INSTALLATION INSTRUCTIONS

CTS700 TOUCH BY NILAN

Compact P / Compact P Polar - AIR9/AIR9+ (English)

Version 3.00 - 02.09.2020

NILAN®
OUTSTANDING INDOOR CLIMATE

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Starting the external unit

The external AIR unit is equipped with a compressor heater, which heats up the compressor prior to starting and in case of low outdoor temperatures. This facilitates start-up and extends the compressor's service life.

CAUTION
The compressor heater must be left on for a minimum of 3 hours before starting the compressor for the first time.

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.

Heat pump for central heating

CAUTION
To secure the heat pump against damages, it is fitted with the following safety equipment

- Expansion systems for central heating and buffertank
- Safety valve for central heating and buffertank
- Low and high pressure switch for compressor

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.

General information

Introduction

General information prior to installation

The following documents are supplied with the unit:

- Installation instructions
- Software instructions
- User manual
- Wiring diagram

Instructions can be downloaded from Nilan's website: https://www.nilan.dk/en-gb/frontpage/download

If you have questions regarding installation of the unit after having read the instructions, contact your nearest dealer of Nilan products. You can find Nilan dealers on www.nilan.dk/en-gb/frontpage/download/dealers.

The purpose of these instructions is to advice the installer on correct installation and maintenance of the unit.

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.

Unit type

Product description

Compact P AIR is a ventilation unit with an integral heat exchanger that also produces hot water for domestic use as well as central heating via an air/water heat pump.

Compact P is designed for air flows of up to 275 m^3/h at 100 Pa external counter-pressure. Compact P XL can handle air flows up to 430 m^3/h at 100 Pa external counter-pressure.

The ventilation part draws the humid, vitiated air out of the dwelling via the bathroom, WC, kitchen and utility room and introduces fresh air into the habitable rooms, i.e. living room, bedrooms and office. The cold outdoor air is heated up in the heat exchanger (heat recovery) by the warm extract air.

In addition to a (counterflow) heat exchanger, Compact P has an integral heat pump. The heat pump uses the heat remaining in the extracted air following heat recovery in the heat exchanger to produce hot water. In case of high hot water consumption, there is a 1.5 kW electric supplement heater in the hot water tank, which can also be used to heat the water.

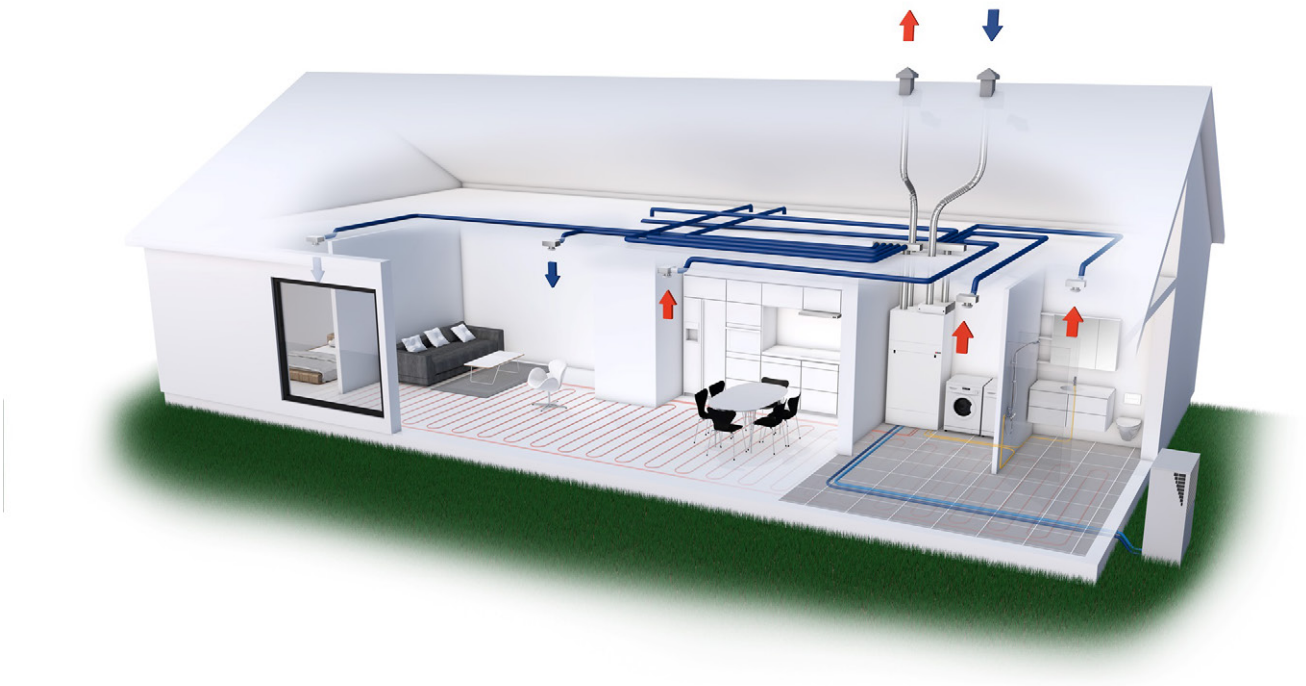
In the winter, the heat pump can be used to heat the supply air (inlet air) during periods in which no domestic hot water is being produced. The supply air can be heated to 34 °C.

As it is a reversible heat pump, it can be used in summer to cool the supply (inlet) air. Compact P is able to cool the supply air by up to 10 °C. However, it will not function as an air conditioning unit, as it operates with a relatively low air change rate. Cooling of the supply air removes humidity from the

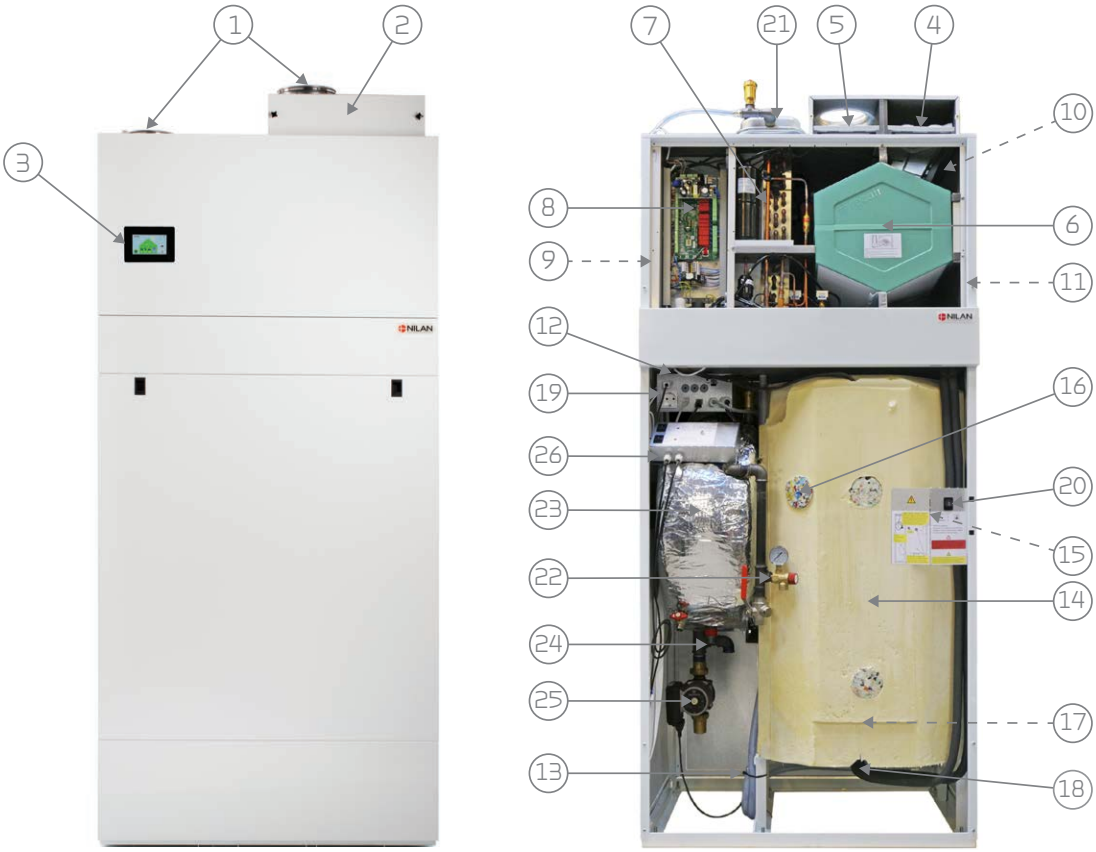
indoor air, providing good comfort for persons in the dwelling, even if the indoor temperature is high. Compact P is able both to provide cooling and produce domestic hot water, so it could be said that the cooling of the supply air is "free of charge".

The energy-efficient and low-noise AIR air/water heat pump heats the home via floor heating or low-temperature radiators. It extracts energy from the outside air and functions at temperatures as low as -22 °C. The heat pump has an electrical power supply to help it to function during very cold periods. The AIR unit has a reversible cooling circuit, which means that it can also be used to cool the home during the summer, using either the floor heating system or fan coils.

The AIR air/water heat pump can also be used to help produce hot water for domestic use, either by pre-heating the water in a buffer tank, or directly in a Compact P hot water tank, if bought with a solar coil.



The installation's internal unit



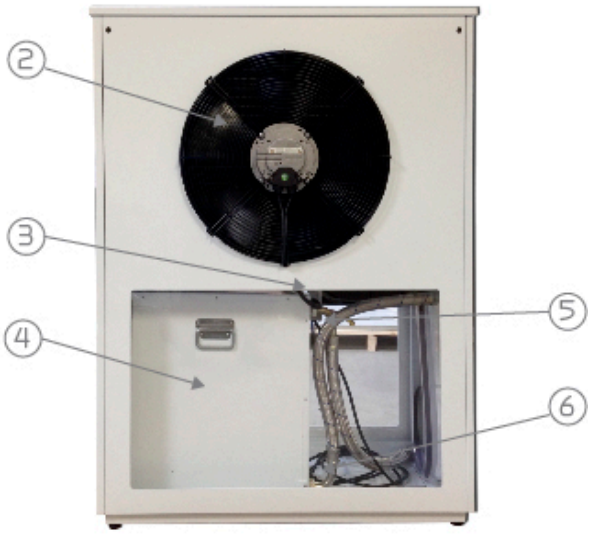
Compact P:

1. Duct connections
2. Front panel for filter changes
3. The control panel (touch-screen), can be moved out and mounted wherever you wish
4. Extract air filter
5. Outdoor air filter (pollen filter placed here if required)
6. Counterflow heat exchanger
7. Heat pump for ventilation and domestic hot water
8. Automation
9. Fans
10. 100% bypass damper
11. Pre-heating element (Polar version only)
12. LAN cable (for connection to router or PC)
13. Condensate drain with water trap
14. 180 l domestic hot water tank (DHW)
15. 1,5 kW electrical supply heating element (with overheating cut-out, which has to be pressed in again if activated)
16. Electronically monitored sacrificial anode
17. Solar coil (SOL version only)
18. Plumbing connections
19. Electrical connection panel
20. Emergency mode

AIR:

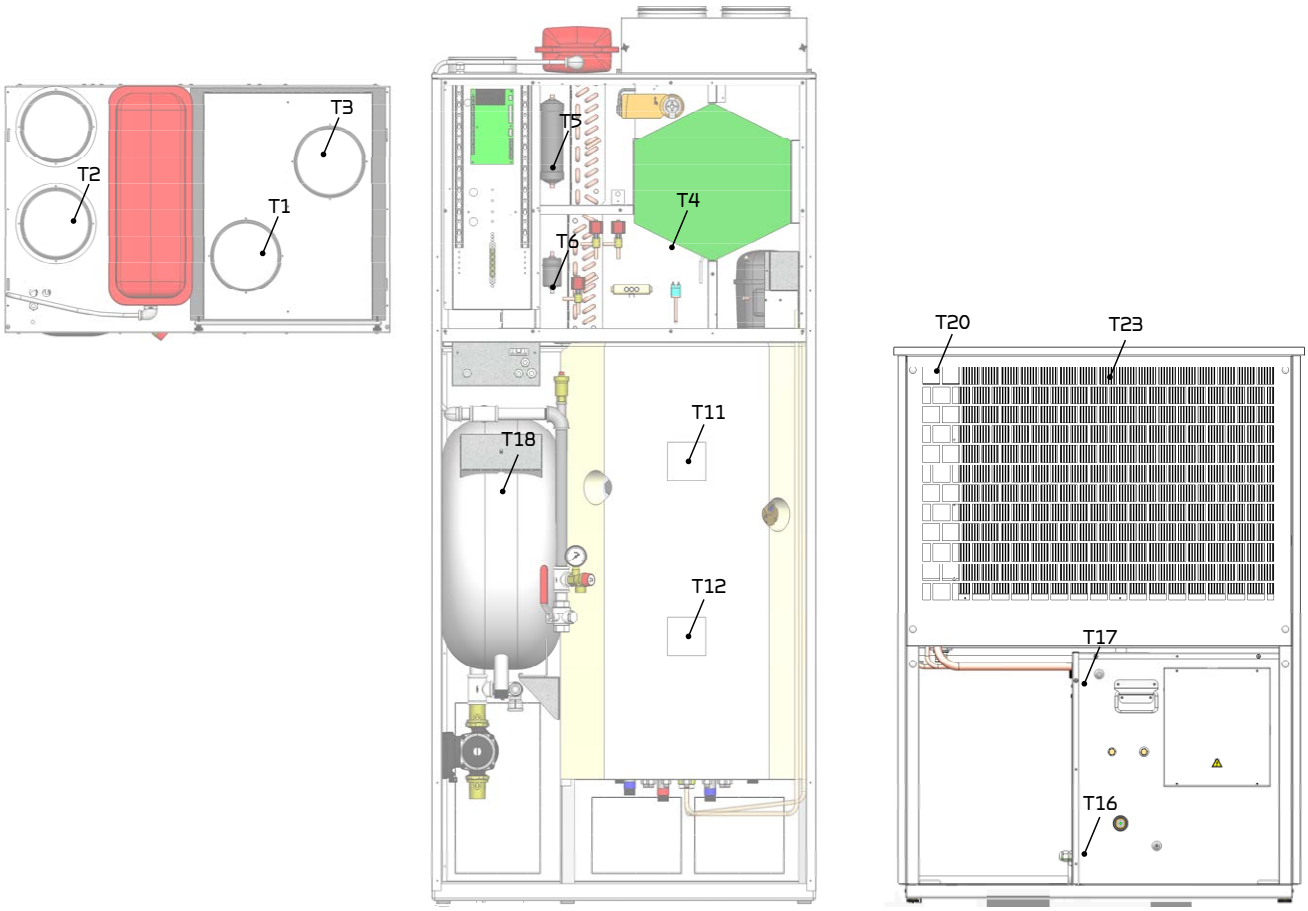
21. 8 l expansion tank for central heating circuit
22. Safety valve and manometer for the central heating circuit
23. 50 l buffer tank
24. Feed cock and particle filter for the central heating circuit
25. Circulation pump for circulation to the external unit
26. 2 x 3 kW electrical central heating top-up elements

The external unit



1. Evaporator element
2. Ventilator
3. Condensate drain with integrated heating cable
4. Heat pump
5. Connectors to internal unit (liquid)
6. Communication to internal unit and electrical connection

Overview of temperature sensors



Temperature sensors in the unit

T1: Outdoor air
T2: Supply air (inlet)
T3: Extract air (outlet)
T4: Extract air after heat exchanger
T5: Condenser
T6: Evaporator

Temperature sensors outside the unit

T7: Supply air after heating element (accessory)
T8: Outdoor air before preheating element (accessory)
T9: On heating element (accessory)
TExt: External temperature sensor (accessory)

Temperature sensors in the hot water tank

T11: Top of tank
T12: Bottom of tank

Temperature sensor in internal unit

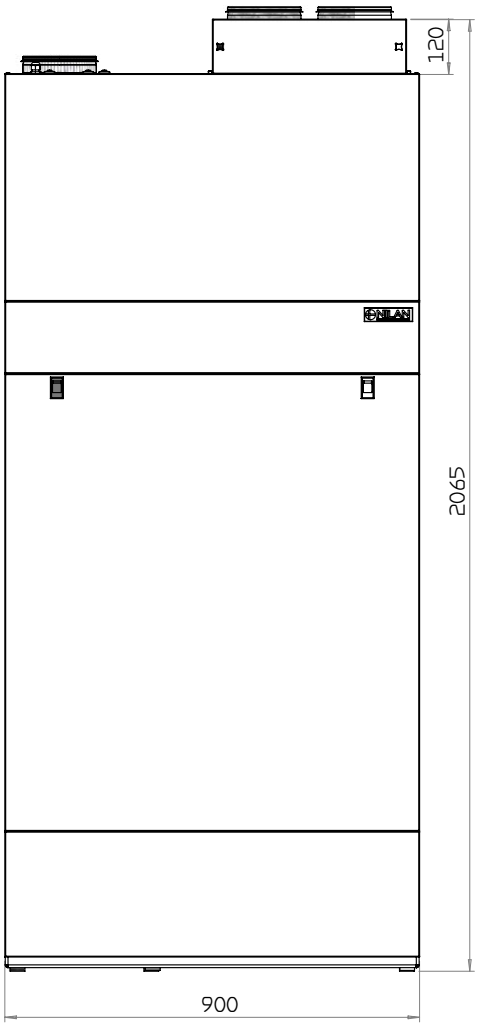
T18: Buffer tank (flow)

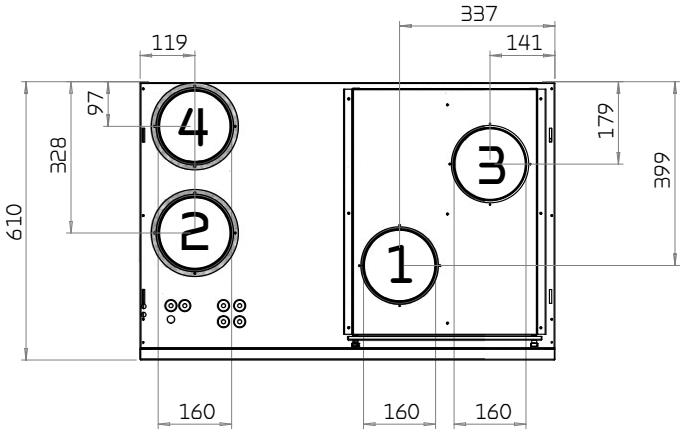
Temperature sensor in external unit

T16: Before condenser (to external unit)
T17: After condenser (from external unit)
T20: Outdoor temperature
T23: Evaporator surface

Dimensional drawing

Internal unit:





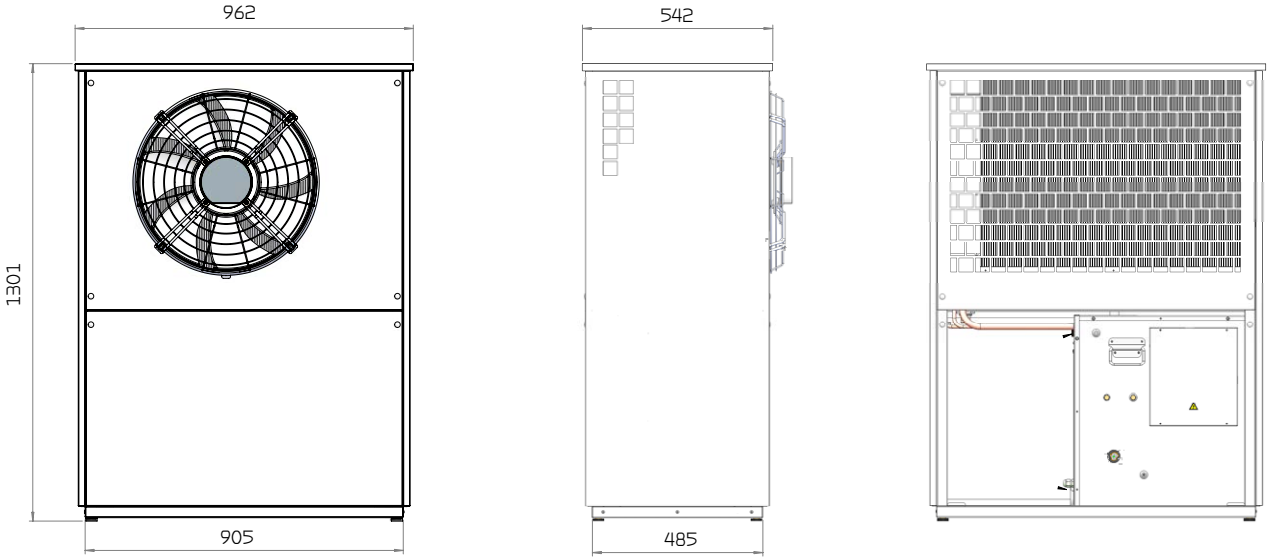
Connections:

1. Outdoor air
2. Supply air (inlet)
3. Extract air (outlet)
4. Discharge air

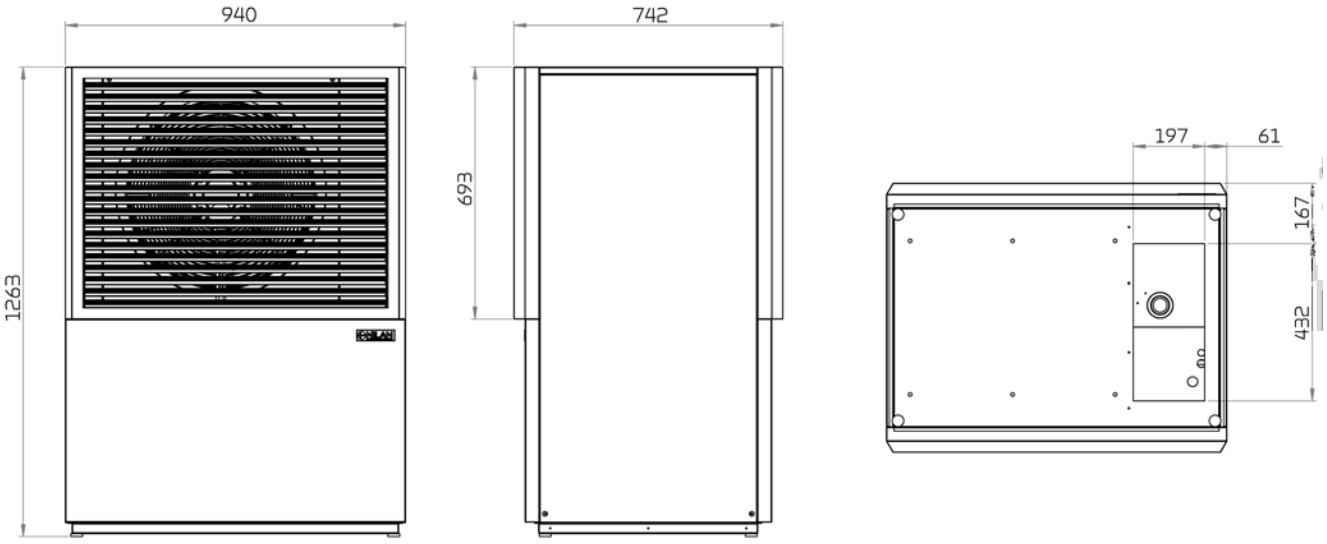
Internal unit weight: 257 kg
External unit weight AIR9: 125 kg
External unit weight AIR9+: 165 kg

All dimensions are in mm

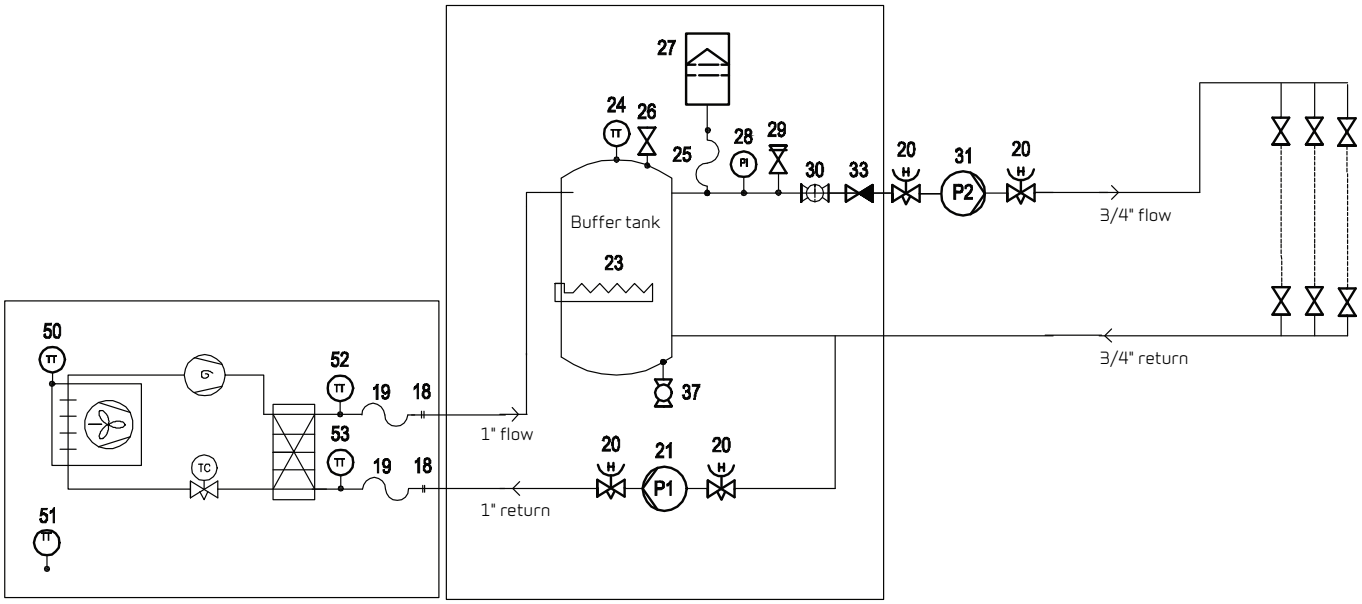
External unit AIR9



External unit AIR9+



Pipe diagram



18. Connection 1"
19. Flexible hose 1"
20. Shutoff valve
21. P1 circulation pump 130 mm
23. Electrical supply heating 2 x 3 kW
24. Temperature sensor T18 buffer tank (flow)
25. Flexible hose 10 mm
26. Automatic vent 3/8"
27. Expansion tank 8 litre
28. Manometer
29. Safety valve 2.5 bar
30. Shutoff valve with particle filter
31. P2 circulation pump
33. Check valve 3/4"
37. Feed tap 1/2"
50. Temperature sensor T23 evaporator element
51. Temperature sensor T20 outdoor temperature
52. Temperature sensor T17 after condenser
53. Temperature sensor T16 before condenser

Accessories

Electrical pre-heating element for frost protection

In longer periods of sub-zero temperatures, the high-efficiency counterflow heat exchanger will ice up. To avoid icing, it is recommended that an electrical preheating element is mounted.

The pre-heating element uses very little energy, but it ensures efficient heat recovery without de-icing. You therefore achieve an overall reduction of energy consumption.

Pollen filter

As a standard, the unit is supplied with a plate filter.

If anyone in the household suffers from a pollen allergy, you can install a pollen filter in the outdoor air intake to minimize the proportion of pollen in the indoor air.

A pollen filter also removes approx. 50 % of harmful particles in outdoor air, so a pollen filter is recommended if you live in a large city or close to a motorway.

EM-box

With an EM box it is possible to divide the extract air between the kitchen and the bathroom.

If a cooker hood is connected to the unit and is switched on, extract air from the bathroom will be reduced slightly to allow sufficient air for the cooker hood to extract kitchen fumes.

The EM-box has a fitted metal filter that clears the air in the cooker hood of grease particles effectively, and thereby protects the unit.

CO_2-sensor

Fitting a CO2 sensor means the ventilation speed can be pre-programmed to run higher ventilation levels in the event of high CO2 level in the extracted air. CO2 levels can be programmed.

Safety group

The safety group consists of:
The safety group, which is made of brass, consists of a stop valve with an integral non-return valve, a safety valve and drain cock. It can be installed directly beneath the hot water tank.

Safety features

During periods with cooling ventilation, hot water in the tank can reach very high temperatures - up to 80 ºC.

A maximum temperature of up to 60 ºC can be set in the control system to prevent scalding, but active cooling is then limited.

To make full use of the cooling function, scalding protection should be fitted that mixes hot water with cold to bring the temperature down.

If a solar panel is used to supplement hot water heating, scalding protection must be fitted.

Flexible sound damper

To make it easy to service the unit in the future, we recommend that you fit a flexible connection between the unit and the duct system.

Nilan's flexible sound damper absorbs sounds effectively from both the duct system and from roof stacks.

Trolley

A trolley makes it possible to lift the unit of the pallet without physical strain. The same trolley can be moved to wheel the unit around.

SHW hot water tank

If there is a large demand for hot water, a 250 litre hot water tank can be connected.

The hot water tank is heated by the central heating system's heat pump and/or via solar panels.

The water runs from the SHW tank, through the DHW tank in Compact P, before running into the domestic hot water supply.

Installation

Installing the internal unit

Transport into the dwelling

Compact P is supplied in one piece on a pallet, packed in cardboard.

It is fitted at the factory with 4 lifting straps, one for each top corner. This makes it possible to lift in the unit with a crane. When lifting the units with the supplied straps, these must be at an angle of max. 45° from the vertical.

Nilan also offers a lifting trolley, with which the unit can be lifted directly off the pallet and into the building. If the filter box is removed, the unit can be manoeuvred through an ordinary door.

Positioning of unit

ATTENTION
When setting up the unit, consideration must always be given to future servicing and maintenance.

It must be easy to replace filters, and it must be possible to perform tasks such as removing the heat exchanger, replacing fans and other components.

ATTENTION
A minimum free space in front of the unit of 60 cm is recommended.

It is important that the unit is level in order to achieve proper run-off from the condensate tray.

The unit should be positioned on a level and vibration-free substrate. In itself, the unit is low-noise and low-vibration, but even so, account must be taken of possible vibrations which could be transferred to building parts. We recommend maintaining a minimum 10 mm gap from building parts and other fixed equipment.

ATTENTION
For noise reasons, it is recommended that the unit is positioned with its rear panel against an outer wall.

At the lower rear and sides there are punched areas which can be clipped out.
This avoids the necessity of cutting holes yourself.

The rear angle iron on the base frame can be removed, allowing the unit to be pushed up against the wall, thereby concealing the water connections.

ATTENTION
If a screen is mounted over the Compact P, it must be easy to dismantle this.

Installing the external unit

Installation transport of external unit

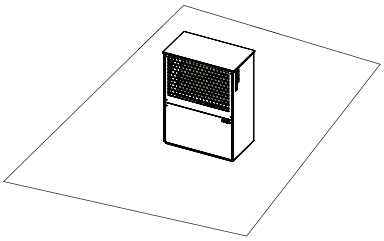
The external AIR unit is supplied film-wrapped and fastened with straps to a transport pallet.

If ground conditions allow, it is recommended that a lifting truck is used to move it.

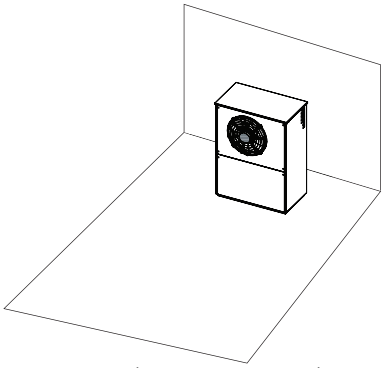
ATTENTION
If the AIR unit is lifted in using a crane, please notice that the weight is not evenly distributed at the front and back.

Sound data

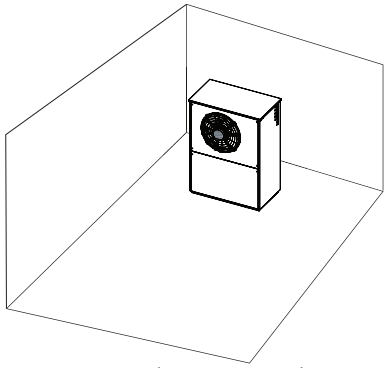
The sound from the AIR unit's external unit can be propagated depending on where it is sited relative to the building and the underlying surface, as well as on other surrounding objects and surfaces.



Q = 2 (free-standing)



Q = 4 (against a wall)



Q = 8 (in a corner)

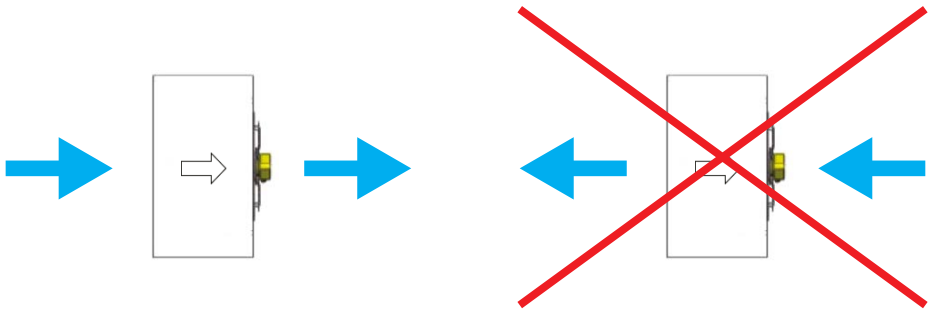
Sound effect L_{WA} dB(A) 7/6 °C - 30/35 °C = 46 db(A) in accordance with EN14511, EN12102 and EN3743/1

Sound pressure L_{pA} dB(A) calculated in accordance with EN13487:2003:

Distance in metres	1	2	6	10	21
Location factor 2	38	32	22	18	12
Location factor 4	41	35	26	21	15
Location factor 8	44	38	28	24	18

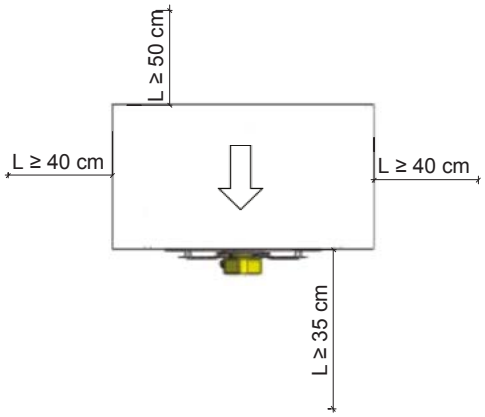
Installing the external unit

The external unit must always be installed on a firm, vertical and vibration-free surface and secured to some solid material if possible. Account must also be taken of the prevailing wind direction during the heating season, as the performance of the heat pump will be limited if the external unit is exposed to strong winds.



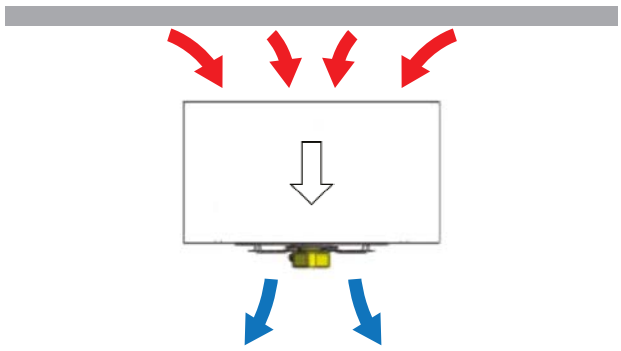
A windbreak can be installed if required. However, clearance distances as detailed below must be observed.

The following horizontal minimum distances to building components etc. must be observed in order to ensure optimum functioning of the heat pump.



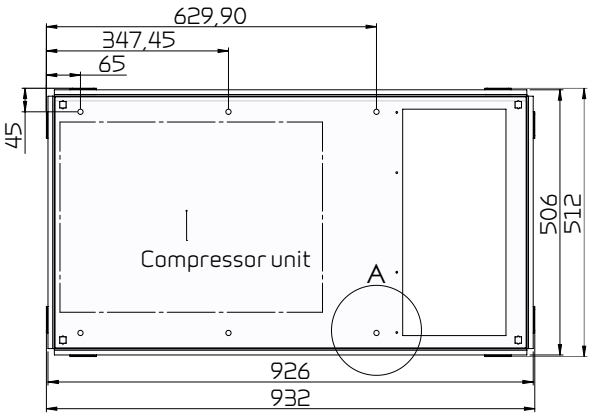
If it is desired to place the AIR up against the house, it is important that it is placed with consideration for any noise from the outdoor unit which could be bothering inside.

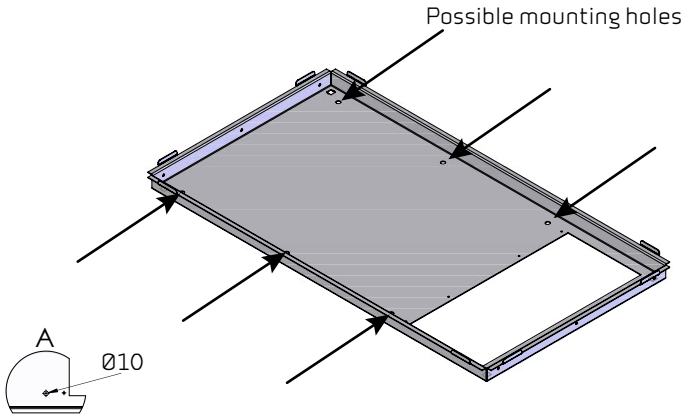
Locate the AIR unit in such a way that the intake air is drawn from the building's surface. This is because solar heating of the wall during the day and general heat loss from the building supplies additional energy to the air, which can then improve the efficiency of the heat pump. If the AIR unit is located with the extract directed at the wall, this will result in cold and damp air being blown against the building, adding extra energy to the air.



Fixing of external unit to substrate

If the outdoor unit is placed in a place with a lot of wind, e.g. on a roof, it is necessary to attach it to the substrate using the 6 pre-drilled holes in the bottom.

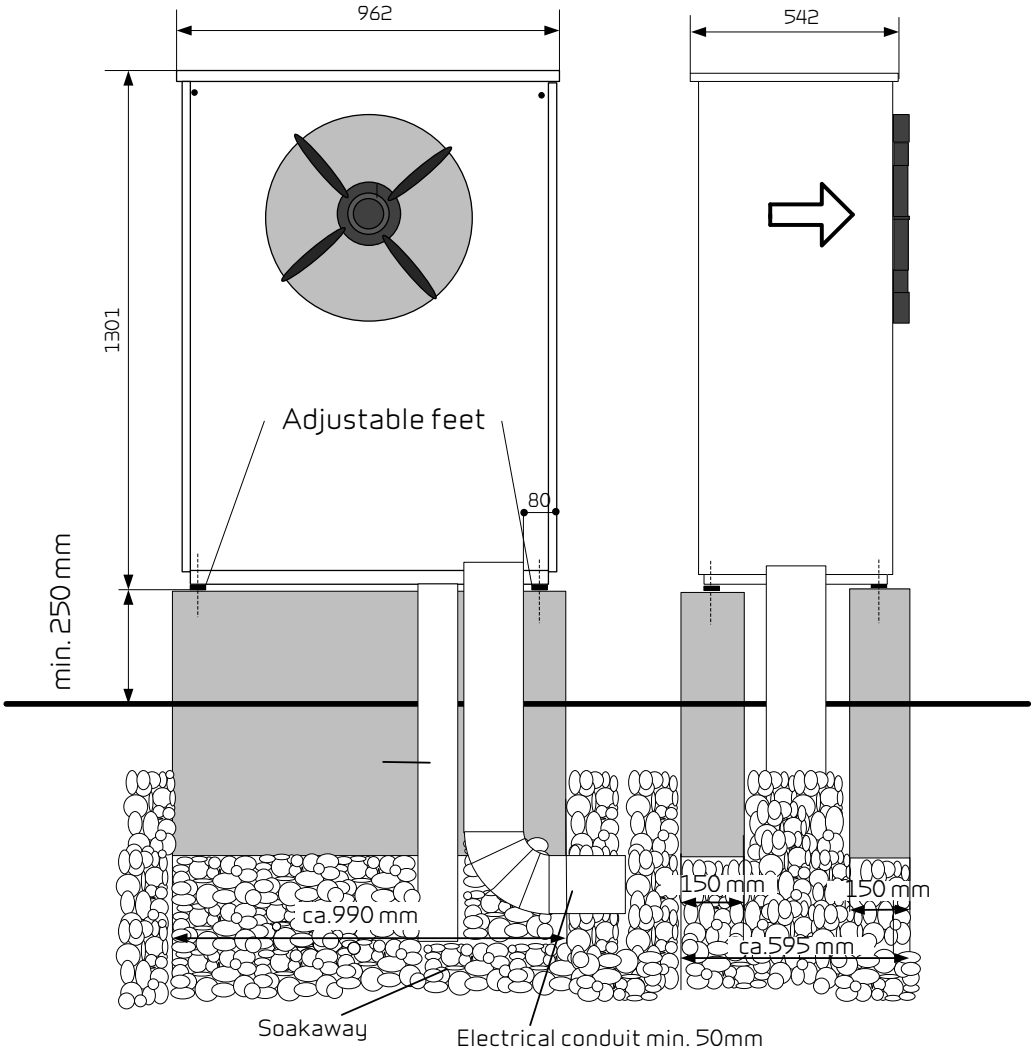




ATTENTION
The illustrations show AIR9. See the dimensional drawing for details about AIR9+.

Foundation

ATTENTION
Place the AIR unit on a stable base, ideally a cast foundation.



Condensate drain

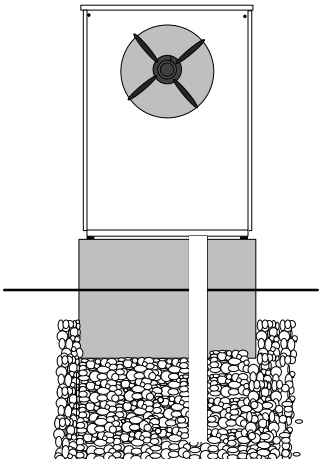
During operation, condensate will form in the external unit's evaporator, and which has to be run off to a drain. From the evaporator condensation tray is mounted a 700mm hose which is led to the drain.

The condensation drain must be insulated against frost, although a 1.5 m heating cable Ø25 / 4mm is included, which also helps to keep the condensation drain frost-free. The heating cable starts at an outdoor temperature < 2°C.

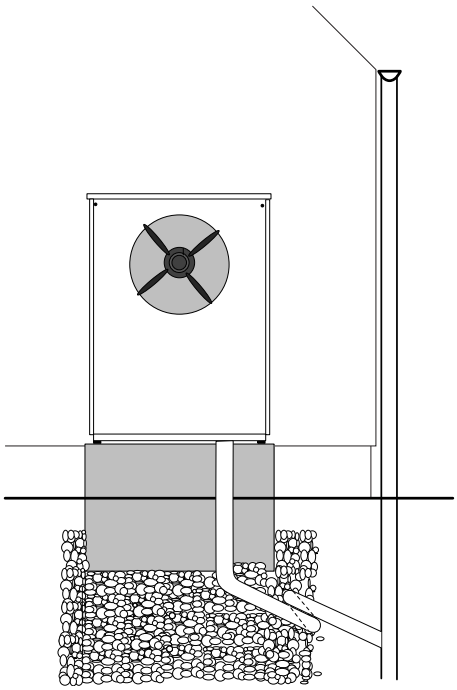
ATTENTION
The condensate must be directed away in a way that avoids damaging the building.

ATTENTION
Condensate drainage from the outdoor section must be dimensioned so that it can drain up to 6 liters / hour.

Draining the condensate off into gravel ensures that it is run off into frost-free subsoil:



If the external unit is located close to the building, the condensate can be drained into a downpipe. Remember to install a water trap:



The condensation water can be passed directly to the surface water well.

Electrical installation

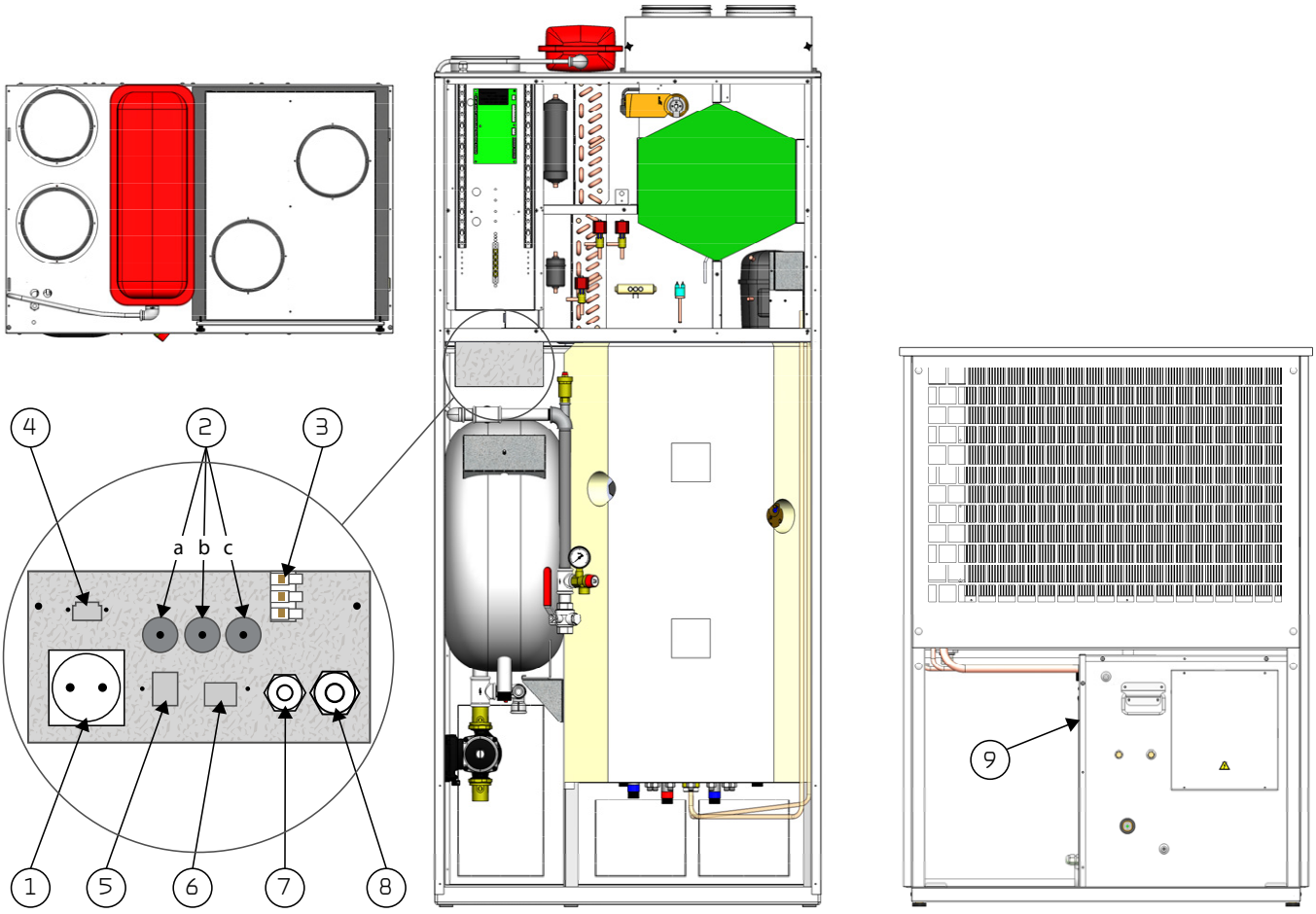
Safety

ATTENTION
All work must be carried out by qualified persons and in compliance with existing legislation and regulations.

ATTENTION
It is important that the power is off, if you do work to the electrical components of the unit.

It is important to check that wires are not damaged or squeezed during connection and use.

Connections overview



1. Power supply 230V for Compact P
2. Grommets (a: Transmission cable between internal unit and Compact P, b: Sensor T18 to buffer tank, c: 3-way valve for SHW tank)
3. Crown sleeve for heat / cooling control (HEAT + COM: heat control. COM + COOL: cooling control)
4. Signal cable to AIR heat pump external unit
5. RJ45 connector for T21, T22 and anode in SHW tank
6. Plug for additional electric heating in SHW tank
7. Power cable for additional electric heating in buffer tank
8. Electrical connection cable for AIR heat pump internal unit + Compact
9. Electrical connection for AIR heat pump external unit

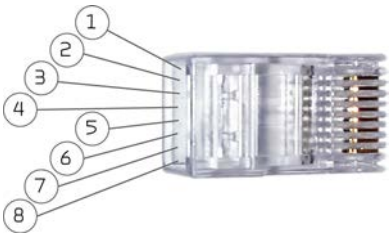
User panel

Touch panel

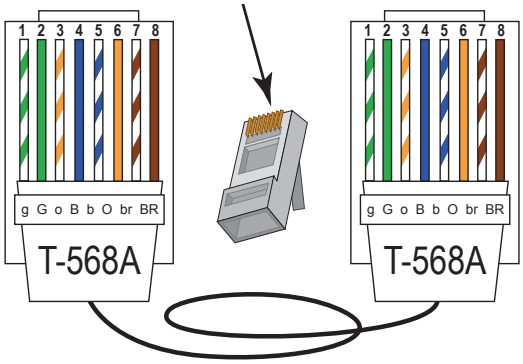
At delivery of the unit, the Touch panel is integrated in the front, but can be moved out, it you want to place it in etc. the Kitchen or living room.

ATTENTION
An ordinary Type A (T-568A) LAN cable must be used, not a crow over cable, max 20m.

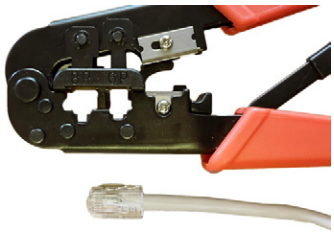
Do you want to crimp a RJ45 plug on to a cable, you must notice the following:



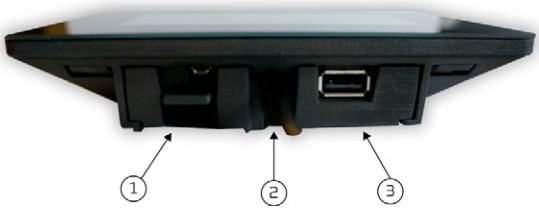
1. Green/white
2. Green
3. Orange/white
4. Empty
5. Empty
6. Orange
7. Brown/white
8. Brown



The illustration shows the clip on the back of the connector.



Use RJ45 T568 type A plug and RJ45 crimping tool.

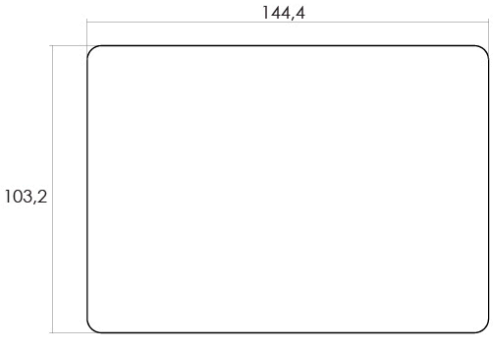


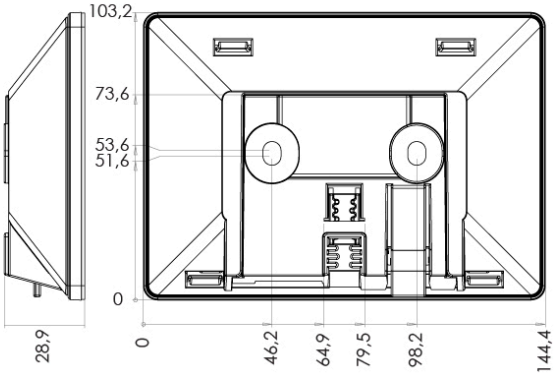
Touch panel seen from below.

1. Locking clip
2. Power connection
3. USB stick

The touch user panel should be located in a prominent place to allow changes to be made to settings and for observing operational warnings or alarms.

Dimensional drawing user panel





Placement of the Touch panel

Below is shown how the touch panel can be moved out of the unit. The following page shows how to mount the wall bracket for the Touch panel.

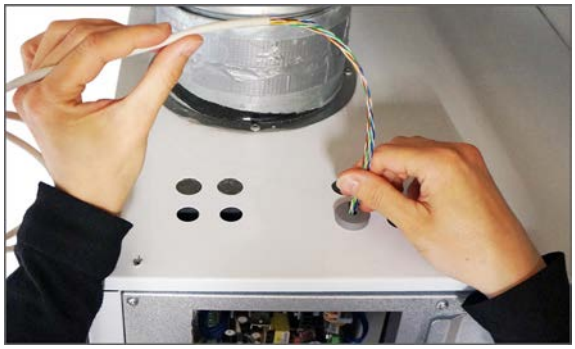
1. Unscrew the two screws at the top of the lid so it can be removed.

2. At the top is the aperture plate that is intended to block the hole when the touch panel is removed.

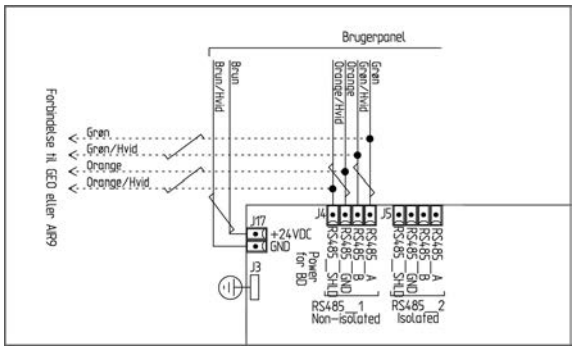
3. The Touch panel is lifted by pressing the lock clamp at the bottom.

4. Unscrew the cover and hang it next to the hole.

5. Unscrew the Touch panel wires from the circuit board, remove the wall bracket and mount it where the Touch panel is to be hung.



6. Route the wire from the Touch panel down into the Compact P, where it is connected to the circuit board.

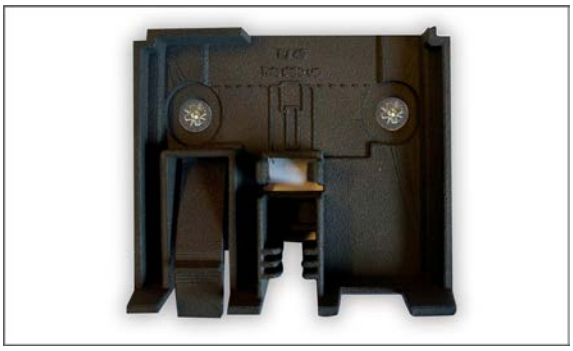


7. Connect the touch panel as shown in the above diagram, see accompanying electrical diagram. The blue and blue/white wires should not be used.

8. Fix the aperture plate to the cover in front of the circuit board. Re-attach the lid and secure with the two screws at the top, giving you a nice white surface.

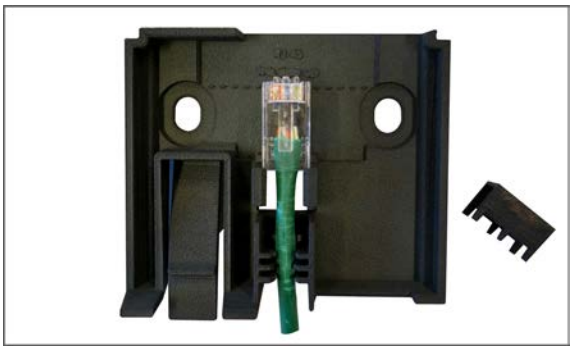
Mounting the wall bracket

The Touch panel can be mounted on the wall using the integral wall-bracket.



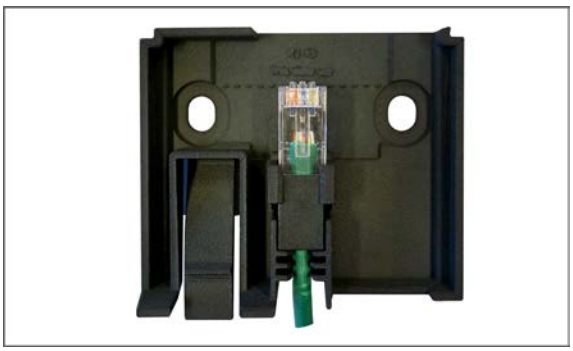
1. The wall bracket is fixed to the wall with two screws.

2.a. Insert the RJ45 plug into the wall bracket with the top of the plug aligned with the dotted line in the wall bracket, and with the RJ45 release tab facing away from the wall.

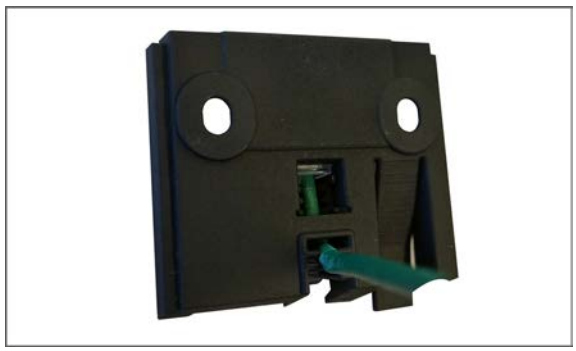


2.b. You can fit the RJ45 plug to the cable yourself. For this purpose, a spacer is supplied.

The spacer is attached to the LAN cable which is located behind the large door.



2.c. The top of the RJ45 plug must be flush with the dotted line in the wall fitting. The spacer fits between the plug and the cable relief bracket.



3. The cable may be routed down from the wall fitting or into a hole in the wall behind it.

4. Push the touch panel down over the wall bracket until a click is heard.
The panel may be removed from the wall by pressing the locking clip.

5. The touch panel is ready for use.

Electrical connection of the unit

Safety

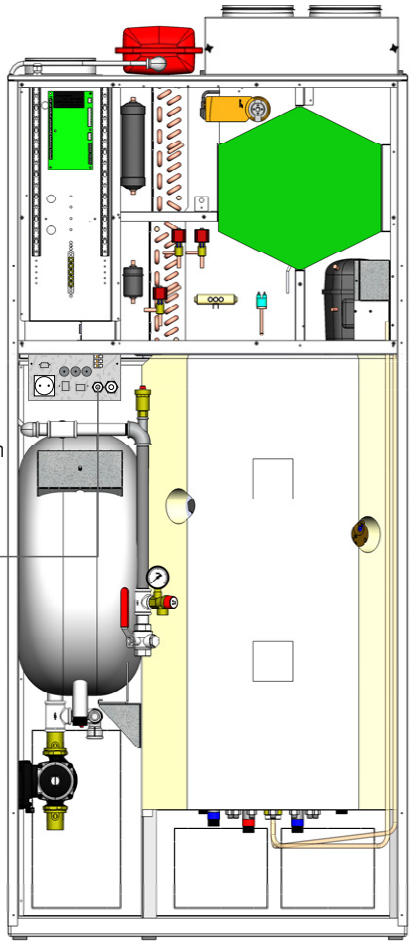
ATTENTION
All work must be carried out by qualified persons and in compliance with existing legislation and regulations.

ATTENTION
It is important that the power is off, if you do work to the electrical components of the unit.

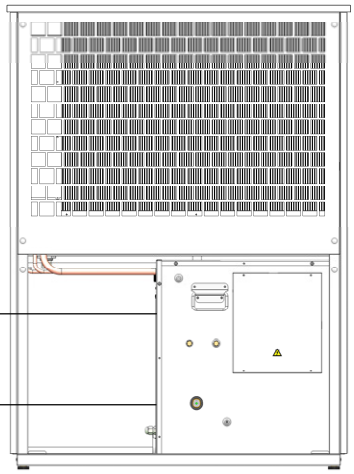
It is important to check that wires are not damaged or squeezed during connection and use.

Compact P AIR

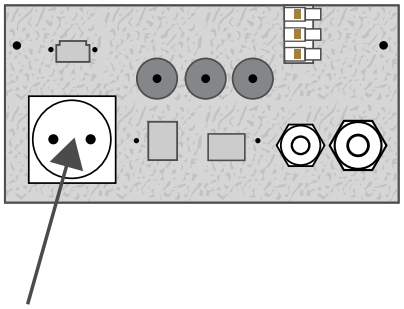
Heat pump, internal AIR unit



Heat pump, external AIR unit



ATTENTION
Due to the risk of faults caused by inductive influence, the communication cable must be routed in a separate pipe with a minimum of 100mm distance to other live cables.



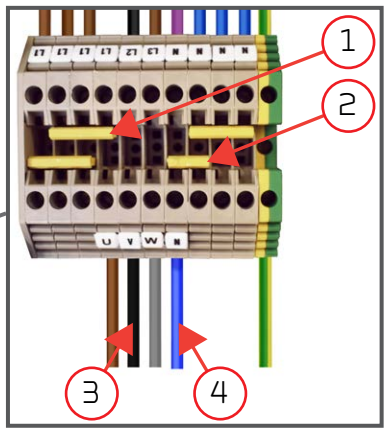
Power connection for Compact P, ventilation and hot water

This power connection via Schuko socket allows to measure the power consumption of the ventilation separately, as well as the possibility that the hot water part does not have the same connection as the heat pump.

Change from 400V to 230V

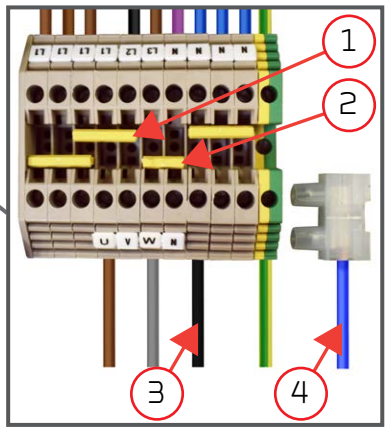
The standard connection in the unit is 3x400V + N. In those countries or areas where this standard is not applicable, the unit can easily be switched to either 3x230V or 1x230V.

The terminal block can be found in the control for AIR. Please refer to the wiring diagram enclosed with the unit.



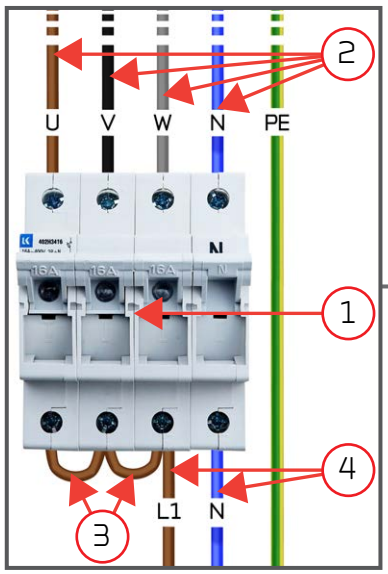
3 x 400V + N

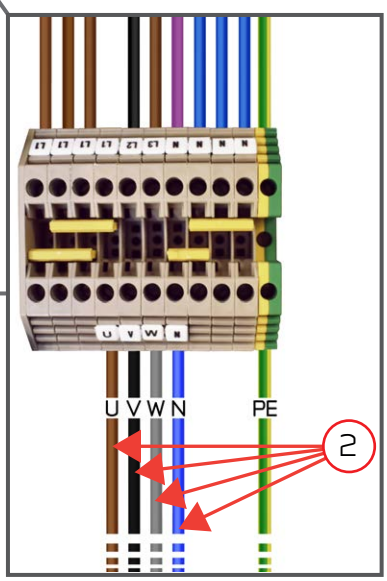
1. Jumper located in L1+L1+L1 (top clamping row)
2. Jumper located in N + zero on the right (bottom clamping row)
3. Black wire located in V (bottom clamping row)
4. Blue wire located in N (bottom clamping row)



3 x 230V

1. Jumper located in L1 + L1 + L2 (top clamping row)
2. Jumper located in W + N (bottom clamping row)
3. Black wire located in zero to the right of N (lower clamping row)
4. Blue wire disconnected and secured with crown sleeve





1 x 230V

1. In the panelboard there must be mounted a 3x16A circuit breaker.
There must be 40A available before the circuit breaker.
2. Wires are connected between the terminal block and the circuit breaker:
U = brown, V = black,
W = gray, N = blue/zero.
3. Jumpers are mounted on the access side of the circuit breaker from 1-2 and 2-3.
4. Brown (L1) is mounted in the third wire inlet. Blue/zero (N) is mounted in the fourth wire inlet.

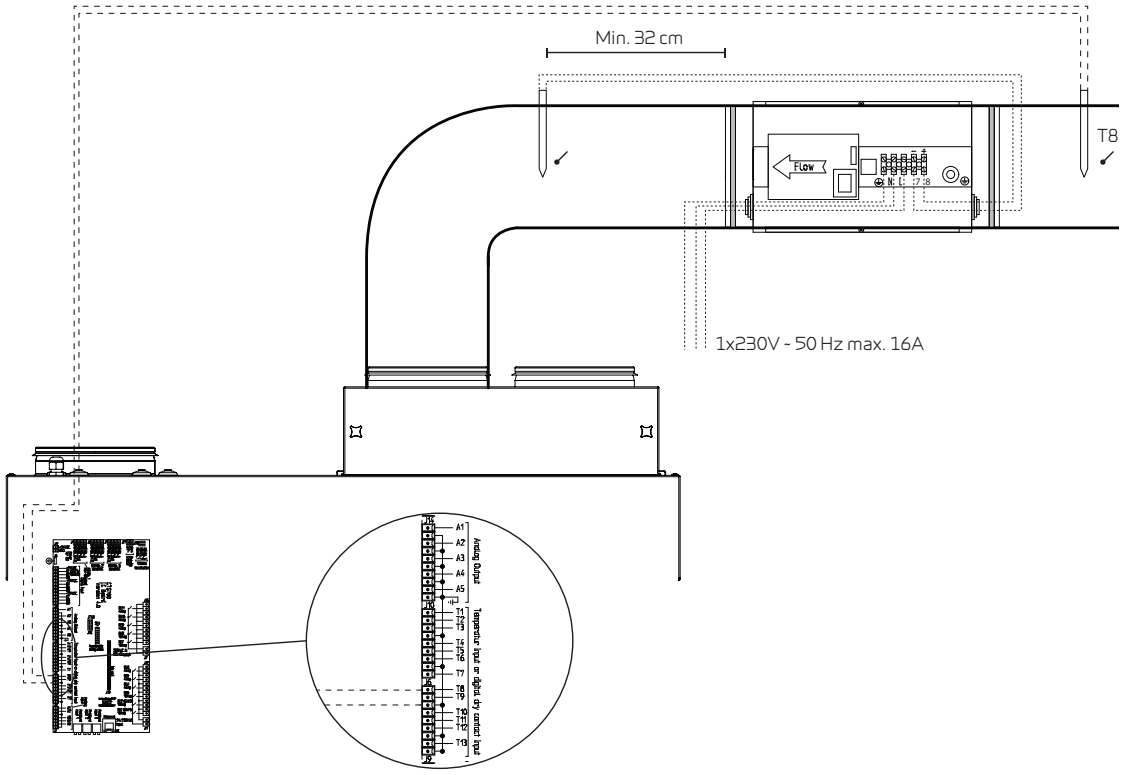
ATTENTION
The installer carries the responsibility for the electrical installation work.

Electrical connections accessories

External electrical preheating element

If Compact P has not been purchased in the Polar version with integral preheating element, there is an option for purchasing an external electrical preheating element for subsequent installation.

The electric preheating element is mounted in the outdoor air duct before the unit with the necessary temperature sensor, and connected to an external power supply.



ATTENTION
It is important that the temperature sensor for the heating element is positioned at least 32 cm after the preheating element in order to achieve correct regulation.

The T8 outdoor air temperature sensor is positioned before the external preheating element and connected to the Compact P control system, to allow it to perform regulation via the outdoor air temperature. If it is not wished to regulate the functions via the outdoor air temperature, T8 may be deactivated in the software under the frost protection section.

The pre-heating element has a three-step safety system that prevents overheating.

1. An operating thermostat regulates the heating and ensures that the supply air temperature does not fall below -1 °C
2. There is a max. thermostat, which shuts down the preheating element if the temperature rises above 50 °C (For vertical mounting with airflow downwards, the preheating surface will switch off at 70 ° C).
3. A safety thermostat switches off the pre-heating element if the temperature exceeds 100 °C. Then, you must reset it manually.
4. Minimum air volume at Ø160. 110 m3/h

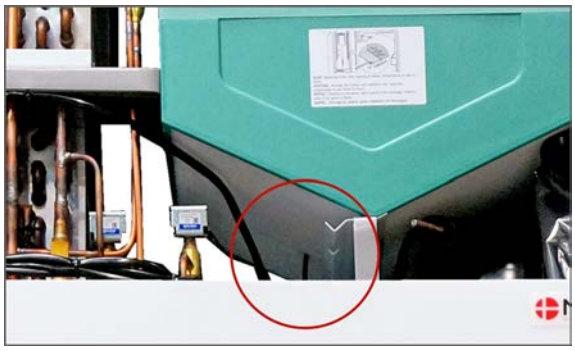
ATTENTION
When mounting the electric preheating element, there must be a safety gap of minimum 15 cm from any flammable material. The heating element must be insulated with a fire retardant insulation material. The cover of the connection box, however, must not be insulated.

The CO_2 sensor

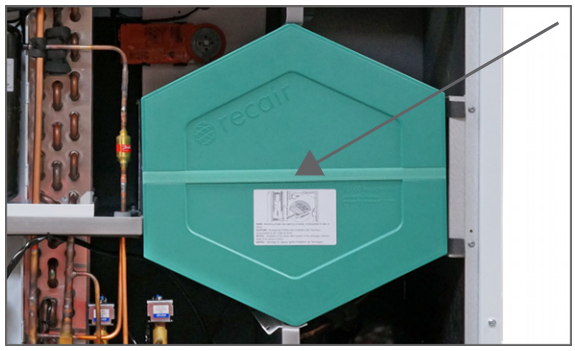
You can purchase a CO_2 sensor as an accessory if you want to control the fan speed level in accordance with the CO_2 level in the dwelling.

CAUTION
Always disconnect the power supply to the unit before opening its doors or working on its electrical installations.

The T3 sensor is factory installed (in the extract air). The CO_2 sensor is to be mounted in the unit as follows:



1. Remove the T4 sensor in the heat exchanger.



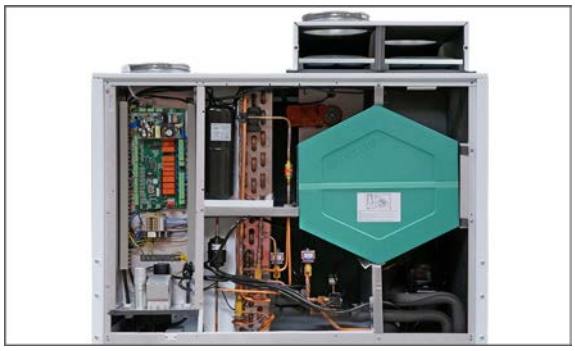
2. Remove the heat exchange by pulling the strap (do nut cut).

3. Pierce a hole into the foam over the crossbar, (where the heat exchanger is positioned) to gain access to the recess in the top cover.

4. Run the wire from the CO_2 sensor through this recess.

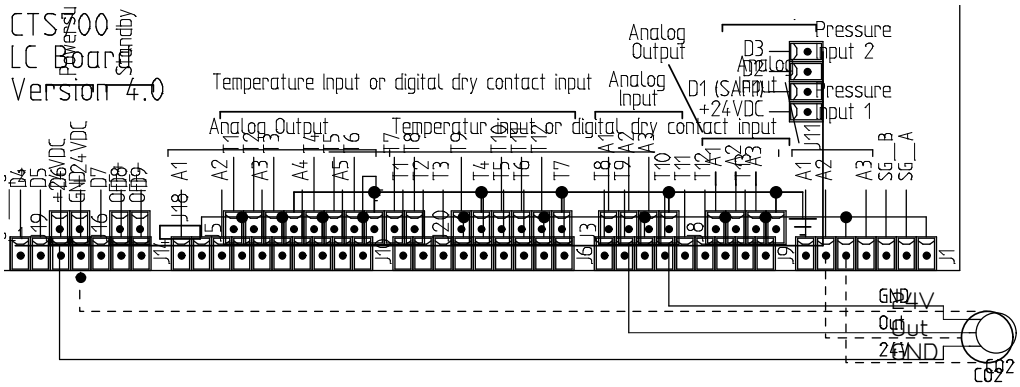
5. Mount the CO_2 sensor in the top cover, using self-threading screws (included in the CO_2 sensor kit).

6. Run the wire from the CO_2 sensor through the cable grommet to the automation.
Wire is subsequently tied up with cable strips.



7. Reinstall the counterflow heat exchanger.
Remember to reinstall the T4 sensor.

Run the wire from the CO_2 sensor to the circuit board and connect it as shown below:



The three wires are connected as follows:

GND: Blue
Out: Black
24V: Brown

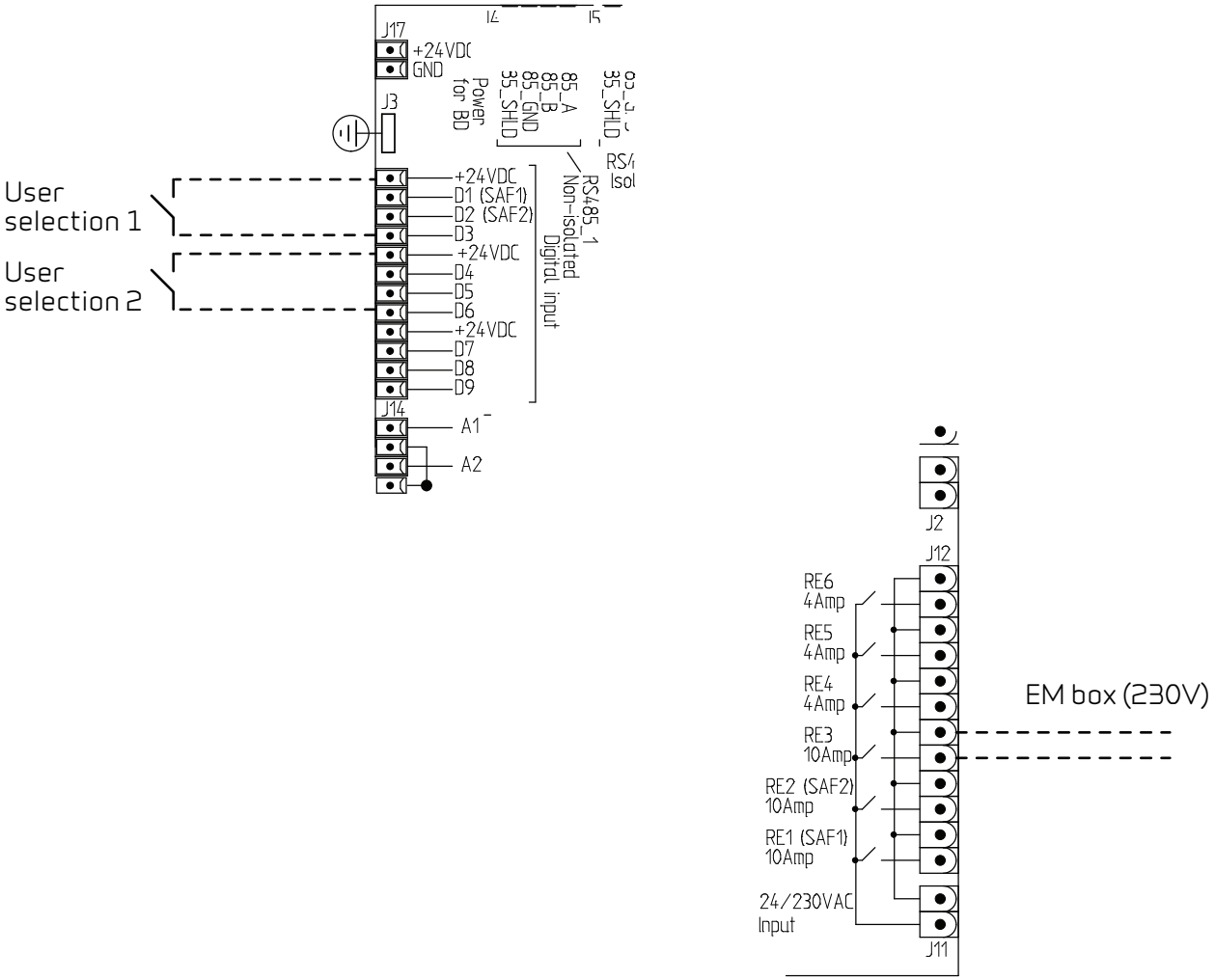
Cooker hood and EM box

There are several benefits from connecting the cooker hood to the home's ventilation system. Firstly, there is full heat recovery of heat from cooking.

Secondly, the unit is able to provide balance in the ventilation. If the cooker hood does not run via the ventilation and if the house is new and airtight, use of the cooker hood will create a negative pressure in the home, minimising the suction effect from the cooker hood and also creating smoke problems, for instance if a wood-burning stove or open fire is installed and in use. By running the cooker hood via the unit, the unit can increase the supply air as the volume of extract air from cooker hood operation goes up. In this way, a balance can be maintained in the home, and the cooker hood will retain its full suction power.

In the case of ventilation of a large home/building, with more than one bathroom, there may be problems creating sufficient air capacity for the cooker hood. In these cases, an EM box will be an ideal addition, as it minimises the extract air from the other high-humidity rooms for the short period that the cooker hood is in use, and in this way ensures sufficient air for extraction via the cooker hood.

ATTENTION
If the cooker hood is connected to the ventilation system, it is important that it is fitted with a good grease filter and that this can be regularly cleaned.



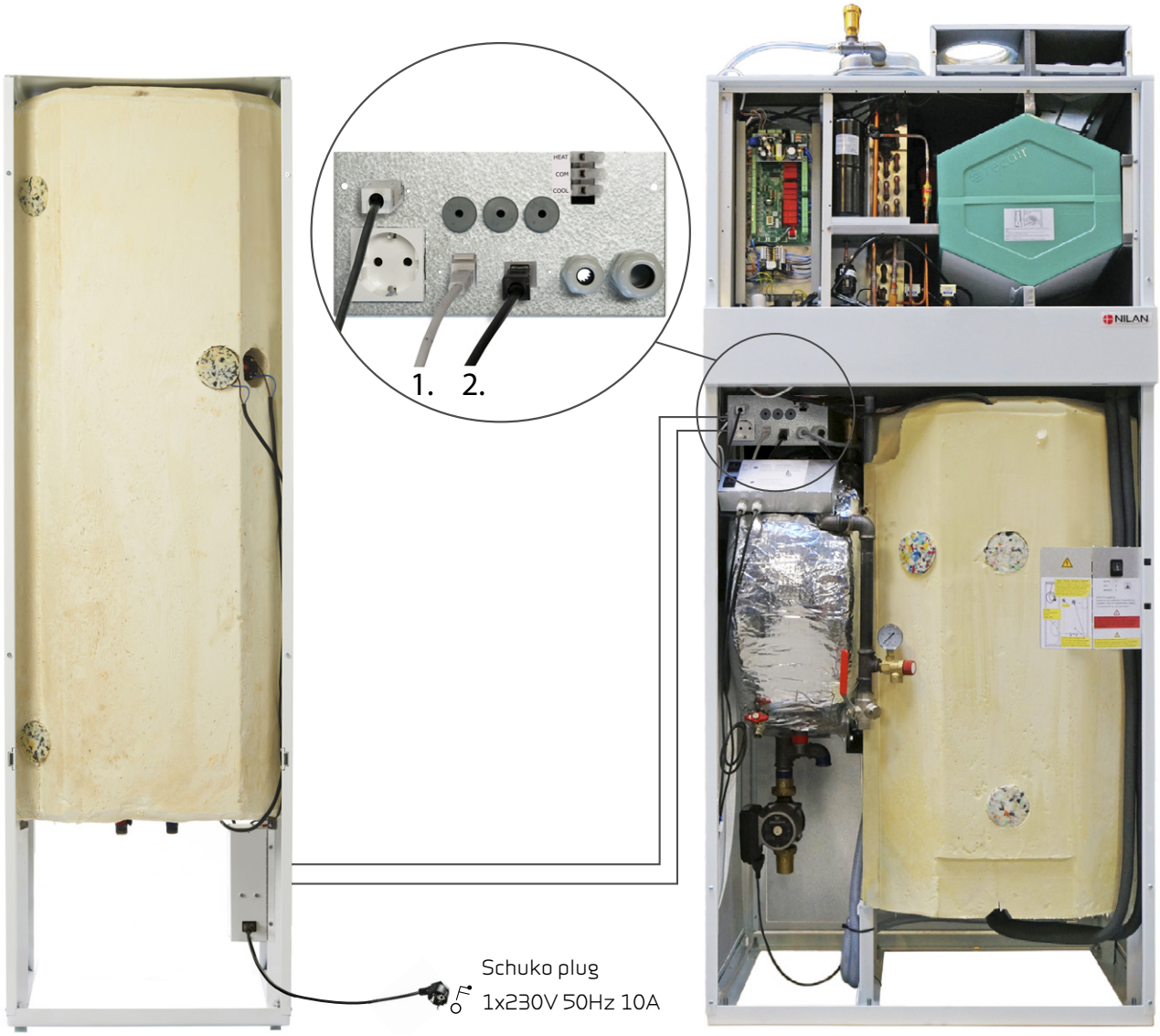
The potential free contact for the cooker hood is connected to user selection 1 or 2, which are programmed in the unit's software under the section 'General settings'. User selection 2 is chosen if an EM box is to be installed.

SHW hot water tank

The SHW hot water tank is connected to Compact P AIR connection panel as shown below. The SHW tank has its own power supply via a Schuko plug.

1. RJ45 plug for transmitting top temperature (T21), bottom temperature (T22) and anode monitoring in the SHW tank.

2. Plug for control of additional electric heating in the SHW tank.



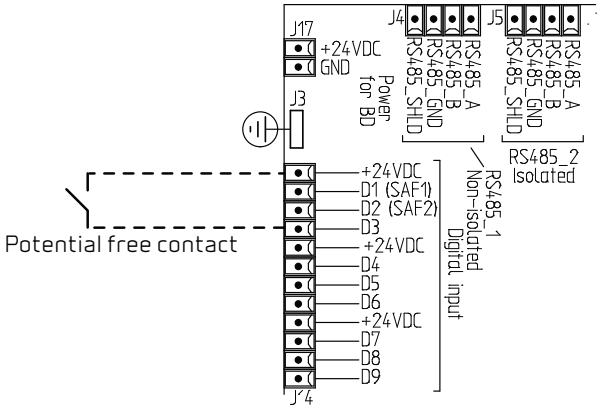
Other electrical connections

User selection 1

It is possible to override the unit's functions via an external signal from a potential free contact

The User selection function can be used for many purposes, e.g. in the case of a wood burning stove or open fire. Initial settings of the ventilation system should be set up with a slight underpressure, so that humidity in the air is not forced into the building elements. This is of course a disadvantage when lighting a wood burning stove, as smoke will enter the room. You can use a dry contact to configure one of Fan stages (e.g. fan stage 4) to run with a slight over-pressure instead, to push the smoke through the chimney as intended.

Connection to CTS700 control system:



User selection 1 is programmed in the unit's software under General settings. See the options in the Software instructions.

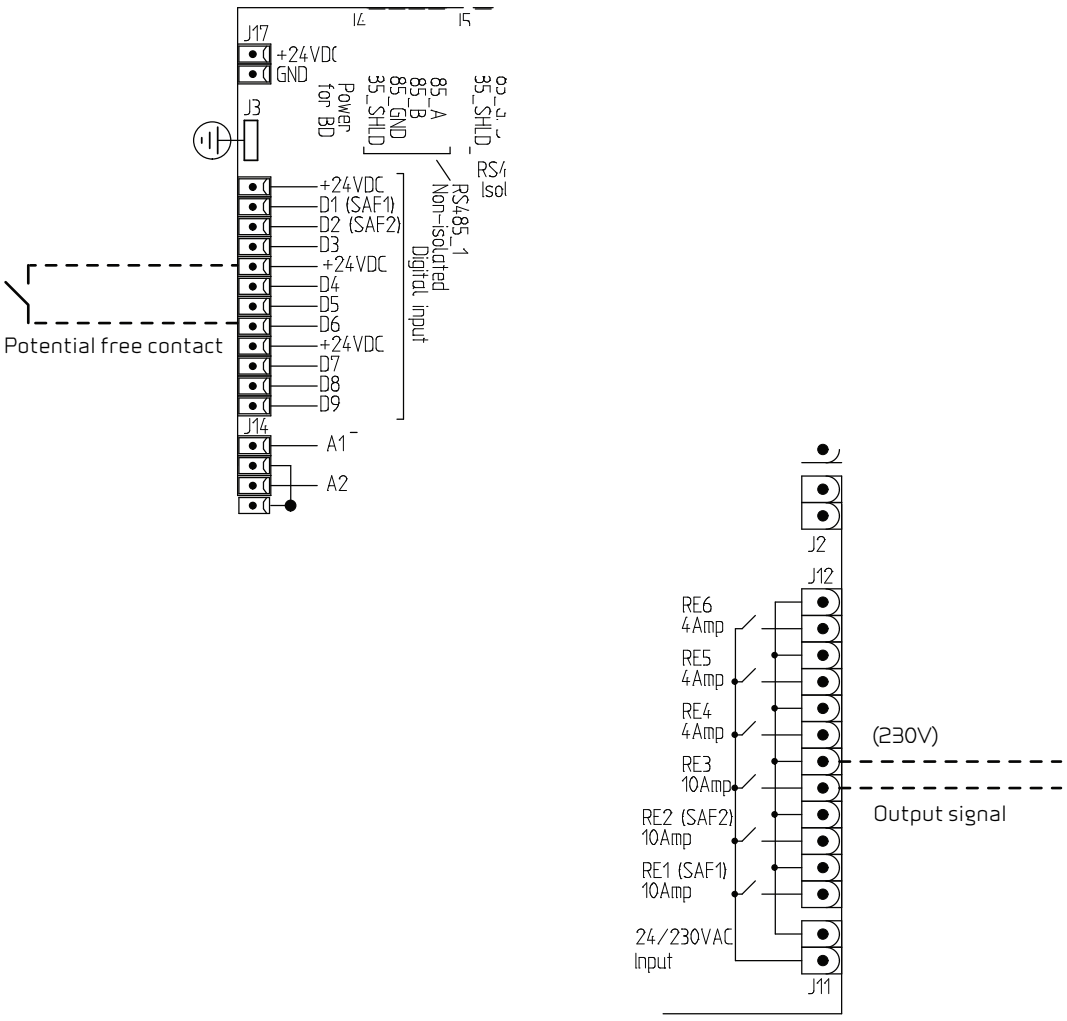
User selection 2

As with User selection 1, it is also possible with User selection 2 to override the unit's functions via an external signal from a potential free contact. The difference is that by activating User selection 2, the control system also transmits an output signal.

User selection 2 has the higher priority and is therefore used for cooker hood operation if a cooker hood is connected to the ventilation system. Normally fan speeds 3 or 4 are set for cooker hood operation. The output signal can be used for connecting an EM box or external damper which is to assume a particular setting during cooker hood operation.

There are many other uses for User selection 2 which we shall not discuss further in these instructions.

Connections:

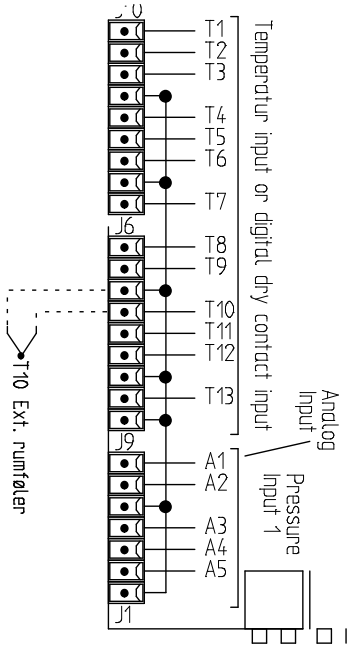


External room sensor

If the unit is not intended to be controlled on the basis of the ambient temperature measured by the exhaust air at T3, an external room sensor can be connected.

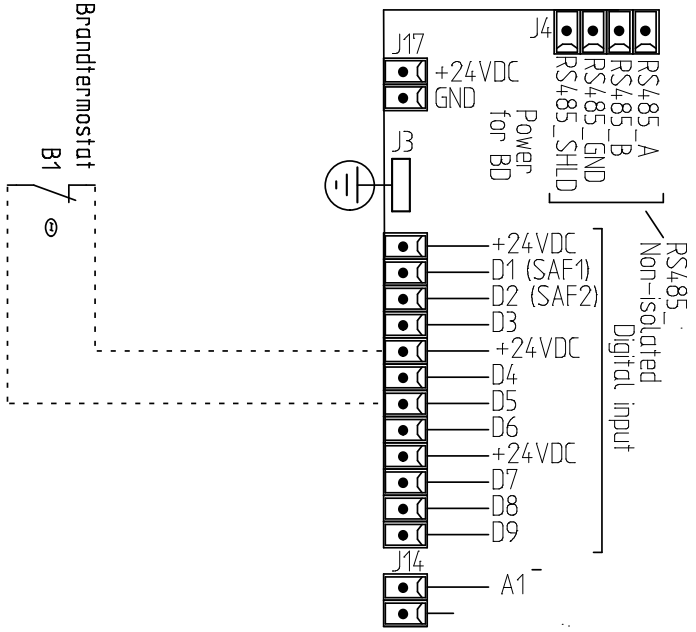
The room sensor should be positioned in the room that should serve as reference for the entire house.

Use NTC sensor (product number 23995).



Fire protection

A fire thermostat or external fire automatic can be connected. It must be a joined signal, when it is broken the Compact P register it as a fire and stop the unit.

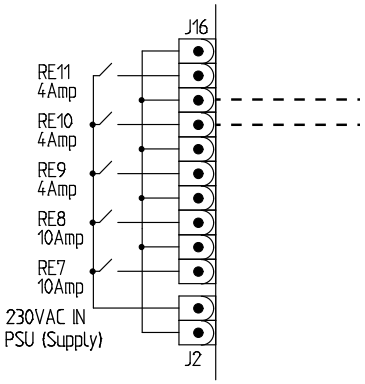


Note! If the unit is connected to external fire automatic, you set the software: General Settings/ Service/Auto reset for external fire alarm to "On".

Common alarm

If the unit is located in a place where access is poor or infrequent, and if the control panel is also located here, it may be hard to observe any alarms.

An external alarm in the form of a light or acoustic signal, etc., can be connected to the unit.

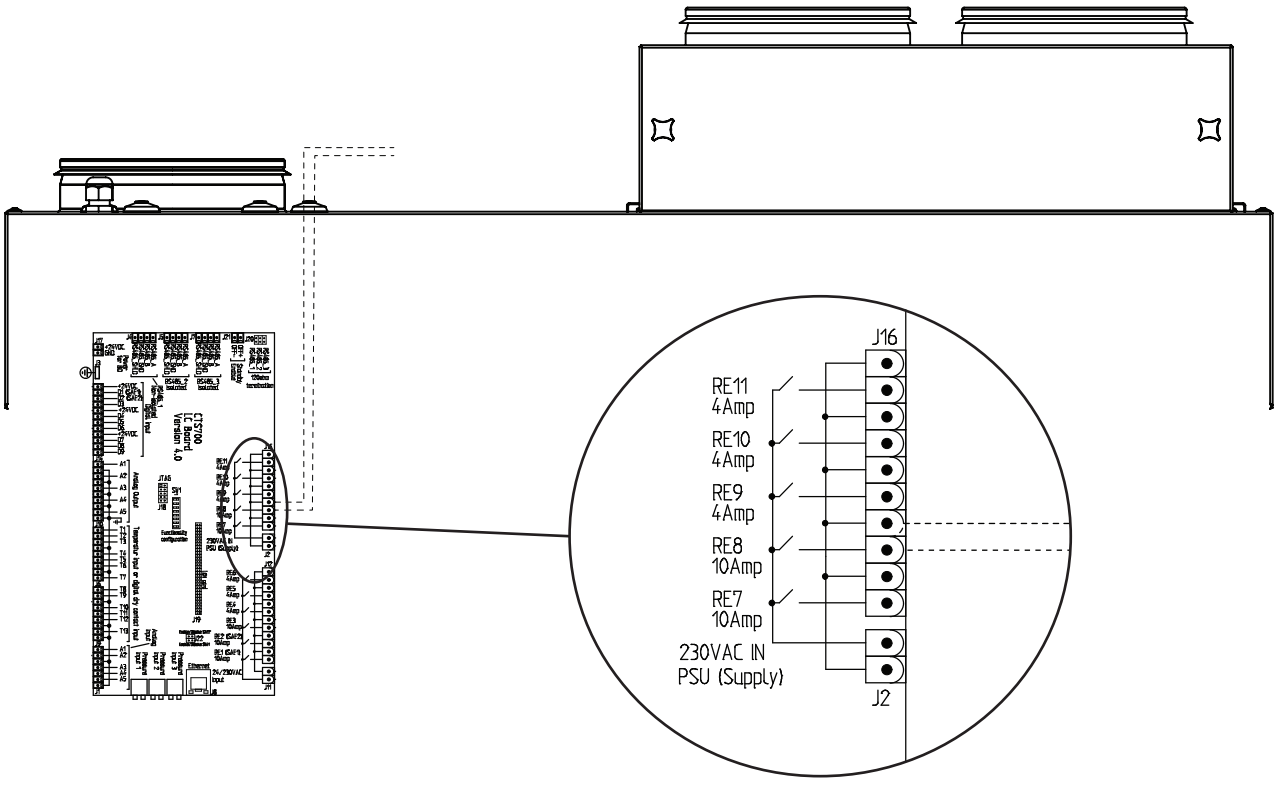


External heat supply

Compact P is able to control an external room heating such as electric radiators or a floor heating system.

The room temperature is monitored by the Compact P, which block the external heating supply when there is no need for heating. If Compact P cannot achieve the desired room temperature through the ventilation, the external heating supply is released until the room temperature is in the desired level.

The external heat supply is connected via relay 8, and set in the touch-display under the menu: Ventilation-/Temperature regulation

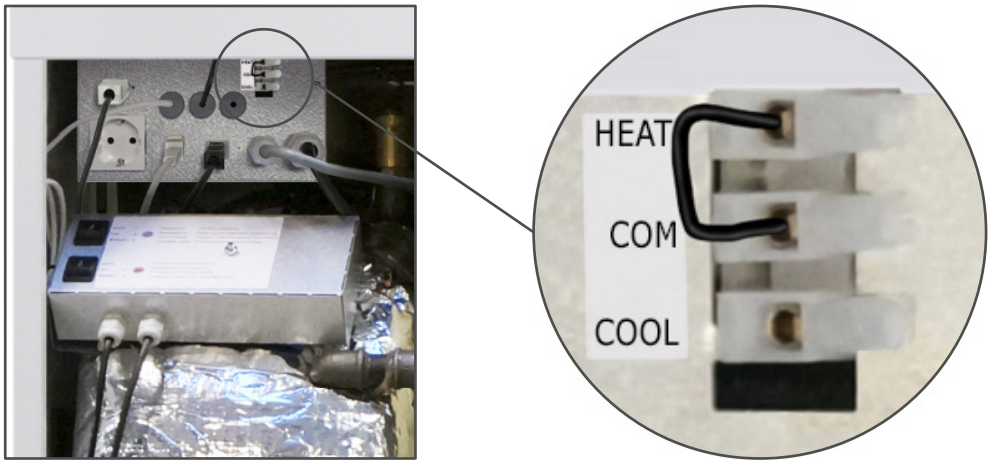


A maximum effect of 500W can be connected (Compact P Polar need to have a transfer relay mounted).

External underfloor heating control

To avoid the heat pump producing heat when there is no need for it, it is advisable to connect the underfloor heating control on the telestats to AIR/GEO.

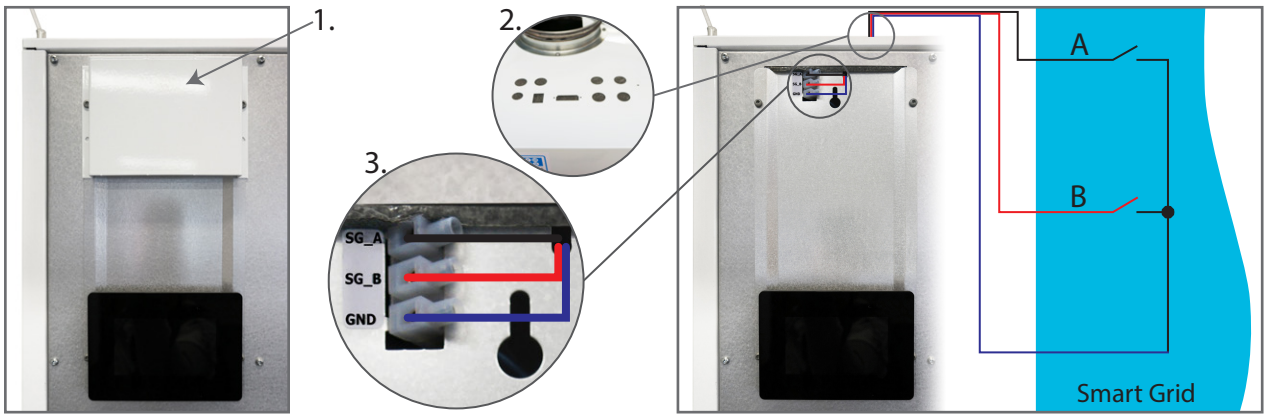
A screw terminal is mounted on the connections panel for controlling heating/cooling. Remove the jumper on HEAT and COM and connect the signal from the underfloor heating control here. Closed contact set: heating required! Open contact set: no heating required!



Smart Grid

If you wish to run Smart Grid, you will need to update to Software version xx and connect the Smart Grid modem to Compact P, as shown.

The Smart Grid signal is connected to the LC circuit board in the Compact P, which will also control AIR and GEO, if connected. Connect the signal directly, without resistance, as these are pre-installed in the cable.



1. Remove the white plate.

2. Route the wires from the SG through the hole in the top of the unit.
3. Connect the wires: SG-A: black, SG-B: red, GND: blue

Smart Grid is programmed in the unit's software under General settings. See the options in the Software Instructions.

Connecting EHD damper

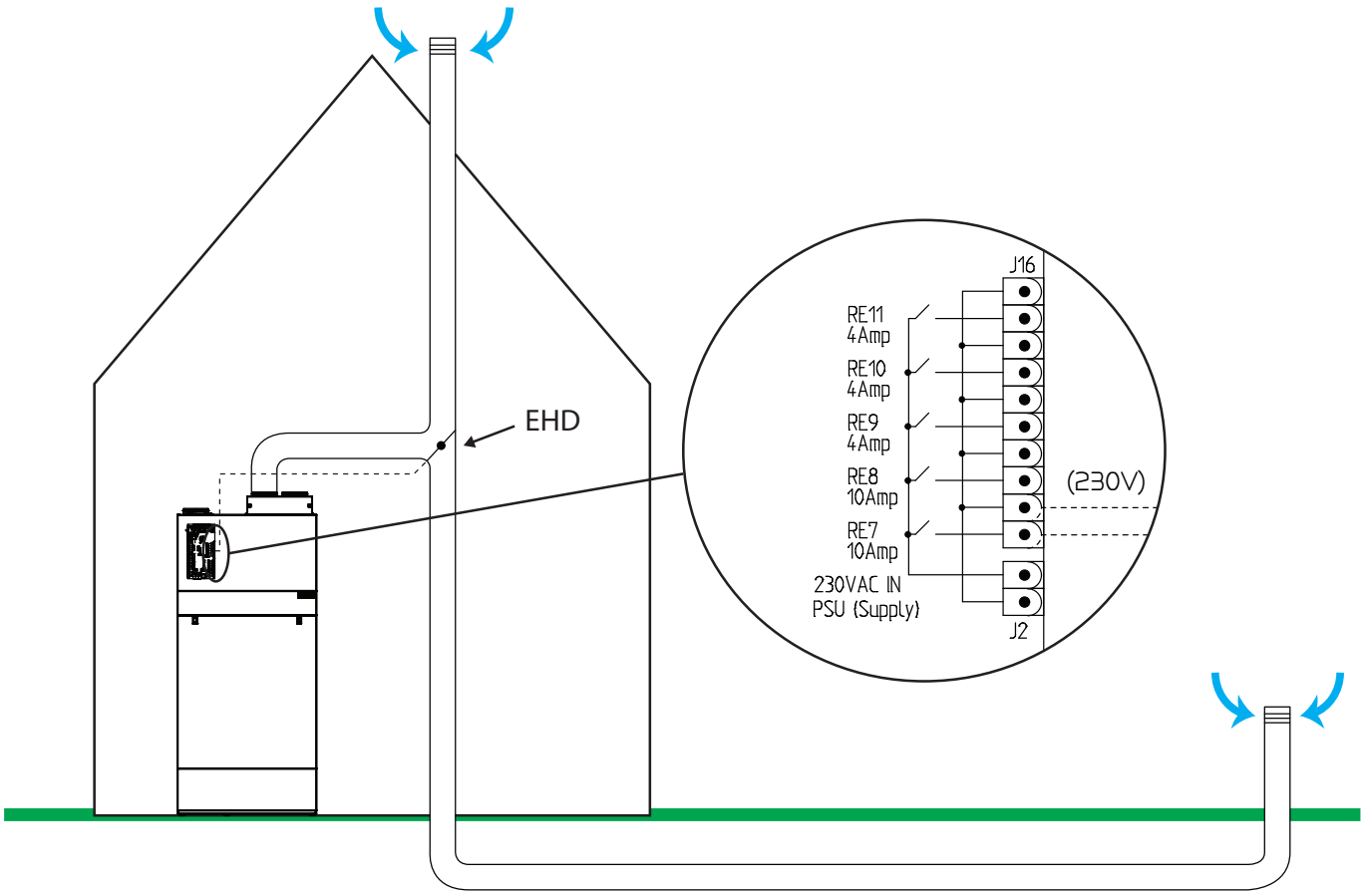
To conduct outdoor air down through a geothermal pipe in the ground makes good sense. The air is heated during the winter and cooled in the summer by the ground.

But passing outdoor air through such a geothermal system may not be the best idea in the spring and autumn, but taking it directly through a roof vent is recommended.

The CTS700 control system has a built-in function that measures whether the geothermal pipe or roof vent provides the best option for air intake.

It measures the outdoor temperature during a **stabilising period** from the geothermal pipe and roof stack respectively. The measurement indicates where it is best to direct the outdoor air. CTS700 sets the EHD damper to the best option, and continues ventilation for a set period, referred to in the program as **holding time**.

The EHD damper is connected via relay 7 and set on the display menu item: Ventilation / Frost protection or de-icing.



ATTENTION
Damper, geothermal pipe and roof stack are not supplied by Nilan.

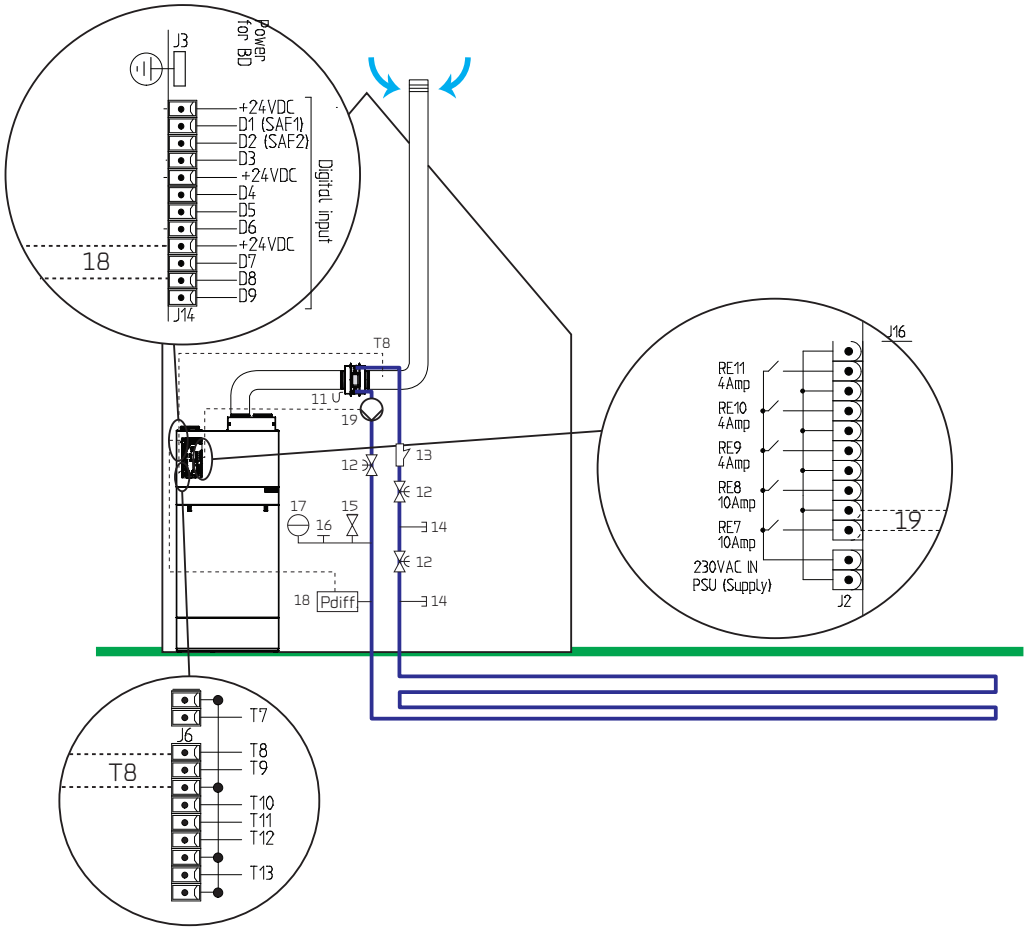
ATTENTION
When using a geothermal pipe, the "Low ventilation at low outdoor temperature" feature cannot be used.

BAH Geothermal heater

A geometric preheater has two functions:

1. It acts as frost protection in the winter, heating up the outdoor air and protecting the unit against icing up
2. It can then be used to cool down outdoor air in the summer, supplying cooled air to the home

The heater is set on the display under: Ventilation/frost-protection or de-icing



11. Condensation drain
12. Shut-off valves
13. Particle filter
14. Filling and drain cocks
15. Safety valve
16. Bleed screw
17. Expansion tank
18. Pressostat
19. Circulation pump

T8. Outdoor temperature sensor

ATTENTION
Circulation pump, heater and brine circuit are not supplied by Nilan.

Active cooling function

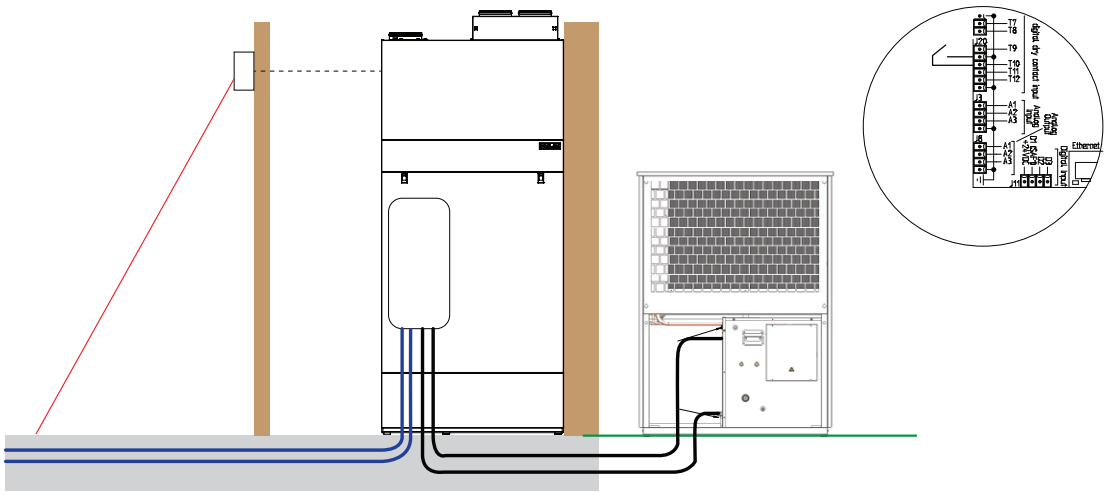
The AIR unit has a reversible cold circuit, which means that it can be used to actively cool the home, using either the floor heating system or fan coils.

CAUTION
If it is wished to operate with cooling, it is important to use glycol in the brine circuit to avoid icing in the heat pump.

Active cooling using the floor heating

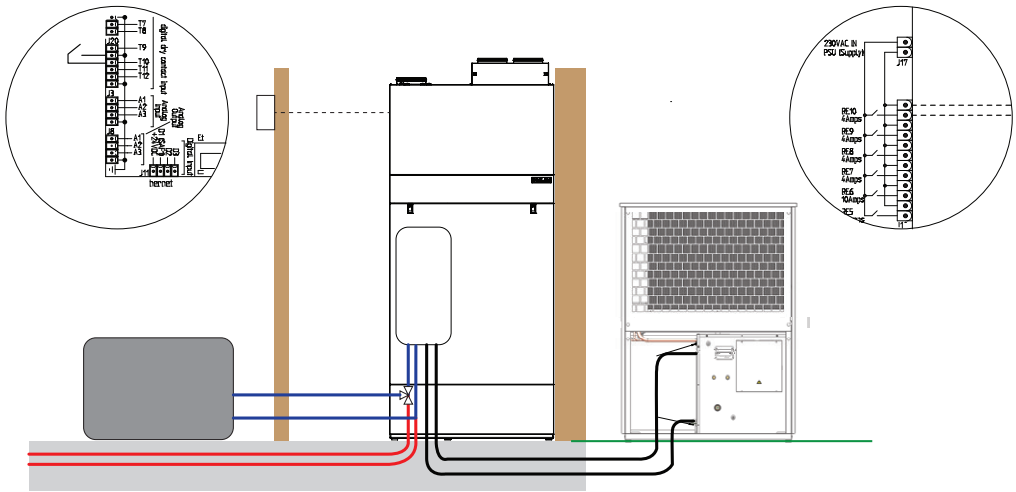
There is an external temperature sensor connected to digital input 10. When the switch is activated, the AIR unit goes into cooling mode and cools the home down to a pre-set value. When the switch is deactivated, the AIR unit returns to normal operation.

The external temperature sensor often has an infra-red sensor, which measures the temperature of the floor and stops the cooling function before condensation forms on the floor.



Active cooling using fan coils

There is an external temperature sensor connected to digital input 10. When the switch is activated, the AIR unit goes into cooling mode and cools the home down to a pre-set value. At the same time relay output 10 is activated, which can control a three-way valve so that the water is directed out to fan coils instead of going into the floor. When the switch is deactivated, the AIR unit returns to normal operation.



Plumbing installation

Condensate drain, internal unit

Important information

Compact P is supplied with a reinforced 20 mm condensation drain pipe with built-in water lock.

ATTENTION
Run the condensate drain to the nearest drain, allowing an even fall of at least 1 cm per m. The overflow from the safety valve for domestic cold water must likewise be led to a visible drain.

ATTENTION
If the unit is positioned outside the climate screen, it is important to secure the condensate drain against icing. Frost protection of the unit is the installer's responsibility.

The connection of the water trap must be air-tight, otherwise air will be sucked into the unit and condensate water will remain in the unit. It could cause water damage if the condensate tray overflows and condensate water runs out of the unit.

After installing the water trap, its function is tested as follows: Fill the condensate tray with water and start the unit at the highest fan speed level. Allow it to run for several minutes. Check that there is no water in the condensate tray when the test has been completed (the unit must be connected to the duct system and the door must be closed during the test).

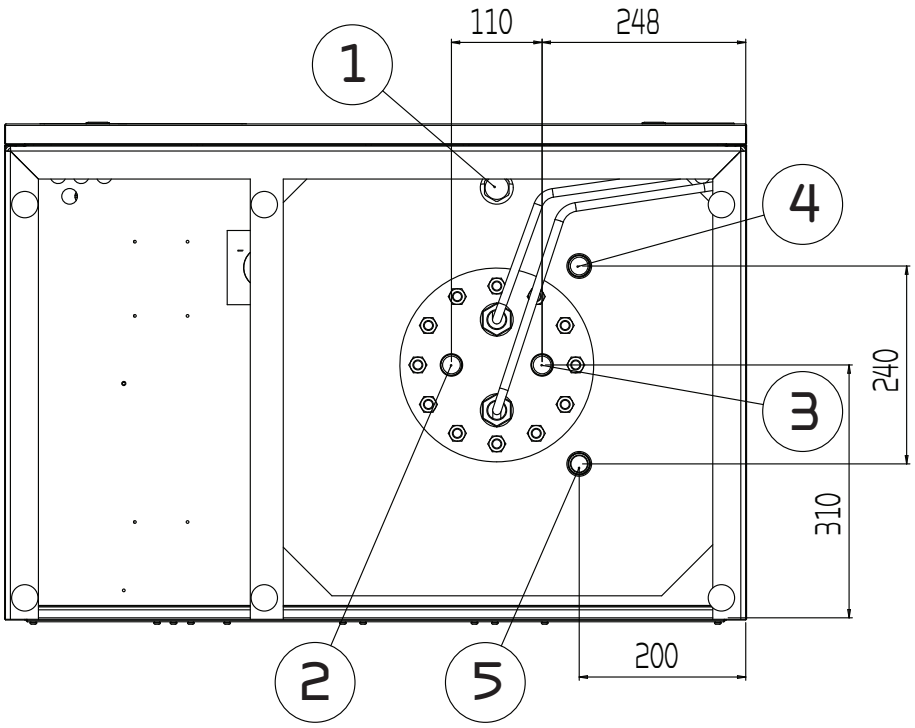
The water trap may dry out and prevent water from draining from the condensate tray, as air will then blow into the unit. The water trap should therefore be checked regularly, especially at the end of the summer, and it should be filled with water if necessary.

The water trap is integrated in the pipe running from the condensation tray to the drain, and is factory mounted.

Hot water tank

Connection overview

Compact P front



Compact P back

Connections:

1. Connection for 3/4" circulation pipe
2. Hot water outlet 3/4"
3. Cold water intake 3/4"
4. Return supplementary coil 3/4"
5. Supply supplementary coil 3/4"

Supplementary coil is only standard on Compact P SOL models.

The coil is located in the bottom, and has an external diameter of 22 mm and is 8,500 mm long, equivalent to 0.6 m^2.

Connection

ATTENTION
All work must be performed by qualified personnel and in accordance with relevant legislation and provisions.

Nilan's hot water tanks are double-enamelled, ensuring long life. The efficient foam insulation protects against unnecessary heat loss.

All connection nozzles for water have 3/4" thread and are located in the tank bottom.

The tank is also fitted with an electronically-monitored sacrificial anode that automatically displays a warning on the display when it needs changing.

CAUTION
Changing the sacrificial anode when notified on the display is important. Failure to do so can cancel the guarantee on the hot water tank.

The tank is fitted with a 1.5 kW supplementary electrical heater deactivated by default and activated via the control panel if required.

ATTENTION
The supplementary heating must not be activated before the water tank is full of water.

Hot water circulation

If wished, hot water circulation can be established by fitting a non-return valve and a circulation pump for domestic water to the tank's circulation connector.

If hot water circulation is not established, the connector must remain closed with the factory-mounted shut-off plug.

ATTENTION
Hot water circulation can lead to a significant heat loss in the pipes, diverting a good proportion of the heat pump's output. To avoid this, circulation pipes and the hot water loop must be insulated with at least 30 mm mineral wool.

It is advisable to set a timer so that the circulation pump is not running constantly.

Supply heat exchanger

All Compact SOL models have integral supplementary coil, see connections list.

The supply heat exchanger has a surface area of 0.6 m^2 is intended for solar heating systems, though it can also be connected to other heat sources.

ATTENTION
If a solar collector or other heat source is connected to a Compact P model, it is recommended that a safety group is connected to the hot water outlet to secure against scalding.

Softened water

If it is wished to soften water with salt in a Nilan hot water tank, the following must be observed:

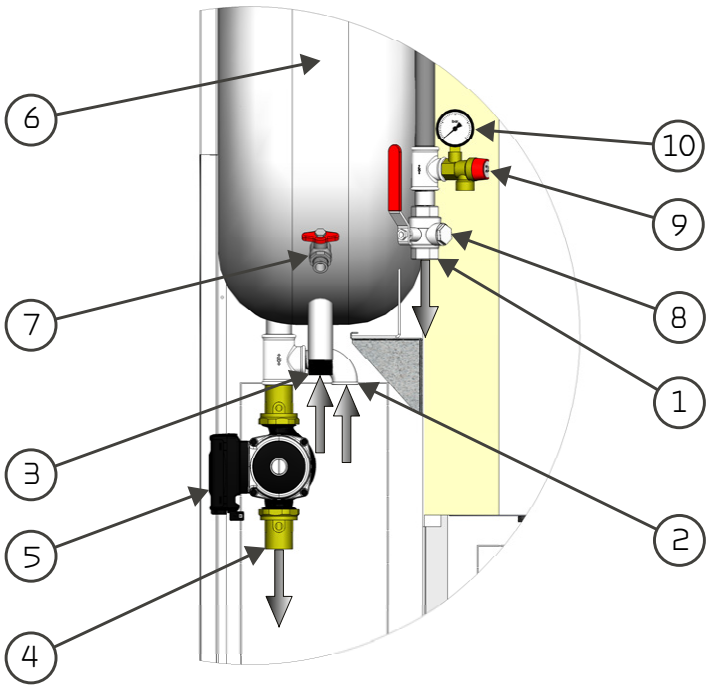
- The conductivity must be between 30 mS/m og 150 mS/m (millisiemens per m)
- The chlorine content must be under 250 mg Cl/l

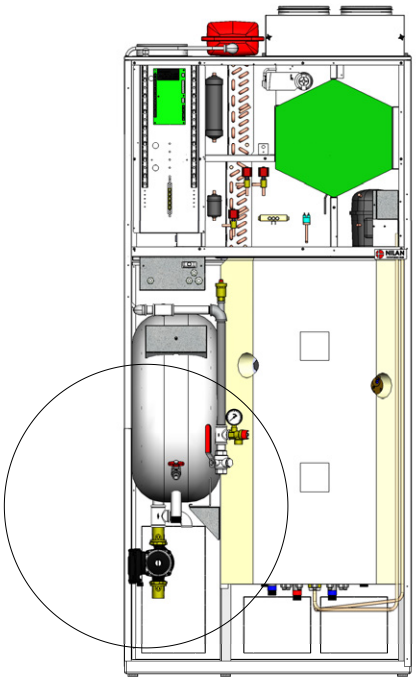
If the above criteria are exceeded, the anode current will be too high, the anode will break down too quickly and the water will begin to smell bad.

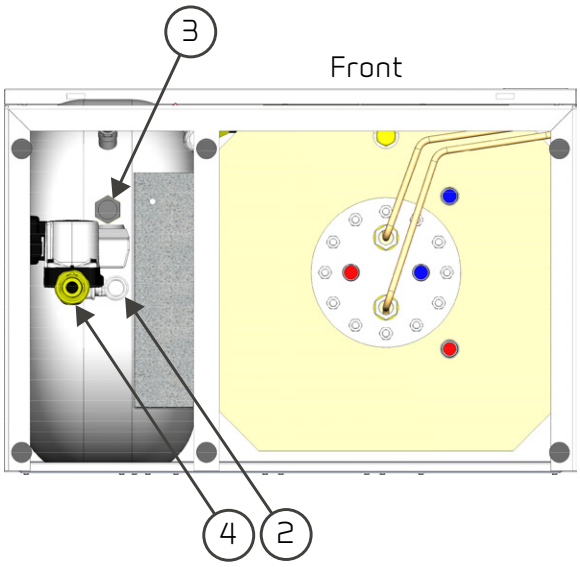
CAUTION
De-mineralised water (double ion exchange) must not be used, as the tank will quickly corrode. De-mineralised is also referred to as desalinated and de-ionised water.

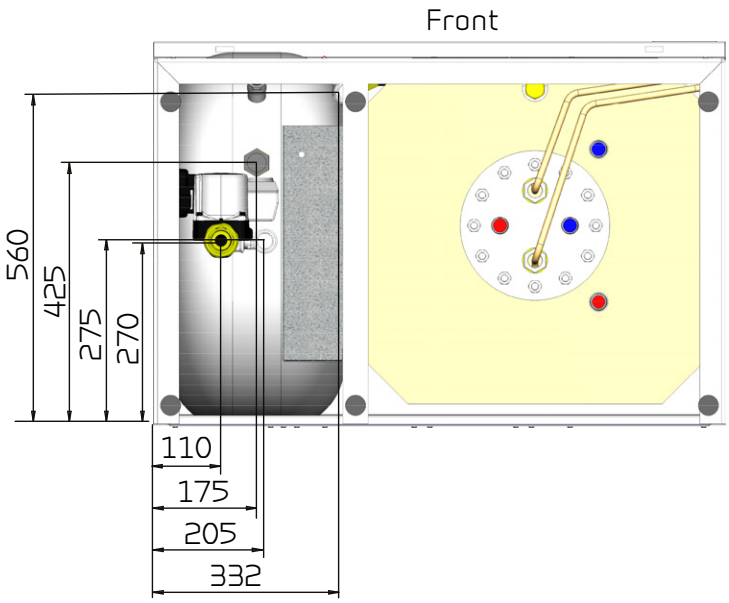
Central heating

Water connection overview, internal unit



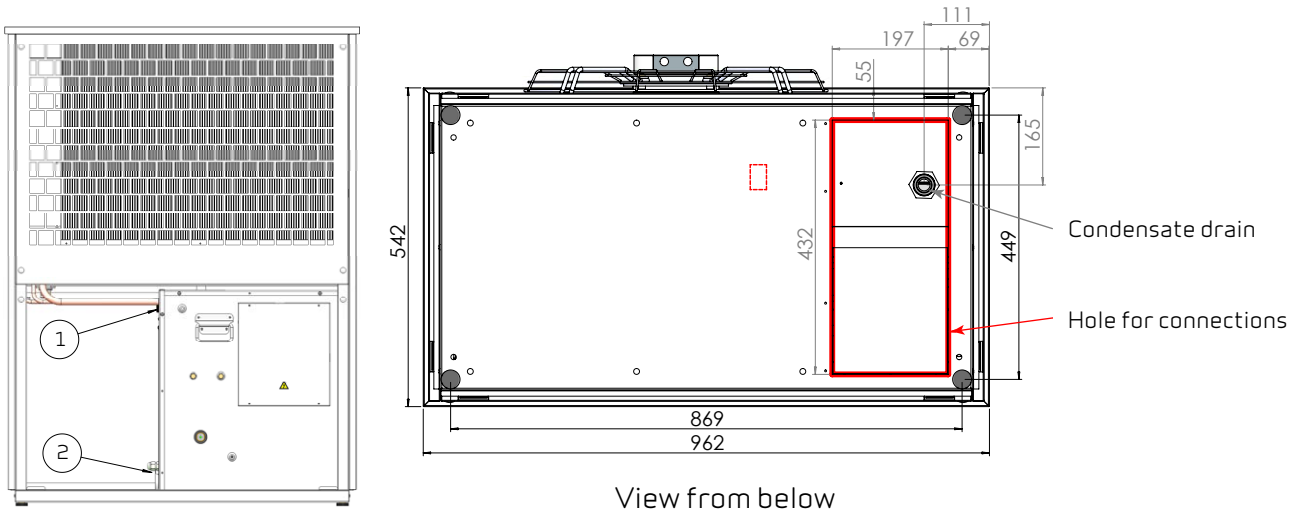






1. Feed to central heating, 3/4"
2. Return from central heating, 3/4"
3. Feed from external unit (hot), 1"
4. Return to external unit (cold), 1"
5. Circulation pump between external and internal units
6. Buffer tank
7. Filling and drain cock
8. Stop valve with particle filter
9. Safety valve (central heating)
10. Manometer (central heating)

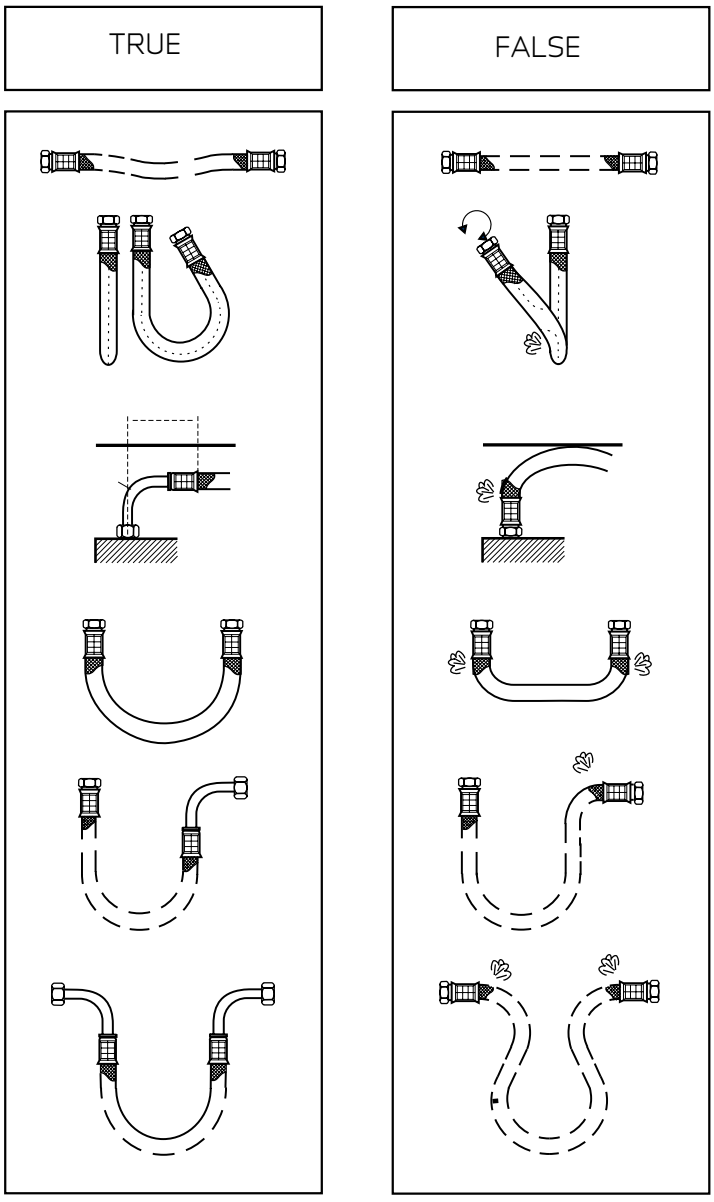
Connections list, external unit



View from below

1. Supply flow to internal unit (hot), fitted with 1" flexible hose
2. Return from internal unit (cold), fitted with 1" flexible hose

ATTENTION
The illustration above shows AIR9. See the dimensional drawing for details about AIR9+.



Insulation of hoses from the outdoor unit

It is important that the brine hoses between the indoor part and the outdoor part are well insulated, according to current standards. This is done to avoid heat loss and to achieve good operation.

CAUTION
If the brine hoses is not well insulated, the AIR heat pump will use significantly more energy and in worst case, there will not be enough heat in the house.

Check list for the central heating system prior to start-up

The check list is used when starting and delivering the system, and it should always be filled in. See the other sections in the manual for further information.

Electrical connection and controls	Checked - date	Notes
The power supply is connected and secured in accordance with the wiring diagram and manual		
The control panel is installed in a place that can easily be seen by the user		

Central heating circuit	Checked - date	Notes
The central heating circuit is sealed		
The central heating circuit has been vented after filling		
Central heating circuit pressure, overpressure		Bar
The opening pressure for the central heating circuit's safety valve is correct		
The circulation pump is rated correctly for the installation		
The circulation pump is in constant operation or is controlled by the heating pump		

Plumbing connections for accessories

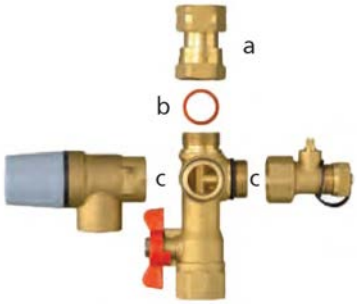
Safety group

CAUTION
A safety device must be connected to the hot water tank.

When water is heated to 60 °C, it expands by 2%. A pressure tank could burst without a safety valve letting the excess water escape. The safety valve should therefore drip during warming up.

Installation:

The following should be remembered during installation:
a.
The double nut is attached to the water heater's cold water pipe so that the arrows are pointing in towards the water heater (in the direction of the flow). The joint with the water heater is sealed using a threaded washer.
b.
The joint between the double nut and the unit is sealed using fibre packing.
c.
The rubber ring seal (the O-ring) is fitted to the unit so that it can function as a seal between the safety valve and the unit in such a way that the valve is locked.



The end of the overflow pipe must be visible, and it must be able to run out safely via the drain.

ATTENTION
As water expands as it heats up, the safety valve will drip.

ATTENTION
It is up to the installer to inform the customer about where the safety valve is placed and how it works, and also that it must be regularly checked at least twice a year in order to prevent incrustation.

Safety group with anti-scald protection

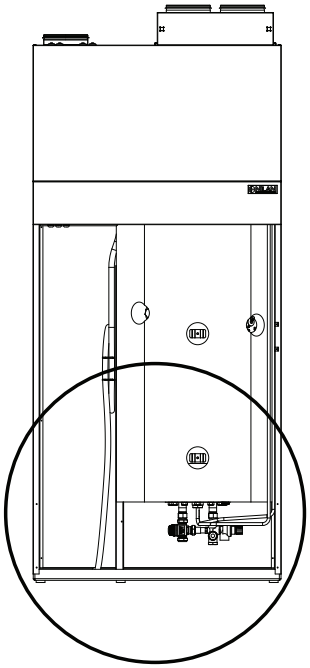
The control system contains as standard a temperature limit for domestic hot water of 65 °C. This setting prevents users from scalding themselves when the hot tap is turned on.

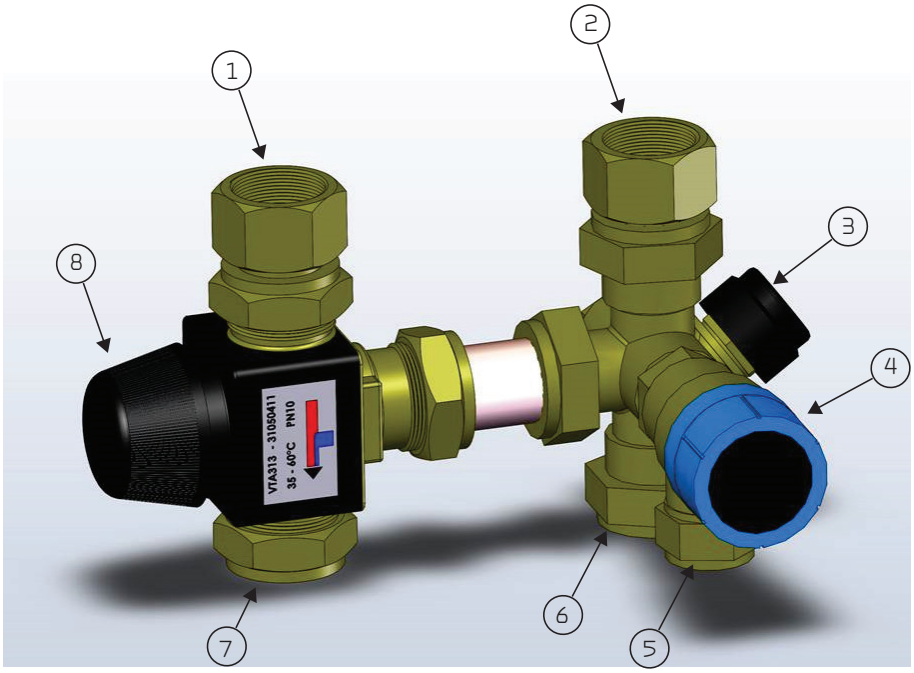
It also means that when Compact P is in cooling mode, cooling will stop when the domestic hot water reaches a temperature of 65 °C.

If the cooling requirement is higher than this, the temperature limit may be raised to 80 °C, but in this case an anti-scald device must be mounted under the hot water tank, to prevent users from scalding themselves when turning on the hot tap.

The anti-scald device mixes hot water with cold water, thus bringing down the temperature and avoiding scalding. This will extend the period for which Compact can perform cooling.

CAUTION
If a solar panel is connected to the hot water tank, an anti-scald device must be mounted.

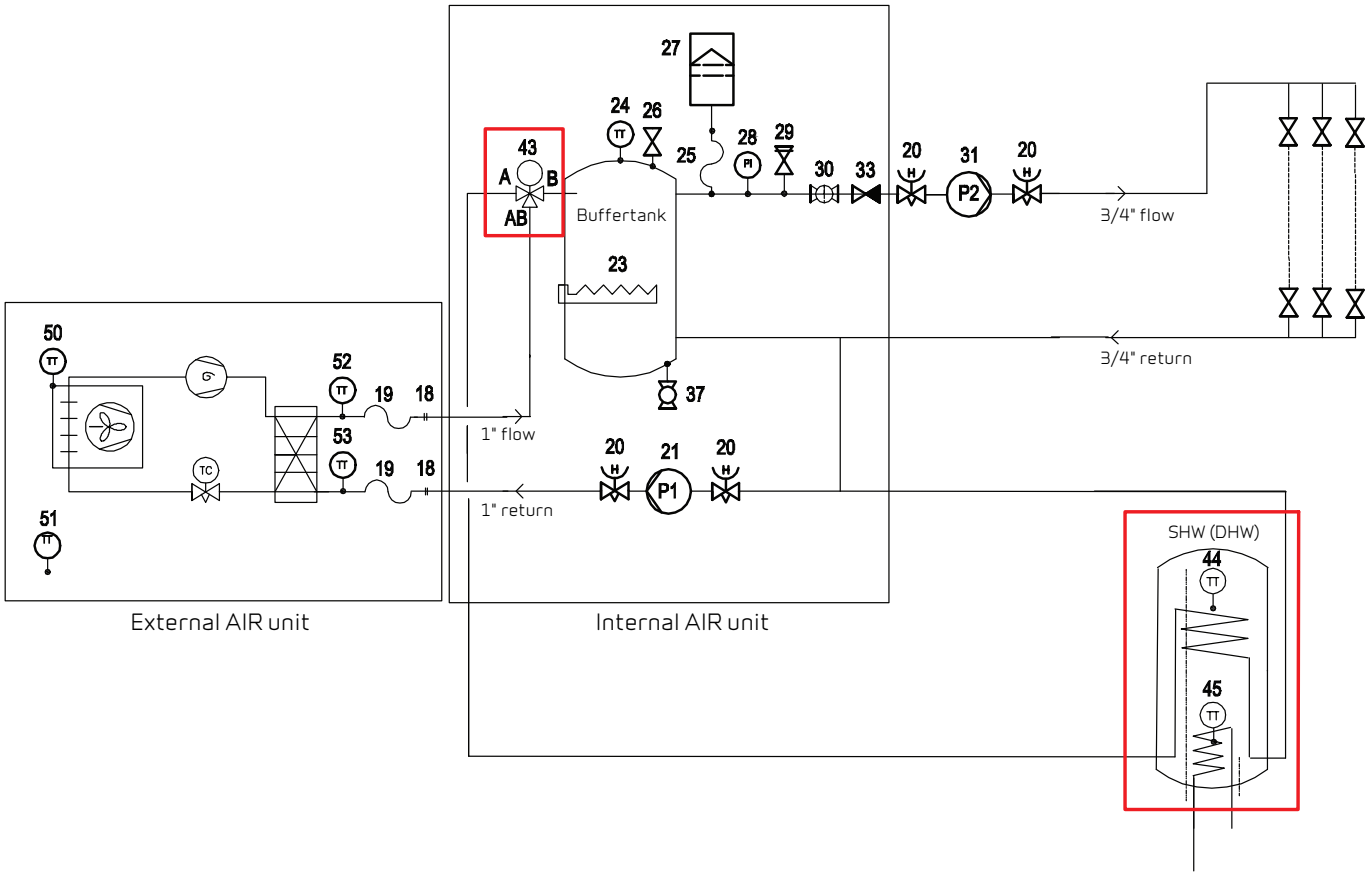




1. Hot water from the hot water tank
2. Cold water to the hot water tank
3. Stop tap cold water
4. Pressure relief valve (6 bar or 10 bar)
5. The overflows from the safety valve are led to a prominent drain
6. Cold water supply
7. Domestic hot water for the dwelling
8. Mixing valve for domestic hot water for the dwelling (can be set between 35 - 60 °C)

Hot water tank

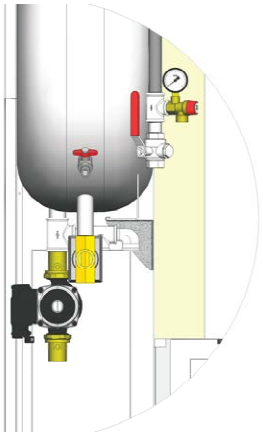
The AIR unit can be connected to an external hot water tank (SHW) or to the hot water tank in the Compact P (DHW). A three-way valve, which can be purchased as an accessory, is required.



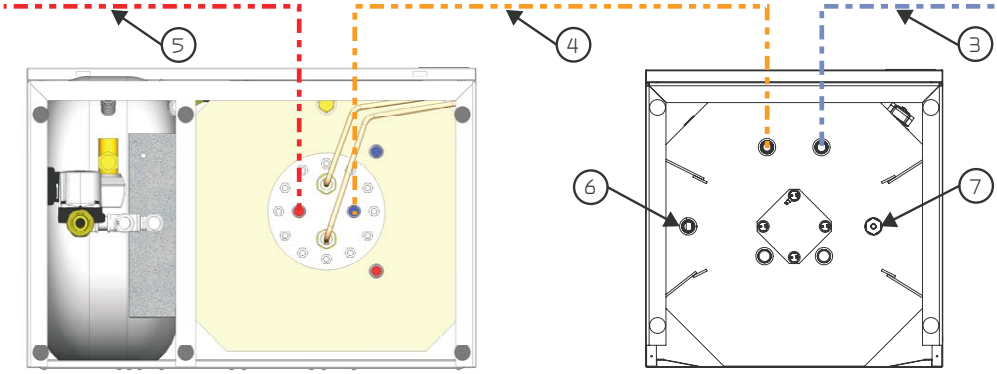
18. Connection 1"
19. Flexible hose 1"
20. Shut-off valve
21. P1 circulation pump 130 mm
23. Electrical supplement heating 2 x 3 kW
24. Temperature sensor T18 buffer tank (supply flow)
25. Flexible hose 10 mm
26. Automatic vent 3/8"
27. Expansion tank 8 litre
28. Manometer
29. Safety valve 2,5 bar
30. Stop valve with particle filter
31. P2 circulation pump
33. Check valve 3/4"
37. Filling tap 1/2"
43. 3-way valve
44. Temperature sensor T21 hot water tank top
45. Temperature sensor T22 hot water tank bottom
50. Temperature sensor T23 evaporator surface
51. Temperature sensor T20 outdoor temperature
52. Temperature sensor T17 after condenser
53. Temperature sensor T16 before condenser

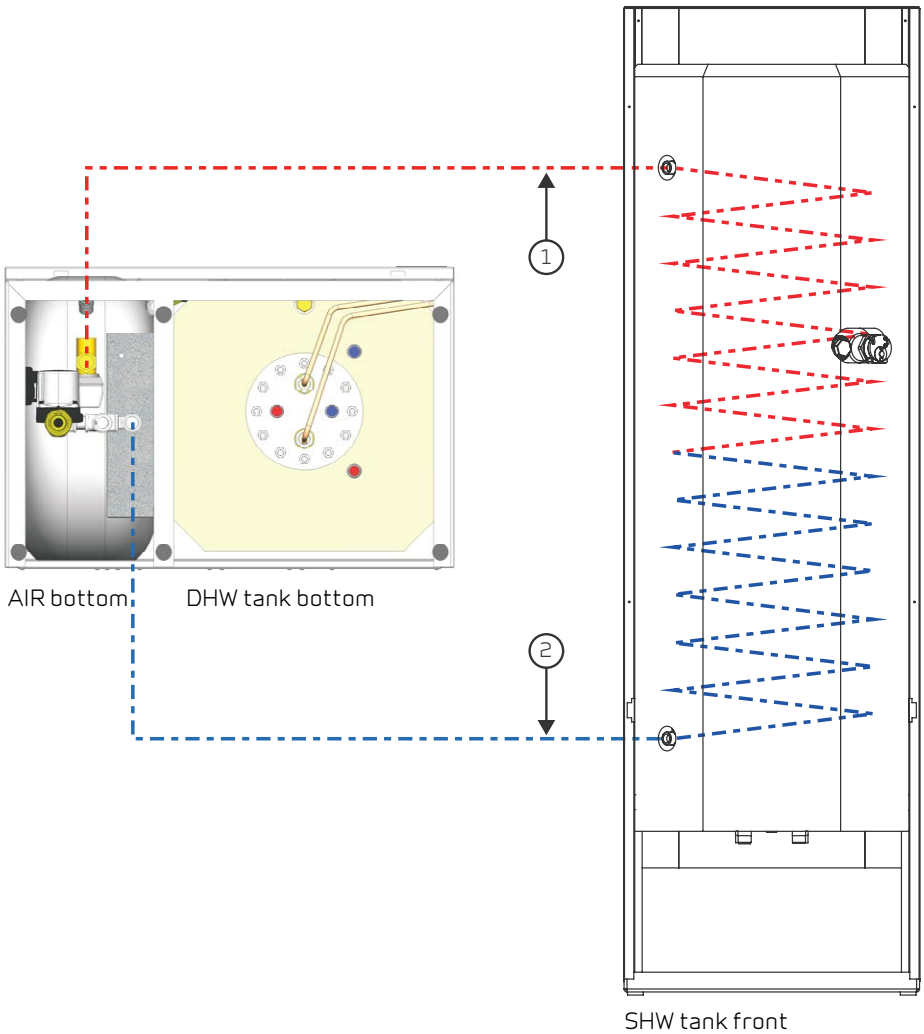
Connecting to SHW hot water tank

The domestic cold water is pre-heated in the SHW tank up to 45 °C by the AIR heat pump (factory setting 40 °C) through the heating pump coil (length 26 m). It is then fed to the DHW tank in the Compact P, where it is heated to the desired flow temperature.



AIR front

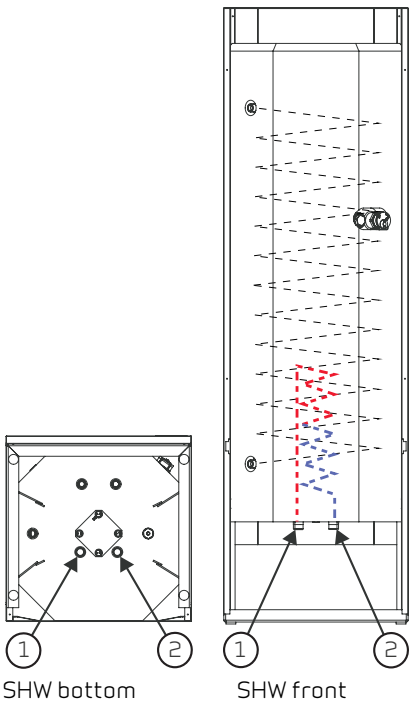




1. Flow to the heat pump coil in the SHW tank from the AIR heat pump three-way valve
2. Return flow from the heat pump coil in the SHW tank to the AIR heat pump
3. Connection for domestic cold water supply
4. Supply flow of pre-heated domestic hot water from the SHW tank to the DHW tank in Compact P
5. Supply flow of domestic hot water from the DHW tank
6. Connection for hot water circulation
7. Sensor pocket

Connection to supplementary coil in SHW hot water tank

The SHW container is equipped as standard with a supplemental coil with a length of 8.5m. The supplementary coil can be connected to a solar panel with external solar heating control (not Nilan supply), or other heat source, which contributes to heating the domestic water.



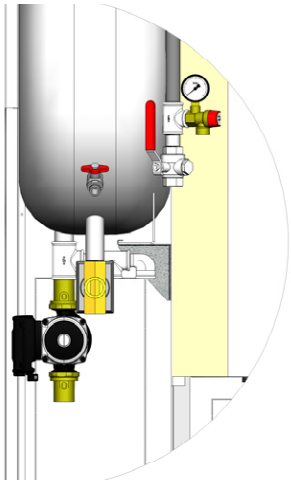
SHW bottom SHW front

1. Supply flow to the supplementary coil in the SHW tank
2. Return flow from the supplementary coil in the SHW tank

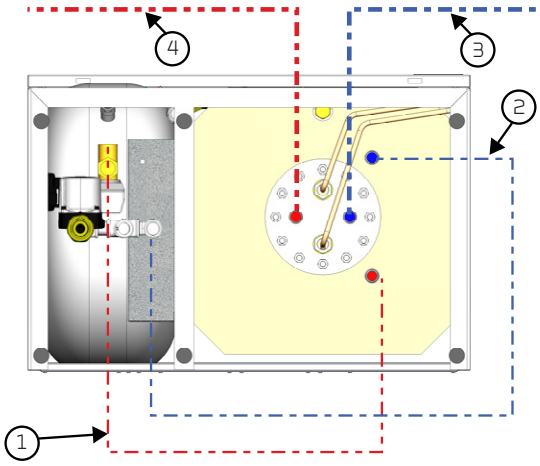
ATTENTION
If another container with a shorter supply coil is connected, the compressor output in the hot water production must be reduced. See the Software manual

Connecting to DHW hot water tank

If the demand for domestic hot water is so great that the Compact P unit's heat pump cannot cope, the AIR unit can be connected to the DHW tank's solar coil to help heat up the domestic hot water.



AIR front



AIR bottom DHW tank bottom

1. Supply to the solar coil in the DHW container from the AIR heat pump
2. Return flow from the solar coil in the DHW tank to the AIR heat pump
3. Connection for domestic cold water supply
4. Supply flow of domestic hot water from the DHW tank

Ventilation mounting

Duct system

Legislation

ATTENTION
All work must be carried out by qualified persons and in compliance with existing legislation and regulations.

Ducts

There are two systems by which to lead air through the house.

Spiral ducts

The spiral ducts are made from metal and are cut to size using an angle grinder. They are then connected using bends and manifolds and are fitted in accordance with the blueprint. The ducts are typically laid on the tie beams and are fixed with perforated band or they are suspended using suspension band. Avoid unnecessary bending of the ducts.

To prevent sound from being transmitted from room to room, you should install silencers for each room.

The ducts must be insulated to prevent heat loss and condensation. In some cases this can be avoided if the ducts are run through the general insulation or inside the climate screen.

NilAIR tubes

NilAIR tubes constitute a flexible system that is easy to install. You can easily cut the tubes to size with a Stanley knife and then situate them in accordance with the blueprint without having to use bends and manifolds. You install a manifold box after the unit and let the tubes run from the box out to the individual rooms.

With NilAIR tubes you do not need to install silencers for every room, as there is no risk of sound transmission.

If you lead the tubes outside the climate screen, they must be insulated to avoid heat loss and condensation. This is simpler than using spiral ducts, as NilAIR tubes are easily led through ordinary insulation.

NilAIR tubes are more flexible than spiral ducts and you can therefore run the tubes in places that are unsuitable for ordinary spiral ducts.

Unit

Nilan recommends that you install a flexible connection between the unit and the duct system.

This is to avoid vibrations from the unit being transmitted to the duct system, but also to lighten future services of the unit that will make it necessary to move the unit.

Nilan offers flexible Sound Flex tubes that provide a flexible connection between the unit and the duct system, but also reduce the sound transmission from the unit to the duct system.

The Sound Flex tubes are insulated against condensation. It may, however, be necessary with further insulation in order to comply with local requirements to insulation of duct systems.

Extract air

Install exhaust air valves in rooms that generate humidity. Place them strategically where they can extract humidity most effectively.

Rooms that generate humidity:

- Bathroom
- Lavatory
- Kitchen
- Utility room

Supply air

Install supply air valves in living areas. Place them strategically so they cause minimum discomfort. It is, for instance, not recommended that you install supply air valves in areas where people are inactive, as the supply air may be experienced as draughty.

Living areas:

- Sitting room
- Living room
- Bedroom
- Home-office

Roof stacks

The position and design of air intake and air discharge should limit pressure oscillations in the ventilation unit caused by wind. Their position should also prevent birds and other animals from getting in. Finally, the position and design should ensure that air intake and the connected duct system are kept free of plants and foreign objects.

You must place the air intake so that the risk of a short-circuit from the discharge air is minimized, with attention to the prevailing wind direction.

The air intake should be placed at least 0.5 m from the roof surface. On black, flat roofs the distance from the roof to the underside of the intake should be at least 1 m to ensure that warm air is not drawn into the building in the summer. Air intakes should be located on the northern or eastern sides of pitched roofs.

You should also install a silencer between the unit and the roof stacks to prevent noise from disturbing your surroundings.

Initial regulation

Important information

ATTENTION
To ensure the ventilation system operates optimally, it is important that it is balanced correctly. We recommend that experts do this.

It is important to measure the total supply air and the total extract air. The system must have a minimum vacuum, which means it must draw out more air than it blows in. This will prevent dampness from being forced into the construction of the building.

Initial regulation connectors

The unit has initial regulation connectors for measuring the supply air (inlet air) and extract air (outlet air) volumes.

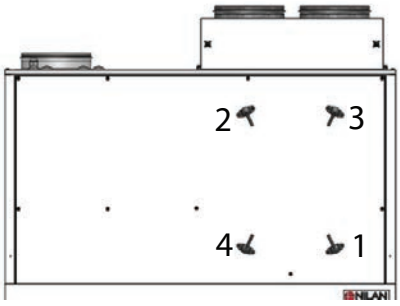
The graph can be used for roughly setting the main air volume for dry operation without condensation precipitation, and with approximately the same temperature for outdoor air and extract air.

On the extract air side (outlet air), the pressure drop dP4-3 [Pa] is measured between the connectors labelled 3 and 4. The air volume qv [m3/h] is read off on the graph.

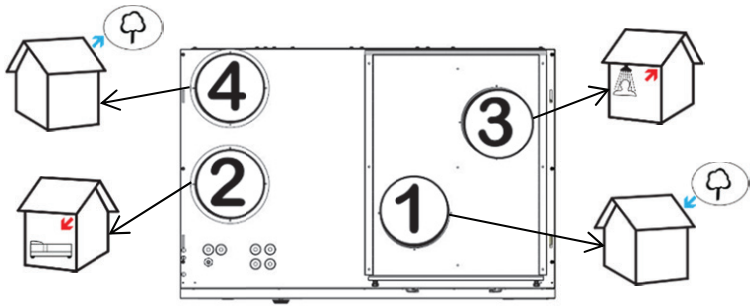
On the supply air side (inlet air), the pressure drop dP2-1 [Pa] is measured between the connectors labelled 1 and 2. The air volume qv [m3/h] is read off on the graph.

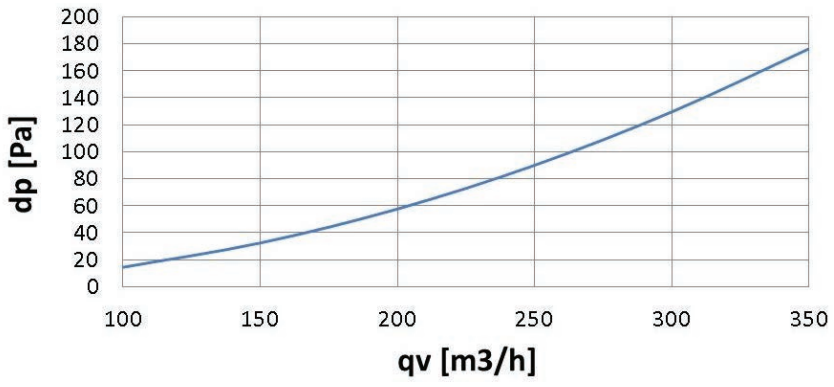
ATTENTION
The capacity in the pressure drop diagram is based on a dry heat exchanger.

Pressure fall diagram



The measuring connectors are inside behind the top front panel.





Startup

Central heating

Filling with water

ATTENTION
Before starting the heat pump and the circulation pumps, the central heating circuit connected to the external unit must first be filled with water

Fill the central heating circuit with water via the feed cock until the correct water pressure is obtained. It is important that all circuits in the central heating system are open during filling.

ATTENTION
Ordinary water or all common types of antifreeze can be used

There is an automatic vent fitted to the buffer tank, which is activated when filling with water. Check that the cover on the vent is loose.

There is a Schrader valve fitted to the external unit's top hose connector for venting the connector between the internal and external units.

Once the central heating circuit has been filled to the correct water pressure, the circulation and heat pump can be started.

Topping up water

The water pressure must be carefully checked the first few days, even several times a day. It may be necessary to top up the water in the central heating circuit if the water pressure has dropped.

ATTENTION
It is important that the circulation and heating pump is switched off while topping up the water

The water pressure will stabilise after a few days, after which the checks can be reduced to once a month.

ATTENTION
If the central heating circuit requires topping up after the start-up phase, it should be checked for leaks

Check the particle filter

There may be some particulate matter in the central heating circuit, and the heating pump must be checked immediately after being put into operation.

The filter must be checked several times a day just after installation until it stays clean. With normal operation, it is enough to check the filter twice a year.

Cleaning the particle filter:

1. Switch off the heating pump on the control panel (Settings: Central heating / Standby functions / Turn off central heating)
2. Turn the shut-off valve to close off the circulation
3. Remove the filter and rinse until clean
4. Replace the filter
5. Turn the shut-off valve to open up the circulation
6. Switch the heating pump back on

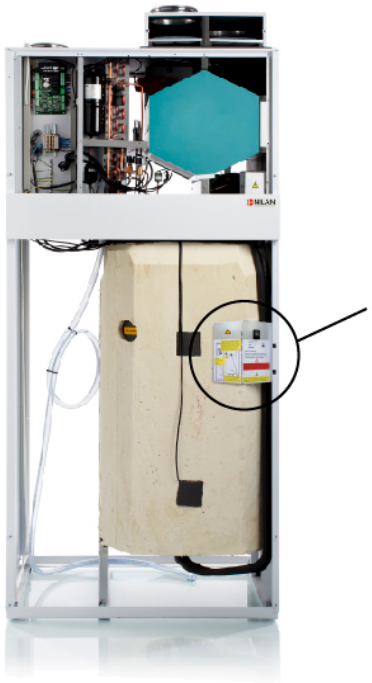
Troubleshooting

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 is 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.

Emergency operation central heating

If an error occurs in the controller or components in the AIR air/water heat pump, and the heat pump therefore stops, it will not be able to heat up the house by the central heating.

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 heat up the house by setting the heat pump into emergency mode.

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

ATTENTION
When the el-supplementation is in I or II the circulationpump must be in the same position.

The emergency operation for the el-supplementation has tree 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

The emergency operation for the circulation pump has tree settings:
I - Auto: The circulation pump is controlled by the control in the unit (standard setting)

0 - Off: The circulation pump is off and cannot be turned on again by the control in the unit

II - Manuel: The circulation pump is on, and cannot be turned off by the control in the unit

ATTENTION
In manual operation the supply flow temperature for the central heating can achieve 40 °C.

Domestic hot water

Problems and solutions domestic hot water

Problem	Possible cause	Solution
The unit produces insufficient domestic hot water	The filters may be blocked so that insufficient air is reaching the unit. This can occur if the filters are not changed frequently enough. This can occur if the unit has been operated during the building process and the filters are filled with dust and dirt.	Change the filters and, if necessary, change the filter change period to a shorter Interval:

Central heating

Problems and solutions central heating

Problem	Possible cause	Solution
The telestates call for heat, but the heat pump does not start	During the spring and autumn transition periods, some space telestates may call for heat, but the heat pump does not start. This may be because the temperature in the extract air is warm enough compared to the temperature set in the control panel. That is, the exhaust air is an average of the room's room temperatures, as some rooms are hot and others are cold. Since the ventilation section considers the average temperature of the house to be high enough, it blocks the heat pump from running. This does it to save energy and to prevent the ventilation part and the heat pump part from counteracting each other.	If you still want to heat in some rooms, despite the average temperature of the house being warm enough, you can activate this function below: Settings / Central heating in the Menu item: Cooling and heating at the same time This means that the cooperation between the ventilation part and the heat pump part ends, and if there is a need for heat in some rooms, the heat pump will start even if the ventilation part detects that the house is warm enough.
El-supplementation is turned on much or always	The heat pump will not work effectively, which may be due to various reasons.	- Check that there is no ice in the evaporator surface in the outdoor unit. It prevents the air from getting through. Make a manual defrost. - Check that the evaporator surface in the outdoor unit is not stopped with leaves and other debris that can prevent the air from getting through. Clean the evaporator surface - Check that the hoses between the outdoor unit and the indoor unit are properly insulated so that there is no excessive heat loss. - Check that there is a proper flow in the circuit between the outer part and the inner part.
AIR has a large power consumption	One must expect that electricity consumption in the first year will be greater than expected. This is quite natural as the house must dry out. The higher humidity in the first year means that it costs more energy to heat the house. This may also be because the heat pump does not run optimally for various reasons.	- Check that there is no ice in the evaporator surface in the outdoor unit. It prevents the air from getting through. Make a manual defrost. - Check that the evaporator surface in the outdoor unit is not stopped with leaves and other debris that can prevent the air from getting through. Clean the evaporator surface - Check that the hoses between the outdoor unit and the indoor unit are properly insulated so that there is no excessive heat loss. - Check that there is a proper flow in the circuit between the outer part and the inner part.

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