

Air handling unit

VEX4000

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EXHAUSTO VEX4000 is a range of units suitable for many ventilation forms. The various section types can be combined and configured for practically any need. The units in the VEX4000 series cover a capacity range from 1050 to 36,000 m³/h.



PRODUCT BENEFITS

- Extremely energy-efficient air-handling unit
- 13 modules, which can be combined to meet your exact solution
- Eurovent and RLT-certified
- EXcon, integrated control system

REGLEMENTATIONS AND COMPLIANCES

Eurovent Certification no. : 16.01.020

Principles of operation

The VEX 4000 brings fresh, filtered air into the building and recovers heat from exhaust air using its high-efficiency heat exchanger. The incoming air can be heated and/or cooled using a comprehensive range of coils.

Product description

ENERGY-EFFICIENT MODULAR UNITS WITH HIGH DEGREE OF FLEXIBILITY

With VEX4000 you can meet the energy requirements of the future via EC motor technology, high-performance heat exchangers and integrated reversible heat pump.

COMPACT FLEXIBILITY

The VEX4000 series covers 10 sizes, which means the optimal size of unit can be found for your ventilation requirements, and the many different modules give you the freedom to put together your own air handling unit to meet your exact project requirements.

All sections are mutually compatible in each model size, allowing the complete unit to preserve the same overall width and height. The units are available in LEFT and RIGHT versions.

EXCON CONTROL SYSTEM

All VEX4000 units are available with integrated control systems for advanced control of airflow, heating, cooling, humidification, etc. However, it is also possible to order VEX4000 without a control system.

EXHAUSTO's patented adaptive pressure control, which constantly optimises the pressure in the unit to match what the building requires, makes it possible to reduce your energy consumption even further than the traditional pressure regulation methods on the market (CAV, VAV and DVC).

EXSELECTPRO

VEX4000 is calculated and configured using the Eurovent and RLT-certified calculation program EXselectPRO .

The program is used for configuration and energy calculations according to project requirements. The output consists of detailed technical data, dimensional sketches and energy calculations and the associated labels.

Installation

- equipment rooms / terraces
- indoors / outdoors
- in-line duct connection or choice of two vertical fixings
- rectangular connections
- choice of left or right side for equipment fittings

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Main characteristics

- ER Rotary heat exchanger
- CF 2 types of counterflow heat exchangers
- EX - Crossflow heat exchanger
- FAN/FX - Plenum fan and filter
- RHP - Reversible heat pump
- RHP-ER – Reversible heat pump with rotary heat exchanger
- HW - Water heating coil
- CW - Water cooling coil
- DX - Cooling coil for direct expansion
- HWR - Heat recovery coil (special solution for shops)
- HE - Electric heating coil
- IC - Integrated DX cooling
- ICC - Integrated DX cooling with rotor and cold recovery
- MR - Mixer and recirculation section
- MS – Damper
- SP - Empty section
- RF - Cover for outdoor installation

Supplementary characteristics

- Patented automatic leakage control (ALC™) prevents transfer of exhaust air and prevents the recirculation of airborne particles and gases, including viral particles.
- Selection of filters and pre-filter to guarantee air quality
- VEX4000 is a hygiene-certified unit in accordance with VDI 6022-1. All of the unit's modules and parts are easily accessible for inspection and cleaning in order to prevent harmful bacteria or particles, and the unit has been certified by an independent laboratory (Synlab).
- EXcon 100% Plug & Play control:
 - Constant airflow
 - Constant pressure
 - Patented adaptive pressure regulation
 - Variable airflow with CO₂/VOC sensor (0–10 V signal)
 - Regulated pressure: optimal pressure regulation is used to adapt the pressure setpoint according to the measured airflow, ensuring energy efficiency
 - Temperature control
 - Integrated clock: operating hours can be controlled with timer
- BMS communication protocols:
 - Integrated webservice - TCP/IP RJ45
 - Modbus RTU RS485
 - BACnet TCP/IP
 - LON (optional)
- Version without automatic control system also available

Dimension table with rotary

Dimension table with counterflow

Dimension table with crossflow

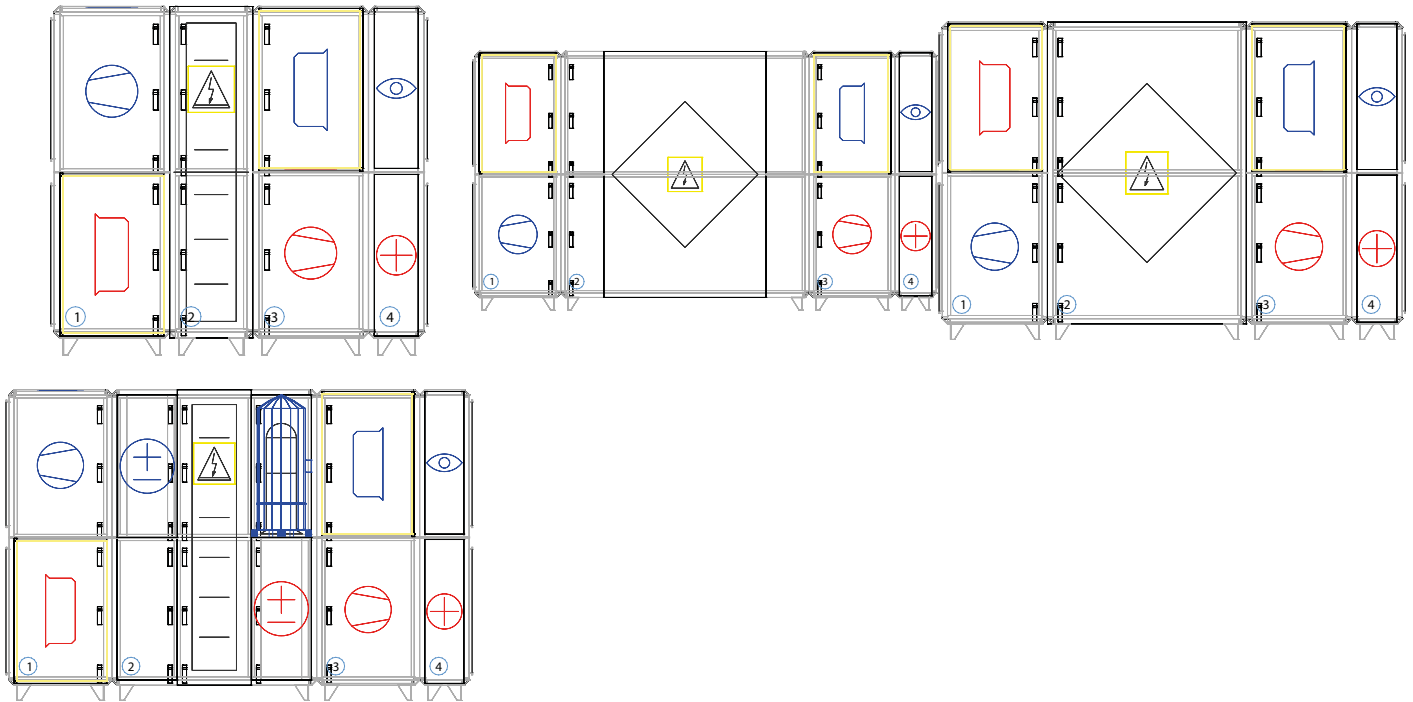
3 MODULAR AHU

Air handling unit

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Dimension table with heat pump



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Installation



VEX4000 is a range of highly energy-efficient, reliable and cost-effective AHUs with enough flexibility to meet most requirements for ventilation solutions for offices, schools, hotels, hospitals, stores, and industrial facilities. VEX4000 units are compact and can be assembled with a high degree of flexibility because they are composed of modular ventilation components. The many possible variations allow great freedom for combining and customising individual solutions.

This indoor system has a rotary heat exchanger and associated heating coils. What makes this configuration special is the specially manufactured heat recovery coil (HWR), only used if the premise's cooling unit is connected to a heat recovery unit for water.

If the different VEX modules cannot be configured into a solution which matches your project, it is possible to have a specially adapted solution constructed.

Contact the Sales Department so we can help you find the optimal solution for your project.

We can supply VEX4000 air handling units that are certified hygienic, i.e. they are certified in accordance with VDI 6022-1. Select the VDI 6022-1 option in our product configurator EXselectPRO and we will ensure that all of the unit's modules and parts are easily accessible for inspection and cleaning in order to prevent any accumulation of harmful bacteria or particles.

The VEX4000 series has been audited and certified by Synlab, a German third-party laboratory. VDI 6022-1 is a standard issued by VDI – The Association of German Engineers.

Compliance with the VDI 6022-1 standard for hygiene in air handling units is a guarantee that the product meets the market's most stringent hygiene standards.

This air handling unit has a rotor, integrated DX cooling system and empty sections with lighting before and after the rotary heat exchanger section for inspecting the cooling coils. The air handling unit also has a heating coil. This configuration is typically used for offices or similar locales where there is a need for cooling in the summer season.

The configuration shown is also available as an outdoor air handling unit. In this case, the dampers are moved into the fan section, extending the length of this section. The empty and heating sections will extend the full height of the unit.

The air handling unit shown is a VEX4000 with rotary heat exchanger and built-in heating coil, but it can also be configured with a duct-mounted heating coil.

The configuration shown with rotary heat exchanger and separate integrated DX cooling with empty sections before and after the rotary heat exchanger for inspection and cleaning. A recirculation section is also shown, for use in situations where people want to reduce heating expenses by recirculating some of the extract air back to the supply air, thus saving on heating of the outdoor air. The air handling unit is also configured with a special heat recovery coil and a standard heating coil.

This configuration is ideal for a large supermarket, sports hall or an industrial building where there is heat surplus during the day and heating requirements during the night, and where the air quality in the premises does not need to have the same quality as during the day.

The air handling unit shown is also available for outdoor installation, however in this case the dampers will be fitted internally in the fan section, thus lengthening the air handling unit, while the heating section will have the full air handling unit's height.



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EXHAUSTO OFFERS THREE DELIVERY OPTIONS:

The units are supplied ready-assembled and Exhausto ensures that all modules are correctly connected and assembled on a base frame.

The modules are delivered separately, an advantage if they have to be transported inside the building. For this reason, VEX4000 has been specially designed for ease of assembly.

The unit is delivered as a SPLIT version, where the unit is delivered unassembled as a flat pack. This means that even large units can be transported through small doors and then assembled on site. The SPLIT solution is more expensive, since specially trained EXHAUSTO technicians are required.



> Patented automatic leakage control (ALC™) prevents transfer of exhaust air and prevents the recirculation of airborne particles and gases, including viral particles.

> Selection of filters and pre-filter to guarantee air quality

> Choice of integrated cooling

> Integrated switch,

> EXcon 100% Plug & Play control:

- Constant airflow,

- Constant pressure,

- Patented adaptive pressure regulation

- Variable airflow with CO₂/VOC sensor (0–10 V signal),

- Regulated pressure: optimal pressure regulation is used to adapt the pressure setpoint according to the measured airflow, ensuring energy efficiency,

- Temperature control,

- Integrated clock: operating hours can be controlled with timer.

> BMS communication protocols:

- Integrated webserver - TCP/IP RJ45,

- Modbus RTU RS485,

- BACnet TCP/IP,

- LON (optional).

> Version without automatic control system also available,

> Developed in accordance with the German Hygiene Standard VDI6022.

INTEGRATED CONTROL SYSTEM

EXcon supports the following networks:

Integrated webserver - TCP/IP

Modbus - RS485 / TCP/IP

BACnet - TCP/IP

EXcon is based on BUS technology, with multiple external communications facilities. All control can be performed from a central unit via the web server.

EXHAUSTO offers special solutions for areas which require specific control facilities, e.g. shops which need precise temperature control, special cooling control and humidified areas.