USER MANUAL

CTS400 BY NILAN

Comfort 250 Top / Comfort 250 Top Polar

Version 1.60 - 15.12.2025
B75 Comfort 250 Top_GB

NILAN®
OUTSTANDING INDOOR CLIMATE

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General information

Safety

Power supply

CAUTION
Always disconnect the power supply to the unit if an error occurs that cannot be rectified via the control panel.

CAUTION
If an error occurs on electrically conductive parts of the unit, always contact an authorised electrician to rectify the error.

CAUTION
Always disconnect the power supply to the unit before opening the unit doors, for instance for installation, inspection, cleaning and filter change.

Introduction

Documentation

The following documents will be supplied with the unit:

- Quick guide
- Wiring diagram

In the Quick guide you will find important information regarding installation and start-up of the unit. If you require further information regarding, for instance, installation of accessories or additional settings in the software, or if you need an extended user manual, the following documents can be downloaded from the Nilan website:

- Installation instructions
- Software instructions
- User Manual
- Wiring diagram

The instructions can be downloaded from www.nilan.dk.

If you have questions regarding installation and operation of the unit after having read the instructions, please contact your nearest Nilan dealer. A list of Nilan dealers is available on www.nilan.dk.

ATTENTION
The unit must be started up immediately after installation and connection to the duct system.

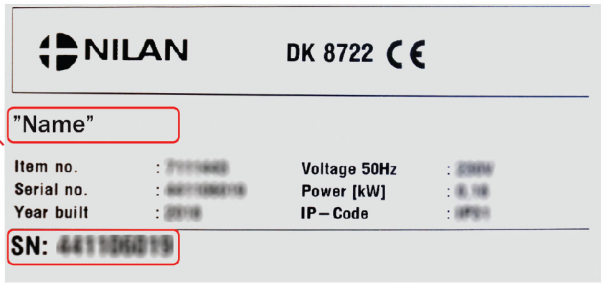
When the ventilation unit is not in operation, humidity from the rooms will enter the duct system and create condensate water that can run out of the valves and cause damage to floors and furniture. Condensation may also form in the ventilation unit, which can damage its electronic components and fans.

From factory, the unit has been tested and is ready for operation.

Data plate

Nilan's data plate is located inside the unit behind the upper door. Loosen the toggle case catch latch and lift out the door.

1. If necessary, pull out the right filter to read the data plate
2. The data plate is located on the plate under the filter



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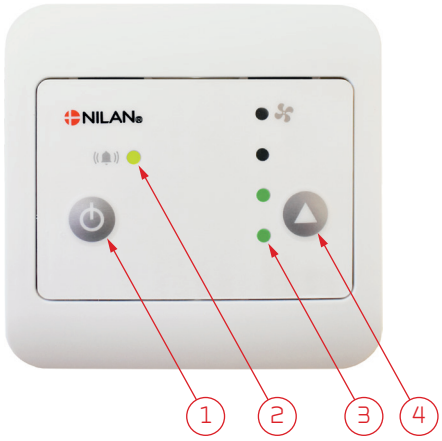
ATTENTION

When contacting Nilan with questions about the product, it is important to have the unit name and serial no. (SN) ready. From this information, the service department can find all information about the unit in question and thus help with information and answer questions about what the unit consists of/contains, and what software is used.

Control panel

Control panel functions

Functional overview



The following functions are available with the CTS 400 panel:

1. Power on and off button.
2. Yellow LED light: Constantly flashing or lit by warnings or alarms.
3. Green LED light: The number of lit LED lights indicates the desired fan speed level.
4. Switching the fan speed level from 1-4 is done by pressing the arrow, after fan speed level 4 fan speed level 1 appears again.

ATTENTION

When the unit is overridden by user selection, humidity, defrost, etc., the desired fan speed level will be lit green, but the current fan speed level will flash. By pressing the arrow, the unit will go to the desired fan speed level - until the next event.

Fan speed level

Level 1 can be used if you are going to be away for a while, e.g. on holiday for a couple of weeks.
NB: When the unit is operating at low air humidity level, it can be set to operate at fan speed level 1.

Level 2 is for standard operation. The air volume at level 2 is the standard air volume for which the dwelling has been balanced.
NB: The automatic humidity control system alters the function of the unit to run high or low flow ventilation as required.

Level 3 can be used if you have visitors or if, for instance, you have candles burning in the dwelling.
NB: Remember to reduce the fan speed to level 2 once your visitors have left.

Level 4 can be used if, for instance, you are having a party and a large crowd of people are gathered in the dwelling. The unit can also be set at high humidity level.
NB: This level is also used during cooker hood operation if the cooker hood is connected to the ventilation unit.

If an alarm is triggered in the ventilation unit, the yellow LED will flash. Alarms are divided into 3 categories: Information, warning and critical alarm.

ATTENTION

Do not turn off the unit unless, for instance, an emergency notification asks residents to stay indoors, close windows and doors, and turn off ventilation units.

If the unit is off for long periods of time, dampness in the ducts can cause condensation and subsequently mould growth.

Warnings and alarms

If an alarm is triggered in the ventilation unit, the yellow LED will flash. Alarms are divided into 3 categories: Information, warning and critical alarm.

INFO

The alarm displays a piece of information that needs your attention, e.g. that filters need replacing.
The ventilation unit remains in operation.

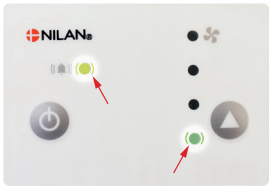
The yellow LED stays on:
Filters need replacing.
Replace filters, clean the unit and reset the alarm.

Resetting the alarm:
Press the On/Off button and the button with the arrow at the same time and hold for 10 seconds.

ATTENTION

The alarm displays a warning that needs your attention. The ventilation unit continues to operate, but in emergency mode.

Alarm display:
Briefly, press the On/Off button and the button with the arrow simultaneously. One of the green diodes will flash and display the following error types.



The yellow diode and the first green diode are flashing:
The temperature sensor has either short-circuited or been disconnected.
Register the error and contact service. Reset the alarm once the error has been rectified.

Resetting the alarm:
Press the On/Off button and the button with the arrow at the same time and hold for 10 seconds.

The yellow diode and the second green diode are flashing:
The humidity sensor or the CO2 sensor has either short-circuited or been disconnected.
Register the error and contact service. Reset the alarm once the error has been rectified.

Resetting the alarm:
Press the On/Off button and the button with the arrow at the same time and hold for 10 seconds.

The yellow diode and the third green diode are flashing:
The thermostat in the after-heating has short-circuited or been disconnected.
Make a note of which sensor is faulty and contact service. Reset the alarm once the error has been rectified.

Resetting the alarm:
Press the On/Off button and the button with the arrow at the same time and hold for 10 seconds.

WARNING

The alarm displays a critical alarm that needs your attention.
The ventilation unit has stopped.

The yellow diode and the first two green diodes are flashing:
The fire alarm has been activated.
If there is no fire, contact service. Reset the alarm once the error has been rectified.

Resetting the alarm:
Press the On/Off button and the button with the arrow at the same time and hold for 10 seconds.

The yellow diode and the upper two green diodes are flashing:
Frost in the water after-heating element (if installed).
Contact service. Reset the alarm once the error has been rectified.

Resetting the alarm:
Press the On/Off button and the button with the arrow at the same time and hold for 10 seconds.

Damper test

If a fire automation system has been connected and it has been activated in PC Tool, it will run a damper test. The damper test lasts approx. 3 minutes and it is carried out every 7/ 14 or 28 days (set in the Software). The test will also run every time the unit starts up after having been turned off. When the test has been completed, the unit will continue in the defined settings.

The 4 green LED lights range from 1-4:
A damper test is carried out that take approx. 3 min.

Resetting the alarm:
The alarm stops automatically when the test has finished, and the control panel will once again display the current fan speed level.

Control panel locked

You can lock the control panel in two different ways: The On/Off button and/or the button with the arrow.

All LEDs flash temporarily:
If all the LEDs flash temporarily when you use the panel, the panel has been locked.
Contact the caretaker or service provider if that happens.

Resetting alarms:
You can still reset alarms.
Press the On/Off button and the button with the arrow at the same time and hold for 10 seconds.

Service and maintenance

Generally

A ventilation unit from Nilan can last for many years if it is properly serviced and maintained. Ventilation units are often hidden away, and they are therefore rarely given attention in everyday life. But just as you maintain your car, your ventilation unit will need servicing regularly to keep it functioning properly.

If appropriate service and maintenance are not carried out, the ventilation unit may get damaged. It can also result in increased energy consumption and a poorer indoor climate. Less air will run through the unit even if the fans are running faster. The ventilation unit does not operate well with dirty filters, a clogged up heat exchanger and dusty fans.

You can set an alarm in your calendar on your phone that will notify you, when your ventilation unit is due a service. Alternatively, you can make a service appointment with your local Nilan dealer or service company.

Regular maintenance

Filters

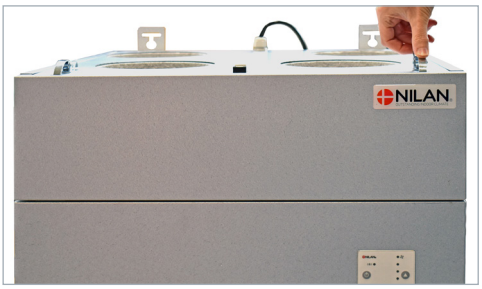
The primary purpose of the filters is to protect the ventilation unit and especially the heat exchanger and the fans that could otherwise become damaged by dust and dirt.

Dirty filters result in a poorer indoor climate and a higher energy consumption. Dirty filters must therefore be replaced. Dirty filters can also affect the humidity control system in the ventilation unit so it no longer works as intended.

The standard filters in the ventilation unit are ISO 16890 Coarse 75 % (G4). If you install a pollen filter ISO 16890 ePM1 55 % (F7), you will not need to replace the pollen filter as often, as its filter area is larger. It may then only be necessary to replace the pollen filter every second or third time, depending on its condition.

Illustration of filter change

1. Before opening the door, switch off the unit on the on/off button on the control panel , which is located on the front of the unit.

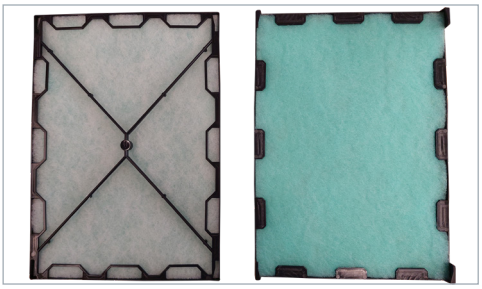


2. Loosen the toggle case catch latches on the upper door and lift the door to remove it.

3. Remove the two filter frames from the unit.
It is important to hold the sides of the filter frame when pulling it out.

4. It is advisable that you vacuum the filter chambers for potential dirt and dust.

5. Remove the filter sheet from the filter frame and place the new filter sheet with the white side downwards towards the cross.



6. Correctly fitted filter. Note that the filter sheet is pushed well under all the caps of the filter frame.

7. The filters shall be placed back in the ventilation unit with the cross downwards towards the unit and the green side upwards. It is important to hold the side of the filter frame when pushing it into place.

8. Turn on the ventilation unit again. Press the on/off button on the control panel.

Annual maintenance

General cleaning

The ventilation unit should be cleaned on the inside once a year. Dust may escape through the filters and potentially mix with moisture from the extract air.

WARNING

Stop the ventilation unit on the control panel and switch off the power supply for the ventilation unit before you open the front door to the unit.

You may want to vacuum the ventilation unit before you clean it on the inside using a slightly damp cloth. Be careful around potentially sharp edges. Be careful not to get water into the electrical control system.

The ventilation unit should also be cleaned on the outside using a slightly damp cloth and a mild detergent.

Valves in the ceiling

Over time a ring may develop around the inlet valves. This is a natural occurrence caused by dust in the air in the room. It is not due to defective filters or filters not being replaced.

Since painted ceilings are only rarely washable, we recommend that you vacuum the area around the valves before wiping them with a slightly damp cloth.

It is a good idea to detach the valves and then clean them when necessary. The valves have been set by the installer at a specific air volume, so it is important that you do not turn them, as this will change the setting and unbalance the ventilation system.

Water trap

During cold periods when the ventilation unit operates with high efficiency heat recovery, the extract air creates condensation. It is important that this water can drain freely from the condensate tray. If it cannot drain properly, it will eventually leak out of the unit door and, potentially, cause water damage.

ATTENTION

If you have not installed a water trap with ball, you must check the condensate drain every autumn before the weather turns cold. (Condensation typically forms when the outdoor temperature < 10 °C)

Water trap with ball

1. Pour water into the condensate tray and check that it drains away
2. If the water drains away, everything is in order
3. If the water does not drain away, you should check the water trap and the drain to locate any blockages

Water trap without ball

1. Pour water into the condensate tray
2. Close the door of the ventilation unit
3. Start the ventilation unit and let it run for 10 minutes
4. Open the door of the ventilation unit and check that the water has drained away and that it has not run back into the condensate tray
5. If the water has drained away, everything is in order
6. If the water has not drained away, you should check the water trap and the drain to locate any blockages

Heat exchanger

The counterflow heat exchanger is a central part of the ventilation unit. It heats up the cold outdoor air with energy from the warm extract air. To maintain a high level of heat recovery, it is important that the heat exchanger is not clogged with dirt.

Experience indicates that it should not be necessary to lift out and clean the heat exchanger every year. However, if it appears to be dirty, you should lift it out and clean it.

The easiest way to clean the counterflow heat exchanger is in the shower. Use lukewarm water and rinse it well from both sides. Allow it to drip off before remounting it in the ventilation unit.

Check air intake and discharge

It is important for the operation of the unit that air can move freely through the air intake and discharge.

If roof stacks have been fitted to the air intake and discharge, check that they are not blocked with birds' nests, leaves or other dirt which can hamper air passage.

If, instead of roof stacks, grilles have been mounted in facades or eaves, check that they are not clogged with leaves or dirt. Grilles are particularly likely to become clogged.

Check ventilation ducts

It is important for the operation of the unit that there is free air passage through the ventilation ducts.

After some years of operation, dirt will attach itself to ventilation ducts or tubes, and accumulations may lead to higher pressure drop in the ducts, leading to higher power consumption. It is therefore important to clean out the ducts when too much dirt has accumulated.

After attending to the inlet and outlet valves, it will be advisable to have them adjusted again, to ensure optimum operation of the ventilation system.

It will only be necessary to clean ducts every few years.

Product data

EU/EC Declaration of Conformity

EU/EC Declaration of Conformity

For the CE-marking inside the European Union

Nilan A/S

We declare that the ventilation systems

Comfort CT150, Comfort CT200, Comfort 200TOP,
Comfort 250L/Comfort250R/Comfort 250TOP,
Comfort 250L Polar/Comfort250R Polar/Comfort 250TOP Polar
Comfort 252TOP, Comfort CT300, Comfort 300LR, Comfort 302TOP,
Comfort 350L/ Comfort 350R/Comfort 350TOP,
Comfort 350L Polar/ Comfort 350R Polar/Comfort 350TOP Polar,
Comfort 450, Comfort CT500, Comfort CT500 Polar, Comfort 600

Confirm to the following EU/EC Directives, providing the products are used in accordance with the ordinary use.

EU-Directives:

- Directive on harmonization of the laws of the Member States relating to electrical equipment to be used within certain voltage limits (LOW voltage directive) 2014/35/EU
- Directive on harmonization of the laws of the Member States relating to electromagnetic compatibility (EMC directive) 2014/30/EU
- Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS directive) 2011/65/EU
- Directive of Energy Related Products in a framework which primarily focuses on environmental care of requirements for energy-related products (ECODESIGN) 2009/125/EU

Harmonized standards applied and EU regulations, in particular:

EN 60335-1	EN 60730-1	EN13141-7	EN 1886
EN 60335-2-80:2003	EN 50581	EN9614-2	EN 5136
(EU) 1253/2014			

Hedensted: 2024-06-04

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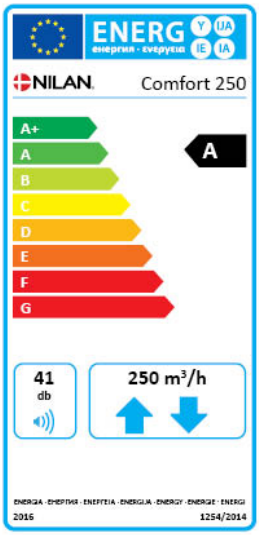
Head of R&D

Ecodesign data Comfort 250 Top



SEC* average climate	-41.6 kWh/(m².a)
SEC* cold climate	-80.4 kWh/(m².a)
SEC* warm climate	-16.8 kWh/(m².a)
SEC*-Class	A
Type	Two-way ventilation unit for residential
Type of drive	Variable speed drive
Type of heat recovery system	Recuperative (counterflow heat exchanger)
Thermal efficiency of heat recovery	90 %
Maximum flow rate	250 m³/h (100 Pa)
Electric power input of fan drive, including any motor control equipment at maximum flow rate	70.5 W
Sound power level (LWA)	41 dB(A)
Reference flow rate	0.049 m³/s (175 m³/h)
Reference pressure difference	50 Pa
SPI	0.18 W/(m³/h)
Central demand control	0.85
Maximum internal leakage	0.4 %
Maximum external leakage	0.2 %
Visual filter warning	An alarm on the user panel appears when filters need changing. To maintain the performance and energy efficiency of the unit it is very important to change filters regularly.
Disassembly instructions	www.nilan.dk

* Specific energy consumption

AEC - annual electricity consumption	208 kWh/year (100 m²)
AHS** average climate	4616 kWh (100 m²)
AHS** cold climate	9030 kWh (100 m²)
AHS** warm climate	2087 kWh (100 m²)

** Annual heating saved

Disposal

The environment - part of the solution

At Nilan A/S we recognize our responsibility in minimizing the environmental impact of our products. We consider the impact on the environment in all aspects of production, operation and subsequent disposal. We recognize our responsibility in minimizing consumption of resources. We work continuously to improve our products and the production process in order to limit our impact on the environment.

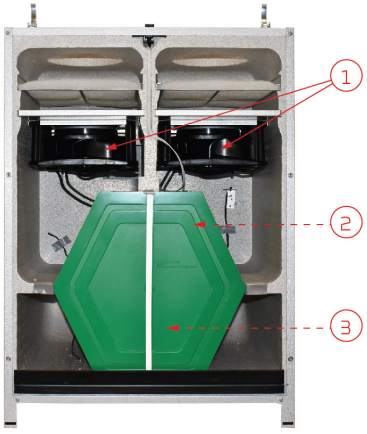
Ventilation unit

Nilan units consist mainly of recyclable materials. They must, therefore, not be mixed with household waste, but must be delivered to your local recycling center for disposal.

Disposal

The only tools required are Torx20 and Torx25 screwdrivers and perhaps some side-cutting pliers for cutting wires.

1. Remove the fans and dispose of them as electronic waste.
2. Demount the orange bypass motor and dispose of it as electronic waste.
3. The circuit board and the electronics are situated behind the green counterflow heat exchanger. These too should be disposed of as electronic waste.



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