SOFTWARE INSTRUCTIONS

CTS400 BY NILAN

Comfort

Version 1.40- 05.09.2023
S75 Comfort GB

NILAN®
OUTSTANDING INDOOR CLIMATE

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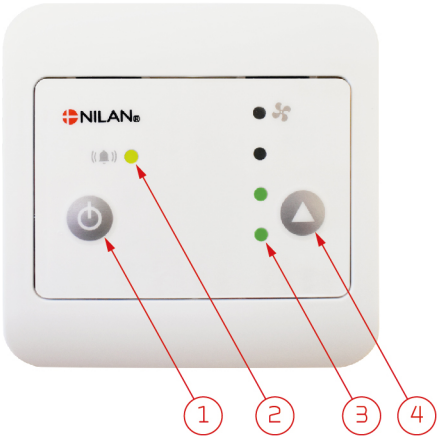
Control panel

Functions on the control panel

Functional overview



The following functions are available with the CTS 400 panel:

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

ATTENTION

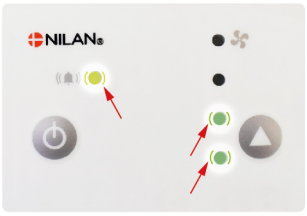
When the unit is overridden by user selection, humidity, defrost, etc., the desired fan speed level will be lit green, but the current fan speed level will flash. By pressing the arrow, the unit will go to the desired fan speed level - until the next event.

Warnings and alarms

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

INFO

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



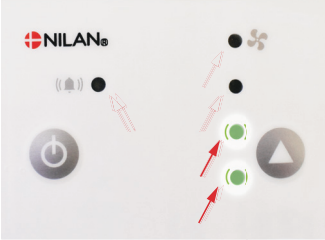
The yellow LED and the two lower green LED stays on:
Filters need replacing.
Replace filters and clean the unit.

Resetting the filter alarm:
Press the Level button (the button with the arrow) in 15 seconds.

The yellow LED and the two green LED in the middle stays on:
Release the Level button

The yellow LED and the four green LED stays on in 10 seconds.:

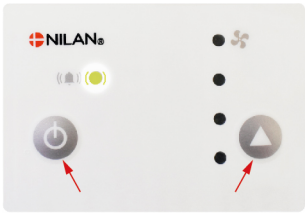
All LED turns off briefly.



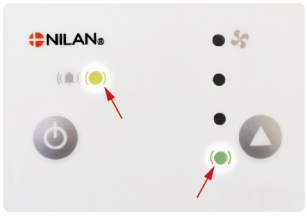
The two lower green LED stays on:
The timer of the filter is resetted and the alarm is de-activated.

ATTENTION

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



Alarm display:
Push briefly both the ON/OFF button and the Level button at the same time and release. Afterwards one of the green LED is flashing and indicate the type of fault:



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

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

The yellow diode and the second green diode are flashing:
The humidity sensor or the CO_2 sensor has either short-circuited or been disconnected.
Register the error and contact service. Reset the alarm once the error has been rectified.

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

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

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

WARNING

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

The yellow diode and the first two green diodes are flashing:

The fire alarm has been activated.
If there is no fire, contact service. Reset the alarm once the error has been rectified.

Resetting the alarm:

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

The yellow diode and the upper two green diodes are flashing:

Frost in the water after-heating element (if installed)
Contact service. Reset the alarm once the error has been rectified.

Resetting the alarm:

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

Damper test

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

The 4 green LED lights range from 1-4:

A damper test is carried out that take approx. 3 min .

Resetting the alarm:

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

Control panel locked

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

All LEDs flash temporarily:

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

Resetting alarms:

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

PC Tool

Installation

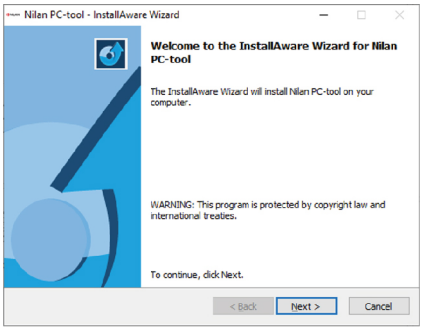
Installation of PC Tool

Use a USB AB cable to connect the PC to the USB port on the unit. **The recommended maximum cable length for the USB AB cable used is 3 m.**

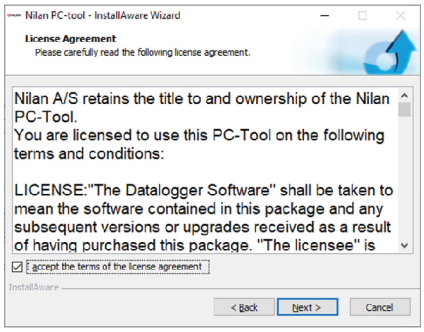
You can download the PC application via NilanNet under the menu item "After Sales/Software".

Install the latest software "Nilan PC-tool"
The program will be installed under: C:\Program Files (x86)\Nilan PC-tool

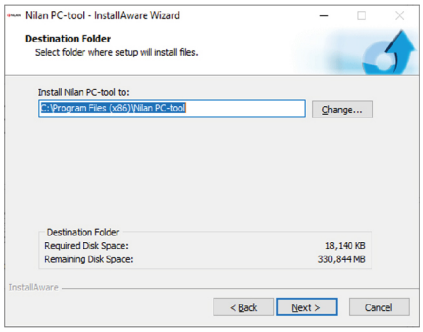
The example is for installation in Windows 10 (it may look different in other versions of Windows).



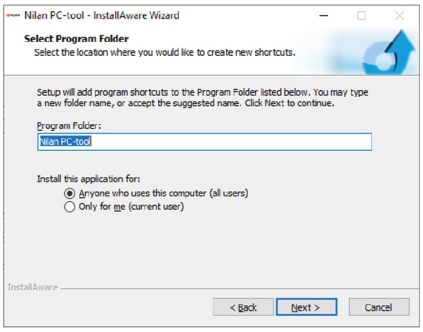
1. Press "Next" to install Nilan PC-tool



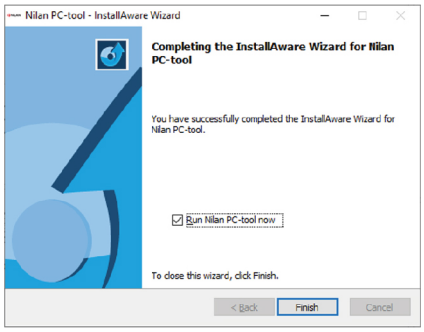
2. Tick the box for accepting the license agreement and press "Next"



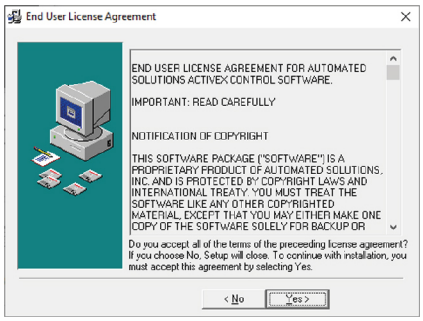
3. Press "Next" to confirm the location of the program



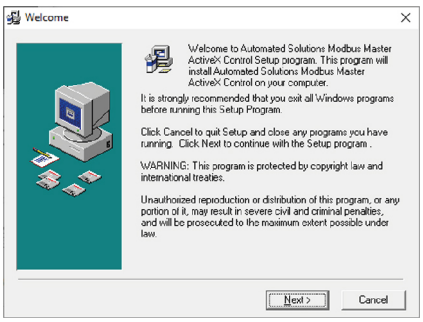
4. Confirm the location of the program. Select the option "all users" and press "Next"



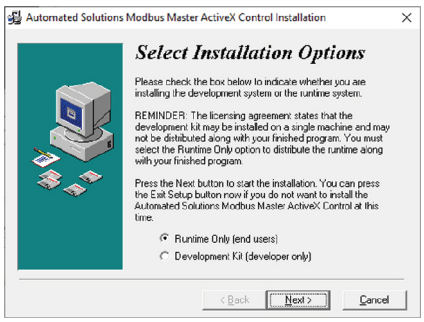
5. Press "Finish" to run Nilan PC-tool



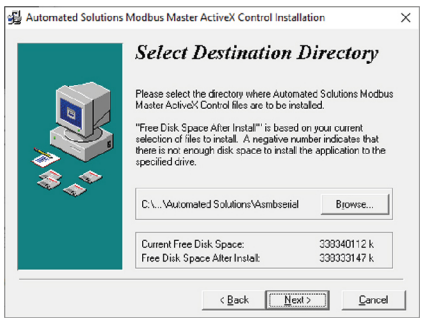
6. Press "Yes" to accept the user license agreement for the software



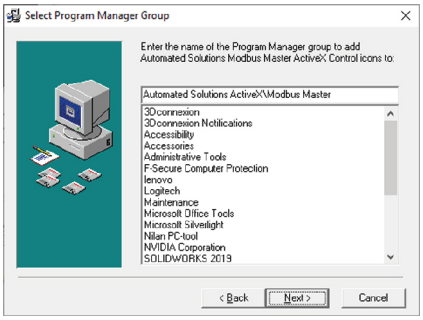
7. Press "Next" to install Automated Solutions Modbus Master ActiveX Control on the PC



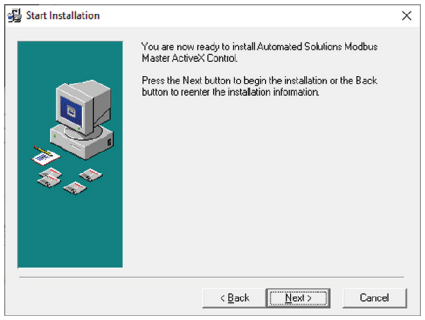
8. Press "Next" to start installation



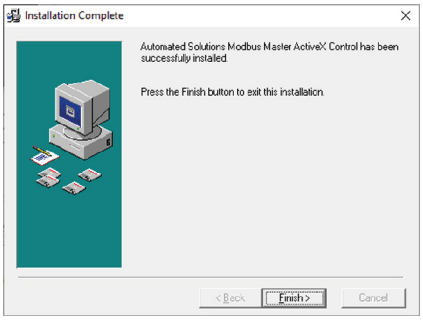
9. Press "Next" to confirm the location of the program



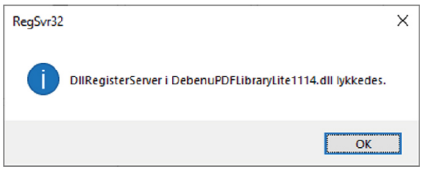
10. Press "Next" to add the program to Program Manager Group



11. Press "Next" to start installation

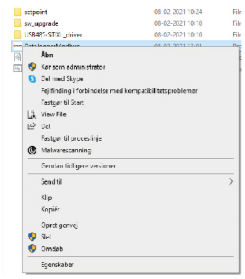


12. Press "Finish" to complete installation

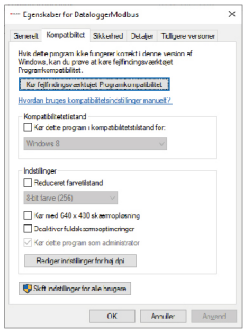


13. Information about successful installation

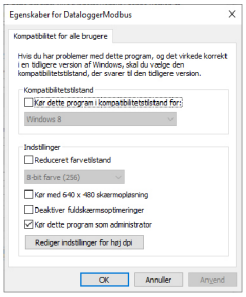
Setup in the program



1. Following installation, you have to set a number of settings in the program.
Under **C:\Program Files (x86)\Nilan PC-tool** you have to right-click DataloggerModbus



2. Go to the sheet "Compatibility" and tick "run this program as administrator". Then, press the bar at the bottom: "Change settings for all users" and press "OK"



3. Tick "Run this program as administrator" and press "OK"

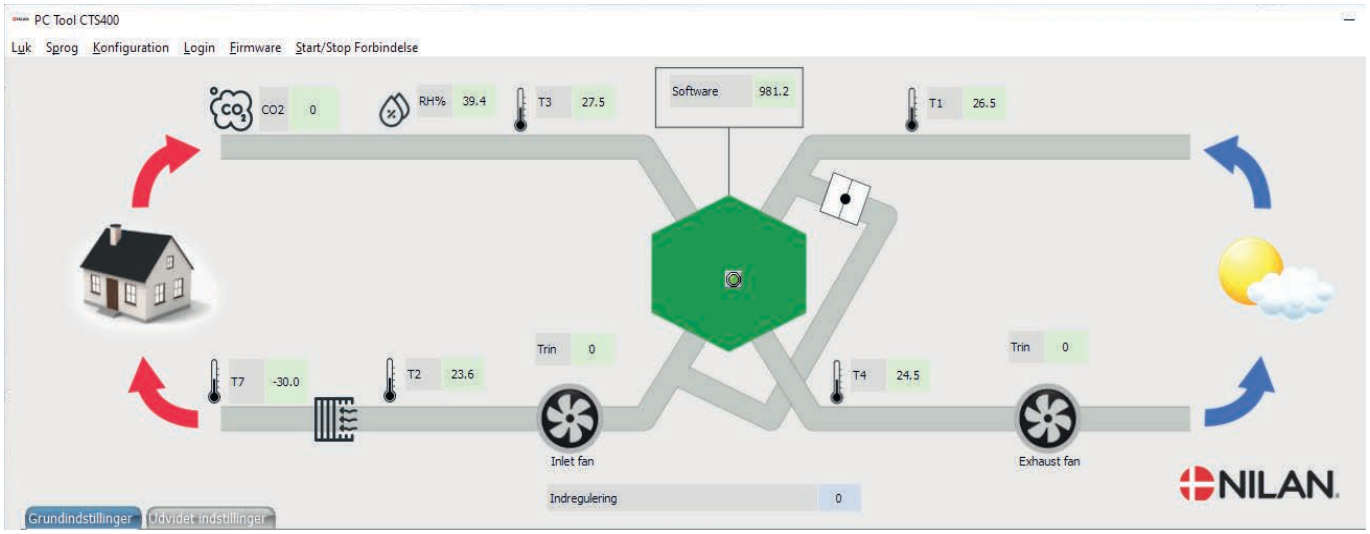
Settings in PC Tool

Menu bar

In the menu bar at the top of the diagram, the following menus are available: Exit, Language, Configuration, Login, Firmware and Start/ Stop connection.

Exit	The program closes
Language	The default language for the ventilation unit is Danish. You can change it to other languages in the menu
Configuration	You can save set values and settings in PC-Tool and transfer them to e.g. a different unit or simply save them for later use.
Login	Login access to default settings
Firmware	Software update
Start/Stop connection	If the connection to the unit is disrupted, you can reestablish it here.

PI diagram



Key for reading the following values in the PI diagram:

When the green button flashes (at the centre of the counterflow heat exchanger), there is a connection to the ventilation unit.

Software: Software version
Bypass damper: Open or closed
Supply air [%]: Supply air fan (supply air)
Level: Fan speed level
Extract air [%]: Extract air fan (extract air)
Level: Fan speed level

T1: Outdoor air temperature
T2: Supply air temperature (does not figure in all ventilation units)
T3: Extract air temperature
T4: Discharge air temperature
T7: Supply air temperature (if an after-heating element has been installed)
RH%: Humidity sensor in extract air
CO_2: CO2 level in ppm
VOC: Air quality measurement

Software

Connection options

Overview of connection options

You can connect external accessories to the ventilation unit. However, it is not possible to have all accessories connected up simultaneously.
The following table shows the external connections that are possible in the different settings.

Setting	User selection 1	Userselection2/ Filter monitor	Fire thermostat	VOC / CO_2	Alarm output
Normal	X	X	X	X	X
Water after-heating	X		X		
Electrical after-heating	X		X		
Fire automation system	X		X		

Balancing

Balancing

To ensure a correct balancing, it is imprtant that the unit is in balancing mode. In this way all other functions such as e.g. humidity control system are deactivated to ensure a correct balncing.

Balancing	Settings: Standard setting: Description:	0 / 1 0 1 indicates that the function "Balancing" has been activated.

Basic settings

Temperature settings

If an after-heating element has not been installed, the settings are used 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 enables you to control the supply air temperature, regardless of the outdoor temperature.

An external after-heating element can be mounted in the supply air duct. This, however, is not an option if the Fire automation system function is being used.

Stop at low room 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 stops. 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.

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

Desired room temperature	Settings: Standard setting: Description:	0 – 28 °C 20 °C Here you set the desired room temperature.
Regulatory-deadband	Settings: Standard setting: Description:	0 – 4 °C 1 °C The temperature setting is deducted from or added to the regulatory-deadband of the setpoint.
Stop at room low temperature: 0=Off	Settings: Standard setting: Description:	0 / 1 – 20°C 0 Here you set the room temperature at which the ventilation unit is to stop.
Summer/winter mode	Settings: Standard setting: Description:	5 – 30 °C 12 °C Here you set the temperature for the shift to and from summer and winter mode. • If the outdoor temperature is higher, the unit will operate in summer mode • If the outside temperature is lower, the unit will operate in winter mode

Humidity control system

The primary purpose of ventilation is to extract humidity from the dwelling to avoid damage to the building, and to achieve a good indoor climate. During long periods with sub-zero temperatures, humidity levels in the dwelling may become critically low for the building and for the indoor climate. Wooden floors, furniture and walls can get damaged from very dry air, which also whirls up dust, resulting in a poor indoor climate.

To prevent this, the control system has an integral humidity control system that maintains a healthy, relative humidity level. When the average air humidity level in the dwelling falls below a set value (default setting is 30%), you can choose to reduce ventilation. It will typically only last for a short period of time. In this way, you can prevent further reduction of the air humidity level in the dwelling.

The humidity control system also has a function that enables you to increase ventilation if the air humidity level becomes high, for instance when running a bath. This reduces the risk of mould growth in the bathroom, and, as an added bonus, 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.

Fan speed level at low humidity level	Settings: Standard setting: Description:	0 / 1 / 2 / 3 1 When the current humidity level falls below the level that signifies low air humidity, the ventilation unit will change to the set fan speed level. 0 indicates that the function "Fan speed level at low humidity level" has been deactivated.
Fan speed level at high humidity level	Settings: Standard setting: Description:	2 / 3 / 4 / 0 3 At high air humidity, for instance when running at bath, the ventilation unit will change to the set fan speed level. 0 indicates that the function "Fan speed level at high humidity level" has been deactivated.
Low humidity level [%]	Settings: Standard setting: Description:	15 – 45% 30% When the current air humidity level falls below this value, "Fan speed level at low humidity level" will be activated.
Time out high humidity level	Settings: Standard setting: Description:	0 – 180 min. 60 min . The function "Fan speed level at high humidity level" ordinarily stops when the current air humidity level is 3% above the average humidity level. The time limit will, however, stop operation if it has not been achieved within the set amount of time. 0 indicates that the function has been deactivated.

Filter alarm

ATTENTION

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

The default setting of the filter alarm is 90 days between filter replacements. You can set the timer so it fits the level of pollution in the location where the ventilation unit has been installed.

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

Days between filter replace-ments	Settings: Standard setting: Description:	0 – 360 90 days Here you set the amount of days between filter replacements.
Filter alarm on the panel: 0=None	Settings: Standard setting: Description:	0 / 1 1 Here you indicate whether or not an alarm is to be displayed on the panel

Bypass Summer mode

In the summer time when it is hot the unit can be set to run a higher air exchange.

Bypass Boost Trin: 0= Off	Settings: Standard setting: Description:	0 – 4 Off Set the fan level speed which has to be used for Bypass mode in the summer time.
Bypass Boost Offset	Settings: Standard setting: Description:	0.0 – 10.0 0,0 Set additional temperatur at which, above set temperatur, increased ventilation must be activated.

Settings

Select setting: 1=Normal 2=Water after-heating 3=Electrical after-heating 4=Fire automation system	Settings: Standard setting: Description:	1 – 4 1 Here you can select settings related to Normal operation, Water / electrical after-heating or Fire automation system

1=Normal	Description:	Here you select normal setting
Fan speed level user selection 1: 0=Function off 1-4= fan speed level 1-4	Settings: Standard setting: Description:	0 – 4 0 Here you select the desired fan speed level when user selection 1 is activated.
Time out user selection 1: Stop after min. (0=Off)	Settings: Standard setting: Description:	0 – 180 min. 0 Here you select for how long user selection 1 is to remain active after it has been activated. 0: User selection 1 remains active as long as the potential signal is closed. 1-180: User selection 1 is deactivated automatically after the selected amount of time (in minutes). This is used, for instance, in sheltered housing for old people where residents might forget to turn off the cooker hood.
Fire thermostat reset: 0=Manual / 1=Automatic	Settings: Standard setting: Description:	0 / 1 0 Fire: Automatic confirmation when fire input is back to normal.
Additional input: 0=Off 1=User selection 2 / 2= Filter monitor	Settings: Standard setting: Description:	0 – 2 0 Here you activate user selection 2 or input from the filter monitor.
Additional sensor: 0=Ingen / 1= VOC / 2=CO_2	Settings: Standard setting: Description:	0 – 2 0 Here you indicate whether a VOC sensor or a CO_2 sensor has been installed.
Output: 0=Off 1=10V alarm / 2=0-10V alarm / 3=10V with fan / 4= User selection 1	Settings: Standard setting: Description:	0 – 4 0 Here you indicate whether the output signal is to communicate alarms to e.g. a lamp / operation of the unit, or it should be activated by user selection 1.

2=Water after-heating element	Settings:	Here you indicate whether or not a water after-heating element has been installed.
Fan speed level user selection 1: 0=Function off 1-4= fan speed level 1-4	Settings: Standard setting: Description:	0 – 4 0 Here you select the desired fan speed level when user selection 1 is activated.
Time out user selection 1: Stop after min. (0=Off)	Settings: Standard setting: Description:	0 – 180 min. 0 Here you select for how long user selection 1 is to remain active after it has been activated. 0: User selection 1 remains active as long as the potential signal is closed. 1-180: User selection 1 is deactivated automatically after the selected amount of time (in minutes). This is used, for instance, in sheltered housing for old people where residents might forget to turn off the cooker hood.

Fire thermostat reset: 0=Manual / 1=Automatic	Settings: Standard setting: Description:	0 / 1 0 Fire: Automatic confirmation when fire input is back to normal.
Status of frost thermostat 0=Ok / 1=Error	Description:	Shows status of the frost thermostat in the water after-heating element. If there is an error, there is a risk of frost in the water after-heating element.
Status of after-heating element [%]	Description:	Shows the current output of the water after-heating element.
Minimum supply air temperature	Settings: Standard setting: Description:	10.0 – 20.0 °C 16.0 Here you set the minimum supply air temperature that you want the ventilation unit to give off when heating is required in the dwelling. If heating is not required, the supply air temperature may fall below this value.
Maximum supply air temperature	Settings: Standard setting: Description:	10.0 – 50.0 °C 25 Here you set the maximum supply air temperature that you want the ventilation unit to give off when heating is required in the dwelling.

3=Electrical after-heating	Settings:	Here, you indicate whether or not an electrical after-heating element has been installed.
Fan speed level user selection 1: 0=Function off 1-4= fan speed level 1-4	Settings: Standard setting: Description:	0 – 4 0 Here you select the desired fan speed level when user selection 1 is activated.
Time out user selection 1: Stop after min. (0=Off)	Settings: Standard setting: Description:	0 – 180 min. 0 Here you select for how long user selection 1 is to remain active after it has been activated. 0: User selection 1 remains active as long as the potential signal is closed. 1-180: User selection 1 is deactivated automatically after the selected amount of time (in minutes). This is used, for instance, in sheltered housing for old people where residents might forget to turn off the cooker hood.
Fire thermostat reset: 0=Manual / 1=Automatic	Settings: Standard setting: Description:	0 / 1 0 Fire: Automatic confirmation when fire input is back to normal.
Status of thermostat to prevent overheating: 0=Ok / 1=Error	Description:	Shows status of thermostat to prevent overheating Errors indicate that the after-heating element has been too hot, which may be due to insufficient air flow across the element. NB: Nilan's electrical after-heating elements have an integral thermostat to prevent overheating. It is therefore not included in this outline.
Status of after-heating element [%]	Description:	Shows the current output of the electrical after-heating element.
Minimum supply air temperature	Settings: Standard setting: Description:	10.0 – 20.0 °C 16.0 Here you set the minimum supply air temperature that you want the ventilation unit to give off when heating is required in the dwelling. If heating is not required, the supply air temperature may fall below this value.

Maximum supply air temperature	Settings: Standard setting: Description:	10.0 – 50.0 °C 25 Here you set the maximum supply air temperature that you want the ventilation unit to give off when heating is required in the dwelling.

4=Fire automation system	Settings:	Here you indicate whether or not you wish to use the Fire automation system.
Fan speed level user selection 1: 0=Function off 1-4= fan speed level 1-4	Settings: Standard setting: Description:	0 – 4 0 Here you select the desired fan speed level when user selection 1 is activated.
Time out user selection 1: Stop after min. (0=Off)	Settings: Standard setting: Description:	0 – 180 min. 0 Here you select for how long user selection 1 is to remain active after it has been activated. 0: User selection 1 remains active as long as the potential signal is closed. 1-180: User selection 1 is deactivated automatically after the selected amount of time (in minutes). This is used, for instance, in sheltered housing for old people where residents might forget to turn off the cooker hood.
Fire thermostat reset: 0=Manual / 1=Automatic	Settings: Standard setting: Description:	0 / 1 0 Fire: Automatic confirmation when fire input is back to normal.
Fire damper closed (1=fully closed)	Description:	Shows whether the fire damper is closing or is fully closed
Fire damper open (1=fully open)	Description:	Shows whether the fire damper is opening or is fully open
Status of fire damper 0=Ok / 1=Error	Description:	Shows status of fire damper
Intervals between tests of fire damper in days: 0=7 / 1=14 / 2=28	Settings: Standard setting: Description:	0 – 2 2 Here you set the desired amount of days before the fire damper is to be tested again.
Polarity of fire input: 0=NO, 1=NC	Settings: Standard setting: Description:	0 / 1 0 The fire input for the fire thermostat should be: 0: Normally open 1: Normally closed

Fan speed %

It is a fast and easy process to balance the air volume using the Nilan CTS400 control system. You can set all fan speed levels between 20 and 100% (stepless). The levels can differ in extract air and supply air.

ATTENTION

Be sure to set regulation to "1" in PC Tool Software settings and remember to restore "0" after regulation.

Supply air - level 1	Settings: Standard setting: Description:	20 – 100% 23% Here you set the fan speed level for Level 1 - Supply air.
Supply air - level 2	Settings: Standard setting: Description:	20 – 100% 40% Here you set the fan speed level for Level 2 - Supply air.
Supply air - level 3	Settings: Standard setting: Description:	20 – 100% 65% Here you set the fan speed level for Level 3 - Supply air.
Supply air - level 4	Settings: Standard setting: Description:	20 – 100% 100% Here you set the fan speed level for Level 4 - Supply air.
Supply air - level 5	Settings: Standard setting: Description:	20 – 100% 100% Here you set the fan speed level for Level 5 - Supply air. This level must be selected in User selection and can not be selected in control panel.
Supply air - level 6	Settings: Standard setting: Description:	20 – 100% 100% Here you set the fan speed level for Level 6 - Supply air. This level must be selected in User selection and can not be selected in control panel.
Extract air - level 1	Settings: Standard setting: Description:	20 – 100% 25% Here you set the fan speed level for Level 1 - Extract air.
Extract air - level 2	Settings: Standard setting: Description:	20 – 100% 45% Here you set the fan speed level for Level 2 - Extract air.
Extract air - level 3	Settings: Standard setting: Description:	20 – 100% 70% Here you set the fan speed level for Level 3 - Extract air.
Extract air - level 4	Settings: Standard setting: Description:	20 – 100% 100% Here you set the fan speed level for Level 4 - Extract air.
Extract air - level 5	Settings: Standard setting: Description:	20 – 100% 100% Here you set the fan speed level for Level 5 - Extract air. This level must be selected in User selection and can not be selected in control panel.
Extract air - level 6	Settings: Standard setting: Description:	20 – 100% 100% Here you set the fan speed level for Level 6 - Extract air. This level must be selected in User selection and can not be selected in control panel.

Nilan recommends the following settings for the individual fan speed levels:
Level 1: "Holiday ventilation" - is used when you are away on holiday, but also for "Humidity low"
Level 2: "Basic ventilation" - is used for standard operation
Level 3: "Visitor ventilation" - is used when you have visitors, 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"
Level 5: User selection 1 or 2 (Cooker hood)
Level 6: User selection 1 or 2 (Cooker hood)

User selection 2

If you have chosen user selection 2 in settings, you can change the fan speed level and the time settings.

Fan speed level user selection 2: 0=Function off	Settings: Standard setting: Description:	0 – 4 0 Here you select the desired fan speed level when user selection 2 is activated.
Time out user selection 2: Stop after min. (0=User selection 2 Off)	Settings: Standard setting: Description:	0 – 180 min. 0 (Must be set to a min. of 1 minute) Here you select for how long the program is to continue running after the external signal is released.

Advanced settings

De-icing function

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 a location with very frosty winters.

Start de-icing T4	Settings: Standard setting: Description:	1 – 5 °C 3 °C Here you select at which discharge air temperature (T4) de-icing is to begin.
Stop de-icing T4	Settings: Standard setting: Description:	5 – 10 °C 7 °C Here you select at which discharge air temperature (T4) de-icing is to stop.
Max. de-icing time [min.]	Settings: Standard setting: Description:	5 – 60 min. 15 Min . Here you set the maximum time allowed for de-icing the counterflow heat exchanger.
Time between de-icing processes [min.]	Settings: Standard setting: Description:	15 – 760 min. 60 min . Her you set the minimum time that has to pass between individual de-icing processes.

CO_2 regulation

This menu item only appears if a CO2sensor has been installed and the function has been selected in CO2 - regulation.

ATTENTION

CO2-sensor is only mountable in Normal settings

If the numbers of people using the building/rooms is inconsistent, it can be a good idea to regulate ventilation in accordance with the CO2-level in extract air. This funtion is often used in officies and schools where the concentration og people varies greatly during the day and during the week.

CO_2 regulation	Settings: Standard setting: Description:	0 / 1 0 Her you can select if the ventilation is controlled according to the CO2-level measured in the extract air. 0: No 1: Yes
>1	Description:	CO_2-measuring is chosen to control the ventilation.
> Fan speed level at high CO_2-level	Settings: Standard setting: Description:	1 / 2 / 3 / 4 4 Here you set the fan speed level for ventilation unit by high CO_2-level.
> High CO_2-level	Settings: Standard setting: Description:	500 - 2000 ppm 800 Here you set the level for high CO_2-level.
> Fan speed level for Nobody home	Settings: Standard setting: Description:	1 / 2 / 3 / 4 1 (not Austria) Here you set the fan speed level for ventilation unit by low CO2-level.
> Nobody home limit	Settings: Standard setting: Description:	400-500 ppm 450 Here you set the level for low CO2-level.
>Fan runtime	Settings: Standard setting: Description:	5 - 20 min 5 min (Only Austria) If the function "Nobody home standby" is active, the fan will be runing once an hour during the selected period.
CO_2 Mode 0-3	Settings: Standard setting: Description:	0 / 1 / 2 / 3 0 Here you set the basic setting for Co2 measurements according to which the ventilation must be regulated.
>0	Description:	CO_2 sensor is off (default)
>1	Description:	The ventilation is regulated according to CO2 measurements for high CO2 -level and basic setting "High ventilation"
> Nobody home standby	Settings: Standard setting: Description:	0 / 1 0 (Only Austria) Here you choose if the regulation of the ventilation according to the CO2 measurements is paused when nobody is home. 0: No (default) 1: Yes
>2	Description:	The ventilation is regulated according to CO2 measurements for low CO2 -level and basic setting "Nobody home"

> Nobody home standby	Settings: Standard setting: Description:	0 / 1 0 (Only Austria) Here you choose if the regulation of the ventilation according to the CO2 measurements is paused when nobody is home. 0: No (default) 1: Yes
>3	Description:	The ventilation is regulated according to CO2 measurements for both high CO2-level and law CO2-level and function "High ventilation" + "Nobody home".

Lock control panel

Unit cannot turn off: 0=Off / 1=On	Settings: Standard setting: Description:	0 / 1 0 Here you can choose a setting that makes it impossible to turn off the ventilation unit via the control panel.
Fan speed cannot be changed: 0=Off /1=On	Settings: Standard setting: Description:	0 / 1 0 Here you can choose a setting that makes it impossible to change the fan speed level via the control panel.

Modbus ID

Nilan's ventilation units have a control system with open Modbus communication. It enables you to control the unit with e.g. an external CTS control system.

The CTS400 control system communicates Modbus RS485, and you can download the complete Modbus protocol from Nilan's website.

Modbus address	Settings: Standard setting: Description	1 – 247 30 Here you specify the Modbus address for the ventilation unit.

Manual test

Override output signal	Settings: Standard setting: Description:	A. Out / Bypass / Extract air fan / Supply air fan 0 Must be selected before the following output parameters can be tested.
Override supply air fan	Settings: Standard setting: Description:	0.0 – 100% 50 Manual setting of the speed level of the supply air fan.
Override extract air fan	Settings: Standard setting: Description:	0.0 – 100% 50 Manual setting of the speed level of the extract air fan.
Test bypass damper: 0=Closed / 1=Open	Settings: Standard setting: Description:	0 / 1 0 Testing the bypass damper.
Override analog output	Settings: Standard setting: Description:	0 – 100 0 Testing the analog output signal.
Override input signal	Settings: Standard setting: Description:	VOC / RH AVG 24 / CO_2 / RH 0 Must be selected before the following output parameters can be tested.
Override average air humidity level	Settings: Standard setting: Description:	0.0 – 100 50 Here you can override the average air humidity level.
Override RH value	Settings: Standard setting: Description:	0 – 120 50 Here you can override the average air humidity level.
Override CO_2 level	Settings: Standard setting: Description:	0 – 2000 600 If a CO_2 sensor has been installed
Override VOC level	Settings: Standard setting: Description:	0.0 – 2000 600 If a VOC sensor has been installed
Override D1in value	Settings: Standard setting: Description:	0 / 1 0 Testing User selection 1

Control panel

Stop unit 0=stop 1=operating	Description:	Shows the operation mode which has been setted in the control panel. It is also possible to set the levels in the software.
Fan speed level	Description:	Shows the fan speed level set in control panel (1-4). It is also possible to set the levels in the software.

List of Alarms

Alarm codes 1, 2 and 3	Description:	Displays codes for the latest 3 alarms. See outline of the alarm list for the meaning of the individual code.

List of Info Alarms

Info Alarms 1, 2 and 3	Description:	Displays codes for the latest 3 info alarms. See outline of the alarm list for the meaning of the individual code.

Alarm list

Comfort

The list below is for Comfort ventilation units with a CTS400 control system. Incidents are divided into the following categories:

	Info	Operation continues, but an incident has occurred that needs your attention.
	Warning	Operation continues, but an incident has occurred that needs your attention. Briefly, press the On/Off button and the button with the arrow to get information about the alarm.
	Alarm	Operation has stopped completely as a serious error has occurred that requires immediate attention.

ID	Type	Name	Display on the panel	Resetting and rectifying an error
1		Change filter	The yellow diode emits light	Clean/ replace filters. Reset alarm.
15		De-icing time out	None	No resetting and rectification
16		Outdoor air temperature T1 disconnected	The yellow diode emits light Green D1 is flashing	Register the error and contact service. Reset the alarm once the error has been rectified.
17		Outdoor air temperature T1 short-circuited	The yellow diode emits light Green D1 is flashing	Register the error and contact service. Reset the alarm once the error has been rectified.
18		Supply air temperature sensor T2 disconnected	The yellow diode emits light Green D1 is flashing	Register the error and contact service. Reset the alarm once the error has been rectified.
19		Supply air temperature sensor T2 short-circuited	The yellow diode emits light Green D1 is flashing	Register the error and contact service. Reset the alarm once the error has been rectified.
20		Extract air temperature sensor T3 disconnected	The yellow diode emits light Green D1 is flashing	Register the error and contact service. Reset the alarm once the error has been rectified.
21		Extract air temperature sensor T3 short-circuited	The yellow diode emits light Green D1 is flashing	Register the error and contact service. Reset the alarm once the error has been rectified.
22		Discharge air temperature sensor T4 disconnected	The yellow diode emits light Green D1 is flashing	Register the error and contact service. Reset the alarm once the error has been rectified.
23		Discharge air temperature sensor T4 short-circuited	The yellow diode emits light Green D1 is flashing	Register the error and contact service. Reset the alarm once the error has been rectified.
24		Supply air temperature sensor T7 disconnected	The yellow diode emits light Green D1 is flashing	Register the error and contact service. Reset the alarm once the error has been rectified.
25		Supply air temperature sensor T7 short-circuited	The yellow diode emits light Green D1 is flashing	Register the error and contact service. Reset the alarm once the error has been rectified.
26		Humidity sensor (RH) error	The yellow diode emits light Green D2 is flashing	Register the error and contact service. Reset the alarm once the error has been rectified.
27		CO_2 sensor is signaling an error	The yellow diode emits light Green D2 is flashing	Register the error and contact service. Reset the alarm once the error has been rectified.

28	⚠	Frost thermostat in after-heating disconnected or short-circuited	The yellow diode emits light Green D3 is flashing	Check that the water after-heating element and its connections have been insulated correctly. Reset the alarm once the error has been rectified.
29	⚠	Risk of frost in after-heating element	The yellow diode emits light Green D3 is flashing	Check that the water after-heating element and its connections have been insulated correctly. Reset the alarm once the error has been rectified.
48	⚠	Activating fire input	The yellow diode emits light Green D1 + D2 are flashing	If there has been no fire, check the connection to the fire thermostat. If it is working, contact service.
49	⚠	Fire	The yellow diode emits light Green D1 + D2 are flashing	Extinguish the fire and reset the alarm.
50	⚠	Frost in after-heating	The yellow diode emits light Green D3 + D4 are flashing	Check that the water after-heating element and its connections have been insulated correctly. Reset the alarm once the error has been rectified.
51	⚠	The room temperature is too low	The yellow diode emits light Green D3 + D4 are flashing	When the room temperature falls below the set value (default set at 10 °C), the unit will stop in order to avoid further cooling of the dwelling. This may, for instance, be because the heating system in the dwelling has stopped. Heat the dwelling and reset the alarm.
52	⚠	Emergency stop	The yellow diode emits light Green D3 + D4 are flashing	

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