SOFTWARE INSTRUCTIONS

CTS602 LIGHT BY NILAN

Comfort

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S24 Comfort_GB

NILAN®
OUTSTANDING INDOOR CLIMATE

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Installation

Settings

Ventilation

How to set the unit.
This list is intended for the installer to get an overview of what settings to use in consultation with the user or the builder.

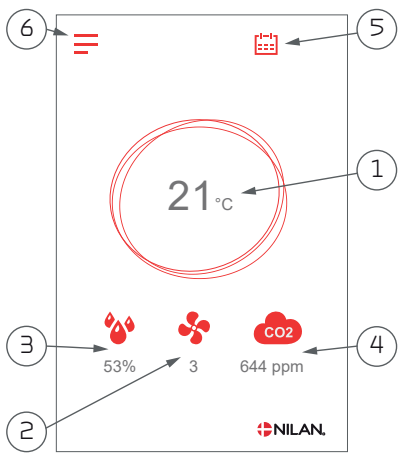
Function		Settings
Frequency of filter change?		Days:
What ventilation level has been set for basic ventilation?		Step:
Is low ventilation flow wanted at low outdoor temperature?	Yes/No	Step: At °C:
Is low ventilation flow wanted at low air humidity?	Yes/No	Step:
Level low air humidity?		%:
Is high ventilation flow wanted at high air humidity?	Yes/No	Step:
Maximum time for high air humidity operation?		Min:
Desired room temperature setting?		°C:
Is a cooker hood connected to the ventilation system?	Yes/No	Step:

Software

Control panel functions

Main screen items

The main screen of the HMI panel shows the information and the settings options that a user mostly requires.



1. Shows the current room temperature in the house, measured via the extract air.
2. Shows the current fan speed level.
3. Shows the current air humidity in the extract air.
4. Shows the current CO2 level in the extract air (does not appear if sensor is not installed).
5. Shows operation icon (see below)
6. Access to the settings menu, where there are several options.

Operation icon

User selection
Indicates that the user selection function is active.

Stop
Indicates that the unit is off.

Week programme
Indicates that the week programme function is active.

Alarm
Is displayed during alarms or warnings.

Main screen settings options

The settings options that are necessary in daily life can all be set on the main screen of the panel.

If you press current fan speed level, the set fan speed level will be displayed.

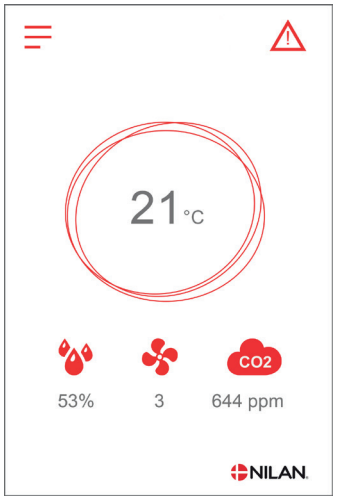
You can change the fan speed level by using the up-and-down arrows followed by the confirm icon (bottom right) or the cancel icon (bottom left).

There may be a difference between set fan speed level and the actual fan speed level as the control system will override the set level, for instance, at high/low air humidity or during cooker hood operation.

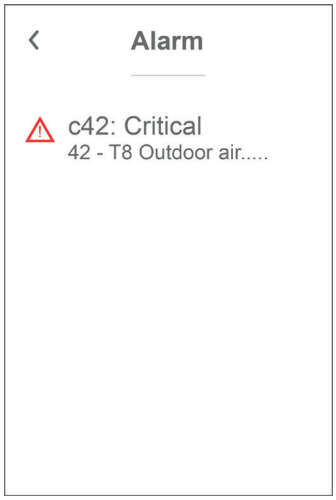
If you press current room temperature, the set room temperature will be displayed.

You can change the room temperature by using the up-and-down arrows followed by the confirm icon (bottom right) or the cancel icon (bottom left).

Warnings and alarms



If the ventilation unit is faulty or an error occurs, there will be either a warning or an alarm. The icon will appear in the top right hand corner in the menu bar.

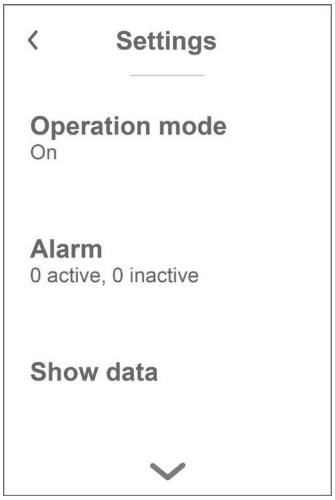


If you press the symbol, a brief description of the warning or the alarm will be displayed.
As soon as the problem is solved the big C- or W-letter will change to a small c- or w-letter.
You will find more detailed descriptions in the "Alarm List" section of this document.

When the problem has been solved, you can reset the warning or alarm by pressing "Clear Alarm".

Settings menu overview

The settings menu is constructed to make it easy to navigate through.



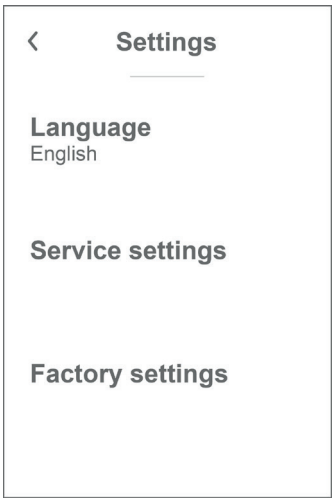
You navigate through the settings menu by pressing the arrow below or above.

If you want to access a menu, tap the text for that menu and it will open.

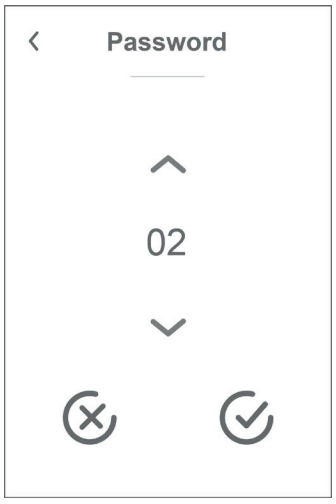
Installer access

Settings menus consist of 3 levels.

1. User level - Settings the user can access and customize.
2. Service level - Settings that the installer needs to access in order to set the ventilation unit in relation to individual installation. It requires expertise knowledge to select these settings. If the settings are not correct, the ventilation unit may not operate properly and it may consume more energy than necessary. The unit may even get damaged.
3. Factory level - Only Nilan has access.



The Service menu is located at the bottom of the User settings. Tap the down arrow several times to get there.



A password is required to access the Service menu.

You can set the password by using the up-or-down arrows followed by the confirm icon (bottom right).

Start-up settings

Language

The default language for the ventilation unit is Danish. You can change the texts to other languages in the settings menu.

> Language (DK - sprog)

> Dansk	Description:	Select the language you want on the panel.

Date/time

It is important to set date and time correctly. It makes it easier to trace potential faults when an error is being reported. When logging data, it is important to be able to follow the history. You set the time in the settings menu.

> Date/time

> Year	Description:	Press "Year" on the panel and select the current year.
> Month	Description:	Press "Month" on the panel and select the current month.
> Day	Description:	Press "Day" on the panel and select the current day of the week.
> Hour	Description:	Press "Hour" on the panel and select the current hour of the day.
> Minute	Description:	Press "Minute" on the panel and select the current minute.

Ventilation settings

Turn on the unit

When you turn on the ventilation unit, the control panel will light up, but all functions are off. This is to prevent errors from occurring when you turn on the unit.

When the ventilation unit is off, this icon is displayed on the main screen of the control panel at the top righthand corner.

ATTENTION

Before touching the electrical installations, the power supply must be disconnected.

ATTENTION

It is important that the ventilation unit is not turned off for lengthy periods of time, as this may cause problems with condensate water in the duct system.

You activate the functions of the ventilation unit in the settings menu under the menu item "Operation".

> Unit on/off

> Unit on/off	Settings: Standard setting: Description:	Off / On Off The ventilation unit is off when it is delivered in order to prevent errors from occurring during connection. This is also where you turn off the ventilation unit when filters need replacing or a service inspection is to be carried out.

Ventilation level

You can set the unit to operate at 4 different speed levels.

> Ventilation level

> Ventilation level	Settings: Standard setting: Description:	De-activated / Level 1 / Level 2 / Level 3 / Level 4 Level 1 De-activated: The units ventilation is de-activated. Level 1-4: Here you choose the basic fan speed level when the unit is not forced to increase operation, e.g. high humidity level, low humidity level, bypass, winter low or user selection program.

Alarm

You can read off warnings and alarms under the "Alarm" menu item. This is also where you reset them once the problem has been solved.

If an alarm or a warning is active, the alarm icon will be displayed in the upper righthand corner of the control panel.

> Alarm

> Alarm number and name	Description:	When you press the alarm, the following information will be displayed: • Alarm ID number • Type of alarm • Critical alarm or warning (The alarm list will inform you of how to proceed.)

ATTENTION

Until the problem has been solved, the alarm or warning will remain active. As soon as the problem is solved the big C- or W-letter will change to a small c- or w-letter. When the problem has been solved, you will be able to reset the alarm or warning by pressing "Clear alarm".

Show data

You can read off current operating data for the ventilation unit. This will allow you to check that the unit operates satisfactorily and to identify the cause of potential alarms.

> Show data

> Operating state	Description:	Shows in which operating setting the ventilation unit is running.
> Bypass	Description:	Shows whether the bypass damper is open or closed.
> T2 Supply air	Description:	Shows the supply air temperature. If an after-heating element is installed, T7 will be displayed instead.
> T3 Extract air	Description:	Shows the room temperature as an average of the entire house.
> T4 Discharge air	Description:	Shows the discharge air temperature.
> T7 Supply air	Description:	Shows the supply air temperature. If the after-heating element has not been selected, supply air will change to T2.
> T8 Outdoor air	Description:	Shows the outdoor temperature before reaching the pre-heating element, if installed.
> T9 Water afterheat	Description:	Shows the temperature in the water after-heating element (only if installed).
> T10 Extract air	Description:	Shows the current room temperature measured in the extract air (only if installed).
> Air humidity	Description:	Shows the current air humidity in the house (only if installed).
> CO_2 level	Description:	Shows the current CO_2 level in the house (only if installed).
> Supply air fan	Description:	Shows the level at which the supply air fan is operating.
> Extract air fan	Description:	Shows the level at which the extract air fan is operating.
> Unit information	Description:	Press for further information about the ventilation unit.
>Unit type	Description:	Shows what type of ventilation unit it is.
>Software version	Description:	Shows the installed software version.
>Panel software	Description:	Shows installed software version on the panel.
>HMI Serial	Description:	Shows the serial number of the HMI panel.

Week programs

You can program the ventilation unit to run in accordance with specific settings at fixed times during the day and week via a week program.

On the main screen of the control panel, in the top right corner, the Week program icon will be displayed when active.

> Week program

> Select program	Settings: Standard setting: Description:	De-activated / Program 1 / Program 2 / Program 3 De-activated The control allows you to set 3 programs for different situations, e.g.: • Normal operation • Holiday operation
> Edit program	Description:	The selected Week program is now active and can be edited.
>Monday	Settings:	Once you have chosen the program you wish to edit, you then select which day of the week you wish to edit, e.g. Monday as shown here.
>Function 1	Settings:	Here you select the function you want to edit.
>Start time	Settings: Standard setting: Description:	Hours and minutes 06:00 Set the time for the program to start. The program will run with the set values until the next change in the Week program.
>Ventilation level	Settings: Standard setting: Description::	De-activated / Level 1 / Level 2 / Level 3 / Level 4 Level 3 Select the desired fan speed level here.
>Room temperature	Settings: Standard setting: Description:	5 – 40 °C 22 °C Set the desired room temperature here.
>Copy to next day	Description:	Once the values for the Monday program have been set, it is possible to copy these to the next day.
The same settings are made for all functions.		
> Reset program	Description:	Here you reset the selected program by pressing the "Approve" icon.

Heating element

You will only have this menu item if an electrical after-heating element or a water after-heating element has been installed, and if it has been activated in "Service settings".

ATTENTION

An after-heating element is not included as standard. However, you can order it as an additional extra, and it can also be retrofitted.

If you want to be able to control the supply air temperature, you will need to install an after-heating element. This allows you to control the supply air temperature irrespective of the outdoor temperature. The after-heating element can also contribute towards the heating of the dwelling.

> Heating element

> Activate	Settings: Standard setting: Description:	Off / On Off The user can turn the after-heating element on and off here.

Humidity control

The primary purpose of ventilation is to extract humidity from the house so it does not damage the building, and to achieve a good indoor climate.

This is rectified by an integrated humidity control system that maintains good, relative air humidity. When the average air humidity in the house falls below a set level (default set at 30 %), ventilation may be reduced. It will typically only be for a short period of time. This will help avoid further reduction of the air humidity in the house.

The humidity control system also has a function that allows increased ventilation, should the air humidity increase, for instance when having a bath. The risk of mould growth in the bathroom is reduced, and the bathroom mirror will rarely steam up.

The humidity control system follows the average air humidity level measured over the previous 24 hours. In this way the system automatically adapts to summer and winter conditions.

> Humidity control

> Vent.low humidity	Settings: Standard setting: Description:	De-activated / Level 1 / Level 2 / Level 3 Level 1 When the current humidity drops below the low humidity level, the ventilation unit switches to the set ventilation level. The speed level for low humidity level is only active when the unit operates in winter mode, outdoor air <12 degrees.
> Low humidity level	Settings: Standard setting: Description:	15 – 45 % 30 % When current humidity below this value falls, the ventilation level set above is activated.
> Vent.high humidity	Settings: Standard setting: Description:	De-activated / Level 2 / Level 3 / Level 4 Level 3 At high humidity levels, for instance when having a bath, the unit changes to the set fan speed level. The function "Vent.high humidity" stops when actual humidity falls below 3 % above the average air humidity.
> Max time hi.humidity	Settings: Standard setting: Description:	De-activated / 1 - 180 min. 60 min. If "Max time high humidity" expires, then the operation of high humidity stops. The current humidity measured at the stop time becomes the new reference point/average. The system often uses this function in the summer, when the temperature outside is warm and the humidity is high.

CO_2 control

This menu is only displayed if a CO_2-sensor has been installed, and the function has been chosen under Service settings.

ATTENTION

A CO_2 sensor is not a standard part of all ventilation units, but may be purchased as an accessory.

If the number of people using a building varies considerably, controlling ventilation through the CO_2 level in the extract air may be a good solution. This function is often used in offices and schools where use varies greatly during the day and during the week.

> CO2 control

> Vent.high CO2	Settings: Standard setting: Description:	De-activated / Level 2 / Level 3 / Level 4 Level 3 Here you set the fan speed level at which the unit is to operate at high CO_2 level.
> High CO2 level	Settings: Standard setting: Description:	650 – 2500 ppm 800 ppm Here you set the CO_2 level at which the unit is to switch to high fan speed level.
> Normal CO2 level	Settings: Standard setting: Description:	400 – 750 ppm 600 ppm Here you set the CO_2 level at which the unit is to switch to normal fan speed level.

Air exchange

Low humidity in the dwelling can be prevented by reducing ventilation at low outdoor temperatures. This function is useful for instance in countries with regular sub-zero temperatures and at high altitudes where the outdoor air is very dry.

> Air exchange

> Level winter low	Settings: Standard setting: Description:	De-activated / Level 1 / Level 2 / Level 3 De-activated Here you specify at what fan speed level you want the unit to operate at low outdoor temperatures.
> Temperature winter low	Settings: Standard setting: Description:	-20 - 10 °C 0 °C Here you specify at which outdoor temperature the "Winter low" function is to be activated.

Filter alarm

ATTENTION

It is important to change the filters regularly and when needed. Dirty filters reduce the efficiency of the ventilation unit and result in a poorer indoor climate and higher power consumption.

From factory, the filter alarm has been set to signal filter replacement every 90 days. You can set the timer to fit the level of pollution in the area where the ventilation unit has been installed.

If someone in the household has pollen allergies, it is recommended that you install a pollen filter in the outdoor air intake.

> Filter alarm

> Days to change	Settings: Standard setting: Description:	De-activated / 30 / 90 / 180 / 360 90 days The number of days between filter changes can be set as required.

Temperature regulation

If you have not installed an after-heating element, use the settings to control the bypass damper.

It is necessary to install an after-heating element if you want to control the supply air temperature and for it to contribute towards the heating of the dwelling. An after-heating element allows you to control the supply air temperature, regardless of the outdoor temperature.

You can install an external electrical or water after-heating element in the supply air duct.

ATTENTION

During periods when heating is not required in the dwelling, the supply air temperature may fall below the minimum temperature.

> Temp. regulering

> Min. supply summer	Settings: Standard setting: Description:	5 - 16 °C 14 °C Here you set the supply air temperature that you want the ventilation unit to be able to provide, as a minimum, during summer, when the unit is in heating mode. NB: Only possible if an after-heating element has been installed.
> Min. supply winter	Settings: Standard setting: Description:	14 - 22 °C 16 °C Here you set the supply air temperature that you want the ventilation unit to be able to provide, as a minimum, during winter, when the unit is in heating mode. NB: Only possible if an after-heating element has been installed.
> Max supply summer	Settings: Standard setting: Description:	16 - 25 °C 22 °C Here you set the supply air temperature that you want the ventilation unit to be able to provide, as a maximum, when heating is required. NB: This option is only shown if an after-heating element has been installed and activated.
> Max supply winter	Settings: Standard setting: Description:	22 - 50 °C 25 °C Here you set the supply air temperature that you want the unit to be able to provide, as a maximum, during winter. NB: This option is only shown if an after-heating element has been installed and activated.
> Summer/wint. shift	Settings: Standard setting: Description:	5 - 30 °C 12 °C Here you set the temperature for the shift between summer and winter operation. • If the outdoor temperature is higher, the unit will operate in summer mode • If the outdoor temperature is lower, the unit will operate in winter mode

Service settings

Password

Password for access to service settings: 02

WARNING

Service settings are intended for qualified installers with knowledge of the workings of the ventilation unit. They can identify the appropriate settings for the ventilation unit.

If a user alters these settings, the ventilation unit will no longer operate to its full potential. It may result in higher energy consumption, and errors may occur and cause damage to the ventilation unit.

User program 1 and 2

If the fire automation system that allows control of the fire damper has not been activated, the control system will provide access to two user selection programs:

- User program 1
- User program 2 (not accessible if the fire automation system has been activated)

NB! User program 2 has a higher priority than User program 1.

A user program enables you to use special settings that override the standard operating settings in the main menu. The user program is activated via an external signal.

The following are examples of situations when user program functions are used:

Cookerhood (User program 2)	If you choose to run the cooker hood via the ventilation unit, the cooker hood will release a potential-free signal to the ventilation unit when you switch it on. When this happens, the ventilation unit increases the air volume to the set level so that enough air is drawn through the cooker hood.
Fireplace	Normally, ventilation is balanced with slightly negative pressure in the dwelling so that dampness is not pressed into the building components. This, however, is a disadvantage if you light a fire in your fireplace/wood-burning stove as the smoke will then enter the dwelling instead of being drawn out through the chimney. When lighting a fire in the fireplace/wood-burning stove, you can activate the user function with a potential-free contact that ensures positive pressure in the dwelling. Smoke is then drawn out of the chimney as intended.
Extended operation	If the ventilation unit is used in an office or a school where ventilation is reduced outside opening hours, it may be necessary to increase ventilation temporarily if the building is used in the evening for, for instance, meetings. In that case you can have a potential-free contact that is activated, causing ventilation to increase, for example for an hour, before operation ceases again.

> Select program	Settings: Standard setting: Description:	None / Extended / Supply air / Extract air / Ext. offset / Ventilate / Cookerhood Extended Here you select the program you wish to run.
>Extended	Description:	Settings if you select Extended.
>Duration	Settings: Standard setting: Description:	De-activated / 15 – 480 min. De-activated Time runs in 15 minutes intervals. Here you set the desired duration of the program after the external signal has ceased.
>Fan speed level	Settings: Standard setting: Description:	De-activated / Level 1 / Level 2 / Level 3 / Level 4 Level 4 Select the desired fan speed level here.
>Room temperature	Settings: Standard setting: Description:	5 – 30 °C 23 °C Set the desired room temperature here.
>Supply air	Description:	Settings if you select Supply air.

>Duration	Settings: Standard setting: Description:	De-activated / 15 – 480 min. De-activated Time runs in 15 minutes intervals. Here you set the desired duration of the program after the external signal has ceased.
>Fan speed level	Settings: Standard setting: Description:	De-activated / Level 1 / Level 2 / Level 3 / Level 4 Level 4 Here you set the desired fan speed level supply air.
>Extract air	Description:	Settings if you select Extract air.
>Duration	Settings: Standard setting: Description:	De-activated / 15 – 480 min. De-activated Time runs in 15 minutes intervals. Here you set the desired duration of the program after the external signal has ceased.
>Fan speed level	Settings: Standard setting: Description:	De-activated / Level 1 / Level 2 / Level 3 / Level 4 Level 4 Here you set the desired fan speed level extract air.
>Ext. offset	Description:	Settings if you select Ext. offset. An after-run time and offset of the external room heating set point are selected.
>Duration	Settings: Standard setting: Description:	De-activated / 15 – 480 min. De-activated Time runs in 15 minutes intervals. Here you set the desired duration of the program after the external signal has ceased.
>Offset temp. reg.	Settings: Standard setting: Description:	-10 – 10 °C 0 °C With this setting, the set point of the external room heating is shifted.
>Ventilate	Description:	Settings if you select Ventilate.
>Duration	Settings: Standard setting: Description:	De-activated / 15 – 480 min. De-activated Time runs in 15 minutes intervals. Here you set the desired duration of the program after the external signal has ceased.
>Fan speed level	Settings: Standard setting: Description:	De-activated / Level 1 / Level 2 / Level 3 / Level 4 Level 4 Select the desired fan speed level.
>Cookerhood	Description:	Settings if you select Cookerhood. If fire control is not activated, activating this function will activate an output signal for controlling e.g. a damper.
>Duration	Settings: Standard setting: Description:	De-activated / 15 – 480 min. De-activated Time runs in 15 minutes intervals. Here you set the desired duration of the program after the external signal has ceased.
>Fan speed level	Settings: Standard setting: Description:	De-activated / Level 1 / Level 2 / Level 3 / Level 4 Level 4 Select the desired fan speed level.

Heating element

Here, the control of the after-heating element is activated and set, if installed.

> Heating element

> Heating type	Settings: Standard setting: Description:	None / El heating / Water heat. None Here you specify what kind of after heating element is installed.
>Delay	Settings: Standard setting: Description:	0 - 60 min. 0 min. This shows the amount of minutes before the after-heating element is released once heating is required.
>Regulation	Settings: Standard setting: Description:	Period / 0-10V / 0/5/10V 0-10V Here the regulation mode is set: 0/5/10V: 3 step regulation 0-10V: Stepless regulation Period: On/Off in 1 min.

Air quality

All Nilan domestic ventilation units come as standard with a humidity sensor installed. It is possible to purchase a CO_2 sensor which is activated in this menu.

> Air quality

> Function	Settings: Standard setting: Description:	Hum + CO_2 / Humidity / De-activated Hum+CO_2 Here you can choose from off / humidity sensor and / or CO_2 sensors.

Air exchange

It is easy and quick to balance the airflows with Nilan CTS602 control. All fan speed levels can be set infinitely between 20 and 100 %, different for extract air and supply air.

> Air exchange

> Balancing	Settings: Standard setting: Description:	Off / On Off
> Min. level sup. air	Settings: Standard setting: Description:	De-activated / Level 1 / Level 2 / Level 3 / Level 4 De-activated You can set a minimum fan speed level for supply air.
> Min. level exh. air	Settings: Standard setting: Description:	Level 1 / Level 2 / Level 3 / Level 4 Level 1 You can set a minimum fan speed level for extract air.
> Max. level exh. air	Settings: Standard setting: Description:	Level 3 / Level 4 Level 4 You can set a maximum fan speed level for extract air.
> Level 1 - Sup. air	Settings: Standard setting: Description:	20 - 100 % 23 % Here the fan speed level is set for step 1 - supply air.
> Level 2 - Sup. air	Settings: Standard setting: Description:	20 - 100 % 40 % Here the fan speed level is set for step 2 - supply air.
> Level 3 - Sup. air	Settings: Standard setting: Description:	20 - 100 % 65 % Here the fan speed level is set for step 3 - supply air.
> Level 4 - Sup. air	Settings: Standard setting: Description:	20 - 100 % 100 % Here the fan speed level is set for step 4 - supply air.
> Level 1 - Exh. air	Settings: Standard setting: Description:	20 - 100 % 25 % Here the fan speed level is set for step 1 - extract air.
> Level 2 - Exh. air	Settings: Standard setting: Description:	20 - 100 % 45 % Here the fan speed level is set for step 2 - extract air.
> Level 3 - Exh. air	Settings: Standard setting: Description:	20 - 100 % 70 % Here the fan speed level is set for step 3 - extract air.
> Level 4 - Exh. air	Settings: Standard setting: Description:	20 - 100 % 100 % Here the fan speed level is set for step 4 - extract air.

Nilan recommends the following settings for each fan speed level:

Level 1: "Holiday ventilation" - is used when you are away on holiday, but also for "Humidity low" and "Ventilation at low outdoor temperature".

Level 2: "Basic ventilation" - is used as standard operation.

Level 3: "Guest ventilation" - is used when you have guests, but also for "High humidity level".

Level 4: "Party ventilation" - is used when many people are gathered in the dwelling, but also for "Cooker hood function".

De-icing

In all ventilation units with a heat exchanger with high efficiency heat recovery, ice may form in the heat exchanger during periods of heavy frost. The de-icing function will try to de-ice the exchanger so that normal operation can continue.

You can prevent ice formation in the heat exchanger by installing a pre-heating element for frost protection. This ensures continuous operation without cold draughts or coldness.

It is recommended that you install a pre-heating element for frost protection if you are in an area with very frosty winters.

> De-icing

> Supp. air de-icing	Settings: Standard setting: Description:	Noner / User / Low None Here you set what the supply air fan should do during de-icing. None: The supply air fan is stopped. User: The supply air fan runs normal operation. Low: The supply air fan runs lowest fan speed level.
> Bypass at de-icing	Settings: Standard setting: Description:	Open / Closed Open Setting whether the bypass damper should be open or closed during de-icing.
> Time betw.de-icing	Settings: Standard setting: Description:	15 – 720 min. 30 min. Setting the minimum time between de-icing processes in the heat exchanger.
> T4 start de-icing	Settings: Standard setting: Description:	De-activated / 1 – 5 °C 3 °C Here you can set the temperature for the de-icing function to start as measured at T4. Set to off if a frost protection pre-heating element is installed.
> T4 stop de-icing	Settings: Standard setting: Description:	2 – 12 °C 7 °C Here you can set the temperature for the de-icing function to stop as measured at T4.

Temperature regulation

Room low temperature

You can set a minimum room temperature at which the ventilation unit is to stop (Room low temperature).

This is a useful safety function, for example if you are not at home and the heat supply is interrupted. In such an event, the dwelling will no longer be heated and the room temperature will fall. To prevent the ventilation unit from cooling the dwelling even further, you can set it to stop at a minimum room temperature.

Offset ext. heating

If an expansion PCB has been installed, the ventilation unit can control an external heat supply by blocking or releasing external heating.

In this way the ventilation unit and the heat supply work in unison to control the heating of the dwelling. When you do not require heating of the dwelling, or the ventilation unit is operating in cooling mode, you can block the external heat supply.

> Temp. regulation

> Room low temp.	Settings: Standard setting: Description:	De-activated / 1 – 20 °C De-activated Here you can set whether the ventilation unit should stop at low room temperature and at what temperature.
> Offs. ext. heating	Settings: Standard setting: Description:	-5 – 5 °C -1 °C Here you can set the offset temperature at which the external heat supply should be released or blocked. The temperature setting should be deducted from or added to the regulatory-deadband of the setpoint.

Supply air control

ATTENTION

The parameters in Supply air control should only be adjusted by persons with knowledge of control technology.

> Supply air control

> Gain PI regulation	Settings: Standard setting:	0 – 30 %/° 7 %/°
> Integration time	Settings: Standard setting:	0 – 600 sec 120 sec
> Neutral zone	Settings: Standard setting:	0.0 – 10.0 °C 0.5 °C
> Temperature ramp	Settings: Standard setting:	De-activated / 0.01 – 1.00 °C/s 0.10 °C/s
> Capacity ramp	Settings: Standard setting:	De-activated / 0.1 – 10.0 %/s 0.5 %/s

Room temperature control

In this menu item it is possible to adjust the control of the ventilation units after heating element.

ATTENTION

The parameters in this menu item should only be adjusted by persons with knowledge of control technology.

> Room temp contr

> Type of response	Settings: Standard setting: Description:	Slow / Normal / Fast / User Normal Here you set the speed at which the heating control should adjust up or down.
> Gain PI regulation	Settings: Standard setting:	0.0 - 10.0 °/° 6.0 °/°
> Integration time	Settings: Standard setting:	0 - 60 min. 6 min.
> Neutral zone	Settings: Standard setting:	0.2 - 10.0 °C 2.0 °C
> Neutral zone	Settings: Standard setting: Description:	0.2 - 10.0 °C 2.0 °C Here you set the offset temperature for when the shift between bypass and after-heating should be activated.

Restart

Here you can set the response of the ventilation unit to fire detection and to tests via an external fire automation system.

> Restart

> Restart	Settings: Standard setting: Description:	De-activated / Fire De-activated Here you can set the response of the ventilation unit to activation of the fire access. Off: Use when connecting a fire thermostat. If fire is detected, the user must confirm the alarm before the ventilation unit can restart. Fire: Use when connecting an external fire automation system. Stop the unit if fire is detected. When the external fire automation system reconnects, the alarm will self-confirm and the ventilation unit will restart automatically.

Save / restore settings

You can restore the factory settings. The function also allows you to save current settings and restore them at a later date.

ATTENTION

Before restoring factory settings or previously saved settings, we recommend that you note down the fan settings to save you balancing the ventilation unit again.

> Save/restore set.

> Save/restore set.	Settings: Standard setting: Description:	De-activated / Factory / Backup / Restore De-activated Factory: Restores factory settings. Backup: Saves current settings. Restore: Restore saves current settings

Manual test

In this menu you can manually test a range of the functions of the ventilation unit.

> Manual test

> Manual test	Settings: Standard setting: Description:	De-activated / De-icing / Supply air / Extract / Vent.+heat / Rotor alternates De-activated You can check some of the functions of the ventilation unit.
>De-activated	Description:	Manual test is deactivated (normal operating mode).
>De-icing	Description:	The de-icing function starts.
>Supply air	Description:	Only the supply air fan is operating.
>Extract	Description:	Only the extract air fan is operating.
>Vent.+heat	Description:	Testing the after-heating element, if one has been installed. During the test a 50 % signal is sent to the heating element.
>Rotor alternates	Description:	Manual rotor exchanger test.

Energy save function

A power-saving function can be activated that prevents after-heating and deactivates the damper.

> Energy saving func.

> Energy saving func.	Settings: Standard setting: Description:	Off / On Off Here you can activate an energy saving function.

Damper automatik

The integrated fire automation system can control up to 2 fire dampers. Installation is easily carried out with a Nilan Fire box.

The function is often used in apartment buildings where the ventilation unit is installed as part of a fire damper solution. It has a fire damper on the discharge air side, but it can also control a fire damper on the side with the outdoor air intake. (Both fire dampers are serially connected to the fire automation system box.)

ATTENTION

From factory, the fire automation system has been tested but not activated.

Please note that if you activate the fire automation system, only Nilan service personnel can de-activate it again.

When the fire automation system is activated, the ventilation unit can only operate with fire dampers and fire thermostat being connected.

> Fire automatic

ATTENTION

When the fire automation system is activated, the following warning will be displayed:

Warning: The fire automation system will stop the unit and change the configuration. The fire automation system can only be de-activated by a Nilan technician. Do you want to activate the fire automation system? Yes/No

If the fire automation system is activated, the following menu items will appear.

> Day damper test	Settings: Standard setting: Description:	Off / Mon / Tue / Wed / Thu / Fri / Satr / Son Wed Here you set the day of the week where the damper test is performed at 10:00. Damper test consists of the following: 1. The ventilation unit stops 2. Fire dampers close and opens within a specified time 3. If ok, the ventilation unit restarts to normal operation 4. If not ok, an error message will appear in the display
> State damp. test	Description:	Displays the state of the last damper test: Ok / Error.
> Last damp. test	Description:	Displays the date of the last damper test.

The fire automation system has been programmed to go into "fire mode" and to close the fire dampers if the ventilation unit is switched off or if there is a power cut.

The ventilation unit will also go into "fire mode", turn off and close the fire dampers if the connection to the fire thermostat is lost.

Modbus address

The control in Nilan ventilation units has an open Modbus communication, which allows the ventilation unit to be controlled with e.g. an external CTS controller

The CTS602 control communicates Modbus RS485, and the complete Modbus protocol can be downloaded from the Nilan website.

> Modbus adress

> Modbus adress	Settings: Standard setting: Description:	1-247 30 The Modbus address for the ventilation unit is entered here.

Data log interval

Data can be logged at intervals of 1-120 minutes.

- A choice has been made to log temperatures in whole degrees Celsius in order to minimize logfile sizes.
- The status of digital inputs and outputs have been combined in two joint log variables, "Din" and "Dout".
- Alarms are always logged at the time they are viewed.

Note! Only installers can download the log file, as an LMT program is required, which can be downloaded on NilanNet.

> Data log interval

> Data log interval	Settings: Standard setting: Description:	1-120 min. / De-activated 10 If "De-activated" is selected, logging will only contain events and alarms.

Data logging

In order to data log you need the XML file "Devicelog.xml", which is a decoding specification required by the LMT PC program. The file can be downloaded from NilanNet under the menu item "After Sales/Software".

- Enter the file in the "..\Database" directory under the current LMT project.
- You can then retrieve the log from the control system via the menu "Device - Devicelog download".
- The log is shown in LMT in both tabular and graphic form.
- You can export the log file to Microsoft Excel format.

ATTENTION

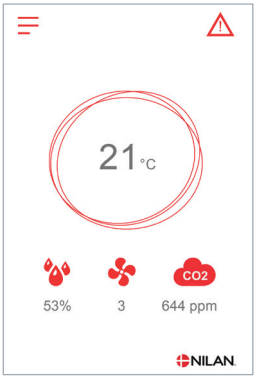
Alarms are still logged if "Data logging" is off.

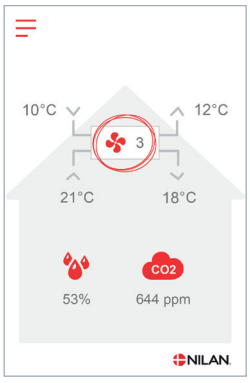
Main screen

You can choose from 2 different images for the main screen in the user panel.

> Main screen

> Main screen	Settings: Standard setting: Description:	Normal / House House Both options allow access to set the ventilation unit via the main screen.





Panel-indstilling

It is possible to set the backlight in the control panel as well as calibrate it in case it comes out of focus.

> Screen set.

> Backlight (active)	Settings: Standard setting: Description:	3 – 100 % 100 % Here you set the backlight when in active function.
> Backlight (idle)	Settings: Standard setting: Description:	0 – 100 % 2 % Here you set the backlight when not in active function.
> Calibrate	Settings: Standard setting: Description:	Off / On Off If you select "On", it is possible to calibrate the screen by pressing the point as it gradually moves. A dot appears that you must press each time it moves.

RH sensor

> RH sensor

> RH sensor	Settings: Standard setting: Description:	Lodam (square) / SHT3x (round) SHT3x (round) (set at the factory) Here you choose the type of humidity sensor which is mounted. Default: Lodam (square)

Alarm list

CTS602 HMI / CTS602i HMI

Alarm list

The following list applies to ventilation units with either CTS602 HMI, CTS602Light or CTS602i HMI control. The events are divided into the following categories:

Warning — Operation continues, but an incident has occurred that should be kept in mind.

Alarm — Operation is partially or completely stopped as it is a critical fault that needs immediate attention.

ID	Type	Error text	Display text / cause	Troubleshooting
1		HARDWARE	Hardware fault: Error in the hardware of the control system.	Note alarm and reset it. If the alarm does not disappear contact service.
2		TIMEOUT	Alarm timeout: A warning alarm has become a critical alarm.	Note alarm and reset it. If the alarm does not disappear contact service.
3		FIRE	Fire alarm activated: The ventilation unit is stopped due to the fire thermostat being activated.	If there is no fire, check the connection to the fire thermostat. If okay, contact service.
4		PRESSURE	Compress. Press. low/high: The high-pressure switch in the refrigeration circuit has been triggered, possibly due to: • Extremely warm outdoor air supply • Clogged filter • Broken fan	Check for faults and reset the alarm. Contact service if you cannot reset the alarm or if alarms often occur.
5		DOOR	Service door is open: Inspection door open.	Check that the doors to the fan compartments are closed properly. Check the door switches. (In larger units, there is one in each fan compartment.)
6		DEFROST	Compres. defrost timeout The de-icing time has been exceeded. The exchanger or the heat pump has failed to de-ice within the maximum time. This may be due to the unit being exposed to very low outdoor temperatures.	Contact service if resetting the alarm does not help. Register the current operating temperatures from the Show data menu in order to ease the service process.
7		FROST	Frost in afterheating: Units with a T9 sensor: Water heating element could not reach 20 °C within 6 min. Units without a T9 sensor: Frost thermostat in water heating element triggered.	Check for adequate insulation around the water heating element and its connections. Reset alarm.
8		FROST_WARN	Frost thermo. triggered: Only on units with a T9 sensor: Frost thermostat in water heating element triggered.	Check for adequate insulation around the water heating element and its connections. Reset alarm.

9	⚠	OVERTEMP	Overheat EK: Electric boiler overheating (Tmax+10 °C)	Check that the circulation pump is working Check that the circulation of the central heating system is not blocked by e.g. a closed ball valve, or because all the actuators are closed on the underfloor heating control system. Check that there is pressure in the central heating system - preferably 1-2 bar.
10	⚠	OVERHEAT	Overheat EL-after heating: The electrical heating element has overheated. Lack of airflow due to, for instance, blocked filters, blocked air intake or defect supply air fan.	Make sure that air is blown into the house. Make sure the filters are clean. Check that the outdoor air intakes is not blocked. Reset alarm. Contact service if the above does not solve the problem.
11	⚠	AIRFLOW	Low airflow el-after heat: Lack of airflow in supply air.	See alarm code 10.
12	⚠	THERMO	Motor thermo fuse: Fan motor thermal fuse.	Check the supply voltage to the fans. Check that the open/close dampers are open.
13	⚠	BOILING	Hot water tank overheat: The temperature for the electricity supplement in the hot water tank has been too high.	The over-heating fuse located behind the lower door is to be re-engaged. In case of repeated alarms contact service.
14	⚠	CONTROL_ SENSOR	Sensor is missing: Selected controlling sensor defect (SW 1.20+).	If the supply air sensor has been selected as the controlling sensor - check sensor T2/T7. If the extract air sensor has been selected as the controlling sensor - check sensor T3/T10.
15	⚠	ROOM LOW	Room temperature too low: When the room temperature is below 10 °C, the unit will stop in order to prevent further cooling of the house. This may, for instance, be during a period when the house is unoccupied and the heating system is off.	Heat up the house and reset the alarm.
16	⚠	SOFTWARE	Software fault: Fault in the ventilation unit software.	Contact service.
17	⚠	WATCHDOG	Watchdog warning Fault in the ventilation unit software.	Contact service.
18	⚠	CONFIG_LOST	Database content changed : Parts of the program setting have been lost. This may be due to a prolonged power cut or a lightning strike. The unit will continue to operate with standard settings.	Reset alarm. Contact service if the unit does not operate to your satisfaction/ as before, as some subprogrames may have been lost. (Subprogram is only available for service).
19	⚠	FILTER	Replace air filter: The filter monitor has been set at X amount of days for check-up/change of filter.	Clean/change filter. Reset alarm.
20	⚠	LEGIO	Legionella timeout: Legionella treatment has not been performed within the time limit or number of trials.	In case of repeated alarms contact service.
21	⚠	POWER	Check date and time: Is displayed during power cuts.	Set the date and time. Reset alarm.
22	⚠	T AIR	Air temperature failure: The desired heating of the supply air is not possible. (Applies only with after heating element)	Set a lower supply air temperature. Reset alarm.

23		T WATER	Hot water temp. failure: Domestic hot water heating not possible.	Contact service.
24		T HEAT	Central heat.temp.failure: Central heating temperatur failure.	Contact service.
27-60		TxSHORT/ OPEN	Tx shortcut/disconnect: One of the temperature sensors has either short circuited, been disconnected or is defective.	Register which sensor (Tx) is faulty and contact service.
70		HTW ANODE	Replace hot water anode: The hot water tank anode is either torn or not connected properly.	Contact service.
71		DFR EXCH	Exchanger defrost timeout: Max. de-icing time exceeded for counterflow heat exchanger. This may be due to the unit being exposed to very low temperatures.	Reset alarm. If resetting the alarm does not help, contact service. Register the current operating temperatures from the "SHOW DATA" menu in order to ease the service process.
72		EVAP LOW	Low evaporator temp.: Abnormal evaporator temperature (T6) is due to insufficient air flow.	Change filters, check outdoor air intake is not stopped. In case of constant fault contact service.
73		HI PRESS	High pressure: The airflow over the surfaces is too low. High-pressure switch. Minimum compressor stop time is 6 minutes.	Make sure that air is blown into the house. Make sure the filters are clean. Check that the outdoor air intake is not blocked. Reset alarm. Contact service if the above does not solve the problem.
74		LO PRESS	Low pressure: The airflow over the surfaces in cooling mode is too low. Low-pressure switch. Minimum compressor stop time is 6 minutes.	Make sure that air is blown into the house. Make sure the filters are clean. Check that the outdoor air intake is not blocked. Reset alarm. Contact service if the above does not solve the problem.
91		OPTION	Missing expansion PCB: Expansion PCB is missing.	Contact service.
92		PRESET	Backup fault settings: Error writing or reading installer settings.	Contact service.
95		SW_UPGRADE	SW upgrade rejected: Software update has been rejected due to newer hardware not being supported by older software versions (SW 2.30+, HW with green dot).	Check that you are updating using the correct software version.
96		DAMPTEST	Error in damper test: Damper (open / closed) not fulfilled.	Check the damper supply, the open/close switches and the travel time configuration. If it does not help contact service.
97		FC	Compressor alarm: The inverter for the compressor has self-protected. Operation continues with the rotary exchanger and after-heating. The alarm must be reset before the compressor starts up again (after 10 min).	Check the supply voltage to the unit. Check the alarm code for the inverter for the compressor. Contact service if you cannot reset the alarm.
98		T13T14	T13 & T14 sensor alarm: VGU180EK and VENTEC: System stop due to alarm on both T13 and T14.	Check the T13 return sensor. Check the T14 supply flow sensor.

99		COMBI	Thermo relay/FC alarm: VPM3 unit: Combined thermal relay and FC alarm. Minimum compressor stop time is 6 minutes.	If you are able to reset the alarm, it will be one or both fans that temporarily stopped due to their integral thermal fuse. There can be different reasons for this, such as an insufficient flow, a closed damper or too high a temperature in the fan. If you cannot reset the alarm, it may be the compressor motor protector, which has been disconnected due to a fault current. Reconnect the motor protector and reset the alarm.
101		BRINEPRESS	Low pressure brine: BAH related alarm: Pressure switch input activated.	Top up the brine in the brine circuit. Seal the brine circuit for the BAH solution.
102		MANUAL	Manual: The system is in manual mode.	Put the unit back into auto mode when you have finished in manual mode. After one hour, the control system automatically switches back to auto mode.
103		DPT_COMM_ERROR	DPT communication error: For units with DPT where you have selected flow or pressure control.	Check the DPT pressure box, which is mounted in the control system.
104		T18_HIGH_TEMP	T18 (T35) Pressure pipe: Is activated if the T18 temperature exceeds 115 °C for VPR or 125 °C for VPM3, respectively. The alarm is deactivated at 5 °C below the alarm limit.	For repeated warnings: Check the T18 sensor. Check the oil level in the compressor. Check the refrigerant volume. Check overheating on the thermostatic valves.
105		SMOKE_DETECTOR	Smoke detector: NIL-139: Via a service menu, DI8 can be configured for Fire Thermostat or Smoke Detector, respectively. This alarm is displayed instead of the FIRE alarm.	If there has been no smoke or fire in the building: Check the smoke detector (not a Nilan product).

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