



Ventilation unit

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**NOTE**

You can register your Vallox MV ventilation unit with the MyVallox Cloud service and sign in into your MyVallox Cloud account at www.myvallox.com.

SAFETY

Safe and appropriate handling requires knowledge of the basic safety regulations, and of the intended use of the ventilation system. Read this manual before operating the ventilation unit. Retain the manual for later reference. If you lose the manual, it can be downloaded from our website.

This user manual contains all the information necessary for safe operation of the system. All persons who operate and maintain the ventilation system must follow the instructions provided in this manual. Furthermore, all local accident prevention regulations must be observed.

Installation

Installation and setup should be carried out only by qualified experts. Electrical installations and connections must be carried out only by an electrician and in compliance with local regulations.

GUARANTEE

The guarantee and liability exclude damage resulting from:

- Inappropriate use of the ventilation system or the control unit
- Incorrect or inappropriate installation, setup or use
- Neglect of instructions concerning transportation, installation, use, or maintenance
- Structural or electronic modifications or changes made to the software

INTENDED USE

All Vallox ventilation units have been designed to provide appropriate and continuous ventilation so as to present no threat to health and to maintain structures in good condition.

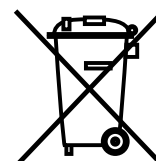


IMPORTANT

In order to ensure that the indoor air presents no harm to health and remains optimal also for the structures of the building, ventilation must be kept on without disruptions. It is recommended that ventilation be left turned on during long holidays also. This keeps the indoor air fresh and prevents humidity from condensing in the ventilation ducts and structures. It also reduces the risk of moisture damage.

DISPOSAL OF THE VENTILATION UNIT

Do not dispose of electronic devices with household waste. Follow local laws and regulations on safe and ecological disposal of the product.



NOTE

For further information, go to www.vallox.com



WARNING

The unit is not intended for use by children under 8 or by persons with reduced sensory, physical or mental capabilities, or whose lack of knowledge and experience do not ensure safe operation of the unit.

Such persons can use the unit under supervision, or by following the instructions of someone who is responsible for their safety.

Children must be supervised and not be allowed to play with the device.

SAFETY SIGNS USED IN THE INSTRUCTIONS



DANGER

Indicates a hazard that will result in death or serious injury if not avoided.



WARNING

Indicates a hazard that can result in death or serious injury if not avoided.



CAUTION

Indicates a hazard that can result in minor or moderate injury if not avoided.



IMPORTANT

Indicates a hazard that can result in damage to property or loss of data if not avoided.



NOTE

Indicates essential information about the product.



TIP

Provides additional information about the use of the product and its benefits.

DIFFERENCES BETWEEN THE MODELS

- Vallox 245 MV has an electric 1500W post-heating resistor and an electric 1500W additional heating resistor.
- Vallox 245 MV VKL has a liquid circulation post-heating radiator and two electric 1500W additional heating resistors.



NOTE

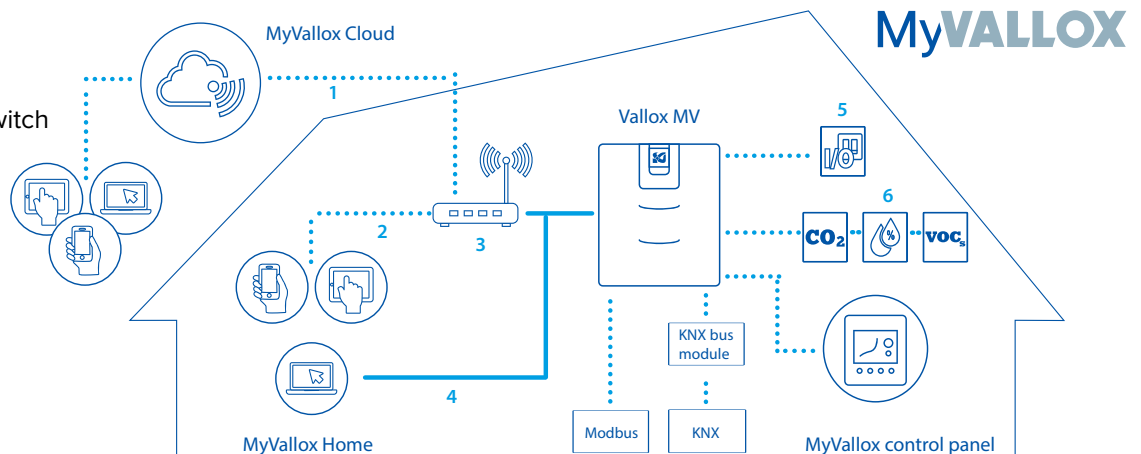
The standard equipment and available accessories vary from country to country.

MOUNTING OPTIONS

- Vallox 245 MV must always be installed on the floor by using a floor rack.

SYSTEM DESCRIPTION

1. Internet
2. WLAN
3. Router
4. WLAN/LAN
5. Additional switch
6. Sensors



VENTILATION UNIT CONTROL

Ventilation unit control options

Operation of the Vallox ventilation unit can be controlled by the following means:

- Through a MyVallox control panel installed in the building.
- Through the MyVallox Home local area network connection and the MyVallox Home/Cloud user interface.
- Through the MyVallox Cloud service and the MyVallox Home/Cloud user interface.
- Through a remote monitoring service or building automation that uses voltage signals or Modbus messages.

In addition to the integrated humidity and carbon dioxide sensor, ventilation can also be adjusted automatically by using the optional carbon dioxide, humidity, or VOC (air quality) sensor. When these are used, ventilation remains optimal even when the dwelling is unoccupied. Each user can use the week clock to adjust the ventilation to fit their individual lifestyle.

The ventilation unit's integrated humidity and carbon dioxide sensors adjust ventilation automatically according to the need. In addition, ventilation can be automated by using optional carbon dioxide, humidity or air quality (VOC) sensors.

Filter reminder

The unit reminds of the need to change filters in the popup window of the compatible MyVallox control panel, in the MyVallox Home/Cloud user interface and by changing the relay status, provided that a signal light has been connected to the relay connectors and Maintenance reminder has been chosen as the relay setting.

The filter reminder can be acknowledged by the following means:

- **from the MyVallox control panel**
- **from the MyVallox Home/Cloud user interface**
- **with the Vallox Delico PTD EC and Vallox Capto PTC EC cooker hoods** — Push the **damper position** button four times at less than one second intervals, starting from the Damper closed position.

Ventilation unit setup without a control panel

The ventilation unit setup can also be completed without a control panel. For instructions, please go to <https://vallox.techmanuals.info/ValloxMV/ENG/help/webhelp>

See instructions provided in the section Connecting the ventilation unit to the computer.

Connecting the ventilation unit to the cloud service

The ventilation unit can be connected to the MyVallox Cloud service. The cloud service allows for controlling ventilation remotely also, using e.g. a smartphone or tablet. Also the unit software is updated automatically through the cloud service. To connect to the cloud service, the ventilation unit must be connected to the Internet via LAN and registered with the cloud service. At the same time you create a MyVallox Cloud account for yourself. Read more about the service at www.myvallox.com.



NOTE

For the MyVallox Cloud/Home instructions, please go to vallox.techmanuals.info/ValloxMV/ENG/help/webhelp



IMPORTANT

Prolonged overpressure can result in damage to the structures of the building.

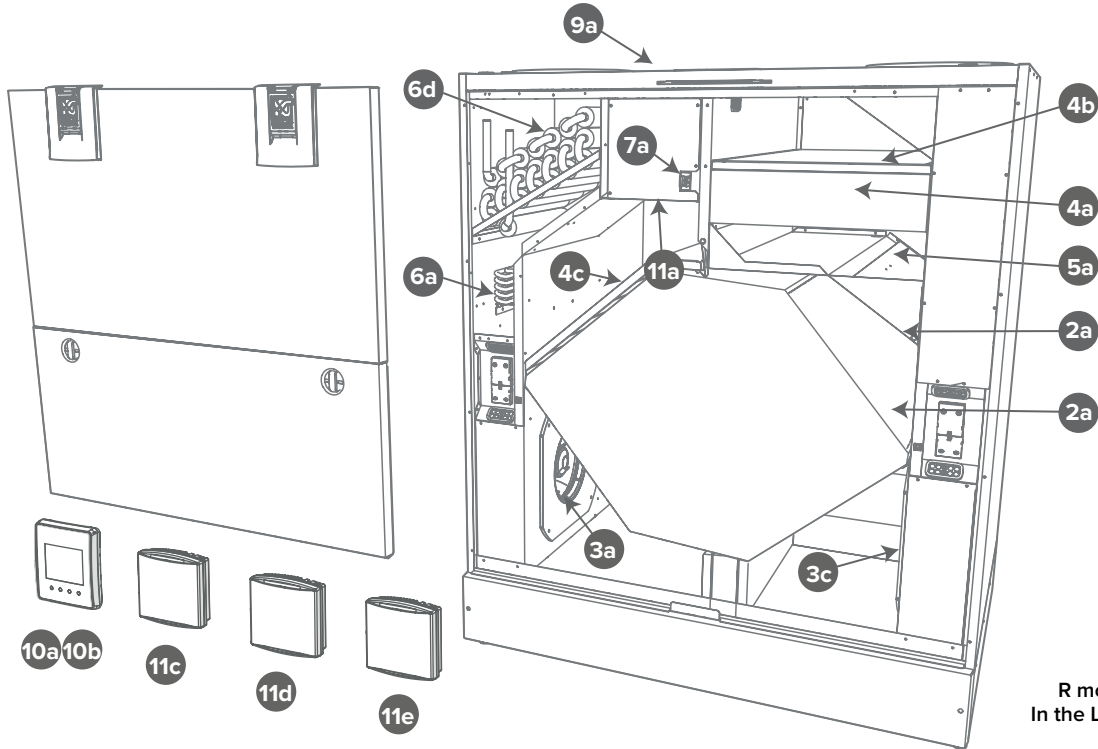


IMPORTANT


















Apartment-specific ventilation units allows residents to adjust the ventilation efficiency. Ventilation is controlled based on the need e.g. through the cooker hood, ventilation control panel, or a separate control centre. In order to ensure that the indoor air presents no harm to health and remains optimal also for the structures of the building, **ventilation must be kept on without disruptions**. It is recommended that ventilation be left turned on during long holidays also. This keeps the indoor air fresh and prevents humidity from condensing in the ventilation ducts and structures. It also reduces the risk of moisture damage.

MAIN PARTS

Vallox 245 MV / Vallox 245 MV VKL



R model in the figure.
In the L model, the parts
are mirrored.

- | | | | | | |
|---|---------------------------------------|----|---|---|------------|
|  | Heat recovery cell, 2 pcs | 2a |  | Safety switch | 7a |
|  | Extract air fan | 3a |  | Ceiling bushing for electric wires | 9a |
|  | Supply air fan | 3c |  | Control panel | 10a
10b |
|  | Fine filter for supply air | 4a |  | Internal humidity sensor
(behind the electric box) | 11a |
|  | Coarse filter for supply air | 4b |  | Internal carbon dioxide sensor
(behind the electric box) | 11a |
|  | Coarse filter for extract air | 4c |  | Carbon dioxide sensor (optional) | 11c |
|  | Bypass damper of the HR cell | 5a |  | Humidity sensor (optional) | 11d |
|  | Post-heating liquid radiator (245 MV) | 6a |  | VOC sensor (Optional) | 11e |
|  | Post-heating resistor
(245 MV VKL) | 6d | | | |

MOUNTING ON THE FLOOR

Vallox 245 MV is always mounted on the floor. Adjust the adjusting legs so that the unit is level.



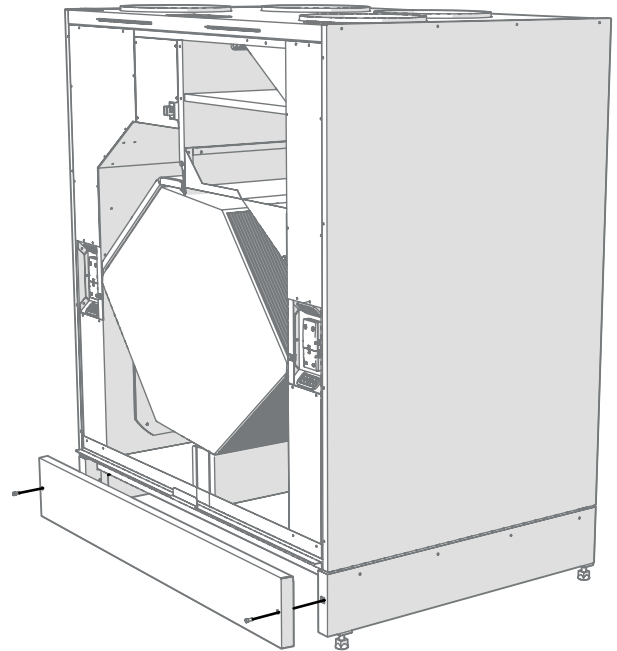
NOTE

When installing the unit, reserve a space of at least 800 mm in front of the unit for servicing purposes.



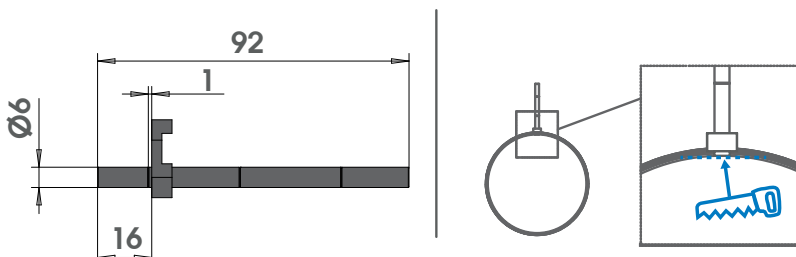
NOTE

Mount the ventilation unit in a place where the temperature does not fall below +10°C.



MEASURING AND ADJUSTING THE AIR FLOWS OF THE VENTILATION UNIT

The accessories delivered with the unit include four (4) air flow measuring tubes. These can be inserted in the ducts to allow for easier ventilation adjustment.



IMPORTANT

If the power cord is damaged, the manufacturer, its service representative or other person with similar qualifications must replace it to avoid danger.

REMOVAL OF CONDENSING WATER



NOTE

The Vallox Silent Klick siphon package is delivered with the unit. Installation instructions for the siphon are enclosed with the packaging, and can also be found online at www.vallox.com. To install the siphon, remove the front panel of the base by undoing the two hexagon screws.

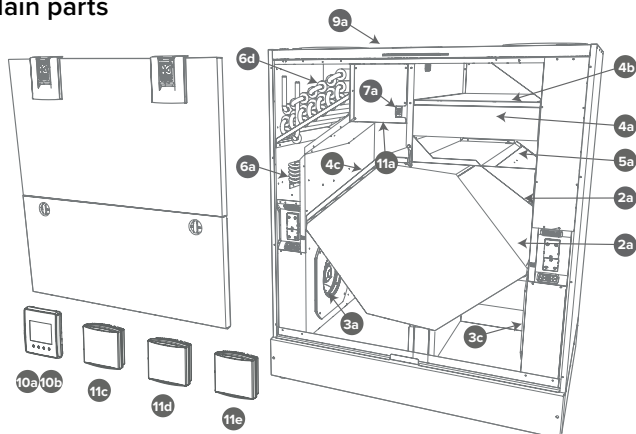


WARNING

Water must at all times be kept out of the electrical system.

DIMENSIONS AND DUCT OUTLETS

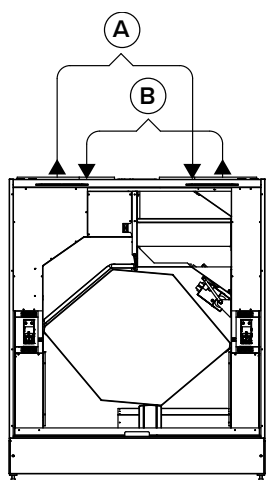
Main parts



R model in the figure.
In the L model, the parts
are mirrored.

- 2a Heat recovery cell
- 3a Extract air fan
- 3c Supply air fan
- 4a Fine filter for supply air
- 4b Coarse filter for supply air
- 4c Coarse filter for extract air
- 5a Bypass damper of the HR cell
- 6a Post-heating resistor (245 MV)
- 6d Post-heating liquid radiator (245 MV VKL)
- 7a Safety switch
- 9a Ceiling bushing for electric wires
- 11a Internal humidity sensor
- 11a Internal carbon dioxide sensor

Measurement points

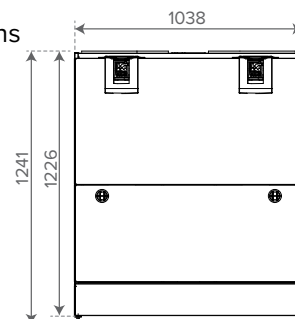


- A Supply air
- B Extract air

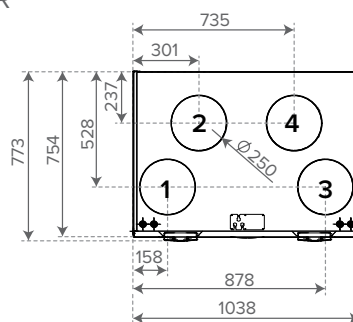
Measurement points after the connection outlet. The fan curves indicate the total pressure accounted for by duct losses.

Dimensions and duct outlets

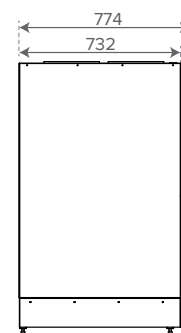
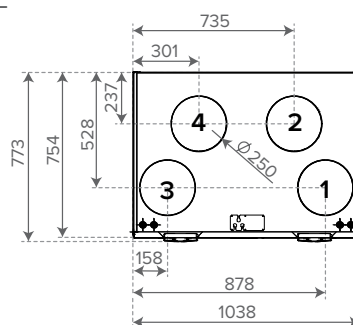
Dimensions



R



L



Duct outlets

Inner diameter of the female collar: 250mm

1. Supply air from the unit to the apartment
2. Extract air from the apartment to the unit
3. Exhaust air flowing outdoors from the unit
4. Outdoor air to the unit

BEFORE BEGINNING MAINTENANCE WORK

The safety switch automatically turns off the power when the door of the unit is opened.

WARNING
Always disconnect the power plug before starting the ventilation unit maintenance.

NOTE
The service space in front of the ventilation unit must be at least 800 mm.

Opening and closing the doors

1. Turn the latches to open the upper door of the ventilation unit.
2. Lift the upper door off.

CAUTION
The door is heavy.

3. Open the lower door of the ventilation unit by undoing the finger screws.
4. Lift the lower door off.
5. Close the doors in reverse order.

There are two unit models, left- (L) and right-handed (R). The figure shows the right-handed model.

CHANGING THE FILTERS

When the maintenance reminder becomes activated, check the cleanliness of the filters and replace them if required.

The Vallox ventilation unit has three air filters:

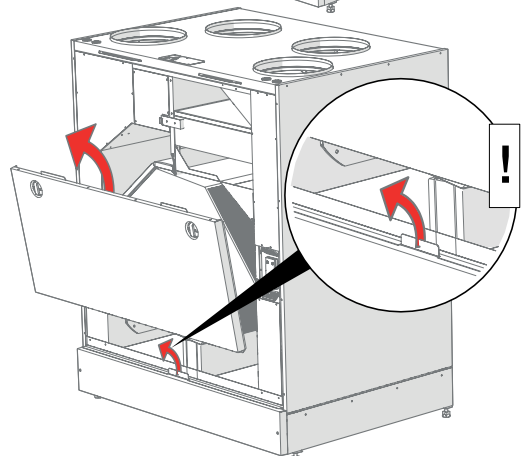
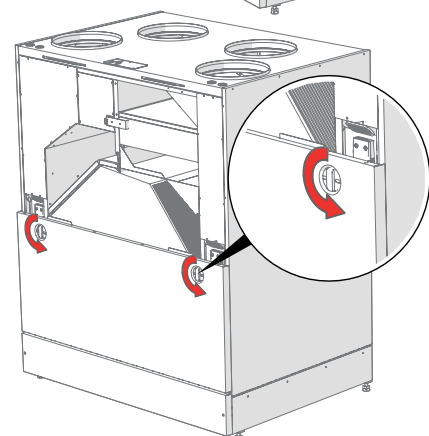
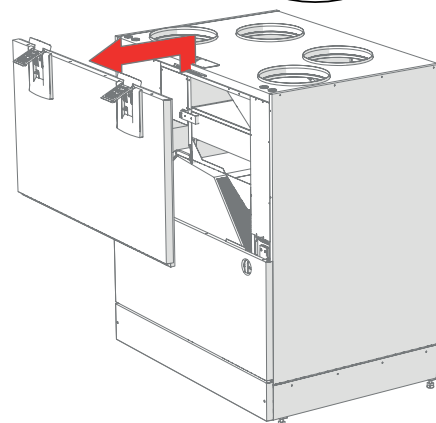
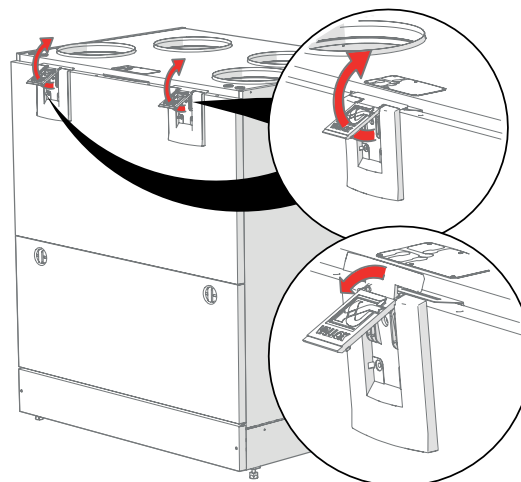
- Coarse filter for supply air filters insects, heavy pollen and other relatively large foreign objects out of the outdoor air.
- Fine filter for supply air filters microscopic pollen and dust particles out of the supply air.
- Coarse filter for extract air filters the extract air and keeps the heat recovery cell clean.

The filter replacement interval depends on the ambient particle concentration. It is recommended that the filters be replaced every spring and autumn, or at the very least once a year.

NOTE
Using original Vallox filters ensures that the ventilation unit remains in top condition, giving the best results. To select and order filter packages, please go to: filters.vallox.com

To replace the filters:

1. Disconnect the ventilation unit from the mains electricity supply.
2. Open the upper door of the unit.
3. Remove the old filters (A, B, C) and discard them.
4. Install the new filters (A, B, C).
5. Close the door of the unit. Ensure that the safety switch catch of the door is touching the safety switch, allowing the unit to be turned on.
6. Plug the ventilation unit back into the mains.
The filters have now been successfully replaced.



CLEANING THE HEAT RECOVERY CELL

Check that the heat recovery cells are clean roughly once a year when the filters are being changed. Clean by washing as required.

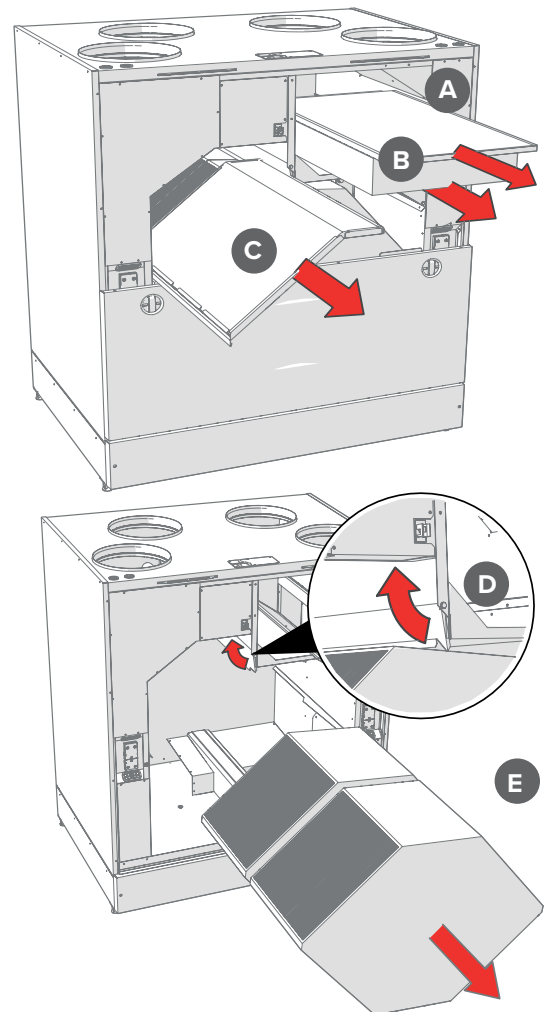
To check and clean the heat recovery cells:

1. Disconnect the ventilation unit from the mains electricity supply.
2. Open the doors of the unit.
3. Remove the filters (A, B, C).
4. Remove the support grid of the filters.
5. Disengage the upper support strip (D) of the cell.
6. Lift and pull the cell (E) out of the unit.
7. If the cells are dirty, clean them by immersing it in warm water, to which a small amount of a mild detergent has been added.
8. Rinse the cell clean with water spray. Do not use a high-pressure cleaner.
9. When all the water has drained from between the layers, reassemble the ventilation unit in the reverse order.
10. Close the doors. Ensure that the safety switch catch of the door is touching the safety switch.
11. Plug the ventilation unit back into the mains. The heat recovery cells have now been checked and cleaned.



IMPORTANT

Handle the cells carefully! For example, do not lift the cells by the layers. The cell layers are very thin and easily damaged.



CONDENSING WATER

In the heating season, the extract air humidity condenses to water. In new buildings, condensation runoff can form rapidly. Condensed water must be able to freely leave the unit.

At some time before the heating season begins (e.g. during autumn maintenance), check that the siphon or the condensing water outlet in the bottom pool are not clogged. To check this, pour some water into the pool. Clean as required.



NOTE

Some condensing water may have accumulated in the bottom pool of the unit; this is normal and requires no corrective action.



WARNING

Water must at all times be kept out of the electrical system.

CLEANING THE FANS

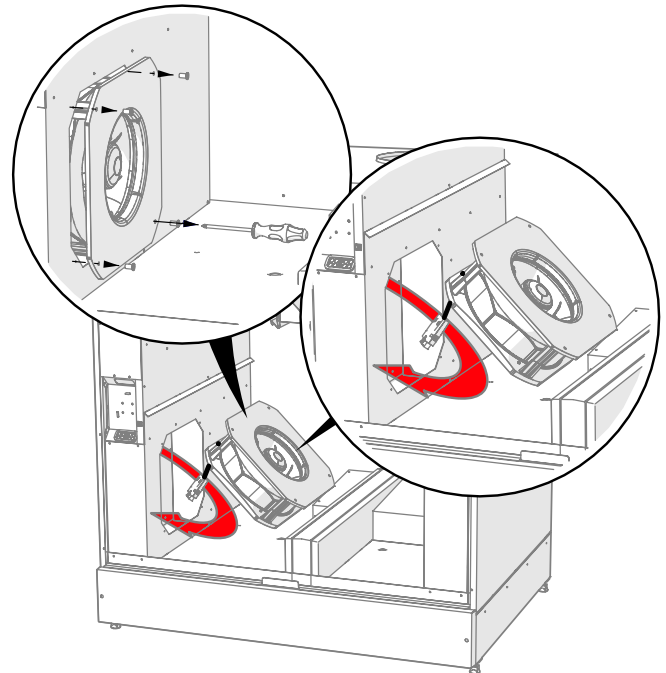
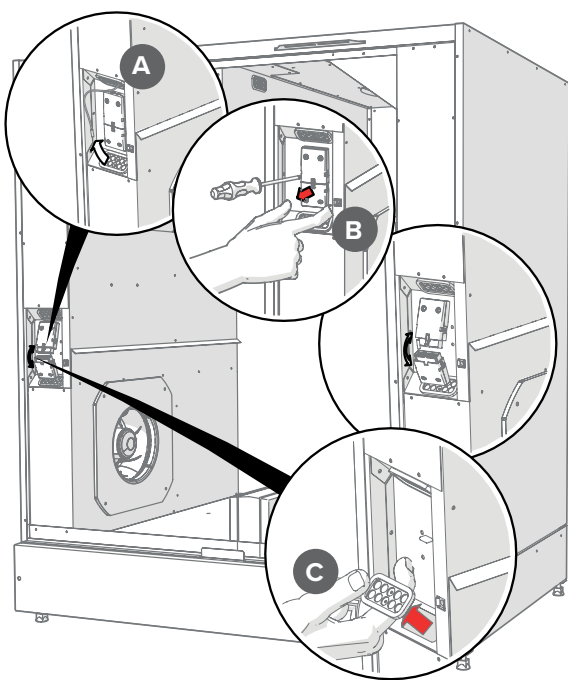
Check the cleanliness of the fans when servicing the filters and the heat recovery cell. Clean the fans as required.

You can clean the fan blades with compressed air (wear protective goggles) or by brushing them gently.



NOTE

Only the supply air fan is equipped with an air flow guide grille.



Removing and cleaning the supply and extract air fans

To clean the supply air fan:

1. Disconnect the ventilation unit from the mains electricity supply.
2. Open the doors of the unit.
3. Pull the temperature sensor out of the rubber feed through (A).
4. Disconnect the quick connector (B) of the fan cables.
5. Remove the rubber feed through (C).
6. Undo the fan's mounting screws.
7. Pull the fan out of its housing.
8. Clean the fan.
9. To reassemble the ventilation unit, follow the above steps in reverse order.
10. Close the doors. Ensure that the safety switch catch of the door is touching the safety switch.
11. Plug the ventilation unit back into the mains.
The fan has now been checked and cleaned.



IMPORTANT

The fans are extremely sensitive to external shocks. It is recommended that the fans be cleaned in place, i.e. without attempting to remove them.

Handle the fan blades carefully. Do not remove or move the fan blade balancing weights.



NOTE

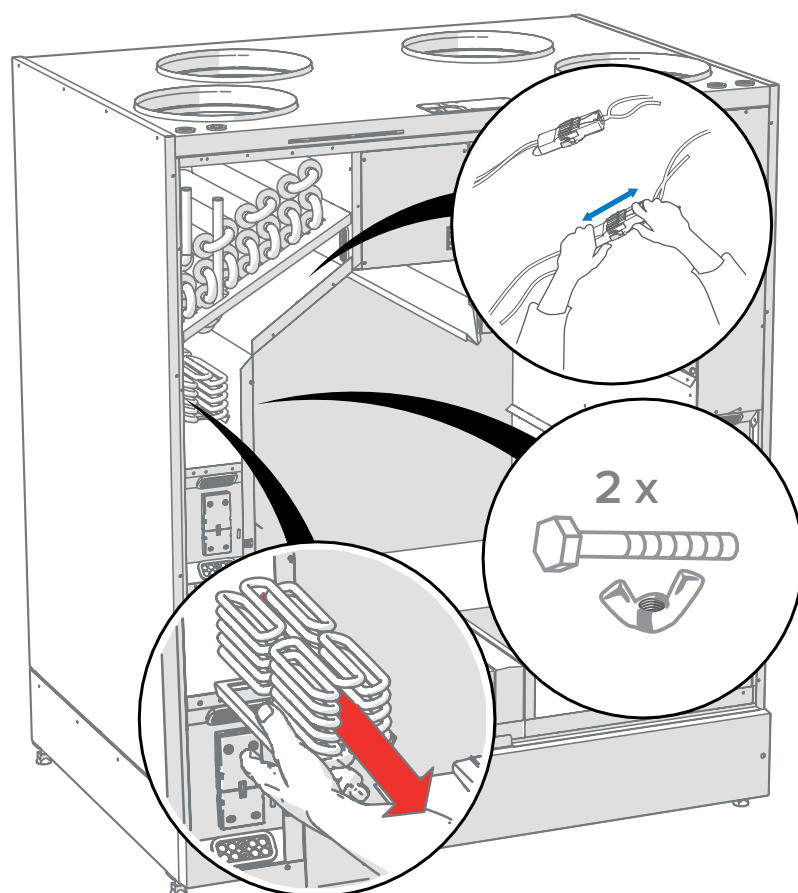
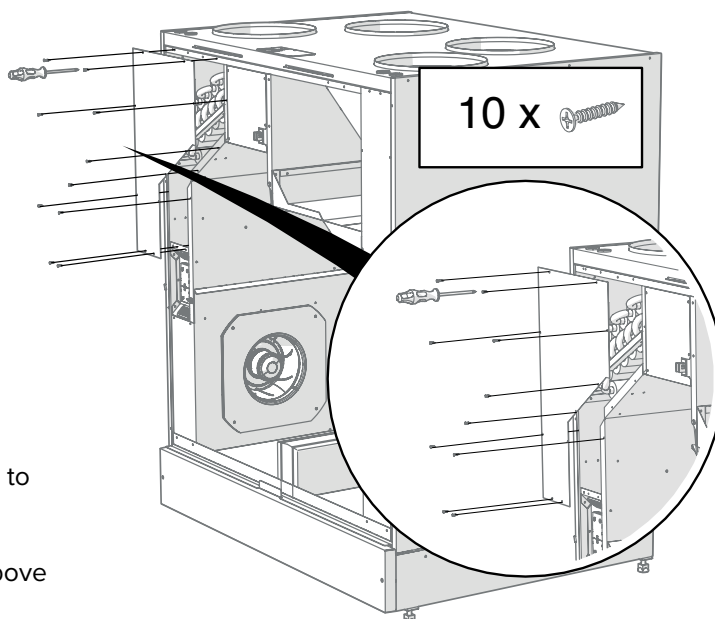
Remember to replace the temperature sensor by feeding it through the rubber feed.

Clean the extract air fan in the same way. The extract air fan is located symmetrically on the opposite side of the unit.

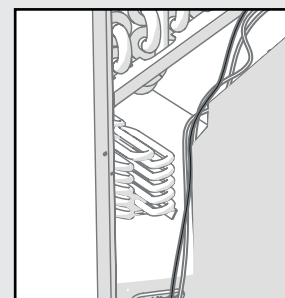
REMOVING THE RESISTOR

To remove the resistor:

1. Disconnect the ventilation unit from the mains electricity supply.
2. Open the doors of the unit.
3. Open the resistor box by undoing the mounting screws (10 PZ2 screws).
4. Remove the quick connector of the resistor:
 - a. Press down the locking device.
 - b. Pull off the connector.
5. Undo the two wing nuts connecting the resistor to the ventilation unit.
6. Lift the resistor out of the ventilation unit.
7. To reassemble the ventilation unit, follow the above steps in reverse order.



WARNING
Risk of fire! Connect the cables so that they do not touch the resistor.



CAUTION
Before removing the resistor from the unit, make sure it is not hot.

VALLOX 245 MV

TECHNICAL SPECIFICATIONS

Product title	Vallox 245 MV R Vallox 245 MV L		
Air volumes Supply air Extract air	247 dm ³ /s, 100 Pa 271 dm ³ /s, 100 Pa	Fans Supply air Extract air	0.170 kW 1.25 A EC 0.170 kW 1.25 A EC
Post-heating	Electrical resistor, 1500 W	Electrical connection	230 V, 50 Hz, 14.5 A power plug
Pre-heating	–	Enclosure protection class	IP34
Additional heating	Electrical resistor, 1500 W	Heat recovery bypass	Automatic
Filters Supply air Extract air	ISO Coarse > 75 % + ISO ePM ₁ ISO Coarse > 75 %		
Specific energy consumption (SEC) in a cold climate in a temperate climate	A+ A+	Operating efficiencies* Annual efficiency Supply air efficiency Specific Fan Power (SFP)	83 % 85 % 0.68 kW/m ³ /h (181 dm ³ /s)
Dimensions (w x h x d)	1038 x 1241 x 773 mm	Weight	181 kg

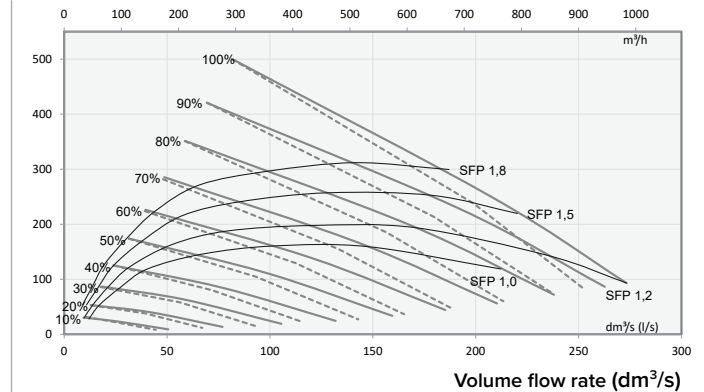
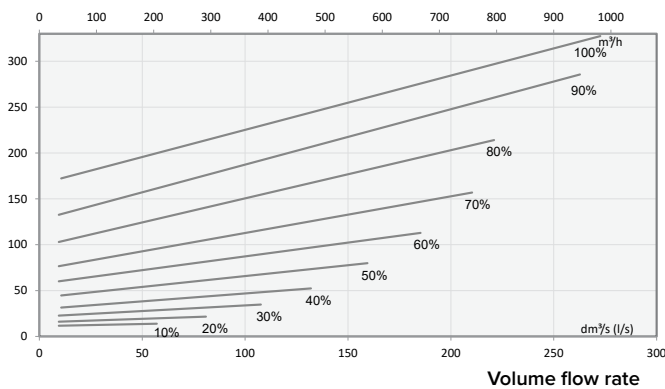
*Working point defined in the Ecodesign Directive (2009/125/EC), Southern Finland, Helsinki-Vantaa TRY year 2012.

FAN INPUT POWER

SUPPLY/EXTRACT AIR VOLUMES

Power (W)

Pressure loss in ducts. Total pressure (Pa)



$$SFP = \frac{\text{Input power (total) (W)}}{\text{Air flow (max) (dm}^3\text{/s)}}$$

SFP rate (Specific Fan Power)
recommended value <1.8 (kW m³/s)

— extract air
- - - supply air

VALLOX 245 MV VKL

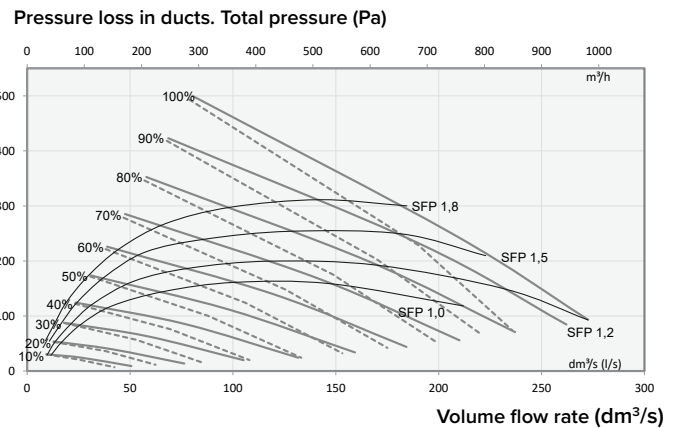
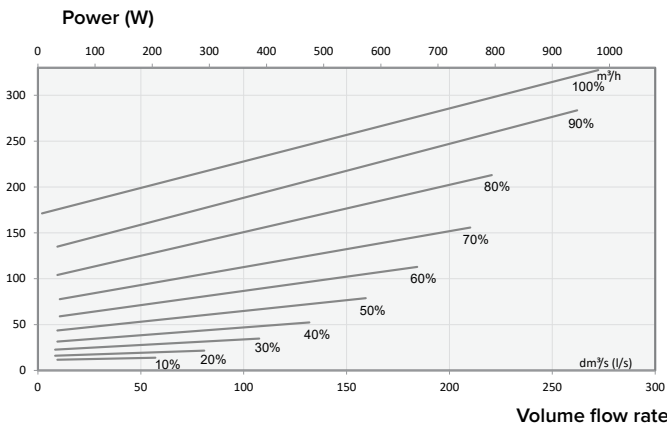
TECHNICAL SPECIFICATIONS

Product title	Vallox 245 MV VKL R Vallox 245 MV VKL L		
Air volumes Supply air Extract air	229 dm ³ /s, 100 Pa 269 dm ³ /s, 100 Pa	Fans Supply air Extract air	0.170 kW 1.25 A EC 0.170 kW 1.25 A EC
Post-heating	Liquid circulating radiator	Electrical connection	230 V, 50 Hz, 14.5 A power plug
Pre-heating	–	Enclosure protection class	IP34
Additional heating	Electrical resistor, 3000 W	Heat recovery bypass	Automatic
Filters Supply air Extract air	ISO Coarse > 75 % + ISO ePM ₁ ISO Coarse > 75 %		
Specific energy consumption (SEC) in a cold climate in a temperate climate	A+ A+	Operating efficiencies* Annual efficiency Supply air efficiency Specific Fan Power (SFP)	83 % 85 % 0.70 kW/m ³ /h (181 dm ³ /s)
Dimensions (w x h x d)	1038 x 1241 x 773 mm	Weight	187 kg

*Working point defined in the Ecodesign Directive (2009/125/EC), Southern Finland, Helsinki-Vantaa TRY year 2012.

FAN INPUT POWER

SUPPLY/EXTRACT AIR VOLUMES



$$SFP = \frac{\text{Input power (total) (W)}}{\text{Air flow (max) (dm}^3\text{/s)}}$$

SFP rate (Specific Fan Power)
recommended value <1.8 (kW m³/s)

— — — — — extract air
- - - - - supply air

SOUND VALUES

Adjustment position (%)	Sound power level in the supply air duct (one duct) by octave band L _w dB										Sound power level in the extract air duct (one duct) by octave band L _w dB										
	Adjustment position										Adjustment position										
	10	20	30	40	50	60	70	80	90	100	10	20	30	40	50	60	70	80	90	100	
Medium frequency of the octave band Hz	63	57	66	66	69	73	75	77	79	80	82	50	51	55	59	64	65	68	72	76	76
	125	43	52	57	64	66	69	71	72	73	73	38	48	50	53	54	55	57	57	59	59
	250	41	46	50	55	59	64	74	72	73	75	33	39	45	48	52	60	63	63	64	64
	500	35	41	48	52	55	58	61	64	67	68	24	30	36	39	42	46	49	50	52	53
	1000	30	38	43	48	52	55	58	61	64	65	18	26	31	36	39	43	45	48	50	51
	2000	24	33	41	46	50	54	56	59	61	63	13	18	25	30	35	38	41	44	46	47
	4000	17	20	27	34	40	45	49	52	55	57	17	17	18	20	24	29	32	35	38	39
	8000	21	21	22	25	31	37	42	46	49	52	21	21	21	21	22	23	25	28	30	30
L _w dB		58	66	66	70	74	77	80	80	82	84	50	53	56	61	65	67	70	73	77	77
L _{WA} dB(A)		38	45	50	55	59	62	68	68	70	72	30	36	40	44	48	53	56	57	59	59
Sound pressure level coming through the envelope of the unit in the room in which it is installed (10m ² sound absorption)																					
Adjustment position																					
Adjustment position (%)	10	20	30	40	50	60	70	80	90	100	10	20	30	40	50	60	70	80	90	100	
L _{pA} dB (A)	24	26	29	34	39	41	44	47	49	49	24	26	29	34	39	41	44	47	49	49	49

You can calculate the sound values for each operating point with the Vallox MySelecta software.

PRESSURE LOSS MEASUREMENTS OF THE LIQUID SIDE

Water flow dm ³ /s	Pressure loss kPa
0.100	53
0.075	31
0.050	14.5
0.040	9.5
0.025	4.0
0.020	2.7

(see page 8 Dimensions and duct outlets)

INPUT MEASUREMENTS

The measurements were taken using 55°C water. Other values have been derived from these measurements.

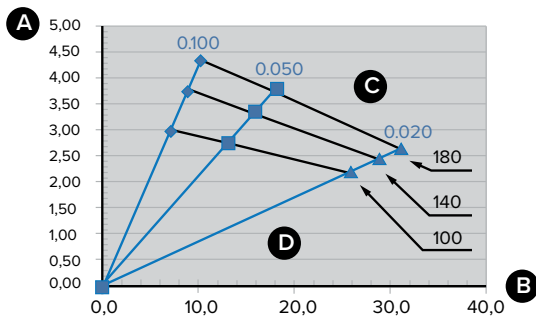
A Thermal input, kW

B Difference in water temperature, °C

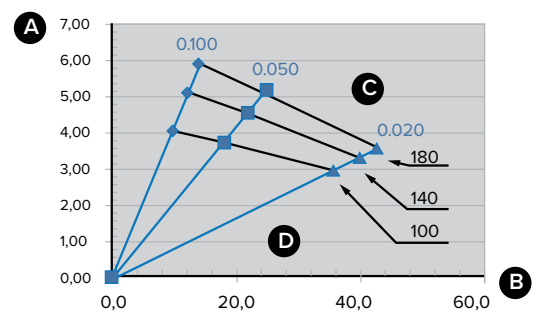
C Water flow dm³/s

D Air flow dm³/s

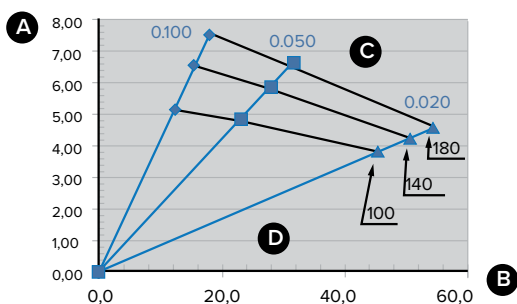
Vallox 245 MV liquid radiator $t_{ai}=15^{\circ}\text{C}$, $t_{ri}=55^{\circ}\text{C}$



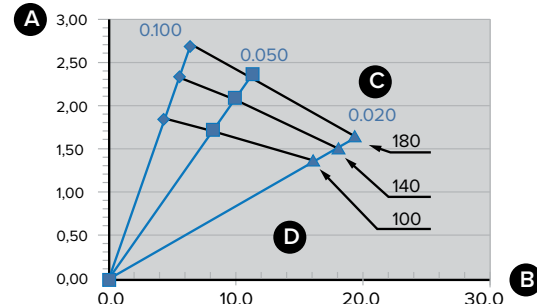
Vallox 245 MV liquid radiator $t_{ai}=15^{\circ}\text{C}$, $t_{ri}=70^{\circ}\text{C}$



Vallox 245 MV liquid radiator $t_{ai}=15^{\circ}\text{C}$, $t_{ri}=85^{\circ}\text{C}$

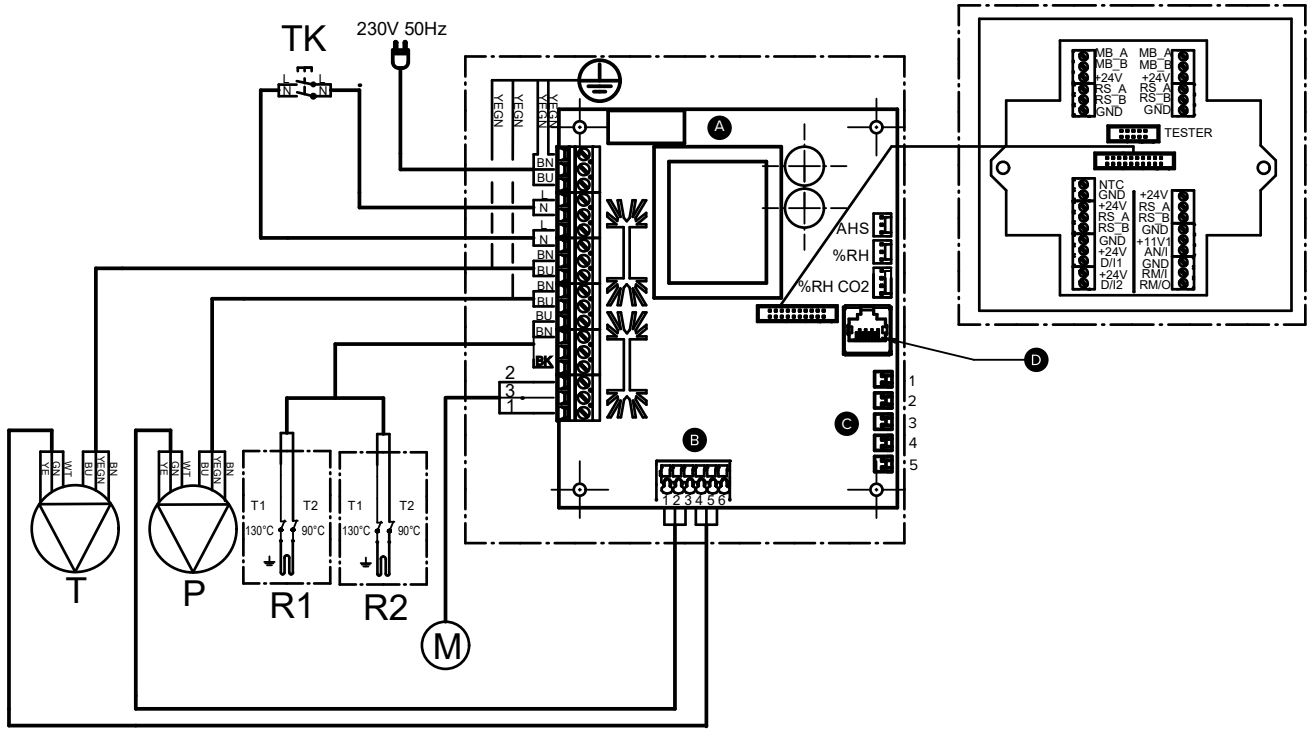


Vallox 245 MV liquid radiator $t_{ai}=15^{\circ}\text{C}$, $t_{ri}=40^{\circ}\text{C}$



INTERNAL ELECTRICAL CONNECTION

Vallox 245 MV

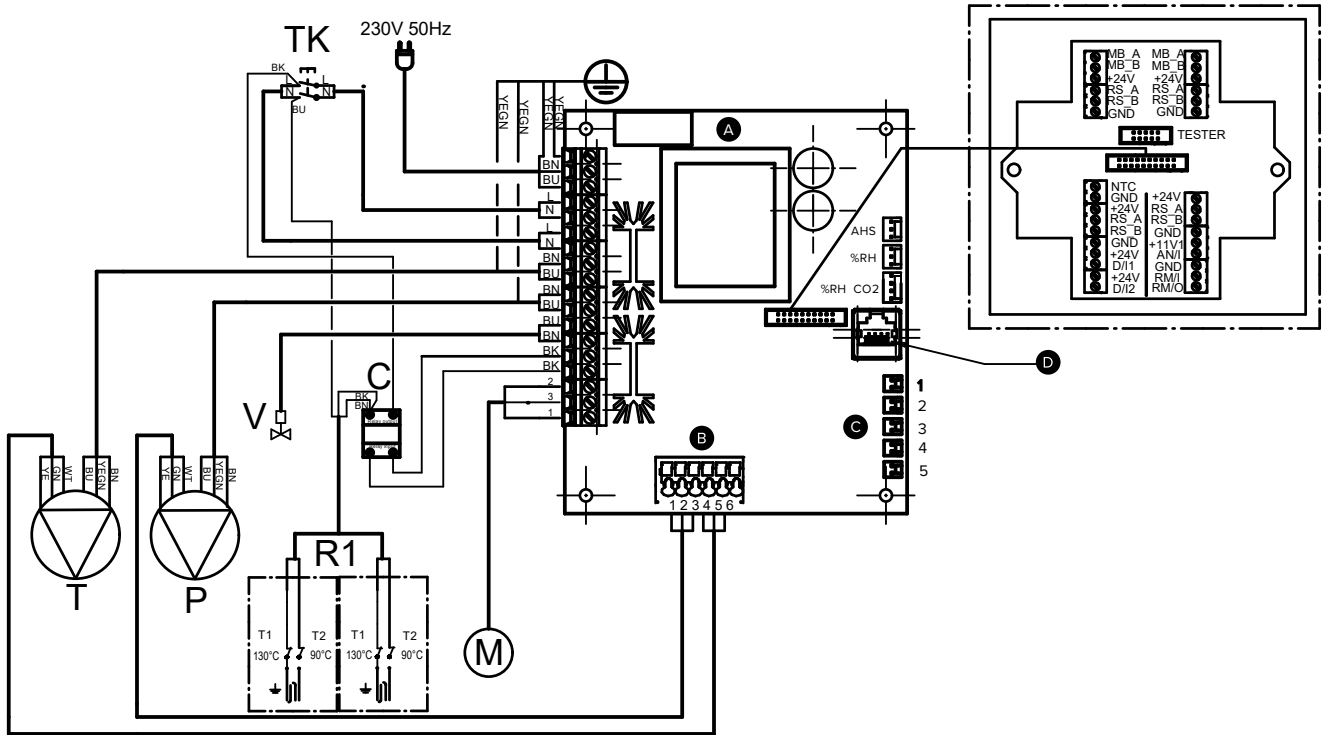


A	Motherboard	MB_A	External Modbus A signal	T	Supply air fan
B	1. Extract air fan tachometer (WT)	MB_B	External Modbus B signal	P	Extract air fan
	2. GND (GN)	+24V	+24V voltage (DC)	M	Damper motor
	3. Extract air fan PWM (YE)	GND	Digital and analog ground potential	TK	Safety switch
C	4. Supply air fan tachometer (WT)	RS_A	Local hardware Modbus A signal	AHS	Post-heating control
	5. GND (GN)	RS_B	Local hardware Modbus B signal	%RH	Internal humidity sensor
	6. Supply air fan PWM (YE)	NTC	External temperature sensor connector	%RH CO ₂	Internal humidity and carbon dioxide sensor
D	1. Extract air	D/I1	Digital input 1	R1	Post-heating resistor with 90°C and 130°C overheating protection
	2. Outdoor air	D/I2	Digital input 2	R2	Additional heating resistor with 90°C and 130°C overheating protection
	3. Supply air	11V1	11.1V operating voltage		
	4. Exhaust air	AN/I	Analog input 0-10VDC		
	5. Supply air from the HR cell	RM/I	24V relay input		
		RM/O	24V relay output		

CABLE COLOURS

BK	Black
BU	Blue
BN	Brown
WT	White
GY	Grey
YE	Yellow
YEGN	Yellow-green

Vallox 245 MV VKL

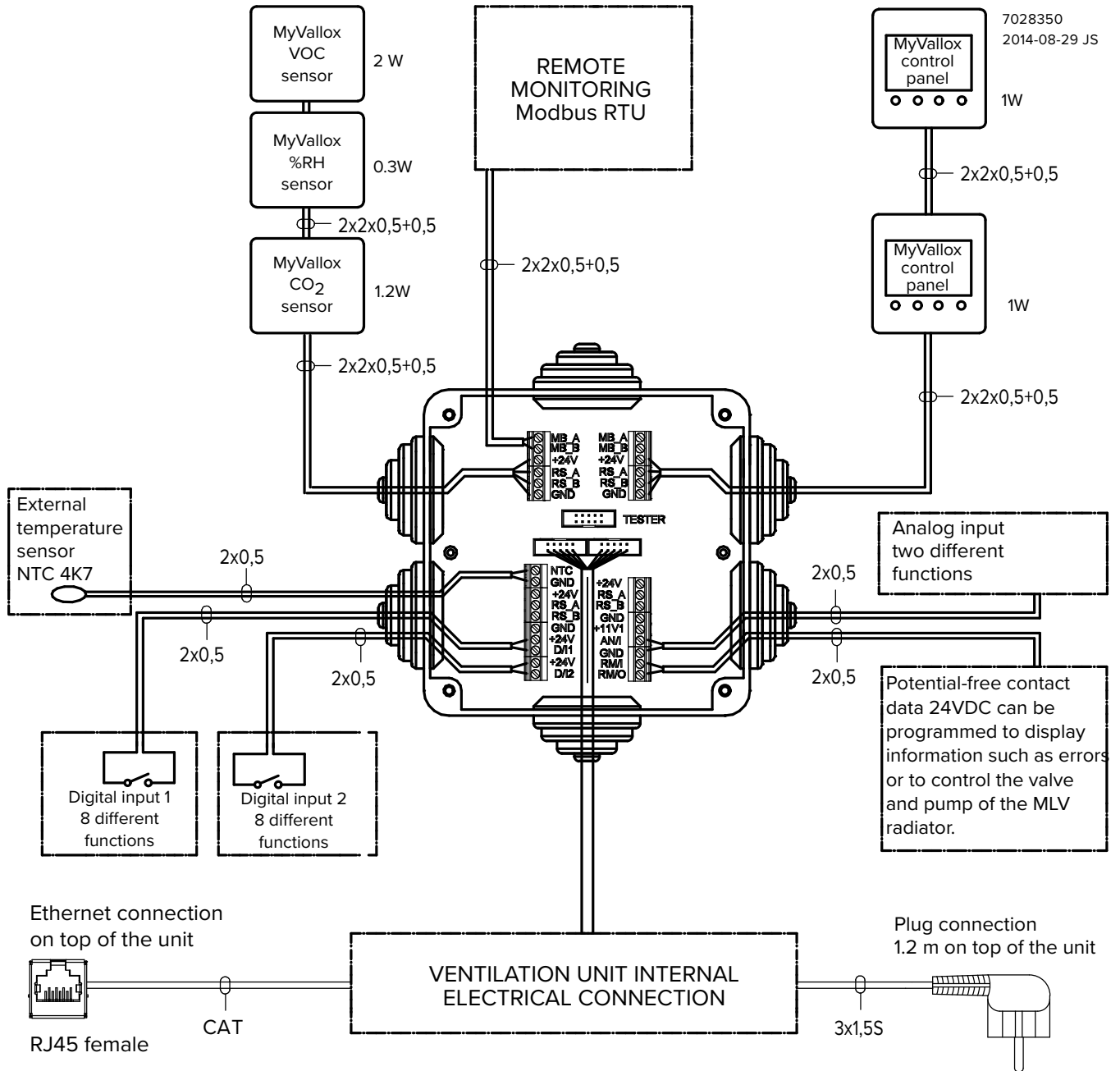


A	Motherboard	MB_A	External Modbus A signal	V	Liquid radiator actuator
B	1. Extract air fan tachometer (WT)	MB_B	External Modbus B signal	T	Supply air fan
	2. GND (GN)	+24V	+24V voltage (DC)	P	Extract air fan
	3. Extract air fan PWM (YE)	GND	Digital and analog ground potential	M	Damper motor
	4. Supply air fan tachometer (WT)	RS_A	Local hardware Modbus A signal	TK	Safety switch
	5. GND (GN)	RS_B	Local hardware Modbus B signal	C	Heating resistor relay
	6. Supply air fan PWM (YE)	NTC	External temperature sensor connector	AHS	Post-heating control
C	1. Extract air	D/I1	Digital input 1	%RH	Internal humidity sensor
	2. Outdoor air	D/I2	Digital input 2	%RH CO ₂	Internal humidity and carbon dioxide sensor
	3. Supply air	11V1	11.1 V operating voltage	R1	Additional heating resistor with 90°C and 130°C overheating protection
	4. Exhaust air	AN/I	Analog input 0-10VDC		
	5. Supply air from the HR cell	RM/I	24V relay input		
D	LAN	RM/O	24V relay output		

CABLE COLOURS

BK	Black
BU	Blue
BN	Brown
WT	White
GY	Grey
YE	Yellow
YEGN	Yellow-green

EXTERNAL ELECTRICAL CONNECTION



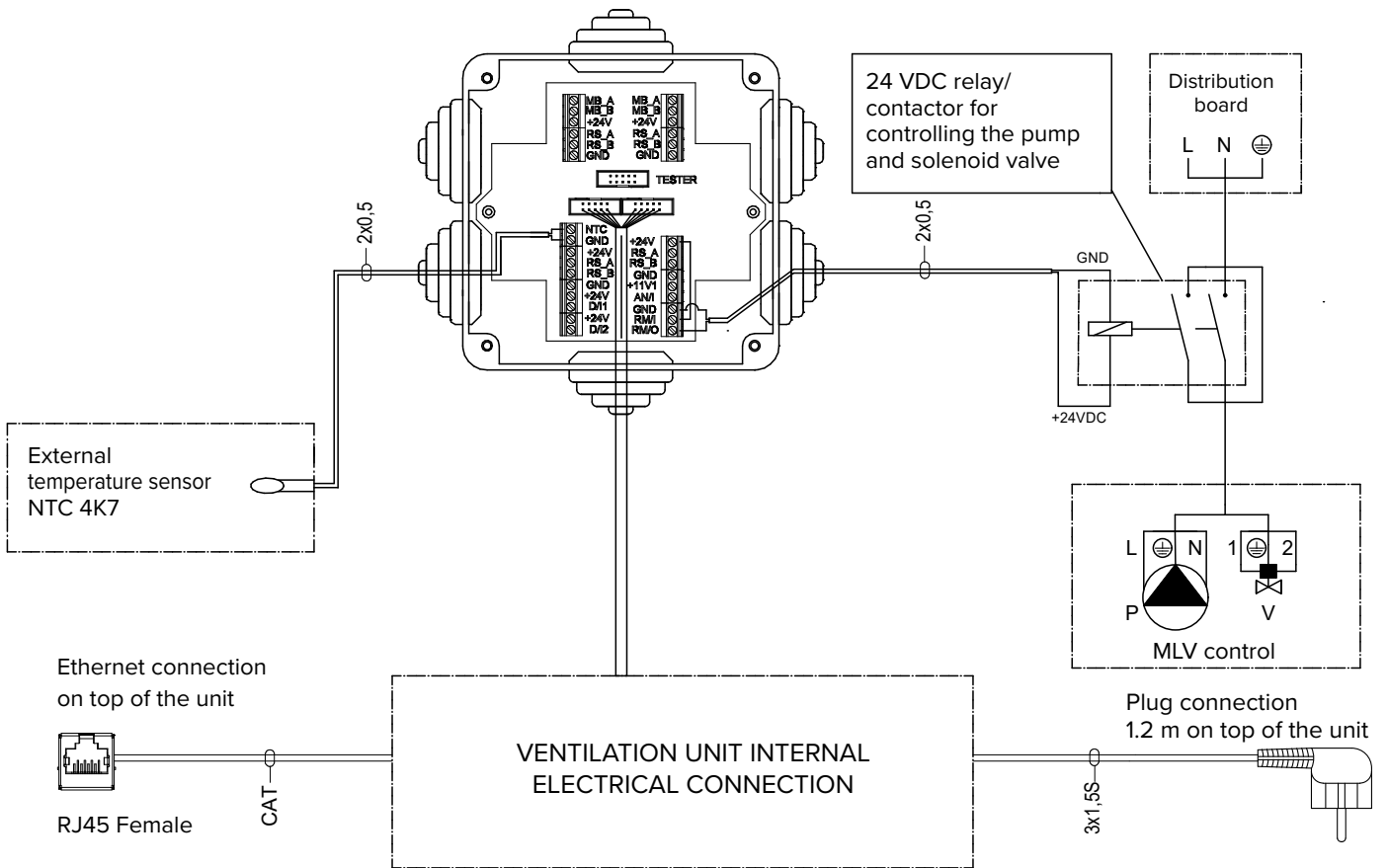
POWER SUPPLY

Maximum	≤6W
MyVallox Control	1W
MyVallox Touch	0.5 W.
MyVallox %RH sensor	0.3W
MyVallox CO ₂ sensor	1.2W
MyVallox VOC sensor	2W
Voltage	24 VDC

MB_A	External Modbus A signal
MB_B	External Modbus B signal
+24V	+24V voltage (DC)
GND	Digital and analog ground potential
RS_A	Local hardware Modbus A signal
RS_B	Local hardware Modbus B signal
NTC	External temperature sensor connector

D/I1	Digital input 1
D/I2	Digital input 2
11V1	11.1 V operating voltage
AN/I	Analog input 0-10VDC
RM/I	24V relay input
RM/O	24V relay output

EXTERNAL ELECTRICAL CONNECTION FOR CONTROLLING THE MLV DUCT RADIATOR



MB_A	External Modbus A signal	D/I2	Digital input 2
MB_B	External Modbus B signal	11V1	11.1 V operating voltage
+24V	+24V voltage (DC)	AN/I	Analog input 0-10VDC
GND	Digital and analog ground potential	RM/I	24V relay input
RS_A	Local hardware Modbus A signal	RM/O	24V relay output
RS_B	Local hardware Modbus B signal	P	Circulation pump
NTC	External temperature sensor connector	V	Solenoid valve
D/I1	Digital input 1		

DUCT RADIATOR OPERATION

Always follow first and foremost the connection diagram provided by the HVAC designer or heat pump manufacturer. Also read the duct radiator manual.

The accompanying figure shows an example of the arrangement for connecting the heating/cooling radiator unit to the heat collection circuit.

Connect the radiator output pipe to the heat collection circuit return pipe. Direct the fluid returning from the radiator unit to the heat collection circuit return pipe. If you know that there is a large loss of internal pressure inside the heat pump, the heat pump should be bypassed. If this is done, the fluid circuit will come into operation when the heat pump comes to a halt. When this happens the pressure loss in the one-way bypass valve Y2 must be lower than the pressure loss in the heat pump.

Heating: The pump starts when the outdoor air temperature drops below the winter limit value set at the factory (-5 °C).

Cooling The supply air setpoint value for the active mode (for example, At home) controls the pump start-up. The pump starts when the supply air setting is below the temperature of the supply air that is blown into the apartment.

The duct radiator can be installed in both the supply air duct and the outdoor air duct. If the radiator is installed in the outdoor air duct, it can be used for both preheating and cooling. If the radiator is installed in the supply air duct, it can be used for heating or for cooling only.

The duct radiator can be set to function either automatically or manually:

- **Automatic** - In summer, the supply air temperature will be maintained at the level specified in the temperature setting. In winter, the duct radiator will turn on, when the outdoor temperature falls below the winter setting.
- **Manual** - In summer, the duct radiator will turn on, when the outdoor temperature rises above the summer setting. In winter, the duct radiator will turn on, when the outdoor temperature falls below the winter setting.

To prevent the risk of condensation in the supply air duct, you can set the adjustment of the supply air limit to automatic or manual:

- **Automatic** - The supply air limit is adjusted automatically based on the dew point of the extract air. When the supply air temperature falls too low, the duct radiator will turn off.
- **Manual** - The supply air limit can be set manually. When the supply air temperature falls down to the set value, the duct radiator will turn off.

If an external sensor is in use, it is selected from the settings of the external sensor whether it is used to control the outdoor air duct radiator or the supply air duct radiator. The temperature of the external sensor can be read from the service menu: **menu > service menu > unit information page 5 "External sensor"**.



NOTE: If the duct radiator is used in the supply air duct, it can only be used for cooling.



NOTE: When used to control the outdoor air duct radiator, the external NTC sensor is installed in the outdoor air duct before the radiator. When used to control the supply air duct radiator, the external NTC sensor is installed after the radiator.



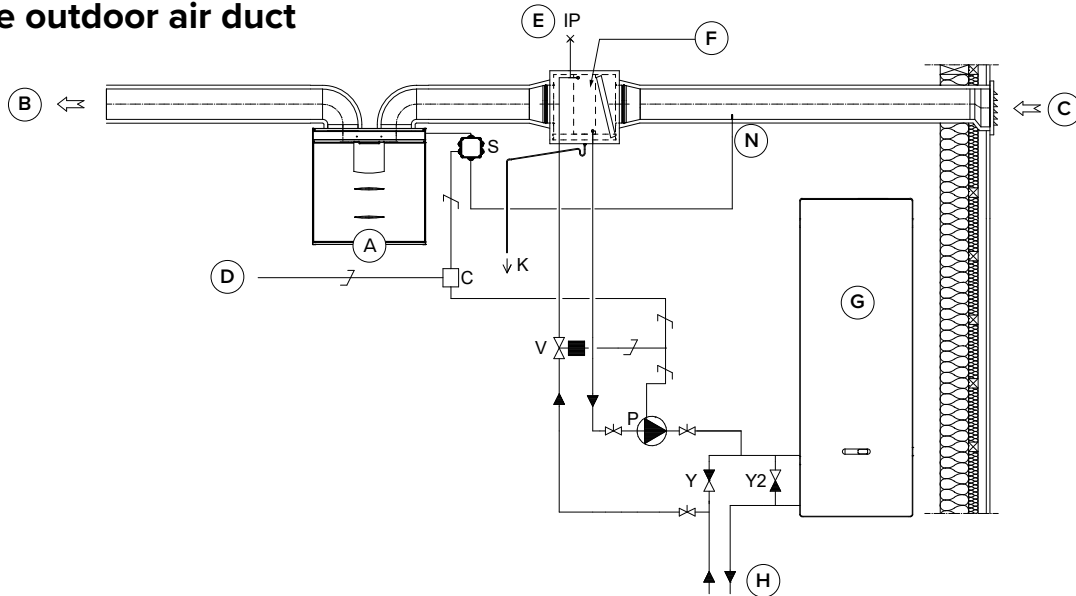
NOTE: When selecting the relay (C), take account of the maximum allowed combined power supply (6W) of the circuit board in the external MV electrical box, if the relay power supply comes from the circuit board's +24V connector.



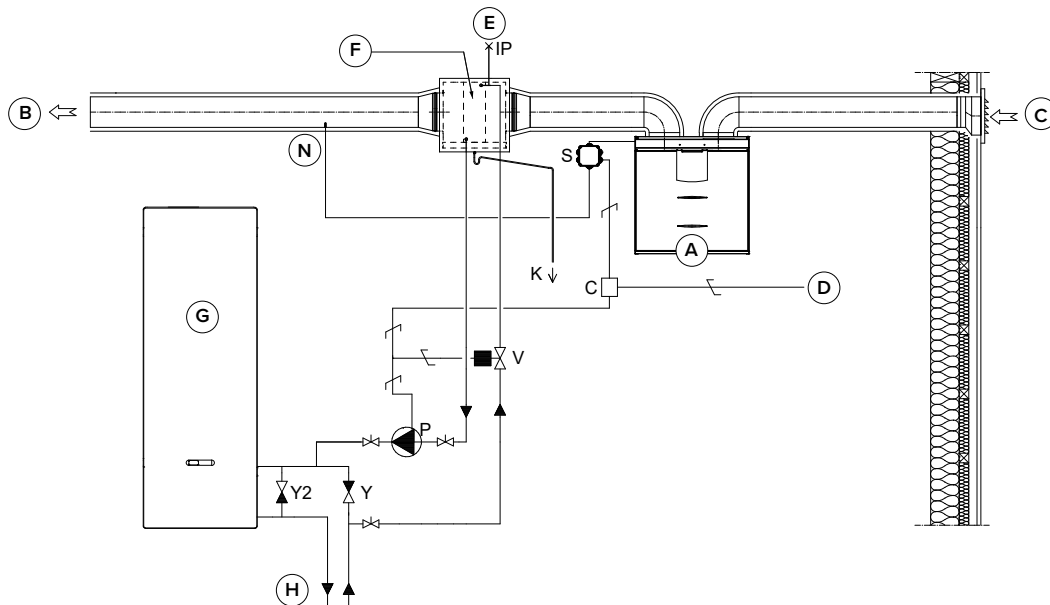
NOTE: Due to the risk of humidity damage, in a duct that has not been insulated for condensation the supply air temperature must not fall below +16 ... 20 °C.

DUCT RADIATOR OPERATION CHART

In the outdoor air duct



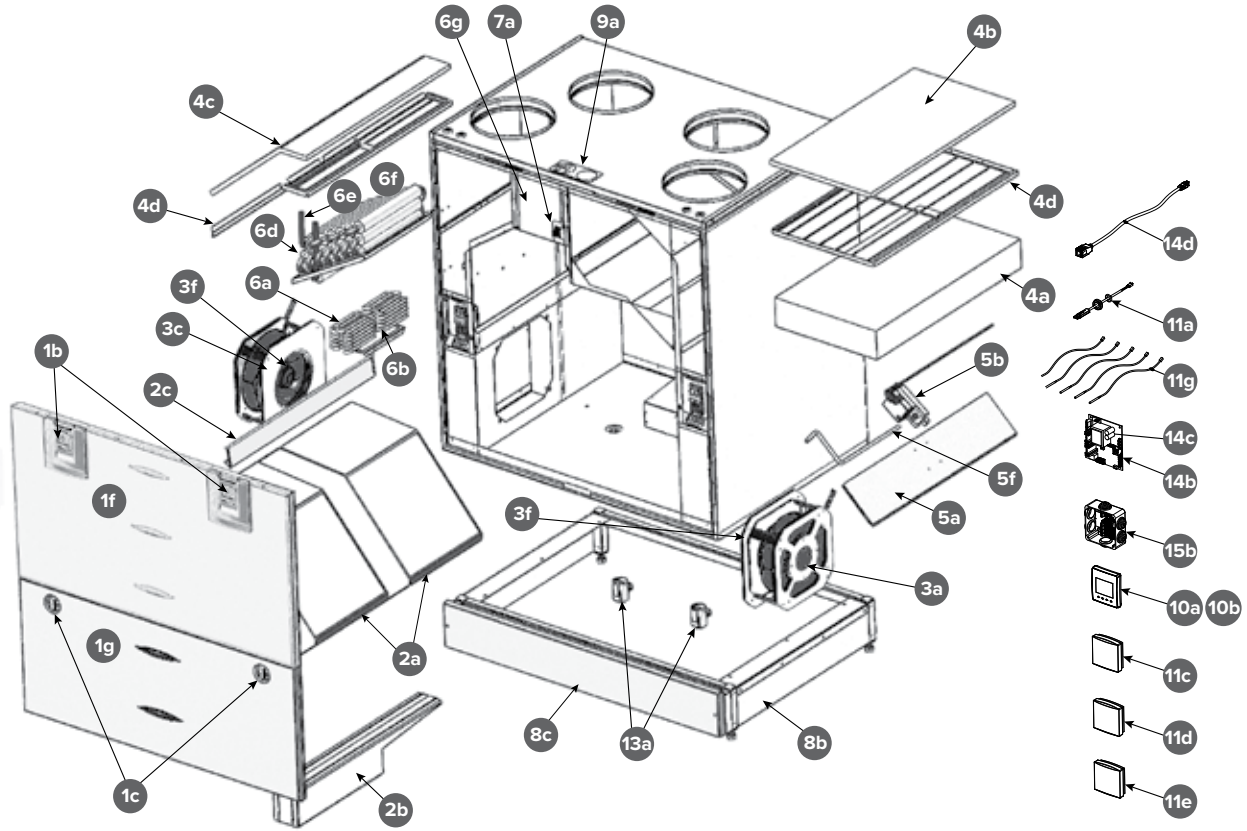
In the supply air duct



A	Ventilation unit
B	Supply air
C	Outdoor air
D	Feed from the distribution board
E	Air extraction
F	Duct radiator (reverse connection)
G	Heat pump
H	Heat collection circuit
N	External NTC sensor

P	Circulation pump. Not included in the delivery. The pump should be suited to pumping liquid colder than the surrounding air, due to risk of condensation (for example, Grundfos Magna 125-80).
V	Solenoid valve. Not included in the delivery. The valve that is chosen must be compatible with the heat collection circuit fluid (for example, Danfoss 032U161431).
K	Condensing water tube. Not included in the delivery.
IP	De-aerator. Not included in the delivery.
S	External electrical junction box for the MV
N	External NTC sensor for Vallox MV ventilation units
C	24 VDC relay/contacter for controlling the pump and the solenoid valve. Not included in the delivery. (For example, ABB CR-P024DC2)
Y	One-way valve. Not included in the delivery.
Y2	One-way valve. Not included in the delivery. The pressure loss must be less than the pressure loss of the heat pump.

EXPLODED VIEW AND SPARE PARTS LIST



NO.	PART	PRODUCT NO.	NO.	PART	PRODUCT NO.	NO.	PART	PRODUCT NO.
1b	Door latch	3355900	5a	Bypass damper of the HR cell	3514200	9a	Ceiling bushing for electric wires Ceiling feed-through seal	950445 950446
1c	Finger screw for the door	990713	5b	Damper motor	930618	10a	MyVallox Control panel	949033
1f	Upper door	3539500	5f	Bypass arm	3508900	10b	MyVallox Touch control panel	949090
1g	Lower door	3539400	6a	Post-heating resistor	942220	11a	Internal humidity and carbon dioxide sensor	4107985
2a	HR cell (aluminium) HR cell (enthalpy)	933295 933155	6b	Additional heating resistor	942220	11c	MyVallox carbon dioxide sensor	949111
2b	Lower support for HR cell	3515800	6d	Liquid radiator assembly	3555200	11d	MyVallox humidity sensor	946149
2c	Upper sealing slip of the HR cell	3516000	6e	Liquid radiator valve	946300	11e	MyVallox VOC sensor (optional)	949112
3a	Extract air fan	1115100	6f	Liquid radiator actuator	946320	11g	NTC sensor kit	3545900
3c	Supply air fan	1115100	6g	Liquid radiator control relay	948517	13a	Siphon Vallox Silent Klick	3494701
3f	Air flow guide grille	935431	7a	Safety switch	948377	14b	Motherboard	949032-1
4a	Fine filter for supply air	978159	8b	Base assembly	3527500	14c	Glass tube fuse 63mA slow 5x20mm	952490
4b	Coarse filter for supply air	978049	8c	Front panel of the base	3527700	14d	RJ45 extension cable	952196
4c	Coarse filter for extract air	978050				15b	Connection box	3526700
4d	Filter stand	3514700						

DECLARATION OF CONFORMITY

Manufacturer Vallox Oy

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Telephone number +358 10 7732 200

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Fax +358 10 7732 201
Email petri.koivunen@vallox.com

Description of unit Ventilation unit with heat recovery

Model Vallox 121 SE,
Vallox 51/51K SC/MV,
Vallox 99/101/125/096/110/145/245/245 VKL MV,
Vallox TSK Multi 50/80 MV,
ValloPlus 180/180K/270/350/370/510/850 MV,
ValloPlus 180/270/350/510 SC,
ValloMulti 200/300 SC/MV

Declares that the ventilation unit for supply and extract air, equipped with heat recovery and operating as part of a ventilation system has been designed and manufactured to the following specifications:

1. Low Voltage Directive (2014/35/EU) – EN 60335-1:2012 + A11:2014, A13:2017 + A1:2919 + A14:2019 + A2:2019; EN 62233:2008
2. EMC Directive (2014/30/EU) – EN 61000-6-1:2007, EN 61000-3-2:2014 + A1:2009 + A2:2009, EN 61000-3-3:2013, EN 61000-6-3:2007 + A1:2011
3. Ecodesign Directive (2009/125/EY) – Commission regulation 1253/2014 – EN 13141-7 Annex B, EN 308, EN 13141-7, ISO 3741, ISO 5135

This is the original Declaration of Conformity

Loimaa, 7th August 2023



Jukka-Pekka Korja
Managing Director

VALLOX

www.vallox.com

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