User manual
DUCO Ventilation Systems

ENGLISH en

User manual

L1023004 (Revision J.1 | 04.10.2023)

Table of contents

Translation of the original instructions in Dutch

For information regarding warranty, maintenance, technical data, etc., see www.duco.eu.
Installation, connection, maintenance and repairs should be done by a recognised installer. The electronic components of this product may be live. Avoid contact with water.

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01 Introduction

01.A Operation of the ventilation system

A DUCO Demand-controlled Ventilation System is a ventilation system that **automatically**[1] ensures healthy air quality. By measuring via sensors, ventilation is provided only when needed (= **demand-controlled**). Depending on the type of appliance and installation, your ventilation system works according to one of the principles below:

- **Mechanical Extract Ventilation**, which means that polluted air is removed mechanically (via an extractor fan) and fresh air is supplied naturally via window ventilators.
- **Mechanical Ventilation with Heat Recovery** (= balanced ventilation), which means that both the extraction 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 the CO_2 level**
An excessively high CO_2 concentration is unhealthy and results in concentration problems and health problems such as headaches and a bad night's sleep. CO_2 accumulates particularly when many people gather in one room. As standard, ventilation operates only until the CO_2 (standard) concentration has dropped below 800 ppm (parts per million) and remains below that level. By way of comparison: the CO_2 level of the air outdoors is between 350 and 450 ppm.

→ **maintain the moisture level**
A too high moisture level can lead to moisture accumulation or mould formation and health problems such as eye, nose and respiratory problems. The ventilation system aims (by default) for a good moisture content of 60%.

→ **extraction of foul odours**
Via presence detection in the toilet, for example, the ventilation system ensures fresh smells by removing foul air.

In summary, your DUCO Ventilation System ensures a healthy and comfortable indoor climate.

01.B What 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 do not know which ventilation system you have. A DUCO Demand-controlled Ventilation System consists of the following:

- **Central extract unit**
  This unit extracts polluted air when necessary. With MVHR, the unit (DucoBox Energy) also supplies fresh air.
- **Air duct network**
  Via ventilation ducts to various rooms, polluted air is extracted to the ventilation unit (and fresh air is supplied in the case of MVHR). Note: depending on the configuration of your system, not every room is directly ventilated. Rooms in which no exhaust duct is provided are ventilated via transit to other rooms. This can be done, for example, with a grille in the inner doors or an air gap underneath.
- **One or more sensors**[1]
  CO_2 and/or humidity sensors monitor air quality and detect presence. Sensors can be incorporated in a remote control in the room, in the air ducts or in the ventilation unit.
- **One or more remote controls**
  For manual operation of the ventilation system.
- **Window ventilators** (Mechanical Extract Ventilation only)
  Fresh air is supplied via window ventilators integrated in the windows, window frames, sliding doors or façade. 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.

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

1 exception: DUCO MEV System

Central or zonal ventilation?

With **central ventilation** (= non-local ventilation), 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. So the system has just one zone.

With **zonal ventilation** (= local ventilation), the system ventilates in the zone where it is needed. So a remote control only controls the zone, unless the remote control is set as 'master' control (= control of the entire system). A zone may consist of one or more rooms (e.g. living room + open 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.

02 Operation

02.A Settings

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

AUTO

Automatic mode(= recommended)

The ventilation system automatically aims for good air quality based on CO_2 and/or humidity measurements. 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 mode

System extracts at **10%**[2] of the maximum capacity.Tronic window ventilators will shut of their own accord.

Medium mode

System extracts at **50%**[2] of the maximum capacity.
Make sure window ventilators are open. Tronic window ventilators will open automatically to 50%.

High mode

System extracts at **100%**[2] of maximum capacity.
Make sure window ventilators are open. Tronic window ventilators will open automatically to 100%.

Among other things to prevent mould in your home, the ventilation system is never completely off; there is always a minimum amount of ventilation.

Night mode

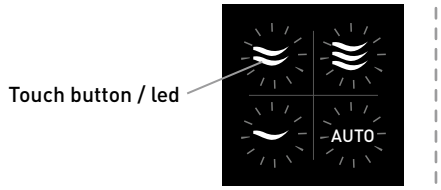
If your ventilation system does not include CO_2 detection in the bedroom(s) - via sensor in a control or in the exhaust duct - it is recommended to activate **permanent medium mode** ( ) (= night mode) at bedtime. In this mode, the system will ensure that proper air quality is maintained in the bedrooms. The automatic mode can be activated again when getting up.

2 The percentages listed are standard and may vary depending on the installation setting. The medium mode percentage can vary from one system to another. The ventilation system automatically determines the most ideal medium mode based on the type of home and the number of occupants set by your installer.

02.B Operation with DUCO Remote control

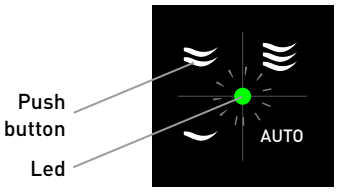
The operation of the system depends on the type of remote control:
with wired power supply (4 **TOUCH** buttons / LEDs) or with battery (4 **PUSH** buttons + 1 LED).

Wired powered



User controller with light-emitting buttons

Battery powered



User controller 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. By default, the temporary mode lasts **15 minutes[3] for zones without Tronic window ventilators** (and MVHR systems) and **8 hours[3] for areas with Tronic window ventilators**. Pressing 2 or 3 times multiplies this time. E.g. pressing 3 x in a zone without Tronic window ventilators will put the system in high mode for 3 x 15 = 45 minutes. Then the system goes back into automatic mode.

Note (Mechanical Extract Ventilation only): At medium and high settings, ensure that manual window ventilators are open. Any Tronic window ventilators will open automatically.

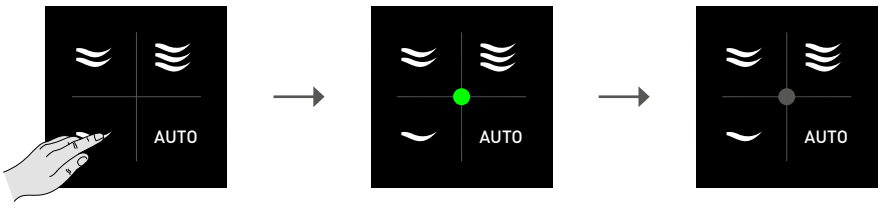
Wired powered

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

short-press 1/2/3 times

Battery powered

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



short-press 1/2/3 times

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

3 The times listed are standard and may vary depending on the installation setting.

‘AUTO’ button for zones/systems without sensors

Since a sensorless zone (or full system like the DUCO Mechanical Extract Ventilation) cannot operate automatically, the 'AUTO' button will permanently set the ventilation in this zone to low. 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. Then the system automatically returns to the last selected mode.

* These times are standard and may vary depending on the installation setting.
  In older systems, these times are 10, 20 and 30 minutes as standard.

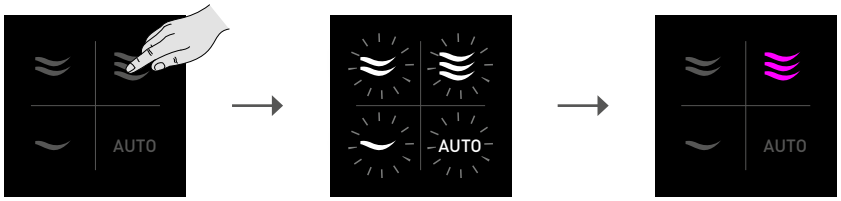
Permanent manual setting

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: for a non-zonal system, the AUTO mode functions as BOOST function and the control at position 1 permanently lights up purple, as no sensors are paired.

Wired powered

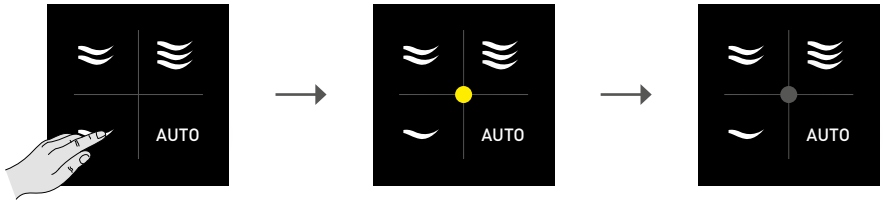
By long-pressing , , or until the 4 LEDs light up briefly, the respective setting will be activated permanently for the **zone** in which the user is located. The selected setting will light up magenta for as long as the permanent setting is activated. Tap any button to deactivate the permanent mode.



approx. 5 sec

Battery powered

By long-pressing , , or until the LED lights up for 5 seconds, the respective mode will be permanently activated 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 to deactivate the permanent mode.



approx. 5 sec

Depending on the software version of your remote control, permanent mode may not be present.
In that case, the above actions activate absence mode for mode , and temporary mode for mode and .

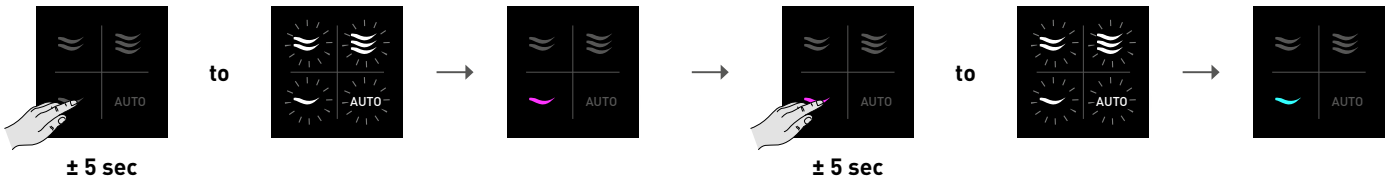
Absence mode

The absence mode sets the **whole system** to the most energy-efficient mode. This setting is suitable when you are on holiday, for example. The absence mode remains active until the user deactivates it.

If the ventilation system has demand control, DUCO does not recommend activating the absence mode. In that case, it is rather appropriate to set the system to AUTO mode.

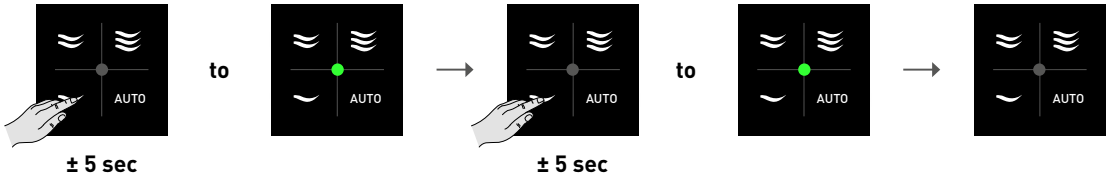
Wired powered

Long-press ▬ until the 4 LEDs light up briefly to activate the permanent low setting. The low setting will light up magenta. Then long press ▬ again until the 4 LEDs light up briefly to activate absence mode. The low setting will light up cyan. Tap any button to deactivate absence mode.



Battery powered

Long-press ▬ until the LED lights up yellow for 5 seconds as confirmation. After that long-press ▬ again until the LED lights up yellow for 5 seconds as confirmation. The absence mode is now activated. Press any button to deactivate the absence mode.

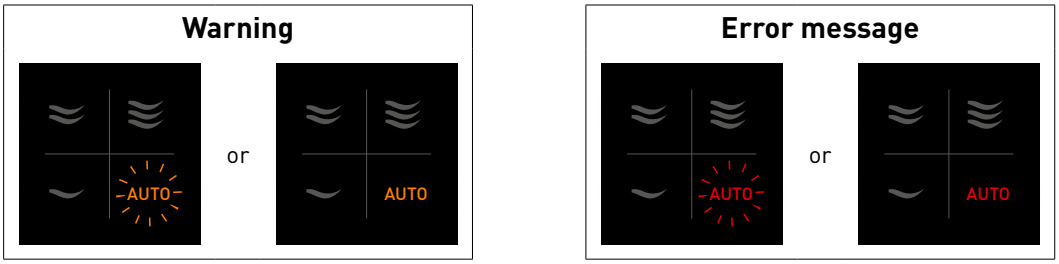


02.C Error warnings

In case of a warning (orange) or error message (red), please contact your installer. Have the serial number ready (for where to find the serial number, see page 11).

With a wired powered remote control, there are several options, depending on the settings

- EITHER the LED flashes orange (for a warning) or red (for an error) after an action at AUTO for a few seconds, and this after each action, until the error has been corrected;
- OR the LED permanently lights orange (warning) or red (error) (until the error has been corrected).



In either case, go to the DucoBox to find out exactly what message shows (DisplayMenu: **INFO** → **ERROR LIST**) and communicate this code to your installer.

Example: for an MVHR system, an orange LED may mean that the filters need to be replaced. A red LED always indicates a problem, such as a motor that is no longer running.

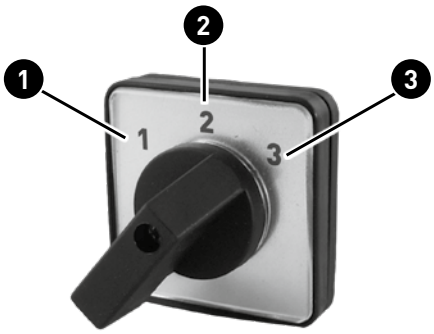
02.D **Alternative operating methods**

3-position switch

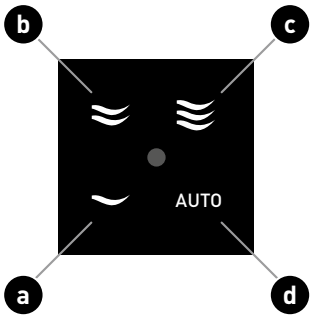
(only applicable to DucoBox Reno, DucoBox Silent or DucoBox Energy Comfort D325 Perilex)

If, in addition to one or more of DUCO's remote controls, your ventilation system is also equipped with a 3-position switch (through Perilex) the last operation on any controller will always prevail. The ventilation setting on the 3-position switch can therefore be overruled by another remote control, so that an incorrect ventilation setting shows on the 3-position switch. The DUCO remote control (with wired power supply) always indicates the correct ventilation setting.

If no demand control present in the system:



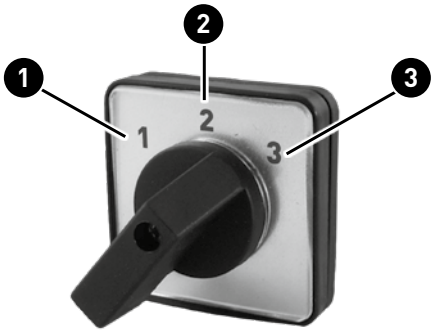
1	Permanent low mode (approx. 10%)
2	Permanent middle mode (approx. 50%)
3	Permanent high mode (100%)



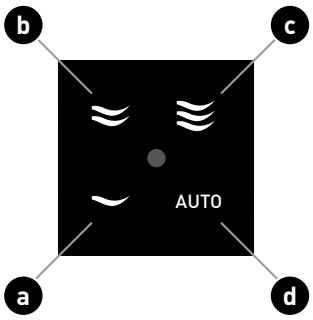
DUCO control (optional)

a	Permanent low mode (approx. 10%)
b	Temporary or permanent middle mode (approx. 50%)
c	Temporary or permanent high mode (100%)
d	Permanent low mode (approx. 10%)

For DucoBox Silent Perilex with demand control:



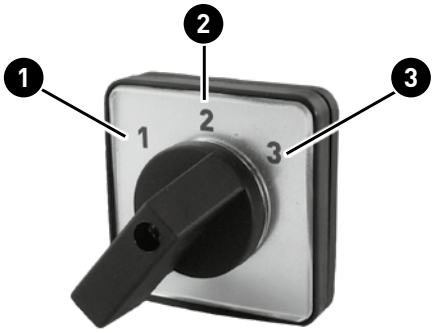
1	Permanent low mode (approx. 10%)
2	Permanent middle mode (approx. 50%)
3	Permanent high mode (100%)

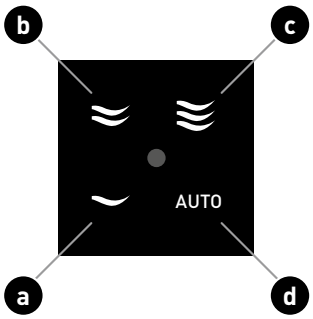


DUCO control (obligatory)

a	Temporary or permanent low mode (approx. 10%)
b	Temporary or permanent middle mode (approx. 50%)
c	Temporary or permanent high mode (100%)
d	AUTO mode (10-100%)

For DucoBox Reno / DucoBox Energy Comfort D325 Perilex with demand control:





DUCO control (optional)

1	Permanent low mode (approx. 10%)
2	AUTO mode (10-100%)
3	Permanent high mode (100%)

a	Temporary or permanent low mode (approx. 10%)
b	Temporary or permanent middle mode (approx. 50%)
c	Temporary or permanent high mode (100%)
d	AUTO mode (10-100%)

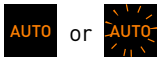
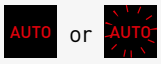
Building management system / home automation / etc.

The optional Duco Connectivity Board enables a connection to home automation and building management systems via REST API (local or via the cloud) or Modbus TCP (local). Both are possible via Ethernet or Wi-Fi. Please refer to your installer if the ventilation system is to be operated via this method.

03 LED indications

03.A Meaning LED colours

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

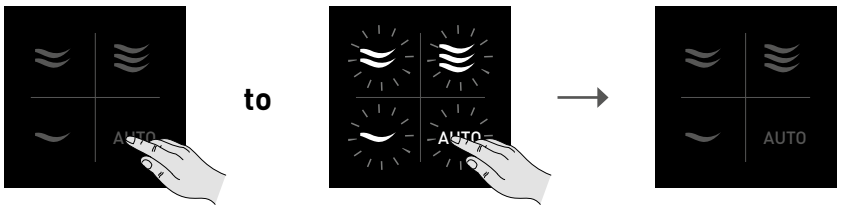
	**Temporary** manual setting
	**Permanent** manual setting
	Absence mode
	Automatic mode
	Warning: check your filters or contact your installer if the warning persists
	Error message: contact your installer
	Please wait, initialising in progress (after system restart)
Flashing LED(s)	There is a problem with the component network. Contact your installer.

03.B **Switching LED indications on/off**

A user 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 remote control. The LEDs on a battery-powered controller do not stay lit anyway, so this does not apply.

Wired powered control

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



± 5 sec

Sensor without control

Briefly press the zone that would correspond to position 1, 2 or 3 on a remote control. This will extinguish the LED. To reactivate the LED, briefly press the zone that would correspond to 'AUTO' (bottom right) on a remote control.

Short press | LED off | Short press | LED on

04 Maintenance

A ventilation system needs to be maintained to keep functioning properly. Please refer to the document Maintenance instructions DUCO Ventilation Systems (L8000013) at www.duco.eu for detailed instructions.

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

05 FAQ

How do I shut the ventilation system down completely?
The system cannot be turned off completely, this is to prevent mould in your home, among other things. However, the system can be set to permanent low or absence mode for the most energy-efficient mode.

I cannot 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 mode and by holding your hand in front of an exhaust vent.

What happens if there is a power failure?
You do not need to do anything, the system will automatically reboot and function correctly. During this restart the LEDs on controllers with light-emitting buttons will light up yellow temporarily. 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.

An LED flashes on the user controller
See "03.A Meaning of LED colours" on page 9 in this manual to find out what is causing the flashing. If necessary, contact your installer.

Can I switch off the LEDs on the user controller?
- For a user controller: yes, long press 'AUTO' to turn the LEDs on or off.
- With a sensor without control: briefly press the touch field that would correspond to position 1, 2 or 3 of a user controller. To reactivate the LED, briefly press the touch pad in the lower right corner (that would correspond to AUTO on a user controller).

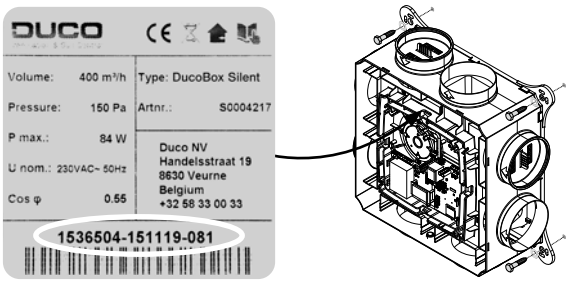
The system is very noisy. What is happening?
If the noise occurs suddenly, then the ventilation system may be restarting, after a power cut, for example. The LEDs on any user controllers with light-emitting buttons will temporarily light up yellow in that case.
After a few minutes, once the LEDs indicate 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, the ventilation unit may experience increased resistance, due to dirty exhaust vents for instance. Check the vents in each room and clean them where necessary. Please contact your installer if the problem persists.

06 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 unplug the DucoBox 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 Energy

See sticker on top of the unit.

All warranty conditions regarding the DucoBox and the DUCO ventilation systems can be found at service.duco.eu.

Installed by:

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