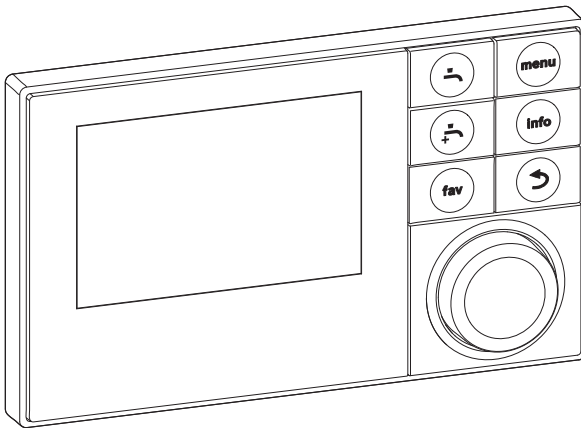


HMC300

Control unit

EMS plus



6 720 808 471-00.10

Operating Instructions

6 720 813 192 (2014/10)




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1 Key to symbols and safety instructions

1.1 Key to symbols

Warnings




Warnings in this document are identified by a warning triangle printed against a grey background. Keywords at the start of a warning indicate the type and seriousness of the ensuing risk if measures to prevent the risk are not taken.

The following keywords are defined and can be used in this document:

- **NOTICE** indicates a situation that could result in damage to property or equipment.
- **CAUTION** indicates a situation that could result in minor to medium injury.
- **WARNING** indicates a situation that could result in severe injury or death.
- **DANGER** indicates a situation that will result in severe injury or death.

Important information



This symbol indicates important information where there is no risk to people or property.

Additional symbols

Symbol	Explanation
▶	Step in an action sequence
→	Cross-reference to another part of the document
•	List entry
–	List entry (second level)

Table 1

1.2 General safety instructions

These instructions are intended for the user of the heating system

- ▶ Read the instructions (for heat source, modules etc.) before use and keep them handy.
- ▶ Pay attention to the safety and warning instructions.

Intended use

- ▶ The product should only be used to control heating systems in one-family houses.

All other use is not suitable. We cannot accept liability for damages resulting from unauthorised use.

Safety of electrical appliances for domestic use and similar purposes

The following requirements apply in accordance with EN 60335-1 in order to prevent hazards from occurring when using electrical appliances:

“This device can be used by children of 8 years and up as well and by people with reduced physical, sensory or mental capabilities or lacking in experience and knowledge, if they are supervised and have been given instruction in the safe use of the device and understand the resulting dangers. Children must not play with the device. Cleaning and user maintenance may not be performed by children without supervision”

“If the power supply cable is damaged, in order to avoid risks it must be replaced by the manufacturer or its customer service department or a similarly qualified person.”

Inspection and maintenance

Inspection and maintenance at regular intervals is essential for safe and environmentally-friendly operation of the heating system.

- ▶ Only allow authorised installers to work on the product.
- ▶ Rectify any confirmed faults immediately.

Damage caused by frost

If the system is not in operation it can freeze:

- ▶ Follow the instructions to ensure protection from freezing.
- ▶ Always keep the system switched on for additional functions, such as heating hot water or protection from blocking.
- ▶ Rectify operating faults immediately.

Risk of scalding at the hot water draw-off points

- ▶ If hot water temperatures above 60 °C are set or if thermal disinfection is activated, a mixer must be installed. If in doubt, ask your contractor.

2 Product data

With the help of the HPC400 (Procontrol 600) control unit it is easy to control the heat pump.

You select the required room temperature in your home by turning the menu dial. The thermostat valves on the radiators should normally be fully open, but can be adjusted if it gets too cold or hot in one room.

The optimised operating mode ensures the efficient use of energy. Heating and cooling are controlled to ensure optimum comfort with the minimum possible consumption of energy. The heating of hot water can easily be set, and then requires few adjustments.

2.1 Functions

The number of functions and the menu structure on the control unit depend upon how the system is built up.

- Settings for different heating and cooling circuits are only accessible if two or more heating/cooling circuits are installed.
- Information on the solar heating system is only shown if a solar heating system is installed.

There are references to indicate that functions are related to the structure of the system where this is relevant. The range of settings and default settings vary, depending on which system has been installed and can deviate from the information in these operating instructions.

Consult your installer if you have any additional questions.

2.2 Functionality of the control unit **Cooling is disabled in the UK model to comply with the regulations for RHI.**

The control unit can control up to four heating/cooling circuits. In heating mode the control unit works with one of the main control modes in each heating circuit. Depending on your requirements, the installer selects one of these and sets it.

The main control modes for heating are:

- **Outdoor temperature controlled:**
 - Control of room temperature in relation to outdoor temperature
 - The control unit adjusts the flow temperature according to a simplified or optimised heat curve.
- **Outdoor temperature controlled with input from room temperature:**
 - Control of room temperature on the basis of outdoor temperature and measured room temperature. The room unit actuates the flow temperature on the basis of the measured and required room temperature.
 - The control unit adjusts the flow temperature according to a simplified or optimised heat curve.



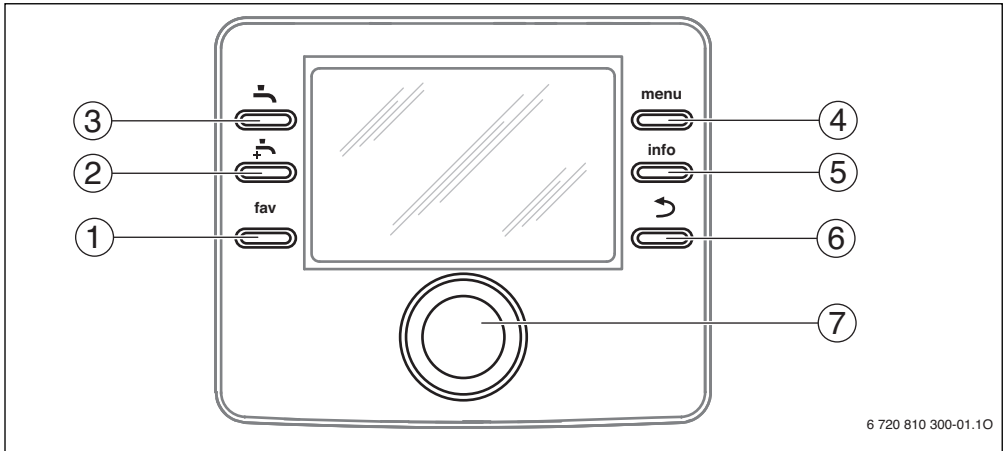
For outdoor temperature controlled adjustment with input from room temperature the following applies:

The thermostat valves in the reference room (the room where the room unit is installed) must be fully open.

2.3 Operation after power failure

In the event of a power failure, or periods with disconnected heat source, no settings are lost. The control unit starts again when the power returns. It may be necessary to redo the settings for the time and date. No other settings are necessary.

3 Overview of buttons and symbols



6 720 810 300-01.10

Fig. 1 Buttons

- [1] Favourites button
- [2] Extra hot water button
- [3] Hot water button
- [4] Menu button
- [5] Info button
- [6] Return button
- [7] Menu dial



If the display is off it goes on when a button is used, and the respective function is carried out. A short tap on the menu dial will only light up the display. The display goes off automatically if no buttons are used.

Overview of buttons and symbols

→ image 1, page 5







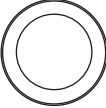
Pos.	Button	Designation	Explanation
1		Favourites button	<ul style="list-style-type: none"> ▶ Press this button to show favourite functions for heating circuit 1. ▶ Keep this button pressed to adjust the favourites menu (→ chapter 4.5, page 12).
2		Extra hot water button	<ul style="list-style-type: none"> ▶ Press to activate or deactivate extra hot water (→ chapter 4.4, page 11).
3		Hot water button	<ul style="list-style-type: none"> ▶ Press this button to open the menu Hot water (→ chapter 4.4, page 11).
4		Menu button	<ul style="list-style-type: none"> ▶ Press this button to open the main menu (→ chapter 5, page 13).
5		Info button	<p>When a menu is shown:</p> <ul style="list-style-type: none"> ▶ Press the button show more information on the selected menu option. <p>When the initial menu is open:</p> <ul style="list-style-type: none"> ▶ Press the button to open the information menu (→ chapter 6, page 29).
6		Return button	<ul style="list-style-type: none"> ▶ Press this button to return to the main menu, or to delete the changed value. <p>When maintenance is due, or a fault has been confirmed:</p> <ul style="list-style-type: none"> ▶ Press the button to switch between the initial menu and the fault message. ▶ Keep the button pressed to switch from a menu to the initial menu.
7		Menu dial	<ul style="list-style-type: none"> ▶ Turn the menu dial to change a set value (e.g. temperature) or to select a menu or menu option. <p>When the display is off:</p> <ul style="list-style-type: none"> ▶ Press the menu dial to switch on the display. <p>When the display is on:</p> <ul style="list-style-type: none"> ▶ Press the menu dial to open a selected menu or a selected menu option, to confirm a set value (e.g. temperature) or a message, or to close a popup window. <p>When the initial menu is open:</p> <ul style="list-style-type: none"> ▶ Press the menu dial to activate the input box for selection of heating circuit in the initial menu (only applies to systems with at least two heating circuits, → chapter 4.1, page 9).

Table 2 Buttons

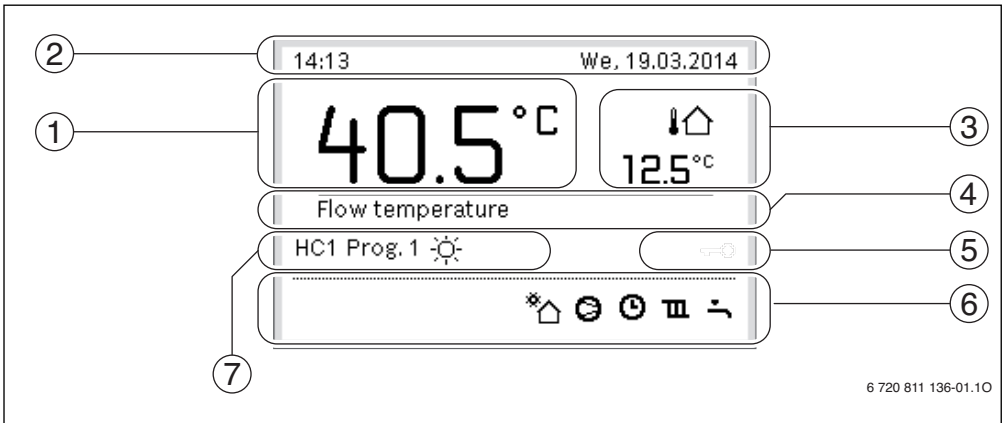


Fig. 2 Example of what the initial menu looks like on a system with several heating circuits.

- [1] Temperature
- [2] Information line
- [3] Outdoor temperature
- [4] Information text
- [5] Button lock
- [6] Information graphics
- [7] Operating mode



→ image 2, page 7			
Pos.	Symbol	Designation	Explanation
1		Temperature	<ul style="list-style-type: none"> • Display of flow temperature or • room temperature if a room unit for the heating circuit shown has been installed.
2	-	Information line	The week day and date are shown here.
3	 3.0 °C	Display of other temperature	An additional temperature, e.g. outdoor temperature, solar panel temperature or temperature in the hot water system, is shown here (read more about this on → page 29).
4	-	Information text	E.g. designation for the temperature being shown (→ image 2, [1]). If an operating fault occurs a message will be shown here until the fault has been rectified.
5		Button lock	The button lock is activated if the key is shown.

Table 3 Symbols in initial menu

Overview of buttons and symbols


















→ image 2, page 7			
Pos.	Symbol	Designation	Explanation
6		Information graphics	Information symbols are shown here, which inform the user of which functions are active in the system.
			Hot water heating active
			Thermal disinfection (hot water) active
			Function for extra hot water active
			Pool heating active
			House heating active
			Cooling active
			Failure caused by power company
			External input closed (Remote control)
			Holiday function active
			Time program – program 1 or 2 for house heating active
			Function for Smart Grid activated
			Drying active
			Additional electric heat active
			Power guard active
			External heat source (additional heat) active
	7		Optimised
Program 1			
Program 2		The house heating follows the time program active in the respective heating circuit. The house heating switches between heating mode and temperature reduction mode at the set times.	
		Heating mode in displayed heating circuit active	
		Temperature reduction mode in displayed heating circuit active	

Table 3 Symbols in initial menu

4 Quick manual

On page 13 there is an overview of the structure of the main menu and the individual menu option positions.

The following descriptions are based on the initial menu (→ image 2, page 7).

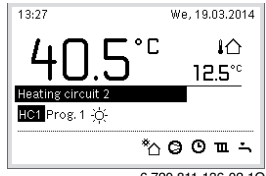
Use	Result
<ul style="list-style-type: none"> ▶ If the display is on, press the menu dial. The selected heating circuit number, operating mode and name are shown in the bottom half of the display. ▶ Turn the menu dial to select a heating circuit. It is only possible to select the heating circuits available in the system. ▶ Wait a few seconds or press the menu dial. The initial menu shows the selected heating circuit. 	 <p>The screenshot shows a digital display with the time 13:27 and date We, 19.03.2014. The main temperature is 40.5°C. Below it, 'Heating circuit 2' is selected. To the right, a secondary temperature of 12.5°C is shown. At the bottom, there are icons for home, power, and other functions, along with the number 6 720 811 136-02.10.</p>

Table 4 Quick manual – Heating circuit in initial menu

4.2 Setting of operating mode

Cooling is disabled in the UK model to comply with the regulations for RHI.

4.1 Select heating circuit for initial menu

Information for one single heating circuit is always shown in the initial menu. If two or more heating circuits are installed it is possible to set which heating circuit the initial menu is to show information on.

Explanation of concepts “operating mode”, “automatic mode” and “optimised operation” are on page 40 and 41. Optimised operation is active with the default settings, because this mode ensures the most efficient operation of the heat pump.

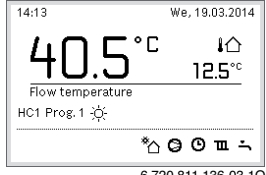
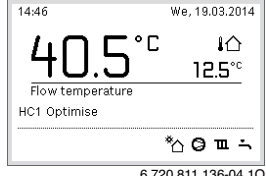
Use	Result
<p>To activate automatic mode (and apply the time program)</p> <ul style="list-style-type: none"> ▶ Press the menu button to open the main menu. ▶ Press the menu dial to open the menu Heating/Cooling. ▶ Press the menu dial to open the menu Operating mode. ▶ If two or more heating circuits are installed: turn the menu dial to mark Heating circuit 1, 2, 3 or 4 and press the menu dial. ▶ Turn the menu dial to mark Auto and press the menu dial. ▶ Return to the initial menu by pressing and holding the return button. All temperatures in the relevant time program for house heating are shown in the bottom half of the display, in a popup window. The actual temperature flashes. The control unit adjusts the room temperature according to the active time program for house heating. 	 <p>The screenshot shows a digital display with the time 14:13 and date We, 19.03.2014. The main temperature is 40.5°C. Below it, 'Flow temperature' is shown. To the right, a secondary temperature of 12.5°C is shown. At the bottom, there are icons for home, power, and other functions, along with the number 6 720 811 136-03.10.</p>
<p>To return to optimised operation (without time program)</p> <ul style="list-style-type: none"> ▶ Press the menu button to open the main menu. ▶ Press the menu dial to open the menu Heating/Cooling. ▶ Press the menu dial to open the menu Operating mode. ▶ If two or more heating circuits are installed: turn the menu dial to mark Heating circuit 1, 2, 3 or 4 and press the menu dial. ▶ Turn the menu dial to mark Optimised and press the menu dial. ▶ Return to the initial menu by pressing and holding the return button. The required room temperature is shown in the bottom of the display, in a popup window. The control unit adjusts the permanent room temperature to the required room temperature. 	 <p>The screenshot shows a digital display with the time 14:46 and date We, 19.03.2014. The main temperature is 40.5°C. Below it, 'Flow temperature' is shown. To the right, a secondary temperature of 12.5°C is shown. At the bottom, there are icons for home, power, and other functions, along with the number 6 720 811 136-04.10.</p>

Table 5 Quick guide – Activate operating mode

4.3 Change room temperature

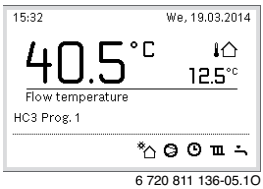
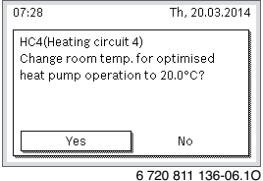
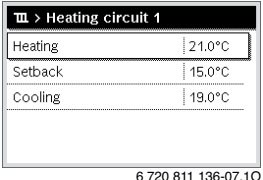
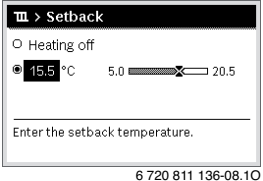
Use	Result
<p>If you are cold or think that it will be too hot: change the room temperature temporarily</p>	
<p>Automatic mode</p> <p>Change room temperature to next break point</p> <ul style="list-style-type: none"> ▶ Turn the menu dial to set the required room temperature. The period in question is shown in grey in the time program bar chart. ▶ Wait a few seconds or press the menu dial. The control unit works with the new setting. The change applies to the next break point in the time program for house heating. After this the settings in the time program apply again. <p>Undo temperature change</p> <ul style="list-style-type: none"> ▶ Turn the menu dial until the time period is shown in black in the time program bar chart, and then press the menu dial. The change has been cancelled. 	
<p>If you are always cold or think it is too hot: set the required room temperature (e.g. for heating and temperature reduction mode)</p>	
<p>Optimised operation</p> <ul style="list-style-type: none"> ▶ Activate optimised operation (→ chapter 4.2). ▶ Wait a few seconds or press the menu dial to close the popup window. ▶ Turn the menu dial to set the required room temperature. ▶ Wait a few seconds or press the menu dial. Confirm the change in the popup window by pressing the menu dial (or cancel the change by pressing the return button). The actual room temperature is shown in the bottom half of the display, in a popup window. The control unit works with the new settings. 	
<p>Automatic mode</p> <ul style="list-style-type: none"> ▶ Press the menu button to open the main menu. ▶ Press the menu dial to open the menu Heating/Cooling. ▶ Turn the menu dial to mark the menu Temperature settings. ▶ Press the menu dial to open the menu. ▶ If two or more heating circuits are installed: turn the menu dial to mark Heating circuit 1, 2, 3 or 4 and press the menu dial. 	
<p>Automatic mode</p> <ul style="list-style-type: none"> ▶ Turn the menu dial to mark Heating, Setback, Increase or Cooling. ▶ Press the menu dial. ▶ Turn the menu dial and press to activate the required setting e.g. for temperature reduction mode. <p>When the temperature adjustment is activated:</p> <ul style="list-style-type: none"> ▶ turn the menu dial and press it to set the temperature. The limit for the values set for temperature depend on the settings for the other operating mode. The control unit works with the new settings. The settings apply for all time programs for house heating (when two or more heating circuits are set they only apply to the selected heating circuit). 	

Table 6 Quick guide – Room temperature

4.4 Additional settings

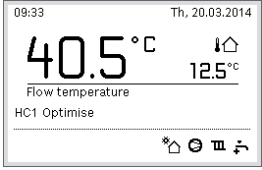
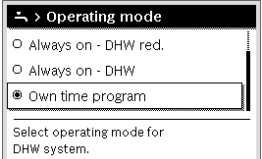
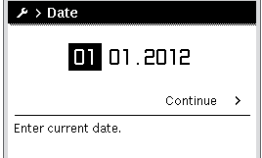
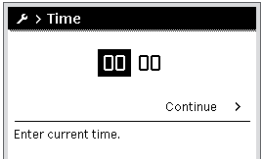
Use	Result
<p>If the demand for hot water is temporarily higher than usual: activate extra hot water (= quick function for hot water).</p> <ul style="list-style-type: none"> ▶ Press the extra hot water button. The heating of hot water is activated immediately with the set temperature and for the set time. After a few seconds the symbol for extra hot water is shown in the information graphics (settings for Extra hot water → chapter 5.3.3, page 21). <p>To deactivate the function for extra hot water before the set time has gone:</p> <ul style="list-style-type: none"> ▶ Press the button for extra hot water once again. 	
<p>If the hot water is too cold or too hot: Change operating mode for heating hot water</p> <ul style="list-style-type: none"> ▶ Press the hot water button. The control unit shows the selection list for the operating mode for heating hot water (more information → chapter 5.3.1, page 20). ▶ Turn the menu dial to mark the required operating mode for a period. ▶ Press the menu dial. The control unit works with the new settings. Your installer can set the temperatures for the operating modes DHW and DHW reduced for you. 	
<p>Set the date and time</p>	
<p>If the power supply to the control unit is disconnected for a long time the user will be automatically asked to enter the date and time. The control unit will then return to normal mode.</p> <ul style="list-style-type: none"> ▶ Activate the power supply The control unit shows the date settings. ▶ Turn the menu dial and press it to set the day, month and year. The text is marked on the display Continue. 	
<ul style="list-style-type: none"> ▶ Press the menu dial. ▶ Set the time in the same way as the date. The text is marked on the display Continue. ▶ Press the menu dial. The control unit works with the new settings. No additional settings are needed to put the control unit in operation again. 	
<p>To avoid unintentionally changing the control unit settings: activate or cancel the button lock (child lock, → page 40)</p>	
<ul style="list-style-type: none"> ▶ Press the hot water button and the menu dial and keep them pressed for a few seconds to activate or cancel the button lock. If the button lock is active a key is shown on the display (→ image 2 [5], page 7). 	

Table 7 Quick manual – Additional settings

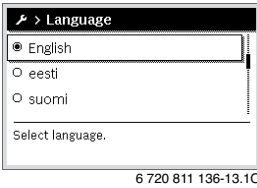
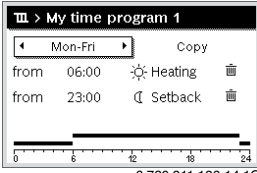
Use	Result
<p>To change the language for the texts shown in the display: set language</p> <ul style="list-style-type: none"> ▶ Press the menu button to open the main menu. ▶ Turn the menu dial to mark Settings. ▶ Press the menu dial to open the menu Settings. ▶ Press the menu dial. ▶ Turn the menu dial to select a language. ▶ Press the menu dial. <p>The control unit works with the new settings.</p>	
<p>If your daily rhythm changes (e.g. working shifts): adjust time program</p> <p>In the menu Heating/Cooling > Time program the time program can in a few simple steps be adjusted to your individual habits or circumstances (→ chapter 5.2.1, page 15).</p>	

Table 7 Quick manual – Additional settings

4.5 Favourite functions

With the help of the favourites button you have direct access to the functions you use most often with heating circuit 1. When you press the favourites button the first time the menu for configuration of the favourites menu opens. You can save your personal favourites there, and if necessary adjust the favourites menu to your requirements later on.

The function of the favourites button depends on which heating circuit is shown in the initial menu. The settings changed in the favourites menu always only apply for heating circuit 1.

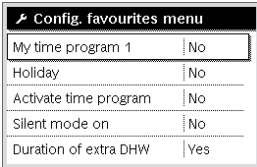
Use	Result
<p>To use a favourite function: open the favourites menu</p> <ul style="list-style-type: none"> ▶ Press the favourites button to open the favourites menu. ▶ Turn and press the menu dial to select a favourite function. ▶ Change the settings (this is done in the same way as in the main menu). 	
<p>To adjust the list of favourite functions to your requirements: adjust the favourites menu</p> <ul style="list-style-type: none"> ▶ Press the favourites button and keep it pressed until the menu for configuration of the favourites menu is shown. ▶ Turn and press the menu dial to select a function (Yes) or to cancel the selection (No). <p>The changes take effect immediately.</p> <ul style="list-style-type: none"> ▶ Press the return button to close the menu. 	

Table 8 Quick manual – Favourites functions

5.1 Overview of main menu

If two or more heating/cooling circuits are installed in the system it is necessary to make several selections in some menus.

- ▶ Turn the menu dial to select which heating circuit the settings are to apply to.
- ▶ Press the menu dial to show the menu.








Menu	The purpose of the menu	Page
 Heating/Cooling	Change mode, room temperatures and time program for house heating permanently.	15
Operating mode	Change mode for house heating or time program, or optimised operation.	4
Temperature settings	Set the required room temperatures allocated to the time program periods, e.g. with heating and temperature reduction mode or cooling mode.	
Time program	Switch between heating and temperature reduction mode at fixed times and weekdays (automatic mode). In this menu you can change the name of the heating circuits and time programs.	15
Summer/winter mode	Switching between summer mode (house heating switched off or active cooling) or winter mode (house heating switched on).	19
DHW priority	When alternative DHW modes are activated the control switches between heating requirements from the house heating and hot water requirements.	22
 DHW	Change water temperatures and time program for heating hot water permanently.	19
Operating mode	Select mode for heating hot water, e.g. according to time program or always active.	20
Time program	Switch between modes for hot water, reduced heating of hot water and no heating of hot water at fixed times and weekdays (automatic mode).	20
Extra hot water	Change temperature and activation time for Extra hot water function.	21
Thermal disinfection	Heat up the hot water to prevent bacteria.	21
DHW priority	When alternating DHW modes are activated, the control switches between heating requirements from the house heating and hot water requirements.	22
 Pool	Settings for operation of heated pool.	24
 Unit	Settings for operation of additional heat (electric/gas/oil/solid fuel).	24
 Holiday	Settings for operation of system during long absence (holiday program).	25
 Hybrid system	Set energy price ratio	28
 Settings	Change general settings, e.g. time, date, display contrast etc.	21

Table 9 Overview of main menu

5.2 Adjust settings for automatic operation of house heating

Cooling is disabled in the UK model to comply with the regulations for RHI.

Menu: **Heating/Cooling**

Optimised operation normally produces the highest comfort with the largest possible energy savings. A constant temperature can be set in cooling mode.

Optimised operation for each heating circuit is active with the default settings

Heating circuit 1 – 4

If several heating circuits are installed and configured, the settings for heating circuits 1 – 4 are changed in the same way as in systems with one heating circuit. The changes only apply however **to the selected heating circuit**. If the heating circuits are given names that are easy to distinguish, this considerably simplifies the selection of the correct heating circuit.

5.2.1 Adjust Time program for automatic operation of house heating

The time program for house heating is only active if automatic mode is active (→ chapter 4.2, page 9).

This is how you can set the same break points for several weekdays:

- ▶ Set break points for a group of several days, e.g. **Mon-Sun** or **Mon-Fri**.
- ▶ Adjust the time program for the individually deviating weekdays during **Monday – Sunday** (detailed description → table 12, page 16).

Menu: **Time program**

Menu options	Description
Activate time program	When automatic mode is activated the control unit applies this selected time program (My time program 1 or My time program 2).
My time program 1	6 break points can be set for each day or each group of days. Each break point can be allocated one of the two modes in automatic mode. The shortest possible period between two break points is 15 minutes.
Reset prog.	Here My time program 1 can be reset to the default settings.
My time program 2	→ My time program 1
Reset prog.	Here My time program 2 can be reset to the default settings.
Rename heating circuit	The name of the selected heating circuit can be adjusted here (this function is only available if more than one heating circuit is installed). This simplifies the selection of the correct heating circuit, e.g. “floor heating” or “loft”. The names are preset with Heating circuit 1 – 4 (→ table 13, page 18).
Rename time program	It is possible to change the name of the time programs in the same way as the heat circuits. It simplifies the selection of the correct time program to give the programs names like “family” or “night shift”.

Table 10 Settings of time program for house heating

The time programs automatically switch from one mode to another at fixed times. The control unit has two time programs for each heating circuit. You can program two break points per day, with their own operating mode. The default settings for the time programs result in reduced heating during the night.

Operation without a time program results in the highest possible energy saving.

If the settings, temperatures or time program break points do not match your requirements you can adjust the time program. Talk to your installer if you do not want to heat the house during the night. He can also set the temperature reduction mode.

The following table shows how to activate and select a time program for house heating.

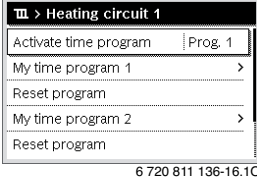
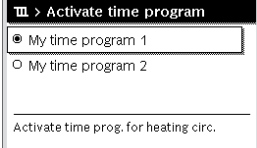
Use	Result
<p>Select active time program for house heating</p> <ul style="list-style-type: none"> ▶ When the initial menu is active, press the menu button to open the main menu. ▶ Press the menu dial to open the menu Heating/Cooling . ▶ Turn the menu dial to mark Time program . ▶ Press the menu dial to open the menu Time program . The text is marked on the display Activate time program . Depending on the installed system, you may need to select a heating circuit. 	 <p>6 720 811 136-16.10</p>
<ul style="list-style-type: none"> ▶ Press the menu dial. ▶ Turn the menu dial to mark My time program 1 or 2 and press the menu dial. The control unit works in automatic mode with the selected time program (when two or more heating circuits are installed the setting only applies on the selected heating circuit). 	 <p>6 720 811 136-17.10</p>

Table 11 Activate and select time program for house heating

The following table shows how to adjust a time program for house heating.

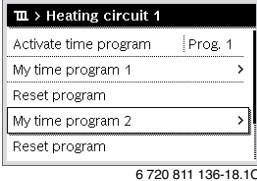
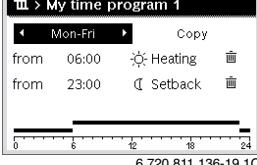
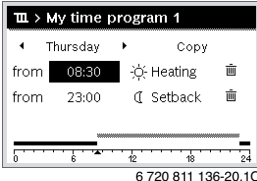
Use	Result
<p>Open the menu to adjust a time program for house heating</p> <ul style="list-style-type: none"> ▶ When the initial menu is active, press the menu button to open the main menu. ▶ Press the menu dial to open the menu Heating/Cooling . ▶ Turn the menu dial to mark Time program . ▶ Press the menu dial to open the menu Time program . ▶ Turn the menu dial to mark My time program 1 or 2. Depending on the installed system, you may need to select a heating circuit. 	 <p>6 720 811 136-18.10</p>
<ul style="list-style-type: none"> ▶ Press the menu dial. ▶ Press the menu dial again to activate the input box for weekday or group of days. ▶ Turn the menu dial to select a weekday or a group of days and press the menu dial. Changes in this menu only apply to the selected weekday or group of days. 	 <p>6 720 811 136-19.10</p>
<p>Change break point</p> <ul style="list-style-type: none"> ▶ Open the menu to adjust a time program for house heating. ▶ Turn the menu dial to mark a break point. ▶ Press the menu dial to activate the input box for the break point. ▶ Turn the menu dial to change the break point. The new time period is shown in grey in the time program bar chart. ▶ Press the menu dial. The control unit works with the new settings. 	 <p>6 720 811 136-20.10</p>

Table 12 Adjust time program for house heating or individual requirements

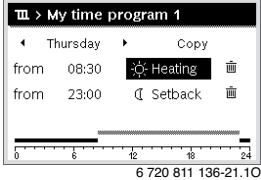
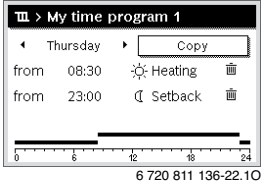
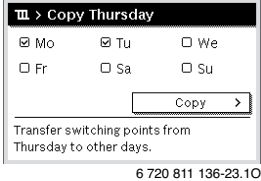
Use	Result
<p>Set the temperature for a period</p> <ul style="list-style-type: none"> ▶ Open the menu to adjust a time program for house heating (→ page 16). ▶ Turn the menu dial to mark the operating mode for a period. ▶ Press the menu dial to activate the input box for the operating mode. ▶ Turn the menu dial to select a mode (heating or temperature reduction). The new time period is shown in grey in the time program bar chart. ▶ Press the menu dial. The control unit works with the new settings. 	 <p>My time program 1 Thursday Copy from 08:30 Heating from 23:00 Setback 6 720 811 136-21.10</p>
<p>Copy a time program (e.g. copy the time program for Thursday to Monday and Tuesday)</p> <ul style="list-style-type: none"> ▶ Open the menu to adjust a time program for house heating (→ page 16) and select the day to be copied, e.g. Thursday. ▶ Turn the menu dial to mark Copy. 	 <p>My time program 1 Thursday Copy from 08:30 Heating from 23:00 Setback 6 720 811 136-22.10</p>
<ul style="list-style-type: none"> ▶ Press the menu dial. A list is shown in the display where you can select to which days the time program is to be copied. ▶ Turn and press the menu dial to select the weekdays, e.g. Monday and Tuesday. ▶ Turn the menu dial to mark Copy and press the menu dial. ▶ Which time program to copy is shown in a popup window. ▶ Press the menu dial to close the popup window. The control unit works with the new settings. 	 <p>Copy Thursday <input checked="" type="checkbox"/> Mo <input checked="" type="checkbox"/> Tu <input type="checkbox"/> We <input type="checkbox"/> Fr <input type="checkbox"/> Sa <input type="checkbox"/> Su Copy Transfer switching points from Thursday to other days. 6 720 811 136-23.10</p>

Table 12 Adjust time program for house heating or individual requirements

The following table shows how to change the name of the heating circuits.

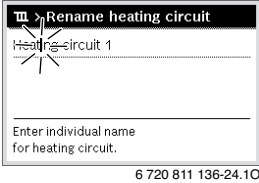
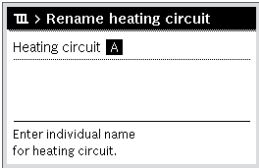
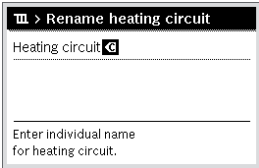

Use	Result
<p>Open the menu to change the name of a heating circuit (or a time program)</p> <ul style="list-style-type: none"> ▶ When the initial menu is active, press the menu button to open the main menu. ▶ Press the menu dial to open the menu Heating/Cooling . ▶ Turn the menu dial to mark Time program . ▶ Press the menu dial to open the menu Time program . ▶ Turn the menu dial to mark Rename heating circuit (only available when more than one heating circuit is installed) or Rename time program . ▶ Press the menu dial. The flashing cursor shows in which position the input starts. The names of the heating circuits and time programs are saved with standard designations. 	 <p>6 720 811 136-24.10</p>
<p>Select and enter the characters</p> <ul style="list-style-type: none"> ▶ Turn the menu dial to move the cursor to the position where the character is to be entered. ▶ Press the menu dial to activate the input box to the right of the cursor. ▶ Turn the menu dial to select a character. ▶ Press the menu dial to enter the character. The selected character is entered. The input box for the next position in the text is now active. ▶ Turn the menu dial and press it to enter additional characters. ▶ Press the return button to close the input. The cursor flashes to the right of the entered characters. The control unit works with the new settings. 	 <p>6 720 811 136-25.10</p>
<p>Delete characters/delete the full name</p> <ul style="list-style-type: none"> ▶ Turn the menu dial to place the cursor behind the letters to be deleted. ▶ Press the menu dial to activate the input box to the right of the cursor. ▶ Turn the menu dial until <C is shown. ▶ Press the menu dial to delete the character to the left of the active input box (<C remains active). ▶ Press the menu dial again to delete additional characters, or press the return button to exit. The cursor flashes in the position where the character <C was last shown. ▶ Press the return button to exit the input and use the entered name. 	 <p>6 720 811 136-26.10</p>

Table 13 Change the name of the heating circuit


5.2.2 Setting of changeover temperature for summer/winter mode



NOTICE: System damage

- ▶ Do not switch over to summer mode if there is a risk of frost.

Heating hot water is not affected by summer/winter mode.



Summer/winter changeover is only active if **Heating/Cooling** > **Automatic mode** has been set.

Menu: **Summer/winter mode**

Menu options	Description
Heating/Cooling	<ul style="list-style-type: none"> • Constant summer mode (= OFF): The heat pump is not used for heating or cooling. • Automatic mode: Heating or cooling mode is activated, depending on the outdoor temperature. When the outdoor temperature lies between the two limiting values the system only provides hot water. • Continuous heating: Cooling mode is not activated, and the system does not run on idle. • Continuous cooling : Heating mode is not activated, and the system does not run on idle.
Heating mode off¹⁾	<p>When the damped outdoor temperature²⁾ exceeds the changeover temperature set here, the house heating is switched off.</p> <p>If the damped outdoor temperature falls below the changeover temperature by 1 °C, the house heating is switched on. In systems with several heating circuits this setting applies for the selected heating circuit.</p>
Cooling mode off¹⁾	<p>If the outdoor temperature exceeds this set temperature, the cooling mode starts.</p>


Table 14 Settings for summer/winter mode

- 1) Only available when the outdoor temperature controlled summer/winter mode is active in respective heating circuit.
- 2) Damped outdoor temperature involves a delayed effect of the measured outdoor temperature to equalise temperature variations.

5.3 Change settings for heating hot water

Menu: **DHW**

These settings are only available if a hot water system is installed in the system. The water is then heated in a hot water heater.



WARNING: Scalding risk!

If the temperature for extra hot water is set higher than 60 °C or if thermal disinfection has been activated to prevent legionnaires' disease, the hot water is heated once to over 65 °C. The default setting for the hot water temperature is 60 °C. With higher settings there is a risk of scalding from hot water taps.

- ▶ Make sure a mixer is installed. Ask your installer if you are unsure how to do this.

A time program has been set at the factory for heating hot water. Alternatively the heating of hot water is managed constantly (→ chapter 5.3.2, page 20).

5.3.1 Set operating mode for heating hot water

By default the heating of hot water follows a separate time program.

- If **Own time program** is set, the operating mode **DHW** is active from 05:00 (Saturdays and Sundays: from 07:00) to 23:00 (default time program).

Menu: **Operating mode**

Menu options	Description
Operating mode	<ul style="list-style-type: none"> • With Own time program a time program can be set to heat hot water that works independantly of the time program for house heating. • If Always on - DHW red. or Always on - DHW is set the heating of hot water works continuously. • If it is deactivated there is no heating of hot water.

Table 15 Operating mode for heating hot water

The following table shows to to adjust the settings for heating hot water.

Use	Result
<p>Select and set time program for heating hot water</p> <ul style="list-style-type: none"> ▶ When the initial menu is open: press the hot water button. ▶ Turn the menu dial to mark the menu option Own time program and press the menu dial. <p>The time program for hot water is activated. The break points can be set individually in the menu DHW > Time program > My DHW time program (according to the instructions in chapter 5.2.1 from page 15). The hot water temperatures set for respective modes apply during the periods.</p>	
<p>Activate constant heating of hot water</p> <ul style="list-style-type: none"> ▶ When the initial menu is open: press the hot water button. ▶ Turn the menu dial to mark Always on - DHW red. or Always on - DHW. ▶ Press the menu dial. <p>Heating of hot water takes place without interruption</p>	

Table 17 Adjust settings for heating hot water

5.3.2 Set time program for heating hot water

In this menu you can adjust the time program for heating of hot water.

Menu: **Time program**

Menu options	Description
My DHW time program	6 break points can be set for each day or each group of days. Each break point can be allocated one of the up to three modes in automatic mode. The shortest possible period between two break points is 15 minutes.
Reset prog.	With this menu option the hot water system can be reset to the default settings.

Table 16 Settings in the time program for hot water

5.3.3 Extra hot water heating

In this menu you can set how the heating of hot water should work when the function Extra hot water is activated.


Menu: **Extra hot water**

Menu options	Description
Start / Cancel	With this menu option the function Extra hot water can be started and cancelled. The function is the same as with the Extra hot water button.
Temperature	When the function Extra hot water is active the hot water is heated up to the temperature set here.
Time	The function Extra hot water stops automatically after the time set here.


Table 18 Settings for extra heating of hot water

5.3.4 Thermal disinfection

After thermal disinfection the content in the hot water heater slowly cools to the set hot water temperature. This mainly takes place through heat loss. The hot water temperature can therefore temporarily be higher than the set temperature.

	<p>CAUTION: Legionnaire's bacteria constitute a health hazard!</p> <ul style="list-style-type: none"> ▶ At low hot water temperatures thermal disinfection or daily heating should be activated¹⁾ (→ note the drinking water statute).
---	---

1) Daily heating can be set by your installer in the service menu.

	<p>WARNING: Risk of scalding!</p> <p>If thermal disinfection has been activated to avoid legionella, the hot water is heated once to in excess of 65 °C (e.g. Thursday night at 02:00).</p> <ul style="list-style-type: none"> ▶ Only schedule thermal disinfection for periods outside normal usage times. ▶ Make sure that a mixer is installed. If in doubt, ask your contractor.
---	---

Thermal disinfection guarantees a hygienic impeccable quality of the hot water. The hot water is also regularly heated up to the set temperature. This also contributes towards preventing legionnaires' bacteria. This menu is used to configure thermal disinfection.

Menu: **Thermal disinfection**

Menu options	Description
Start	It is only if Auto is set here that the full volume of hot water will be automatically heated up to the set temperature once a week or once a day.
Start / Cancel	Thermal disinfection starts or stops immediately, irrespective of the set weekday.
Temperature	Temperature of hot water volume during thermal disinfection (65 – 80 °C)
Day	The weekday when thermal disinfection is carried out automatically.
Time of day	Time when thermal disinfection starts automatically
Max. period	If the temperature for thermal disinfection is not reached during the time specified here, the thermal disinfection will be cancelled. The control unit will then indicate interference.

Table 19 Settings for thermal disinfection

5.3.5 Settings for hot water prioritisation

If the heating of hot water is more important than heating the home, the function for hot water prioritisation can ensure that the heat produced with the heat pump is used to heat hot water as soon as the need arises. During this time the heating requirements from the house heating will be ignored.

If the hot water prioritisation is deactivated there will be a switch from heating hot water to house heating according to the settings (→ table 20).

Menu: **DHW priority**

Menu options	Description
DHW priority on	If Yes is selected: In the event of simultaneous heating requirements there will be a switch between hot water heating and heating mode during DHW priority for and Prioritise heating for .
DHW priority for	Time period for hot water heating during DHW priority on .
Prioritise heating for	Time period for heating mode during DHW priority on .

Table 20 Operating mode for heating hot water

5.3.6 Settings for hot water circulation

A hot water circulation pump allows the hot water to circulate between the hot water heater and the taps. In this way you have quick access to hot water at the taps.

This menu is only shown if the system is fitted with a hot water circulation pump.

Menu: **DHW circulation**¹⁾

The settings for the circulation pump control when and how often it should be activated.

Menu options	Description
Operating mode	<ul style="list-style-type: none"> The circulation can be disconnected permanently (Off). When this setting is On the pump works according to the settings for Start frequency. The time program for the circulation pump is not active. The circulation can be connected to the time program for heating hot water (As hot water system). With Own time program a time program can be set for the circulation pump so that it works independently of the time program for hot water.
Start frequency	The connection frequency controls how many times an hour the circulation pump is run for three minutes (1 x 3 minutes/hour – 6 x 3 minutes/hour) or continuously. In all circumstances the circulation will only work during the time interval set in the time program.
My DHW circn time prog.	6 break points can be set for each day or each group of days. The circulation pump can be switched on or off at each break point. The shortest possible period between two break points is 15 minutes.

Table 21 Settings for circulation

1) Not available if Sweden or Finland has been specified as the country where the heat pump is installed.

The following table shows how to adjust the settings for circulation.

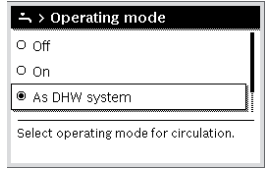
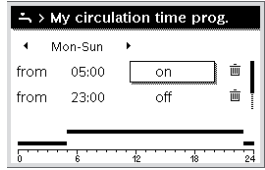
Use	Result
<ul style="list-style-type: none"> ▶ When the initial menu is active, press the menu button to open the main menu. ▶ Turn the menu dial to mark DHW and press the menu dial. ▶ Turn the menu dial to mark ▶ and press the menu dial. The menu option Operating mode is marked. ▶ Press the menu dial. ▶ Turn the menu dial to mark As hot water system and press the menu dial. The control unit works with the new settings. The circulation pump only works when hot water heating is active. 	
<ul style="list-style-type: none"> ▶ Turn the menu dial to mark Own time program and press the menu dial. The time program for circulation is independent of the time program for hot water heating. The break points can be set individually in the menu DHW circulation > My DHW circn time prog. (according to the instructions in chapter 5.2.1 from page 15). During the periods the circulation is either switched on or off. 	
<ul style="list-style-type: none"> ▶ Turn the menu dial to mark off or on and press the menu dial. The control unit works with the new settings. In periods with the setting off the circulation pump is always switched off. 	

Table 22 Adjust settings for adjust circulation

5.4 Settings for heated pool

In this menu you can adjust the settings for heating a pool.

Menu: **Pool**

Menu options	Description
Activate pool heating	If the heating for a pool is activated here, the pool is heated up.
Pool temperature	The water in the pool is heated up to this set temperature.
Allow additional heat in pool mode	If additional heat for pool mode has been approved the required water temperature can also be achieved by means of additional heat if the heat pump cannot deliver enough heat.

Table 23 Settings for a pool

5.5 Settings for extra heat source (additional heat)

If the heat pump cannot deliver enough heat quickly enough during the winter, or for heating hot water, an extra heating source is required (additional heat). It is possible to use additional electric heat, or an extra heat source (gas, oil or wood heater via a mixing valve).

This menu is only shown when additional heat is installed in the system.

5.5.1 Time program for extra heat source

If you are not at home, or for any other reason want to have a lower room temperature, you can reduce your energy consumption by limiting the effect of the extra heat source.

Menu: **Unit** > **Time program additional heat**

Menu options	Description
Time program Activate additional heat	If the time program for additional heat is activated the additional heat can only deliver extra heating in the periods with the mode on .
My time program	The time program for additional heat can be set with this menu option.
Reset time program	The time program for additional heat is reset to the default settings.
Time program min. outdoor temp.	If the outdoor temperature is less than this set temperature the time program for additional heat is disconnected.

Table 24 Time program for an extra heat source

5.5.2 Settings for Silent mode of heat pump

If a heat pump has been installed the settings in this menu can be used to reduce the noise level when the system is in operation.

Menu: **Unit** > **Silent mode**

Menu options	Description
Silent mode	<ul style="list-style-type: none"> If No has been selected the noise level will not be reduced. If Auto has been selected the heat pump starts automatically in silent mode at 22:00. At 6:00 silent mode is switched off again, i.e. the noise level is reduced from 22:00 to 6:00. If On has been selected the noise is reduced continuously.
Min. outdoor temperature	If the outdoor temperature is less than this set temperature the heat pump cancels silent mode.

Table 25 Settings for silent mode

5.6 Set holiday program

Menu: **Holiday**

If you are going away for some time, or taking some time off for a few days, you can set the holiday program. If the heat pump is set to heating mode according to the settings for summer/winter mode you use the holiday function. With the holiday program the heating is set very low according to the time program for "Saturdays", or to no heating at all.



Whatever settings are used for the holiday program, the cooling mode is not used during the holiday.

You may decide to switch off the heating of hot water completely during the holiday. The default settings guarantee energy efficient and safe operation during your holiday. The display shows to which date the holiday program is active during the holiday period.

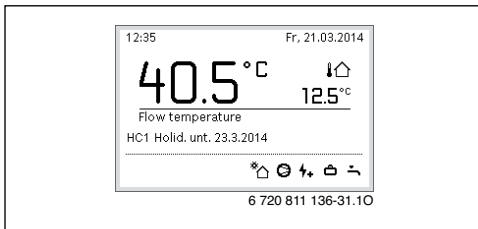


Fig. 4 Initial menu during the holiday period.

The settings and use of the holiday program do not change the other time programs. When the holiday program has been completed the control unit works with the set time programs again. The holiday program is automatically deleted once it has finished.



NOTICE: Damage to the system.

- ▶ If you are going to be away for a long time you should only change the settings in the menu option **Holiday**.
- ▶ After a long period away the operating pressure should be checked with pressure gauge for the heating system and where necessary solar panel system.
- ▶ The solar heating system should not be switched off, even if you are away for a long time.

A detailed description of how to set the holiday program is given in table 27 from page 26.

Menu: **Holiday 1, Holiday 2, Holiday 3, Holiday 4** and **Holiday 5**

Menu options	Description
Holiday period	Set when your absence during the holiday period starts and ends. The holiday program starts at 00:00 on the set start date. The holiday program continues to 24:00 on the set date.
Selection heat. circ./DHW	The holiday program does not affect the parts of the system marked here. Only the heating/cooling circuits that are actually installed in the system can be selected.
Heating	Control of room temperature for selected heating circuits during the holiday period: <ul style="list-style-type: none"> • With the setting As Saturday the house heating in selected heating circuits works every day according to the active time program for Saturdays (holiday at home). • Optional Constant temperature can be set to apply during the entire holiday for selected heating circuits. • With the setting Off the house heating is completely deactivated for selected heating circuits. • With the setting Setback the house heating works in selected heating circuits in the mode set by the installer (Reduced mode, Outside temperature threshold, Room temperature threshold → from page 36).
DHW	Hot water settings during the holiday period. <ul style="list-style-type: none"> • If the setting is Off no hot water will be produced during the entire holiday period. • If Off + therm. disinfection on is set the heating of hot water is deactivated, but thermal disinfection is carried out as usual once a week, or once a day. If you spend your holiday at home you must ensure that the hot water is not marked in the option Selection heat. circ./DHW so that you have hot water.
Delete	Delete all settings for selected holiday program

Table 26 Settings for holiday programs

Use the main menu

The following table shows how to set a holiday program, how to cancel an active holiday program, and how to delete a holiday program.

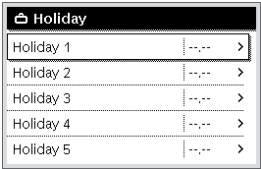
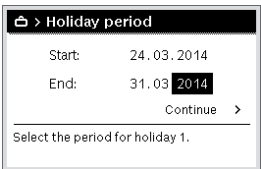
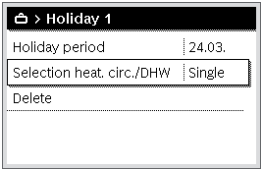
Use	Result
<p>Open the menu for holiday program</p> <ul style="list-style-type: none"> ▶ When the initial menu is active, press the menu button to open the main menu. ▶ Turn the menu dial to mark Holiday. ▶ Press the menu dial to open the menu Holiday. ▶ Turn the menu dial to mark Holiday 1, 2, 3, 4 or 5. If a period has been set for a holiday program, the start date is shown in the menu. ▶ Press the menu dial. If the period has already been set for the holiday program, the following menu is shown Holiday 1, 2, 3, 4 or 5. If a period has not been set for the holiday program, the start and end date for the holiday program must be set. The following menu is then shown Holiday 1, 2, 3, 4 or 5. 	 <p style="text-align: right; font-size: small;">6 720 811 136-32.10</p>
<p>Set holiday period</p> <ul style="list-style-type: none"> ▶ Open the menu for holiday program. The menu option for input of the start and end date for the holiday period is open. The input box for the start date is marked. ▶ Turn the menu dial to mark the day, month or year for the start date or end date and press the menu dial. The marked box is activated for input. If no holiday period had been entered, the entered date would be saved as the start date. The end date is put in a week later than the start date. ▶ Turn and press the menu dial to set the day, month or year for the start date or end date. ▶ When the holiday period is set, turn the menu dial to mark Continue and press the menu dial. When the display switches to the main menu level the control unit works with the new settings. If the control unit does not switch to the main menu level you should follow the instructions on the display. 	 <p style="text-align: right; font-size: small;">6 720 811 136-33.10</p>
<p>Select a set the heating circuits and hot water system for the holiday program</p> <ul style="list-style-type: none"> ▶ Open the menu for holiday program. ▶ Turn the menu dial to mark Selection heat. circ./DHW. 	 <p style="text-align: right; font-size: small;">6 720 811 136-34.10</p>

Table 27 Set, cancel or delete holiday program

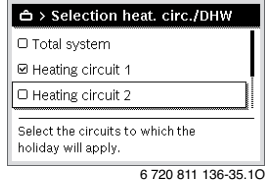
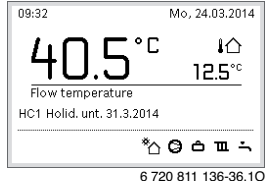
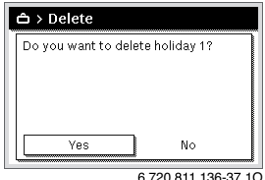
Use	Result
<ul style="list-style-type: none"> ▶ Press the menu dial to open the menu Selection heat. circ./DHW . When Total system is selected all the system parts are marked. ▶ Turn the menu dial to mark a heating circuit or a hot water system. ▶ Press the menu dial. ▶ The selection for the heating circuit or hot water system is cancelled. Press the menu dial again to select the heating circuit or hot water system again. If the selection of the heating circuit or hot water system is cancelled, the selection of the entire system is cancelled automatically. ▶ Turn the menu dial to mark Continue and press the menu dial. The control unit works with the new settings. ▶ Check and adjust if necessary the settings for house heating and hot water (→ chapter 5.6, page 25). 	
<p>Cancel a holiday program</p> <p>The display shows to which date the holiday program is active during the holiday period. If two or more heating circuits are installed the heating circuit must be selected before the holiday program is cancelled (→ chapter 4.1, page 9).</p> <p>If the holiday program is set to As Saturday you can cancel the program by turning the menu dial. The change applies to the next break point in the active time program. The holiday program applies again from this break point.</p>	
<p>Delete the holiday program, e.g. to close it in advance.</p> <ul style="list-style-type: none"> ▶ Open the menu for holiday program (→ page 26). ▶ Turn the menu dial to mark the menu option Delete and press the menu dial. A popup window is shown on the display, which asks if the selected holiday program should be deleted. ▶ Turn the menu dial to mark Yes and press the menu dial. ▶ A message on which holiday program has been deleted is shown in a popup window. ▶ Press the menu dial. The holiday program has now been deleted. 	

Table 27 Set, cancel or delete holiday program

5.7 Adjust settings for hybrid system

Menu: **Hybrid system**

In a system with a hybrid system there are two different heat sources. A heat source that utilises regenerative energy generates heat from geothermal energy, from the air, from biomass, or from solar energy. Heat is also supplied from a conventional source, e.g. oil or gas.

If a hybrid system is installed in the system the following menu is shown **Hybrid system**.

In this case the hybrid system consists of a heat pump and a separate gas or oil heating source.

Depending on the actual circumstances and heating requirements, either the heat pump or the gas/oil heating source produces the best price-performance ratio.

Controlling the heat pump controls the actual output data of the heat pump with the set energy price ratio and whether the heat pump or gas/oil heating source is more beneficial from the perspective of cost. Either the heat pump or the gas/oil heating source is used, depending on the result.

In the menu **Hybrid system** > **Energy:price ratio** the energy ratio between electric power and solid fuel can be regularly adjusted to the actual price structure.

The cost ratio is calculated according to the following formula:

e.g.

- Electricity costs: 24 cent/kWh
- Gas/oil costs: 8 cent/kWh

This ratio must be given via the menu **Hybrid system** > **Energy:price ratio**.

The setting of the price ratio is made by dividing the price of electricity with gas

5.8 General settings

No settings are deleted during short power failures and period when the heat source is switched off. The control unit starts again when the power returns. If the switched off period last longer it is possible that the settings for the date and time must be redone. Other settings are not necessary (table 7, page 11).

Menu: **Settings**

Menu options	Description
Language	Language that display texts are shown in
Time of day	This time controls all time programs and the thermal disinfection. The time is set in this menu.
Date	This date controls the holiday program. This date is also used to set the actual weekday, which controls the time programs and, for example, thermal disinfection. The date is set in this menu.
Autom. time changeover	Activate or block automatic changeover from summer to winter time. If Yes is set the time will be changed automatically (last Sunday in March from 02:00 to 03:00, last Sunday in October from 03:00 to 02:00).
Display contrast	Change the contrast (to make display easier to read)
Time correction	Time correction of control unit's internal clock in s/week (→ Set correct time correction (Time correction), page 29)
Standard display	Settings to show additional temperatures in initial menu
Internet password	Reset personal password for Internet connection (only possible with IP-module). Next time you login, e.g. with an app, you will be automatically asked to give a new password.

Table 28 General settings

Set correct time correction (Time correction)

Example of calculation of the value for time correction with a deviation of approx. – 6 minutes per year (the control unit clock runs 6 minutes late):

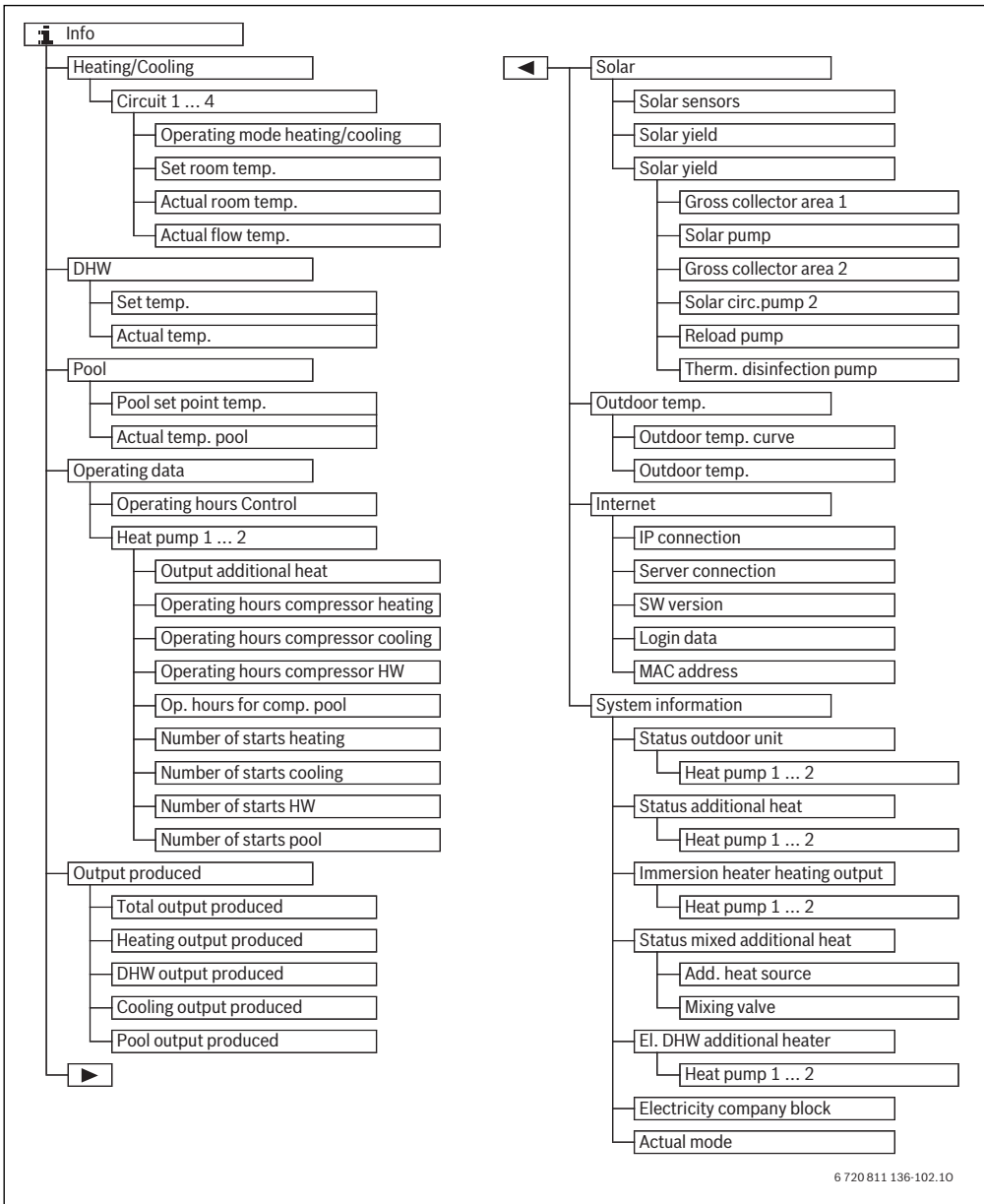
- – 6 minutes per year = – 360 seconds per year
- 1 year = 52 weeks
- – 360 seconds: 52 weeks = – 6.92 seconds per week
- Increase time correction to 7 seconds per week.

6 Get information on the system

In the information menu you can easily show actual values and active modes in the system. No changes can be made in this menu.

The information menu adjusts automatically to your system. The availability of some menu options depends on the design of the system and the correct setting of the control unit (→ chapter 2.1, page 4).

- ▶ In the active initial menu, press the info button to open the information menu.
- ▶ Turn the menu dial to select the required menu, e.g. **DHW**.
- ▶ Press the menu dial to open the selected menu.
- ▶ Turn the menu dial to show other available information.
- ▶ Go back one step in the menu with the return button.
- ▶ Return to the initial menu by pressing and holding the return button.



6 720 811 136-102.10

Fig. 5 Information menu structure

- 1) Only available if a temperature sensor or a room unit has been installed in the reference room for the corresponding heating circuit.

Menu: Heating/Cooling

This menu only shows menu options for installed heating circuits.

Menu options	Description
Operating mode heating/cooling	Actual operating mode for selected heating circuit (Heating, Idling, Cooling)
Set room temp.	Actual setting of room temperature for selected heating circuit: <ul style="list-style-type: none"> • May change several times a day in automatic mode • Constant setting in optimised mode
Actual room temp.	Actual measured room temperature in selected heating circuit
Actual flow temp.	Actual measured flow temperature in selected heating circuit

Table 29 Information on house heating

Menu: DHW

This menu is only shown if a hot water system is installed.

Menu options	Description
Set temp.	Required hot water temperature
Actual temp.	Actual measured hot water temperature

Table 30 Information on hot water

Menu: Pool

This menu is only available if a heated pool is installed.

Menu options	Description
Pool set point temp.	Required water temperature in pool
Actual temp. pool	Measured temperature in pool

Table 31 Information on heated pool

Menu: Operating data

Apart from the first menu option, only the menu options for installed units are shown in this menu. If two heat pumps are working in combination all the menu options are shown separately for each heat pump after the control system's operating hours.

Menu options	Description
Operating hours Control	Control unit operating hours since commissioning of the heat pump or since last reset.
Output additional heat	Output of additional electric heat after commissioning or since last reset.
Operating hours compressor heating	The compressor operating hours in heating mode since commissioning or since last reset.
Operating hours compressor cooling	The compressor operating hours in cooling mode since commissioning or since last reset.
Operating hours compressor HW	The compressor operating hours in hot water mode since commissioning or since last reset.
Operating hours compressor pool	The compressor operating hours in pool mode since commissioning or since last reset.
Number of starts heating	The number of compressor starts in heating mode since commissioning or since last reset.
Number of starts cooling	The number of compressor starts in cooling mode since commissioning or since last reset.
Number of starts HW	The number of compressor starts in hot water mode since commissioning or since last reset.
Number of starts pool	The number of compressor starts in pool mode since commissioning or since last reset.

Table 32 Information on operation of heat pump

Get information on the system

Menu: **Produced output**

This menu shows the accumulated output for the heat pump.

Menu options	Description
Produced total output	Accumulated total output for heat pump
Produced output heating	Accumulated output for heating mode
Produced output hot water	Accumulated output for heating hot water
Produced output cooling	Accumulated output for cooling mode
Produced output pool	Accumulated output for pool heating

Table 33 Information on produced output

Menu: **Solar**

This menu is only shown if a solar heating system is installed. The information under respective menu options is only shown if the corresponding system parts are installed.

Menu options	Description
Solar sensors (graphic)	Actual measured temperatures with indication on position of selected temperature sensor in the solar heating system (with graphic display of actual operating status of control mechanism)
Solar yield	Solar energy product for last week, solar energy production for actual week and total energy produced by solar heating system since commissioning
Solar thermal system	This submenu shows information on the set gross solar panel area (can only be set by technician with the help of the technical documentation for the solar panel module) and the operating status of different pumps in the solar panel system.

Table 34 Information on solar heating system

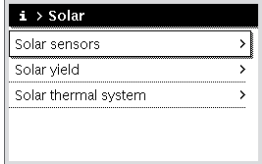
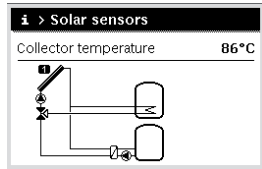
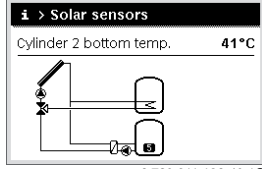
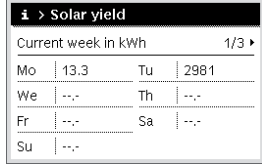
Use	Result
<p>Show information on solar heating system</p> <ul style="list-style-type: none"> ▶ In the active initial menu, press the info button to open the information menu. ▶ Turn the menu dial to mark Solar . ▶ Press the menu dial to open the menu Solar . 	 <p style="text-align: right; font-size: small;">6 720 811 136-38.10</p>
<ul style="list-style-type: none"> ▶ Turn the menu dial to mark the menu option Solar sensors and press the menu dial. Actual temperature of temperature sensor with the lowest number is shown. The number on the display indicates the position of the temperature sensor in the system, e.g. solar panel temperature [1]. 	 <p style="text-align: right; font-size: small;">6 720 811 136-39.10</p>
<ul style="list-style-type: none"> ▶ Turn the menu dial to show additional temperatures. The images in the information menu show pumps, shunt valves and valves installed in the solar heating system. When a pump is working the symbol for the pump rotates . 	 <p style="text-align: right; font-size: small;">6 720 811 136-40.10</p>
<p>Information on solar energy production</p>	
<ul style="list-style-type: none"> ▶ In the active initial menu, press the info button to open the information menu. ▶ Turn the menu dial to mark Solar . ▶ Press the menu dial to open the menu Solar . ▶ Turn the menu dial to mark Solar yield and press the menu dial. Solar energy production values for the actual week are shown. ▶ Turn the menu dial to switch between showing solar energy production for last week, solar energy production for the actual week and the total energy produced by the solar heating system since its commissioning. 	 <p style="text-align: right; font-size: small;">6 720 811 136-41.10</p>

Table 35 Show information on solar heating system

Menu options: **Outside temp.**

This menu shows the actual measured temperature. There is also a diagram here that shows the development of the outdoor temperature during the actual day and previous day (from 00:00 to 24:00).

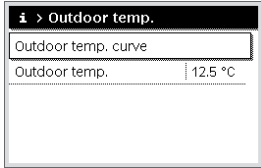
Use	Result
Show development of outdoor temperature	
<ul style="list-style-type: none"> ▶ In the active initial menu, press the info button to open the information menu. ▶ Turn the menu dial to mark Outside temp. and press the menu dial. 	
<ul style="list-style-type: none"> ▶ Press the menu dial. The diagram shows history of outdoor temperature for 2 last days (detailed information → chapter 6, page 29). 	

Table 36 Information on outdoor temperature show

Menu: Internet

This menu is only shown if a communication module has been installed.

Menu options	Description
IP connection	Status for link between communication module and router
Server connection	Status for link between communication module and internet (via router)
SW version	Program version for communication module
Login data	Login name and password to login the app to control the system via a smartphone
MAC address	Communication module MAC address

Table 37 Information on internet connection

Menu: **System information**

The information under respective menu options is only shown if the corresponding system parts are installed. If 2 heat pumps have been installed you must choose between heat pump 1 and 2.

Menu options	Description
Status outdoor unit	The outdoor unit is switched off or in operation for different reasons. This menu option shows the following operating status for this: Off; Heating; Cooling; DHW; Pool; Pool/heating; Defrosting; Alarm
Status additional heat	Additional heat is switched off or in operation for different reasons. This menu option shows the following operating status for this: Off; Heating; DHW; Pool; Pool/heating; Alarm
Immersion heater heating output	Actual via the output supplied by the additional heat in kW (0.1– 15.0)
Status mixed additional heat	<ul style="list-style-type: none"> • Extra heat source: Additional heat is On or Off. • Mixing valve: If the output of the heat pump is insufficient, hot water is supplied from the additional heat to the heating system via a shunt. The following then applies: 0% = no additional heat supplied – 100% maximum additional heat output supplied.
Electricity company block¹⁾	If On is shown the system is working with a limited electric output. If Off is shown here the system can work with full electric output.
Additional heat in hot water heater	Additional heat hot water heating is On or Off .
Actual mode	Actual operating mode for selected heating circuit (Heating, Idling, Cooling)

Table 38 System information

1) Not used in Sweden.

7 Energy saving tips

Heating/cooling set low

- Use the optimised mode. Set the required room temperature to your personal comfort level. The heat pump saves most energy if it works continuously.
- Open the thermostat valves completely in all rooms. Increase the temperature on the control unit only when the required room temperatures has not been reached after a long period. Only close the thermostat valve in a room if it gets too hot just in that room.
- If there is a room unit in the system the room temperature can be optimally controlled. Avoid the effect of induced heat (e.g. from sunlight or stove). Otherwise there can be unwanted variations in the room temperature.
- Do not place any large objects directly in front of radiators, e.g. a sofa (minimum 50 cm gap). The heated or cooled air will otherwise not be able to circulate and heat up or cool the room.
- Do not set the temperature too low to start the cooling. Cooling of the home also consumes energy.

Air properly

Open the windows completely for a short time instead of allowing them to stand ajar. If windows are left ajar heat disappears continuously from the room without the air in the room become much better.

Close the thermostat valves while airing the room.

Heating of hot water according to need

- Use the time program for automatic operation of heating hot water.
- Set the lowest possible hot water temperature. This saves a lot of energy, without significantly reducing hot water comfort.

8 Common questions

Why do I have to set a set point value for the room temperature even though the temperature is not measured?

When you set a set point value for the room temperature you change the heat curve. This also changes the room temperature, because the temperature in the heating system changes.

Why do the radiators get too hot with a high outdoor temperature?

Even in summer mode radiators can heat up for a short period in special circumstances, such as when the circulation pump starts automatically at a certain interval to prevent it "jamming" (blocking). If the circulation pump should by chance start immediately after the heating up of hot water the residual heat that is not used is moved away via the heating circuit and the radiators.

Why does the heat pump work at night if the heating is negligible or very little?

There can be different reasons for this. It depends on which setting your installer has made for temperature reduction.

- **Reduced mode:** The heat pump works even when the heating requirement is less to achieve the set room temperature, even if it is low.
- **Outside temperature threshold and Room temperature threshold:** the heating system switches automatically on if the measured temperature drops below the set value. The heat pump will then start as well.
- **Protection from freezing:** The heating mode is also used to avoid the system freezing if the outdoor temperature drops.

Why is the extra heat source used when the time program switches from lowering to heating?

The output of the heat pump is limited. If the required room temperature suddenly increases then the extra heat source must also produce heat, even if no extra heat source is needed when the temperature is the same. This is why the time program is not a good choice to save energy.

The measured room temperature is higher than the required room temperature. Why is the heat source working anyway?

The heat source can heat up hot water.

Your heating system can be set to 2 possible control modes (→ chapter 2.2, page 4).

With outdoor temperature controlled adjustment (and with the effect of the room temperature) the heat source can also work if the measured room temperature is higher than the set room temperature. This also serves to heat adjacent rooms, which do not have their own room unit, sufficiently.

Why does the house heating not switch off even though the outdoor temperature has reached the threshold temperature set for disconnection in the summer?

Disconnection for the summer on the basis of the outdoor temperature takes the thermal inertial of the building and its mass (equalisation of temperature differences due to the structure of the building) into consideration. There is therefore a delay of several hours before disconnection takes place.

9 Rectify operating fault

9.1 Rectify “experienced” fault

There can be several reasons for an “experienced” fault, which are often easy to rectify.

If you are cold or too hot, for example, the following table will help you to rectify the “experienced” faults.

Symptom	Cause	Action
The required room temperature is not reached.	The thermostat valves on the radiators are set to a temperature that is too low.	Increase the settings for the thermostat valves.
	The temperature for heating mode is set too low.	Increase the temperature for heating mode if the thermostat valves are completely open.
	The system is working in summer mode.	Reconnect the system to winter mode (→ chapter 5.2.2, page 19).
	The extra heat source flow temperature control is set too low.	Increase the setting on the flow temperature control (→ instructions for heat source).
	There is air in the heating system.	Bleed the radiators and heating system.
	The outdoor sensor is not in a good position.	Contact your installer and get him to move the outdoor sensor to a better place.
The room temperature is considerably higher than what is wanted.	The radiators get too hot.	Set a lower temperature for the operating mode in question.
		Set lower temperatures for all modes.
		Set the thermostat valves in adjacent rooms to a lower setting.
	If the room unit is installed in the reference room: the position of the unit is not suitable, e.g. on outer wall, near a window, or where there is draught.	Contact your installer and get him to move the room sensor to a better place.
Excessive changes in temperature.	Repeated temporary effect of induced heat (e.g. from sunlight, lighting, television or stove).	Contact your installer and get him to move the room sensor to a better place.
The temperature rises instead of dropping.	The time is set incorrectly.	Set the time.
Room temperature too high during temperature reduction mode.	The building stores a lot of heat.	Select a previous break point for temperature reduction mode.
The hot water heater does not get hot.	The hot water temperature ¹⁾ is set too low on the heat source.	Switch from DHW reduced to DHW.
	The hot water temperature ¹⁾ is not set too low on the heat source	Check the settings on the control unit.
	The hot water program is set incorrectly.	Set the hot water program.
	The configuration of the hot water heating does not suit the heating system.	Contact the installer and get him to check the settings.

Table 39 Rectify “experienced” fault


Rectify operating fault

Symptom	Cause	Action
The hot water at the taps does not reach the required temperature.	The mixer valve is set lower than the required hot water temperature.	If in doubt, contact your installer to have the mixer valve settings checked.
The figure 0 is always shown in the information menu for solar energy production, even though the solar heating system is in operation.	The solar heating system is set incorrectly.	Contact your installer to have the settings for the control unit checked.

Table 39 Rectify "experienced" fault

- 1) Read more about this in the instructions for extra heat source.

9.2 Rectify shown operating fault



NOTICE: System damage due to frost! The system can freeze up if it is taken out of service due to fault shutdown.

- ▶ Use Tab. 40 to check if the fault can be fixed.
- ▶ If the fault cannot be fixed, contact your contractor immediately.

A fault in the system is shown on the control unit display.

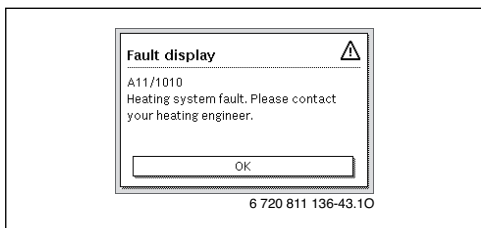


Fig. 6 Fault message

If several faults occur at the same time the fault with the highest priority is shown first. Error codes and additional codes are shown. These codes inform the installer of the causes. If you acknowledge a fault (by pressing the menu dial) the display returns to the initial menu. A message on the fault is still shown on the information line. If the fault is still active you can show it again by pressing the return button.

The fault could be caused by an operating fault in the control unit, on a component, a module or the heat source.

The system continues to remain in operation as long as possible, i.e. heating can still take place.

Faults that you can rectify yourself.

Fault code	Additional code	Cause or description of the fault	Check/cause	Action
Nothing shown on the display			The system is switched off.	▶ Switch on the system.
			The power supply to the control unit has been disconnected.	▶ Check if the room unit is correctly placed in the wall bracket.
H01	5284	Warning: The last thermal disinfection could not be carried out	Check if water is continuously taken from the hot water heater via the hot tap water during the thermal disinfection.	▶ Stop such continuous consumption of hot water, or change the time for thermal disinfection.
A11	1010	No communication via bus connection EMS plus	–	▶ Check if the room unit is correctly placed in the wall bracket.
A11	1038	Invalid value time/date	Date/time still not set	▶ Set date/time
			Long power failure	▶ Avoid power failure.
A11	3061 3062 3063 3064	No communication with mixing module (3061: heating circuit 1, ..., 3064: heating circuit 4)	–	▶ Check if the room unit is correctly placed in the wall bracket.
A11	6004	No communication with solar heating module	–	▶ Check if the room unit is correctly placed in the wall bracket.
A21 A22 A23 A24	1001	–	No bus connection between HPC400 and CR10 or CR10H in corresponding heating circuit (A22: heating circuit 2, ..., A24: heating circuit 4).	▶ Check if the room unit is correctly placed in the wall bracket.
A01	5451	The heat pump needs servicing	Maintenance is required. The system continues to work as far as possible.	▶ Contact the installer to carry out maintenance.

Table 40

If an operating fault cannot be rectified:

- ▶ Contact an authorised installer, or customer service. Submit error code, additional code and control unit ID number.



Table 41 The control unit ID number must be filled in here by the installer at installation.

Interference at extra heat source



Faults at the heat source are always shown at the heat source. If there is a bus connection between the control unit and heat source, the fault will also be shown in the control unit. Ask your installer if you are unsure of which connection there is.

Faults that block the heat source can be rectified by resetting.

- ▶ Do a reset of the heat source.
- More information on how to rectify operating faults on the heat source are available in the instructions for the heat source.
- ▶ Contact your installer if the fault cannot be rectified by resetting.

10 Environment / disposal

Environmental protection is a fundamental corporate strategy of the Bosch Group.

The quality of our products, their efficiency and environmental safety are all of equal importance to us and all environmental protection legislation and regulations are strictly observed.

We use the best possible technology and materials for protecting the environment taking into account of economic considerations.

Packaging

We participate in the recycling programmes of the countries in which our products are sold to ensure optimum recycling.

All of our packaging materials are environmentally friendly and can be recycled.

Old electrical and electronic appliances



Electrical or electronic devices that are no longer serviceable must be collected separately and sent for environmentally compatible recycling (in accordance with the European Waste Electrical and Electronic Equipment Directive).

To dispose of old electrical or electronic devices, you should use the return and collection systems put in place in the country concerned.

Technical terms

Setback phase

A time slot during automatic mode, with **Setback** operating mode.

Automatic mode

The heating system is heating in accordance with the time program and an automatic changeover takes place between operating modes.

Operating mode

The operating modes for heating are: **Heating** and **Setback**. They are shown with the symbols ☀ and ☾.

The operating modes for hot water heating are: **DHW**, **DHW reduced** and **Off**.

For each mode (with the exception of **Off**) it is possible to set a temperature.

Frost protection

Depending on the selected frost protection, the heat pump will turn on when the outside and/or room temperature reaches below a certain set threshold. Frost protection prevents the heating system from freezing up.

Required room temperature (also desired or set temperature/set room temp.)

The room temperature to be achieved by the heating system. It can be set individually.

Default setting

Values permanently saved in the programming unit (e.g. complete time programs) that are available at any time and that can be reinstated according to demand.

Heating phase

A time slot during automatic mode, with **Heating** operating mode.

Hybrid system

Heating system from factory set heat sources with built-in optimised control, which are offered as separate installation modules (e.g. heat pump with conventional heat source as additional heat). The system produces hot water for the heating of a building, and where appropriate hot water heating.

Child lock

The settings in the initial menu and in the menu can only be changed when the child lock (button lock) has been removed (→ page 11).

Mixer

Assembly that automatically ensures that hot water can be drawn from the taps at a temperature no higher than the temperature set on the mixer.

Optimised mode

In optimised mode the automatic mode (time program for house heating) is not active and the system provides heating continuously according to the temperature set for optimised mode.

Reference room

The reference room is the room in the home where a room unit has been installed. The room temperature in this room acts as the control variable for the assigned heating circuit.

Switching time

A certain time at which the heating system starts to heat or hot water is produced, for example. A switching time is a component of a time program.

Temperature of an operating mode

A temperature that is assigned to an operating mode. The temperature is adjustable. See the explanations on operating mode.

Thermal disinfection

This function heats up the hot water to a temperature in excess of 65 °C. This temperature is sufficient to kill off pathogens (e.g. legionella). Observe the anti-scalding safety instructions.

Holiday program

The holiday program enables the settings that would ordinarily be applied to be interrupted for a number of days. After the end of the holiday program, the programming unit resumes operation with the settings that would ordinarily be applied.

Flow temperature

The temperature that the heated water maintains in the central heating circuit, from the heat source to the heating surfaces in the rooms.

Water heater

A water heater stores large volumes of heated tap DHW. Thereby, sufficient DHW is available at the draw-off points (e.g. taps). This is a prerequisite for longer hot shower.

Time program for the heating system

This time program ensures automatic changeover between operating modes at defined switching times.

Time program for hot water heating

This time program means that the system automatically switches between the modes **DHW**, **DHW reduced** and **Off** at fixed break points. It can be connected to the time program for house heating (→ chapter 5.3.2, page 20).

Time program for circulation

This time program ensures automatic operation of the DHW circulation pump at defined switching times. Linking this time program to the time program for hot water is recommended.

Hot water circulation pump

A hot water circulation pump allows the hot water to circulate between the hot water heater and the taps. In this way you have quick access to hot water at the taps. The circulation pump can be controlled with a time program.



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