User Guide

# iTec


www.thermia.com

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 heating, hot water and in certain cases cooling, for your home at a low cost.

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**

The front of the heat pump must only be opened by qualified installers.

**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.

## 2.2 Installation and maintenance

**Caution**

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

**Caution**

Only qualified electricians may modify the electrical installation.

**Caution**

Only qualified refrigeration technicians may work on the refrigerant circuit.

## 2.3 System modifications

Only qualified installers may carry out modifications on the following components:

Only qualified installers may carry out modifications on the following components:

- The outdoor and indoor units
- The pipes for the refrigerant 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.

## 2.4 Safety valves

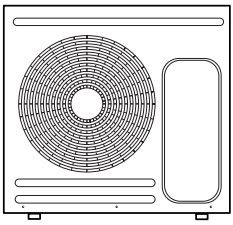
- Never block the connection to a safety valve's overflow pipe.
- The following safety precautions apply to the hot water circuit's safety valve with corresponding overflow pipe: Water expands when it is heated, which means that a small amount of water is released from the system via the overflow pipe. 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 or others.

# 3 About your heat pump

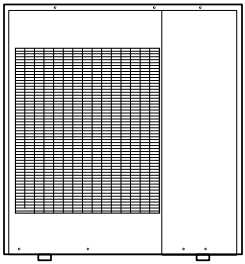
The heat pump is a complete heat pump installation that consists of two basic units: a heat pump placed outdoors and a control unit placed indoors. The outdoor unit is available in up to three models and the indoor unit is available in two models. This is to be able to create as optimal system solution as possible, both in an existing heating system that is to be upgraded and in new builds. Heating and cooling are supplied to the house via a water borne heating system.

## 3.1 Components and functions

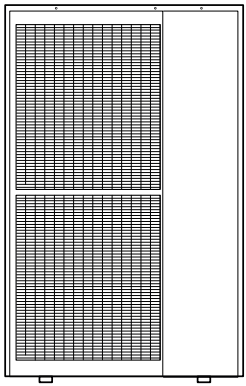
### 3.1.1 Outdoor unit



5kW



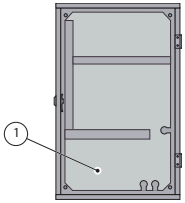
9kW



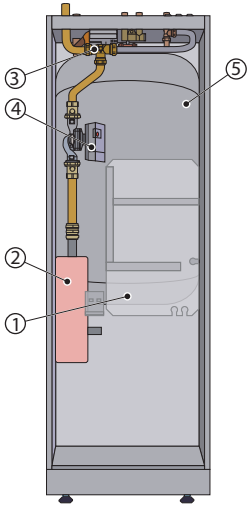
16kW

### 3.1.2 Indoor unit

**iTec Standard**




**iTec Total**




1 Control module (transparent in image)
2 Immersion heater
3 Reversing valve
4 Circulation pump
5 Water heater

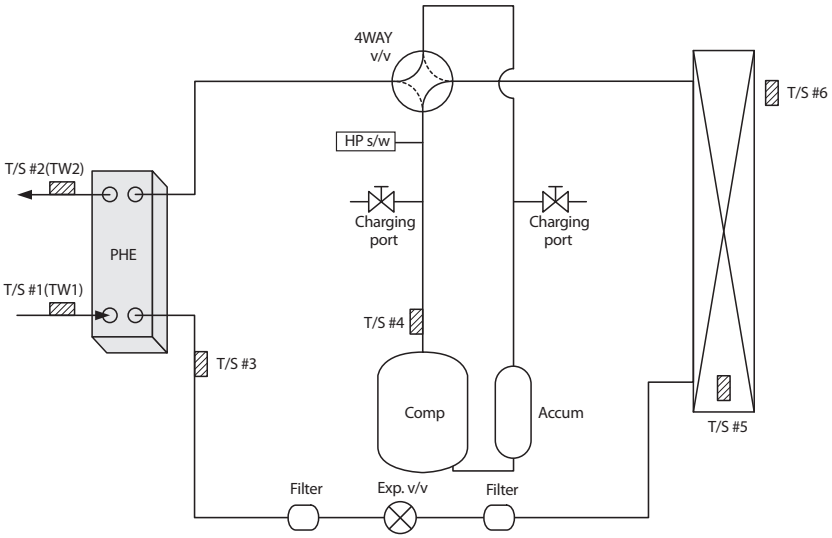
### 3.1.3 Heating

The heat pump can produce heat for heating (house, pool) and hot water.

The hot water requirement is prioritised before the heating requirement. The heating requirement is calculated from outdoor temperature and set heat curve. An auxiliary heater starts automatically on demand.

Heat production is as follows;

- A fan draws the outdoor air through an air heat exchanger, which heats up the cold refrigerant, which evaporates into a gas.
- The refrigerant that is now supplied with energy in the form of heat is transferred via the 4 way valve to the compressor, where its temperature and pressure are increased.
- The extremely hot refrigerant continues to the flat heat exchanger . Here, the refrigerant is cooled and releases its heat energy to the heating system. The refrigerant's temperature drops and condenses to a liquid state.
- The heating system transports the heating energy out to the water heater or the heating system of the house.
- The refrigerant then passes through the drying filter to the electronic expansion valve where the pressure and temperature drop and the process starts again.




| Part | Description |
|---|---|
| PHE | Plate Heat Exchanger |
| T/S #1 | For water inlet temperature sensor |
| T/S #2 | For water outlet temperature sensor |
| T/S #3 | For PHE temperature sensor |
| T/S #4 | For discharge temperature |
| T/S #5 | For condenser temperature |
| T/S #6 | For ambient temperature sensor |
| Charging port | For refrigerants |
| Accum | Accumulator |

### 3.1.4 Hot water function

iTec Total is adapted for hot water production. Production of heating and hot water cannot occur at the same time because the reversing valve for heating and hot water is positioned after the heat pump and the immersion heater. Hot water production is prioritised ahead of heat and cooling.

iTec Total has an integrated 180 litre heater equipped with a TWS coil (Tap Water Stratificator) which gives more effective heat transfer and efficient layering of water in the heater.

Using a regular time interval, the water in the water heater is given extra heat by the integrated immersion heater to prevent the build up of bacteria, an anti-legionella function. The factory set time interval is seven days (can be adjusted).

### 3.1.5 Defrost function

During operation the air heat exchanger is cooled by the energy exchange, at the same time the humidity causes it to become covered in frost at low outdoor temperatures. iTec has an automatic function to defrost the air heat exchanger using the energy from whatever heat source is currently active.

Defrosting is initiated by low temperature in the refrigerant circuit after the air heat exchanger and, among other things, is dependent on outdoor temperature, humidity and operating time. The length of defrosting varies depending on the extent of freezing of the air heat exchanger. Defrost continues until the air heat exchanger is free of ice and the temperature starts to rise in the refrigerant circuit. After completed defrosting the heat pump returns to the operating mode before defrosting.

### 3.1.6 Cooling function

The heat pump produces cooling through a similar process as the defrosting function.

Cooling function is started by the heat pump control unit and is primarily temperature controlled. The house's heating system is cooled by transferring heat to the refrigerant circuit, which is then given off in the air heat exchanger.

If the hot water heater is installed, the control unit will alternate between cooling and hot water production with prioritisation for the hot water requirement.

### 3.1.7 Electronic expansion valve

When the refrigerant passes the expansion valve the pressure and temperature of the refrigerant are reduced. In this way the energy in the outdoor air is available to the refrigerant circuit. By automatically regulating the opening degree of the expansion valve we optimise the flow in the refrigerant circuit in different operating conditions. Control of the electronic expansion valve is based on the measurements of temperatures and pressures in the refrigerant circuit and outside air.

### 3.1.8 Auxiliary heat

The auxiliary heater is included in iTec Total. An auxiliary heater consists of an immersion heater, which is located on the supply pipe before the reversing valve.

If the auxiliary heater is installed it engages AUTO mode automatically when the heat demand is greater than the heat pump's capacity.

Immersion heaters in iTec Total series intended for 400V supply have three heating elements (IMM.HEAT 1, 2 and 3) and can be controlled in five power stages.

Products for 230V have two heating elements (IMM. HEAT 1 and 2) and are controlled in three power stages.

The two stages 4 and 5 cannot be engaged when the compressor is in operation as opposed to stages +4 and +5 where it is possible.

### 3.1.9 Speed (rpm) control

A heat pump requires optimum conditions in the heating system in order to be able to run as efficiently as possible. The temperature difference between the heating system's supply line and condenser in must be constant between 5–10°C. If the differences are greater or less, the heat pump is less efficient and savings are lower.

The speed controlled circulation pump in iTec always ensures that the temperature difference is retained. The control equipment detects if the balance is upset and increases or decreases the speed of the circulation pump as necessary.

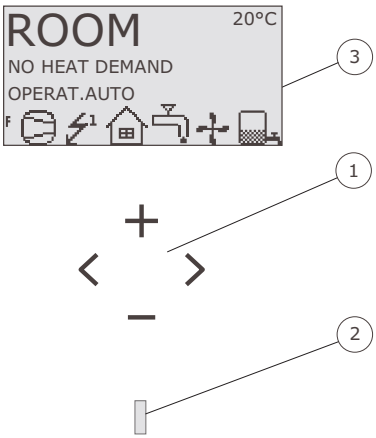
## 4 Control system

The heat pump has an integrated control system which automatically calculates the heating and cooling demand in the house to ensure that the correct amount of heating and cooling is produced and emitted where necessary.

The control panel is operated using a keypad and information is shown in a display and by an indicator.

N

The information in the display and menus will vary depending on the menu selection made and connected accessories.




1. Keypad
2. Indicator
3. Display

### 4.1 Keypad

+ Plus sign used to scroll up a menu and increase the values.

- Minus sign used to scroll down a menu and reduce the values.

> Right arrow used to select a value or open a menu.

< Left arrow to cancel selection or exit a menu.

## 4.2 Indicator

The indicator at the bottom of the control panel has three modes:

- Not lit, means that the heat pump is not powered.
- When the green light shines continuously, the heat pump has power and is ready to produce heat, cooling or hot water.
- Flashing green, means an active alarm.

## 4.3 Display

The display shows information about the heat pump's operation, status and any alarms.

| Symbol | Meaning | Description |
|---|---|---|
|  | COMPRESSOR | Indicates that the compressor is in operation. |
|  | LIGHTNING | Indicates that the auxiliary heater is in operation. The number indicates what additional step is activated. |
|  | HOUSE | Indicates that the heat pump produces heat for the heating system. |
|  | TAP | Indicates that the heat pump produces heat for the water heater. |
| F | FLOW SENSOR | Indicates that the flow sensor is active (there is flow). |
|  | CLOCK | Indicates that tariff control is active. |
|  | TANK | Indicates the level of hot water in the water heater. When hot water is produced for the water heater, this is indicated by a flashing icon for the tank. |
|  | TANK and LIGHTNING | A lightning symbol by the tank symbol indicates peak heating charging (anti-legionella function). |
|  | DEFROST | Displayed when defrosting is active. |
|  | FAN | Displayed when the fan is active. |
|  | COOLING | Displayed if cooling is activated and in cooling season. |

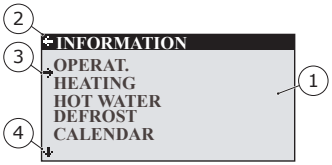
The following operating information may also appear:

| Message | Meaning |
|---|---|
| ROOM | Shows the set ROOM value. Standard value: 20°C.<br>If the accessory room sensor is installed it shows the actual temperature and the desired indoor temperature is shown within brackets. |
| START | Indicates that there is a need for heat production or hot water and that the heat pump will start. |
| EVU STOP | Indicates that the additional function EVU is active. EVU is used to switch off the heat pump during high energy tariffs. |

| Message | Meaning |
|---|---|
| NO HEAT DEMAND | Indicates that there is no heating or hot water production demand. |
| NO COOLING DEMAND | Indicates that there is no cooling demand. |
| COMPRESSOR START -- XX | Indicates that there is a need for heat, hot water or cooling and that the heat pump will start in XX minutes. |
| COMPRESSOR +IMM.HEAT | Indicates that heat production is active with both compressor and auxiliary heater. |
| START_MIN | Indicates that there is a demand for heating or hot water production but that a start delay is active. |
| AUX. HEATER | Indicates that there is an auxiliary heater demand. |
| ACT COOLING | Displayed if cooling is active. |
| DEFROST | Displayed when defrosting is active. |

## 4.4 Main Menu

The display's INFORMATION menu is used to set and adjust the heat pump functions and is opened by pressing the left or right buttons. The appearance of the menu will vary depending on the menu selection made and connected accessories. The basic menu appears as follows:




1. Sub-menus
2. Return
3. Cursor
4. If an arrow is shown, it indicates that more sub menus are continued underneath

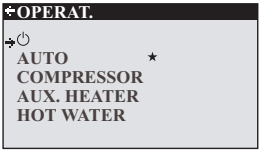
Press the + and - buttons to move the cursor between the sub-menus. Press the right button to select a sub-menu. Press the left button to go back in the menu.

## 5 Settings and adjustments

The installer carries out the basic settings of the heat pump at installation. A number of settings and adjustments that you can carry out yourself are described below.

Before changing the control computer's settings, first find out what these changes mean. Make a note of the default setting.

### 5.1 Setting operating mode




1. Open the menu OPERAT. in the INFORMATION menu. The asterisk shows the current selection
2. Mark new mode using + or – button.
3. Press the right button once to confirm the choice.
4. Press the left button twice.

The following operating modes can be selected:

| Operating mode | Meaning |
|---|---|
| (OFF) | The installation is fully switched off. This mode is also used to acknowledge certain alarms. |
| AUTO | The heat pump automatically controls the compressor operation and auxiliary heater. |
| COMPRESSOR | The control system is controlled so that only the outdoor unit (compressor) is allowed to operate. In this operating mode peak heating charging (anti-legionella function) of the hot water will not run because the auxiliary heater is not used. |
| AUX. HEATER | The control system only permits the auxiliary heater to be in operation. |
| HOT WATER | In this mode the heat pump only produces hot water, no heat goes to the heating system. |

**Warning**

If the operating mode OFF or HOT WATER is to be used for long periods during the winter, the water in the heating system must be drained, otherwise there is a risk of frost damage. Alternatively a system solution with an intermediate exchanger should be used.

## 5.2 Adjusting the indoor temperature

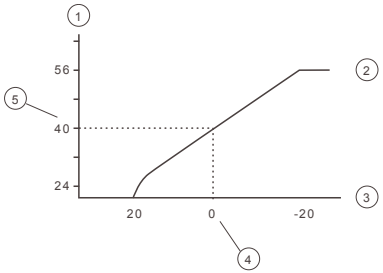
The indoor temperature is adjusted by changing the heat pump's heat curve, which is the control system's tool for calculating the heating demand, the integral value. The integral value is determined by comparing the actual temperature of the heating system's supply line with the calculated value, the setpoint value. The heating requirement is calculated from the current outdoor temperature and heat curve setting.

The heat curve will be adjusted in connection with installation. It must be adapted later on, however, to obtain a pleasant indoor temperature in any weather conditions. A correctly set heat curve reduces maintenance and gives energy efficient operation.

There are two ways of adjusting the heat curve, partly in the HEATING sub-menu, partly with the ROOM value.

**Adjusting CURVE**

A typical heat curve is shown below. When the outdoor temperature is 0°C the heat pump control tries to make the temperature in the supply line 40°C. At hotter or colder outdoor temperatures than 0°C the set point that the control regulates against is lowered or raised respectively. When you increase the CURVE value, the heat curve will become steeper and when you decrease the CURVE value, the heat curve will become flatter. This is the most energy and cost efficient way to set the indoor temperature and should therefore be used for long term temperature settings.




1. Supply temperature (°C)
2. Maximum setpoint value
3. Outdoor temperature (°C)
4. 0°C
5. Set value (standard 40°C)

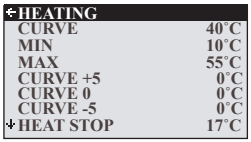
The following parameters can be adjusted in the HEATING menu:

| Parameter | Description |
|---|---|
| CURVE | If the CURVE value is increased, the heat curve will become steeper and if the value is decreased, it will become flatter. Raise or lower as necessary to obtain as even indoor temperature as possible. |
| MIN | Lowest set point for supply temperature. |
| MAX | Highest set point for supply temperature. |
| CURVE +5 | Used to adjust the heat curve at an outdoor temperature of +5°C. |
| CURVE 0 | Used to adjust the heat curve at an outdoor temperature of 0°C |
| CURVE -5 | Used to adjust the heat curve at an outdoor temperature of -5°C. |
| HEAT STOP | This function stops all production of heat when the outdoor temperature is equal to, or higher than, the set heat stop value. |

| Parameter | Description |
|---|---|
| DURING COOLING | Choose between the following modes: AUTO, OPEN or CLOSED |
| CONSTANT TEMP | The temperature that the shunt wishes to retrieve from the buffer tank and distribute to the house. Only applies when the buffer tank is activated and with shunt group connected. |
| SETBACK TEMP | The temperature that will apply at temperature setback controlled from the CALENDAR menu. |
| ROOM FACTOR | Only displayed if an accessory Room temperature sensor is installed. Determines how great an impact the room temperature is to have when calculating the supply temperature. For under floor heating it is recommended that ROOM FACTOR is set to 1, 2 or 3. For radiator heating it is recommended that ROOM FACTOR is set to 2, 3 or 4. Impact: 0 = no impact, 4 = large impact. |


## High temperatures in an underfloor heating system can damage parquet floors.

Adjust the heat curve in the HEATING sub-menu as follows:




1. Open the HEATING sub-menu in the INFORMATION menu
2. Mark desired parameter using + or – button.
3. Open the parameter by pressing the right button once.
4. Raise or reduce the value with the + or - button.
5. Press the left button three times.

**Adjusting ROOM values**

The heat curve and therefore the indoor temperature can be affected by changing the "ROOM" value. If the ROOM value is used to affect the system's heat curve, the heat curve does not become steeper or flatter, which the curve becomes if the CURVE value changes, instead the entire heat curve is moved by 3°C for every degree change of the ROOM value.


## For a temporary increase or reduction of the indoor temperature, adjust the ROOM value instead.

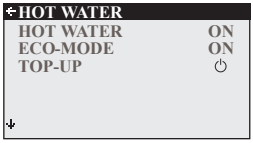
Change the ROOM value as follows:

1. Press either the + or - button once to open and change the ROOM value.
2. Raise or reduce the ROOM value using the + or - buttons to change the indoor temperature.
3. Wait ten seconds or press the left button once to exit the menu.

## 5.3 Distribution circuit 1 and 2

In addition to the main circuit for heating and cooling two distribution circuits can be controlled individually. The same parameters are used for these as in the main circuit (menu HEATING).

## 5.4 Hot water




HOT WATER switched on will enable hot water production. With ECO-MODE switched on, the heat pump will produce hot water in the most economic way possible. If you should want a prioritization on the amount of hot water and a faster hot water production you should switch off eco-mode. By activating TOP-UP the heat pump can immediately start to heat the water heater using the compressor and electrical auxiliary heater until the tank is fully heated.

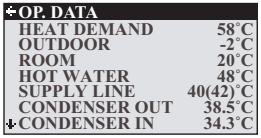
## 5.5 Cooling

COOLING is used to activate cooling function. DESIR.COOL TEMP. is the desired temperature for cooling. COOL.MODE ACTIVE gives the lowest outdoor temperature that cooling production is permitted at.

**Caution**

Low temperatures in the system can cause condensation on pipes and pipe connections, which could cause moisture damage to the building. Make sure every pipe and pipe connection is properly insulated if cooling stop temperature is set to under 16°C (default).

## 5.6 Reading of temperatures

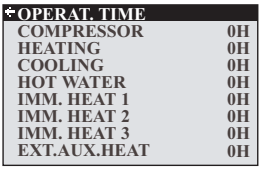



The set point value for the supply line and the max value of the return line is shown within brackets The max value indicates the temperature at which the compressor is stopped. No values can be changed in this menu.

The different temperatures that the installation has are shown here. All temperatures are stored back in time so that they can also be displayed in the form of graphs.

If ROOM shows 20°C the heat curve is unaffected. If ROOM shows higher or lower, this indicates that the heat curve has been adjusted up or down.

## 5.7 Reading the operating time




COMPRESSOR shows the total time in hours that the heat pump has been in operation since installation. HEATING and COOLING shows the time the heat pump has been producing heat and cooling. IMM. HEAT 1, 2 and 3 refer to the immersion heater and its different power stages.

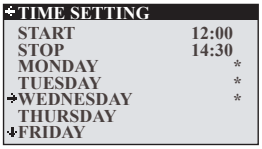
## 5.8 Calendar

The following functions can be controlled via calendar:

- Blocking hot water production
- Stopping the heat pump at high energy tariff (EVU)
- Reducing the noise of the fan (gives reduced performance)
- Reducing the temperature in the heating and distribution circuits.

Do as follows:

1. Select which function is to be controlled
2. Select a CALENDAR SETTING (up to 8 can be selected for each function)
3. Select the menu TIME FUNCTION if the function should be over a continuous time period (DATE) or be recurring (DAYS / WEEK).
4. Select start and stop times and date and weekdays in the TIME SETTING menu.




Examples of a recurring calendar control (DAYS / WEEK)

### 5.8.1 Setting of temperature reduction

To set the TEMP. REDUCTION, do as follows:

1. Press left arrow (<) to enter the INFORMATION menu.
2. Press (-) button to navigate down to HEATING menu and press right arrow (>) to enter.
3. Press (-) button to navigate down to SETBACK TEMP menu and press right (>) arrow.
4. Set the temperature with the (+) and (-) buttons.
5. Press left arrow (<) to confirm the temperature.
6. Press left arrow (<) to leave the SETBACK TEMP menu and return to the INFORMATION menu

### 5.8.2 Setting of calendar function

To set the date and time (for the calendar function to work properly), do as follows:

1. Press left arrow (<) to enter the INFORMATION menu.
2. Press (-) button to navigate down to CALENDAR and press right arrow (>) to enter.
3. Press the right arrow (>) once to navigate to the time setting (CLOCK).
4. Set today's time with the (+) and (-) buttons and confirm with the right arrow (>).
5. Press (-) button once to navigate down to the date setting (DATE and YEAR).
6. Press the right arrow (>) to enter the DATE setting.
7. Set today's date and year with (+) and (-) buttons.
8. Press right arrow (>) to confirm.
9. Press left arrow (<) to leave the menu and return to INFORMATION menu.

### 5.8.3 Setting of hot water, EVU, silent mode and temp reduction

The time period can either be set to a continuous or a recurring time period.

To set the date and time period for these functions, do as follows:

1. From the main menu, press left arrow (<) to enter the INFORMATION menu.
2. Press (-) button to navigate down to CALENDAR and press right arrow (>) to enter.
3. Press (-) button to navigate down to the function you wish to set (HOT WATER, EVU, SILENT MODE or TEMP REDUCTION).
4. Press right arrow (>) button once to set Calendar 1 (you can set up to eight different calendars).
5. Press right arrow (>) to enter the CALENDAR setting menu.
6. Press right arrow (>) to enter the TIME FUNCTION menu.
7. Use (+) and (-) buttons to program the function by DATE (continuous) or DAYS/WEEK (recurring).
8. Press right arrow (>) to confirm the selection. An asterisk symbol (*) is shown on the screen.
9. Press left arrow (<) to leave the TIME FUNCTION.
10. Press (-) button once and press right arrow (>) to enter the TIME SETTING menu.
11. Set the start and stop date and time with the (+) and (-) buttons. You can also set the weekday (MONDAY to SUNDAY) if you have selected DAYS/WEEK, see the example below.
12. Press left arrow (<) to leave the menu and return back to INFORMATION menu.

| Example of a DATE setting | |
|---|---|
| START | 18 June 2017 |
| | (09:00), (00:01 is the earliest setting for START) |
| STOP | 20 August 2017 |
| | (16:00), (23:59 is the latest setting for STOP) |

| Example of a DAYS/WEEK setting | |
|---|---|
| START | (08:00) |
| STOP | (17:00) |
| Monday | * |
| Tuesday | * |
| Wednesday | |
| Thursday | |
| Friday | |
| Saturday | |
| Sunday | |


For the calendar function to work, the STOP time must be set to maximum 23:59.

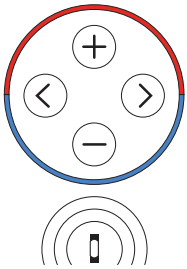
## 5.9 Alarm history

NAME ALARM displays information about up to 10 alarms with type of alarm, time and date.

# 6 Regular checks

## 6.1 Checking operation

During normal operation, the alarm indicator lights green continuously to show that everything is OK. When an alarm is triggered, the display will flash and the indicator will flash green at the same time as a text message is shown in the display.

Regularly check the alarm indicator to ensure that the installation is working correctly. In event of alarm the heat pump will if possible supply heating to the house. Primarily with the compressor, secondarily with the auxiliary heater. Hot water production will stop to indicate that something noteworthy has occurred.

In the event of an alarm this is indicated in the display with the text ALARM and an alarm message/alarm code. Examples of potential alarm messages:

| Message | Meaning |
|---|---|
| OUTDOOR SENSOR | Something would likely have happened to the cable connection to the outdoor sensor, the cable itself or the sensor. Check for physical damages. Contact your installer if the alarm persists. |
| SUPPLY LINE SENSOR | Contact the installer for further assistance. |
| Other alarm message | Try to reset the alarm as follows. If the alarm remains contact your installer. |

**Resetting the alarm**

For alarms that are not reset automatically acknowledgement is required. Acknowledge the alarm by setting the heat pump to operating mode OFF and then back to the desired operating mode. If the alarm remains contact your installer.

## 6.2 Check the water level in the heating circuit

The line pressure of the installation must be checked once a month. The external manometer must show a value between 0.8-1.5 bar, depending on the system's requirements. If the value is below 0.8 bar, when the water in the heating system is cold, the water must be topped up (applies in the event of an empty expansion tank). Normal tap water can be used when topping up the heating system. In certain exceptional cases the water quality may be so poor (for example very hard water) that it is not suitable for filling the heating system.
If unsure, contact your installer.


Do not use any additives for water treatment in the heating system's water!


The closed expansion tank contains an air filled bladder that absorbs variations in the heating system's volume. Under no circumstances may it be drained of air.

## 6.3 Checking safety valves

Both the safety valves for the installation must be checked at least four times a year to prevent lime deposits clogging the mechanism.

The safety valve of the water tank protects the enclosed heater against over pressure in the water tank. It is mounted on the cold water inlet line, its outlet opening facing downwards. If the safety valve is not checked regularly, the water tank might be damaged. It is quite normal that the safety valve lets out small amounts of water when the water tank is being charged, especially if a lot of hot water was used previously.

Both safety valves can be checked by turning the cap a quarter of a turn clockwise until the valve lets out some water through 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.

## 6.4 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.

## 6.5 Cleaning the strainer for the heating circuit

N

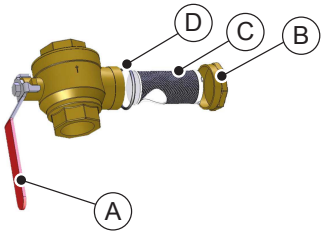
The heat pump must be switched off at the main switch before the cleaning can be started.

N

The strainer must be cleaned twice a year after installation. The interval can be extended if there is evidence that cleaning twice a year is not necessary.

N

Have a cloth at hand when opening the strainer cover as a small amount of water usually escapes.




A: Stopcock
B: Cover
C: Strainer
D: O-ring

Clean the strainer as follows:

1. Switch off the heat pump.
2. Turn the stopcock to the closed position (see figure above).
3. Unscrew the cover and remove it.
4. Remove the strainer.
5. Rinse the strainer.
6. Reinstall the strainer.
7. Check that the o-ring on the cover is not damaged.
8. Screw the cover back into place.
9. Turn the stopcock to the open position.
10. Start the heat pump.

## 7 Default setting in the control computer

The first column in the table below shows the parameters that can be adjusted by the User. The second column shows settings made at the factory, and the third column the settings made by the installation contractor in connection with installation of the heat pump.

| Setting | Factory setting | Any customer specific settings |
|---|---|---|
| ROOM | 20°C | |
| OPERAT. | AUTO | |
| CURVE | 40°C | |
| MIN | 10°C | |
| MAX | 55°C (45°C for under floor heating) | |
| CURVE 5 | 0°C | |
| CURVE 0 | 0°C | |
| CURVE -5 | 0°C | |
| HEAT STOP | 17°C | |

## 8 Installation protocol

| General | |
|---|---|
| Outdoor unit model | |
| Serial number | |
| Indoor unit model | |
| Serial number | |

| Pipe installation | |
|---|---|
| Company | |
| Contact person | |
| Telephone number | |

| Electrical installation | |
|---|---|
| Company | |
| Contact person | |
| Telephone number | |

| Commissioning | |
|---|---|
| Company | |
| Contact person | |
| Telephone number | |
| Date final inspection | |

## 9 Checklist

**Location**

- ☐ Surface adjustment
- ☐ Drainage

**Pipe installation, hot and cold side**

- ☐ Pipe connections in accordance with the diagram
- ☐ Flexible hoses
- ☐ 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

**Customer information**

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

## 10 Service schedule

To achieve best performance and service life we recommend that the heat pump is serviced at a 12 month interval.

| | |
|---|---|
| Service company* | Service technician's signature* |
| Date (year-month-day)* | Customer's signature* |
| Comments* | |

| | |
|---|---|
| Service company* | Service technician's signature* |
| Date (year-month-day)* | Customer's signature* |
| Comments* | |

| | |
|---|---|
| Service company* | Service technician's signature* |
| Date (year-month-day)* | Customer's signature* |
| Comments* | |

| | |
|---|---|
| Service company* | Service technician's signature* |
| Date (year-month-day)* | Customer's signature* |
| Comments* | |

| | |
|---|---|
| Service company* | Service technician's signature* |
| Date (year-month-day)* | Customer's signature* |
| Comments* | |

**User Guide** **iTec**

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