



Operation manual

Daikin Altherma ground source heat pump



Table of contents

| | | |
|----------|--|----------|
| 1 | About this document | 2 |
| 2 | About the system | 2 |
| 2.1 | Components in a typical system layout | 2 |
| 3 | Operation | 3 |
| 3.1 | Overview: Operation..... | 3 |
| 3.2 | The user interface at a glance | 3 |
| 3.2.1 | Buttons..... | 3 |
| 3.2.2 | Status icons | 3 |
| 3.3 | Space heating control..... | 4 |
| 3.3.1 | Using the room temperature home page | 4 |
| 3.3.2 | Using the leaving water temperature home pages (main + additional) | 4 |
| 3.4 | Domestic hot water control..... | 4 |
| 3.4.1 | Reheat mode | 4 |
| 3.4.2 | Scheduled mode..... | 4 |
| 3.4.3 | Scheduled + reheat mode..... | 5 |
| 3.4.4 | Using the DHW tank temperature home page..... | 5 |
| 3.4.5 | Using the DHW tank booster mode | 5 |
| 3.5 | Schedules: Example..... | 5 |
| | To select which schedule you currently want to use... | 5 |
| 3.6 | Menu structure: Overview..... | 6 |
| 3.7 | Installer settings: Tables to be filled in by installer | 7 |
| 3.7.1 | Quick wizard | 7 |
| 3.7.2 | Space heating control | 7 |
| 3.7.3 | Domestic hot water control [A.4]..... | 7 |
| 3.7.4 | Contact/helpdesk number [6.3.2]..... | 7 |
| 4 | Energy saving tips | 7 |
| 5 | Maintenance and service | 8 |
| 5.1 | Overview: Maintenance and service..... | 8 |
| 5.2 | To find the contact/helpdesk number | 8 |
| 6 | Troubleshooting | 8 |
| 6.1 | Symptom: You are feeling too cold (hot) in your living room..... | 8 |
| 6.2 | Symptom: The water at the tap is too cold | 8 |
| 7 | Glossary | 8 |

1 About this document

Thank you for purchasing this product. Please:

- Read the documentation carefully before operating the user interface to ensure the best possible performance.
- Request the installer to inform you about the settings that he used to configure your system. Check if he has filled in the installer settings tables. If not, request him to do so.
- Keep the documentation for future reference.

Target audience

End users

Documentation set

This document is part of a documentation set. The complete set consists of:

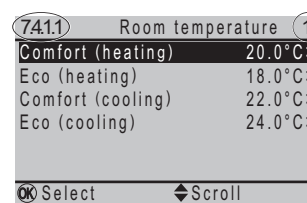
| Document | Contains... | Format |
|----------------------------|--|--|
| General safety precautions | Safety instructions that you must read before operating your system | Paper (in the box of the indoor unit) |
| Operation manual | Quick guide for basic usage | |
| User reference guide | Detailed step-by-step instructions and background information for basic and advanced usage | Digital files on http://www.daikineurope.com/support-and-manuals/product-information/ . |

Latest revisions of the supplied documentation may be available on the regional Daikin website or via your installer.

Available screens

Depending on your system layout and installer configuration, not all screens in this document may be available on your user interface.

Breadcrumbs



Breadcrumbs help you to locate where you are in the menu structure of the user interface. This document also mentions these breadcrumbs.

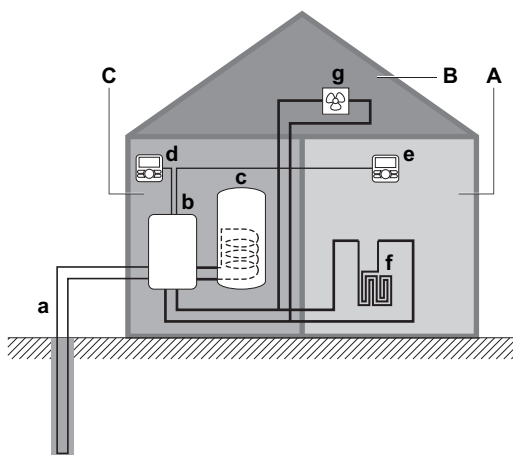
Example: Go to [7.4.1.1]: > User settings > Preset values > Room temperature > Comfort (heating)

2 About the system

Depending on the system layout, the system can:

- Heat up a space
- Produce domestic hot water (if a DHW tank is installed)

2.1 Components in a typical system layout



- A** Main zone. Example: Living room.
- B** Additional zone. Example: Bedroom.
- C** Technical room. Example: Garage.
- a** Brine loop
- b** Indoor unit heat pump
- c** Domestic hot water (DHW) tank
- d** User interface at the indoor unit
- e** User interface in the living room, used as room thermostat
- f** Underfloor heating

g Heat pump convectors or fan coil units



INFORMATION

The indoor unit and the domestic hot water tank (if installed) can be separated or integrated depending on the indoor unit type.

3 Operation

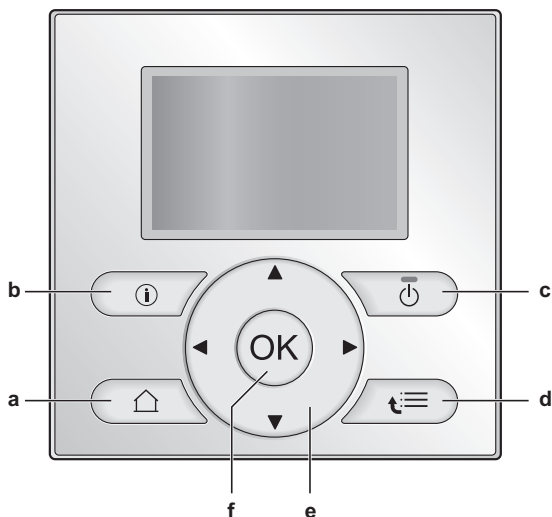
3.1 Overview: Operation

You can operate the system via the user interface. This part describes how to use the user interface:

| Part | Description |
|----------------------------|---|
| At a glance | <ul style="list-style-type: none"> Buttons Status icons |
| Space heating control | How to control space heating: <ul style="list-style-type: none"> Setting the space operation mode Controlling the temperature |
| Domestic hot water control | How to control domestic hot water: <ul style="list-style-type: none"> Reheat mode Scheduled mode Scheduled + reheat mode |
| Schedules | How to select and program schedules. |
| Menu structure | Overview of menu structure |
| Installer settings table | Overview of installer settings |

3.2 The user interface at a glance

3.2.1 Buttons



- a HOME PAGES
 - Switches between home pages (when you are on a home page).
 - Goes to the default home page (when you are in the menu structure).
- b MALFUNCTION INFORMATION

If a malfunction occurs, is displayed on the home pages. Press to display more information about the malfunction.
- c ON/OFF

Turns ON or OFF one of the controls (room temperature, leaving water temperature, DHW tank temperature).

- d MENU STRUCTURE/BACK
 - Opens the menu structure (when you are on a home page).
 - Goes up a level (when you are navigating through the menu structure).
 - Goes back 1 step (example: when you are programming a schedule in the menu structure).
- e NAVIGATING/CHANGING SETTINGS
 - Navigates the cursor on the display.
 - Navigates through the menu structure.
 - Changes settings.
 - Selects a mode.
- f OK
 - Confirms a selection.
 - Enters a submenu in the menu structure.
 - Switches between displaying actual and desired values, or between displaying actual and offset values (if applicable) on the home pages.
 - Goes to the next step (when you are programming a schedule in the menu structure).
 - Enables you to activate or deactivate child lock if pressed for more than 5 seconds on a home page.
 - Enables you to activate or deactivate a function lock if pressed for more than 5 seconds in the main menu of the menu structure.



INFORMATION

If you press or while changing settings, the changes will NOT be applied.

3.2.2 Status icons

| Icon | Description |
|------|---|
| | Space operation mode = Heating. |
| | Not available. |
| | Unit is operating. |
| | Desired room temperature = preset value (Comfort; daytime). |
| | Desired room temperature = preset value (Eco; nighttime). |
| | <ul style="list-style-type: none"> On the room temperature home page: Desired room temperature = according to the selected schedule. On the DHW tank temperature home page: DHW tank mode = Scheduled mode. |
| | DHW tank mode = Reheat mode. |
| | DHW tank mode = Scheduled + reheat mode. |
| | At the next scheduled action, the desired temperature will increase. |
| | At the next scheduled action, the desired temperature will NOT change. |
| | At the next scheduled action, the desired temperature will decrease. |
| | The preset value (Comfort or Eco) or scheduled value is temporarily overruled. |
| | The system will produce domestic hot water for the indicated number of persons. |
| | The DHW tank booster mode is active or ready to be activated. |
| | Quiet mode is active. |
| | Holiday mode is active or ready to be activated. |
| | Child lock mode and/or function lock mode is active. |

3 Operation

| Icon | Description |
|------|--|
| | An external heat source is active. Example: Gas burner. |
| | The disinfection mode is active. |
| | A malfunction occurred. Press OK to display more information about the malfunction. |
| | Weather-dependent mode is active. |
| | User permission level = Installer. |
| | Defrost/oil return mode is active. |
| | Hot start mode is active. |
| | Emergency operation is active. |

3.3 Space heating control

3.3.1 Using the room temperature home page

Typical room temperature home pages

Depending on the user profile, the user interface gives you either a basic or a detailed home page. To switch between home pages, go to [7.1.3] User settings > Display > User profile.

| User profile = Basic | User profile = Detailed |
|----------------------|-------------------------|
| | |

To read out the actual and desired room temperature

- Go to the room temperature home page (Room).
Result: You can read out the actual temperature.
20.0°C
Actual temperature
- Press **OK**.
Result: You can read out the desired temperature.
22.0°C
Desired temperature

To temporarily overrule the room temperature schedule

- Go to the room temperature home page (Room).
- Use **▲** or **▼** to adjust the temperature.

To change the mode from scheduled to preset value

Prerequisite: User profile = Detailed.

- Go to the room temperature home page (Room).
- Press **⏸** or **⏹** to select a preset value (⊙ or ◐).

Result: The mode will return to Scheduled according to the overrule period.

To set the overrule period

- Go to [7.2]: **⏸** > User settings > Temperature lock.
- Select a value and press **OK**:
 - Permanent
 - hours (2, 4, 6, 8)

3.3.2 Using the leaving water temperature home pages (main + additional)

i INFORMATION

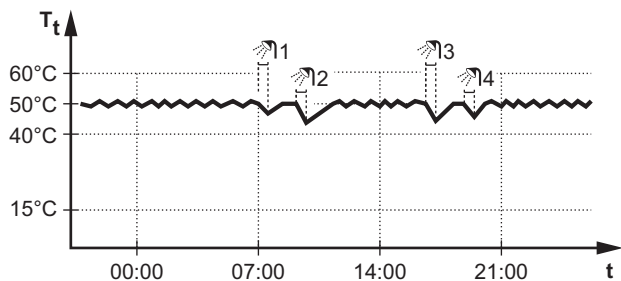
The leaving water is the water that is sent to the heat emitters. The desired leaving water temperature is set by your installer in accordance with the heat emitter type. Example: Underfloor heating is designed for lower leaving water temperature than radiators and heat pump convectors and/or fan coil units. You only have to adjust leaving water temperature settings in case of problems.

For more information about the leaving water temperature, see the user reference guide.

3.4 Domestic hot water control

3.4.1 Reheat mode

In reheat mode (⊙), the DHW tank continuously heats up to the desired temperature (example: 50°C).



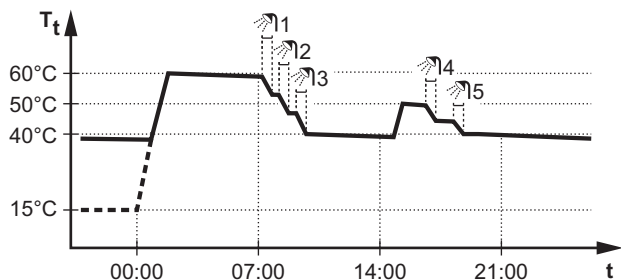
- T_t : DHW tank temperature
- t: Time

3.4.2 Scheduled mode

In scheduled mode (⊕), the DHW tank produces hot water corresponding to a schedule. The best time to allow the tank to produce hot water is at night, because:

- The space heating demand is lower
- Electricity tariffs are lower

Example:

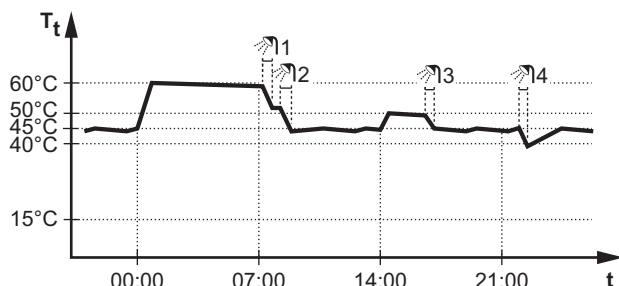


- T_t : DHW tank temperature
- t: Time

3.4.3 Scheduled + reheat mode

In scheduled + reheat mode (☉ ☉), the domestic hot water control is the same as in scheduled mode. However, when the DHW tank temperature drops below a preset value (=Reheat; example: 45°C), the DHW tank heats up until it reaches this preset value. This ensures that a minimum amount of hot water is available at all times.

Example:



3.4.4 Using the DHW tank temperature home page

Typical DHW tank temperature home pages

Depending on the user profile, the user interface gives you either a basic or a detailed home page. Depending on an installer setting, either an actual temperature or a number of people is displayed to indicate the domestic hot water tank temperature. The examples in the illustrations below are in DHW tank mode = Scheduled.

| User profile = Basic | User profile = Detailed |
|--|---|
| <p>Mon 15:20 Tank</p> <p>60°C</p> <p>Desired temperature</p> | <p>Mon 15:20 Tank</p> <p>60°C</p> <p>Storage comfort</p> <p>Tue 00:00</p> |
| <p>Mon 15:20 Tank</p> <p>4</p> <p>Desired temperature</p> | <p>Mon 15:20 Tank</p> <p>4</p> <p>Storage comfort</p> <p>Tue 00:00</p> |

To read out and adjust the desired reheat temperature (in reheat mode)

- Go to [7.4.3.3]: ☰ > User settings > Preset values > Tank temperature > Reheat.

Result: You can read out the desired reheat temperature.

50°C

- Press or to adjust. Note: The reheat temperature can only be changed if the DHW tank mode is scheduled + reheat mode.

To read out and overrule the active or next scheduled desired temperature (in scheduled mode or scheduled + reheat mode)

- Go to the DHW tank temperature home page (Tank).

Result: 60°C or 4 is displayed.

- Press or to overrule. Note: If the desired temperature is weather dependent, you cannot change it on the home page.

3.4.5 Using the DHW tank booster mode

To activate the DHW tank booster mode (method 1)

- Go to the DHW tank temperature home page (Tank).
- Press for more than 5 seconds.

To activate the DHW tank booster mode (method 2)

Prerequisite: User profile = Detailed

- Go to the DHW tank temperature home page (Tank).
- Press to select ☰.

3.5 Schedules: Example



INFORMATION

The procedures to program other controls are similar.

In this example:

- Room temperature schedule in heating mode
- Monday = Tuesday = Wednesday = Thursday = Friday
- Saturday = Sunday

To program the schedule

- Go to [7.3.1.1]: ☰ > User settings > Set schedules > Room temp. > Set heating schedule.
- Select Empty and press **OK**.
- Program the schedule for Monday. See below for more details.
- Copy from Monday to Tuesday, Wednesday, Thursday and Friday. See below for more details.
- Program the schedule for Saturday.
- Copy from Saturday to Sunday.
- Save the schedule and give it a name. See below for more details.

To program the schedule for Monday

- Use and to select Monday.
- Press to enter the schedule for Monday.
- Program the schedule for Monday:
 - Use and to select an entry.
 - Use and to change the value of an entry.

To copy from one day to another

- Select the day from which you want to copy and press **OK**. Example: Monday.
- Select Copy day and press **OK**.
- Set the days you want to copy to Yes and press **OK**. Example: Tuesday = Yes, Wednesday = Yes, Thursday = Yes and Friday = Yes.

To save the schedule

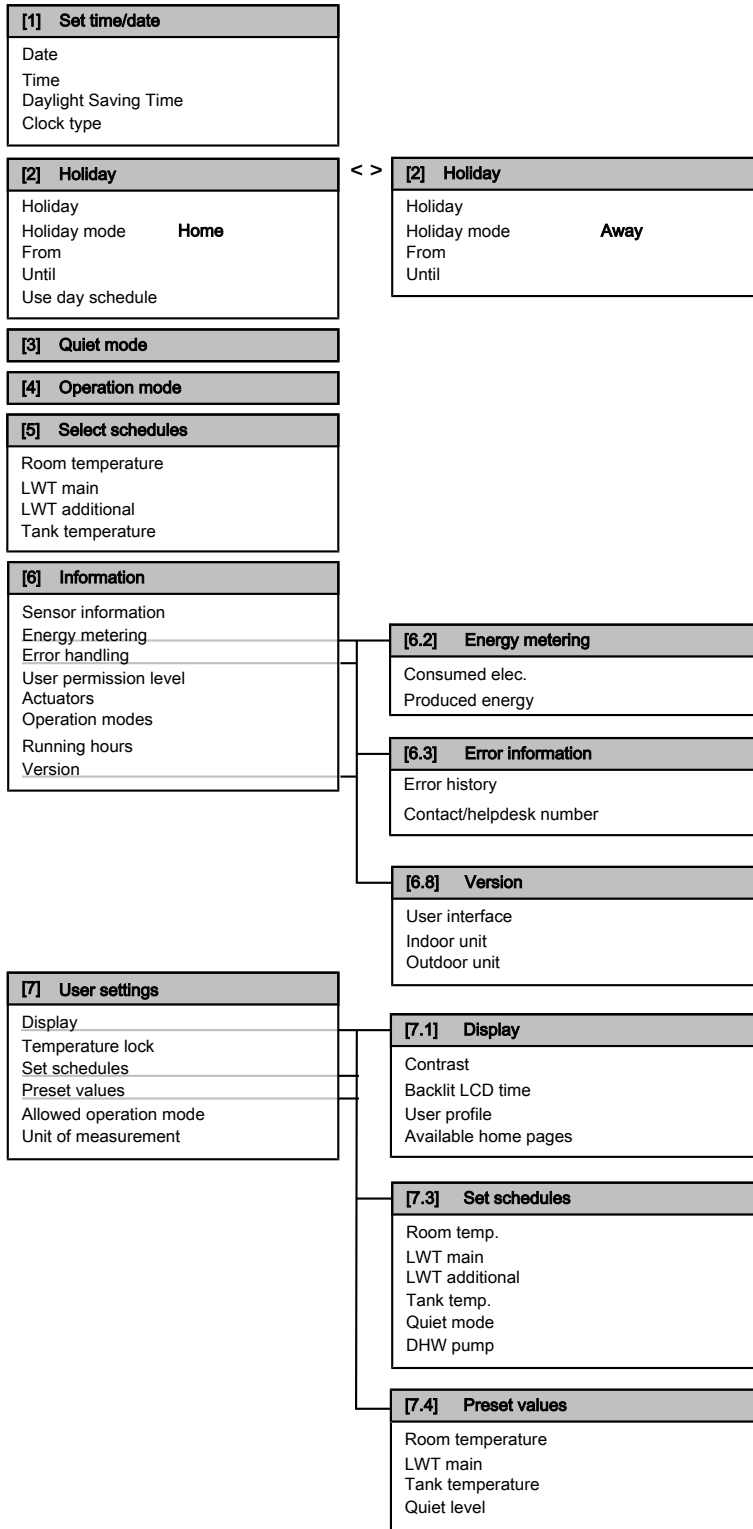
- Press **OK**, select Save schedule and press **OK**.
- Select User defined 1, User defined 2 or User defined 3 and press **OK**.
- Change the name and press **OK**. (Only applicable for room temperature schedules). Example: MyWeekSchedule

To select which schedule you currently want to use

- Go to [5]: ☰ > Select schedules.
- Select for which control you want to use a schedule. Example: [5.1] Room temperature.
- Select for which operation mode you want to use a schedule. Example: [5.1.1] Heating.
- Select a predefined or user-defined schedule and press **OK**.

3 Operation

3.6 Menu structure: Overview



INFORMATION

Energy metering functionality is NOT applicable and/or NOT valid for this unit if it is calculated by the unit. If optional external meters are used, energy metering display is valid.

3.7 Installer settings: Tables to be filled in by installer

3.7.1 Quick wizard

| Setting | Default | Fill in... |
|---|-------------------|------------|
| Backup heater configuration (only for unified backup heater) [A.2.1.5] | | |
| BUH type | 1 (1P,(1/2)) | |
| Preferential kWh rate power supply [A.2.1.6] | | |
| Preferential kWh rate | 0 (LWT control) | |
| Space heating settings [A.2.1] | | |
| Unit control method | 0 (In room) | |
| User interface location | 1 (1 LWT zone) | |
| Number of LWT zones | 1 (1 LWT zone) | |
| Pump operation mode | 1 (Sample) | |
| Domestic hot water settings [A.2.2] | | |
| DHW operation | Depends on model | |
| DHW tank type | Depends on model | |
| DHW pump | 0 (No) | |
| Thermostats [A.2.2] | | |
| Contact type main | 2 (Thermo ON/OFF) | |
| Contact type add. | 2 (Thermo ON/OFF) | |
| External sensor | 0 (No) | |
| Digital I/O PCB [A.2.2.6] | | |
| Alarm output | 0 (Normally open) | |
| Demand PCB [A.2.2.7] | | |
| Demand PCB | 0 (No) | |
| Energy metering [A.2.2] | | |
| External kWh meter 1 | 0 (No) | |
| External kWh meter 2 | 0 (No) | |
| Capacities (energy metering) [A.2.3] | | |
| BUH: step 1 | Depends on model | |
| BUH: step 2 | Depends on model | |

3.7.2 Space heating control

| Setting | Default | Fill in... |
|---|--------------|------------|
| Leaving water temperature: Main zone [A.3.1.1] | | |
| LWT setpoint mode | 0 (Fixed) | |
| Set weather-dependent heating | 25/40/15/-10 | |
| Leaving water temperature: Additional zone [A.3.1.2] | | |
| LWT setpoint mode | 0 (Fixed) | |
| Set weather-dependent heating | 25/40/15/-10 | |
| Leaving water temperature: Delta T emitter [A.3.1.3] | | |
| Heating | 5°C | |
| Leaving water temperature: Modulation [A.3.1.1.5] | | |
| Modulated LWT | 0 (No) | |
| Leaving water temperature: Emitter type [A.3.1.1.7] | | |
| Emitter type | 1 (Slow) | |

3.7.3 Domestic hot water control [A.4]

| Setting | Default | Fill in... |
|-----------------------|--------------------|------------|
| Type | 2 (Scheduled only) | |
| Setpoint readout type | 0 (Temperature) | |
| Maximum setpoint | Depends on model | |

3.7.4 Contact/helpdesk number [6.3.2]

| Setting | Default | Fill in... |
|-------------------------|---------|------------|
| Contact/helpdesk number | — | |

4 Energy saving tips

Tips about room temperature

- Make sure the desired room temperature is NEVER too high (in heating mode) or too low (in cooling mode), but ALWAYS according to your actual needs. Each saved degree can save up to 6% of heating/cooling costs.
- Do NOT increase the desired room temperature to speed up space heating. The space will NOT heat up faster.
- When your system layout contains slow heat emitters (example: under floor heating), avoid large fluctuation of the desired room temperature and do NOT let the room temperature drop too low. It will take more time and energy to heat up the room again.
- Use a weekly schedule for your normal space heating or cooling needs. If necessary, you can easily deviate from the schedule:
 - For shorter periods: You can overrule the scheduled room temperature. Example: When you have a party, or when you are leaving for a couple of hours.
 - For longer periods: You can use the holiday mode. Example: When you stay at home during your holiday, or when you go away during your holiday.

Tips about DHW tank temperature

- Make sure the number (available hot water for x persons) on the DHW tank temperature home page is NOT higher than your actual needs.
- Use a weekly schedule for your normal domestic hot water needs (only in scheduled mode).
 - Program to heat up the DHW tank to a preset value (Storage comfort = higher DHW tank temperature) during the night, because then space heating demand is lower and electric tariffs may be lower.
 - If heating up the DHW tank once at night is not sufficient, program to additionally heat up the DHW tank to a preset value (Storage eco = lower DHW tank temperature) during the day.
- Make sure the desired DHW tank temperature is NOT too high. Example: After installation, lower the DHW tank temperature daily by 1°C and check if you still have enough hot water.
- Program to turn ON the domestic hot water pump only during periods of the day when instant hot water is necessary. Example: In the morning and evening.

5 Maintenance and service

5.1 Overview: Maintenance and service

The installer has to perform a yearly maintenance. You can find the contact/helpdesk number via the user interface.

As end user, you have to:

- Keep the user interface clean with a soft damp cloth. Do NOT use any detergents.
- Regularly check if the water pressure indicated on the manometer is above 1 bar.

Refrigerant


This product contains fluorinated greenhouse gases covered by the Kyoto Protocol. Do NOT vent gases into the atmosphere.

Refrigerant type: R410A

Global warming potential value: 1975

Periodical inspections for refrigerant leaks may be required depending on the applicable legislation. Please contact your installer for more information.

5.2 To find the contact/helpdesk number

Go to [6.3.2]:  > Information > Error handling > Contact/helpdesk number.

6 Troubleshooting

6.1 Symptom: You are feeling too cold (hot) in your living room

| Possible cause | Corrective action |
|---|---|
| The desired room temperature is too low (high). | <p>Increase (decrease) the desired room temperature.</p> <p>If the problem recurs daily, do one of the following:</p> <ul style="list-style-type: none"> ▪ Increase (decrease) the room temperature preset value. ▪ Adjust the room temperature schedule. |
| The desired room temperature cannot be reached. | Increase the desired leaving water temperature in accordance with the heat emitter type. |

6.2 Symptom: The water at the tap is too cold

| Possible cause | Corrective action |
|--|---|
| You ran out of domestic hot water because of unusual high consumption. | If you immediately need domestic hot water, activate the DHW tank booster mode. However, this consumes extra energy. |
| The desired DHW tank temperature is too low. | <p>If you can wait, overrule (increase) the active or next scheduled desired temperature so that more hot water will be produced exceptionally.</p> <p>If the problems recurs daily, do one of the following:</p> <ul style="list-style-type: none"> ▪ Increase the DHW tank temperature preset value. ▪ Adjust the DHW tank temperature schedule. Example: Program to additionally heat up the DHW tank to a preset value (Storage eco = lower tank temperature) during the day. |

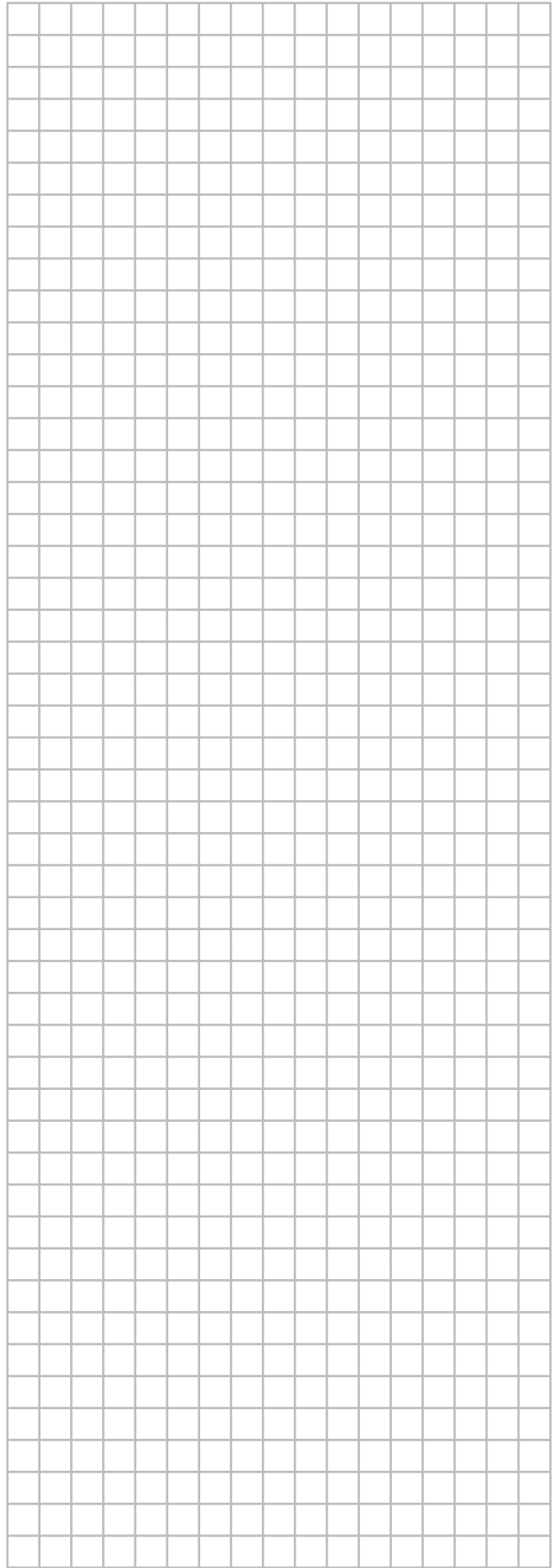
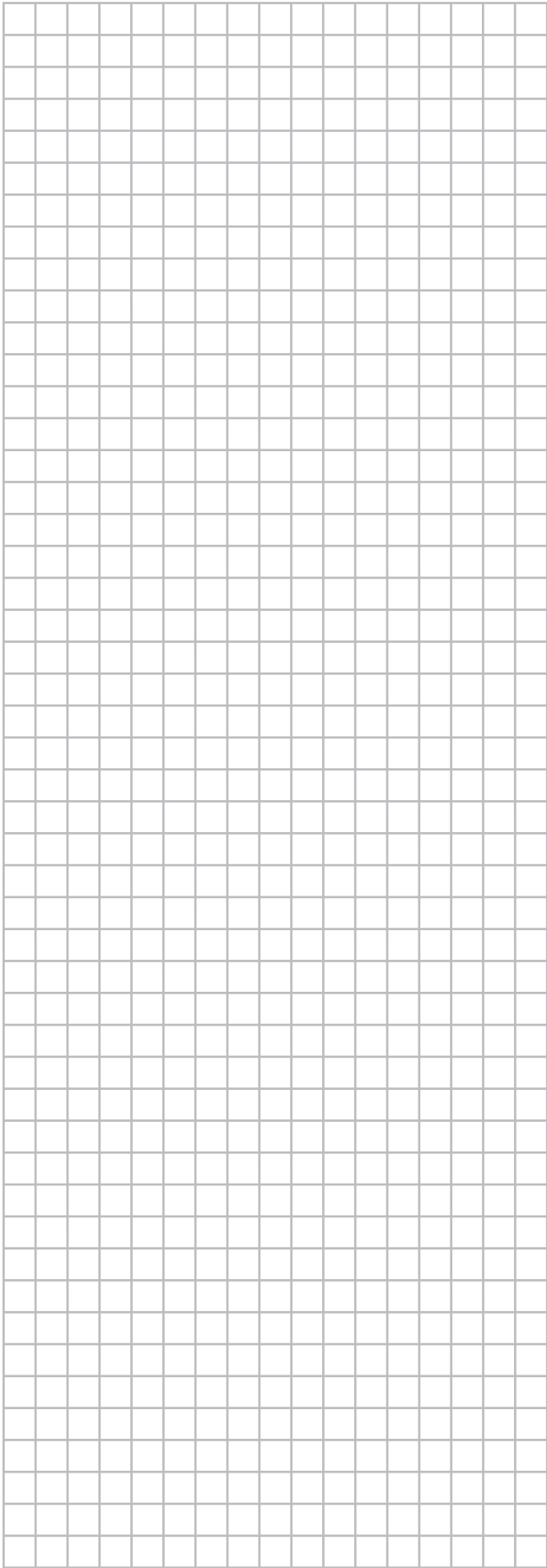
7 Glossary

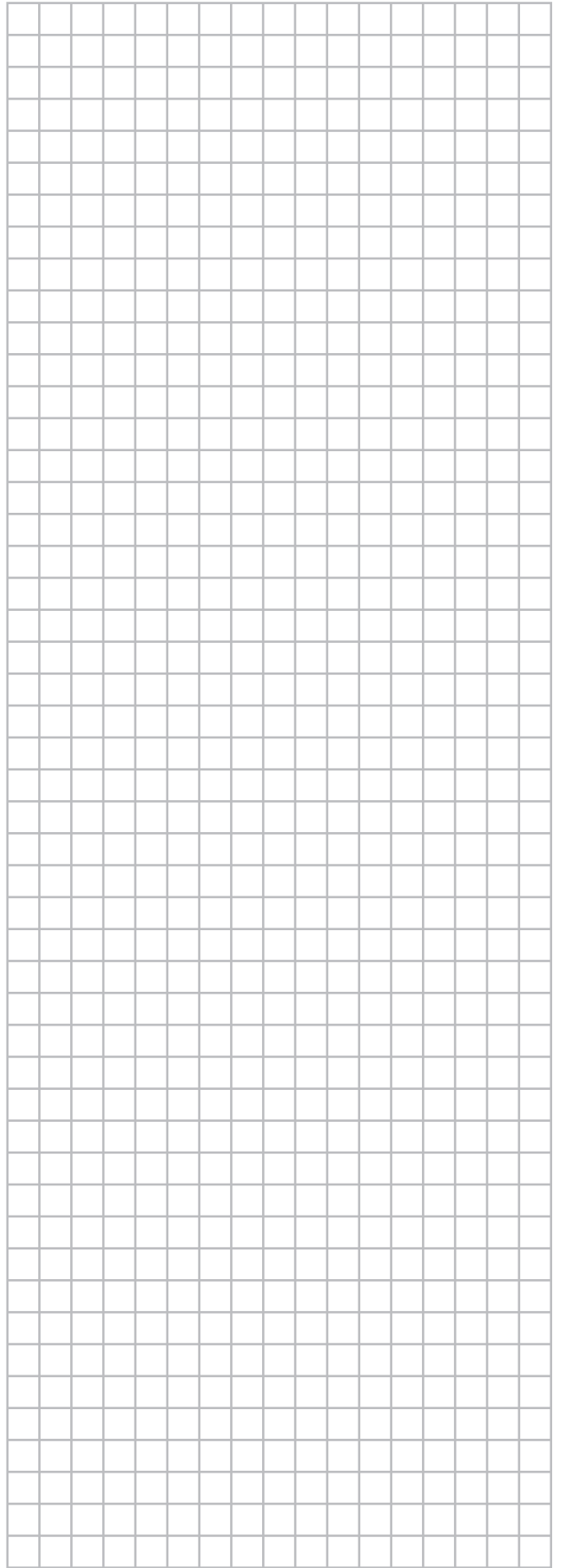
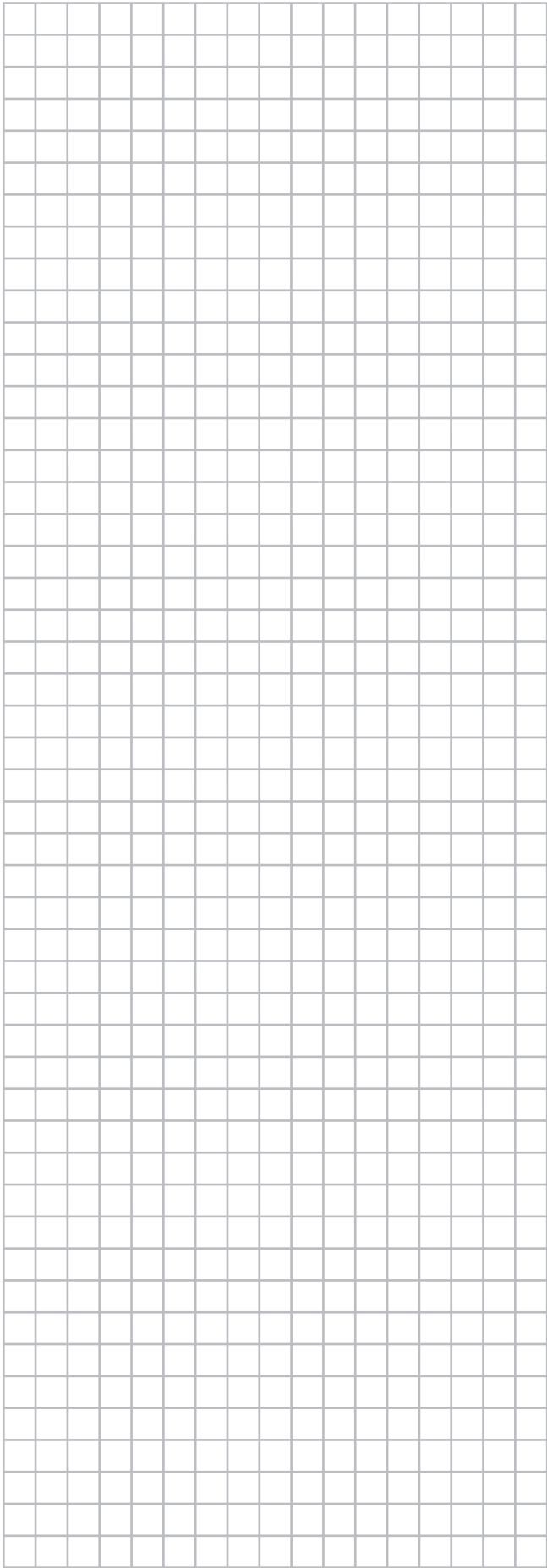
DHW = Domestic hot water

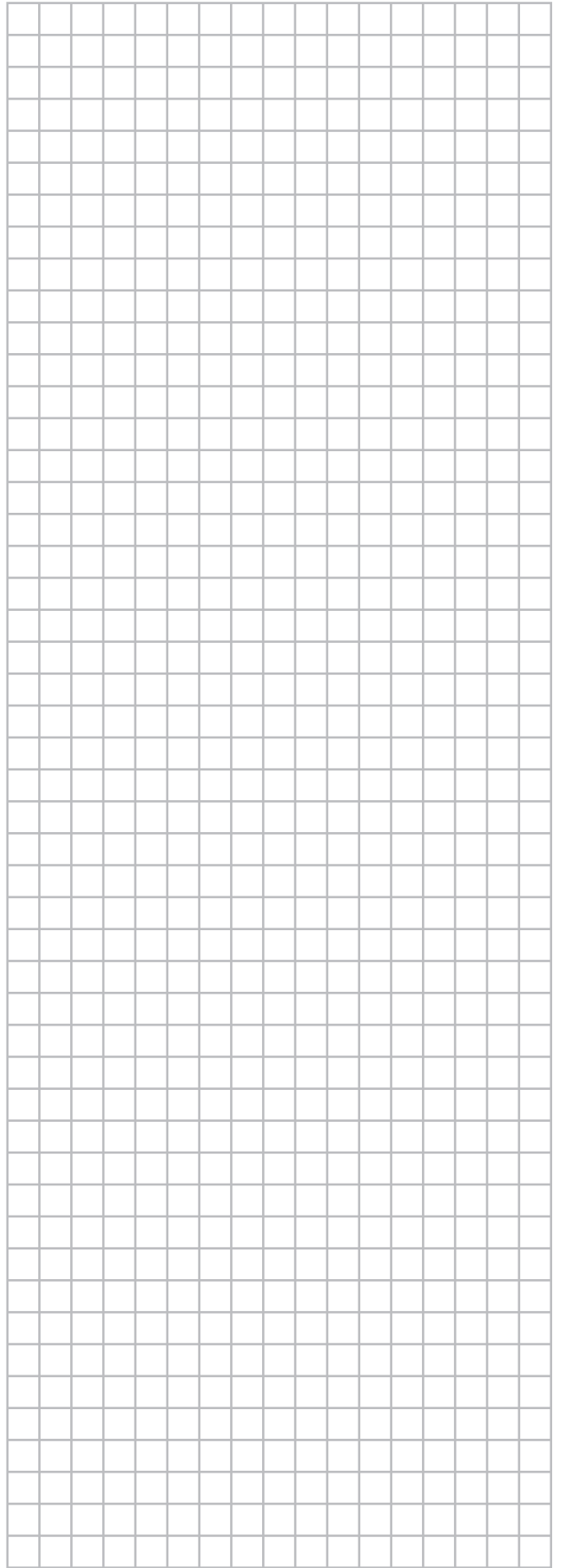
Hot water used, in any type of building, for domestic purposes.

LWT = Leaving water temperature

Water temperature at the water outlet of the heat pump.









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