



Operating instructions

Daikin Control RoCon HP, EHS157034, EHS157068

Operating instructions
Daikin Control RoCon HP, EHS157034, EHS157068

English

Daikin
RoCon HP
EHS157034
EHS157068

List of contents

1	Safety	3	5	Parameter settings	31
1.1	Observing instructions	3	5.1	Explanation of the parameter tables	31
1.2	Warning signs and explanation of symbols	3	5.2	Rotary switch setting: Configuration	31
1.3	Avoid danger	3	5.2.1	Level "Setup"	31
1.4	Proper use	4	5.2.2	Level "System Configuration"	34
			5.2.3	Level "HC Configuration"	35
			5.2.4	Level "DHW Configuration"	37
2	Product description	5	5.3	Rotary switch setting: DHW Install	37
			5.4	Rotary switch setting: Operating Mode	37
3	Operation	6	5.5	Rotary switch setting: Set Temp Day	38
3.1	General	6	5.6	Rotary switch setting: Set Temp Night	38
3.2.1	Display	6	5.7	Rotary switch setting: DHW Set Temp	38
3.2.2	Operating elements	7	5.8	Rotary switch setting: Time Program	39
3.3	Operating concept	8	5.9	Rotary switch setting: Remote Param	39
3.4	Basic functions and operating modes	9	5.10	Rotary switch setting: Info	40
3.4.1	System information (Info)	9	5.11	Exit button: Sonderfunktion	41
3.4.2	Setting the operating mode	11	5.12	Parameter level "Basic Configuration"	41
3.4.3	Temperature setting Daytime room temperature	12	5.13	Parameter levels for the EHS157068 mixer module	42
3.4.4	Temperature setting Economy mode	12	5.13.1	Rotary switch setting: Configuration, level "Setup"	42
3.4.5	Temperature setting hot water generation	13	5.13.2	Rotary switch setting: Configuration, level "Mixer Config"	43
3.4.6	Unplanned hot water generation	13			
3.4.7	Switching time program	13	6	Errors, malfunctions and messages	45
3.4.8	System settings	15	6.1	Recognising errors, correcting malfunctions	45
3.4.9	Terminal function	15	6.1.1	Current fault display	45
3.4.10	Quite Mode	16	6.1.2	Read Protocol	45
3.4.11	SMART GRID	16	6.1.3	Troubleshooting	45
3.5	Special functions	17	6.2	Emergency operation	46
3.5.1	Manual Operation	17	6.3	Malfunctions and fault codes	46
3.6	Special system settings	18			
3.6.1	Access Rights (Technician password)	18	7	Glossary	47
3.6.2	Heat curve	18			
3.6.3	Cooling characteristic curve	19	8	Notes	48
3.6.4	Weather-controlled flow temperature regulation	20	8.1	User-specific settings	48
3.6.5	Frost protection function	20	8.1.1	Switching time program	48
3.6.6	Interlink function	21	8.2	Parameter	49
3.6.7	Additional heat generator	21	8.2.1	Data bus addresses	49
3.6.8	Heating support	22	8.3	Other items	50
3.6.9	Special function: Switching contacts	22			
3.6.10	Air Purge	23	9	List of keywords	51
3.6.11	Legionella protection	23			
3.6.12	Reset to factory settings (Reset)	24			
3.6.13	Screed Program	25			
3.6.14	Relay Test	27			
3.6.15	Settings for optional circulation pump	27			
3.6.16	Remote control via Internet	27			
4	Initial start-up	28			
4.1	Starting up the Daikin Altherma EHS(X/H)	28			
4.2	Connect the optional RoCon devices and start them up	28			
4.2.1	Starting up the EHS157068 mixer module	28			
4.2.2	Starting up the EHS157034 room station	29			
4.2.3	Caretaker function	30			

1 Safety

1.1 Observing instructions

These instructions are a >> **Translation of the original version** << in your language.

All the activities required for operation and setting the parameters are described in this instruction manual. All parameters needed for trouble-free operation have been configured at the factory.

- Please read through this manual carefully before operating the heating system or before adjusting the settings for it.
- Make a note of the preset values before you make any changes to the unit configuration.

Relevant documents

- Daikin Altherma EHS(X/H):
 - Operating instructions for the user/owner
 - Installation and maintenance instructions
 - Commissioning checklist
- External unit for Daikin Altherma EHS(X/H); the associated installation and operating instructions.
- When connecting to a Daikin solar system; the associated installation and operating instructions.
- If a Daikin FWXV(15/20)AVEB is connected; the associated installation and operating instructions.
- If a different Daikin heater or optional accessories are connected; the associated installation and operating instructions.

The guides are included in the scope of supply for the individual units.

1.2 Warning signs and explanation of symbols

Meaning of the warnings

Warnings in this manual are classified according into their severity and probability of occurrence.



DANGER!

Draws attention to imminent danger.

Disregarding this warning can lead to serious injury or death.



WARNING!

Indicates a potentially dangerous situation.

Disregarding this warning can result in serious injury or death.



CAUTION!

Indicates a situation which may cause possible damage.

Disregarding this warning can lead to damage to property and the environment.



This symbol identifies user tips and particularly useful information, but not warnings or hazards.

Special warning signs

Some types of danger are represented by special symbols:



Electric power



Risk of burning or scalding

Validity

Some information in this manual has limited validity. The validity is highlighted by a symbol.



Only valid for Daikin Altherma EHS(X/H) with cooling function



Valid/available only if a room station (EHS157034) is connected



Valid/available only if a mixer module (EHS157068) is connected

Handling instructions

- Instructions on actions are shown as a list. Actions of which the sequential order must be maintained are numbered.
 - ➔ Results of actions are identified with an arrow.

Display readouts of the RoCon-Control



Entry into a setting procedure



Exit from a setting procedure

Certain screen displays or menu points may differ from those shown in these instructions due to country or equipment variations in the Daikin Altherma EHS(X/H) or the status of the user logged onto the Control.

1.3 Avoid danger

The Daikin Altherma EHS(X/H) is state-of-the-art and is built to meet all recognised technical requirements. However, improper use may result in serious physical injuries or death, as well as property damage.

To avoid danger, only operate the Daikin Altherma EHS(X/H):

- as stipulated and in perfect condition,
- with an awareness of the safety and hazards involved.

This assumes knowledge and use of the contents of this manual, the relevant accident prevention regulations and the recognised safety-related and occupational medical rules.



WARNING!

This unit is not intended for use by persons (including children) with impaired physical, sensory or mental faculties or persons with insufficient experience and/or expertise unless supervised by a person responsible for ensuring their safety or are given instruction by this person on how to use the unit.

1 Safety

1.4 Proper use

The RoCon HP may be used only in Daikin Altherma EHS(X/H) heat pumps that have been approved for Daikin the regulating system RoCon. The Daikin RoCon HP may only operated only according to the indications in this manual.

Any other use outside the intended use is considered as improper. The operator alone shall bear responsibility for any resulting damage.

For any work on the equipment, which extends above and beyond the operation of the regulating system, you must observe the details provided in the supplementary documents, particularly with regard to safety instructions.

2 Product description



The Control RoCon HP is part of the Daikin Altherma EHS(X/H).

It consists of the **RoCon BM1** control panel to which the actuators and sensors, as well as other components in the Daikin RoCon regulating system, are connected, and the **RoCon B1** operating unit.

In this instruction manual we explain just the functions and setting possibilities of the Control. More information on the Daikin Altherma EHS(X/H) and other equipment components can be found in the supplementary documents.

The electronic, digital Control is able to automatically control all heating, cooling and hot water functions for a direct heating circuit, a storage tank charging circuit and optionally connectable mixer module, depending on the heating unit in question.

It is responsible for all safety management functions of the Daikin Altherma EHS(X/H). This executes a safety switch-off in the event of a water shortage or undefined operating states. A corresponding fault message shows the operator all the information for fault causes.

All function settings for the Daikin Altherma EHS(X/H) and the optional RoCon devices connected via the data bus are carried out with the operating elements of the integrated RoCon B1 control panel and displayed in clear text display on a coloured backlit display.

The regulation data bus can be used to connect the Daikin Altherma EHS(X/H) to the following optional equipment:

- **EHS157034** room station.
- **EHS157068** mixer module.

In addition, the RoCon HP control unit has a frost protection function for the direct heating circuit and the storage tank charging circuit, as well as an automatic function for heating support (inclusion of an additional source of heat such as a wood-burning boiler or solar installation).

The potential-free AUX switching contact can be used to carry out different control functions in conjunction with external devices (demand from an external heat generator, switching to bivalent operating mode, external status display, etc.).

In addition, it also has several inputs for using external control contacts (external operating mode switching or heat demand and SMART GRID and off-peak (EVU) functions),

The weather-controlled flow temperature regulation can be optimised with the **RoCon OT1** optional external temperature probe which can be installed on the north face of the building.

If the **EHS157056** optional gateway is installed and connected to the Internet, the Daikin Altherma EHS(X/H) can be conveniently monitored and operated by remote control using a mobile phone (app).

The Control RoCon HP contains a timer which can be used to set:

- 2 individually-adjustable timer programmes for room heating and room cooling⁽¹⁾ (direct heating circuit),
- 2 individually-adjustable timer programmes for hot water generation,
- 1 individually-adjustable timer programme for an optional circulation pump.

(1) Use of the timer programme for room cooling only possible in combination with a connected room thermostat

Initial commissioning of the heating system is described in the installation manual for the Daikin Altherma EHS(X/H).

Certain menu items in the Control RoCon HP are only accessible to the specialist heating technician. This security measure ensures that no undesirable malfunctions arise during operation of the system through incorrect settings.

The EHS157034 room station has the same operating panel as the Daikin Altherma EHS(X/H) B1 operating element integrated in the RoCon.

All settings for the allocated heating circuit can be carried out in the same way as the operating unit. With activated terminal function, all operating possibilities that are available on the integrated operating unit are available, with the exception of certain special functions (e.g. Manual Operation).

An EHS157068 connected mixer module will also be operated, after appropriate allocation, by the RoCon B1 control unit and/or the EHS157034 room station.

3 Operation

3 Operation

3.1 General



DANGER!

If electrical components come into **contact** with **water**, this can cause an **electric shock** as well as cause potentially fatal injuries and burns.

- The **displays** and the **buttons** on the Control **must be protected from the effects of moisture**.
- To **clean** the Control use a **dry cotton cloth**. Using aggressive **cleaning agents** and other **liquids** can cause **damage to equipment or lead to an electric shock**.



Maximum energy utilisation

The most effective energy utilisation is achieved by the Daikin Altherma EHS(X/H) at the lowest possible return flow and hot water temperatures.

If an external heat generator (e.g. the optional backup heater) is used at inflow target temperatures of over 50 °C, the efficiency (COP) of the Daikin Altherma EHS(X/H) can be affected negatively (depending on the outside temperature).

3.2 Display and operating elements

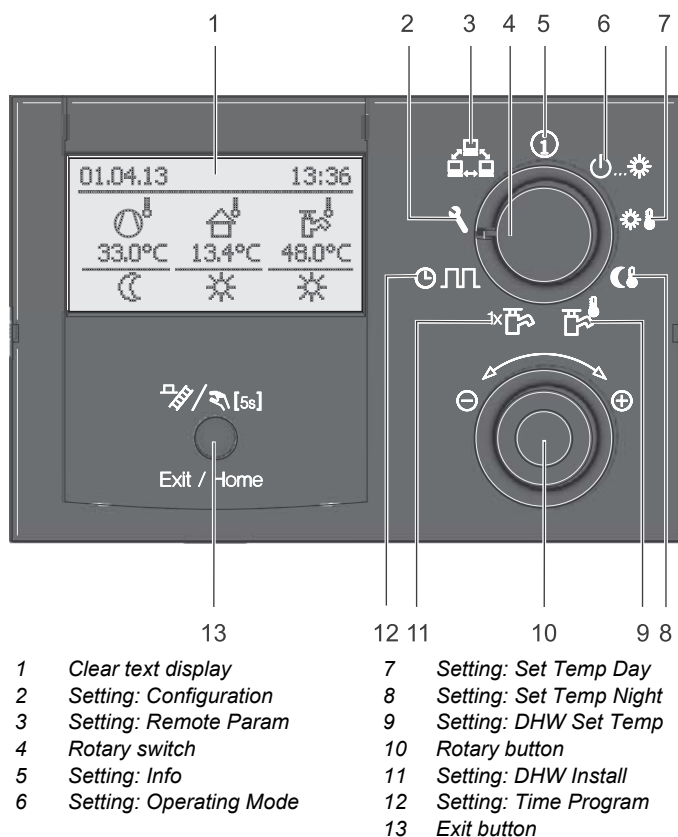


Fig. 3-1 Arrangement of display and operating elements

3.2.1 Display

All the operating steps are supported by appropriate displays in the clear text display on a coloured background.

Menu guiding is available in 7 different languages (see section 3.4.8).



Malfunctions are generally indicated by a fault code and a clear text fault message on the display.

For troubleshooting instructions refer to chapter 6.

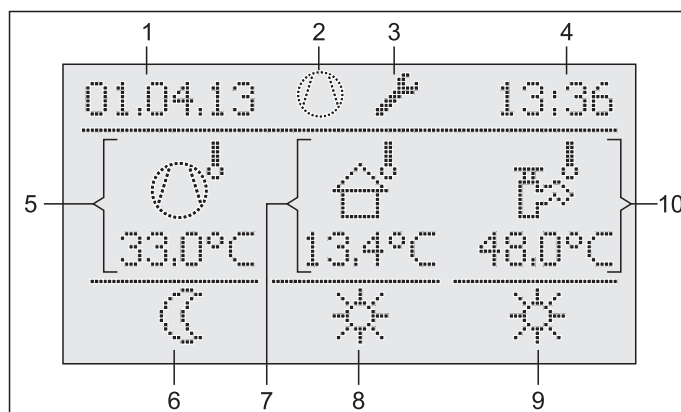
The colour of the backlighting indicates the operational status and the operational mode:

White: Standard lighting, normal operational display.

Red: Fault status, depending on the type of fault, the Daikin Altherma EHS(X/H) continues to function with restrictions.

Green: Operating mode with operator authorisation.

Blue: Operating mode with expert authorisation.



- | | | | |
|---|----------------------------------|----|----------------------------------|
| 1 | Date display | 7 | Current outdoor temperature |
| 2 | Status of refrigerant compressor | 8 | Active operating mode |
| 3 | Display of expert login | 9 | Status of hot water generation |
| 4 | Display time | 10 | Current storage tank temperature |
| 5 | Current flow temperature | | |
| 6 | Status heating circuit | | |

Fig. 3-2 Display of the Control - standard display

Explanation of symbols

Item fig. 3-2	Symbol	Explanation
2		<u>Flashing</u> : Heat pump demand active <u>Permanently on</u> : Refrigerant compressor is working
2		No connection to the external heat pump unit
3		Access Rights Expert active (see section 3.6.1)
2 / 3		Air Purge active (see section 3.6.10)
2 / 3		Terminal function active (see section 3.4.9)
2 / 3		Frost protection function active (see section 3.6.5)
2 / 3		Temporary timer programme "Party" active (see section 3.4.7)

Item fig. 3-2	Symbol	Explanation
2 / 3		Temporary timer programme "Away" active (see section 3.4.7)
2 / 3		Temporary timer programme "Holiday" active (see section 3.4.7)
2 / 3		Temporary timer programme "Vacation" active (see section 3.4.7)
2 / 3		Screed Program active (see section 3.6.13)
5		Direct heating circuit <ul style="list-style-type: none"> Under normal conditions, the current inflow temperature $t_{V, BH}$ is displayed. In the case of no demands from the heat pump, the abbreviation "ES" is displayed instead of the current inflow temperature. ➔ The control system has switched to energy saving mode (see section 3.4.2). Superfluous electronic components are switched off.
5		Mixer circuit (M1) <p>The current inflow temperature of the selected heating circuit is displayed.</p>
5		Room temperature sensor (U1) <p>The current room temperature is displayed.</p>
6		Heating circuit status <ul style="list-style-type: none"> Heating circuit active (room heating function) Heating circuit active (room cooling function) Heating circuit not active (currently no heat transfer in the heating circuit)
7		Outside temperature sensor <p>The current outside temperature is displayed.</p>
8		Current operating mode (see section 3.4.2) <ul style="list-style-type: none"> Standby active. Reducing active. Heating active. Cooling active. Summer active. Automatic 1 active. Automatic 2 active.
9		Domestic hot water generation active Domestic hot water generation not active
10		Domestic hot water circuit status <p>The current storage tank temperature t_{DHW1} is displayed.</p>

Tab. 3-1 Explanation of display symbols

3.2.2 Operating elements



CAUTION!

Never operate the operating elements on the controller with a hard, pointed object. This can cause damage and can cause the control to malfunction.

If special key combinations or extended key pushes are required for certain function, a separate note is made in each specific section of this description.

Rotary switch

The rotary switch is used to gain rapid direct access (main function level) to frequently required functions and setting possibilities.



Independent of the setting of the rotary switch, the Daikin Altherma EHS(X/H) operates in accordance with the operating mode set in the switch position **"Operating Mode"** or which has been activated by a special programme.

Action	Result
Rotating	Direct selection of the main function level allocated to this switch position.

Tab. 3-2 Function of rotary switch

Rotary switch

The rotary switch can be used to navigate in the individual levels, setting values can be selected, changed and these changes can then be accepted by pressing briefly.

Action	Result
Rotating	To the right (+): Increased regulation To the left (-): Reduced regulation
Tap sthing	Confirm, accept, selection and execute the function.



Tab. 3-3 Functions of the rotary switch

3 Operation

Exit button

This button can be used to jump back to the previous display within a menu display or a function / input can be interrupted.

This button can also be used to call up the special level (see section 3.5).

Action	Result
 Exit / Home	<ul style="list-style-type: none"> – Jump back to the previous display or previous level or – Cancellation of a special function or an active temporary timer programme.
Press for more than 5 s.  5s Exit / Home	<ul style="list-style-type: none"> – Special level is called up.

Tab. 3-4 Functions of the exit button

3.3 Operating concept

The operating concept for controlling the RoCon HP is structured in such a way that the frequently required setting facilities are accessible quickly and directly at the **main function level** (selection using the **rotary switch**) and that the less frequently required setting facilities are arranged at a lower parameter level.

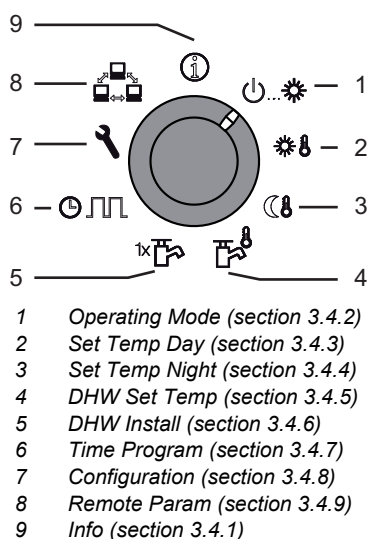


Fig. 3-3 Illustration of main function level (rotary switch position)

Certain functions and parameters are restricted by access authorisation and can only be adjusted by the heating expert (see section 3.6.1).

In normal operating mode the rotary switch should be in position ①.

After switching on and successful initialisation, the display automatically shows the standard display with rotary switch position ①.

In the first commissioning, the setting for language selection is displayed first.

- Select the language using the rotary switch.
- Confirm the changes with a brief push of the rotary switch.




Adaptation to the special installation configuration is carried out in the rotary switch position "**Configuration**" (see section 3.4.8).

When the system is switched on, it regulates fully automatically, based on the stipulations set in the Control RoCon HP, the operation of the

- room heating, room cooling and the
- sanitary hot water generation.



Independent of the setting of the rotary switch, the Daikin Altherma EHS(X/H) operates in accordance with the operating mode set in the switch position "**Operating Mode**"  or which has been activated by a special programme.

If the user enters a value manually, this setting remains active until the user changes it or until the programme clock forces another operating mode.

The operating mode can be affected by additional functions such as:

- Weather-controlled flow temperature regulation
- Switching time program
- Setting the temperature target value
- Setting at the room station
- EXT signal (external operating mode switching)
- Quiet Mode
- Interlink fct
- SMART GRID - Signal
- EVU (reduced cost tariff) - Signal
- Screed function
- Air Purge
- Manual Operation

Button block

The operating panel on the RoCon HP can be blocked to prevent inadvertent actuation (see fig. 3-4).

Unlocking can be carried out in the same way.

The prerequisite for this function is that, in the level "Setup", the parameter [Keylock Function] is set to "On" (see chapter 5.2.1 tab. 5-1).

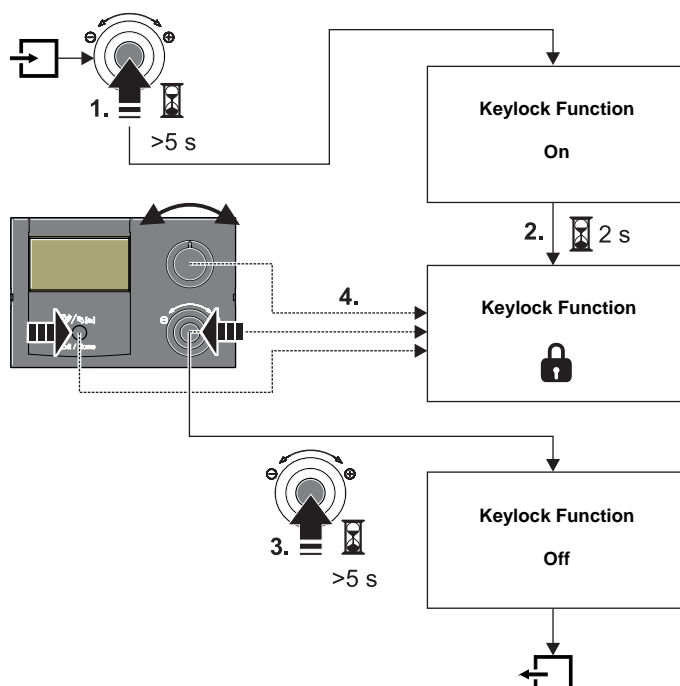


Fig. 3-4 Activating and deactivating the button block

3.4 Basic functions and operating modes



If the storage temperature falls below a certain minimum value, the safety settings of the Daikin Altherma EHS(X/H) prevent the operation of the heat pump in the case of low external temperatures:

- **External temperature $< -2^{\circ}\text{C}$** , minimum **storage temperature = 30°C**
- **External temperature $< 12^{\circ}\text{C}$** , minimum **storage temperature = 23°C** .

Without backup heater:

The storage tank water must be heated to the minimum required storage temperature by an external heater.

With backup heater (EKBUxx):

With an outdoor temperature $< 12^{\circ}\text{C}$ and a storage tank temperature $< 35^{\circ}\text{C}$, the backup heater (BUH) is switched on automatically in order to heat up the storage tank water to at least 35°C .

- In order to **accelerate the heating process** with the **back-up heater, temporarily**
 - Parameter **[Function Heating Rod]** = "1" and
 - Set parameter **[Power DHW]** to the **maximum value of the backup heater**.
 - Set rotary switch to the operating mode and parameter [1x Hot Water] to "On". Following successful heating, reset the parameters to "Off".

Automatic defrosting function

At low outdoor temperatures and corresponding humidity values, the external heat pump unit may ice up. This icing impairs efficient operation. The system detects this condition automatically and starts the defrosting function.

During the defrosting function, heat is drawn from the hot water storage tank and the backup heater is turned on if required. Depending on the heat demand for the defrosting function, heating of the direct heating circuit may be interrupted temporarily.

After 8 minutes at most, the system returns to normal mode.

3.4.1 System information (Info)

In this rotary switch position, the rotary switch can be used to call up all the system temperatures, the type of Daikin Altherma EHS(X/H), various software information and the operating statuses of all system components, one after the other. The number of displayed parameters depends on the connected components.

No settings can be made to these values.

- Place the rotary switch in the **"Info"** position.
 - ➔ Standard display is shown (see fig. 3-2).
- Press the rotary switch briefly.
 - ➔ The parameter overview is displayed.
- Select the desired information level with the rotary switch.
- Confirm the changes with a brief push of the rotary switch.
 - ➔ The value is displayed (for example, see fig. 3-6).
- Select the individual information with the rotary switch.

More detailed explanations and possible setting values for this rotary switch setting can be seen in chapter 5.10.

Display operating data

The current operating data for the Daikin Altherma EHS(X/H) are shown on the RoCon HP Control in the "Overview" information level.

The display of the operating data is not divided into several windows. By adjusting the rotary switch it is toggled between the windows.

Short designation		Explanation of the displayed value
Page 1	Mode	Current mode of the heat pump: : Heating : Cooling : Domestic hot water generation : Automatic defrosting function active
	Ext	Current energy mode of the heat pump: LT : EVU function active and low tariff. HT : EVU function active and standard tariff. SGN : SMART GRID - Function active, normal mode. SG1 : SMART GRID - Function active, rejection, expensive power. SG2 : SMART GRID - Function active, multiple operation, cheap power. SG3 : SMART GRID - Function active, start command and multiple operation, cheap power. --- : No external mode active, heat pump works in normal mode.
	RT	Parameter [Room thermostat] / [Interlink fct] = Off: --- Parameter [Room thermostat] = On: – : Heating or cooling demand – : No heating demand Parameter [Interlink fct] = On (priority): – ---: Only frost protection – IL1: Normal inflow target temperature – IL2: – Increased inflow target temperature in heating operation – Decreased inflow target temperature in cooling operation
	Pump	Actual output of the internal heating circulation pump in %
	EHS	Current output of the backup heater in kW
Page 2	BPV	Current position of the mixing valve 3UVB1 (100% = A, 0% = B)
	TV	Current inflow temperature after the plate heat exchanger (t_{V1})
	TVBH	Current heating inflow temperature or temp. after heating support heat exchanger ($t_{V, BH}$)
	TR	Current heating return flow temperature (t_{R1})
	Tdhw	Current temperature in domestic hot water storage tank (t_{DHW1})
	TA	Actual outdoor temperature (measured by optional temperature sensor RoCon OT1)
	V	Actual volume flow (flow rate) in the heating system

3 Operation

Short designation		Explanation of the displayed value
Page 3	TVBH2 = TVBH	
	TR2	Current heating return flow temperature, secondary sensor (t_{R2})
	Tdhw2	Current temperature in domestic hot water storage tank, secondary sensor (t_{DHW2})
	Tliq2	Current coolant temperature (t_{L2})
	TA2	Actual outdoor temperature (measured by temperature sensor of the external heat pump)
	quiet	Shows the status of the whisper mode

Tab. 3-5 Description of the operating data displayed as an overview

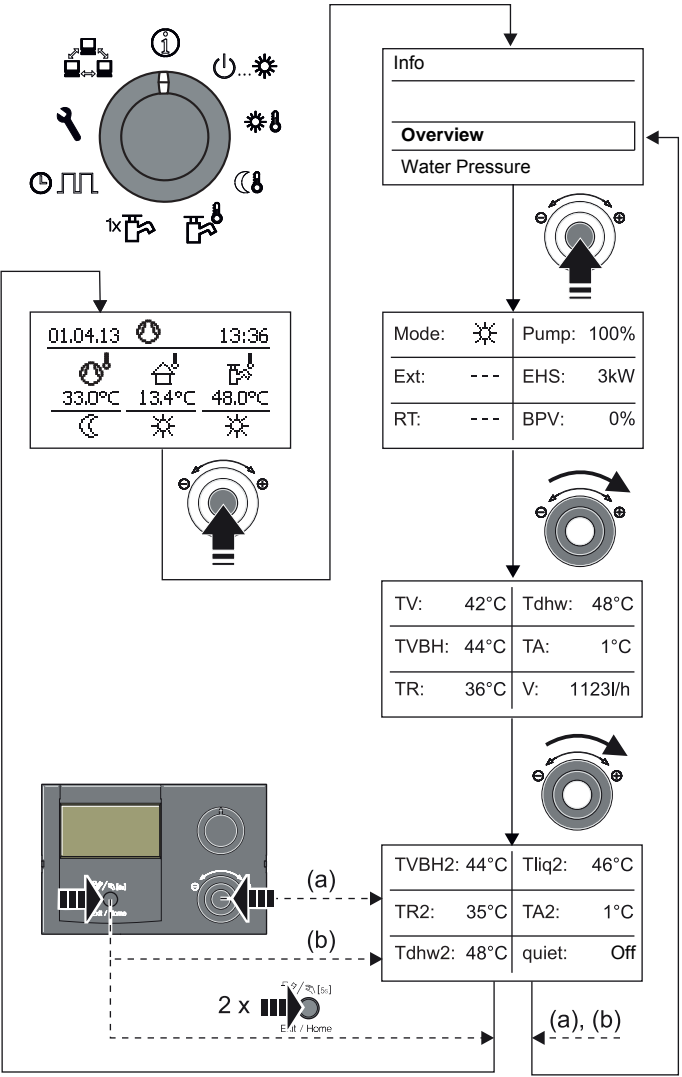


Fig. 3-5 Display operating data overview

Displaying the water pressure

On the Control RoCon HP, when it is switched on, you can display the system pressure (water pressure) in the internal circuit (direct heating circuit). The water pressure is available as the first info parameter (see fig. 3-6).

The permissible range of water pressure during operation depends on the Daikin Altherma EHS(X/H) and the heating system. The set values and threshold values must only be changed by the heating technician. If the water pressure falls below the minimum value (set parameter value), it must be increased by topping up the system (see installation instructions of the Daikin Altherma EHS(X/H)).

i The pressure limits for the safety switch-off and the set pressure can be adjusted in the parameter settings in level "System Configuration".

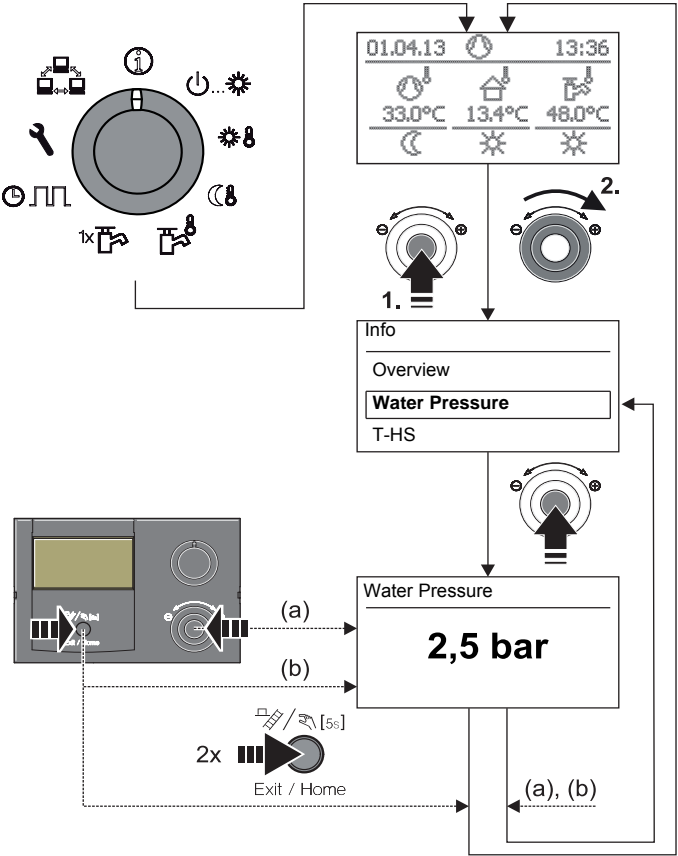



Fig. 3-6 Info values display (e.g. system pressure)

3.4.2 Setting the operating mode

The selection of the operating mode with which the Daikin Altherma EHS(X/H) is to operate is undertaken on the rotary switch in the setting "**Operating Mode**" .

The selected operating mode is activated by briefly pushing the rotary switch.

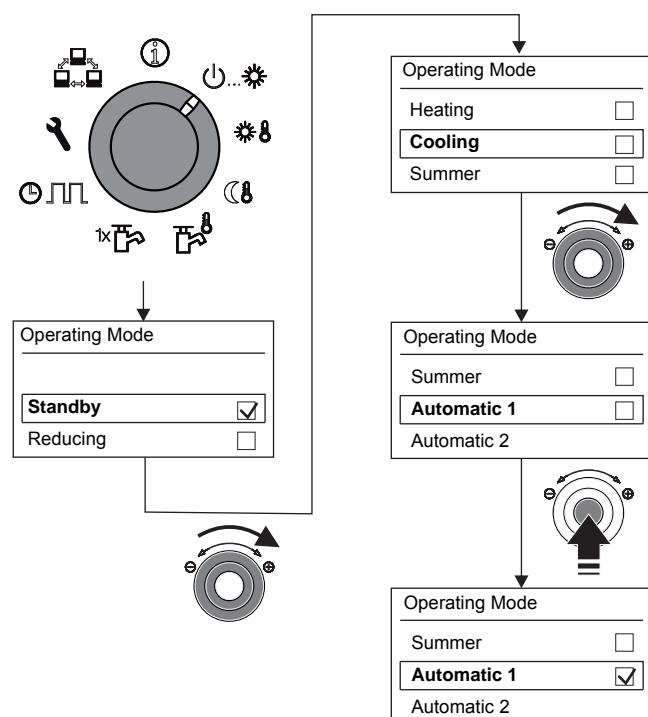



Fig. 3-7 Changing over the operating mode
(E.g.: From "Standby" to "Automatic 1")

- Place the rotary switch in the "**Operating Mode**"  position.
→ An overview is displayed.
- Select the desired operating mode with the rotary switch.
- Confirm the changes with a brief push of the rotary switch.
→ Daikin Altherma EHS(X/H) operates in accordance with the set operating mode.
- The current operating mode is indicated by an appropriate symbol in the standard display.

Operating mode Standby (Stand-by)



CAUTION!

A heating system that is not frost-protected can freeze in cold weather and be damaged.

- Drain the water out of the heating system if there is a danger of frost.
- If the heating system is not drained and there is a risk of frost, the power supplies must be secured and the external main switch must remain switched on.

In this mode, the Daikin Altherma EHS(X/H) is shifted to the stand-by mode. The **frost-protection function** (see section 3.6.5) remains in place. In order to maintain this function, the system must not be disconnected from the mains!

All controllers integrated into the RoCon-system via the CAN bus are also switched at a higher level to the operating mode "Standby".

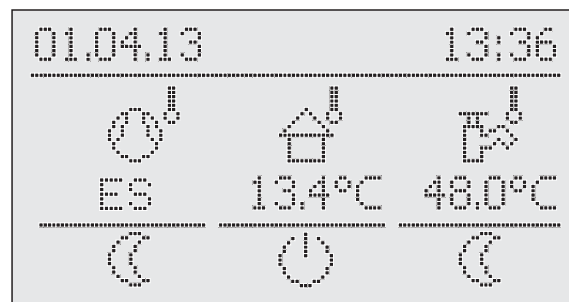


Fig. 3-8 Standard display in "Standby" operating mode
(above the frost-protection limit)



In the "Standby" operating mode, the heat pump and any optionally connected backup heaters are isolated from the power supply (**Energy saving mode**) when the following conditions are met:

- the outdoor temperature sensor (RoCon OT1) is connected and correctly parametrised in the system configuration,
- the outdoor temperature is over 8°C,
- there is no heating command,
- the frost protection function is not active in any of the connected heating circuits, and
- Daikin Altherma EHS(X/H) has been switched on for at least 5 mins.

Operating mode Reducing

Reduced heating mode (lower set room temperature) in accordance with the target temperature set for economy mode in the parameter [T-Reduced] (see section 3.4.4).

Hot water generation according to the set target domestic hot water temperatures and switching cycles in the hot water time programme [DHW Program 1] (see section 3.4.5).

Operating modes Heating, Cooling

Heating or cooling operation in accordance with the room temperature set in the parameter [T-Room 1 Setpoint] (see section 3.4.3).

A connected outdoor temperature sensor (weather-controlled flow temperature regulation) or a connected room station will also influence the set flow temperature regulation (requirements: Parameter [HC Function] = On).

Hot water generation according to the set target domestic hot water temperatures and switching cycles in the hot water time programme [DHW Program 1] (see section 3.4.5).

Operating mode Summer

Hot water generation according to the set target domestic hot water temperatures and switching cycles in the hot water time programme [DHW Program 1] (see section 3.4.5).

All controllers integrated into the RoCon-system via the CAN bus are also switched at a higher level to the operating mode "Summer".

Operating mode Automatic 1 (Timer programme)

Automatic heating and economy mode in accordance with the permanent timer programmes (see section 3.4.7):

- [HC Program 1]
- [DHW Program 1]

3 Operation

Operating mode Automatic 2 (Timer programme)

Automatic heating and economy mode in accordance with the permanent timer programmes (see section 3.4.7):

- [HC Program 2]
- [DHW Program 2]



If, in the active operating mode, the hot water generation is in setback, you can use the rotary switch to set temporary **"DHW Reheating"** without having to change any other standard settings (see section 3.4.6).



Switching contact for external operating mode switching

Likewise, the operating mode (see tab. 3-6) can be switched from an external device (e.g. modem, etc.) via a potential-free switching contact which is connected to a resistor and to the terminals "EXT" at the J8 port on the Daikin Altherma EHS(X/H).

Operating mode	Resistance	Tolerance
Standby	<680 Ω	± 5 %
Heating	1200 Ω	
Reducing	1800 Ω	
Summer	2700 Ω	
Automatic 1	4700 Ω	
Automatic 2	8200 Ω	

Tab. 3-6 Resistance values for the evaluation of the EXT signal



The resistances specified in tab. 3-6 work at a tolerance range of 5%. Resistances outside of this tolerance ranges are interpreted as open input. The heat generator resets to the previously active operation mode.

At resistance values higher than the value for "Automatic 2", the input is not considered.

If several switching contacts are to be connected to the Daikin Altherma EHS(X/H) (e.g. SMART GRID, Room thermostat), the associated functions can have a higher priority than the external operating mode switching. The operating mode requested by the EXT switching contact might then not be activated or may be activated later.

In addition to these operating modes there are various different temporary heating programmes available (see tab. 3-7), which run according to priority after they have been activated.

Temporary timer programme	Setting / activating in level	Rotary switch setting	Note
DHW Install	DHW Install		Section 3.4.6
Party	Time Program		Section 3.4.7
Away			
Holiday			
Vacation			
Screed*	Configuration > HC Configuration		Section 3.6.13

* Only with expert code.

Tab. 3-7 Overview of temporary timer programmes



If a temporary timer programme (DHW Install, Party, Away, Holiday, Vacation, Screed) is started during the selected operating mode, the regulation will take place with preference according to the settings of this timer programme.

3.4.3 Temperature setting Daytime room temperature

The set room temperatures for room heating during the day are determined in the rotary switch setting .

- Place the rotary switch in the **"Set Temp Day"** position.
→ An overview is displayed.



The end figures of the parameter designations (1 - 3) within this rotary switch setting designate the association with each individual cycle of the timer programme.

- Select the temperature block to be set with the rotary switch.
- Confirm the changes with a brief push of the rotary switch.
→ Settings are displayed.
- Set the temperature.
- Confirm the changes with a brief push of the rotary switch.
→ Change has been accepted. Jump back to previous display.

More detailed explanations and possible setting values for this rotary switch setting can be seen in chapter 5.5.


3.4.4 Temperature setting Economy mode


The set room temperatures for room heating in economy mode are determined in the rotary switch setting .

- Place the rotary switch in the **"Set Temp Night"** position.
→ An overview is displayed.
- Select the parameter to be set with the rotary switch.
- Confirm the changes with a brief push of the rotary switch.
 - [T-Reduced]: Set value for "Reducing" operating mode or setback by a permanent timer programme.
 - [T-Absence]: Set value for temporary heating / cooling programmes ("Away" and "Vacation").
 → Settings are displayed.
- Set the temperature.
- Confirm the changes with a brief push of the rotary switch.
→ Change has been accepted. Jump back to previous display.

More detailed explanations and possible setting values for this rotary switch setting can be seen in chapter 5.6.

3.4.5 Temperature setting hot water generation

The hot water set temperatures for hot water generation for each individual timer programme are determined in the rotary switch setting .

- Place the rotary switch in the **"DHW Set Temp"**  position.





The end figures of the parameter designations (1 - 3) within this rotary switch setting designate the association with each individual cycle of the timer programme.

- Select the temperature block to be set with the rotary switch.
- Confirm the changes with a brief push of the rotary switch.
 - Settings are displayed.
- Set the temperature.
- Confirm the changes with a brief push of the rotary switch.
 - Change has been accepted. Jump back to previous display.


More detailed explanations and possible setting values for this rotary switch setting can be seen in chapter 5.7.

3.4.6 Unplanned hot water generation

You can charge the hot water up manually outside a hot water timer programme to the preset temperature set in parameter [T-DHW Setpoint 1] in the rotary switch position . Heating up is carried out as a priority and independently of any other heating programmes.

- Place the rotary switch in the **"DHW Install"**  position.
 - An overview is displayed.
- Select the parameter to be set with the rotary switch.
 - [1x Hot Water]: Activating one-off hot water generation.
- Confirm the changes with a brief push of the rotary switch.
- Setting parameters.
- Confirm the changes with a brief push of the rotary switch.
 - Start unplanned hot water generation.



After this temporary function has expired, the Control automatically jumps back to the previously active operating mode. The rotary switch should therefore be returned to the position **"Info"**  after activation.

The function is subject to time limits.

It is interrupted at the latest after the time set in the parameter [Max DHW loading time] and cannot be restarted once more until the time set in the parameter [DHW Off Time] has passed.


Possible setting values for this rotary switch setting can be seen in chapter 5.3.


3.4.7 Switching time program

Various different timer programmes are available, that are set in the factory, but which can be adjusted to suit, to provide convenient and individual room and hot water temperature control.

The timer programmes regulate the associated heating circuit, the storage tank charging circuit and an option connected circulation pump in accordance with the stipulated switching times.

Adjustment

In the rotary switch position  we set the time intervals for the heating circuit, the integrated hot water generation and the optional circulation pump.




- Place the rotary switch in the **"Time Program"**  position.
 - An overview is displayed.
- Select the timer programme to be set with the rotary switch.
- Confirm the changes with a brief push of the rotary switch.
 - Settings are displayed.
- Select and change the value to be set with the rotary switch.
- Confirm the changes with a brief push of the rotary switch.

More detailed explanations and possible setting values for this rotary switch setting can be seen in chapter 5.8 "Rotary switch setting: Time Program".

Permanent timer programmes

For the connected heating circuits and the storage tank charging circuit, timer programmes regulate the heating circuit temperatures or the operating times for the circulation pump in accordance with the stipulated switching cycles. The switching cycles are saved in time blocks for which various different set temperatures apply.

In the switching cycles the heating system is regulated differentiated into **day** and **economy mode**.

The target room temperatures for these timer programmes are set in **"Set Temp Day"** , **"Set Temp Night"**  and **"DHW Set Temp"** .

The following timer programmes are available:

- **2 timer programmes for the heating circuit**, each with 3 possible time cycles
 - [HC Program 1]
 - [HC Program 2]



A separate input for each individual day of the week is possible, or in blocks of "Monday to Friday", "Saturday to Sunday" and "Monday to Sunday".

Programme	Time period	Switching cycle
HC Program 1	Single day of the week (Monday, Tuesday ...)	1. 06:00 -> 22:00 2. --:-- -> --:-- 3. --:-- -> --:--
	Working week (Monday to Friday)	1. 06:00 -> 22:00 2. --:-- -> --:-- 3. --:-- -> --:--
	Weekend (Saturday to Sunday)	1. 07:00 -> 23:00 2. --:-- -> --:-- 3. --:-- -> --:--
	Entire week (Monday to Sunday)	1. 06:00 -> 22:00 2. --:-- -> --:-- 3. --:-- -> --:--
HC Program 2	See HC Program 1	1. See 2. HC Program 1 3. See

Tab. 3-8 Menu structure heating circuit timer programme

3 Operation



Time settings for one switching cycle in one weekday or block programme are also adopted for other time periods, provided that they affect the same weekdays. Examples referring to tab. 3-8:

- For the single working day "Monday" the start time in the 1st. Switching cycle changed from 06:00 to 05:00.
→ In the time period "Working week" and "Entire week", the 1st. time block Switching cycle also changed from 06:00 to 05:00.
- For the time period "Weekend", the start time in the 1st. Switching cycle changed from 07:00 to 08:00.
→ In the individual weekdays "Saturday" and "Sunday", the 1st. time block is automatically Switching cycle also changed from 07:00 to 08:00.
- For the time period "Entire week", the end time in the 1st. time block Switching cycle changed from 22:00 to 21:30.
→ In all the weekdays the 1st. switching cycle is also changed from 22:00 to 21:30.

- **2 timer programmes for the hot water circuit**, each with 3 possible switching cycles
 - [DHW Program 1]
 - [DHW Program 2]



The setting and input structure of the timer programmes are identical to the ones for the heating circuit timer programme (see also tab. 3-8).

- **1 timer programme for one optionally connected** circulation pump with 3 individual possible switching cycles [Circulation Time]






The setting and input structure of the timer programmes are identical to the ones for the heating circuit timer programme (see also tab. 3-8).

For further instructions concerning settings for an optional circulation pump, see section 3.6.15.

Saved switching time programmes can be changed at any time. To provide a better overview, we recommend making a record of the programmed switching times and keeping it in a safe place (see chapter 8.1.1).

The permanent timer programmes are preset as per tab. 3-9.

		Switching cycle 1		Switching cycle 2		Switching cycle 3	
Time period		On	Off	On	Off	On	Off
Room heating / Room cooling							
Temperature setting		[T-Room 1 Setpoint]: 20°C		[T-Room 2 Setpoint]: 20°C		[T-Room 3 Setpoint]: 20°C	
		[T-Reduced]: 10°C					
"HC Program 1"							
Monday - Friday		06:00	22:00	--:--	--:--	--:--	--:--
Saturday, Sunday		07:00	23:00	--:--	--:--	--:--	--:--
"HC Program 2"							
Monday - Friday		06:00	08:00	--:--	--:--	--:--	--:--
Saturday, Sunday		07:00	23:00	--:--	--:--	--:--	--:--
Domestic hot water generation							
Temperature setting		[T-DHW Setpoint 1]: 48°C		[T-DHW Setpoint 2]: 48°C		[T-DHW Setpoint 3]: 48°C	
"DHW Program 1"							
Monday - Sunday		00:00	24:00	--:--	--:--	--:--	--:--
"DHW Program 2"							
Monday - Friday		05:00	21:00	--:--	--:--	--:--	--:--
Saturday, Sunday		06:00	22:00	--:--	--:--	--:--	--:--
"Circulation Time"							
Monday - Friday		05:00	21:00	--:--	--:--	--:--	--:--
Saturday, Sunday		06:00	22:00	--:--	--:--	--:--	--:--

Tab. 3-9 Factory setting for the permanent switching time programmes

Temporary timer programmes

For a specific situation there are 4 **temporary programmes** available, **which deactivate the permanent timer programmes** or the current operating mode for **the duration of their validity**.

The symbol of the temporary time program is displayed in the header line of the standard display, as long as the time program is active.



The following temporary time programmes may be interrupted any time by manually changing the operating mode.

1. [Party]: **Immediate one-off extension of the room heating**
 - a) If an automatic programme is activated, the last applicable switching cycle is always extended. In the time before switching cycle 1, the target room temperature set in the parameter [T-Room 1 Setpoint] applies.
 - b) In all other operating modes, the target room temperature set in the parameter [T-Room 1 Setpoint] applies.
 - The hot water generation is not affected.
 - The time programme runs for the set time period after activation.
2. [Away]: **Immediate one-off setback** up to 6 hours
 - The system operates in economy mode according to the room temperature set in the rotary switch setting "**Set Temp Night**" in the parameter [T-Absence].
 - The hot water generation is not affected.
 - The time programme runs for the set time period after activation.
3. [Holiday]: **One-off calendar-controlled presence.**
 - The system operates exclusively in accordance with the "Sunday" settings in the [HC Program 1].
 - The hot water generation operates exclusively in accordance with the "Sunday" settings in the [DHW Program 1].
4. [Vacation]: **One-off calendar-controlled setback.**
 - The system only operates in economy mode according to the room temperature set in the rotary switch setting "**Set Temp Night**" in the parameter [T-Absence].
 - Hot water generation according to the set temperatures and switching cycles in the hot water time programme [DHW Program 1] (see section 3.4.5).
 - The calendar-controlled programme [Vacation] is **not started** if the operating mode [Standby] or [Manual Operation] is active on the set start date.

3.4.8 System settings

We undertake the basic settings for the Control RoCon HP and the system configurations for the installation environment of the Daikin Altherma EHS(X/H), the direct heating circuit, the hot water generation and any optionally connected components in the rotary switch setting "**Configuration**" .

Depending on access authority (user or expert), various different parameters are available. Certain parameters are only accessible to the heating expert.

Setting the Language, Date, Time



An internal pre-programmed calendar ensures automatic time reset at the annually recurring summer/winter time changes. If required, the automatic time changeover can be switched off.

- Place the rotary switch in the "**Configuration**" position.
 - ➔ An overview is displayed.
- Select the "**Setup**" level with the rotary switch.
 - ➔ An overview is displayed.
- Use the rotary switch to select and confirm the [Language], [Date] or [Time] parameters.
- Select and change the value to be changed within the individual display using the rotary switch.
- Confirm the changes with a brief push of the rotary switch.
 - ➔ Change has been accepted. Jump back to previous display.

More detailed explanations and possible setting values for this rotary switch setting can be seen in section 3.6 and in chapter 5.2.

3.4.9 Terminal function

In the rotary switch setting "**Remote Param**" if terminal mode is activated, other controllers in the RoCon system can also be parameterised via the controller integrated in the CAN bus.

After activation of the "Bus - Scan" a list of the equipment that was recognised is shown for selection in the display (external equipment and local equipment).

After selection and acknowledgement of an external item of equipment, this is shown on the local Control. The local control element acts as the remote control for the external equipment. In this case all the control functions are provided and saved 1:1 as on the external equipment.

During this terminal function the header of the display carries additional information on the remotely controlled equipment; the symbol #X indicates the bus ID setting for the remotely controlled equipment.

The displayed values and symbols are always loaded from the selected equipment (such as the mixer circuit infeed temperature of the mixer module EHS157068).

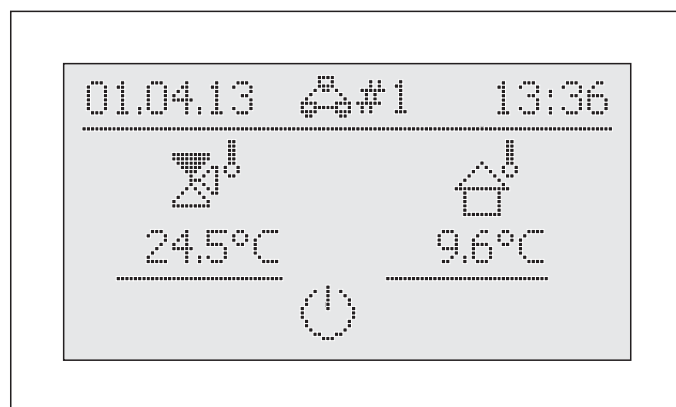


Fig. 3-9 Display example for a remotely controlled mixer module

For operation of the local equipment, this must be activated again in the selection list (parameter [No selection]).



If at the rotary switch setting the message "n. A." is displayed, the control unit has yet to be assigned a valid terminal address.

If the message "n. A." is still displayed it may be necessary to update the device software before the terminal function can be used. Contact the Daikin Service Team for this.

3 Operation

Assign the terminal address of the Daikin Altherma EHS(X/H) to the control element RoCon B1



If several items of equipment in the RoCon system are connected via the data bus, make sure not to duplicate the setting of any parameters [Terminaladdress].

- Enter the expert code (see section 3.6.1).
→ The "Setup" level is displayed after entering.
- Select the parameter [Terminaladdress] with the rotary switch.
- Confirm the changes with a brief push of the rotary switch.
- Within the display, use the rotary switch to set the unique terminal address.
- Confirm the changes with a brief push of the rotary switch.
→ Change has been accepted. Jump back to previous display.

More detailed explanations and possible setting values for this rotary switch setting can be seen in chapter 5.2.1.

Activating / deactivating normal operation

Requirement: A valid terminal address is assigned to the RoCon B1 control element of the Daikin Altherma EHS(X/H) or the EHS157034 room station.



For setting the terminal address of optional connected equipment, see chapter 4.2 or the instruction handbook supplied for the respective equipment.

- Place the rotary switch in the **"Remote Param"** position.
→ The level "Remote Param" is displayed.
- Select the parameter [Bus - Scan] with the rotary switch.
- Confirm the changes with a brief push of the rotary switch.
→ The context menu is displayed.

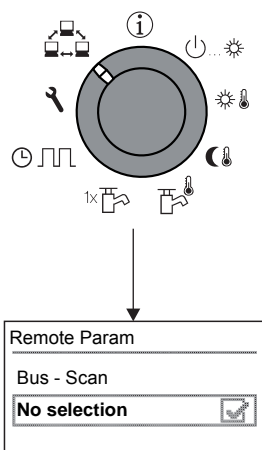


Fig. 3-10 Display of the level "Remote Param" at commissioning or temporary disconnection from the mains

- Use the rotary switch to select the parameter [New scan?] and confirm with "Yes".
→ Bus - Scan is performed.
→ An overview of all the equipment found is displayed.
- Use the rotary switch to select the equipment for which the terminal function is to be performed.
- Confirm the changes with a brief push of the rotary switch.
→ The local control element acts as the remote control for the external equipment.

To **end terminal mode** and restore operation of the assigned equipment to the control element, at the level **"Remote Param"** the parameter **[No selection]** must be selected and acknowledged (see fig. 3-10).

3.4.10 Quite Mode

Quite Mode means that the exterior heat pump unit is operating at reduced output. This reduces the operating noise caused by the exterior heat pump unit.



CAUTION!

Active Quite Mode reduces the performance in room heating and room cooling operation with the result that it may no longer be possible to reach the preset target temperatures.

- With outside temperatures below freezing, there is a risk of material damage caused by frost.

The Quite Mode is set and turned off as follows:

- Place the rotary switch in the **"Configuration"** position.
→ An overview is displayed.
- Select the **"System Configuration"** level with the rotary switch.
→ An overview is displayed.
- Select the parameter [Quite Mode] with the rotary switch.
- Confirm the changes with a brief push of the rotary switch.
→ The setting for the parameter is displayed.
- Setting parameters
 - Parameter [Quite Mode] = 0: Deactivated
 - Parameter [Quite Mode] = 1: Permanently activated
 - Parameter [Quite Mode] = 2: Only activated at night
- Confirm the changes with a brief push of the rotary switch.
→ Change has been accepted. Jump back to previous display.

More detailed explanations and possible setting values for this function can be seen in chapter 5.2.2.

3.4.11 SMART GRID



WARNING!

There is a danger of scalding at target hot water temperatures over 60°C. This is possible as the electric utilities company (EVU) is entitled to control the electricity consumption optimally in accordance with supply and demand in the SMART GRID regulations.

Due to the forced charging, the target hot water temperature in the hot water storage tank can reach over 60°C.

This storage tank charging even takes place when the "Standby" operating mode is set.

- Fit a scald-protection in the hot water distributor line (e.g. VTA32 + Screw connection set 1").

You will need a special electric meter with an SG receiver for this function, and the Daikin Altherma EHS(X/H) must be connected to it.

As soon as the function is activated by the parameter [SMART GRID] = 1, the heat pump is moved to the standby, normal or hot water operating mode, depending on the signal provided by the energy supply company.

The SG signals and operating status conditions are differentiated as follows:

Signal		Cost of electricity	Effect on	
EVU	SG		Hot water	Heating
1	0	None	No operating mode ¹⁾	No operating mode ¹⁾
0	0	Normal	Normal operating mode	Normal operating mode
0	1	Low	The switch-on recommendation and set value storage tank temperature is increased, depending on the parameter "Mode SG"	The switch-on recommendation and in-flow target temperature are increased depending on the parameter "Mode SG"
1	1	Very Low	Switch-on command and set value of storage tank temperature is set to 80 °C	Switch-on command for storage tank charging

1) No frost-protection function (see section 3.6.5).

Tab. 3-10 Utilisation of the SG signal

More detailed explanations and possible setting values for this function can be seen in chapter 5.2.1.

3.5 Special functions

In the **"Special Level"** we can carry out various functions that are usually used by the heating expert.

The following special functions are possible:

- Manual mode (see section 3.5.1)
- Message display (see chapter 6)
- Resetting to factory settings (see section 3.6.12)

More detailed explanations of these functions can be found in chapter 5.11.



The call-up of special functions does not depend on the setting on the rotary switch.

- Depress the exit button for at least 5 s.
→ Menu **"Special Level"** is displayed.
- Select the programme to be started with the rotary switch.
- Confirm the changes with a brief push of the rotary switch.
→ The selected programme starts.
- Cancellation and jump back by:
 - pushing the exit button again, or
 - briefly actuating the rotary switch or
 - selecting a different menu using the rotary switch.

3.5.1 Manual Operation

Manual Operation serves to regulate the Daikin Altherma EHS(X/H) manually to a specific flow temperature. The manual mode should only be used for diagnostic purposes.

With hydraulically controlled priority operation for the hot water generation you must make sure that the inflow target temperature set in manual mode is adequate to achieve the stored hot water set temperature (parameter [T-DHW Setpoint 1]).

- Depress the exit button for at least 5 s.
→ Menu **"Special Level"** is displayed.
- Select the programme **"Manual Operation"** with the rotary switch.
- Confirm the changes with a brief push of the rotary switch.
→ **"Manual Operation"** active.
- Set the inflow target temperature with the rotary switch.



Do **not** confirm the setting with the **rotary switch**, as this will end the programme.

→ During active manual mode the hot water is consistently regulated to the parameter value for the first target hot water temperature ([T-DHW Setpoint 1]).

- Cancellation and jump back by:
 - pushing the exit button again, or
 - briefly actuating the rotary switch or
 - selecting a different menu using the rotary switch.
- When the manual mode is ended, the Control RoCon HP automatically switches to the operating mode **"Standby"**.

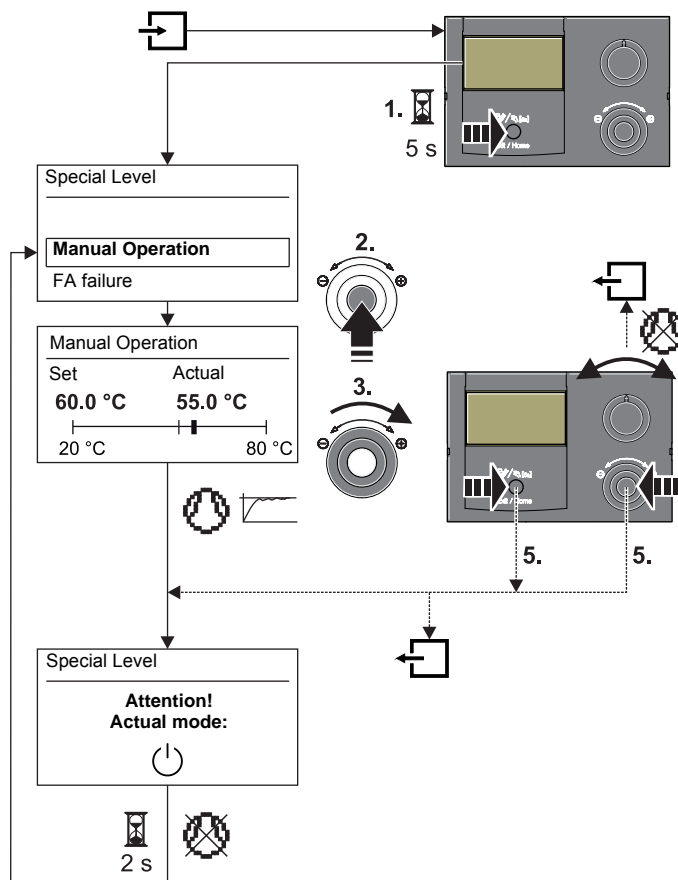


Fig. 3-11 Symbolic brief instructions for manual mode

3 Operation

3.6 Special system settings

The Control RoCon HP already has the basic configuration for the Daikin Altherma EHS(X/H). However, it needs to be adapted to the optionally connected accessories and the installation environment during initial commissioning.

Adaptation is carried out via the setting of parameters in the rotary switch setting **"Configuration"**.

Navigating with the rotary switch accesses either the next deeper level or directly to the appropriate parameter.

3.6.1 Access Rights (Technician password)

Certain settings are restricted by Control access rights. In order to gain access to these setting values (parameters) you need to enter the expert "Setup" code in the level.

The fig. 3-12 shows the fundamental procedure for entering the access code. The expert code will be advised to the expert company in a separate letter.

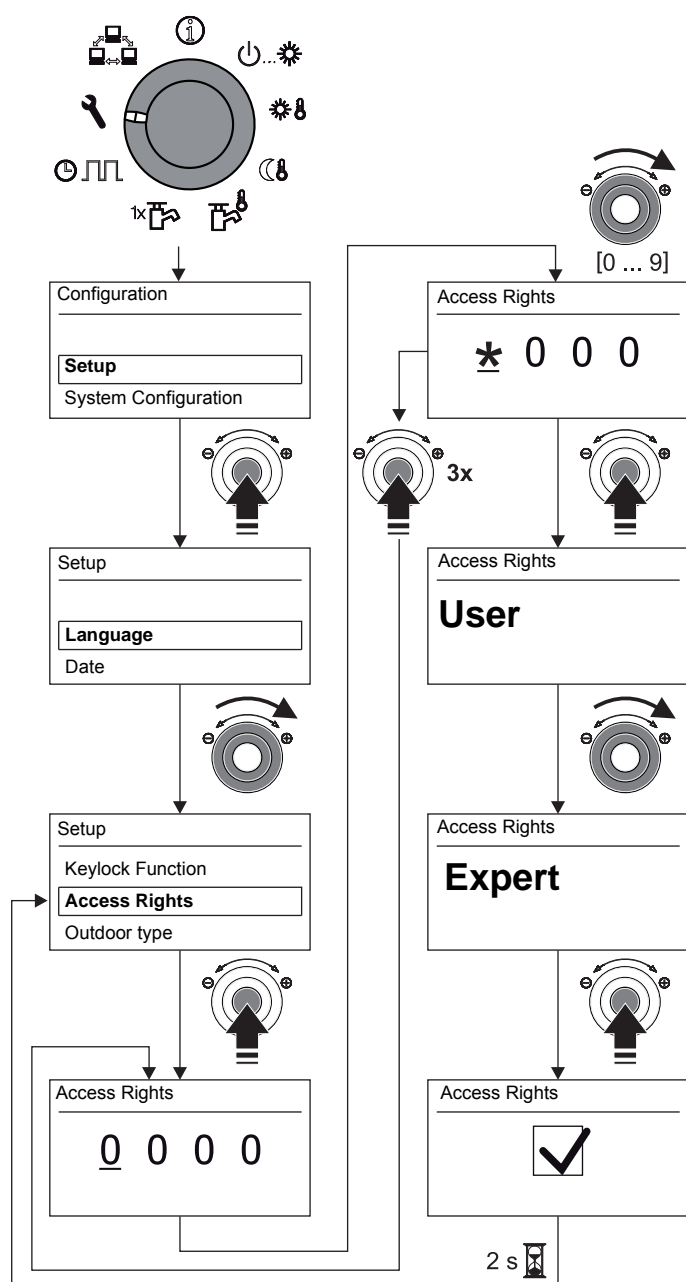


Fig. 3-12 Entering the access code

3.6.2 Heat curve



Caution - danger of overheating with underfloor heating!

In the event of a fault, or in hand mode, damage may be caused to the screed, the structure of the floor and the underfloor heating system by overheating.

- Before initial commissioning of the underfloor heating system, set the maximum permissible system temperature Control RoCon HP (parameter [T vbh1 max]) in the maximum temperature limit in the Control RoCon HP (parameter [Max T-Flow]).
- Connect the overheat protection switch (customer) on the "EXT" plug connection to the external operating mode switch so that the Daikin Altherma EHS(X/H) is in operating mode "Standby" or "Summer" (see section 3.4.2). In parameter [Room thermostat] = On or parameter [Interlink fct] = On, the overheat protection switch must be connected so that the switching contact of the room thermostat is interrupted.
- If the underfloor heating system is also used for room cooling, the connection notes from the previous section are also valid for the connection of a customer-provided humidity protection switch.

With the heating characteristic curve, the inflow target temperature is adjusted to building conditions in accordance with the relevant external temperature (weather-controlled flow temperature regulation, see section 3.6.4). Generally speaking, the steepness of the heating characteristics describes the ratio of the flow temperature change to the external temperature change.

The heating characteristic curve applies within the minimum and maximum temperature limits that have been set for the corresponding heating circuit. The room temperature measured in the living area may differ from the desired room temperature; these deviations can be kept to a minimum by installing a room station or a room thermostat.

The **Control** is **set in the factory** so that the **heating curve does not adjust itself** during operation.

The **automatic heat curve adaptation** can be activated (parameter [HC Adaption]) if the **room station** (EHS157034) is **connected** (see chapter 3.6.4).

Starting conditions for the automatic heating curve adjustment:

- Outdoor temperature $< 8^{\circ}\text{C}$
- Operating mode is automatic (I or II)
- Duration of setback phase at least 6 hours

If an **automatic heat curve adjustment** is not activated, the heat curve can be set **manually** by adjusting the parameter **[Heat-Slope]**.



Manually adapting the heating curve

Do not make any corrections to the set values for 1 - 2 days, and then only make them in small increments.

- Deactivate additional heat sources (e.g. fireplaces, direct solar radiation, open windows).
- Fully open any existing radiator thermostat valves or setting drives.
- Activate the operating mode "Heating".
Approximate setting values:
 - Radiator: 1.4 to 1.6.
 - Underfloor heating system: 0.5 to 0.9.

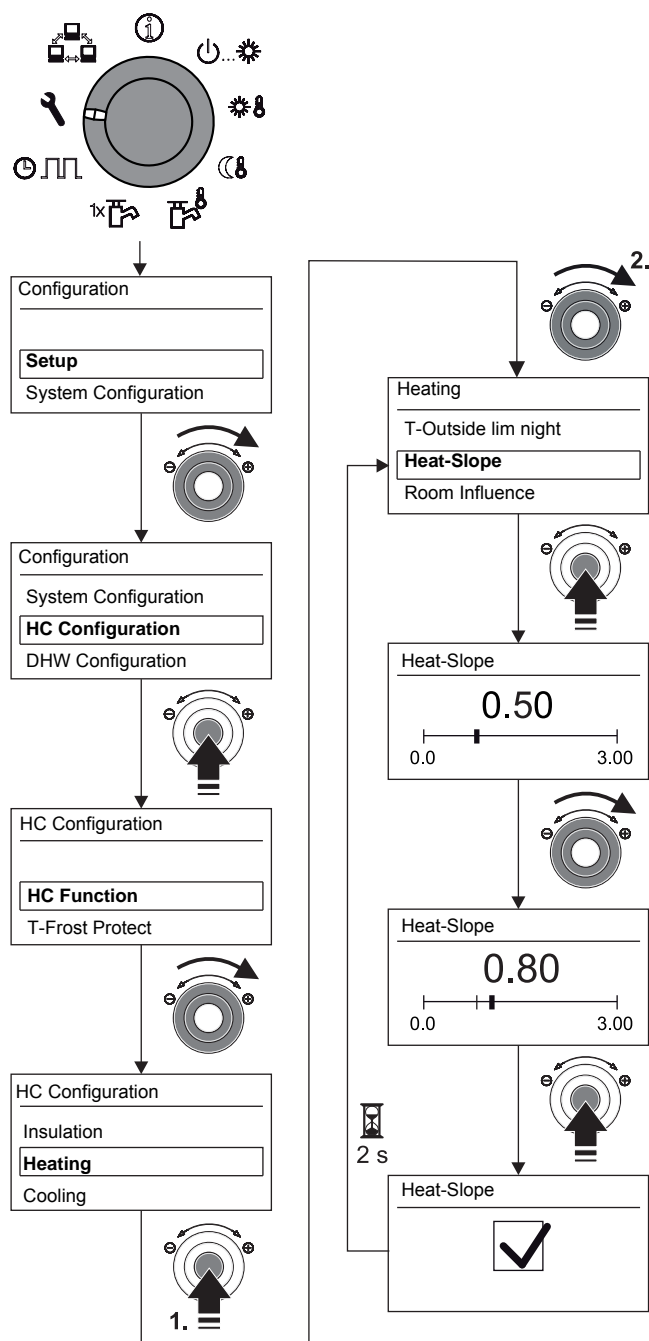
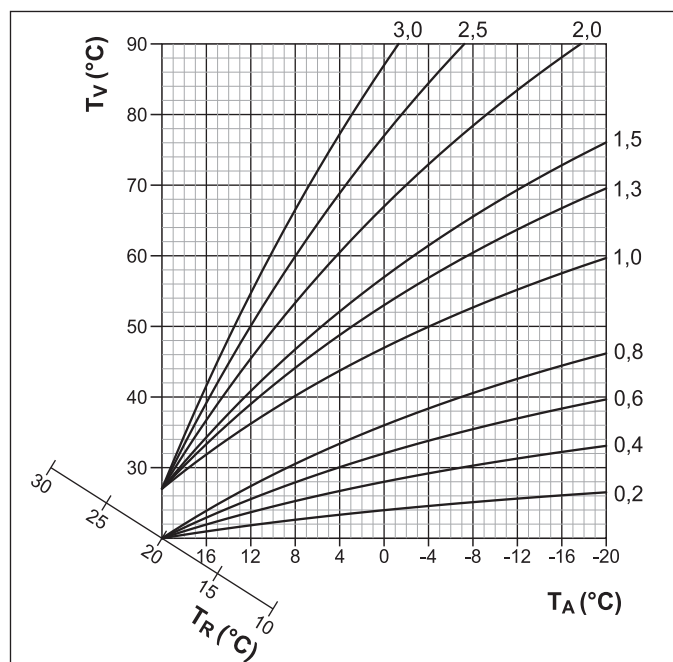


Fig. 3-13 Manual setting of the heat curve (shown for "User" access rights)



T_A External temperature T_V Flow temperature
 T_R Room temperature set value

Fig. 3-14 Heat curves

More detailed explanations and possible setting values for this function can be seen in chapter 5.2.

3.6.3 Cooling characteristic curve



Caution! - risk of condensation!

In the event of a fault or wrong setting of parameters, damage may be caused to the screed, the structure of the floor and the underfloor heating system by condensation.

- Before initial commissioning and activation of cooling operation, set the maximum permissible system temperature in the minimum temperature limit in the Control RoCon HP (parameter [Min T-Flow Cooling]).

With the cooling characteristic curve, the inflow target temperature is adjusted to building conditions in accordance with the relevant external temperature (weather-controlled flow temperature regulation, see section 3.6.4). Warmer outdoor temperatures result in a colder inflow target temperature and vice versa.

Conditions for cooling operation:

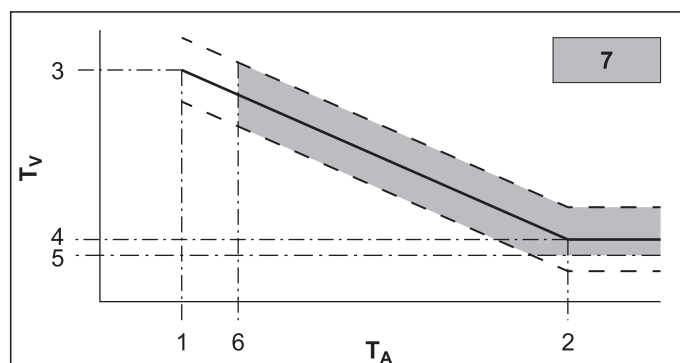
- Outside temperature > Target room temperature setting
- Outside temperature > [Start T-Out Cooling] parameter setting
- Operating mode "Cooling" activated.
 - with the rotary switch in the position "Operating Mode" or
 - via the room thermostat function (cooling switching contact closed)
- No heating demand active in the heating system.

The cooling characteristic curve is specified using the following four parameters:

- [Start T-Out Cooling]
- [Max T-Out Cooling]
- [T-Flow Cooling start]
- [T-Flow Cooling max]

3 Operation

During the weather-controlled flow temperature regulation, the user can adjust the inflow target temperature using the parameter [Cooling Setpoint adj] by a maximum of 5°C up or down. The lower temperature limit is limited by the parameter [Min T-Flow Cooling].



1	Parameter [Start T-Out Cooling]	T_A	External temperature
2	Parameter [Max T-Out Cooling]	T_V	Flow temperature
3	Parameter [T-Flow Cooling start]	—	Cooling characteristic curve
4	Parameter [T-Flow Cooling max]	---	Possible parallel displacement of the cooling characteristic curve
5	Parameter [Min T-Flow Cooling]		
6	Target room temperature		
7	Cooling operation possible		

Fig. 3-15 Parameter-dependency of characteristic cooling curve

More detailed explanations and possible setting values for this function can be seen in chapter 5.2.3.

3.6.4 Weather-controlled flow temperature regulation

If the weather-controlled flow temperature regulation is active, the inflow target temperature (see info parameter [T-HS Setpoint], chapter 5.10) is determined automatically in accordance with the set heating/cooling curve depending on the outside temperature.

The weather-controlled flow temperature regulation can be optimised with the **RoCon OT1** optional external temperature probe which can be installed on the north face of the building. If no **RoCon OT1** is installed, the Control RoCon HP uses the value for the outside temperature measured in the exterior heat pump unit.

If the room station (**EHS157034**) is additionally connected to the Daikin Altherma EHS(X/H), the inflow target temperatures will be controlled dependent on the weather and room temperature (see tab. 5-3 / tab. 5-16, parameter [Room Influence]). Activation and deactivation of this function takes place via the parameter [HC Function] in the rotary switch position "**Configuration**" in level "HC Configuration".

- Parameter [HC Function] = 0: Weather-controlled flow temperature regulation
- Parameter [HC Function] = 1: Regulation according to fixed inflow target temperature
 - In heating mode: Parameter [T-Flow Day] or parameter [T-Flow Night]
 - In cooling mode: Parameter [T-Flow Cooling]

If a mixer module (M1) is connected

The setting of the heating/cooling curve and the activation of the weather-based infeed temperature regulation for the assigned heating circuit is performed in the same way as described above.

There is the option of operating the assigned heating circuit as a

a) Mixer extension

The outside temperature determined by the outside temperature sensor connected to the Daikin Altherma EHS(X/H) is transmitted to the mixer module via the CAN bus.

or as


b) Mixer extension with zone regulation

A separate outside temperature sensor (**RoCon OT1**) must be connected to the mixer module. The assigned heating circuit is regulated by the relevant outside temperature for this zone.

When the terminal function is activated, the mixer module is operated via the Control RoCon HP of the Daikin Altherma EHS(X/H), and the settings for the assigned heating circuit are performed.

In connection with the EHS157034 room station, the mixer module can also autonomously control the assigned heating circuit, fully independently of the Daikin Altherma EHS(X/H).



If the message "n. A." is displayed at the rotary switch setting , the control unit has yet to be assigned a valid terminal address.

If the message "n. A." is still displayed it may be necessary to update the device software before the terminal function can be used. Contact the Daikin Service Team for this.

More detailed explanations and possible setting values for this function can be seen in chapters 5.2.3 and 5.13.2.

3.6.5 Frost protection function

If the outdoor temperature is below the parameter value [T-Frost Protect], the integrated heating circulation pump is switched on in order to prevent the heating system from freezing.

In addition, the inflow, storage tank and connected room temperature sensors are continually monitored. If the temperature measured by any of these sensors drops below 7°C (in the case of room temperature: 5°C), the frost protection function is automatically activated.

When the frost protection function is active, the Control RoCon HP standard display shows the  symbol alongside the time.

If the inflow heating temperature drops below 7°C, the Daikin Altherma EHS(X/H) heats up until the temperature reaches at least 12°C once more.

The function ceases once the outside temperature has risen to the set parameter value [T-Frost Protect] + 1 K is reached and there are no other activation conditions present.



Off-peak tariff activated;

- parameter [HT/NT Function] = 3
- or

parameter [SMART GRID] = 1, the heat pump operation can be completely switched off by the energy supply company for a limited period of time. In such cases, no additional heating is carried out and the internal device heating circulation pump are not switched on, even in frost-protection conditions.

These situations can be recognised as the "Overview" information level (see section 3.4.1) in the operating data field "Ext" displays the value "HT" or "SG1".

3.6.6 Interlink function

**Caution!**

Incorrect flow temperatures can result in damage to the underfloor heating system or the build-up of condensation on cooling surfaces.

- Limit infeed target temperatures to suitable ranges.
- Heat distribution areas with different design temperatures should be installed as hydraulically separate heating circuits. Heating circuits with limited infeed target temperatures should possibly be installed as mixing circuits controlled by mixer modules.

Setting of the parameter [Interlink fct] = On offers the possibility of the Daikin Altherma EHS(X/H) integrating two different infeed target temperatures into the control system.

This applies both to a weather-controlled controller and a controller using a fixed inflow target temperature (see section 3.6.4).

A possible use for this might be the additional integration of a FWXV(15/20)AVEB in a surface heating and cooling system.

Requirement: 2 switching contacts (e.g. room thermostats) need to be connected to plug connection J16 on the Daikin Altherma EHS(X/H).

- Parameter [Interlink fct] = Off: Deactivated
- Parameter [Interlink fct] = On: Evaluation of and cooling switching contacts at plug connection J16 on the RoCon BM1 circuit board.
Activation of cooling mode only possible by changing operating mode to "Cooling" (see section 3.4.2).
Setting for the parameter [Room thermostat] no longer evaluated.
 - a) Open switching contacts: Only frost protection active.
 - b) Operating modes "Heating" or "Automatic 1" / "Automatic 2" active during switching cycles in day mode.
 - Closed switching contact heating = IL1:
➔ The system operates according to the normal infeed target temperature according to the parameter settings in "HC Configuration" > "Heating".
 - Closed switching contact cooling = IL2:
➔ The system operates according to the increased inflow target temperature (normal inflow target temperature + value of parameter [T-Flow CH adj]). Priority if both switching contacts are closed.
 - c) "Cooling" operating mode active.
 - Closed switching contact heating = IL1:
➔ The system operates according to the normal infeed target temperature according to the parameter settings in "HC Configuration" > "Cooling".
 - Closed switching contact cooling = IL2:
➔ The system operates according to the reduced inflow target temperature (normal inflow target temperature - value of parameter [T-Flow Cooling adj]). Priority if both switching contacts are closed.

More detailed explanations and possible setting values for this function can be seen in chapter 5.2.1.

3.6.7 Additional heat generator

Adjustment of the [Function Heating Rod] sets whether and which additional heat generators (WEZ) are available for domestic hot water generation and heating support.

- 0: No additional WEZ
- 1: Optional backup heater EKBUxx (connected via XBUH1 plug)
- 2: Alternative WEZ takes over the hot water generation and heating support. Upon demand by the WEZ, relay K3 on the RTX-EHS circuit board is switched on (see fig. 3-16).
- 3: Alternative WEZ 1 (optional backup heater EKBUxx) takes over hot water generation and alternative WEZ 2 takes over heating support. Upon demand by WEZ 1 and WEZ 2, relay K3 and relay K1 respectively on the RTX-EHS circuit board are switched on (see fig. 3-16). Observe warning signs!

The operation of additional heat generators are also influenced by the parameters [Equilibrium Func.] (see chapter 5.2.1) and [Equilibrium Temp] (see chapter 5.2.2).

The heat supplied by an alternative heat generator must be added to the unpressurised storage tank water in the Daikin Altherma EHS(X/H) hot water storage tank.

- In the case of the optional backup heater EKBUxx, this is managed by the construction.
- In the case of using an external heat generator (e.g. gas or oil boiler) this can be integrated hydraulically
 - a) Unpressurised via connections (solar infeed and solar return) of the hot water tank.
 - or
 - b) In device types Daikin Altherma EHS(X/H) B, via the integrated solar pressure heat exchanger.

3 Operation

Electrical connections to settings 2 and 3 of the parameter [Function Heating Rod]

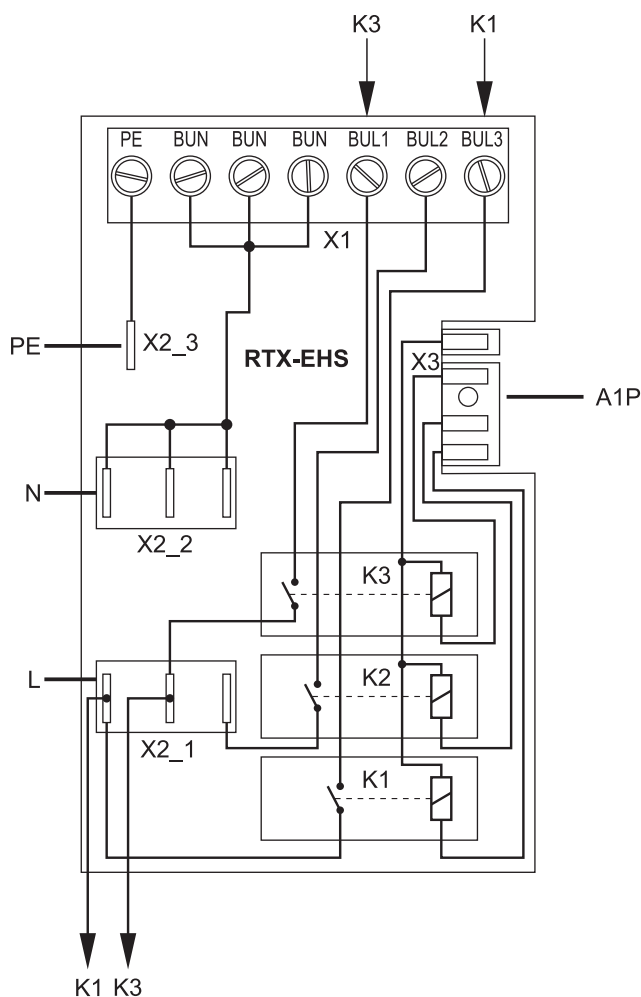


Caution!

Risk of voltage arcing.

- The connections on the RTX-EHS circuit board must not be used for switching the mains voltage (~230 V) and protective low voltage (SELV = "Safety Extra Low Voltage") at the same time.

Demand from an alternative heat generator is switched to the RTX-EHS circuit board via a relay (see fig. 3-16).



A1P Circuit board (basic control of the heat pump)

K1/2/3

Relay for backup heater

L Phase

N Neutral

PE Protective earth conductor

RTX-EHS

Switch board (backup heater)

X1 Terminal block for mains connection to backup heater

X2_1/2/3

Internal cabling

X3 Plug connection internal cabling to RTX-AL4 circuit board

Fig. 3-16 Connections on RTX-EHS circuit board

The switching contacts can be connected as

- Potential-free control contacts
- Power supply for alternative heat generator (~230 V, maximum load 3,000 W)

Connection X1 is a screw terminal. Isolated 6.3 x 0.8 mm push-on receptacles are required for connections X2_1/2/3.

The correct electrical connection for the alternative heat generator must be taken from the device installation instructions.

More detailed explanations and possible setting values for this function can be seen in chapter 5.2.1.

3.6.8 Heating support

If the heating support function (parameter [HZU] = On) is activated, the energy in the Daikin Altherma EHS(X/H) integrated storage tank is used to take over the heating function. At a sufficiently high storage tank temperature, the heat pump (refrigerant circuit) remains out of use.

The minimum value (T_{HZUmin}) is calculated as follows:

T_{HZUmin} = current active target hot water temperature [T-DHW Setpoint] + parameter [TDiff-DHW CH Support].

Switch-on condition:

$T_{dhw} > T_{HZUmin} + 4 \text{ K}$ and $T_{dhw} > \text{info parameter [T-HS Setpoint]} + 1 \text{ K}$

If the switch-on condition is fulfilled, heat is taken from the storage tank for the heating system.

Switch-off condition:

$T_{dhw} < T_{HZUmin}$ or $T_{dhw} < \text{info parameter [T-HS Setpoint]}$ (see section 3.6.4)

If the switch-off condition is fulfilled, the heating support is stopped in the domestic hot water storage tank and the heat pump takes over the heating operation.

Parameter [Power BIV] limits the maximum power which can be removed. Parameter [T vbh1 max] limits the maximum temperature which the heating system can reach.

More detailed explanations and possible setting values for this function can be seen in chapter 5.2.2.

3.6.9 Special function: Switching contacts

Setting the parameter [AUX Fct] changes the switching conditions for the AUX switching contact (toggle switch output A). This switching contact can be used, for example, to control an external heat generator.

If one of the switching conditions is fulfilled, the potential-free switching contact changes over after the time set in the parameter [AUX time] has passed.

AUX switching contact (toggle switch output A) is not switched if setting =

0: Function deactivated.

AUX switching contact (toggle switch output A) is switched if setting =

- When storage tank temperature (T_{dhw}) \geq value of parameter [T-DHW 1 min].
- When there is a cooling or heating demand.
- When there is a hot water demand to the heat pump or the configured backup heater is required for heating support.
- When there is a malfunction.
- When sensor value (TVBH) $> 60^\circ\text{C}$.
- When the outdoor temperature $<$ parameter value [Equilibrium Temp].

➔ Heat pump continues to operate = parallel bivalence operation.

7: When the outdoor temperature < parameter value [Equilibrium Temp] + there is a heating or hot water demand.

➔ Heat pump does not continue to operate = alternative bivalence operation.

8: When there is a hot water demand.

9: When outside temperature < parameter [Equilibrium Temp] + heat demand "Room heating" (not for hot water demand).

Heat pump no longer operates in room heating mode below the value set in parameter [Equilibrium Temp] - only in hot water mode.

The potential-free **AUX switching contact** (switching output B) always closes if the heat pump is in "Cooling" mode.

More detailed explanations and possible setting values for this function can be seen in chapter 5.2.2.

3.6.10 Air Purge

By activating the Air Purge the RoCon HP Control starts a defined sequence program with Start-Stop operation of the integrated heat circulation pump and various settings for the 3-way diverter valve integrated into the Daikin Altherma EHS(X/H).

Existing air can leak from the automatic venting valve during the Air Purge and the heating circuit connected to the Daikin Altherma EHS(X/H) is evacuated.



The activation of this function does not replace the correct venting of the heating circuit.

Prior to activating this function, the heating circuit must be completely filled.

1. Enter the expert code (see section 3.6.1).
➔ The **"Setup"** level is displayed after entering.
2. Select the **[Air Purge]** parameter using the rotary switch.
3. Confirm the changes with a brief push of the rotary switch.
➔ The setting for the parameter is displayed.
4. Using the rotary switch, set the parameter for the function to **"On"** and confirm by pressing it quickly.
➔ **"Air Purge"** starts (3-way diverter valves into middle position, heating circulation pump modulated - see fig. 3-17).
➔ After the programme is completed (approx. 10 min), the Daikin Altherma EHS(X/H) switches to "Standby" operating mode.

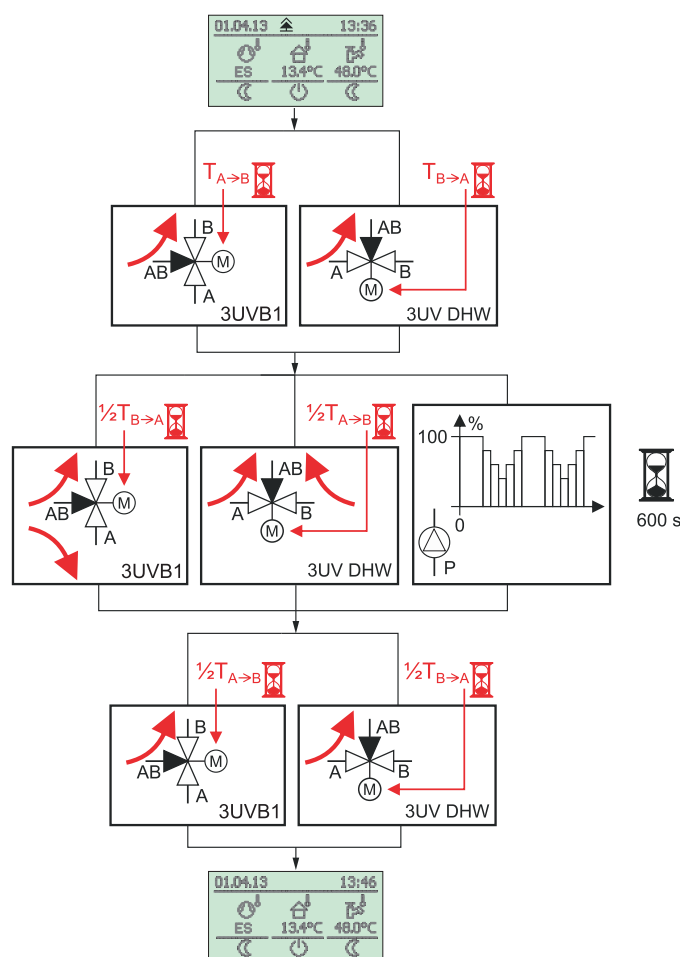


Fig. 3-17 Air Purge procedure

5. Place the rotary switch in the **"Operating Mode"** position and set the desired operating mode (see section 3.4).

More detailed explanations and possible setting values for this function can be seen in chapter 5.2.1.

3.6.11 Legionella protection



WARNING!

There is a danger of scalding at target hot water temperatures over 60°C. This is possible when solar energy is used and when legionella protection or SMART GRID is activated or when the domestic hot water target temperature is set higher than 60°C.

- Fit a scald-protection in the hot water distributor line (e.g. VTA32 + Screw connection set 1").

This function serves to prevent bacterial contamination in the hot water storage tank. For accurate controllers for drinking water hygiene, refer to the national provisions.



The legionella protection function in the Daikin Altherma EHS(X/H) is deactivated when leaving the factory as the possibility of bacterial contamination is very low:

- Low volume of heat exchanger (stainless steel) used for heating drinking water.
- Frequent complete water replacement "first-in-first-out".
- No stagnant water areas in drinking water storage.


3 Operation

An active legionella protection function (parameter [Anti-Le-gionella day]) involves heating the connected storage tank to a disinfection temperature 1 x a day or 1 x a week. The legionella protection function is active for an hour.



The maximum hot water temperature set by the user or the heating technician is ignored when hot water is heated for disinfection purposes.

A connected circulation pump is automatically switched on during thermal disinfection.

Setting the parameters for legionella protection is carried out in the rotary switch setting **"Configuration"**  in level **"DHW Configuration"**.

Using the factory settings, the storage tank is heated at 03:30 hours if the target hot water temperature is below 65 °C at that time.

More detailed explanations and possible setting values for this function can be seen in chapter 5.2.4.

3.6.12 Reset to factory settings (Reset)

If the Daikin Altherma EHS(X/H) no longer works properly and any other cause for the malfunction cannot be detected, it may be helpful to reset all the controller settings to the factory settings. There are 3 options for this.

Option 1

User access rights allow the **switching time program** in the "Special Level" to be reset to the factory setting according to tab. 3-9.

1. Press the exit button for at least 5 s.
➔ Menu **"Special Level"** is displayed.
2. Select the programme **"Timeprog Reset"** with the rotary switch.
3. Execute the programme by briefly pressing on the rotary switch.
➔ The respective values are reset to the factory setting.
4. Select **"Return"** with the rotary switch.
5. Confirm the changes with a brief push of the rotary switch.


Possibility 2

Technician access rights permit all **customer-specific parameter settings** in the "Special Level" to be reset to the factory setting according to tab. 5-1 to tab. 5-11.

1. Enter the expert code (see section 3.6.1).
➔ The **"Setup"** level is displayed after entering.
2. Press the exit button for at least 5 s.
➔ Menu **"Special Level"** is displayed.
3. Select the programme **"Reset?"** with the rotary switch.
4. Execute the programme by briefly pressing on the rotary switch.
➔ The respective values are reset to the factory setting.
5. Select **"Return"** with the rotary switch.
6. Confirm the changes with a brief push of the rotary switch.

Possibility 3

If fundamental changes to the Daikin Altherma EHS(X/H) equipment for the function within the RoCon system are necessary, the **Basic Configuration** can be reset using **Technician access rights** to the **factory settings** or can be redefined.

1. Enter the expert code (see section 3.6.1).
➔ The **"Setup"** level is displayed after entering.
2. Select the **"System Config"** level with the rotary switch.
3. Confirm the changes with a brief push of the rotary switch.
➔ An overview is displayed.
4. Select the programme **"Delete"** with the rotary switch.
5. Confirm the changes with a brief push of the rotary switch.
➔ Restart of the Daikin Altherma EHS(X/H) is performed.
➔ The message "No Basic Configuration" is displayed.
6. Place the rotary switch in the **"Info"**  position.
➔ The message "Basic Configuration Not Set" is displayed.
7. There is now the facility either to select manual mode for the equipment individually (a) or to load the factory settings automatically (b).
 - a) Press the rotary switch briefly.
➔ A parameter overview is displayed at the level **"Basic Configuration"** and the settings can be performed manually as desired according to tab. 5-14.
 - b) Turn the Daikin Altherma EHS(X/H) off and restart it.
➔ After the has restarted the question will be Daikin Altherma EHS(X/H) posed whether the standard configuration should be used. If it is confirmed with **"Yes"**, the preset **basic configuration is loaded**. If the answer given is **"No"** the settings must be performed manually, **see a)**.

More detailed explanations and possible setting values for this function can be seen in chapter 5.12.



After a reset to the factory settings via option 2 or 3, the system must be configured again by the heating technician to the installation environment and all the customer-specific parameters reset.

3.6.13 Screed Program

The Screed Program is intended exclusively for specified drying of newly created screed in underfloor heating systems. This operates the heat generator for several days according to a predefined temperature profile (the predefined temperature profile is based on the recommendations of the Bundesverbandes Flächenheizungen (Federal Association of Surface Heating Systems) for heating to cure the floor).

The temperatures and the duration of the Screed Program can be adjusted as required, after entering the expert code, in the rotary switch setting "**Configuration**" in the level "**HC Configuration**" in the parameter [Screed Program].

The **Screed Program** is a special function and is not interrupted by any other operating mode. It can be activated **only** by the **heating expert** for the **direct heating circuit** and/or the optionally connected mixed heating circuits. Each heating circuit must be separately activated.

i Prior to start of the Screed Program, the parameters [Interlink fct] and [Room thermostat] must have been deactivated.

In the event of a brief power failure the system continues with a previously activated screed function in place of shutting down.

After activation of the Screed Program (parameter [Screed] = On) all the weather-controlled regulating functions of the relevant heating circuit are switched off. The relevant heating circuit operates independently of the operating mode (switching times) as a constant temperature regulator.

An already started Screed Program can be deactivated at any time. At the end of Screed Programs the screed function the parameter is automatically set to "Off" and the heating circuit once again operates according to the currently set operating mode.

Function heating

Function heating verifies that the installation is fault-free for the heating engineer. A pre-prepared heating up protocol for Daikin underfloor heating can be found in the Daikin Internet portal.

In this case, function heating (identical with "Heating up" in EN 1264, section 5.2) does not constitute a heating up process for drying and curing. Normally you need to carry out separate heating process to cure the floor and/or perform mechanical drying.

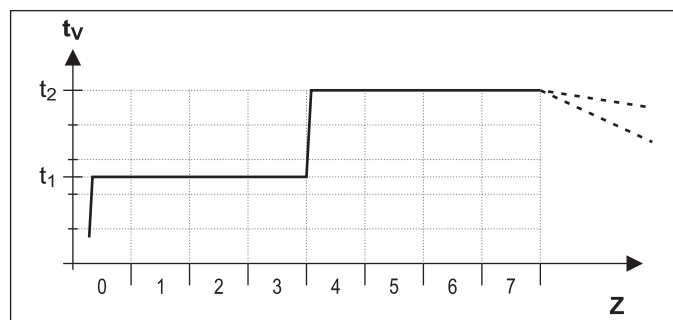
Heating up should be carried out no earlier than after 21 days for cement screed, and no earlier than after 7 days for anhydrite screed in accordance with the details provided by the manufacturer. The first heating up starts at a feed temperature of 25°C, which must be maintained for a period of 3 days. Then heating is carried out at the maximum flow temperature set for the heating circuit (limited to max. 55°C) and this is then held for a further 4 days.

After the heating up process described, there is no guarantee that the screed has achieved the moisture content required to cure the floor.

You must determine the moisture content in the screed by measurement before laying the floor covering.

i Procedure in accordance with EN 1264 Part 4:
The heating circuits must be checked for leaks by a water pressure test once the anhydrite and cement screeds are completed. The absence of leaks must be ensured immediately before and during screed laying. The level of the test pressure is at least 1.3 times the maximum permissible operating pressure.

If there is a danger of freezing up, you must take suitable measures, e.g. the use of antifreeze or temperature control in the building. If antifreeze is no longer required for intended use of the installation, you must remove the antifreeze by draining it out and flushing the installation with at least 3 changes of water.



- t_1 Starting temperature 25°C
- t_2 Maximum heating circuit temperature
- t_v Flow temperature
- Z Duration of screed function, in days, after function start

Fig. 3-18 Sequence of timings of the Screed Program for function heating

Ready-to-apply heating

The drying out procedure for the screed cannot be predicted exactly in advance. At higher humidity levels in the air this can come to a complete stop under certain circumstances stop under certain circumstances. The drying out process may be accelerated by running the underfloor heating (curing heating) or by using measures such as mechanical drying.

Every curing heating process must be commissioned, separately by the building owner as an extra service in accordance with VOB. For the flooring contractor to achieve fault-free installation, the flooring must be properly cured before work is started on the top flooring layer.

The standard settings can be used to activate the combined function and curing heating programme in order to achieve a residual moisture level in the screed required for curing the floor (see fig. 3-19). The residual moisture level in the screed must, however, always be checked by measurement before the floor covering is laid.

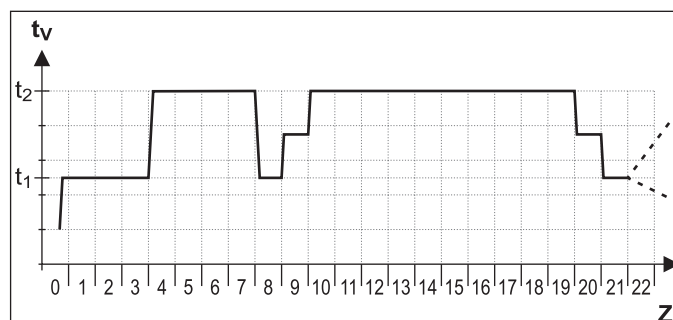


Fig. 3-19 The time sequence of the Screed Program in combined function and curing heating (for legend see fig. 3-18)

More detailed explanations and possible setting values for this function can be seen in chapters 5.2.3 and 5.13.2.

3 Operation

Screed Program setting and starting

The Screed Program contains factory-set specifications which can, however, be individually adapted.

Screed Program The day on which the screed function is activated does not count towards the runtime of the screed programme. The 1st. The day begins with the change of the day at 00:00. On the day of activation we heat the remaining time at the programme of the first day.

- Enter the expert code (see section 3.6.1).
→ The "Setup" level is displayed after entering.
- Using the rotary push button, select and check the parameters [Interlink fct] and [Room thermostat] whether they are deactivated (see tab. 5-1).
→ Both parameters must be on "Off" before starting the screed function.
- Press the Exit key briefly.
→ An overview is displayed.
- Select the "HC Configuration" level with the rotary switch.
→ An overview is displayed.
- Select the [Screed Program] parameter using the rotary switch.
- Check the Screed Program settings and adjust to the stipulations provided for the screed by the manufacturer, if necessary (see fig. 3-20).
 - The setting range is always between 0.0 and 65°C.
 - The steps are 1°C.

Day	Factory setting	Day	Factory setting
1 - 3	25°C	10 - 19	55°C
4 - 7	55°C	20	40°C
8	25°C	21	25°C
9	40°C	22 - 26	-

Tab. 3-11 Presettings Screed Program

- Press the Exit key briefly.
→ An overview is displayed.
- Select the "Screed" parameter using the rotary switch.
- Confirm the changes with a brief push of the rotary switch.
→ The setting for the parameter is displayed.
- Using the rotary switch, set the parameter for the function to "On" and confirm by pressing it quickly (see fig. 3-20).
→ Screed Program starts.

After expiry of the Screed Program the Control RoCon HP again operates in the previously set operating mode. Unless configured previously, the following tasks need to be carried out in conclusion.

- When connecting without a room station:
 - Set the heating characteristic curve or the inflow target temperature.
- When connecting with a room station:
 - Activate the room station.
 - Set the heating characteristic curve or the inflow target temperature. If required, activate the parameter [Room Influence] and set the target room temperature.

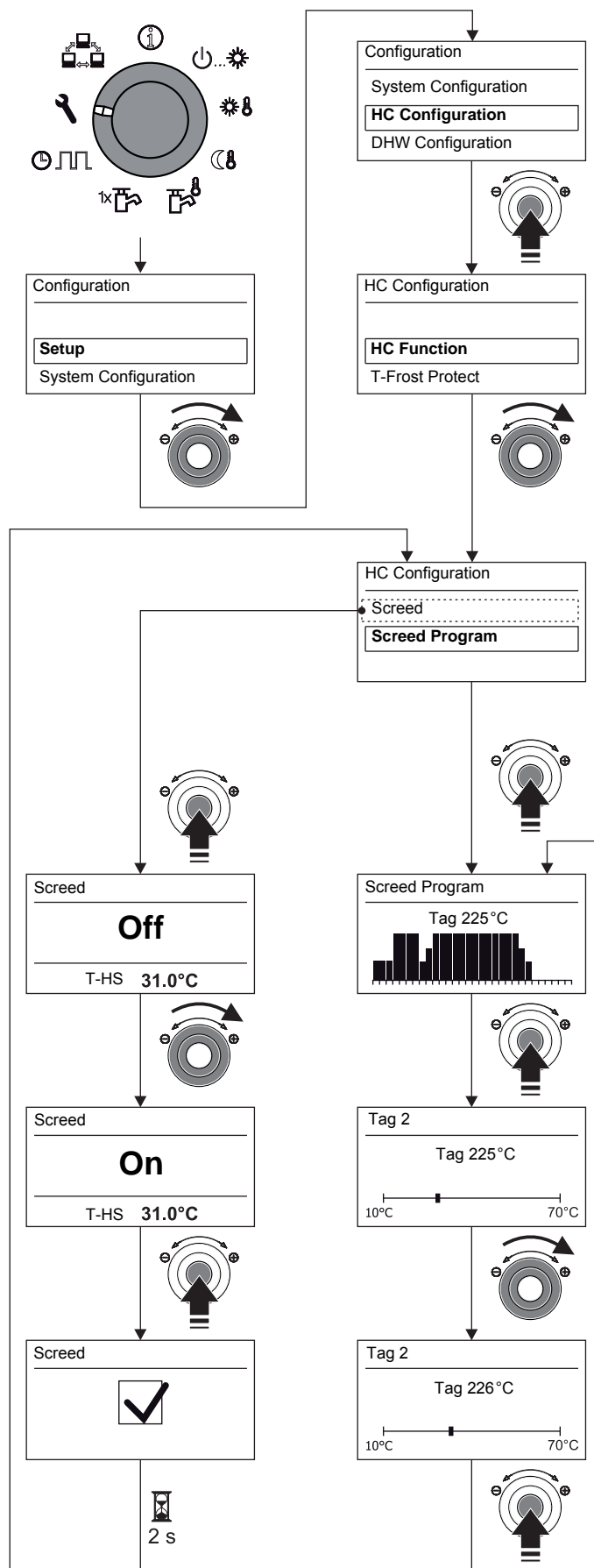


Fig. 3-20 Screed Program Setting

3.6.14 Relay Test

In the event of fault signals, heating problems or in the framework of the annual service, it may be necessary to check the function of internal switching relays.

- Enter the expert code (see section 3.6.1).
→ The "Setup" level is displayed after entering.
- Press the Exit key briefly.
→ The level "Configuration" is displayed.
- Select the "System Configuration" level with the rotary switch.
- Confirm the changes with a brief push of the rotary switch.
→ An overview is displayed.
- Select the parameter [Relay Test] with the rotary switch.
→ All relays are deactivated.
→ The selection list of all relays is displayed (for allocation of relays see chapter 5.2.2).
 - Select the relay to be tested with the rotary switch.
 - Confirm the changes with a brief push of the rotary switch.
→ The relay is activated.
- Cancellation and jump back by:
 - Briefly pressing the exit button or the rotary switch.
 - Selecting a different menu using the rotary switch.

More detailed explanations and possible setting values for this function can be seen in chapter 5.2.2.

3.6.15 Settings for optional circulation pump


To increase convenience when drawing off hot water we can switch an optional circulation pump using the Control RoCon HP.

There are 2 switching possibilities:

- a) Separate timer programme (see section 3.4.7). The circulation pump operates according to its own timer programme.
- b) Together with a hot water timer programme. The circulation pump is actuated in parallel with the operating periods of the hot water timer programme.

Independent of the set timer programme, the energy consumption of the circulation pump can be minimised by operating it on a cyclic basis. The parameter [Circl-Pump Interval] is used to set how long the circulation pump is operated within a 15-minute interval.

Setting the timer programme for the circulation pump

- Place the rotary switch in the "Configuration"  position.
→ An overview is displayed.
- Select the "DHW Configuration" level with the rotary switch.
- Confirm the changes with a brief push of the rotary switch.
→ An overview is displayed.
- Select the parameter to be set with the rotary switch.
 - [Circl-Pump DHW]: Setting as to whether the circulation pump is actuated by the active hot water timer programme [ON] or from a separate timer programme [OFF].
 - [Circl-Pump Interval]: Setting the interval control for an optional circulation pump.
- Confirm the changes with a brief push of the rotary switch.
- Setting parameters
- Confirm the changes with a brief push of the rotary switch.
→ The circulation pump is actuated in accordance with the settings made by the Control RoCon HP.

Possible setting values for this rotary switch setting can be seen in chapter 5.2.4.

3.6.16 Remote control via Internet

Using an optional gateway (EHS157056), the Control RoCon HP can be connected to the internet. This means that the Daikin Altherma EHS(X/H) can be controlled remotely via mobile phone (using an app).

4 Initial start-up

4 Initial start-up



In addition to the commissioning instructions listed in this chapter, the specific commissioning instructions listed in the installation instructions for the Daikin Altherma EHS(X/H) must be complied with.

4.1 Starting up the Daikin Altherma EHS(X/H)

A precondition for initial commissioning is the completion of all preparatory installation work in accordance with the installation and maintenance instructions for the Daikin Altherma EHS(X/H).

- Turn power supply to Daikin Altherma EHS(X/H) on.
 - ➔ After the start phase, the operating language selector is displayed.
- Use the rotary switch to select the desired language.



The operating language can be changed again at any time.

- Confirm the changes with a brief push of the rotary switch.
 - ➔ The Basic Configuration of the RoCon device is loaded.
 - ➔ The message "Starting Up" is displayed.
 - ➔ The message "Initialization" is displayed.
 - ➔ The standard display for the current rotary switch setting is displayed.
- At the RoCon device, adjust the settings to suit the configuration of the heating system (see chapter 3.6).

4.2 Connect the optional RoCon devices and start them up

Instructions for installation can be found in the respective user instructions supplied.

The optional RoCon-devices must be connected to the Daikin Altherma EHS(X/H) using a 4-core CAN bus cable (port J13, see installation instructions for the Daikin Altherma EHS(X/H)).

Daikin recommends screened cables with the following characteristics for this purpose:

- Standard to ISO 11898, UL/CSA type CMX (UL 444)
- PVC outer sheath with flame retardant to IEC 60332-1-2
- Up to 40 m, minimum cross-section area 0.75 mm². For greater lengths, use larger cross-section areas.

Commercially available junction boxes can be used for connection of Can bus lines of several RoCon-devices.

Ensure power cables, sensor cables and data bus cables are laid separately from each other. Use only cable trunking with separate trays or cable trunking with separators that ensure at least 2 cm spacing. Cable crossings are permissible.

The entire RoCon system can have a maximum of 20 devices connected with a total cable length up to 800 m.

4.2.1 Starting up the EHS157068 mixer module


The **EHS157068** mixer module has no control unit of its own. For configuration and operation it must be connected using a CAN bus cable to a RoCon-Control installed in the heat generator or to an EHS157034 room station.



In conjunction with a room station the mixer module can also be operated as a free-standing heating circuit controller.

To operate the mixer module directly via the control panel RoCon B1, the terminal function must be activated (see chapter 3.4.9).



If the message "n. A." is displayed at the rotary switch setting , the control unit has yet to be assigned a valid terminal address.

If the message "n. A." is still displayed it may be necessary to update the device software before the terminal function can be used. Contact the Daikin Service Team for this.

At the address switch (see fig. 4-1) a unique data bus address (≥ 1) must be set for the heating circuit to be controlled by this mixer module. This must be synchronised with the assigned operating element (parameter [HC Assignment]).

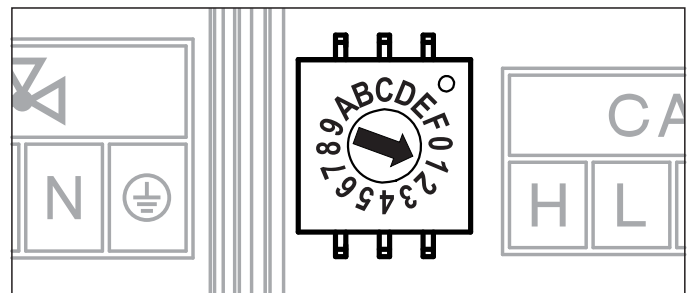
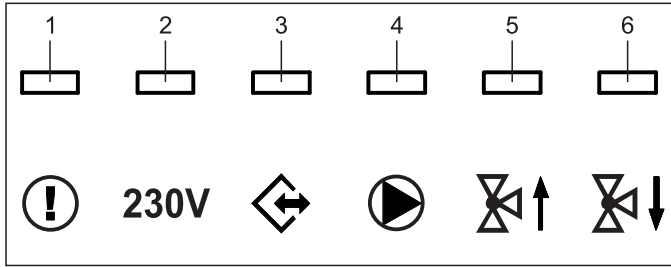


Fig. 4-1 Setting the data bus address for the EHS157068 mixer module

All settings and operating steps for this heating circuit are performed similarly to those for the direct heating circuit. The overview of the available parameters and their settings can be found in chapter 5.13.

The current operating status can be determined directly at the EHS157068 mixer module (see fig. 4-2).



- | | | |
|---|-----------|---|
| 1 | LED red | - Flashing: Internal fault
(the fault code is communicated via the CAN bus to the relevant control unit) |
| 2 | LED green | - To: Display during operation, mixer module switched on |
| 3 | LED green | - To: CAN communication established |
| 4 | LED green | - To: Mixer circuit pump switched on |
| 5 | LED green | - To: Mixer "OPEN" is activated |
| 6 | LED green | - To: Mixer "CLOSED" is activated |

Fig. 4-2 Explanation of symbols for status displays EHS157068


4.2.2 Starting up the EHS157034 room station

The **EHS157034** room station can be used as

- A remotely controlled unit of the Daikin Altherma EHS(X/H),
- A mixer circuit operating unit (as a mixer circuit extension or as a free-standing mixer circuit controller),
- Room thermostat for the Daikin Altherma EHS(X/H),
- Remotely controlled unit for the entire RoCon-system (with terminal function activated).

The room station must be connected using a CAN bus line to a RoCon-Control installed in the Daikin Altherma EHS(X/H) or to an EHS157068 mixer module. No separate mains supply is necessary for the room station.

Procedure for commissioning

- Set the rotary switch on the EHS157034 room station to position **"Info"** .
- Switch on the power to the Daikin Altherma EHS(X/H).
 - ➔ After the start phase, the operating language selector is displayed on the EHS157034 room station.
- Use the rotary switch to select the desired language.



The operating language can be changed again at any time.

- Confirm the changes with a brief push of the rotary switch.
 - ➔ The message "Setup Wizard" is displayed.
- Use the rotary switch to set the desired operating function for the room station.
 - "Living Room": Operating function see a), c), d)
 - "Mixing Valve": Operating function see b)
 - "Solar Module": Currently not available
- ➔ Depending on the application selected, the further configuration is based either A or B in the following sections.

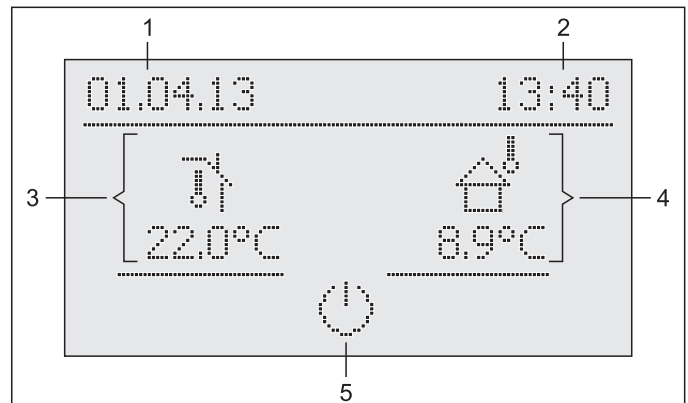


All the operating steps for the assigned heating circuit after initial commissioning are performed similarly to those for the operating element **RoCon B1** of the Daikin Altherma EHS(X/H).

However not all functions (such as manual operation, resetting of faults) of the Daikin Altherma EHS(X/H) can be activated by the room station.

A: Configuration for setting "Living Room"

- Confirm the setting "Living Room" by briefly pressing the rotary switch.
 - ➔ The setting for the [HC Assignment] parameter is displayed.
- Use the rotary switch to select the associated heating circuit in the [HC Assignment] parameter.
- Confirm the changes with a brief push of the rotary switch.
 - ➔ The setting for the [Terminaladdress] parameter is displayed.
- Use the rotary switch to set the [Terminaladdress] parameter. This parameter defines the data bus address of the EHS157034 room station in the selected heating circuit.
- Confirm the changes with a brief push of the rotary switch.
 - ➔ The setting for the [Boiler Assignment] parameter is displayed.
- Use the rotary switch to set the [Boiler Assignment] parameter. This parameter defines the assignment of the EHS157034 room station to a Daikin Altherma EHS(X/H) in the RoCon system.
 - ➔ Standard display is shown (see fig. 4-3).



- | | |
|----------------------------|--|
| 1 Date | 4 Current outside temperature |
| 2 Time | 5 Operating mode active for the assigned heating circuit |
| 3 Current room temperature | |

Fig. 4-3 Standard display EHS157068 - "Living Room"

- ➔ The settings on the EHS157034 room station are only valid for the assigned heating circuit (except in the case of active terminal function).

4 Initial start-up

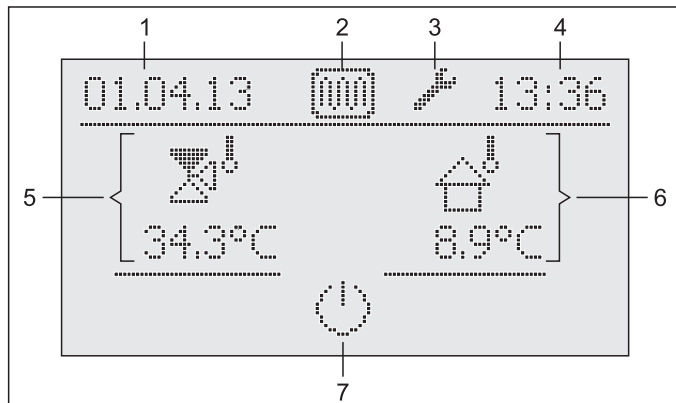
B: Configuration for setting "Mixing Valve"

- Confirm the setting "Mixing Valve" by briefly pressing the rotary switch.
 - ➔ The setting for the [HC Assignment] parameter is displayed.
- Use the rotary switch to set the [HC Assignment] parameter. This parameter must be identical with the data bus address of the mixer module which is assigned to the EHS157034 room station.
- Confirm the changes with a brief push of the rotary switch.
 - ➔ The setting for the [Terminaladdress] parameter is displayed.
- Use the rotary switch to set the [Terminaladdress] parameter. This parameter defines the data bus address of the EHS157034 room station in the selected heating circuit.
- Confirm the changes with a brief push of the rotary switch.
 - ➔ The setting for the [Boiler Assignment] parameter is displayed.
- Use the rotary switch to set the [Boiler Assignment] parameter. This parameter defines the assignment of the EHS157034 room station to a Daikin Altherma EHS(X/H) in the RoCon system.
 - ➔ Standard display is shown (see fig. 4-3).



The data bus address of the mixer module is set to the address switch of the mixer (see fig. 4-1).

Make sure not to assign a duplicate value as the setting of the [Terminaladdress] parameter.



- | | | | |
|---|--|---|---|
| 1 | Display date | 5 | Current inflow temperature of the mixer circuit |
| 2 | Status display: Screed function active | 6 | Current outside temperature |
| 3 | Status display: Technician login | 7 | Operating mode setting for the assigned heating circuit |
| 4 | Display time | | |

Fig. 4-4 Standard display EHS157068 - "Mixing Valve" with example of the status displays



In the setting "Mixing Valve" the indoor sensor of the EHS157068 is deactivated.

4.2.3 Caretaker function

The caretaker function can be assigned to any EHS157034 room station set to "Living Room".

If more than one EHS157034 room stations are assigned to the same heat generator, the caretaker function can only be assigned to one of them.

- Enter the technician code (see chapter 3.6.1).
 - ➔ The **"Setup"** level is displayed after entering.
- Select the [Master-RoCon] parameter using the rotary switch.
- Confirm the changes with a brief push of the rotary switch.
 - ➔ The setting for the parameter is displayed.
- Using the rotary switch, set the parameter for the function to **"On"** and confirm by pressing it quickly.

All settings on the EHS157034 room station act in the same way as settings on the RoCon B1 control panel for the assigned heat generator.

As a result, the functions for hot water preparation can also be remotely operated from the room station.

5 Parameter settings

5.1 Explanation of the parameter tables

The parameter tables listed in the sections 5.2 to 5.11 contain important information concerning all parameters that are available in the individual rotary switch setting on the controller (1. menu level, 2. menu level).

In addition to the parameter designations, the tables contain details for the setting ranges, factory settings, setting options or setting step distances and brief function explanations.

In addition, they provide explanation of the access rights for the operation of the controller. The following abbreviations are available for appropriate characterisation:

BE Access right for the operator

HF Access permission with technician code

If different settings appear in the BE and HF columns, the user must log in as a technician so as to be able to access the parameter level to change the status set in the HF column, (see chapter 3.6.1).

Status:

N Not visible

E Visible and configurable

S Visible

5.2 Rotary switch setting: Configuration

5.2.1 Level "Setup"

Sub-level	Parameter	Description	Access		Setting range Min / Max	Factory setting	Increment
			BE	HF			
	Language	Language of the display text in the operating panel	E	E	Deutsch English French Dutch Italian Spanish Portuguese	Deutsch	1
	Date	Current date in format day / month / year. The current day of the week is calculated automatically from the date.	E	E			
	Time	Time in format hours / minutes.	E	E			
	Keylock Function	Release of the keylock function: Off: Button block cannot be activated. On: The button block can be activated using the rotary switch (see chapter 3.1).	E	E	Off On	Off	-
	Access Rights	Entering access code. Setting character by character like a combination lock (see chapter 3.6.1).	E	E	0 - 9	0000	1
	RoCon U1 assign	Display only on connected (U1) room station: Function of the EHS157034 room station in the data bus system: Living Room: Control panel for the heating circuit assigned in the parameter [HC Assignment]. Mixing Valve: Mixer circuit operating unit (as a mixer circuit extension or as a free-standing mixer circuit controller) Solar Module: Not applicable In addition to the aforementioned functions, the room temperature controller can be basically used as a remotely controlled unit of the Daikin Altherma EHS(X/H) and the entire RoCon system (with activated terminal function) (see chapter 4.2.2).	N	E	Living Room, Mixing Valve, Solar Module	Living Room	-
	Master-RoCon	Display only on connected (U1) room station: Setting the caretaker function Off: Deactivated On: Function active The caretaker function can be activated on any EHS157034 room station whose purpose of use is set to "Living Room" and which is assigned to a heat generator (parameter [Boiler Assignment]>0) (see chapter 4.2.3). Several room stations with active caretaker function in the system are possible, however only one caretaker function is possible per heat generator. With the caretaker function active, all settings on the EHS157034 room station act in the same way as the settings on the RoCon B1 for the assigned heat generator (may differ from the control panel heating circuit assignment). As a result, the functions for hot water preparation can also be remotely operated from the room station.	N	E	Off On	Off	-
	Outdoor type	Type exterior heat pump unit 0: No selection 1: 4 kW 2: 6 kW 3: 8 kW 4: 11 kW 5: 14 kW 6: 16 kW	N	E	0 - 6	0	1
	INDOOR UNIT	Type of interior heat pump unit 0: So far no commissioning has taken place. 1: 304 - EHSX(B)04P30A 2: 308 - EHSX(B)08P30A 3: 508 - EHSX(B)08P50A 4: 516 - EHSX(B)16P50A	N	E	0 - 4	0	1

5 Parameter settings

Sub-level	Parameter	Description	Access		Setting range Min / Max	Factory setting	Increment
			BE	HF			
	Function Heating Rod	Setting as to whether there is an additional heat generator (WEZ) for hot water generation and heating support (see chapter 3.6.7). 0: No additional WEZ 1: Optional backup heater 2: Alternative WEZ takes over the hot water generation and heating support 3: Alternative WEZ 1 takes over hot water generation and alternative WEZ 2 takes over heating support	N	E	0 - 3	1	1
	HZU	Heating support from domestic hot water storage tanks when the minimum temperature is exceeded (see chapter 3.6.8 and parameter [TDiff-DHW CH Support]). Off: No heating support On: Heating support function active	N	E	Off On	On	-
	Equilibrium Func.	The bivalence function is relevant for operation of the optional ancillary heater based on a backup demand (room heating operation). Off: Operation of the backup heater is always possible. On: The backup heater is only enabled if the temperature falls below the one set in the parameter [Equilibrium Temp].	N	E	Off On	On	-
	SMART GRID	Evaluation of the SG signal (see chapter 3.4.11). 0: SMART GRID function not active; SG signal not evaluated. 1: Depending on the signal from the energy supply company, the heat pump is turned off (no frost-protection function - see chapter 3.6.5) or run in high-temperature mode.	N	E	0 - 1	0	-
	Mode SG	Only if parameter [SMART GRID] = 1: Used for a possible target temperature increase in the case of a SMART GRID start command. 0: Comfort (5 K increase in target domestic hot water temperature) 1: Standard (2 K increase in inflow target temperature and 5 K increase in target domestic hot water temperature) 2: Eco (5 K increase in inflow target temperature and 7 K increase in target domestic hot water temperature)	N	E	0 - 2	1	1
	HT/NT Function	Setting which specifies which heat sources are switched off when the standard signal is received from the energy supply company (EVU) in the case of the customer having an off-peak tariff network connection. 0: Deactivated (no effect) 1: Refrigerant compressor switched off 2: Refrigerant compressor and reserve heating switched off 3: Everything switched off (no frost protection - see chapter 3.6.5)	N	E	0 - 3	0	1
	HT/NT Contact	Specifies whether the HT/NT input is an NC or NO contact. 0: NO contact (switching contact closed = standard tariff) 1: NC contact (switching contact closed = off-peak tariff)	N	E	0 - 1	0	-
	Room thermostat	Configuration of a room thermostat connected to the port J16 on the Daikin Altherma EHS(X/H) using potential-free contacts. – Off: Deactivated – On: (Only when parameter [Interlink fct] = Off) Evaluation of () heating and () cooling switching contacts at plug connection J16 on the RoCon BM1 circuit board (only when none of the operating modes "Standby", "Economy mode", "Summer", "Vacation", "Holiday" or "Screed" is active): a) Closed switching contact () heating: Operating mode is switched to "Heating". Priority if both switching contacts are closed. b) Closed switching contact () cooling: Operating mode is switched to "Cooling". c) Open contacts: Only frost protection active.	N	E	Off On	Off	-
	Interlink fct	Configuration for systems operating with 2 different inflow target temperatures (see chapter 3.6.6). A possible use for this might be the additional integration of aFWXV(15/20)AVEB in a surface heating and cooling system. <u>Requirement:</u> 2 room thermostats need to be connected to plug connection J16 on the Daikin Altherma EHS(X/H). – Off: Deactivated – On: Evaluation of () and cooling () switching contacts at plug connection J16 on the RoCon BM1 circuit board. Activation of cooling mode only possible by changing operating mode to "Cooling" (see chapter 3.4.2). Setting for the parameter [Room thermostat] no longer evaluated. a) Open switching contacts: Only frost protection active. b) Operating modes "Heating" and "Automatic 1" / "Automatic 2" active during switching cycles in day mode. – Closed switching contact heating () = IL1: → The system operates according to the normal infeed target temperature according to the parameter settings in "HC Configuration" > "Heating". – Closed switching contact cooling () = IL2: → The system operates according to the increased inflow target temperature (normal inflow target temperature + value of parameter [T-Flow CH adj]). Priority if both switching contacts are closed. c) "Cooling" operating mode active. – Closed switching contact heating () = IL1: → The system operates according to the normal infeed target temperature according to the parameter settings in "HC Configuration" > "Cooling". – Closed switching contact cooling () = IL2: → The system operates according to the reduced inflow target temperature (normal inflow target temperature - value of parameter [T-Flow Cooling adj]). Priority if both switching contacts are closed.	N	E	Off On	Off	-



5 Parameter settings

Sub-level	Parameter	Description	Access		Setting range Min / Max	Factory setting	Increment
			BE	HF			
	Air Purge	Activation of automatic bleeding of the Daikin Altherma EHS(X/H) and the connected heating circuit (see chapter 3.6.10). Off: Deactivated On: Start of Air Purge	N	E	Off On	Off	-
PWM Config							
	Max Perform Pump	Upper limit for modulation of the pump output	N	E	20 - 100%	100%	1%
	Min Perform Pump	Lower limit for modulation of the pump output	N	E	10 - 100%	50%	1%
Sensor Config							
	Outside Config	Configuration of the optional external temperature sensor RoCon OT1: Off: No sensor evaluation On: Sensor evaluation activates (if an outdoor temperature sensor is not connected, a fault message is generated.)	N	E	Off On	Off	-
	Storage Config	Configuration of water heating: inactive; no function for hot water generation. Sensor: Function for hot water generation is activated. A circulating tank temperature sensor is evaluated for hot water generation (if no circulating tank temperature sensor is connected, a fault message is generated). Thermostat: Function for hot water generation is activated. A thermostatic switch (On / Off) is evaluated for hot water generation, and where "Open brackets" are evaluated as "No demand".	N	E	Inactive Sensor Thermostat	Sensor	-
	Pressure Config	Configuring the sensor for assessment of the system water pressure: Off: No sensor evaluation On: Sensor evaluation activated (if no pressure sensor is connected, a fault message is generated.)	N	E	Off On	On	-
	Outside Temp Adap	Individual adapting for the measured value of the outdoor temperature relevant for the Control.	N	E	-5.0 to +5.0 K	0.0 K	0.1 K
	Terminaladress	Setting the data bus address for system access. The set value must be applicable for the entire system. Confirmation of this parameter using the rotary switch reinitialises the controller.	N	E	Off, 0 - 9	Off	1
	System Config	System configuration of the unit, consisting of the sensor configuration and bus configuration. If you answer "Yes" to the enquiry about using the standard configuration when starting the unit for the first time, the basic configuration for the installed heat generator will be activated automatically. Confirmation of this parameter setting as " <i>Inactive</i> " or " <i>Delete</i> " using the rotary switch reinitialises the controller. A fault message follows. After this the rotary switch must be set to the position " <i>Info</i> ". Use the rotary switch to select the required menu item.	N	E	Inactive Active Delete	Active	-
	HC Assignment	Display only on connected (U1) room station: Allocation of the room station to the heating circuit to be operated. The direct heating circuit of the Daikin Altherma EHS(X/H) is set as standard to "0" (see section 5.12, parameter [Unmixed Circ Config])	N	E	Off, 0 - 15	Off	1

Tab. 5-1 Parameter in rotary switch setting "Configuration" level "Setup"

5 Parameter settings

5.2.2 Level "System Configuration"

Parameter	Description	Access		Setting range Min / Max	Factory setting	Increment
		BE	HF			
Power DHW	Heating output of electric auxiliary heater for hot water generation	N	E	1000 - 40000 W	3000 W	1000 W
BUH s1 power	Heat capacity of the ancillary electric heater in Stage 1 heating support	N	E	1000 - 40000 W	3000 W	1000 W
BUH s2 power	Heat capacity of the ancillary electric heater in Stage 2 heating support	N	E	1000 - 40000 W	3000 W	1000 W
Power BIV	Setting limits the output of the heating support.	N	E	3000 - 40000 W	15000 W	1000 W
TDiff-DHW CH Support	Only when parameter [HZU] = On. <u>Heating support activated when</u> $T_{dhw} > T_{HZUmin} + 4 \text{ K}$ and $T_{dhw} > [T\text{-HS Setpoint}] + 1 \text{ K}$. <u>Heating support deactivated when</u> $T_{dhw} < T_{HZUmin}$ or $T_{dhw} < [T\text{-HS Setpoint}]$. T_{HZUmin} = Current active target hot water temperature [T-DHW Setpoint] + set parameter value [TDiff-DHW CH Support]. T_{dhw} = Current hot water storage tank temperature [T-HS Setpoint] = current active inflow target temperature (see tab. 5-12 and chapter 3.6.4)	N	E	2 - 15	5	1
T vbh1 max	Setting limits the inflow temperature (measured at $t_{V, BH}$) with active heating support function.	N	E	5 - 60 °C	60 °C	1 °C
Equilibrium Temp	Setting affects the operation of the potential-free AUX switching contact (toggle switch output A) Defined in the parameter [AUX Fct]. Only when parameter [Equilibrium Func.] = On. Outdoor temperature from which the optional ancillary heating is activated for supporting the room heating. The bivalent temperature is relevant for operation of the optional ancillary heater based on a backup demand (room heating operation). The temperature of the sensor integrated into the external unit for heat pump (info value TA2) is used. The info value TA2 displayed can differ from the value in the standard display depending on parameter [Outside Config].	E	E	-15 °C to +35 °C	0 °C	1 °C
Quite Mode	Mode for low-noise operation with reduced output (see chapter 3.4.10). 0: Deactivated 1: Activated 2: Operated in whisper mode only at night between 22:00 and 6:00 hours.	E	E	0 - 2	0	-
AUX Fct	Setting assigns the switching conditions to the potential-free AUX contact (toggle switch output A; see chapter 3.6.9). 0: Function deactivated <u>AUX switching contact changes:</u> 1: When storage tank temperature (T_{dhw}) \geq value of parameter [T-DHW 1 min]. 2: When there is a cooling or heating demand. 3: When there is a hot water demand to the heat pump or the configured backup heater is required for heating support. 4: When there is a malfunction. 5: When sensor value (T_{VBH}) > 60 °C. 6: When the outdoor temperature $<$ parameter value [Equilibrium Temp]. → Heat pump continues to operate = Parallel bivalence operation. 7: When the outdoor temperature $<$ parameter value [Equilibrium Temp] + there is a heating or hot water demand. → Heat pump does not continue to operate = Alternative bivalence operation. 8: When there is a hot water demand. 9: When outside temperature $<$ parameter [Equilibrium Temp] + heat demand "Room heating" (not for hot water demand). Heat pump no longer operates in room heating mode below the value set in parameter [Equilibrium Temp] - only in hot water mode.	N	E	0 - 9	0	1
AUX time	AUX switching contact (A) switches with a delay when the switching condition (see parameter [AUX Fct]) is pending for longer than the set time.	N	E	0 - 600 s	120 s	5 s
T-DHW 1 min	Switching threshold storage tank temperature (T_{dhw}) for AUX switching contact (see parameter [AUX Fct]).	N	E	20 - 85 °C	50 °C	1 °C
Delta-T CH	Set outdoor temperature spread The Daikin Altherma EHS(X/H) heating circulation pump controls the flow rate in order to achieve the set spread between the inflow target temperature and the return flow temperature ($t_{V, BH} - t_{R1}$).	N	E	2 - 20 K	7 K	1 K
V var	Current minimum necessary volume flow in the system (calculated value, not configurable)	N	S	INFO VALUE	XXX	-
T-Flow CH adj	Only if parameter [Interlink fct] = On: With a closed cooling RT switching contact  , the inflow target temperature is increased by the set value (see tab. 5-1, parameter [Interlink fct]). Demand, e.g. from FWXV(15/20)AVEB.	N	E	0 - 50 °C	5 °C	1 °C
T-Flow Cooling adj	Only if parameter [Interlink fct] = On: With a closed cooling RT switching contact  , the cooling inflow target temperature is reduced by the set value (see tab. 5-1, parameter [Interlink fct]). Demand, e.g. from FWXV(15/20)AVEB.	N	E	0 - 50 °C	5 °C	1 °C
Min Pressure	Defines the minimum water pressure. Pressure monitor function (only if the pressure sensor is activated, [Pressure Config] = On, see tab. 5-1): If the measured value falls below the set value, the Daikin Altherma EHS(X/H) is switched off and an error message is generated.	N	E	0.1 - 5.0 bar	0.5 bar	0.1 bar
Max Pressure	Defines the maximum water pressure. Pressure monitor function (only if the pressure sensor is activated, [Pressure Config] = On, see tab. 5-1): If the measured value exceeds the set value, a warning message is generated.	N	E	0.1 - 5.0 bar	3.0 bar	0.1 bar
Set Point Pressure	Defines the set water pressure. Pressure monitor function (only if the pressure sensor is activated, [Pressure Config] = On, see tab. 5-1): If the measured value falls below the value set in the [Max Pressuredrop] parameter by more than the set amount, a warning message is generated.	N	E	0.1 - 5.0 bar	0.9 bar	0.1 bar

5 Parameter settings

Parameter	Description	Access		Setting range Min / Max	Factory setting	Increment
		BE	HF			
Max Pressuredrop	Defines the maximum acceptable pressure drop in the heating system. Pressure monitor function (only if the pressure sensor is activated, [Pressure Config] = On, see tab. 5-1): If the measured value exceeds the value set in the [Set Point Pressure] parameter by more than the set amount, a warning message is generated.	N	E	0.1 - 5.0 bar	0.5 bar	0.1 bar
Relay Test	Manual actuation of individual relays for test purposes. After confirmation of this parameter using the rotary switch, the list of the relays 1 - 9 is displayed with selection boxes. For selection and confirmation of a relay using the rotary switch, a tick is set in the selection box and the respective relay is activated. Multiple selections can be made Relay 1: Output J1 (internal heating circulation pump), (M) output pump Relay 2: Output J14 (circulation pump -), (M) mixer "open" Relay 3: Contact A to output J2 (change-over valve 3UVB1), (M) mixer "closed" Relay 4: Contact B to output J2 (change-over valve 3UVB1) Relay 5: Output J12, change-over valve 3UV DHW, "closed" Relay 6: Output J12, change-over valve 3UV DHW, "open" Relay 7: Port J3 (potential-free relay: NO contact B-B1) - AUX Relay 8: Port J3 (potential-free relay: Change-over contact A-A1/A-A2) - AUX Relay 9: Output J10 (power supply A1P)	N	E	<input type="checkbox"/> / <input checked="" type="checkbox"/>	<input type="checkbox"/>	-

Tab. 5-2 Parameter in rotary switch setting "Configuration" level "System Configuration"



Depending on the version of the device software certain information parameters for the device, not described in tab. 5-2, can be displayed at this level. For this see tab. 5-12.

5.2.3 Level "HC Configuration"

Sub-level	Parameter	Description	Access		Setting range Min / Max	Factory setting	Increment
			BE	HF			
	HC Function	Setting defines the type of inflow temperature control. 0: Weather-controlled flow temperature regulation 1: Regulating to a fixed set flow value, depending on the heating, cooling or setback mode	N	E	0 - 1	0	1
	T-Frost Protect	Off: No frost protection of the heating circuit Otherwise: If the outside temperature falls below the programmed value, the system switches into the frost protection mode (switches the pumps on). The function ceases once the outside temperature has risen to the set value +1 K.	E	E	Off, -15 to +5°C	0°C	1°C
	Insulation	Setting the insulation standard of the building. This affects the way the heating curve and the heating times automatically adapt to the outside temperature.	E	E	Off low Normal Good Very Good	low	-
	Screed	Function for screed drying Off: Deactivated On: The flow temperature is regulated according to the set screed programme. The day on which the screed function is activated does not count towards the running time of the screed programme. The first day starts as the day changes on the first day at 00:00. On the day of activation we heat for the remaining time at the inflow temperature for the first day's program (see chapter 3.6.13).	N	E	Off On	Off	-
	Screed Program	Setting the procedural program for screed heating. An individual inflow temperature can be set for each day for a maximum period of 28 days. The end of the screed programme is defined by the 1st. Day at target value setting "- - - -" (see chapter 3.6.13).	N	E	10 - 70°C per heating day	See tab. 3-11	1°C
Heating							
	T-Outside lim day	Setting the automatic summer shutdown of the heating system. If the outside temperature measured and averaged out by the controller exceeds the set value by 1 K, the heating circuit is switched off. The heating is released again if the outdoor temperature falls below the set heat curve.	E	E	Off, 10 - 40°C	19°C	0.5°C
	T-Outside lim night	Parameter for setting the heating limit for "Switch-off" of the heating circuit during economy mode (functionality as for parameter [T-Outside lim day]).	E	E	Off, 10 - 40°C	10°C	0.5°C
	Heat-Slope	Only if parameter [HC Function] = 0: Setting the heating curve. The heating curve reflects the dependence of the set inflow temperature of the heating circuit on the outside temperature (see chapter 3.6.2).	E	E	0.0 - 3.0	0.5	0.1
	Room Influence	Only if the room station (U) is connected and assigned to the heating circuit. Setting of the impact the deviation of the room temperature measured by the EHS157034 from the actual set value (see chapters 3.4.3 and 3.4.4) has on the flow temperature. Off: Exclusively weather-controlled flow temperature regulation 0: Purely weather-controlled flow temperature regulation, but internal heat recirculation pump continues to run until the next heating cycle following a heat demand during the setback time. 1-20: Causes a correction of the set flow temperature (parallel shift of the heat curve) by the set factor. For example: If the measured temperature is 2 K below the set value, the set flow temperature is raised 2-times the set value.	E	E	Off, 0 - 20	Off	1
	T-Room Adj	Only if the room station (U) is connected and assigned to the heating circuit. Individual adaptation of the room temperature relevant for control. Should a systematic deviation of the room temperature as measured by the EHS157034 from the actual temperature in the living area of this room be detected, the measured value can be corrected by the set value.	E	E	-5.0 to +5.0 kW	0.0 K	1 K

5 Parameter settings

Sub-level	Parameter	Description	Access		Setting range Min / Max	Factory setting	Increment
			BE	HF			
	T-Flow Day	Only if parameter [HC Function] = 1: Setting the inflow target temperature for the heating circuit during the heating time when in operating mode: "Automatic 1", "Automatic 2", "Heating".	E	E	20 - 90°C	40°C	1°C
	T-Flow Night	Only if parameter [HC Function] = 1: Setting the inflow target temperature for the heating circuit during the setback time when in operating mode: "Automatic 1", "Automatic 2", "Reducing".	E	E	10 - 90°C	10°C	1°C
	Max T-Flow	The inflow temperature determined for the heating circuit is limited to the maximum value set here. If an additionally connected mixed heating circuit demands a higher temperature for the Daikin Altherma EHS(X/H), this is taken into account. This means that the heat internal circulation pump for the Daikin Altherma EHS(X/H) runs all the time when this is switched on. If the connected heating circuit supplies underfloor heating, a mechanical temperature limiter must be fitted to prevent overheating the screed.	N	E	20 - 90°C	55°C	1°C
	Min T-Flow	The inflow temperature determined for the heating circuit is limited to the minimum value set here.	N	E	10 - 90°C	10°C	1°C
	HC Adaption	Only if the room station (U) is connected and assigned to the heating circuit. Off: Deactivated On: Activated = Start a one-off automatic adaptation of the heating curve. Requirements: - Outside temperature < 8°C - Setting the operating mode: "Automatic 1" or "Automatic 2" - Duration of the setback phase must be at least 6 hours Function: At the start of the setback time the current room temperature is set as the target value for the following 4 hours. The heating curve is determined by the Control from the inflow target temperatures that are necessary to maintain this room temperature. If the automatic adjustment of the heating curve is interrupted, the function pauses until it is performed successfully on the next day or until it is ended by setting the parameter to "Off" or by changing the current operating mode. The hot water generation and the heating-up optimisation are blocked during the automatic heating curve adapting.	N	E	Off On	Off	-
Cooling (Can be used only if the assigned heat generator has a cooling function.)							
	Start T-Out Cooling	Only if parameter [HC Function] = 0: Setting from which outside temperature the cooling operation with the highest cooling infeed target temperature [T-Flow Cooling start] starts (setting condition: operating mode "Cooling").	E	E	15 - 45°C	24°C	1°C
	Max T-Out Cooling	Only if parameter [HC Function] = 0: Setting to determine from which outdoor temperature the lowest cooling flow temperature [T-Flow Cooling max] is stipulated (setting condition: operating mode "Cooling").	E	E	20 - 45°C	35°C	1°C
	T-Flow Cooling start	Only if parameter [HC Function] = 0: Setting the cooling inflow target temperature at the start of cooling mode (outside temperature = parameter [Start T-Out Cooling]).	E	E	5 - 25°C	18°C	1°C
	T-Flow Cooling max	Only if parameter [HC Function] = 0: Setting the minimum cooling inflow target temperature. This is kept constant relative to the outside temperature (parameter [Max T-Out Cooling]).	E	E	5 - 25°C	8°C	1°C
	Min T-Flow Cooling	Only if parameter [HC Function] = 0: Setting the absolute lower limit of the cooling inflow target temperature. The limitation is effective if a lower cooling inflow target temperature is determined based on other parameter settings.	N	E	5 - 25°C	18°C	1°C
	T-Flow Cooling	Only if parameter [HC Function] = 1: Setting the cooling inflow target temperature (fixed value) when cooling mode is active.	E	E	8 - 30°C	18°C	1°C
	Cooling Setpoint adj	Parallel displacement of the cooling characteristic curve to match the set value.	E	E	-5.0 to +5.0 kW	0.0 K	1 K

Tab. 5-3 Parameter in rotary switch setting "Configuration" level "HC Configuration"

5.2.4 Level "DHW Configuration"

Parameter	Description	Access		Setting range Min / Max	Factory setting	Increment
		BE	HF			
Circ-Pump DHW	Setting for activating a circulation pump. Off: Optional circulation pump operates according to the timer programme [Circulation Time]. On: The optional circulation pump operates synchronously with the switching timer program activated for generation of hot water.	E	E	Off On	Off	-
Circ-Pump Interval	Setting the interval control for an optional circulation pump. Off: Deactivated The circulation pump operates continuously throughout the enabled time of the assigned switching timer program (parameter [Circ-Pump DHW]). Otherwise: The circulation pump runs cyclically (duty ratio: pump running time = set value every 15 min).	E	E	Off, 1 - 15 min	Off	1 min
Anti-Legionella day	Setting the day for the thermal disinfection of the circulating tank. Off: No thermal disinfection Monday - Sunday Day for thermal disinfection Mon - Sun: Daily thermal disinfection	E	E	Off, Monday ... Sunday, Mon - Sun	Off	-
Anti-Legionella time	Setting the start time of the thermal disinfection of the hot water circulating tank (format hh:mm).	N	E	00:00 - 23:45	03:30	15 min
Anti-Legionella temp	Setting the hot water target temperature during thermal disinfection of the hot water circulating tank (format hh:mm).	N	E	60 - 70°C	65°C	1°C
Max DHW loading time	Setting limits the time period for hot water generation to the set target value [T-DHW Setpoint]. After expiry of this time period, the controller automatically returns to the previously active operating mode. The hot water generation takes place at the actual set value.	N	E	0 - 240 min	60 min	10 min
DHW Off Time	Setting the block time following completion or interruption of a hot water generation cycle. New demand of hot water generation is satisfied only after expiry of this block time.	N	E	0 - 180 min	30 min	10 min


Tab. 5-4 Parameter in rotary switch setting "Configuration" level "DHW Configuration"

5.3 Rotary switch setting: DHW Install

Parameter	Designation	Access		Setting range Min / Max	Factory setting	Increment
		BE	HF			
1x Hot Water	Start of the one-off heating up of the hot water and the set value [T-DHW Setpoint 1], independent of the heating programmes.	E	E	Off On	Off	-
Hyst HP	Switching threshold hot water charging Setting of the temperature difference to which the temperature in the domestic hot water storage tank compared to the current target hot water temperature [T-DHW Setpoint] can drop before the heat pump is switched on to provide hot water.	E	E	2 - 20 K	5 K	1 K
Timer BOH	Delay time after which the reserve heating may support the heat pump in hot water charging (see chapter 3.6.7).	E	E	20 - 95 min	50 min	1 min

Tab. 5-5 Parameter in rotary switch setting "DHW Install"

5.4 Rotary switch setting: Operating Mode

Parameter	Designation	Access		Setting range Min / Max	Factory setting	Increment
		BE	HF			
Standby	In this operating mode, all internal functions are turned off. Frost protection remains active and a blocking protection for the pump is guaranteed. All controllers integrated in the RoCon system via the CAN bus are also switched at a higher level to the operating mode when this setting is selected.  Outputs are not always free of voltage.	E	E	<input type="checkbox"/> / <input checked="" type="checkbox"/>	<input type="checkbox"/>	-
Reducing	The internal heating circuit provides continuous (24 h per day) regulation to the parametrised setback temperature. The hot water generation takes place according to [DHW Program 1].	E	E	<input type="checkbox"/> / <input checked="" type="checkbox"/>	<input type="checkbox"/>	-
Heating	The internal heating circuit provides continuous (24 h per day) regulation to the parametrised day set room temperature (heating). The hot water generation takes place according to [DHW Program 1].	E	E	<input type="checkbox"/> / <input checked="" type="checkbox"/>	<input type="checkbox"/>	-
Cooling	The internal heating circuit provides continuous (24 h per day) regulation to the parametrised day room temperature set (cooling). The hot water generation takes place according to [DHW Program 1]. Frost protection remains active and a blocking protection for the pump is guaranteed.	E	E	<input type="checkbox"/> / <input checked="" type="checkbox"/>	<input type="checkbox"/>	-
Summer	The internal heating circuit is turned off. Frost protection remains active and a blocking protection for the pump is guaranteed. The hot water generation takes place according to [DHW Program 1]. All controllers integrated in the RoCon system via the CAN bus are also switched at a higher level to the operating mode when this setting is selected.	E	E	<input type="checkbox"/> / <input checked="" type="checkbox"/>	<input type="checkbox"/>	-
Automatic 1	The internal heating circuit regulates according to the parametrised timer programme [HC Program 1] with the individual day room temperatures set. The hot water generation takes place according to [DHW Program 1].	E	E	<input type="checkbox"/> / <input checked="" type="checkbox"/>	<input type="checkbox"/>	-
Automatic 2	The internal heating circuit regulates according to the parametrised timer programme [HC Program 2] with the individual day room temperatures set. The hot water generation takes place according to [DHW Program 2].	E	E	<input type="checkbox"/> / <input checked="" type="checkbox"/>	<input type="checkbox"/>	-

Tab. 5-6 Parameter in rotary switch setting "Operating Mode"

5 Parameter settings

5.5 Rotary switch setting: Set Temp Day ☀️

Parameter	Designation	Access		Setting range Min / Max	Factory setting	Increment
		BE	HF			
T-Room 1 Setpoint	Target room temperature for the 1st switching cycle of the timer programmes [Automatic 1] and [Automatic 2].	E	E	5 - 40 °C	20 °C	0.5 °C
T-Room 2 Setpoint	Target room temperature for the 2nd switching cycle of the timer programmes [Automatic 1] and [Automatic 2].	E	E	5 - 40 °C	20 °C	0.5 °C
T-Room 3 Setpoint	Target room temperature for the 3rd switching cycle of the timer programmes [Automatic 1] and [Automatic 2].	E	E	5 - 40 °C	20 °C	0.5 °C

Tab. 5-7 Parameter in rotary switch setting "Set Temp Day"

5.6 Rotary switch setting: Set Temp Night 🌙

Parameter	Designation	Access		Setting range Min / Max	Factory setting	Increment
		BE	HF			
T-Reduced	Target room temperature for the setback times for the permanent timer programmes [Automatic 1] and [Automatic 2].	E	E	5 - 40 °C	15 °C	0.5 °C
T-Absence	Target room temperature for the setback times for the temporary timer programmes [Away] and [Vacation].	E	E	5 - 40 °C	15 °C	0.5 °C

Tab. 5-8 Parameter in rotary switch setting "Set Temp Night"

5.7 Rotary switch setting: DHW Set Temp 🚿

Parameter	Designation	Access		Setting range Min / Max	Factory setting	Increment
		BE	HF			
T-DHW Setpoint 1	Target hot water temperature for the 1st switching cycle of the timer programmes [Automatic 1] and [Automatic 2].	E	E	10 - 70 °C	48 °C	1 °C
T-DHW Setpoint 2	Target hot water temperature for the 2nd switching cycle of the timer programmes [Automatic 1] and [Automatic 2].	E	E	10 - 70 °C	48 °C	1 °C
T-DHW Setpoint 3	Target hot water temperature for the 3rd switching cycle of the timer programmes [Automatic 1] and [Automatic 2].	E	E	10 - 70 °C	48 °C	1 °C

Tab. 5-9 Parameter in rotary switch setting "DHW Set Temp"

5.8 Rotary switch setting: Time Program

Parameter	Designation	Access		Setting range Min / Max	Factory setting	Increment
		BE	HF			
Party	The heating circuit operates at the target room temperature set in the [T-Room 1 Setpoint] parameter for the set period of time. If the [Automatic 1] or [Automatic 2] timer programmes are active, the heating cycle is extended or started early. (Target room temperature - see chapter 3.4.7). The hot water generation is not affected.	E	E	00:00 - 06:00	00:00	1 h
Away	The heating circuit operates at the target room temperature set in the [T-Absence] parameter for the set period of time. The hot water generation is not affected.	E	E	00:00 - 06:00	00:00	1 h
Vacation	The heating circuit operates at the target room temperature set in the [T-Absence] parameter permanently (24 h per day). A calendar function can be used to enter a time period for the absence.	E	E	Date on first day - Date on last day:	-	1 day
Holiday	A calendar function can be used to enter a time period for presence. During this time, the system operates exclusively in accordance with the "Sunday" settings in [DHW Program 1] and [HC Program 1].	E	E	Date on first day - Date on last day:	-	1 day
HC Program 1	In this menu we can parametrise the 1st timer programme for the heating circuit. 3 switching cycles with a resolution of 15 minutes can be set. A separate entry for each weekday is possible. Format: (On) hh:mm - hh:mm (Off) Also, the cycles can be parametrised from Monday to Friday, Saturday to Sunday and Monday to Sunday.	E	E	See chapter 3.4.7	See tab. 3-9	15 min
HC Program 2	In this menu we can parametrise the 2nd. timer programme for the heating circuit. 3 switching cycles with a resolution of 15 minutes can be set. A separate entry for each weekday is possible. Format: (On) hh:mm - hh:mm (Off) Also, the cycles can be parametrised from Monday to Friday, Saturday to Sunday and Monday to Sunday.	E	E	See chapter 3.4.7	See tab. 3-9	15 min
DHW Program 1	In this menu we can parametrise the 1st timer programme for hot water generation. 3 switching cycles with a resolution of 15 minutes can be set. A separate entry for each weekday is possible. Format: (On) hh:mm - hh:mm (Off) Also, the cycles can be parametrised from Monday to Friday, Saturday to Sunday and Monday to Sunday.	E	E	See chapter 3.4.7	See tab. 3-9	15 min
DHW Program 2	In this menu we can parametrise the 2nd. timer programme for hot water generation. 3 switching cycles with a resolution of 15 minutes can be set. A separate entry for each weekday is possible. Format: (On) hh:mm - hh:mm (Off) Also, the cycles can be parametrised from Monday to Friday, Saturday to Sunday and Monday to Sunday.	E	E	See chapter 3.4.7	See tab. 3-9	15 min
Circulation Time	In this menu we can parametrise a timer programme for the circulation pump. 3 switching cycles with a resolution of 15 minutes can be set. A separate entry for each weekday is possible. Format: (On) hh:mm - hh:mm (Off) Also, the cycles can be parametrised from Monday to Friday, Saturday to Sunday and Monday to Sunday.	E	E	See chapter 3.4.7	See tab. 3-9	15 min

Tab. 5-10 Parameter in rotary switch setting "Time Program"

5.9 Rotary switch setting: Remote Param

Parameter	Description	Access		Setting range Min / Max	Factory setting	Increment
		BE	HF			
Bus - Scan	Off: No function On: Control checks which RoCon devices are connected to the system using the CAN bus lines. Devices that are detected are displayed with their type and data bus address (for example: MM#8 = mixer module with data bus address 8). The selection and activation of a device with the rotary switch switches the function of the control unit to that of the selected device (see chapter 3.4.9).	E	E	Off On	Off	-
No selection	Activation switches to the local device.	E	E	<input type="checkbox"/> / <input checked="" type="checkbox"/>	<input type="checkbox"/>	-
Contr BM1/BE1 #X	Activation switches to the Daikin Altherma EHS(X/H) with the bus ID X (see section 5.12, parameter [BUS ID HS]).	E	E	<input type="checkbox"/> / <input checked="" type="checkbox"/>	<input type="checkbox"/>	-
Mix Valve #X	Activation switches to the mixer module with the bus ID X (see section 5.13.1, parameter [HC Assignment]).	E	E	<input type="checkbox"/> / <input checked="" type="checkbox"/>	<input type="checkbox"/>	-

Tab. 5-11 Parameter in rotary switch setting "Remote Param"

5 Parameter settings

5.10 Rotary switch setting: Info ⓘ

Parameter	Description	Access		Setting range Min / Max	Factory setting	Increment
		BE	HF			
Overview	Display of different current operating data (see chapter 3.4.1).	S	S	-	-	-
Water Pressure	The current water pressure is displayed in bar.	S	S	0 - 4 bar	-	0.1 bar
T-HS	The current temperature (TVBH) of the heat generator is displayed in °C.	S	S	0 - 100°C	-	1°C
T-HS Setpoint	The current Inflow target temperature of the heat generator is displayed in °C (see chapter 3.6.4).	S	S	0 - 90°C	-	0.1°C
T-Outside	The current external temperature is displayed °C.	S	S	-39 to +50°C	-	0.1°C
T-DHW	The current temperature of the hot water storage tank is displayed in °C. If there is no hot water function activated, "- - -" is displayed.	S	S	0 - 100°C	-	0.1°C
T-DHW Setpoint	The current target hot water temperature is displayed °C. If there is no hot water function activated, "- - -" is displayed. The current set value is here always the maximum value of all relevant demands for this hot water circuit.	S	S	10 - 70°C	-	0.1°C
T-Return	The current return flow temperature of the heat generator is displayed in °C. If there is no relevant sensor connected to the heat generator, "- - -" is displayed.	S	S	0 - 100°C	-	0.1°C
Flow Rate	The filtered value of the current volume flow in litres per hour is displayed.	S	S	0 - 5100 l/h	-	l/h
T-HC	The inflow temperature in the direct heating circuit is displayed in °C.	S	S	0 - 100°C	-	0.1°C
T-HC Setpoint	The set temperature of the flow in the direct heating circuit is displayed in °C.	S	S	0 - 90°C	-	0.1°C
Status HS pump	The current status of the internal heat circulation pump in the Daikin Altherma EHS(X/H) is displayed.	S	S	Off On	-	-
Runtime Compressor	The running time of the refrigerant compressor is displayed in h.	S	S	-	-	h
Runtime Pump	The running time of the internal heating circulation pump is displayed in h.	S	S	-	-	h
Mixer Position	The current position of the 3UV DHW 3-way switch valve is displayed. 0%: Position A (room heating) 100%: Position B (domestic hot water generation)	S	S	0 - 100%	-	1%
Qboh	The amount of heat in the additional heat generator for hot water generation is displayed in kWh.	S	S	-	-	kWh
Qchhp	The amount of heat in the additional heat generator for heating mode is displayed in kWh.	S	S	-	-	kWh
Qsc	The quantity of heat in the heat pump for cooling is displayed in kWh.	S	S	-	-	kWh
Qch	The quantity of heat in the heat pump for heating is displayed in kWh.	S	S	-	-	kWh
QWP	The total amount of heat in the heat pump is displayed in kWh.	S	S	-	-	kWh
Qdhw	The quantity of heat for hot water generation is displayed in kWh.	S	S	-	-	kWh
HS type	The heat generator type Daikin Altherma EHS(X/H) detected is displayed.	S	S	-	-	-
Sw Nr B1/U1	The software and version of the RoCon B1 operating unit is displayed.	S	S	-	-	-
Sw Nr Controller	The software number and the version of the RoCon BM1 circuit board are displayed.	S	S	-	-	-
Sw Nr RTX RT	The software number and the version of the RTX-AL4 circuit board are displayed.	S	S	-	-	-

Tab. 5-12 Parameter in rotary switch setting "Info"


5.11 Exit button: Sonderfunktion

Parameter	Description	Access		Setting range Min / Max	Factory setting	Increment
		BE	HF			
Manual Operation	The direct heating circuit and the target hot water temperature are controlled according to the temperature set in this parameter (see chapter 3.5.1).	E	E	20 - 80°C	50°C	1°C
FA failure	Display of a current heat pump malfunction in the Daikin Altherma EHS(X/H). If "----" is displayed there is no fault (see chapter 6).	E	E	-	-	-
Protocol	Display of protocol (error and information messages). Here we display the saved messages of the Daikin Altherma EHS(X/H) and the connected data bus units with date a code, in each case as a menu item. By selecting an entry with the rotary switch, all other corresponding information is displayed concerning the selected fault message: - Date and time of the message - Code number (see chapter 6) - Location (device) where the message originated - Bus identification (device) where the message originated	E	E	-	-	-
Delete message	By setting this parameter to "On" and briefly pressing the rotary switch all the entries of the protocol, including the faults from connected data bus devices, are deleted.	E	E	Off On	Off	-
RoCon B1/U1 Reset	Resets all parameter settings to factory setting. Necessary for software updates. Complete re-configuration subsequently required.	N	E	Off On	Off	-
Parameter Reset	Resets all customer-specific parameter settings to factory setting.	N	E	Off On	Off	-
Timeprog Reset	Resets all permanent time programmes to factory setting (see tab. 3-9).	E	E	Off On	Off	-
Return	This parameter is used only to exit the special level.	E	E			

Tab. 5-13 Parameter in the level "Sonderfunktion"

5.12 Parameter level "Basic Configuration"

This parameter level appears only if:

- At initial commissioning, if the query "use standard configuration?" is answered by "No", or
- After, in the rotary switch position **"Configuration"** , level **"Setup"** the parameter [System Config] has been set to "inactive" or "delete".

Parameter	Description	Access		Setting range Min / Max	Factory setting	Increment
		BE	HF			
Boiler Function	Setting the system functionality of the device in the CAN-BUS. The standard value of this parameter is Single and thus applies to a Daikin Altherma EHS(X/H) in self-contained operating mode. With value settings "Slave 1" to "Slave 8" the Daikin Altherma EHS(X/H) works as a heater module and waits for the demand for an optional cascade regulator. These settings are not currently usable.	N	E	Single, Slave 1, ... Slave 8	Single	-
Unmixed Circ Config	Setting the CAN-BUS-ID for the direct heating circuit. The data bus address of a heating circuit must be the same throughout the entire system. There must be no overlapping with the heating circuits in optional mixer circuits.	N	E	0 - 15	0	1
BUS ID HS	It is possible to operate up to 8 heat generators at the same time in single mode on the CAN Bus. This parameter can be used to set the unique differentiation of the necessary Bus detection. It is not possible to operate a Daikin Altherma EHS(X/H) in single mode in parallel with a cascade system.	N	E	0 - 7	0	1
Time Master	Activation of a system-wide time master. The time master synchronises all controllers in the Can system with the date and time set at the time master. The input of time and date can no longer be set at any other operating unit in the system. There may be only one time master in the entire system. The parameter is not available if the time master parameter is activated at a different controller in the CAN system.	N	E	Off On	On	-
System Config	The system configuration of the unit, consisting of the sensor configuration and bus configuration, can be deleted, activated and deactivated with this parameter. If you answer "yes" to the enquiry about using the standard configuration when starting the unit for the first time, the system configuration will be activated automatically (see section 5.2.1, tab. 5-1).	N	E	Inactive; Active. Delete	Inactive;	-

Tab. 5-14 Parameter in the level "Basic Configuration"

5 Parameter settings

5.13 Parameter levels for the EHS157068 mixer module

The parameter levels, parameter priorities, setting ranges and associated functions are essentially the same as those described in the preceding sections.

In some cases there exist at individual levels a restricted scope of available parameters.

The description below relates only to the sections indicated. Areas where there are significant differences are described in greater detail.

Rotary switch setting: Info

See section 5.10.

If the assigned control unit is set to "Mix Valve #X", the displayed values relate to the assigned heating circuit and to the components connected to the EHS157068. (pump, mixer valve, ...).

When the assigned control unit is set to "Living Room", the [T-Room adj] parameter is available. The rotary switch can be used to change the room target temperature to the range -5 K to +5 K. This function is not available if the control unit is being used as a terminal function for remote control.

Rotary switch setting: Operating Mode

See section 5.4.

Rotary switch setting: Set Temp Day

See section 5.5.

Rotary switch setting: Set Temp Night

See section 5.6.

Rotary switch setting: DHW Set Temp

No function.

Rotary switch setting: DHW Install

No function.

Rotary switch setting: Time Program

See section 5.8.



Rotary switch setting: Configuration

See sections 5.13.1 and 5.13.2.

Rotary switch setting: Remote Param

See section 5.9.

5.13.1 Rotary switch setting: Configuration , level "Setup"

Sub-level	Parameter	Description	Access		Setting range Min / Max	Factory setting	Increment
			BE	HF			
	Language	Language of the display text in the operating panel	E	E	Deutsch English French Dutch Italian Spanish Portuguese	Deutsch	1
	Date	Current date in format day / month / year. The current day of the week is calculated automatically from the date.	E	E			
	Time	Time in format hours / minutes.	E	E			
	Keylock Function	Release of the keylock function: Off: Button block cannot be activated. On: The button block can be activated using the rotary switch (see chapter 3.1).	E	E	Off On	Off	-
	Access Rights	Entering access code. Setting character by character like a combination lock (see chapter 3.6.1).	E	E	0 - 9	0000	1
	RoCon U1 assign	Display only on connected  room station: Function of the EHS157034 room station in the data bus system: Living Room: Control panel for the heating circuit assigned in the parameter [HC Assignment]. Mixing Valve: Mixer circuit operating unit (as a mixer circuit extension or as a free-standing mixer circuit controller) Solar Module: Not applicable In addition to the aforementioned functions, the room temperature controller can be basically used as a remotely controlled unit of the Daikin Altherma EHS(X/H) and the entire RoCon system (with activated terminal function) (see chapter 4.2.2).	N	E	Living Room, Mixing Valve, Solar Module	Living Room	-
	Master-RoCon	Display only on connected  room station: Setting the caretaker function Off: Deactivated On: Function active The caretaker function can be activated on any EHS157034 room station whose purpose of use is set to "Living Room" and which is assigned to a heat generator (parameter [Boiler Assignment]>0) (see chapter 4.2.2). Several room stations with active caretaker function in the system are possible, however only one caretaker function is possible per heat generator. With the caretaker function active, all settings on the EHS157034 room station act in the same way as the settings on the RoCon B1 for the assigned heat generator (may differ from the control panel heating circuit assignment). As a result, the functions for hot water preparation can also be remotely operated from the room station.	N	E	Off On	Off	-
PWM Config							
	Min Perform Pump	Lower limit for modulation of the pump output	N	E	0 - 100 %	50 %	1 %
	Max Perform Pump	Upper limit for modulation of the pump output	N	E	0 - 100 %	100 %	1 %

5 Parameter settings

Sub-level	Parameter	Description	Access		Setting range Min / Max	Factory setting	Increment
			BE	HF			
Sensor Config							
	Outside Config	Configuration of the outside temperature sensor: Off: Adoption of the outside temperature for the heat generator assigned to parameter [Boiler Assignment] or no sensor evaluation On: Sensor evaluation activates (if an outdoor temperature sensor is not connected to the EHS157068 mixer module, an error message is generated.)	N	E	Off On	On	-
	Flow Temp Config	Configuration of the mixer circuit inflow temperature sensor: Off: No sensor evaluation On: Sensor evaluation activated (if no mixer circuit inflow temperature probe is connected, a fault message is generated.)	N	E	Off On	On	-
	Outside Temp Adap	Individual adapting for the measured value of the outdoor temperature relevant for the Control.	N	E	-5.0 to +5.0 kW	0.0 K	0.1 K
	Terminaladdress	Setting the data bus address for system access. The set value must be applicable for the entire system. Confirmation of this parameter using the rotary switch reinitialises the controller.	N	E	Off, 0 - 9	Off	1
	Boiler Assignment	Assignment of the EHS157068 to the heat generator, in accordance with the setting of the [BUS ID HS] parameter (see section 5.12, tab. 5-14).	N	E	0 - 7	0	1
	HC Assignment	Allocation of the EHS157068 control unit to the mixer module. Off: If there is only one mixer module in the system this assignment is performed automatically, otherwise the setting must match the address at the address switch for the mixer module (see chapter 4.2.1, fig. 4-1). 0 - 9 = 0 - 9 10 = A 11 = B 12 = C 13 = D 14 = E 15 = F	N	E	Off, 0 - 15	Off	1

Tab. 5-15 (M1) Parameter in rotary switch setting "Configuration" level "Setup"

5.13.2 (M1) Rotary switch setting: Configuration , level "Mixer Config"

Parameter	Description	Access		Setting range Min / Max	Factory setting	Increment
		BE	HF			
HC Function	Setting defines the type of inflow temperature control. 0: Weather-controlled flow temperature regulation 1: Regulating to a fixed set flow value, depending on the heating, cooling or setback mode	N	E	0 - 1	0	1
Pump Mode	Setting the operating mode of the mixer circuit pump. 0: Standard mixer circuit pump switching according to weather conditions / room temperature 1: Mixer circuit pump switching according to heating limits (optional room thermostat switch-off also effective). 2: Mixer circuit pump switching according to heating programme 3: Mixer circuit pump in continuous running mode	N	E	0 - 3	0	1
T-Outside lim day	Only if parameter [Pump Mode] = 1: Setting the automatic summer shutdown of the heating system. If the outside temperature measured and averaged out by the controller exceeds the set value by 1 K, the heating circuit is switched off. The heating is enabled again once the outside temperature falls below the set heating curve.	E	E	Off, 10 - 40°C	19°C	0.5°C
T-Outside lim night	Only if parameter [Pump Mode] = 1: Parameter for setting the heating limit for switch-off of the heating circuit during economy mode (functionality as for parameter [T-Outside lim day]).	E	E	Off, 10 - 40°C	10°C	0.5°C
Heat-Slope	Only if parameter [HC Function] = 0: Setting the heating curve. The heating curve reflects the dependence of the set inflow temperature of the heating circuit on the outside temperature (see chapter 3.6.2).	E	E	0.0 - 3.0	0.5	0.1
Room Influence	Only if the room station (U1) is connected and assigned to the heating circuit. Setting of the impact the deviation of the room temperature measured by the EHS157034 from the actual set value (see chapters 3.4.3 and 3.4.4) has on the flow temperature. Off: Exclusively weather-controlled flow temperature regulation 0: Purely weather-controlled flow temperature regulation, but internal heat recirculation pump continues to run until the next heating cycle following a heat demand during the setback time. 1-20: Causes a correction of the set flow temperature (parallel shift of the heat curve) by the set factor. For example: If the measured temperature is 2 K below the set value, the set flow temperature is raised 2-times the set value.	E	E	Off, 0 - 20	Off	1
T-Room Adj	Only if the room station (U1) is connected and assigned to the heating circuit. Individual adaptation of the room temperature relevant for control. Should a systematic deviation of the room temperature as measured by the EHS157034 from the actual temperature in the living area of this room be detected, the measured value can be corrected by the set value.	E	E	-5.0 to +5.0 kW	0.0 K	1 K
T-Flow Day	Only if parameter [HC Function] = 1: Setting the inflow target temperature for the heating circuit during the heating time when in operating mode: "Automatic 1", "Automatic 2", "Heating".	E	E	20 - 90°C	40°C	1°C
T-Flow Night	Only if parameter [HC Function] = 1: Setting the inflow target temperature for the heating circuit during the setback time when in operating mode: "Automatic 1", "Automatic 2", "Reducing".	E	E	10 - 90°C	10°C	1°C
Max T-Flow	The inflow temperature determined for the heating circuit is limited to the maximum value set here.	N	E	20 - 70°C	50°C	1°C

5 Parameter settings

Parameter	Description	Access		Setting range Min / Max	Factory setting	Increment
		BE	HF			
Min T-Flow	The inflow temperature determined for the heating circuit is limited to the minimum value set here.	N	E	10 - 70 °C	10 °C	1 °C
HC Adaption	Only if the room station (M1) is connected and assigned to the heating circuit. Off: Deactivated On: Activated = Start a one-off automatic adaptation of the heating curve. Requirements: - Outside temperature < 8 °C - Setting the operating mode: "Automatic 1" or "Automatic 2" - Duration of the setback phase must be at least 6 hours Function: At the start of the setback time the current room temperature is set as the target value for the following 4 hours. The heating curve is determined by the Control from the inflow target temperatures that are necessary to maintain this room temperature. If the automatic adjustment of the heating curve is interrupted, the function pauses until it is performed successfully on the next day or until it is ended by setting the parameter to "Off" or by changing the current operating mode. Heating-up optimisation is blocked during automatic adaptation of the heating curve.	N	E	Off On	Off	-
Slope Offset	Setting the increase in the inflow target temperature for the Daikin Altherma EHS(X/H) compared to the set flow temperature determined for the mixer circuit.	N	E	0.0 - 50.0 K	5.0 K	1 K
T-Frost Protect	Off: No frost protection of the heating circuit Otherwise: If the outside temperature falls below the programmed value, the system switches into the frost protection mode (switches the pumps on). The function ceases once the outside temperature has risen to the set value +1 K.	E	E	Off, -5 to +5 °C	0 °C	1 °C
Insulation	Setting the insulation standard of the building. This affects the way the heating curve and the heating times automatically adapt to the outside temperature.	E	E	Off Low Normal Good Very Good	Normal	-
Forced Performance	Not applicable.	N	E	Off On	Off	-
Start T-Out Cooling	Can be used only if the assigned heat generator has a cooling function. Only if parameter [HC Function] = 0: Setting from which outside temperature the cooling operation with the highest cooling infeed target temperature [T-Flow Cooling start] starts (setting condition: operating mode "Cooling").	E	E	20 - 45 °C	24 °C	1 °C
Max T-Out Cooling	Can be used only if the assigned heat generator has a cooling function. Only if parameter [HC Function] = 0: Setting to determine from which outdoor temperature the lowest cooling flow temperature [T-Flow Cooling max] is stipulated (setting condition: operating mode "Cooling").	E	E	20 - 45 °C	35 °C	1 °C
T-Flow Cooling start	Can be used only if the assigned heat generator has a cooling function. Only if parameter [HC Function] = 0: Setting the cooling inflow target temperature at the start of cooling mode (outside temperature = parameter [Start T-Out Cooling]).	E	E	5 - 25 °C	18 °C	1 °C
T-Flow Cooling max	Can be used only if the assigned heat generator has a cooling function. Only if parameter [HC Function] = 0: Setting the minimum cooling inflow target temperature. This is kept constant relative to the outside temperature (parameter [Max T-Out Cooling]).	E	E	5 - 25 °C	18 °C	1 °C
Min T-Flow Cooling	Can be used only if the assigned heat generator has a cooling function. Only if parameter [HC Function] = 0: Setting the absolute lower limit of the cooling inflow target temperature. The limitation is effective if a lower cooling inflow target temperature is determined based on other parameter settings.	N	E	5 - 25 °C	18 °C	1 °C
T-Flow Cooling	Can be used only if the assigned heat generator has a cooling function. Only if parameter [HC Function] = 1: Setting the cooling inflow target temperature (fixed value) when cooling mode is active.	E	E	8 - 30 °C	18 °C	1 °C
Cooling Setpoint adj	Can be used only if the assigned heat generator has a cooling function. Parallel displacement of the cooling characteristic curve to match the set value.	N	E	-5.0 to +5.0 kW	0.0 K	1 K
Relay Test	See section 5.2.2, tab. 5-2.	N	E	<input type="checkbox"/> / <input checked="" type="checkbox"/>	<input type="checkbox"/>	-
Screed	Function for screed drying Off: Deactivated On: The flow temperature is regulated according to the set screed programme. The day on which the screed function is activated does not count towards the running time of the screed programme. The first day starts as the day changes on the first day at 00:00. On the day of activation we heat for the remaining time at the inflow temperature for the first day's program (see chapter 3.6.13).	N	E	Off On	Off	-
Screed Program	Setting the procedural program for screed heating. An individual inflow temperature can be set for each day for a maximum period of 28 days. The end of the screed programme is defined by the 1st. Day at target value setting "----" (see chapter 3.6.13).	N	E	10 - 70 °C per heating day	See tab. 3-11	1 °C

Tab. 5-16 (M1) Parameter in rotary switch setting "Configuration" level "Mixer Config"

6 Errors, malfunctions and messages



CAUTION!

Electrostatic charges can lead to voltage arcing that can destroy the electronic components.

- Secure potential equalisation before touching electronic parts (e.g. by touching an earthed metallic part).

6.1 Recognising errors, correcting malfunctions

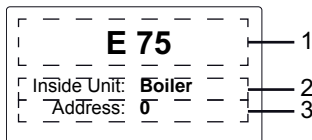
Electronic control of the Daikin Altherma EHS(X/H):

- Signals an error by means of the background of the display lighting up red and shows an error code in the display (see section 6.3).
- Shows information messages regarding the operating status (not signalled by red background lighting).

An integrated Protocol saves up to 15 error-related or other information messages regarding the operating status that last occurred.

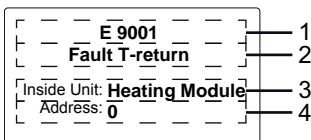
Depending on the operating mode, messages are also forwarded to connected room stations or room thermostats.

6.1.1 Current fault display



- 1 Error message as a code (see section 6.3)
- 2 Location information (equipment) of the detected fault
- 3 Bus address of the unit causing the fault

Fig. 6-1 Displays an active error message (controller fault)



- 1 Error message as a code (see section 6.3)
- 2 Fault message as plain language (see section 6.3)
- 3 Location information (equipment) of the detected fault
- 4 Bus address of the unit causing the fault

Fig. 6-2 Display of a current error message (heat pump fault)

6.1.2 Read Protocol

The Protocol can be read in the "Special Level" (see fig. 6-3).

The last received message is in the first position. All other previous messages are then pushed backwards by one place when a new entry is made. The 15th message will be deleted any time a new message is received.

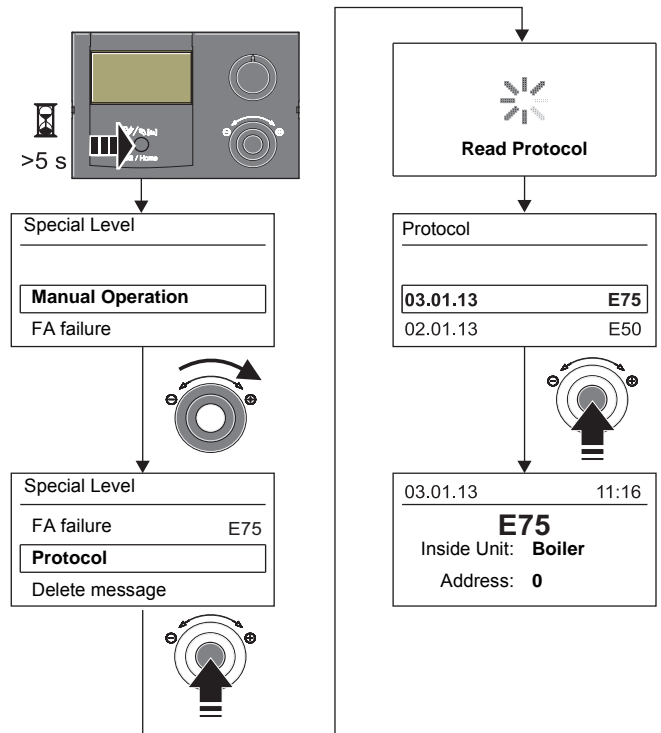


Fig. 6-3 Reading the protocol

6.1.3 Troubleshooting

- Detecting and remedying the cause of the malfunction.
 - Contactor triggered:
 - Nothing shown on the display in the controller. Ascertain cause of triggering the contactor and remedy fault. Start up system again.
 - ➔ Once the cause has been remedied, the system will resume operations as normal.
 - Contactor not triggered:
 - No fault codes are shown but the system is not working properly. Troubleshooting and eliminating faults (see section 6.3).
 - ➔ Once the cause has been eliminated, the system continues to work normally.
 - Fault codes are displayed as long as the fault conditions are present. Troubleshooting and eliminating faults (see section 6.3).
 - With specific faults, the heat demand must be cancelled (activate "Standby" operating mode).
 - If the fault message is still displayed after the cause of the fault has been corrected and the heat demand has been cancelled, the system must be disconnected from the power supply for at least 10 s in order to unlock it.
 - ➔ Once the cause has been eliminated, the system continues to work normally.

6 Errors, malfunctions and messages



In order to ensure that the fault has not been caused by incorrect setting, set all the parameters back to the factory settings before possible replacement of components (see chapter 3.6.12).

If you are unable to determine the cause of failure yourself, Daikin please consult a service technician.

Have the significant equipment data to hand (see fig. 6-4 for the procedure):

- Type and manufacturer number of the Daikin Altherma EHS(X/H)s (see heat pump identification plate).
- Software versions (see fig. 6-4) of:
 - a: RoCon B1 control unit [Sw Nr B1/U1]
 - b: RoCon BM1 circuit board [Sw Nr Controller]
 - c: RTX-AL4 circuit board [Sw Nr RTX RT]

6.2 Emergency operation

In the case of incorrect setting in the electronic control system or malfunction of the 3-way diverter valves, emergency heating operation can be maintained by activating the **special "Manual Operation" function** on the control unit (see chapter 3.5.1 and the **supplementary instructions in the installation and maintenance manual** of the Daikin Altherma EHS(X/H).

6.3 Malfunctions and fault codes

See Daikin Altherma EHS(X/H) installation and maintenance manual; chapter "Faults, Malfunctions, Messages".

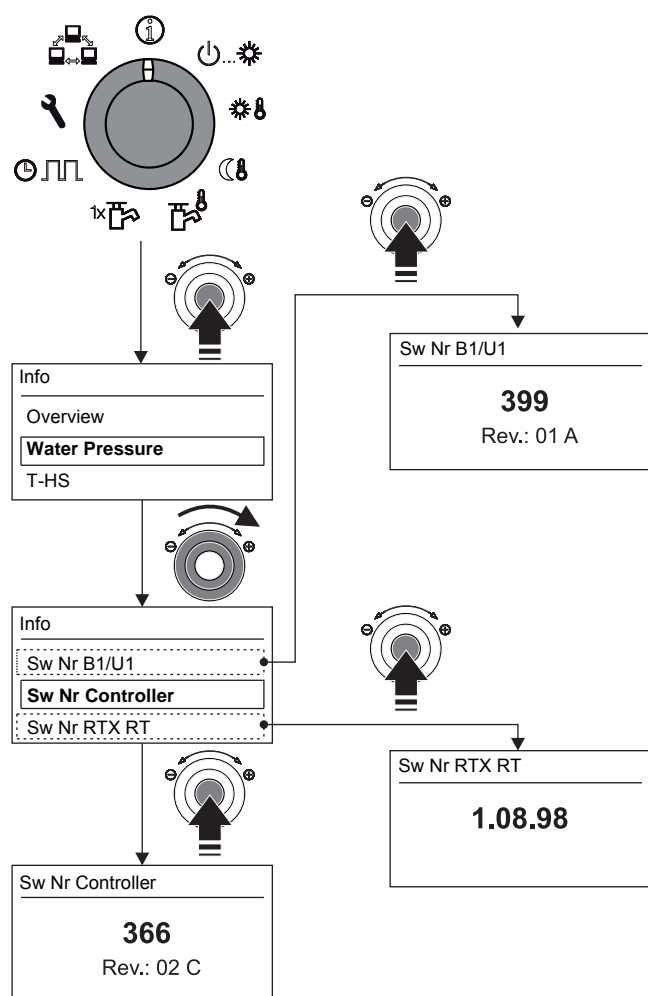


Fig. 6-4 Software information of the controller components

7 Glossary

Ancillary heater	An additional heat generator (e.g. backup heater or external heating boiler) which is part of the heating system and which helps bring the system up to the inflow target temperature in case of an insufficient or ineffective heat pumping process.
Anti-legionella system	Periodic heating of storage water to $>60^{\circ}\text{C}$ for preventative elimination of pathogenic bacteria (legionella) in the hot water circuit.
Backup demand	Operating situation in which the desired infeed temperature cannot be reached or cannot be achieved efficiently through the heat pump process. As a result, an extra heater (e.g. backup heater) is used to support the Daikin Altherma EHS(X/H) to generate heat.
Backup heater	Optional electric ancillary heater for general support of the Daikin Altherma EHS(X/H) during heat generation.
Circulation pump	An optional electrical circulation pump which permanently recirculates the hot water in the hot water pipes (feed from the tap connection back to the domestic hot water storage tank) and thus provides it at each draw-off point without delay. Circulation is particularly effective in widely branched piping networks. In hot water distribution systems without a circulation pipe, at first the water cooled in the outlet pipe escapes during the tapping process until the outlet pipe is sufficiently heated by the hot water flowing subsequently.
Control	Device electronics, with which the processes for heat generation and heat distribution for the heating system are controlled. The Control consists of many electronic components. The component that is most important to the operator is the operating element at the front of the heat generator which has operating elements (rotary switch, rotary button and Exit key) and a display.
Domestic hot water generation	Operating status of the heat generator, in which heat is generated at increased temperatures and supplied to the hot water circuit, e.g. filling the hot water storage tank.
Flow	Part of the hydraulic circuit which directs the heated water from heat generator to the heating surfaces.
Heat exchanger	A part that transfers thermal energy from one circuit to another. Both circuits are separated from each other hydraulically by a wall in the heat exchanger.
Heat pumping process	In a closed coolant circuit, the coolant absorbs heat from the surrounding air. Compressing this coolant results in a higher temperature which can then be transferred to the heating unit (thermodynamic circuit).
Heating characteristic curve	Mathematical relationship between the external temperature and the target flow temperature (synonym = heating curve), in order to achieve the desired room temperature at all outside temperatures.
Hot water circuit	Is the water circuit in which the cold water is heated and directed to the hot water discharge point.
Low tariff mains connection (HT/NT)	A special mains connection to the energy supplier, which offers various cheaper rates during so-called low-load periods for electrical current (day-, night-, heat pump current, etc.).
Modulation	Automatic and continuous adjustment of the thermal / pump output to the particular heat requirement, without having to switch various heating / pumping stages or cycles.
Nominal output	Maximum heat output given by the heat generator at certain operating temperatures under test conditions.
Operating mode	User or Control-demanded function of the heat generator (e.g. room heating, hot water heating, stand-by, etc.).
Parameter	A value that influences the execution of programs or processes or defines specific states.
Refrigerant	A material which is used for thermal transfer in a heating system. At low temperature and low pressure, heat is absorbed and at high temperature and a high pressure, heat is emitted.
Return flow	Part of the hydraulic circuit that directs the cooled water from the radiators in the rooms back to the heat generator via the piping system.
SMART GRID (SG)	Intelligent energy utilisation for economical heating. Using a special electricity meter it is possible to receive a "SMART GRID signal" from the energy supply company. Depending on the signal from the energy supply company, the heat pump is turned off, put into standard mode or run in high-temperature mode.
Switching time programme	Programme for setting dates and times on the Control to define regular heating, cooling, economy and hot water cycles.
Water shortage/ overheating protection	Safety device which switches off the heat generator automatically if there is a water shortage, in order to avoid over-heating.
Weather-controlled flow temperature regulation	The inflow target temperature for temperature control in the heating unit is calculated from the measured value for the external temperature and a defined heating curve.

8 Notes




8 Notes

8.1 User-specific settings




8.1.1 Switching time program

The factory settings of the timer programs are stated in chapter 3.4.7, tab. 3-9.

- Enter your switching time settings in the table below.

		Switching cycle 1		Switching cycle 2		Switching cycle 3	
		 [T-Room 1 Setpoint]: ____ °C		 [T-Room 2 Setpoint]: ____ °C		 [T-Room 3 Setpoint]: ____ °C	
		On	Off	On	Off	On	Off
HC Program 1	Monday						
	Tuesday						
	Wednesday						
	Thursday						
	Friday						
	Saturday						
	Sunday						
HC Program 2	Monday						
	Tuesday						
	Wednesday						
	Thursday						
	Friday						
	Saturday						
	Sunday						

Tab. 8-1 Individual settings in the heating timer programmes

		Switching cycle 1		Switching cycle 2		Switching cycle 3	
		 [T-DHW Setpoint 1]: ____ °C		 [T-DHW Setpoint 2]: ____ °C		 [T-DHW Setpoint 3]: ____ °C	
		On	Off	On	Off	On	Off
DHW Program 1	Monday						
	Tuesday						
	Wednesday						
	Thursday						
	Friday						
	Saturday						
	Sunday						
DHW Program 2	Monday						
	Tuesday						
	Wednesday						
	Thursday						
	Friday						
	Saturday						
	Sunday						

Tab. 8-2 Individual settings in the hot water timer programmes

	Time period	Switching cycle 1		Switching cycle 2		Switching cycle 3	
		On	Off	On	Off	On	Off
Circulation Time	Monday						
	Tuesday						
	Wednesday						
	Thursday						
	Friday						
	Saturday						
	Sunday						

Tab. 8-3 Individual settings of the circulation-switching time programme

8.2 Parameter

- Enter your parameter changes in the table below.

Rotary switch setting	Parameter levels / Parameter	Old value	New value	Date	Comments

Tab. 8-4 Individual parameter modifications

8.2.1 Data bus addresses

RoCon-appliance	Data bus address	Comments

Tab. 8-5 Data bus addresses in the RoCon system

8 Notes

8.3 Other items

[illegible]

9 List of keywords

- A**
- Additional heat generator 21
 - Address switch 28
 - Anti-legionella system 23, 47
- B**
- Backup demand 47
 - Backup heater 9
 - Explanation 47
 - Parameters 32, 34, 37
 - Basic functions
 - Automatic defrosting 9
 - Displaying system information 9
 - Setting the language, date and time 15
 - Switching the system on and off 11
 - Water pressure display 10
 - Bivalency function 32
 - Button block 8
- C**
- CAN bus line 28
 - Caretaker function 30, 31, 42
 - Circulation pump 14, 27
 - Cleaning 6
 - Cooling operation 11, 19
- D**
- Data bus address 29, 33, 39, 45, 49
 - Day mode 12
 - Defrosting function 9
 - Display 6
 - Domestic hot water generation 13
 - Domestic hot water reheating 13
- E**
- Economy mode 11, 12
 - Emergency operation 46
 - Energy saving mode 11
 - Error messages 41
 - Explanation of symbols 3, 6
 - EXT signal 8, 9
 - External operating mode switching 8, 12
- F**
- Factory setting 31
 - Faults and malfunctions
 - Fault codes 46
 - Frost protection function 6, 20
- G**
- Glossary 47
- H**
- Heat curve 18
 - Heating cycle 13
 - Heating support function 22, 32
 - HT/NT Function 32
- I**
- Inflow target temperature 11
 - In cooling mode 19
 - In heating mode 18
 - With weather-dependent regulation 20
 - Information messages 41, 45
- L**
- Language setting 15
 - Low tariff mains connection 47
- M**
- Malfunctions 45
 - Manual operation 17
 - Mixer module 20, 28
- N**
- Normal operation 16
- O**
- Operating elements 5, 6, 8
 - Exit button 8
 - Rotary push button 7
 - Rotary switch 7
 - Operating modes
 - Automatic 1 11
 - Automatic 2 12
 - Cooling 11
 - Economy 11
 - Heating 11
 - Stand-by 11
 - Summer 11
- P**
- Parameters 47
 - Pressure monitor function 34
 - Proper use 4
 - Protocol 17
- R**
- Relay test 27
 - Relevant documents 3
 - Remote control via Internet 27
 - Reports 45
 - RESET 24
 - Room station 29
 - Room thermostat 32
 - Rotary switch position 8
- S**
- Safety shutdown 5
 - Screed programme
 - Function heating 25
 - Heating until sufficiently cured/ready for installation 25
 - Setting the date 15
 - Setting the time 15
 - SMART GRID 16, 32, 47
 - Software information 9, 46
 - Special level 17
 - Switching time program
 - Permanent programmes 13
 - Personal settings 48
 - Setting 13
 - Temporary programmes 15
 - System temperatures 9
- T**
- Target hot water temperature 11, 13, 17
 - Target room temperature 12
 - Technician code 31
 - Technician password 18
 - Temperature setting
 - Day mode 12
 - Domestic hot water mode 13
 - Economy mode 12
 - Terminal address 16, 20, 28, 30
 - Terminal function 15
 - Timer programme (temporary)
 - Absent 15
 - Holiday 15
 - Party 15
- V**
- Venting function 23
- W**
- Water pressure 10
 - Whisper mode 16, 34
- Z**
- Zone regulation 20

DAIKIN EUROPE N.V.

Zandvoordestraat 300, B-8400 Oostende, Belgium

008.1420844_08

Copyright © Daikin

05/2014