OXYGEN

Installation and operation manual

Heat Recovery Unit **OXYGEN X-Air C180**

Rev 1.3 2022.01

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1. TRANSPORT AND STORAGE OF EQUIPEMENT

Heat Recovery Unit (hereinafter – the Unit) is prepared for transportation and storage. Packaging materials ensure protection against exposure to environment, dust and humidity. The Unit must be properly secured during transportation to protect it against possible housing deformation or other mechanical damage.

Transportation conditions: -20°C - +30°C.

Long-term storage conditions: +5°C - +30°C, relative air humidity <= 50%.

CONSIGNMENT ACCEPTANCE:

- Carefully check the received consignment – make sure that the number of packages matches with the consignment documentation. Upon noticing any non-conformity or damage of the package (tears, dents or compressed box, detached or reattached packaging tape) inform the courier immediately and indicate the disrepancies or damages in the consignment document.
- Verify if the right product was delivered. Upon noticing any non-conformity inform the sender immediately.
- Verify if all the supplementary parts listed were delivered. In case of any doubt contact the Sender immediately.
- Do not attempt to repair the Unit damaged during the transportation by yourself.

IMPORTANT! Sender does not assume any obligations towards damage or loss of the Unit or its part, if there is no corresponding record in the consignment document.

2. PACKAGE CONTENTS

Heat Recovery Unit OXYGEN X-Air C180	1 pc
Control panel (10m connection cable included) or WiFi adapter. May be delivered as separate package.	1 pc
Fastening elements:	
L-shaped horizontal installation bracket	4 pcs
Bolt, type M5, 8 mm	8 pcs
Spring washer, type M5	8 pcs
Installation manual	1 pc

3. SAFETY REQUIREMENTS

Carefully read and follow safety requirements provided below before installing and while operating the Unit:

- Do not discard the Installation and operation manual, keep it for future reference.
- The Unit should be installed and operated in compliance with this Installation and operation manual, following the requirements of effective legislation and standards.
- When connecting the Unit to mains supply, grounding must be installed in compliance with requirements of effective legislation and standards.
- To prevent accidents and potential damage to the Unit it should be installed, connected, maintained and repaired only by qualified technician. Never attempt to do this by yourself.
- Turn off the Unit by using Control panel and wait for fans to stop completely before replacing air filters.
- Turn off the Unit by using Control panel, wait for fans to stop completely and disconnect the Unit from mains supply before performing any maintenance.
- Disconnect the Unit from mains supply before disconnecting or reconnecting the control panel.
- Before connecting the Unit make sure that no items will get sucked into the its air intake openings.
- The Unit is not intended to be used by persons (including children) with reduced physical, sensory or mental capabilities, unless they have been instructed to use the Unit and under constant supervision of person held responsible for their safety.
- Children may only use the Unit under adult supervision.
- Only original supplementary parts and consumables, certified by manufacturer should be used.
- The Unit package (cardboard, plastic, foam polystyrene) can pose hazard to children. Dispose or recycle the package elements.
- Disused Unit should be disposed in accordance with requirements of legislation on handling of waste electrical and electronic equipment.
- **IT IS FORBIDDEN** to operate the Unit with damaged mains supply cable. Switch off the power circuit-breaker to disconnect mains supply and contact a qualified technician or manufacturer service centre immediately upon noticing such damage.
- **IT IS FORBIDDEN** to attempt the repair of the damaged Unit or its part, to open its service cover. Contact a qualified technician or manufacturer service centre.
- **IT IS FORBIDDEN** to operate the Unit while construction works are still in progress to remove dust or excess moisture. Fine dust of building materials, used in construction, can irreversibly change characteristics of the heat exchanger or cause damage to sensitive electronic components. Failure of the Unit caused by such operation will void the warranty.

4. TECHNICAL DATA

4.1. EU declaration of conformity

We, undersigned below, representing the manufacturer of ventilation equipment:

OXYGEN group, JSC
Birzelio 23-osios g. 29
50201 Kaunas
LITHUANIA

confirm, that heat recovery ventilation device **OXYGEN X-Air C180** conforms to Europe Union standards, directives and regulations:

2009/125/EC – eco-design requirements for energy-related products
ES 1253/2014
ES 1254/2014
ES 2017/1369
EN 13141-7:2010

2010/30/EU – labelling and standard product information of the consumption of energy and other resources by energy-related products
ES 1254/2014

2011/65/EU – restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)
EN 50581(2012)

2014/35/EU – harmonization of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits
EN 60335-1:2012
EN 60335-1:2012/A11:2014

CEO Zilvinas Salialionis

01.08.2020, Kaunas

4.2. Product information sheet. Delegated regulation (EU) 1254/2014

a)	Supplier's name or trade mark		OXYGEN
b)	Model identifier		X-Air C180
c)	Specific energy consumption (SEC), SEC class		A+
	Cold climate	kWh/m².a	-89.2
	Average climate	kWh/m².a	-43.7
	Warm climate	kWh/m².a	-17.7
d)	Declared typology		Bidirectional, residential
e)	Type of drive installed or intended to be		Variable speed drive
f)	Type of heat recovery system		Recuperative
g)	Thermal efficiency of heat recovery	%	93
h)	Maximum flow rate	m³/h	143
i)	Electric power input of the fan drive,	W	76
j)	Sound power level (L_{WA})		49
k)	Reference flow rate	m³/s	0.029
l)	Reference pressure difference	Pa	50
m)	Specific power input (SPI)	W/(m3/h)	0.24
n)	Control factor		0.65
	Control typology		Local demand control
o)	Declared maximum leakage rate:		
	internal	%	1.4
	external	%	2.5
q)	Position and description of visual filter warning		Refer to user's manual
s)	Internet address for pre-/dis-assembly		www.oxygenvent.com
v)	The annual electricity consumption (AEC), average climate zone	kWh/100m².a	198
w)	The annual heating saved (AHS)		
	Cold climate	kWh/100m².a	9303
	Average climate	kWh/100m².a	4756
	Warm climate	kWh/100m².a	2150

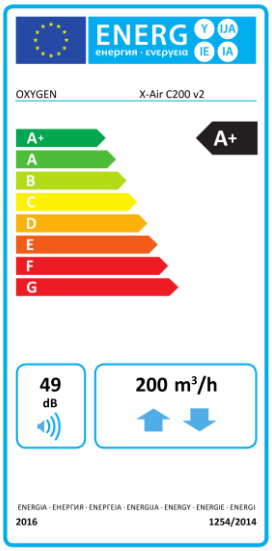
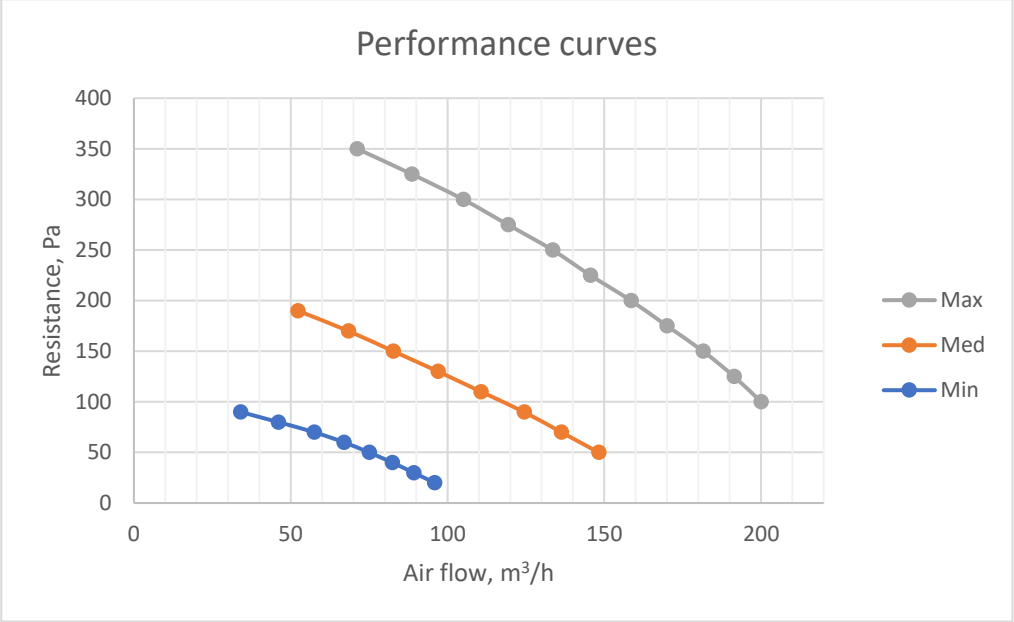


Table 1. Product information sheet. Delegated regulation (EU) 1254/2014

Refer to comprehensive product fiche to evaluate device parameters for different control options.

4.3. Performance curves



Graph. 1. Ventilation power dependence on the resistance of installed ventilation system

4.4. Performance and power consumption. LST EN13141-7

Power setting	Resistance, Pa	Air flow, m^3/h	El. consumption, W
Max	100	194	76.9
	125	187	76.9
	150	180	76.8
	175	172	77.0
	200	166	77.1
	225	159	76.9
	250	152	76.6
	275	143	76.9
	300	133	77.1
	325	123	76.8
	350	112	76.5
Med	50	151	41.4
	70	145	42.4
	90	140	42.6
	110	134	42.8
	130	127	42.7
	150	120	42.6
	170	112	42.3
	190	102	42.0
Min	20	109	23.0
	30	105	23.0
	40	101	23.0
	50	97	23.0
	60	93	23.0
	70	87	23.0
	80	82	23.0
	90	74	22.9

Table 2. Performance and power consumption. Measured according to LST EN13141-7 with M5 (EN 779:2012) class filters installed

4.5. Dimensions and weight

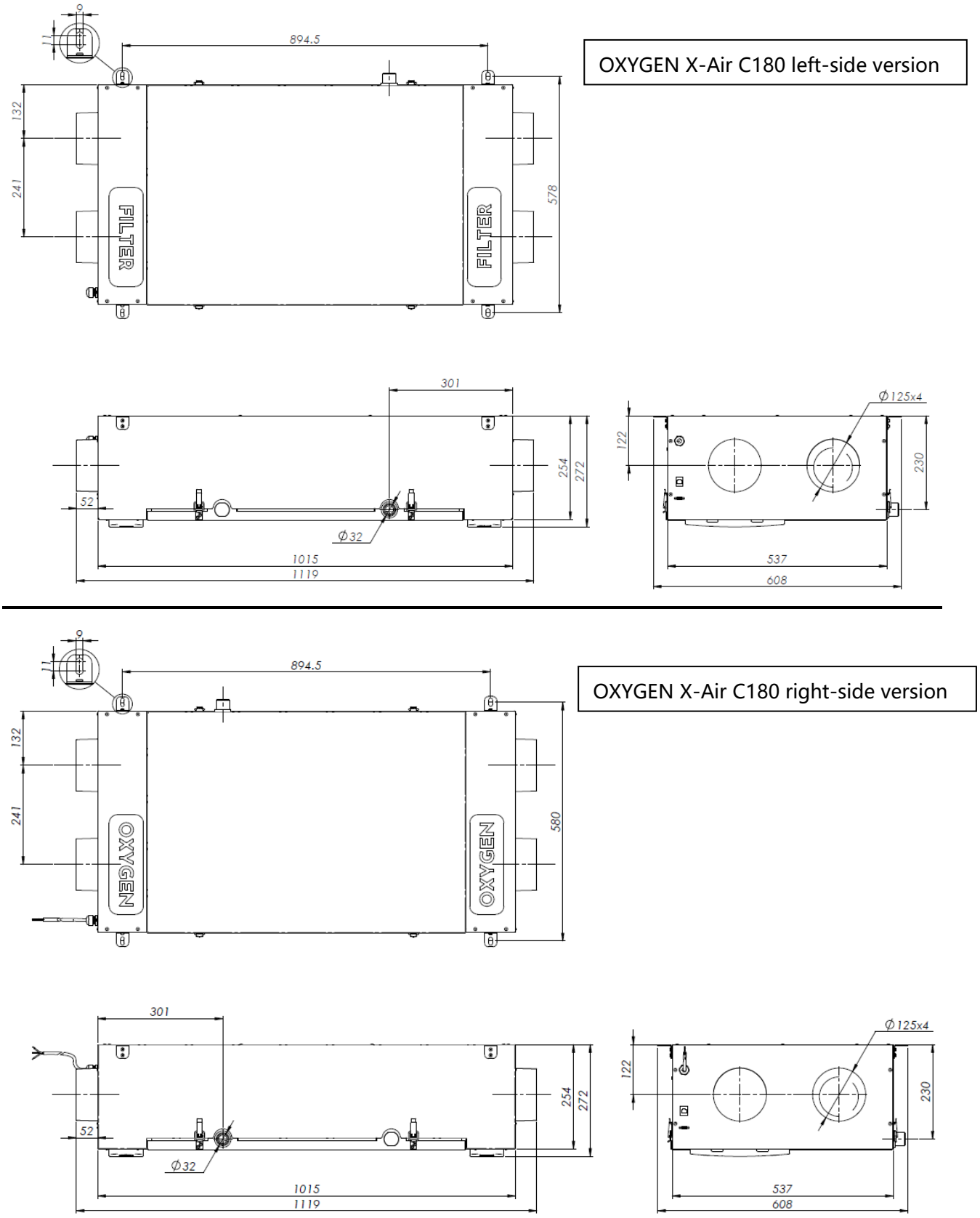


Figure 1. Unit dimensions

Body dimensions and weight	Length, mm	Width, mm	Height, mm	Weight, kg
OXYGEN X-Air C180	1015	537	272	25

Table 3. Dimensions and weight

4.6. Functionality

Function	Control panel with a rotary switch	LCD control panel / WiFi controller
Ventilation		
Efficient EC fans	✓	
Stepless ventilation intensity adjustment within 30-100% range	✓	✗
Ventilation intensity setting at 5% steps within 30-100% range	✗	✓
Weekly operation program, up to 4 different modes for every week day	✗	✓
Ventilation boost activation by control panel button	✗	✓
System balancing by adjusting power of each fan	✓	
Display of extract air temperature and relative air humidity	✗	✓
Display of date and time	✗	✓
Preservation of indoor air humidity	✓	
Stepless increase of preheater power	✓	
Ventilation boost activation by external switch	✓	
"Away" - reduced ventilation power, when security system is active	✓	
Adjustment of ventilation power according to CO2 level indoors	✓ *	
Adjustment of ventilation power according to humidity level indoors	✓ *	
Disabling of supply air stream	✗	✓
Filtration		
M5 (EN 779:2012) / EPM10 50% (ISO 16890), retains average size particles	✓	
Carbon G4 (EN 779:2012) / EPM2.5 60% (ISO 16890), retains average size particles and unwanted odors	✓	
F7 (EN 779:2012) / EPM1 70% (ISO 16890), retains smallest particles and pollen	✓	
Visual warning of the necessity to replace filters	✓	
Filter lifetime metering	✓	
Protection functions		
Overheat protection	✓	
Anti-frost protection	✓	
Ventilation shutdown function upon activation of fire alarm	✓ *	
Visual warning of the Unit failure	✓	
Additional functions / features		
Possibility to install according to the layout of outdoor ventilation openings (right-side / left-side versions)	✓ **	
Control of electric damper	✓ **	
Control of in-duct comfort heater	✓ **	

Table 4. Functionality

** requires additional ventilation system components to be purchased*

*** depends on device configuration (to be selected prior ordering) and software version*

5. INSTALLATION

5.1. Mounting orientation

Choose the right mounting orientation of the Unit before ordering. It will not be possible to change the mounting orientation later.

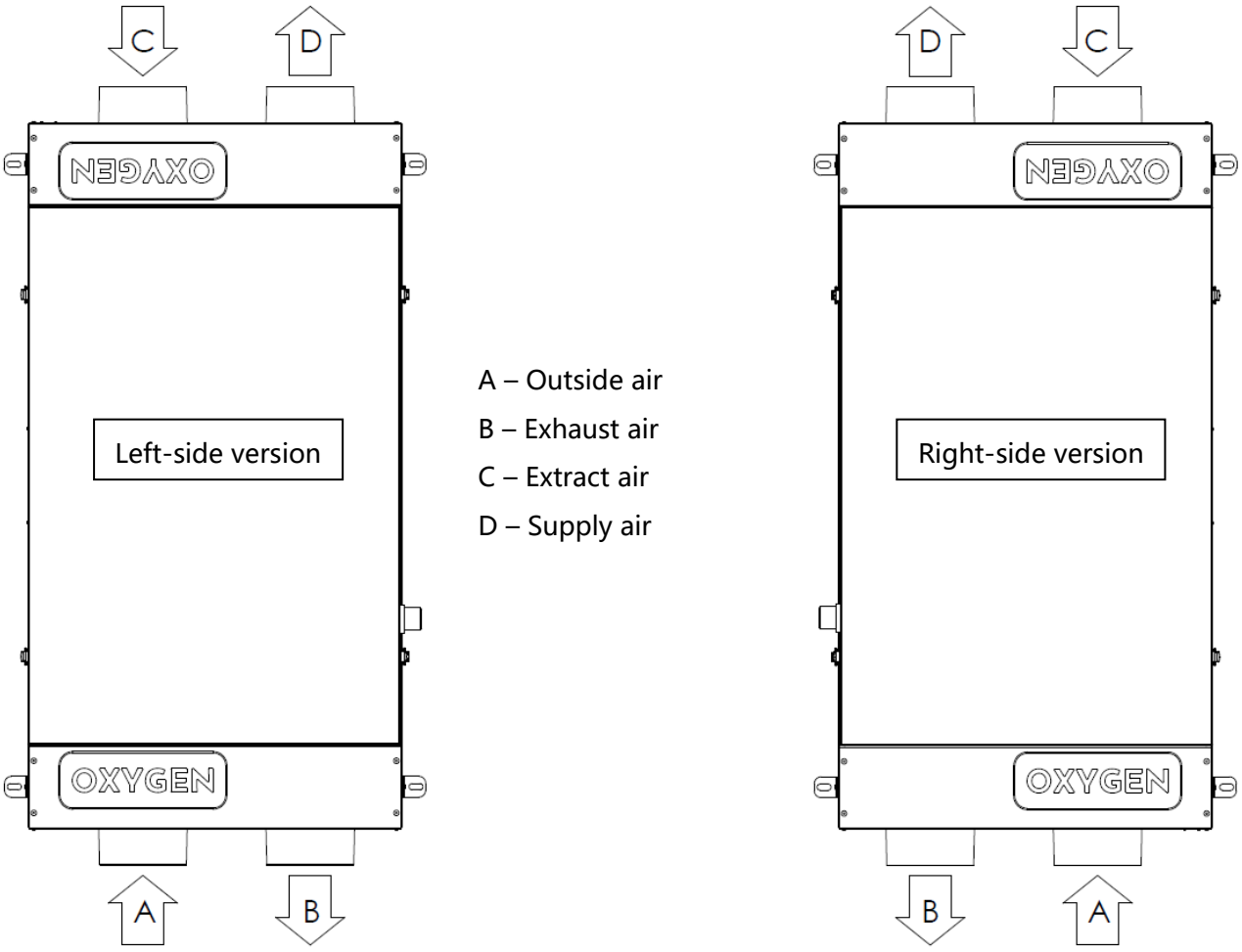


Figure 2. Mounting orientation

5.2. Mounting location

The Unit should be installed in a heated room such as bathroom, storage room, boiler room or attic. Make sure, that there is sufficient space to install not only the Unit itself, but also auxiliary ventilation system components – noise silencers or air distribution boxes. Make sure that there is a possibility to connect the condensate drain pipe of the Unit to building's sewerage system and to mount siphon.

The Unit should be installed horizontally with service cover looking downwards. L-shape fastening brackets (provided) should be used to fasten Unit to the ceiling. Use ceiling pins or locking sleeves (not included), depending on installation surface. It is recommended to use vibro-isolation gaskets (not included) to ensure that Unit vibration will not be transferred to the mounting surface.

5.3. Ducts

It is recommended to install outside air supply and exhaust ducts as far as possible from each other to prevent the ingress of contaminated air back to premises. Please refer to local construction regulations.

Make sure that outdoor humidity or precipitation will not get into the Unit, when connecting outside air supply and exhaust ducts. Make sure that openings in the outside wall are installed lower than corresponding ducts of the Unit. The air intake opening in the outside wall should be protected against precipitation ingress to ventilation duct by grille or roof.

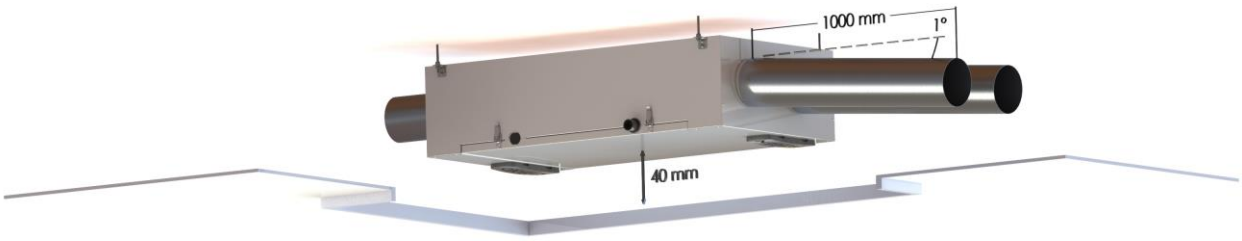


Figure 3. Air intake duct connection diagram

IMPORTANT! At least 1° ventilation duct incline (refer to Figure 3 "Air intake duct connection diagram") should be ensured or other sufficient measures taken to prevent ingress of outdoor humidity or precipitation into the Unit.

IMPORTANT! Both outside air intake and exhaust ducts should be covered with a layer of thermal insulation of sufficient thickness to prevent condensation of humidity on their walls due to difference between outdoor and indoor air temperatures.

IMPORTANT! Avoid using duct grille with dense mesh – it can quickly become clogged with dust and will prevent fresh air supply. The Unit is equipped with supply air filter to trap dust and insects.

5.4. Maintenance and service hatch

When installing the Unit ensure enough space for its maintenance. Maintenance and service hatch installed in the ceiling should be of suitable size to allow convenient access to all Unit components. At least 100 mm distance should be ensured from every edge of the Unit. Suspended ceiling should be installed at least 30 mm from the lowest point of the Unit housing (refer to section **Error! Reference s ource not found.** "**Error! Reference source not found.**").

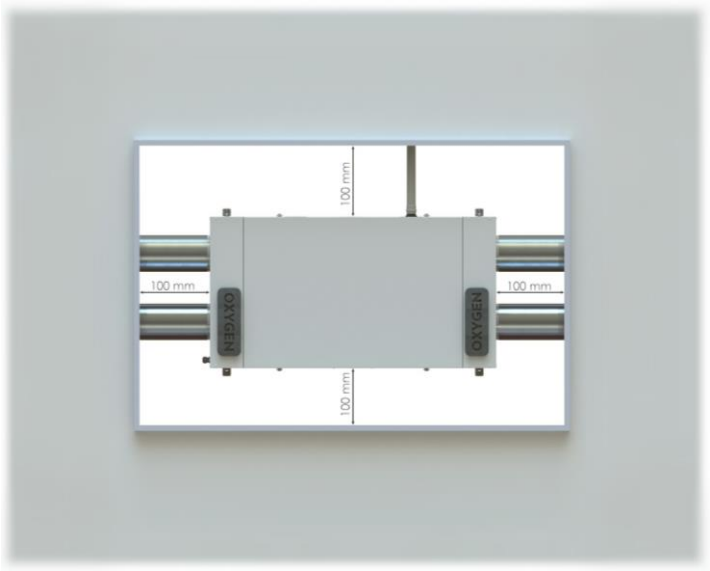


Figure 4. Maintenance and service hatch

IMPORTANT! Owner of the Unit shall ensure the possibility to perform Unit maintenance. If there is not enough space for Unit maintenance, the manufacturer's representative is entitled to refuse to perform maintenance or repairs.

5.5. Ventilation system balancing

It is necessary to balance the supply and exhaust air flows of the air handling unit during first launch of the ventilation system. Ventilation system will ensure proper operation, optimal heat recovery and the lowest possible electricity consumption during the cold season only if properly balanced.

System has to be balanced according to ventilation system installation project. Balance supply and exhaust air flows by choosing necessary coefficients in App (refer to section 7.7.9 "Ventilation system balancing"), setting values for Fan1 and Fan2 in the operating parameters setting menu of control panel with touchscreen display (refer to section 1.5 of Operating parameters setting manual) or adjusting P3 and P4 controls of control panel with the knob (refer to section 7.9.6 "Additional system settings").

There is a risk of heat exchanger freezing when operating an unbalanced ventilation system during the cold season, as a result of which the Unit may start supplying cold air to the premises. Unexpected indoor air moisture condensation can occur on the supply air ducts.

IMPORTANT! Balancing of the system can only be entrusted to qualified professional possessing all the necessary properly calibrated technical equipment.

IMPORTANT! Request a ventilation system passport to be prepared.

IMPORTANT! Freezing of heat exchanger which occurred during operation of an unbalanced ventilation system can irreversibly change the properties of the heat exchanger and damage the internal air tightness of the Unit. Failure of the Unit due to freezing while operating the unbalanced ventilation system will void the warranty.

5.6. Operating parameters of the ventilation system

The Unit is fully operational. However, depending on its configuration, installation location, and the characteristics of installed ventilation system, it may be necessary to set different than preset operating parameters. Failure to do so may result in unforeseen changes in ventilation speed while operating the Unit during cold season, higher than usual electricity consumption may be expected.

IMPORTANT! Only entrust setting of operating parameters to qualified technician with necessary knowledge to perform this task.

IMPORTANT! It is only possible to set operating parameters if the Unit is being controlled by control panel with touchscreen display or an app.

6. CONNECTION

Mains supply, control panel cable and, if necessary, comfort function connector should be connected to the Unit, according to the following diagram:

- Control panel connector (USB)
- Comfort functions connector (RJ-45)

- Mains cable (230V, 3x1.5mm^2 L+N+PE)

Figure 5. Connection of the Unit

IT IS FORBIDDEN to connect any cables or devices to connectors of control panel and comfort functions, despite similarity to any standard connectors. External similarity of connectors does not guarantee compatibility – connected devices may fail or damage the Unit. Failure of the Unit due to incompatible supplementary parts connection will void the warranty.

IT IS FORBIDDEN to connect or disconnect control panel or WiFi controller without turning off the mains power first. Failure of control panel or the Unit due to improper connection will void the warranty.

6.1. Electric circuit connection

WARNING!!!

- To prevent accidents and potential damage to the Unit, it can only be connected by a qualified technician. Do not attempt to do that by yourself.
- Mains supply power rating shall comply with the rating indicated in the Unit manual.
- Mains supply should be disconnected when connecting the Unit.
- The Unit should be connected according to diagram provided in the User Manual.
- Only power cable provided with the Unit should be used to connect it to power source.
- Grounding should be installed in compliance with the requirements of effective legislation and standards when connecting the Unit to mains supply.
- Electric circuit must be equipped with suitable power circuit-breaker.

Power supply	230V, 50Hz, 5A
Maximum electric power consumption – fans	77W
Maximum electric power consumption – preheater	800W
IP protection class	20

Table 5. Electrical parameters

6.2. Control panel installation

It is recommended to install control panel of the Unit in a living space or hall at 1.5 – 1.6 m height from the floor for convenient access. Lay the control panel connection cable supplied from the Unit location to the control panel location before finishing decoration works.

The maximum permissible installation distance of control panel from the Unit is 100 m. Use a flexible mounting cable 4x0.22mm² to connect the panel, the resistance of each conductor must not exceed 40Ω.

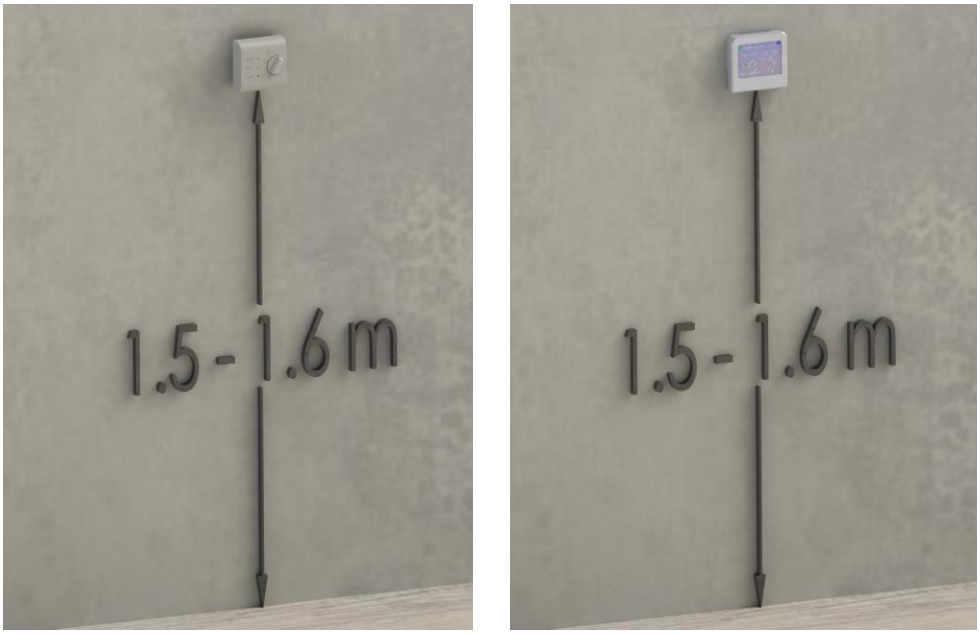


Figure 6. Installation of the control panel

IT IS FORBIDDEN to install control panel in premises, where relative air humidity may exceed 70%.

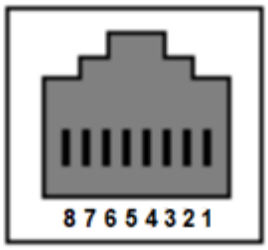
6.3. Comfort functions connector

The Unit supports following external functionality:

Fire alarm	emergency shutdown of the Unit upon activation of fire alarm
Boost	ventilation boost activation by external switch
CO_2 sensor	ventilation power increase based on readings of auxiliary CO_2 or humidity sensors connected
Away	reduction of ventilation power while away from home by security system or external switch

Table 6. Comfort functions

Function can be activated by short circuiting the respective digital contacts of RJ45 function connector.



Conn. contact No.	Function of ventilation system
1-2	Away
3-4	CO_2 sensor
5-6	Boost
7-8	Fire alarm

Figure 7. Contacts of functions connector

IMPORTANT! Only passive electric switch or electric relay should be used to activate the function.

IMPORTANT! If the Unit is being controlled by control panel with a knob, please make sure that corresponding S2 switch does not block the usage of function (refer to section 7.9.6 "Additional system settings").

IT IS FORBIDDEN to connect the functions connector directly to electrical wiring network.

Optional RJ45 adapter can be used for more convenient connection:

Figure 8. Comfort functions RJ45 connector adapter

6.4. Control board electrical wiring diagram

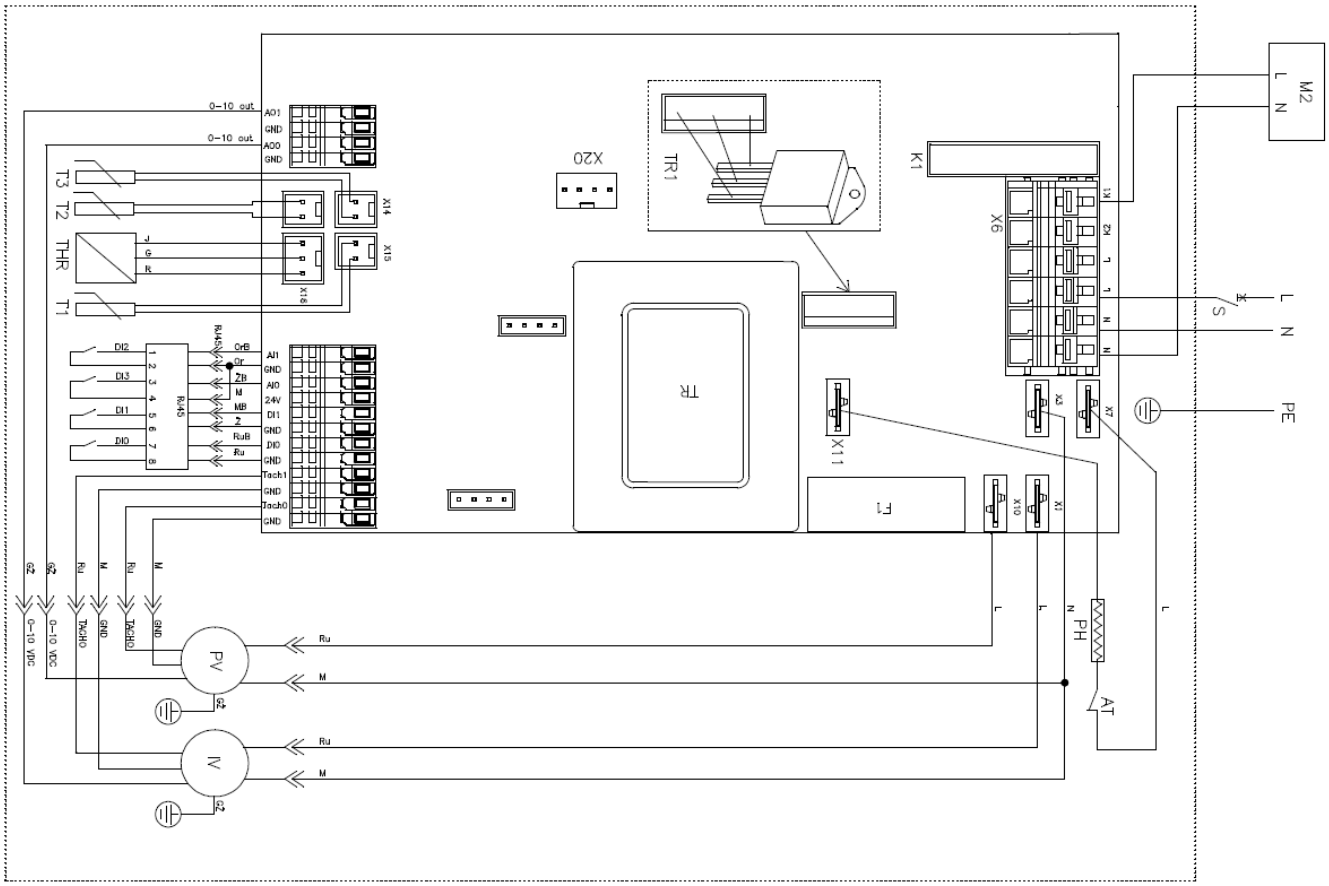


Figure 9. Control board electrical wiring diagram

IMPORTANT! Make sure that the Unit is disconnected from mains supply before connecting or disconnecting system components.

6.5. Control board contacts

AO1	Exhaust fan control 0-10V
GND	Not used
AO0	Supply fan control 0-10V
GND	Not used
X13	Exhaust air temperature sensor
X14	Supply air temperature sensor
X15	Outside air temperature sensor
X16	Extract air temperature/ humidity sensor
AI1	DI2 function – "Away"
GND	
AI0	DI3 function – "CO2 sensor"
24V	Not used
DI1	DI1 function – "Boost"
GND	
DI0	DI0 function – "Fire alarm"
GND	
Tach1	Exhaust fan tacho signal
GND	
Tach0	Supply fan tacho signal
GND	
X20	Control Panel connector
X1	Exthaust air fan L
X3	Exthaust and Supply fans N
X7	Preheater L
X10	Supply fan L
X11	Preheater N
K1	Bypass N
K2	Not used
L	Bypass L
L	Mains L
N	Mains N
N	Not used
F1	315mA fuse

Table 7. Control board contacts

7. OPERATION

7.1. Operating conditions

Hygiene standard HN 42: 2009 sets limit values for the microclimate of residential premises:

Microclimate parameters	Limit values	
	During cold season	During warm season
Air temperature, °C	18–22	18–28
Relative humidity, %	35–60	35–65

Table 8. Hygiene Standard HN 42: 2009 "Microclimate of Residential and Public Buildings"

It is FORBIDDEN to operate the Unit in premises where relative humidity exceeds the limit value of HN 42: 2009 during the cold season. The Unit is not intended for removal of excess building moisture, use electric dehumidifiers for this purpose.

IMPORTANT! Condensate may start to accumulate inside the air handling unit when outdoor and indoor air temperature difference meets conditions of dew point. When the Unit is being operated at conditions of excess humidity, dew drops are likely to appear on Unit housing, excess water from inside may leak through unintended areas of housing, which may damage the ceiling and cause the rust. Exhaust air fan may be damaged when operating in excess humidity conditions. Failure of the Unit caused by operation in excess humidity conditions will void the warranty.

7.2. Operation of the Unit during warm period of year

Ventilation unit with heat recovery is not only useful in cold but also in warm season of year. There is prevailing misconception that ventilation by opening windows is more efficient. Advantages of mechanical room ventilation system during the warm season:

- Air you breathe is filtered, free from dust and pollen,
- No insects in the premises,
- Inaudible outdoor noise,
- Continuous uninterrupted flow of fresh air is ensured,
- Ventilation of enclosed rooms (warehouses, wardrobes, bathrooms, toilets) is ensured,
- Indoor air coolness is being preserved.

During extremely hot, wind-free summer day, premises are not being ventilated despite windows are open. Even the air in the far corners of room with an open window will not be replaced to fresh.

Continuously operating ventilation unit ensures uninterrupted air exchange in all rooms of the dwelling.
During extremely hot summer day, ventilation unit with heat recovery function will perform a coolness recovery instead. When ventilating by opening windows, indoor air temperature immediately becomes equal to outdoor air temperature. Meanwhile, when indoor temperature is at least a few degrees cooler than outside, air handling unit with heat recovery function will supply air at lower temperature than outside air.

To cool the room during the summer night, use the summer cassette of the Unit (sold separately) or the intelligent control solution which shuts-off supply air fan (depends on hardware and software version of the Unit).

Select appropriate filtering class suitable for particular time of year, refer to section 7.6 "Air filters".

7.3. Operation of the Unit during cold period of year

The Unit is designed to operate in the harsh winter conditions. Internal electric heater will prevent heat exchanger from freezing and in unlikely event of freezing will ensure its automatic defrosting. To ensure proper operation of the Unit, it is important to follow these operating directions:

- Balance the newly launched ventilation system,
- Replace air filters regularly,
- Air supply and exhaust fans speed is likely to change (decrease or increase) for short time when Unit's frost protection program is in progress due to extremely low outdoor temperature. Do not attempt to increase or decrease ventilation power by abruptly changing setting on the control panel or app. Failure to follow this advice is likely to cause Unit's heat exchanger to freeze, which may result in cold air supply, as well as condensation of indoor air humidity on supply air ducts,
- Do not open service cover of the Unit. To prevent accidents and possible damage to the Unit, such operation may only be carried out by qualified technician. Improper opening of service cover can damage internal tightness of the Unit. Mechanical damage will void the warranty.

Select appropriate filtering class suitable for particular time of year, refer to section 7.6 "Air filters".

7.4. Right ventilation power setting

It is necessary to ensure constant supply and removal of air quantity provided in dwelling's HVAC project for ventilation of premises to be efficient.

Components of ventilation system (grilles, non-return valves, distribution boxes, etc.) creates resistance, impeding air flow. Larger dwelling or more complicated ventilation system will require higher ventilation power setting to ensure minimum airflow.

IMPORTANT! Unit's air flow may not overcome the resistance of installed ventilation system when operated at lowest power settings 30-40%. This may significantly reduce Unit's ability to recover heat energy, may result in cold air supply, as well as condensation of indoor air humidity on supply air ducts. It is recommended to choose at least 45% ventilation power setting.

IMPORTANT! Consult professionals who have installed and balanced the ventilation system in your dwelling to determine the lowest acceptable ventilation power setting.

7.5. Weekly ventilation program

You will benefit from ventilation power and costs most by setting the ventilation program for whole week, refer to section 7.7.4 "Weekly operation program" or 7.8.4 "Weekly operation program" depending on type of controller being used.

Choose ventilation power of the Unit to suit the pace of your life. You can set 4 different operating modes for each day:

Week day	Hour	Power setting	Description
I-V	06:30	60%	Get up, take a shower, have breakfast
	08:00	40%	Go to work
	17:00	70%	Whole family at home, cooking, bathing
	22:00	45%	Go to sleep
VI-VII	08:00	60%	Get up, take a shower, have breakfast
	11:00	40%	Outside activities
	18:00	70%	Whole family at home, cooking, party
	22:00	45%	Go to sleep

Table 9. Example of weekly ventilation program

7.6. Air filters

The Unit is equipped with supply and exhaust air filters.

- Supply air filter ensures supply air quality, protects against ingress of outdoor dust and insects (M5, Carbon G4, F7 filtering classes);
- Exhaust air filter protects the device against ingress of indoor dust and insects (M5 filtration class).

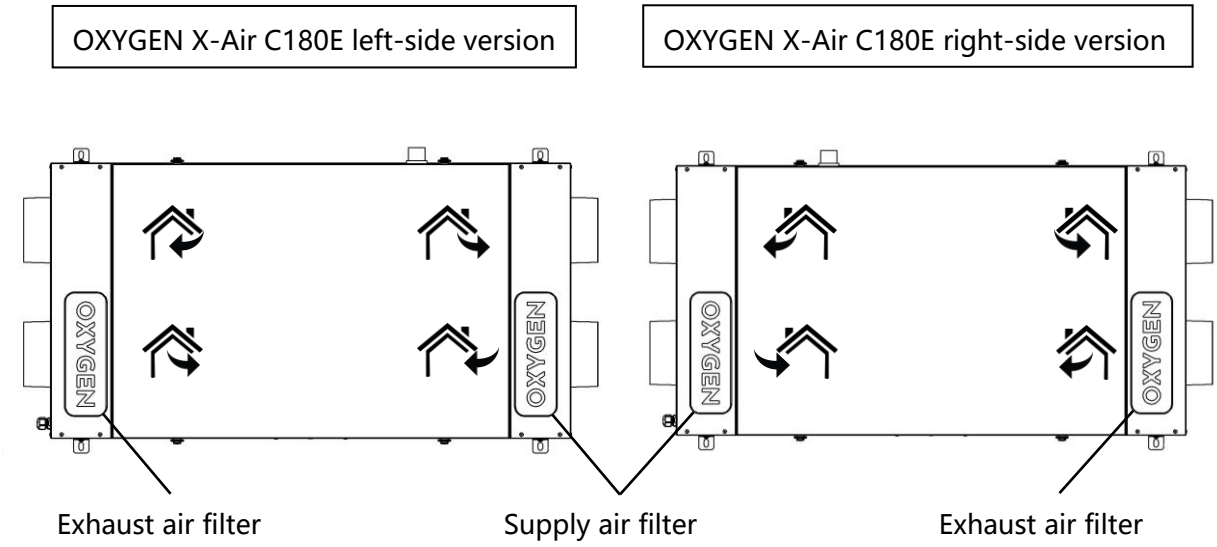


Figure 10. Locating air filters

Control panel of the Unit or app indicates the necessity to check and, if needed, replace air filters. Frequency of indication depends on type of filters being used. 2 months initial frequency is set at the factory for each Unit. Type of air filters being used can be set via control panel with touchscreen display (see section 1.7 of the Operating Parameter Manual) or an app (see section 7.7.7 "Operating menu for air handling unit filters").

Filter lifetime depends on the pollution of environment in which the Unit operates. Dusty operation environment will foul filters faster.

Replacing air filters:

1. Shut down the Unit by control panel, make sure that fans have completely stopped,
2. Open the lid of filter, that you intend to change, marked by "OXYGEN" by firmly gripping it and pulling out,
3. Use fabric handle to remove a filter,
4. Insert new filter, following ventilation flow direction indicated on filter frame – arrow should

point towards center of the Unit,

5. Firmly push the lid of the filter back to its place. Make sure it was tightly inserted into the Unit housing,
6. Turn on the Unit,
7. Reset filter lifetime meter, refer to sections 7.7.7 "Filter menu", 7.8.3 "Settings menu" or 7.9.5 "Resetting filter lifetime meter" accordingly, depending on type of controller being used.

Select appropriate filtering class suitable for particular time of year:

Time of year	Filtering class EN 779:2012	Filtering class ISO 16890
Spring, summer, autumn, winter	M5	ePM_{10} 50%
Spring, summer	F7	ePM_1 70%
Winter	Carbon G4	$ePM_{2.5}$ 60%

Table 10. Filtering class suitability for different seasons

It is recommended to replace air filters at least:

Filtering class EN 779:2012	Filtering class ISO 16890	Recommended replacing frequency
M5	ePM_{10} 50%	every 6 months
Carbon G4	$ePM_{2.5}$ 60%	every 6 months
F7	ePM_1 70%	every 4 months

Table 11. Filter replacement frequency

IMPORTANT! Fouled air filters can result in ventilation power decrease and higher than usually power consumption.

IMPORTANT! Only original, manufacturer recommended filters should be used. Use of low quality third party filters can result in damage to sensitive device components due to excess dust or humidity. Metal filter frames can cause unrestorable damage to Unit's body. Failure of the Unit caused by the use of non-original components, will void the warranty.

IMPORTANT! Filter lifetime depends on the pollution of environment in which the Unit operates. Schedule first replacement shortly after first launch – outdoor and indoor construction dust fouls filters in less than 1 month.

Replacement filters can be ordered at: www.oxygenvent.com.

7.7. WiFi controller

You may control the Unit by app installed on smartphone or tablet by purchasing the WiFi controller.

Figure 11. WiFi controller

IT IS FORBIDDEN to connect or disconnect WiFi controller while the Unit is powered. Failure of the Unit or WiFi controller caused by improper connection will void the warranty.

7.7.1. Downloading the app

Download the OXYGEN WiFi app for your smartphone or tablet from the App store or Google Play store:

By downloading or using the app or WiFi controller, you agree that OXYGEN group, JCS collects and processes air handling unit usage data as described in the privacy policy https://www.oxygen.lt/privacy-policy-gdpr-en/.

7.7.2. WiFi connection set-up

Plug in the WiFi controller then power-up the Unit. Connect WiFi controller to your home WiFi network first, do not start the App yet. Follow these steps:

- slightly press and release immediately the hidden button through the small hole on WiFi controller body with thin screwdriver (safety-match, toothpick) to start broadcasting of OXYGEN_xxxxxx wireless network. Yellow led will light up,
- locate and connect to unprotected WiFi network OXYGEN_xxxxxx in your phone, tablet or PC's wireless connection settings menu:

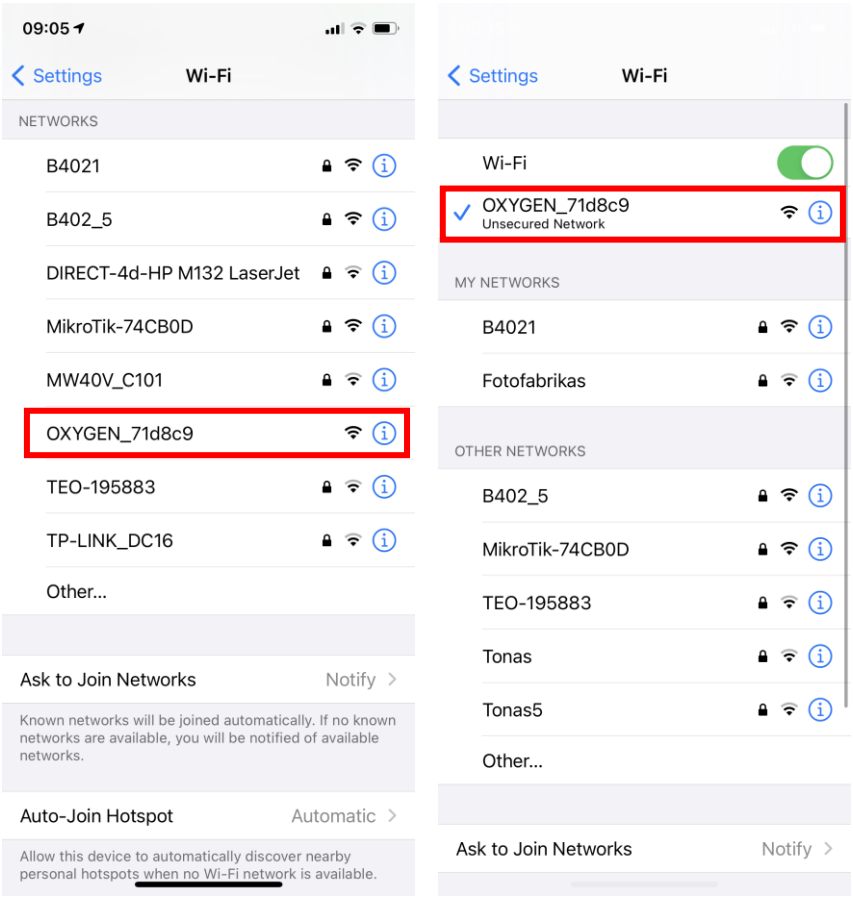


Figure 12. WiFi connection set-up

IMPORTANT! WiFi controller will only broadcast unprotected WiFi network for 2 minutes. If You fail to connect while it is active, broadcasting will stop. Slightly press and release immediately the hidden button through the small hole on WiFi controller body again to restart broadcasting.

IMPORTANT! In case of home WiFi network device (router or ADSL modem) failure or failure to properly configure WiFi connection, the broadcasting of secure WiFi network OXYGEN_xxxxxx**s** may start. Use default system password 123123123123 to connect. It is recommended to change the password immediately.

- WiFi Manager window will pop up after succesfull connection. Click "Configure WiFi" button,
- locate and select your home WiFi network in the list,
- enter your home WiFi network connection password,
- click "Save":

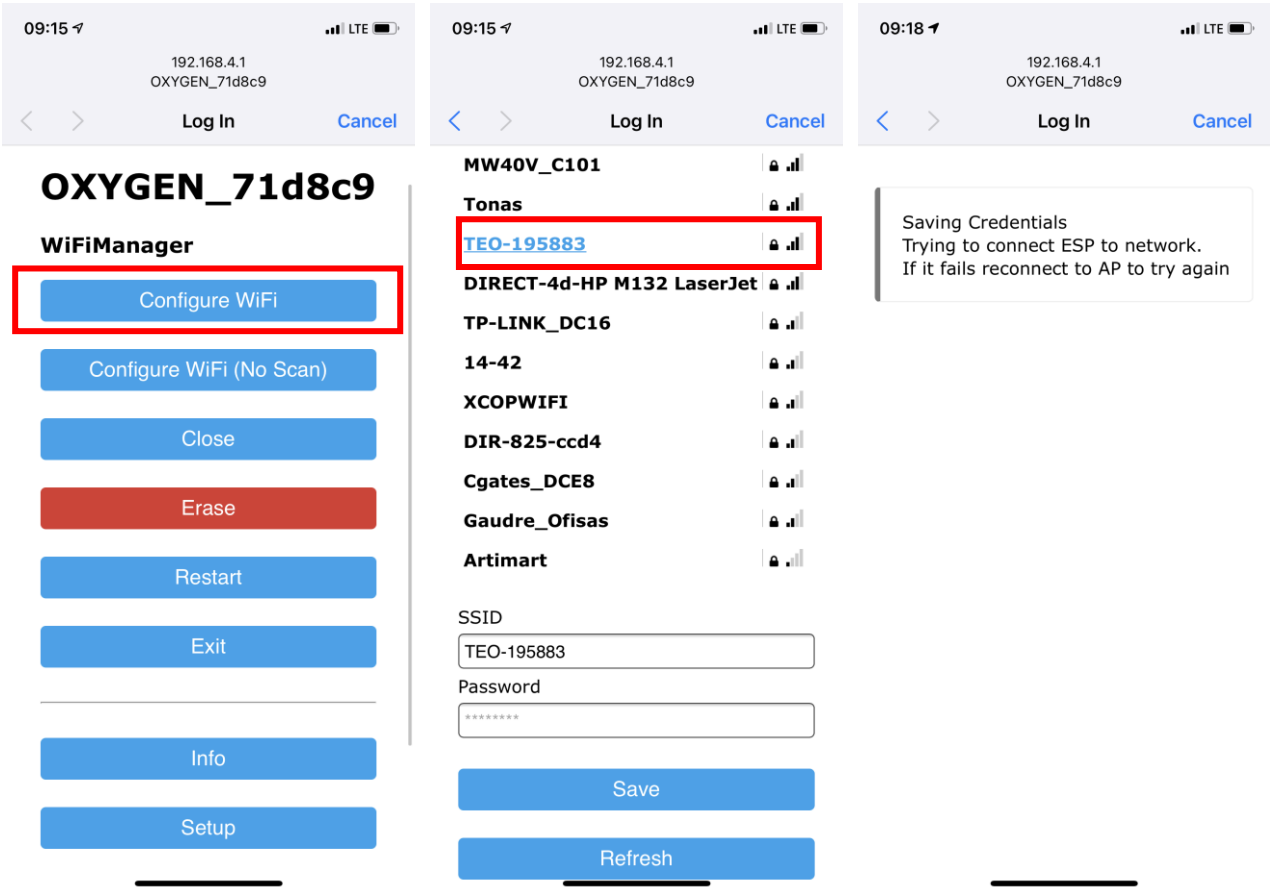


Figure 13. WiFi connection set-up

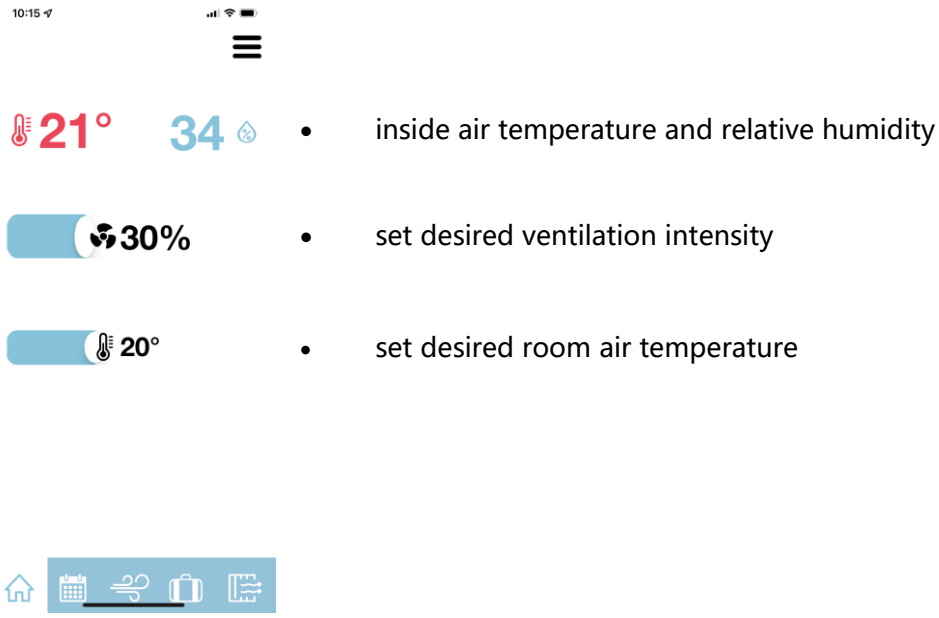
WiFi controller will connect to your home WiFi network after successfully accomplishing all tasks. OXYGEN_xxxxxx will stop being broadcasted.

IMPORTANT! In case (usually due to smartphone or tablet security settings) WiFi Manager window does not pop up, connect to WiFi Manager console using browser (Safari, Chrome or similar) by entering 192.168.4.1 in the address field. Make sure that your device (smartphone or tablet) is connected to OXYGEN_xxxxxx WiFi network (you may be asked to confirm connection by hitting "use without internet" or similar button.

IMPORTANT! App will only access the Unit if both WiFi controller and device are connected to the same home WiFi network.

7.7.3. Home screen

Home screen of control app:



- inside air temperature and relative humidity
- set desired ventilation intensity
- set desired room air temperature

Figure 14. Home screen of control app

Supply air temperature can be maintained by external duct electric heater, if installed.

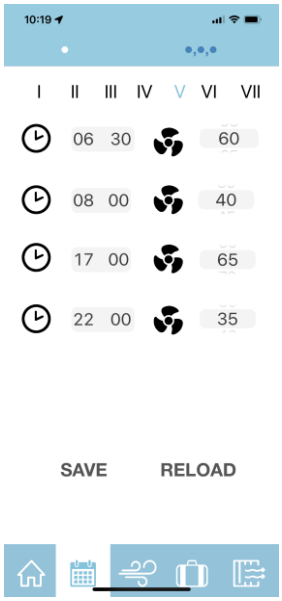
Unit can control external heating or cooling devices by switching on or off "OXYGEN Heat" and "OXYGEN Cool" wireless relays.

IMPORTANT! Ability to maintain supply air temperature depends on Unit's hardware and software version. It is necessary to anticipate the need to install a duct heater controlled by the Unit in the ventilation system before ordering the Unit.

IMPORTANT! Consult professional who has installed heating and cooling systems in your dwelling to confirm possibility to control corresponding device by wireless relay.

7.7.4. Weekly operation program

Up to 4 different ventilation modes can be set for each day of week. Set desired operation program for selected day or days of the week:



- select single or multiple week days
- select day or days depending on above selection
- set operating mode start time and ventilation intensity for each slot
- click "SAVE" to apply or "RELOAD" to discard changes

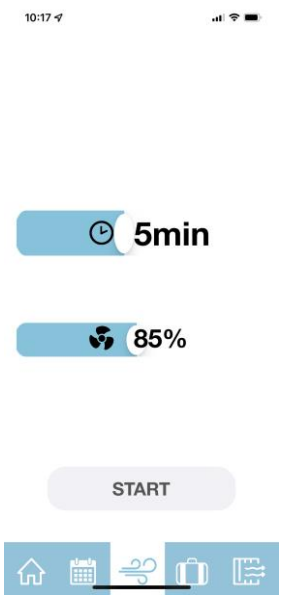
Figure 15. Weekly operation program

Refer to section 7.5 "Weekly ventilation program" for example of weekly operation program.

IMPORTANT! Activate weekly operation program by double-clicking calendar icon on menu ribbon, green dot will appear. Deactivate by double-clicking icon again, green dot will disappear.

7.7.5. Ventilation boost activation

Activate selected (increased) ventilation intensity for selected time:



- set time of operation
- set ventilation intensity
- activate selected ventilation intensity by clicking "START"

Figure 16. Ventilation boost activation

After the selected time, previously set or scheduled ventilation intensity will be restored.

7.7.6. Away

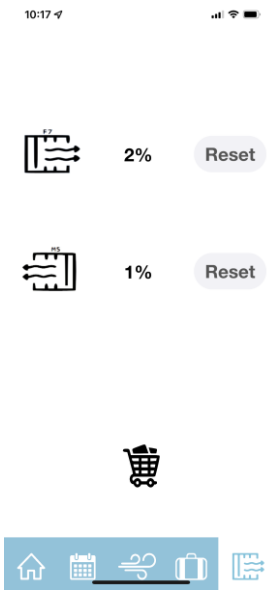
Activate selected (decreased) ventilation intensity until the selected date. The feature is useful when leaving home for a weekend or vacation:

- select return date
- select return time
- select ventilation intensity
- activate selected (decreased) ventilation intensity by clicking "START"

Figure 17. Away

7.7.7. Filter menu

Set type of filters used, monitor filter lifetime, reset filter usage timer:

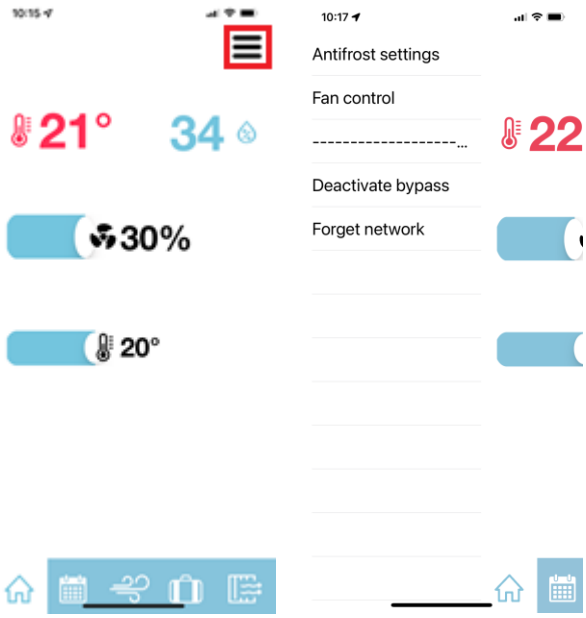


- select the type of supply air filter by clicking on the filter icon
- reset supply filter usage timer by clicking "RESET" button
- select the type of exhaust air filter by clicking on the filter icon
- reset exhaust filter usage timer by clicking "RESET" button
- order replacement filter set by clicking troley icon

Figure 18. Filter menu

7.7.8. System settings menu

Click on menu icon in the upper corner of screen to access the settings menu:



Pav. 1. System settings menu

7.7.9. Ventilation system balancing

Balance ventilation system by setting right power coefficient for air supply and exhaust fans:

- set power coefficient for air supply fan
- set power coefficient for air exhaust fan

Pav. 2. Ventilation system balancing

IMPORTANT! Balancing of the system can only be entrusted to qualified professional possessing all the necessary properly calibrated technical equipment.

Refer to section 5.5 "Ventilation system balancing" for more information.

7.7.10. Factory defaults

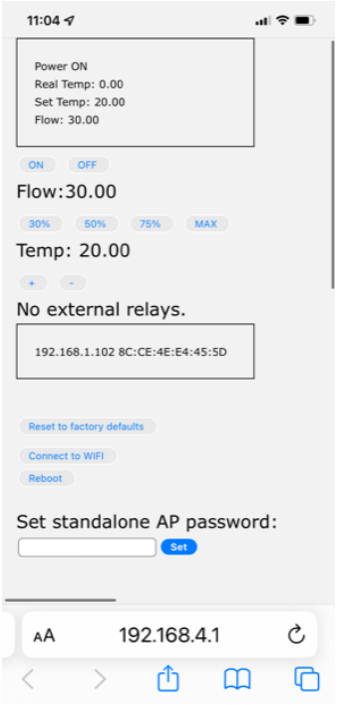
Click and hold the hidden button through the small hole of WiFi controller body with thin screwdriver (safety-match, toothpick) until the yellow light will fade away if it is necessary to reset WiFi controller to factory defaults.

You will have to reconnect WiFi controller to your home WiFi network to regain ability to control the Unit, refer to section 7.7.2 "WiFi connection set-up").

7.7.11. P2P connection

Follow these steps if you need to operate the Unit without connecting it to your home WiFi network:

- press and hold the hidden button through the small hole on WiFi controller body with thin screwdriver (safety-match, toothpick) until red light blinks and fades,
- locate and connect to secure WiFi network OXYGEN_xxxxxx**s** in your phone, tablet or PC's wireless connection settings menu using default system password 123123123123. You may be asked to confirm connection by hitting "use without internet" or similar button,
- connect to WiFi Manager console using browser (Safari, Chrome or similar) by entering 192.168.4.1 in the address field,
- type new password in "Set standalone AP password" field, click "Set",
- reconnect to OXYGEN_xxxxxx**s** WiFi, using new password.



Pav. 3. P2P connection to WiFi controller

IMPORTANT! Control app will only work while connected to secure WiFi network OXYGEN_xxxxxx**s**.

IMPORTANT! Internet connection may be unavailable while connected to secure WiFi network OXYGEN_xxxxxx**s**.

7.8. Control panel with touchscreen display

Control panel with touchscreen display screen makes it possible to use the enhanced Unit functionality.

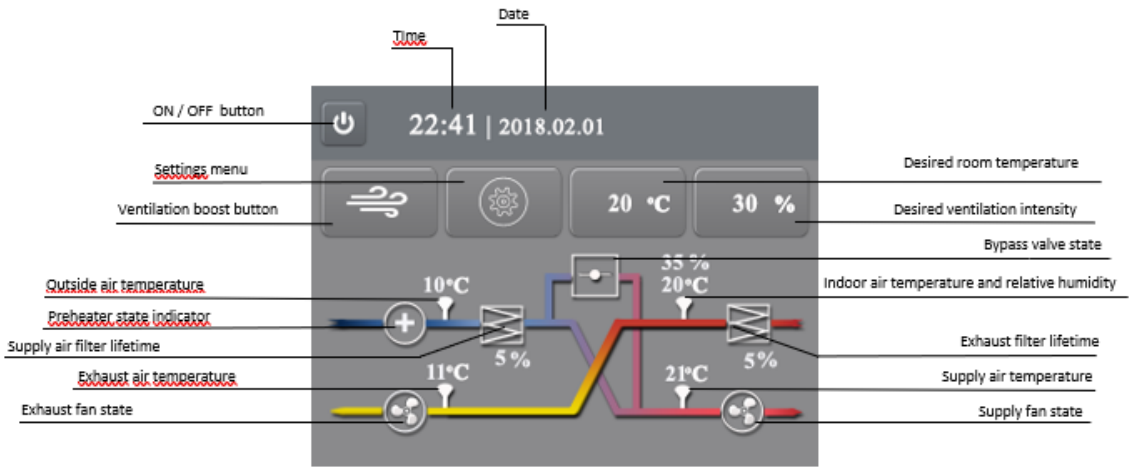
Figure 19. Control panel with touchscreen display

7.8.1. Standby mode

Touchscreen display of control panel will only display the time of day in standby mode if the Unit is switched off. If the Unit is in operation, settings of desired temperature and ventilation intensity will also be displayed.

Figure 20. Control panel with touchscreen display in standby mode: the Unit is switched off, the Unit is in operation

7.8.2. Main screen



Figu

Main screen displays:

- Time of day
- Date
- Temperatures:
  - Outside* air (refer to section 7.8.2.1 "Winter mode")
  - Extract air
  - Supply air
  - Exhaust air
- Relative humidity of extract air
- Lifetime of supply and exhaust air filters
- Bypass valve state (depends on device configuration)
- Preheater state

This menu enables to:

- Activate the "boost" mode by single touch of button
- Access the settings menu
- Set the desired room air temperature
- Set the desired ventilation intensity

7.8.2.1. Winter mode

Outside* air temperature display depends on ambient conditions:

- If outside air temperature is above 0° C, the outside air temperature is being displayed;
- If outside air temperature is below 0° C and preheater is on, the temperature after preheater is being displayed.

Preheater state:

preheater on	green ⊕ sign is being displayed
preheater off	white ⊕ sign is being displayed

Table 12. Preheater state

IMPORTANT! Higher than usual electricity consumption is expected when preheater is on.

7.8.2.2. Maintaining the desired room air temperature

You may set the desired room air temperature from the control panel menu. In the cold season, air supplied to the room can be additionally heated by a separately purchased duct heater installed in the ventilation system.

IMPORTANT! Availability of feature depends on device configuration, to be selected prior ordering the Unit.

7.8.3. Settings menu

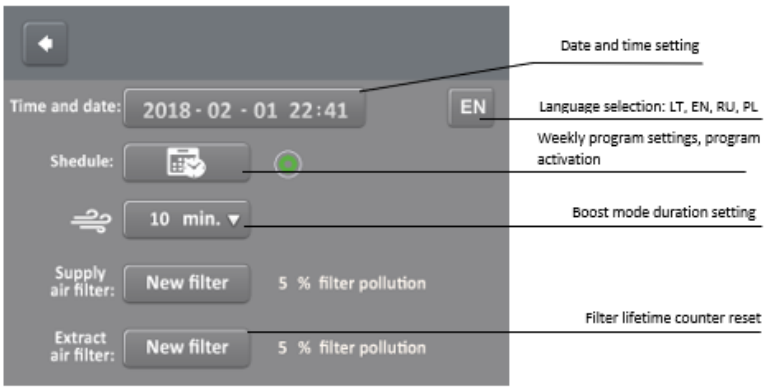


Figure 22. Settings menu

Control panel settings menu enables to:

- Set system date and time
- Select menu language: English, Russian, Polish, Lithuanian
- Set up weekly operation program
- Set duration of boost mode
- Reset filter lifetime counters after replacing air filters

7.8.4. Weekly operation program

Up to 4 different ventilation modes can be set for each day of week. After selecting the week day, set:

- operating mode start time
- selected ventilation intensity
- desired room air temperature

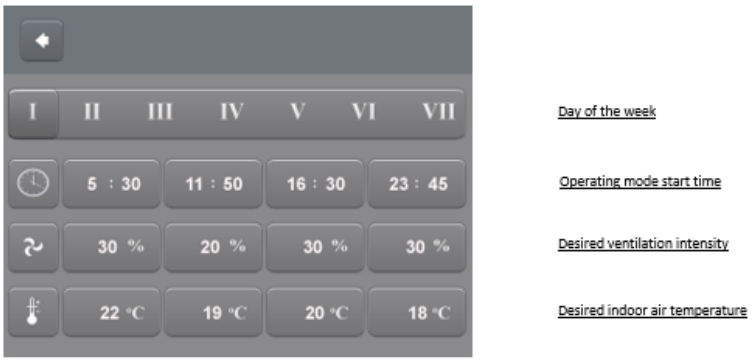


Figure 23. Weekly operating mode settings menu

Weekly operation program will be saved by clicking "back arrow" button.

Refer to section 7.5 "Weekly ventilation program" for example of weekly operation program.

IMPORTANT! Click on the round button next to schedule button in main menu to activate a weekly operation program. Green color of button means the program is active. Toggle to deactivate.

7.8.5. Failure indication

In case of Unit component failure, the RESET button will appear in main menu. Failed component icon will turn red, Unit operation will stop.

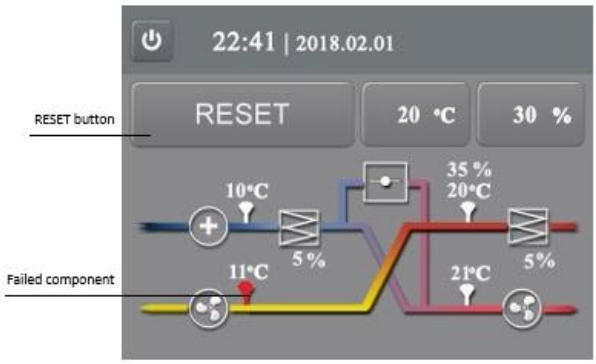


Figure 24. Failure indication

Press the RESET button. The Unit will restart and if the failure was resolved, will continue to operate. If the problem with failed component will persist after the Unit reset procedure has been performed and RESET button will reappear, contact the point of purchase.

You may control the Unit by app installed on smartphone or tablet by purchasing the WiFi controller, refer to section 7.7 "WiFi controller".

7.9. Control panel with a knob

Control panel with a knob makes it possible to gradually control the ventilation intensity. Colored LEDs indicate status of the Unit.

operating state -
air filter replacing indicator -
failure indicator -

- ventilation intensity setting control

Figure 25. Control panel with a knob

7.9.1. Operating state indicator

Flashing green led indicates that the Unit is connected to power supply:

flashes 1 time	ventilation is off
flashes 2 times	ventilation is on
flashes 3 times	the Unit is shutting down

Table 13. Operating state indicator

7.9.2. Air filter replacing / anti-frost protection indicator

Flashing yellow led indicates:

flashing consistently	it is necessary to replace filters
yellow and green leds flash in turns	anti-frost protection is on

Table 14. Air filter replacing / anti-frost protection indicator

Control panel indicates the necessity to replace filters after 2 months of uninterruptable Unit operation by consistent flashing of yellow led. Disconnection of the Unit from mains supply does not reset the counter.

IMPORTANT! Filters may need to be replaced more frequently – refer to section 7.6 "Air filters".

During cold season of a year green and yellow leds flashing in turns indicate that anti-frost protection has been activated, the electric preheater is on.

IMPORTANT! Higher than usually power consumption is to be expected when the Unit is operating in this mode.

7.9.3. Failure indicator

The flashing red led indicates that failure of the Unit component was detected:

flashes 1 time	failure of outside air temperature sensor
flashes 2 times	failure of exhaust air temperature sensor
flashes 3 times	failure of supply air temperature sensor
flashes 4 times	failure of extract air temperature sensor
flashes 5 times	failure of supply fan motor
flashes 6 times	failure of exhaust fan motor
flashes 7 times	fire alarm has been activated
flashes 8 times	failure of preheater
both red and yellow leds are on (no flashing)	connection between control panel and the Unit was lost and the Unit is operating in safe mode

Table 15. Failure indicator

Unit operation will stop after detecting component failure. You may restart the Unit by following RESET procedure.

7.9.4. RESET procedure

Gently press and release the hidden button S1 through the small hole on the side of control panel with thin screwdriver (safety-match, toothpick) twice, until all three color leds switch on. Then immediately press and hold S1 button again for about 3 seconds, until all leds switch off. The Unit will restart.

- reset button S1

Figure 26. Reset button

IMPORTANT! If red failure indicator led starts flashing again after the Unit reset procedure has been performed, contact the point of purchase.

7.9.5. Resetting filter lifetime meter

Filter lifetime meter has to be reset after air filters have been replaced.

Gently press and release the hidden button through the small hole on the side of control panel S1 with thin screwdriver (safety-match, toothpick), making the yellow led switch on. Then immediately press and hold S1 button again for about 3 seconds, until led fades away.

IMPORTANT! Resetting the Unit (refer to section 7.9.4 "RESET procedure") does not reset filter lifetime meter.

7.9.6. Additional system settings

Controllers for additional settings of ventilation system are installed inside the control panel:

P1	boost mode time setting
P2	boost mode power setting
P3	supply fan power adjustment
P4	exhaust fan power adjustment
S1	reset button
S2	switches for disabling (OFF) or activating (ON) boost (1) and away (2) functions

Table 16. Additional settings for control panel with a knob

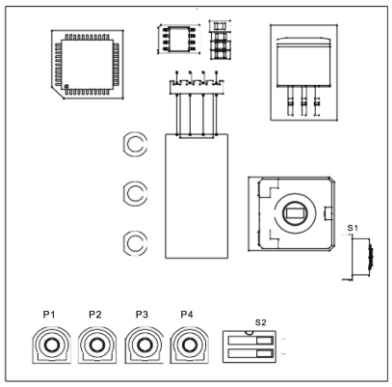


Figure 27. Additional settings for control panel with a knob

You may control the Unit by app installed on smartphone or tablet by purchasing the WiFi controller, refer to section 7.7 "WiFi controller".

8. MAINTEINANCE AND WARRANTY

Heat recovery Unit OXYGEN X-Air C180 is granted 24 months warranty. Make sure to have the section below properly filled in to confirm the installation date. Have the proof of purchase handy before contacting point of purchase.

Product	OXYGEN X-Air C180
Serial No.	_____
Installation date	_____
Contractor (company)	_____
	_____
	(company name, technician, signature, stamp, contact details)

IMPORTANT! Before contacting point of purchase, make sure that the failure is persistent – check that:

- The Unit is connected to mains supply
- Power circuit-breaker is ON
- If RESET button is being displayed on touchscreen control panel (refer to section 7.8.5 "Failure indication") or flashing red led of control panel with a knob indicates failure (refer to section 7.9.3 "Failure indicator"), try rebooting the Unit first.

IMPORTANT! Flashing green and/or yellow leds of control panel with a knob do not indicate the failure. Refer to section 7.9.2 "Air filter replacing / anti-frost protection indicator" for more information.

Prepare to submit :

- Product model and serial number (locate it on the product label)
- Proof of purchase, including invoice or receipt
- Detailed description of failure, including photos or video recordings of the Unit, control panel and place of installation if necessary
- Your name, address, contact phone number, e-mail address

After gathering all the necessary information, contact the point of purchase.

9. CONTACTS

OXYGEN group, JSC

Company code:	304288834
VAT code:	LT100010366918
Bank account:	LT42 7044 0600 0810 3886
SWIFT:	CBVILT2X
AB "SEB" bank	
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	Lithuania
	www.oxygenvent.com