USER MANUAL

CTS700 TOUCH BY NILAN

Compact P / Compact P Polar (English)

Version 2.50 - 01.09.2020

NILAN®
OUTSTANDING INDOOR CLIMATE

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Safety

Important information

Power supply

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

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

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

Heat pump domestic hot water

CAUTION
Avoid direct contact with the heating system pipes in the heat pump as they can get very hot.

CAUTION
To protect the heat pump against damage, it is fitted with the following safety equipment:

- Electronic temperature monitoring

The heat pump must undergo suitable service inspections under applicable legislation and regulations to keep it in good condition and in compliance with safety and environmental requirements.

Responsibility for maintenance of the heat pump rests with the owner/user.

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.

Quickguide

Safety switch

Emergency stop ventilation

If the ventilation has been stopped for a lengthy period, condensation will occur in the duct system. This occurs when the warm air in the dwelling penetrates into the cool ducts. This presents the risk that the water will drip out of the ceiling valves, damaging floors and furniture.

To avoid this, the user is not directly permitted to turn off the ventilation. However in emergency situations, where the user is asked to go indoors, close windows and doors and turn off ventilation systems, this must still be possible.

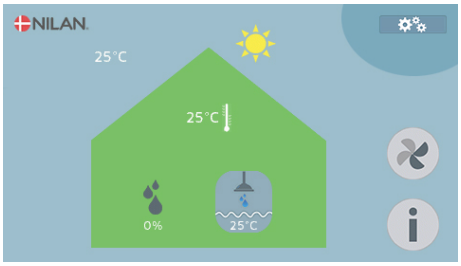
The user may then press the emergency stop in the settings menu:

A warning will appear before the ventilation can be turned off:

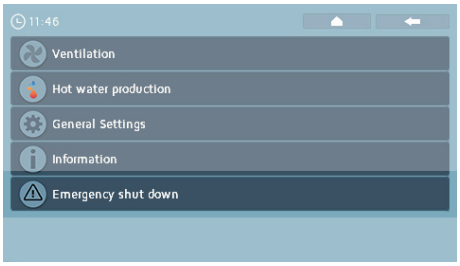
Warning: Are you sure you wish to turn off the ventilation?

If the ventilation is not running, you may get problems with high air humidity and condensation in the ventilation ducts, and a risk that your home may be damaged.

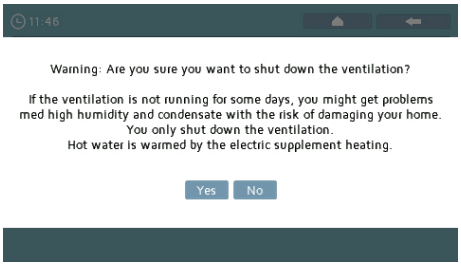
You are only turning off the ventilation. Domestic hot water will be heated by the supplementary electric heating, if activated.



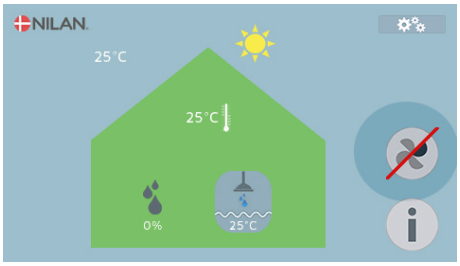
1. Press the settings icon.



2. Press "Emergency stop ventilation".

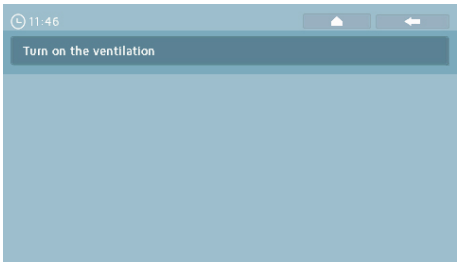


3. A warning will appear, but press yes.



4. A red line through the ventilation icon will appear on the display, indicating that the ventilation has been turned off .

5. When the danger has passed and the ventilation can be used again, press "Emergency Stop Ventilation" once more.

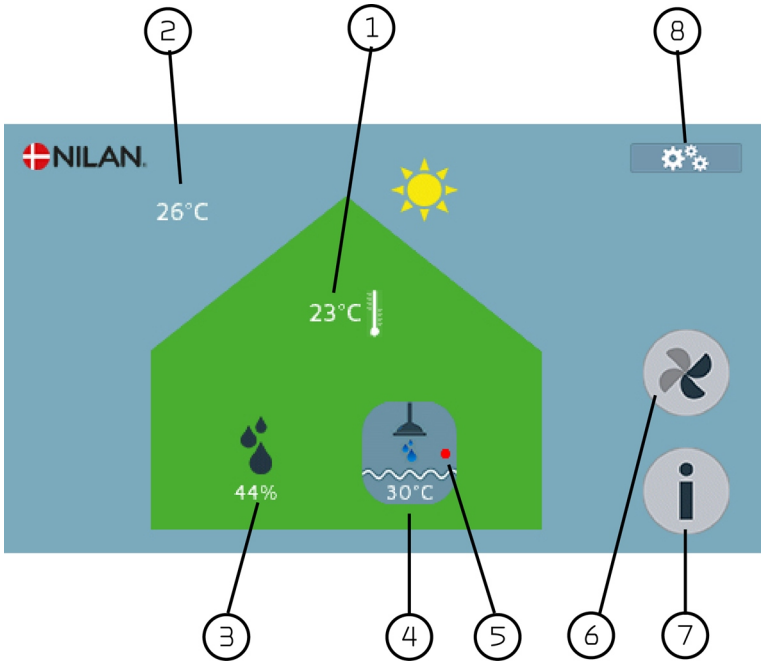


6. Press "Turn on ventilation again".

The control panel

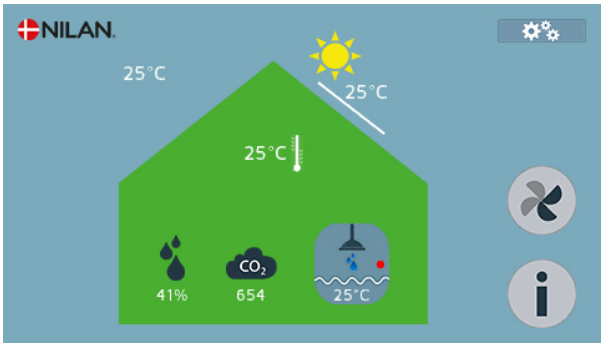
Front page controls

The front page of the touch panel contains the setting options and the information the user needs most frequently.



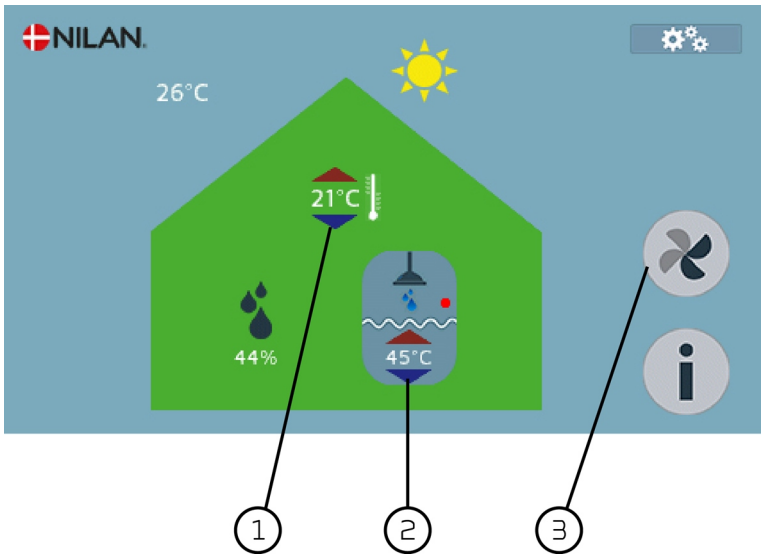
1. Displays the current room temperature in the house, measured via the extract air or via an external temperature sensor
2. Displays the current outdoor temperature measured in the outdoor air intake
3. Displays the current air humidity measured in the dwelling
4. Displays the current temperature in the hot water tank
5. Displays whether supplementary electric heating in the hot water tank is active
6. Fan speed level: The number of dark segments indicates the desired fan speed level.
7. Information button: Press this to see the unit's current operating status
8. Access to the settings menu, where several settings options are available

If the unit is equipped with a CO_2 sensor, the CO_2 level in the building will also be displayed on the front page, and if a solar panel is installed, the panel temperature will also be displayed.



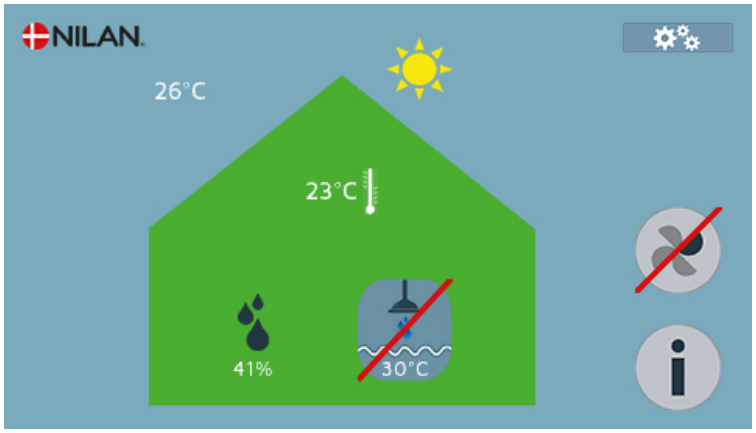
Front page setting options

The settings which the user needs in daily use, can be changed on the front page of the touch-panel.



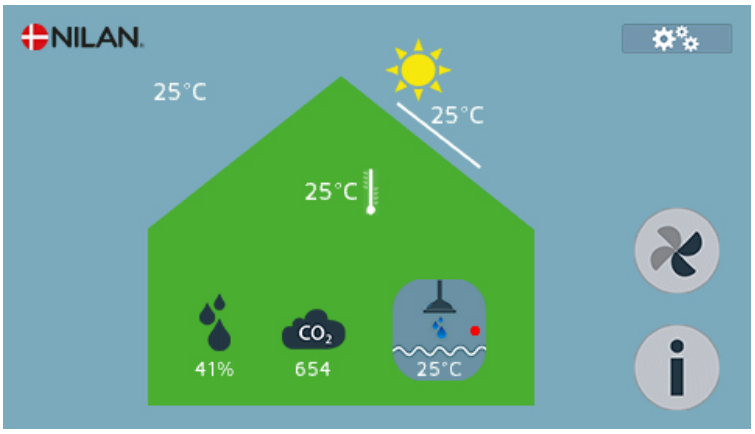
1. By touching the current room temperature, the wanted room temperature is shown. You can change the wanted room temperature by touching the red or blue arrow.
2. By touching the current hot water temperature, the wanted hot water temperature is shown. You can change the temperature in the domestic hot water tank by touching the red or blue arrow.
3. The number of dark segments shows at which ventilation level you want the unit to run. There are four levels and the level is changed by touching the icon.

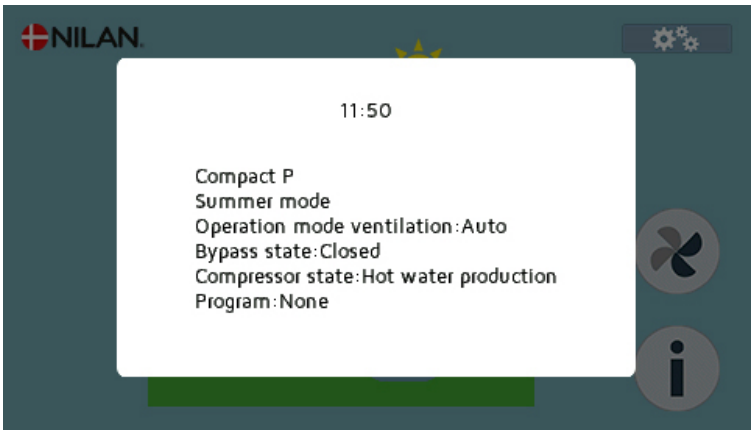
If the unit or functions are turned off, a red line will cross the functions, which are off.



Information

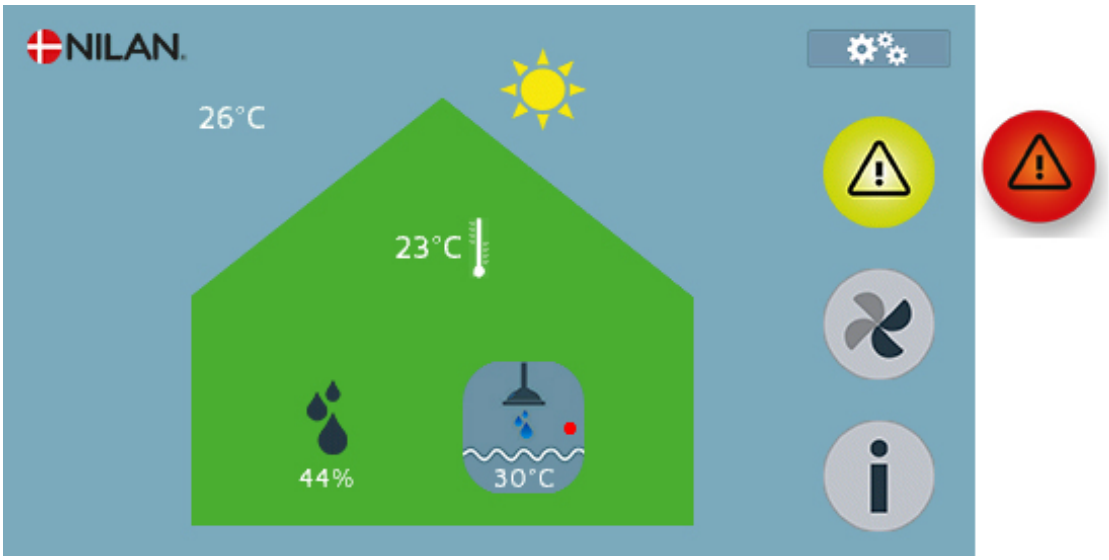
By touching the information button, you get an overview about the actual operation state of the unit.





Warnings and alarms

If a fault occurs in the unit's operation, a warning or an alarm will be shown.



A warning is a yellow button, which advises that something needs attention, e.g. that filters or sacrificial anodes need replacing.

The unit operates normally.

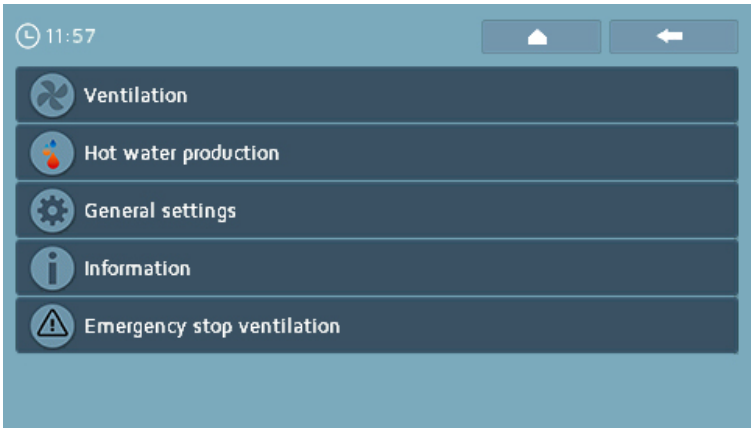
The alarm is a red button which denotes that there is something seriously wrong with the unit, and in most cases this will require the attendance of a technician.

The unit stops operating.

Pressing on the icon will bring up a description of the warning or alarm. The warning or alarm can be reset by pressing Approve.

Settings menu overview

The settings menu is arranged for clarity and ease of navigation.



Ventilation: This is where all the settings for the ventilation of the dwelling are made.

Domestic hot water production: This is where all the settings for the domestic hot water production are made.

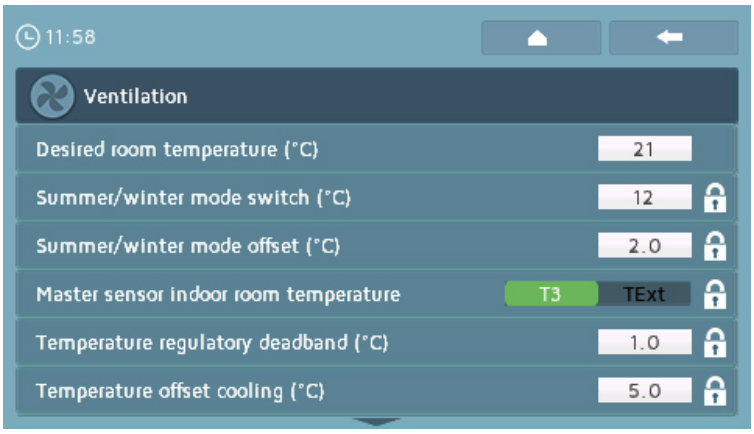
General settings: This is where settings are made concerning both the ventilation and the domestic hot water production, and also the service settings.

Information: Here you can see the event log together with the current settings for the entire unit.

Emergency stop ventilation: Preferably, the ventilation system should not be turned off. Turned off ventilation can cause problems with condensate in the ducts and the unit. However, in emergency situations it is possible to turn off the ventilation via the emergency stop.

User and installer rights

In the setting menu both user, installer and factory settings are shown.



- Settings without any lock can be set by all
- Settings with a white lock can only be set by installers
- Settings with a red lock can only be set by Nilan

The reason why some settings are locked for the user, is because it requires a certain amount of knowledge about how the unit works in order to change these settings, and if they are set wrongly the unit does not work properly and can be damaged.

Service and Maintanance

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. This is a natural process and is due to dust in the room air, not to defective filters or failure to change filters.

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.

Changing the filters.

The filters are there to protect the fans and heat exchanger by preventing them from being coated by dust and dirt.

For optimum operation it is important to change the filters before they become clogged. In normal operation, G4 filters from Nilan should be changed every three months. In newbuild, it is recommended that the filters are changed when the house is first occupied, as they may be clogged with building dust.

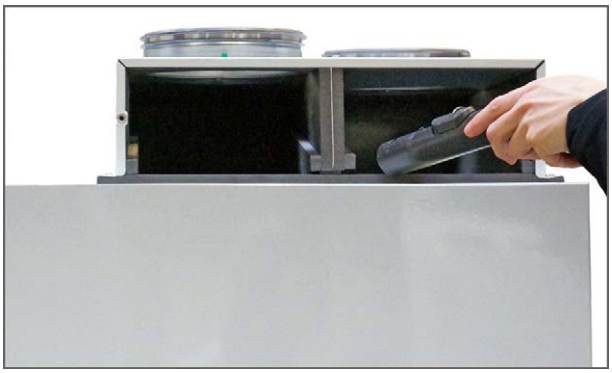
If the filters are not changed regularly, this will hamper ventilation, reducing the indoor air quality, using more power than necessary, and producing insufficient domestic hot water.

Illustration of filter change

1. Set the unit to standby on the control panel in the "Filter settings" menu under Ventilation before opening the door.

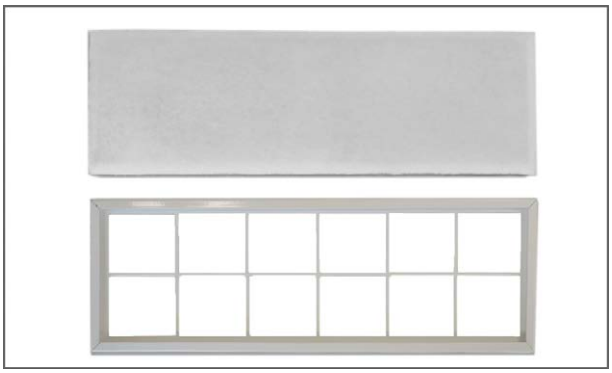
2. Turn the thumb screws in the door at the top right of the unit and open the door.

3. Remove the two filters from the unit.



4. It is a good idea to vacuum the filter chamber to remove any dirt which has collected there.

5. Remove the filter pad from the filter frame.



6. Place the new filter pad with its smooth side down in the filter frame.

7. Carefully fix the filter pad in place in the filter frame, pushing it well out into the sides. Replace the filter in the unit with the filter pad facing upwards.

8. Reset the alarm:
Reset the alarm on the control panel in the "Filter settings" menu under Ventilation.

Water trap

If the water trap in the condensate outlet dries out, air will blow into the unit. This will prevent the condensate water from draining away. Instead it will accumulate in the condensate tray. When there is no space left in the condensate tray, it will spill over, possibly causing water damage on the floor.

ATTENTION
The water trap must be checked at regular intervals and filled with water. This is done by filling the condensate tray with water and checking that it runs out.

Safety valves

The safety valve for the domestic hot water is prominently connected to the drain by the installer. It is important to check regularly that it is not dripping from the valve.

If it is dripping, contact a plumber to remedy the matter.

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.

Visual inspection

You are recommended to carry out a visual inspection of the whole unit.

Check that there are no sweating pipes to cause condensation and damage the substrate on which the unit stands.

Check that there are no cracks in hoses and pipes and no leaks in the heat pump and hot water tank.

Check that there are no damaging accumulations of dirt in the unit.

Checking the sacrificial anode

An electrically monitored anode has been mounted for protecting the hot water tank. When it is time to change the anode, a warning will appear on the control panel display.

Check the sacrificial anode to ensure that the electrical monitoring is undamaged.

Checking the safety valve

The safety valve for the domestic hot water should have an annual function check to ensure it is functional at all times.

The function check must be carried out by a trained plumber.

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 intake and 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 clogged with leaves or dirt. Grilles are particularly likely to become clogged.

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.

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

Filter settings

The filter alarm has a timer which is set at the factory to give 90 days between filter changes.

Supply air filters and extract air filters are set separately. The unit leaves the factory with a G4 standard filter, but an F7 pollen filter can be purchased for the outdoor air. The service life of the two types of filter differs.

Ventilation

Filter settings		
↳ Set ventilation to standby	Settings: Standard setting: Description:	On / Off Off Before opening the unit to change the filter, turn off the ventilation. If you forget to turn on the ventilation again, it will automatically restart after 2 hours.
↳ Outdoor air filter		
↳ Filter change warning	Settings: Standard setting: Description:	None / Digital / Timer Timer Settings performed by the installer.
↳ Days between filter change	Settings: Standard setting: Description:	30 ↔ 180 days 90 days Number of days between filter changes can be set as required. It is important that filters are clean, to give optimum operation and low power consumption. Dirty filters reduce production of domestic hot water.
↳ Days to next filter change	Description:	Shows how many days remain to the next filter change.
↳ Reset timer	Description:	Press to reset timer. NB! This must be done after each filter change.
↳ Extract air filter	Same settings options as for the outdoor air filter	

Operating mode

It is possible to provide the unit with an input which determines whether it will operate in Auto, Heating or Cooling.

Ventilation

Operating mode	Settings: Standard setting: Description:	Auto/ Heating/ Cooling Auto **Auto** : The unit operates in accordance with the set values. **Heating** : The unit operates in accordance with the set values, but is not set to perform cooling. Active cooling has been blocked and the bypass damper will not open. **Cooling** : The unit operates in accordance with the set values, but is not set to perform heating. Active heating and the after heating element have been blocked. With this setting the unit can perform cooling in winter operation under the correct conditions.

The functions Heating and Cooling override the weekly schedule, and can be used in situations such as the following:

Heating

A weekly schedule has been made in which the room temperature is lowered between 8.00 and 16.00 during the day, when the residents are at work or school. During the autumn half-term they no longer wish to lower the daytime temperature as they are at home that week. Instead of cancelling the weekly schedule, this can be overridden by setting the unit to heating mode. The unit now operates in accordance with the desired room temperature, which can be set on the front of the touch-panel.

Cooling

A large modern house with extensive south-facing windows can start having overheating problems as early as March/April, if the sun is shining form a cloudless sky. As the outdoor temperature maybe only is 8 °C, the unit will be running in winter mode, with a setting which prevents it from cooling. This limitation can be overridden by setting the unit to cooling mode. The unit will try to cool the indoor air, if the right conditions are present. Cooling will take place via bypass and at high indoor temperatures with active cooling via the heat pump.

ATTENTION
The system will automatically change to Auto on the next change in the weekly schedule, is such is programmed.

Humidity control

The unit has a built-in humidity control to control the ventilation relative to the average humidity, in order to maintain a good relative humidity in the house.

If the average humidity in the house is below a set level (factory setting 30%), it is possible to reduce the ventilation to avoid further drying of humidity in the house. It will typically only be needed for shorter periods during the winter.

The humidity control has a further feature that allows increased ventilation if the humidity level gets high, for example, if you take a bath. It reduces the risk of mold formation in the bathroom, and in most cases you avoid dew on the mirror in the bathroom.

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

Ventilation

Humidity control		
↳ Low humidity level	Settings: Standard setting: Description:	15 ↔ 45 % 30 % The humidity control calculates the average air humidity measured over the previous 24 hours. If the average air humidity in the extract air falls below this level, the "Low humidity" function is activated.
↳ Fan speed at low humidity	Settings: Standard setting: Description:	Level 1/ Level 2/ Level 3 Level 1 In case of "Low himidity", the unit changes to the set fan speed level.
↳ Fan speed at high humidity	Settings: Standard setting: Description:	Level 2/ Level 3/ Level 4 Level 3 In case of "High humidity", e.g. when bathing, the unit changes to the set fans speed level.
↳ Max. time at high humidity (min)	Settings: Standard setting: Description:	0 ↔ 180 minutes 60 minutes The function "High humidity" stops when the actual air humidity is 3% above average air humidity. There is a time limit set for how long this function is allowed to run. If it is set to 0 minutes, the function is de-activated.
↳ Average air humidity	Description:	This shows the relative humidity in the extract air as an average over the previous 24 hours.

Prioritisation sequence in the control system:

1. Userprogram 2 and 1 with high priority for ventilation
2. High ventilation in connection with cooling
3. Low ventilation in connection with low outdoor air temperature
4. **Low air humidity**
5. **High air humidity**
6. User program 2
7. User program 1
8. CO_2 level (accessory)
9. Manually set values
10. Week program

Settings active cooling

Depending on architecture, the dwelling may require cooling in the summer. Compact P has an integral heat pump, primarily used for production of domestic hot water. The heat pump has a reversible cooling cycle, and in summer is able to cool the supply air, while still producing domestic hot water. Thus, in principle, this gives "free" domestic hot water heating.

The heat pump is able to cool the supply air by up to 10 °C and, in order to make it as efficient as possible, it is a good idea to turn up the ventilation when cooling is required.

However, it must be emphasised that it does not function like a conventional air conditioning unit. Instead, by cooling the supply air, the indoor air is dehumidified, thus giving a pleasant indoor climate even when indoor temperatures are high.

Active cooling settings		
↳ Allow active cooling	Settings: Standard setting: Description:	On / Off Off With this it is possible to select or deselect active cooling via the heat pump.
↳ Setpoint active cooling	Settings: Standard setting: Description:	20 ↔ 35°C 26°C This indicates the desired temperature at which active cooling is to start and stop again when the temperature falls below.
↳ High fan speed when cooling	Settings: Standard setting: Description:	On / Off Off This indicates whether it is wished to raise the ventilation level when the unit switches to cooling. NB: The ventilation level is already raised in the case of bypass cooling and cooling recovery, and not just in the case of active cooling.
↳ Fan speed when cooling	Settings: Standard setting: Description:	Level 3 / Level 4 Level 3 This indicates at what fan speed level the unit is to run in cooling operation. Requires that "High fan speed when cooling" is activated.
↳ Minimum cooling supply temp. (°C)	Settings: Standard setting: Description:	5 ↔ 30°C 5°C Here the minimum supply air temperature is set for the unit during cooling mode.
↳ Cooling priority to hot water	Settings: Standard setting: Description:	On / Off Off This indicates whether the cooling function is to have a higher priority than production of domestic hot water*.

*When domestic hot water is needed, the heat pump will run at a higher level, and cannot simultaneously perform active cooling during that period. However, it will open the bypass damper if cooling is required.

By choosing cooling to have a higher priority than hot water, the unit will cool the supply air and store the heat in the hot water tank during that period. The domestic hot water will be heated, but not as quickly as usual in normal domestic hot water production.

Prioritisation sequence in the control system:

1. User selection 2 and 1 with high priority for ventilation
2. **High ventilation in connection with cooling**
3. Low ventilation in connection with low outdoor air temperature
4. Low air humidity
5. High air humidity
6. User selection 2
7. User selection 1
8. CO_2 level (accessory)
9. Manually set values
10. Week program

Ventilation at times of low outdoor air temperature

It is possible to prevent low humidity in the home by reducing ventilation in case of low outdoor temperatures. This function is particularly useful in countries with heavy frosts and at high altitudes where the outdoor air is very dry.

The function can also be used if no after-heating element has been fitted, and the supply air feels too cold in case of low outdoor air temperature. Lower ventilation levels will increase temperature efficiency and thus raise the supply air temperature slightly.

The Compact P heat pump is able to heat supply air up to 34 °C in periods where no domestic hot water is produced.

Ventilation

Low outdoor temperature settings		
↳ Low fan speed at low outdoor temp.	Settings: Standard setting: Description:	On / Off Off This indicates whether it is wished to operate at low fan speed in case of low outdoor temperature.
↳ Below outdoor temperature (°C)	Settings: Standard setting: Description:	-20 ↔ 10 °C 0 °C This indicates the outdoor temperature at which it is wished to start the low fan speed.
↳ Fan speed	Settings: Standard setting: Description:	Level 1/ Level 2 Level 1 This indicates at what fan speed the unit should run in case of low outdoor temperatures.

Prioritisation sequence in the control system:

1. User selection 2 and 1 with high priority for ventilation
2. High ventilation in connection with cooling
3. **Low ventilation in connection with low outdoor air temperature**
4. Low air humidity
5. High air humidity
6. Userprogram 2
7. Userprogram 1
8. $CO2_2$ level (accessory)
9. Manually set values
10. Weekprogram

CO_2 control

ATTENTION
A CO_2 sensor is not standard in all units, but may be purchased as an accessory.

If the occupancy varies greatly, it may be better to control ventilation by the CO_2-level in the extract air. This function is often used in offices and schools where loadings vary greatly during the day and from week to week.

Ventilation

CO2 settings		
↳ CO2 level, fan speed level 2	Settings: Standard setting: Description:	400 ↔ 800 ppm 600 ppm This shows the minimum CO_2-level at which the unit is to switch to fan speed level 2. At the lowest CO_2-level, the unit runs at fan speed level 1.
↳ CO2 level, fan speed level 3	Settings: Standard setting: Description:	800 ↔ 1200 ppm 1000 ppm This shows the minimum CO_2-level at which the unit is to switch to fan speed level 3.
↳ CO2 level, fan speed level 4	Settings: Standard setting: Description:	1200 ↔ 1600 ppm 1400 ppm This shows the minimum CO_2-level at which the unit is to switch to fan speed level 4.

Prioritisation sequence in the control system:

1. Userprogram 2 and 1 with high priority for ventilation
2. High ventilation in connection with cooling
3. Low ventilation in connection with low outdoor air temperature
4. Low air humidity
5. High air humidity
6. Userprogram 2
7. Userprogram 1
8. **CO_2 level (accessory)**
9. Manually set values
10. Weekprogram

Reading off temperatures

Here readings can be taken from all temperature sensors.

Ventilation

Temperature sensor overview		
↳ TExt room temperature (°C)	Description:	Indicates the room temperature measured by an external room sensor (only if connected).
↳ Temperature sensor status	Description:	Indicates whether sensor is in working order (OK / Error / Absent).
↳ Offset (°C)	Description:	It is possible to adjust the sensor if it shows the wrong temperature.
↳ T1 outdoor temperature (°C)	Description:	Shows current outdoor temperature, unless an external pre-heating element has been installed.
↳ T2 supply air temperature (°C)	Description:	Shows current supply air temperature, unless an after-heating element has been installed.
↳ T3 extract air temperature (°C)	Description:	Shows current room temperature measured by the extract air.
↳ T4 discharge air after heat exchanger (°C)	Description:	Shows current temperature after counterflow heat exchanger and before the heat pump.
↳ T5 condenser temperature (°C)	Description:	Shows current condenser temperature (heating).
↳ T6 evaporator temperature (°C)	Description:	Shows current evaporator temperature (heating).
↳ T7 supply air after-heating element (°C)	Description:	Shows current supply air temperature after installation of after-heating element. Shown only if an after-heating element is installed.
↳ T8 outdoor air temperature before preheating element (°C)	Description:	If an external pre-heating element is installed, the temperature sensor must be placed before this so that the unit can be controlled by the outdoor temperatures. Only shown if a T8 temperature sensor is installed.
↳ T9 temperature in the after-heating element (°C)	Description:	Shows current temperature in the water after-heating element. Used for frost protection of water after-heating element. When the temperature in the water after-heating element falls to between 10°C and 5°C, a 0-10V signal is sent to the mixing valve, which allows hot water to enter and attempts to maintain min. 10°C. If the temperature in the water after-heating element falls below 2°C, the unit stops and displays an alarm: Frost in heating element.

Domestic hot water

DHW standby function

It is possible to set the hot water production on standby for a period between 1 and 180 days. In this way, energy for heating the domestic hot water can be saved when on vacation, or the holiday cabin is closed for the winter.

The ventilation section continues operation at the set values.

Domestic hot water production

DHW hot water tank		
↳ Standby function		
↳ Standby hot water production	Settings: Standard setting: Description:	On / Off Off Enables the standby of domestic hot water production.
↳ Standby period (days)	Settings: Standard setting: Description:	1 ↔ 180 days 7 days Indicates the number of days for which hot water production is to be suspended.

DHW settings domestic hot water production

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

Domestic hot water production

DHW hot water tank		
↳ Settings hot water production		
↳ Hot water set point (°C)	Settings: Standard setting: Description:	10 ↔ 60 °C 45 °C Here the desired temperature for the domestic hot water is indicated. Can also be set on the front of the control panel.
↳ Frost protection water tank (°C)	Settings: Standard setting: Description:	On / Off Off On activating the frost protection, supplementary electric heating is switched on at a tank temperature < 4 °C (T11 or T12) and turns off again at a tank temperature > 6 °C (T11 and T12). Frost protection will work even if supplementary electric heater is not activated.
↳ Electric heating activates below (°C)	Settings: Standard setting: Description:	30 ↔ 65 °C 40 °C This setting will operate independently of the set point for the hot water. Here the temperature is indicated to which the supplementary electric heating will help to heat up the domestic hot water. It is controlled by the T11 temperature sensor at the top. For instance, if many guests are staying in the weekend, it may be beneficial to turn up the supplementary electric heating to ensure sufficient hot water for showers. **NB! Requires the supplement electrical heater to be activated.**
↳ Max. water temperature T11 (°C)	Settings: Standard setting: Description:	40 ↔ 80 °C 60 °C This setting will operate independently of the set point for the hot water. When Compact P for example, ventilates with active cooling, the heat is deposited in the hot water tank. The temperature in the hot water tank may thus increase up to 80 °C. If no anti-scald device is fitted under the tank, this setting must not be set higher that 65 °C, to avoid scalding. If an anti-scald device is fitted under the tank, it will be advisable to change the setting to 80 °C, to increase the cooling capacity.
↳ Supplementary electric heating	Settings: Standard setting: Description:	On / Off Off Here it is selected whether supplementary electric heating is required or not. Frost protection will work even if supplementary electric heating is de-activated.

DHW anti-legionella

The control system has an integral anti-legionella function for treatment of any legionella in the hot water tank.

Domestic hot water production

DHW hot water tank		
↳ Anti-legionella settings		
↳ Start function manually	Settings: Standard setting: Description:	On / Off Off It is possible to start the anti-legionella function manually when necessary.
↳ Automatic anti-legionella	Settings: Standard setting: Description:	Off / Week / Month Off Here it is selected whether automatic legionella prevention is required or not, and if so, whether it is to be carried out weekly or monthly.
↳ Selection of day of week for anti-legionella	Settings: Standard setting: Description:	Mon / Tue / Wed / Thu / Fri / Sat / Sun Fri If Week is chosen, a selection is made here of the day of the week on which the anti-legionella function is to run.
↳ Selecting day for anti-legionella	Settings: Standard setting: Description:	1 - 28 5 (Day) If Month is chosen, a selection is made here of which day of the month on which the anti-legionella function is to run.
↳ Time of day for anti-legionella	Settings: Standard setting: Description:	0 - 23 15 (hour of day) Here it is selected in which hour of the day the anti-legionella function is to start.

DHW reading of temperatures

Here the temperature sensors in the hot water tank can be read of.

Domestic hot water production

DHW hot water tank		
↳ Temperature overview		
↳ T11 top temperature hot water tank (°C)	Description:	Shows the temperature at the top of the hot water tank.
↳ Temperature sensor status	Description:	Indicates whether the sensor is in working order (OK / Error / Absent).
↳ Offset (°C)	Description:	It is possible to adjust the sensor if it shows the wrong temperature.
↳ T12 bottom temperature hot water tank (°C)	Description:	Shows the temperature at the bottom of the hot water tank.

General settings

Display settings

The brigtness of the display can be adjusted. It is also possible to set the display to shut down at a set time to save energy.

Display settings		
↳ Brightness (%)	Settings: Standard setting: Description:	0 ↔ 100 % 100 % The brightness of the display can be set here.
↳ Standby settings	Settings: Standard setting: Description:	Off / 5 / 10 / 30 / 60 minutes 5 minutes It is possible to have the display to go into sleep mode after a while. The display panel is reactivated by touching the screen.

Week program

It is possible to program the unit to run in accordance with specific settings at fixed times of the week via a week program.

General settings

Week program		
↳ List of week programs	Description:	This shows a list of week programs.
↳ Add a new week program	Description:	Press to add a new week program.
↳ Start time	Settings: Standard setting: Description:	Hours and minutes 0:00 Set the time of day at which the program is to start. The program will continue until the next change in the week program.
↳ Program setting	Settings: Standard setting: Description:	Auto / Night setback / Fans only / Hot water off Auto Here the program is selected which it is wished to run. **Auto:** Runs in accordance with the set values. **Night setback:** Reduces the desired room temperature by the offset for night setback. **Fans only:** Setting of fan speed level. **Hot water off:** Ceases production of domestic hot water.
↳ Setpoint room temperature (°C)	Settings: Standard setting: Description:	5 - 40°C 20°C Here the desired room temperature is set.
↳ Setpoint hot water (°C)	Settings: Standard setting: Description:	10 - 65°C 50°C Here the desired temperature for the domestic hot water is set.
↳ Fan speed level	Settings: Standard setting: Description:	Level 1 / Level 2 / Level 3 / Level 4 Level 1 Here the desired ventilation level is selected.
↳ Select weekday	Settings: Standard setting: Description:	Mon / Tue / Wed / Thu / Fri / Sat / Sun Here the day or days of the week are selected to which the program will apply.
↳ Delete or correct the week program	Description:	This is selected if it is wished to correct or delete an existing week program.

Prioritisation sequence in the control system:

1. User selection 2 and 1 with high priority for ventilation
2. High ventilation in connection with cooling
3. Low ventilation in connection with low outdoor air temperature
4. Low air humidity
5. High air humidity
6. User selection 2
7. User selection 1
8. CO_2 level (accessory)
9. Manually set values
10. **Week program**

Information

Event log

Warnings, alarms or changes to settings can all be read off in the event log. It is also possible to reset warnings and alarms in this menu.

Information

Event log		
↳ See events	Description:	Pressing this shows a list of events, warnings and alarms.
↳ Information about event	Description:	Press on an event and further information about it will appear. It is possible to approve the event by pressing "Approve event". It is possible to read off the unit's status and settings at the time of the event by pressing "Log data".
↳ Approve all events	Description:	Pressing this approves all alarms and warnings.
↳ Sort event log	Settings: Standard setting: Description:	Latest / Oldest / Master / Slave / > ID / < ID Latest Here it is possible to change the sequence in the event log. **Latest**: This shows the latest first. **Oldest**: This shows the oldest first. **Master**: This shows the events for the Master circuit board. **Slave**: This shows the events for the Slave circuit board. **ID >**: Sorted by ID rising **ID <**: Sorted by ID falling.
↳ Show only non-approved events	Settings: Standard setting: Description:	On/Off Off When this function is activated, only non-approved events are shown under the menu item "Review events".

Read data for ventilation and domestic hot water

It is possible to read off current data for Compact P ventilation and domestic hot water.

Information

Compact P all device data		
↳ Software version	Description:	Shows the installed software version.
↳ Product	Description:	Shows the name of the product for which the software has been set.
↳ Operating state	Description:	Shows the operating settings under which the unit is working.
↳ Supply air fan	Description:	Shows the supply air fan's speed as %.
↳ Extract air fan	Description:	Shows the extract air fan's speed as %.
↳ Bypass damper	Description:	Shows whether the bypass damper is open or closed.
↳ Days outdoor air filter used	Description:	Shows number of days since last filter change.
↳ Days extract air filter used	Description:	Shows number of days since last filter change.
↳ After-heating element	Description:	Shows the capacity at which the after-heating element is running (only if installed).
↳ Compressor state	Description:	Shows whether the compressor is running or not.
↳ Frost protection pre-heater	Description:	Shows the capacity at which the pre-heating element is running (Polar version only).
↳ Current air humidity	Description:	Shows the current air humidity measured in the home.
↳ Average air humidity	Description:	Shows the average air humidity calculated over the last 24 hours.
↳ CO2 level	Description:	Shows the current CO_2 level (only if installed).
↳ Fire alarm	Description:	Shows whether the fire alarm is activated or deactivated.
↳ User selection 1	Description:	Shows whether user selection program 1 is activated.
↳ User selection 2	Description:	Shows whether user selection program 2 is activated.
↳ User selection 2 output	Description:	Shows whether user selection program 2 is active.
↳ Allow external cooling	Description:	Shows whether external cooling is activated.
↳ Allow external heating	Description:	Shows whether external heating is activated.
↳ Anti-legionella	Description:	Shows whether anti-legionella function is activated.
↳ Heat pump high pressure alarm	Description:	Shows whether there is a high pressure alarm in the heat pump system.
↳ Sacrificial anode hot water tank	Description:	This must possibly be replaced if faulty.
↳ Electrical supplement hot water tank	Description:	Shows whether the supplementary electric heating is active.
↳ De-icing heat exchanger	Description:	Shows whether the de-icing function for the heat exchanger is active.
↳ De-icing heat pump	Description:	Shows whether the de-icing function for the heat pump is active.
↳ Four-way valve	Description:	Shows whether the four-way valve is open or closed.
↳ Alarm	Description:	Shows whether there are active alarms.
↳ Blocking heating or cooling	Description:	Shows whether heating or cooling is blocked or not.
↳ Brine pressure switch BAH	Description:	Indicates whether the brine circuit is in working order. Only with BAH solution.
↳ Heat valve	Description:	Shows whether the heat pump is heating the supply air (Open).
↳ Hot water valve	Description:	Shows whether the heat pump is producing domestic hot water (Open).
↳ Setpoint desired room temperature	Description:	Shows the setpoint for the desired room temperature.
↳ TExt room temperature	Description:	Shows the temperature in the control panel.

↳ T1 Outdoor temperature	Description:	Shows the outdoor temperature.
↳ T2 supply air temperature	Description:	Shows the supply air temperature without after-heating element.
↳ T3 extract air temperature	Description:	Shows the room temperature.
↳ T4 extract air temp. heat exchanger	Description:	Shows the discharge air temperature after the heat exchanger.
↳ T5 extract air temp. heat pump	Description:	Shows the discharge air temperature after the heat pump.
↳ T6 Evaporator temperature	Description:	Shows the temperature in the heat pump's evaporator.
↳ T7 supply air temp. after-heater	Description:	Shows the supply air temperature after the after-heating element.
↳ T8 outdoor temp. before pre-heater	Description:	Shows the outdoor temperature before the pre-heating element.
↳ T9 temp. in water after-heater	Description:	Shows the temperature in the water after-heating element.
↳ T11 top temp. in water tank	Description:	Shows the top temperature in the hot water tank.
↳ T12 bottom temp. in water tank	Description:	Shows the bottom temperature in the hot water tank.

Troubleshooting

Alarm lists

Alarm list, ventilation and domestic hot water

The first column in the event log shows whether it is master (M) or slave (3) that the event is applicable to.

The following list applies to the Compact P (M) and the events are divided into the following categories:

Info	Information	Normal operation is unaffected and no information is shown on the display.
⚠	Warning	Operation continues but something is no longer functioning optimally.
⚠	Alarm	Operation is either partially or completely suspended, as a serious error is present which requires immediate attention.

ID	Type	Display tekst	Description/cause	Rectification of error
01	**Info**	Unit start up	Ventilation has started	
02	**Info**	Unit has stopped	Ventilation has stopped	
05	⚠	Error in realtime database (RTDB)	Different software on circuit board and control panel	Check that the correct software is installed. If necessary, update sofware and perform a dip-switch 1 reset. *NB: Note fan settings, as these will have be be reconfigured after reset.*
07	⚠	Outdoor air filter must be changed	The outdoor air filter is dirty and unit performance has declined	Change the outdoor air filter and reset the timer.
08	⚠	Extract air filter must be changed	The extract air filter is dirty and unit performance has declined	Change the extract air filter and reset the timer.
12	⚠	Safety active for electric after-heating element	Overheating protection on electrical after-heating element has been activated	Check if there is sufficient airflow over the heating element.
14	⚠	Risk of ice in the water after-heating element	Temperature of the water after-heating element (T9) is below 2 °C	Check if there is sufficient airflow in the duct and water flow in the heating element.
15	⚠	Increased risk of ice in the water after-heating element	Frost thermostat on water after-heating element has been actuated for more than 5 minutes	Check if there is sufficient airflow in the duct and water flow in the heating element.
16	⚠	High risk of ice in the water after-heating element	Frost thermostat on water after-heating element has been actuated for less than 5 minutes	Check if there is sufficient airflow in the duct and water flow in the heating element.
18	⚠	Too many compressor starts (hour)	The compressor has been started too many times (12 times/hour)	Adjust "Time between compressor start ups" and "Minimum off time compressor".
19	⚠	Software initialisation failure	Initialisation error on software	Contact Service. Error on connection to outdoor unit.
21	⚠	Fire input activated	Fire input has been activated	When there is no longer any activation of the fire input, the event may be approved, and the unit started up again within a brief period. NB: If "Auto reset for external fire alarm" has been activated, the alarm will automatically disappear when the fire input is no longer activated.

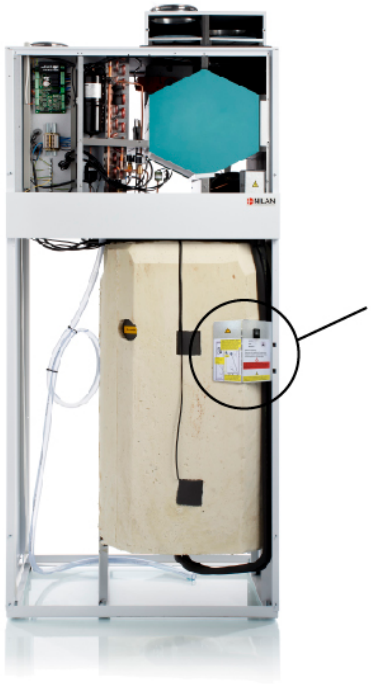
24	Info	Too long start-up of a function	Software error	Turn the unit off and on again. If the error reoccurs, contact the installer.
28	Info	Slave device connected	A new slave device has been connected	
31		Failure in de-icing	De-icing error (2 hours)	Check counterflow heat exchanger. If necessary, remove and thaw under a shower.
41		Frost protection hot water tank active	Frost protection of DHW hot water tank has been active	
44		Failure on anode in domestic hot water tank	Error in the DHW hot water tank anode	Replace anode and check anode monitoring.
45	Info	Start anti legionella	Anti legionella function for DHW hot water tank has started	
46		Failure in anti legionella function	The anti-legionella function in the DHW hot water tank could not be completed after 20 attempts, or the maximum period of 5 hours has passed	Adjust time before startup to e.g. night so there is enough time to restart the anti-legionella function.
47		Heat pump de-icing failure	Error on heat pump de-icing	Check that T6 de-icing has been activated.
49		Compressor high pressure alarm	Compressor is showing a high pressure alarm	Check that there is sufficient airflow over the condenser and water in the hot water tank. Check that the outdoor air temperature is not over 45°C.
62		Database error		Contact installer.
65		Changed type of slave device	Type of slave device has been changed	Check dip-switch settings.
69		Leaking brine circuit BAH solution	There is a leak in the brine circuit of the BAH solution	Repair the brine circuit on the BAH solution.
75		Sensor fault	There is an error on one or more sensors	Check the sensors by reading off data under Information.
80		Too low temperature in the evaporator	The evaporater element has been too cold (<-20 °C)	Check airflow over the evaporator. Check that the filters are clean and there is free passage in the air intake.
81	Info	Electric supplement heater in hot water tank is on	Electric supplement heater in the DHW tank has been turned on	
82	Info	Electric supplement heater in hot water tank is off	Electric supplement heater in the DHW tank has been turned off	
85		Slave SW not the same as master	Software version for slave unit is not the same as on the master	Update software so that both are running the same version.
86		Slave RTDB not the same as master	Slave RTDB version is not the same as master	Update software so that both are running the same version.

Emergency operation

Emergency operation domestic hot water

If an error occurs in the controller or components in the Compact P, and the unit therefore stops, it will not be able to produce domestic hot water.

If the installer is not able to come right away or the error happens outside the opening hours, and you therefore cannot contact the installer, there is a possibility to get hot water by setting the unit into emergency mode.



The button for the emergency operation are located behind the large door

The emergency operation has three settings:

I - Auto: El-supplementation is controlled by the control in the unit (standard setting)

0 - Off: El-supplementation is off and cannot be turned on again by the control in the unit

II - Manuel: El-supplementation is turned on, and cannot be turned off by the control in the unit (Don ´t turn it on if there is no water in the tank)

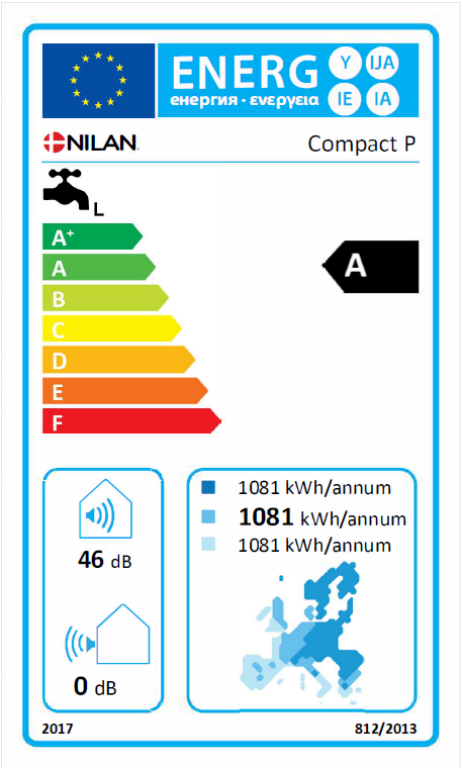
CAUTION
In manual operation, the water temperature can achieve 75 °C, which can cause scalding, if you are not careful when you open the hot water.

Technical data

Ecodesign data

Hot water production

Consumer profile, water heater	L (large)
Energy efficiency class	A
Energy efficiency for water heating - average climate	94 %
Annual electricity consumption - average climate	1081 kWh/annum
Temperature settings on the thermostat	10 - 65 °C
Sound power level LWA	57 dB(A)
The water heater can function outside peak load periods (Smart-grid)	No
Guidelines for assembly, installation and maintenance	See installation instructions
Energy efficiency for water heating - cold climate	94 %
Energy efficiency for water heating - warm climate	94 %
Annual electricity production - cold climate	1081 kWh/annum
Annual electricity production - cold climate	1081 kWh/annum



CE declaration

Compact P / Compact P Polar

NILAN
OUTSTANDING INDOOR CLIMATE

EU/EC Declaration of Conformity

For the CE-marking inside the European Union

Nilan A/S

We declare that the Ventilation and Air to Air/Water Heat Pump

Compact P – Compact P Polar

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) 812 / 2013
EN 60335-2-80	EN 50581	(EU) 814 / 2013
EN 13141-7	EN 14511	EN 9614-2
	EN 5136	EN16147

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