

NILAN CTS602 HMI Upgrade Kit User Manual

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USER MANUAL CTS602 HMI BY NILAN



VGU 180 EK "RS"

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maintenance

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Safety

Power supply



A CAUTION

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



CAUTION

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



A CAUTION

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

Disposal

Ventilation unit

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

Heatpump

Concerning disposal of units with heat pumps, it is important to contact the local authorities for information about correct handling of these. The heatpump contains the refrigerant R134a, which is harmful to the environment if not handled correctly.

General information

Introduction



ATTENTION

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

When a ventilation unit is not in operation, humidity from the rooms may penetrate into the ducts and create condensation. Condensate water may leak out of the valves and damage furniture and floors. Condensation may also form inside the unit, which can damage its electronics and fans.

The unit is delivered fully tested and ready for operation.

Type plate

Nilan's type plate can be found on the unit



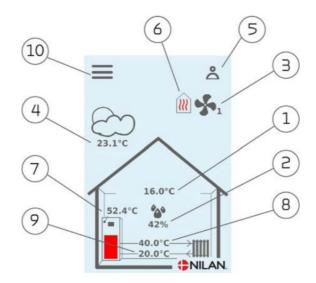
Note: Contact Nilan a/s with questions about the product, it is important to have the unit name and serial No. (SN) ready. On the basis of this information, please contact service department find all informations about the relevant aggregate and thus provide information and answer questions about what the aggregate consists of/contains, as well as the software used.

Quick guide

Functions of control panel

Main screen elements

The main screen of the HMI panel contains the settings options and the information mostly used by an operator.



- 1. Shows the current room temperature in the dwelling, measured via the extract air.
- 2. Shows the current air humidity. If a CO2 meter has been installed, this will be shown next to air humidity.
- 3. Shows the current fan speed level.
- 4. Show the current outdoor temperature
- 5. Shows the menu icons listed below
- 6. Shows the mode icons listed below
- 7. Shows the hot water temperature
- 8. Shows the central heating flow temperature
- 9. Shows the central heating return temperature
- 10. Access to the settings menu, which contains more settings options

Menu icons



Indicates that the unit has stopped



User selection icon

Indicates that the user selection function is active



Week program icon

Indicates that the week program function is active



Alarm icon

Indicates an alarm or warning

Mode icons



Compressor icon

Indicates that the compressor is active



Domestic hot water icon

Indicates that the unit is producing hot water. The flash indicates that the supplementary electric heating is active.



De-icing ikon

Indicates that the heat pump is de-icing

Settings options on the main screen

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



If you select the option of current room temperature, the desired room temperature will be displayed. The desired room temperature can be adjusted by pressing the up-or-down arrows followed by the cancel icon (bottom left) or the accept icon (bottom right).



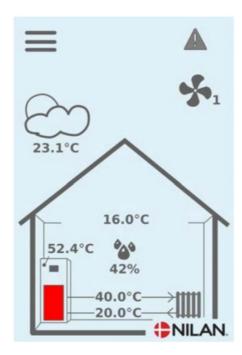
If you select the option of current fan speed level, the desired fan speed level will be displayed. The desired fan speed level can be adjusted by pressing the up-or-down arrows followed by the cancel icon (bottom left) or the accept icon (bottom right).



By pressing the current hot water temperature the desired hot water temperature is displayed. The desired hot water temperature can be adjusted by pressing the up-or-down arrows followed by the cancel icon (bottom left) or the accept icon (bottom right).

Warnings and alarms

Should an error occur in the operation of the unit, a warning or an alarm will be displayed. A warning will appear in the top righthand corner in the menu bar.



If you press the symbol, a description of the warning or the alarm will be displayed.



The warning or the alarm can be reset by pressing "Clear Alarm".



A warning indicates that something requires attention, for instance that filters need changing. The unit operates normally.

An alarm indicates a serious fault with the unit that is likely to require investigation by an expert. The unit has stopped.

Settings menu overview

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



Service and maintenance

Maintenance

Regular maintenance

Your Nilan ventilation unit will last for many years if it is correctly maintained. Correct maintenance will also ensure that the unit runs optimally at all times with low energy consumption.

In the following we point out the regular maintenance which you can perform yourself and the annual service which should be carried out by a professional.

External cleaning

The ventilation unit

The outside of the unit can be cleaned with a mild soap solution.

The ceiling valves

Over time a ring may develop round the inlet valves. is due to dust in the room air, not to defective filters or failure to

As very few painted ceilings are washable, you are recommended to vacuum round the valve and then wipe the area with a damp cloth.

It is a good idea to dismantle and clean the valves when necessary. The valves have been set by the installer for a specific airflow, so it is important not to rotate them, as this will change the setting and unbalance the ventilation system.

Water trap

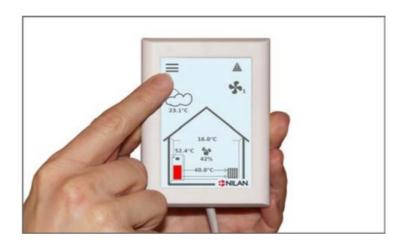
The water trap can dry out and prevent water from draining from the condensate tray, because air will then blow into the unit. Condensate water will accumulate in the condensate tray. This will eventually overflow and potentially cause water damage to the surface supporting the unit. The water trap should therefore be checked regularly and filled with water, especially in the summer when the risk of the water trap drying out is highest.

Filter replacement

The purpose of the filters is to protect the fans and the heat exchanger from dust and dirt, which may cause damage.

For operation to run smoothly, it is important to change the filters as required. The filter timer in Nilan's control system is set by default to indicate that filters should be replaced after 90 days, but this can be changed as required to 180 or 360 days. If the filters are not changed, ventilation will lessen. This may cause the indoor climate to deteriorate and affect the automatic humidity control system of the unit.

Illustration of filter change



1. Switch off the unit on the control panel before opening the door.



2. Turn the thumb screws in the door at the top right of the unit and open the door.



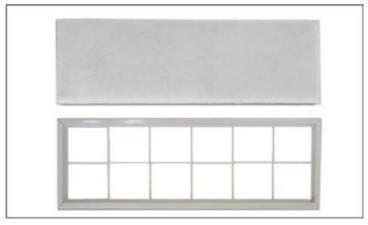
3. Remove the filter from the unit



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



5. Remove the filter sheet from the filter frame



6. Keeping the smooth side facing downwards, place the new filter sheet in the filter frame



7. Press the filter sheet firmly in place and carefully push it to the sides of the filter frame. The filter is placed back in the unit with filter mat upward



8. In the ALARM menu on the control panel, press the alarm symbol at the top right and reset the alarm here.

Service

Annual service

It is important to perform an annual service on the unit to ensure it will continue to perform optimally with low energy consumption and long service life.

You are recommended to take out a service agreement with the installer, as certain elements of the service require an authorised technician.

Internal cleaning

For hygienic reasons, it is important that the unit undergoes annual internal cleaning. This will prevent the formation of fungus and bacteria which impair the internal air quality.

- Wipe down the internal plate parts and pipes with a damp cloth and a mild soap solution.
- · Check and clean the evaporator coil.
- Check and clean the counterflow heat exchanger. If necessary, it may be removed and rinsed with a shower head.
- Clean the condensate trays with a damp cloth and a mild soap solution.
- Check the condensate outlet to make sure the water can exit freely.

Check the air outlet

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

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

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

Check ventilation ducts

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

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

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

However, it will not be necessary to clean ducts more than every few years.

The heat pump

The heat pump must be inspected in accordance with applicable laws and regulations, such that it is kept in good condition and meets safety and environmental requirements.

The installer is obliged to inform the owner/user about applicable laws and regulations.

User settings

Ventilation settings

Stop the unit

If it is necessary to open the doors while servicing the unit, for instance when changing filters, the unit must be turned off.

The functions of the unit are activated in Settings under Operation.

If the unit is off, an icon appears on the main screen.

Operation

4 Operation	Settings: Description:	Off / On The unit must be turned off before the doors are opened during a service
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Alarm

You can read warnings and alarms in the "Alarm" menu. It is likewise possible to reset warnings and alarms in this

When a warning or an alarm has been triggered, an icon appears on the main screen Λ

Alarm

→ Alarm number and name	Description:	When selecting this, a list will appear showing the alarm ID number, information about the type of alarm, and whether it is critical or not. (See the alarm list for more information) You can approve the alarm by selecting "Clear A larm"
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ATTENTION

When an alarm is active, it cannot be reset in the panel. When the alarm has been resolved, it will figure as inactive and it can be reset by selecting "Clear Alarm".

Show data

It is possible to read off current data for the unit.

Show data

→ Operating state	Description:	Shows the operating setting in which the unit is running.
T1 Outdoor air	Description:	Shows the outdoor temperature before reaching the pre-heating element.
₽ T5 Condenser	Description:	Shows the condenser temperature.
4 T6 Evaporator	Description:	Shows the evaporator temperature.
₽ T10 Extract air/Room	Description:	Shows the current room temperature, measured in the extract air.
T11 Top hot water	Description:	Shows the current temperature in the top of the domestic hot wat er tank. Controls the supplementary electric heating.
T12 Bottom hot water	Description:	Shows the current temperature at the bottom of the domestic hot water tank. Controls the compressor.
→ T13 Return flow	Description:	Shows the current return temperature of the water in the central h eating system
4 T14 Supply flow	Description:	Shows the current flow temperature of the water in the central he ating system
₽ Air humidity	Description:	Shows the current air humidity in the dwelling.
4 CO2	Description:	Shows the current CO level in the dwelling (only if installed). 2
4 Extract air fan	Description:	Shows the level at which the extract air fan is operating.
4 Unit information	Description:	Press "Unit information" for more information.
	Description:	Shows the name of the product the software has been set to work with.
4 Software version	Description:	Shows the installed software version.
→ Panel software	Description:	Shows the installed software version on the panel.

Date/Time

It is important to set date and time correctly. It makes it easier to localise errors indicated in an error report. When logging data, it is important to be able to follow the history. The time is shown under "Date / Time" in the display. Date / Time

▶ Year	Description:	Select "Year" in the panel and then select the correct year.
→ Month	Description:	Select "Month" in the panel and then select the correct month.
ь Day	Description:	Select "Day" in the panel and then select the correct day.
Կ Hour	Description:	Select "Hour" in the panel and then select the correct hour.
⊾ Minute	Description:	Select "Minute" in the panel and then select the correct amount of minut es.

Week program

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

On the main screen an icon will be displayed when the week program is active



Week program

4 Select program	Description:	You can select from the Programs 1, 2, 3 or off.
→ Edit program	Description:	The selected week program is now active and can be edited.
→ Monday	Description:	You can select either Monday, Tuesday, Wednesday, Thursday, Friday, Saturday or Sunday.
→ Function 1	Description:	Under each function, you can set time, temperature and fan spee d level.
→ Start time	Settings: Standard setting : Description:	Hours and minutes 6:00 Set the time for the program to start. The program will run until the next change in the week program.
▶ Ventilation	Settings: Standard setting : Description:	Level 1 / Level 2 / Level 3 / Level 4 / Off Level 3 Select the desired fan speed level here.
→ Temperatures	Settings: Standard setting: Description:	5 – 40 °C 22 °C Set the desired room temperature here.
4 Function 2		Under each function, you can set time, temperature and fan spee d level.
Start time	Settings: Standard setting : Description:	Hours and minutes 8:00 Set the time for the program to start. The program will run until the next change in the week program.
▶ Ventilation	Settings: Standard setting : Description:	Level 1 / Level 2 / Level 3 / Level 4 / Off Level 1 Select the desired fan speed level here.
▶ Temperatures	Settings: Standard setting : Description:	5 – 40 °C 22 °C Set the desired room temperature here.
→ Function 3	Description:	Under each function, you can set time, temperature and fan spee d level.
→ Start time	Settings: Standard setting: Description:	Hours and minutes 15:00 Set the time for the program to start. The program will run until the next change in the week program.
▶ Ventilation	Settings: Standard setting: Description:	Level 1 / Level 2 / Level 3 / Level 4 / Off Level 3 Select the desired fan speed level here.

→ Temperatures	Settings: Standard setting : Description:	5 – 40 °C 22 °C Set the desired room temperature here.
₽ Function 4	Settings: Standard setting: Description:	Under each function, you can set time, temperature and fan spee d level.
հ Start time	Settings: Standard setting : Description:	Hours and minutes 22:00 Set the time for the program to start. The program will run until the next change in the week program.
↓ Ventilation	Settings: Standard setting: Description:	Level 1 / Level 2 / Level 3 / Level 4 / Off Level 1 Select the desired fan speed level here.
⊾ Temperatures	Settings: Standard setting: Description:	5 – 40 °C 22 °C Set the desired room temperature here.
₽ Functions 5 and 6	Settings: Standard setting: Description:	Under each function, you can set time, temperature and fan spee d level. Off The program will run until the next change in the week program.
→ Reset program	Description:	You can reset the program by selecting the approve icon.

Central heating

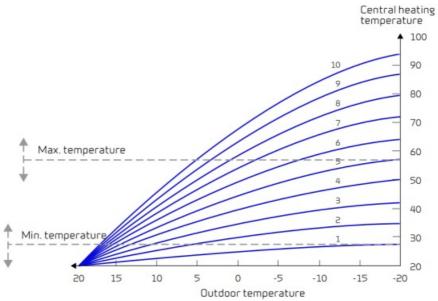
Possible settings for room heating.

Central heating

₽ Setting	Settings: Standard s etting: Description:	Heating / Off / Requirement Heating Off: Room heating is off. Heating: Constant heating in relation to min./max. Requirement: The flow temperature is regulated automatically by the curve setting
→ Minimum flow temper ature	Settings: Standard s etting: Description:	5 – 40 °C 25 °C Here, the minimum flow temperature is set. The setting overrides a pot entially lower temperature from the curve control. This function may be relevant with, for example, underfloor heating if you should want a minimum co mfort temperature.
→ Maximum flow temper ature	Settings: Standard s etting: Description:	25 – 70 °C 50 °C Here, the maximum flow temperature is set. The setting overrides a potentially higher temperature from the curve control.
Goutdoor temperature compensatio	Settings: Standard s etting: Description:	1-10.4 Choose which curve the control system should regulate in accordance with
⊌ Offset curve	Settings: Standard s etting: Description:	-15 – 10 °C 0 °C You can shift the curve to best fit the heating requirements of the dwell ing
→ Delay	Settings: Standard s etting: Description:	0 – 30 minutes 10 minutes Set a chosen delay for when the central heating should start operating, once a heating requirement has been registered.
	Settings: Standard s etting: Description:	Continuous / Energy Continuous: The pump is running constantly Energy: The pump runs when required

Curve control

The flow temperature is regulated automatically in accordance with a curve.



Domestic hot water

Settings for hot water production have been set at the factory, but it may be necessary to adjust them to match the

Domestic hot water

→ Electric supplement heater hot water	Settings: Standard setting: Description:	Off / 5 – 85 °C 30 °C Off: The electricity supplement is de-activated by the user 5 – 85 °C Indicates below which temperature (T11) the electricity supplement should help by heating the hot water.
→ Hot water temperature	Settings: Standard setting: Description:	Off / 5 – 60 °C 45 °C Off: The hot water production is switched off by the user 5 – 60 °C Indicates below which temperature (T12) the compressor must produce hot water.
Anti-scald device:	Settings: Standard setting: Description:	60 – 80 °C 65 °C When the unit is in heating or cooling mode, heat will simul taneously be deposited in the hot water tank. To prevent the hot water from getting too hot and rinsing the user, a limit of 65°C has been inserted. When the temperature in the hot water tank reaches 65 °C, cooling or heating the supply air stops. NB! If a scalding valve is connected to the bottom of the hot water tank, the setting can be changed up to 80°C. In this way, the capacity for cooling and heating of the supply air is increased.

Air humidity

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. During long periods with sub-zero temperatures, air humidity in the house may fall to a level that is critical for the building and for the indoor climate. Wooden floors, furniture and walls can be damaged by very dry air, which also whirls up dust, resulting in a poor 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.

Air humidity

▶ Vent.low humidity	Settings: Standard settin g: Description:	Level 1 / Level 2 / Level 3 / Level 4 / Off Level 1 At low humidity, the unit changes to the set fan speed level.
Low humidity level	Settings: Standard settin g: Description:	15 ↔ 45 % 30 % The control system calculates an average air humidity leve I measured over the previous 24 hours. If the average air h umidity in the extract air falls below this level, the "Low hu midity" function will be activated. Note! The function is only active in winter mode.
Vent.high humidity	Settings: Standard settin g: Description:	Level 2 / Level 3 / Level 4 / Off Level 3 At high humidity levels, for instance when having a bath, the unit changes to the set fan speed level.
→ Max time high humidity	Settings: Standard settin g: Description:	1 ↔ 180 minutes / Off 60 minutes The function "High humidity" stops when actual humidity fa Ils below 3% above the average air humidity. The run of thi s function has been time limited.

CO₂

This menu is only displayed if a CO2 sensor has been installed.



ATTENTION

CO 2 sensor.

A CO2 sensor is not a standard part of all 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.

↳ Vent.high CO2 level	Settings: Standard setting : Description:	Level 2 / Level 3 / Level 4 / Off Level 3 Here you indicate the fan speed level at which the unit is to operate at high CO 2 level.
ե High CO2 level	Settings: Standard setting: Description:	650 ↔ 2500 ppm 800 ppm Here you indicate the CO 2 level at which the unit is to switch to high fan speed level.
↓ Normal CO2 level	Settings: Standard setting : Description:	400 ↔ 750 ppm 600 ppm Here you indicate the CO2 – level at which the unit is to swit ch to normal control.

Air exchange

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

Air exchange

↓ Type of ventilation	Settings: Standard setting: Description:	Comfort / Energy Comfort Comfort: The fan is constantly on. Energy: The fan stops concurrently with the compressor
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Air filter

The filter alarm has a timer. Its factory setting is 90 days between each filter change. If you want to add pressurecontrolled filter change, pressure sensors can be connected via digital input and adjustment in the filter menu.

Air filter

հ Filter alarm	Settings: Standard setting: Description:	None / 30 / 60 / 90 / 180 / 360 90 days The number of days between filter changes can be set as required. For optimal operation, it is important that filters are clean. A clogged filter increases power consumption and provides less hot water.
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Language

The unit is factory-set to Danish language. You can change the texts to other languages.

4 Danish	Description:	Select the desired language on the panel.
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Alarm list

VGU unit

Alarm list

The list below applies to VGU units. Events are divided into the following categories:



Warning Operation continues, but something no longer functions optimally.



Operation has stopped partially or completely as a serious error requires immediate attention.

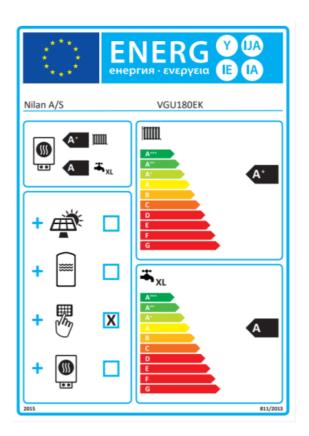
ID	Туре	Display text	Description / cause	Rectification of error			
1		Hardware error	Error in the hardware of the control system .	If resetting does not help, contact service.			
2		Alarm timeout	A warning alarm has become a critical alar m.	Register alarm and reset. If the alarm persists, contact ser vice.			
3	Fire alarm acti vated		The unit has stopped because the fire ther mostat has been activated.	If there has been no fire, contact service.			
4	(A)	Pressure switc	The high-pressure switch in the refrigeration circuit has been triggered, possibly due to: • Extremely warm outdoor air supply • Clogged filter • Defective fan	Check for faults and reset the al arm. Contact service if you cannot re set the alarm or if alarms occur often.			

6		Error in de-icin g of heat pump	The de-icing time has been exceeded. The exchanger or the heat pump has faile d to de-ice within the maximum time. This may be due to the unit being exposed to v ery low outdoor temperatures.	Contact service if resetting the a larm does not help. Register the current operating t emperatures from the "Show dat a" menu in order to ease the ser vice process.
13		Over temperat ure Supplementary electric heating HW.	The temperature of the supplementary ele ctric heating in the hot water tank has been too high.	Reset the overheat protection, w hich is situated behind the lower door. In case of repeated alarms , contact service.
15		The room temp erature is too low	When the room temperature falls below 10 °C, the unit will stop in order to prevent furt her cooling of the dwelling. This may, for instance, be during a period of the dwelling being unoccupied and the h eating system having gone off.	Heat up the dwelling and reset t he alarm.
16		Software error	Error in the control system program.	Contact Service.
17		Watchdog war ning	Error in the control system program.	Contact Service.
18	(A)	Content of dat abase changed	Parts of the program setting have been los t. This may be due to a prolonged power cut or a lightning strike. The unit will continue t o operate with standard settings.	Reset alarm. Set the week program you require. Contact service if the unit does not operate to your satisfaction/as before, as some subprogram s may have been lost. (Subprogram is only available for service).
19	(A)	Change filter	The filter monitor has been set at X amoun t of days for check-up/change of filter (30, 90, 180, 360 days). The standard setting is 90 days.	Clean/change filter. Reset alarm .
20	(1)	Error in legione lla treatment	Legionella treatment has not been perform ed within the time limit or number of attem pts.	In case of repeated alarms, cont act service.
21	<u>(A)</u>	Check date an d time	Is displayed during power cuts.	The settings of the weekly clock must be checked and adjusted if necessary. Reset alarm.
22		Error in air tem perature	It is impossible to heat the supply air as de sired (only applicable if you have an after-h eating element). The afterheating element and the unit cannot increase the temperature to the desired level.	Set a lower supply air temperatu re. Reset alarm.
23	<u>(A)</u>	Error in domestic hot water temperat ure	Heating of domestic hot water is not possible.	Contact service

27-58	Error on the te mperature sen sor	One of the temperature sensors has either short circuited, been disconnected or is def ective.	Register which sensor, Tx, is fau lty and contact service.
70	Anode error	The hot water tank anode is either worn or not connected correctly.	Contact service
72	Abnormally lo w evaporator tem perature	Abnormal evaporator temperature (T6) is d ue to insufficient air volume.	Change filters, check outdoor air intake has not stopped. If error p ersists, contact service.
92	Backup error	Abnormal evaporator temperature (T6) is d ue to insufficient air volume.	Contact service.

Product data

Ecodesign label



Ecodesign data cold climate

Heat pump combination heater – cold climate

Model	VGU1850EK
Air-to-water heat pump	Yes
Water-to-water heat pump	No
Brine-to-water heat pump	No
Low-temperature heat pump	Yes
Equipped with a supplementary heater	Yes
Heat pump combination heater	Yes
Temperature control	
Model	CTS602
Class	2
Contribution to seasonal space heating energy efficiency	2%

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit	
Rated heat output (*)	Prated	2.3	kW	Seasonal space he ating energy efficiency	ŋs	147	%	
Declared capacity for perature 20 °C and o				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj				
Tj = -7 °C	Pdh	2.092	kW	Tj = -7 °C	COPd	3.82		
Tj = +2 °C	Pdh	2.103	kW	Tj = +2 °C	COPd	3.94		
Tj = +7 °C	Pdh	2.112	kW	Tj = +7 °C	COPd	4.00		
Tj = +12 °C	Pdh	2.096	kW	Tj = +12 °C	COPd	3.95		
Tj = bivalent temper ature	Pdh	2.077	kW	Tj = bivalent temper ature	COPd	3.68		
Tj = operation limit t emperature	Pdh	2.119		Tj = operation limit t emperature	COPd	3.70		
For air-water-heat p umps Tj = -15 °C (h vis TOL < -20 °C)	Pdh			For air-water-heat p umps Tj = -15 °C (h vis TOL < -20 °C)	COPd			
Bivalent temperatur e	Tbiv	-6		For air-water-heat p umps Operation lim it temperature			°C	
Cycling interval cap acity for heating	Pcych			Cycling interval effic iency				
Degradation co-effi cient	Cdh	0.9		Heating water oper ating limit temperat ure	WTOL		°C	
Power consumption i	n modes of	ther than a	ctive mode	Supplement heater		1	1	

Off mode	POFF	0.0084		Rated heat output	Psup	9	kW
Thermostat off-mod e	PTO	0.0253					
Standby mode	PSB	0.0084		Type of energy inpu	Electrica I		
Crankcase heater mode	PCK	0,000					
Other items							
Capacity control	Variable indoor temperature re gulation			For air-water-heat p umps Rated air flow outside		360	m3/h
Sound power level, outdoor	LWA	58.2	dB				
Annual energy cons umption	qHF	2148	kWh				
Specified consumption profile	XL			Energy efficiency fo r water heating	Ŋwh	108	%
Daily electricity con sumption	qelec	7.212	kWh	Daily fuel consumption	qfuel		
Annual energy cons umption	AEC	1557	kWh				

Ecodesign average climate Heat pump combination heater

Model	VGU1850EK
Air-to-water heat pump	Yes
Water-to-water heat pump	No
Brine-to-water heat pump	No
Low-temperature heat pump	Yes
Equipped with a supplementary heater	Yes
Heat pump combination heater	Yes
Temperature control	
Model	CTS602
Class	2
Contribution to seasonal space heating energy efficiency	2%

|--|

Rated heat output (*)	Prated	2.5	kW	Seasonal space he ating energy efficiency	ŋs	105	%
Declared capacity for perature 20 °C and o	-	•		Declared coefficient of performance or primary energ y ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	Pdh	2.078	kW	Tj = -7 °C	COPd	3.59	
Tj = +2 °C	Pdh	2.094	kW	Tj = +2 °C	COPd	3.77	
Tj = +7 °C	Pdh	2.109	kW	Tj = +7 °C	COPd	3.97	
Tj = +12 °C	Pdh	2.151	kW	Tj = +12 °C	COPd	4.13	
Tj = bivalent temper ature	Pdh	2.074	kW	Tj = bivalent temper ature	COPd	3.64	
Tj = operation limit t emperature	Pdh	2.119		Tj = operation limit t emperature	COPd	3.70	
For air-water-heat p umps Tj = -15 °C (h vis TOL < -20 °C)	Pdh			For air-water-heat p umps Tj = -15 °C (h vis TOL < -20 °C)	COPd		
Bivalent temperatur e	Tbiv	-6		For air-water-heat p umps Operation limi t temperature			°C
Cycling interval cap acity for heating	Pcych			Cycling interval effic iency			
Degradation co-effi cient	Cdh	0.9		Heating water oper ating limit temperat ure	WTOL		°C
Power consumption i	n modes o	ther than ac	ctive mode	Supplement heater			
Off mode	POFF	0.0084		Rated heat output	Psup	9	kW
Thermostat off-mod e	РТО	0.0253					
Standby mode	PSB	0.0084		Type of energy input	Electrica I		
Crankcase heater mode	PCK	0,000					
Other items							
Capacity control Variable indoor temperature re gulation			For air-water-heat p umps Rated air flow outside		360	m3/h	
Sound power level, outdoor	LWA	58.2	dB				
Annual energy cons umption	qHF	1732	kWh				
	<u> </u>				<u> </u>		<u> </u>

Specified consumption profile	XL		Energy efficiency fo r water heating	Ŋwh	108	%	
Daily electricity con sumption	qelec	7.212	kWh	Daily fuel consumption	qfuel		
Annual energy cons umption	AEC	1557	kWh				

CE declaration

EU/EC Declaration of Conformity

For the CE-marking inside the European Union

Nilan A/S

We declare that the Ventilation and Air to Water Heat Pump

VGU250

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

- Directive on harmonization of the laws of the Member States concerning pressure equipment (pressure equipment directive) 2014/68/EU
- Directive on harmonization of the laws of the Member States relating to electrical equipment to be used within certain voltage limits (the low voltage directive) 2014/35/EU
- Household and similar electrical appliances Safety Part 2-40: Particular requirements for electrical heat pumps, air-conditioners and dehumidifiers. IEC 60335-2-40:2013
- Directive on harmonization of the laws of the Member States relating to electromagnetic compatibility (EMC directive) 2014/30/EU
- Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS directive) 2011/65/EU
- Directive of Energy Related Products in a framework which primarily focuses on environmental care of requirements for energy-related products (ECODESIGN) 2009/125/EU

Harmonized standards applied and EU regulations, in particular:

EN 60335-1 EN 60730-1 (EU) 1253/2014

EN 60335-2-80 EN 5058 (EU) 1254/2014

Hedensted: 2016-11-08

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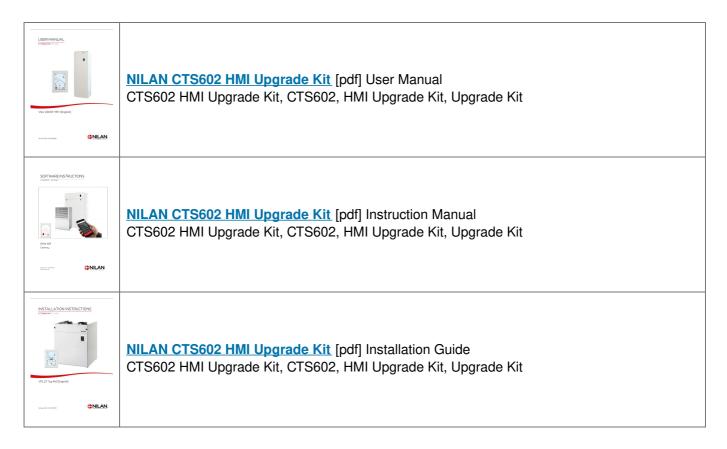
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Documents / Resources



References

- Nilan | Miljøvenlige ventilationsanlæg og varmepumper
- Nilan | Energy-friendly ventilation and heat pumps
- Nilan | Energy-friendly ventilation and heat pumps
- User Manual

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