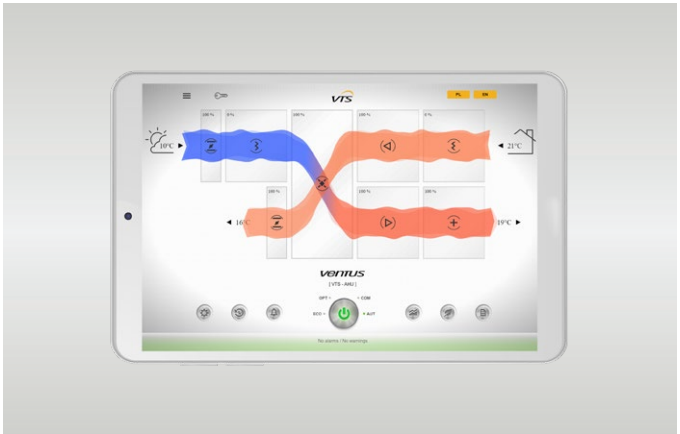
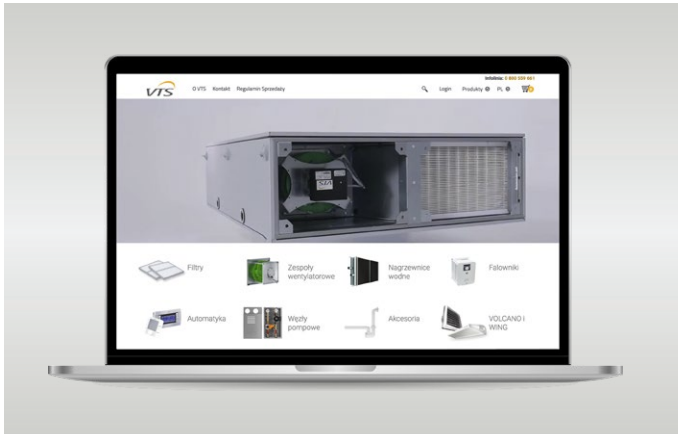
THE GLOBAL PLAYER

Newsletter **2/2020**





New hexagonal counterflow recuperators offered by VTS

- VOLCANO heaters and WING air curtains are taking America by storm
- Controls of VENTUS air handling units - cost efficiency and comfort.
- Spare parts to air handling units with the guarantee of the lowest price - now available at the VTS eShop.


VTS

Introduction

Ladies and gentlemen,

We are happy to provide you with the next issue of our corporate newsletter.

In this issue, we paid special attention to the news in our offer of VENTUS Compact air handling units. In the floor-mounted version of our VENTUS Compact units, we implemented a new heat recovery system in the form of the HEX module. Thanks to this solution, in compact AHU up to 16 500 m³/h in total capacity, we can now offer you two the most popular heat recovery options: the rotary heat exchanger and the HEX exchanger.

We are happy to announce that we have successfully launched our legendary VOLCANO heating units and WING air curtains on the American market. The devices are now available for pre-order in our online store. Follow us on LinkedIn and Facebook to learn more about our latest announcements.

I would like to take this opportunity to encourage you to become familiar with the changes we have introduced in the e-commerce channel. Apart from filters, our online store will also offer the most popular components for air handling units, such as fan sets, controls solutions or water exchangers.

Despite the difficult situation related to the coronavirus pandemic, I would like to inform you that VTS Group has maintained continuity of production and deliveries in all markets, and the lead times of orders have not changed.

I wish you a lot of health and a pleasant lecture

Hanna Siek, VTS Group President.

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New hexagonal counterflow recuperators offered by VTS

VTS is launching a high-performance, compact heat recovery module based on a hexagonal counterflow exchanger. The new solution has been named the HEX module.

The HEX module has been designed for:

- WS021c-WS150c compact air handling units, as their integral component,
- VVS021-VVS150 modular air handling units, as a heat recovery section replacing the hexagonal exchangers (in AHUs sized VVS021 to VVS040), and Premium Plus cross-flow exchangers (in all other AHUs) used previously.

The solution will be available with aluminum (AL) and HIPS (high impact polystyrene) exchangers, just as it is the case in suspended air handling units.

The AL version will be launched first, followed by HIPS.

OPERATING PARAMETERS

The newly designed HEX module is characterized by high heat recovery efficiency and low air stream resistance, which significantly improves the competitiveness of the VTS offer.

The design of the HEX module guarantees a high degree of air tightness between supply and exhaust paths. Thanks to that the solution suitable for ventilating rooms requiring separation of air supply and exhaust streams, **including rooms with strict hygienic requirements.**

DESIGN

The HEX module is available in the cross-flow counterflow configuration with a **bottom-mounted supply air outlet**.

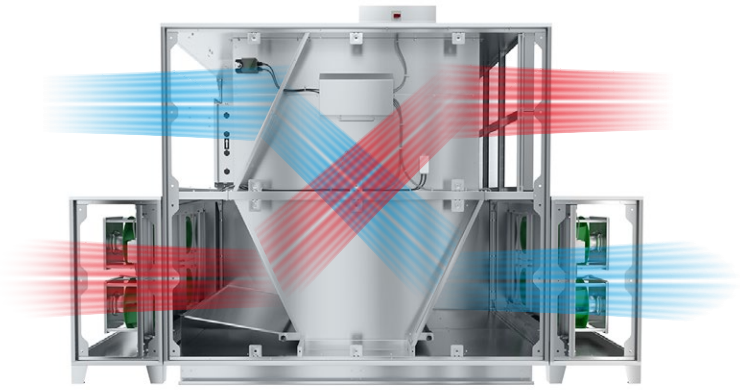
With its fan sections installed, the HEX module serves as unit base of the compact air handling unit that may be optionally expanded by additional functional modules (heaters, coolers, etc.). All elements of the compact air handling unit are encased within sandwich panels comprising two layers of sheet metal with inner lining made of mineral wool. The complete product, together with the selection program, is certified by Eurovent.

The compact units offer two options for positioning the fan relative to the hexagonal exchanger (see the figure below):

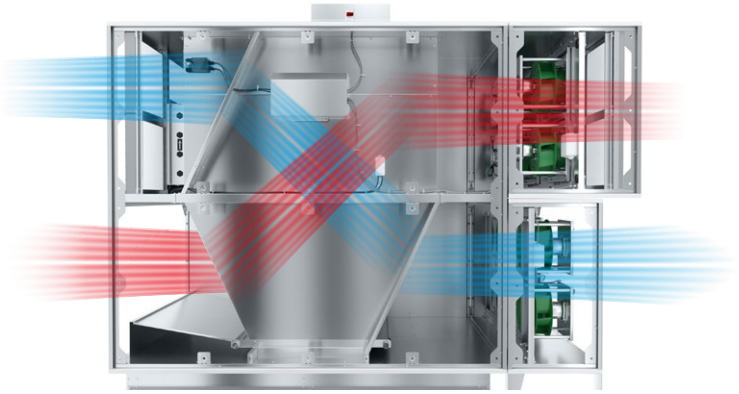
Layout 1 - Supply and exhaust fans installed on the opposite sides of the HEX exchanger. This configuration is only available for air handling units without a mixing box.

Layout 2 - Supply and exhaust fans installed on the same side of the HEX exchanger. This configuration is available for air handling units with and without an air mixing box.

LAYOUT 1



LAYOUT 2



Supply Exhaust

The HEX module is a system comprising interconnected segments of hexagonal counterflow exchangers, an integrated by-pass damper and air dampers guaranteeing that air flows through each segment in an evenly distributed manner. To minimize the length of HEX modules, different internal positions of exchangers are relied upon, depending on the size of the air handling unit.

DIMENSIONS

Combined with the special design of the fan units and the ultra-short Mini-Pleat filters, such an approach has resulted in the shortest compact air handling unit available on the market. Compared to the modular AHU with the PREMIUM PLUS cross-flow exchanger, the compact AHU with the HEX module is by over 50% shorter.

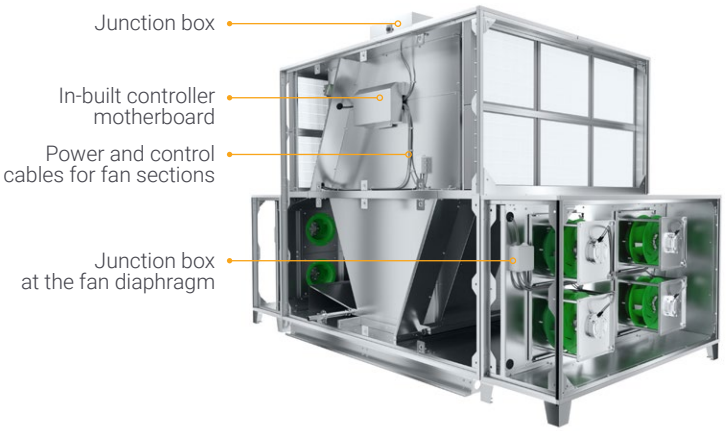
Despite its small size, the compact air handling unit with the HEX module may be used in buildings with different functional requirements. Functional diversity is achieved by enclosing optional functional modules (e.g. heater, cooler or additional air filters) in a separate casing. A common control system integrated with the air handling unit guarantees full control over all functionalities .

An intuitive mobile device interface with visualization capability makes the operation and monitoring of the unit an effortless task and includes a remote online control functionality.

PLUG & PLAY COMPACT AHU

Compact air handling units are delivered as Plug&Play units, with factory-installed controls solutions, and are ready for immediate operation after connecting power and peripherals.

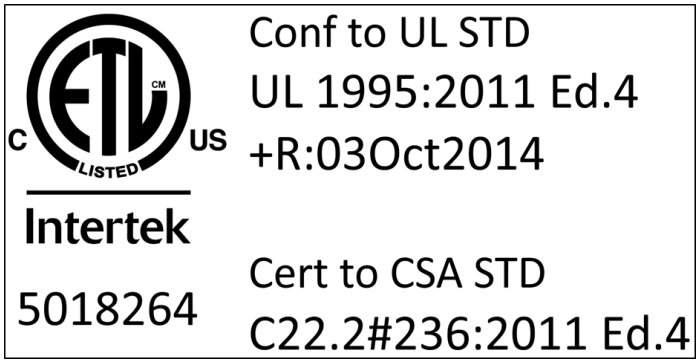
The controller is installed inside the unit, and the junction box is either flush-mounted on the top surface of the AHU or is installed externally, on the back of the unit.



VENTUS MANAGEMENT SYSTEM

VOLCANO heaters and WING air curtains are taking America by storm

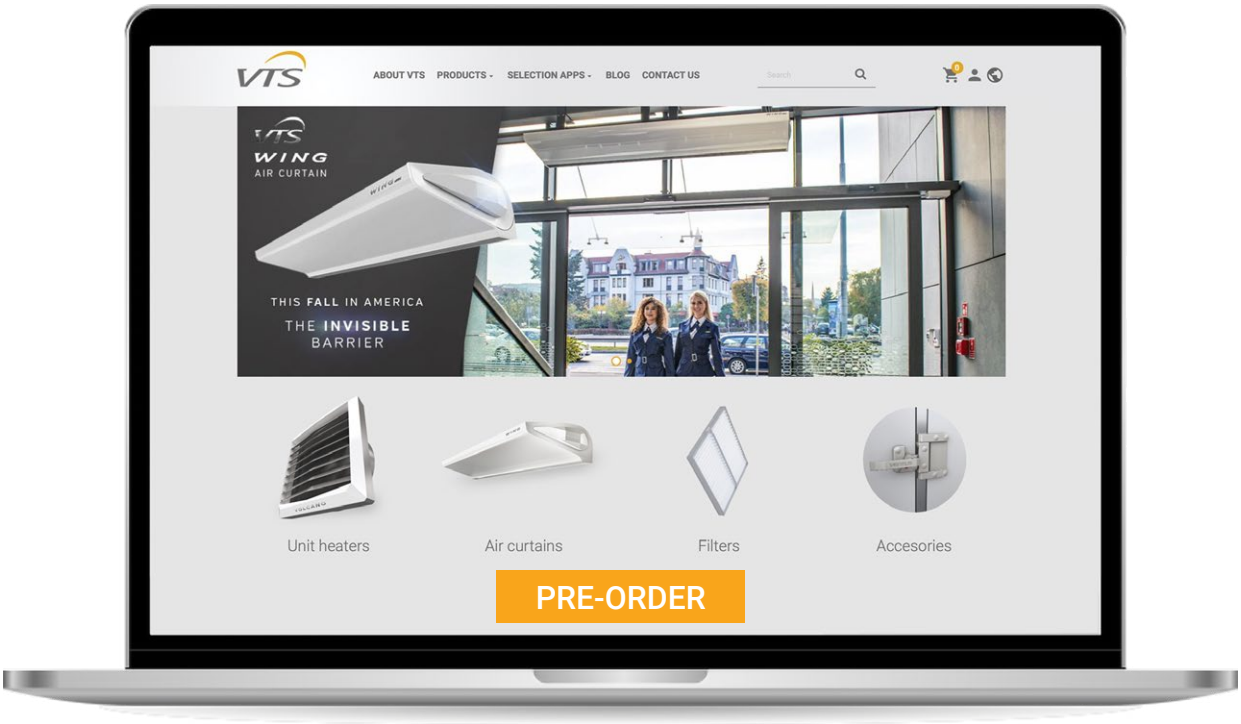
We are pleased to announce that we have received the ETL-Intertek certificate for VOLCANO heating units and WING air curtains. Upon completing the certification process, we were green lighted to market our products in the US and Canada – with both countries offering a vast sales potential. Until now, VTS only offered ventilation and air conditioning units on these markets.



Americans - stay warm!

The first American VOLCANO heaters and WING air curtains are heading to Buford (Georgia), where VTS America is headquartered. In the meantime, we have already launched our promotional and product pre-order campaigns.

Our online store serving the American market is ready for launch and the promotional campaign has already been started.



The design, as well as installation and connection procedures of VOLCANO and WING units may differ from those applicable to equipment currently available on the American market. That is why education will be key here. We are planning a series of webinars and intend to release video tutorials to familiarize installers and users with how VTS devices should be connected and operated - all in a simple and convenient manner.

Say yes to VTS!

The third phase of our communication campaign is dedicated to end users of the units and to investors.

Our goal is to inspire users by presenting the great variety of applications for our products. Potential investors will be provided with a series of articles, case studies and references from various types of buildings.

The promotional campaign will be continued until the end of the year. Follow our social media channels, where the campaign will be unfolding.

Controls of VENTUS air handling units - cost efficiency and comfort.

In the process of designing HVAC systems, the operating parameters of each units are calculated taking into consideration reference conditions that are based on applicable standards and regulations. However, such reference conditions are provided relatively rarely for climate zones with large temperature fluctuations.

If we additionally consider the changing demand for process heat or cold throughout the day or the week, resulting from the manner in which a given building or structure is used, we obtain an overestimated size of the device that will not operate in an inefficient manner. In order to reduce the costs of operating the air handling unit, VTS offers advanced control solutions allowing to adjust performance of the units to the actual conditions inside the building, thus ensuring low operating costs.

Three different operating modes

The user may choose from three individual operating modes: Economy, Optimized and Comfort. Each of these modes offers specific performance parameters: primary value setting, e.g. temperature in the room, humidity, CO_2 level or air flow value, etc.

AHU operating schedule

VTS controls solutions allow to program a weekly AHU operating schedule, taking into account special occasions (annual holidays, bank holidays, days off, etc.). One of the three operating modes available may be selected for each time period. A graphic presentation of the user-configured schedule, relying on visualization tools, is also available.

Advanced control algorithms – minimization of cost

VTS algorithms rely on cascading temperature control in the room, which translates into minimum process heat and cold consumption. Furthermore, control algorithms are responsible for precisely maintaining the preset temperature in the room, at zero hysteresis, by relying on dynamic, automatic change of supply air temperature settings when operating under the room air temperature regime. This means that the AHU uses the minimum amount of process heat and cold required for obtaining the required parameters.

Automatic air quality control function

VTS offers optimization of energy consumption based on stepless, automatic adaptation of air volume to heating, cooling and ventilation needs. Such an adaptation is based on ensuring proper air quality - temperature, CO_2, humidity.

Economic adjustment of fan capacity parameters to the needs of the building

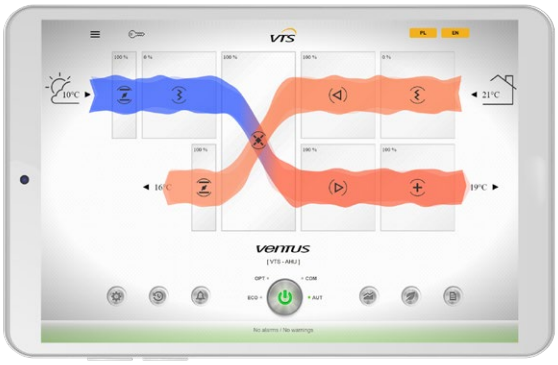
VTS controls solutions offer fan capacity control functions and algorithms that perform electronic measurements and automatically adjust air volume expressed in m^3/h (CAV). Optionally, fixed available pressure expressed in Pa (VAV) may be also be measured electronically and adjusted automatically, and a fixed fan speed may be set.

Intuitive and robust AHU control module

HMI Basic

The AHU is operated using a control panel with a simple interface, that prevents any unauthorized changes to the advanced operating settings of the AHU. HMI Basic is a combination of a temperature and humidity sensor with a control panel, all in one casing.

HMI Advanced

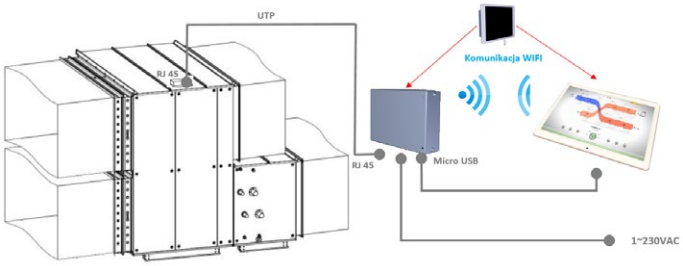


- **Advanced control panel** – configuration of advanced operating parameters (service access), user-configured parameter settings, reading and canceling error logs.
- **Access to monitoring and visualization menus** - the AHU may be operated using a control panel with a simple service interface used to change advanced settings and configurations.
- **Technical documentation repository** – a compilation of current operation and maintenance manuals, as well as service manuals.
- **Marketing documentation repository** - compilation of marketing information: catalogs and video tutorials.

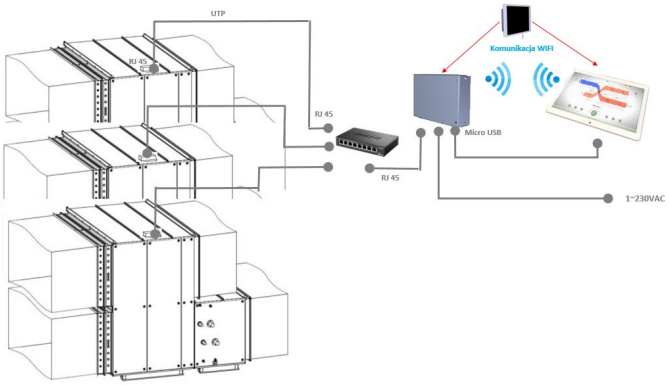
HMI Advanced is a dedicated tablet with the Android operating system and the Chrome web browser, allowing the user to comfortably manage and configure the parameters of the device. The user is provided with a one-stop tool for configuring and parametrizing the VENTUS air handling unit, gaining access to documents and information concerning the product, and allowing them to monitor and visualize the operating parameters of devices connected the same network. A 10-inch, high-resolution display allows to conveniently display all AHU data.

The **HMI Advanced** tablet is delivered together with a communication box. The tablet is mounted to the box using a set of magnets for easy attaching and detaching. The communication box includes a WiFi router for wireless communication with the tablet, and a power supply unit for connecting the tablet. This means that the tablet may be used remotely, whenever within WiFi range.
The diagram showing the power supply connection and the communication paths between the tablet, its communication box and the AHU is presented belowj:

a) With a single AHU connected



b) With numerous AHUs connected to a single tablet



Real-time, remote monitoring and management of the units operating parameters

VTS provides a standard automation functionality in the form of a factory-implemented **VMS (Ventus Management System)** app allowing to remotely monitor, visualize and manage the operating parameters of the units in real time, via a web browser, using any device.

The **Ventus Management System app** provides:

- **OPTIMIZATION** - operating parameters of each functional unit may be easily optimized,
- **DIAGNOSTICS** - this functionality allows the service staff to perform diagnostic procedures and to offer support remotely,
- **ECONOMY** - measurement and recording of current operating costs. Ability to define currency and utility prices,
- **SIMULATION**
  - simulation of savings generated thanks to specific functionalities,
  - simulation of operating parameters of individual components,

» **VISUALIZATION** - presentation of all operating parameters of all ventilation units connected to the same network, in the form of charts,

» **RECORDING** – recording all AHU operating parameters, alarms and warnings, including a text description, date of occurrence and duration of the recorded events,

» **CONVENIENCE**
- ability to be launched using a web browser on each device,
- available for mobile devices,
- remote access to and remote modification of parameters via LAN or the Internet.

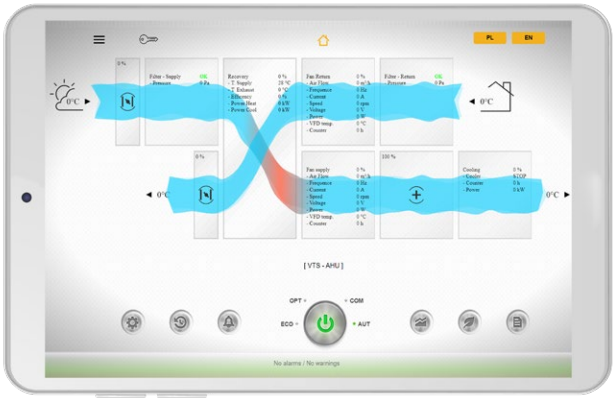
INTUITIVE INTERFACE

MAIN SCREEN

The main screen includes a graphic diagram of the air handling unit, with air conditioning functions, current settings and parameters clearly marked.

Numerous buttons are also displayed in this window, offering a wide spectrum of AHU management functionalities. This screen may be considered to be the main AHU navigation panel. Using this panel, the user may monitor the status of the AHU, switch on different operating modes or navigate to any of the additional functions.

The AHU diagram offers a series of options, such as displaying the status of each functionality of the unit - informing the user about potential alarms directly via the applicable AHU block. The user may also monitor the parameters of air flowing into and being discharged by the unit.



TIME SCHEDULE

Ability to control the air handling unit based on a predefined schedule is a well-known solution offered by control applications. However, in this case the novelty consists in the fact that the user may manage schedule settings directly via the diagram - using a standard computer screen and a mouse, or a touch screen of a tablet. The time schedule is designed as a series of scroll bars assigned to specific operating modes. All items are displayed against a timeline. By using scroll bars, the user may adapt the operating schedule of their AHU and improve the economic performance of their ventilation system, all within seconds.

CHARTS

Charts are a tool used for recording all operating parameters of the AHU, as well as for saving them and for displaying historical operating data in the form of a time diagram. This tool was created to help the user develop the most suitable AHU operation schedule, perfectly aligned with the parameters of a given ventilation system. It also aims to improve the economics of system operation and to match the user's personal preferences.

ECO MODE

The ECO mode is used for calculating the savings generated thanks to heat recovery, use of high-performance EC fans and management of the complete unit. State-of-the-art algorithms developed by VTS are relied upon in the process.

All the user needs to do is spend a few minutes to inform the application about the cost of each energy medium used - expressed in any currency. In return, the application will report all savings expressed in kW and in monetary values.

Depending on their preferences, the user may monitor all savings generated jointly by heat recovery, use of high-performance EC fans and advanced VTS control algorithms, or may display a report on a separate, detailed diagram.

BMS

Apart from accessing factory-provided visualizations available via an Internet browser, the user may also connect the AHU's controls circuits to an external building management system (BMS). By using the BMS system, the user may integrate ventilation, heating and air conditioning systems in order to prevent these installations from opposing each other (simultaneous heating and cooling of the same room by different devices). Communication with the BMS may be based on ModBUS or BacNET TCP/IP protocols, and may support the transfer of nearly all working parameters of the AHUs (all values measured by sensors and transducers and all signals controlling individual actuators (servomotors, fan motors, etc.).

ECO MODE

VENTUS N-type air handling units with EC motors

Wishing to ensure high reliability and to reduce operating costs of its devices, VTS has introduced EC motors to N-type suspended VENTUS air handling units. EC motors will be available in NVS23 and NVS39 AHUS with the total capacity of up to 4200 m³/h.

In NVS23, the current 0.55 kW AC motor will be replaced by a 0.35 kW or 0.7 kW EC solution, whereas in NVS39 units, 0.35 kW and 0.7 kW EC motors are available optionally, as substitutes of the current 1.1 kW AC motor.

The new options are presented below:

Size	Nominal rating [kW]	Nominal rpm [1/min]	Rated voltage [VAC]	Rated current [A]	Motor type
NVS 23	0,35	3000	1x230V	2,3	EC
	0,7	3800	1x230V	5,1	EC
NVS 39	0,37	2060	1x230V	1,5	EC
	0,72	2600	1x230V	3,8	EC
	1,1	2845	3~230 V / 3~400 V	4,2 / 2,45	AC

The new EC motors available in NVS23 increase the air flow range offered by the units by 10% compared with the AC motor.
The new EC motors will be available for all base sections with a built-in fan, i.e. for fan sections, for fan sections with a water cooler, and for fan sections with a DX cooler.

The use of EC motors eliminates the problem of insufficient space for installing the inverter – a device required for controlling the parameters of the AC motor.
All EC motors installed in NVS units offer 0-10V signal control as a factory setting, making them suitable for commonly use speed regulators.

NVS with the EC motor

NVS with the AC motor

Spare parts for air handling units now available from the VTS online store

In light of the rapid increase in the number of filters for VTS air handling units sold via the ecommerce channel, we have decided to use the same solution to provide our customers with access to spare parts for VENTUS air handling units. We hope that our customers will appreciate the ease and safety of online shopping.

Go to VTS eShop:
www.eshop.vtsgroup.com

GUARANTEED
LOWEST PRICE

Our eShop currently offers the following products:

- single filters and filter sets for specific air handling units
- fan units
- heat exchangers
- frequency converter
- controls components

Original parts available from our eShop only - pay upon delivery or later

Original parts available from our eShop only - pay upon delivery or later.

Original parts guarantee the highest quality level proper functioning of the unit. Until now, parts were only available to service and maintenance contractors. Currently, they are also available to undertakings providing building management services and to individual AHU users.

Several payment methods may be used in the VTS online store to purchase products. The easiest way is to pay by credit card or by a traditional wire transfer. Responding to the needs of our customers, we also offer a solution in which the payment is made upon receipt of the goods ordered. The buyer may also make a deferred payment purchase, using PayPo. Regardless of the method selected by the customer, each purchase via the VTS eShop guarantees the lowest price and the highest level of quality.

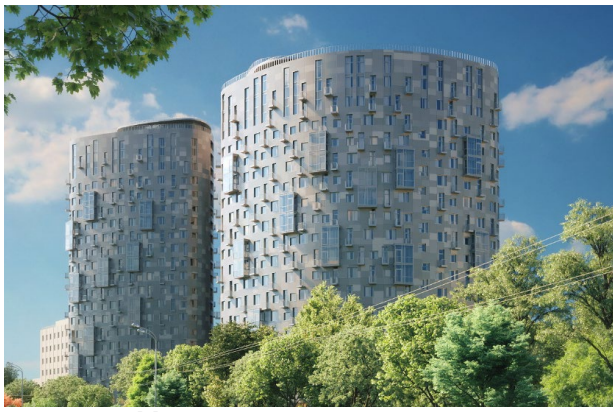
Choose your filter within 10 seconds

Due to a large number of sizes and types of filters available, for your convenience, we have created filter sets for complete ventilation sections. Simply select the AHU size, filter category and choose the correct filter set – all done in less than 10 seconds.

LATEST REFERENCES

Building: **Ten Pao factory**
Country: **Hungary**
City: **Miskolc**

Building: **Hanza Tower**
Country: **Poland**
City: **Szczecin**



Building: **Nakhimov project**
Country: **Russia**
City: **Moscow**

Building: **Madinat Jumeirah Living**
Country: **United Arab Emirates**
City: **Dubai**

Building: **Edwards life center**
Country: **USA**
City: **Montgomery**

Building: **University Library**
Country: **Poland**
City: **Warsaw**

Building: **Residential Filicity complex**
Country: **Russia**
City: **Moscow**

Building: **Mana Al Edition Hotel**
Country: **Qatar**
City: **Doha**

Building: **BELARUS PAVILION**
Country: **United Arab Emirates**
City: **Dubai**

Building: **Seaside Park Hotel**
Country: **Poland**
City: **Kolobrzeg**

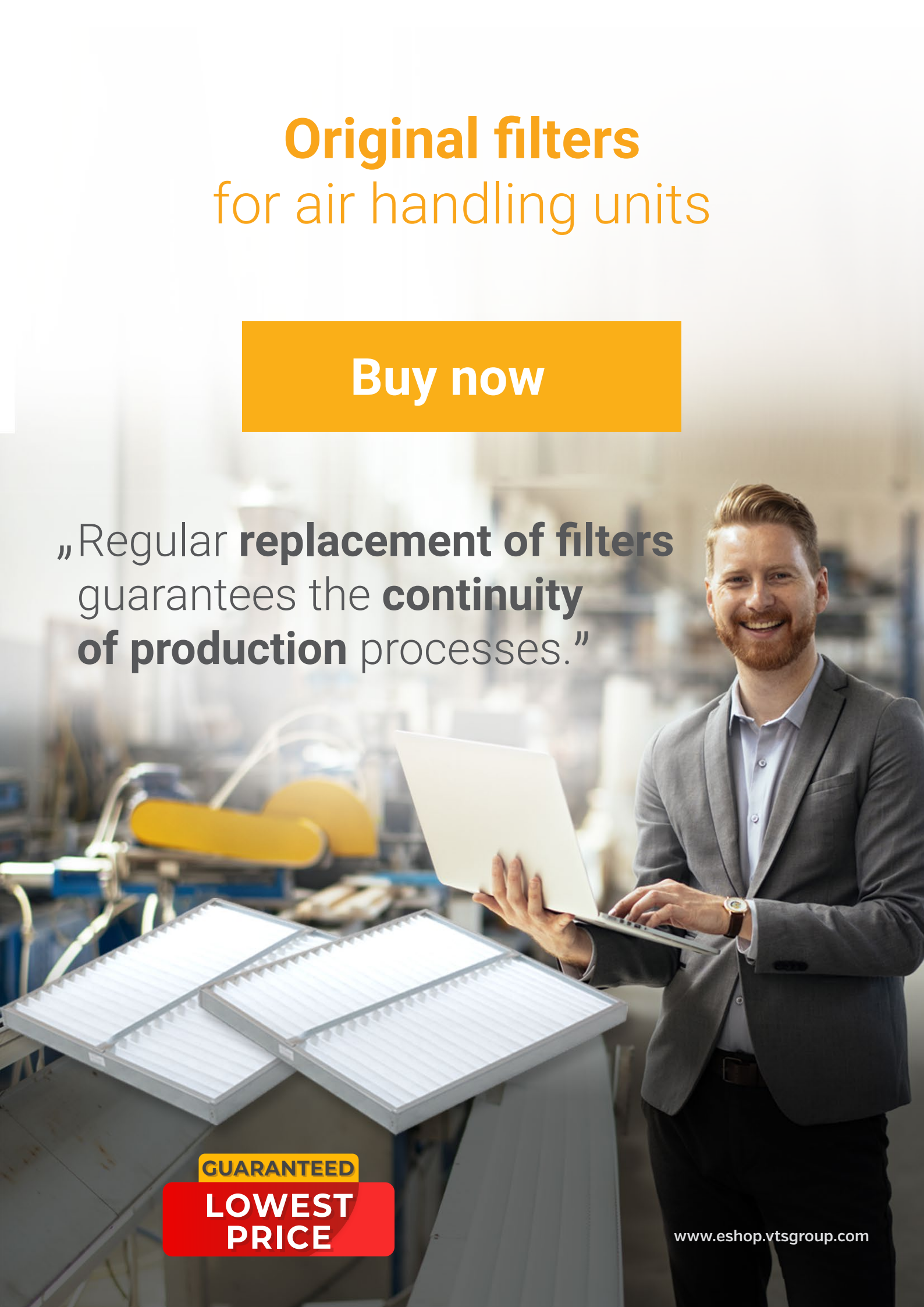
Building: **Tiszaligeti SPA center**
Country: **Hungary**
City: **Szolnok**

Building: **Lorenz factory**
Country: **Russia**
City: **Sankt Petersburg**

Original filters
for air handling units

Buy now

„Regular **replacement of filters** guarantees the **continuity of production** processes.”



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