



THE **GLOBAL** PLAYER

Newsletter 2/2016



Issue topic:

**WING - a new quality
in air curtains technology**

NEW PRODUCTS:

VTS PUMP UNITS

**THE FILTERS ARE
ALREADY AVAILABLE ONLINE!**

▶ Introduction



Dear Readers!

The construction of today is not only based on pragmatism, but first and foremost on the image. The design takes on importance in a dynamic manner. Using a form is an art which creates the architecture of the interior. It requires taste and intuition. It becomes a decorative element next to the functional features. It greatly enriches the space by creating atmosphere and a plastic image of the interior, which we find increasingly harder to do without.

In the entrance hall of the modern office building, bank, apartment block, office or other public utility facility, comfort and aesthetics are one of the most important features of this part of the building.

A new generation curtain, WING, was created as a result of love for design and innovative technologies. This device, which combines unique design and excellent efficiency due to its streamlined structure topped with a diamond, completely redefines the form of air curtains category.

Thus the premiere of the WING curtain became the title of the second number of the magazine "VTS The Global Player". Apart from, in the newest issue that you will also find a lot of information concerning error-free connection of air handling units installations thanks to the introduction of centres into the offer, which guarantee optimum adaptation of parameters of the complete system responsible for air heating. You will also see a photographic relation from the presentation of both solutions during the VENTUS2016 seminar combined with the cruise to Sweden, organized especially for the designers collaborating with VTS.

We wish you a great read and we invite you to get acquainted with the details.

Hanna Siek-Zagórska



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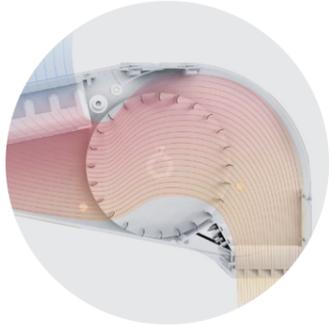
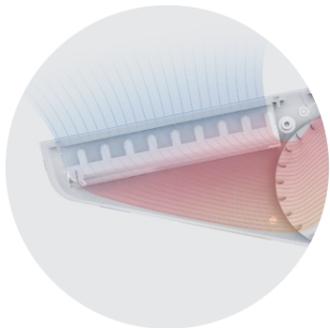
Newest VTS projects



▶ **NEW VTS PRODUCTS**

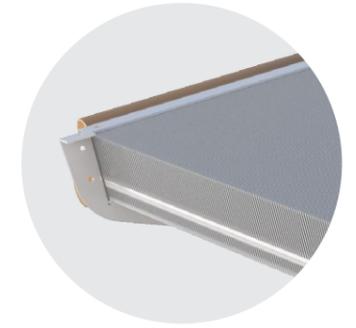
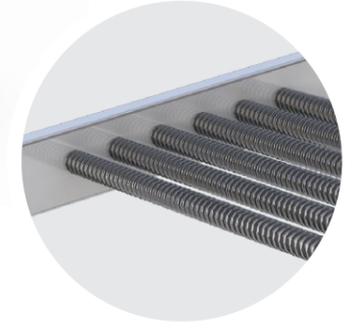
WING by VTS

WING is a new generation device, created because of a passion for lightness of form and modern design- which are characteristic for gliders. A minimalist housing with a streamlined form of a wing seems to float in the air. The housing topped up with a diamond that hides excellent components in an innovative curtain body sets new standards for the category of curtains. WING combines unique design and excellent efficiency and therefore it completely redefines the air curtain image.



OPTIMUM AIR FLOW RATE

The special design of the blades ensures an increase in the air stream range by 20% compared to conventional approaches. Larger air intake area makes it possible to take full advantage of heat exchanger power.



COMBINATION OF FUNCTIONALITY AND DESIGN

The distinctive crowning of a diamond-shaped side cover, which shields the inlet of the motor cooling system, performs also the function of inspection.

WATER OR ELECTRICAL ONE

A high-efficiency double-row water heater is suitable for supplying with an agent of low parameters. The low-temperature high-power electric heating coil ensures safe operation of the device without the necessity of the fan coasting. The asymmetric distribution of the heating power ensures meeting the individual needs of a user.



THE QUIETEST CURTAIN AVAILABLE ON THE MARKET



QUALITY AND SAFETY



LIFETIME+ GUARANTEE PROGRAMME



AVAILABLE ONLINE 24/7

* - szczegółowe informacje zawiera Dokumentacja Techniczno-Ruchowa.



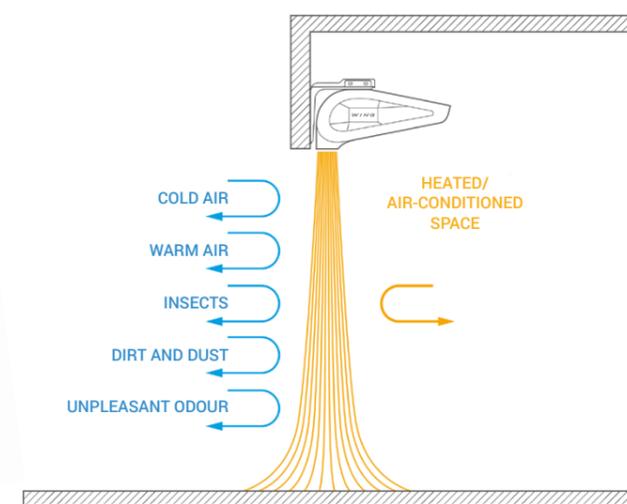
WING - a new quality in air curtains technology

The entry zone in contemporary construction has not only functional, but also representative importance. The aesthetics of the interior and the comfort of persons present in the entrance hall of the modern office building, bank, apartment block, office or other public utility facility are one of the most important features of this part of the building. A major problem of the entry zone are the external doors which are opened frequently, thus causing energy losses and drafts which bother the persons present inside. The vestibules which have been used for years eliminate these inconveniences, but they are not popular among the architects, since they prevent the architects from using this visiting space in an optimum manner.

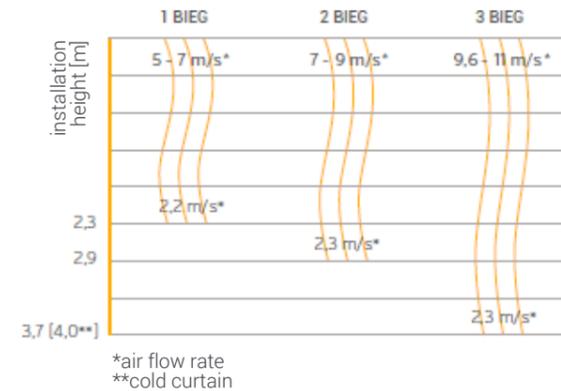
Air curtains are an alternative for vestibules that complies with good practice and applicable legal provisions. However, they should also match the representative character of the space in which they are installed, apart from providing effective reduction of heat exchange through open doors and low exploitation costs expected by the user. Thus the aesthetic values and silent operation (apart from effectiveness of operation and power efficiency) are the most important features of these devices that are an important element of technical and aesthetic fitting of a contemporary building.

Air curtains reduce air exchange through the open external doors, thus protecting the interiors of the building against the inflow of cold air in the winter and hot air in the summer, as well as the entry of insects and contamination. The principle of operation is simple. The curtain within the whole door or gate surface creates an intensive air stream, which is directed vertically or horizontally, tangentially in relation to the surface air of the door opening.

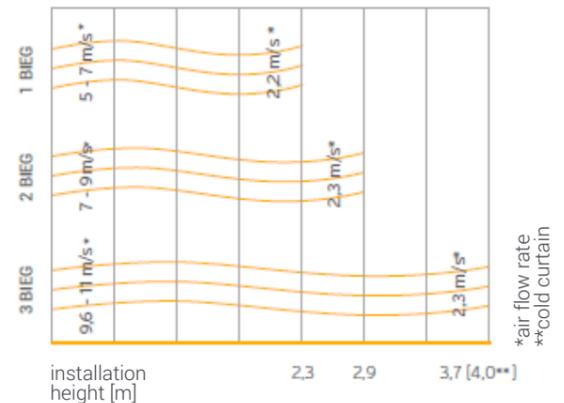
A certain part of this stream (on the useful side) circulates inside the protected area. The external layer that corresponds to approx. 20% of the generated stream covers external air that tries to get into the room and it flows out of the building together with the external air and potential contaminants. Thus the operation of the curtain involves a certain loss of the internal air through the door opening. Despite that fact, it is one of the most effective methods of reducing a free exchange of air and energy loss.



Vertical air stream range (maximum height)



Horizontal air stream range (upon vertical installation)



With the view to achieving optimum efficiency of operation, the rate of airflow in the lumen of the open doors cannot be lower than 2 m/s. A significant fan power is required for the generation of such air stream on the whole surface of the door opening, which is often large. The construction of an appropriately powerful device is a huge challenge, especially taking into account that it should be energy-saving, silent and enclosed in a small, aesthetic housing. It is possible to switch on the fan only when the door is open with the view to reducing energy consumption, however technical solutions are needed that enable the start-up of the device with full capacity in a fraction of a second upon doors opening. Slight rotor inertia required to this end unfortunately does not match the need of high efficiency.

VTS engineers, taking advantage of their experience gained over the years of manufacturing and operating, have developed a new, innovative design of the WING curtain, which combines both functional and aesthetic qualities as well

as meets the current requirements for acoustics and energy saving. The quietest curtain currently available on the market has been obtained. Owing to special solutions reducing air flow resistance and application of EC motors as well as a precisely developed rotor and air structuring device blades, the electricity consumption has been successfully reduced along with obtaining the required air stream range and the outstandingly short start-up time to full performance. The innovative and aesthetic shape of the WING curtain complements its unrivalled perfection. Due to the quality of applied solutions, a lifetime warranty on the housing and a five-year warranty on the final product can be granted.

The new curtain WING from VTS, which has been the leading global manufacturer of air curtains for years, redefines the air curtains category, providing investors with a product whose design meets the latest trends and whose parameters are suited for every interior.

Today the greatest advantage in the scope of functionality, aesthetics and power efficiency is offered by innovation. The design is one of the best tools for providing innovative solutions that place the users' needs in the centre. WING air curtain was created from passion for design and on the basis of a dream to achieve exceptional results; it combines an unpretentious form and master execution. Streamlined WING topped up with the side cover with a diamond shape which is nearly invisible is the fruit of the engineering idea, which led to designing the device structure in a manner that ensures subtlety that ideally matches any interiors in functional and aesthetic terms. Transforming ideas of a designer into reality has resulted in a product which is a real luxury on the mass market, due to its unique concept. Having smart form, it is characterized by intuitive operation and easy installation.





THE SIZES AND TYPES OF OFFERED CURTAINS:

In order to obtain a required efficiency of an air curtain, it should cover the entire door opening area. The WING curtains are available in lengths of 100, 150 and 200 cm.



Zbigniew Whukowicz
Product Board Advisor VTS

WIn the case of larger openings, more than one of the curtains next to each other should be used. All WING curtain types are suitable for vertical and horizontal installation, both individually and as a group.

Doors of office, apartment and public buildings should be protected using the WING curtains equipped with air heaters. Curtains WING WH with water heaters of heating power ranging from 7.5 to 28 kW as well as WING EH with electric heaters of heating power ranging from 2 to 15 kW are available. Location of the heaters in an opening of an inlet grille facilitates a service thereof and enables the full use of a heating surface, which, along with the large size, allows one to obtain a high thermal efficiency combined with a low air flow resistance. The applied double-row water heaters can be supplied with an agent of low parameters. The application of electric heating coils equipped with radiators has caused a drop in their temperatures by half, which, in combination with thermal protection, prevents a curtain from overheating even after the motor is stopped.

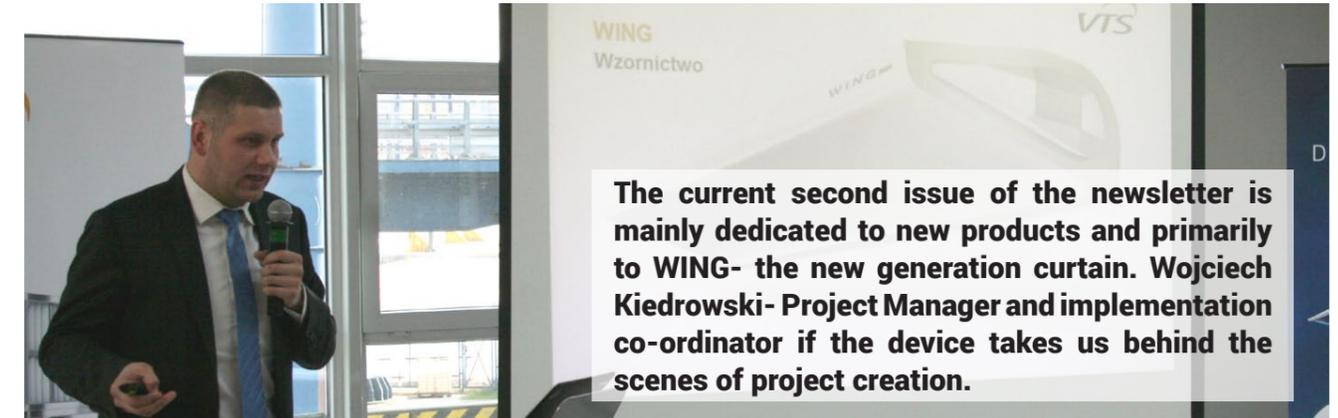
The curtains can protect not only entrance doors, but also transport gates to industrial and commercial buildings. In such cases, heating of the air is not always needed and thus cold air curtains without air heaters are used.

Adjustment of the curtain performance to the size of a door opening is conducted by means of a three-step fan speed controller. Owing to low air flow resistance and special design, its electricity consumption is exceptionally low. The optional application of EC motors in efficiency class IE4 (ERP2015) in all types of curtains assures even

SUMMARY

WING is a new generation device, created because of a passion for the distinguished form and technological advancement- which are characteristic for gliders. A minimalist housing with a streamlined form of a wing seems to float in the air. The housing topped up with a diamond that hides excellent components in an innovative curtain body sets new standards for the category of curtains. WING combines unique design and excellent efficiency and therefore it completely redefines the air curtain image.

| Interview with Wojtek Kiedrowski



The current second issue of the newsletter is mainly dedicated to new products and primarily to WING- the new generation curtain. Wojciech Kiedrowski- Project Manager and implementation co-ordinator if the device takes us behind the scenes of project creation.

Wojtek, can you tell me about the genesis of the product? From where did the idea for the new air curtain originate?

The observation of the market, market trends and Customers' needs were our inspiration for the creation of the brand-new product.

When looking at the previous version of the curtain- the presently sold DEFENDER we came to the conclusion that it no longer fits into the interior in which it is placed. From the very beginning we had been convinced that the curtain, unlike the heaters, cannot be in dark colours; we knew that it should have been designed in a way which makes it as little visible and attracting attention as possible. Therefore the structure of the new unit was redesigned, thanks to which it is smaller and it can easily be matched to interior design both in the case of commercial facilities and office interiors.

With which applications in mind was WING created?

VTS Group has extended its offer by the new curtain, mainly directed to public utility buildings, commercial and office facilities, railway stations or airports. WING is dedicated for all locations in which DEFENDER has been used so far.

WING, the air curtain with impressive technical parameters and minimalist design will soon be available for sale. Was the creation of the completely new product a huge challenge?

It was a huge challenge. It was not related to technical issues, i.e. the determination of curtain parameters (output, heating power); we performed such analysis within a few weeks. The development of the device design took us most time. We managed to develop a final version on the basis of concepts from the whole team and as a result of many meetings. We were aiming at creating something completely different and exceptional, and therefore we were not influenced by the

products of the competition. Our main motif was the focus on the Customer who often makes the purchase on the basis of visual evaluation. Thus the idea on the creation of the product with the unique shape appeared.

Can you summarise the innovative characteristics of WING?

WING air curtain is a new generation device, created because of a passion for the distinguished form and technological advancement. By using modern design we focused on the creation of a product with excellent parameters in an innovative shape. Additionally, we tried to achieve brand cohesion with VOLCANO and DEFENDER, so that all of them could be perceived as coming from the same product family. Moreover, we adapted to the customer's requirements, i.e. the need for optimised heaters in electrical version and a new, 2-row exchanger in the water version. Very silent operation of the device ensures the user's comfort. It generates almost inaudible noise. All of the above features redefine the picture of the air curtain.

And the last question. What are the market forecasts as to the reaction of the Customers to the product?

Our guiding principle is that we are not looking for the Clients for our products, but we are searching for solutions for our customers. We carefully analyse the HVAC market and Customers' expectations, therefore I firmly believe that the new proposal will be positively received. The Customers will appreciate not only high power efficiency of the curtain, but also new appearance and very silent operation.

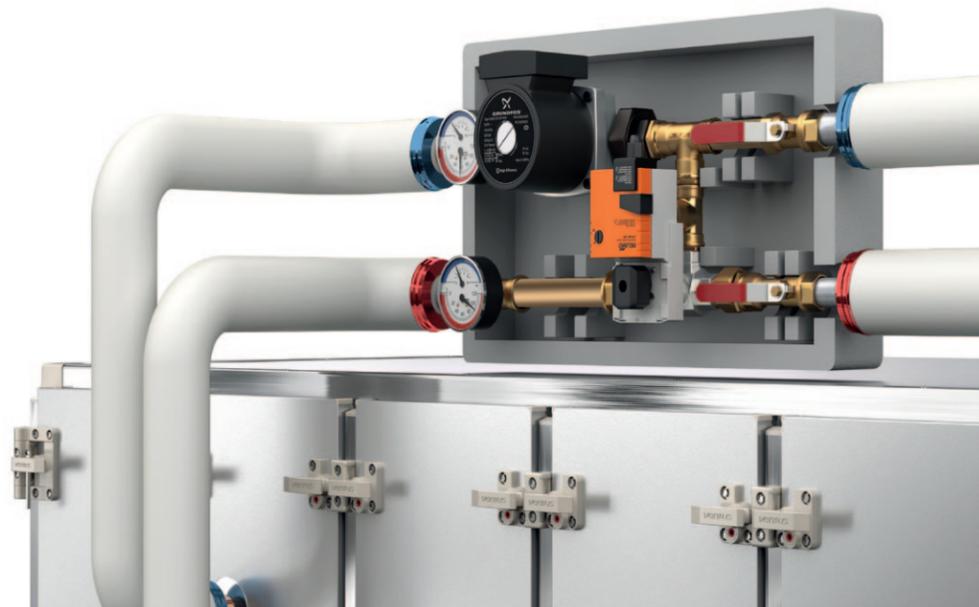
Wojtek, thank you for the interview. We keep our fingers crossed for the success of WING and we wish you many inspirations for new products!

VTS PUMP UNITS - A READY-MADE AND COMFORTABLE MANNER FOR CREATING AN POWER REGULATION SYSTEM OF A WATER HEATER

Proper functionality of air handling unit depends equally on its quality and on the quality of external equipment and installations, supporting the central unit and on the way they are attached. One of the key external installations is the process heat installation which supplies the water heater. A heating power regulation system, consisting of a tee-valve, a pump and accessories, has to be installed at the site of the water heater connection. It is a seemingly easy task. However, errors often are committed in practice, which makes it impossible to regulate air temperature in an proper way.

The contractors often confuse the manner of connection of a mixing and separating 3-way valve. It can happen that valve and pump parameters or the parameters of other components selected individually by the contractor do not match. Another troublesome issue is the correct and aesthetic execution of water insulation of many combined elements (the valve, the pump, the filter, bolt fasteners) in a manner which enables their servicing.

Responding positively to the need of rapid, economical and fault-free connection of these installations, VTS have completed the sales offer of air handling units with pump centres to ensure optimal matching of complete system parameters, responsible for air heating in air handling units



Heat pump group VTS in combination with VENTUS 2016 air handling unit

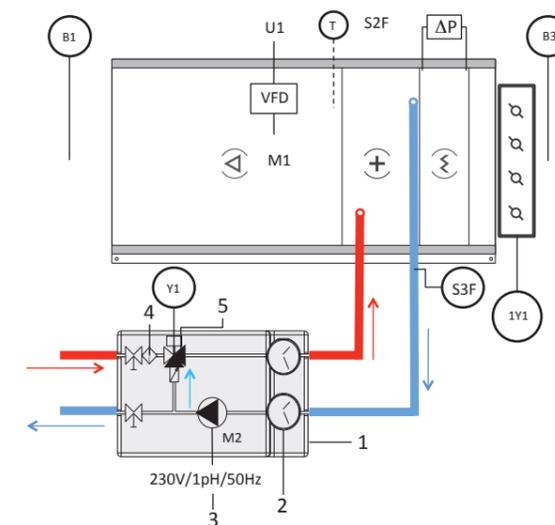
VTS pump centres - are hydraulic systems, housed in a separate enclosure, intended to control the heat power of water heaters of the air, used in air handling units. They can be used in the case of heating medium temperatures not higher than 120°C, at acceptable pressure of 10 bar. The maximum available pressure

(the elevation height of the complete set) depending on the type ranges between 7 and 10.5 m of water column. The selection of the appropriate value is possible using ClimaCAD OnLine (CCOL) software or on the basis of ready characteristics, contained in the operation and maintenance documentation.

OPERATING DESCRIPTION

Pump centres are responsible for qualitative regulation of heating power of water heaters that consist in the change of temperature of the working medium supplied to the heaters while maintaining relatively constant medium efficiency. The temperature of the working medium upon the supply to the heater can be obtained by the mixing of the colder medium in coming from the heater with the hot medium from the supply installation in the control valve. The constant flow of the medium before the heater is enforced by means of the circulation pump, and the quantity of the hot medium obtained from the source is regulated by changing the degree of control of the three-way valve.

OPERATING PRINCIPLE



- B1 - supply air sensor
- VFD - frequency converter
- U1 - converter supply voltage
- T S2F - air-side freeze protection sensor
- B3 - outside air temperature sensor
- 1Y1 - damper actuator
- ΔP - pressure switch
- S3F - return water temperature sensor
- Y1 - three-way valve actuator
- M1 - fan motor
- M2 - pump motor
- 1 - pump centre casing
- 2 - thermomanometer
- 3 - circulator pump
- 4 - mesh filter
- 5 - three-way valve/actuator assembly

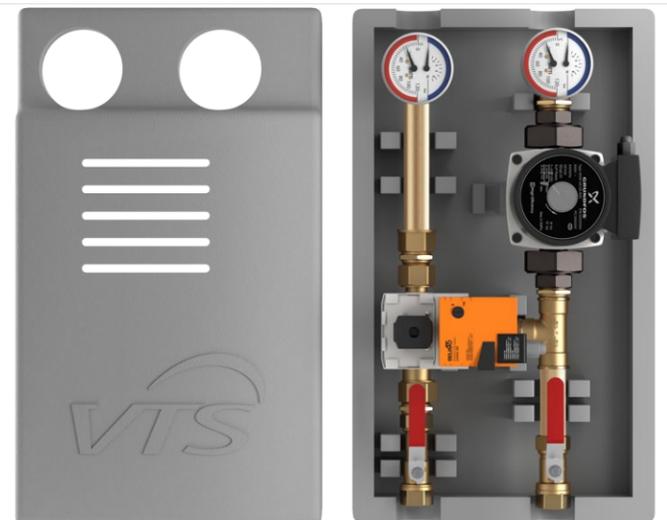
ADVANTAGES RESULTING FROM THE USE OF READY-MADE PUMP CENTRES

The application of the ready-made power regulation systems of water heaters is first and the foremost a convenient and easy solution for contractor companies, eliminating connection errors and guaranteeing the optimum adjustment of technical parameters of specific components of these systems. The method of qualitative regulation applied in them offers a possibility to apply double, most effective anti-freeze protection of water, based on return heating medium temperature measurements, active also when the air handling unit is off, and on air temperature control with an anti-freeze thermostat. The additional fitting of connection spigots with thermomanometers offers the possibility to monitor in real time medium temperatures and pressures, both on supply and on return from the heater.

The selection of the pump node is made by means of CCOL software in one cycle with air handling unit selection, which is an undoubted attribute of this solution, since it guarantees, apart from selection ease and convenience, also optimum adjustment of the complete air heating system in VENTUS air handling systems. It is also the guarantee of the optimum support of VTS control system.

STRUCTURE

The main pump center components include: circulation water pump, three-way control valve with cylinder, mesh filter, two thermomanometers; as well as two shut-off valves. The whole gear is housed in an enclosure of EPP foam which, with its very good insulation parameters, effectively protects against heat loss, while also ensuring protection against mechanical damage and weather conditions.



VTS pump centre

MAJOR COMPONENTS



PUMP

- » Voltage – 230 V/1 ph/50 Hz
- » Temp. of the environment - 0..40°C
- » Water temp
 - 110°C (WPG-25-070),
 - 95°C (WPG-25-095,WPG-25-105)
- » Max. operating pressure – 10 bar
- » Overload protection– integrated
- » Casing protection rating:
 - IP 44 (WPG-25-070)
 - IP X2D (WPG-25-095,WPG-25-105)
- » Propylene / ethylene glycol – up to 35%



VALVE/ACTUATOR ASSEMBLY

- » Voltage – 24 VAC, 0–10 V DC signal
- » Ambient temp. – -30 to +50°C
- » Max. temp. of the medium – 120°C
- » Humidity 5 to 95% rH (without condensation)
- » Casing protection rating – IP54



THERMOMANOMETER

- » Measured parameters
 - temperature and pressure
- » Temp. measuring range – 0 to 120°C
- » Pressure measuring range
 - 0..10 bar (0..1 MPa)
- » Casing diameter – 80 mm

WHY THE ADJUSTMENT OF THE HEATER POWER IS QUANTITATIVE AND NOT QUALITATIVE?

The construction art allows for the application of both quantitative and qualitative power regulation of water heaters, however in the case of quantitative regulation the reduction of heating power is obtained through the reduction of capacity of the medium flowing through the heater, which can lead to its freezing in wintertime, despite the efficient operation of the anti-freeze thermostat installed at the air outlet of the heater. Multi-row exchangers commonly used in the ventilation systems are especially exposed. This is due to the fact that high efficiency of heat exchange is obtain by using a counter-current medium flow direction in relation to airflow direction, as a result of which the pre-cooled medium is pumped into the zone under the impact of cold external air. A low medium flow that can occur in the process of quantitative temperature regulation also in wintertime exposes this medium to deep cooling up to freezing.

With the view to minimising the risk of heater damage, the systems offered by VTS use qualitative heating power regulation, in the case of which a nominal medium stream always flows through the heater, and due to that it is significantly less prone to deep cooling and freezing that occurs in the case of qualitative regulation. Moreover, constant medium flow through the heater, also in the case of zero control setting of the valve enables constant measurement of real reader temperature in the coolest place at the return from the heater. VTS automation by means of appropriate valve control prevents excessive temperature reduction, thus providing the most effective anti-freeze protection of the heater, active when the air handling unit is on and off (the majority of freeze failures of heaters takes place upon switching off the air handling units when the classic anti-freeze protection offered by the thermostat installed behind the heater is not effective).

The devices will appear in VTS offer at the beginning of May. 9 types of pump centres will be available, depending on the rate of medium flow and hydraulic resistance (taking into account the authority of the three-way valve). More information is available on: <http://vtsgroup.pl/VENTUS/VENTUS2016/pl#pump>



Zbigniew Wnukowicz
Product Board Advisor VTS

THE FILTERS ARE ALREADY AVAILABLE ONLINE!



In April the offer of our online shop has been extended by the **new product category**. Consumable materials for VENTUS air handling units in the form of **filters** were added to the current portfolio. They are characterised not only by comprehensiveness and convenience of selection and purchase, but primarily by a very attractive price and numerous promotions.

For the enhanced functionality of VTS e-shop platform please visit eshop.vtsgroup.com

Enjoy your shopping.

EXAMPLE PRICES



Cellular filter VS P.FLT G4 572x272 | Model 1-2-0301-0001 | **47,07 PLN**

Cellular filter VS P.FLT G4 712x302 | Model 1-2-0301-0002 | **51,08 PLN**



|The greatest VTS Poland seminar this year

On April 22 the greatest seminar organized so far this year by VTS Poland took place at the Stena Line check-in terminal in Gdynia. Nearly 150 designers, contractors and investors from HVAC branch in Poland took part in the event.

The highlight of the programme was the presentation of VENTUS 2016 air handling units. The presentation was divided into two sessions: a theoretical and a laboratory one. During the theoretical part the participants had the occasion to get acquainted with the possibilities offered by the new VENTUS 2016 air handling units, both in terms of structure and in the terms of automation and its functionality. The laboratory part presented automation possibilities (which had been discussed earlier). Thanks to the web server function, the participants could observe how air handling unit operation can be managed (via the web browser), and thus how its operating parameters could be optimised. Experiments presenting the advantages of the CO2 function, as well as the metering and adjustment of constant air volume flow (CAV) were also made (among others).

"Last year we significantly reconstructed our handling units. Thanks to that our flagship product, VENTUS air handling unit gained a completely new quality. Aluminium construction poles, a steel frame and the housing made from aluzinc together with the number of

conveniences that impact the installation and operation of our devices led to the very good reception of the product on the market. This fact is also confirmed by the customers that have already received new devices; we have also observed a 35% rise in the interest in our offer. At present the works on new automations are also about to terminate; this automation shall supplement the offer and the sample of its possibilities could be seen during the seminar.

We believe that thus prepared offer will evoke even greater interest and in consequence it will also result in the satisfaction of our present and new customers", commented Jarosław Józwiak, the President of the Board of VTS Polska Sp. z o.o.

Yet another VTS device which will soon be available for sale had its premiere during the seminar - a new air curtain by the name of "WING". More information on this product will soon be available on VTS web pages and websites.

The seminar was combined with an integration cruise on a Stena Line ferry to Swedish Karlskrona. This joint (weekend) trip was full of many attractions, including entertainment activities on the ferry, the sampling of local specialities and also joint rope weaving in the old rope production site (the video presenting rope production by our guests is available at VTS Facebook <https://web.facebook.com/VTSgroupHVACcompany/>). We would like to offer our thanks to all the guests for the active participation in the seminar and shared fun during the trip to Sweden. Below we present a few pictures from the whole event.





Building name: **Ashjar at Al Barari Residential**
Country: **UAE**
City: **Dubai**
Devices: **VENTUS**



Building name: **Ice Arena**
Country: **Kazakhstan**
City: **Almaty**
Devices: **VENTUS**



Building name: **Kolostat**
Country: **Canada**
City: **Quebec**
Devices: **VENTUS**



Building name: **Nobilis Business House**
Country: **Poland**
City: **Wroclaw**
Devices: **VENTUS**



Building name: **Park Inn Hotel**
Country: **Netherlands**
City: **Amsterdam**
Devices: **VENTUS**



Building name: **ETK Logistic Center**
Country: **Estonia**
City: **Tallinn**
Devices: **VENTUS**



Building name: **Bell helicopters - Assembly hall**
Country: **Czech Republic**
City: **Prague**
Devices: **VENTUS**



Building name: **Coresi Business Park**
Country: **Romania**
City: **Brasov**
Devices: **VENTUS**