

SOFTWARE INSTRUCTIONS

CTS602iHMI BY NILAN



Comfort 1200 / 5000

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Alarm list

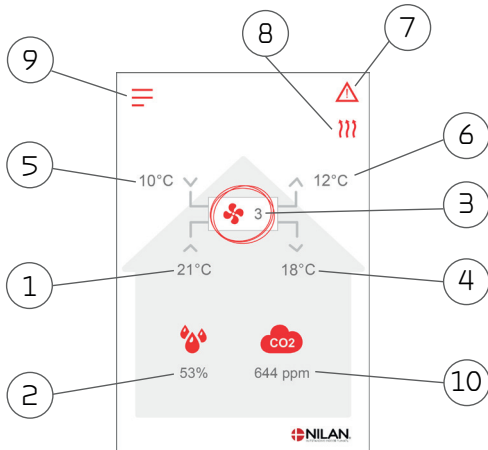
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Software

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.



- Shows the current room temperature in the house, measured via the extract air
- Shows the current air humidity in the extract air
- Shows the current fan speed level
- Shows the current supply air temperature.
- Shows the current outdoor temperature measured via the outdoor air intake.
- Shows the current discharge air temperature.
- Shows the menu icons listed below.
- Shows the operation mode icons listed below.
- Access to the settings menu, where there are several options.
- Shows the current humidity. If a CO₂-meter has been installed, this will be displayed next to humidity.

Menu icons



User selection
Indicates that the user selection function is active.



Week programme
Indicates that the week programme function is active.



Stop
Indicates that the unit is off.



Alarm
Is displayed during alarms or warnings.

Operation icons



Compressor
Indicates that the compressor is active.



Cooling
Indicates that the unit is cooling the supply air via the compressor or the bypass.



Heating
Indicates that the unit is heating up the supply air via the compressor or the after-heating element.



De-icing
Appears when the heat pump defrosts.



Lightning icon
Appears when the EK module is operating and the number next to it shows on which step it is operating.

Main screen settings options

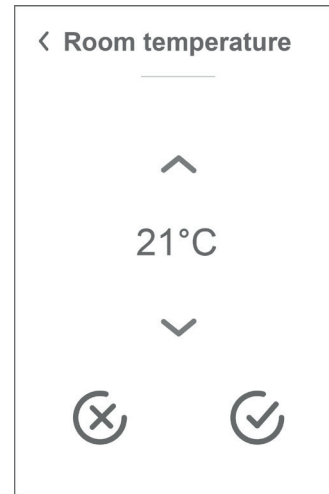
The settings options which the user needs in daily life can all be controlled from the main screen of the panel.



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).

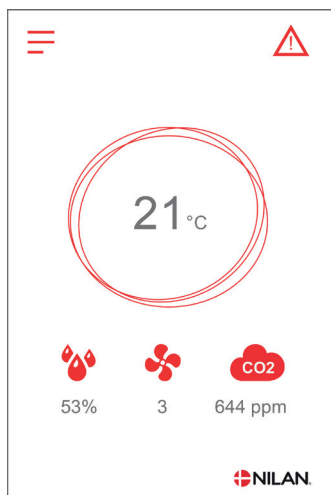
There may be a difference between set fan speed level and the actual fan speed level as the control system will override the set level, for instance, at high/low air humidity or during cooker hood operation.



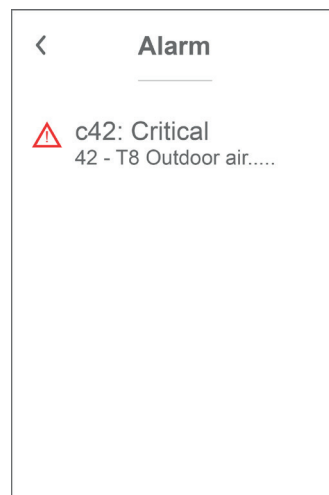
If you press current room temperature, the set room temperature will be displayed.

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.



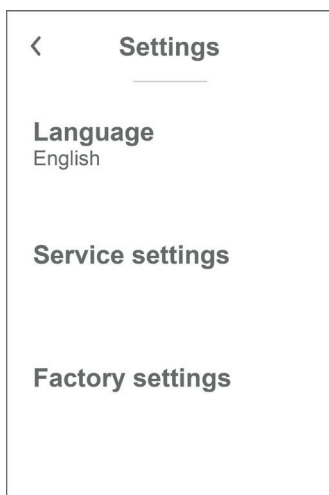
You navigate through the settings menu by pressing the arrow below or above.

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.
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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.
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Operation mode

You can set the unit to operate in "Auto", "Heating" or "Cooling" mode.



ATTENTION

The "Heating" and "Cooling" functions override the week program. If a week program has been activated, the mode will automatically shift to "Auto" when the week program next changes.

> Operation mode

> Operation mode	Settings: Standard setting: Description:	Auto / Cooling / Heating Auto Auto: The unit operates in accordance with the selected values. Cooling: The unit operates in accordance with the selected values. However, cooling is possible in winter mode if the requirements for cooling are present. Heating: The unit operates in accordance with the selected values, but the bypass damper cannot open and active cooling cannot be activated even if the requirements for cooling are present.
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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: <ul style="list-style-type: none">• Alarm ID number• Type of alarm• Critical alarm or warning (The alarm list will inform you of how to proceed.)
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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.
> Temperatures	Description:	Press for further information about the temperatures.
> T2 Supply air	Description:	Shows the supply air temperature if an after-heating element has not been installed.
> T3 Extract air	Description:	Shows the room temperature as an average of the entire house.
> T4 Discharge air	Description:	Shows the discharge air temperature in the exchanger.
> T7 Supply air	Description:	Shows the supply air temperature provided an after-heating element has been installed. Otherwise T2 is shown.
> 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 - if installed.
> T10 Extract air	Description:	Shows the current room temperature measured in the extract air, if installed.
> Humidity	Description:	Shows the current humidity level in the dwelling - if installed.
> CO ₂ level	Description:	Shows the current CO ₂ level in the dwelling - 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.
> Supply pressure	Description:	Shows
> Extract pressure	Description:	Shows
> Afterheat	Description:	Shows
> 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 software version of the ventilation unit.
> Panel software	Description:	Shows the software version of the control 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.: <ul style="list-style-type: none"> • 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. It is possible to edit in Function 1, 2, 3, 4, 5, 6 and Copy to next day.
> Start time	Settings: Standard setting: Description:	Hours and minutes 08:00 (depends on the selected program and function) 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::	Level 1 / Level 2 / Level 3 / Level 4 / De-activated Level 3 (depends on the selected program and function) Select the desired fan speed level here.
> Room temperature	Settings: Standard setting: Description:	5 – 50 °C 22 °C (depends on the selected program and function) 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:	You can reset the program by selecting 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.
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Bypass operation

The Bypass mode menu allows you to switch fan speed level automatically when the bypass damper opens in summer mode.



ATTENTION

The "Heating" and "Bypass" functions override the week program. If a week program has been activated, the mode will automatically shift to "Auto" when the week program next changes.

> Bypass operation

> Vent. at bypass	Settings: Standard setting: Description:	De-activated / Level 2 / Level 3 / Level 4 De-activated Here you select the fan speed level you want the unit to switch to when operating in bypass mode.
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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 "Max time hi. 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.

CO₂ control

This menu is only displayed if a CO₂-sensor has been installed, and the function has been chosen under Service settings.



ATTENTION

A CO₂ 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 CO₂ 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 CO ₂	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 CO ₂ 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 CO ₂ 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:	Filter guard / 30 / 90 / 180 / 360 / Guard+70 days 90 days The number of days between filter changes can be set as required.
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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:	10 - 35 °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:	10 - 35 °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:	14 - 50 °C 35 °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:	16 - 50 °C 35 °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. <ul style="list-style-type: none"> • 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

> User program 1

> Select program	Settings: Standard setting: Description:	None/Extended/Extract air/Ventilate/Cookerhood Extended Here you select the program you wish to run.
>Extended	Description:	Settings if Extended is selected.
>Duration	Settings: Standard setting: Description:	De-activated / 15 - 480 min. De-activated Time is set with 15 minute intervals. Select for how long the program is to continue after the external signal has ceased.
>Fan speed level	Settings: Standard setting: Description:	Level 1 / Level 2 / Level 3 / Level 4 / De-activated Level 4 Select the desired fan speed level.
>Room temperature	Settings: Standard setting: Description:	5 - 30 °C 23 °C Set the desired room temperature.
>Extract air	Description:	Settings if Extract air is selected.
>Duration	Settings: Standard setting: Description:	De-activated / 15 - 480 min. De-activated Time is set with 15 minute intervals. Select for how long the program is to continue after the external signal has ceased.
>Room temperature	Settings: Standard setting: Description:	5 - 30 °C 23 °C Set the desired room temperature.
>Ventilate	Description:	Settings if Ventilate is selected.
>Duration	Settings: Standard setting: Description:	De-activated / 15 - 480 min. De-activated Time is set with 15 minute intervals. Select for how long the program is to continue after the external signal has ceased.
>Room temperature	Settings: Standard setting: Description:	5 - 30 °C 23 °C Set the desired room temperature.
>Cookerhood	Description:	Settings if Cookerhood is selected.
>Duration	Settings: Standard setting: Description:	De-activated / 15 - 480 min. De-activated Time is set with 15 minute intervals. Select for how long the program is to continue after the external signal has ceased.
>Room temperature	Settings: Standard setting: Description:	5 - 30 °C 23 °C Set the desired room temperature.

Heating element

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

> Heating element

> Heating type	Settings: Standard setting: Description:	Water heat. / EB heating / EI heating / None Water heat. Here you specify what kind of after heating element is installed.
> Water heat	Description:	Settings if Water heat is selected.
> Delay	Settings: Standard setting: Description:	0 - 60 min. 0 min. Here you set the desired delay.
> Regulation	Settings: Standard setting: Description:	Period / 0-10V / 0/5/10V 0-10V Here you set the desired regulation.
EB heating	Description:	Settings if EB heating is selected.
> Delay	Settings: Standard setting: Description:	0 - 60 min. 0 min. Here you set the desired delay.
EI heating	Description:	Settings if EI heating is selected.
> Delay	Settings: Standard setting: Description:	0 - 60 min. 0 min. Here you set the desired delay.
> Regulation	Settings: Standard setting: Description:	Period / 0-10V / 0/5/10V 0-10V Here you set the desired regulation.

Air quality

All Nilan domestic ventilation units come as standard with a humidity sensor installed. It is possible to purchase a CO₂ 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.
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Air exchange

> Air exchange

> Min. level supply	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 extract	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 extract	Settings: Standard setting: Description:	Level 3 / Level 4 Level 4 You can set a maximum fan speed level for extract air.
> Fan start delay	Settings: Standard setting: Description:	0-4 min. 2 min. Start fan pending opening of the damper (if damper has been mounted).
> Damper time	Settings: Standard setting: Description:	60 - 900 sec 150 sec
> Air handling	Description:	Settings if Air handling is selected.
> Fan control	Settings: Standard setting: Description:	Level / Pressure / Flow Pressure
> Level	Description:	Settings if Level is selected.
> Level 1 - Supply	Settings: Standard setting: Description:	20 - 100 % 23 % Here the fan speed level is set for Level 1 - Supply.
> Level 2 - Supply	Settings: Standard setting: Description:	20 - 100 % 40 % Here the fan speed level is set for Level 2 - Supply.
> Level 3 - Supply	Settings: Standard setting: Description:	20 - 100 % 65 % Here the fan speed level is set for Level 3 - Supply.
> Level 4 - Supply	Settings: Standard setting: Description:	20 - 100 % 100 % Here the fan speed level is set for Level 4 - Supply.
> Level 1 - Extract	Settings: Standard setting: Description:	20 - 100 % 25 % Here the fan speed level is set for Level 1 - Extract.
> Level 2 - Extract	Settings: Standard setting: Description:	20 - 100 % 45 % Here the fan speed level is set for Level 2 - Extract.
> Level 3 - Extract	Settings: Standard setting: Description:	20 - 100 % 70 % Here the fan speed level is set for Level 3 - Extract.
> Level 4 - Extract	Settings: Standard setting: Description:	20 - 100 % 100 % Here the fan speed level is set for Level 4 - Extract.
> Pressure	Description:	Settings if Pressure is selected.
> K-value 1	Settings: Standard setting: Description:	0 - 1500 See table Here the supply value is set (Supply air).
> K-value 2	Settings: Standard setting: Description:	0 - 1500 See table Here the suction value is set (Extract air).

>Calibrate	Settings: Standard setting: Description:	Yes / No Not calibrated
>Pressure control	Description:	Settings if Pressure control is selected.
>Regulation of	Settings: Standard setting: Description:	Supply / Extract / Supply and Extract Supply and Extract
>Supply and Extract	Description:	Settings if Supply and Extract is selected.
>Level 1 - Supply	Settings: Standard setting: Description:	0 - 1000 Pa 15 Pa
>Level 2 - Supply	Settings: Standard setting: Description:	0 - 1000 Pa 40 Pa
>Level 3 - Supply	Settings: Standard setting: Description:	0 - 1000 Pa 80 Pa
>Level 4 - Supply	Settings: Standard setting: Description:	0 - 1000 Pa 120 Pa
>Level 1 - Extract	Settings: Standard setting: Description:	0 - 1000 Pa 15 Pa
>Level 2 - Extract	Settings: Standard setting: Description:	0 - 1000 Pa 40 Pa
>Level 3 - Extract	Settings: Standard setting: Description:	0 - 1000 Pa 130 Pa
>Level 4 - Extract	Settings: Standard setting: Description:	0 - 1000 Pa 210 Pa
>Supply P.Ctrl	Settings: Standard setting: Description:	1 - 10 %/° 4 %/°
>Supply I.Ctrl	Settings: Standard setting: Description:	0 - 10 sec 2 sec
>Extract P.Ctrl	Settings: Standard setting: Description:	1 - 10 %/° 4 %/°
>Extract I.Ctrl	Settings: Standard setting: Description:	0 - 10 sec 2 sec
>Calibrate	Settings: Standard setting: Description:	Yes / No Succeeded
>Extract	Description:	Settings if Extract is selected.
>Fan relation	Settings: Standard setting: Description:	0 - 200 % 100 %
>Level 1 - Extract	Settings: Standard setting: Description:	0 - 1000 Pa 15 Pa Here the fan speed level is set for Level 1 - Extract.

>Level 2 - Extract	Settings: Standard setting: Description:	0 - 1000 Pa 40 Pa Here the fan speed level is set for Level 2 - Extract.
>Level 3 - Extract	Settings: Standard setting: Description:	0 - 1000 Pa 130 Pa Here the fan speed level is set for Level 3 - Extract.
>Level 4 - Extract	Settings: Standard setting: Description:	0 - 1000 Pa 210 Pa Here the fan speed level is set for Level 4 - Extract.
>Extract P.Ctrl	Settings: Standard setting: Description:	1 - 10 %/° 4 %/°
>Extract I.Ctrl	Settings: Standard setting: Description:	0 - 10 sec 2 sec
>Calibrate	Settings: Standard setting: Description:	Yes / No Succeeded
>Supply	Description:	Settings if Supply is selected.
>Fan relation	Settings: Standard setting: Description:	0 - 200% 100 %
>Level 1 - Supply	Settings: Standard setting: Description:	0 - 1000 Pa 15 Pa Here the fan speed level is set for Level 1 - Supply.
>Level 2 - Supply	Settings: Standard setting: Description:	0 - 1000 Pa 40 Pa Here the fan speed level is set for Level 2 - Supply.
>Level 3 - Supply	Settings: Standard setting: Description:	0 - 1000 Pa 80 Pa Here the fan speed level is set for Level 3 - Supply.
>Level 4 - Supply	Settings: Standard setting: Description:	0 - 1000 Pa 120 Pa Here the fan speed level is set for Level 4 - Supply.
>Supply P.Ctrl	Settings: Standard setting: Description:	1 - 10 %/° 4 %/°
>Supply I.Ctrl	Settings: Standard setting: Description:	0 - 10 sec 2 sec
>Calibrate	Settings: Standard setting: Description:	Yes / No Succeeded
>Flow	Description:	Settings if Flow is selected.
>Calibrate	Settings: Standard setting: Description:	Yes / No Succeeded
>Flow control	Description:	Settings if Flow control is selected.
>Regulation of	Settings: Standard setting: Description:	Supply and Extract / Extract / Supply Supply and Extract
>Supply and Extract	Description:	Settings if Supply and Extract is selected.
>Level 1 - Supply	Settings: Standard setting: Description:	0 - 40.000 m3 298 m3 Here the fan speed level is set for Level 1 - Supply.

>Level 2 - Supply	Settings: Standard setting: Description:	0 - 40.000 m ³ 486 m ³ Here the fan speed level is set for Level 2 - Supply.
>Level 3 - Supply	Settings: Standard setting: Description:	0 - 40.000 m ³ 596 m ³ Here the fan speed level is set for Level 3 - Supply.
>Level 4 - Supply	Settings: Standard setting: Description:	0 - 40.000 m ³ 688 m ³ Here the fan speed level is set for Level 4 - Supply.
>Level 1 - Extract	Settings: Standard setting: Description:	0 - 40.000 m ³ 298 m ³ Here the fan speed level is set for Level 1 - Extract.
>Level 2 - Extract	Settings: Standard setting: Description:	0 - 40.000 m ³ 486 m ³ Here the fan speed level is set for Level 2 - Extract.
>Level 3 - Extract	Settings: Standard setting: Description:	0 - 40.000 m ³ 596 m ³ Here the fan speed level is set for Level 3 - Extract.
>Level 4 - Extract	Settings: Standard setting: Description:	0 - 40.000 m ³ 688 m ³ Here the fan speed level is set for Level 4 - Extract.
>Supply P.Ctrl	Settings: Standard setting: Description:	1 - 10 %/° 4 %/°
>Supply I.Ctrl	Settings: Standard setting: Description:	0 - 10 sec 2 sec
>Extract P.Ctrl	Settings: Standard setting: Description:	1 - 10 %/° 4 %/°
>Extract I.Ctrl	Settings: Standard setting: Description:	0 - 10 sec 2 sec
>K-value 1	Settings: Standard setting: Description:	0 - 1500 See table Here the supply value is set (Supply air).
>K-value 2	Settings: Standard setting: Description:	0 - 1500 See table Here the suction value is set (Extract air).
>Calibrate	Settings: Standard setting: Description:	Yes / No Succeeded
>Extract	Description:	Settings if Extract is selected.
>Fan relation	Settings: Standard setting: Description:	0 - 200 % 100 %
>Level 1 - Extract	Settings: Standard setting: Description:	0 - 40.000 m ³ 298 m ³ Here the fan speed level is set for Level 1 - Extract.
>Level 2 - Extract	Settings: Standard setting: Description:	0 - 40.000 m ³ 486 m ³ Here the fan speed level is set for Level 2 - Extract.
>Level 3 - Extract	Settings: Standard setting: Description:	0 - 40.000 m ³ 596 m ³ Here the fan speed level is set for Level 3 - Extract.

>Level 4 - Extract	Settings: Standard setting: Description:	0 - 40.000 m ³ 688 m ³ Here the fan speed level is set for Level 4 - Extract.
>Extract P.Ctrl	Settings: Standard setting: Description:	1 - 10 %/° 4 %/°
>Extract I.Ctrl	Settings: Standard setting: Description:	0 - 10 sec 2 sec
>K-value 1	Settings: Standard setting: Description:	0 - 1500 See table Here the supply value is set (Supply air)
>K-value 2	Settings: Standard setting: Description:	0 - 1500 See table Here the suction value is set (Extract air).
>Calibrate	Settings: Standard setting: Description:	Yes / No Succeeded
>Supply	Description:	Settings if Supply is selected.
>Fan relation	Settings: Standard setting: Description:	0 - 200 % 100 %
>Level 1 - Supply	Settings: Standard setting: Description:	0 - 40.000 m ³ 298 m ³ Here the fan speed level is set for Level 1 - Supply.
>Level 2 - Supply	Settings: Standard setting: Description:	0 - 40.000 m ³ 486 m ³ Here the fan speed level is set for Level 2 - Supply.
>Level 3 - Supply	Settings: Standard setting: Description:	0 - 40.000 m ³ 596 m ³ Here the fan speed level is set for Level 3 - Supply.
>Level 4 - Supply	Settings: Standard setting: Description:	0 - 40.000 m ³ 688 m ³ Here the fan speed level is set for Level 4 - Supply.
>Supply P.Ctrl	Settings: Standard setting: Description:	1 - 10 %/° 4 %/°
>Supply I.Ctrl	Settings: Standard setting: Description:	0 - 10 sec 2 sec
>K-value 1	Settings: Standard setting: Description:	0 - 1500 See table Here the supply value is set (Supply air)
>K-value 2	Settings: Standard setting: Description:	0 - 1500 See table Here the suction value is set (Extract air).
>Calibrate	Settings: Standard setting: Description:	Yes / No Succeeded

Table of K-values

Unit type	K-value 1 (supply air)	K-value 2 (extract air)
Comfort 1200	76	76
Comfort 5000	148	148

De-icing

All ventilation units that have a heat exchanger with a high heat recovery will, during periods of high frost, be able to experience the formation of ice in the heat exchanger. The defrost function will try to de-frost the ice that forms in the heat exchanger so that normal operation can continue.

It is possible to prevent ice formation in the heat exchanger with a frost protecting pre-heating element. In this way continuous operation is achieved without cold supply air.

It is recommended to install a frost protection pre-heating element in areas with a lot of frost during winter time.

> De-icing

> Suppl. air de-icing	Settings: Standard setting: Description:	Low / User / None User Low: Indicates low level supply air during de-icing. User: Indicates user-defined supply air during de-icing. None: Indicates ceased supply air during de-icing.
> 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. 90 min. Indicates the minimum time between each de-icing process.
> T4 start de-icing	Settings: Standard setting: Description:	De-activated / 1 - 5 °C 3 °C Here, the temperature in the counter-flow heat exchanger (T4) indicates that the unit must defrost the exchanger. De-activated has to be selected if a pre-heating element is installed.
> T4 stop de-icing	Settings: Standard setting: Description:	2 - 12 °C 6 °C Indicates at which evaporator temperature (T4) de-icing of the heat pump is to cease.

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 safety function that can be useful, for instance if you are not at home and the heat supply gets disconnected. If that happens, 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.

> Temp. regulering

> Room sensor	Settings: Standard setting: Description:	T3 Extract air / T7 Supply air / T10 Extract air T3 Extract air Here it is possible to specify which sensor should be the controlling sensor.
> Select heat source	Settings: Standard setting: Description:	HP+Afterheat / HP / De-activated HP+Afterheat Here you can disconnect the heat pump if you do not want to use it for heating.
> Room low temp.	Settings: Standard setting: Description:	De-activated / 1 - 20 °C De-activated Here you specify whether the ventilation unit is to stop at low room temperature. If you wish, you can choose at what temperature this should happen.

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 Room temperature control 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 This option is only shown if an after-heating element has been installed and activated.
>Slow / Normal / Fast	Description:	Here you set the speed at which the heating control should adjust up or down.
>User	Description:	A user-specific setting is made here.
> Gain PI regulating	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 set how the ventilation unit should act in case of fire detection and when testing via external fire control.

> Restart

> Restart	Settings: Standard setting: Description:	De-activated / Fire De-activated Here you set what the ventilation unit should do when fire input is activated. De-activated: Used when connecting to a fire thermostat. For fire detection, the user must acknowledge the alarm before restarting the ventilation unit. Fire: Used when connecting to external fire control. In case of fire detection, the unit is stopped. When the external fire alarm system is connected again, the alarm is self-acknowledged and the ventilation unit starts up again automatically.
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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
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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 / Dampers / Supply air / Extract / Vent. +heat 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.
> Dampers	Description:	Damper is activated.
> 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.

Fire automation system

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.

<p>> Day damper test</p>	<p>Settings: Standard setting: Description:</p>	<p>None / Mon / Tue / Wed / Thu / Fri / Satr / Son / Start De-activated Here you set the day of the week where the damper test is performed at 10:00. Start: Used for manual damper test. 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.</p>
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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.

DIB setup

If you want to connect a fire thermostat or a smoke detector, this should be connected via input DIB. You can order a fire thermostat or a smoke detector under accessories. They cannot both be installed at the same time.

> DIB setup

> DIB setup	Settings:	Fire thermostat / Smoke detector
	Standard setting:	Fire thermostat
	Description:	Here you connect either a fire thermostat or a smoke detector.

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 CTS602i control communicates Modbus RS485, and the complete Modbus protocol can be downloaded from the Nilan website.

> Modbus adress

> Modbus adress	Settings:	1-247
	Standard setting:	30
	Description:	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:	1-120 min. / De-activated
	Standard setting:	10
	Description:	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

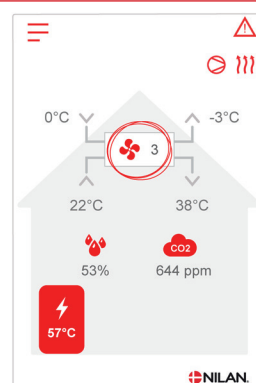
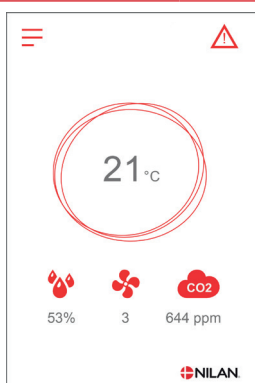
Alarms are still logged if "Data logging" is off.

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.
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Screen settings

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) Here you choose the type of humidity sensor which is mounted.
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Alarm list

Comfort units

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: <ul style="list-style-type: none"> • 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 T1/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 subprogrammes 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		THEAT	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 heat 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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