



THE GLOBAL PLAYER

Newsletter 3/2016

VTS PERFECTLY SHAPED QUALITY
WING EC
NEW AIR CURTAIN
ULTRASILENT WORK
OUTSTANDING PRICE
PERFECT PARAMETERS
www.WINGbyVTS.com

WING EC

– EVEN LARGER CAPACITIES
OF ENERGY EFFICIENT AIR CURTAIN

VENTUS2016

WITH ACCREDITATION OF HYGIENIC OPERATION
CONFIRMED BY DIN 1946-4:2008 STANDARD

▶ Introduction



We live in a time in which an excellent product is not enough. The Customer, while investing in a solution, wishes to be assured that a given purchase will guarantee him/her the safety of use and, therefore, the reliability of purchased product. Air-handling units, in order to be reckoned on the global market, have to meet numerous, not infrequently very demanding standards.

Special requirements are placed on installation systems at health care premises, where the hygienic standards have to be on the top level. The appropriate air quality and proper parameters of air-handling unit operation and handling can be ensured only by a device of appropriate engineering design. That is why it is particularly pleasing that it has just been VENTUS2016 from VTS which has passed accreditation for DIN 1946, the restrictive German standard. This accreditation unquestionably confirms that VTS air-handling units, beside fulfilling the provisions, specific for hospitals, also fulfil the requirements concerning the safety of work, fire protection, they are user-friendly and easy in handling and maintenance.

I encourage to read the third edition of VTS THE GLOBAL PLAYER which will not only provide you with some basic knowledge of the DIN standard but which will also unveil subsequent new solutions in the VTS's offer: a new WING curtain with EC motors, rotary regenerators in cages, rising the class of protections of VENTUS air-handling units. We share with you our experience from the original project of VTS training programme for trading structures. Mr Jarosław Józwiak – President of the VTS Polska Company – describes his years of experience in building the strength of a global corporation with European roots.

I do hope that you will find the third issue of our Magazine a good and welcome source of information!

President of the VTS Group
Hanna Siek-Zagórska



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WING EC – orientation towards energy saving

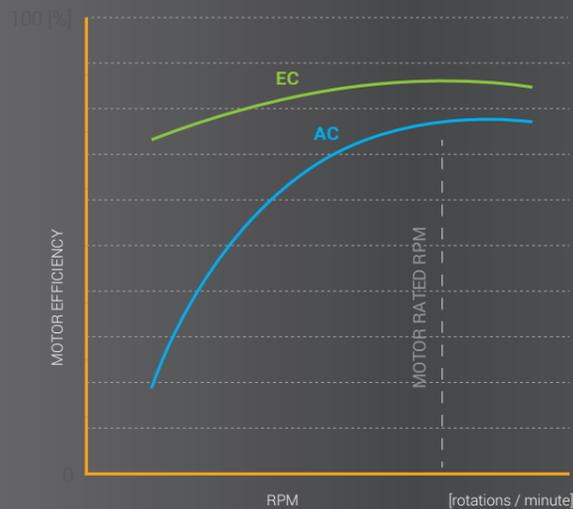
The modern design of the motor and fan delivers up to 40% energy savings compared to traditional solutions.



ENERGY SAVING

A higher energy performance of EC motors vs. AC motors enables lower energy consumption, especially in modes with reduced capacity; a lower efficiency drop in motor's RPM adjustments.

Comparison of motor efficiency values



VTS OPINION – the future of solutions with EC motors in Europe

Following various estimations, all motors, used in industrial applications, consume approx. 30-40% of the electric energy, generated in the world. It is a gigantic value, thus its reduction focuses the interest not only of bearing its costs motor users but also of governments in many countries. At the European Union, the necessity to use energy-saving AC motors has been sanctioned in appropriate regulations which impose on the manufacturers, selling their products on the EU's Market, the requirement to maintain a predetermined energy efficiency level.

6th June 2005

2005/32/EC directive was approved (concerning the eco project for EuP (energy using products))

22nd July 2009

The Regulation was approved, requiring the implementation of the eco project requirements in case of electric motors – the time point of its entry into force was agreed for the middle of the year 2011

16th June 2011

Motors with power of 0.75 – 375 kW have to comply with, at least, IE2 efficiency class

1st January 2015

Motors with power of 0.75 – 375 kW have to comply with, at least, IE3 efficiency class or IE2 efficiency class, when applied in a driving system with RPM control

1st January 2017

motors with power of 0.75 – 375 kW have to comply with, at least, IE3 efficiency class or IE2 efficiency class, when applied in a driving system with RPM control

SAVINGS FROM EC MOTOR OPERATION VS AC MOTORS

Motor TYPE	Unit	WATER AIR CURTAIN		
		100	150	200
motor power [AC motor]	kW	0,18	0,22	0,32
motor power [EC motor]	kW	0,15	0,18	0,26



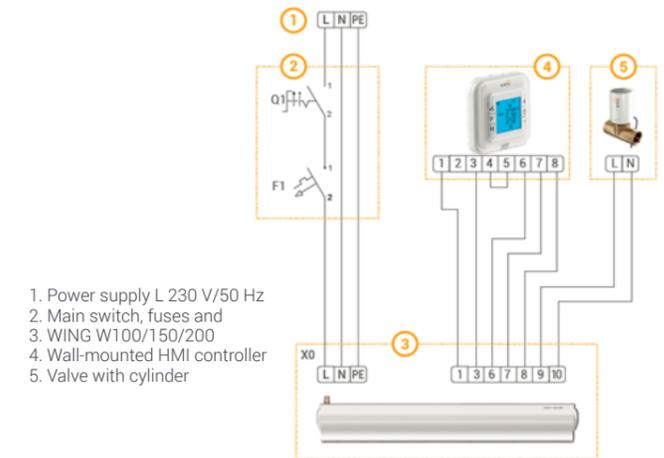
WING EC – even larger capacities of energy efficient air curtain

The representative character of the entrance zone of contemporary building imposes high and strict requirements onto all the elements mounted on it. Therefore, the possibility of precise setting of the airflow range of air curtains and of the associated level of generated sound is a significant quality factor of the devices, mounted at the entrance zone. Not negligible for the user are low heat and electric consumption levels as well, which are ensured by the curtain's engineering structure and its control system, as well as from the possibility of dynamic support of a heating system at a given room, automatically activated when it is needed. The new WING EC curtain of VTS, equipped with EC motors and an innovative control system, reveals all the above-mentioned advantages and many more.

Air curtains reduce heating and cooling losses through the opened entrance door to the building. They also protect its interior against the occurrence of draughts and the arrival of insects and contaminations. This protection is ensured by an intensive air stream, tangent to the plane of the protected opening. High curtain performance is associated with considerable noise levels, difficult to damp for the rather large size of the fan and the lack of space in the casing to mount damping elements. Any increase in curtain size, allowing for effective sound damping, would negatively affect its functional and aesthetic qualities. A special design of the WING curtain considerably reduces the level of emitted sound but its further reduction is possible by

precise and smooth adjustment of curtain performance and range parameters for the needs of the object. Such possibilities provide the application of an EC motor with a HMI microprocessor control. Thanks to the high IE4 effectiveness class of the applied EC motor, this solution, beside the infinitely variable control of the curtain performance, is also characterised by a much lower consumption of electric energy. A small increase in investment outlays, associated with the application of air curtain with EC motor and a dedicated controller, is returned from obtained savings within merely 2-4 years, depending on the curtain size and at the average degree of its use.

A still better effect of electric energy saving, as well as of heat and cooling saving, can be achieved when the fan is activated only when the door is open. However, technical solutions are needed that enable the start-up of the device with full capacity in a fraction of a second upon door opening. It is possible with the special design of the fan rotor, made of composite materials, which, despite its high performance levels, is characterised by an exceptionally low moment of inertia. The activation of this function in WING EC curtains is carried out by an additionally mounted open door sensor, combined with the HMI controller.



The application of microprocessor technology to control the WING EC curtain enables, beside performance changes, the control of many other working parameters, tailored to customer's needs. It also provides a convenient display of parameter settings and measured values. See below for the controller picture. A rapid heating function is available, both for the curtain with water heater and electric one. This function automatically changes the fan capacity, depending on the actual room temperature, following the PI algorithm. For this purpose, it is possible to connect an additional temperature sensor to the controller. The microprocessor HMI controller enables weekly programming of curtain operation time points for working and weekend days.

ADDITIONAL ACCESSORIES

The complex offer with EC WING curtain and HMI controller includes a valve with a cylinder and brackets for ceiling and on-wall mounting.



EXAMPLE SCHEME OF EC CURTAIN CONNECTION

An anti-freeze function is available for the curtain with water heater. For the curtain with an electric heater, the HMI controller automatically cuts off the second heating stage during fan rotation with the lowest capacity (WING curtains with electric heaters are provided – as standard – in two-step heating power control).

SUMMARY

VTS engineers, taking advantage of their experience gained over the years of manufacturing and operating, have developed a new, innovative design of the WING EC, curtain which, together with the dedicated microprocessor HMI control system, combines both functional and aesthetic qualities, as well as meets the current requirements for performance, functionality, acoustics and energy saving.

All of the above-mentioned features redefine the picture of the air curtain.



RETURN OF INVESTMENT COSTS FROM ENERGY SAVINGS

	WING 100	WING 150	WING 200
» 1st gear	€ 31	€ 42	€ 80
» top gear	€ 18	€ 24	€ 37

* – estimated value



VENTUS control points 2016 in hygienic version

The series of VENTUS VS 10 -650 control points was covered by TUV Rheinland for use in health care institutions, according to DIN 1946-4.

Currently designed buildings and rooms are characterized by a high degree of tightness, which means a smaller degree of infiltration of fresh air to the rooms, as well as to the rooms, where people stay. This, in its turn, necessitates the need for the increased use of mechanical ventilation.

It is well known how very important air quality for our health is. The proper microclimate and clean air are crucial in both the patients and the health care of the medical staff. Therefore, the task of ventilation systems in health care institutions is to limit the spread of microorganisms, provide temperature control, humidity and air cleanness of the ventilated rooms.

Such tasks are also implemented by the systems built on the basis of VENTUS control points. VENTUS series is designed to meet the stringent requirements related to control points in this regard. VENTUS control points already in their basic design meet a number of criteria described in related standards such as:

- **EN 1886** - The mechanical properties and testing of ventilation and air conditioning units - the standard sets parameters for the ventilation units as a whole, together with the control parameters, which can be used in areas with the highest degree of air purity.
- **PN-EN 13053** – Rating of manufacturing and performance of units components and

sections – this standard provides requirements for air handling units as a whole and defines the requirements related to the classification and testing of their individual components

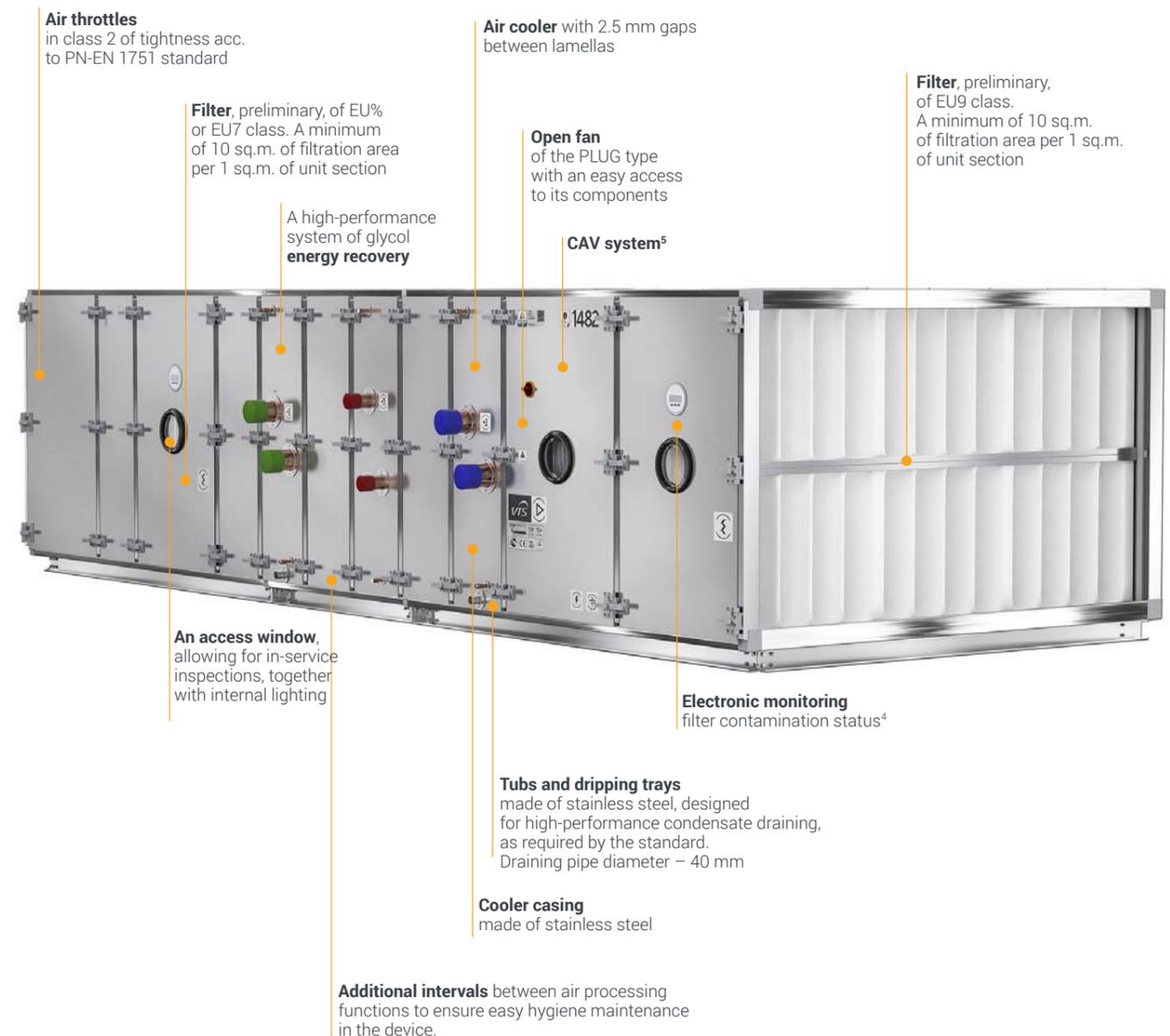
- **BS EN 13779** Ventilation of non-residential buildings - a set of guidelines for designers of ventilation and room-conditioning systems. Contained guidelines describe the conditions for obtaining and maintaining a hygienic and healthy indoor environment during all seasons, while taking into account the costs of installation and operation.

- **PZH certificate** means the approval of the Polish Institute of Hygiene of the device to be used from the point of view of admission to the ventilation and air conditioning systems of the public buildings, industrial facilities (branches of industry: food, electronic and pharmaceutical), healthcare facilities (operating rooms, laboratories and other rooms of Clean Room type):

Control points VENTUS 2016 Hygienic meet all the requirements indicated in DIN 1946-4. Requirements which are defined in DIN 1946-4 standard can be divided into four aspects:

- **technological and structural**, describing the performance standard of the device itself,
- **Configuration** - focusing on the type of the selected unit, the succession of its components and the scope of the functions of air.
- **Implementation** - how it is used in the entire

DIN 1946-4 standard is the basic document describing the requirements for the ventilation of health care institutions, including hospitals. This standard sets out a number of conditions which have to be satisfied so that the control unit could be used for the ventilation of hospitals.



¹ It shall be required that, after the tank is filled with 5 litres of water, more than 95% of the water is drained during 10 minutes on one square metre of the catchment area (DIN 1946-4 – 6.5.5)
² Filters, characterised by unchanging filtration performance during the entire period of their use (DIN 1946-4 – 6.5.7.3)
³ Inspection sight-glasses (with minimal diameter of 150 mm or with an equivalent cross-section) and internal lighting with smooth surface are required, at least, to monitor fans, filters and humidifiers
⁴ Pressure gauges to measure pressure differences with local displays and without manometer liquid or a pressure cell, installed at the filters of the first and the second stage
⁵ Air flow indicator, to be installed on the fan chamber or on the control cabinet



ventilation system, particularly in the area of its installation

- Operating - defining the procedures for the permanent maintenance of the ventilation control points in proper condition.

Accordingly, VENTUS 2016 control points in the hygienic version are in line with the requirements of DIN 1946-4 in the following areas:

- Air dampers - manufacturing according to the 2nd class of tightness, according to PN-EN,
- Prime filter - class M5 or F7, according to the designer's specification. Filters are available with a developed filtering surface exceeding 10 m² of the filtering surface area per 1 m² section of the unit,
- Secondary filter - class F7 or EU9, according to designer's specification. Filters are available with a developed filtering surface exceeding 10 m² of the filtering surface area per 1 m² section of the unit,

- Air cooler - radiator is provided with a collector made of copper, a frame made of stainless steel and aluminum fins with a 2.5 millimeter spacing,
- High performance glycolic energy recovery system,
- Easy service access to the fan of PLUG type with a direct drive continuously controlled by frequency converters,
- Inspection windows, which make it possible to carry out inspection works together with interior lighting,
- Additional intervals between maintenance of air treatment functions for easy maintenance of hygienic clearness of the device,
- Baths and drip trays made of stainless steel, designed to provide effectiveness of condensate discharge, according to the required standard (min. diameter of the condensate drain),

The certificates obtained by VTS are yet another confirmation of the high manufacturing quality of VENTUS control points.

It also expands the competitiveness of the offer in the field of ventilation and air conditioning projects for healthcare facilities.

VTS new releases already available online!

Click and check

how quickly and comfortably will you order filters, pumping stations and new WING air curtains online!



Filters
| from
PLN 40 net price



WING
| from
PLN 1400 net price



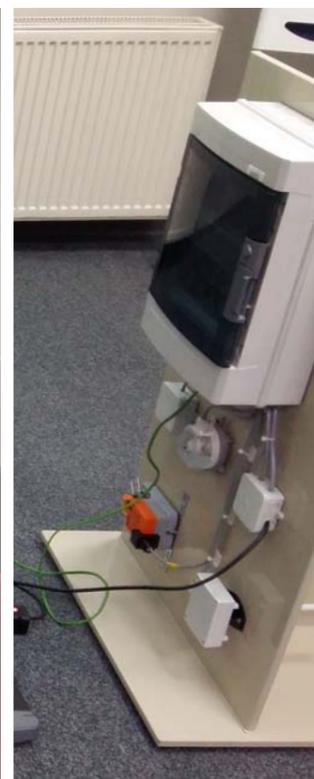
PUMP STATION
| check the price in with
your Sales Consultant

VTS TRAINS TRADING STRUCTURES

– a new educational project in the HVAC branch



The training was attended by AMs and Application Engineers from Poland, the Czech Republic, Romania, Hungary, Lithuania, Latvia and Estonia. The two-day training was dedicated to new product releases, recently launched onto the market, and to the expansion of the VTS product portfolio in the near future.



The new WING air curtain was presented during the training.

During that part of the presentation, the participants had an opportunity to see the excellent parameters and modern design of the curtain. The operation and performance of the new curtain solution was also presented in a live demo on a WING air curtain sample – the first piece from its series production.

The majority of the training was dedicated to such VTS solutions as:

- > providing air-handling units with terminal boxes,
- > new VTS automation systems,
- > the offer of turn-key water heater power control units (so-called pump stations)

In addition, the presentation included the **Ventus unit solution in the side-by-side arrangement with cross-flow heat exchangers (so called, lying heat exchangers)** and a new run-around coil system (glycol recovery), planned to be introduced in the near future.

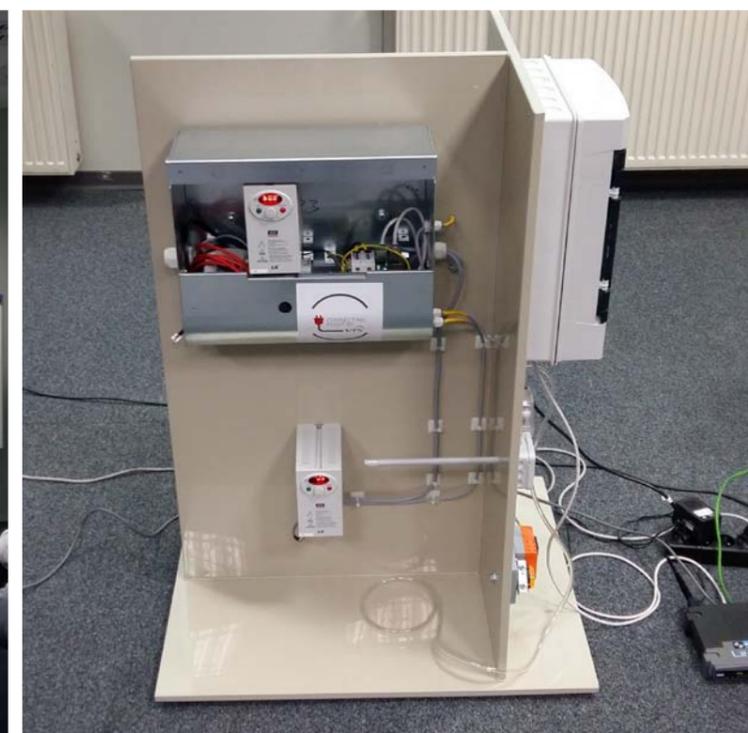
The training also covered the current issues, related to the selection and preparation of tenders, having regard to **EcoDesign 2016** and products offered by the competition.

The new automation systems, combined with the range of units with a connecting point, accounted for the most substantial changes and generated the highest interest of participants.

In the theoretical part, the participants learned the advantages of new solutions and the details concerning their technical parameters. The theoretical part, concerning automation, was supplemented with demonstrations and hands-on training on air-handling unit simulators with the new VTS automatic controls. This was an opportunity to see in practice the effects of new air handling unit operation algorithms and watch the practically unlimited capacities of control systems.

Training sessions for other regions will also be delivered in the near future. I would like to sincerely thank the PM team and the R&D Department for their assistance in the organisation and delivery of the training.

One of the high points of the training was the presentation of REVIT object systems, the generator of which will soon be implemented into the VTS selection system.



VENTUS S-TYPE

Compact, suspended air-handling unit
FOR INDIA AND UAE

The product specification has been developed by experienced engineers and reflects the requirements of the regions of India and MEA, where high cooling performance is expected. The S-type has been designed and manufactured with the application of unique technology and advanced material engineering – providing an innovative engineering solution, reliable and energy-saving.

from 236 to 5886 CFM
TOTAL PERFORMANCE

6 DIMENSIONS

SMALL SIZE AND MASS

SILENT OPERATION

HIGH WATER RESISTANCE

ATTRACTIVE PRICE

100% of the devices in-house tested

CASING

- Panel thickness:
 - 40 mm.
- Heat resistance:
 - PPU $\lambda = 0.022$ W/mK
- Density:
 - $\rho = 42$ kg/m³.
- Heat transfer coefficient through the casing:
 - $K = 0.6$ W/m²K
- Casing mechanical strength:
 - +2500 Pa \varnothing 2500 Pa < 2 mm

- Casing panel thickness:
 - -400 Pa – 0.05 l/sm²
 - +700 Pa-0.13 l/sm³
- Anticorrosive protection:
 - double coating of the panels – galvanised (Zn) – 275g/m²
- The outer casing coating – thickness:
 - polyester 25.

COOLER

- A copper pipe:
 - Dimensions: 1/2"
- Blade
 - Type: corrugated
 - Rows: 4 or 6 rows
 - Inlet / outlet: 32 / 50 mm
 - Air pumping valve and water outlet



AIR SUPPLY:

- Specification:
 - Type: air-to-air handling unit
 - Material: galvanised steel

FAN:

- Type: single-phase capacitor
 - Insulation: B
 - Protection rating: IP20
- Type: three-phase capacitor
 - Insulation: F
 - Protection rating: IP-54

FILTER:

- Material: synthetic and washable
- Thickness: 50 mm
- G-4 gradient control

DRIP TRAY:

- Material: stainless steel
- Water outlet 1

APPLICATION

RESIDENTIAL BUILDINGS

INDUSTRIAL PREMISES

SMALL BUSINESS OBJECTS

SPORTS FACILITIES

COMMERCIAL FACILITIES AND WAREHOUSES

GARAGES AND CAR SERVICE STATIONS



| BEING A PIONEER TAKES COURAGE

– an interview with Mr Jarosław Józwiak, President of VTS Polska



Jarosław Józwiak
President of the Management Board
of VTS Polska Sp. z o.o.

A graduate of the Gdansk University of Technology and MBA studies at the University of Gdansk. Working for VTS for 16 years. In 2003 – 2008, Jarosław Józwiak served as the Managing Director of VTS Clima in Dubai, then, from 2008 to 2009, worked as a Business Developer Manager in Asia. The CEO of VTS Polska since 2009.

1. At this moment, the VTS Group in numbers is: 50 countries, 5 continents and more than 350 technical and sales consultants all over the world. Continuing your global expansion, in October, you opened an innovative Logistics and Production Center in Dubai. What are the reasons for such dynamic and expansive development of VTS in the last few years?

In every discipline, the key to success is to set a precise goal you want to achieve and then to consistently complete all measures leading to that goal. Since the beginning, it was the purpose of VTS founders to create a global company which, thanks to a pioneering outlook on design, production and logistics processes, would be able to offer technologically advanced products at competitive prices and offering the shortest delivery dates practically on all European, Middle Eastern, Asian or American markets. Our determination and consistence in working towards that goal allowed us to build a brand which is recognized practically all over the world.

2. VTS devices are very popular among investors. What made them stand out from among the competition, being the first choice of investors, contractors and designers?

VTS is an unquestionable leader in sales on the Polish market, as well as other Central and Eastern European markets. Maintaining the leading position for years is the result of multiple factors working together, such as: quality of product offered, delivery dates, anticipated price policy, and, what I always like to emphasize, a team of wonderful people who have been working hard for years

to build and strengthen our position on the market.

We are perfectly aware that, in order to be and stay the best, we must constantly self-improve in each area. The products we offer in Poland and on Middle Eastern markets or the US market, a very demanding one, are constantly improved. We are constantly raising their technical parameters, quality and durability. As the first Polish manufacturer, we received the Eurovent certificate, and, as the only company in the industry, we have all certificates admitting our products to be sold in Europe, Asia, America or Australia.

Thanks to the mass scale and standardization of production, we can offer products at very attractive prices and delivery dates, which are unattainable for other companies from the industry. Standardization of production also assumes the elimination of shortages and the possibility of conducting full factory inspection of the devices sold.

The companies that cooperate with us know that we are trustworthy and reliable partner, and it is trust, often based on long-term cooperation, which is the foundation we build our relations on.

3. Which of the investments featuring your devices do you consider the most spectacular?

There are many buildings we supplied our solutions with. On the Polish market, the most renowned ones are, among others, the Prime Corporate Center (Warsaw), the Pacific office building (Warsaw), the Grand Lubicz Hotel (Ustka), the Zielone Arkady Shopping Center (Bydgoszcz), the Sky Tower (Wrocław), the

Posnania Shopping Center (Poznań), the Dom Plusa Multimedia Building (Warsaw), the Górnik Zabrze Stadium, the Jagiellonia Białystok Stadium.

In the global scale, in my opinion, the most interesting buildings include, e.g. the Intercontinental hotel (Bay Central) in Dubai (United Arab Emirates), the Bridgestone tire factory in Ulyanovsk (Russia), the enormous New Century Global shopping center in Chengdu (China), the IBM office building in Chennai (India), the Presbyterian Weill Cornell medical center in New York (the US), the Auckland university (New Zealand) and many more.

4. 2015 was a year of changes in the industry. The introduction of new VENTUS 2016 air handling units stirred things up among producers. What is the competitive advantage of these air handling units?

It's true. VENTUS 2016 is a new line of devices, created on the basis of 25 years of experience on the HVAC market. Designing new air handling units, we tried to consider the remarks of companies using our devices, installation or design companies. This combination of knowledge and experience of our technologists, constructors and information obtained from our clients produced the end result, one that we are very proud of.

VENTUS 2016 air handling units are devices that feature improved structural rigidity and tightness, improved safety of use, an authorial panel opening/closing system – the SMART HINGE. To improve resistance to very high temperatures and UV radiation, which is particularly important for the Middle East, we replaced all composite elements with steel and aluminum. The scale of changes is proven by the fact that more than 300 elements of the unit were changed.

However, we are planning to surprise our clients with new changes this very year. These will make the product we offer even better and better adapted to changing market needs and customer preferences.

5. You did the same in 2016 – by extending the VTS eShop to include service parts, then pump manifolds, followed by a cherry on top – the new WING air curtain. How did the industry react to this pace of change?

As I mentioned in the beginning, we set very ambitious goals for ourselves. Following the motto "One step ahead", we always try to set and create trends in the industry. Maintaining the leading position determines the high pace of changes implements, the search for innovative solutions not only in the product per se, but in all areas of the company's activity.

The pump manifolds we decided to incorporate in our offer guarantee optimal matching of the technical parameters of particular components of the system, and thus the elimination of potential errors in selection. This has proven very comfortable for installation companies and designers. Additionally, our manifolds comprise elements by renowned manufacturers and are offered at

very attractive prices, which guarantees that we will maintain the correct quality and volume of sales.

WING is undoubtedly a revolution on the market of air curtains. It is a product with excellent technical parameters and unique design. When designing WING, we paid particular attention to maintaining low noise levels, which is often the key parameter determining the choice of a curtain. Thanks to the application of an innovative structure stabilizing the air flow and a new fan unit, we have achieved parameters which make WING the quietest curtain on the market.

In terms of design, in the case of WING, we can proudly speak of applied arts. The minimalist housing form resembles a glider wing, perfect in its simplicity, and the characteristic diamonds crowning the device add elegance and harmony. It is without a doubt the most visually stunning product create in the entire history of the company. I would also like to emphasize, what is new on the market, that the WING curtain is offered with EC engines, which provide higher energy efficiency.

6. In your opinion, does the sales of HVAC devices over the Internet have a future?

Of course. Online sales is the future, also for the HVAC market. We understand that we have to move with the times. This is why we opened an online store (eshop.vtsgroup.com), through which we launched the sales of air curtains, water heaters, automation, consumables and service parts for air handling units. An order made in our eShop is completed within 48 hours and sent directly to the client. Our order completion terms, the absence of agents, the safety of payment are the advantages that help us develop our online distribution channels and acquire new clients.

7. What are the most important challenges facing you and VTS Polska in the foreseeable future?

The company is constantly developing. After introducing the new Ventus 2016 line, the pump manifolds, the new WING curtain, we are ahead of next product implementations. We understand the importance of innovative automation systems in air handling and air conditioning units. We need intelligent automation to provide the user with full control of the operation of the devices (regardless of their place of use), optimization of usage costs, giving the user faster return on investment.

Let us not forget about the training programs our clients undergo. We organize regular product seminars, during which we present the VENTUS 2016 units, the new air curtain, the pump manifolds, new solutions in automation and unit wiring. The seminars include practical parts, during which each participant can try out the possibilities offered by the new control systems, recognizing the ease and intuitiveness of operation. From January to June 2016, our seminars were attended by nearly 500 designers, investors and contractors. We are counting for the second half of the year to match the first one.





Name of building: **AEROSTAR SA**
 Country: **Romania**
 City: **Bacau**
 Devices: **WING**



Name of building: **SECOM SA**
 Country: **Romania**
 City: **Chiajna**
 Devices: **WING**



Name of building: **Kondratievsky Business Center**
 Country: **Russia**
 City: **Saint Petersburg**
 Devices: **VENTUS**



Name of building: **WIDZEW STADIUM**
 Country: **Poland**
 City: **WŁÓDŹ**
 Devices: **WING**



Name of building: **The Atria Tower**
 Country: **UAE**
 City: **Dubaj**
 Devices: **VENTUS**



Name of building: **Nazarbayev University School of Medicine**
 Country: **Kazakhstan**
 City: **Astana**
 Devices: **VENTUS**



Name of building: **Rollie Johnson Inc**
 Country: **USA**
 City: **St. Louis**
 Devices: **VENTUS**



Name of building: **Järveküla Kool**
 Country: **Estonia**
 City: **Tallin**
 Devices: **VENTUS**