

User manual

Duco's ventilation systems

1 Introduction

1A. Ventilation system operation

A Duco Demand-Controlled Natural Ventilation System (DCNVS) is a ventilation system that provides healthy air quality **automatically***. Sensor readings ensure that the building is ventilated only when it is required (= **demand-controlled**). Depending on the type of unit and installation, your ventilation system works according to one of the principles below:

- **System C**, which means that polluted air is extracted mechanically (using a central extract unit) and fresh air is supplied **naturally** via window ventilators.
- **System D** (= balanced ventilation), which means that both the exhaust of polluted air and the supply of fresh air occurs mechanically, i.e. via air ducts from and to the ventilation unit.

Depending on the components installed, your ventilation system will:

→ **Maintain CO₂ at an appropriate level**

Excessively high CO₂ concentration is unhealthy and results in problems including lack of concentration and health issues such as headaches and lack of sleep at night. CO₂ accumulates particularly when many people gather in one room. As standard, ventilation operates only until the CO₂ (standard) concentration has dropped below 800 ppm (parts per million) and remains below that level. By way of comparison: the CO₂ level of the air outdoors is between 350 and 450 ppm.

→ **Maintain humidity at an appropriate level**

Excessively high humidity can lead to moisture accumulation or mould growth and health issues such as eye, nose, and respiratory tract problems. The ventilation system is geared (as standard) to 60% relative humidity, the optimum.

→ **Exhaust unpleasant odours**

Using presence detection in a toilet for instance, the ventilation system ensures that rooms smell fresh by exhausting polluted air.

Summing up, your Duco ventilation system ensures a healthy as well as comfortable indoor climate.

* Exception: Duco C System

Duco C System

All Duco Demand-Controlled Natural Ventilation Systems feature an automatic setting which is controlled by one or more sensors. A Duco C System does not include any sensors and hence no automatic setting, which means the system requires wholly manual operation.

1B. Which system do I have?

The capabilities of your ventilation system will depend on the configuration of the system. Please contact your Duco installer if you don't know which ventilation system you have. A Duco Demand-Controlled Ventilation System consists of the following:

- **Central extract unit** This unit extracts polluted air as required. With a System D, the unit (DucoBox Energy) also supplies fresh air.
- **Air duct network (not a Duco product)** Via ventilation ducts to various rooms, the polluted air is extracted to the ventilation unit (and fresh air is supplied with System D). Note: depending on the configuration of your system, not every room will be ventilated directly. Rooms in which there is no exhaust duct provided are ventilated via feed-through to other rooms. This can be done for instance with a window ventilator in internal doors or an air gap under them.
- **One or more sensors***CO₂ and/or humidity sensors monitor air quality and detect presence. Sensors can be incorporated into a User controller in the room, into air ducts or into the ventilation unit.
- **One or more User controllers** For manual operation of the ventilation system.
- **Window ventilators** (only with System C) Fresh air is supplied via window ventilators incorporated in windows, window frames, a sliding door or an outside wall. Your ventilation system may include manual and/or Tronic (= electronically controlled) window ventilators. Manual window ventilators require to be opened and shut by the user. Tronic window ventilators are electronically controlled window ventilators which open and shut automatically as the system sees fit.

* Exception: Duco C System



You will need to leave manual window ventilators at least partially open in order to guarantee automatic system operation.

CENTRAL OR ZONAL VENTILATION?

With **central exhaust** (= non-local exhaust), overall ventilation is provided across the entire system. The ventilation system will therefore exhaust air from all rooms at all times, regardless of where the polluted air is detected or in which room the user has operated the system. The system therefore has just one zone.

With **zonal ventilation** (= local ventilation) the system ventilates in the zone where it is necessary. Accordingly, a User controller will only control the relevant zone, unless the User controller is set to 'master' operation (= operating the entire system). A zone may consist of one or more rooms (e.g. living room + kitchen).

Note: some settings (see below in this manual) apply only to the room in which the user is located. In central-ventilation systems, i.e. with just one zone, these settings apply to the whole system.

2 Operation

2A. Settings

Your ventilation system includes four settings: one automatic and three manual settings. The next chapter describes the possibilities for activating these settings.



Automatic setting (= recommended)

The ventilation system is geared to obtaining good air quality automatically, based on CO₂ and/or humidity readings. This is achieved as energy-efficiently as possible, by extracting polluted air only when necessary. In zonal ventilation systems, this occurs only where required. **Ensure that manual window ventilators are open.**



Low setting

The system exhausts at **10%*** of maximum capacity. Tronic window ventilators will shut of their own accord.



Medium setting

The system exhausts at **50%*** of maximum capacity. **Ensure that manual window ventilators are open.** Tronic window ventilators will open automatically to 50%.



High setting

The system exhausts at **100%*** of maximum capacity. **Ensure that manual window ventilators are open.** Tronic window ventilators will open automatically to 100%.

* The stated percentages are standard and may differ in line with system settings. The medium setting percentage can vary from one system to another. The ventilation system determines the optimum medium setting based on the type of home and the number of occupants configured by your installer.



The ventilation system is never shut down completely, there is always a minimum amount of ventilation. This is to prevent mould growth, among other things, in your home.

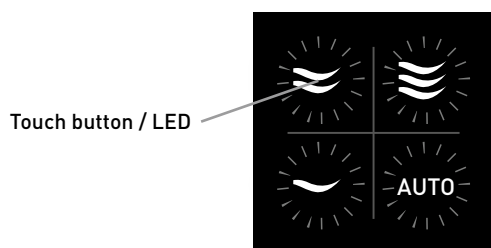
Night setting

If your **ventilation system does** not feature CO₂ sensing in the bedroom(s) – via a sensor in a controller or in the exhaust duct – then it is recommended that continuous medium setting (📧) (= night setting) should be set on going to bed. At this setting, the system will ensure that proper air quality is maintained in the bedrooms. The automatic setting can be activated again on getting up.

2B. Operation with Duco's User controller

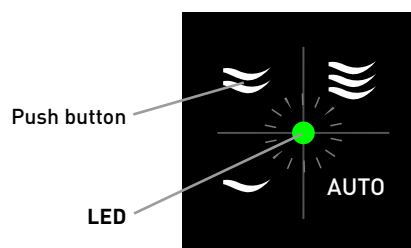
The operation of the system depends on the type of User controller: with wired power supply (4 **TOUCH** buttons / LEDs) or with battery (4 **PUSH** buttons + 1 LED).

Wired power supply



OPERATION WITH LIGHT-EMITTING BUTTONS

Battery powered




OPERATION WITH LED IN THE CENTRE



Depending on the software version of the system and its components, some of the functions below may not be available.




Temporary manual setting

A temporary setting is activated for the zone in which the user is located. The temporary setting has a standard duration of **15 minutes* for zones without Tronic window ventilators (and D systems)** and 8 hours* for zones **with Tronic window ventilators**. Pressing 2 or 3 times multiplies this time correspondingly. e.g. Pressing  3 times in a zone without Tronic window ventilators will put the system in the high setting for $3 \times 15 = 45$ minutes. The system will revert to the automatic setting thereafter.

* The stated times are standard and may differ in line with system settings.




Note (only with system C): At the medium and high settings, ensure that manual window ventilators are open. Any Tronic window ventilators will open automatically.

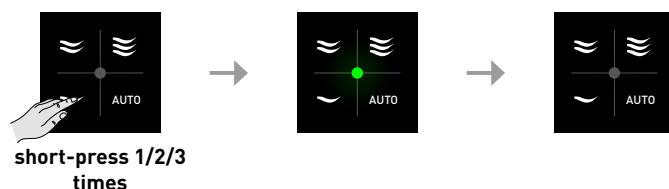
Wired power supply

Short-press 1, 2 or 3 times on ,  or  to activate the low, medium or high setting, respectively, for the **zone** in which the user is located. The LED for the selected setting will briefly light up brightly as confirmation.



Battery powered

Short-press 1, 2 or 3 times on ,  or  to activate the low, medium or high setting, respectively, for the **zone** in which the user is located. The LED will light up green for 1 second as confirmation.



Depending on the software versions in the system, it is possible that the function for pressing 2 and 3 times is not supported.

'AUTO' button for zones/systems without sensors

Since a zone with no sensor (or complete system such as the Duco C System) cannot work automatically, the 'AUTO' button will set the ventilation in this zone permanently to the low setting. With older systems, pressing 1, 2 or 3 times will set the zone to ventilate at the high setting for 10, 30 or 45 minutes respectively. The system will revert thereafter automatically to the setting last selected.

* These times are standard and may differ in line with system settings. In older systems, these times are 10, 20 and 30 minutes as standard.

Permanent manual setting

A permanent setting is activated for the **zone** in which the user is located. This setting remains active until the user deactivates it again.

Note: in a non-zonal system, the permanent setting applies to the whole system.

Wired power supply

By long-pressing , or until the 4 LEDs light up briefly, the respective setting will be activated permanently for the **zone** in which the user is located. The selected setting will light up magenta for as long as the permanent setting is activated. Tap any button (at random) to deactivate a permanent setting.



Battery powered

By long-pressing , or until the green LED lights up for 5 seconds, the permanent setting will be activated permanently for the **zone** in which the user is located. The battery-powered controller does not give any indication that a permanent setting is activated. Tap any button (at random) to deactivate a permanent setting.



Depending on the software version of your User controller, the permanent setting may not be available. In that case, the above actions will activate the unoccupied setting for the setting, and the temporary setting for the and settings.

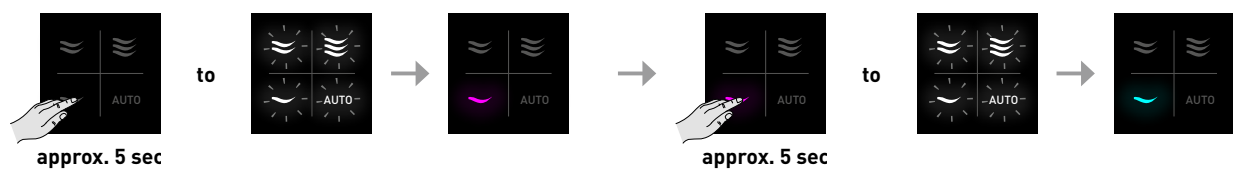
Unoccupied setting

The unoccupied setting puts the **whole system** in the most energy-saving setting. This setting is suitable for when you are on holiday, for example. The unoccupied setting remains active until the user deactivates it again.

Note: in a non-zonal system, this setting is the same as a permanent low setting.

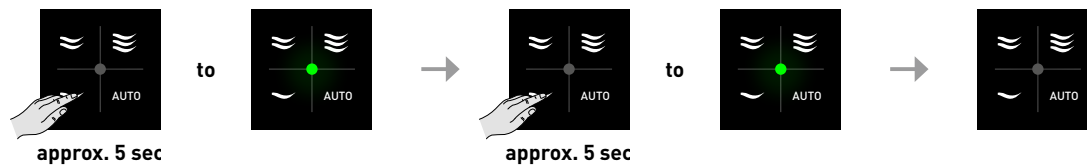
Wired power supply

Long-press until the 4 LEDs light up briefly to activate permanent low setting. The low setting will light up magenta. After that, long-press until the 4 LEDs light up briefly to activate unoccupied setting. The low setting will light up cyan. Tap any button (at random) to deactivate unoccupied setting.



Battery powered

Long-press until the LED lights up green for 5 seconds as confirmation. After that long-press again until the LED lights up green for 5 seconds as confirmation. The unoccupied setting is now activated. Press any button (at random) to deactivate unoccupied setting.

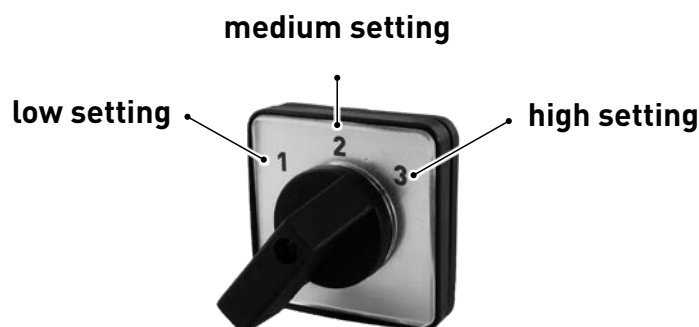


2C. Alternative control methods

3-position switch

(only applicable to DucoBox Silent Perilex, not applicable to system D)

If, in addition to one or more of Duco's User controllers, your ventilation system is also equipped with a 3-position switch (through Perilex) the last operation on any controller will always take precedence. The ventilation setting on the 3-position switch can therefore be overruled by another User controller, such that an incorrect ventilation position will be visible on the 3-position switch. The Duco User controller (with wired supply) always indicates the correct ventilation setting.



Duco Ventilation App

Using the Duco Ventilation App for smartphones and tablets (Android and iOS), you can operate your ventilation system and check the air quality, among other things.

In order to use the Duco Ventilation App, your Duco ventilation unit must have a Communication Print. Contact your Duco installer to find out whether your ventilation unit can be upgraded with a Communication Print and to arrange for it to be installed. The Communication Print contains an Ethernet connection enabling the ventilation system to be included in the local area network. Then download the Duco Ventilation App from the Play Store (Android) or App Store (iOS) and follow the steps shown on the screen. The Duco Ventilation App will detect your ventilation system automatically*.

* Your smartphone / tablet and the ventilation system must be located in the same subnet (e.g. 192.168.1.xxx).







Building management system / home automation / etc.

Your system may be linked to an external system. Please refer to your installer if the ventilation system requires to be operated via this method.

3 LED indications

3A. Meaning of LED colours

The LEDs on a User controller with a wired power supply indicate the active setting or status of the system. There is no indication of status on a battery-powered controller.

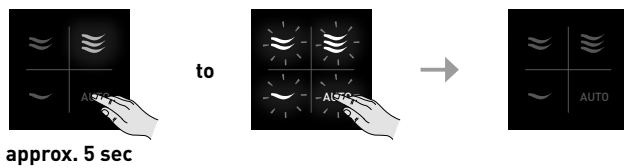
	Temporary manual setting
	Permanent manual setting
	Unoccupied setting
	Automatic setting
	Preheating in progress in ClimaTop 60 window ventilator
	Please wait, initialising in progress (after system restart)
Flashing LED(s)	There is a problem with the component network. Please contact your installer.

3B. Switching LED indications on/off

A controller with a wired power supply always shows the active setting by lighting up the LED for this setting. If you find this annoying, in a dark bedroom for instance, you can switch off the LED indication on the User controller. The LEDs on a battery-powered controller do not light up anyway, so this does not apply.

Wired power supply

Long-press 'AUTO' until the 4 LEDs light up briefly to confirm the action, in order to switch the LED indications ON or OFF.



4 Maintenance

4A. General

A ventilation system must be maintained in order to maintain proper operation. Consult the document **Maintenance instructions for Duco's Ventilation systems [L8000011]** on www.duco.eu for comprehensive instructions.

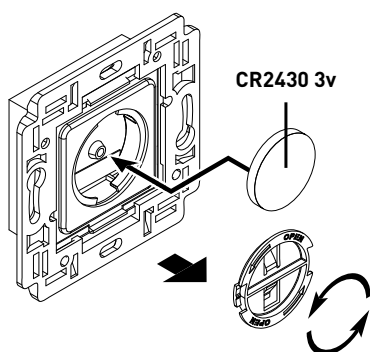
Maintenance instructions for the DucoBox Energy can be found on link.duco.eu/onderhoud-DucoBox-energy.



Also surf to duco.tv for step-by-step instruction videos.

4B. Battery-powered controller

The battery in a battery-powered controller lasts 3 to 5 years in normal use. Battery type: CR2430 – 3 V
Unscrew the controller from the wall and rotate the cover on the back to open it in order to replace the battery.



Also surf to duco.tv for step-by-step instruction videos.

4C. DucoBox Energy filters

The filters of your DucoBox Energy should be replaced **at least every six months**.

NOTE: The filters require to be replaced within 3 months after initial commissioning in order to remove building dust and so on, even if the unit is not indicating it. Failure to replace filters (in a timely manner) can result in improper ventilation system operation with unnecessarily high energy consumption, more noise and unhealthy air for the occupants.

Warranty on the unit will be void if:

- components not supplied by the manufacturer are used
- the unit is used without filters

Replace filter indication

The system indicates that the filters need to be replaced by means of an alert on the DucoBox Energy display:

- Alert on display: “**REPLACE FILTERS**”, display stays lit up until the user takes action. This alert appears once.
- Alert on display, when the previous alert has been deleted by the user: alert symbol at the top of the display + filter indication shows 0%.

The estimated remaining service life of the filter is indicated in two ways:

- The filter indication is on the right at the top of the display: → **100%** = new filter, **0%** = replace filter
- The estimated remaining service life of the FILTER (expressed in days) can be read off on the **FILTER** → **CURRENT FILTER** menu.

Ordering filters

Filters can be ordered on webshop.duco.eu, or from your Duco dealer. There is a choice between two sets:

Type	Item number
DucoBox Energy Filterset Coarse 65% / ePM1 70%	0000-4416
DucoBox Energy Filterset 2 x Coarse 65%	0000-4417

The filtersets for the DucoBox Energy contain the following filters:

For supply air (SUP): choice between Coarse 65% (≈ G4) or ePM1 70% filter (≈ F7). The ePM1 70% filter allows fewer fine particles through, which has a positive influence on air quality (e.g. for people who may have allergies).

For extract air (ETA): Coarse 65% filter (≈ G4)

Postponing filter replacement

Whenever the “**REPLACE FILTERS**” alert shows on the display, you can postpone it until you have received the new filters. You can do this by selecting “**NO**” when the alert appears on the display for the first time. You will not receive any new messages to replace the filters after that.

The alert symbol (▲) will remain visible at the top of the display by way of a reminder and furthermore the filter indication will show **0%**.

NOTE: NB: you will not get any new alerts, you need to take action yourself to replace the filters.

To guarantee the unit's correct operation and a healthy indoor climate, you are strongly advised against re-using contaminated filters (e.g. after vacuum-cleaning them). This can result in a breeding-ground for bacteria and an unhealthy indoor climate! Take care to ensure that the filters are not rotated when they are withdrawn for checking.

Replacing filters

- 1 Order new filters.
- 2 Press **enter** (■) when the “**REPLACE FILTERS**” alert shows up or navigate to the **FILTER** → **REPLACE FILTER** menu. Select “**YES**” in response to the **REPLACE FILTERS** question.
- 3 Follow the instructions on the display.
 - a. Remove the filter caps.
 - b. Replace filters.
 - c. Close the filter caps.
 - d. Confirm using **enter** (■).



Also surf to
duco.tv for step-
by-step instruction
videos.

5 FAQ**How do I shut the ventilation system down completely?**

The system cannot be shut down completely, this is to prevent mould growth in your house, among other things. The system can, on the other hand, be switched permanently to the low or unoccupied setting for maximum energy saving.

I can't hear the ventilation system, is it actually working?

Duco's ventilation systems are whisper-quiet. You can check whether the system is working by switching the system (temporarily) to the high setting and feeling an exhaust vent.

What happens if there is a power failure?

You don't need to do anything: the system will restart automatically and operate correctly. During this restart the LEDs on controllers with light-emitting buttons will light up yellow momentarily. This can take a few minutes.

How much energy does my ventilation system consume?

The central extract unit's energy consumption will depend on the number of rooms being ventilated. Energy consumption will be reduced to a minimum by using pressure-controlled fans.

Do I need to maintain the system?

Yes, please contact your installer for annual maintenance.

A LED is flashing on the controller

There is a network problem, refer to your installer for a remedy.

Can I switch off the LEDs on the controller?

Yes, long-press 'AUTO' to switch the LEDs on and off.

The system is very noisy. What is happening?

If the noise occurs suddenly, then it may be the case that the ventilation system is restarting, after a power cut, for example. The LEDs on any controllers with light-emitting buttons will light up yellow in that case. After a few minutes, once the LEDs indicate the normal situation again, the ventilation unit will slow down and the system will revert to quieter operation.

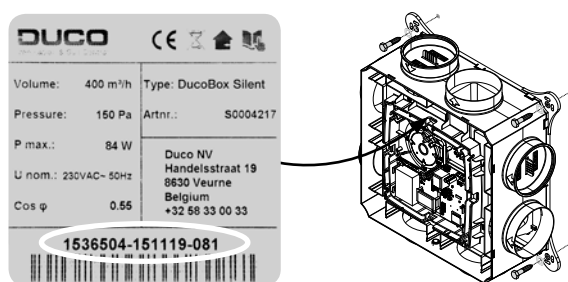
If the system starts making more noise gradually, it may be the case that ventilation unit is coming up against increased resistance, due to clogged exhaust vents for instance. Check the vents in each room and clean them as necessary. Please contact your installer if the problem persists.

6 Service & warranty

The responsibility for warranty implementation lies in the first place with the installer or supplier where the DucoBox was bought. Always refer to the local installer or dealer if you have problems with the installation and/or operation of the DucoBox. Keep the serial number of the product nearby. You can find the serial number as follows:

DucoBox Silent / DucoBox Focus

The sticker with the serial number is located inside the unit. **Temporarily remove the plug of the DucoBox from the electrical socket** and remove the cover. Afterwards, close the cover securely (press down all the corners) and put the plug back into the socket.



Sticker inside the DucoBox

DucoBox WTW

See sticker underneath the unit.

DucoBox Energy

See sticker on top of the unit.

All warranty conditions concerning the DucoBox and Duco's ventilation systems can be found on link.duco.eu/warranty-statement-duco-ventilation-systems.