

# Systemair KA - Quick overview

Modular air handling units



# Systemair KA

Modular design makes the possibility to configure a completely customized unit for almost any application.

Unit configuration with numerous options and solutions is without a doubt one of the main advantages compared to compact units. Quality, reliable and efficient operation of the optimized modules

ensure a high coefficient of performance together with a low-pressure loss which is crucial for the safe and efficient operation of the units.

Eurovent certified KA units are available in different versions and meet normal as well as the most demanding ventilation requirements. The Hygienic version units are TÜV NORD certified.



# Highest flexibility for infinite solutions.



## Standard unit

The most basic version for general use.



## Outdoor unit

The housing design with additional weather protection is suitable for outdoor installation.



## Double stage unit

Bi-directional air handling units where the supply and extract part are positioned one above the other.



## Hygienic unit

For facilities with higher hygiene requirements (hospitals, laboratories, etc), TÜV NORD certified.



## Supply unit

A single or multi module unit for air supply only.



## Extract unit

A single or multi module unit for air extract only.



## Stacked unit

Bi-directional air handling unit where there is only one panel between supply and extract air (only for double stage unit).



## Indoor unit

The housing design is suitable for indoor installation.



## Inline unit

Bi-directional air handling units where the supply and extract part are positioned in-line.

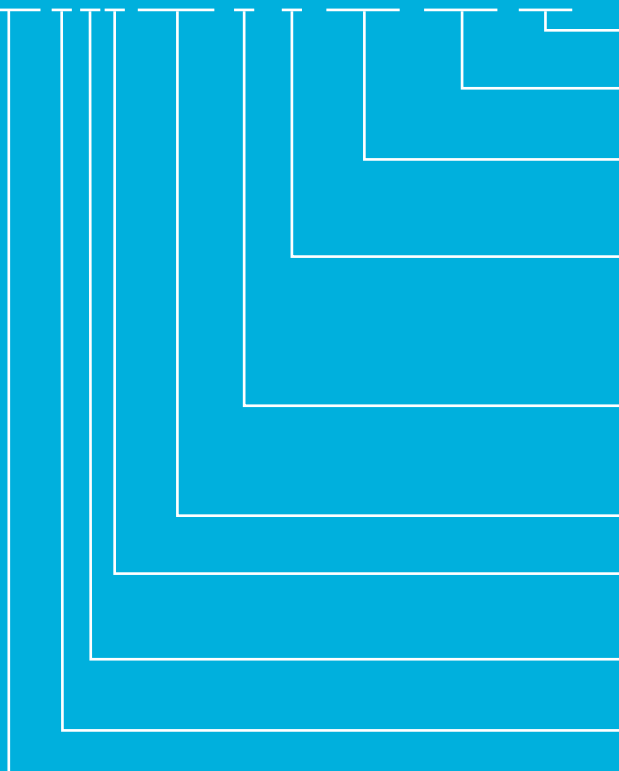


## Parallel unit

Bi-directional air handling units where the supply and extract part are positioned one beside the other.

## How to select KA unit

### KA HSI-2-2-S-R-50F-TB2-L2



Air leakage class	L2	
Thermal break class	TB2 TB3	
Panel execution	50F 50P	50 mm fully glued 50 mm partially glued
Service side	L R T B	Left Right Top Bottom
Design	S E I D P C	Supply Extract In-line Double stage Parallel Stacked
Cross section	Width-Hight	
Installation	I O	Indoor Outdoor
Execution	S H P	Standard Hygienic Corrosion resistant
Profile type	H	THOR 50 mm profile
Product name		

# Casing

**Modular design makes the possibility to configure a completely customized unit for almost any application.**

The casing consists of a mounting frame, panels and a base frame. The height and width values depend on the required air volume, type of unit and geometry required. The length depends on the: built-in functional elements, purpose of use, installation type, position of the intake and exhaust section and any special customer requirements. The casing interior is smooth, all exposed interior integrated elements have smooth edge finish or rounded edges.

## Mechanical properties in accordance with EN 1886:

- Thermal transmittance class **T2**
- Thermal bridging class **TB2 / TB3**
- Mechanical strength casing class **D1**
- Casing air leakage class **L2**

## Doors and removable panels

For accessing the interior of the air handling unit there are two options available:

- a removable panel fixed to the frame with clamping blockers,
- a rotary door, fixed to the frame with hinges and door handles.

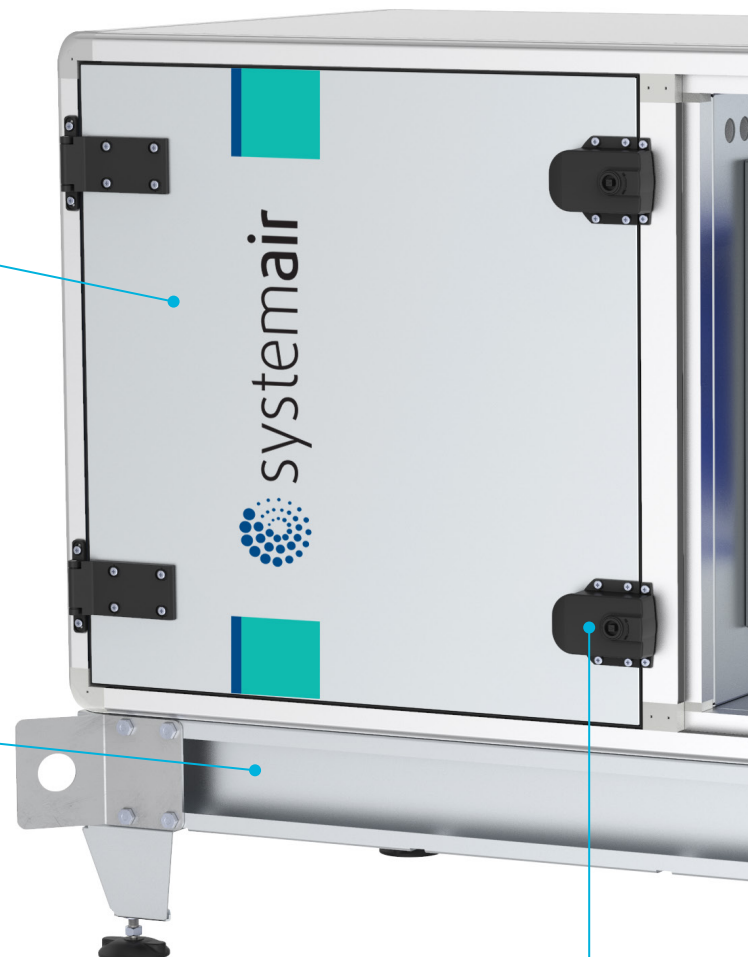
The rotary doors which are built-in in the over-pressure segment have additional blockers attached on their rim when necessary.

## Base frame

The galvanized steel base frame protects the lower section of the air handling unit against corrosion and damage, ensures structural strength and rigidity, and enables the unit transport and assembly on the building. The following base frame versions are possible:

- 125 mm base frame (no feet),
- 250 mm base frame (no feet),
- 125 mm base frame + 110-175 mm adjustable feet.

The base frame comes with lifting brackets for easier lifting and installation.



## Handles and hinges

Strong and robust hinges and handles increase lifetime of your unit casing, increase security towards unit's moving parts and increase casing airtightness.

## Panels

Double shell insulated panels with an interrupted thermal bridge. Panel execution comes in two options. Fully glued panels (50F) are more stable and used as standard option. Partially glued panels (50P) have increased sound attenuation over casing. Panels of larger dimensions with partially glued insulation have internal reinforcing elements made of PIR material. The panels are bolted onto the frame from the outside.

## Insulation:

- Material type: rockwool
- Insulation thickness: 50 mm,
- Insulation density: 100 kg/m<sup>3</sup>
- Non-combustible, class A1 according to EN 13501-1

## Possible materials for internal panel jacket, external panel jacket and internal built-in elements:

- galvanized steel sheet,
- galvanized painted steel sheet RAL9006,
- stainless steel sheet AISI 304 (material No. 1.4301),
- stainless steel sheet AISI 316Ti,
- steel sheet aluzinc protected (AZ 185).

## Frame profiles and corners

The aluminium profile frame (AlMgSi) is made of hollowed aluminium sections (EN AW-60-60) and rounded nylon corners (PA6+20% GF).

## Possible versions of aluminium sections:

- with an interrupted thermal bridge,
- painted aluminium RAL9006,
- anodized aluminium.

## Joints and sealing tapes

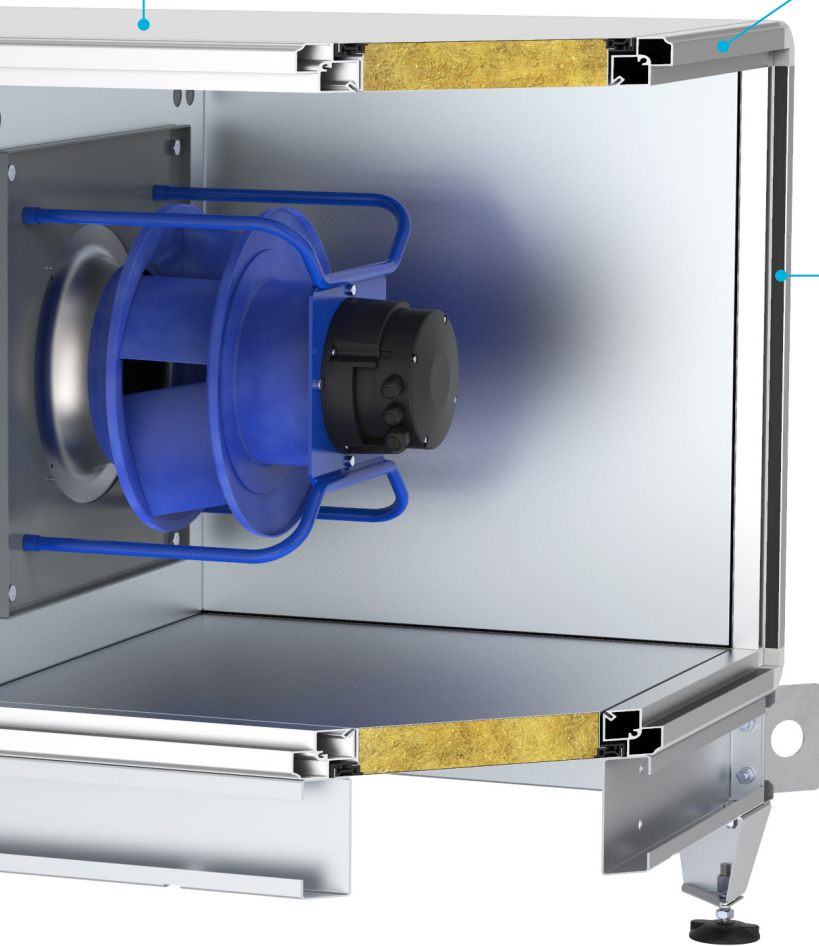
Self-adhesive sealing tape is used for joints between the fixed non-removable panels and the frame.

Self-adhesive or foamed sealing tape on doors, depending on standard or hygienic execution.

All sealing tapes and the poured PU sealing compound have a closed-cell structure and are resistant to molds and other microorganisms.

Depending on the purpose of use and the requirements of the client, the following sealing options are available:

- sealant is applied to the bottom openings of internal casing (standard)
- sealant is applied to all fixed panel openings of internal casing (hygienic)
- sealant is applied to all fixed panel openings of external casing (outdoor)



## Eurovent certification

KA units are constructed in accordance with European standards and certified by Eurovent.



## Assembly brackets

Galvanized steel (EN AB 46100) brackets for precise coupling of housing sections.





# KA configuration with airCalc++

Effective and powerful a selection tool.

Quick selection and thermodynamic calculation of the unit can be made in **airCalc++**. By using this application we can provide useful information about the unit such as:

- technical data for all modules,
- heat recovery and coil calculations,
- energy consumption,
- acoustics information,
- detailed technical drawings, dimensions and weights,
- Mollier diagram,
- prices.



Calculation is performed according to ErP 2018.

# Directives and certifications



## Eurovent certification

Eurovent certification ensures the conformity between the calculated performance in airCalc++ and the measured performance at independent test laboratories.



## Ecodesign Directive

The Ecodesign Directive 1253/2014 prescribes minimum requirements regarding heat recovery efficiency, fan efficiency, SFP internal values, and operation of the air handling unit. The airCalc++ selection software will tell you if the requirements for 2018 are fulfilled.



## Machinery directive

KA air handling units are manufactured according to the safety demands of the EU Machinery Directive 2006/42/EC. This is confirmed through the issuance of corresponding Declaration of Conformity and CE label.

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## Standards

### EN 1886:2007

Ventilation for buildings – Air handling units – Mechanical performance.

### EN 13053: 2019

Ventilation for buildings – Air handling units – Rating and performance for units, components and sections.

### EN 16798-3:2017

Energy performance of buildings – Ventilation of buildings – Part 3: For non-residential buildings – Performance requirements for ventilation and room-conditioning systems.

### EN 1751: 2014

Ventilation for buildings – Air terminal devices – Aerodynamic testing of damper and valves.

### EN 308:1997

Heat exchangers – Test procedures for establishing performance of air to air and flue gases heat recovery devices.

### EN ISO 12100: 2010

Safety of machinery – General principles for design – Risk assessment and risk reduction.

### EN ISO 13857: 2019

Safety of machinery – Safety distances to prevent hazard zones being reached by upper and lower limbs.

### 60204-1:2018

Safety of machinery – Electrical equipment of machines – Part 1: General requirements.

### EN 60034-1:2010

Rotating electrical machines – Part 1: Rating and performance.

### EN 16890-1:2016

Air filters for general ventilation – Part 1: Technical specifications, requirements and classification system based upon particulate matter efficiency (ePM).

