



Nilan Compact P, QuickStart and basic functions

The Nilan Compact P ventilates your home and should remain on 24hrs, 7 days a week. Turning it off will not only cease a supply of fresh air, it will also cease to generate Hot Water and control space heating. This QuickStart guide does not take the place of the Nilan User or Software Manuals.

The Nilan Compact P is primarily Mechanical Ventilation with Heat Recovery (MVHR)

MVHR means that fresh air is constantly taken into the building via the vent outside and inserted into Living rooms and Bedrooms, opposite to this the stale air from Kitchens/Bathrooms/Stores is constantly being exhausted and returned outside.

In an MVHR unit these two air streams do not mix but pass by each other through a series of plastic fins within the heat exchanger (green hexagon below). As heat will always move from Hot to Cold, about 80% of the thermal energy in the air that is leaving the home “jumps” across these fins to warm up the incoming air. Meaning that approximately 80% of the internal energy is maintained within the home.

This shortfall of 20% in thermal energy is made up primarily with the glazing/solar gain and backed up by an auxiliary heat source (in this case electrically operated radiators). Your Nilan Compact P will automatically turn on your radiators if the extract air temperature falls below the desired setpoint temperature (usually 20°C) and then turn them off again when the setpoint has been met.

The unique aspect of the “Nilan Compact P” is that the last 20% of unrecoverable energy within the heat recovery unit is utilised to evaporate a refrigerant gas. That gas is then compressed into a liquid and by doing so the temperature increases. It is that high temperature liquid that heats your Hot Water cylinder on a CONSTANT basis.

Turning your ventilation off will stop hot water production.

This system is not dissimilar to the technology found in a domestic fridge, but the process is reversed. This is commonly known as an Exhaust Air Heat Pump.

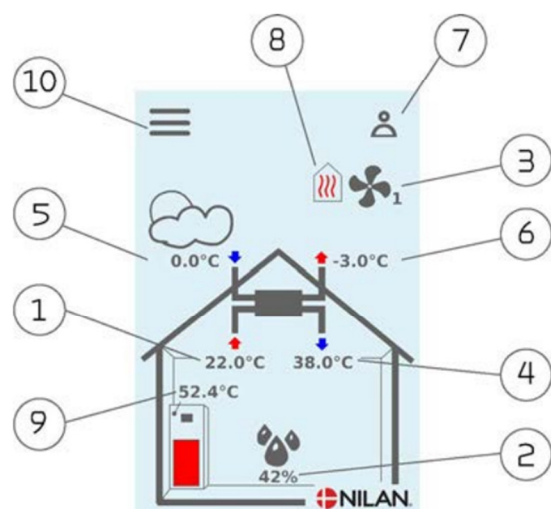


User panel

Functions in the user panel

Main screen elements

The main screen of the HMI user panel contains the settings options and the information that an operator mostly uses.



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

Menu icons



Stop icon

Indicates that the unit is off



User selection icon

Indicates that the user selection function is active



Week program icon

Indicates that the week program function is active



Alarm icon

Is displayed during alarms or warnings

Operation icons



Compressor icon

Indicates that the compressor is active



Heating icon

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



Cooling icon

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



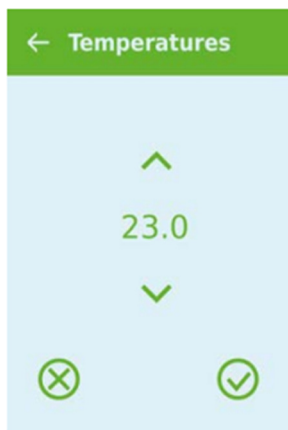
Domestic hot water icon

Appears when the unit produces hot water. Lightning is displayed when the power supply is active



De-icing icon

Appears when the heat pump defrosts



Setting the desired Temperature (SetPoint)

On the Main screen, tap close to icon 1 or 4. And it will take you to the temperature screen. The temperature selected here is known as the **Setpoint**. The suggested design temperature is 20°C, however there is no problem in making the setpoint higher or lower.

Setting the desired Fan speed

On the Main screen tap on icon 3 and it will take you to the ventilation screen. Set the ventilation speed to 3 and the system will adjust if there is a need for additional ventilation due to high humidity or reduced ventilation for times of low humidity.

Fan speeds have been set during commissioning for the following scenarios

- Fan speed 1 (trickle in times of little or no occupancy)
- Fan Speed 2 (Minimal ventilation or intermittent use)
- Fan speed 3 (Everyday use)
- Fan speed 4 (High occupancy)



Domestic Hot Water Set point

On the Main screen tap on icon 9 and it will take you to the domestic hot water temperature screen.

Set the temperature to the desired value. Usually around 45DegC for average usage household and increase accordingly for a higher usage household.

If the hot water temperature is set higher then less heat will be available for space heating. Your heat pump is approximately 3 times more efficient than your radiators, therefore it is 3 times cheaper to operate.

It should also be noted during space Active Heating or Active Cooling, higher hot water temperatures will be achieved which is normal in these conditions.

Additional Settings/Considerations



To enter the settings menu, tap on icon 10 from the Main screen. Use the up and down arrows to scroll through the options and tap the screen on the desired option.



Domestic Hot water (DHW)

To save energy, set the DHW temperature as low as possible while still providing sufficient hot water. The DHW is created as previously described using an Exhaust Air Heat Pump, this works by a Coefficient of Performance of 3:1. Meaning for every 3 parts of thermal energy produced, 1-part electrical energy is used. The Compact P will replenish the hot water tank daily. Should a hot water tap be left running by accident there is an immersion heater built in to boost the hot water, be sure to set the hot water temp back to normal so as to not leave the immersion running and using electricity.

For example:

A Hot water cylinder at 45°C the tank can provide 180L of 40°C water.

A Hot water cylinder at 50°C it will deliver about 220L of 40°C water.

Note: Your Compact P will boost hot water to over 60°C automatically once a week to protect against Legionella, regardless of what the hot water cylinder temperature set point is.

Domestic Hot water (DHW), Electrical supplementary.

There is an electrical supplementary heating element within the hot water cylinder similar to an old Immersion Heater. Its primary function is to boost the temperature above 60°C once a week to protect against Legionella bacteria, during commissioning this has been activated for you.

The Electrical supplementary can also be used in the event of expected High usage whereby it will help the Heat pump satisfy a greater demand for hot water. Be sure to turn off when not required as this will consume electricity. (During commissioning the supplementary heating element is activated and set at 35C which means it's only activating when hot water falls below 35C)

Active Heating



Active heating occurs automatically when the Domestic hot water desired temperature has been achieved. This means that the supply air temperature will be warmed by the Exhaust Air Heat Pump, however on colder days solar gain and electrical supplementary radiators will operate to maintain that required temperature in your home. It should be noted that high temp (i.e. above 20°C) will cause supplementary heater be operate for longer period of time and will increase your energy consumption.

Cooling (Summer Time Bypass & Active Cooling)

Summertime bypass occurs automatically when the heat exchanger stops trying to warm up the incoming fresh air with the outgoing stale air. Instead filtered Fresh Air will be taken directly to the rooms, bypassing the heat exchanger (Note: this will not affect Hot Water production).

In the settings menu you will find an option for Cooling. Use the options here to activate the active cooling. It will have been set at Setpoint+5. This means that cooling will be activated once the stale air from the wet rooms rises 5°C above the setpoint temperature. For example if the home owner has the internal temperature set to 19°C, Active Cooling will be activated once the stale air from the wet rooms rises above 24°C. To activate Cooling sooner select a lower number after the setpoint in Cooling settings. In Active Cooling the ventilation level will have been set at level 4 and will automatically rise. This can also be changed, but higher fan speeds are recommended whilst active cooling is operational.

Remember, Active cooling consumes additional electricity so minimising its usage is recommended.

As previously described, low energy buildings require only a trickle of additional thermal energy, in the same way the Active Cooling is only a trickle of energy being removed – it is not an Air Conditioning device and will not offset persistent solar gain.

Summer Purge ventilation

It is a miss conception you cannot open windows. In summertime opening windows is beneficial to control overheating. In winter the ventilation system has been sized so that it is not necessary to open windows. However, feel free to open windows in the wintertime if cooler air is desired locally without reducing the overall temperature of the property.

Overview to the 4 Main operating modes of the Nilan Compact P



Ventilation

- DHW is produced as previously described on a constant basis.
- Your DHW boosts once a week to protect for Legionella
- The Compact P is set up to make DHW a priority
- After the DHW set point temperature has been satisfied (No9 on previous page), that energy will be diverted to the supply air going to the rooms. This is called Active Heating.
- Active heating is not designed to heat your home on the coldest days of the year, it is there only to lessen the use of the radiators.



Domestic Hot Water (DHW)

- DHW is produced as previously described on a constant basis. Turning your ventilation off completely will mean that no hot water is being generated.
- Your DHW boosts once a week to protect for Legionella
- The Compact P is set up to make DHW a priority
- After the DHW set point temperature has been satisfied (Icon No9), that energy will be diverted to the supply air going to the rooms. This is called Active Heating.



Summertime bypass & Active Cooling

- Summertime bypass occurs automatically, this is when the incoming air temperature already exceeds that of the air leaving the building. Thus the MVHR knows not to try and recover any energy and sends the outside air directly to the supply rooms.
- Active cooling is a second stage event that is automatically set to come on when the stale air temperature exceeds the Setpoint internal Air by 5 degrees. This is known as "Setpoint+5" within the settings, feel free to set your own Setpoint.
- Fan speeds can automatically change in Active Cooling mode.
- Active Cooling uses the refrigeration process to chill the supply air going to the rooms.
- Active Cooling IS NOT Air Conditioning
- By setting the desired room temperature to a very low level will activate cooling, however it will not deliver that temperature to the rooms, Temperature sensors are inside the Compact P and not in the rooms.
- Active cooling (and Active Heating) reflects very small amounts of energy taken from (or delivered to) the supply air.
- Window shading and opening provide the most efficient method of cooling. The active cooling is supplementary to this
- Active cooling consumes additional electricity



Active Heating

- After the DHW set point temperature has been satisfied, that energy will be diverted to the supply air going to the Bedrooms and Living rooms.
- Active heating will not initiate if the DESIRED supply temperature (icon 4) has already been achieved.
- By changing the supply air temperature to something unattainably warm (say 30 degrees) will not mean that your home will get to this temperature, it only means the Compact P will be left in a steady state always working to achieve this temperature. (Excessively high temperature setting will also activate supplementary electrical heaters for longer period resulting in higher-than-normal energy costs)
- Only when the return air temperature from the kitchens, bathroom (otherwise average house temperature) etc. reaches the setpoint will the active heating and radiators be turned off.

Service Agreements

Your Heat Recovery Ventilation system is provided by **www.nilan.green**

Service agreements are recommended and can be sought by emailing **service@nilan.green**

Please note that a service agreement can only be taken out when there is a stable internet connection.

A service agreement will provide you with

- Extended warranty to up to 4 years for Parts and Labour
 - (Current manufacturers spare parts warranty is 12month from move in date and does not include consumables necessary for servicing i.e., filters etc.)
- Annual onsite inspection to include
 - Fitting new filters
 - Annual Heat pump health check
 - Heat exchanger and filter box cleaning
- Further optimisation of the system after the first year to better suit your lifestyle.
- Remote diagnostics and monitoring by Nilan staff via a stable internet connection.

Frequently Asked Questions

1. **Can I open my windows** – yes you can
2. **Will windows affect the mechanical ventilation of my home** - No
3. **Are filters available for Pollen** – yes, please contact service@nilan.green
4. **How does excess humidity be dealt with?** – The Compact P has an in-built humidity sensor and will boost ventilation accordingly.
5. **Upstairs is too warm whilst downstairs is not warm enough** – In a low energy home the upstairs will have all walls and ceiling highly insulated, so the rising heat is contained more effectively. Locally turn off the individual radiators in the bedrooms at the fuse spur on the wall whilst keeping on the fuse spurs in the rooms where you require a higher temperature. Then increase the house temperature tapping the around icon 1 or 4. Keep internal doors closed on first floor where possible to prevent rising heat entering rooms from ground floor.

For more detailed information, the user manual can be downloaded from the main www.nilan.dk website or scan the QR code here to take you straight there.



Steps to cleaning filters

It is recommended that filters are cleaned and reinserted quarterly.

A timer alarm is set to remind you to clean your filters every 90 days. This is denoted on the main screen

Turn off you Nilan by entering the main menu (icon 10). Toggle on to off, once you hear the fans slow down and stop, remove the filter box door. Only remove filter door when this icon is displayed.



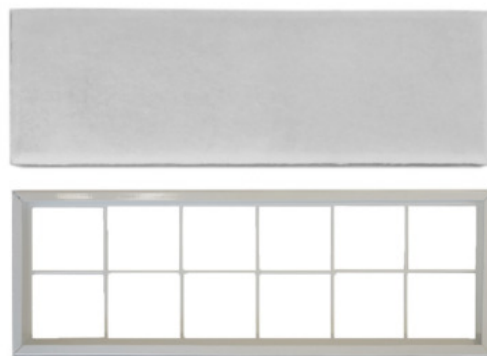
Slide out the filter trays, making sure debris does not fall down into the heat exchanger. It is perfectly normal for incoming filter to be very dirty.



Vacuum any debris that may have not been picked up by the filter trays.



Remove the filter material from their trays. Wash in a basin of water or in a cool cycle of a washing machine and dry.



Once dried, place the filter material back in their trays.



Once held in place by the tray edges, slide them back into the filter box, screw door closed and turn on again.

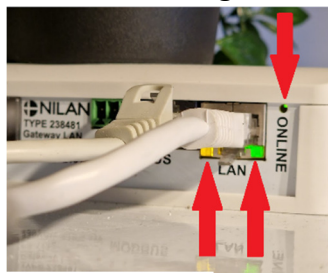


Setting up the Nilan App

<div data-bbox="118 165 255 309" data-label="Image"> </div> <div data-bbox="277 174 499 255" data-label="Text"> <p>Nilan User App LS Control A/S</p> </div> <div data-bbox="153 329 517 638" data-label="List-Group"> <ol style="list-style-type: none"> 1. Download the Nilan App from Google Play or Apple App store and locate the LAN gateway device on top of the Filter box. </div> <div data-bbox="536 347 791 560" data-label="Image"> </div>	<div data-bbox="855 150 1112 551" data-label="List-Group"> <ol style="list-style-type: none"> 2. In the App, enter the Device ID – a 12 digit number found on the top of the LAN gateway device. </div> <div data-bbox="1136 145 1497 600" data-label="Image"> </div>
<div data-bbox="153 741 429 871" data-label="List-Group"> <ol style="list-style-type: none"> 3. Enter a username email address. </div> <div data-bbox="459 696 791 1117" data-label="Image"> </div>	<div data-bbox="855 692 1123 1095" data-label="List-Group"> <ol style="list-style-type: none"> 4. A password will be generated automatically (if not, check your email inbox and retrieve from there) </div> <div data-bbox="1136 692 1497 1117" data-label="Image"> </div>
<div data-bbox="153 1126 568 1350" data-label="List-Group"> <ol style="list-style-type: none"> 5. You should then see the loading page for up to a few minutes whilst your Compact P is being located. </div> <div data-bbox="587 1126 791 1552" data-label="Image"> </div>	<div data-bbox="855 1126 1244 1258" data-label="List-Group"> <ol style="list-style-type: none"> 6. Your Nilan Compact P should now display settings. </div> <div data-bbox="1270 1126 1497 1552" data-label="Image"> </div>

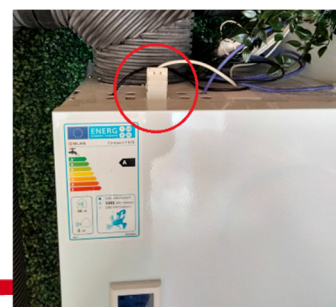
Note, you cannot turn your Compact P On and Off from the App. The Compact P should be on before you can control it with the App

Trouble shooting,



The Compact P requires a hard-wired connection from your WiFi router, once a valid internet connection has been established all 3 lights will illuminate as shown here on the left.

The LAN Gateway device is located on top of the filter box and is cabled to the 8 Pin connector on the top left hand side of the unit, circled here of in red. Make sure the 8 Pin connector is connected.



If you are still experiencing difficulty setting up the Nilan App please scan the QR code here to access the full setup guide and check your home's hardware configuration.