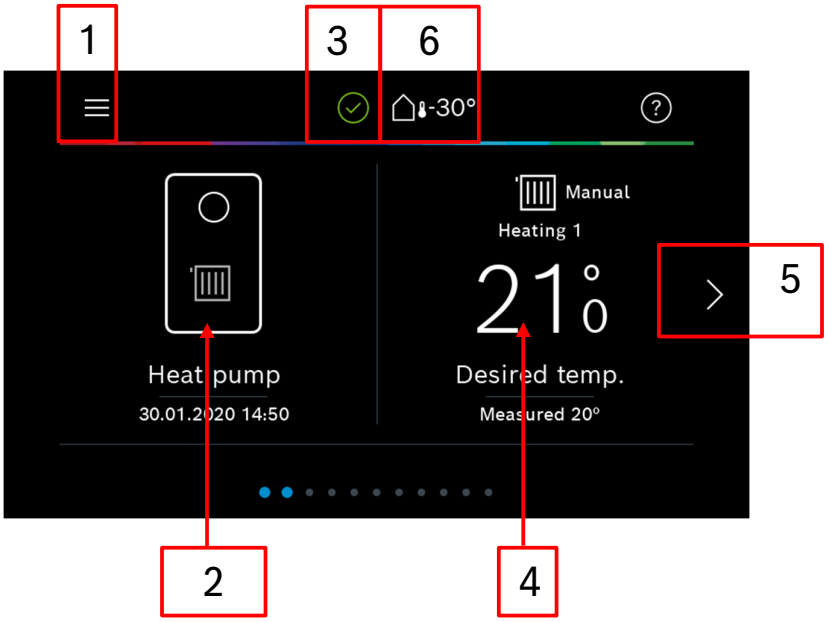
5800 Commissioning document

This guide follows the step-by-step process of commissioning a 5800-heat pump.

Contents

Display Overview



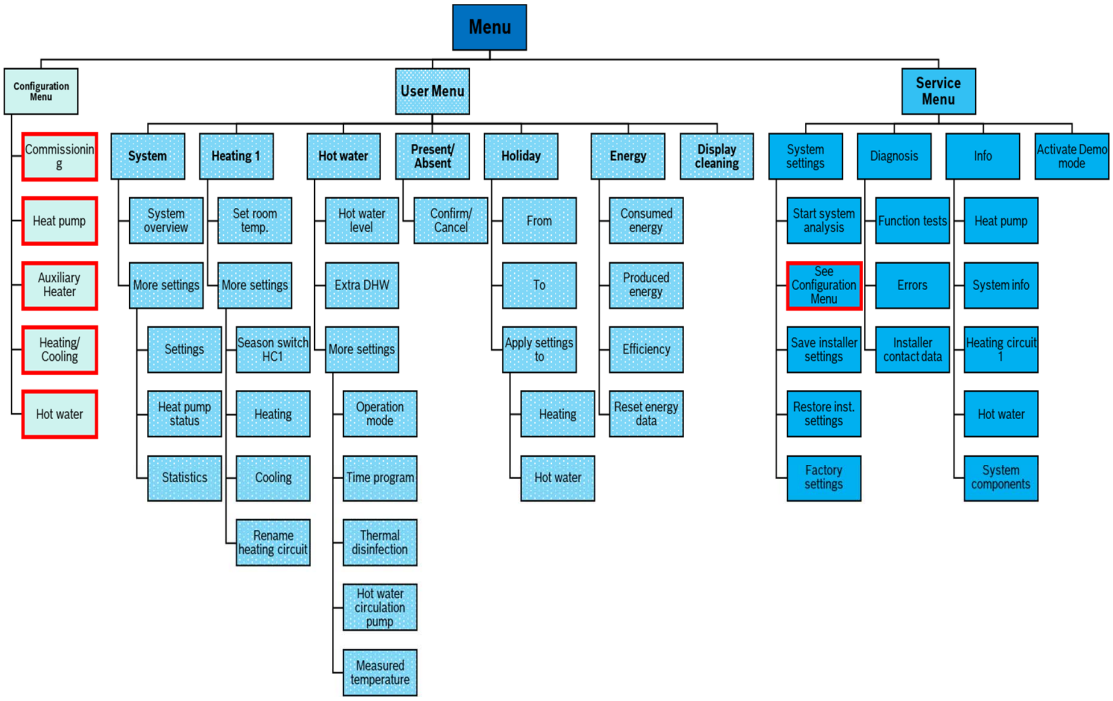
1. Menu key
2. System overview
3. Status (green checkmark = no alarm), a triangle indicates that an alarm has occurred. Press the triangle to display the alarm code.
4. Heating circuit 1 (press to change settings)
5. Scroll direction for other functions (left and right possible)
6. Outdoor temperature

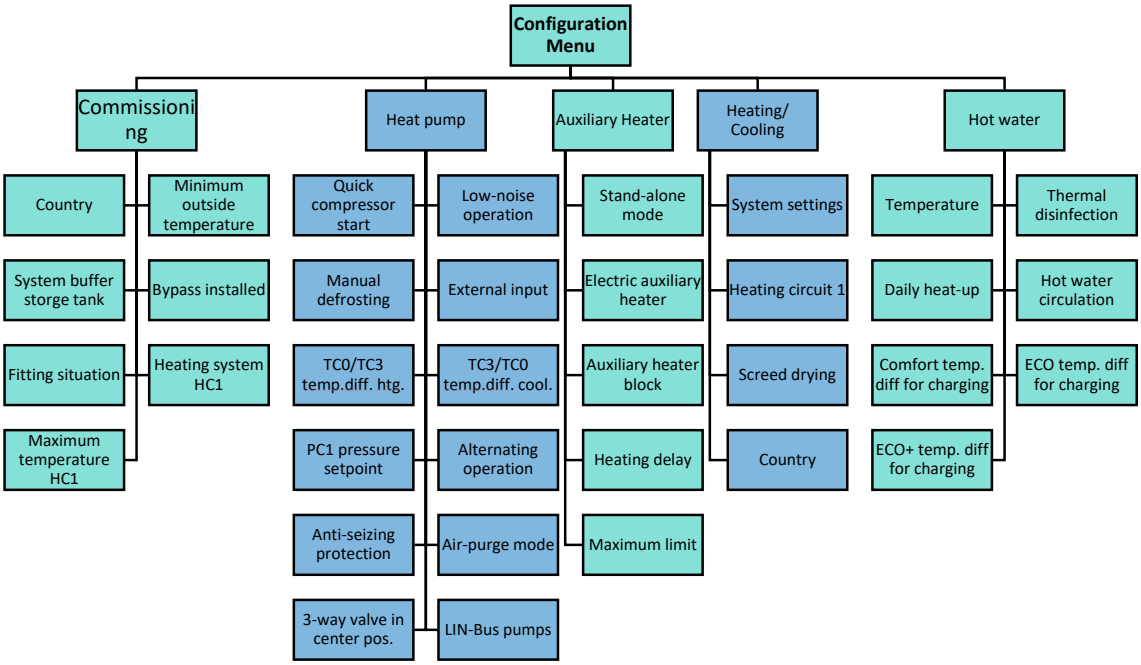
Important information

Some menus will only show a few settings until **Expert view** is turned on to see all the menus.

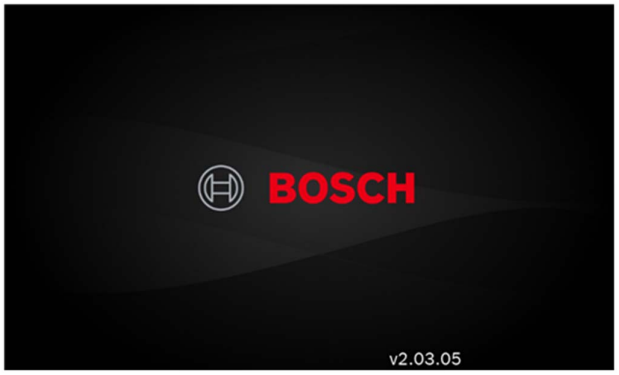
On Commissioning, every section must be confirmed by selecting **Complete Config** to complete the commissioning**.**

Menu Structure





First Start up & Commissioning



The brand will be displayed when the power supply is turned on.

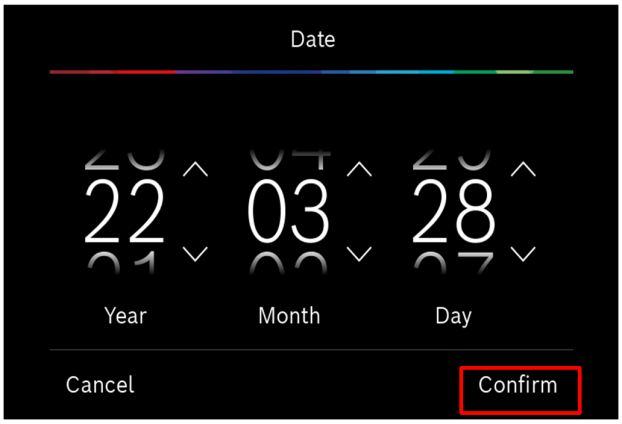
Note:

The stepper motor will move up and down on first turn on and after every reset.

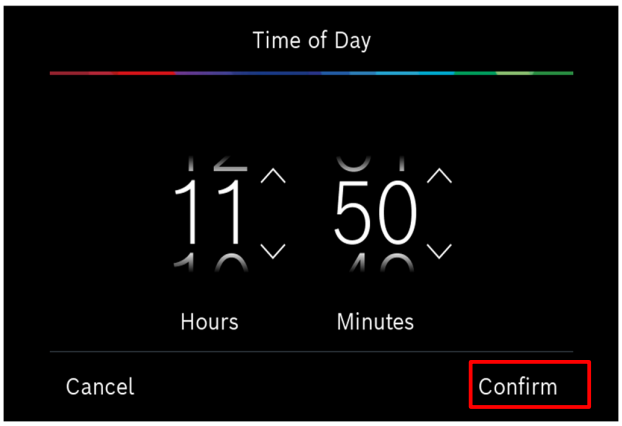
Select the required language and select **Next.**

<Default is English>

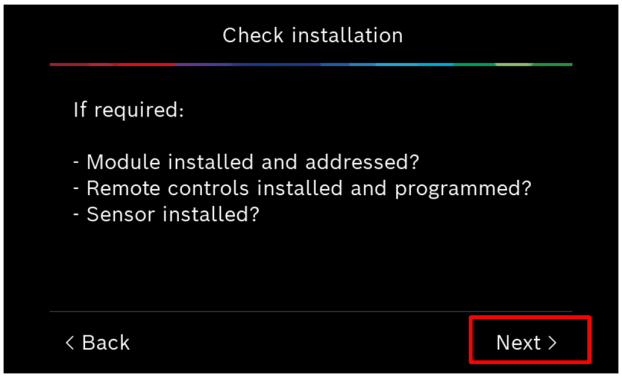
Note:
If a control such as a Bosch RT800 is fitted the date will appear on there instead of unit



Select the required date and select **Confirm.**

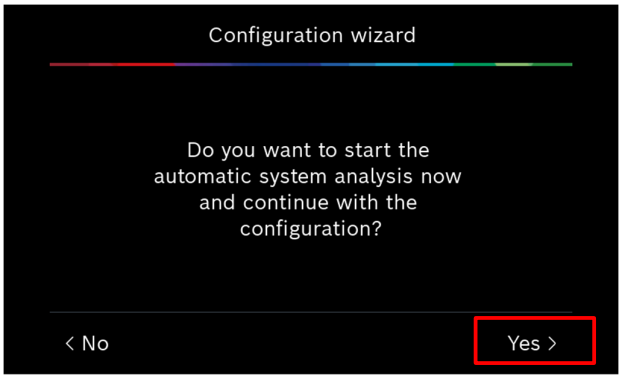


Adjust to the required Time and select **Confirm.**

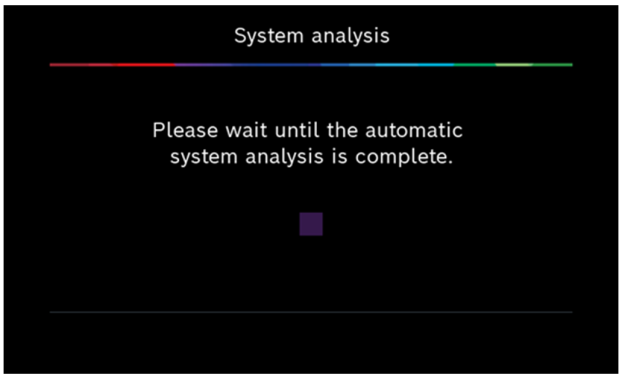


Reminder to check everything has been installed.

Press **Next** to continue.



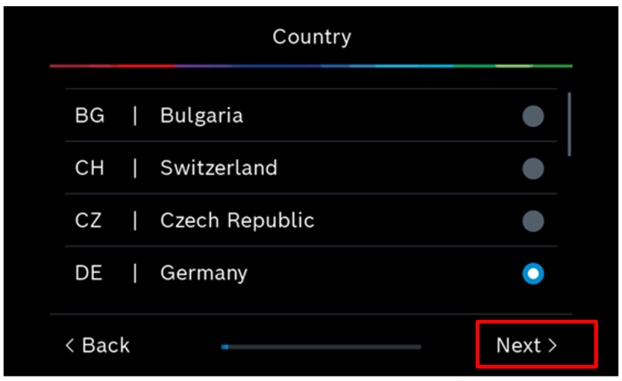
Start the configuration wizard by selecting **Yes**.



System analysis is running.

The heat pump searches for accessories in the system via the bus system.

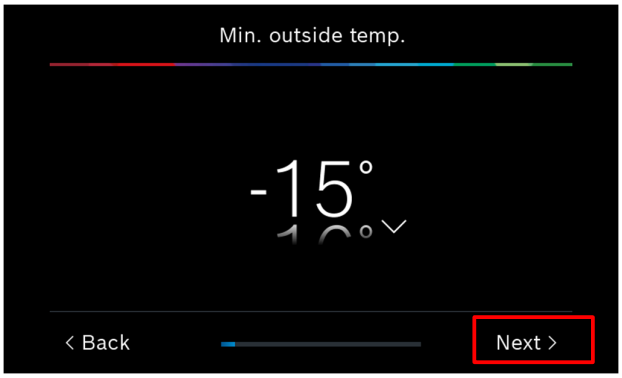
Note: This may take several minutes



Select a Country.

Different countries have **different** regulations.

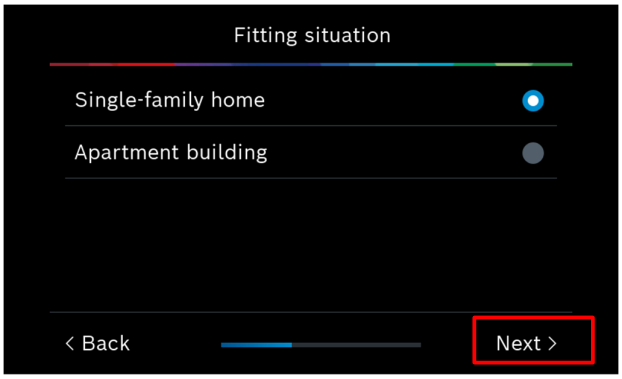
Press **Next** to continue.



Min. outside temperature.
This is the design temperature for the area of installation taken from the MCS website and should represent the coldest day in the region.

For example, Birmingham is -3. c. The flow temperature setting will be at this figure.

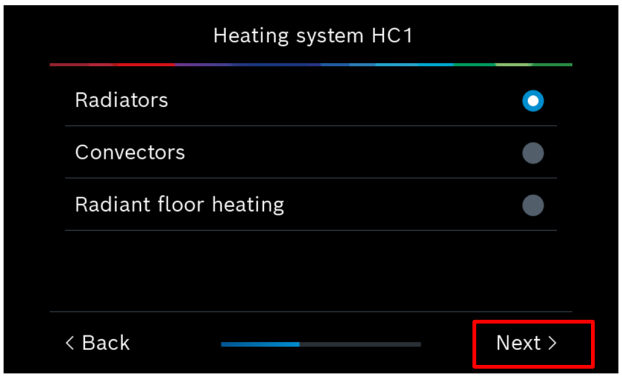
Select **Next**



Select if single-family home or apartment building.

Note: *If the room controller was installed in a multi dwelling property, we can select apartment building, then the room sensor would not have influence on flow temps that could affect other rooms and tenant's comfort*

Select **Next**

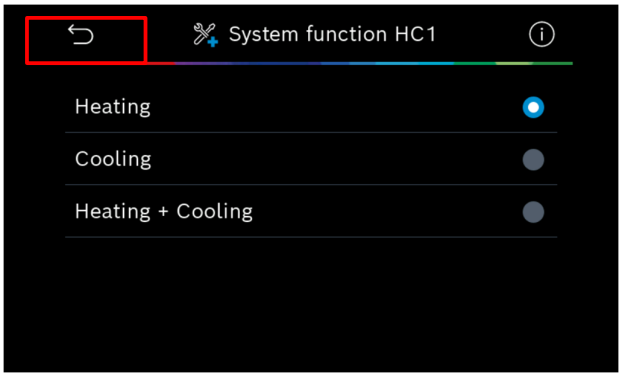


Type of heating system. This is a basic setting for the heating curve.

Flow temperature at Design outdoor temperature (DOT):

- *Radiators = 60°C*
- *Convectors =60°C*
- *Radiant floor heating = 35°C*

Select **Next**

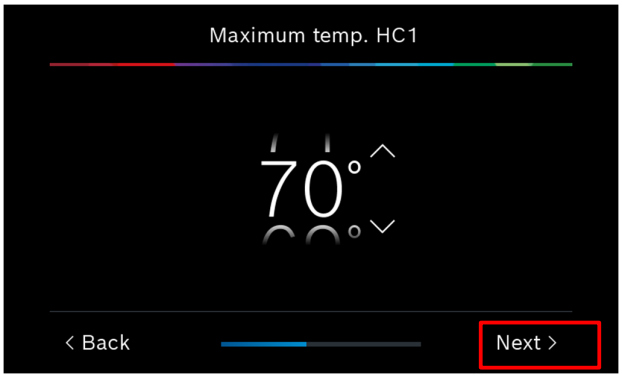


System function HC1 (wall mount only, not on PPC)

Note:
Default is always the heat pump in only heating mode. Choose function on heating circuit 1.

If Heating + Cooling is chosen, a room controller is required.

Select **Back**

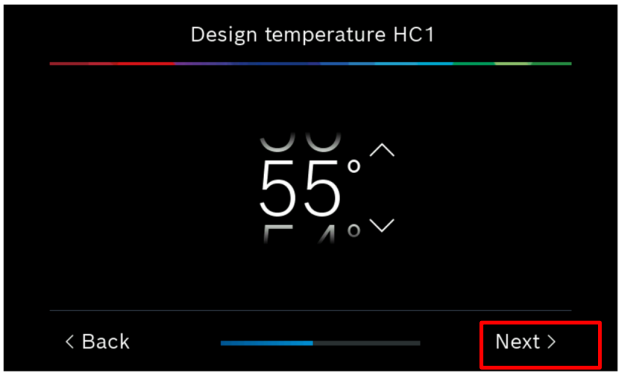


Maximum temperature of the heating system.

This is a safety limit, and an alarm is triggered when the supply temperature exceeds the set temperature by 5K for 40 min (or by 15K for 5 min).

The supply temperature cannot exceed this temperature.

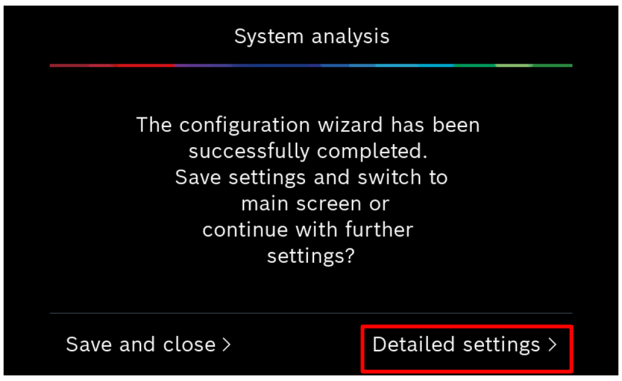
Select **Next**



Set design temperature for the heating circuit HC1.

Select **Next** to move on

Note:
Curve should be set in accordance with the heating design.
(This will be the flow temperature at the previously set minimum outside temperature)



Save & Close will save the settings inputted above.

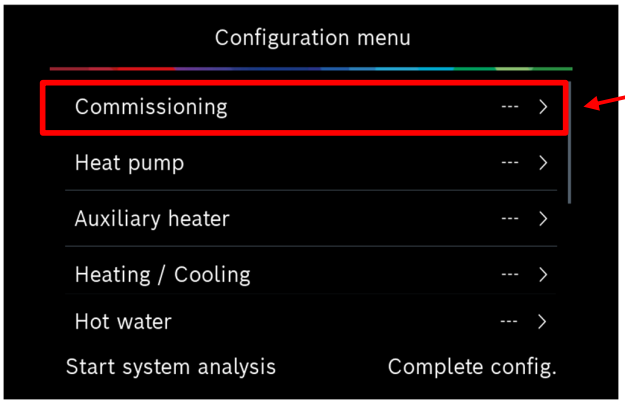
Select **"Detailed settings"** and go through each function.

Note: Maximum temp HC1.

There is a safety limit, and an alarm is triggered when the supply temperature exceeds the set temperature **by 5K for 40 min (or by 15K for 5 min).**

The supply temperature cannot exceed this temperature.

Detailed Commissioning settings

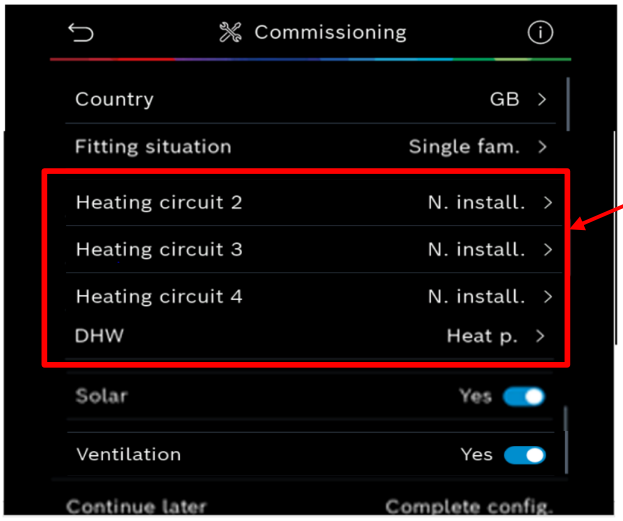


Commissioning Menu

Adjust individual settings to correspond to your installation.

Note: heating circuit 1 will not appear only the additional heating circuit

Additional circuits will only appear if fitted and recognised by the set-up wizard

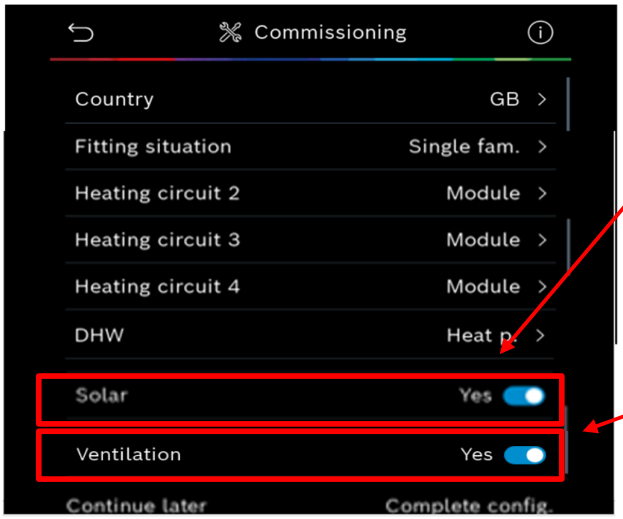


Heating circuits 2,3,4 will say **N. install** unless further modules are fitted and confirmed.

DHW
With the pre-plumbed cylinder leave as **Heat p**. with the wall mount leave as Heat p unless no hot water cylinder is installed.

Then change to not installed.

Note:
Modules may show not installed at first, this depends on the heating system.



Solar

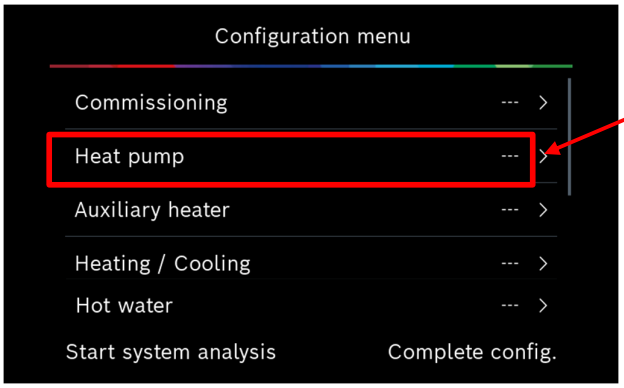
Default should be set as no when on a pre-plumed cylinder.

On a wall mounted unit this can be changed to yes if solar fitted

Ventilation
This setting is for mechanical ventilation.

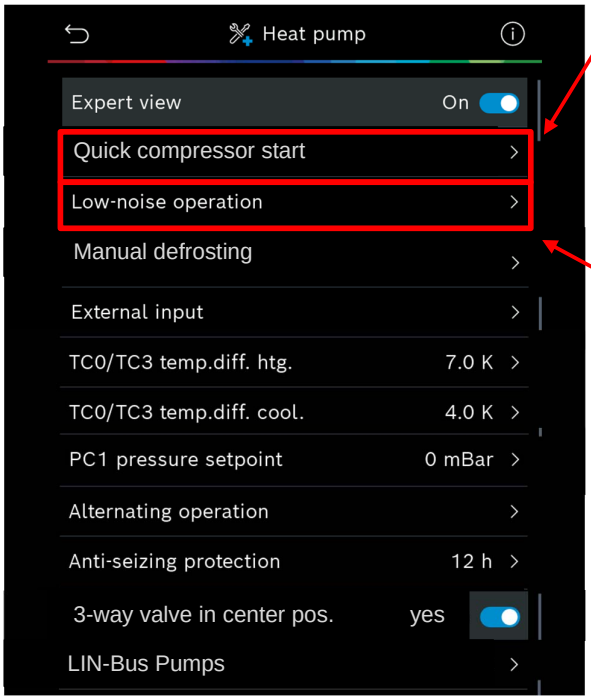
Default is No

Not used this in the UK.



Heat pump menu

Note: Expert view must be on to see all the menus.



Quick compressors start:
Do not quick start the compressor if the outdoor unit ODU hasn't been on for more than 12 hours.

Low noise operation:
low noise operation during set hours (auto) on or off and at what temp outside will it ignore the low noise operation.

Operation mode {Off, Auto, Permanent} Auto

- From {00:00. 23:45}
- To {00:00. 23:45}

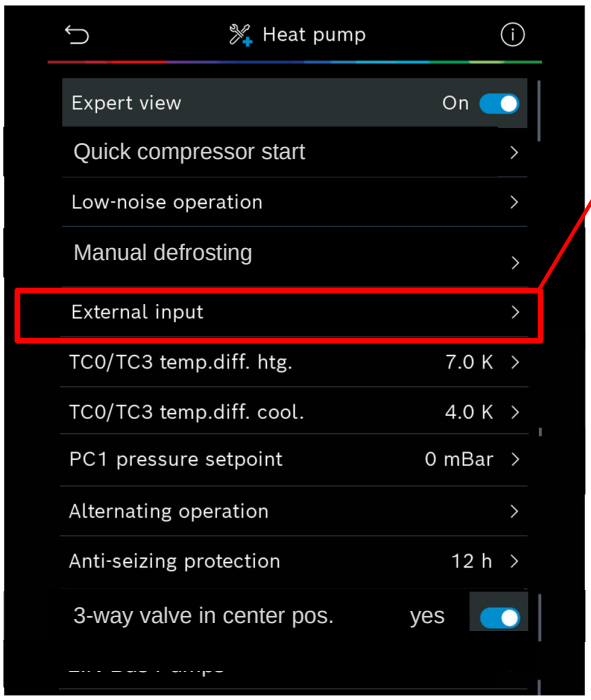
Min. temperature {Inactive, Active: -31. 20} -20 [°C]

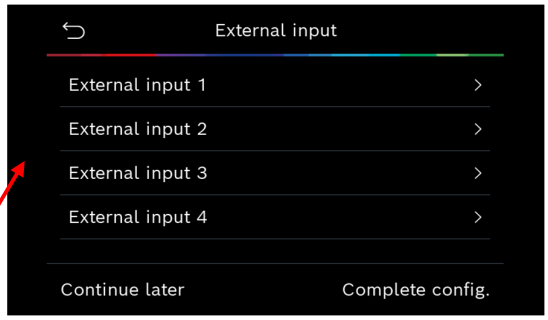
Power reduction

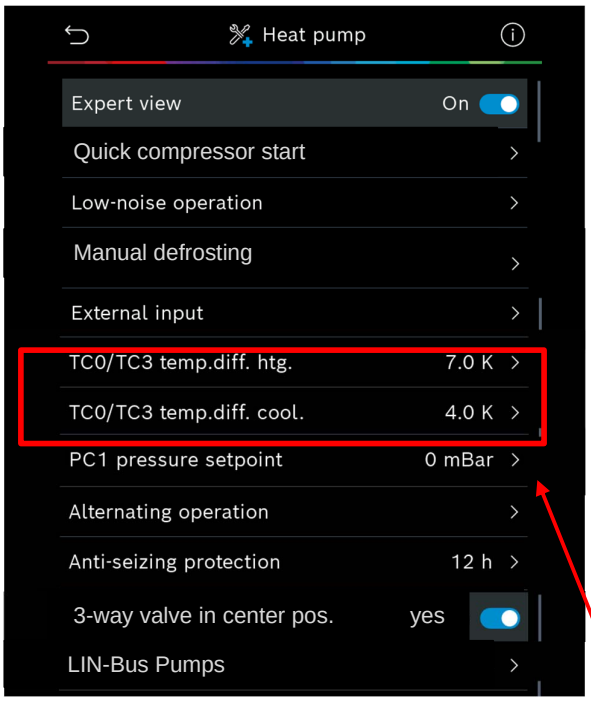
Note:
When using **"Quick start"**, the compressor warm-up is skipped, a request (heating, hot water...) is required to start the heat pump.

Note: If something blocks the start (e.g., flow too low, air detection, internal interlock timers...), the heat pump will not start even though the "Quick start" function has been selected.

The compressor is preheated before starting. This can take up to 30 minutes, depending on the outdoor temperature. The prerequisite for starting is that the compressor temperature (TR1) is 20K higher than the supply air temperature (TL2) and 20K lower than the flow temperature from the heat pump (TC3).







External Input

External input 1 = Disabled in UK

External input 2 = Block CH or Block DHW (configurable)

External input 3 = Safety temperature limiter

In some countries, a safety thermostat is required to be installed in under floor heating circuits. The safety temperature limiter is connected to external input 3. Set the operation for external input (control unit manual

External input 4 = Smart Grid 2: heat pump + el. auxiliary heater requested or PV integration

Optional possibility to invert the input logic.

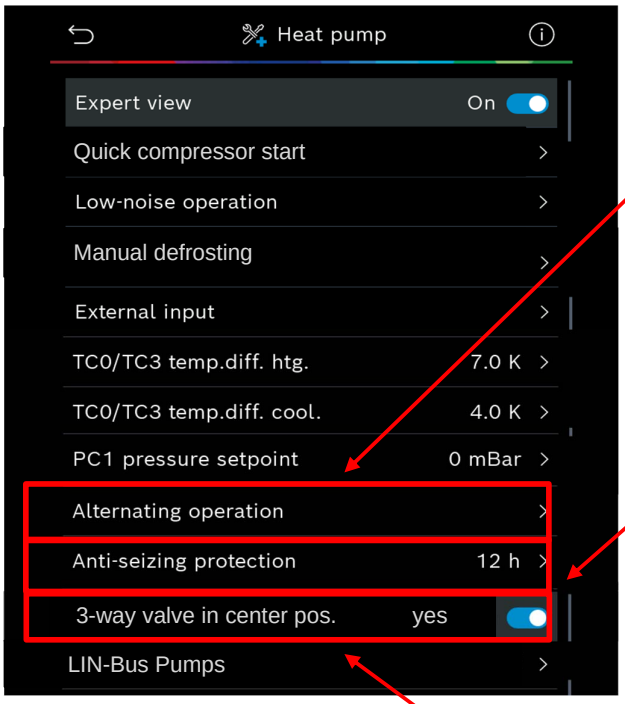
Volt free input from an additional source such as PV panels etc / energy supplier <during peak times, they send a volt free contact to make sure the additional heater isn't used for example.

TCO Menu

TC3 temp diff htg:

T3 is temp leaving heat pump and TCO is the return temp set, in heating measured in Kelvin
<shouldn't have to touch>

TCO/TC3 temp. diff. cool.: Tc3 is temp leaving heat pump and TCO is the return temp set, in cooling measured in Kelvin



Alternating Operation

- DHW 120min
- CH 30min

On by default

Time is adjustable, default values are different per country.

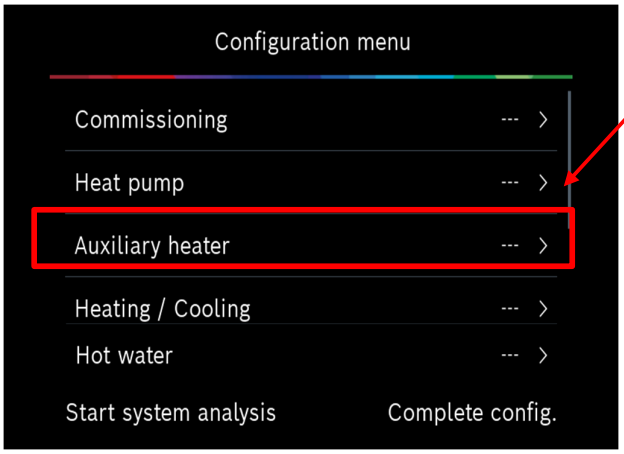
Anti-seize function.

This sets a time <in hours> if no demand within the time period set the pump / diverter valve will activate to prevent seizing.

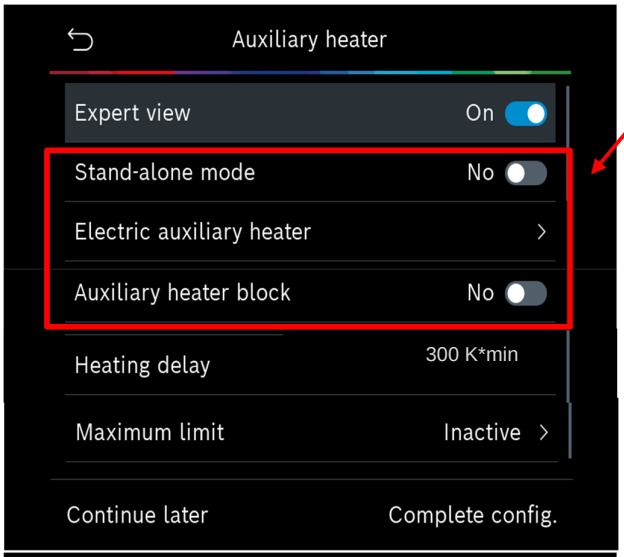
3 Way valve in centre pos.

Yes/No Option

This is to allow draining / filling of the system.



Auxiliary heater menu



Stand Alone mode.

Yes/No Option
If you have no outdoor unit and you want to start screed drying etc.

Electrical heater
Factory set outputs for the heater.

This will open another menu shown on page 14

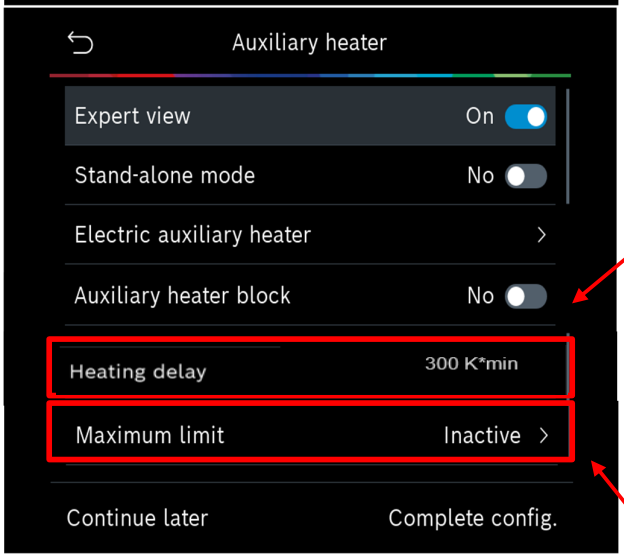
Bival.parallel. mode:

The default is 10 degrees, the additional Heater will not be used for CH above this temp

this should be set to the minimum outdoor temp. e.g -3 for birminham

Auxiliary Heater Block

Yes/No Option
Blocks activation of immersion heater



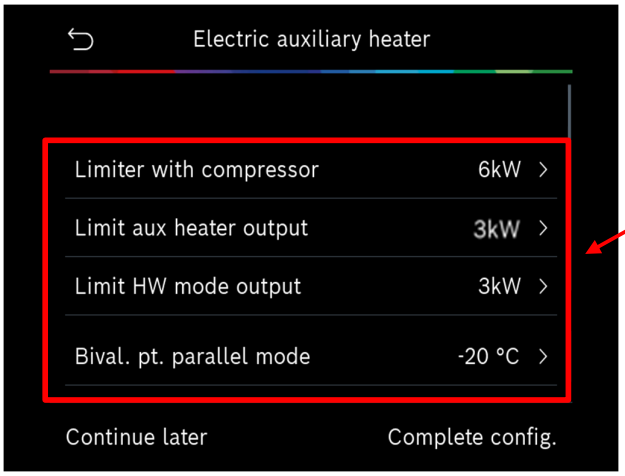
Heating delay

Yes/No Option Constant calculation,.

E.g., if you had a flow temp of 40 degrees and the request is 50 degrees < 10-degree diff> = k/min divided by the diff between actual / requested will give the time before the additional heat kicks in

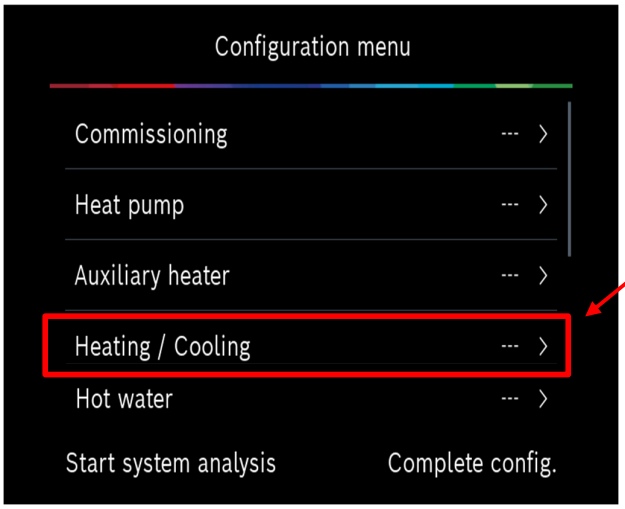
<Constantly changes depending on temp>

Maximum limit on/off with temperature option
E.g., 2.0k this is the maximum it will go as in 2k above max flow temp.



Electric Auxiliary Heater

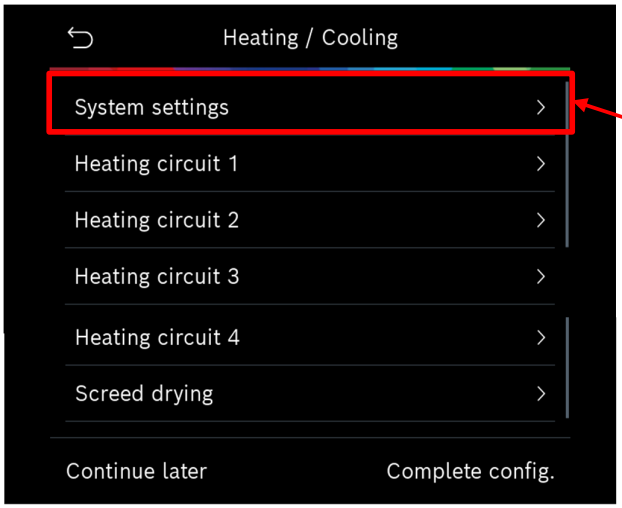
- Limiter with compressor 0 -3kW
- Limiter aux heater output 3kW
- Limit HW output 3kW
- Bival.pt parallel mode <temp set to 10 degrees>
  This is the temperature when additional heater will come on <should be set to the minimum outside temp>



Heating & Cooling

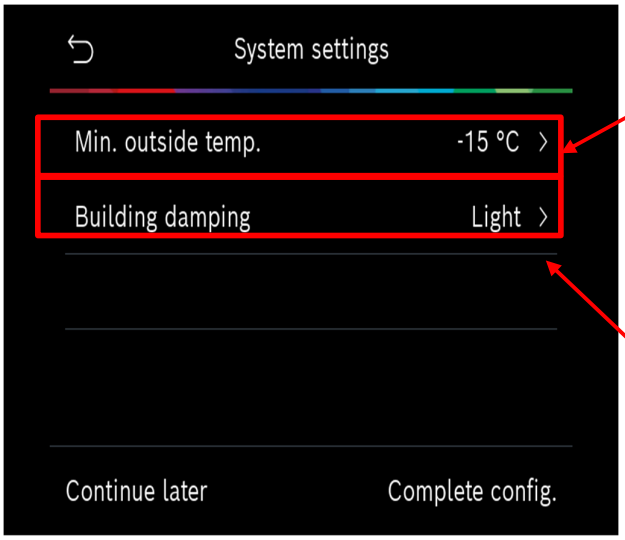
Menu to fine tune the individual heating circuits

Heating circuit 1 is the default circuit the rest are additional and are not used unless configured for set up.



System settings
This will allow you to check the outside temp set and amend if required.

You can also set the insulation levels of the property.



Minimum outside temp.
This figure is carried over from the original step when first powered up.

Building Damping

Insulation properties of the building.

Light: Double brick house.

Medium: Average house with average insulation

Heavy: Very well insulated / new build property

Note:

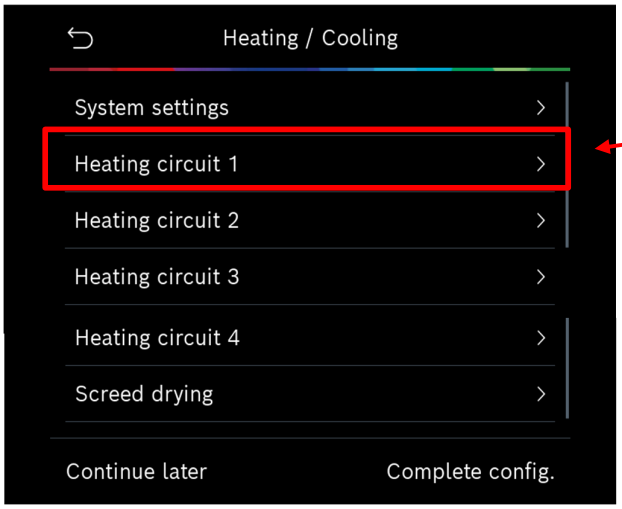
The outdoor temperature fills in an important role in controlling how much energy is needed to reach the desired room temperature. Since a house has a capacity to store heat, the changes in room temperature are delayed relative to the changes in outdoor temperature.

By activating the damping function, a filter is applied to the measured outdoor temperature T1. The slowness of the filter depends on the type of building (Light, Medium or Heavy) chosen.

In this way the control unit is able to consider the ability of the house to store heat.

Additional info
If sensor T1 is defective, the damped temperature will strive for the value set in Lowest outdoor temperature (from the heat curve) + 10K.

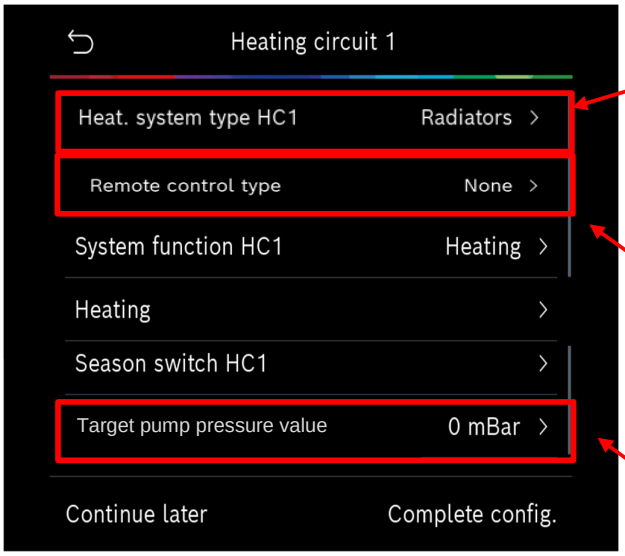
Configuration



Heating circuit 1
This is the default heating circuit.

All other circuits can be set up in the way below.

On the set-up wizard if it identifies modules, it will populate this menu.



Heat system type HC1

Select the heating type for this heating circuit

Example Radiators / Underfloor

Remote control type

Default will show None if a controller is connected it will appear here.

Target pump pressure valve

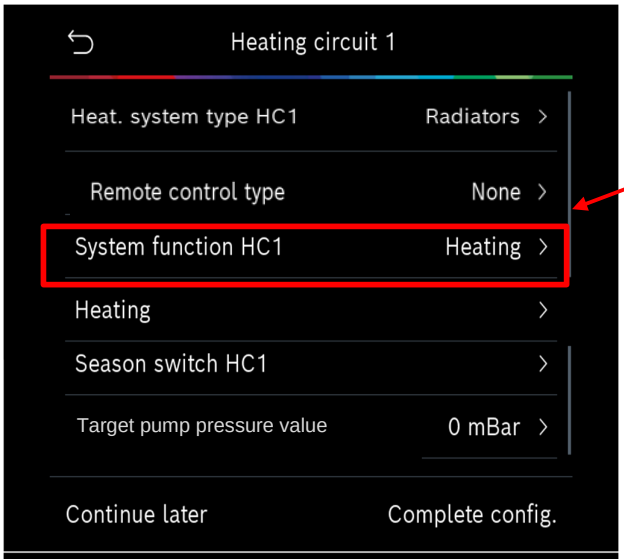
Note: Only on pre-plumb cylinder

Do not adjust

Note

All additional heating circuits identified during the initial wizard are set up in the same way as heating circuit 1.

In this way the control unit is able to consider the ability of the house to store heat.

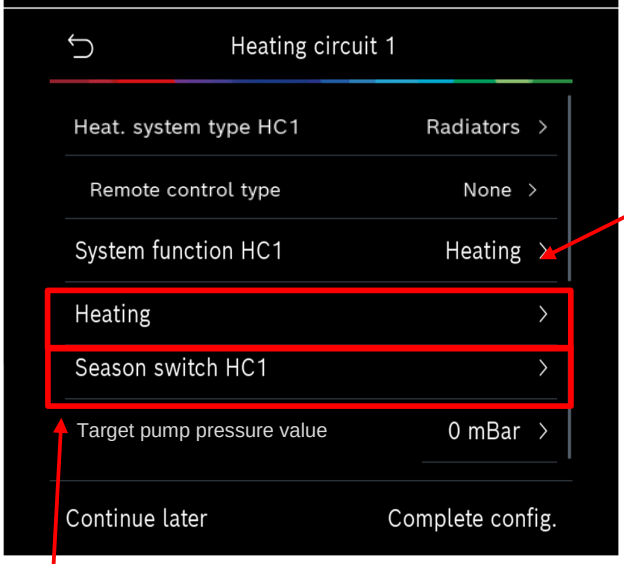


System function HC1

On pre-plumb cylinder this cannot be changed

On wall hung as part of the set up prior to the configuration this can be amended.

Heating
Cooling
Heating & Cooling



Heating

In this menu you can adjust the heat curve

For Commissioning select this option to set up the heat curve

Season Switch HC1 <summer disconnection menu options>

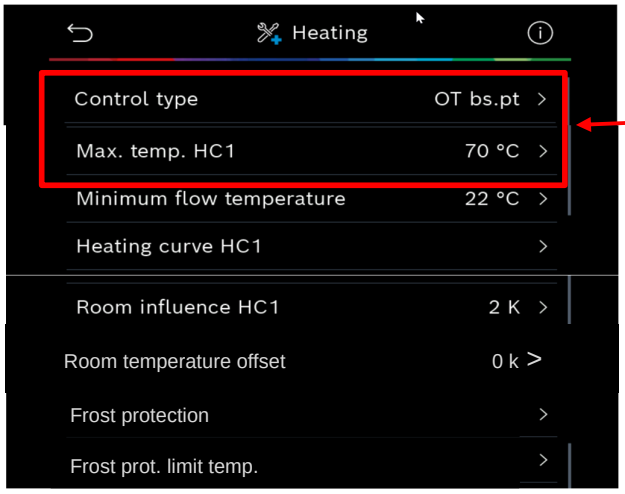
Operating mode
Either follows summer disconnection or you can set this to heating for permanent heating.
Heating mode up to This is summer disconnection temp.

Heating mode up to:
Factory set to 18.c: heating will only come on below this temperature. Adjust to suit.

Dir. Start temp diff: 1-10K
Works with heating mode delay menu < time before it comes on> but will bring the unit on if this figure is reached.

Summer mode delay: 1-48h
Stops the heating coming on over the **heating mode up to** temperature.

Heating mode delay: 1-48h
Time before heating system activates.

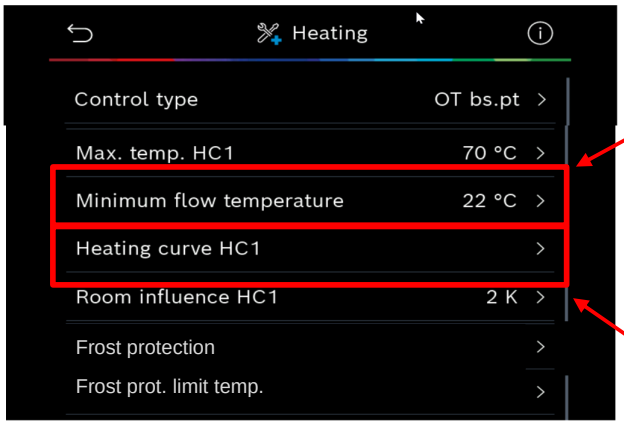


Control type

- **OT bs. Pt>** Outside temp with base point
- **OT. Dep>** Outside temp compensated.

What is selected here affects **Menu Heating Curve menu.**

Max. Temp. HC1
Temperature is taken from the first set up



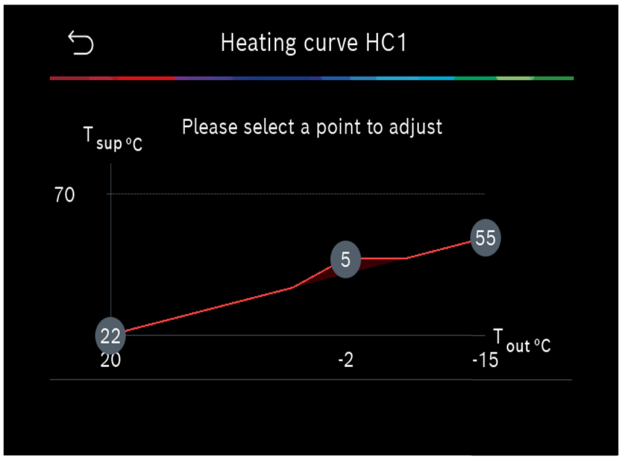
Minimum flow temperature On / off menu

- Off is 25 degrees
- On allows 22 -60 degrees

Heating Curve HC1

2 curves can be set, the one shown or standard compensated.

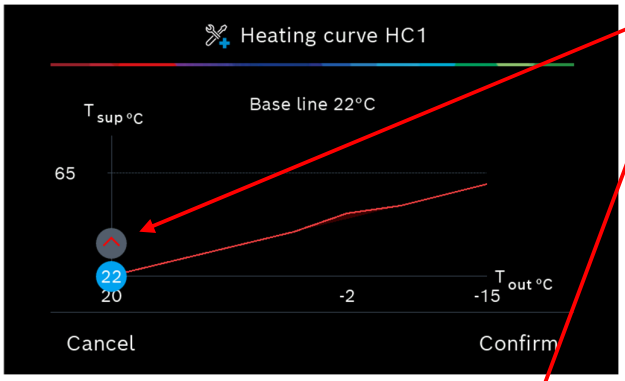
Standard Compensated curve will use previous set points (design temp and min outside temp)

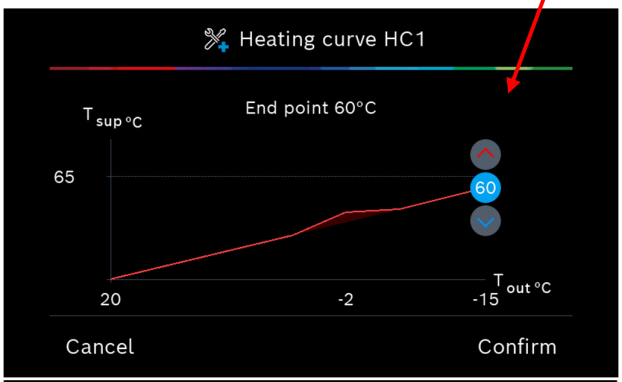


Heating curve menu

The heating curve shown will depend on the option selected on control type.

Note:
The heating curve should be set in accordance with the heating design for the property.



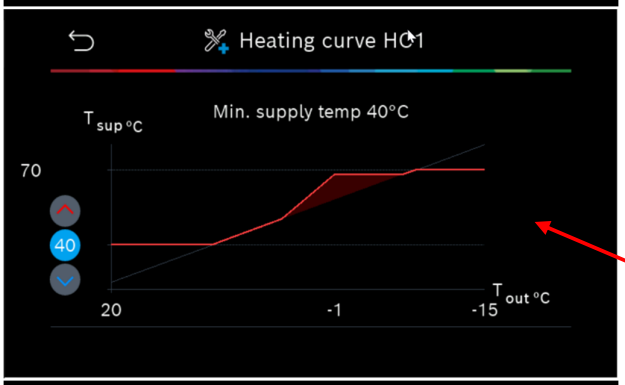


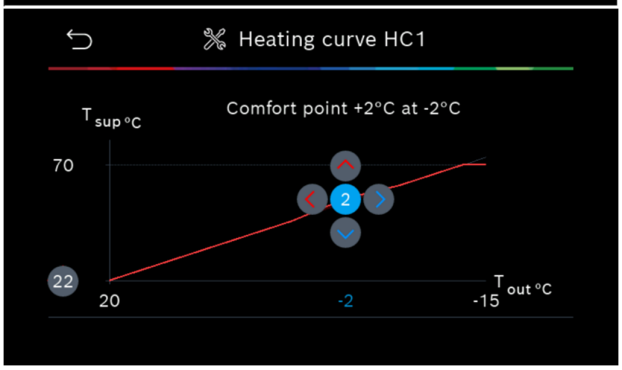
Heating Curve Adjustment

What will be shown is the default curve based on the information entered.

All points are adjustable by selecting the point on the screen.

Start or end point can be selected and using the up / down arrows to move the curve to the required position.

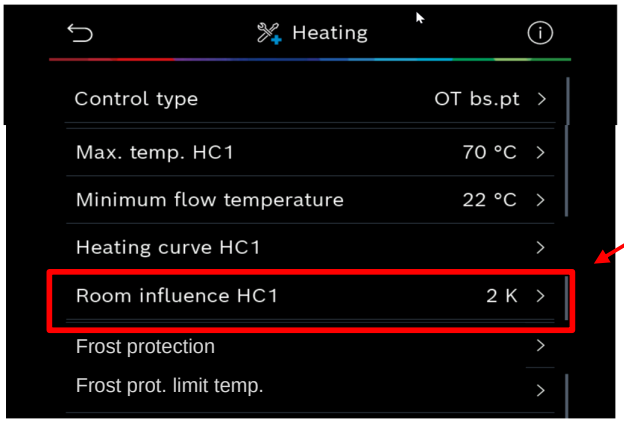




Heating Curve Adjustment

The middle points of the curve can only be changed if you select **Control type OT bs.pt.** in the previous menu

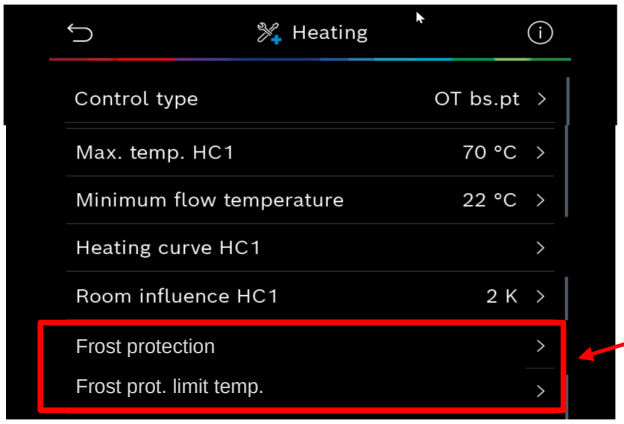
If you move away from the default curve you will see red hash marks on the screen showing the deviation



Room Influence

Room influence hc1 on/off 1-5
Measured in Kelvin the higher this is set to the higher the influence on the flow temperature when there is a diff between set point and actual room temp.

Room temperature offset -5 to 5
This is parallel offset on the curve, and we advise this is always left at zero.
Note: Any deviation from 21 degrees on the room temperature setting will be multiplied by 3 and added / subtracted from the flow temperature.



Frost Protection menu

- **Off**
- **Room** uses room sensor < this is an accessory>
- **Out d** <Factory to outdoor sensor>
- **R&o** <both> Room & outdoor

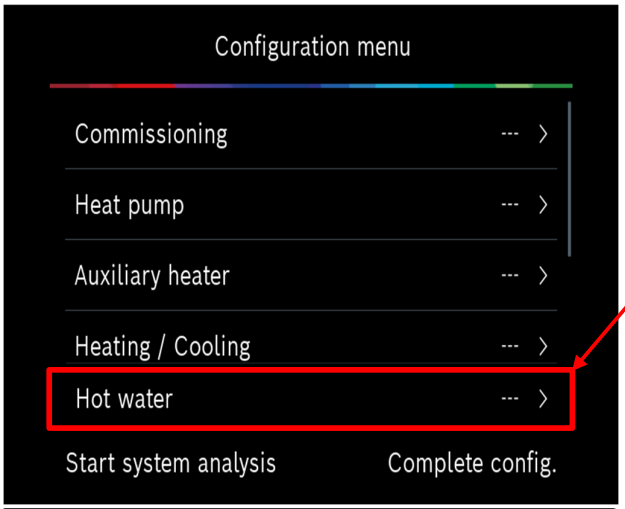
Frost prot pro. limit temp

-20 to 10 at what point frost protection kicks in.

Cont. below on/off
min –30 to 10 <constant?> default is off?

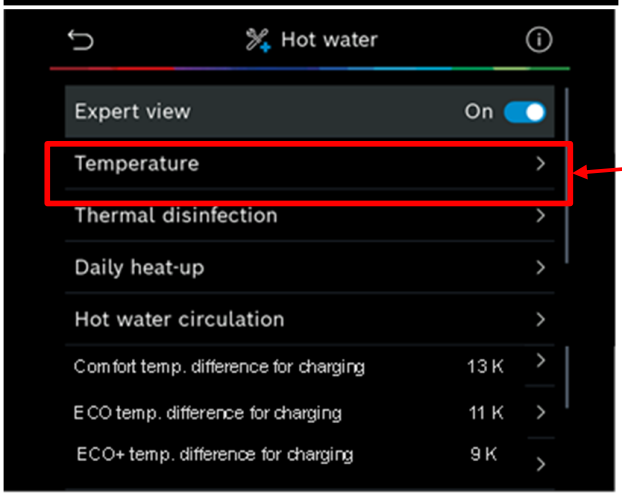
Note:
Timed function is ignored in the heating settings

Hot Water



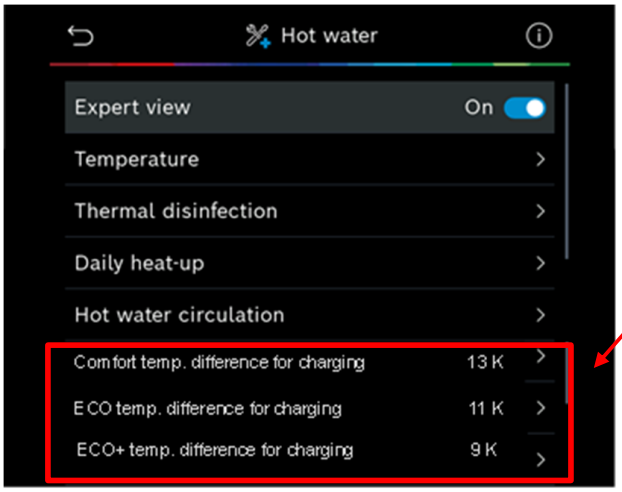
Hot Water

Select to adjust individual settings for hot water



Temperature

DHW Start & Stop temperatures.



Hot Water

- Comfort start temp 53 <faster>
- Comfort stop temp 60.
- Eco start temp 51 <slower>
- Eco stop temp 58.
- Eco+ start temp 44 <efficiency>
- Eco+ stop temp 53.
- Extra hot water temp 60

Note on Hot water settings:

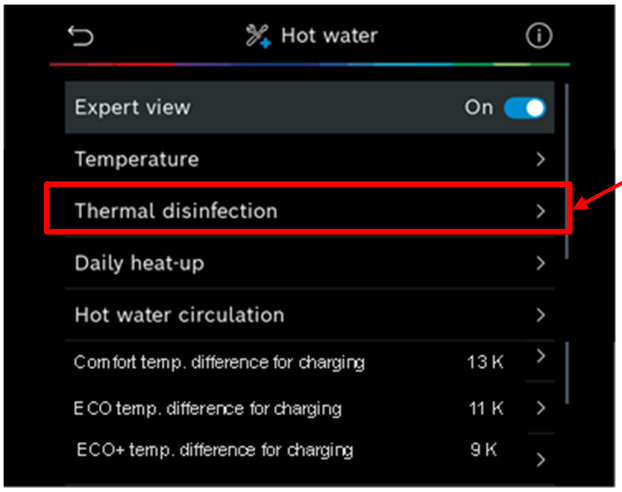
These settings are the difference between the outdoor unit flow temperature and the cylinder actual temperature, the pump will slow down, and the compressor will speed up to give these temperatures faster or slower depending on the settings.

The higher the delta the harder the compressor will need to work to achieve the temperatures.
We would advise that these temperatures are not adjusted as this can have a knock on affect on hot water production.

Additional Note:
Hot water is started after the temperature falls below the start temperature (depending on the “Comfort”, “ECO” and “ECO-Plus” operating modes) without a hot water start timer.

The start and stop temperature are based on TW1 (storage tank temperature).

	Delta Temp DHW Charging [K]	TW1 Start Temperature [°C]	TW1 Stop Temperature [°C]	House Type
Eco+	9	44	53	1-2 Bed
Eco	11	51	58	2-3 Bed
Comfort	13	Wallhung / Flex: 53 DHW-Tower: 55	Wallhung / Flex: 60 DHW-Tower: 62	3+ Bed

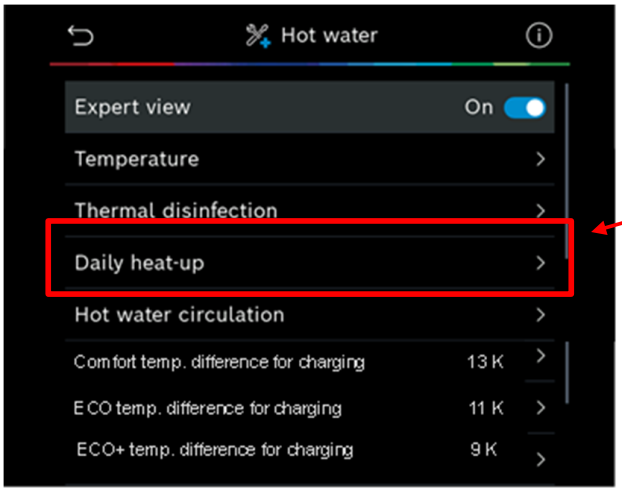


Thermal Disinfection
Auto yes/no

Temperature
70 <factory set>

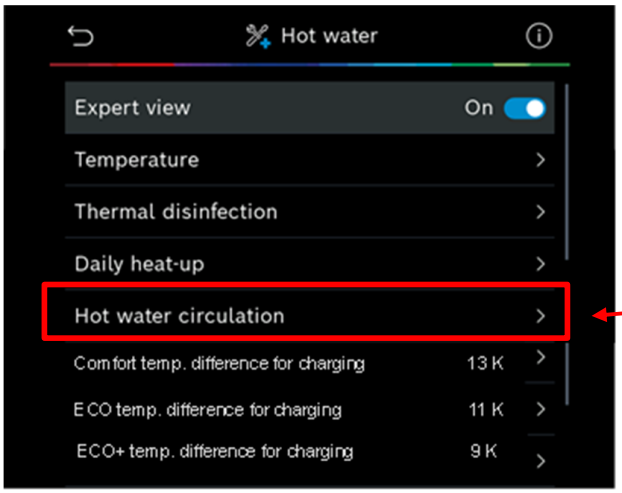
Heat maintenance time
1hour <keeps it at set temp for this time.

Max time
240mins <will try and reach 70 degrees in the time period set.



Daily Heat up

Daily heating yes / no

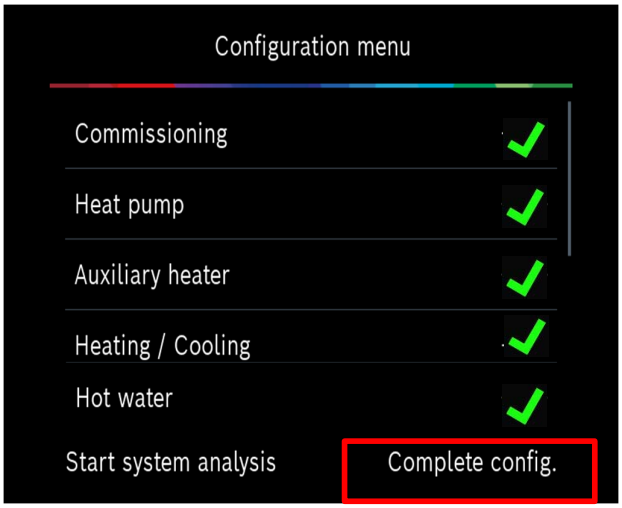


Hot Water Circulation
On/off

Pw2 circulation pump installed off/on <secondary return on cylinder controlled by unit>

This opens up settings menu for this pump.

Note: we would advise external programmer is used rather than ours as there is only a program for start frequency per hour



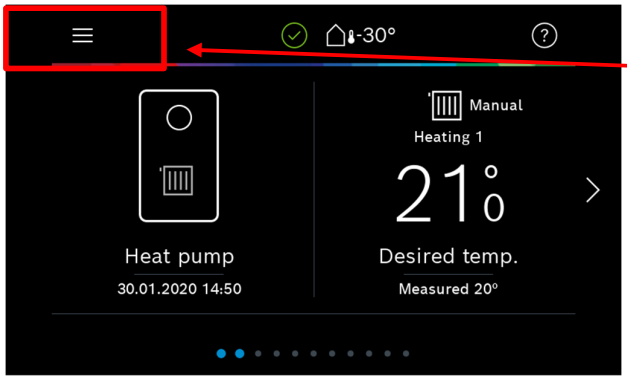
Complete Config

Once complete select this option and the display screen will activate the main menu screen.

This should be undertaken at the end of every sub section, and you should have green ticks against all.

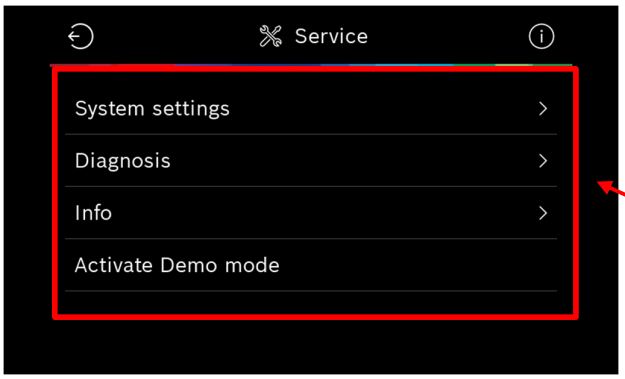
Note: You cannot complete the commissioning if you miss a section.

Diagnosis



Hold the **menu** button for 5 seconds

< a countdown is displayed>



System settings:
Return to the Commissioning menu and to Installation settings(heat pump, auxiliary heating, heating/cooling settings, hot water, etc.)

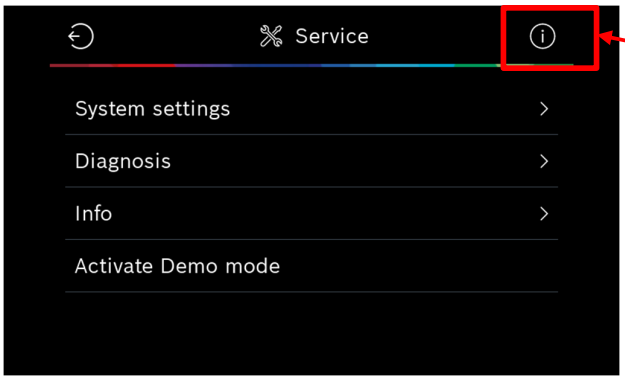
Diagnosis:
Includes functional tests, errors & contact details of the installer

Info:
Detailed information about the heat pump, the system, the heating circuits...

Activate Demo Mode:
For demonstration purposes e.g. for the end customer, trade fairs...

Warning:
If you activate Demo mode you will need to re commission the heat pump.

Info



Information-button.

This is a quickway to check sensor values, the heating circuits, DHW or running condition of the heat pump.

Note: This is view only and can be preseed on multiple screens to show the temepratures