**User Guide**

# Atlas, Calibra & Calibra Eco

The English language is used for the original instructions.
Other languages are a translation of the original instructions.
(Directive 2006/42/EC)

## Table of Contents

## 1      Foreword

**Buying a heat pump from Thermia is an investment in a better future.**

A Thermia heat pump is classed as a renewable energy source, which means that it is considerate of our environment. It is a safe and convenient solution that provides sustainable heating, hot water and, in certain cases, cooling for your home at a low energy consumption.

We thank you for the confidence that you have shown in us by buying a heat pump from Thermia . We hope that you will benefit from it for many, many years to come.

**With best wishes**

**Thermia heat pumps**

## 2      Safety precautions

### 2.1      Important information

| **Warning** ⚠ | This appliance can be used by children aged 8 years and above, and by persons with reduced physical, sensory or mental capabilities or lack of experience or knowledge, provided that they are supervised or have been instructed in the safe use of the appliance and understand the hazards involved. Cleaning and user maintenance must not be carried out by children, except under adult supervision. |
|---|---|
| **Warning** ⚠ | Children are not permitted to play with the product. |

The system can be considered maintenance-free but certain checks are necessary.
Contact your installer for any service work.
The front of the heat pump must only be opened by qualified installers.

### 2.2      Installation and maintenance

**Only qualified installers may install, operate and carry out maintenance and repair work on the heat pump.**

The appliance shall be stored and installed so as to prevent mechanical damage from occurring.

Due to safety regulations, only qualified electricians may modify the electrical installation and only qualified refrigeration technicians may work on the refrigerant circuit.
This applies to modifications on the following components:

- The heat pump unit
- The pipes for the refrigerant, brine and water
- The power supply
- The safety valves

It is not permitted to carry out construction installations that may affect the operational safety of the heat pump.

Make sure to never block the connection to the safety valves' overflow pipes.

The following safety precautions apply to the hot water circuit's safety valve with corresponding overflow pipe:

- Water expands when it is heated, which means that a small amount of water is released from the system via the overflow pipe.
- The water that exits the overflow pipe can be hot!
  Therefore, allow it to flow to a floor drain to prevent any risk of burning yourself.

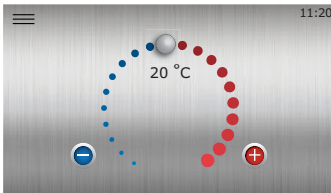# 3          Common settings

## 3.1          Common settings

Below is a summary of the most common settings you may need to make as owner of this heat pump. If the screen saver is active, simply press the screen to proceed.

- **Adjusting the indoor temperature**

Adjusting the indoor temperature is easy.

Without room sensor



Press ⊕ to increase the indoor temperature or ⊖ to decrease the indoor temperature.

One step up or down will affect the indoor temperature with approximately 1 °C. This is the easiest way to adjust the heating.

Observe that the effect of the adjustment takes up to approximately 24 hours to be noticable, depending on the heating system and insulation of the building etc.

For more advanced settings and information, please refer to the Heating settings chapter.

- **Thermia Online**

With Thermia Online you can control and monitor your heat pump via any smart phone, computer or tablet.

Visit https://www.online-genesis.thermia.se to create an account. For smart phone or tablet, please download the application.

- **Display notifications**

The heat pump is equipped with automatic functional surveillance in the controller in order to give the heat pump a long lifetime with as reliable and efficient running as possible. If the heat pump detects that something may need attention, this will be presented as a so called "alarm" in the display. See the Alarms chapter for further information.

# 4        About your heat pump

## 4.1        Product description

This heat pump is a heating system for both heating and hot water production. It has a compressor which is customised for heat pumps.

The heat pump is equipped with control equipment which is presented in a graphic display. The heat pump is also prepared for monitoring via the internet.

Heating is provided to the building via a water-borne heating system. The heat pump supplies as much of the heat demand as possible before auxiliary heating is engaged to assist. If cooling is installed, the heat pump can also provide cooling.

The heating unit consists of two basic components:

**Heat pump unit**

The heat pump also consists of:

- Variable speed scroll compressor controlled by frequency converter
- Stainless steel heat exchangers
- Circulation pumps for collector system and heating system
- Electronic expansion valves and pressure transmitters for surveillance of the refrigerant circuit
- Inbuilt stainless water heater
- Internal immersion heater
- The Duo heat pump has a separate water heater. The temperature in the water heater is controlled by the lower and top temperature sensors.
- If you have the Atlas model with HGW you can achieve higher amount of hot water.

**Control equipment**

The control equipment controls the incoming components of the heating appliance (compressor, circulation pumps, auxiliary heating, exchange valves and external functions available as accessories, if installed) and keeps track of when the pump should start and stop, as well as whether it should produce heating or hot water.

The control equipment consists of:

- Colour touch screen and relay module
- Temperature sensors (outdoor, supply line, return line, brine and hot water)
- Frequency converter and sensors in the heat pump's refrigerant circuit

**Heating system**

In your heating system, water is constantly circulating from the heat pump through radiators or floor heating and back again to provide heating to the building, except during summer when there is no need for heating . If you have cooling installed, the cooling is supplied in a similar way, often to to fan coils or under floor systems prepared for cooling.

**Heat curve & supply line temperature**

The heat pump is automatically calculating how much heat it has to produce to keep a comfortable indoor climate based on the measured outdoor temperature and the settings made on the so called "heat curve" in the heat pump display.

The temperature of the water supplied from the heat pump to the heating system is called "supply line temperature" as it is the temperature that is supplied from the heat pump to the heating system.

The supply line temperature needs to be increased when the outdoor temperatures gets lower because more heat is required from the heating system when it gets colder outside to keep the same indoor temperature. This is what the "heat curve" makes sure.

The heat curve settings are normally adjusted by the heat pump installer, but fine tuning to the specific house conditions and individual preferences may be required after some time to obtain desired indoor climate in all weather conditions.

A correctly set heat curve saves energy, gives a very good indoor climate and often also reduces the need of maintenance.

**General guidance:**

In order to increase the indoor temperature with 1 degree, the **supply line** temperature should often be increased by 3 ℃ in radiator systems and 2 ℃ in floor heating systems.

(To decrease indoor temperatures, lower the temperatur settings correspondingly.)

When the heat curve is set properly, the comfort adjustment will work as a quick adjustment to increase/decrease the indoor temperature, affecting the indoor temperature with approx 1 ℃ / step.

For furter information. See appendix.

## 5      Settings and adjustments

A qualified installer sets the heat pump's basic settings upon installation. The adjustments that may be made by the end user are described below.
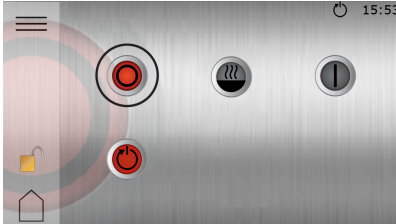Sometimes no adjustments are needed at all.

Never change control unit settings unless you are aware of what effects the changes may have. Make a note of the default setting and know that some changes may take some time to take effect due to the nature of a heating system.

### 5.1      Selecting operating mode

Set the heat pump to the desired operating mode in the menu:
1.  Press ☰ on the Start screen to open the Menu screen.
2.  Press ⊗. A new window opens.
3.  Press the appropriate symbol for the desired operating mode.
4.  Normal mode is **Auto** (On).

⏱ If the compressor has been in operation for the past 20 minutes, so-called restriction time may occur temporarily preventing the heat pump from starting.

| Symbol | Description |
|---|---|
|  | Operating mode **On/Auto**<br>(This is normal mode).<br><br>All activated functions are on. By factory default, heating and hot water is produced. Compressor and internal immersion heater are controlled automatically. |
|  | Operating mode **Auxiliary heater only**. <br>This setting can be often be used as "emergency mode" for heating and hot water if the compressor is blocked for operation.<br><br>Compressor is off, but by factory default the unit can produce heating and hot water with the internal immersion heater, in case of certain alarms, and/or during installation and commissioning of the heat pump. External functions are on. This operating mode will increase the energy consumption compared to " Auto" mode. |
|  | Operating mode **Off**.<br><br>All functions are off. Components inside the heat pump are still current carrying.<br>The heat pump will not produce any heating or hot water.<br>**Risk of freezing!** |

## 5.2      Adjusting the indoor temperature - Heat settings

**Comfort adjustment, to change temperature**

On the start screen, "comfort adjustment" of the indoor temperature may be done very easily.
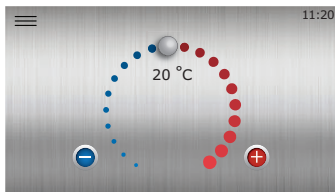
Press ⊕ or ⊖, alternatively drag clockwise or anticlockwise to raise or lower the temperature.
Each step represents an increase/decrease of approximately 1°C of the indoor temperature.

General advice: If the temperature is perceived as too high, it is normally highly recommended to change the setting on the heat pump instead of adjusting down/closing the radiator thermostats and similar. Adjusting the settings on the heat pump will in most cases enable a more efficient and smooth running.

If regular adjustments on the comfort adjustment are required to keep the indoor temperature stable when the outdoor temperature changes, this may indicate that the so called heat curve (more advanced setting) should be adjusted. For cooling settings: see cooling chapter.

See Comfort Settings in the Appendix for details.

## 5.3      Adjusting the Heat Curve

The heat curve is a more advanced and complicated way to adjust the heating compared to the comfort adjustment available on the first page, but also gives very good possibilities for fine tuning the heating settings to get desired indoor climate also when the outdoor temperature changes.

If you are not familiar with how the heat curve is working, it may be good to start by reading the Heat curve chapter in the Appendix, in this manual.
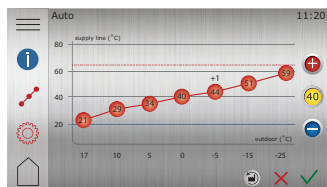
1. Press ☰ on the Start screen to open the Menu screen.
2. Press 🔥
3. Press 🖉 if the Heat curve is not shown.
4. There are two ways of adjusting the heat curve:
   - If the Curve indicator ⑳ is lit, press ⊕ or ⊖ to adjust the entire curve.
   **Or:**
   - If the Curve indicator ⑳ is not lit individual points can be moved separately by pressing the desired individual point and pressing ⊕ and ⊖ to the desired temperature.
5. Confirm the new selection by pressing ✓

## 5.4      Heating Settings

In Heating settings, you can set seasonal stop and min/max supply line temperature.
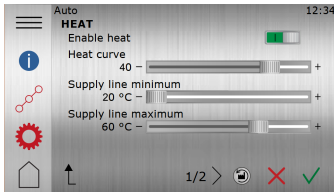


1. Press ☰ on the Start screen to open the Menu screen.
2. Press 🔥
3. Press ⚙ if the Heat settings window is not shown.
4. Make the desired changes.
5. Confirm settings by pressing ✓.

Adjusting the minimum and maximum supply temperatures is particularly important if your home has under floor heating.

If your house has floor heating, the supply line temperature must not exceed the values recommended by the floor manufacturer. Otherwise the floor might get damaged.

For more information, see Heating Settings in the Appendix.

Note: **Enable heat** is by default ON and should normally never be deactivated, as this could cause freezing and property damage.

## 5.5      Hot water settings

In hot water settings you may choose from 3 different hot water modes depending on your preferences:

**Economy mode:** Can be used as default mode to get the most energy efficient hot water production when the demands on hot water capacity is expected low. This setting will give the most efficient hot water production, but also a lower hot water capacity and longer recharge times compared to the other modes.

**Normal mode:** Often a good setting for normal families and is optimized to give a very good compromise between comfort and economy giving a high amount of available hot water, but also a low energy consumption.

**Comfort mode:** Will give shortest recharge times and highest hot water capacity, but with a somewhat lower efficiency and a slightly increased sound level.

**Boost button:** By pressing the "Boost" button you can trigger an extra (onetime) hot water production including the use of the electrical top up heater, giving the possibility of an increased amount of hot water for special occasions.

**Note** - Hot water production should normally never be deactivated, as this could cause harmful bacterial growth inside the hot water tank.

### 5.6          Cooling settings

Cooling (standard in "Calibra Cool" model, otherwise accessory).
For products with cooling installed, your heat pump can produce cooling during summer time to give you an extra pleasant indoor climate. If you have cooling installed, the cooling menu icon is visible in the heat pump display.

To view and change actual cooling settings:

1. Press ☰ on the Start screen to open the Menu screen.
2. Press ❄
3. Make the desired changes.
4. Confirm settings by pressing ✓.

**Enable Passive cooling**

If cooling is activated, the heat pump will stop heating and will start and stop cooling automatically (If the cooling is deactivated, cooling will never start).

**General information**

**Important!** A desired cooling temperature set too low can give condense problems in certain systems, especially at high air humidity. Contact your installer for advice if you are uncertain and/or would like to lower the desired cooling supply (min) temperature.

In certain systems external systems can also be connected to command the heat pump to start cooling.

### 5.6.1          Cooling without indoor room sensor (standard)

The cooling function will be activated automatically when the outdoor temperature over time has exceeded the set value for cooling **seasonal start**. This is how the heat pump detects and sets the heat pump to "cooling season" mode. If the outdoor temperature drops, cooling will (with some delay) stop. The cooling **seasonal start** shall therefor be set to the outdoor temperature from where cooling is normally required.

**Desired cooling supply** is the target temperature that the heat pump will strive to supply and circulate to the cooling system when supplying cooling.

### 5.6.2          Cooling with indoor room sensor (accessory)

If an indoor room sensor is installed and activated for cooling, this will also affect the cooling function. With indoor sensor activated for cooling, the heat pump will start cooling when both of the following criteria are fulfilled:

- Cooling season mode active &
- Indoor temperature exceeds the desired indoor temperature for heating + the desired offset room temperature for cooling (Temperature on first page + "**Passive cooling room sensor offset**" (default 2 degrees)).

The desired "**Passive cooling room sensor offset**" temperature can be adjusted in the cooling menu. It is also possible to set if the indoor room sensor should be allowed to control cooling.

With an installed room sensor, the controller will automatically regulate the cooling supply temperature, but not below **Desired cooling supply (min)**.

## 5.7      System information

Check applicable operating data described in the tables below. The information can be found in the sub-menu System information (🖥️)

Select System information on the Menu screen:

1. Press ≡ on the Start screen to open the Menu screen.
2. Press System information (🖥️).

**Operating data**

| Sensor | Explanation |
|---|---|
| **Outdoor** | Shows the temperature on the outdoor sensor. |
| **System supply line** | Optional. Depending on system application. |
| **Desired supply line** | Shows the calculated requirement value for the supply line. |
| **Hot water** | Shows the temperature of the hot water sensor, if hot water production is permitted. |
| **Supply line (HP)** | Shows temperature of outgoing radiator temperature from heat pump. |
| **Return line (HP)** | Shows temperature of incoming radiator temperature to heat pump. |
| **Brine in** | Shows the current temperature of brine in to the heat pump. |
| **Brine out** | Shows the current temperature of brine out from the heat pump. |

**Operating time**

| | Explanation |
|---|---|
| **Compressor run time** | Shows the number of hours that the compressor has been in operation. |
| **Tap water run time** | Shows the number of hours that has been used for hot water production. |
| **External heater run time** | Shows the number of hours that the external heater has been activated. |
| **Internal immersion heater step 1** | Shows the number of hours that the immersion heater step 1 has been in operation. |
| **Internal immersion heater step 2** | Shows the number of hours that the immersion heater step 2 has been in operation. |
| **Internal immersion heater step 3** | Shows the number of hours that the immersion heater step 3 has been in operation. |

**Version information**
In the menu Operating data, version information about the control system software is shown.
This information is useful when contacting support.

**Default settings in the control unit**

The left column in the table below shows the parameters that can be adjusted by the user.
The middle column shows the factory settings.
The right column shows the settings made by the installer when the heat pump was installed

| Parameter | Factory setting | Any customer-specific settings |
|---|---|---|
| **Heat curve** | 40/30°C | |
| **Min desired system supply temp.** | 20°C | |
| **Max desired system supply temp.** | 60/45°C | |
| **Heating - Seasonal stop** | 17°C | |

# 6          Online

## 6.1          Online

The heat pump is factory prepared for monitoring remotely via internet. (Thermia Online)
In order to use the Thermia Online service:

- Make sure that there is an available internet connection (router or equivalent) in the building
- Connect the commissioned heat pump to an existing internet connection (router or equivalent). Use the RJ45 connection placed below the display (CM module) behind the front panel. Use a patch cable (not cross over cable).
- 1. Press the Menu icon ☰ to open the Menu screen.
  2. Press the Settings icon (⚙).
  3. Press the text **System settings**.
  4. Press the text **Online**.
  5. Press ▭○ to activate.
- Make a note of the heat pump MAC-address. The MAC-address is also available in the Network menu in the display
- An account and registration is required to use the Thermia Online service.
  For more information, see:
  www.thermia.com/online

# 7          Accessories

## 7.1          Accessories

There are a number of accessories available to be installed with this heat pump. Below is a list of the most commonly used accessories. Contact your installer if you have any specific requests.

Installed accessories will make settings available in the display. Different accessories have different ways of controlling its functionality, depending on sensors, extra equipment added to the system (bought and delivered separately with each accessory), etc.

Information about these individual settings can be found by pressing the **Information icon** ⓘ on the respective accessory page in the display, when applicable.

- Pool
- Distribution circuit 1
- External auxiliary heater
- Passive cooling
- Active cooling
- Power limiter
- Flow guard
- Buffer tank
- Room sensor
- Etc.

# 8      Alarms

## 8.1      Alarms

If the display shows a screen saver, and no warning triangle is shown on the start page, the system is OK and no actions are required.

The heat pump is equipped with automatic functional surveillance in the controller in order to give the heat pump a long lifetime with as reliable and efficient running as possible. If the heat pump detects that something may need attention, this will be presented as a so called "alarm" in the display.
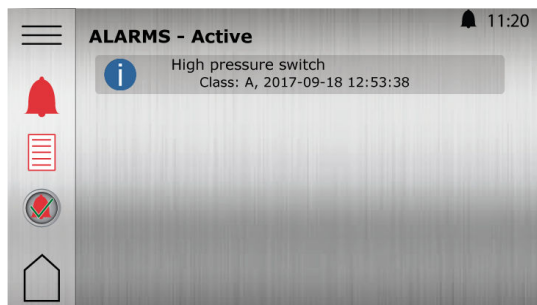
There are different types of alarms:

- **Class A**: Stops the heat pump. The alarm must be acknowledged.
  The display shows a red screen saver.
- **Class B**: Does **not** stop the heat pump. The alarm must be acknowledged.
  The display shows a yellow screen saver.
- **Class C**: Temporary functional deviation, no action required. Does **not** stop the heat pump.
  The alarm is self-acknowledging.
  The display shows a green screen saver during the functional deviation.

If an A-alarm is active, the heat pump's compressor is disabled, and the hot water production will stop. This is to draw attention to the fact that there is an alarm that must be resolved before the heat pump can regain normal functionality.
The immersion heater will automatically be used for space heating during an A-alarm that is blocking the compressor. If the A-alarm can not be re-set or reoccurs, tap water heating can also be reactivated by switching the operating mode to "Auxiliary heater only". This mode can also be used in an installation phase, before the brine circuit is connected to the heat pump.
Have in mind that heating the house and the tap water tank of the heat pump with the immersion heater only, can be costly if done over a longer period of time, and is not recommended as a long term solution.

The following symbol is shown during screen saver mode and on the start screen when there is a Class A-alarm

active (yellow for Class B):  ⚠  . Press it to go to the alarms menu, showing information on what alarm has

been triggered.

Example of alarm messages:

| Message | Meaning / Class | Corrective action |
|---|---|---|
| **High pressure** | The heating circuit is the heat pump's high pressure circuit. Class A | Often caused by air or insufficient flow in the heating system or hot water tank. Check and, if necessary, rectify the level of the circuit. Acknowledge the alarm as described below. |
| **Low pressure** | The brine circuit is the heat pump's low pressure circuit. Class A | Often caused by air or insufficient flow in the brine circuit. Check the circuit's level. Acknowledge the alarm as described below. Contact a service technician if the alarm reoccurs. |
| **Internal immersion heater** | Internal immersion overheat protection triggered. Class B | Usually caused by poor flow or air in the heating system. |
| **All other messages** | Acknowledge the alarm as described below. If the alarm remains or reoccurs, contact a service technician. | |

In the case of an active alarm, information about the alarm is also available by pressing [i], close to the alarm.

**Acknowledging alarms**

Press [✓] to reset all alarms.

Contact the installer if alarms are persisting and/or recurring. If you need to set the heat pump in emergency mode to get heating and hot water, see operating mode chapter.

# 9       Regular checks

## 9.1       Check the water pressure in the heating circuit

The system pressure of the installation must be checked at least twice per year. Ensure that the heating system has the necessary pressure, according to the installers advice, but never more than 3 bar.

You can often use normal tap water when topping up the heating system. In certain exceptional cases the water quality may be unsuitable for filling the heating system (corrosive or calciferous water).
In case of doubt, contact your installer.

Do not use any additives for treatment of the water in the heating system, unless you have a written consent from Thermia!

## 9.2       Checking safety valves

The safety valves for the installation should be checked at least four times per year to prevent lime deposits clogging the mechanism.

The safety valve of the water tank protects the enclosed heater against over pressure. It is mounted on the cold water inlet line. If the safety valve is not checked regularly, there is a risk that the water tank may sustain damage. It is quite normal for the safety valve to let out small amounts of water when the water tank is being charged, especially if a lot of hot water was used previously.

The safety valves can be checked by turning the cap a quarter of a turn clockwise until water comes out of the overflow pipe. If a safety valve does not work properly, it must be replaced. Contact your installer.

The opening pressure of the safety valves is not adjustable.

Make sure to never ever block the connection to the safety valves' overflow pipes. Any excessive pressure must always be able to escape.

## 9.3       In the event of leakage

In the event of leakage in the hot water pipes between the heat pump and water taps, close the shut-off valve on the cold water inlet immediately. Then contact your installer.

In the event of leakage in the brine circuit, turn off the heat pump and call your installer immediately.

## 9.4       Cleaning the filters for the heating and brine circuits

Contact your installer if you are not sure how to perform the filter cleaning.

**Heating circuit:** The heat pump must be switched off during this maintenance. First turn it off from the Operating mode page, wait a few minutes to make sure it shuts down properly, then turn off the the main switch before cleaning can be started.

The cleaning of filters may cause air ingress to the brine or heating system that may cause operational disturbances. For cleaning magnetite filters, please refer to the filter manufacturers instructions.

Check and clean the filters at least twice the first year after installation. The interval can be extended if there is evidence that cleaning twice a year is not necessary.

Have a cloth at hand when opening the filter cover as a small amount of water usually escapes.
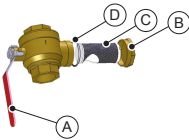
| | |
|---|---|
| A | Shut-off tap |
| B | Cover |
| C | Filter |
| D | O-ring |

Clean the filter as follows:

1. Switch off the heat pump.
2. Turn the shut-off tap (A) to the closed position.
3. Unscrew the cover (B) and remove it.
4. Remove the filter.
5. Rinse the filter (C).
6. Reinstall the filter.
7. Check that the O-ring (D) on the cover is not damaged.
8. Screw the cover back into place.
9. Turn the shut-off tap to the open position.
10. Start the heat pump.

For the brine circuit filter, please contact your installer for advice.

## 10        Appendix

### 10.1        Display symbol description

Not all symbols are applicable in all installations.

| Symbol | Description |
|---|---|
| | Opens the menu screen from the start screen. Return to the menu screen from any sub-menu. |
| ✓ | Confirm setting. A change which has been made is confirmed and becomes the new setting. |
| ✗ | Ignore change. Changes which are not confirmed with ✓ are reset to the previous value. |
| ⟨ 2/3 ⟩ | Page navigation. To browse through pages and sub-menus. Press the arrows to navigate. 2/3 means that you are on page 2 of 3. |
| | Home. Back to start screen. |
| ⓘ | Information. Shows information about the respective page. |
| ▶ | This symbol indicates that the text that follows can be pressed to open a new view. |
| ⚠ | Alarm. Press on the symbol to go to the alarm window. The window displays the alarm history. |
| ⚠ | Alarm. Indicates that there are active class A or class B alarms. Press on the symbol to go to the alarm window. |
| | Select operating mode. Press on the symbol to select operating mode. A new window opens for selection of operating mode. |
| | Operating data. Opens a number of sub-menus which show current operating data such as:<br>▪ Outdoor temperature<br>▪ etc. |
| | Factory reset. Resets values on the current menu page to factory values. |

| Symbol | Description |
|---|---|
| | Settings.<br>Opens a number of sub-menus such as:<br>  ▪ Language<br>  ▪ System settings<br>  ▪ Heating<br>  ▪ etc. |
| | Back.<br>Back to previous view. |
| – ▭ + | Push-pull control.<br>Used for raising or lowering values. Press on the "handle" and push it to the sides. Alternatively, press "+" or "-". |
| | Activation/deactivation of push-pull control or switch functions/equipment on/off. Press on the symbol to change mode.<br>The symbol ▭ indicates activated function/equipment switched on. |
| | Activation/deactivation of push-pull control or switch functions/equipment on/off. Press on the symbol to change mode.<br>The symbol ▭ indicates deactivated function/equipment switched off. |
| | Certain menu selections are locked to prevent unauthorised use. An authorisation code is required. |
| | Internet connection. Visible in the top of the display when the heat pump has an internet connection. |
| | Network connection. Visible in the top of the display when the heat pump has a network connection. |
| | Pool heating mode. Visible in the top of the display when the heat pump is in pool heating mode. |
| | Space heating mode. Visible in the top of the display when the heat pump is in space heating mode. |
| | Restriction timer. Visible in the top of the display when the heat pump is in restriction to start. |
| | Tap water mode. Visible in the top of the display when the heat pump is in tap water heating mode. |
| | Virtual keyboard. Opens up a virtual keyboard. Changes must be acknowledged in the keyboard window AND in the view in which the changes are made. |
| | Reconnect button. Used when re-establishing connection between primary and secondary heat pump, in Primary/secondary view |

## 10.2 Calculating heat production

The heat pump is calculating how much heat it has to produce to keep a comfortable indoor climate based on the outdoor temperature and the so called heat curve.
The heat curve settings are adjusted by the installer during installation/commissioning, but fine tuning to the specific house conditions and individual preferences may be required after some time to obtain a pleasant indoor climate in all weather conditions. A correctly set heat curve reduces maintenance and saves energy.
The indoor temperature is adjusted by changing the heat pump's heat curve, which is the control system's tool for calculating the supply temperature for water that is sent out on the heating system.

The heat curve calculates the supply temperature depending on the outdoor temperature. The lower the outdoor temperature, the higher the supply temperature. In other words, the supply temperature of the water out to the heating system will increase linearly as the outdoor air temperature falls.

**NOTE:** Incorrect adjustments on max/min temperatures may, in case of floor heating systems, cause damage to the floor. Make sure to not exceed the recommended temperature according to the floor manufacturer.

## 10.3 Comfort settings

If you temporarily wish to increase or decrease the indoor temperature.
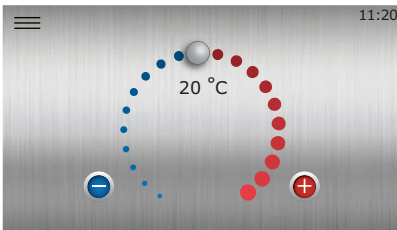


Fig. 1: Comfort Settings

When changing the comfort setting, the angle of the curve on the system's heat curve does not change, instead the entire heat curve is moved by 2-3°C for every degree change of the comfort setting. The reason that the curve is adjusted 2-3°C is that it is an approximate increase of the supply temperature, usually needed to increase the indoor temperature with 1°C.

The simplified working principle for Comfort Settings is as follows:
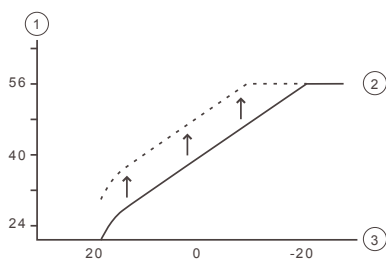
| 1 | Supply temperature (°C) |
| 2 | Maximum supply temperature |
| 3 | Outdoor temperature (°C) |

If a larger change than +/- 3 steps on the comfort wheel is required to obtain the desired indoor temperature, or corrective adjustments are needed at different outdoor temperatures, the more advanced heating settings may need adjustments. See the Heating Settings chapter in this Appendix for details.

Please note that lowering the comfort adjustments too low may cause very low indoor temperatures. Also be aware that it may take up to one day before the result of the changes you make have full impact, due to the space heating system inertia.

Contact your installer if you are uncertain about how to adjust the heat pump settings.

## 10.4     Heat curve

The heat curve indicator value (40) shows the temperature of the water supplied to the heating system ("supply line temperature") at an outdoor temperature of 0 °C.
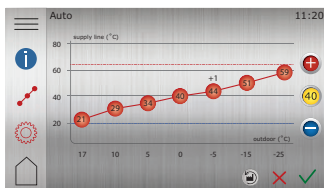


Fig. 2: Heat curve 40

The factory settings for the heat curve before adjustment is "40". This setting is suitable for many heating systems with radiators, but generally unsuitable for systems with floor heating. For systems with underfloor heating a standard heat curve setting is "30".
**NOTE:** Incorrect adjustments on max/min temperatures may, in case of floor heating systems, cause damage to the floor. Make sure to not exceed the recommended temperature according to the floor manufacturer.
Combination systems with both underfloor heating and radiators may need different heat curves. This can be obtained with, for example, an additional distribution circuit if that has been prepared by the installer.

The heat curve provides very good adjustment possibilities and may also be further customized to individual needs at seven different outdoor temperatures.

If a room sensor is installed (accessory), this may enhance the control of how warm the water supplied to the heating system should be, based on the measured indoor temperature.
To ensure that the supply line temperature is not too warm (or cold) for the heating system, max and min supply line temperature boundaries should also be set. See chapter Heating Settings (Supply line min and max) in this appendix.
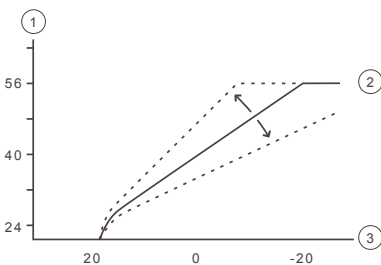The simplified working principle for the heat curve is as follows:
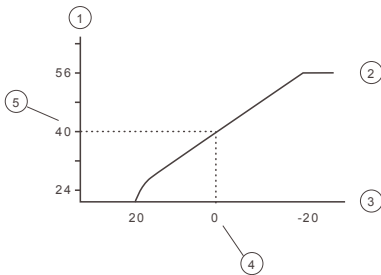
| | |
|---|---|
| 1 | Desired system supply temperature (°C) |
| 2 | Maximum setpoint value |
| 3 | Outdoor temperature (°C) |
| 4 | Example: 0°C |
| 5 | Example: Set value (standard 40°C). |

In the event of outdoor temperatures below 0°C, a higher setpoint value is calculated and in the event of outdoor temperatures greater than 0°C, a lower setpoint value is calculated.

**Moving the heat curve as one unit**

When the curve indicator ( 40 ) is lit, the curve is moved as one unit and the slope of the curve is adjusted.

The simplified working principle for this is as follows:

| | |
|---|---|
| 1 | Desired system supply temperature (°C) |
| 2 | Maximum setpoint value |
| 3 | Outdoor temperature (°C) |

If the curve is moved upwards, the heat curve will become steeper and if the curve is moved downwards, it will become flatter.

The most energy efficient and cost effective setting is achieved by changing the curve settings which leads to fewer starts and longer operating times.

**Supply line min and max**

The MIN and MAX values are the lowest, respectively highest set point values that are allowed for the supply line temperature.

*Supply line min* is the minimum permitted supply temperature, if the temperature for seasonal stop has been reached and the heat pump has stopped.

Adjusting the minimum and maximum supply temperatures is particularly important if your home has under-floor heating.

If your house has underfloor heating and parquet floors, the supply line temperature must not exceed 45°C. Otherwise the floor might get damaged.

**Seasonal stop**

The heating will be activated automatically when the outdoor temperature over time is below the set value for heating seasonal stop. This is how the heat pump detects and sets the heat pump to "heating season" mode. If the outdoor temperature increases, heating will (with some delay) stop. The heating seasonal stop shall there-for be set to the outdoor temperature from where heating is normally required.
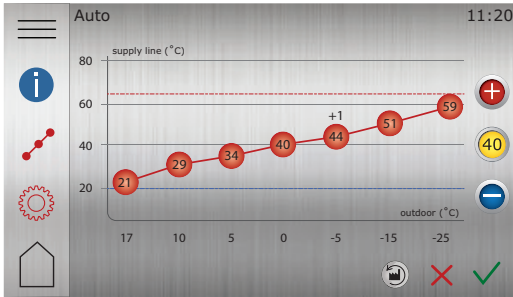
**Symbol description**



Fig. 1: The figure shows the standard curve 40

| Symbol | description |
|---|---|
| (+1) 44 | Shows when the curve is comfort-adjusted. The digit shows how much the deviation is from the default value. |
| i | Shows information about the **heat curve**. |
| (inactive heat curve icon) | Shows that the **heat curve** window is inactive. Press on the symbol to open heat curve settings. |
| (active heat curve icon) | Shows that the **heat curve** window is active. This window is the default window. |
| (inactive gear icon) | Shows that the **heating settings** window is inactive. Press on the symbol to open heating settings. |
| (active gear icon) | Shows that the **heating settings** window is active. |
| (reset icon) | Press (reset icon) to reset the heat curve to the factory settings. |
| 40 (lit) | When the curve indicator is lit, press ⊕ or ⊖ to move whole curve upwards or downwards. |
| 40 (not lit) | When the curve indicator is not lit, press ⊕ or ⊖ to move individual curve points upwards or downwards. |

## 11    Checklist

**Location**
- ☐ Surface adjustment
- ☐ Drainage

**Pipe installation, hot and cold side**
- ☐ Pipe connections in accordance with the diagram
- ☐ Flexible hoses ( does not apply for all models )
- ☐ Expansion and bleed vessel
- ☐ Filter, hot and cold side
- ☐ Pipe insulation
- ☐ Open radiator valves
- ☐ Leak test, hot and cold side

**Electrical Installation**
- ☐ Circuit breaker
- ☐ Fuse
- ☐ Positioning of the outdoor sensor

**Commissioning**
- ☐ Bleeding, hot and cold side
- ☐ Settings control system
- ☐ Manual test components
- ☐ Manual test different operating conditions
- ☐ Noise check
- ☐ Function test safety valves
- ☐ Function test mixer valve
- ☐ Trimming the heating system
- ☐ High pressure switch checked
- ____ °C. Fill in the measured freezing point of the collector circuit´s brine fluid.

**Customer information**
- ☐ Contents of this manual
- ☐ Safety precautions
- ☐ Controller, function
- ☐ Settings and adjustments
- ☐ Regular checks
- ☐ Reference to service requirement
- ☐ Warranties and insurances

## 12       Installation carried out by:

**Piping installation**

- Date:

- Company:

- Name:

- Tel. No:

**Electrical Installation**

- Date:

- Company:

- Name:

- Tel. No:

**System adjustment**

- Date:

- Company:

- Name:

- Tel. No:

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