



# **Operation instructions**

## **Design Software VentiAir**





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The device has been manufactured in accordance with the EU standards EN1886, EN13053.

**This documentation must always be handed over to the user!**

**In case of non-compliance with the warranty conditions listed below in the documentation, Ventiair s.r.o. reserves the right to refuse warranty.**

Version 03/2021



Regular  
Production  
Surveillance  
Safety  
[www.tuv.com](http://www.tuv.com)  
ID: 000073065



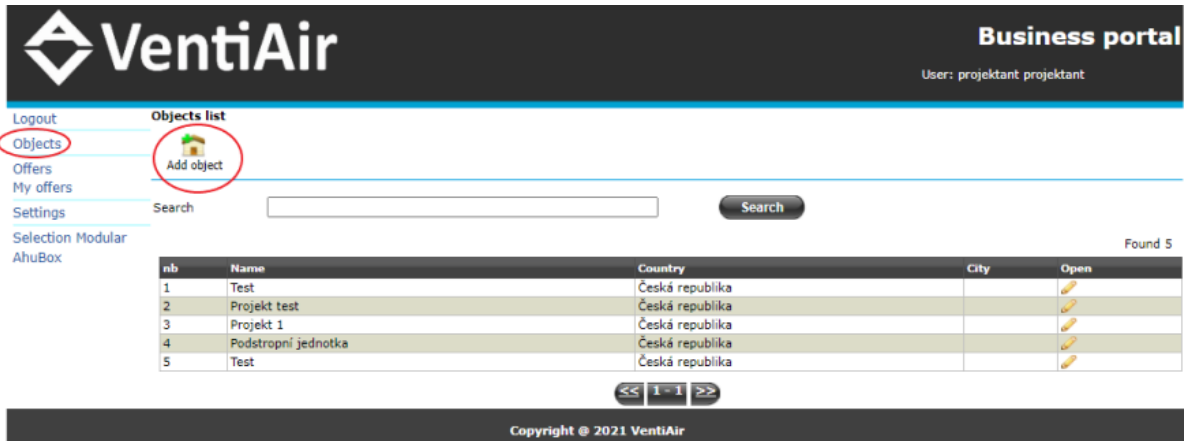
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## 2 ENTERING NEW OBJECT - PROJECT

In the bookmark "Objects" on the left, enter a new object / project using the "Insert object" button and fill in the data. There is no need to fill in everything. Choose the lines for your best orientation possible.



**VentiAir Business portal**  
User: projektant projektant

Logout  
**Objects**  
Offers  
My offers  
Settings  
Selection Modular  
AhuBox

**Objects list**  
Add object

Search

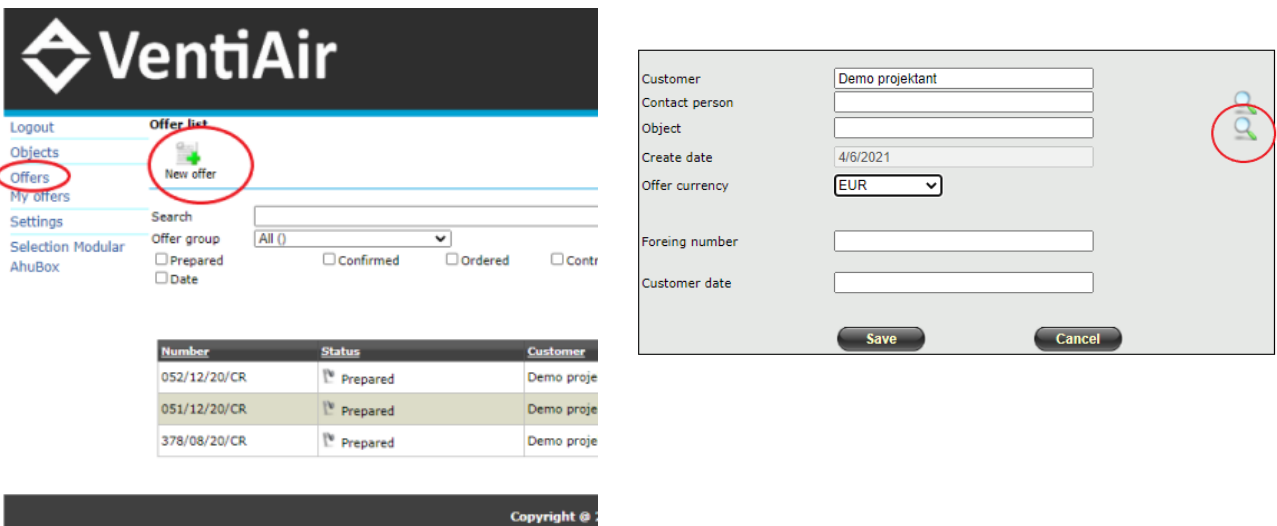
Found 5

nb	Name	Country	City	Open
1	Test	Česká republika		
2	Projekt test	Česká republika		
3	Projekt 1	Česká republika		
4	Podstropní jednotka	Česká republika		
5	Test	Česká republika		

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## 3 ENTERING NEW QUOTATION — LIST OF EQUIPMENT

In the bookmark "Offers", select the "New quotation" option and fill in the data about the object via the magnifying glass icon. This offer will get a unique number.



**VentiAir Business portal**  
User: projektant projektant

Logout  
Objects  
**Offers**  
My offers  
Settings  
Selection Modular  
AhuBox

**Offer list**  
New offer

Search

Offer group:

☐ Prepared ☐ Confirmed ☐ Ordered ☐ Contr

☐ Date

Number	Status	Customer
052/12/20/CR	Prepared	Demo proje
051/12/20/CR	Prepared	Demo proje
378/08/20/CR	Prepared	Demo proje

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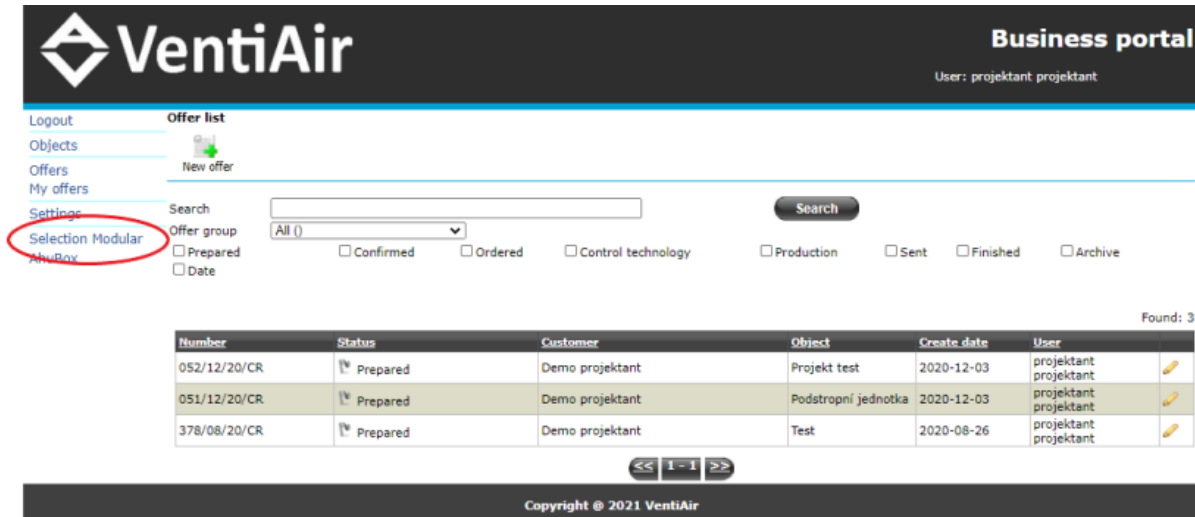
Customer:   
Contact person:   
Object:   
Create date:   
Offer currency:   
Foreing number:   
Customer date:

4



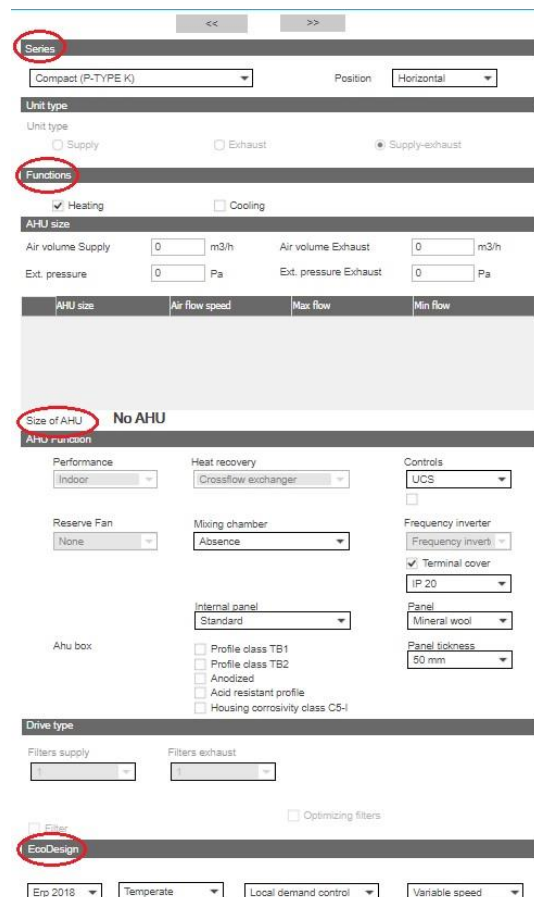
## 4 DESIGN OF SPECIFIC EQUIPMENT

Selecting the "Selection Modular" option you will be redirected to the initial screen of the VentiAir design program.



Number	Status	Customer	Object	Create date	User
052/12/20/CR	Prepared	Demo projektant	Projekt test	2020-12-03	projektant projektant
051/12/20/CR	Prepared	Demo projektant	Podstropní jednotka	2020-12-03	projektant projektant
378/08/20/CR	Prepared	Demo projektant	Test	2020-08-26	projektant projektant

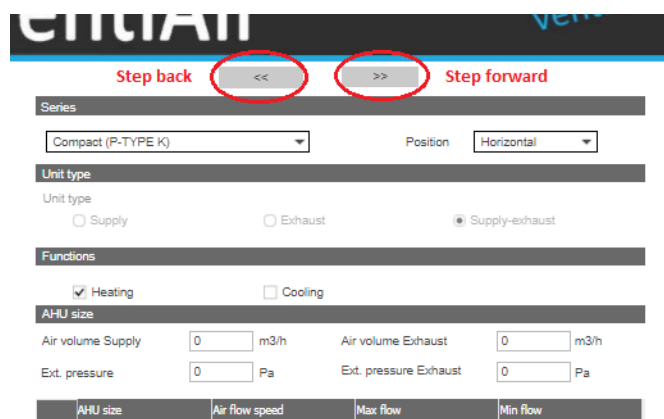
Enter the required data here: series, functions, flow rates, pressure losses, select unit size, components, control and other project requirements. Before clicking on the double arrow to the right



below the header, which shows the next step forward, check the entered parameters.

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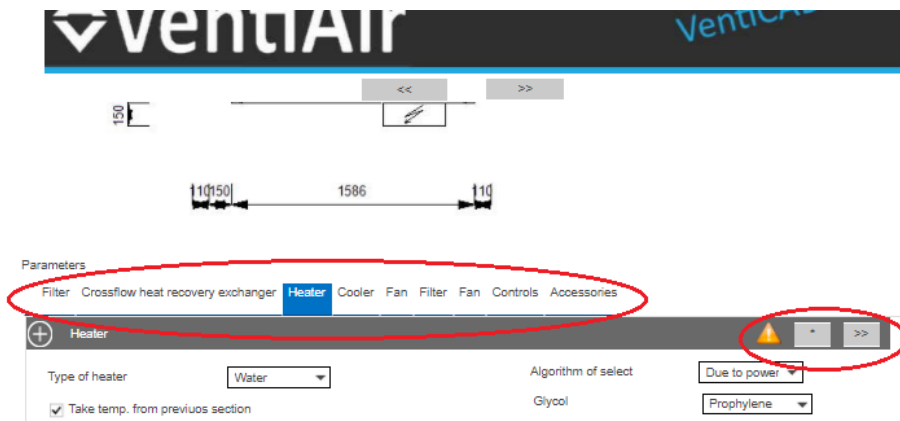
If you made a wrong choice, you will be able to make the change by clicking on the double arrow to the left below the header. It makes a step back.





## 5 ENTERING REQUIREMENTS ACC. TO THE PROJECT

After selecting the service side of the air handling unit version with the appropriate pictogram, there are several bookmarks named on the screen below, which are listed individually below. Enter the parameters from the project there. We recommend to choose the fans as the last, as they are affected by the pressure drop of other components used. The orange triangle signals the need to calculate the entered values. The calculation is made by pressing the asterisk located immediately on the right of the orange triangle. Next to the right is a double arrow to display all applicable variants and then you can make your own selection.



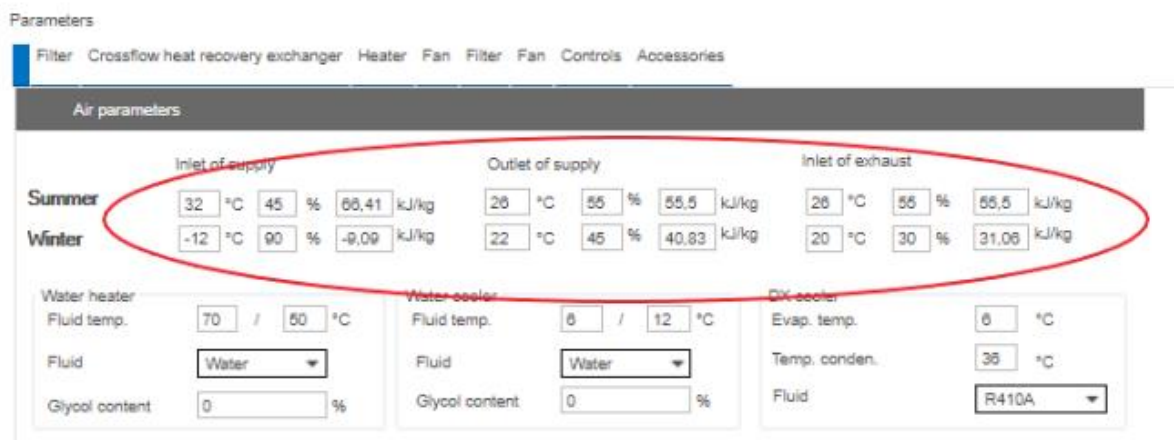
*Note: If the program is not able to calculate the entered values (e.g. with heater or cooler), it is possible to go back (using the double arrow showing to the left located at the top under the header) to the initial design of the device and select a different unit size.*

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After clicking on the next step, a double arrow showing to the right will display a summary of parameters and information about the designed device, and in the next step, you can save it.

### 5.1 AIR PARAMETERS

We enter the parameters of the outdoor and indoor environment. We do not have to enter the data about the heater and the cooler / direct evaporator, there are separate bookmarks for this purpose.



## 5.2 AND CLASS OF EXTRACT FILTER

Choose required type and class of filtration.

Parameters

**Filter** Crossflow heat recovery exchanger Heater Fan Filter Fan Controls Accessories

Filter

Type of filter: **Flat filter** Class: **F7**

Drop pressure (Initial): 104 Pa

Drop pressure (Average): 152 Pa

Drop pressure (Final): 200 Pa

☐ Lighting

Description

Note: If the orange triangle on the right does not change to a blue circle with a white sign, click on the star next to the triangle (written in the article No. 6 Entering requirements according to the project)

## 5.3 RECUPERATION HEAT EXCHANGER

For a plate heat exchanger, we start calculating the values by clicking on asterisk.

Parameters

**Crossflow heat recovery exchanger** Heater Fan Filter Fan Controls Accessories

Crossflow heat recovery exchanger

Parameters ☒ Winter ☐ Summer

Algorithm of select: Efficiency

Other air flow: Manual

	Supply		Exhaust	
Air flow	1500	m <sup>3</sup> /h	1500	m <sup>3</sup> /h
Air temp. (in)	-12,00	°C	20,00	°C
Inlet air humidity	90	%	30	%
Air temp. (out)	13,73	°C	-1,12	°C
Humidity outlet	12	%	72	%
Pressure drop	105	Pa	136	Pa
Temperature efficiency	80	%		
Heat Recovery power	12,97	kW		
Condensate	3,31	l/h		

☐ Ball siphon

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For a rotary heat exchanger, we also proceed via the asterisk, but only after specifying more the type of recuperator.

Parameters

Filter **Rotary heat recovery exchanger** Heater Cooler Fan Filter Fan Controls

Rotary heat recovery exchanger

Parameters ☒ Winter ☐ Summer ☐ Calculate all available types

Algorithm of select Efficiency

Rotor type  
 Standard  
 Entalphy  
 Sorption I  
 Sorption II  
 Epoxy

	Supply	Exhaust
Air flow	m <sup>3</sup> /h	m <sup>3</sup> /h
Air temp. (in)	°C	°C
Inlet air humidity	%	%
Air temp. (out)	°C	°C
Humidity outlet	%	%
Pressure drop	Pa	Pa
Temperature efficiency	%	

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## 5.4 HEATER

After clicking on the "Heater" option, we choose between the water and electric model. The design algorithm also offers two options:

- Based on the temperature when we enter the required value in °C into the field "Air outlet temp."
- The second option is based on the power, where we enter the required value in kW into the field "Nominal power".

Parameters

Filter Rotary heat recovery exchanger **Heater** Cooler Fan Filter Fan Controls

Heater

Type of heater  
 Water  
 Water  
 Electric

☒ Take temp. from previous set

☐ Air flow

Air flow 1500 m<sup>3</sup>/h

Air temp. (in) -12,00 °C

Inlet air humidity 90 %

Air temp. (out) 22,00 °C

Humidity outlet 7 %

Power Nom 17,14 kW

Max. power 17,82 kW

Pressure drop 36 Pa

Air flow 2,78 m/s

Algorithm of select Due to tempe

Glycol Propylene

Glycol content 0 %

Fluid temp. 70 °C 50 °C

Max Fluid Pressure Drop 50 kPa

Fluid flow 0,21 l/s

Fluid press. drop 11,32 kPa

Connection size 1/2"

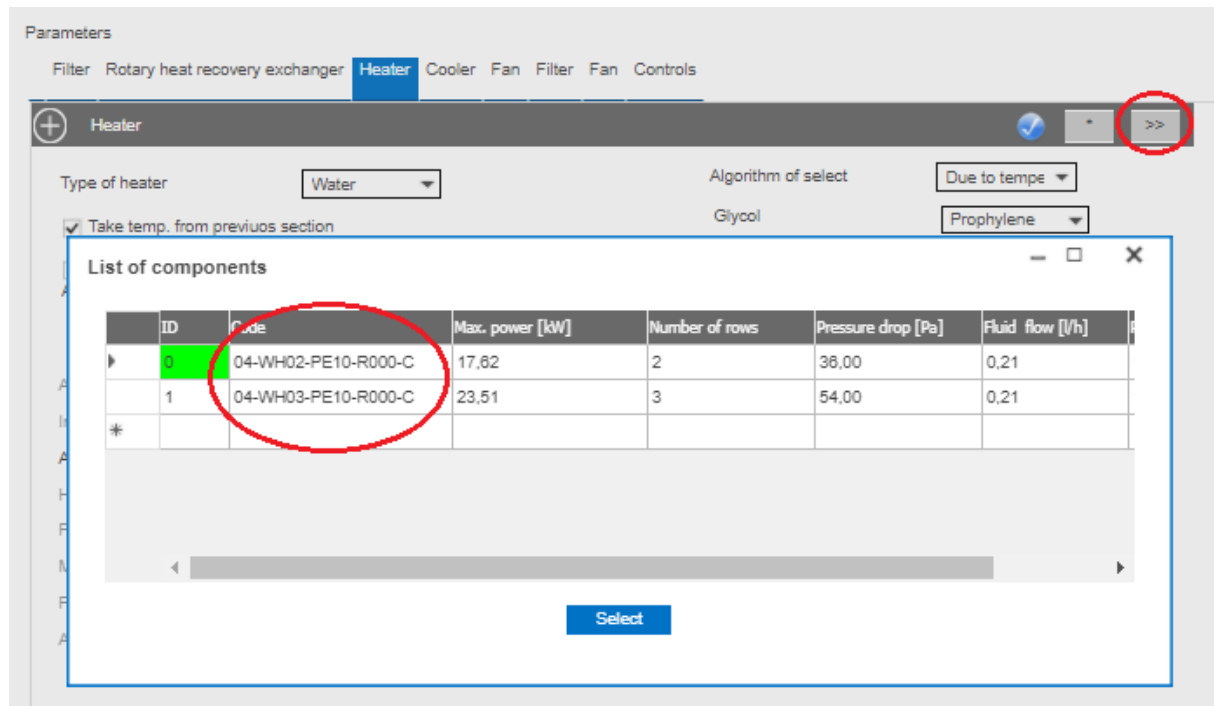
Number of rows 2

Capacity 0 l



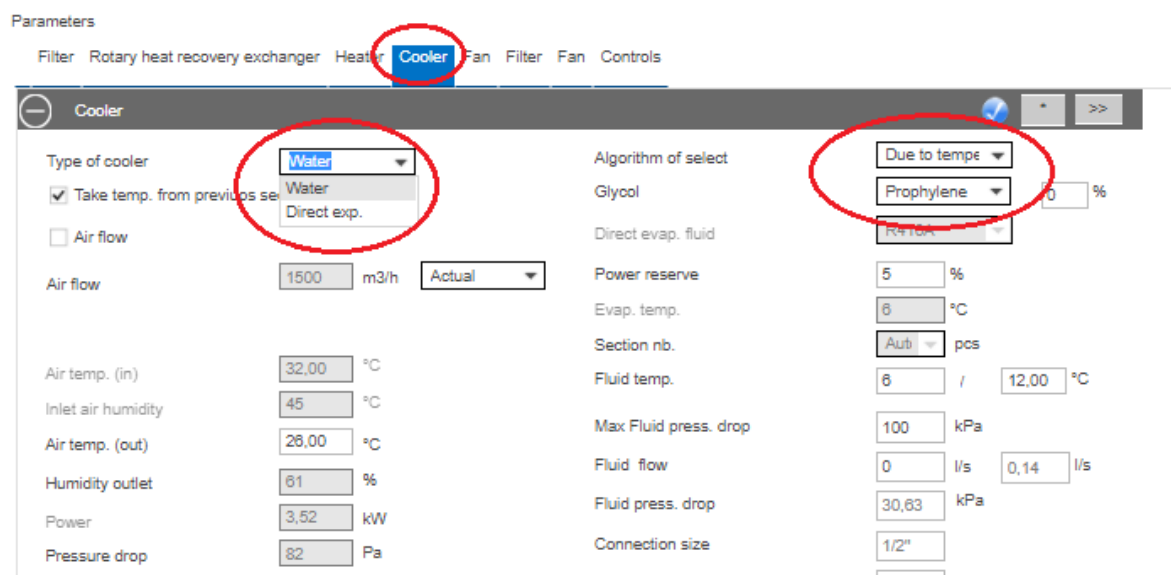


If more than one type of heater is available, we can specify the selection in more detail by clicking on the double arrow next to the asterisk



## 5.5 COOLER

Here we select the option of water cooling or of direct evaporator and we also enter the required value from the design algorithm, which we got acquainted with in the Heater bookmark. We also choose the type of glycol for the water cooler.



The direct evaporator offers us different types of refrigerant. Here we select one option, continue with an asterisk and possibly with a double arrow to select a more specific model.



Parameters

Filter Rotary heat recovery exchanger Heater **Cooler** Fan Filter Fan Controls

**Cooler**

Type of cooler: **Direct exp.**

☒ Take temp. from previous section

☐ Air flow

Air flow: 1500 m<sup>3</sup>/h Actual

Air temp. (in): 32.00 °C

Inlet air humidity: 45

Air temp. (out): 26.00 °C

Humidity outlet: --- %

Power: --- kW

Pressure drop: --- Pa

Air flow: --- m/s

Condensate: --- l/min

Algorithm of select: Due to temp.

Glycol: Propylene 0 %

Direct evap. fluid: **R410A**

Power reserve: ---

Evap. temp.: --- °C

Section nb.: ---

Fluid temp.: 2.00 °C

Max Fluid press. drop: ---

Fluid flow: 0 l/s

Fluid press. drop: --- kPa

Connection size: ---

Number of rows: ---

Capacity: ---

## 5.6 SUPPLY FAN

In the Fan bookmark, we enter the power reserve, and we can select a sight glass and lighting from the optional accessories. The selection in the design algorithm determines how all usable fan variants will be sorted after clicking on the double arrow next to the already well-known asterisk.

This specifies all parameters of the supply branch.

**WARNING:** If we decide to change any parameter in the already entered bookmarks, we must then return here and click on the asterisk again to recalculate the fan values. Without this step, the device will not be able to be designed for us.

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Parameters

Filter Rotary heat recovery exchanger Heater Cooler **Fan** Filter Fan Controls

**Fan**

Type of fan: EC

Filter pressure: Drop pressure (Average)

☐ Porthole ☐ Lighting ☒ Fast calc

Power reserve: 0 %

Stat. pressure: --- Pa

Total pressure: --- Pa

Efficiency: --- %

Speed: --- 1/min

Speed max.: --- 1/min

SFP (EN13779:2007): --- kW/m<sup>3</sup>/s

SFP Class: ---

Shaft power: --- kW

Nom. motor power: --- kW

Nom. motor current: --- A

Motor power supply: --- V

Power recruitment: --- kW

FC frequency: --- Hz

Operating point: --- V

Algorithm of select: **Price**

Price

SFP

Efficiency

Noise

Capacity

Quantity

*Note: There may be a situation where the program will not be able to offer us any fans. The situation can arise, for example, with a large pressure loss, when the fans will not have a sufficiently strong air pressure - in this case we will be prompted to select a different unit size with an error message.*



## 5.7 TYPE AND CLASS OF EXTRACT FILTER

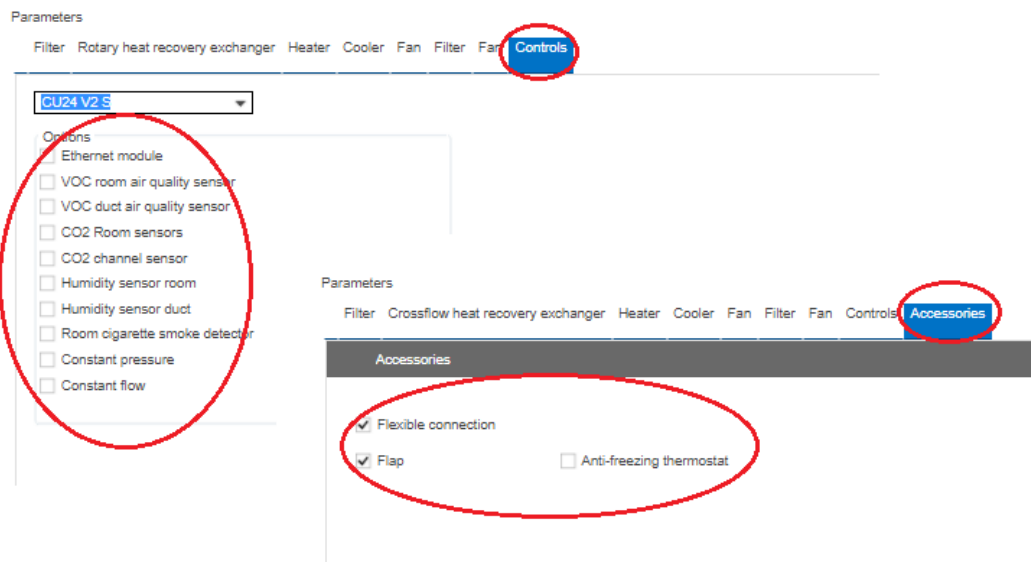
This bookmark is the same as the filter bookmark on the inlet/supply. Select the type and class of filtering and continue with an asterisk.

## 5.8 EXTRACT FAN

This bookmark is the same as the supply fan bookmark. We enter the requirements and continue with an asterisk. There is also a warning that if we change any parameter in the bookmark relevant to the extract branch, we will have to return here and click on the asterisk again.

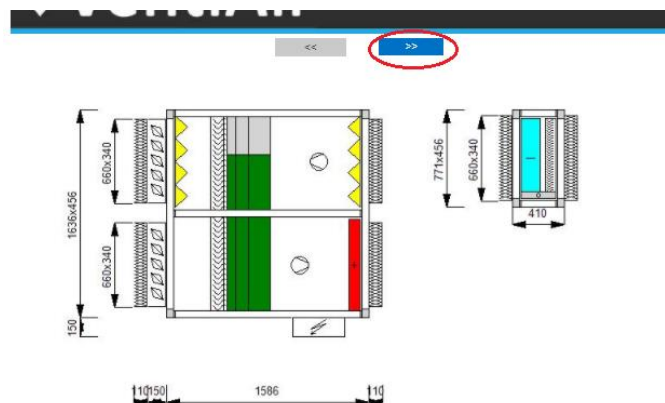
## 5.9 PARAMETERS OF REGULATION AND ACCESSORY

Check the required components and proceed to the selection of accessories, where we choose sleeves, dampers and antifreeze capillary.



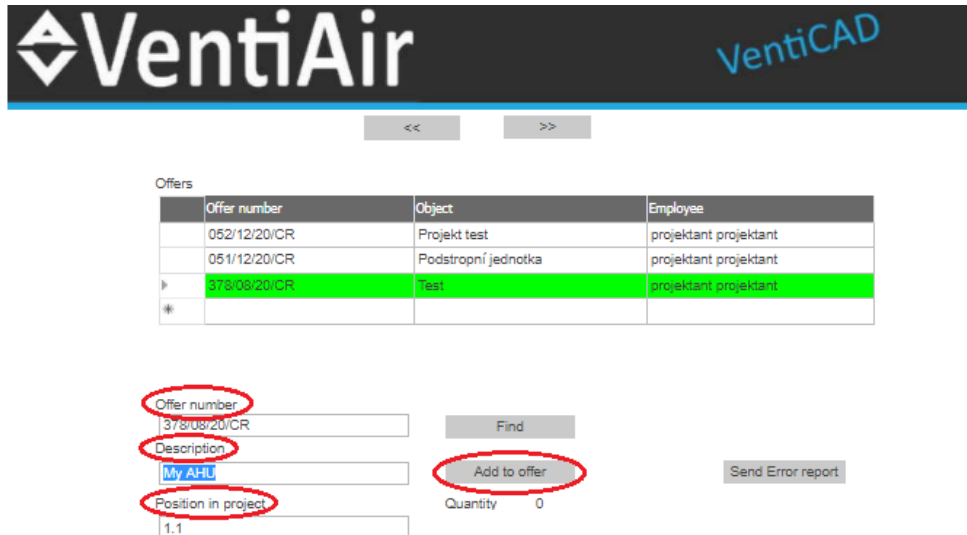
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After clicking on the double arrow showing to the right, we get to the summary report. Here we can click between the individual bookmarks and check the entered values. In case we need to change certain values, we can do so by clicking on the double arrow showing to the left and adjust them. When everything is in order and the summary agrees, we click on the double arrow showing to the right to save the proposed device.



## 6 SAVING THE EQUIPMENT

Select the quotation number to save. We recommend also to fill in the "Description" field, which will also be stated in the technical sheet on the first page. After saving with the "Add to offer" button and after returning to the application when opening a specific quotation, the designed device is saved.



The screenshot shows the VentiAir software interface. At the top, there's a header with the VentiAir logo and VentiCAD text. Below it, there's a navigation bar with left and right arrows. The main area displays a table titled 'Offers' with columns: Offer number, Object, and Employee. The table contains three rows, with the third row (378/08/20/CR) highlighted in green. Below the table, there's a form with fields for Offer number, Description, and Position in project. The 'Add to offer' button is circled in red, and the 'Send Error report' button is also visible.

Offer number	Object	Employee
052/12/20/CR	Projekt test	projektant projektant
051/12/20/CR	Podstropní jednotka	projektant projektant
378/08/20/CR	Test	projektant projektant

Form fields:

- Offer number: 378/08/20/CR
- Description: My AHU
- Position in project: 1.1
- Find button
- Add to offer button (circled in red)
- Send Error report button
- Quantity: 0

## 7 EDITING THE EQUIPMENT

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If you only need to modify the equipment, you can copy it using the button and save the changes as a completely new equipment. After clicking on the button, you will be redirected to the initial screen of the design program. Edit your entry here and continue as above to save your device.

nb				Code	Description	Quantity	Print	C	Edit	Delete
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P-TYPE K® 5000S CE/R/L	Test	1.00				
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P-TYPE K® 3000S CE/R/L	Pokoj 1	1.00				
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P-TYPE K® 3000S CE/R/L	test2	1.00				
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P-TYPE K® 1800S CE/R/L	Moje zariadenie	1.00				
5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	P-TYPE K® 1800S CE/R/L	My AHU	1.00				

Navigation: << 1-1 >>

A red arrow points to the 'Edit' icon in the last row of the table.

## 8 TECHNICAL SHEET OF THE EQUIPMENT

Download the technical sheet by specifically selecting the desired option in the upper section of the screen, or by clicking on the printer icon in the line directly at the designed device. We recommend that you make this option with a shorter time delay, because the program completes the Revit model and may not be displayed correctly. This is indicated by a colour-changing circle on the right of the printer icon, and green indicates the end of the process.



**Edit offer**

Logout | Objects | Offers | My offers | Settings | Selection Modular | AhuBox

Refresh | Offer list | Edit

Print: Technical data **Print** | Download: DXF **Download**

☒ All Positions

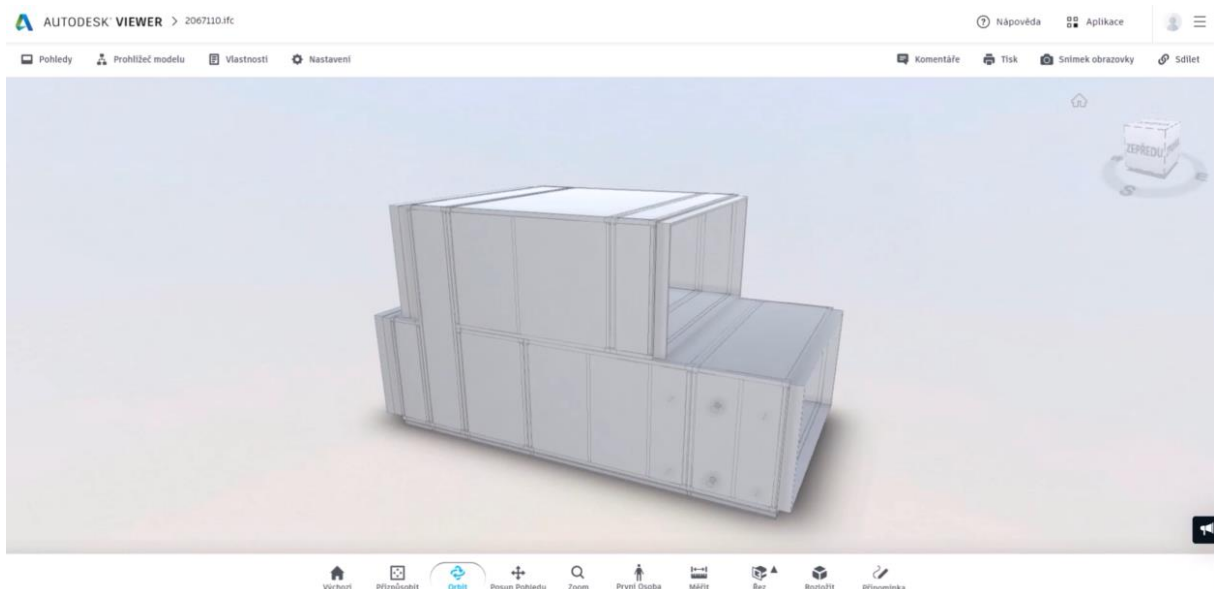
Customer		Offer data	
Name	Demo projektant	Number	378/08/20/CR
City		Create date	2020-08-26
Street		Status	<b>Prepared</b>
Number		Realization time	6 Weeks
		Jazyk vydrukův	CZ
Object		Trader	projektant projektant
Name	Test	Prepare by	projektant projektant
City			
Street			

nb	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Code	Description	Quantity	Print	C	Edit	Delete
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P-TYPE K® 5000S CE/R/L	Test	1.00				
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P-TYPE K® 3000S CE/R/L	Pokoj 1	1.00				
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P-TYPE K® 3000S CE/R/L	test2	1.00				
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P-TYPE K® 1800S CE/R/L	Moje zariadenie	1.00				
5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	P-TYPE K® 1800S CE/R/L	My AHU	1.00				

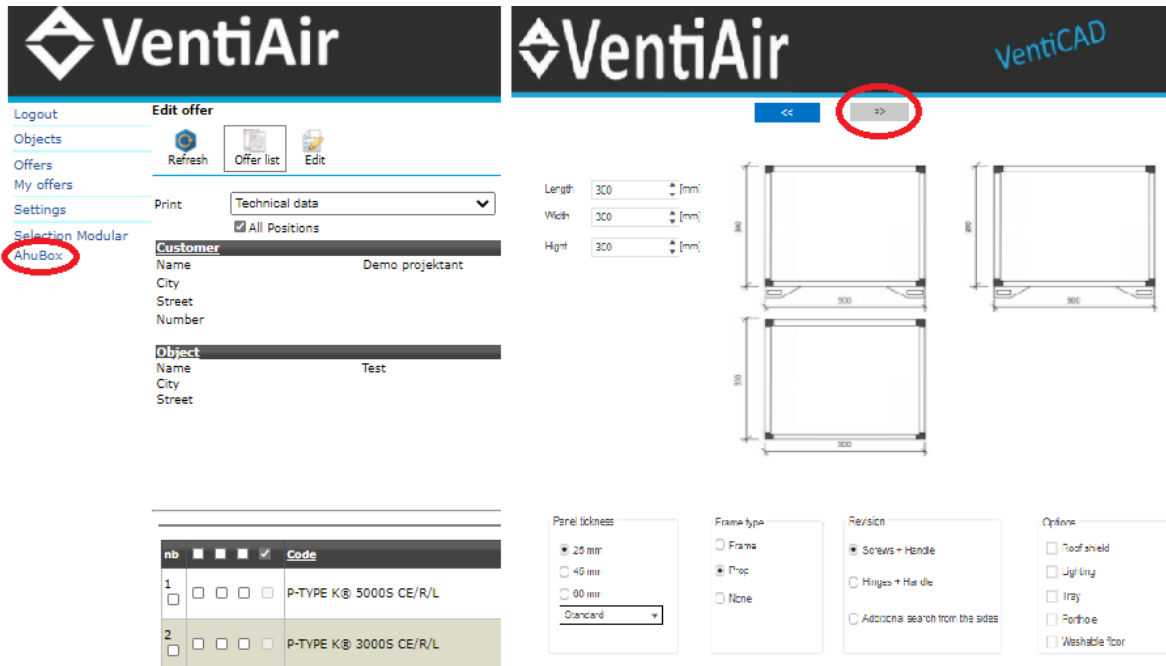
Found 5

DXF  
DXF  
Revit  
DT



## 9 INDIVIDUAL BOX DESIGN

Selecting the "AhuBox" option will redirect you to the VentiAir design program. This selected option is used to design only the box itself. After entering the parameters and requirements, clicking on the double arrow showing to the right below the header will take you to the option of saving the designed box to the quotation. Storage and subsequent processing are described in detail in separate chapters 6 and 8.



nb				Code
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P-TYPE K® 5000S CE/R/L
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P-TYPE K® 3000S CE/R/L

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You will find the video instructions to the design program VentiAir on our youtube channel [VentiAir - YouTube](https://www.youtube.com/watch?v=05OEkofryRQ&t=4s), video <https://www.youtube.com/watch?v=05OEkofryRQ&t=4s>

