Vallox Digit 2 SE

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• Code 3550 SE
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INSTRUCTIONS FOR USE AND MAINTENANCE





MODELS:
VALLOX DIGIT2 SE
VALLOX DIGIT2 SE VKL
VALLOX DIGIT2 SE MLV VKL
VALLOX DIGIT2 SE MLV electric

DIGIT SED
ELECTRONIC CONTROLLER WITH LCD DISPLAY



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VALLOX DIGIT2 SE

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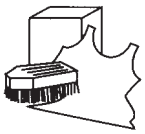
EVERYDAY QUICK GUIDE

VALLOX DIGIT2 SE has been initially adjusted for normal circumstances in your home. Ventilation adjustment is needed mainly in the following circumstances:

- **Taking a bath:**
  Boost ventilation in bathing and washing facilities in order to ensure that the rooms get dry as quickly as possible. It is advisable to have boosted ventilation on for 2 to 3 hours after taking a sauna bath, unless automatic adjustment based on humidity content is used.



- **Washing and drying clothes:**
  Boost ventilation in washing and drying rooms during the activity, unless automatic adjustment based on humidity content is used.



- **Sleeping:**
  Ventilation in a bedroom has to be sufficient throughout the night. The level is correct when air does not smell fusty when you enter the room in the morning. If the carbon dioxide content of a room is monitored and ventilation is adjusted accordingly, air will always be fresh.



- **Empty dwelling:**
  To save energy, ventilation can be adjusted to the minimum level.



- **Cooking:**
  If the ventilation unit is connected to a cooker hood, boost ventilation during cooking.

  The most common way to abate cooking fumes is to have a separate cooker hood.



NOTE!
Never switch ventilation off, because ventilation keeps indoor air quality uniform and removes gases and dust emanating from the structures.

VALLOX DIGIT2 SE models
Code: 3550 SE
Models: VALLOX DIGIT2 SE, VALLOX DIGIT2 SE VKL,
VALLOX DIGIT2 SE MLV VKL, VALLOX DIGIT2 SE MLV electric

VALLOX DIGIT2 SE
- Preheating radiator: electric, 1200 W
- Post-heating radiator: electric, 1200 W

VALLOX DIGIT2 SE VKL
- Preheating radiator: electric, 1200 W
- Post-heating radiator: liquid radiator

VALLOX DIGIT2 SE MLV VKL
- Preheating radiator: liquid radiator
- Post-heating radiator: liquid radiator

VALLOX DIGIT2 SE MLV electric
- Preheating radiator: liquid radiator
- Post-heating radiator: electric, 1200 W

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1. THREE QUESTIONS ABOUT VENTILATION

1.1. Why is air replaced in dwellings?

Good ventilation promotes healthy living for both residents and the building. Air in a dwelling needs to be replaced in order to remove humidity brought about by living as well as impurities emanating from structures and human bodies. Impurities of indoor air include carbon dioxide, formaldehyde, radon and other gases as well as dust.

Mechanical ventilation is needed in order to be able to adjust air circulation as needed by the residents. In a tightly sealed house, air does not circulate sufficiently by natural means. Even in a poorly sealed house air is only replaced because of differences between indoor and outdoor air temperatures, or because of winds. This means that ventilation is dependent on weather conditions and cannot be regulated.

It is especially important that humidity and carbon dioxide content of the indoor air stay at a healthy level. Recommended humidity content of good indoor air is approximately 45%. Humidity content is lower in winter and higher in summer and autumn. Dust mites thrive in indoor air if humidity exceeds 50%, and if humidity stays at over 60% for a long time in winter, water condenses in the cold structures of the house and mould starts to form.

The recommended maximum carbon dioxide content in good indoor air is circa 1,000 ppm.

1.2. What are the characteristics of adequate ventilation?

- Indoor air stays fresh in all the rooms of the dwelling, also in bedrooms during night. **Without adequate ventilation**, carbon dioxide content tends to rise high especially in bedrooms.
- The bathroom and the sauna get dry quickly.
- During the heating season, the windows and other outer wall structures remain dry.
- Humidity in indoor air is not condensed in the ventilation ducts.
- Air is fresh in the toilet as well.

1.3. How much air is replaced?

For air to be clean to breathe, it has to be replaced with outdoor air **every two hours**.

In a new and a renovated house, air needs to be circulated continually, at least once an hour. During the first year in a new and a renovated house, air needs to be circulated even more efficiently in order to remove harmful gases and structural humidity. In buildings that are more than a year old and dry, ventilation can be regulated as needed. Ventilation is boosted during for instance a sauna bath, clothes washing and cooking, and reduced during very cold periods or when there is nobody at home. Carbon dioxide and humidity sensors adjust ventilation in the rooms automatically as needed.

SEASONAL CALENDAR

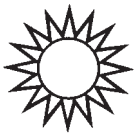
Autumn

- Wash or change the coarse filter and clean or change the fine filter if needed. The recommendation is approximately once a year.
- Check that the heat recovery cell is clean.
- Check that the condensing water outlet is not clogged.
- Switch the post-heating radiator on.



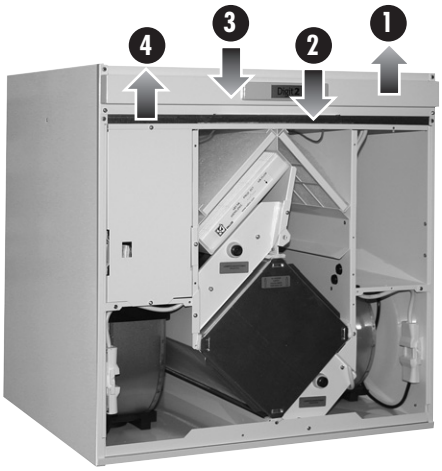
Spring

- Wash or change the coarse filter and clean or change the fine filter if needed.
- Clean the fan blades and the post-heating unit if needed.
- Check that summer ventilation is in operation.
- Switch the post-heating radiator off.



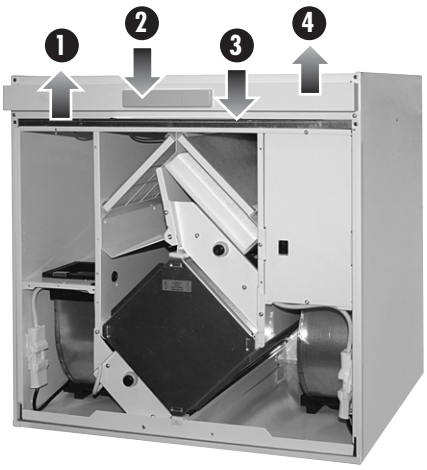
NOTE!
For further details, see inner pages.

VALLOX DIGIT2 SE, order of duct outlets

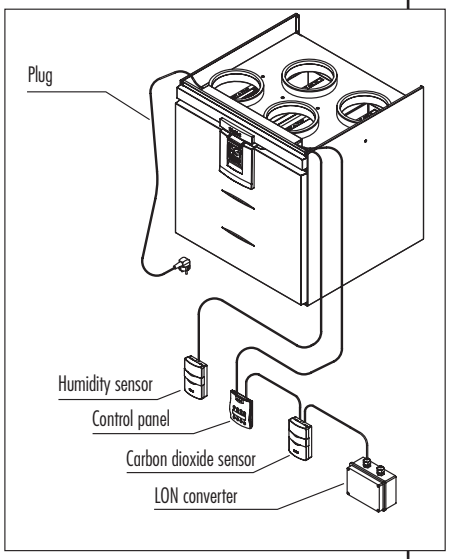


L MODEL
1. Supply air to rooms
2. Extract air to the unit
3. Outdoor air to the unit
4. Exhaust air outside

R MODEL
1. Supply air to rooms
2. Extract air to the unit
3. Outdoor air to the unit
4. Exhaust air outside



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Remember!
Never turn VALLOX off, or else you'll risk catching a cough!

2. Instructions for using VALLOX DIGIT2 SE

Also get acquainted with the technical specification. It gives a broader description of the parts and functioning of the unit.

For indoor air to stay healthy and beneficial also for the structures of the dwelling, ventilation has to be in operation continuously. It is not advisable to stop ventilation even for longer holidays because it makes indoor air stuffy. Also, during the heating season indoor air humidity may condense in the ducts and structures and therefore cause humidity damage. The sensors automatically adjust ventilation to an optimal level even if the dwelling is empty.

2.1. Making the unit ready for operation

1. Connect the plug to the mains supply. VALLOX DIGIT2 SE is now ready for operation.
2. Turn the unit on and choose a suitable ventilation power at the control panel. There are either one or more control panels. See the instructions for using the control panel in Sections 3.2.1. and 3.2.2. A wireless remote control may also be in use.

In normal conditions **basic ventilation**, with a change of air every two hours, is sufficient in living areas. Boosting is needed during for example sauna baths, cooking, clothes washing or family parties. If carbon dioxide and/or humidity sensors have been installed in the system, VALLOX DIGIT2 SE also takes care of demand controlled ventilation.

If no precise measurement data is available, the table below shows the speed which is sufficient for basic ventilation in dwellings of different sizes. The table also shows how much the fans of the unit consume electricity at various speeds.

SPEED	1	2	3	4	5	6	7	8
Living area (m^2)	55	100	140	175	215	245	275	314
Air flow (l/s)	20	35	50	62	75	85	97	110
Total electricity consumption of fans (W)	40	60	90	125	160	200	235	305

2.2. Ventilation control

The unit can be fully controlled with the control panel delivered with the unit, with a wireless controller (option) or with a LON converter (option).

The standard week clock control can be used to control the fan power of the unit and the setpoint for supply air temperature. (This function is not available in the wireless remote control.)

Furthermore, demand controlled ventilation can be adjusted with optional carbon dioxide and humidity sensors.

The fan power of the unit can also be controlled with a voltage or current signal.

2.3. Ventilation control with control panel

The control panel can be used for the following ventilation control functions:

2.3.1. Functions for adjusting ventilation power

- Starting and stopping.
- Power adjustment (8 positions).
- Setting the base fan speed and the maximum fan speed. Ventilation power cannot be set lower than the base fan speed. When carbon dioxide and/or relative humidity adjustments are activated, power cannot be adjusted higher than the maximum fan speed. When humidity and carbon dioxide adjustments have been switched off, fan speed can be raised to speed 8 (if the limitation only exists with adjustments, see the Settings menu, Section 3.3.6).

2.3.2. Supply air temperature adjustment functions

- Switching the electric post-heating unit on/off.
- Setting the desired supply air temperature (+10 °C...+30 °C).
- Selecting the desired method for controlling supply air temperature

2.3.3. Preheating

- Setting the control temperature for the electric preheating unit (-6 °C...+15 °C exhaust air).
- Changing the setpoints.

There may be three control panels at most. When more than one control panel are used, the most recent control function is valid.

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Fixed controller (standard)



Wireless remote control and receiver (option)

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2.3.4. Liquid-circulating preheating and precooling

- Setting the control temperature (-6 °C... +15 °C, outdoor air) for the heating function in a liquid-circulating preheating unit (MLV model). The function is on when outdoor air temperature goes below the set temperature and post-heating has been switched on (see the instructions for using the control panel, Section 3.3.24.).

  When the temperature value is lower than the temperature of the liquid coming from the ground collector, the liquid is used to heat outdoor air. If preheating cannot keep exhaust air temperature warmer than the stopping temperature is, the outdoor air fan stops.
- Setting the control temperature (+10 °C... +30 °C, supply air) for cooling in the liquid-circulating preheating unit (MLV model). The cooling function starts whe the post-heating radiator has been switched off and the temperature of air coming from the unit to the dwelling exceeds the setpoint temperature of supply air (see the instructions for using the control panel, Section 3.2.6.).

  When choosing the setpoint temperature for supply air, care must be taken so as not to bring too cold air into the duct, which may cause humidity damage. The risk is small when the ground collectors of the heat pump are situated in the ground or in a water system and the liquid received from them is warmer in summer than the liquid circulating in the drilled well.

  If the duct is not insulated against condensation indoors, the temperature of air travelling in it must be confined to below the dew point, which depends on the ambient temperature and relative humidity. In hot weather, supply air temperature should not go below +16...+20 °C.

2.4. Ventilation control with carbon dioxide sensor (option)

- In carbon dioxide control, VALLOX DIGIT2 SE adjusts fan speed so as to keep carbon dioxide content in the ventilation zone below the setpoint. When two or more sensors are used, fan speed is adjusted according to the highest measuring result.
- Carbon dioxide control is anticipatory. When carbon dioxide content is on the rise, it raises speed up to speed 4 even if the setpoint were not exceeded.
- 1...5 carbon dioxide sensors can be connected as options to the VALLOX DIGIT2 SE unit.
- The adjustment is switched on/off and, if needed, the setpoint (500...2000 ppm) is set at the control panel. The factory setting is 900 ppm. The recommended maximum carbon dioxide content in good indoor air is 1,000 ppm.
- When control is on, the control panel may be used to raise fan speed to the maximum fan speed and to decrease it to the base fan speed. In carbon dioxide control, maximum fan speed limitation is enabled.



Carbon dioxide sensor (CO_2)

2.5. Ventilation control with humidity sensor (option)

There are two methods for adjusting fan speed.

1 **Automatic humidity setting**, which is suitable for controlling humidity in washing rooms, for instance. The program records current humidity level and selects it as the setpoint, which it then uses as the target for drying air in a bathroom e.g. after a shower. The setpoint automatically varies according to season, for instance, and is always at the right level. This setting is factory selected.

2 Humidity level can also be set **fixed**. The setting can range between 1...99 %RH and is set at the control panel. This can be used in public saunas and swimming pools, for instance. The program aims at keeping humidity at the setpoint. The setpoint can be changed if needed.

  Mode of adjustment is selected at the controller (see the Settings menu, Section 3.3.19.). Recommended humidity content of good indoor air is approximately 45%.

- When this control is on, the control panel may be used to raise fan speed to the maximum fan speed and to decrease it to the base fan speed.
- In humidity control, fan speed varies between the basic and maximum fan speeds selected.
- When the unit is first taken into use with **automatic setpoint search enabled** (factory setting), **it takes 3 to 10 hours for the program to define the value**. During this time, humidity adjustment is not enabled (because the first value, selected at the factory, is 100%).
- Automatic search is enabled even if humidity control is not selected.





Humidity sensor (RH)

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LON converter



2.6. Ventilation control with voltage or current signal

- VALLOX DIGIT2 SE fan power can be controlled with a voltage or current signal coming from remote monitoring.
- The signal can be used to select speeds 0 to 8. However, if carbon dioxide or humidity adjustment is enabled, the maximum fan speed cannot be exceeded.
- The signal changes the base fan speed.
- The signal does not lock fan speed, i.e. fan speed can be changed at the control panel within the set limits. Carbon dioxide and humidity adjustment also operate within the set limits.

2.7. Ventilation control with remote monitoring system (option)

- With an optional LON converter, VALLOX DIGIT2 SE can be connected to the remote monitoring system.
- When VALLOX DIGIT2 SE is connected to the remote monitoring system, compatibility between the two needs to be ensured.
- The remote monitoring system can control the same functions as the control panel does.
- The remote monitoring system works in parallel with the control panel as well as carbon dioxide and humidity sensors.

2.8. Post-heating

For most of the year, heat recovered from the air being extracted is enough to warm the cold air coming from the outside to a suitable temperature. If the heat of extract air is not enough, air coming from the outside may be heated further with an electric radiator, available as an option for the unit. Post-heating is switched on at the control panel (see the instructions for using the control panel, Section 3.1.). When heating has been switched on, the unit automatically adjusts the selected supply air temperature.

2.9. Supply air constant temperature control

- Post-heating control in VALLOX DIGIT2 SE is relative; when the temperature selected exceeds supply air temperature by more than 2.5 °C, the radiator is on 100%, and when the temperature difference gets smaller, the period of active heating is automatically reduced in two-minute sequences. The adjustment range of heating is 10...30 °C.
- The heating radiator is on when the (≋) sign is displayed.
- Temperature control is only active when post-heating has been switched on.

2.10. Supply air cascade control

- Supply air temperature control can be changed into cascade control.
- It changes the controlling principle of the post-heating radiator. The temperature of air blown to the ventilation zone is controlled on the basis of extract air.
- The program tries to keep supply air temperature at a value determined by the difference between extract air and the setpoint as follows: If extract air is warmer than the setpoint, supply air temperature is lower than the setpoint by the difference. If extract air is colder, supply air is higher than the setpoint by the difference.

  If the temperature in the room is 25 °C and the setpoint is 24 °C, the aim is to blow 23 °C air to the ventilation zone. If the temperature in the ventilation zone is 24 °C and the setpoint is 25 °C, the aim is to blow 26 °C air to the ventilation zone.
- The aim is to keep the temperature of air blown to the ventilation zone always within the range of 10...30°C.
- Cascade control can be selected at the control panel, and it is active when post-heating has been switched on.
- The heating radiator is on when the (≋) sign is displayed.

2.11. Heat recovery bypass function

- The bypass function tries to get as cool supply air as possible to the ventilation zone by comparing the measuring results of the outdoor air and extract air sensors.
- The heat recovery cell is bypassed when post-heating is switched off, outdoor air temperature is two degrees more than the setpoint and extract air is warmer than outdoor air.
- The setpoint can be changed between 0 and +25 °C. (Factory setting 12 °C).

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2.12. Heat recovery antifrost function and preheating

- Antifrost prevents the heat recovery cell from freezing, thus ensuring proper ventilation even in cold periods.
- According to the factory setting antifrost is implemented in units with an electric preheating radiator by stopping the supply air fan. The stopping function is controlled on the basis of the data given by the temperature sensor measuring the temperature sensor of exhaust air after the heat recovery cell.
- T he supply air fan stops when exhaust air temperature falls to the setpoint (factory setting +4 °C) and starts when exhaust air temperature has risen to the value set (by the amount of the hysteresis setting, factory setting +3 °C).

Preheating

- The unit is equipped either with an electric preheating radiator or a liquid-circulating preheating radiator (MLV model). The purpose of using the radiator is to minimise momentary stopping of the supply air fan. This ensures a maximally even supply air flow through the unit.
- An electric preheating radiator is taken into use by using the Settings menu, adjusting switch-on temperature to be higher than the value for "supply fan Stop". The difference could be 2 °C, for example.The radiator switches on when exhaust air temperature falls to the setpoint and switches off when exhaust air temperature has risen to the value set (by the amount of the hysteresis setting, factory setting +3 °C).

  If radiator power is not sufficient in extreme conditions, the supply fan starts to stop as exhaust air temperature goes down to the "supply fan Stop" value. The setpoint for preheating could be +6 °C, for instance; the factory setting for "fan Stop" is +4 °C.
- The liquid-circulating preheating radiator (MLV model) starts when post-heating has been switched on and outdoor air temperature is below the preheating setpoint. The setpoint temperature must be lower than the temperature of the liquid in the ground collector (factory setting +0 °C). The automatic control system of the unit switches on the circulation pump and opens the solenoid valve of the radiator (see the Technical specification).

2.13. Maintenance reminder

- The maintenance reminder switches on the maintenance reminder symbol (!) in the main display of the control panel at defined intervals, the factory setting being 4 months.
- The maintenance reminder symbol is reset at the control panel (see the instructions for using the control panel, Section 3.3.10.).
- The interval can be set between 1 and 15 months at the control panel.

2.14. Filter guard function

- If DIGIT2 SE is equipped with a pressure difference switch for the supply and/or extract air ductwork, the switch monitors the pressure difference in the whole ductwork. When pressure has risen (e.g. because of a clogged filter), the filter guard symbol (⧖) in the main display of the control panel is lit up.
- The filter guard closes the contacts of the fault signal relay, and the filter guard symbol (⧖) is seen in the main display.
- The maintenance reminder is on even during this function.
- The operation threshold for the pressure difference switch is adjusted at the pressure difference switch regulator (0...500 Pa). Factory setting is ca. 260 Pa, and the setting can be changed if needed. With clean filters, the symbol should light up at speeds 7 and 8.

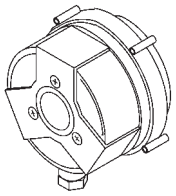
2.15. Antifreeze function in water-circulating post-heating unit

- The antifreeze function aims at preventing a water-circulating post-heating unit from freezing. The automatic function stops the supply and extract air fans as soon as outdoor air temperature falls below 0 °C and supply air temperature below +7 °C. At the same time, the self-actuated dampers of the fans close and the control valve becomes wide open. The control panel displays the fault message FREEZING ALERT, irrespective of display.
- The fans start automatically and the dampers open as soon as supply air temperature exceeds 10 °C.

Remember!

Switch post-heating off when it starts to get too warm in the dwelling because of warm weathers.

Switch post-heating on again when it gets cooler in autumn.



Pressure difference switch

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2.16. Fireplace switch function/boosting

Fireplace switch function

- The fireplace switch stops the extract air fan for 15 minutes and produces overpressure in the ventilation zone. This makes it easier to light a fireplace, for instance.
- The function is started in the main display of the control panel by simultaneously pressing and holding down the + and - buttons for 2 seconds.
- The function can also be started at a separate auto-reset push-button switch, wired from the connection box of the unit to a wall in the fireplace room, for instance. Upon each pressing, the stopping function continues for 15 minutes (the switch is not included in the delivery).
- During the function, the fireplace/booster switch symbol ( ) is visible in the main display of the control panel.

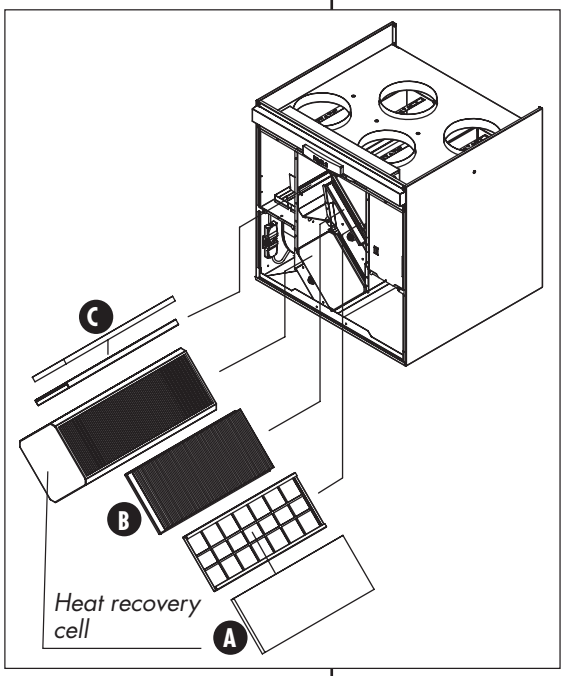
NOTE!

The starting of the extract air fan may weaken draught in the fireplace.

During cold winter periods, the flowing of cold air to the extract ducts may cause the antifreeze and antifrost functions to start. The situation will normalise in a while, after the functions stops.

Booster switch function

- The booster switch raises the fan speed to the set maximum speed for 45 minutes.
- The function is started in the main display of the control panel by simultaneously pressing and holding down the + and - buttons for 2 seconds.
- The function can also be started at a separate auto-reset push-button switch, wired from the connection box of the unit to a wall in a classroom, for instance. Upon each pressing, the booster function continues for 45 minutes.
- During the function, the fireplace/booster switch symbol ( ) is visible in the main display of the control panel.
- The function is chosen at the control panel (is alternative to the fireplace switch function, see Section 3.3.17.).



2.17. Fault signal relay (remote monitoring)

- The fault signal relay has potential-free contacts (24 VDC, 1 A).
- The contacts provide information on various failure modes of the unit.
- When the antifreeze function of the water-circulating radiator is on, the contacts of the relay close and open at a 10-second interval.
- Alarm of high carbon dioxide content switches the relay at 1-second intervals.
- In other fault situations, the contacts are closed.

2.18. Air filtering

VALLOX DIGIT2 SE has an F7 class fine filter (B) and a G3 class coarse filter (A) on the supply air side as well as a G3 class coarse filter (C) on the extract air side. The filters need to be in place in the unit whenever ventilation is in operation.

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3. Control panel

Separate instructions for use and installation instructions are delivered with a wireless remote control.

3.1. Keyboard



1 Start button
Use this button for switching the unit on and off. When the indicator is lit, the unit is on.

2 Carbon dioxide adjustment
Press this button to switch carbon dioxide adjustment on and off. When the indicator is lit, the adjustment is on.

3 Humidity adjustment
Press this button to switch humidity adjustment on and off. When the indicator is lit, the adjustment is on.

4 Post-heating
Press this button to switch post-heating on and off. When the indicator is lit, post-heating is on. The summer function is active when the indicator is not lit.

5 Scrolling up
With this button you can scroll the displays upward.

6 Scrolling down
With this button you can scroll the displays downward.

7 Increase button
With this button you can increase values.

8 Decrease button
With this button you can decrease values.

Power failure

After a power failure, the unit starts at minimum fan speed. The adjustments and setpoints chosen will remain in the memory of the unit in spite of the power failure.

3.2. Operating menu

The displays of the operating menu (sections 3.2.1.–3.2.6.) can be scrolled with the scrolling buttons (see section 3.1., items 5 and 6 in the figure).

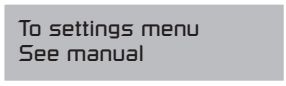
3.2.1. Main display and change of fan speed



3 Fan speed (3).
21 C Supply air temperature (21 °C).
Post-heating is on.
10:20 Time.
Filter guard alert.
Maintenance reminder alert.
Fireplace/booster switch on. The fireplace/booster switch is activated in this display by simultaneously pressing down the + and – buttons for 2 seconds.
Week clock control on.

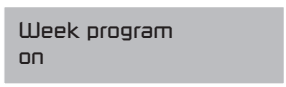
Fan speed can be changed in this display with the + and – buttons (see Section 3.1., items 7 and 8 in the figure).

3.2.2. Moving to the settings menu



In order to move the control panel to the settings menu, press the + and – buttons simultaneously. In the Settings menu you can change setpoints for the ventilation unit.

3.2.3. Week clock control



Week clock control can be activated by pressing the + button and deactivated by pressing the – button. Week clock control is on when the symbol of week clock control is shown in the main display. In week clock control, the base fan speed and supply air temperature of the unit are adjusted in accordance with the programme as described in Section 3.3.4.

3.2.4. Content display



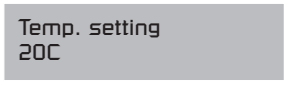
The content display shows humidity and carbon dioxide content. The corresponding sensors are required (options).

3.2.5. Temperature display



The temperature display shows the temperatures of outdoor air, indoor air, supply air and exhaust air. The accuracy of the temperature sensors is ±2 °C.

3.2.6. Setting supply air temperature



Supply air temperature setting is changed with the + and – buttons. In the MLV model the cooling function of the MLV radiator starts when supply air temperature exceeds the supply air setpoint temperature. **NOTE!** When choosing temperature make sure that there is not too cold air in the supply air duct (risk of condensation grows as temperature goes below 20 °C).

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INSTRUCTIONS FOR USING THE CONTROL PANEL

3.3. Settings menu

You can reach the Settings menu from the Operating menu as indicated in section 3.2.2. The displays of the Settings menu (Sections 3.3.1.–3.3.26.) can be scrolled with the scrolling buttons. (See Section 3.1., items 5 and 6 in the figure.)

3.3.1. Setting base fan speed

MIN speed 1	The desired base fan speed (minimum fan speed) is selected with the + and – buttons. Active when week clock control is not on. Week clock control changes this speed.

3.3.2. Moving to the operating menu

To main menu Press + and -	You can return to the operating menu by pressing the + and – buttons simultaneously.

3.3.3. Erasing the week programme

Erase week prog. Press + and -	The week programme can be totally erased by simultaneously pressing the + and – buttons.

3.3.4. Week programme programming

Adjust week prog. Press + and -	You can access the programming mode for the week clock programme by simultaneously pressing the + and – buttons. See Section 3.4.1.

3.3.5. Adjusting time

Adjust time Press + and -	You can adjust time by simultaneously pressing the + and – buttons. For more details, see Section 3.4.2.

3.3.6. Mode of operation of the maximum speed setting

MAX Speed limit with adjustments	The maximum fan speed setting can be selected to be active either in connection with (carbon dioxide and humidity) adjustments or permanently. The selection is done with the + and – buttons.

3.3.7. Choosing language version

Kieli / Language English	Select the desired language (German, English, Swedish, French or Finnish) with the + and – buttons.

3.3.8. Restoring factory settings

Factory settings see manual	The general factory settings can be restored by pressing the + and – buttons simultaneously. Remember to ensure that the setpoints are in accordance with the factory settings for this unit. Especially, check the unit model (electricity/water) and change if needed as stated in Section 3.3.20.

3.3.9. Adjustment interval

Adjust interval 10	The adjustment interval for humidity and carbon dioxide adjustments is selected with the + and – buttons. The adjustment interval refers to minutes.

3.3.10. Resetting the service reminder

Mainten. reset Press + and -	The maintenance reminder is reset by pressing the + and – buttons simultaneously. This turns off the maintenance reminder symbol (🔧) on the main display.

3.3.11. Contrast of the control panel display

Display contrast 05	The contrast setting for the control panel display is changed with the + and – buttons.

3.3.12. Address of the control panel

Panel address 1	The address of the control panel is changed with the + and – buttons. Two control panels cannot have the same address. If control panels have the same address, they go to bus fault state and do not work.

3.3.13. Controlling the direct-current fan on extract air side (does not apply to VALLOX DIGIT2 SE as it has an AC fan)

DC fan exhaust 100%	The desired adjustment value for the direct current fan is selected with the + and – buttons. The rotation speed of the extract air fan can be decreased by decreasing the percentage. If the unit has alternating current fans, this adjustment has no impact on the functioning of the unit.

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3.3.14. Controlling the direct-current fan on supply air side (does not apply to VALLOX DIGIT2 SE as it has an AC fan)

DC fan - supply
100%

The desired adjustment value for the direct current fan is selected with the + and – buttons. The rotation speed of the supply air fan can be lowered by decreasing the percentage value. If the unit has alternating current fans, this adjustment has no impact on the functioning of the unit.

3.3.15. Changing the operating temperature of heat recovery cell bypass

Cell bypass
10C

The desired cell bypass temperature is selected with the + and – buttons. If outdoor temperature is lower than cell bypass temperature, the summer/winter damper is in the winter position.

3.3.16. Setpoint of the basic humidity level

Basic %RH level
40%

The desired setpoint is chosen with the + and – buttons when manual adjustment has been selected as the Rh level setting (humidity setting, Section 3.3.19).

3.3.17. Mode of operation of the fireplace/booster switch

Switch type
Fireplace switch

The mode of operation of the switch (either fireplace or booster switch) is selected with the + and – buttons.

3.3.18. Choosing cascade control for supply air temperature

Cascade adjust
Off

Cascade control is chosen to be on or off with the + and – buttons.

3.3.19. Choosing basic humidity level

Rh-level setting
automatic

The basic humidity level can be chosen as either automatic or manual. The selection is done with the + and – buttons.

3.3.20. Choosing post-heating for the unit

Radiator type
electric rad.

A water or electric radiator is selected with the + and – buttons, depending on the type of post-heating radiator the unit is equipped with.
Note! Choosing the wrong type of post-heating may cause a faulty post-heating function.

3.3.21. Choosing maintenance reminder interval

Maintenance rem.
04

The interval for the maintenance reminder is selected with the + and – buttons. The maintenance reminder interval refers to months.

3.3.22. Hysteresis of antifrost function in heat recovery cell

Hysteresis
03C

The hysteresis of the antifrost function in the heat recovery cell is selected with the + and – buttons.

3.3.23. Stopping temperature of supply air fan for the antifrost function in the heat recovery cell

Supply fan stop
05C

The stopping temperature of the supply air fan for the antifrost function in the heat recovery cell is chosen with the + and –buttons.

3.3.24. Pre-heating temperature for antifrost function in the heat recovery cell

Preheater
07C

The preheating temperature for the antifrost function of the heat recovery cell is chosen with the + and – buttons. **MLV model:** Choose outdoor air temperature at which preheating is on. (Note! Temperature < the temperature of the liquid circulating in the radiator.)

3.3.25. Changing the setpoint for carbon dioxide adjustment

CO2-setting
0900 PPM

The setpoint for CO_2 adjustment is chosen with the + and – buttons.

3.3.26. Choosing maximum fan speed

MAX speed
8

The desired maximum fan speed is selected with the + and – buttons. Maximum fan speed is on either with adjustments or always. See Section 3.3.6. Mode of operation of maximum speed limitation.

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INSTRUCTIONS FOR USING THE CONTROL PANEL

3.4. Week clock control

3.4.1. Week programme programming

D	Hr	Sp	Tmp	
1	12	5	20	Exit

Cursor

D Day 1…7
1 = Monday, 2 = Tuesday, etc.
Hr Hours, 0…23
Sp Fan speed, 1…8
Tmp Supply air temperature, 10...30 °C
Exit Save the setting and exit
N No change to previous

The week programme can be used to set the desired fan speed (base fan speed) and supply air temperature for each hour of the day on seven days a week.
The week programme overrides manual adjustments.
Carbon dioxide and humidity adjustment can increase fan speed but never decrease it below the base fan speed set in the week programme.

Example: Monday

Fan speed is decreased to speed 2 and supply air temperature to 17 °C between 7:00 (7 a.m.) and 16:00 (4 p.m.). After that, fan speed is raised to speed 4 and supply air temperature to 20 °C. For the evening, fan speed is boosted to speed 6 between 19:00 and 21:00 (7 p.m. and 9 p.m.) for the period when a sauna bath is taken, after which fan speed is lowered back to 4.

Move the cursor with the arrow keys and change values with the + and – buttons. Note that Exit and saving are done when the programming is finished by moving the cursor below the word Exit and pressing + or –.

Changes in fan speed (Speed) and supply air temperature (Temp.) are only made for the hours desired; in other cases, use N (no change to previous).

D	Hr	Sp	Tmp	
1	7	2	17	Exit

Monday (D=1), time 07:00 (H=7), fan speed 2 (Speed=2), supply air temperature 17 °C (Tmp.=17). Move the cursor to the following hour.

D	Hr	Sp	Tmp	
1	16	4	20	Exit

Monday (D=1), time 16:00 (H=16), fan speed 4 (Speed=4), supply air temperature 20 °C (Tmp.=20). Move the cursor to the following hour.

D	Hr	Sp	Tmp	
1	19	6	N	Exit

Monday (D=1), time 19:00 (H=19), fan speed 6 (Speed=6), no change in supply air temperature (Tmp.=N).
Move the cursor to the following hour.

D	Hr	Sp	Tmp	
1	21	4	N	Exit

Monday (D=1), time 21:00 (H=21), fan speed 4 (Speed=4), no change in supply air temperature (Tmp.=N).
Move the cursor to the following day.

Similar changes have to be made separately for each day. Finally, exit the programming mode by selecting Exit. If you wish, you can erase the week programme as indicated in Section 3.3.3. You can then start programming from the start. You can see the settings programmed by choosing a day and by scrolling the hours with the + or – button.

3.4.2. Adjusting time

day	hour	min	
1	15	30	Exit

Cursor

day Day 1…7
1 = Monday, 2 = Tuesday, etc.
hour Hours, 0…23.
min Minutes, 0…60
Exit Save the setting and exit

Move the cursor with the arrow keys and change values with the + and – buttons. Exit and saving are done when the programming is finished.
Monday (D=1), time 15 (H=15), minutes (M=30).
Time is maintained even though there is a power failure.

3.5. Factory settings

VALLOX DIGIT2 SE has the following factory settings

Base fan speed	= 1
Maximum fan speed	= 8
Carbon dioxide adjustment (CO_2)	= 900 ppm CO_2
Basic humidity level	= automatic
Adjustment interval	= 10 min.
Freezing protection (cell)	= 5 °C
Freezing protection hysteresis	= 3 °C
Preheating setting	= 0 °C
Maintenance reminder	= 4 months
Cell bypass	= 12 °C
Cascade control	= not used
Humidity level (RH level) adjustment	= automatic
Switch type	= fireplace switch
Supply air setpoint	= 10 °C (MLV and VKL models 18 °C)

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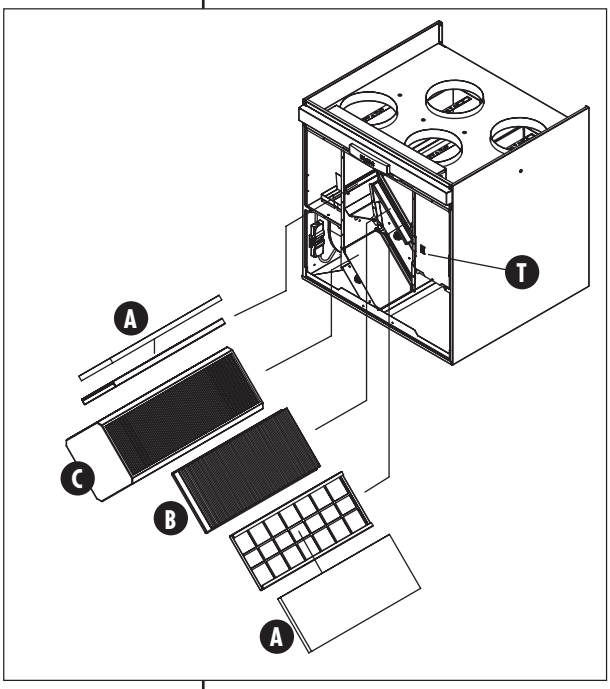
4. Maintenance instructions

4.1. Filters

When the maintenance reminder or filter guard lights up the indicator lamp, check filter cleanliness. Outdoor air is filtered in the unit with two kinds of filters. A G3 class coarse filter (A) filters off insects, heavy pollen and other dust. An F7 class fine filter (B) filters off fine dust invisible to the eye. Extract air is filtered with a similar G3 class filter as outside air.

Clean the coarse filters (A) by e.g. vacuuming them 2 to 4 times a year and whenever the maintenance reminder or filter guard. indicates a need for maintenance. When you open the door of DIGIT2 SE, the security switch (T) turns voltage off. The filters can also be washed with +25…30 °C warm water and washing-up liquid, pressing them smoothly. Do not handle the filters with force. When washing is done properly, filters stand cleaning a few times. In other words, you have to **replace them at least once a year or when needed**.

The fine filter (B) is not washable. Clean it at the same time as the G3 class filters by vacuuming it with a brush nozzle. When cleaning, be careful no to break filter material. **To ensure good supply air quality, replace the filter when needed, at least at one-year intervals**, depending on local air quality. It is recommended to replace filters in autumn. This way the filters stay cleaner through the winter and can effectively filter off dust in the following spring.

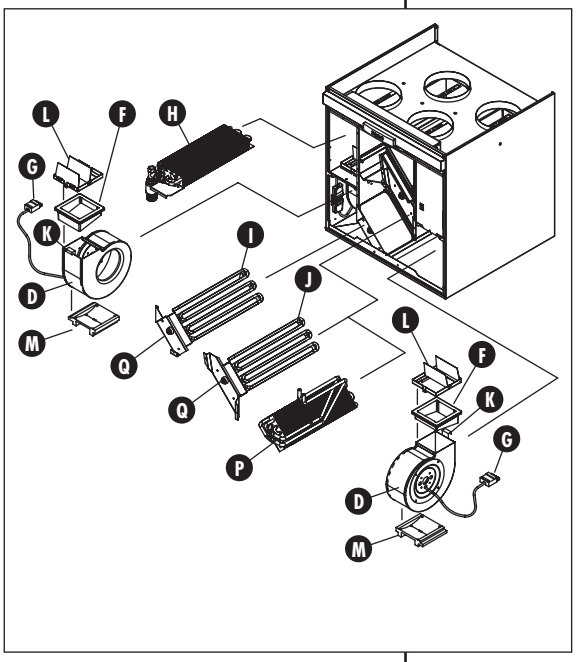


VALLOX DIGIT2 SE filters and heat recovery cell. The units are available in right and left handed models.
In the right handed model (model R) outdoor air comes to the unit from the right side of the centre line as shown in the instructions.
In the left handed model (model L) outdoor air comes in from the left side of the unit. The filters, summer/winter damper and the heating radiator change places correspondingly.

When cleaning the filters, it is also advisable to check the cleanliness of the heat recovery cell (C) every two years or so. Grab the ears at the ends of the cell and pull the cell out of the unit. If the cell is contaminated, soak it in a solution of water and washing-up liquid. Rinse the cell clean with a jet of water. When all the water has drained from between the laminas, push the cell back so that the seals next to the sliding surfaces are in place and the "up" sticker at the end of the cell points to the corner next to the upper support.

REMEMBER!
Clean the filters at least twice a year. Set the maintenance reminder interval as needed. See Section 3.3.21. (The setting depends on the cleanliness of outdoor and indoor air).

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4.2. Fans and post-heating radiator

The supply and extract air fans (D and E) have been fastened with rubber collars (F). When removing the fans for maintenance remove the one-way dampers (L) from the VKL model, open the ear (K), which is bent over the rubber collar (F). Then lift the rubber collar off and turn the fan off from above the lower support (M) made of rubber. Then disconnect the electric connector (G).

Clean the fan blades with compressed air or with a brush. Each blade has to be equally clean so that the fans stay balanced. Take care not to remove the balancing pieces attached to the fan blades.

If you use water in cleaning the unit or its parts, do not let it flow into the electrical parts.

4.2.1. Radiators

I Post-heating radiator: electricity

J Preheating radiator: electricity

H Post-heating radiator and actuator: liquid

P Preheating radiator: liquid

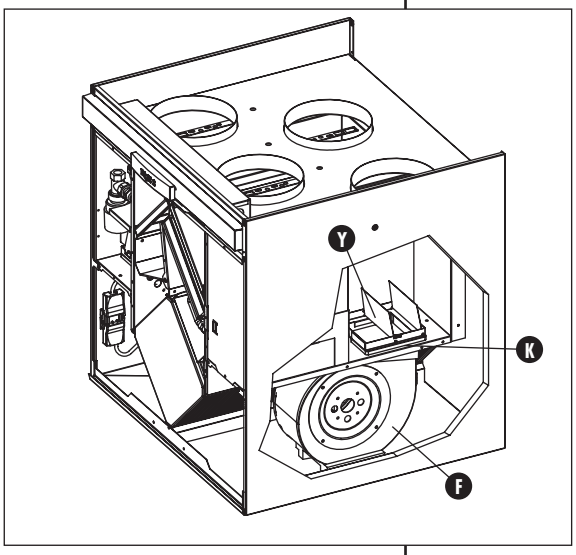
4.2.2. Detaching and attaching of self-actuated one-way damper (vacuum damper), MLV and VKL models

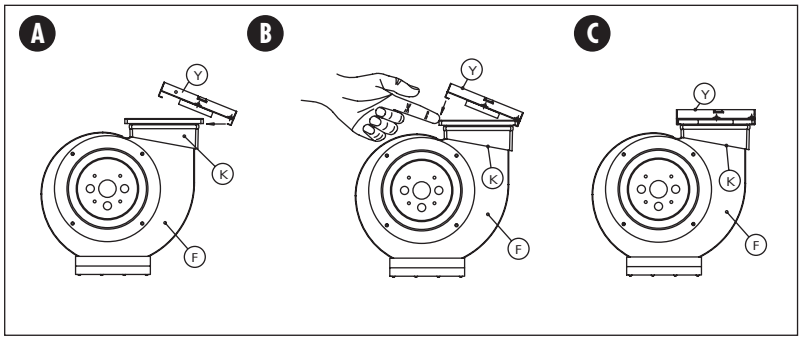
A Put the hook of the damper (Y) rim under the back edge of the fastening collar (K) of the fan (F). Then push the damper downwards until the steering edges of the valve go inside the rubber collar.

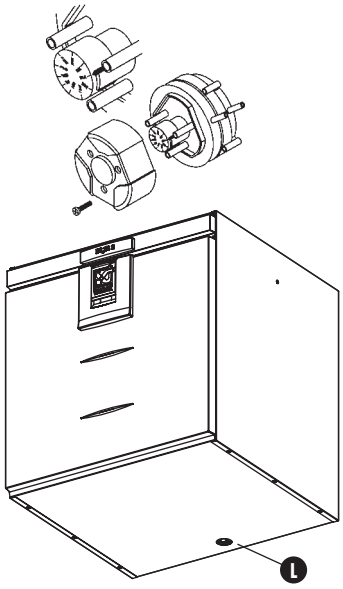
B Push the other side of the collar with a finger.

C Put the hook of the front edge of the damper below the front edge of the collar.

To detach the damper take the same steps in the opposite order.







4.3. Filter guard

DIGIT2 SE can be equipped with an optional filter guard. The filter guard symbol (⧖) normally lights up in the main display at speeds 7 and 8, when the filters are clean, and this does not require any maintenance activities. If the symbol does not light up at speed 8, the pressure in the ventilation ductwork of the building differs from the factory setting. In that case, adjust the filter guard setpoint lower in the inside of the unit (see Section 2.14). If the filter guard symbol lights up at fan speed 4 or 5, the filters need cleaning. If they are clean, the lighting up may be caused by too dense a mosquito net installed in the external grille, contrary to what is said in the installation instructions, or by the closing of the supply air valves in the rooms. If, after checking these things, the symbol continues to light up at small speeds, adjust the setpoint to a higher value.

4.4. Condensing water

During the heating season, humidity of extract air condenses into condensing water. Water formation may be abundant in new buildings or if ventilation is low compared to the humidity build-up caused by the residents. Condensing water needs to flow out from the ventilation unit without hindrance. In connection with maintenance, e.g. in autumn before the beginning of the heating season, make sure that the condensing water outlet (L) in the bottom tank is not clogged. You may check it by pouring a little water in the tank. Clean if necessary.

Do not let water flow into electrical devices.

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TROUBLESHOOTING

	SYMPTOM	REASON	DO THIS
1	**Outdoor air coming to the dwelling is cold.**	• Air cools down in the attic ducts. • The heat recovery cell is frozen, which is why extract air cannot heat outdoor air. • The post-heating radiator does not work. • The extract air filter or cell is clogged. • The initial adjustment of ventilation has not been done.	• Check the insulation of the attic ducts. • If the heat recovery cell is frozen, check the setpoint for freezing protection. The setpoint for freezing protection can be raised by 1 or 2 °C, or the sensor can be bent closer to the cell, in which case the supply air fan stops earlier (see the instructions for using the control panel, Section 3.3.23). Thaw the cell before closing the door. • If the post-heating radiator does not operate, check to see if overheating protection prevents it from operating: press button Q (figure on page 14) and measure the temperature of supply air inside the unit when the door is closed. If the radiator does still not work, contact a maintenance company. • Check that the filters and the heat recovery cell are clean. • Check the functioning of the preheating radiator in the MLV model.
2	**Supply air fan keeps stopping.**	• The stopping of the supply air fan is active. **NOTE! If you decrease the setpoint too much, the cell may freeze. Compare with list item 1.**	• The fan stops more rarely and the efficiency of the heat recovery cell gets better when the setpoint is decreased by 1 or 2 °C. (See the instructions for using the control panel, Section 3.3.23.) • Check the functioning of the preheating radiator in the MLV model.
3	**Supply air fan stops and starts too frequently.**	• The difference between the stopping and starting temperatures is too small. • The preheating radiator does not work.	• Raise the difference between the stopping and starting temperatures by 1 or 2 °C. It extends the period between the stopping and starting of the supply air fan. (See the instructions for using the control panel, Section 3.3.22.) • If the (electric) preheating radiator does not function, check if overheating protection prevents it from operating: press overheat protection reset button Q (figure on page 14) and ensure that the preheating radiator has been taken into use (see the instructions in Section 2.12. on page 7). If these steps do not help, contact a maintenance company.
4	**The maintenance reminder symbol (🔧) is displayed and the unit operates otherwise normally.**	• The maintenance reminder lights up the maintenance reminder symbol in the main display of the control panel at an interval of approximately 4 months (factory setting). • You may change the interval (see the instructions for using the control panel, Section 3.3.21).	• Check the cleanliness of the filters and the unit. If needed, clean or replace the filters. Also check the external grille. • Reset the maintenance reminder symbol to make it disappear. (See the instructions for using the control panel, Section 3.3.10.)
5	**"Exh air sensor faulty" message is displayed and the unit has stopped.**	• There is a fault in the freezing protection sensor.	• Contact a maintenance company. Sensor mounting needs to be checked and the sensor has to be replaced if necessary.
6	**"Sup. air sensor faulty" message is displayed and the unit has stopped.**	• There is a fault in the supply air sensor.	• Contact a maintenance company. Sensor mounting needs to be checked and the sensor has to be replaced if necessary.
7	**"Inp. air sensor faulty" message is displayed and the unit is stopped.**	• There is a fault in the extract air sensor.	• Contact a maintenance company. Sensor mounting needs to be checked and the sensor has to be replaced if necessary.
8	**"Out air sensor faulty" message is displayed and the unit has stopped.**	• There is a fault in the outdoor air sensor.	• Contact a maintenance company. Sensor mounting needs to be checked and the sensor has to be replaced if necessary.

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VALLOX DIGIT2 SE

TROUBLESHOOTING

	SYMPTOM	REASON	DO THIS
9	**"Bus fault" message is displayed and the unit operates at speed 1 (check the fan speed).**	• Wiring fault in the carbon dioxide sensor, in the control panel or in the humidity sensor.	• Contact a maintenance company. The connections have to be checked and corrected if necessary.
10	**"Freezing alert" message is displayed and the unit is stopped.**	• Antifreeze of the water-circulating radiator is active. **NOTE! If there is no non-freezing solution in the water of the radiator, the radiator is at risk of freezing.**	• Immediately troubleshoot the situation. Consult a maintenance company to find out if there is any non-freezing solution in the radiator. Check if the circulation pump is broken, the boiler out of operation etc. The situation may pass by itself as soon as supply air temperature exceeds 10 degrees, but do not wait till it happens.
11	**The desired automatic adjustment does not stay on.**	• There is a fault in the humidity or carbon dioxide sensor. One of the sensors is broken or missing.	• Contact a maintenance company. Sensor mounting and connections have to be checked. (The sensors are optional.)
12	**The unit does not work, the fans are not running and no indicator light is lit in the control panel.**	• The door switch may be broken, or the door is possibly not quite closed. • The unit is out of power, e.g. because a fuse has blown. • The glass tube fuse (located in the control card behind a protecting plate) protecting the electronics inside the unit may have blown.	• Check the door switch and fuses. The unit includes a T800 mA glass tube fuse. • If needed, contact a maintenance company (e.g. to check the glass tube fuse)
13	**The unit does not obey the control panel.**		• Disconnect the plug of the unit from the wall socket, wait for 30 seconds and put the plug back. If this does not help, contact a maintenance company.
14	**"Carbon dioxide alarm" message is displayed and the unit has stopped.**	• Carbon dioxide alarm. Carbon dioxide content has exceeded 5000 PPM for two minutes. May be caused by a fire.	• If there is a fire, take the necessary steps. • You can make the unit operational by disconnecting the plug from the wall socket, waiting for 30 seconds and putting the plug back again.
15	**The filter guard symbol (⌧) is displayed and the unit operates otherwise normally.**	• The pressure in the filter guard (pressure difference switch) has risen above the adjustment value or speed is 7 or 8.	• Check the cleanliness of the filters and the unit. If needed, clean or replace the filters. Also check the external grille.

After a power failure, the unit starts at minimum fan speed. All the other selected adjustments and setpoints remain in the memory of the unit.

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