

COMMERCIAL LINE

# DUPLEX BASIC

## DUPLEX Basic

The **DUPLEX Basic** units are compact ventilation units with crossflow heat recovery core. Their performance range is between 1.000–15.000 m<sup>3</sup>/h. They are intended solely for applications that do not come under the field of activity of the committee's regulation (EU) No. 1253/2014. Ventilation units **DUPLEX Basic** are equipped with time-proven types of crossflow plastic heat recovery cores (ATREA K750.F, K750.G and K900.A), which reach up to 75 % of heat efficiency with low pressure loss of air. Other important parts are the new EC fans of the highest quality – the products of the internationally recognized manufacturers EBM-Papst and Ziehl-Abegg. Since there is the emphasis on saving energy and increasing the unit's efficiency, it is essential that all the EC fans throughout the whole product line fulfill the ErP 2015 regulations (according to 327/2011) and they even distinctively exceed it. **DUPLEX Basic** units have a unique sandwich casing with outstanding thermal insulation and minimization of thermal bridges, which enhances the energy-saving operation of the unit.

**ATREA** was started as a private company in 1990 in the Czech Republic. Very shortly it began to focus on the production of ventilation units with waste heat recovery. The company's founder has authored many authorship certificates, patents and industrial designs in this field.

ATREA's high quality products started to make their mark also in the demanding markets of Western Europe. The economic and geographic proximity led ATREA to focus primarily on the German market where it has established itself really well as a result of a good partnership and top-quality products, with the Netherlands, Switzerland, UK, Italy, Slovenia and other countries to follow.

## ATREA'S PRODUCT RANGE

- Commercial ventilation
  - air handling units from 500–15.000 m<sup>3</sup>/h
- Residential ventilation
  - air handling units from 180–500 m<sup>3</sup>/h
- Kitchen ventilation
  - whole area ventilation ceilings and kitchen hoods
- Passive houses by ATREA

For more information please visit [www.atrea.com](http://www.atrea.com)



## DUPLEX Basic / Basic-N / Basic-V

- Heat recovery efficiency up to 75 %  
– superior cross-flow heat exchanger
- Very flat design, suitable even for ceiling-suspended mount
- Highly variable
- Compact and semi-compact design
- Elegant look
- Integrated heating and cooling possibility
- Floor-standing, ceiling-suspended and floor-standing flat version
- Great thermal insulation of the casing
- Internet interface as standard (aMotion)
- A major decrease in servicing costs
- Touchscreen controller
- EC type fans – top German quality
- Smart phones application
- LCC – life cycle cost programme
- BMS compatibility
- Hygiene version according to VDI 6022
- 100% by-pass
- Air circulation mode
- Constant airflow and pressure control



### DUPLEX Basic

(floor-standing, ceiling-suspended and floor-standing flat version)



### DUPLEX Basic-V

(upright version)



### DUPLEX Basic-N

(rooftop version)



# DUPLEX 1400–15100 Basic

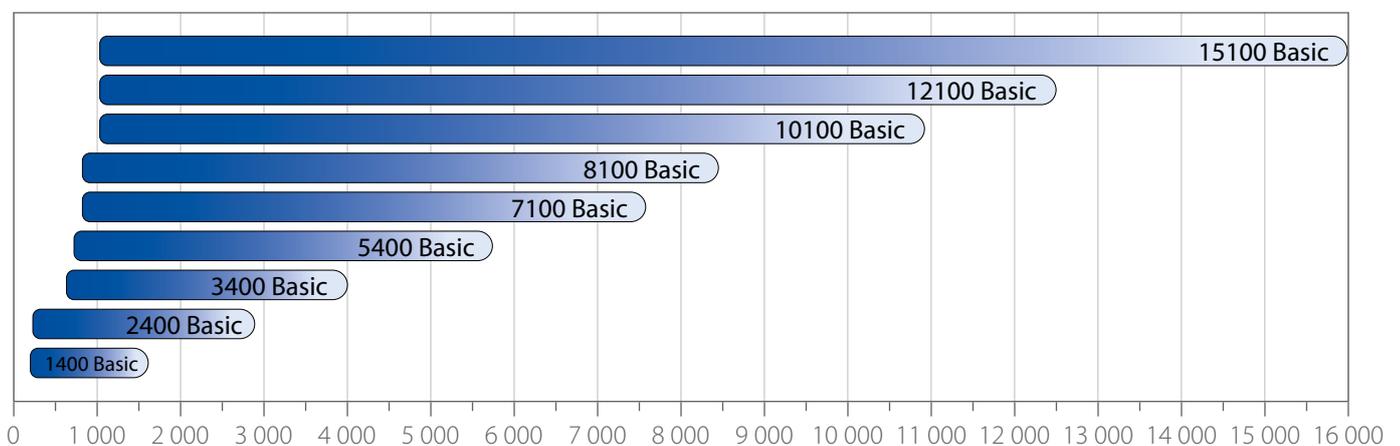
## DUPLEX Basic



**Universal indoor version** with floor-standing, under-ceiling and floor-standing flat installation

- ▣ Heat recovery efficiency up to 75 %
- ▣ Tailored according to customer requirements
- ▣ Compact or semi-compact design
- ▣ Integrated heating and cooling
- ▣ Internet interface as standard (aMotion control system only)
- ▣ Smart phones application
- ▣ BMS compatibility
- ▣ Hygiene version according to VDI 6022
- ▣ EC type fans – top German quality
- ▣ Great thermal characteristics
- ▣ Circulation damper
- ▣ 100% by-pass
- ▣ Constant airflow control
- ▣ Constant pressure control

## DUPLEX Basic performance graph



# DUPLEX Basic

1400, 2400, 3400, 5400, 7100, 8100,  
10100, 12100, 15100



## DUPLEX Basic

### DUPLEX Basic

floor-standing version  
(DUPLEX 1400–15100 Basic)



ceiling-suspended version  
(DUPLEX 1400–8100 Basic)

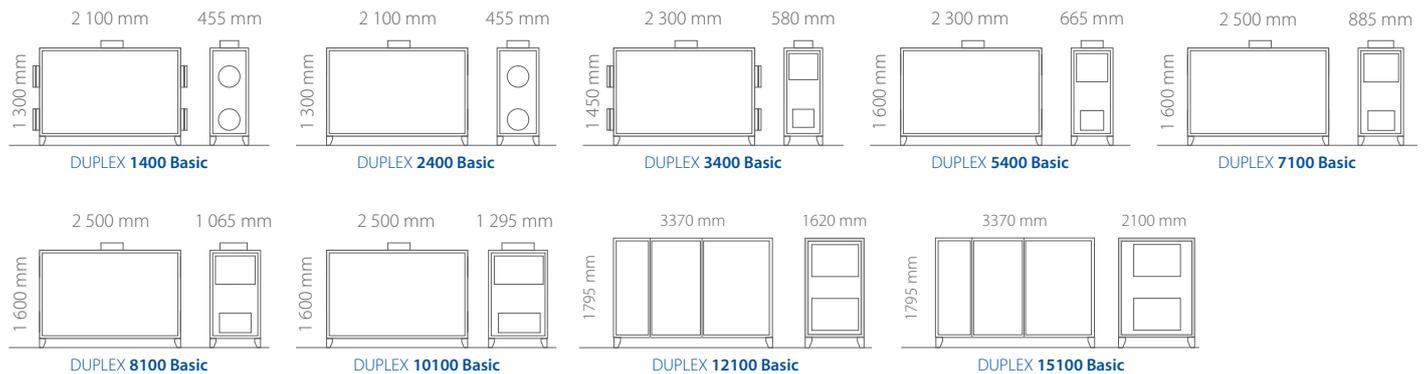


floor-standing flat version  
(DUPLEX 1400–8100 Basic)



### DUPLEX Basic

dimensions





# DUPLEX 1400–10100 Basic-V

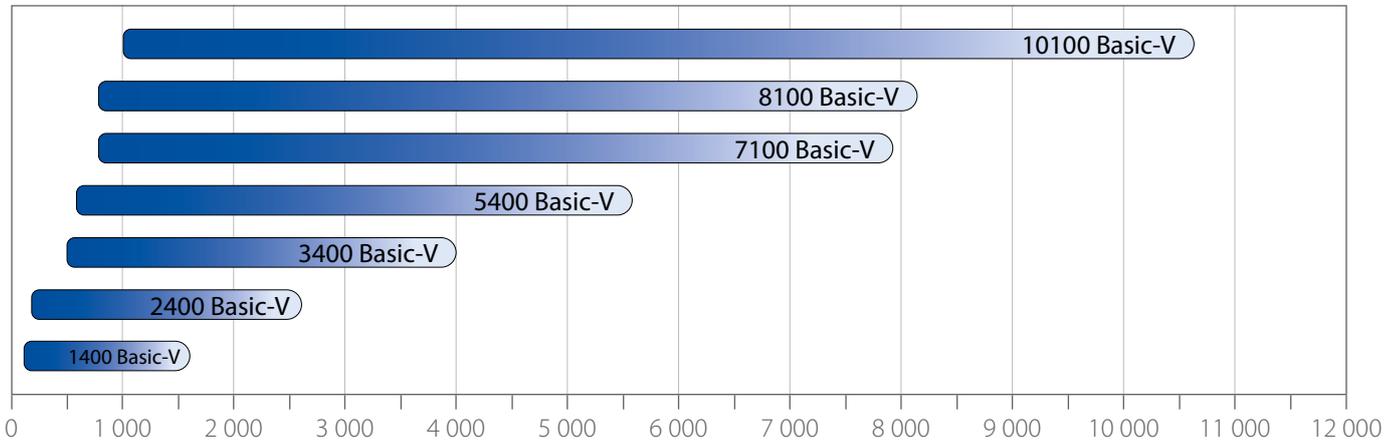


## DUPLEX Basic-V

**Upright version** with 4 spigots up – great for tight spaces

- ▣ Heat recovery efficiency up to 75 %
- ▣ Tailored according to customer requirements
- ▣ Great compactness
- ▣ Integrated heating and cooling
- ▣ Internet interface as standard (aMotion control system only)
- ▣ Smart phones application
- ▣ BMS compatibility
- ▣ Hygiene version according to VDI 6022
- ▣ EC type fans – top German quality
- ▣ Great thermal characteristics
- ▣ Circulation damper
- ▣ 100% by-pass
- ▣ Constant airflow control
- ▣ Constant pressure control
- ▣ Upright version with 4 spigots up

### DUPLEX Basic-V performance graphs



# DUPLEX Basic-V

1400, 2400, 3400, 5400, 7100, 8100, 10100



## DUPLEX Basic-V

### DUPLEX Basic-V

upright configuration



### DUPLEX Basic-V

dimensions





# DUPLEX 1400–15100 Basic-N

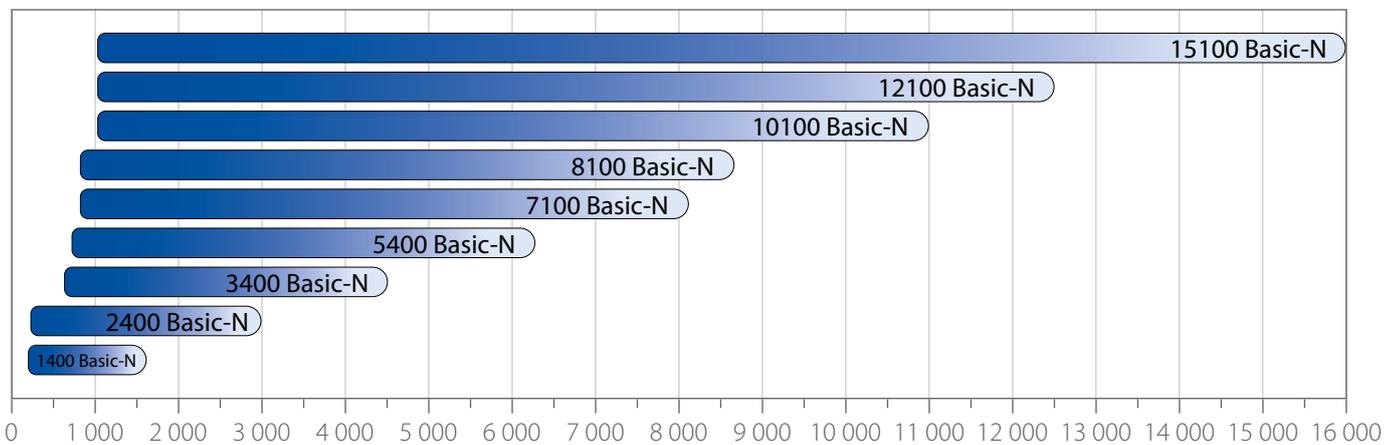


## DUPLEX Basic-N

**Rooftop configuration** with unique duct connection from bottom

- ▣ Heat recovery efficiency up to 75 %
- ▣ Tailored according to customer requirements
- ▣ Compact and semi-compact design
- ▣ Integrated heating and cooling
- ▣ Internet interface as standard (aMotion control system only)
- ▣ Smart phones application
- ▣ BMS compatibility
- ▣ Hygiene version according to VDI 6022
- ▣ EC type fans – top German quality
- ▣ Great thermal characteristics
- ▣ Circulation damper
- ▣ 100% by-pass
- ▣ Constant airflow and pressure control
- ▣ Crane transport ready
- ▣ Easy access service doors
- ▣ Built-in control system

### DUPLEX Basic-N performance graphs



# DUPLEX Basic-N

1400, 2400, 3400, 5400, 7100, 8100,  
10100, 12100, 15100



## DUPLEX Basic-N

### DUPLEX Basic-N

rooftop configuration (DUPLEX 1400–10100 Basic-N)

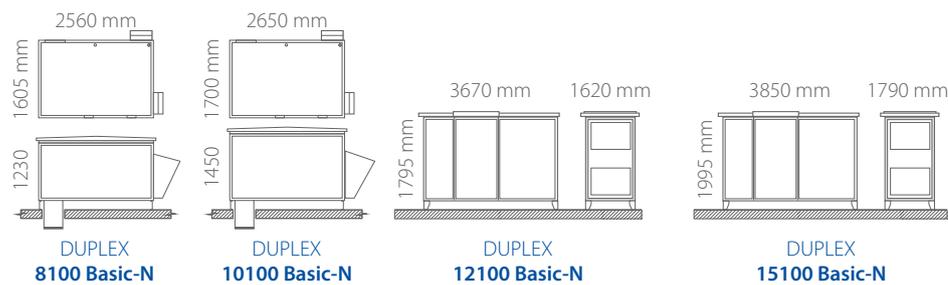
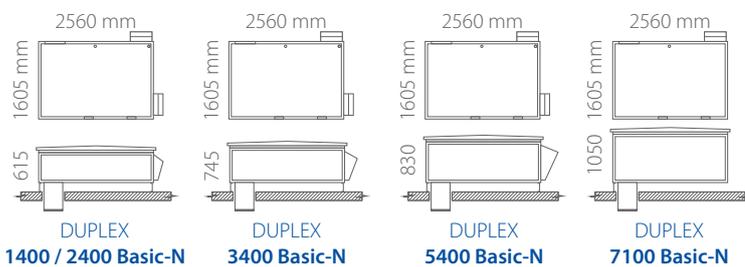


Base-frame ATREA (DUPLEX 1400–10100 Basic-N)



### DUPLEX Basic-N

dimensions





## DUPLEX Basic

### SELLER CONTENT POLICY

#### 1. Three basic lines based on installation –

DUPLEX 1400–15100 **Basic** – floor-standing, under-ceiling or flat configuration

DUPLEX 1400–10100 **Basic-V** – upright configuration

DUPLEX 1400–15100 **Basic-N** – rooftop configuration

**2. Excellent design** – the units are designed in a very attractive design with a continuous emphasis on the maximum level of comfort of installers. All the components are easily accessible in the unit.

**3. Up to 75% heat recovery efficiency** – cross-flow exchangers ATREA K750.F, K750.G and K900.A enable to achieve great heat recovery efficiency thus consequently reduces the energy costs.

**4. 100 % customization** – Basic line air handling units follow the business philosophy of multiple variability. Designers can easily modify spigot connections, filters, heating, cooling or the position of the units themselves. Thus this unique variability in construction gives a competitive advantage because can meet requirements of almost any project.

**5. Excellent compactness** – one of the biggest ATREA advantages. DUPLEX Basic units are so compact that these enable installation on spaces with limited installation possibilities. **Simply – with great performance ATREA saves the space.**

**6. Integrated heating and cooling** – all components are neatly included in the units so that installation and eventual servicing is as easy as possible.

**7. DUPLEX Basic** could be installed in various positions – floor-standing, under-ceiling, floor-standing flat, rooftop or upright.

(\*) aMotion control system only

**8. Internet interface as a standard with aMotion control system** – ATREA provides its products with internet connection as standard! Thus no extra expenses are needed. Via its built-in web server the units can be remotely controlled through the Internet which gives great marketing argument for your customers. (\*)

**9. A major decrease in servicing** – the standard internet connection in ATREA units means not only comfort and a remote control option for the user, but also greatly simplified, more convenient and significantly cost-saving servicing. All this makes the subsequent operation of the units vastly cheaper. (\*)

**10. Smart phones application** – ATREA follows the modern trends and provides application that is iPhone and Android compatible. Thus a client can control all parameters of ATREA units easily with his cell-phone. (\*)

**11. LCC** – life cycle cost programme – innovative help in business argumentation against cheap low quality units. Easily but on a high-professional way designed software that will prove economic return based on the exact calculation.

**12. BMS compatibility** – communication with a higher-ranking system for BMS is a matter of course.

**13. VDI 6022 hygienic design** – the unit meets all requirements of key certification for hygiene versions under German standard VDI 6022 that starts being internationally relevant. The Roto units can therefore be successful in projects whose specifications require a healthy, clean and easy to maintenance product.

# DUPLEX Basic / Basic-N / Basic-V



## MANAGER CONTENT POLICY

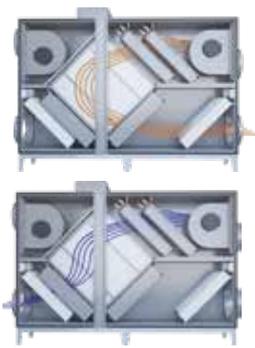
### Heat recovery efficiency up to 75 %

Plastic plate cross-flow heat recovery exchangers by ATREA enable to achieve a great level of heat recovery and subsequent cost savings.



### Circulation / by-pass damper

Circulation valve used for mixing exhaust and supply air, by-pass damper allows supply of fresh, cold and filtered air to the building.



### Web server (\*)

A web server that allows running the unit over the internet to drastically reduce the cost of servicing and indirectly also the market entry price of the unit of ATREA units.



- 1. Absolute customization** – the great variety of possible construction including all needed positions gives a great advantage to place the units in any project.
- 2. Short delivery time** – despite the 100% customization the delivery time is 3 weeks and earlier.
- 3. Vast reduction in servicing costs** – Control via the Internet enables easy servicing including error message history, firmware updates and information on the current settings of the unit. As a result the time costs of the servicing department are vastly reduced.
- 4. LCC – life cycle cost programme** – helps with the reasonable and exact argumentation in communication with your customers.
- 5. ATREA selection software** – All advantages are supported by the company's major marketing tool – its proprietary design software to help your clients design HVAC equipment easily, intuitively and efficiently. At the same time the software is used to efficiently check various designs for correctness and completion.

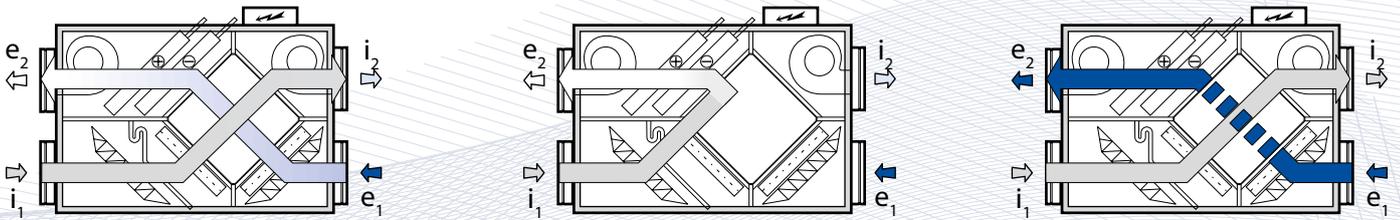
(\*) aMotion control system only



# ENGINEERING Basic

## Equal pressure ventilation

1. Ventilation with heat recovery with re-heating (with cooling)
2. Circulation heating or cooling
3. Ventilation without heat recovery (via bypass)



## TECHNICAL PARAMETERS

**BASIC HAS SEVERAL VARIANTS AND PORT CONFIGURATIONS that allow you to choose a unit tailored for each project.**

- **Nominal internal operating points of the Basic series:**  
1400 (300 Pa), 2400 (250 Pa), 3400 (400 Pa), 5400 (200 Pa), 7100 (350 Pa), 8100 (200 Pa), 10100 (400 Pa), 12100 (300 Pa), 15100 (300 Pa)
- **Casing** – 30 mm thick PIR (polyisocyanurate) or 45 mm thick mineral wool sandwich panels ensure great insulation and acoustic properties.
- **Filters ISO Coarse 90 % / ePM10 50 % / ePM1 55 %** – Cassette filters, easy to replace thanks to the ingeniously designed clips. The patented design allows filtration through the filter frame as well.
- **5 temperature and 6 pressure sensors inputs** – A wide range of temperature, air and pressure sensing options, fully compatible with ATREA's own control system aMotion.
- **Easy access** – the hinged door opens fully for easy access to all equipment sets of the unit. They enable easy installation and any servicing of the unit.

- **Servo drives** – Top quality Belimo servo drives.
- **Low noise** – Very good acoustic properties of our units can be defined for various working points in our design software.
- **Automatic frost protection** – An option to rearrange fan operation or the unit can be provided with an EPO-V electrical pre-heater (see Accessories).
- **Constant flow** – The units can be equipped with accessories supplied to enable constant flow control.
- **Constant pressure** – Basic series units can also be provided with accessories for a constant pressure mode.



**Heating** – DUPLEX Basic offers wide variety of heating possibilities. It can be provided with external electrical preheaters or integrated water heaters or external electrical reheaters.



**Cooling** – built-in water or direct evaporator (heat pump mode).



## SELECTION SOFTWARE



[www.atrea.com](http://www.atrea.com)

ATREA offers its proprietary design software that is a highly useful and practical tool to select DUPLEX series units and provides great marketing support!

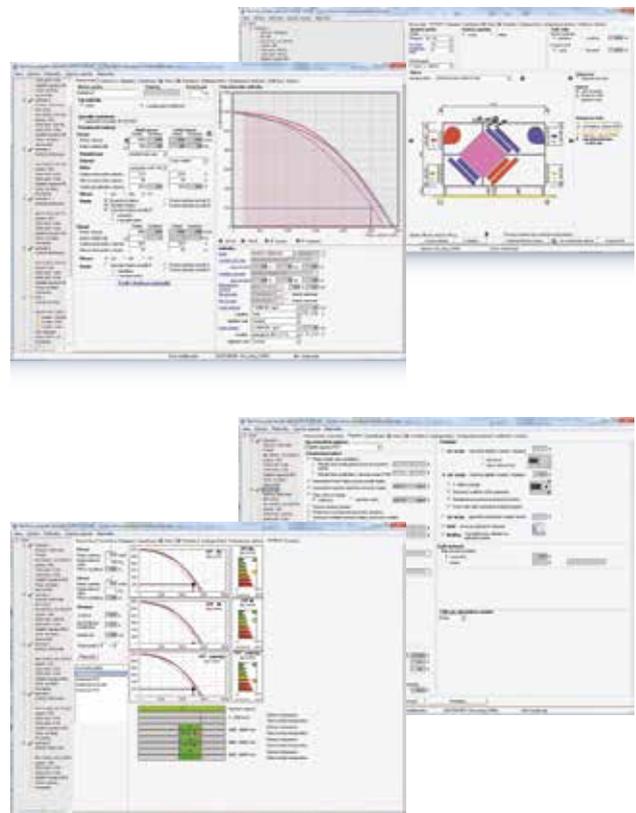
**Very positive feedback from designers of all over Europe gives a good opportunity to easily include ATREA's units in all kinds of projects.**

Very detailed calculations on all specifications are standard.

The software checks whether all components were selected and whether the selected system is working. This way you can avoid any possible mistakes.

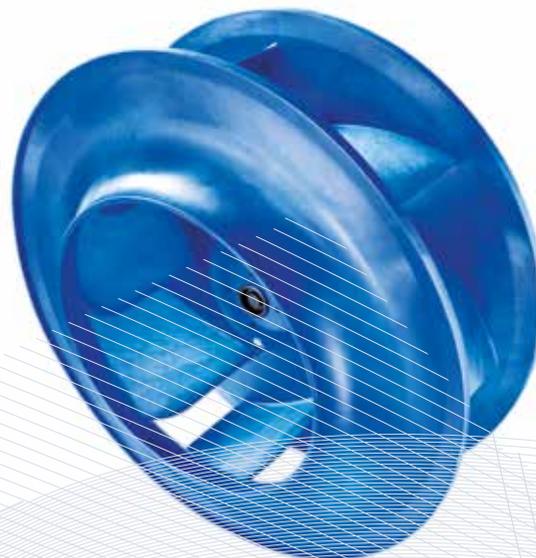
### It includes:

- Selecting a unit and its accessories
- Showing parameters of the selected appliance
- An option to adjust the various parameters, designs or mounting positions of the units
- Selecting the control system with accessories in a functional set
- Electrical wiring diagrams
- Displaying and printing the components installed, an h-x diagram and HVAC diagrams
- Price specifications of individual components
- Print output to a printer or PDF
- Exporting drawings and diagrams to DXF in 2D or 3D
- Sending the design and export by e-mail
- **Additionally, the design software includes a full catalogue of ATREA's products in PDF format.**



## EC TYPE FANS

Fans from the world's top producer Ziehl Abegg and Ebm-Papst. The outstanding German quality helps eliminate servicing costs. Basic units use backward bending blades fans to ensure great SFP ▶



## OPTIONAL ACCESSORIES

### mounted and connected

#### By-pass damper

facility provides a flow of cool, fresh and filtered air into the property.



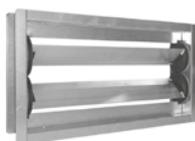
#### Circulation damper

with motorized damper.



#### Shut-off dampers

Shut-off dampers to be fitted on the suction port (the unit's inlet). The dampers are supplied with a conventional servo drive or a servo drive type with an emergency shut-off function in case of power cuts.



#### Air filtration

As standard DUPLEX Basic series units are provided with G4 / G4 cassette filters. An M5 or F7 filter class can be ordered separately.



#### RE-TPO Control manifolds for hot-water air heaters

They are intended to control the heating performance of the hot-water heaters. They always consist of a three-speed pump, two shut-off ball valves and a three- or four-way mixing manifold with a Belimo servo drive.



#### EPO-V electrical pre-heaters

EPO-V electric pre-heaters that ensure frost protection of the heat recovery exchanger when equal-pressure ventilation is permanently required. They are installed in a duct on the fresh air inlet side of the unit ( $e_1$ ).



#### Flexible flanges

Flexible flanges to be fitted on both circular and rectangular ports in sizes corresponding to the unit's port.



#### T hot water air heater

Hot-water heaters integrated in the unit. For systems up to 110 °C and 1,0 Mpa. Special design suitable for low-temperature sources (i.e. Heatpumps).



## FLOOR-STANDING, CEILING-SUSPENDED, AND FLAT POSITIONS

DUPLEX Basic units can be provided in under-ceiling version that enables great variety of spigot connections. ▶



## OPTIONAL ACCESSORIES

### Inclined manometers

A filter accessory for the easy visualisation of current pressure loss of the filters. Inclined manometers are mandatory for the hygiene version of the units under VDI 6022.



### Spare filter cassettes

Spare filter cassettes in sizes according to the type of the unit. Supplied with G4, M5 and F7 class filters.



### EPO-V electrical re-heaters

Heaters to be installed in circular or rectangular ducts connected to DUPLEX units.



### CHF direct cooler

Direct coolers to be installed in the unit.



### CHW chilled water cooler

Chilled water air cooler built-in in the unit.



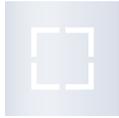
### R-CHW control manifolds for chilled water coolers

They are designed to control the cooling performance of chilled water coolers.



### Constant flow and pressure control





## ENGINEERING Basic



### CPM CONTROL SYSTEM

#### CPM control system with CP 10 RA controller basic controller

- Manual or automatic mode
- Continuous fan control
- Automatic by-pass damper control
- Anti-freeze heat recovery exchanger protection
- Switching of external electric or built-in water heater
- Switching for selected performance according to an external signal
- Automatic operation according to sensors (CO<sub>2</sub>, rH) with 0–10 V output
- Control of the intake and outlet lock dampers
- Settings for minimum and maximum allowed revs
- Optional connection of CO<sub>2</sub> or rH sensor – max. 2 sensors with a switch or 0–10 V output
- Outputs for electric preheater and heater control (pulse 10 V) or hot-water control (0–10 V)

#### CPM control system with CPM controller comfortable controller

- + Graphic touchscreen controller
- + Weekly program
- + “Party” mode – when a higher ventilation performance is requested
- + “Vacation” mode – automatic activation and deactivation according to a set date
- + Warns when the filters need to be changed
- + Automatic operation on a constant output signal – e.g. constant pressure control

#### CP 10 RA controller



#### CPM controller



CPM color variations

# DUPLEX Basic



## aMotion CONTROL SYSTEM

„high-tech“ control system line with all comfort and possibilities

### ● aTouch and aDot controllers (touchscreen)



### ● Control via internet



### ● Smartphone application



### INTEGRATED WEB SERVER AS STANDARD \*

A service technician is able to remotely check the setting, check any defect and promptly fix the problem.

- Remote software update with preserving user settings.
- Show error messages, including history.
- Intuitive and user friendly interface with display both basic and servis parameters.

### Various functions of the aMotion control system:

- **Constant flow** – An option to fit sensors for constant flow control.
- **Constant pressure** – An optional accessory for constant pressure control.
- **CO<sub>2</sub> sensors, relative humidity sensors and air quality sensors** – An option to set the intensity of ventilation automatically based on those parameters.
- **Modbus TCP** – Communication with a higher-ranking system for BMS.
- **User preferences** – including setting weekly programmes for ventilation, heating and cooling modes. Immediate manual override settings for more convenience to the user as well as weekly programme control.
- **External inputs function** – ventilation switches as required.
- **Combined heating and preheating** (electrical or water based)
- **Zoning** – the ability to split the building into zones and define their operation.
- **BACnet / KNX** – optional converter enables connection to the superior system via BACnet or KNX protocol.

(\*) with aMotion control system



## BUSINESS Basic



### Why DUPLEX Basic?

**E** **Easy** – Easy to integrate in the project.

**M** **Multiple** – Multiple customized design.

**C** **Compact** – Basic is small and compact – a great advantage for the ceiling-suspended position.

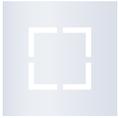
**E** **Efficient** – However compact, Basic is perfectly efficient – up to 75 % of heat recovery efficiency.

• With very short delivery time

• With two kinds of control system – high demand aMotion or economical CPM control system.

**Basic Is the Way**





# ENGINEERING Basic





**ATREA s.r.o.**  
Československé armády 32  
466 05 Jablonec nad Nisou  
Czech Republic

email: [export@atrea.eu](mailto:export@atrea.eu)