V2~ | 1500 | 1755x44x94 | 3,0 |
| **CIR22031** | 400V2~ | 2000 | 2180x44x94 | 3,7 |

**Accessories - CIR**

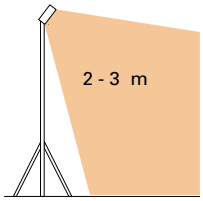
| Type | Description |
|---|---|
| **CIRT** | Stepless output control with timer, IP44 |
| **CBT** | Electronic timer, IP44 |

For controls, see pages 46 and 63-64.

**Min. distances CIR [mm]**




## Halogen infrared heater ELIR




ELIR gives an intense heat suitable for all outdoor applications and rough industrial premises. While ELIR is light, stable and portable it is also well suited for temporary heating on building sites etc. With its concentrated heat it is a good complement to dehumidifiers for drying in areas damaged by water. High protection class (IP65) makes it possible to install the heater in almost any environment.

ELIR has a thorough design in a compact format. Simple, robust and light (1 kg). ELIR has no protective glass which means 10–15 % higher efficiency compared to a heater with glass with the same protection class.

- All parts are anti-corrosive.
- Casing/reflectors of high-gloss polished aluminium with maximum resistance against corrosion.
- ELIR is mounted on the wall with the accompanying mounting bracket or suspended from the ceiling. It can also be mounted on a stand for portable use. Suspension details and stand are extra.
- Grey terminal boxes of heat and weather resistant plastic. Colour: RAL 7035.
- Max. surface temperature: 2200 °C.
- CE compliant.

**Infrared heater ELIR (IP65)**

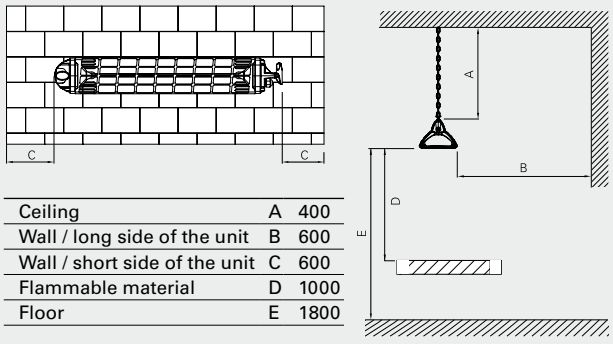
| Type | Voltage [V] | Heat output [W] | LxHxD [mm] | Weight [kg] |
|---|---|---|---|---|
| **ELIR12** | 230V~ | 1200 | 712x112x83 | 1,0 |

**Accessories - ELIR**

| Type | Description |
|---|---|
| **ELIRC** | Chain for ceiling mounting |
| **ELIRS** | Floor stand (tripod) with bracket for ELIR included |
| **ELIRB** | Universal bracket when using any floor stand (i.e. tripod) |
| **IREL12** | Extra lamp |
| **CBT** | Electronic timer, IP44 |

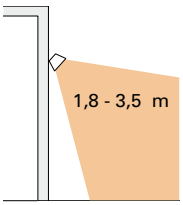
For controls, see pages 46 and 63-64.

**Min. distances ELIR [mm]**




| | | |
|---|---|---|
| Ceiling | A | 400 |
| Wall / long side of the unit | B | 600 |
| Wall / short side of the unit | C | 600 |
| Flammable material | D | 1000 |
| Floor | E | 1800 |

## Halogen infrared heater IH




Halogen infrared heater IH is the perfect choice for exposed outdoor environments where design is important, for example, balconies, pavement cafés, etc. IH can also be used as local heating in large premises such as churches, industries and warehouses.

IH is easy to position thanks to its compact design. The discreet and appealing look makes it suitable for outdoor environments with design demands.

- IH is available in two versions:
  - **IHW** provides wide heat distribution (60°), recommended installation height 1.8 – 2.5 m.
  - **IHF** provides directed heat distribution (40°), recommended installation height 2.3 – 3.5 m.
- IH consists of a halogen lamp with a very high intensity and a highly-polished reflector for optimum heat distribution.
- Gives 10-15 % higher efficiency than a glass fronted heater of the same enclosure.
- Bracket for wall mounting. Can also be suspended from the ceiling or mounted on e.g. a parasol or a post. Other mounting alternatives are available as accessories.
- Max. element temperature:2200 °C.
- Colour: grey, RAL 9006.
- Approved by SEMKO and CE compliant.

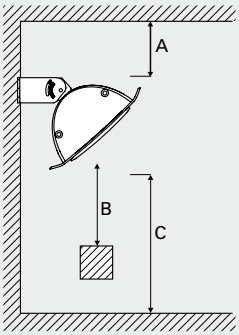
**Infrared heater IHW with wide heat distribution (IPX4)**

| Type | Voltage [V] | Heat output [W] | LxHxD [mm] | Weight [kg] |
|---|---|---|---|---|
| **IHW10** | 230V~ | 1000 | 500x77x169 | 1,9 |
| **IHW15** | 230V~ | 1500 | 500x77x169 | 1,9 |
| **IHW20** | 230V~ | 2000 | 676x77x169 | 2,5 |

**Infrared heater IHF with directed heat distribution (IPX4)**

| Type | Voltage [V] | Heat output [W] | LxHxD [mm] | Weight [kg] |
|---|---|---|---|---|
| **IHF10** | 230V~ | 1000 | 500x77x169 | 1,9 |
| **IHF15** | 230V~ | 1500 | 500x77x169 | 1,9 |
| **IHF20** | 230V~ | 2000 | 676x77x169 | 2,5 |

**Min. distances IH [mm]**




| | | |
|---|---|---|
| Ceiling | A | 200 |
| Flammable material | B | 1000 |
| Floor | C | 1800 |

**Accessories - IH**

| Type | Description |
|---|---|
| **CBT** | Electronic timer, IP44 |
| **IHUB** | Universal bracket for IH |
| **IHXH** | Drooping extension bracket for high level mounting |
| **IHXL** | Arching extension bracket for low level mounting |
| **IHT** | Triple bracket |
| **IHTW** | Set of three bright galvanized wires for easy hanging of IHT |
| **IHP** | Post for freestanding installation |

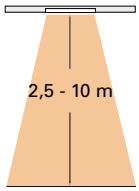
IHXH

IHUB

IHP + IHT

IHT + IHTW

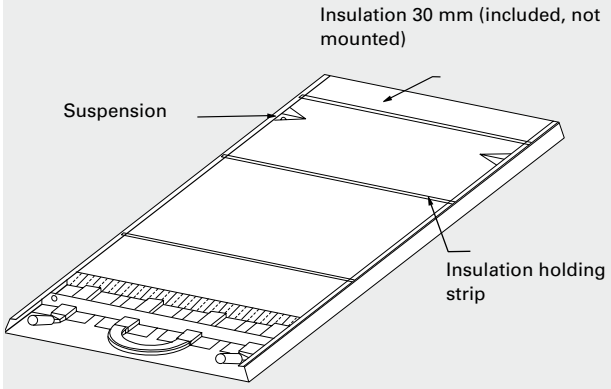
## Comfort Panel SZR



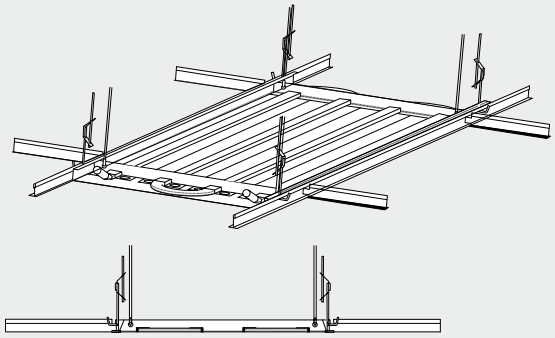

Comfort Panel SZR is used for water supplied heating/cooling systems. It can be mounted free hanging or integrated in false ceilings and perfectly suits in fine environments such as offices, shops, etc.

Discreet flat satin finished surface that matches most false ceiling panel designs. A perfect symmetri can be created with heating/cooling panels in combination with non active panels.

- Comfort Panel SZR is available in following versions:
  - **SZRxxxP** for recessed mounting in false ceilings.
  - **SZRxxxM** for free hanging mounting.
- The panels are available in five lengths with three different pipe settings. The lengths can be combined to a total panel length desired. Non active panels are available.
- Complies to EN14037 which is based on the EU Construction Product Directives 89/106/CEE. EN14037 is compulsory for a CE mark for water heated radiant heaters.
- Max working pressure: 4 bar.
- Max water temperature: 90 °C.
- Colour: white, RAL 9016, NCS S 0500-N.
- CE compliant.




Recessed mounting in false ceiling



**Comfort Panel SZR for recessed mounting**

| Type*1 | Heat output*2 [W/pcs] | Weight [kg] | LxHxW [mm] |
|---|---|---|---|
| **SZR060P** | 178 | 7 | 595x35x595 |
| **SZR120P** | 355 | 14 | 1195x35x595 |
| **SZR180P** | 534 | 21 | 1795x35x595 |
| **SZR240P** | 713 | 28 | 2395x35x595 |
| **SZR300P** | 893 | 35 | 2995x35x595 |
| **SZRN60P** | Non active | 4 | 595x35x595 |
| **SZRN120P** | Non active | 8 | 1195x35x595 |

**Comfort Panel SZR for free hanging mounting**

| Type*1 | Heat output*2 [W/pcs] | Weight [kg] | LxHxW [mm] |
|---|---|---|---|
| **SZR060M** | 178 | 7 | 595x35x595 |
| **SZR120M** | 355 | 14 | 1234x35x610 |
| **SZR180M** | 534 | 21 | 1858x35x610 |
| **SZR240M** | 713 | 28 | 2482x35x610 |
| **SZR300M** | 893 | 35 | 3106x35x610 |
| **SZRN60M** | Non active | 4 | 610x35x610 |
| **SZRN120M** | Non active | 8 | 1234x35x610 |

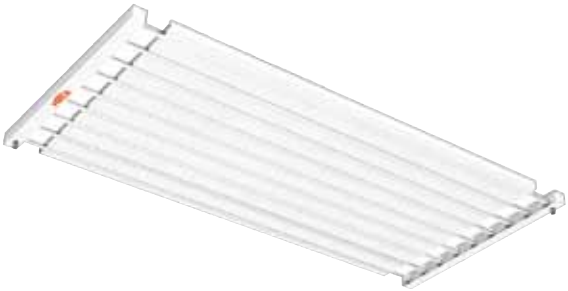
*1) The panels are available with three different pipe settings.
*2) Applicable at water temperature 80/60 °C, air temperature +20 °C.

**Accessories - Comfort Panel SZR**

| Type | Description |
|---|---|
| **RTI2** | Room thermostat, IP44 |
| **T10S** | Room thermostat, IP30 |
| **TVVS20/25** | 2-way control valve, DN 20/25 mm |
| **TRVS20/25** | 3-way control valve, DN 20/25 mm |
| **SD20** | Actuator |

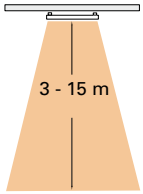
Suspension accessories are priced on request.

A Comfort Panel handbook with detailed information is available at www.frico.se. Further information can also be obtained by contacting Frico.



## Comfort Panel SZ

Comfort Panel SZ is the ideal system solution for water supplied heating of larger buildings such as industrial buildings, commercial buildings and sports centres. Comfort Panel SZ is suitable for both high and low installation, and extremely high installations are possible with pressurized hot water.




- Complies to EN14037 which is based on the EU Construction Product Directives 89/106/CEE. EN14037 is compulsory for a CE mark for water heated radiant heaters.
- For ceiling mounting in panel lengths of 4 meters up to 120 meters.
- Max working pressure: 10 bar (special version: 16 bar).
- Max water temperature: 120 °C (special version: 180 °C).
- Colour: white, RAL 9016, NCS S 0500-N or light grey, RAL 9002, NCS 1502-Y. Other colours available on request.
- CE compliant.

### Comfort Panel SZ max 120 °C

| Type | Heat output* [W/m] | Weight [kg/m] | Width [mm] |
|---|---|---|---|
| **SZ23** | 162 | 4 | 300 |
| **SZ26** | 289 | 8 | 600 |
| **SZ29** | 406 | 12 | 900 |
| **SZ212** | 543 | 16 | 1200 |
| **SZ33** | 194 | 6 | 300 |
| **SZ36** | 345 | 12 | 600 |
| **SZ39** | 501 | 18 | 900 |
| **SZ312** | 639 | 24 | 1200 |

*) Applicable at water temperature 80/60 °C, air temperature +15 °C.

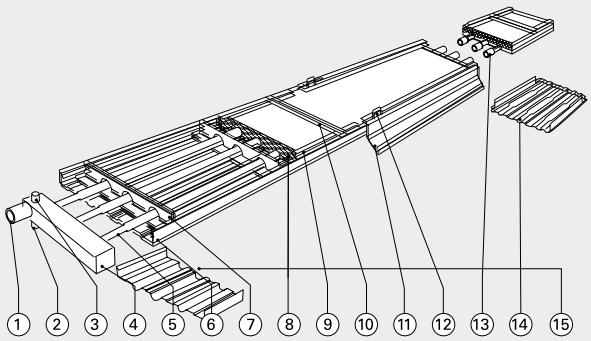
### Comfort Panel SZ special max 180 °C

| Type | Heat output* [W/m] | Weight [kg/m] | Width [mm] |
|---|---|---|---|
| **SZ23SP** | 267 | 5 | 300 |
| **SZ26SP** | 477 | 10 | 600 |
| **SZ29SP** | 667 | 15 | 900 |
| **SZ212SP** | 870 | 20 | 1200 |
| **SZ33SP** | 324 | 7 | 300 |
| **SZ36SP** | 574 | 14 | 600 |
| **SZ39SP** | 790 | 21 | 900 |
| **SZ312SP** | 1005 | 28 | 1200 |

*) Applicable at water temperature 130/70 °C, air temperature +15 °C.

### Accessories - Comfort Panel SZ

| Type | Description |
|---|---|
| **RTI2** | Room thermostat, IP44 |
| **T10S** | Room thermostat, IP30 |
| **TVVS20/25** | 2-way control valve, DN 20/25 mm |
| **TRVS20/25** | 3-way control valve, DN 20/25 mm |
| **SD20** | Actuator |




1. Threaded male connection (Ø 1/2" - 3/4" - 1" - 1.1/4")
2. Connection for drain valve Ø 3/8"
3. Connection for air vent. valve Ø 3/8"
4. First or end header
5. Steel pipe Ø 1/2"
6. Radiant panel
7. Suspension bracket
8. Insulation
9. Side edging strip
10. Insulation retaining clip
11. Anti-convective side skirts (accessory)
12. Skirt hook
13. Pipe ends adapted for press fitting or compression fitting or belled end for welding
14. Make-up joint
15. Make-up joint between panel and header (accessory)

A Comfort Panel handbook with detailed information is available at www.frico.se. Further information can also be obtained by contacting Frico.

# Radiant heaters - Controls

**ERP, electric heating control**
Stepless pulse control intended for single phase (3600W/230V) or two phase (6000W/400V2~) electric heaters. Cannot control 3 phase loads. Pulse time 60 secs. Triac control (quiet control). Integrated temperature sensor. External sensors available as an accessory. Save reduction function via external connection timer (1–10 degrees). For larger power outputs a slave unit (ERPS) can be connected. Each ERPS can handle the same power as ERP.

**Electric heating control ERP (IP20)**

| Type | Voltage [V] | HxWxD [mm] |
|---|---|---|
| **ERP** | 230/400V~ | 153x93x40 |
| **ERPS** | 230/400V~ | 153x93x40 |

**Accessories ERP**

| Type | Description |
|---|---|
| **ERPRG** | Room sensor ERP |
| **ERPGG** | Floor/duct sensor ERP |

**CIRT, stepless output control with timer**
Stepless output control with timer, primarily intended for infrared heaters and other radiant heaters. Intended for single phase (3600W/230V~) or two phase (6000W/400V2~) electric heaters. Especially suited for spot amd zone heating. The heat contribution is regulated for best comfort (25-100 %). The built-in timer can be set for 0.5 to 4 or 4 to 24 hours. High protection class (IP44).

**Output control CIRT (IP44)**

| Type | Voltage [V] | HxWxD [mm] |
|---|---|---|
| **CIRT** | 230/400V2~ | 155x87x43 |

**S123, manual switch for 1-2-3 steps**
Controls the output in three steps 0-1/3-2/3-3/3.

**Manual switch S123 (IP44)**

| Type | Voltage [V] | HxWxD [mm] |
|---|---|---|
| **S123** | 230/400V3~ | 72x64x46 |

For decades Frico has been the world leader in fan heater design. Today we have a complete range of high quality equipment modelled on the demanding climate of Scandinavia. Frico's worldwide distribution network encounters many different environmental conditions, such as storage rooms, pump rooms, building sites, mines, sports centres, shops, drying rooms, stables, boats, etc.

We are proud of the worldwide acclaim we have gained through our line of fan heaters. They are known as reliable and long-lasting products. The heaters are also robust and will withstand rough treatment in aggressive environments, at the same time having the lowest sound level on the market.

## Exceptionally quiet

One of the most important tasks in our product development, is the construction of low noise fan heaters.

At our plant in Skinnskatteberg, Sweden, you will find one of the most sophisticated air and sound laboratories in Europe, staffed by highly skilled technicians making it possible to manufacture products of the finest quality.

## Lots of power, small investment

Compared to other heating systems, the investment cost for fan heaters is low. Frico fan heaters give you lots of power for the money.

## Compact and robust

Frico fan heaters are compact and light. Therefore they are easy to carry or can easily be mounted on the wall.

The heaters are also very robust and withstand heavy handling in aggressive environments.

## Electricity or water?

Frico fan heaters are available for electrical or water heating - you have the choice!

## Heating and ventilation

A great advantage of fan heaters is the option of combining heating and ventilation. Mixing cabinets for stationary fan heaters create economic heating and ventilation, by mixing the return air with fresh air.

## Door heater PA1006

PA1006 is a compact door heater which heats the incoming air and gives increased comfort on the inside. When wall mounted, the unit can act as a high level fan heater.

With its compact construction and timeless design the unit is easy to place in any doorway. The intuitive controls are easily accessible, placed on the gable end.

- Integrated selector for the fan and heating.
- Easy installation with 1,8 m cable and plug.
- The unit is easily angled on the bracket, which is used for both wall and ceiling mounting.
- Colour front: white, RAL 9016, NCS S 0500-N. Colour grille, rear section, ends and brackets: grey, RAL 7046.
- CE compliant.

**Door heater PA1006E03 (IP20)**

| Type | Voltage [V] | Output steps [kW] | Airflow [m³/h] | Sound level* [dB(A)] | HxWxD [mm] | Weight [kg] |
|---|---|---|---|---|---|---|
| **PA1006E03** | 230V~ | 0/1.5/3 | 230 | 44 | 153x164x650 | 5,3 |

*) Conditions for sound level measurements, see page 67.

## Fan heater K21

K21 is a compact and safe fan heater designed for portable use. Ideal for heating small areas, for example, garages, caravans, awnings, weekend cottages, offices, patios, etc.

K21 fan heater is small and compact in white metal finish and is equipped with a solid handle.

- Self-regulating ceramic PTC element that can not be overheated.
- Intensive and concentrated heat emission. The air is heated to approx. 65 °C when it passes through K21.
- Equipped with 2 metre long cord with plug for connection to an earthed outlet socket.
- Thermostat (+5 – +35 °C) and output selector (0/1/2 kW).
- Dimensions HxWxD: 220x160x200 mm.
- Colour: white, RAL 9016, NCS S 0500-N.
- Approved by SEMKO and CE compliant.

**Fan heater K21 (IP21)**

| Type | Voltage [V] | Output steps [kW] | Airflow [m³/h] | Sound level* [dB(A] | HxWxD [mm] | Weight [kg] |
|---|---|---|---|---|---|---|
| **K21** | 230V~ | 0/1/2 | 90 | 43 | 220x160x200 | 2,5 |

*) Conditions: Distance to unit 5 metres.



## Fan heater Tiger

Tiger is a range of robust and compact fan heaters for professionals with high demands. The Tiger fan heater is portable, models up to 15 kW can also be hung on the wall.

Tiger 2-9 kW are intended for heating and drying areas such as garages, workshops and shops.

Tiger 15, 20 and 30 kW are ideal for heating and drying larger premises such as industrial premises and workshops, where higher outputs are required.

The Tiger fan heater has a compact and robust sheet steel design with a red finish. The heavy-duty tubular frame acts as a well-balanced and ergonomic carrying handle. The design protects against impact and vibrations and permits use in exacting environments.

- The Tiger fan heater is available in the following designs:
  - **P21 and P31** have a 1.8 m cord with plug for connection to earthed outlet sockets. Can be hung on the wall.
  - **P33, P53 and P93** have a 1.8 m cable with CEE-plug. 230V-outlet socket (type F) at the rear. Products with 230V-outlet socket of type E are also available for ordering. Can be hung on the wall.
  - **P153** has a 1.8 m cable with CEE-plug. Can be hung on the wall.
  - **P203, P303 and P305** are supplied with a 1.8 m cable without a plug. P305 can be connected to 440V3~ and 500V3~.
- Low sound level.
- Integrated thermostat with setting range +5 – +35 °C and output selector.
- Colour: red, RAL 3020, NCS 1090-Y80R.
- CE compliant.

**Fan heater Tiger 2–9 kW (IP44)**

| Type | Voltage [V] | Output steps [kW] | Airflow [m³/h] | Sound level [dB(A)] | HxWxD [mm] | Weight [kg] |
|---|---|---|---|---|---|---|
| **P21** | 230V~ | 0/2 | 280 | 41 | 450x290x390 | 5,7 |
| **P31** | 230V~ | 0/2/3 | 280 | 41 | 450x290x390 | 6,0 |
| **P51** | 230V~ | 0/3,3/5 | 480 | 41 | 450x290x390 | 6,4 |
| **P33** | 400V3N~* | 0/1,5/3 | 280 | 41 | 450x290x390 | 6,3 |
| **P53** | 400V3N~* | 0/2,5/5 | 480 | 40 | 450x290x390 | 6,7 |
| **P93** | 400V3N~* | 0/4,5/9 | 720 | 44 | 530x350x480 | 10 |

*) Also available without neutral and are then called P33-0, P53-0 and P93-0. These models do not have a 230 V~ socket on the back and are equipped with P416-6 connectors.

**Fan heater Tiger 15 kW (IP44)**

| Type | Voltage [V] | Output steps [kW] | Airflow [m³/h] | Sound level [dB(A)] | HxWxD [mm] | Weight [kg] |
|---|---|---|---|---|---|---|
| **P153** | 400V3~ | 0/7,5/15 | 1120 | 47 | 510x410x530 | 16 |

**Fan heater Tiger 20 and 30 kW (IP44)**

| Type | Voltage [V] | Output steps [kW] | Airflow [m³/h] | Sound level [dB(A)] | HxWxD [mm] | Weight [kg] |
|---|---|---|---|---|---|---|
| **P203** | 400V3~ | 0/10/20 | 1900/2600 | 60 | 590x630x600 | 26 |
| **P303** | 400V3~ | 0/10/20/30 | 1900/2600 | 52 | 590x630x600 | 30 |
| **P3053*** | 440V3~<br>500V3~ | 0/7,5/15/23<br>0/10/20/30 | 1900/2600 | 52 | 590x630x600 | 30 |

*) Can be connected to 440V3~ and 500V3~.

**Accessories - Tiger**

| Type | Description |
|---|---|
| **LT22406** | Wall bracket |

Conditions for sound level measurements, see page 67.

# Fan heaters - electrically heated

## Elektra - C/F/V/H

Elektra is a range of fan heaters designed for use in demanding environments. The different models can be used anywhere from corrosive environments and combustible areas to rooms with high temperatures as well as onboard ships and offshore platforms. Elektra is mainly designed for stationary use, yet can also be used as a portable fan heater.

The Elektra fan heater has a modern design with a stainless steel outer casing, red grille and red brackets. The brackets can be rotated, which means Elektra can also be used as a portable fan heater.

- The Elektra fan heater is available in four designs:
  - **Elektra C** is intended for corrosive and damp environments, for example, car-wash halls and sewage works. Outer casing of acid-proof sheet steel. IP65.
  - **Elektra F** has a low element temperature and is approved for use in combustible areas, for example, joinery workshops and agricultural buildings. IP65.
  - **Elektra V** is designed to withstand vibrations on ships and offshore platforms and is approved by Det Norske Veritas. Also available for 440V/60Hz. IP44.
  - **Elektra H** is designed for rooms with high temperatures, up to 70 °C. IP44.
- Colour: stainless steel outer casing (Elektra C has an acid-proof outer casing). Grille and bracket: red, RAL 3020.
- Approved by SEMKO and CE compliant. Elektra V is approved by Det Norske Veritas.

**Fan heater Elektra C for corrosive environments (IP65)**

| Type | Voltage [V] | Output steps [kW] | Airflow [m³/h] | HxWxD [mm] | Weight [kg] |
|---|---|---|---|---|---|
| **ELC331** | 230V~ | 0/2/3 | 400 | 375x300x340 | 13 |
| **ELC633** | 400V3~ | 0/3/6 | 1000 | 445x375x430 | 20 |
| **ELC933** | 400V3~ | 0/4,5/9 | 1000 | 445x375x430 | 20 |
| **ELC1533** | 400V3~ | 0/7,5/15 | 1300 | 445x375x430 | 20 |

**Fan heater Elektra F for rooms where there is a risk of fire (IP65)**

| Type | Vvoltage [V] | Output steps [kW] | Airflow [m³/h] | HxWxD [mm] | Weight [kg] |
|---|---|---|---|---|---|
| **ELF331** | 230V~ | 0/2/3 | 400 | 375x300x340 | 13 |
| **ELF633** | 400V3~ | 0/3/6 | 700 | 375x300x340 | 13 |
| **ELF933** | 400V3~ | 0/4,5/9 | 1000 | 445x375x430 | 20 |

**Fan heater Elektra V for ships and offshore industry (IP44)**

| Type | Voltage [V] | Output steps [kW] | Airflow [m³/h] | HxWxD [mm] | Weight [kg] |
|---|---|---|---|---|---|
| **ELV331** | 230V~ | 0/2/3 | 400 | 375x300x340 | 13 |
| **ELV3333** | 400V3~ | 0/1,5/3 | 400 | 375x300x340 | 13 |
| **ELV3344** | 400/440V3~ | 0/1,8/3,6 | 400 | 375x300x340 | 13 |
| **ELV5333** | 400V3~ | 0/2,5/5 | 700 | 375x300x340 | 13 |
| **ELV6344** | 400/440V3~ | 0/3/6 | 700 | 375x300x340 | 13 |

**Fan heater Elektra H for rooms with high temperatures (IP44)**

| Type | Voltage [V] | Output steps [kW] | Airflow [m³/h] | HxWxD [mm] | Weight [kg] |
|---|---|---|---|---|---|
| **ELH633** | 400V3N~ | 0/3/6 | 1000 | 445x375x430 | 20 |
| **ELH933** | 400V3N~ | 0/4,5/9 | 1000 | 445x375x430 | 20 |

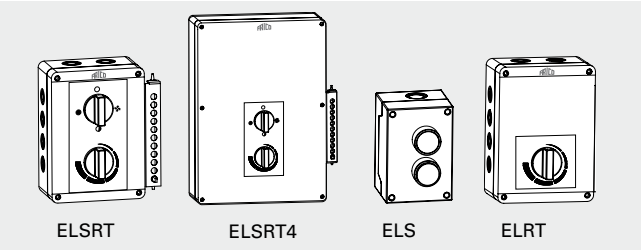
### Control options

Fan heater Elektra H features an integrated thermostat with the working range 0 – +70 °C, other models feature an integrated thermostat with the working range 0 – +35 °C. The output can be selected using the output selector on the unit or on the external control panel.

Elektra C / Elektra V
- ELSRT, control box, controls one unit
- ELSRT4, control box, controls four units

Elektra F
- ELS, control box, controls one unit

Elektra H
- ELRT, room thermostat




ELSRT/ELSRT4, control panel
The required output and temperature can be set on the control panel. Integrated thermostat, +5 – +35 °C. Used for external control, for example, when installed high on a wall. **ELSRT** controls only one unit. **ELSRT4** can control up to four units. IP65.

ELS, control panel start/stop
Control panel that starts/stops the fan, for external control, for example, when installed high on a wall. Only one unit can be controlled from one control panel. IP65.

ELRT, room thermostat
Capillary tube thermostat with visible dial. Setting range 0 - +70 °C. Max. breaking current: 16 A. IP44.

**Accessories - Elektra**

| Type | Description |
|---|---|
| **ELSRT** | Control box with thermostat for ELC and ELV, start/stop, 175x150x100 mm, IP65 |
| **ELSRT4** | Control box with thermostat for ELC and ELV, start/stop, for 4 units, 255x360x110 mm, IP65 |
| **ELS** | Control box for ELF, start/stop, 105x70x80 mm, IP65 |
| **ELRT** | Room thermostat for ELH, 175x150x100 mm, IP44 |
| **KRT1900** | Room thermostat, IP55 |

For controls, see pages 63-64.

## Fan heater Cat

Cat is a range of compact and quiet fan heaters for stationary use. It is ideally suited for small stockrooms, in a garage, workshop or shop. The mixing cabinet (accessory) allows heating and ventilation to be combined, through mixing the return air and outdoor air.

The Cat fan heater has a classic clean design in white enamelled sheet steel. It is small and unobtrusive and with that easy to position.

- Low sound level.
- Wall bracket with 10° tilt angle for good heat distribution.
- Integrated thermostat with setting range +5 – +35 °C and output selector. External control, for example, thermostat and timer is possible.
- Colour: white, RAL 9016, NCS S 0500-N.
- CE compliant.

**Fan heater Cat (IP44)**

| Type | Voltage [V] | Output steps [kW] | Airflow [m³/h] | Sound level [dB(A)] | HxWxD [mm] | Weight [kg] |
|---|---|---|---|---|---|---|
| **C3*** | 230V~ 400V3N~ | 0/1,5/3 | 280 | 41 | 255x335x276 | 6,3 |
| **C5** | 400V3N~ | 0/2,5/5 | 480 | 40 | 255x335x276 | 6,7 |
| **C9** | 400V3N~ | 0/4,5/9 | 720 | 44 | 315x405x335 | 10,2 |

*) C3 can be connected for 230V~ and 400V3N~. Other models should not be connected for single phase, 230V~.

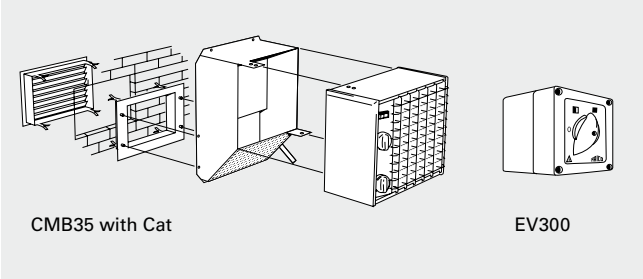
## Control kits Cat

**Built-in control:**

The built-in thermostat controls fan speed and heat, or heat only. The choice is made with the mode selector. The output can be controlled via the built-in output selector (0-1/2-1/1).

**External regulation:**

- T10S/TK10S room thermostats
- EV300, output selector
- CBT, electronic timer


EV300, output selector
Output selector with output steps 0-1/2-1/1. IP44.

CMB35, mixing cabinet
Mixing cabinet for C3 and C5. Save energy by mixing the outdoor air with the return air in individually selected proportions. An outer wall grille, a walling-in frame and a hand controller are supplied with the mixing cabinet.

TP3/5 and TP9, cover panel for switches
Covers the switches on the heater and prevents changes in the settings.

**Accessories - Cat**

| Type | Description |
|---|---|
| **T10S** | Room thermostat, IP30 |
| **TK10S** | Room thermostat with knob, IP30 |
| **TKS16** | Room thermostat with knob, 1-pole switch, IP30 |
| **KRT1900** | Room thermostat, IP55 |
| **EV300** | Output selector, IP44 |
| **CBT** | Electronic timer, IP44 |
| **KUR** | Digital time switch, IP55 |
| **CMB35** | Mixing cabinet for C3 and C5 |
| **TP3/5** | Cover panel for switches for C3 and C5 |
| **TP9** | Cover panel for switches for C9 |

For controls, see pages 63-64.

Conditions for sound level measurements, see page 67.

# Fan heaters - electrically heated

## Fan heater Panther 6-15

Panther 6-15 is a range of very quiet and efficient fan heaters for stationary use. They are intended for heating, drying and ventilation in e.g. workshops, sport halls, shops, assembly rooms and drying rooms. The mixing cabinet (accessory) allows heating and ventilation to be combined, through mixing the return air and outdoor air.

The Panther fan heater has a classic clean design in white enamelled sheet steel.

- Low sound level.
- Supplied with wall bracket that makes it possible to direct the airflow down and to the side.
- Integrated thermostat with setting range +5 – +35 °C, possibility to connect an external thermostat.
- External control panel PP15 (ordered separately) with master/slave function, for up to six units gives good and simple control.
- Colour: white, RAL 9016, NCS S 0500-N.
- CE compliant.

## Fan heater Panther 20-30

Panther 20–30 is a range of powerful and quiet fan heaters for stationary use. They are intended for heating, drying and ventilation of large premises, for example, industries. The mixing cabinet (accessory) allows heating and ventilation to be combined, through mixing the return air and outdoor air.

The Panther fan heater has a classic clean design in white enamelled sheet steel.

- Supplied with wall bracket that makes it possible to direct the airflow down and to the side.
- Post-running thermostat for efficient cooling.
- External control panel PP20/30 (ordered separately) with master/slave function, for up to six units, and external thermostat, for example, RTI2 gives good and simple control.
- Colour: white, RAL 9016, NCS S 0500-N.
- CE compliant.

**Fan heater Panther 6-15 kW (IP44)**

| Type | Voltage [V] | Output steps [kW] | Airflow [m³/h] | Sound level [db(A)] | HxWxD [mm] | Weight [kg] |
|---|---|---|---|---|---|---|
| **SE06** | 400V3N~ | 0/3/6 | 900/1300 | 39/47 | 520x450x510 | 21 |
| **SE09** | 400V3N~ | 0/4,5/9 | 900/1300 | 39/47 | 520x450x510 | 22 |
| **SE12** | 400V3N~ | 0/6/12 | 900/1300 | 39/47 | 520x450x510 | 22 |
| **SE15** | 400V3N~ | 0/7,5/15 | 900/1300 | 39/47 | 520x450x510 | 22 |
| **SE135** | 440V3~ | 0/5/10 | 900/1300 | 39/47 | 520x450x510 | 23 |
| | 500V3~* | 0/7/13,5 | 900/1300 | | 520x450x510 | |

*) Can be connected to 440V3~ and 500V3~.

**Fan heater Panther 20 and 30 kW (IP44)**

| Type | Voltage [V] | Output steps [kW] | Airflow [m³/h] | Sound level [db(A)] | HxWxD [mm] | Weight [kg] |
|---|---|---|---|---|---|---|
| **SE20** | 400V3N~ | 0/10/20 | 1900/2600 | 52/60 | 576x478x545 | 27 |
| **SE30** | 400V3N~ | 0/10/20/30 | 1900/2600 | 52/60 | 576x478x545 | 31 |
| **SE305** | 440V3~ | 0/7,5/15/23 | 1900/2600 | 52/60 | 576x478x545 | 32 |
| | 500V3~* | 0/10/20/30 | 1900/2600 | | 576x478x545 | |

*) Can be connected to 440V3~ and 500V3~.

## Control kits Panther 6 -15 kW

**Fan speed and thermostat control:**

- RTI2 or KRT2800, 2-step room thermostats
- PP15, control box, controls the output in two steps and the airflow in three steps.

**Automatic temperature control:**

- PTA, automatic temperature control

**Control of mixing cabinet:**

- PHR01, control lever, manual damper control or
- PSA01, automatic damper and temperature control
- PSM01, damper motor, is used in combination with PSA01 when several mixing cabinets should be controlled

## Control kits Panther 20 - 30 kW

**Fan speed and thermostat control:**

- RTI2 or KRT2800, 2-step room thermostats
- PP20, control box, controls the output in two steps and the airflow in two steps (SE20)
- PP30, control box, controls the output in three steps and the airflow in three steps (SE30, SE305).

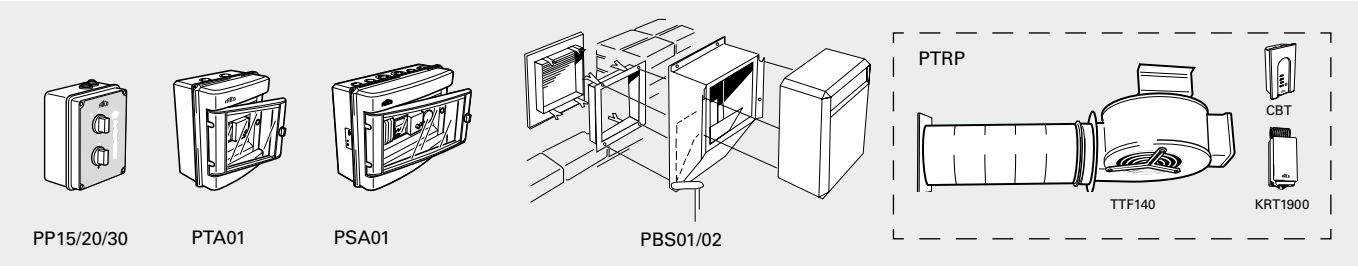
**Automatic temperature control:**

- PTA, automatic temperature control

**Control of mixing cabinet:**

- PHR01, control lever, manual damper control or
- PSA01, automatic damper and temperature control
- PSM01, damper motor, is used in combination with PSA01 when several mixing cabinets should be controlled

Conditions for sound level measurements, see page 67.




PP15/20/30, control box
The desired output and fan speed can be set on the control box. Up to 6 units can be controlled by one control box. Protection class: IP44.

PTA01, automatic temperature control
PTA01 can be used to lower the heat when necessary (1–10°C), for example at night or weekends. The control consists of an electronic timer and thermostat with an external sensor. The timer alternates between day and night mode. Protection class: IP55.

PHR01, control lever for mixing cabinet
Used with the mixing cabinet, if you wish to control the damper manually. The pull-rod (not included) for the lever should have a diameter of 8 mm.

PSA01, automatic damper and temperature regulator
Used on the mixing cabinet. Lowers the temperature and reduces the amount of outdoor air during periods with a low requirement. Consists of timer (weekly timer), thermostat with external sensor, potentiometer and damper motor. Exhaust air fans can possibly be controlled from the automatic system. One damper motor (PSM01) included. IP55.

PSM01, damper motor
Used in combination with PSA01 when several mixing cabinets should be controlled. (1 damper motor is included in PSA01.) Protection class: IP54.

PBS01/02, mixing cabinet
Saves energy by mixing return air with fresh air in preset proportions. The mixing cabinet is delivered with a wall frame and outer wall grille.

PLR15/30, air director
The air director directs the airflow vertically or laterally. PLR is snapped on the front of the heater. Torsional (turning) angle 0–35°.

PFF15, exhaust air fan
Can be used with fan heater/mixing cabinet to obtain good ventilation. Airflow approx. 1400 m³/h. Protection class: IP54.

PFF30, exhaust air fan
Can be used with fan heater/mixing cabinet to obtain good ventilation. Airflow approx. 2600 m³/h. Protection class: IP54.

PTRP, drying room kit
Consists of exhaust air fan TTF140 with flexi hose and connection sleeve, thermostat KRT1900 and timer CBT. The exhaust air fan works alternately with, for example, a fan heater, which gives the shortest possible drying time and minimal energy consumption. Supplemented with a fan heater from the Panther range with output 6-12 kW.

**Accessories Panther 6-12, 20 and 30 kW**

| Type | Description |
|---|---|
| **PP15** | Control box SE06 - SE15, IP44 |
| **PP20** | Control box SE20, IP44 |
| **PP30** | Control box SE30 and SE305, IP44 |
| **PTA01** | Automatic temperature control, IP55 |
| **PBS01** | Mixing cabinet SE06 – SE15 |
| **PBS02** | Mixing cabinet SE20, SE30 and SE305 |
| **PHR01** | Control lever for mixing cabinet |
| **PSM01** | Damper motor, IP54 |
| **PLR15** | Air director SE06 – SE15 |
| **PLR30** | Air director SE20, SE30 and SE305 |
| **PSA01** | Automatic damper and temp. control, IP55 |
| **PTRP** | Drying room kit without fan heater |
| **PFF15** | Exhaust air fan SE06 – SE15, IP54 |
| **PFF30** | Exhaust air fan SE20, SE30 and SE305, IP54 |
| **KRT2800** | 2-step room thermostat, IP55 |
| **RTI2** | 2-step room thermostat, IP44 |
| **RTI2V** | 2-step room thermostat with knob, IP44 |
| **CBT** | Electronic timer, IP44 |
| **KUR** | Digital time switch, IP55 |

For controls, see pages 63-64.

# Fan heaters - water heated

## Fan heater SWH

SWH belongs to a new generation of intelligent fan heaters with SIRe integrated controls. SWH and SIRe together can provide fully automatic room heating, adaptable to each area of use.

SWH is suitable for use in premises where fan heaters are traditionally used, such as industrial buildings, as well as environments with low sound requirements.

- Integrated SIRe control system.
- Very low sound level.
- Five fan speeds.
- Mounted on the wall or ceiling.
- Intended for water temperatures up to +125 °C and 10 bar in standard design.
- Colour: RAL 9016, NCS S 0500-N (white). Aluminium louvres.
- CE compliant.

**Fan heater SWH (IPX4)**

| Type | Output* [kW] | Airflow [m³/h] | Sound level [dB(A)] | HxWxD [mm] | Weight [kg] |
|---|---|---|---|---|---|
| **SWH02** | 12 | 1120 | 39 | 525x515x320 | 15 |
| **SWH12** | 20 | 1810 | 48 | 600x535x340 | 19 |
| **SWH22** | 33 | 3260 | 55 | 725x680x370 | 27 |
| **SWH32** | 51 | 5860 | 58 | 850x820x450 | 46 |
| **SWH33** | 66 | 5420 | 58 | 850x820x450 | 46 |

*) Applicable at water temperature 80/60 °C, air temperature, in +15 °C

Conditions for sound level measurements, see page 67.

### Control options

SWH is supplied with an intelligent and well designed low voltage SIRe control system which can be customised for each unique application and environment. The control system is pre-installed in SWH with an integrated PC board. If more than one SWH should be controlled by a single SIRe, an additional modular cable SIReCC per unit is needed. Cables between units can easily be joined together by using joint piece SIReCJ. SIRe is supplied pre-programmed with quick fit plug connections and is very easy to use and install.

SIRe learns the requirements and can provide fully automated room heating with calendar function and selectable switch off at set temperatures for up to nine units. Using SIRe no more energy is consumed than necessary. Because the fan speed is adapted , the sound level is optimized and is never higher than is necessary for comfort. With SIRe Advanced it is possible to choose between Eco and Comfort mode dependent on whether energy savings or optimal comfort has been prioritised. SIRe Advanced can also be used for simple and safe ventilation solutions using mixing cabinets, control is fully automatic and also has built-in frost protection. There are three different levels with different functionality to choose from, Basic, Competent or Advanced. The SIRe control system can be supplemented with a valve kit for a complete solution.

Functions SIReB Basic
- Manual regulation of the fan and temperature
- Automatic control of fan speed and temperature with integrated thermostat.

Functions SIReFC Competent
- All functions for Basic
- Calendar function
- Filter alarm
- Simple BMS control - on/off, fan speed and alarm functions

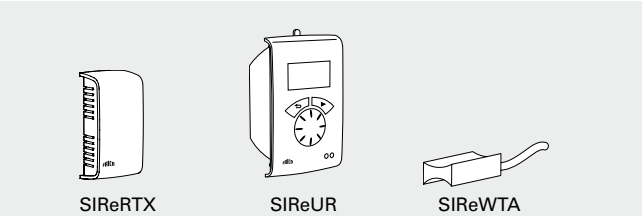
Functions SIReFA Advanced
- All functions for Competent
- Eco mode - extra energy-efficient mode
- Comfort mode - when comfort is important
- Advanced BMS control
- Max limit of return water temperature.
- Stepless heat control.
- Possibility to use an external filter guard.
- Model (SIReFAWM) For fully automatic control of ventilation and heating with mixing cabinet. One SIReFAWM per unit is needed. Integrated frost protection.

**Control - Fan heater SWH**

| Type | Description |
|---|---|
| **SIReB** | Control system SIRe Basic |
| **SIReFC** | Control system SIRe Competent for fan heaters |
| **SIReFA** | Control system SIRe Advanced for fan heaters |
| **SIReFAWM** | Control systemSIRe Advanced for fan heaters with mixing cabinet |

SIRe Basic

SIRe Competent /Advanced




Included in SIReB Basic:
- SIReUB1, control unit with built in room temperature sensor. Wall unit cover included.
- SIReCC, modular cable, RJ12(6p/6c), 5 m

Options:
- SIReRTX, external room temperature sensor, RJ11 (4p/4c), 10 m
- VOS(P), (pressure independent) valve kit on/off or VOT, three way valve and actuator on/off

Included in SIReFC Competent:
- SIReUA1, control unit with built in room temperature sensor. Wall unit cover included.
- SIReC1X, PC board HUB Competent
- SIReCC, modular cables, RJ12(6p/6c), 3 m resp. 5 m

Options:
- SIReRTX, external room temperature sensor, RJ11 (4p/4c), 10 m
- SIReUR, kit for recessed installation
- VOS(P), (pressure independent) valve kit on/off or VOT, three way valve and actuator on/off

Included in SIReFA Advanced:
- SIReUA1, control unit with built in room temperature sensor. Wall unit cover included.
- SIReA1X, PC board HUB Advanced
- SIReOTX, outdoor temperature sensor
- SIReCC, modular cables, RJ12(6p/6c), 3 m resp. 5 m

Options:
- SIReRTX, external room temperature sensor, RJ11 (4p/4c), 10 m
- SIReUR, kit for recessed installation
- SIReWTA, clamp-on sensor, RJ11 (4p/4c), 3 m
- VMO(P), (pressure independent) modulating valve kit or VMT, three way valve and modulating actuator

Included in SIReFAWM Advanced with mixing cabinet:
- SIReUA1, control unit with built in room temperature sensor. Wall unit cover included.
- SIReA1X, PC board HUB Advanced
- SIReOTX, outdoor temperature sensor
- SIReWTA, clamp-on sensor, RJ11 (4p/4c), 3 m
- SMM24, damper motor
- SIReCC, modular cables, RJ12(6p/6c), 3 m resp. 5 m

Options:
- SIReRTX, external room temperature sensor, RJ11 (4p/4c), 10 m
- SIReUR, kit for recessed installation
- VMO(P), (pressure independent) modulating valve kit or VMT, three way valve and modulating actuator

**Accessories - SIRe**

| Type | Description |
|---|---|
| **SIReRTX** | External room temperature sensor |
| **SIReUR** | Kit for recessed installation |
| **SIReWTA** | Clamp-on sensor |
| **SIReCJ4** | Joint piece for two pcs RJ11 (4/4) |
| **SIReCJ6** | Joint piece for two pcs RJ12 (6/6) |
| **SIReCC603** | Modular cable RJ12 3 m |
| **SIReCC605** | Modular cable RJ12 5 m |
| **SIReCC610** | Modular cable RJ12 10 m |
| **SIReCC615** | Modular cable RJ12 15 m |
| **SIReCC403** | Modular cable RJ11 3 m |
| **SIReCC405** | Modular cable RJ11 5 m |
| **SIReCC410** | Modular cable RJ11 10 m |
| **SIReCC415** | Modular cable RJ11 15 m |

## Water control

Valve kit VOS(P), VOT, VMO(P) or VMT is used to control the water flow. For more information see the "Controls" section.

**Water control - SWH**

| Type | Description |
|---|---|
| **VOS15LF** | Valve kit on/off, low flow, DN15, Kvs 0,90 |
| **VOS15NF** | Valve kit on/off, DN15, Kvs 1,8 |
| **VOS20** | Valve kit on/off, DN20, Kvs 3,4 |
| **VOS25** | Valve kit on/off, DN25, Kvs 7,2 |
| **VOSP15LF** | Pressure independent valve kit on/off, low flow, DN15 |
| **VOSP15NF** | Pressure independent valve kit on/off, DN15 |
| **VOSP20** | Pressure independent valve kit on/off, DN20 |
| **VOSP25** | Pressure independent valve kit on/off, DN25 |
| **VOT15** | 3-way control valve and actuator on/off, DN15, Kvs 1,7 |
| **VOT20** | 3-way control valve and actuator on/off, DN20, Kvs 2,5 |
| **VOT25** | 3-way control valve and actuator on/off, DN25, Kvs 4,5 |
| **VMO15LF** | Modulating valve kit, low flow, DN15, Kvs 0,40 |
| **VMO15NF** | Modulating valve kit, DN15, Kvs 1,0 |
| **VMO20** | Modulating valve kit, DN20, Kvs 2,0 |
| **VMO25** | Modulating valve kit, DN25, Kvs 4,0 |
| **VMOP15LF** | Pressure independent and modulating valve kit, low flow, DN15 |
| **VMOP15NF** | Pressure independent and modulating valve kit, DN15 |
| **VMOP20** | Pressure independent and modulating valve kit, DN20 |
| **VMOP25** | Pressure independent andmodulating valve kit, DN25 |
| **VMT15** | 3-way control valve and modulating actuator, DN15, Kvs 1,7 |
| **VMT20** | 3-way control valve and modulating actuator, DN20, Kvs 2,5 |
| **VMT25** | 3-way control valve and modulating actuator, DN25, Kvs 4,5 |
| **VAT** | Adjustement tool for valve kits |

SWB, mounting brackets
When not using the filter section or mixing cabinet the main unit is suspended from the wall or ceiling using brackets SWB (fig 2). Brackets are extra and supplied as a pair.

SWFTN, basic filter
Used as an alternative to the filter section. Provides the heating coil with basic protection. The filter is easily fitted into the SW unit and can be cleaned from either the top or bottom. The SWH unit has a re-usable filter (fig 3).

SWF, filter section
Fig. 4. Filters the outdoor air or/and return air from particles that might reduce the performance and reliability of SWH. The disposable deep-pleated bagfilter is a cassette of synthetic material. Filterclass G85 (EU3). The filter section is equipped with filter on delivery.

Note! If the filter section is not used in combination with the mixing cabinet, a return air intake (SWD) is required.

SWEF, extra filtercassette
Replacement filter for SWF.

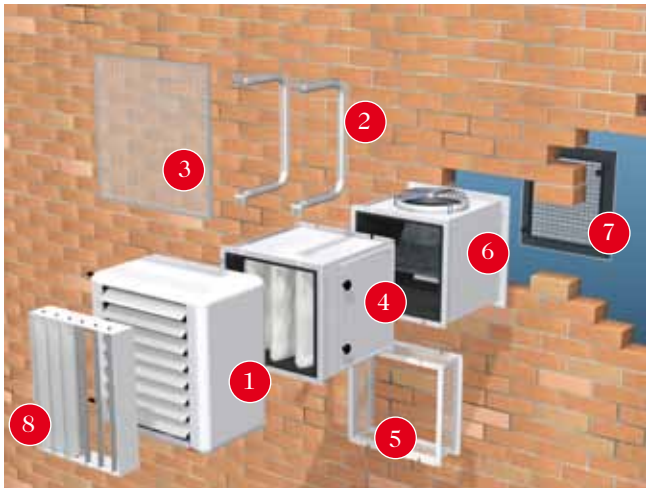
SWD, return air intake
Fig. 5. Allows air intake when filter section is used without mixing cabinet SWBS. Return air intake is not required when the mixing cabinet is used.

SWBS, mixing cabinet
Fig. 6. The mixing cabinet is used to combine ventilation with heating by mixing outdoor air with return air. The mixture ratio is controlled and infinitely variable with a damper, either manually or with a damper motor.

SWY, outer wall grille
Fig. 7. For intake of fresh air into the mixing cabinet. Grille of hot zinc-plated steel panels.

SWLR, extra air director
Fig. 8. To direct the air stream sideways. On delivery, SWH is equipped with an air director for vertical direction of the air stream. Individually adjustable louvres in anodised aluminium.

The extra air director is mounted to SWH by hooking it onto the existing air director.




1) Fan heater SWH
2) Mounting brackets SWB
3) Basic filter SWFTN
4) Filter section SWF
5) Return air intake SWD
6) Mixing cabinet SWBS
7) Outer wall grille SWY
8) Extra air director SWLR

**Accessories - Fan heater SWH and SWS**

| Type | Description |
|---|---|
| **SWB0** | Mounting brackets SWH/SWS02 |
| **SWB1** | Mounting brackets SWH/SWS12 |
| **SWB2** | Mounting brackets SWH/SWS22 |
| **SWB3** | Mounting brackets SWH/SWS32/33 |
| **SWFTN02** | Basic filter SWH/SWS12 |
| **SWFTN1** | Basic filter SWH/SWS12 |
| **SWFTN2** | Basic filter SWH/SWS22 |
| **SWFTN3** | Basic filter SWH/SWS32/33 |
| **SWF1** | Filter section SWH/SWS12 |
| **SWF2** | Filter section SWH/SWS22 |
| **SWF3** | Filter section SWH/SWS32/33 |
| **SWEF1** | Extra filter cassette SWH/SWS12 |
| **SWEF2** | Extra filter cassette SWH/SWS22 |
| **SWEF3** | Extra filter cassette SWH/SWS32/33 |
| **SWD1** | Return air inlet (SWF1) SWH/SWS12 |
| **SWD2** | Return air inlet (SWF2) SWH/SWS22 |
| **SWD3** | Return air inlet (SWF3) SWH/SWS32/33 |
| **SWBS1** | Mixing cabinet SWH/SWS12 |
| **SWBS2** | Mixing cabinet SWH/SWS22 |
| **SWBS3** | Mixing cabinet SWH/SWS32/33 |
| **SWY1** | Outer wall grille SWH/SWS12 |
| **SWY2** | Outer wall grille SWH/SWS22 |
| **SWY3** | Outer wall grille SWH/SWS32/33 |
| **SWLR1** | Extra air director SWH/SWS12 |
| **SWLR2** | Extra air director SWH/SWS22 |
| **SWLR3** | Extra air director SWH/SWS32/33 |

## Fan heater SWS

Fan heater SWS is intended for water-heating or cooling. SWS is suitable for places where fan heaters are traditionally used, such as industrial premises, workshops and storage rooms. The fan heater is mounted on the wall. By turning the unit the water connections will be positioned on the left or right side.

Fan heater SWS has a compact and functional design well suitable for the applications it is intended for.

- Mounted on the wall.
- Intended for water temperatures up to +125 °C and 10 bar in standard design.
- Colour: grey. Louvres in anodised aluminium.
- CE compliant.

**Fan heater SWS (IPX4)**

| Type | Voltage [V] | Output* [kW] | Airflow [m³/h] | Sound level [dB(A)] | HxBxD [mm] | Weight [kg] |
|---|---|---|---|---|---|---|
| **SWS02** | 230V~ | 12 | 1260 | 50 | 470x520x260 | 14 |
| **SWS12** | 230V~ | 19 | 2340 | 57 | 545x540x275 | 18 |
| **SWS22** | 230V~ | 30 | 3560 | 58 | 675x690x275 | 26 |
| **SWS32** | 230V~ | 50 | 6300 | 64 | 800x830x350 | 45 |
| **SWS33** | 230V~ | 65 | 6090 | 64 | 800x830x350 | 45 |
| **SWS323** | 400V3~ | 48 | 5890 | 62 | 800x830x350 | 45 |
| **SWS333** | 400V3~ | 62 | 5660 | 62 | 800x830x350 | 45 |

*) Applicable at water temperature 80/60 °C, surrounding temperature +15 °C, fan position: max.

## Control options 230V~

Control by thermostat only
- KRT1900 or T10S/TK10S, room thermostat
- TVVS20/25, valve + SD20, actuator

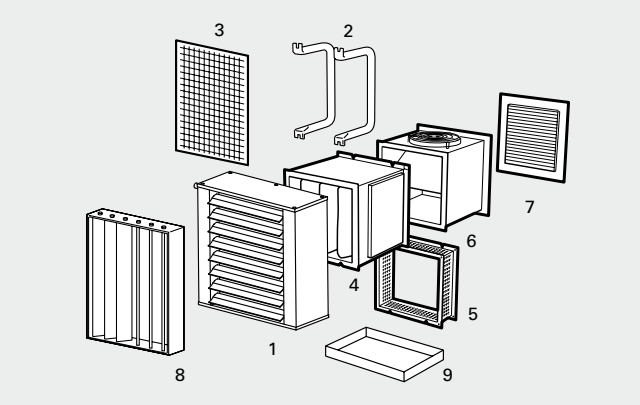
5-step control of airflow only
- RE1,5, 5-step regulator max 1,5A, or
  RE3, 5-step regulator max 3A, or
  RE7, 5-step regulator max 7A

Thermostat and 5-step control
- RE1,5, 5-step regulator max 1,5A, or
  RE3, 5-step regulator max 3A, or
  RE7, 5-step regulator max 7A
- KRT1900 or T10S/TK10S, room thermostat
- TVVS20/25, valve + SD20, actuator

## Control options 400V~

2-step control of airflow only
- SWYD1, 2-step change-over switch for air flow (Y/D)
- STDT16, thermal contact motor protection

Heat controlled by thermostat and 2-step control of air flow
- SWYD1, 2-step change-over switch for air flow (Y/D)
- STDT16, thermal contact motor protection
- KRT1900 or T10S/TK10S, room thermostat
- TVVS20/25, valve + SD20, actuator




1) Fan heater SWS
2) Mounting brackets SWB
3) Basic filter SWFTN
4) Filter section SWF
5) Return air intake SWD
6) Mixing cabinet SWBS
7) Outer wall grille SWY
8) Extra air director SWLR
9) Drip tray SWST

RE1,5/RE3/RE7, 5-step change-over switch for air flow
Controls the air flow in 5 steps. **RE1,5** controls maximum 1,5 A. **RE3** controls maximum 3 A. **RE7** controls maximum 7 A. To control the heat, a suitable thermostat and a valve + actuator are needed. IP54.

STDT16, thermal contact motor protection
Motor protection for models 400V3~. Switches off the supply voltage to the motor when the thermal contact in the motor windings is tripped. The motor protector is reset by pressing the black button as soon as the motor windings have cooled sufficiently. IP55.

SWYD1, 2-step change-over switch for air flow (Y/D)
Controls the air flow in two steps. One change-over switch for each unit. IP66.

SWST, drip tray
Used to collect condensation when the unit is used for cooling.

For information about other accessories, see fan heater SWH.

**Accessories - Fan heater SWS**

| Type | Description |
|---|---|
| **RE1,5** | 5-step change-over switch for airflow 1,5 A |
| **RE3** | 5-step change-over switch for airflow 3 A |
| **RE7** | 5-step change-over switch for airflow 7 A |
| **T10S** | Room thermostat, IP30 |
| **TK10S** | Room thermostat with knob, IP30 |
| **KRT1900** | Room thermostat, IP55 |
| **TVVS20** | 2-way control valve DN20 |
| **TVVS25** | 2-way control valve DN25 |
| **SD20** | Actuator |
| **STDT16** | Thermal contact motor protection, IP55 |
| **SWYD1** | 2-step change-over switch for air flow (Y/D), IP66 |
| **SWST02** | Drip tray SWS02 |
| **SWST1** | Drip tray SWS12 |
| **SWST2** | Drip tray SWS22 |
| **SWST3** | Drip tray SWS32/33 |

For controls, see pages 63-64 and 66.



Conditions for sound level measurements, see page 67.

# Fan heaters - water heated

## Fan heater SWT

The SWT fan heater is used for heating entrances, stores, industrial premises, workshops, sports halls, garages and shops. The low height means that SWT can also be recessed into a suspended ceiling.

The SWT fan heater has a robust design in white enamelled steel panels. SWT is intended for water connection and is ceiling mounted.

- Installed directly to the ceiling or suspended from brackets.
- Intended for water temperatures up to +80 °C and 10 bar.
- Two fan speeds.
- Colour: white.
- CE compliant.

**Fan heater SWT (IPX4)**

| Type | Output* [kW] | Airflow [m³/h] | Sound level [dB(A)] | HxWxD [mm] | Weight [kg] |
|---|---|---|---|---|---|
| **SWT02** | 11 | 1100 | 53 | 330x705x535 | 19 |
| **SWT12** | 18 | 2000 | 57 | 355x825x675 | 26 |
| **SWT22** | 40 | 3900 | 60 | 415x1135x710 | 41 |

*) Applicable at water temperature 80/60 °C, air temperature, in +15 °C

Control options

Control by thermostat only
- KRT1900 or T10S/TK10S, room thermostat
- TVVS20/25, valve + SD20, actuator

2-step control of airflow only
- CB20, control box

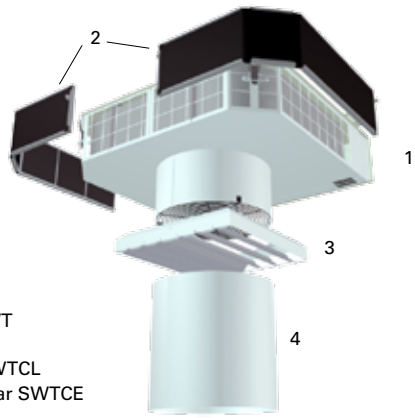
Thermostat and 2-step control
- CB20, control box
- KRT1900 or T10S/TK10S, room thermostat
- TVVS20/25, valve + SD20, actuator

5-step control of airflow only
- RE1,5, 5-step regulator max 1,5A, or
  RE3, 5-step regulator max 3A, or
  RE7, 5-step regulator max 7A

Thermostat and 5-step control
- RE1,5, 5-step regulator max 1,5A, or
  RE3, 5-step regulator max 3A, or
  RE7, 5-step regulator max 7A
- KRT1900 or T10S/TK10S, room thermostat
- TVVS20/25, valve + SD20, actuator

CB20, control box
Controls the airflow in 2 steps. Can control several units. Max input 12 A. IP44.

RE1,5/RE3/RE7, 5-step change-over switch for air flow
Controls the air flow in 5 steps. **RE1,5** controls maximum 1,5 A. **RE3** controls maximum 3 A. **RE7** controls maximum 7 A. To control the heat, a suitable thermostat and a valve + actuator are needed. IP54.




1) Fan heater SWT
2) Filter SWTCF
3) Air director SWTCL
4) Extension collar SWTCE

SWTCF, filter
With the filter installed the interval for cleaning the water coil is extended. The filter is delivered in two pieces.

SWTCL, air director
To avoid draughts at low ceiling heights the air director can be installed to direct air more to the side.

SWTCE, extension collar
At high installation the outlet collar for the SWT can be extended. This increases the throw pattern of the air. SWTCE02 increases the throw pattern to 4-7 m, SWTCE12 increases it to 5-8 m and SWTCE22 to 7-12 m.

**Accessories - Fan heaters SWT**

| Type | Description |
|---|---|
| **CB20** | Control box |
| **RE1,5** | 5-step change-over switch for airflow 1,5 A |
| **RE3** | 5-step change-over switch for airflow 3 A |
| **RE7** | 5-step change-over switch for airflow 7 A |
| **T10S** | Room thermostat, IP30 |
| **TK10S** | Room thermostat with knob, IP30 |
| **KRT1900** | Room thermostat, IP55 |
| **RTI2** | 2-step room thermostat, IP44 |
| **RTI2V** | 2-step room thermostat with knob, IP44 |
| **TVVS20** | 2-way control valve DN20 |
| **TVVS25** | 2-way control valve DN25 |
| **SD20** | Actuator |
| **SWTCE02** | Extension collar 350 mm SWT02 |
| **SWTCE12** | Extension collar 350 mm SWT12 |
| **SWTCE22** | Extension collar 350 mm SWT22 |
| **SWTCF02** | Filter SWT02, 2 pcs |
| **SWTCF12** | Filter SWT12, 2 pcs |
| **SWTCF22** | Filter SWT22, 2 pcs |
| **SWTCL02** | Air director SWT02 |
| **SWTCL12** | Air director SWT12 |
| **SWTCL22** | Air director SWT22 |

For controls, see pages 63-64 and 66.

Conditions for sound level measurements, see page 67.

# Industrial ceiling fan ICF

Ceiling fans are used primarily to equalize the temperature in rooms with high ceilings, such as industrial and warehouse buildings, gymnasiums, and shops. Several controls as well as downrods and blades of different sizes are available, making it possible to adapt ceiling fan ICF to almost all applications.

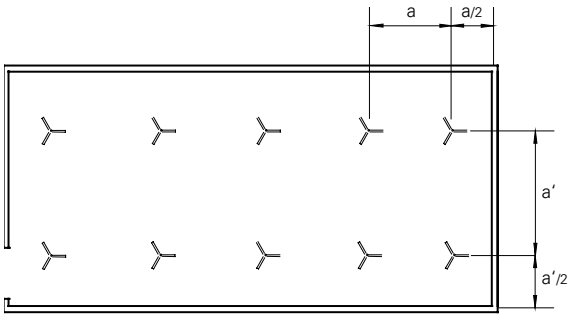
Ceiling fan ICF pushes the warm air from the ceiling and thus lowers the temperature there, the heat losses through the roof and walls are reduced and in many cases, heating costs can be reduced by up to 30%.

Ceiling fan ICF is a high quality, maintenance free product with long lifetime, which results in a very short pay-off time, that is often less than one year.
Industrial ceiling fan ICF has a functional design and white colour which blends well in most premises. The low sound level makes it even more discreet.

- The blades push down large volumes of air without causing excessive air speed.
- Can operate clockwise and anti-clockwise.
- Canopy with vibration absorption.
- Fan blades and downrod coated with zinc.
- Colour: white, NCS S 0505-R90B.
- Protection class ICF20: IPX0.
- Protection class ICF55: IPX5.
- Approved by IMQ and CE compliant.

**Ceiling fan ICF (ICF20:IPX0 / ICF55:IPX5)**

| Type | Voltage [V] | Output [W] | Airflow [m³/h] | Height x Ø [mm] | Weight [kg] |
|---|---|---|---|---|---|
| **ICF20** | 230V~ | 70 | 13500 | 545x1422 | 6,2 |
| **ICF55** | 230V~ | 70 | 13500 | 545x1422 | 6,2 |




| | Recommended distance between fans | | | | |
|---|---|---|---|---|---|
| **Ceiling height (m)** | 4 | 6 | 8 | 10 | 12 |
| **Distance between fans a (m)** | 5 | 7 | 8 | 9 | 10 |

## Control options

- CAR15, automatic fan speed control, for a maximum of 15 fans, reversible
- CFR1R, 5-step control for 1 fan, reversible
- RE1,5, 5-step control for a maximum of 4 fans
- RE3, 5-step control for a maximum of 8 fans
- RE5, 5-step control for a maximum of 12 fans
- PE1, variable fan speed control for a maximum of 2 fans
- PE2,5, variable fan speed control for a maximum of 6 fans

CAR15, automatic fan speed control
Automatic fan speed control, through external sensor, in accordance with variations in the temperature between the ceiling and the floor. Built-in switch for reversed rotation. Controls a maximum of 15 fans. IP31.


CAR15

CFR1R, 5-step control
5-step control. Built-in switch for reversed rotation. Controls a maximum of 1 fan. IPX0.


CFR1R

RE1,5 / RE3 / RE5, 5-step control
5-step control. RE1,5 controls a maximum of 4 fans, RE3 controls a maximum of 8 fans and RE5 controls a maximum of 12 fans. IP54.


RE1,5/RE3/RE5

PE1/PE2,5, variable fan speed control
Single-phase manual thyristor for variable speed adjustment of the fan and on/off regulation. External mounting (IP54) or recessed mounting (IP44). PE1 controls a maximum of 2 fans. PE2,5 controls a maximum of 6 fans.


PE1/PE2,5

**Accessories - ICF**

| Type | Description |
|---|---|
| **CAR15** | Automatic fan speed control |
| **CFR1R** | 5-step fan speed control for 1 fan |
| **PE1** | Stepless fan speed control for 2 fans |
| **PE2,5** | Stepless fan speed control for 6 fans |
| **RE1,5** | 5-step fan speed control for 4 fans |
| **RE3** | 5-step fan speed control for 8 fans |
| **RE5** | 5-step fan speed control for 12 fans |
| **CFAP200** | Short downrod, total height 395 mm |
| **CFAP750** | Long downrod, total height 945 mm |
| **CFB900** | Fan blades Ø 914 mm (3 pcs) |
| **CFB1200** | Fan blades Ø 1218 mm (3 pcs) |

# Convectors

Convection is the term for the rotating air movement where the air is affected by a heat source. The air is heated - rises upwards - cools and comes back to then be reheated. This gives good comfort through good heat distribution and the warm air flow directed upwards can be used to counteract cold drafts from large glass surfaces.

Convectors and radiators are simple to install. Our range contains a convector to suit all needs: small, discreet, robust and hard-wearing or quick and economical, all with the same high level of quality.

## Bench heater SH

Bench heater SH is designed for use with church pews, waiting room benches and the like. The bench heater is installed under the seat and distributes heat in the occupied zone through convection and radiant heat.

As heat is produced as soon as the heater is switched on, SH is also an ideal and efficient option in slowly heated buildings such as churches. Only heating the building when necessary helps to keep down heating costs.

Bench heater SH has a discreet design especially adapted to fit under benches and seats.

- Approved for serial connection.
- Equipped with protecion grille and tube element of stainless steel.
- Dual reflectors (external and internal) give downward heat dispersion.
- Outer reflector is of zinc-plated steel panels and the heater is grey lacquered. Colour: NCS 4000, RAL 7036 (grey).
- CE compliant.

**Bench heater (IP21)**

| Type | Voltage [V] | Heat output [W] | LxHxD [mm] | Weight [kg] |
|---|---|---|---|---|
| **SH17521** | 230V~ | 175 | 700x100x200 | 1,4 |
| **SH17531** | 400V2~ | 175 | 700x100x200 | 1,4 |
| **SH25021** | 230V~ | 250 | 1000x100x200 | 1,9 |
| **SH25031** | 400V2~ | 250 | 1000x100x200 | 1,9 |
| **SH37521** | 230V~ | 375 | 1500x100x200 | 2,9 |
| **SH37531** | 400V2~ | 375 | 1500x100x200 | 2,9 |

## Mini radiator/frost guard

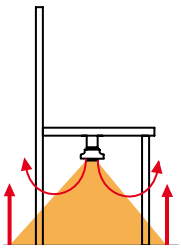
The mini radiator/frost guard gives off a lot of heat despite the small size. The compact radiators are suitable for providing frost protection, but can also be used to heat many different areas, for example, homes, close to water pipes, small warehouses, greenhouses and electrical cabinets.

The mini radiator/frost guard is available in white or stainless steel designs and is very easy to position on account of its small size.

- Mounted horizontally (FML/FMLR) or vertically (FMS) on the wall.
- Stainless steel tubular element.
- Equipped with 1 metre long cord with plug for connection to an earthed outlet socket.
- Integrated overheating protection.
- Integrated thermostat with setting range +5 – +35 °C.
- Colour front: NCS 1103-Y06R (white). FMLR200 has a stainless steel design.
- CE compliant.

**Frostguard FMS, FML, FMLR (IP31)**

| Type | Voltage [V] | Heat output [W] | LxHxD [mm] | Weight [kg] |
|---|---|---|---|---|
| **FMS200** | 230V~ | 200 | 90x298x68 | 0,7 |
| **FMLR200** | 230V~ | 200 | 298x90x68 | 0,7 |
| **FML200** | 230V~ | 200 | 298x90x68 | 0,7 |
| **FML300** | 230V~ | 300 | 398x90x68 | 0,9 |
| **FML450** | 230V~ | 450 | 498x90x68 | 1,1 |



## Ribbed pipe radiator

Frico's ribbed pipe radiators are designed for harsh environments and are approved for wet rooms, but are also available in designs for rooms at risk of fire. The retro design has also created a new application area in modern housing.

Frico's ribbed pipe radiators have a hard wearing and robust design in dark green sheet steel. The compact format means the radiator has a small footprint, but gives a lot of heat.

- The ribbed pipe radiator is available in the following designs:
  - **Model 125**, without output selector.
  - **Model 126**, with output selector that regulates the heat in three steps.
  - **Model 127**, without output selector, sand-filled and suitable for rooms at risk to fire.
- The ribbed flanges increase the heating surface and provide good heat transfer combined with a compact design.
- Resettable overheating protection along the full length of the ribbed pipe radiator.
- A protective steel case give a lower surface temperature and extra protection against impact (model 125 and 126).
- Colour: dark green, RAL 6005, NCS 7020-B90G.
- CE compliant.

**Ribbed pipe radiator (IP44)**

| Type | Voltage [V] | Heat output [W] | LxHxD [mm] | Weight [kg] |
|---|---|---|---|---|
| **125-12B** | 230V~ | 200 | 370x180x185 | 2,4 |
| **125-22B** | 230V~ | 375 | 530x180x185 | 3,3 |
| **125-32B** | 230V~ | 575 | 730x180x185 | 4,5 |
| **125-42B** | 230V~ | 775 | 880x180x185 | 5,5 |
| **126-32B** | 230V~ | 575 | 730x180x185 | 4,7 |
| **126-42B** | 230V~ | 775 | 880x180x185 | 5,7 |
| **126-52B** | 230V~ | 1150 | 1185x180x185 | 7,5 |
| **127-22B** | 230V~ | 500 | 980x180x185 | 10,9 |
| **127-42B** | 230V~ | 800 | 1925x180x185 | 33,3 |


## Thermowarm TWT/TWTC

Thermowarm is a series of easily installed convectors designed for public buildings such as changing rooms, stores and toilets. TWTC can also be used in corrosive and aggressive environments. TWT200 has a surface temperature as low as 60 °C, which makes it ideal for daycare centres and bathrooms.

Thermowarm is easy to position and has, despite its small size, a large heat output. The three different surface finishes: white, grey covered panel covered and stainless steel, make Thermowarm suitable for most environments. The front cover can be opened making it straightforward to keep the convectors clean and tidy.

- With ribbed flanges and tubular elements.
- Integrated thermostat with setting range 0 – +35 °C.
- Resettable overheating protection along the full length of the convector.
- Colour TWT100 and TWT300: white front, RAL 9016, NCS S 0500-N, grey sides
  Colour TWT200: grey covered front panel, grey sides
  Colour TWTC: stainless steel design, black sides
- CE compliant.

**TWT100 (IP44) white, with circuit breaker**

| Type | Voltage [V] | Heat output [W] | LxHxD [mm] | Weight [kg] |
|---|---|---|---|---|
| **TWT10321** | 230V~ | 300 | 345x205x123 | 1,5 |
| **TWT10331** | 400V~ | 300 | 345x205x123 | 1,5 |
| **TWT10521** | 230V~ | 500 | 465x205x123 | 2,0 |
| **TWT10531** | 400V~ | 500 | 465x205x123 | 2,0 |
| **TWT11021** | 230V~ | 1000 | 765x205x123 | 3,0 |
| **TWT11031** | 400V~ | 1000 | 765x205x123 | 3,0 |

**TWT200 (IP44) covered front, with circuit breaker 60 °C**

| Type | Voltage [V] | Heat output [W] | LxHxD [mm] | Weight [kg] |
|---|---|---|---|---|
| **TWT20321** | 230V~ | 300 | 345x205x123 | 1,5 |
| **TWT20331** | 400V~ | 300 | 345x205x123 | 1,5 |
| **TWT20521** | 230V~ | 500 | 465x205x123 | 2,0 |
| **TWT20531** | 400V~ | 500 | 465x205x123 | 2,0 |
| **TWT21021** | 230V~ | 1000 | 765x205x123 | 3,0 |
| **TWT21031** | 400V~ | 1000 | 765x205x123 | 3,0 |

**TWT300 (IP21) white, with mains cord and plug**

| Type | Voltage [V] | Heat output [W] | LxHxD [mm] | Weight [kg] |
|---|---|---|---|---|
| **TWT30321** | 230V~ | 300 | 345x205x123 | 1,5 |
| **TWT30521** | 230V~ | 500 | 465x205x123 | 2,0 |
| **TWT31021** | 230V~ | 1000 | 765x205x123 | 3,0 |

**TWTC (IP54) stainless steel, with mains cord and plug**

| Type | Voltage [V] | Heat output [W] | LxHxD [mm] | Weight [kg] |
|---|---|---|---|---|
| **TWTC30321** | 230V~ | 300 | 345x205x123 | 1,5 |
| **TWTC30521** | 230V~ | 500 | 465x205x123 | 2,0 |
| **TWTC31021** | 230V~ | 1000 | 765x205x123 | 3,0 |

## Fan convector PF

Fan convector PF is suitable for most environments, for example, homes and offices. It is also ideal for use in buildings that are rarely used, for example, weekend cottages, where quick heating is required. The fan convector also has very good drying properties. Models up to 800 W have a surface temperature of less than 60 °C which makes them extremely suitable for daycare centres and bathrooms.

The fan convector consumes less energy than standard convectors. The air flow from the convector, which balances the temperature difference between the floor and ceiling, gives higher efficiency and lower energy consumption compared to convectors without a fan.

Fan convector PF has an attractive and clean design in a white finish. A brushed aluminium front is available as an accessory. The low surface temperature makes it possible to finish the front panel in any colour or a film finish can be applied.

- Fan convector PF is available in the following designs:
  - **PFE** is equipped with a 1.2 metre long cord with plug for connection to an earthed outlet socket (230V~). Can be used as a portable unit, a floor stand is available as an accessory.
  - **PFD** is designed for permanent installation (400V2~).
  - **PFW** is for water based heating. Equipped with a 1.2 metre long cord with plug for connection to an earthed outlet socket. Supplied with two, 0.9 m PEX hoses for easy installation. Works with a heat pump.
- Low sound level.
- Master/slave function (PFE/PFD).
- Integrated thermostat with setting range 5 – +35 °C (PFE/PFD).
- Prepared for night tariffs via external signal (PFE/PFD).
- Depth wall bracket PFE/PFD: 30 mm.
- Depth wall bracket PFW: 45 mm.
- Colour: white, RAL 9016, NCS S 0500-N (standard), brushed aluminium as an accessory.
- CE compliant.

**Fan convector PFE/PFD, electrically heated (IP23)**

| Type | Voltage [V] | Heat output [W] | LxHxD [mm] | Weight [kg] |
|---|---|---|---|---|
| **PFE5** | 230V~ | 500 | 598x330x90 | 6 |
| **PFE8** | 230V~ | 800 | 598x330x90 | 6 |
| **PFE10** | 230V~ | 1000 | 598x330x90 | 6 |
| **PFE12** | 230V~ | 1200 | 598x330x90 | 6 |
| **PFD5** | 400V2~ | 500 | 598x330x90 | 6 |
| **PFD8** | 400V2~ | 800 | 598x330x90 | 6 |
| **PFD10** | 400V2~ | 1000 | 598x330x90 | 6 |
| **PFD12** | 400V2~ | 1200 | 598x330x90 | 6 |

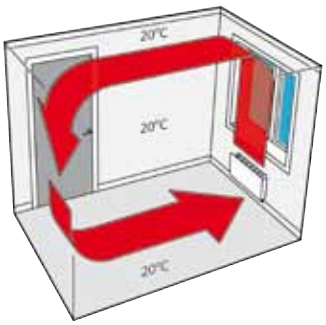
**Fan convector PFW, water heated (IP23)**

| Type | Voltage [V] | Heat output*1 [kW] | Airflow [m³/h] | Sound level*2 [dB(A)] | LxHxD [mm] | Weight [kg] |
|---|---|---|---|---|---|---|
| **PFW10** | 230V~ | 1,1 | 59 | 42/32 | 598x330x90 | 7,3 |
| **PFW20** | 230V~ | 3,0 | 65 | 44/33 | 1058x330x90 | 13 |

*1) Applicable at water temperature 80/60 °C, air temperature, in +20 °C.
*2) Conditions: Distance to the unit: 3 metres. Directional factor: 2. Equivalent absorption area: 200 m².

**Accessories - PFE/PFD/PFW**

| Type | Description |
|---|---|
| **PFFAL** | Front, brushed aluminium |
| **PFFS** | Floor stand PFE/PFD |




The control system is the intelligent centre and the "brain" of a heating system and essential for good comfort level and low energy consumption. The temperature of an electric heating system can be quickly, easily and precisely regulated and is more responsive than any other heating system.

Frico offers a wide range of thermostats and controls, read more under each product or in the Frico catalogues.

T10S

TK10S

TKS16(400)

TD10

RTI2

RTI2V

T, TK, TD, basic offer thermostats
Processor controlled thermostats for room/floor heating. Available with concealed/visible knob or digital display. Model with visible knob also available with switch and in 400 V.

On/off control (for slow systems) or proportional control (for faster systems) in the same thermostat. TD10 has adjustable P-band and time of cycle.

Internal and/or external sensors (external sensor RTS01 available as an accessory) give the possibility of selecting the sensor function e.g limiting external sensors (min/max). Save reduction either by built-in manual switch or via external timer. CE compliant.

| Type | Voltage [V] | Max input [A] | Setting range [°C] | HxWxD [mm] |
|---|---|---|---|---|
| **T10S** | 230V~ | 10 | 5 - +30 | 80x80x31 |
| **TK10S** | 230V~ | 10 | 5 - +30 | 80x80x31 |
| **TKS16** | 230V~ | 16 | 5 - +30 | 80x80x39 |
| **TKS16400** | 400V2~ | 16 | 5 - +30 | 80x80x39 |
| **TD10** | 230V~ | 10 | 5 - +37 | 80x80x31 |

RTI2, electronic 2-step thermostats
Processor controlled 2-step thermostats for room heating / cooling. Available with concealed or visible knob. Adjustable temperature difference between the steps (1–10 degrees). Save reduction via external connection timer (1–10 degrees). External sensor (RTS01) available as an accessory. High protection class (IP44). CE compliant.

| Type | Voltage [V] | Setting range [°C] | HxWxD [mm] |
|---|---|---|---|
| **RTI2** | 230V~ | 5 - +35 | 155x87x43 |
| **RTI2V** | 230V~ | 5 - +35 | 155x87x43 |

**Accessories**

| Type | Description |
|---|---|
| **RTS01** | External floor/duct sensor |

# Thermostats and controls


KRT1900/1


KRTV19


KRT2800

KRT, capillary tube thermostats
Capillary tube thermostats for room heating/cooling. Available with concealed and visible knob, and control in 1 or 2 steps. KRT2800 controls in 2 steps and has adjustable temperature difference between the steps (1–4 degrees). KRT1901 has a temperature range of -35–+10 °C. High protection class (IP44 resp. IP55). CE compliant.

| Type | Voltage [V] | Setting range [°C] | HxWxD [mm] |
|---|---|---|---|
| **KRT1900** | 230/400V~ | 0 - +40 | 165x57x60 |
| **KRT1901** | 230/400V~ | -35 - +10 | 165x57x60 |
| **KRTV19** | 230/400V~ | 0 - +40 | 165x57x60 |
| **KRT2800** | 230/400V~ | 0 - +40 | 165x57x60 |


TBK10


TBKS10

TBK, bimetal thermostats
Mechanical bimetal thermostats with acceleration resistance for room heating/cooling. TBKS10 also has a 1-pole switch. CE compliant.

| Type | Voltage [V] | Setting range [°C] | HxWxD [mm] |
|---|---|---|---|
| **TBK10** | 230V~ | 5–30 | 80x80x43 |
| **TBKS10** | 230V~ | 5–30 | 80x80x43 |


CBT

CBT, electronic timer
Electronic timer with alternating contact. Setting range 1/2-1-2-4 or 4-8-16-24 hours respectively. The setting range can be limited down to a maximum time of 1/2 hours. IP44.

| Type | Voltage [V] | HxWxD [mm] |
|---|---|---|
| **CBT** | 230V~ | 155x87x43 |


KUR

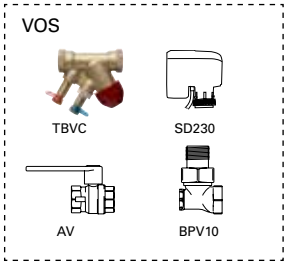
KUR, digital time switch
Digital weekly timer with 8 different program steps (36 memory places) equipped with a changeover contact. Max. breaking current: 10 A. IP55.

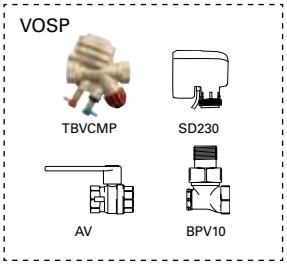
| Type | Voltage [V] | HxWxD [mm] |
|---|---|---|
| **KUR** | 230V~ | 175x85x105 |

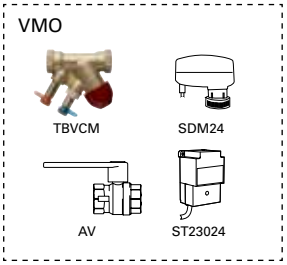
## Functions | Thermostats

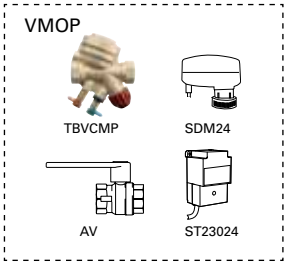
| | Basic offer | | | | Electronic 2-step | | Capillary tube | | | Bimetallic | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **T10S** | **TK10S** | **TKS16 TKS16400** | **TD10** | **RTI2** | **RTI2V** | **KRT1900 KRT1901** | **KRTV19** | **KRT2800** | **TBK10** | **TBKS10** |
| **Internal sensor** | X | X | X | X | X | X | X | X | X | X | X |
| **External sensor** | X*1 | X*1 | X*1 | X*1 | X*1 | X*1 | | | | | |
| **Save reduction** | X*2 | X*2 | X*2 | X*2 | X*2 | X*2 | | | | | |
| **1-pole switch** | | | X | | | | | | | | X |
| **Volt free contact** | X | X | X | X | X | X | X | X | X | | |
| **Contact, 1-pole closing** | X | X | | X | | | | | | | |
| **Contact, 1-pole alternating** | | | X | | X | | X | X | X | X | X |
| **Digital display** | | | | X | | | | | | | |
| **Advanced extra functions*3** | | | | X | | | | | | | |
| **Internal setting** | X | | | | X | | X | | X | | |
| **Processor controlled** | X | X | X | X | X | X | | | | | |
| **Bimetallic** | | | | | | | | | | X | X |
| **Capillary tube** | | | | | | | X | X | X | | |
| **Fits wall box system** | X | X | X | X | | | | | | X | X |
| **Heating or cooling function** | X | X | X | X | X | X | X | X | X | X | X |
| **2-step** | | | | | X | X | | | X | | |
| **Adjustable temp.diff. between the steps** | | | | | X | X | | | X | | |

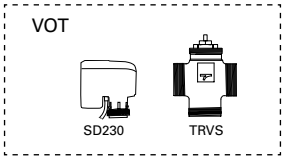
*1) External sensor (RTS01) as accessory.
*2) Can be used with an external timer.
*3) See manuals on www.frico.se.

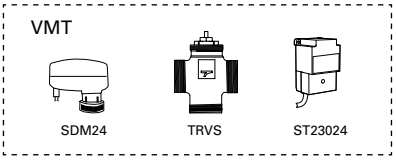



Complete valve kits with multifunctional terminal valves makes new functions possible and ensures stable flows and exact control using the modulating actuator. They are supplied at different levels and have a low installation cost with few components. The valve kit gives exact adjustment and means extra energy savings. Used to control the water supply to water heated units with SIRe control system.

## Used with SIRe Basic and Competent.

VOS, valve kit on/off
Two way combined control and adjustment valve with on/off actuator, shut-off valve and bypass. DN15/20/25. 230V. Used with SIRe Basic and Competent.
The valve kit consists of the following:
- TBVC, regulation and adjustment valve
- SD230, actuator on/off 230V
- AV, shut off valve
- BPV10, bypass valve

VOSP, pressure independent valve kit on/off
Two way pressure independent control and adjustment valve with on/off actuator, shut-off valve and bypass. DN15/20/25. 230V. Used with SIRe Basic and Competent.
The valve kit consists of the following:
- TBVCMP, pressure independent regulation and adjustment valve
- SD230, actuator on/off 230V
- AV, shut off valve
- BPV10, bypass valve

VOT, three way control valve and actuator on/off
3-way control valve with on/off actuator, DN15/20/25. 230V.
The valve kit consists of the following:
- TRVS, 3-way control valve
- SD230, actuator on/off 230V

## Used with SIRe Advanced.

VMO, modulating valve kit
Two way combined control and adjustment valve with modulating actuator and shut-off valve. DN15/20/25. 24V. Used with SIRe Advanced.
The valve kit consists of the following:
- SDM24, modulating actuator 24V
- TBVCM, regulation and adjustment valve
- AV, shut off valve
- ST23024, 24V transformer for valve actuator (in valve kit with 24V)

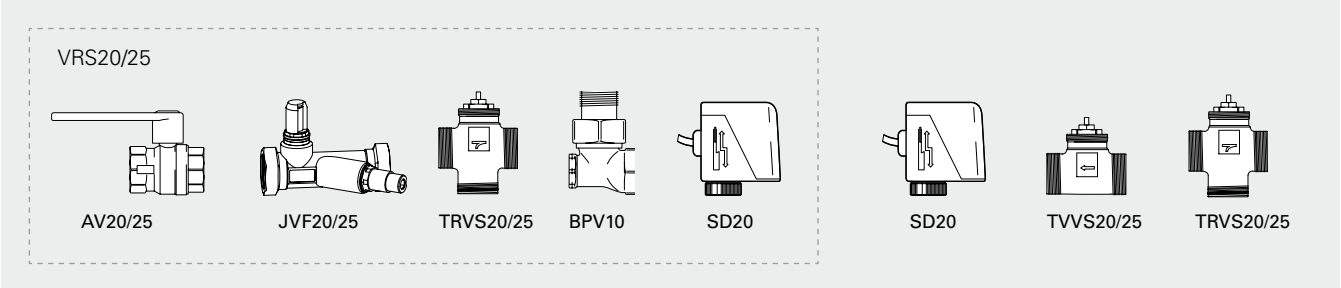
VMOP, pressure independent and modulating valve kit
Two way pressure independent control and adjustment valve with modulating actuator and shut-off valve. DN15/20/25. 24V. Used with SIRe Advanced.
The valve kit consists of the following:
- TBVCMP, pressure independent regulation and adjustment valve
- SDM24, modulating actuator 24V
- AV, shut off valve
- ST23024, 24V transformer for valve actuator (in valve kit with 24V)

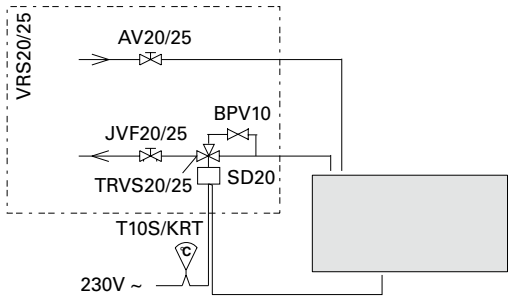
VMT, three way control valve and modulating actuator
3-way control valve with modulating actuator. DN15/20/25. 24V.
The valve kit consists of the following:
- TRVS, 3-way control valve
- SDM24, modulating actuator 24V
- ST23024, 24V transformer for valve actuator (in valve kit with 24V)

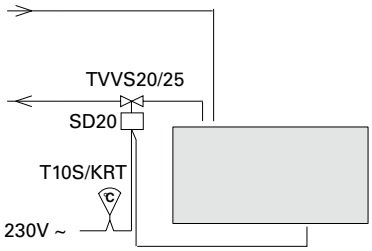
| Type | Flow | Connection | Kvs |
|---|---|---|---|
| **VOS15LF** | Low flow | DN15 | 0,90 |
| **VOS15NF** | Normal flow | DN15 | 1,8 |
| **VOS20** | Normal flow | DN20 | 3,4 |
| **VOS25** | Normal flow | DN25 | 7,2 |
| **VOSP15LF** | Low flow | DN15 | - |
| **VOSP15NF** | Normal flow | DN15 | - |
| **VOSP20** | Normal flow | DN20 | - |
| **VOSP25** | Normal flow | DN25 | - |
| **VOT15** | Normal flow | DN15 | 1,7 |
| **VOT20** | Normal flow | DN20 | 2,5 |
| **VOT25** | Normal flow | DN25 | 4,5 |

| Type | Flow | Connection | Kvs |
|---|---|---|---|
| **VMO15LF** | Low flow | DN15 | 0,40 |
| **VMO15NF** | Normal flow | DN15 | 1,0 |
| **VMO20** | Normal flow | DN20 | 2,0 |
| **VMO25** | Normal flow | DN25 | 4,0 |
| **VMOP15LF** | Low flow | DN15 | - |
| **VMOP15NF** | Normal flow | DN15 | - |
| **VMOP20** | Normal flow | DN20 | - |
| **VMOP25** | Normal flow | DN25 | - |
| **VMT15** | Normal flow | DN15 | 1,7 |
| **VMT20** | Normal flow | DN20 | 2,5 |
| **VMT25** | Normal flow | DN25 | 4,5 |

# Water control




VRS20/25, valve kit*
For control of water flow to water heated air curtains.

The valve kit consists of the following:
- AV20/25, stop valve
- JVF20/25, adjustment valve
- TRVS20/25, on/off 3-way control valve
- BPV10, by-pass valve
- SD20, actuator on/off 230V~

The stop valve (AV20/25) consists of a ball valve which is either open or closed. It is used to turn the water flow off and on. The water flow can be fine-tuned manually with the adjustment valve and can also be completely turned off. The water flow may be read off the valve. The kv value for JVF20 is 3,5 and for JVF25 it is 5,5.

If the 3-way valve (TRVS20/25) is closed, the flow through the by-pass valve (BPV10) is low to ensure presence of warm water in the heating coil. This leads to instant heat supply when needed and some degree of frost protection. The actuator (SD20) works on/off.

The valve kit is available with two different valve dimensions: VRS20 - DN20 (3/4”) and VRS25 - DN25 (1”). The by-pass valve dimension is DN10 (3/8”). To regulate VRS20/25, a suitable thermostat has to be added.

TVVS20/25, valves + SD20, actuator*
TVVS20/25, 2-way regulation valve and SD20, actuator on/off provides a basic form of water regulation, without the possibility of adjusting or shutting the water flow off, e.g. when making maintenance. A suitable thermostat is chosen to regulate TVVS20/25 and SD20. DN20/25.

TVVS20/25, 2-way control valve*
**TVVS20:** maximum close-off pressure 150 kPa (1,5 bar), kvs 2,6, DN20 (3/4").
**TVVS25:** maximum close-off pressure 70 kPa (0,7 bar), kvs 4,5, DN25 (1").
Pressure class PN16.

TRVS20/25, 3-way control valve
If a 3-way valve is preferred, TRVS20/25 can be used instead of TVVS20/25.
**TRVS20:** maximum close-off pressure 100 kPa (1,0 bar), kvs 2,5, DN20 (3/4").
**TRVS25:** maximum close-off pressure 70 kPa (0,7 bar), kvs 4,5, DN25 (1").
Pressure class PN16.

SD20, actuator on/off 230V~*
SD20 regulates the heat supply. Works on/off. A 5 second closing of the valve prevents sudden pressure changes in the pipe system. In unpowered mode SD20 is closed.

TE3434
Flexible hose, length 0,8 metres, for water heated units (2 is needed for a unit) with external thread 3/4” (DN20) at one end and coupling nut internal thread 3/4” (DN20), on the other.

*) These products can not be used together with SIRe control system.

### Symbols for model types

= normal design (no symbols), IPX0
= drip-proof design, IPX1
= splash-proof design, IPX4
= jet-proof design, IPX5

### Protection classes for electrical material

| IP, first figure | Protection against solid objects |
|---|---|
| 0 | No protection |
| 1 | Protection against solid objects ≥50 mm |
| 2 | Protection against solid objects ≥12,5 mm |
| 3 | Protection against solid objects ≥2,5 mm |
| 4 | Protection against solid objects ≥1,0 mm |
| 5 | Protection against dust |
| 6 | Dust-tight |

| IP, second figure | Protection against water |
|---|---|
| 0 | No protection |
| 1 | Protection against vertically dripping water |
| 2 | Protection against dripping water angled at max 15° |
| 3 | Protection against sprinkled water |
| 4 | Protection against spraying with water |
| 5 | Protection against water jets |
| 6 | Protection against heavy seas |
| 7 | Protection against short-term immersion in water |
| 8 | Protection against the effects of long-term immersion in water |

### How is sound measured?

Sound level is measured in decibels (dB). The dB is a logarithmic unit used to describe a ratio. If the sound level is increased by 10 dB, the result is twice as loud (as perceived by human ear).

It is also useful to know that two equally strong sound sources give an added sound level of 3 dB. Assume you have two entrances with two air curtains in each entrance, all four units with a sound level of 50 dB. The total sound level will then be 56 dB. The first opening will have a total sound level of 53 dB plus an extra 3 dB from the other opening.

Points of reference – dB

| | |
|---|---|
| 0 | The softest sound a person can hear |
| 10 | Normal breathing |
| 30 | Recommended max. level for bedrooms |
| 40 | Quiet office, library |
| 50 | Large office |
| 60 | Normal conversation |
| 80 | Ringing telephone |
| 85 | Noisy restaurant |
| 110 | Shouting in ear |
| 120 | The threshold of pain |

The sound level is stated for most of our product in the mini catalogue. Our sound measurements are done according to international standards BS 848, AMCA standard 210-85 and DIN 24 163, (the distance to the product* 5 metres, directional factor 2, equivalent absorption area 200 m²).

*) For fan heaters Tiger, Cat and Panther as well as convector PF, the distance to the product is 3 metres.

### Heat insulation, U-value

U = thermal transmittance value [W/m²°C]
U-values indicate the heat insulating capacity of a building section.

| Material | U-value [W/m² °C] |
|---|---|
| **Walls** | |
| **New building** | |
| Wooden fascia with 15 cm insulation and plaster | 0,27 |
| Wooden fascia with 20 cm insulation and plaster | 0,25 |
| Wooden fascia with 25 cm insulation and plaster | 0,22 |
| Brick fascia with 15 cm insulation and plaster | 0,27 |
| Brick fascia with 20 cm insulation and plaster | 0,24 |
| Light concrete with 15 cm insulation | 0,25 |
| Light concrete with 20 cm insulation | 0,2 |
| Sheet metal fascia with 5 cm insulation | 0,8 |
| Sheet metal fascia with 10 cm insulation | 0,4 |
| Sheet metal fascia with 15 cm insulation | 0,3 |
| New construction for low energy house | 0,18 |
| Warehouse | 0,3 |
| One layer PVC (900 g) | 5,0 |
| Insulated hall (Thermohall) | 0,6 |
| **Older building** | |
| Single brick 12 cm | 1,8 |
| 1 1/2 brick 18 cm | 1,1 |
| Light concrete block 20 cm | 0,8 |
| Light concrete block 30 cm | 0,6 |
| Concrete 15 cm | 2,8 |
| Concrete with 5 cm insulation | 0,8 |
| Concrete with 10 cm insulation | 0,4 |
| Frame wall with 5 cm insulation | 0,8 |
| Frame wall with 10 cm insulation | 0,4 |
| Frame wall with 15 cm insulation | 0,3 |
| New construction | 0,3 |
| **Roof** | |
| **New building** | |
| Sheet metal pitched roof, with 20 cm insulation | 0,24 |
| Brick pitched roof, with 20 cm insulation | 0,23 |
| **Older building** | |
| Concrete beam frame 15 cm | 2,8 |
| Concrete beam frame with 5 cm insulation | 0,8 |
| Concrete beam frame with 10 cm insulation | 0,4 |
| Light concrete 20 cm | 0,8 |
| Light concrete 30 cm | 0,6 |
| Sheet metal roof, uninsulated | 4,0 |
| Sheet metal roof with 5 cm insulation | 0,8 |
| Sheet metal roof with 10 cm insulation | 0,6 |
| Sheet metal roof with 25 cm insulation | 0,2 |
| **Windows** | |
| **New building** | |
| 1+1 pane window (1 outer pane and 1 insulated pane) | 2,5 |
| 2 pane window (2 insulated panes) | 2,7 |
| 2+1 pane window (1 outer pane and 2 insulated panes) | 1,0 |
| 3 pane window (3 insulated panes) | 1,2 |
| Energy class A | 0,9 |
| Energy class B | 1,0 |
| Energy class C | 1,1 |
| Energy class D | 1,2 |
| Energy class E | 1,3 |
| Energy class F | 1,4 |
| Energy class G | 1,5 |
| **Older building** | |
| 1 pane window | 5,0 |
| 2 pane window | 3,0 |
| 3 pane window | 2,0 |
| 3 pane window insulation pane | 1,8 |

Confiance
Asiantuntemus
Trust
Дизайн
Kompetanse
Tillit
Competência
Компетентность
Kompetenz
Zaufanie
Design
Vertrauen
Confiança
Estetyka
Kompetencja
信任
Доверие
Competence
Luotettavuus
能力
Competance
设计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