

Operating manual

REMKO Smart-Control

HTS, WKF/WKF-compact and WKF Duo series

Manual for experienced specialists





Read these operating instructions carefully before commissioning / using this device!

These instructions are an integral part of the system and must always be kept near or on the device.

Subject to modifications; No liability accepted for errors or misprints!

Translation of the original operating manual

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1 Safety and usage instructions

1.1 General safety notes

Carefully read the operating manual before commissioning the units for the first time. It contains useful tips and notes such as hazard warnings to prevent personal injury and material damage. Failure to follow the directions in this manual not only presents a danger to people, the environment and the system itself, but will void any claims for liability.

Keep this operating manual and the refrigerant data sheet near to the units.

1.2 Identification of notes

This section provides an overview of all important safety aspects for proper protection of people and safe and fault-free operation. The instructions and safety notes contained within this manual must be observed in order to prevent accidents, personal injury and material damage.

Notes attached directly to the units must be observed in their entirety and be kept in a fully legible condition.

Safety notes in this manual are indicated by symbols. Safety notes are introduced with signal words which help to highlight the magnitude of the danger in question.

DANGER!

Contact with live parts poses an immediate danger of death due to electric shock. Damage to the insulation or individual components may pose a danger of death.

DANGER!

This combination of symbol and signal word warns of a situation in which there is immediate danger, which if not avoided may be fatal or cause serious injury.

WARNING!

This combination of symbol and signal word warns of a potentially hazardous situation, which if not avoided may be fatal or cause serious injury.

CAUTION!

This combination of symbol and signal word warns of a potentially hazardous situation, which if not avoided may cause injury or material and environmental damage.

NOTICE!

This combination of symbol and signal word warns of a potentially hazardous situation, which if not avoided may cause material and environmental damage.



This symbol highlights useful tips and recommendations as well as information for efficient and fault-free operation.

1.3 Personnel qualifications

Personnel responsible for commissioning, operation, maintenance, inspection and installation must be able to demonstrate that they hold a qualification which proves their ability to undertake the work.

1.4 Dangers of failure to observe the safety notes

Failure to observe the safety notes may pose a risk to people, the environment and the units. Failure to observe the safety notes may void any claims for damages.

In particular, failure to observe the safety notes may pose the following risks:

- The failure of important unit functions.
- The failure of prescribed methods of maintenance and repair.
- Danger to people on account of electrical and mechanical effects.

1.5 Safety-conscious working

The safety notes contained in this manual, the existing national regulations concerning accident prevention as well as any internal company working, operating and safety regulations must be observed.

1.6 Safety notes for the operator

The operational safety of the units and components is only assured providing they are used as intended and in a fully assembled state.

- The units and components may only be set up, installed and maintained by qualified personnel.
- Protective covers (grille) over moving parts must not be removed from units that are in operation.
- Do not operate units or components with obvious defects or signs of damage.
- Contact with certain unit parts or components may lead to burns or injury.
- The units and components must not be exposed to any mechanical load, extreme levels of humidity or extreme temperature.
- Spaces in which refrigerant can leak sufficient to load and vent. Otherwise there is danger of suffocation.
- All housing parts and device openings, e.g. air inlets and outlets, must be free from foreign objects, fluids or gases.
- The units must be inspected by a service technician at least once annually. Visual inspections and cleaning may be performed by the operator when the units are disconnected from the mains.

1.7 Safety notes for installation, maintenance and inspection

- Appropriate hazard prevention measures must be taken to prevent risks to people when performing installation, repair, maintenance or cleaning work on the units.
- The setup, connection and operation of the units and its components must be undertaken in accordance with the usage and operating conditions stipulated in this manual and comply with all applicable regional regulations.
- Local regulations and laws such as Water Ecology Act must be observed.
- The power supply should be adapted to the requirements of the units.
- Units may only be mounted at the points provided for this purpose at the factory. The units may only be secured or mounted on stable structures, walls or floors.
- Mobile units must be set up securely on suitable surfaces and in an upright position. Stationary units must be permanently installed for operation.
- The units and components should not be operated in areas where there is a heightened risk of damage. Observe the minimum clearances.

- The units and components must be kept at an adequate distance from flammable, explosive, combustible, abrasive and dirty areas or atmospheres.
- Safety devices must not be altered or bypassed.

1.8 Unauthorised modification and changes

Modifications or changes to units and components are not permitted and may cause malfunctions. Safety devices may not be modified or bypassed. Original replacement parts and accessories authorised by the manufacturer ensure safety. The use of other parts may invalidate liability for resulting consequences.

1.9 Intended use

The units are designed depending on the model and equipment exclusively as a control unit for the heat pump and the heating system.

Any different or additional use shall be classed as non-intended use. The manufacturer/supplier assumes no liability for damages arising from such use. The user bears the sole risk in such cases. Intended use also includes working in accordance with the operating and installation instructions and complying with the maintenance requirements.

Under no circumstances should the threshold values specified in the technical data be exceeded.

1.10 Warranty

For warranty claims to be considered, it is essential that the ordering party or its representative complete and return the "certificate of warranty" to REMKO GmbH & Co. KG at the time when the units are purchased and commissioned.

The warranty conditions are detailed in the "General business and delivery conditions". Furthermore, only the parties to a contract can conclude special agreements beyond these conditions. In this case, contact your contractual partner in the first instance.

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1.11 Transport and packaging

The devices are supplied in a sturdy shipping container or inside the heat pump casing. Please check the equipment immediately upon delivery and note any damage or missing parts on the delivery and inform the shipper and your contractual partner. For later complaints can not be guaranteed.

 **WARNING!**

Plastic films and bags etc. are dangerous toys for children!

Why:

- Leave packaging material are not around.
- Packaging material may not be accessible to children!

1.12 Environmental protection and recycling

Disposal of packaging

All products are packed for transport in environmentally friendly materials. Make a valuable contribution to reducing waste and sustaining raw materials. Only dispose of packaging at approved collection points.



Disposal of equipment and components

Only recyclable materials are used in the manufacture of the devices and components. Help protect the environment by ensuring that the devices or components (for example batteries) are not disposed in household waste, but only in accordance with local regulations and in an environmentally safe manner, e.g. using certified firms and recycling specialists or at collection points.



2 Operation - General

2.1 Design and functions

Overview of the controls



Fig. 1: Controls of the Smart Control

- 1: SD card
- 2: Display
- 3: Softkeys
- 4: Rotary knob
- 5: Info key
- 6: Menu key

Function of the keys

The **Softkeys** below the display perform different functions. The current function (e.g. Cancel, OK or Edit) appears on the display, right above the respective key. If nothing appears in the display above the **softkey** this key performs no function in the currently active mode.

Furthermore, the **Softkeys** and the **rotary knob** serve navigational purposes. By pressing the right-hand **softkey** and turning the **rotary knob** you can select the menu items which gains you deeper access to the menu structure. By pressing the left-hand **softkey** you can navigate back to the Welcome screen (3D house).

By pressing the **Info key** (6) you can obtain information and guidance at any time about the currently selected area.

By pressing the **Menu key** (7) you can access the main menu.

With the **rotary knob** (5) you can move through the menu. In addition, with the **rotary knob** you can change a value after selecting a parameter.

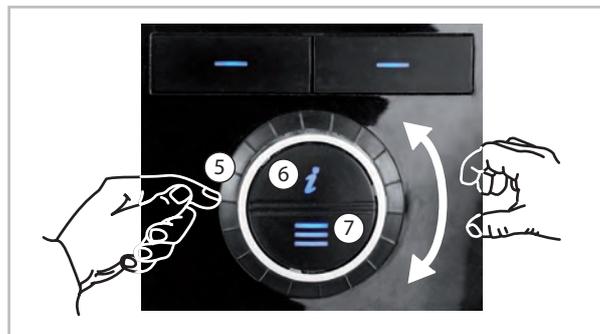


Fig. 2: Function of the keys

Selecting user / expert mode

! NOTICE!

The settings in expert mode may only be configured by REMKO-authorized installers!

There are two different authorisation levels for the main menu: user mode and expert mode. Some settings are only visible in expert mode. The authorisation levels are identified by icons.

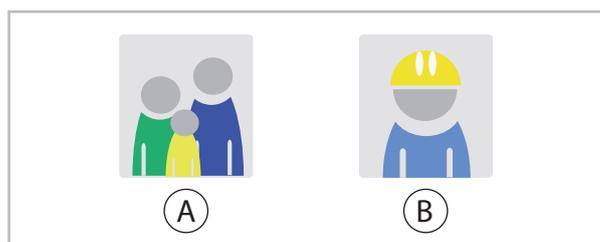


Fig. 3: The user and expert icons

A: User; B: Expert (password-protected)

Briefly press the menu key to access the main menu for the user.

Press and hold the menu key for 5 sec. to access the main menu for the expert. Then enter the expert password.

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Navigation and changing parameters

Calling up the main menu

Press the menu key until the menu items "Information", "Settings" and "Messages" appear.

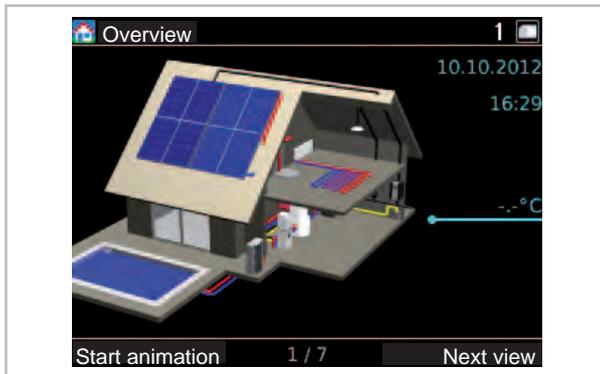


Fig. 4: Calling up the main menu

Selecting a menu item

Select the menu item "Settings" (for example) and then confirm your selection with "OK" (right softkey).



Fig. 5: Selecting a menu item

Confirm the selection "Basic settings" with "OK" (right softkey).

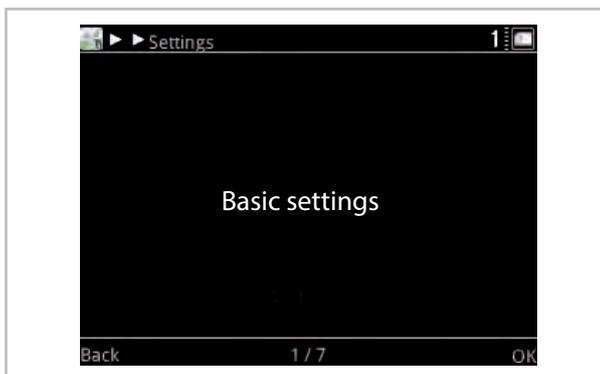


Fig. 6: Basic settings

Confirm the selection "Language / Time" with "OK" (right softkey). You are now on the parameter menu of the "Language / Time" folder.



Fig. 7: Language / Time

Selecting a parameter

Press the rotary knob until you reach the "Clock" parameter.

The bottom bar on the display shows the number of the current parameter and the total number of parameters in one menu item (in this case, 2/7).

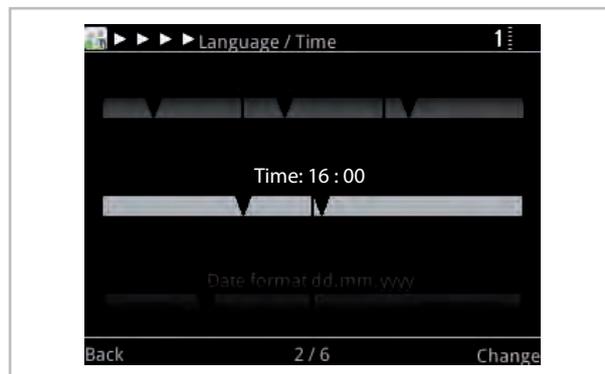


Fig. 8: Selecting a parameter 1

Select "Change" (right softkey). The select value appears marked in blue.

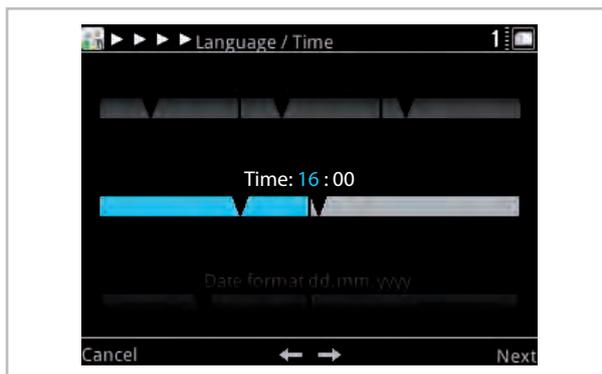


Fig. 9: Selecting a parameter 2

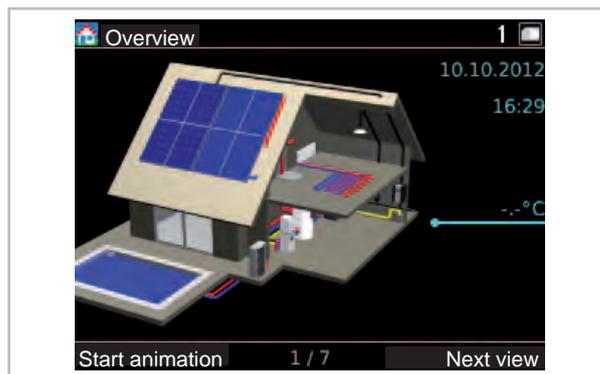


Fig. 11: Exiting the menu

Changing the parameter

Turn the rotary knob to set the number of hours. Turning the knob to the left reduces the value, and turning it to the right increases it.

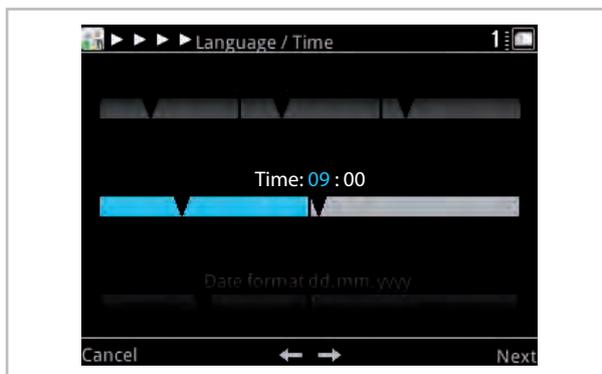


Fig. 10: Changing the parameter

"Next" (right softkey) takes you to the menu for setting the number of minutes.

Turn the rotary knob to set the number of minutes. Confirm your entry with "OK" (right softkey).

Exiting the menu

Provided that no parameter has been selected, the label "Back" appears on the display, over the left softkey. Press the left softkey multiple times to get back to the home screen.

(After a period of inactivity of 150 seconds, the controller switches back to the home screen automatically.)

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3 Operation - User level

3.1 Menu structure of the controller

The following information is primarily directed at system operators. Specialists can find relevant additional information in the "Manual for experienced specialists".

The following sections introduce the individual menu items and parameters. You will find a brief description regarding each menu item. Should you require a more precise description for the individual parameters, call up the parameter on the controller and press the  key. A help text will then be displayed.



- The following diagrams and explanations relate to the full menu structure, which may differ from the menu structure of your own controller. Only the relevant menu items and parameters are displayed by the Smart-Control, depending upon which heat generators and functions you have activated. For example, if no heating cycle has been activated, the corresponding menu items and parameters are not displayed.

- Values in square brackets [xx] are the factory settings. They may be modified by software updates, and mainly serve in the following tables to provide an understanding of the functions.

- On the Smart-Control the current factory setting is indicated by a green mark.

Overview of the menus (User level)

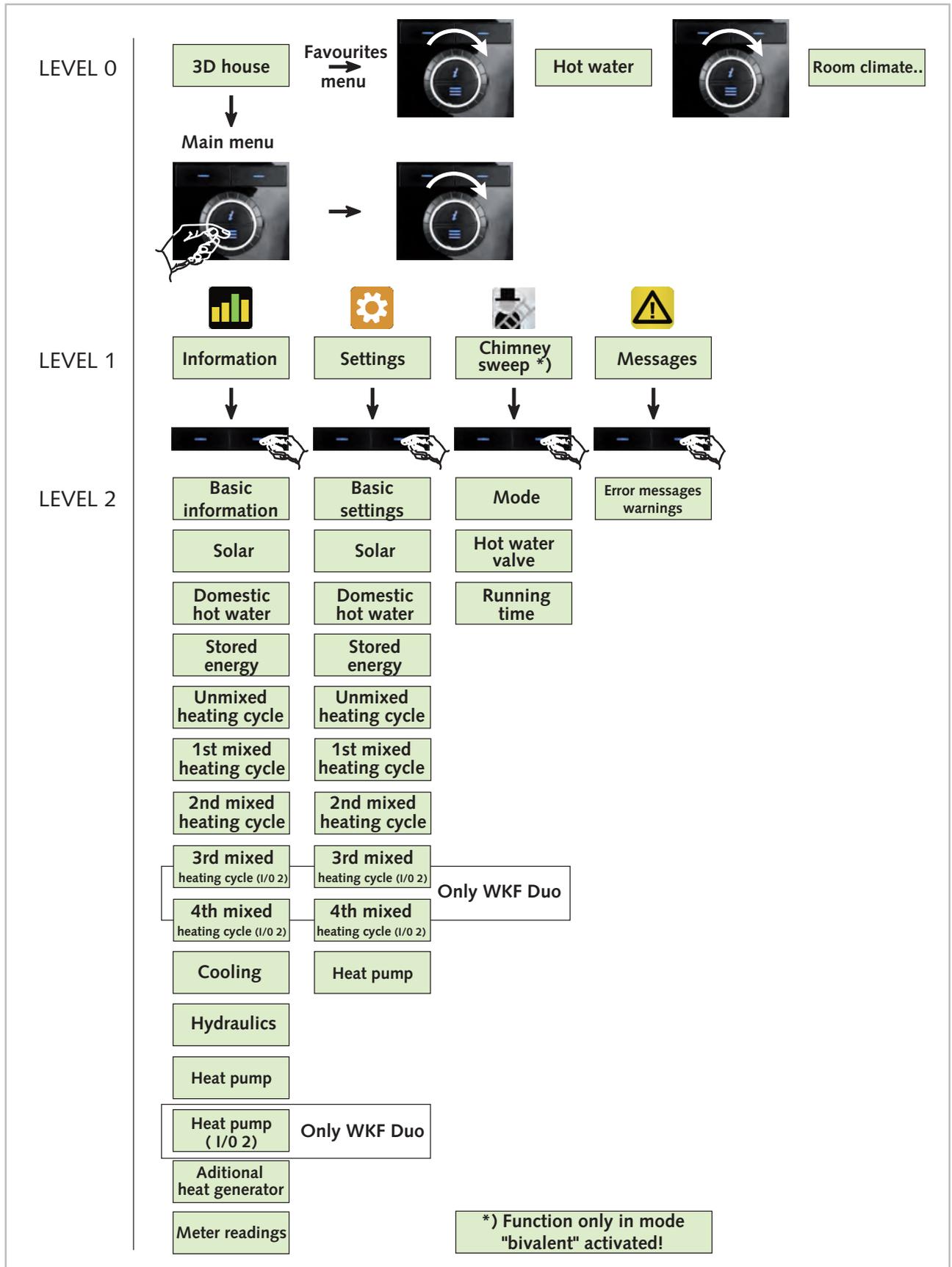


Fig. 12: Menu structure overview

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"3D house" animation

Once the Smart Control commissioning wizard has been completed, you will see the home screen with the 3D house. Pressing the left softkey starts the animation. To return to the home screen with the 3D house, press "Cancel" (left softkey).

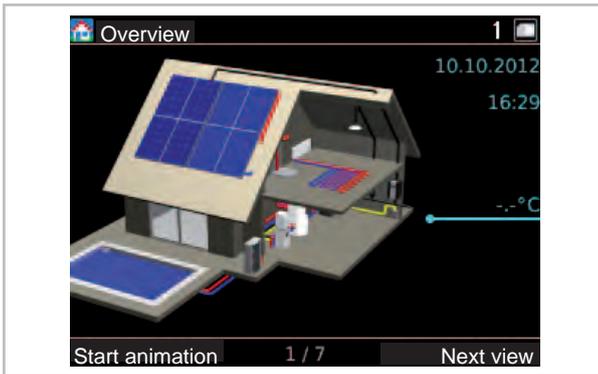


Fig. 13: 3D house

To immediately display temperatures in the system, you can press "Next view" (right softkey).

This is an overview of the key system data, represented using a 3D house.



Fig. 14: Explanation of View 1

- 1: Collector array
- 2: Heat pump outdoor unit

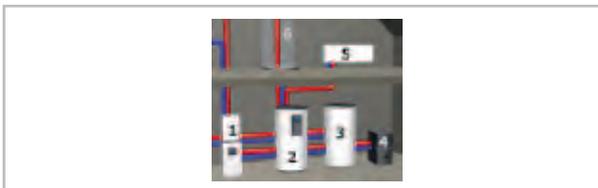


Fig. 15: Explanation of View 2

- 1: Conv. heat generator
- 2: Solar storage tank (primary)
- 3: Storage tank 2
- 4: Boiler (solid fuel)
- 5: Heater

Explanation of operating statuses:

- Circuit is in operation
- Hot water or heating is being heated by solar energy
- The heat pump is in operation
- The heating is being provided by conventional means

Explanation of other icons:

- Manual operation (probe/actuator)
- Fault present
- Warning present

Current measured values, such as temperature or output, are displayed. The lines refer to the individual components.

The charging status of the storage tank is specified in percent. 100 % means that the solar volume of the storage tank is fully charged.

If a photovoltaic system is integrated, the following values can be displayed.



Fig. 16: Explanation of View 3

- 1: Heat pump current
- 2: Domestic electricity
- 3: PV current

Depending on the level of equipment purchased for the system, some components may not be displayed in the 3D house. It is also possible that some components will be displayed which are not present. However, for such components, no temperature or operating statuses are shown.

Pressing the right softkey zooms in on the individual components in the house and the current parameters, such as storage tank and collector temperature, are displayed

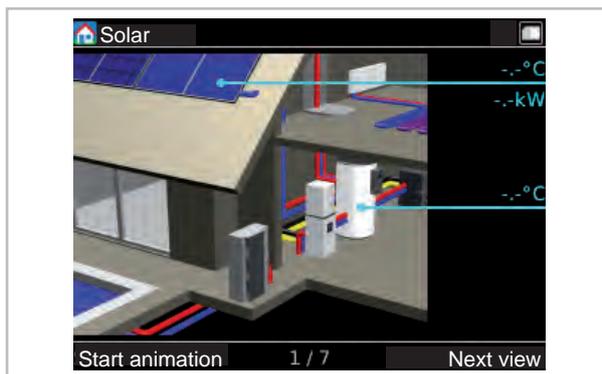


Fig. 17: Component zoom, solar

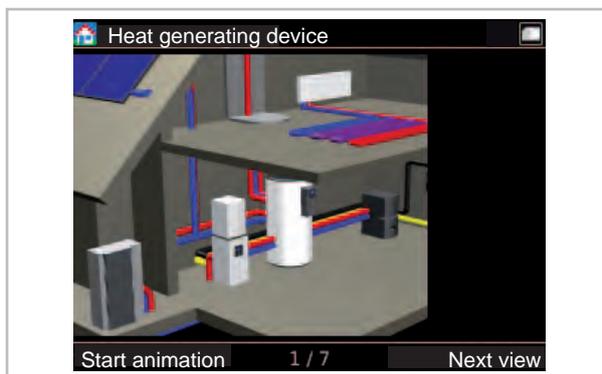


Fig. 18: Component zoom, heat generator

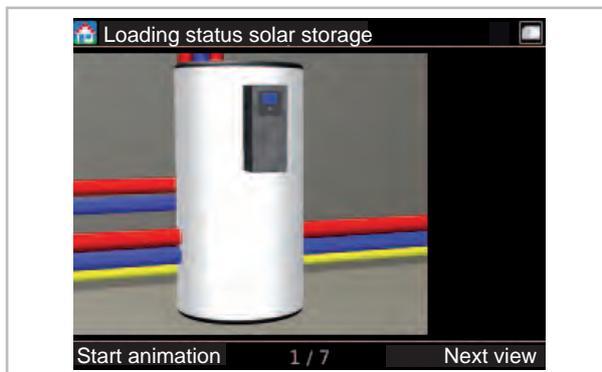


Fig. 19: Component zoom, solar storage tank charging status

Pressing the right softkey again takes you to the home screen with the 3D house

Favourites menu: for the user

Using the rotary knob (turning it clockwise) you can access other views. They allow you to rapidly and easily adjust the most important parameters and view the yield in kilowatt hours

Hot water

The **Storage tank set temperature** (set with the left softkey, then confirm with "OK") is the temperature to which the hot water is to be heated to ensure comfortable conditions. For efficiency reasons, the lowest possible set temperature should be selected. If the available quantity of hot water is insufficient, the value should be increased. Pay attention to the maximum temperature of the heat generator while doing so. If there is a solar yield, the storage tank can become substantially warmer. The maximum temperature for solar charging can be modified under Settings/Solar/Storage tank.

The **Mode** (select with the right softkey, then confirm with "OK") for hot water preparation can be set as follows:

Automatic comfort: Hot water preparation always takes place according to the setpoint, i.e. no optimisation of the solar yields.

Automatic eco: In order to optimise the solar yields, during solar storage tank charging, the set temperature of the storage tank is reduced by the "Tolerance during solar operation". The reheating of the storage tank is delayed by this or is carried out by PV on-site utilisation.

Solar only: The hot water is heated exclusively by solar or on-site utilisation of the PV system, i.e. if the temperature drops below the set temperature, no conventional reheating takes place.

("Off": No hot water preparation)

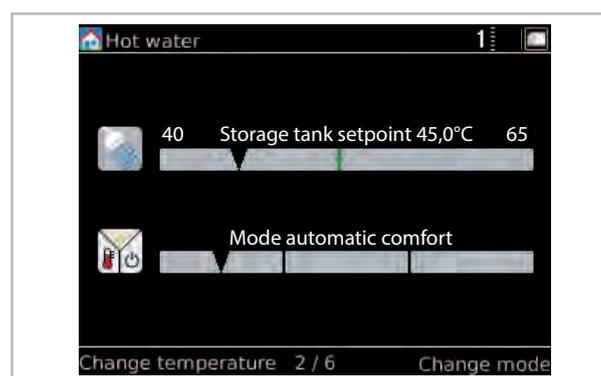


Fig. 20: Warmwasser

Then turn the rotary knob clockwise.



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Room climate

Colder/Warmer can be used to adjust the temperature of the heating (set with the left softkey, then confirm with "OK"). If the room temperature is too low, the room thermostat (on the heater) should first be set higher. If this is not sufficient, then set the Warmer/Colder value higher by 1 °C. This also roughly corresponds to one degree of room temperature.

Room climate mode (select the right softkey, then confirm with "OK") allows you to define the operating status of the room heater.

Automatic (recommended): the mode switches automatically between heating, standby and cooling (special equipment), based on the outside temperature. This takes account of the ability of the building to retain heat. For example, on cooler summer nights the room heater stays off, preventing unnecessary operation.

Heating: heating mode occurs in accordance with the outside temperature and the heating curve (weather-controlled) or in accordance with a fixed value.

Standby: in standby mode neither heating nor cooling occurs, however anti-freeze protection is active.

Cooling: cooling mode occurs in accordance with the outside temperature and the cooling curve (weather-controlled) or in accordance with a fixed value.

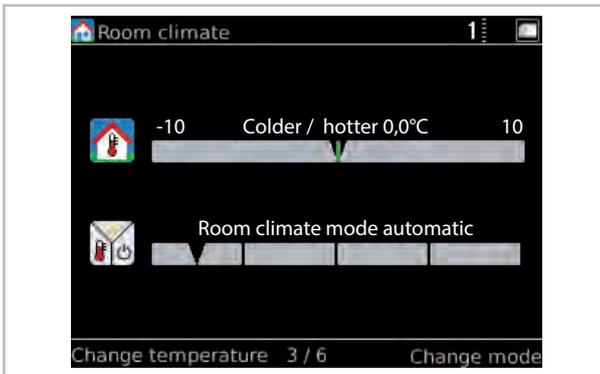


Fig. 21: Room climate

Then turn the rotary knob clockwise.



One-off hot water/party mode

Activating **Party mode** (select with the right softkey) causes the next window of time with reduced heating to be disregarded, so that the heating runs in normal operation again. After this period, the heating again functions according to the stored time program. To activate/deactivate "One-off hot water" press the left softkey. The storage tank is enabled for one-off charging (activated), e.g. for showering outside hot water time periods).

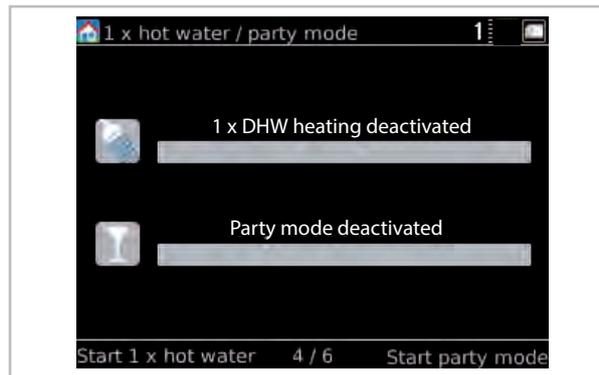


Fig. 22: One-off hot water/party mode

Then turn the rotary knob clockwise.



Time programmes

There are 3 **user profiles** available for the time program. For example, Profile A could be used for early shift weeks, B for late shifts, and C for holidays. You can switch profile using the left softkey.

The displayed **time programmes** apply to the current day. Blue means reduced mode, red means normal operation. The current time is displayed above the time bars.

Time programme for hot water

Time programme for the unmixed heating cycle

Time programme for the mixed heating cycle

The time programmes can be adjusted in the menu under:

- Settings/Hot water
- Settings/Unmixed heating cycle
- Settings/Mixed heating cycle

You can use the right softkey to activate an "away period". The system will then function in reduced mode until the right softkey is pressed again.

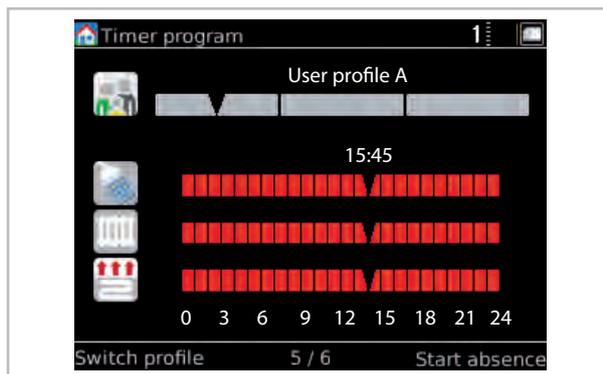


Fig. 23: Time programmes

Then turn the rotary knob clockwise.



Solar yields (only with Smart-Count)

The yields of the solar plant are generally calculated using the collector and storage tank temperature, and the medium flow rate. The energy content of one litre of oil or one cubic metre of gas is 10 kWh.

The right softkey is used to select day, week, month or year values for the bars. The left softkey activates a scroll function, which allows you to scroll through historical values using the rotary knob.

Yields are highly dependent upon solar radiation and heating requirements. The solar plant will achieve the highest yields on sunny days.

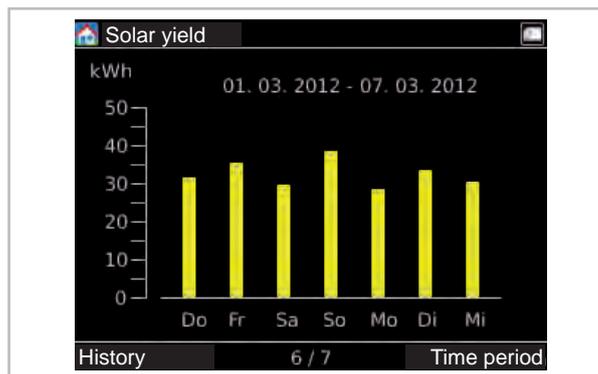


Fig. 24: Example diagram: Solar yield

NOTE:

These yields are also displayed with an activated PV function

Then turn the rotary knob clockwise.



CO₂ savings

CO₂ savings specifies how much CO₂ emissions have been avoided. The calculation of CO₂ savings is based on the amount of renewable energy generated.

The CO₂ savings figure is used to calculate the Equivalent in trees value. This is based on the assumption that a beech tree is able to bind 12.5 kg of CO₂ per year.

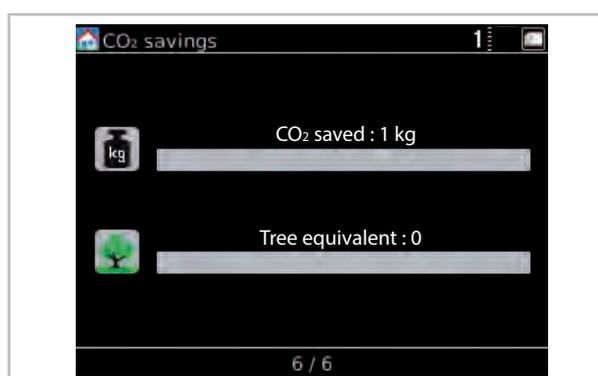


Fig. 25: CO₂ savings

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"Main menu" menu item

Pressing the Menu key takes you to the main menu. There is an expert mode and a user mode. The two authorisation levels are identified by icons. Some menu items and parameters are only visible in expert mode. They may only be adjusted by specialists!

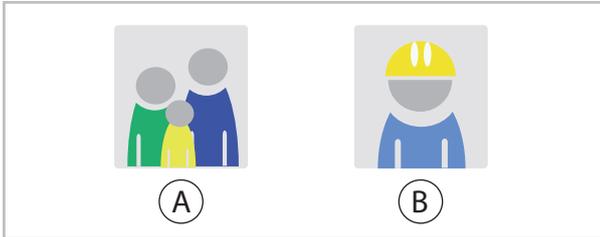


Fig. 26: The user and expert icons

- A: User
- B: Expert

Authorisation level	Level 1 menu item	Description
		Information
		Settings
		Chimney sweep
		Messages

"Information" menu item - User

This menu contains information about the current operating status of the system. The menu is opened with the key on the right. Pressing the left-hand key allows you to jump up a level in the menu structure again. By turning the rotary knob, you can select another menu item (for instance "Settings"). Pressing the left key multiple times always allows you to return to the 3D house.

Pressing "OK" (right softkey) takes you to submenus of the menu item "Information".

Depending on the heat pump installed and the design, individual parameters may vary from version to version. The relationship of certain parameters to a particular unit series is indicated with a *). The legend can be found on  on page 27

Authorisation level	Level 2 menu item	Level 3 menu item	Level 4 menu item	Info
	Basic information	Status	Current operating mode	You can find many of the individual info texts about the level 2-4 menu items on your Smart Control
			Previous operating mode	
			Room climate	
			Party mode	
			Away mode	
			Anti-freeze protection	
			IP address	
			Subnet	
			Gateway	
			Smart Count *a)	
			Smart Web *a)	
			Smart Com *a)	
		Activation code		
		Date/Time	Time	
			Date	
			Time zone	
		Version number	Hardware control panel	
			Hardware	
			Software control panel	
			Software	
Software (I/O 2) *5)				
Linux kernel control panel				
Linux kernel				
Licence information	µPC version *2)			
	µPC software date *2)			

*a) Please find additional information on these menu items in the special manuals

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"Information" menu item (continued) - User

Authorisation level	Level 2 menu item	Level 3 menu item	Info
	Solar	Pump A01	You can find many of the individual info texts about the level 2-3 menu items on your Smart Control
		Control signal A40	
		Collector temp. S01	
		Lower storage tank temp. S02	
		Storage tank charging status	
		Storage tank changeover valve A12	
		Current output	
		Solar yield	
		Medium flow rate S23	
		Buffer tank temp. S09	
	Hot water	HW request	
		HW storage tank set temp.	
		HW storage tank actual temp. S08	
		Hot water energy	
		Hygiene function	
		Circulation request S05	
		Circulation set temp	
		Circulation actual temp. S05	
	Circulation pump A04		
	Stored energy	Stored energy	
		Buffer tank temp. S09	
		Heating water temp. (Setpoint)	
	Unmixed Heating cycle	Heating cycle set temp.	
		Heating cycle actual temp.	
		Room target temperature	
		Room actual temperature	
		Room humidity	
		Mixed outside temperature	
	1st mixed Heating cycle	Heating cycle set temp.	
		Heating cycle actual temp.	
		Room target temperature	
		Room actual temperature	
		Room humidity	
Mixed outside temperature			

"Information" menu item  (continued) - User

Authorisation level	Level 2 menu item	Level 3 menu item	Info
	2nd mixed Heating cycle	Heating cycle set temp.	You can find many of the individual info texts about the level 2-3 menu items on your Smart Control
		Heating cycle actual temp.	
		Room target temperature	
		Room actual temperature	
		Room humidity	
		Mixed outside temperature	
	3rd mixed Heating cycle (I/O 2) *5)	Heating cycle set temp.	
		Heating cycle actual temp.	
		Room target temperature	
		Room actual temperature	
		Room humidity	
		Mixed outside temperature	
	4th mixed Heating cycle (I/O 2) *5)	Heating cycle set temp.	
		Heating cycle actual temp.	
		Room target temperature	
		Room actual temperature	
		Room humidity	
		Mixed outside temperature	
	Cooling	Changeover valve A14	
		Cooling cycle set temp.	
		Cooling cycle actual temp.	
		Room target temperature	
		Room actual temperature	
		Room humidity	
		Dew point	
		Mixed outside temperature	
	Hydraulics	Heat generator request	
		Heating water temp. (setpoint)	
Heating water temp. (actual value)			
Therm.output			
Changeover valve 2nd Heat generator A11			
Pump speed rel. A43			
Pump speed rel. A43.2 *5)			

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"Information" menu item  (continued) - User

Authorisation level	Level 2 menu item	Level 3 menu item	Info
	Heat pump	Heat pump status	You can find many of the individual info texts about the level 2-3 menu items on your Smart Control
		Remaining idle time	
		Defrost status S22	
		Compressor status S21	
		Compressor frequency *2), *3), *5)	
		Fault status S20 *2), *4)	
		Fault code (outside) *3), *5)	
		Fault code (inside) *3), *5)	
		Target temperature A44	
		Enable signal A33	
		Disable compressor A30	
		Heat pump mode A31	
		Disable signal S16, energy supplier cut-off	
		Heat pump elec. power	
		Therm. power, heat pump	
		Max. inlet temperature	
		Fan status *3), *5)	
		Fan speed *2), *3), *5)	
		Air temp. Outdoor unit *2), *3), *5)	
		Cont. HW offset	
		Cont. heating offset	
Short-term HW offset			
Short-term heating offset			
PV power utilisation			

"Information" menu item  (continued) - User

Authorisation level	Level 2 menu item	Level 3 menu item	Info
	Heat pump (I/O 2) *5)	Heat pump status	You can find many of the individual info texts about the level 2-3 menu items on your Smart Control
		Remaining idle time	
		Defrost status	
		Compressor status	
		Fault code (outside)	
		Fault code (inside)	
		Target temperature	
		Enable signal	
		Disable compressor	
		Heat pump mode	
		Disable signal S16	
		Fan status	
		Air temp. Outdoor unit	
	Auxiliary heat generator	Heat generator status	
	Potential-free output A32		

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"Information" menu item  (continued) - User

Authorisation level	Level 2 menu item	Level 3 menu item	Info
Meter readings	Solar	Current output	You can find many of the individual info texts about the level 2-3 menu items on your Smart Control
		Solar yield	
		Solar yield (day)	
		Solar yield (week)	
		Solar yield (month)	
		Solar yield (year)	
	Heat pump	Therm. power, heat pump	
		Therm. energy (day)	
		Therm. energy (week)	
		Therm. energy (month)	
		Therm. energy (year)	
		Therm. Heat pump energy	
		Output, environment	
		Environmental energy (day)	
		Environmental energy (week)	
		Environmental energy (month)	
		Environmental energy (year)	
		Heat pump elec. power	
		Electr. energy (day)	
		Electr. energy (week)	
		Electr. energy (month)	
		Electr. energy (year)	
		Heat pump electrical energy	

"Information" menu item  (continued) - User

Authorisation level	Level 2 menu item	Level 3 menu item	Info
Meter readings (cont.)	Household	Current household output	You can find many of the individual info texts about the level 2-3 menu items on your Smart Control
		Household energy (day)	
		Household energy (week)	
		Household energy (month)	
		Household energy (year)	
	Photovoltaic	Photovoltaic output	
		Photovoltaic yield (day)	
		Photovoltaic yield (week)	
		Photovoltaic yield (month)	
		Photovoltaic yield (year)	
		Photovoltaic yield	
		Feed-in power	
		Feed-in (day)	
		Feed-in (week)	
		Feed-in (month)	
		Feed-in (year)	
		Private consumption power	
		Private consumption (day)	
		Private consumption (week)	
		Private consumption (month)	
	Private consumption (year)		
	Heating and Hot water	Heating energy	
		Hot water energy	
		Cooling energy	
		Hot water meter	
	CO ₂ savings	CO ₂ savings	
		Equivalent in trees	
	KNXnet/IP	IP for the KNX interface	
MAC for the KNX interface			
IA for the KNX interface			
IA for the SMT			
KNX connection status			
Programming mode			

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"Settings" menu item - User

In this menu you can configure the settings. For example, you can adjust hot water and heating temperatures or change time settings. The menu is opened with the key on the right. Pressing the left-hand key allows you to jump up a level in the menu structure again. Pressing the left key multiple times always allows you to return to the 3D house.

Pressing "OK" (right softkey) takes you to submenus of the menu item "Settings".

Authorisation level	Level 2 menu item	Level 3 menu item	Level 4 menu item	Info		
	Basic settings	Language/Time	Date	You can find many of the individual info texts about the level 2-4 menu items on your Smart Control		
			Time			
			Date format			
			Time format			
			Language			
			Time zone			
		Display	Display brightness			
			Display contrast			
			Display off			
			Default screen			
			Solar		Storage tank	Solar set temp.
			Hot water		Domestic water heating	Storage tank set temp.
	Mode					
	Time program A					
	Time program B					
	Time program C					
	Tolerance during ECO operation					
	Circulation	Circulation set temp.				
Time program						

"Settings" menu item  (continued) - User

Authorisation level	Level 2 menu item	Level 3 menu item	Level 4 menu item	Info
	Heating/cooling	Mode	Room climate mode	You can find many of the individual info texts about the level 2-4 menu items on your Smart Control
			Differ. from cooling limit	
			Differ. from heating limit	
		Cooling	Cooling cycle mode	
			Time program	
			Cooling curve adjustment	
			Fixed value	
			Pump control	
			Building adaptation	
		Standard outside temp. (Heating)		
		Standard outside temp. (Cooling)		
		Unmixed Heating cycle	Heating cycle mode	
	Heating curve adjustment			
	Fixed value			
	Time program A			
	Time program B			
	Time program C			
	Time program function			
	Room temp. reduction			
	Room unit			
	Room temperature influence			
	1st mixed Heating cycle		Heating cycle mode	
		Heating curve adjustment		
		Fixed value		
		Time program A		
		Time program B		
		Time program C		
Time program function				
Room temp. reduction				
Room unit				
Room temp. influence				

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"Settings" menu item (continued) - User

Authorisation level	Level 2 menu item	Level 3 menu item	Level 4 menu item	Info
	2nd mixed Heating cycle	Heating cycle mode		<p>You can find many of the individual info texts about the level 2-4 menu items on your Smart Control</p>
		Heating curve adjustment		
		Fixed value		
		Time program A		
		Time program B		
		Time program C		
		Time program function		
		Room temp. reduction		
		Room unit		
		Room temperature influence		
	3rd mixed Heating cycle (I/O 2) *5	Heating cycle mode		
		Heating curve adjustment		
		Fixed value		
		Time program A		
		Time program B		
		Time program C		
		Time program function		
		Room temp. reduction		
		Room unit		
		Room temperature influence		
	4th mixed Heating cycle (I/O 2) *5	Heating cycle mode		
		Heating curve adjustment		
		Fixed value		
		Time program A		
		Time program B		
		Time program C		
		Time program function		
		Room temp. reduction		
		Room unit		
		Room temperature influence		

"Settings" menu item (continued) - User

Authorisation level	Level 2 menu item	Level 3 menu item	Level 4 menu item	Info	
	Heat pump	Graduated tariff	Number of power tariffs	You can find many of the individual info texts about the level 2-4 menu items on your Smart Control	
			Time field Tariff 1-9		
			Power tariff 1-9		
	PV current Consumption		Power tariff 1		
			Feed-in tariff		
			Personal use tariff		

Legend: Parameter/unit series coding

*)	Unit series
*1)	Only WKF/WKF-compact
*2)	Only HTS
*3)	Only WKF/WKF-compact with F-board WKF/WKF-compact 70 built as of 2016 (WKF/WKF-compact 120-180 built as of 2015)
*4)	Only WKF/WKF-compact with A/C board (WKF/WKF-compact 85 with software version ≥ 4.19 and WKF/WKF-compact 120-180 before 2015 with software version ≥ 4.19)
*5)	Only WKF Duo

"Messages" menu item

Pressing "OK" (right softkey) takes you to sub-menus of the menu item "Messages".

This is where operating messages, warning notices and fault messages are displayed.

Explanation of symbols:

 Warning message

 Fault message

If one of these symbols appears in the header of the control screen, please access the menu item "Messages" and display the details, with instructions on how to rectify the fault, with the key on the right.

Operating messages indicate which of the regular operating statuses the system is in.

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4 Operation - Expert level 🧑🔧

4.1 General notes regarding the menu structure of the controller

The following information is primarily directed at specialist personnel.

The following sections introduce the individual menu items and parameters. You will find a brief description regarding each menu item. Should you require a more precise description for the individual parameters, then call up the parameter on the controller and press the  key. A help text will then be displayed

- Values in square brackets [xx] are the factory settings. They may be modified by software updates, and mainly serve in the following tables to provide an understanding of the functions.

- On the Smart-Control the current factory setting is indicated by a green mark.



- The following diagrams and explanations relate to the full menu structure, which may differ from the menu structure of your own controller. Only the relevant menu items and parameters are displayed by the Smart-Control, depending upon which heat generators and functions you have activated. For example, if no heating cycle has been activated, the corresponding menu items and parameters are not displayed.

Overview of the menus (Expert level)

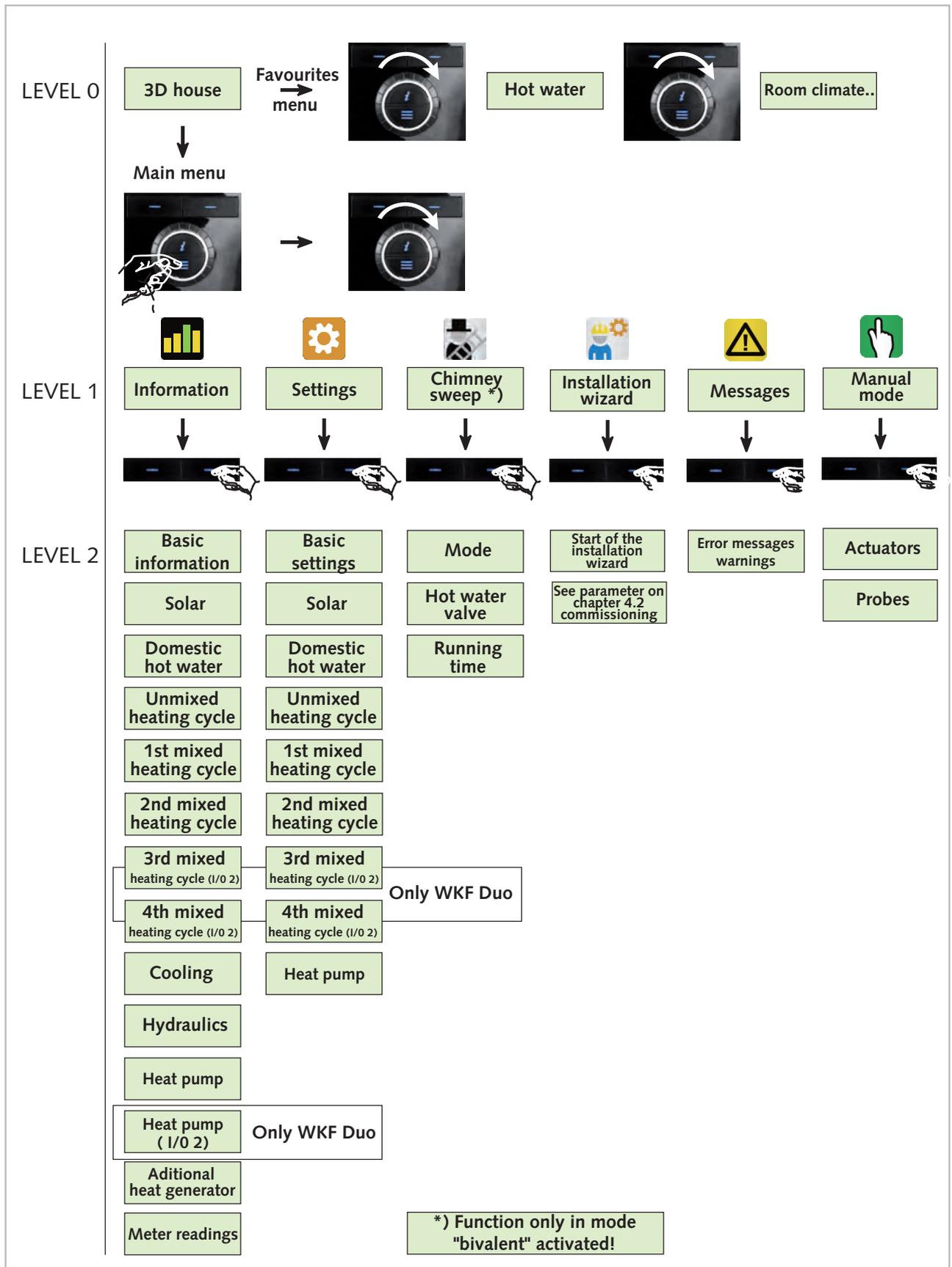


Fig. 27: Menu structure overview

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4.2 Commissioning wizard

When starting the controller for the first time the commissioning assistant is started in order to implement the basic programming of the existing system. After commissioning has been fully completed, the default set of parameters is enabled. During the first heating period, the thermal characteristics of the system should be observed, and the parameters optimised as necessary.

i The lower the selected water temperatures, the more efficient operation of the heat pump will be.

i You can find simplified commissioning examples ↪ Chapter 4.3 'Template hydraulic diagrams with installation parameters' on page 46

Should you require the installation wizard again at a later point in time (e.g. if you are expanding the existing system), you can also call it up manually at any time from the expert menu.

Proceed with installation as follows:



Fig. 28: Setting parameters



Fig. 29: Confirm the entry with "OK", then jump to the next setting with "Next"

Assigning the unique unit identifier

Here you can address up to 3 Smart-Control units.

Select the unit identifier with the rotary knob and confirm the entry with "OK". The unit ID number appears before a red, flashing field in the top right of the display. As soon as the bars indicating the connection strength appear in place of the red flashing field, it is possible to proceed with the parameterising.

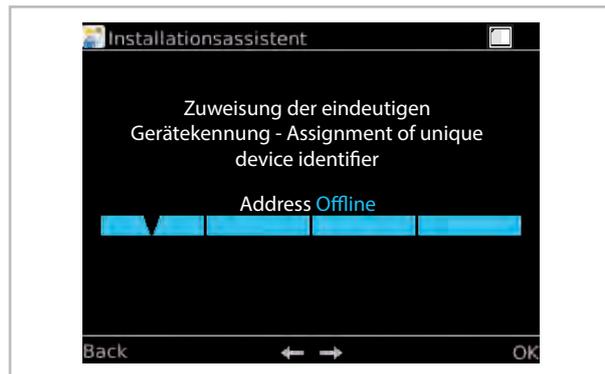


Fig. 30: Assigning the unit identifier

Menu item	Parameter	Factory setting
Control panel 1 address	Control panel 1	Control panel 1
	Control panel 2	
	Control panel 3	

Press "Next".

Setting the country

Select the country with the rotary knob and confirm the entry with "OK".



Fig. 31: Selecting a country

Menu item	Parameter	Factory setting
Country	Germany	Germany
	Österreich	
	Schweiz	
	United States	
	United Kingdom	
	Nederland	
	Belgique	
	Luxembourg	
	France	
	Espana	
	Portugal	
	Italia	
	Greece	
	Norge	
	Sverige	
	Suomi	
Polska		
Cesko		
Slovensko		

Press "Next".

Setting country-specific settings

Please confirm this parameter in order to load the country-specific settings. The selection of the country determines the setting for the date format, units of measurement and temperature limits. All settings can be modified at a later date.



Fig. 32: Load country-specific settings

Press "OK". The settings are loaded.

Setting the language

All menu entries, commands and parameters are displayed in plain language in the language selected.

Select the language with the rotary knob and confirm the entry with "OK".



Fig. 33: Setting the language

Menu item	Parameter	Factory setting
Language setting	Deutsch	Deutsch
	English	
	Francais	
	Italiano	
	Espanol	
	Portugues	
	Nederlands	

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Menu item	Parameter	Factory setting
	Polski	
	Čeština	

Press "Next".

Setting the time zone for the winter time

Selecting the time zone for the winter time allows the switch to daylight savings time to occur automatically. The respective time zone in winter must be specified.

Central Europe (GER, FR, IT, ES, PL)

-CET (Central European Time, Berlin, Paris)

If UTC (Universal Time Coordinated) is selected, no automatic switch to daylight savings time occurs.

Select the time zone with the rotary knob and confirm the entry with "OK".

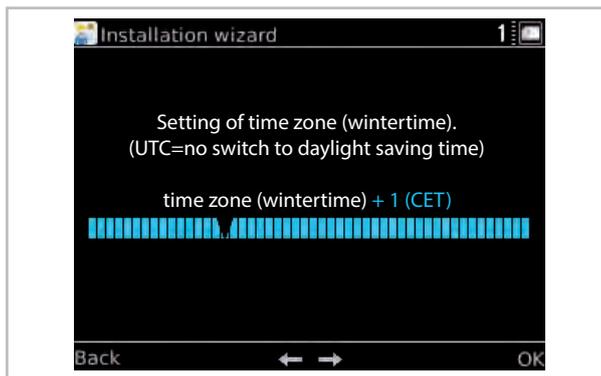


Fig. 34: Setting the time zone

Menu item	Parameter	Factory setting
Time zone (winter)	Time zones from "Winter -12" to "Winter +12 (PETT)" can be set	Winter +1 (CET)

Press "Next".

Setting the date

When setting the date, first the four-digit year is selected, then the month, and finally the day. The appropriate value is selected in each case by turning the rotary knob, and then confirmed with "OK".

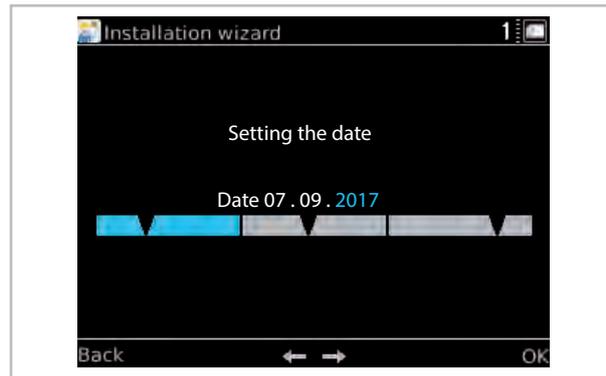


Fig. 35: Setting the date

Menu item	Parameter	Factory setting
Date setting	Year	Current date entry
	Month	
	Day	

Press "Next".

Setting the time

From here, you can set the current time. The controller has automatic daylight savings switching, which can also be activated from the menu "Language/Time".

When setting the time, first the hours are selected, and then the minutes. The appropriate value is selected in each case by turning the rotary knob, and then confirmed with "OK".



Fig. 36: Setting the time

Menu item	Parameter	Factory setting
Time setting	Hours	Current time entry
	Minutes	

Press "Next".

Load user settings

When first installing the controller this parameter is confirmed with "NO".

If a new software status is installed after the initial installation, it is possible to confirm this with "YES" and all existing parameters will be accepted anew. This means a complete new installation is unnecessary.



Fig. 37: Load user settings

Activating the heat pump

The controller detects automatically that a heat pump has been connected. If necessary, activate the heat pump (select with the rotary knob and confirm with "OK").

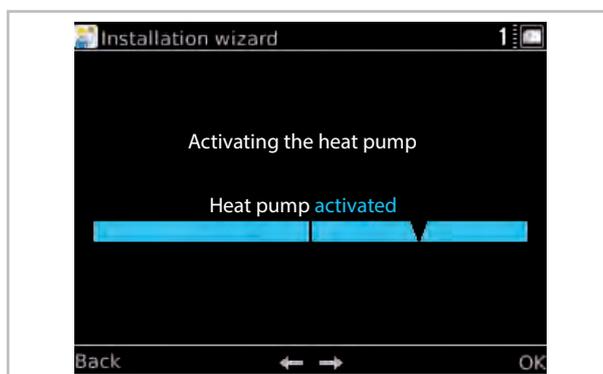


Fig. 38: Activating the heat pump

Menu item	Parameter	Factory setting
Activating the heat pump	Activated	Activated
	Deactivated	

Press "Next".

Operating mode



Fig. 39: Bivalent alternative operating mode

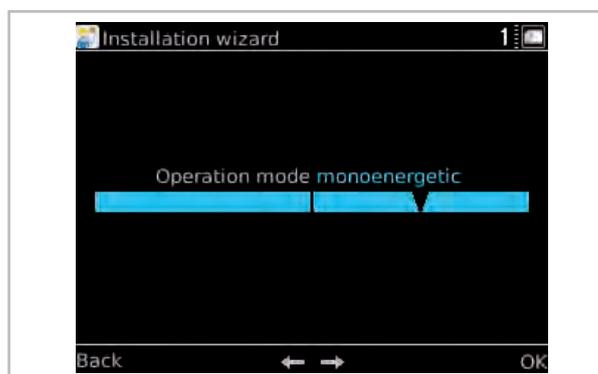


Fig. 40: Monoenergetic operating mode

Menu item	Parameter	Factory setting
Operating mode selection	Monoenergetic	Monoenergetic
	Bivalent alternative	

Selection of the auxiliary heat generator:

- Bivalent alternative (heat pump or oil/gas-fired boiler or wall heating)
- Monoenergetic (heat pump and/or Smart-Serv electric heating element) according to usable limits

The operating mode of the internal pump in the indoor unit must be defined here. (See ⚙️ "Settings" menu item ⚙️ (continued) - Expert' on page 87 - Internal pump: active/inactive)

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Domestic hot-water heating

Optionally, you can activate or deactivate the "Domestic hot-water heating" function. Activate Domestic hot-water heating if domestic water has to be heated for washing or showering (select with the rotary knob and confirm with "OK"). When this function is activated, the associated parameters are then queried. Pay attention to information on the display.

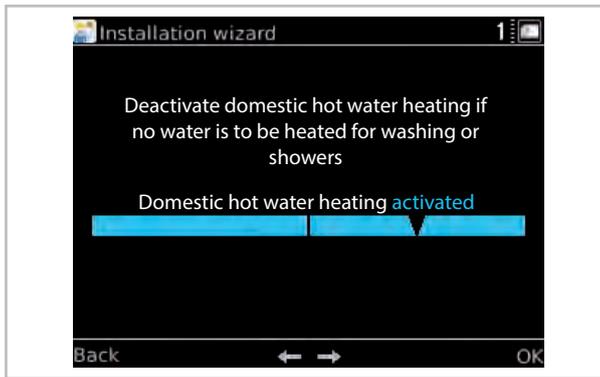


Fig. 41: Domestic hot-water heating
Auf „Weiter“ drücken.

Storage tank set temp.

Desired charging temperature for the hot water storage tank.

If there is a solar yield, the storage tank can become substantially warmer. The maximum temperature for solar charging can be modified under Settings/Solar/Storage tank.

For efficiency reasons, the lowest possible set temperature should be selected. If the available quantity of hot water is insufficient, the value should be increased. Pay attention to the maximum temperature of the heat pump.

Select the storage tank set temperature with the rotary knob and confirm with "OK".

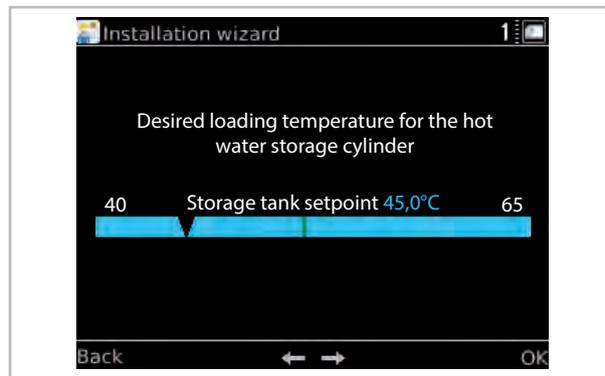


Fig. 42: Storage tank set temp.

Menu item	Parameter	Factory setting
Storage tank set temp.	40 °C - 65 °C	Factory recommendation 45°C

Press "Next".

Hot water circulation

If there is a hot water circulation pump in the building, which you are intending to operate in an energy-saving manner using the controller, this function must be activated (select with the rotary knob and confirm with "OK").

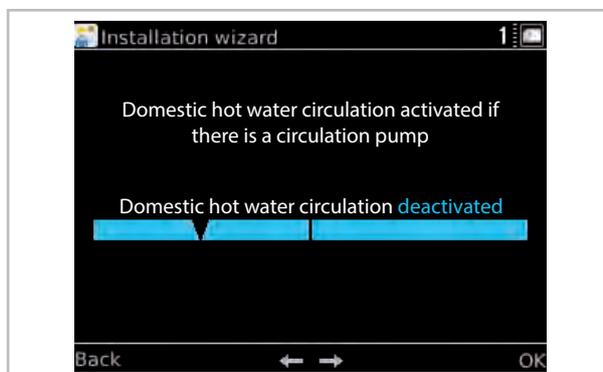


Fig. 43: Hot water circulation

Menu item	Parameter	Factory setting
Hot water circulation	Deactivated	As required
	Activated	

Press "Next".

Circulation type

(dependent on which probes are used)

Impulse circulation:

If briefly dispensing water triggers an impulse on the flow-operated safety device, this is registered by the controller and the circulation pump is started up. This means that the circulation is also active when it is required.

Temperature-guided circulation:

Temperature-guided circulation keeps the hot water temperature at the set temperature.

Select the circulation type with the rotary knob, then confirm the entry with "OK".

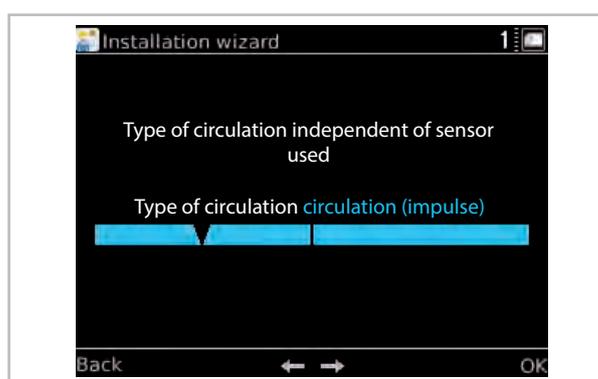


Fig. 44: Selecting the circulation type

Menu item	Parameter	Factory setting
Circulation type	Impulse circulation	As required
	Temperature-guided circulation	

Press "Next".

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Impulse-guided circulation - Running time of the circulation

Switch-on time of the circulation pump after a dispensing impulse.

If the circulation line is very short, a shorter running time may suffice. If the time is not sufficient to pump hot water to a remote dispensing point, the running time must be extended.

To set the desired temperature, select it with the rotary knob and confirm the entry with "OK".

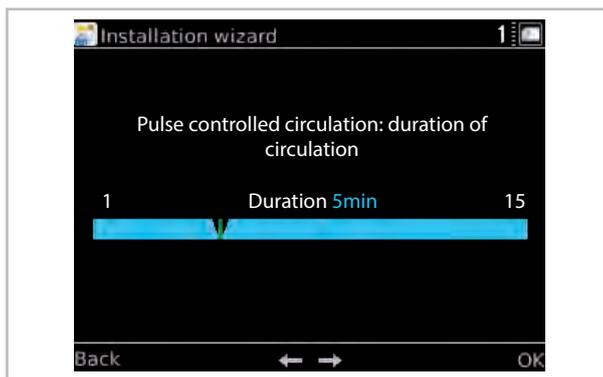


Fig. 45: Impulse-guided circulation - Selecting the running time of the circulation

Menu item	Parameter	Factory setting
Impulse-guided circulation - Running time of the circulation	1 min - 15 mins	5 min.

Press "Next".

Impulse-guided circulation - Disable switch-on

After the running time of the circulation pump, the pump cannot be started again while disable switch on is active. This prevents unnecessary permanent operation of the pump in the case of continuous dispensing. If the hot water cools too much while disable switch-on is active, the time should be shortened.

To set the desired time, select it with the rotary knob and confirm the entry with "OK".



Fig. 46: Impulse-guided circulation - Setting disable switch-on

Menu item	Parameter	Factory setting
Impulse-guided circulation - Disable switch-on	1 min - 15 mins	5 min.

Press "Next".

Temperature-guided circulation

Desired set temperature for temperature-guided circulation.

This should be set at least 5 °C below the set temperature for the hot water storage tank, or even lower for efficiency reasons.

To set the desired temperature, select it with the rotary knob and confirm the entry with "OK".

Menu item	Parameter	Factory setting
Temperature-guided circulation	25 °C - 65 °C	35 °C

Press "Next".

Unmixed heating cycle

Optionally, you can activate or deactivate the "Unmixed heating cycle" function. (select with the rotary knob and confirm with "OK").

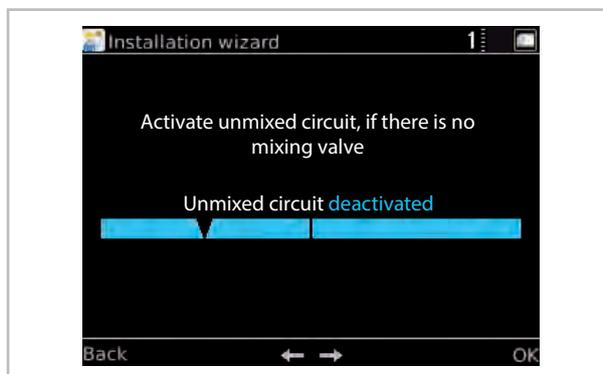


Fig. 47: Activate unmixed heating cycle

Menu item	Parameter	Factory setting
Unmixed heating cycle	Deactivated	Deactivated
	Activated	

Press "Next".

Setting heating cycle mode

This is where you can select between the different **heating cycle modes**. The choice is between control according to the set "**Heating curve**" and "**Fixed value control**" (select with the rotary knob and confirm with "OK").

Menu item	Parameter	Factory setting
Heating cycle mode with FB active	Heating curve	According to design
	Fixed value	10 °C - 50 °C

Press "Next".

Fixed-value-control heating cycle mode

Specify the set temperature for fixed value control (select with the rotary knob and confirm with "OK"). The heating cycle is kept permanently at this temperature in fixed value control.

For optimal configuration of the heating curve parameters, the heating load calculation and/or energy consumption must be taken into account.

Differences between the installed parameters and the design of the actual building can cause the heat pump to run inefficiently.

Operating the heating cycle with a fixed value is not recommended, as it will cause the heat pump to operate inefficiently.

After activating the 1st mixed heating cycle, the 2nd mixed heating cycle is enabled.

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2nd mixed heating cycle

Activate if a heating cycle with panel heating is installed. (select with the rotary knob and confirm with "OK")

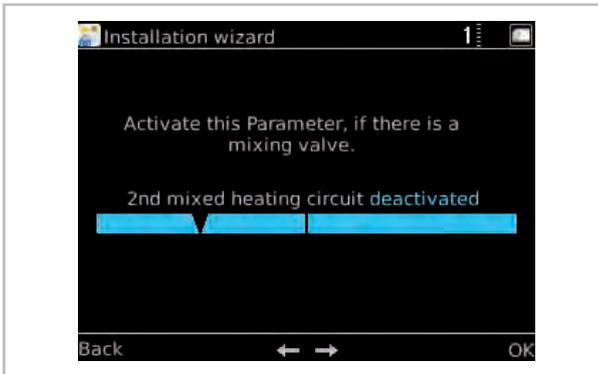


Fig. 48: Activate 2nd mixed heating cycle

Menu item	Parameter	Factory setting
2nd mixed heating cycle	Deactivated	Deactivated
	Activated	

Press "Next".

Setting heating cycle mode

This is where you can select between the different **heating cycle modes**. The choice is between control according to the set "Heating curve" and "Fixed value control" (select with the rotary knob and confirm with "OK").

Menu item	Parameter	Factory setting
Heating cycle mode for HK active	Heating curve	According to design
	Fixed value	10 °C - 40 °C

Press "Next".

Heating curve heating cycle mode

The heating curve can be adjusted in three points, according to the structure and location-related conditions of the building:

Base point:

The base point corresponds to the minimum set temperature of the heating water at an outside temperature of 20 °C. If the heating is too cold at relatively high outside temperatures (trans-seasonal period), the base point should be set higher.

Standard inlet temperature:

the standard inlet temperature corresponds to the set temperature of the heating water at the standard outside temperature in the building location. If the heating is not warm enough at low outside temperatures, the standard inlet temperature should be increased.

Standard outside temperature:

the standard outside temperature is dependent on the regional location of the building. Please consult your heating installer.

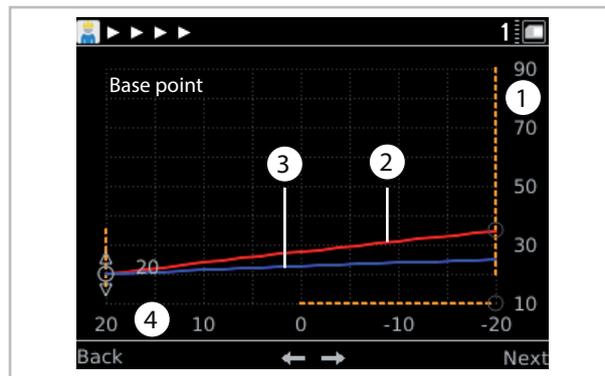


Fig. 49: Heating curve adjustment

- 1: Temperature of the heating water in °C
- 2: Inlet temperature heating curve
- 3: Return flow heating curve
- 4: Outside temperature in °C

Setting the heating curve:

- Activate the base point with the right softkey, set with the rotary knob and conform with the right softkey.

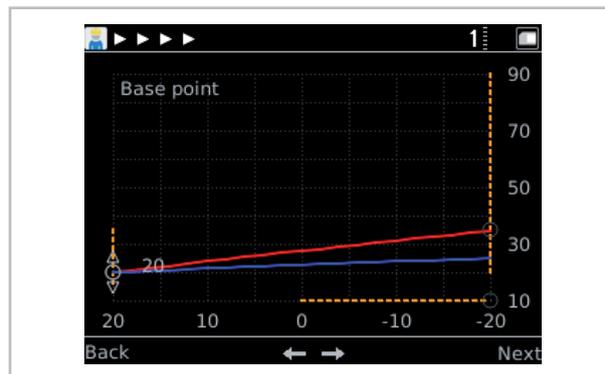


Fig. 50: Setting the base point

- The standard inlet temperature and the outside temperature are set using the same procedure.

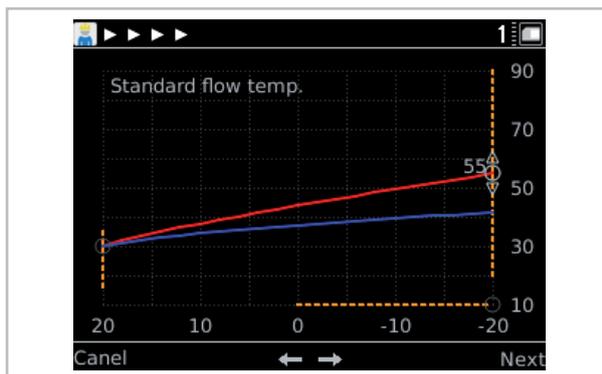


Fig. 51: Setting the standard inlet temperature

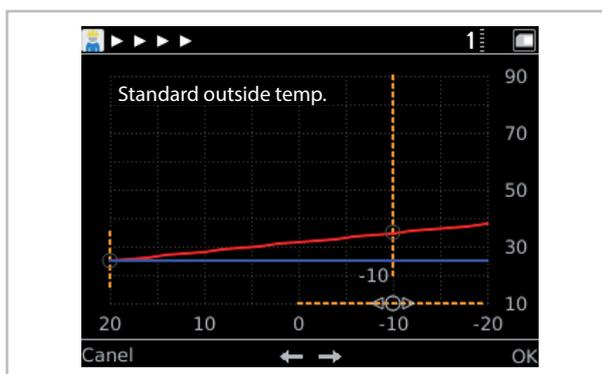


Fig. 52: Set the standard outside temperature

Fixed-value-control heating cycle mode

Specify the set temperature for fixed value control (select with the rotary knob and confirm with "OK"). The heating cycle is kept permanently at this temperature in fixed value control.

For optimal configuration of the heating curve parameters, the heating load calculation and/or energy consumption must be taken into account.

Differences between the installed parameters and the design of the actual building can cause the heat pump to run inefficiently.

Operating the heating cycle with a fixed value is not recommended, as it will cause the heat pump to operate inefficiently.



For the WKF Duo heat pump, two further mixed heating cycles can be activated if required. To do so, carry out steps as described in the 1st or 2nd mixed heating cycle.

System separation

Activation if a mixed heating cycle is separated by a heat exchanger.

If system separation is activated, the setpoint temperature is increased (select with the rotary knob and confirm with "OK").

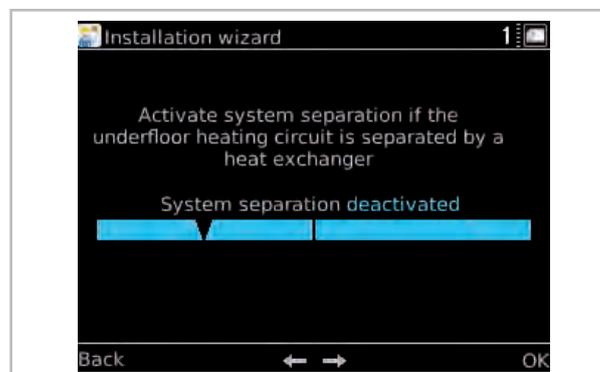


Fig. 53: Activating the system separation

Menu item	Parameter	Factory setting
System separation FBH	Deactivated	Deactivated
	Activated	

After activating the system separation it is possible to select a setpoint increase, in order to balance the heat losses with a heat exchanger.

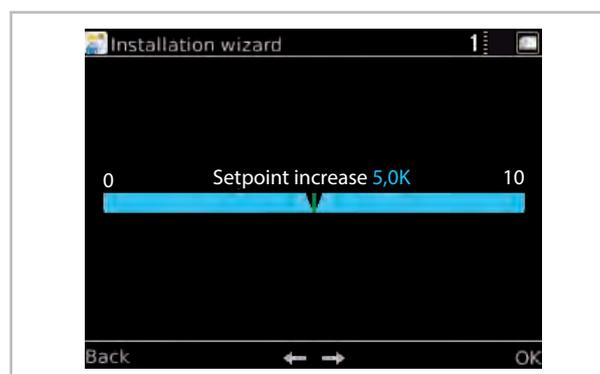


Fig. 54: Adjustment of the setpoint temperature

Menu item	Parameter	Factory setting
Setpoint temperature	0 - 10	5.0 K

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Setting the building time constant

The building time constant specifies the ability of the building to retain heat. The building time constant is dependent upon the type of building (see table). The value (select with the rotary knob and confirm with "OK") is also dependent on individual temperature perception, and so the information in the table should only be treated as a guide. Recommended are:

Building type	Heat retention ability	Recommended value
Light	Low heat retention ability, e.g. prefab/wood-frame houses	approx. 10h
Medium	Moderate heat retention ability, e.g. house made from hollow blocks	approx. 20h
Heavy	High heat retention ability, e.g. brick house	approx. 30h
Very heavy	Very high heat retention ability, e.g. exterior and interior walls > 30cm	approx. 60h
Passive	Well-insulated, e.g. zero-energy housing	approx. 100h

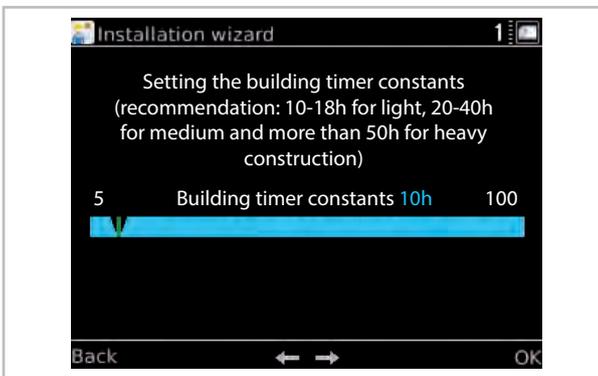


Fig. 55: Setting the building time constant

Menu item	Parameter	Factory setting
Building time constant	0 - 100 h	According to design! - 10 h

Press "Next".

Setting the standard heating load

Set the standard heating load (select with the rotary knob and confirm with "OK"). The standard heating load is obtained by multiplying the specific heating load by the living area to be heated. You can calculate the standard heating load from the following table.

Building performance requirements	
Year of construction	Specific heating load
Up to 1970, uninsulated	120... 180 W/m ²
1977 to 1984	70... 100 W/m ²
1985 to 1995	50... 70 W/m ²

Building performance requirements	
Year of construction	Specific heating load
New build, EnEv	40... 50 W/m ²
New build, KfW 40/60	20... 30 W/m ²
Zero-energy house	10... W/m ²

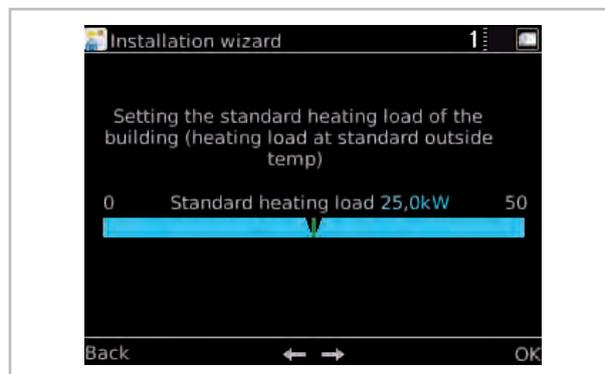


Fig. 56: Setting the standard heating load

Menu item	Parameter	Factory setting
Standard heating load	0 - 50 kW	Dependent on unit (outdoor unit) detected

Press "Next".

Cooling function

Activate (select with the rotary knob and confirm with "OK") if the building is to be actively cooled with the heat pump in summer.

Please ensure that the cycle being used for the cooling function is designed for this purpose.

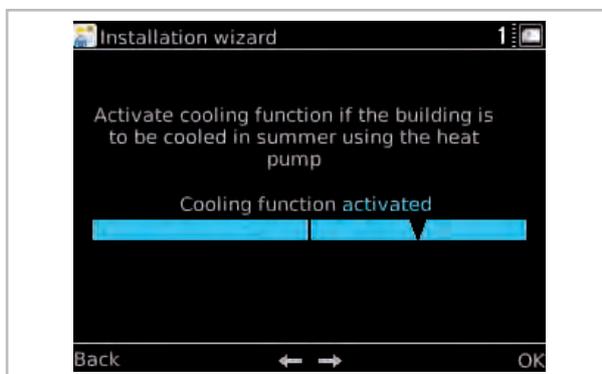


Fig. 57: Activating the cooling function

Menu item	Parameter	Factory setting
Cooling function	Deactivated	Deactivated
	Activated	

Press "Next".

Separate cooling cycle

Activate (select with the rotary knob and confirm with "OK") if a separate cycle is installed which is used solely for the cooling function (e.g. with fan convectors).

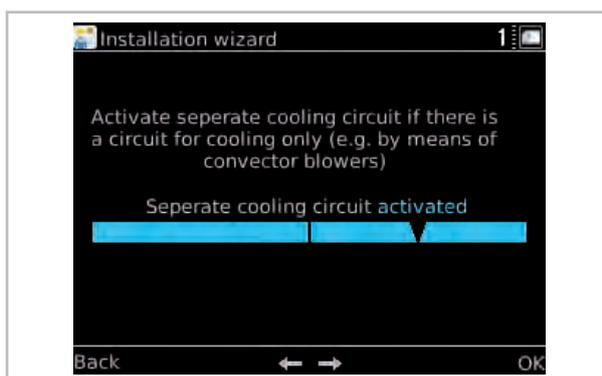


Fig. 58: Activating the separate cooling cycle

Menu item	Parameter	Factory setting
Separate cooling cycle	Deactivated	Deactivated
	Activated	

Press "Next".

Cooling via unmixed heating cycle

If active cooling is to take place via the unmixed heating cycle, this parameter is activated.

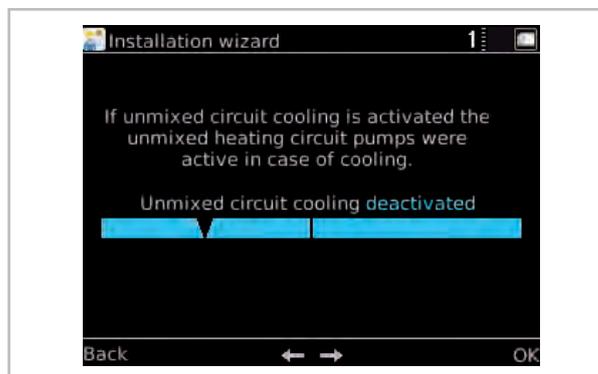


Fig. 59: Cooling via unmixed heating cycle

Menu item	Parameter	Factory setting
Cooling via unmixed heating cycle	Deactivated	Deactivated
	Activated	

Solar plant

Deactivate (turn the rotary knob to the left and confirm with "OK") if no solar plant is installed. It can be activated again at a later date.

Activate (turn the rotary knob to the right and confirm with "OK") if a solar plant is installed.

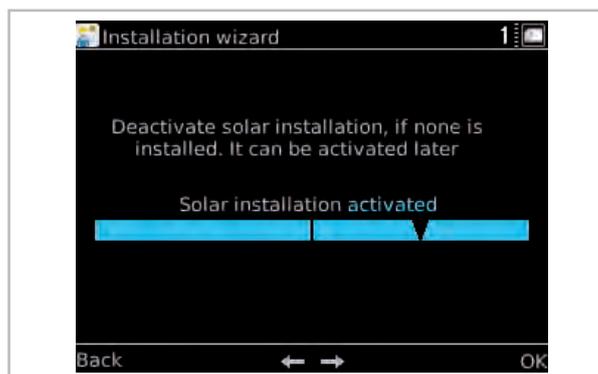


Fig. 60: Deactivate solar plant

Menu item	Parameter	Factory setting
Solar plant	Deactivated	Deactivated
	Activated	

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Selecting the pump system

Select the pump system for the speed control system (select with the rotary knob and confirm with "OK"). The speed control system is available for a solar cycle with asynchronous pump (controlled by an A01 with "wave packets"), as well as for one or two solar cycles with high-efficiency pump (controlled by an A01 with "PWM").

We recommend activating an EC pump. The solar pump adapts automatically to solar capacity. If the temperature difference increases due to increased solar capacity, the speed of the solar pump is increased. (This results in a higher degree of efficiency of the solar plant as well as lower power consumption of the solar pump).

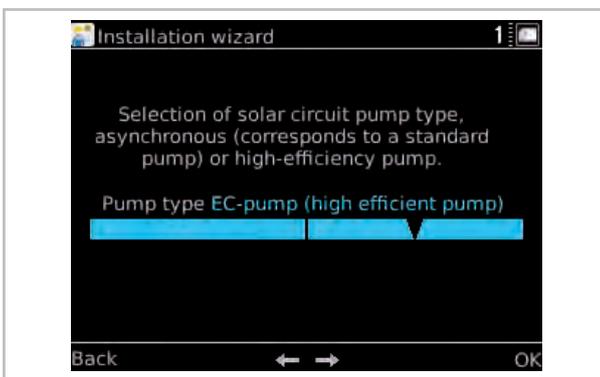


Fig. 61: Selecting the pump system

Menu item	Parameter	Factory setting
Pump type (solar cycle)	Asynchronous pump EC pump	Selection according to pump type installed in the solar cycle

Solar speed control system

Activate the solar speed regulation if you want the solar cycle pump to modulate according to solar capacity.

Activation of the speed control system for the pump in the solar cycle. the pump can be activated according to demand, for efficiency reasons; as solar radiation increases, the speed of the pump increases.

When using a pump which is not suitable for the speed control system, the system should be deactivated.

(We recommend use of a speed-controlled pump).

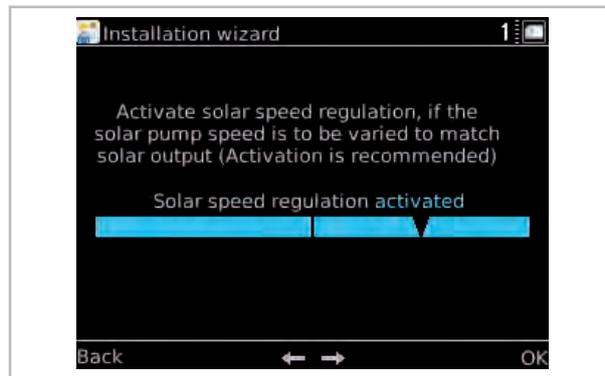


Fig. 62: Activating the speed control system

Menu item	Parameter	Factory setting
Solar speed control system	Deactivated	Deactivated
	Activated	

Menu item	Parameter	Factory setting
Asynchronous speed control system	On	On
	Off	

Medium flow rate probe

The amount of heat delivered from solar yields is recorded continuously, and can be called up in the form of a daily or cumulative value.

If no medium flow rate probe is installed, a manual medium flow rate can be selected. The heat meter can also be deactivated, if desired.

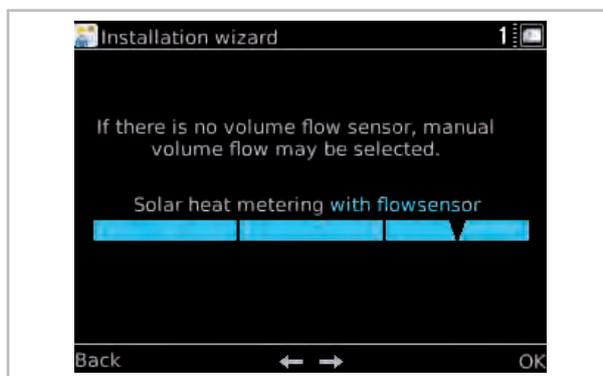


Fig. 63: Selecting the medium flow rate probe

Menu item	Parameter	Factory setting
Solar HM	Deactivated	Setting with heat meter installed
	Manual medium flow rate	
	Medium flow rate probe	

Press "Next".

Setting the impulse rate of the solar medium flow rate probe

The impulse rate must only be changed (select with the rotary knob and confirm with "OK") if the impulse rate in the customer-provided system must be adapted.

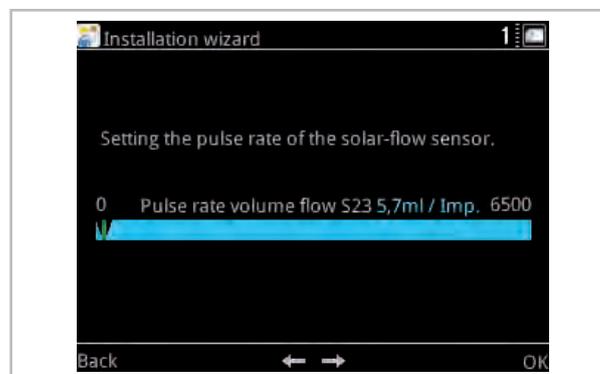


Fig. 64: Medium flow rate probe - setting the impulse rate

Menu item	Parameter	Factory setting
Impulse rate for medium flow rate (if activated)	0 - 10 ml/Imp	5.7 ml/Imp

Press "Next".

Manual medium flow rate

If there is no medium flow rate in the solar station, manual medium flow rate can be selected (select with the rotary knob and confirm with "OK"). The heat meter can also be deactivated, if desired.

Press "Next".

Specifying the medium flow rate

The medium flow rate is specified in order to calculate the amount of solar heat. The value can be viewed on the flow meter when the solar pump is running.

Enter the value (select with the rotary knob and confirm with "OK").

Recommendation: adjust the medium flow rate to suit the hydraulic system provided by the customer

Press "Next".

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Heat carrier medium

Select (select with the rotary knob and confirm with "OK") the type of solar fluid used, in order to calculate the amount of solar heat.

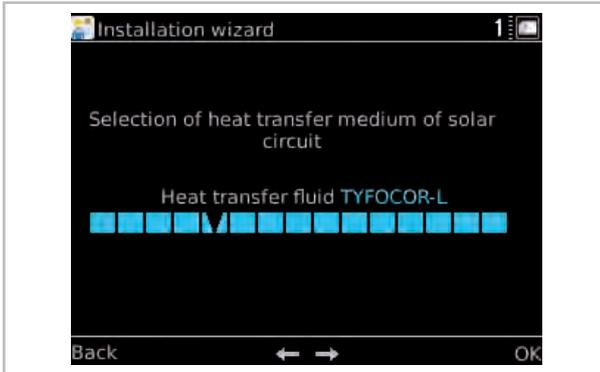


Fig. 65: Selecting the heat carrier medium

Menu item	Parameter	Factory setting
Heat carrier medium	Water	TYFOCOR-L
	DOWCAL 10	
	DOWCAL 20	
	TYFCOR	
	TYFOCOR-L	
	TYFOCOR-LS	
	ANTIFROGEN-N	
	ANTIFROGEN-SOL	
	Temper-10	
	Temper-15	
	Temper-20	
	Temper-30	
	Temper-40	
Temper-55		
GLYTHERMIN P44		

Press "Next".

Set temperature of the storage tank during solar charging

Once the solar set temperature is reached, the solar cycle pump is switched off. With the collector cooling function activated, the temperature of the storage tank can continue to rise as far as the set maximum temperature.

The solar set temperature (select with the rotary knob and confirm with "OK") should be reduced if the hot water temperature is regularly too high or if there is no thermostatic mixing valve installed. At the same time, when the collector cooling function is activated, the max. temperature of the storage tank must be reduced.

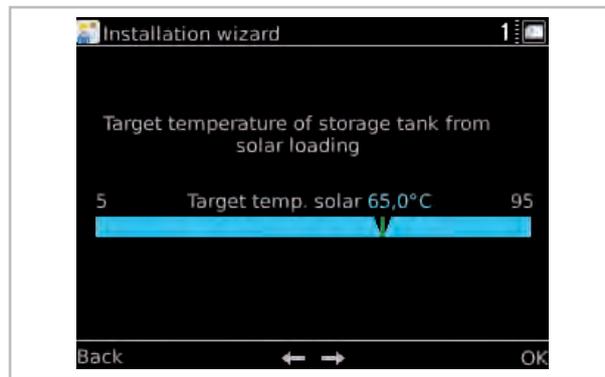


Fig. 66: Set temperature of the storage tank

Menu item	Parameter	Factory setting
Solar set temperature	5 °C - 95 °C	85 °C

Press "Next".

Acquisition of the stored energy via the S 09 probe

If heating is to be provided from the available solar yield (if required), this parameter must be activated.

If another heat generator is connected to the system hydraulically, e.g. water-based chimney heat exchanger, this parameter must be activated and the S 09 probe must be installed.

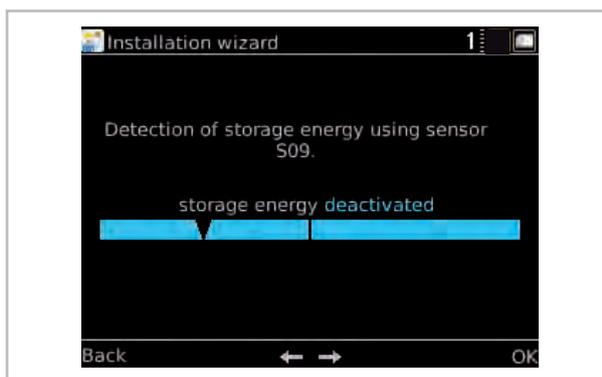


Fig. 67: Acquisition of the stored energy

Menu item	Parameter	Factory setting
Acquisition of the stored energy	Deactivated	Deactivated
	Activated	

REMKO recommends installing a domestic hot water mixer.

Once the last parameter has been entered into the commissioning wizard, the screen switches to the overview mode (3D house).

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4.3 Template hydraulic diagrams with installation parameters

! NOTICE!

The following template hydraulic systems are only to be used as a planning aid, and do not replace an installation drawing! Technical modifications reserved!

The design and planning of customer-provided hydraulic systems must be performed by a specialist installer!

We recommend adapting plant-specific parameters, such as a heating limits and bivalence point, to the design data!

You can find further hydraulics examples at www.remko.de

Hydraulic diagram for heat pump assembly HTS Köln

Functions: Heating or cooling, operating mode: monoenergetic or bivalent alternative

Only one cycle is possible for cooling; active cooling or floor heating (passive cooling)

The operating mode here can only be monoenergetic or bivalent alternative!

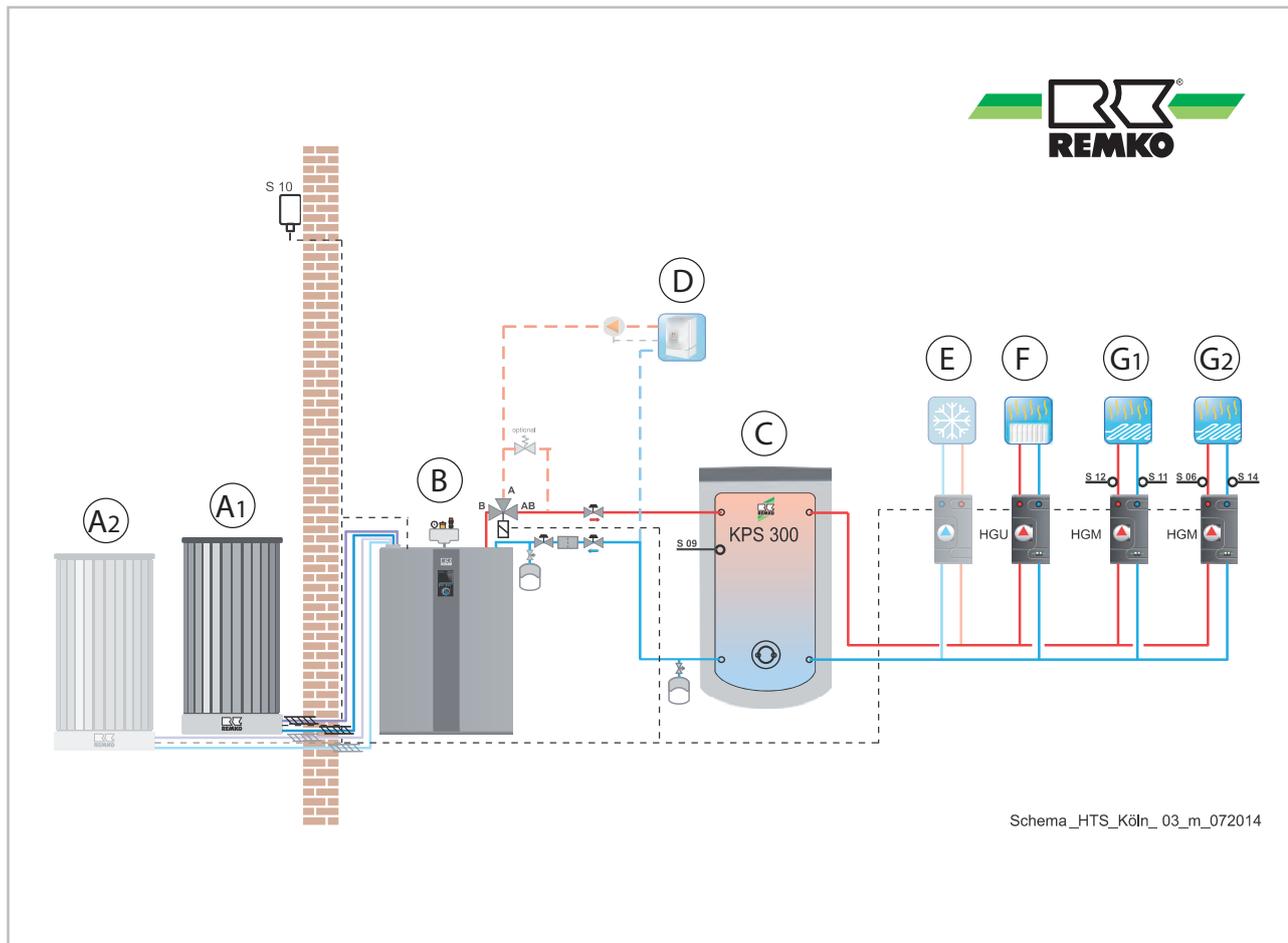


Fig. 68: Example hydraulic diagram for HP assembly HTS Köln

- | | |
|-----------------------------------|---------------------------------|
| A1: Outdoor unit 1 | D: Boiler / wall heating device |
| A2: Outdoor unit 2 (only HTS 260) | E: Cooling cycle |
| B: Indoor unit | F: Unmixed heating cycle |
| C: Storage tank | G1-2: Mixed heating cycle |

Hydraulic diagram for heat pump assembly WKF Köln

Functions: Heating or cooling, operating mode: monoenergetic or bivalent alternative

Only one cycle is possible for cooling; active cooling or floor heating (passive cooling)

The operating mode here can only be monoenergetic or bivalent alternative!

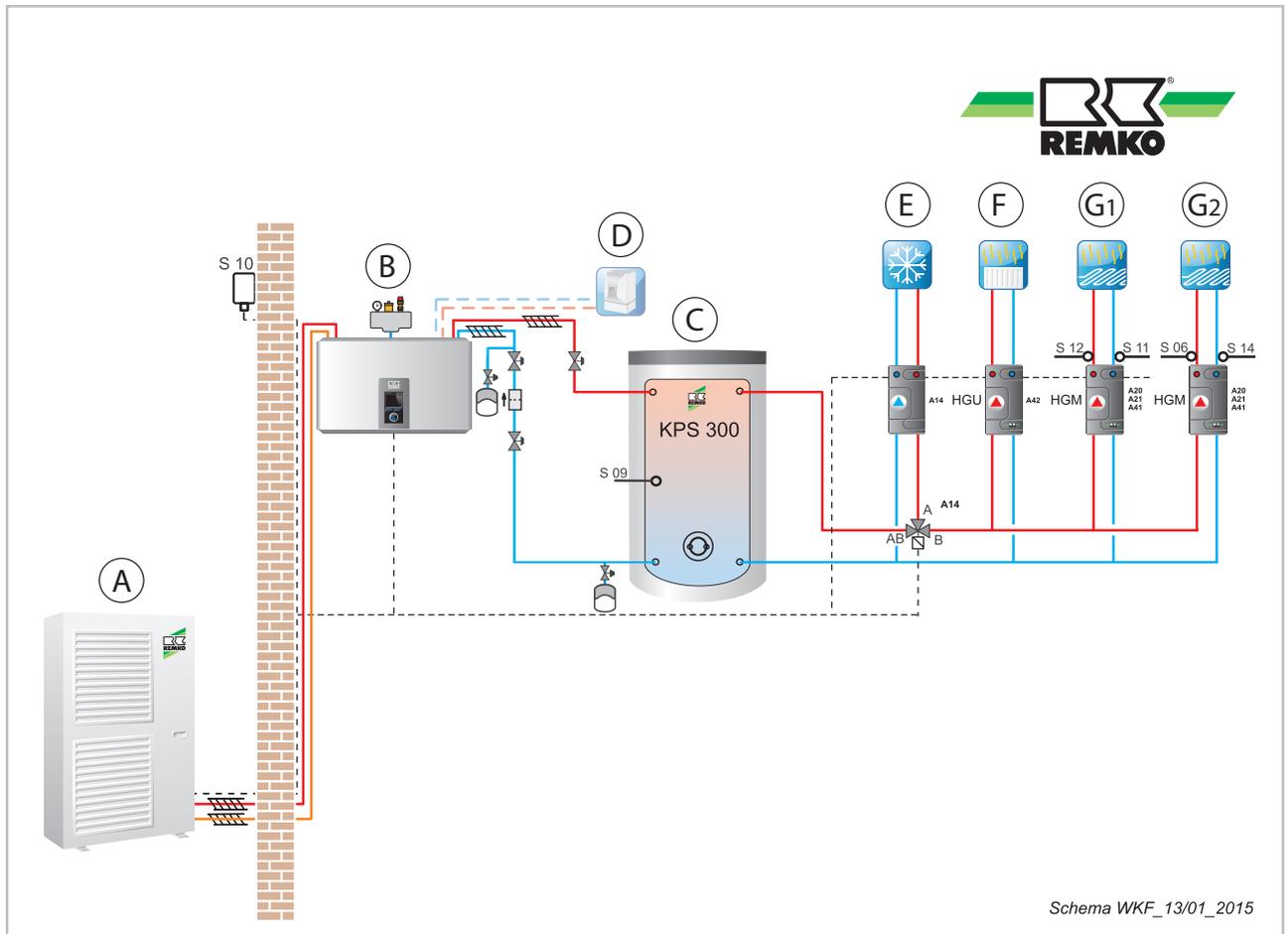


Fig. 69: Example hydraulic diagram for HP assembly WKF Köln

- | | | | |
|----|------------------------------|-------|-----------------------|
| A: | Outdoor unit | E: | Cooling cycle |
| B: | Indoor unit | F: | Unmixed heating cycle |
| C: | Storage tank | G1-2: | Mixed heating cycle |
| D: | Boiler / wall heating device | | |

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Hydraulic diagram for heat pump assembly WKF Köln Duo

Functions: Heating or cooling, operating mode: monoenergetic or bivalent alternative

Only one cycle is possible for cooling; active cooling or floor heating (passive cooling)

The operating mode here can only be monoenergetic or bivalent alternative!

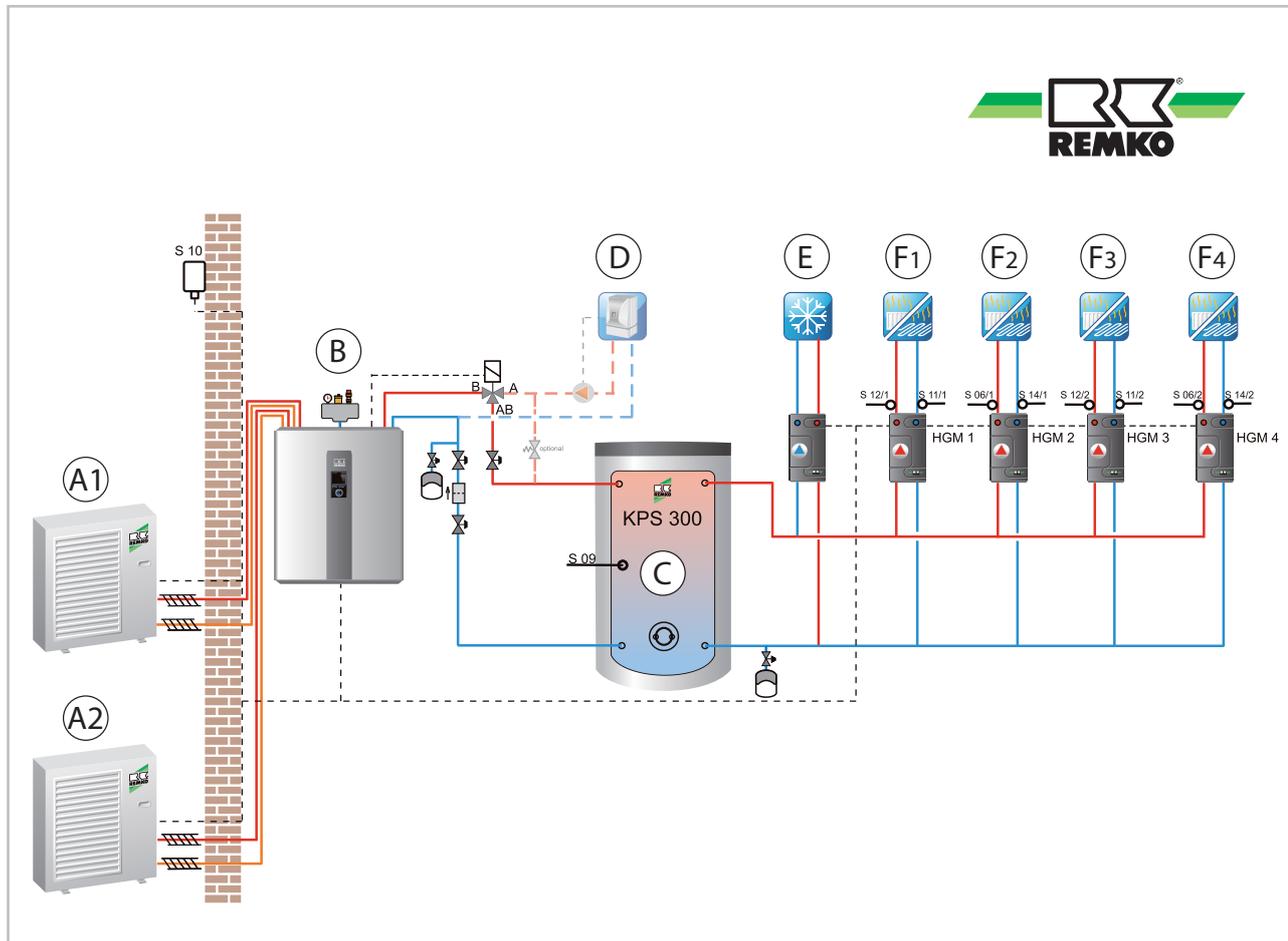


Fig. 70: Example hydraulic diagram for HP assembly WKF Köln Duo

- | | |
|------------------------------|---|
| A1: Outdoor unit 1 | D: Second heat generator |
| A2: Outdoor unit 2 (WKF Duo) | E: Cooling cycle |
| B: Indoor unit (WKF/WKF Duo) | F1-2: Floor heating cycles (F1, F2) |
| C: Storage tank | F3-4: Heating cycles (F3, F4, only WKF Duo) |

Basic settings for hydraulic diagrams for the HP packages HTS Köln, WKF Köln and WKF Köln Duo

Menu item	Parameter	Factory setting
Control panel address	Control panel 1-3	Control panel 1
Country	Deutschland - Slovensko	Germany
Load setting	Accept the parameters	Saving process
Language	Deutsch - Polski	Deutsch
Time zone	Var. time zones possible	Winter + 1(CET)
Date setting	Year / Month / Day	Basic settings

Menu item	Parameter	Factory setting
Time setting	Hours / Minutes	Basic settings
Activate heat pump	Activated / Deactivated	Activated
Operating mode	Monoenergetic/bivalent alternative	Monoenergetic
Domestic hot-water heating	Activated / Deactivated	Activated
Storage tank set temperature	"40°C - 65°C"	45 °C
Hot water circulation	Activated / Deactivated	Deactivated
Circulation type	Impulse	Deactivated
Circulation running time	1 min - 15 mins	5 min
Disable switch-on	1 min - 15 mins	5 min
Circulation type	Temperature	Deactivated
Circulation set temp	"25 °C - 65°C"	35 °C
Unmixed heating cycle	Activated / Deactivated	Deactivated
Heating cycle mode	Heating curve	Deactivated
Heating-curve base point	"15 °C - 35 °C"	30 °C
Standard inlet temperature	"40°C - 90 °C"	55 °C
Standard outside temperature	"0 °C - 20 °C"	20 °C
1st mixed heating cycle	Activated / Deactivated	Deactivated
Heating cycle mode	Heating curve	Deactivated
Heating-curve base point	"15 °C - 25 °C"	20 °C
Standard inlet temperature	"28 °C - 90 °C"	35 °C
Standard outside temperature	"0 °C - 20 °C"	20 °C

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Menu item	Parameter	Factory setting
2nd mixed heating cycle	Activated / Deactivated	Deactivated
Heating cycle mode	Heating curve	Deactivated
Heating-curve base point	"15 °C - 25 °C"	20 °C
Standard inlet temperature	"28 °C - 90 °C"	35 °C
Standard outside temperature	"0 °C - 20 °C"	20 °C
System separation FBH	Activated / Deactivated	Deactivated
Setpoint increase	0 - 10 K	5.0 K
Building time constant	"0 h - 100 h"	10 h
Standard heating load	"0 kW - 25 kW"	As required
Cooling function	Activated / Deactivated	Deactivated
Separate cooling cycle	Activated / Deactivated	Deactivated
Cooling via unmixed heating cycle	Activated / Deactivated	Deactivated
Solar plant	Activated / Deactivated	Deactivated
Pump type	Asynchronous	Deactivated
Asynchronous speed control system	On / Off	Deactivated
Pump type	EC pump (high-efficiency pump)	Deactivated
Solar speed control system	Activated / Deactivated	Deactivated
Solar HM	Deactivated	Deactivated
Manual medium flow rate	2 l/min - 30 l/min	5.0 l/min
Medium flow rate probe	0 ml / Imp - 10 ml / Imp	5.7 ml / Imp
Heat carrier medium	As required	Tyfocor-L
Solar set temperature	"5 °C - 95 °C"	85 °C
Acquisition of the stored energy	Activated / Deactivated	Deactivated

Hydraulic diagram for heat pump assembly HTS Frankfurt

Functions: heating and hot water, operating mode: monoenergetic or bivalent alternative. Solar prepared. Integration of solid fuels possible.

The operating mode here can only be monoenergetic or bivalent alternative!

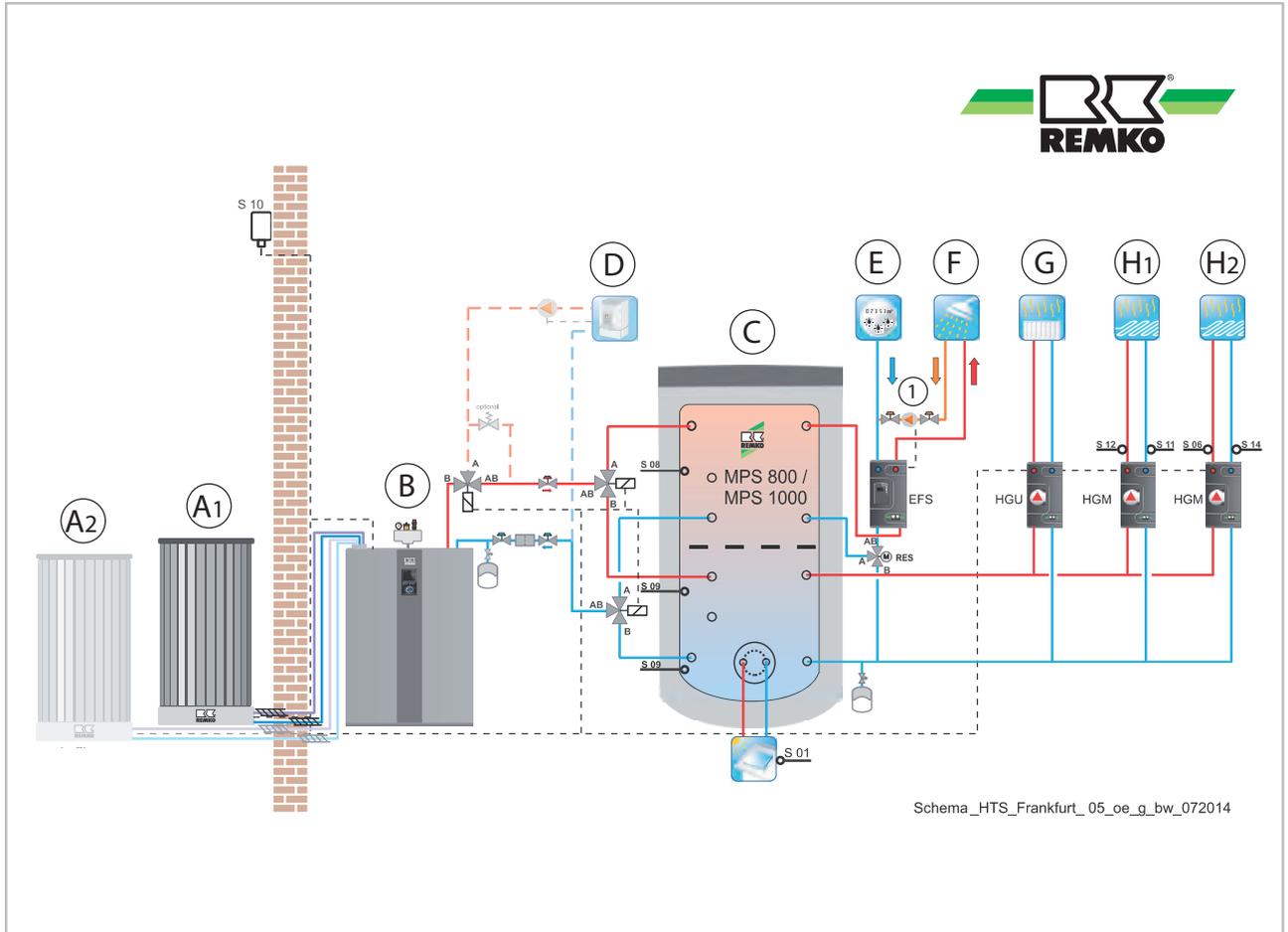


Fig. 71: Example hydraulic diagram for HP assembly HTS Frankfurt

- | | | | |
|-----|-------------------------------|-------|-----------------------|
| A1: | Outdoor unit 1 | E: | Cold water |
| A2: | Outdoor unit 2 (only HTS 260) | F: | Hot water |
| B: | Indoor unit | G: | Unmixed heating cycle |
| C: | Storage tank | H1-2: | Mixed heating cycle |
| D: | Boiler / wall heating device | 1: | Circulation |

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Hydraulic diagram for heat pump assembly WKF Frankfurt

Functions: heating and hot water, operating mode: monoenergetic or bivalent alternative. Solar prepared. Integration of solid fuels possible.

The operating mode here can only be monoenergetic or bivalent alternative!

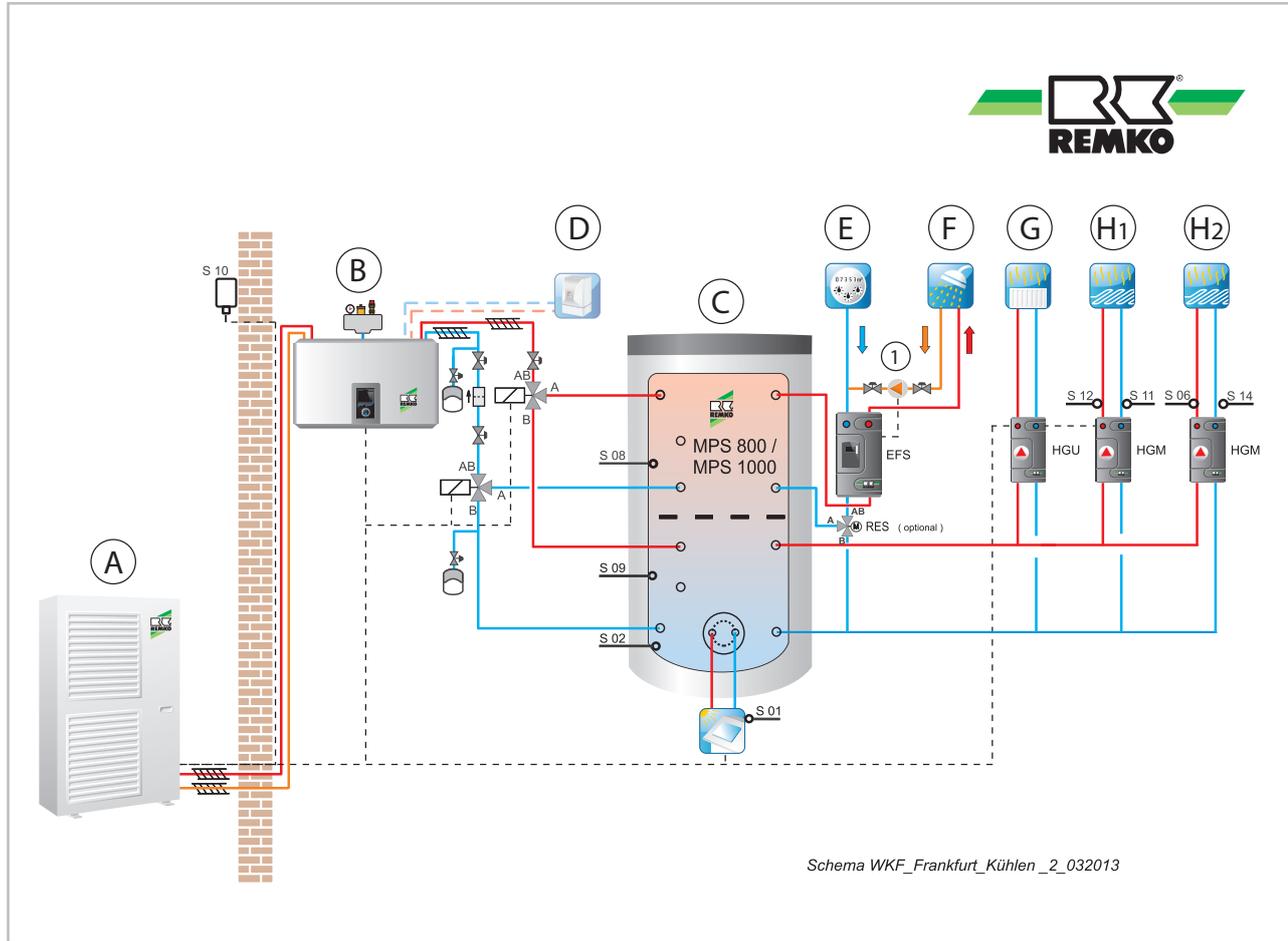


Fig. 72: Example hydraulic diagram for HP assembly WKF Frankfurt

- | | | | |
|----|------------------------------|-------|-----------------------|
| A: | Outdoor unit | F: | Hot water |
| B: | Indoor unit | G: | Unmixed heating cycle |
| C: | Storage tank | H1-2: | Mixed heating cycle |
| D: | Boiler / wall heating device | 1: | Circulation |
| E: | Cold water | | |

Hydraulic diagram for heat pump assembly WKF Frankfurt Duo

Functions: heating and hot water, operating mode: monoenergetic or bivalent alternative. Solar prepared. Integration of solid fuels possible. The operating mode here can only be monoenergetic or bivalent alternative!

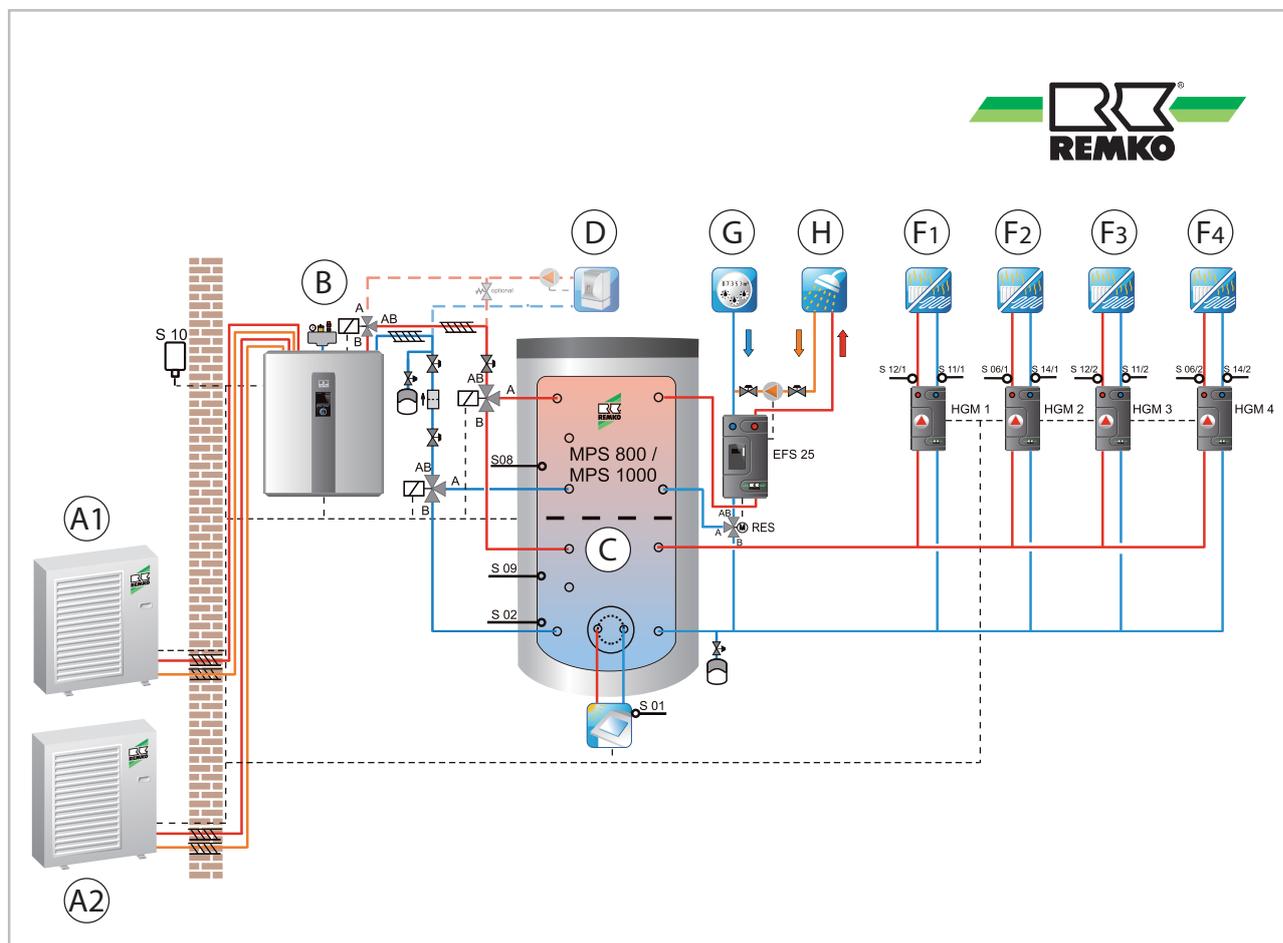


Fig. 73: Example hydraulic diagram for HP assembly WKF Frankfurt Duo

- | | |
|------------------------------|---|
| A1: Outdoor unit 1 | D: Second heat generator |
| A2: Outdoor unit 2 (WKF Duo) | E: Cooling cycle |
| B: Indoor unit (WKF/WKF Duo) | F1-2: Floor heating cycles (F1, F2) |
| C: Storage tank | F3-4: Heating cycles (F3, F4, only WKF Duo) |

Basic settings for hydraulic diagrams for the HP packages HTS Frankfurt, WKF Frankfurt and WKF Frankfurt Duo

Menu item	Parameter	Factory setting
Control panel address	Control panel 1-3	Control panel 1
Country	Deutschland - Slovensko	Germany
Load setting	Accept the parameters	Saving process
Language	Deutsch - Polski	Deutsch
Time zone	Var. time zones possible	Winter + 1(CET)
Date setting	Year / Month / Day	Basic settings

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Menu item	Parameter	Factory setting
Time setting	Hours / Minutes	Basic settings
Activate heat pump	Activated / Deactivated	Activated
Operating mode	Monoenergetic/bivalent alternative	Monoenergetic
Domestic hot-water heating	Activated / Deactivated	Activated
Storage tank set temperature	"40°C - 65°C"	45 °C
Hot water circulation	Activated / Deactivated	Deactivated
Circulation type	Impulse	Deactivated
Circulation running time	1 min - 15 mins	5 min
Disable switch-on	1 min - 15 mins	5 min
Circulation type	Temperature	Deactivated
Circulation set temp	"25 °C - 65°C"	35 °C
Unmixed heating cycle	Activated / Deactivated	Deactivated
Heating cycle mode	Heating curve	Deactivated
Heating-curve base point	"15 °C - 35 °C"	30 °C
Standard inlet temperature	"40°C - 90 °C"	55 °C
Standard outside temperature	"0 °C - 20 °C"	20 °C
1st mixed heating cycle	Activated / Deactivated	Deactivated
Heating cycle mode	Heating curve	Deactivated
Heating-curve base point	"15 °C - 25 °C"	20 °C
Standard inlet temperature	"28 °C - 90 °C"	35 °C
Standard outside temperature	"0 °C - 20 °C"	20 °C

Menu item	Parameter	Factory setting
2nd mixed heating cycle	Activated / Deactivated	Deactivated
Heating cycle mode	Heating curve	Deactivated
Heating-curve base point	"15 °C - 25 °C"	20 °C
Standard inlet temperature	"28 °C - 90 °C"	35 °C
Standard outside temperature	"0 °C - 20 °C"	20 °C
System separation FBH	Activated / Deactivated	Deactivated
Setpoint increase	0 - 10 K	5.0 K
Building time constant	"0 h - 100 h"	10 h
Standard heating load	"0 kW - 25 kW"	As required
Cooling function	Activated / Deactivated	Deactivated
Separate cooling cycle	Activated / Deactivated	Deactivated
Cooling via unmixed heating cycle	Activated / Deactivated	Deactivated
Solar plant	Activated / Deactivated	Deactivated
Pump type	Asynchronous	Deactivated
Asynchronous speed control system	On / Off	Deactivated
Pump type	EC pump (high-efficiency pump)	Deactivated
Solar speed control system	Activated / Deactivated	Deactivated
Solar HM	Deactivated	Deactivated
Manual medium flow rate	2 l/min - 30 l/min	5.0 l/min
Medium flow rate probe	0 ml / Imp - 10 ml / Imp	5.7 ml / Imp
Heat carrier medium	As required	Tyfocor-L
Solar set temperature	"5 °C - 95 °C"	85 °C
Acquisition of the stored energy	Activated / Deactivated	Deactivated

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Hydraulic diagram for heat pump assembly HTS Frankfurt Solar

Functions: heating/hot water and solar, operating mode: monoenergetic or bivalent possible

The operating mode here can be monoenergetic or bivalent alternative!

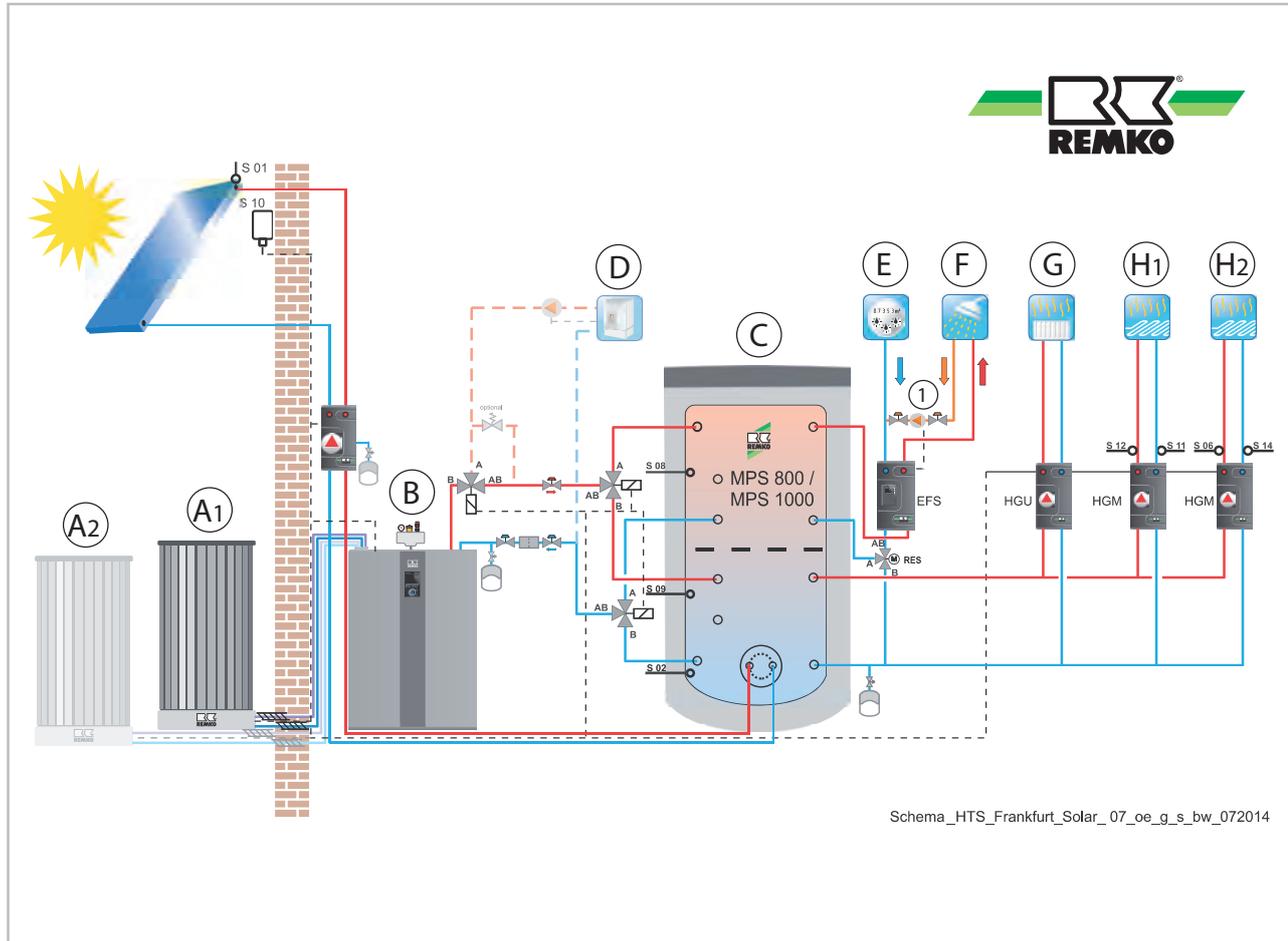


Fig. 74: Example hydraulic diagram for HP assembly HTS Frankfurt Solar

- | | |
|-----------------------------------|---------------------------|
| A1: Outdoor unit 1 | E: Cold water |
| A2: Outdoor unit 2 (only HTS 260) | F: Hot water |
| B: Indoor unit | G: Unmixed heating cycle |
| C: Storage tank | H1-2: Mixed heating cycle |
| D: Boiler / wall heating device | 1: Circulation |

Hydraulic diagram for heat pump assembly WKF Frankfurt Solar

Functions: heating/hot water and solar, operating mode: monoenergetic or bivalent possible

The operating mode here can be monoenergetic or bivalent alternative!

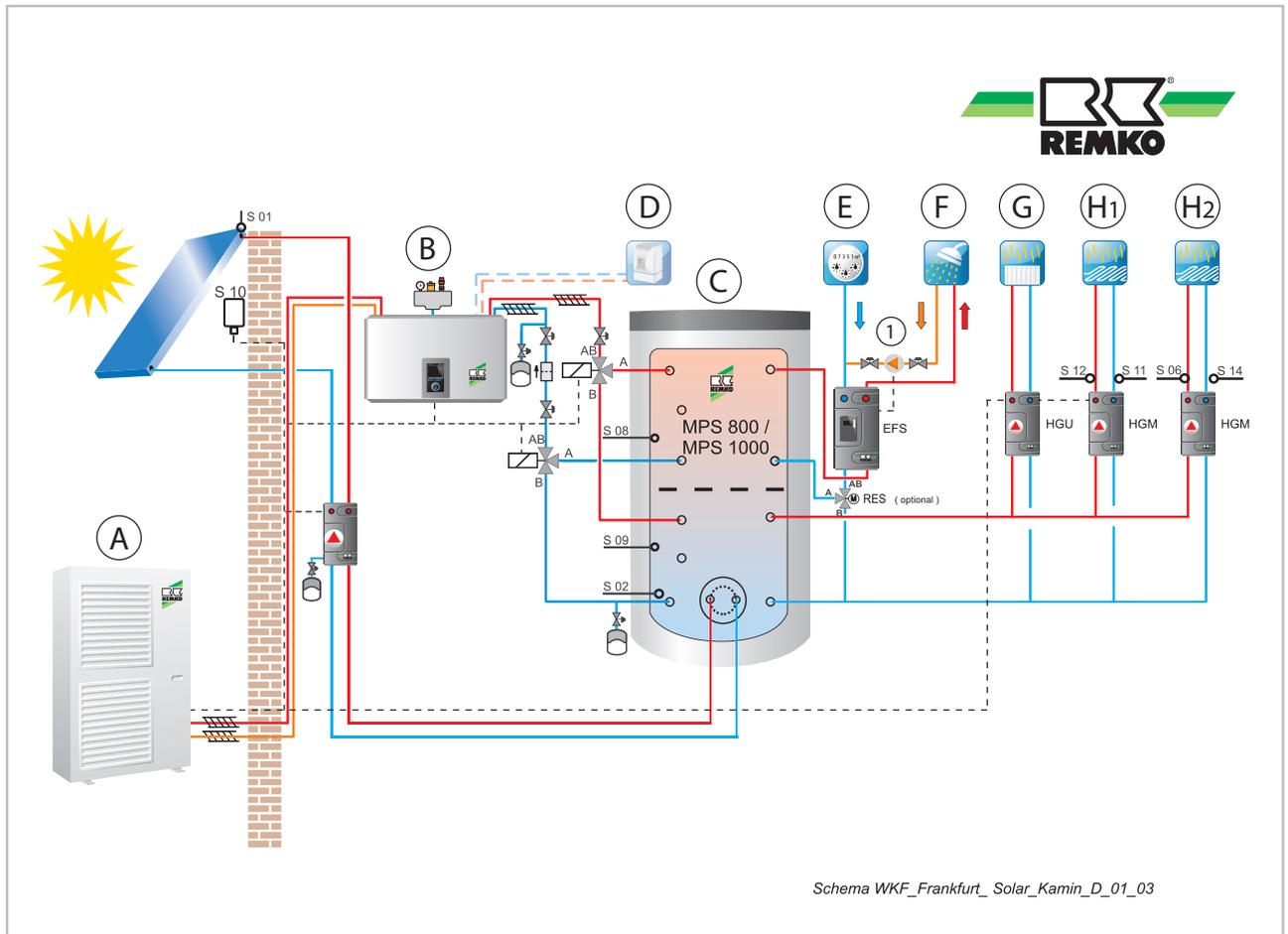


Fig. 75: Example hydraulic diagram for HP assembly WKF Frankfurt Solar

- | | | | |
|----|------------------------------|-------|-----------------------|
| A: | Outdoor unit | F: | Hot water |
| B: | Indoor unit | G: | Unmixed heating cycle |
| C: | Storage tank | H1-2: | Mixed heating cycle |
| D: | Boiler / wall heating device | 1: | Circulation |
| E: | Cold water | | |

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Hydraulic diagram for heat pump assembly WKF Frankfurt Duo Solar

Functions: heating/hot water and solar, operating mode: monoenergetic or bivalent possible

The operating mode here can be monoenergetic or bivalent alternative!

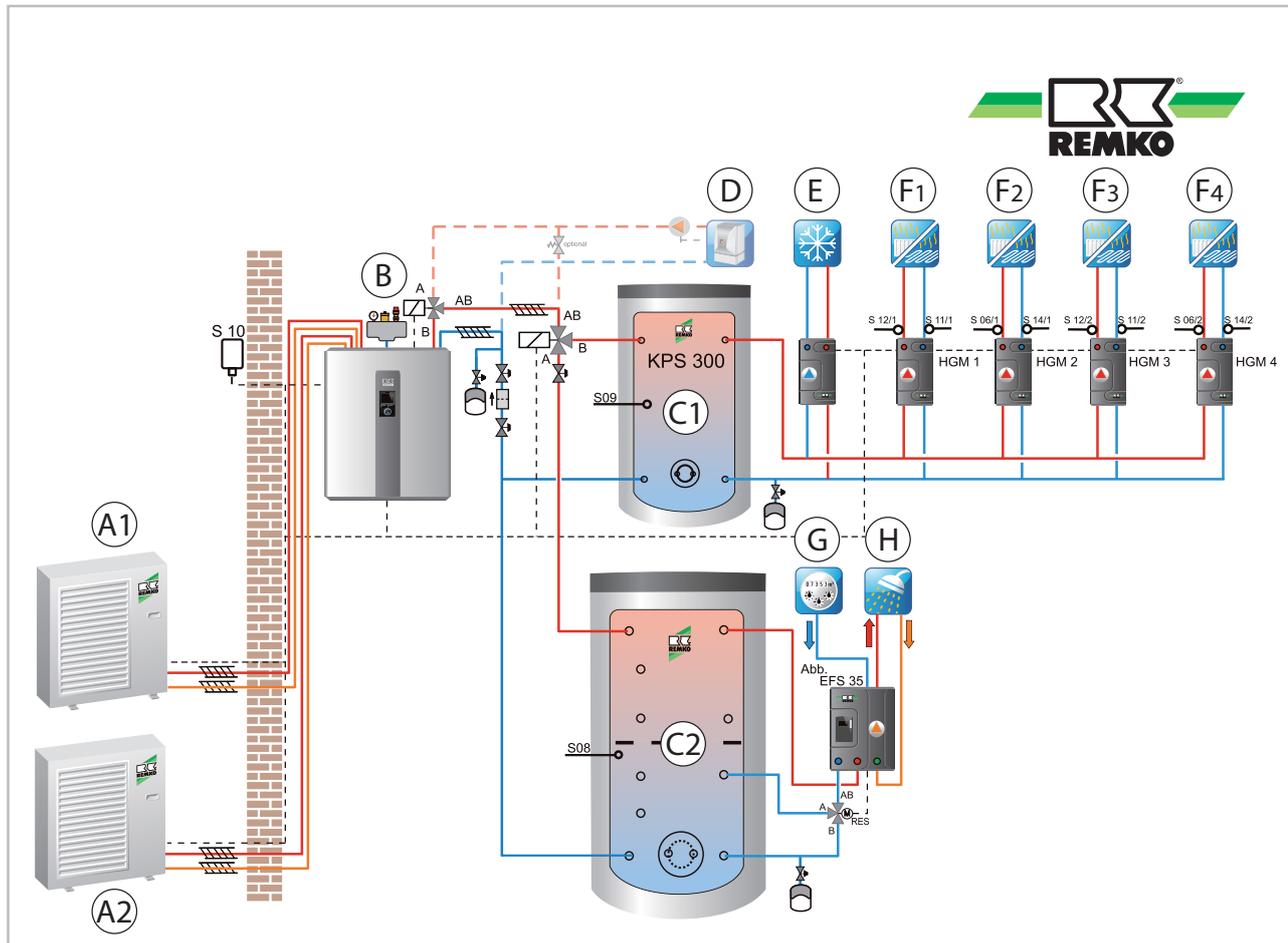


Fig. 76: Example hydraulic diagram for HP assembly WKF Frankfurt Duo Solar

- A1: Outdoor unit 1
- A2: Outdoor unit 2 (WKF Duo)
- B: Indoor unit (WKF/WKF Duo)
- C1: Storage tank 1
- C2: Storage tank 2
- D: External heat generator
- E: Cooling cycle
- F1-2: Floor heating cycles (F1, F2)
- F3-4: Heating cycles (F3, F4, only WKF Duo)
- G: Cold water
- H: Hot water

Basic settings for hydraulic diagrams for the HP packages HTS Frankfurt Solar, WKF Frankfurt Solar and WKF Frankfurt Duo Solar

Menu item	Parameter	Factory setting
Control panel address	Control panel 1-3	Control panel 1
Country	Deutschland - Slovensko	Germany
Load setting	Accept the parameters	Saving process
Language	Deutsch - Polski	Deutsch
Time zone	Var. time zones possible	Winter + 1(CET)

Menu item	Parameter	Factory setting
Date setting	Year / Month / Day	Basic settings
Time setting	Hours / Minutes	Basic settings
Activate heat pump	Activated / Deactivated	Activated
Operating mode	Monoenergetic/bivalent alternative	Monoenergetic
Domestic hot-water heating	Activated / Deactivated	Activated
Storage tank set temperature	"40°C - 65°C"	45 °C
Hot water circulation	Activated / Deactivated	Deactivated
Circulation type	Impulse	Deactivated
Circulation running time	1 min - 15 mins	5 min
Disable switch-on	1 min - 15 mins	5 min
Circulation type	Temperature	Deactivated
Circulation set temp	"25 °C - 65°C"	35 °C
Unmixed heating cycle	Activated / Deactivated	Deactivated
Heating cycle mode	Heating curve	Deactivated
Heating-curve base point	"15 °C - 35 °C"	30 °C
Standard inlet temperature	"40°C - 90 °C"	55 °C
Standard outside temperature	"0 °C - 20 °C"	20 °C
1st mixed heating cycle	Activated / Deactivated	Deactivated
Heating cycle mode	Heating curve	Deactivated
Heating-curve base point	"15 °C - 25 °C"	20 °C
Standard inlet temperature	"28 °C - 90 °C"	35 °C
Standard outside temperature	"0 °C - 20 °C"	20 °C

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Menu item	Parameter	Factory setting
2nd mixed heating cycle	Activated / Deactivated	Deactivated
Heating cycle mode	Heating curve	Deactivated
Heating-curve base point	"15 °C - 25 °C"	20 °C
Standard inlet temperature	"28 °C - 90 °C"	35 °C
Standard outside temperature	"0 °C - 20 °C"	20 °C
System separation FBH	Activated / Deactivated	Deactivated
Setpoint increase	0 - 10 K	5.0 K
Building time constant	"0 h - 100 h"	10 h
Standard heating load	"0 kW - 25 kW"	As required
Cooling function	Activated / Deactivated	Deactivated
Separate cooling cycle	Activated / Deactivated	Deactivated
Cooling via unmixed heating cycle	Activated / Deactivated	Deactivated
Solar plant	Activated / Deactivated	Deactivated
Pump type	Asynchronous	Deactivated
Asynchronous speed control system	On / Off	Deactivated
Pump type	EC pump (high-efficiency pump)	Deactivated
Solar speed control system	Activated / Deactivated	Deactivated
Solar HM	Deactivated	Deactivated
Manual medium flow rate	2 l/min - 30 l/min	5.0 l/min
Medium flow rate probe	0 ml / Imp - 10 ml / Imp	5.7 ml / Imp
Heat carrier medium	As required	Tyfocor-L
Solar set temperature	"5 °C - 95 °C"	85 °C
Acquisition of the stored energy	Activated / Deactivated	Deactivated

4.4 Menu structure of the controller

"Information" menu item - Expert

This menu contains information about the current operating status of the system. The menu is opened with the key on the right. By turning the rotary knob, you can select another menu item (for instance "Settings"). Pressing "OK" (right softkey) takes you to submenus of the menu item "Information".

Depending on the heat pump installed and the design, individual parameters may vary from version to version. The relationship of certain parameters to a particular unit series is indicated with a *). The key is provided in ( Table on page 87).

Authorisation level	Level 2 menu item	Level 3 menu item	Level 4 menu item	Info	
	Basic information	Status	Detected unit	You can find many of the individual info texts about the level 2-4 menu items on your Smart Control	
			Control algorithm		
			Current operating mode		
			Previous operating mode		
			Room climate		
			Party mode		
			Away mode		
			Anti-freeze protection		
			IP address		
			Subnet		
			Gateway		
			Power consumption L		
			Mains frequency		*a) Please find additional information on these menu items in the special manuals
			Cascade		
			Smart Count *a)		
			Smart Web *a)		
			Smart Com *a)		
		Activation code			
		Date / Time	Time		
			Date		
Time zone					

REMKO Smart-Control

"Information" menu item (continued) - Expert

Authorisation level	Level 2 menu item	Level 3 menu item	Level 4 menu item	Info
	Basic information (cont.)	Version number	Hardware control panel	You can find many of the individual info texts about the level 2-3 menu items on your Smart Control
			Hardware	
			Software control panel	
			Software	
			Software (I/O 2) *5)	
			Linux kernel control panel	
			Linux kernel	
			µPC version *2)	
	µPC software date *2)			
	Licence information			
	Solar	Pump A01		
		Pump control signal A40		
		Collector temp. S01		
		Lower storage tank temp. S02		
		Storage tank charging status		
		Storage tank changeover valve A12		
		Current output		
		Solar yield		
		Inlet temp. S03		
		Return temp. S04		
Medium flow rate S23				
Stored energy				

"Information" menu item  (continued) - Expert

Authorisation level	Level 2 menu item	Level 3 menu item	Level 4 menu item	Info
	Hot water	HW request		You can find many of the individual info texts about the level 2-3 menu items on your Smart Control
		HW storage tank set temp.		
		HW storage tank actual temp. S08		
		Changeover valve A10		
		Hot water energy		
		Hygiene function		
		Medium flow rate S27		
		Tap volume		
		Circulation request S05		
		Circ. set temp.		
		Circ. actual temp. S05		
	Stored energy	Circulation pump A04		
		Stored energy		
		Buffer tank temp. S09		
	Unmixed Heating cycle	Heating water temp. (setpoint)		
		Heating cycle set temp.		
		Heating cycle actual temp.		
		Room target temperature		
		Room actual temperature		
		Room humidity		
		Mixed outside temperature		
		Pump speed rel. A42		
	KNX status			
	KNX target value adjustment			

REMKO Smart-Control

"Information" menu item (continued) - Expert

Authorisation level	Level 2 menu item	Level 3 menu item	Info
	1st mixed Heating cycle	Heating cycle set temp.	You can find many of the individual info texts about the level 2-3 menu items on your Smart Control
		Heating cycle actual temp.	
		Inlet temperature S12	
		Return temperature S11	
		Room target temperature	
		Room actual temperature	
		Room humidity	
		Mixed outside temperature	
		Pump speed rel. A41	
		HC mixer position A20/A21	
		KNX status	
		KNX target value adjustment	
	2nd mixed Heating cycle	Heating cycle set temp.	
		Heating cycle actual temp.	
		Inlet temperature S06	
		Return temperature S14	
		Room target temperature	
		Room actual temperature	
		Room humidity	
		Mixed outside temperature	
		Pump speed rel. A46	
		HC mixer position A24/A25	
		KNX status	
		KNX target value adjustment	

"Information" menu item  (continued) - Expert

Authorisation level	Level 2 menu item	Level 3 menu item	Info
	3rd mixed Heating cycle (I/O 2) *5)	Heating cycle set temp.	You can find many of the individual info texts about the level 2-3 menu items on your Smart Control
		Heating cycle actual temp.	
		Inlet temperature S12.2	
		Return temperature S11.2	
		Room target temperature	
		Room actual temperature	
		Room humidity	
		Mixed outside temperature	
		Pump speed rel. A41.2	
		HC mixer position A20/A21.2	
		KNX status	
	KNX target value adjustment		
	4th mixed Heating cycle (I/O 2) *5)	Heating cycle set temp.	
		Heating cycle actual temp.	
		Inlet temperature S06.2	
		Return temperature S14.2	
		Room target temperature	
		Room actual temperature	
		Room humidity	
		Mixed outside temperature	
		Pump speed rel. A46.2	
		HC mixer position A24/A25.2	
		KNX status	
	KNX target value adjustment		
	Screed drying function	Screed drying mode	
		Momentary setpoint temp.	
		Remaining time	
Elapsed time			

REMKO Smart-Control

"Information" menu item (continued) - Expert

Authorisation level	Level 2 menu item	Level 3 menu item	Info
	Cooling	Changeover valve A14	You can find many of the individual info texts about the level 2-3 menu items on your Smart Control
		Cooling cycle set temperature	
		Cooling cycle actual temperature	
		Room target temperature	
		Room actual temperature	
		Room humidity	
		Dew point	
		Mixed outside temperature	
		KNX status	
		KNX target value adjustment	
	Hydraulics	Heat generator request	
		Hot water temperature (setpoint)	
		Hot water temperature (actual value)	
		Therm.output	
		Inlet temperature S13	
		Inlet temperature S13.2	
		Inlet temperature mixed	
		Return temperature S15	
		Set medium flow rate	
		Actual medium flow rate S24	
		Actual medium flow rate S24.2 *5)	
		Actual medium flow rate	
		Pump speed rel. A43	
		Pump speed rel. A43.2 *5)	
		Changeover valve 2nd Heat generator A11	
		Bypass valve position A22/23	

"Information" menu item  (continued) - Expert

Authorisation level	Level 2 menu item	Level 3 menu item	Info
	Heat pump	Heat pump status	<p>You can find many of the individual info texts about the level 2-3 menu items on your Smart Control</p>
		Remaining idle time	
		Defrost status S22	
		Compressor status S21	
		Fault status S20 *2), *4)	
		Fault code (outside) *3), *5)	
		Fault code (inside) *3), *5)	
		Target temperature A44	
		Enable signal A33	
		Disable compressor A30	
		Heat pump mode A31	
		Disable signal S16, energy supplier cut-off	
		Heat pump elec. power	
		Therm. power, heat pump	
		Maximum frequency *3), *5)	
		Compressor frequency	
		Max. inlet temperature	
		Fan status *3), *5)	
		Fan speed *2), *3), *5)	
		Air temp. Outdoor unit *2), *3), *5)	
		Water inlet temperature *2)	
		Water outlet temperature *2)	
		Suction gas temperature *2)	
		Hot gas temperature *2)	
		Evaporation temperature *2)	
		Evaporation pressure *2)	
		Condenser temperature *2)	
Condenser pressure *2)			
Refrigerant temp. S07 *3), *5)			
Test mode, outdoor unit *3), *5)			
4-way valve *2), *3), *5)			

REMKO Smart-Control

"Information" menu item (continued) - Expert

Authorisation level	Level 2 menu item	Level 3 menu item	Info
	Heat pump (cont.)	Current consumption *3), *5)	You can find many of the individual info texts about the level 2-3 menu items on your Smart Control
		Expansion valve position *3), *5)	
		Degree of opening of the expansion valve *2)	
		Overheating *2)	
		Overheating setpoint *2)	
		Cont. HW offset	
		Cont. heating offset	
		Short-term HW offset	
		Short-term heating offset	
		Compressor start	
		Run-time (minutes)	
		Run-time (hours)	
		Min. PV surplus	
		PV power utilisation	
		Envelope alarm *2)	
Inverter alarm *2)			

"Information" menu item  (continued) - Expert

Authorisation level	Level 2 menu item	Level 3 menu item	Info
	Heat pump (I/O 2) *5)	Heat pump status	<p>You can find many of the individual info texts about the level 2-3 menu items on your Smart Control</p>
		Remaining idle time	
		Defrost status	
		Compressor status	
		Fault code (outside)	
		Fault code (inside)	
		Target temperature	
		Enable signal	
		Disable compressor	
		Heat pump mode	
		Disable signal S16, energy supplier cut-off	
		Maximum frequency	
		Compressor frequency	
		Fan status	
		Fan speed	
		Air temperature, outdoor unit	
		Refrigerant temp. S07.2	
		Test mode, outdoor unit	
		Hot gas temperature	
		Suction gas temperature	
		4-way valve	
		Current consumption	
		Expansion valve position	
Degree of opening of the expansion valve			
Compressor start			
Run-time (minutes)			
Run-time (hours)			

REMKO Smart-Control

"Information" menu item (continued) - Expert

Authorisation level	Level 2 menu item	Level 3 menu item	Level 4 menu item	Info	
	Auxiliary heat generator	Heat generator status		You can find many of the individual info texts about the level 2-4 menu items on your Smart Control	
		Potential-free output A32			
		Enable			
		Enable time (minutes)			
		Enable time (hours)			
	Meter readings	Solar			Current output
					Solar yield, day
					Solar yield, week
					Solar yield, month
					Solar yield, year
					Solar yield
		Heat pump			therm. power, heat pump
					therm. energy (hour)
					therm. energy (day)
					therm. energy (week)
					therm. energy (month)
					therm. energy (year)
					therm. Heat pump energy
					Output, environment
					Environmental energy (day)
					Environmental energy (week)
					Environmental energy (month)
					Environmental energy (year)
					Heat pump elec. power
					Electr. energy (hour)
					Electr. energy (day)
					Electr. energy (week)
	Electr. energy (month)				
	Electr. energy (year)				
	Heat pump electrical energy				

"Information" menu item  (continued) - Expert

Authorisation level	Level 2 menu item	Level 3 menu item	Level 4 menu item	Info
	Meter readings (cont.)	Household	Current household output	You can find many of the individual info texts about the level 2-4 menu items on your Smart Control
			Household energy (hour)	
			Household energy (day)	
			Household energy (week)	
			Household energy (month)	
			Household energy (year)	
		Photovoltaic	Photovoltaic output	
			PV yield (hour)	
			PV yield (day)	
			PV yield (week)	
			PV yield (month)	
			PV yield (year)	
			Photovoltaic yield	
			Feed-in power	
			Feed-in (hour)	
			Feed-in (day)	
			Feed-in (week)	
			Feed-in (month)	
			Feed-in (year)	
			Private consumption power	
			Private consumption (day)	
			Private consumption (week)	
		Private consumption (month)		
		Private consumption (year)		
		Heating & hot water	Heating energy	
			Cooling energy	
			Hot water energy	
			Hot water meter	
CO ₂ savings	CO ₂ savings			
	Equivalent in trees			

REMKO Smart-Control

"Information" menu item (continued) - Expert

Authorisation level	Level 2 menu item	Level 3 menu item	Info
	Checklist	Collector temp. S01	You can find many of the individual info texts about the level 2-3 menu items on your Smart Control
		Lower storage tank temp. S02	
		Inlet temperature S03	
		Return temp. S04	
		Circulation actual temp. S05	
		Circulation request S05	
		Inlet temperature S06	
		Inlet temperature S06.2 *5)	
		Refrigerant temperature S07 *3), *5)	
		Refrigerant temperature S07.2 *5)	
		HW storage tank actual temperature S08	
		Storage tank temperature, centre S09	
		Outside temperature S10	
		KNX outside temperature	
		Return temperature S11	
		Return temperature S11.2 *5)	
		Inlet temperature S12	
		Inlet temperature S12.2 *5)	
		Inlet temperature S13	
		Inlet temperature S13.2 *5)	
		Return temperature S14	
		Return temperature S14.2 *5)	
		Return temperature S15	
		Disable signal S16	
		Fault status S20 *4)	
		Compressor status S21 *4)	
		Defrost status S22 *4)	
		Medium flow rate S23	
Actual medium flow rate S24			
Actual medium flow rate S24.2 *5)			
Impulse counter status S25			
Impulse counter status S26			

"Information" menu item  (continued) - Expert

Authorisation level	Level 2 menu item	Level 3 menu item	Info
	Checklist (cont.)	Medium flow rate S27	<p>You can find many of the individual info texts about the level 2-3 menu items on your Smart Control</p>
		Impulse counter status S28	
		Impulse counter status S29	
	KNXnet/IP	IP for the KNX interface	
		MAC for the KNX interface	
		IA for the KNX interface	
		IA for the SMT	
		KNX connection status	
		Programming mode	

REMKO Smart-Control

"Settings" menu item - Expert

In this menu you can configure the settings. For example, you can adjust hot water and heating temperatures or change time settings. The menu is opened with the key on the right. Pressing the left-hand key allows you to jump up a level in the menu structure again. Pressing the left key multiple times always allows you to return to the 3D house.

Pressing "OK" (right softkey) takes you to submenus of the menu item "Settings".

Authorisation level	Level 2 menu item	Level 3 menu item	Level 4 menu item	Level 5 menu item	
	Basic settings	Language/Time	Date		
			Time		
			Date format		
			Time format		
			Language		
			Temperature unit		
			Decimal separator		
			Time zone		
			Mains frequency		
			Display		Display brightness
		Display contrast			
		Display off			
		Default screen			
		Expert password			
		Control panel address			
		Interfaces	LAN		Use DHCP
					Local IP address
					Subnet mask
					Gateway address

"Settings" menu item  (continued) - Expert

Authorisation level	Level 2 menu item	Level 3 menu item	Level 4 menu item	Level 5 menu item
	Basic settings (cont.)	Interfaces (cont.)	KNXnet/IP	Smart Com
				Interface search
				IP for the KNX interface
				IA for the KNX interface
				Multicast address
				IA for the controller
				Programming mode
				On/off (switching)
				Heating/cooling (switching)
				Heating/cooling (status)
				SMT operating mode (switching)
				SMT operating mode (status)
				Outside temperature
				Room target temperature
				Defrosting (status)
				HW target temperature
				HW actual temperature
				One-off hot water
				Alarm signal (status)
				Unmix. HC actual temp.
				1st mixed HC actual temp.
				2nd mixed HC actual temp.
				3rd mixed HC actual temp.
4th mixed HC actual temp.				
Unmix. HC room temp.				
1st mixed HC room temp.				
2nd mixed HC room temp.				
3rd mixed HC room temp.				
4th mixed HC room temp.				

REMKO Smart-Control

"Settings" menu item (continued) - Expert

Authorisation level	Level 2 menu item	Level 3 menu item	Level 4 menu item	Level 5 menu item
	Basic settings (cont.)	Interfaces (cont.)	KNXnet/IP (cont.)	Cooling circuit room temp.
				Unmix. HC humidity
				1st mixed HC humidity.
				2nd mixed HC humidity
				3rd mixed HC humidity
				4th mixed HC humidity
				Cooling circuit humidity
				Time
				Date
				Unmix. HC room target temp.
				1st mixed HC room target temp.
				2nd mixed HC room target temp.
				3rd mixed HC room target temp.
				4th mixed HC room target temp.
				Cooling circuit room target temp.
				Unmix. HC presence object
				1st mixed HC presence object
				2nd mixed HC presence object
				3rd mixed HC presence object
				4th mixed HC presence object
				Cooling circuit presence object
				Unmix. HC operating mode
				1st mixed HC operating mode
				2nd mixed HC operating mode
				3rd mixed HC operating mode
				4th mixed HC operating mode
				Cooling circuit operating mode
Heat pump energy				
Heating energy				
Hot water energy				

"Settings" menu item  (continued) - Expert

Authorisation level	Level 2 menu item	Level 3 menu item	Level 4 menu item	Info
	Basic settings (cont.)	System configuration	Heat pump	<p>You can find many of the individual info texts about the level 2-4 menu items on your Smart Control</p>
			Auxiliary heat generator	
			PV power utilisation	
			Graduated tariffs	
			Domestic hot-water heating	
			Hot water circulation	
			Hygiene function	
			Unmixed heating cycle	
			1st mixed heating cycle	
			2nd mixed heating cycle	
			3rd mixed heating cycle *5)	
			4th mixed heating cycle *5)	
			System separation FBH	
			Setpoint increase	
			Cooling function	
			Separate cooling cycle	
			Cooling via unmixed heating cycle	
			Solar plant	
Solar collector cooling function				
Solar pump kick function				
Solar HM				
Stored energy				

REMKO Smart-Control

"Settings" menu item (continued) - Expert

Authorisation level	Level 2 menu item	Level 3 menu item	Level 4 menu item	Info
	Solar	Collector	Max. temperature	You can find many of the individual info texts about the level 2-4 menu items on your Smart Control
			Max. temperature hysteresis	
			Min. temperature	
			Min. temperature hysteresis	
			Switch-on difference	
			Switch-off difference	
		Storage tank	Solar set temp.	
			Solar set temp. hysteresis	
			Collector cooling function ON temp.	
			Storage tank max. temp.	
		Pump setting	Pump type	
			Solar speed control system	
			Asynchronous speed control system	
			Min. pump speed A01	
			Max. pump speed A01	
			Min. pump speed A40	
			Max. pump speed A40	
			Min. pump speed (%)	
			Max. pump speed (%)	
		Manual pump speed		
Heat meter	Heat carrier medium			
	Mixing ratio			
	Impulse rate for medium flow rate			
	Manual medium flow rate			
Pump kick function	Time program			

"Settings" menu item  (continued) - Expert

Authorisation level	Level 2 menu item	Level 3 menu item	Level 4 menu item	Info
	Hot water	Domestic water heating	Storage tank set temp.	<p>You can find many of the individual info texts about the level 2-4 menu items on your Smart Control</p>
			Mode	
			Time program A	
			Time program B	
			Time program C	
			Tolerance during ECO operation	
			Reheating 2nd WE	
			Speed in HW A43	
			Pump parallel operation	
		Circulation	Circulation type	
			Circulation set temp.	
			Set temp. hysteresis	
			Time program	
			Running time	
		Hygiene function	Disable switch-on	
			Set temperature	
			Day of activation	
			Time of activation	
			Inspection time	
			Storage tank volume	
			Pulse valency	
Max. duration until cancellation				
Circulation pump				
2. Heat generator				

REMKO Smart-Control

Factory-set circulation switching times

Designation	Value range	Factory setting	Customer system
Time program	Mon-Sun	Mon-Sun	00:00-24:00

Hygiene function

Designation	Value range	Factory setting	Customer system
Set temperature	"60 °C - 75 °C"	60 °C	
Day of activation	Mon-Sun	Monday	
Time of activation	Hrs/Mins	20:00	
Inspection time	24 h - 72 h	72 h	
Storage tank volume	0 - 1000 l	300 l	
Pulse valency	0.0 - 20.0 l/imp	3.1 l/imp	
Max. duration until cancellation	15 - 120 min	60 min	
Circulation pump	Activated/Deactivated	Deactivated	

"Settings" menu item  (continued) - Expert

Authorisation level	Level 2 menu item	Level 3 menu item	Level 4 menu item	Info
	Heating/cooling	Building adaptation	Building time constant	<p>You can find many of the individual info texts about the level 2-4 menu items on your Smart Control</p>
			Standard heating load	
			Standard outside temp. (Heating)	
			Standard outside temp. (Cooling)	
			Inertia of the heating curve	
		Mode	Room climate mode	
			Heating/cooling time program	
			Difference from heating limit	
			Difference from cooling limit	
		Screed drying function After the screed function we recommend ending this function manually by deactivating it!	Floor screed function status	
			Start/end temperature	
			Max. temperature	
			Heating phase increment	
			Drying time	
			Time at high temp.	
			Incremental cooling phase	
			Time at low temp.	
		Cooling	Cooling cycle mode	
			Cooling curve adjustment	
			Fixed value	
			Time program	
			Setpoint increase	
			Room unit	
			Room temperature influence	
			Dewpoint monitoring	
			Max. cooling down (outside temp. reference)	
Dew point distance				
Temperature difference				
Pump control				

REMKO Smart-Control

"Settings" menu item  (continued) - Expert

Floor screed function

Designation	Value range	Factory setting	Cust. system
Floor screed funct. status	Activated/Deactivated	Deactivated	
Start/end/max/temp.	"10 °C-50 °C"/"20 °C-50 °C"	20 °C/35 °C	
Incremental heating phase	0.0 K - 10.0 K	5.0 K	
Drying time	0.0 h - 192 h	24 h	
Time at high temp.	0.0 h - 192 h	96 h	
Incremental cooling phase	0.0 K - 10.0 K	5.0 K	
Time at low temp.	0.0 h - 192 h	24 h	

Authorisation level	Level 2 menu item	Level 3 menu item	Info	
	Stored energy	Excessive temperature in the heating buffer	You can find many of the individual info texts about the level 2-3 menu items on your Smart Control	
		Excessive temperature in the HW buffer		
		Internal pump		
	Unmixed Heating cycle	Heating cycle mode		
		Heating curve adjustment		
		Fixed value		
		Time program A		
		Time program B		
		Time program C		
		Time program function		
		Room temperature reduction		
		Room unit		
		Room temperature influence		
		Pump type		
		Min. pump speed A42 (%)		
		Max. pump speed A42 (%)		
		Min. pump speed A42 (rpm)		
		Max. pump speed A42 (rpm)		
		1st mixed Heating cycle		Heating cycle mode
				Heating curve adjustment
	Fixed value			
	Time program A			
	Time program B			

"Settings" menu item  (continued) - Expert

Authorisation level	Level 2 menu item	Level 3 menu item	Info
	1st mixed Heating cycle (cont.)	Time program function	You can find many of the individual info texts about the level 2-3 menu items on your Smart Control
		Room temperature reduction	
		Room unit	
		Room temperature influence	
		Max. inlet temperature	
		Pump type	
		Min. pump speed A41 (%)	
		Max. pump speed A41 (%)	
		Min. pump speed A41 (rpm)	
		Max. pump speed A41 (rpm)	
	Mixing valve running time		
	2nd mixed Heating cycle	Heating cycle mode	
		Heating curve adjustment	
		Fixed value	
		Time program A	
		Time program B	
		Time program C	
		Time program function	
		Room temperature reduction	
		Room unit	
		Room temperature influence	
		Max. inlet temperature	
		Pump type	
		Min. pump speed A46 (%)	
		Max. pump speed A46 (%)	
	Min. pump speed A46 (rpm)		
	Max. pump speed A46 (rpm)		
	Mixing valve running time		
	3rd mixed Heating cycle (I/O 2) *5)	Heating cycle mode	
		Heating curve adjustment	
Fixed value			
Time program A			
Time program B			
Time program C			

REMKO Smart-Control

"Settings" menu item (continued) - Expert

Authorisation level	Level 2 menu item	Level 3 menu item	Info
	3rd mixed Heating cycle (I/O 2) *5 (cont.)	Room temperature reduction	You can find many of the individual info texts about the level 2-3 menu items on your Smart Control
		Room unit	
		Room temperature influence	
		Max. inlet temperature	
		Pump type	
		Min. pump speed A41.2 (%)	
		Max. pump speed A41.2 (%)	
		Min. pump speed A41.2 (rpm)	
		Max. pump speed A41.2 (rpm)	
	4th mixed Heating cycle (I/O 2) *5	Heating cycle mode	
		Heating curve adjustment	
		Fixed value	
		Time program A	
		Time program B	
		Time program C	
		Room temperature reduction	
		Room unit	
		Room temperature influence	
		Max. inlet temperature	
		Pump type	
		Min. pump speed A46.2 (%)	
		Max. pump speed A46.2 (%)	
		Min. pump speed A46.2 (rpm)	
Max. pump speed A46.2 (rpm)			

Unmixed & mixed heating cycle switching times

Designation	Factory setting	Customer system
Time program A	Mo-Su 00:00-24:00	
Time program B	Mo-Fr 05:00-23:00	
	Sa-Su 06:00-23:00	
Time program C	Mo-Fr 05:00-23:00	
	Sa-Su 06:00-23:00	

"Settings" menu item  (continued) - Expert

Authorisation level	Level 2 menu item	Level 3 menu item	Level 4 menu item	Info
	Heat pump	Basic settings	Activating DT regulation	You can find many of the individual info texts about the level 2-4 menu items on your Smart Control
			Temperature difference setpoint	
			Min. pump speed A43	
			Max. pump speed A43	
			Envelope protection function *2)	
			Temp. dropped below min. inlet temp. (Heating) *2)	
			Max. inlet temp. (Cooling) *2)	
			Oil return function *2)	
			Oil return timer *2)	
			Manual defrosting *2)	
			Reset meter	
			Reset alarm	
		Graduated tariff	Number of power tariffs	
			Time field Tariff 1-9	
			Power tariff 1-9	
			Continuous HW adjustment	
			Short-term HW adjustment	
			Short-term HTG adjustment	
			Continuous HTG adjustment	

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"Settings" menu item (continued) - Expert

Authorisation level	Level 2 menu item	Level 3 menu item	Level 4 menu item	Info
	Heat pump (cont.)	PV power utilisation	PV personal use variant	You can find many of the individual info texts about the level 2-4 menu items on your Smart Control
			Power tariff 1	
			Feed-in tariff	
			Personal use tariff	
			Factor for PV power surplus	
			Damping electr. power	
			HW setpoint	
			Setpoint heating	
			Continuous HTG adjustment	
			PV cooling limit distance	
			Min. run time Cooling (PV)	
			Target feed-in	
			Hysteresis	
		Bivalence point	Bivalence point, heating	
			Bivalence point, HW	
			Time program	
			Output restriction HTG (normal)	
			Output restriction HTG (reduced)	
			Output restriction cooling (normal)	
			Output restriction cooling (reduced)	
	Output restriction HW (normal)			
	Output restriction HW (reduced)			
	Compressor rest. HW (normal) *5)			
	Compressor rest. HW (reduced) *5)			

"Settings" menu item  (continued) - Expert

Authorisation level	Level 2 menu item	Level 3 menu item	Level 4 menu item	Info	
	Auxiliary heat generator	Operating mode		You can find many of the individual info texts about the level 2-4 menu items on your Smart Control	
		Response to disable signal			
		Min. pump speed A 43 (%)			
		Max. pump speed A 43 (%)			
		Internal pump			
		Delay changeover valve	Active/inactive		
	Control panel 1	Room temperature probe correction			
		Room humidity probe correction			
	Control panel 2	Room temperature probe correction			
		Room humidity probe correction			
	Control panel 3	Room temperature probe correction			
		Room humidity probe correction			
	Energy meter	Heat pump (elec.)			Meter constant S25
		Household meter			Meter constant S26
		Reference meter			Meter constant S26
		Feed meter			Meter constant S29
		Photovoltaics (yield)			Meter constant S28
	Probe correction	Outdoor temp. S10			
		Inlet temp. S13			
		Return temp. S15			
	Program output	Alarm messages selection			

Legend: Parameter/unit series coding

*)	Unit series
*1)	Only WKF-WKF-compact
*2)	Only HTS
*3)	Only WKF-WKF-compact with F-board WKF-WKF-compact 70 built as of 2016 (WKF-WKF-compact 120-180 built as of 2015)
*4)	Only WKF-WKF-compact with A/C board (WKF-WKF-compact 85 with software version ≥ 4.19 and WKF-WKF-compact 120-180 before 2015 with software version ≥ 4.19)
*5)	Only WKF Duo

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"Chimney sweep" menu item - Expert

Authorisation level	Level 2 menu item	Level 3 menu item	Info
	Mode	Normal operation/test mode	Info texts can be found in the Smart Control
	Hot water valve	Deactivated/activated	
	Running time	15 - 90 minutes	



Fig. 77: Level "Expert" - chimney sweep function

In order to test boilers or wall heaters with bivalent systems it is possible to manually enable the second heat generator in the "user and expert level".

The test mode can be changed from "normal mode" to "test mode". During testing it is possible to activate the changeover valve to the hot water tank, in order to feed the heat generated to the hot water tank. This function is limited to 30 minutes with the factory settings. The restriction can be set from 15 to 90 minutes. Once the run-time has lapsed, normal heat pump mode becomes active automatically.

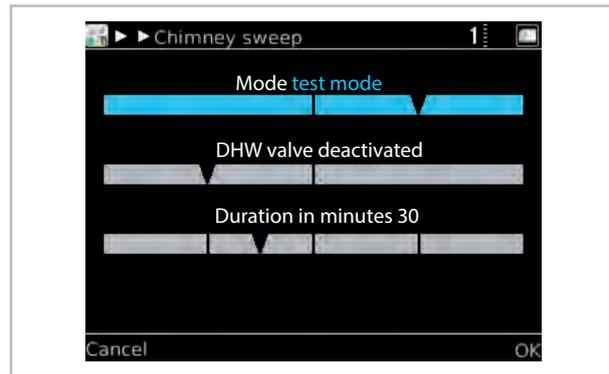


Fig. 79: "Test mode"

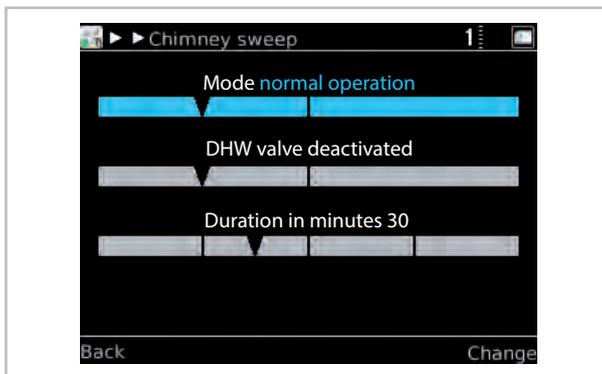


Fig. 78: "Normal operation" mode

"Messages" menu item - Expert

Pressing "OK" (right softkey) takes you to submenus of the menu item "Messages".

This is where operating messages, warning notices and fault messages are displayed.

Explanation of symbols:

 Warning message

 Fault message

If one of these symbols appears in the header of the control screen, please access the menu item "Messages" and display the details, with instructions on how to rectify the fault, with the key on the right.

Operating messages indicate which of the regular operating statuses the system is in.

Manual mode (relay test)

With this menu item, you can control the individual actuators (pumps, mixing valves, etc.) manually or specify values of probes for checking.

	Parameter		Selection parameter
Actuators	Manual mode		Permanent
			Deactivated
			15 minutes
	Solar cycle pump	A 01	Auto On Off
	Speed	A 01	10 % - 100 %
	Pump 1st mixed heating cycle	A 02	Auto On Off
	Pump 3rd mixed heating cycle *5)	A 02.2	Auto On Off
	Pump unmixed heating cycle	A 03	Auto On Off
	HW circulation pump	A 04	Auto On Off
	HW changeover valve	A 10	Auto On Off
	Changeover valve heat generator	A 11	Auto On Off

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"Message" menu item  (continued) - Expert

Manual mode (relay test)  (continued)

Parameter		Selection parameter
Pump 2nd mixed heating cycle	A13	Auto On Off
Pump 4th mixed heating cycle *5)	A13.2	Auto On Off
Changeover valve, cooling	A14	Auto On Off
Mixing valve 1st mixed heating cycle	A20/A21	Open Stop Close Auto
Mixing valve 3rd mixed heating cycle *5)	A20.2/21.2	Open Stop Close Auto
Bypass valve	A22/A23	Open Stop Close Auto
Mixing valve 2nd mixed heating cycle	A24/A25	Open Stop Close Auto

"Message" menu item  (continued) - Expert

Manual mode (relay test)  (continued)

Parameter		Selection parameter
Mixing valve 4th mixed heating cycle *5)	A24.2/A25.2	Open Stop Close Auto
Compressor forced off	A30	Auto On Off
Heat pump operating mode	A31	Auto On Off
Auxiliary heat generator	A32	Auto On Off
Enable heat pump	A33	Auto On Off
Alarm signal	A34	Auto clos. Open
Solar cycle pump status	A40	Auto On Off
Speed	A40	10 % - 100 %
Pump 1st mixed heating cycle	A41	Auto On Off
Speed	A41	10 % - 100 %
Pump 3rd mixed heating cycle *5)	A41.2	Auto On Off
Speed	A41.2	10 % - 100 %
Pump unmixed heating cycle	A42	Auto On Off
Speed	A42	10 % - 100 %

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"Message" menu item  (continued) - Expert

Manual mode (relay test)  (continued)

Parameter		Selection parameter
Pump indoor unit (top)	A43	Auto On Off
Speed	A43	10 % - 100 %
Pump indoor unit (bottom) *5)	A43.2	Auto On Off
Speed	A43.2	10 % - 100 %
Heat pump request		Auto On Off
Target temperature	A44	10 % - 100 %
Pump 2nd mixed heating cycle	A46	Auto On Off
Speed	A46	10 % - 100 %
Pump 4th mixed heating cycle *5)	A46.2	Auto On Off
Speed	A46.2	10 % - 100 %

Manual mode (probes)

Parameter		Selection parameter
Probes	Manual mode	Permanent
		Deactivated 15 minutes
	Collector temperature	S01
		Probe value Default value
	Temperature	S01
	Storage tank temperature, lower	S02
	Temperature	S02
	Solar inlet temperature	S03
		Probe value Default value
	Temperature	S03
	Solar return temperature	S04
		Probe value Default value
	Temperature	S04
	Circulation temperature	S05
		Probe value Default value
	Temperature	S05
	Circulation paddle switch	S05
	2nd mixed heating cycle inlet temperature	S06
	Temperature	S06
	4th mixed heating cycle inlet temperature *5)	S06.2
		Probe value Default value
	Temperature	S06.2
	Refrigerant temperature *3), *5)	S07
		Probe value Default value
	Temperature	S07
	Refrigerant temperature *5)	S07.2
		Probe value Default value
	Temperature	S07.2

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"Message" menu item  (continued) - Expert

Manual mode (probes)  (continued)

Parameter		Selection parameter	
Storage tank temperature, upper	S08	Probe value	
		Default value	
Temperature	S08	-60°C - 250°C	
Storage tank temperature, centre	S09	Probe value	
		Default value	
Temperature	S09	-60°C - 250°C	
Outside temperature	S10	Probe value	
		Default value	
Temperature	S10	-60°C - 250°C	
1st mixed heating cycle return temperature	S11	Probe value	
		Default value	
Temperature	S11	-60°C - 250°C	
3rd mixed heating cycle return temp. *5)	S11.2	Probe value	
		Default value	
Temperature	S11.2	-60°C - 250°C	
1st mixed heating cycle inlet temperature	S12	Probe value	
		Default value	
Temperature	S12	-60°C - 250°C	
3rd mixed heating cycle inlet temp. *5)	S12.2	Probe value	
		Default value	
Temperature	S12.2	-60°C - 250°C	
Heat generator (indoor unit) inlet temperature	S13	Probe value	
		Default value	
Temperature	S13	-60°C - 250°C	
Heat generator (indoor unit) inlet temperature *5)	S13.2	Probe value	
		Default value	
Temperature	S13.2	-60°C - 250°C	
2nd mixed heating cycle return temperature	S14	Probe value	
		Default value	
Temperature	S14	-60°C - 250°C	
4th mixed heating cycle return temp. *5)	S14.2	Probe value	
		Default value	
Temperature	S14.2	-60°C - 250°C	

"Message" menu item  (continued) - Expert
Manual mode (probes)  (continued)

Parameter		Selection parameter	
Heat generator return temperature	S15	Probe value	
		Default value	
Temperature	S15	-60°C - 250°C	
Energy supplier (public utility) external block	S16	On	
		Off	
		Auto	
Heat pump fault	S20	On	
		Off	
		Auto	
Compressor active	S21	On	
		Off	
		Auto	
Defrosting (thawing) active	S22	On	
		Off	
		Auto	
Medium flow rate solar	S23	Probe value	
		Default value	
Medium flow rate	S23	0 l/min - 100 l/min"	
Medium flow rate (indoor unit)	S24	Probe value	
		Default value	
Medium flow rate	S24	0 l/min - 100 l/min"	
Medium flow rate (indoor unit) *5)	S24.2	Probe value	
		Default value	
Medium flow rate	S24.2	0 l/min - 100 l/min"	
Medium flow rate	S27	Probe value	
		Default value	
Medium flow rate	S27	0 l/min - 100 l/min"	

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4.5 Setting the heating curves

Heating curve heating cycle mode

The heating curve can be adjusted in three points, according to the structure and location-related conditions of the building:

Base point:

The base point corresponds to the minimum set temperature of the heating water at an outside temperature of 20 °C. If the heating is too cold at relatively high outside temperatures (trans-seasonal period), the base point should be set higher.

Standard inlet temperature:

the standard inlet temperature corresponds to the set temperature of the heating water at the standard outside temperature in the building location. If the heating is not warm enough at low outside temperatures, the standard inlet temperature should be increased.

Standard outside temperature:

the standard outside temperature is dependent on the regional location of the building. Please consult your heating installer.

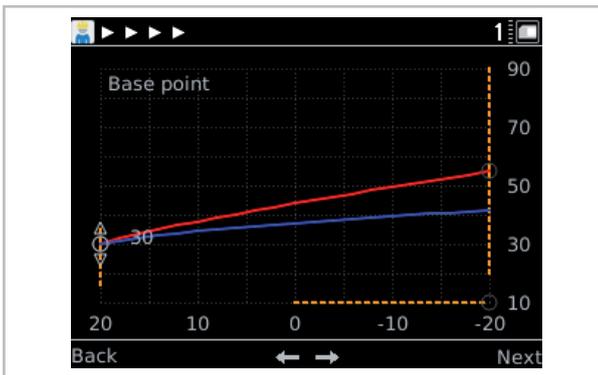


Fig. 80: Heating curve adjustment

- 1: Temperature of the heating water in °C
- 2: Inlet temperature heating curve
- 3: Return flow heating curve
- 4: Outside temperature in °C

For optimal configuration of the heating curve parameters, the heating load calculation and/or energy consumption must be taken into account.

Differences between the installed parameters and the design of the actual building can cause the heat pump to run inefficiently.

Operating the heating cycle with a fixed value is not recommended, as it will cause the heat pump to operate inefficiently.

Setting the heating curve:

- Activate the base point with the right softkey, set with the rotary knob and conform with the right softkey.

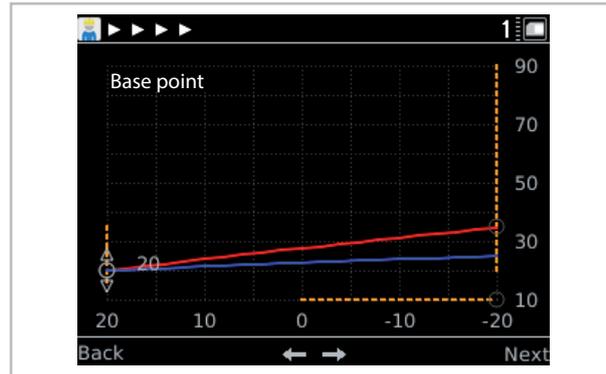


Fig. 81: Setting the base point

- The standard inlet temperature and the outside temperature are set using the same procedure.

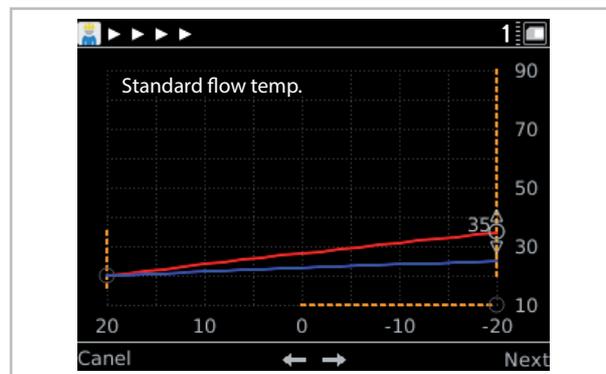


Fig. 82: Setting the standard inlet temperature

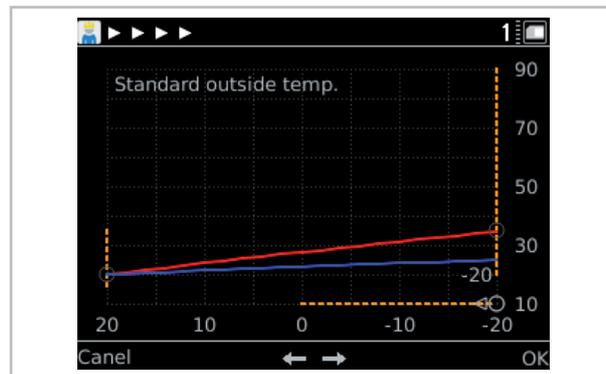


Fig. 83: Setting the outside temperature

Fixed-value-control heating cycle mode

Specify the set temperature for fixed value control (select with the rotary knob and confirm with "OK"). The heating cycle is kept permanently at this temperature in fixed value control.

Press "Next".

Example for activating a heating cycle, e.g. 1st mixed heating cycle

Activating a heating cycle with panel heating.

1. Enabling the heating cycle when commissioning.

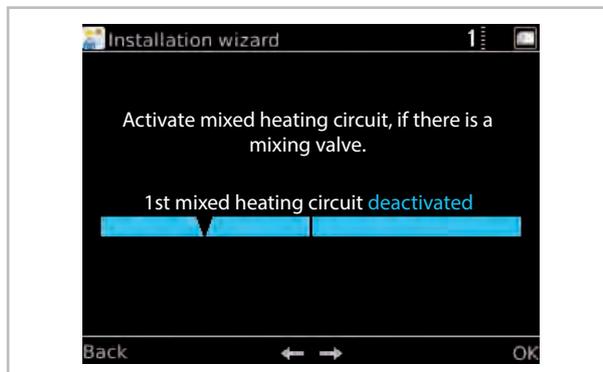


Fig. 84: Activate mixed heating cycle

Menu item	Parameter	Factory setting
1st mixed heating cycle	Deactivated	Deactivated
	Activated	

Press "Next".

Setting heating cycle mode

This is where you can select between the different **heating cycle modes**. The choice is between control according to the set **"Heating curve"** and **"Fixed value control"** (select with the rotary knob and confirm with "OK").

Menu item	Parameter	Factory setting
Heating cycle mode for HK active	Heating curve	According to design
	Fixed value	10 °C - 40 °C

Press "Next".

Heating curve heating cycle mode

The heating curve can be adjusted in three points, according to the structure and location-related conditions of the building:

Base point:

The base point corresponds to the minimum set temperature of the heating water at an outside temperature of 20 °C. If the heating is too cold at relatively high outside temperatures (trans-seasonal period), the base point should be set higher.

Standard inlet temperature:

the standard inlet temperature corresponds to the set temperature of the heating water at the standard outside temperature in the building location. If the heating is not warm enough at low outside temperatures, the standard inlet temperature should be increased.

Standard outside temperature:

the standard outside temperature is dependent on the regional location of the building. Please consult your heating installer.

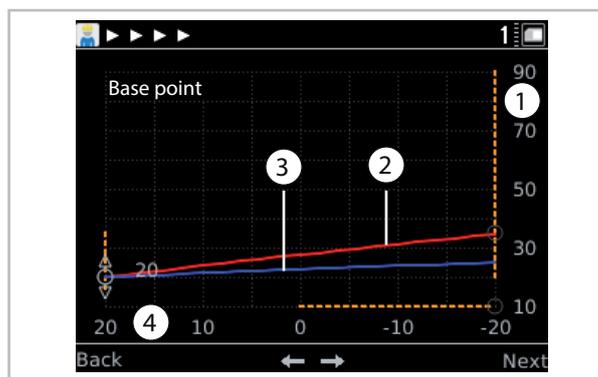


Fig. 85: Heating curve adjustment

- 1: Temperature of the heating water in °C
- 2: Inlet temperature heating curve
- 3: Return flow heating curve
- 4: Outside temperature in °C

Setting the heating curve:

- Activate the base point with the right softkey, set with the rotary knob and conform with the right softkey.

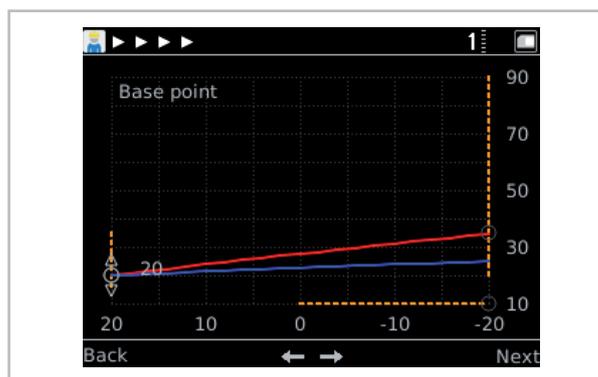


Fig. 86: Setting the base point

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- The standard inlet temperature and the outside temperature are set using the same procedure.

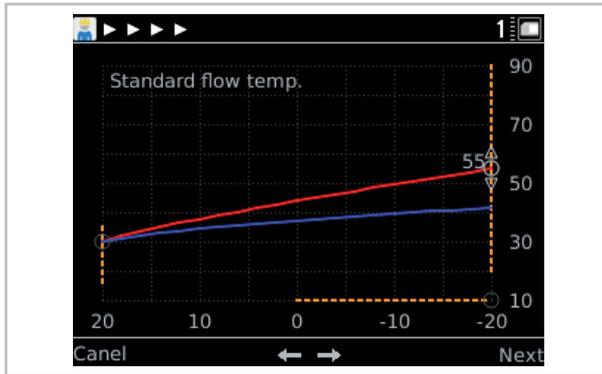


Fig. 87: Setting the standard inlet temperature

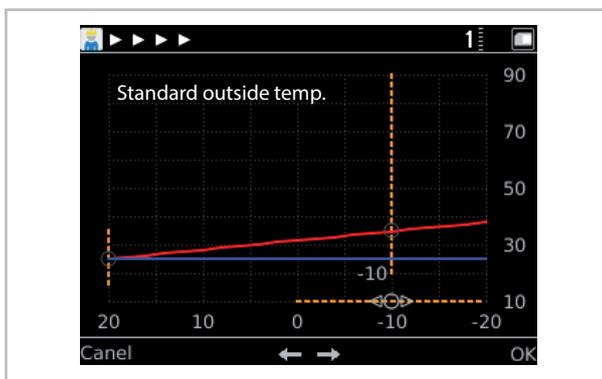


Fig. 88: Set the standard outside temperature



Operating the heating cycle with a fixed value is not recommended, as it will cause the heat pump to operate inefficiently.

4.6 Output restriction (night mode)

"Settings" menu item output restriction (night mode with noise optimisation)

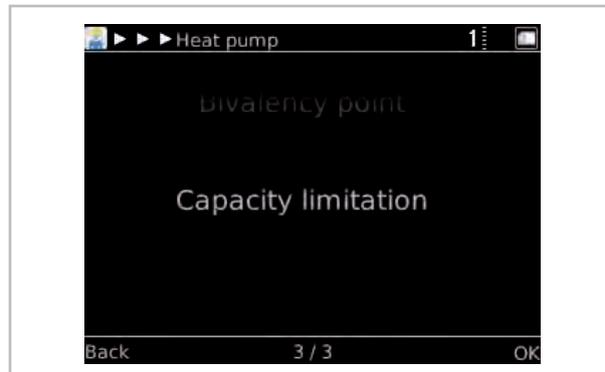


Fig. 89: "Output restriction" menu item

Under the level "Expert/heat pump/output restriction" it is possible to adjust the following parameters for the output reduction and associated noise optimisation.



Fig. 90: Time program

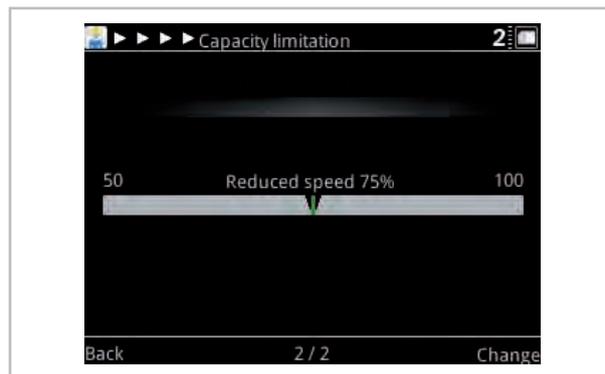


Fig. 91: Reduced speed (only with HTS)

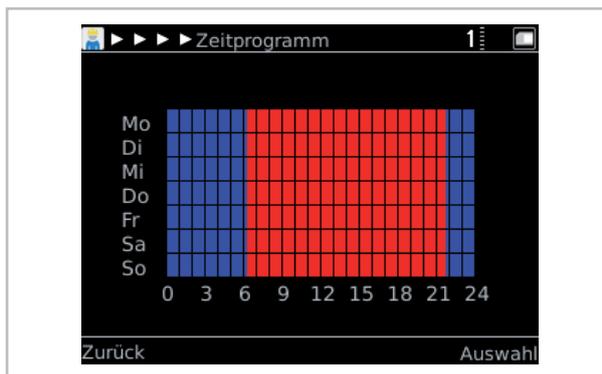


Fig. 92: Time window overview

Output reduction is set to active in the factory in the series WKF from 22:00 hrs to 06:00 hrs. This time window can be individually adjusted for the system operator.

In the HTS series, this function is deactivated as standard.

The time program is active for all connected circuits (HGU, HGM 1-4, HW and cooling cycle).

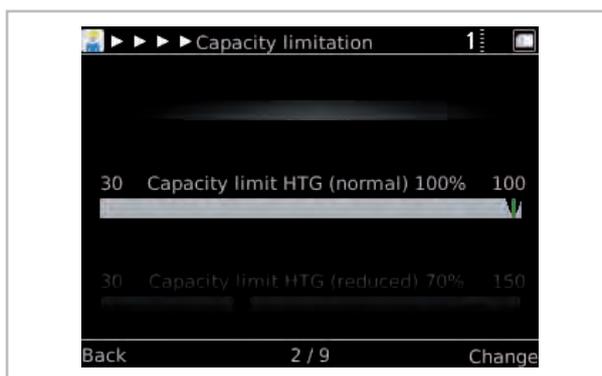


Fig. 93: Output restriction HTG (normal)

If a reduction is required for "normal" heating mode (e.g. 06:00 - 22:00 hrs) then the output can be aligned accordingly.

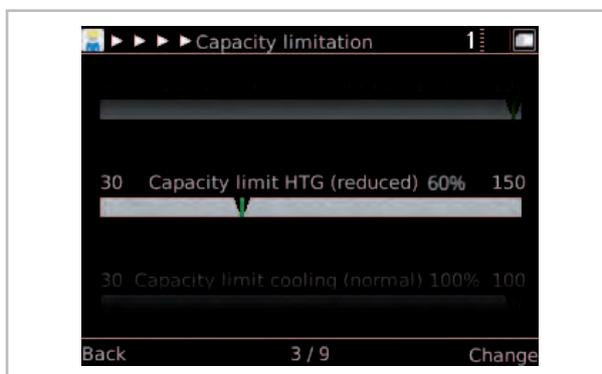


Fig. 94: Output restriction HTG (reduced)

The output restriction in "reduced" operation (22:00 - 06:00 hrs) is set to 60 % in the factory. Adjustment of the output must take depending on the installation site.

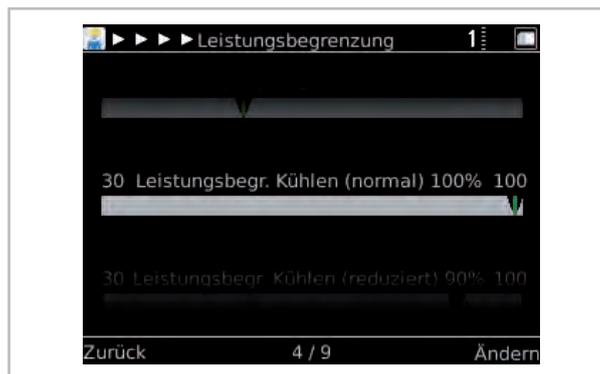


Fig. 95: Output restriction cooling (normal)

If a reduction is required for "normal" cooling mode (e.g. 06:00 - 22:00 hrs) then the output can be aligned accordingly.

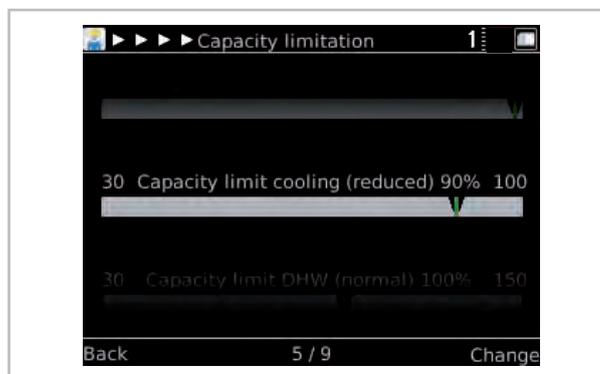


Fig. 96: Output restriction cooling (reduced)

The output restriction in "reduced" cooling mode (22:00 - 06:00 hrs) is set to 90 % in the factory. Adjustment must take place depending on the building.

WKF series mode of operation:

reduced operation during the time period highlighted in blue. During this period, the speed of the compressor and the fan is reduced to the set value.

HTS series mode of operation:

reduced operation during the time period highlighted in blue. During this period, the speed of the compressor and the outdoor unit fan is reduced to the set value. The setting of the time highlighted in red refers exclusively to the compressor and not to the outdoor module fan.

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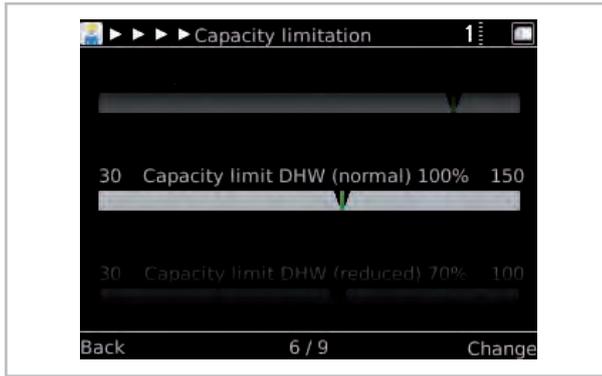


Fig. 97: Output restr. Hot water (normal)

The output during hot water preparation (HW) in "normal" operation (06:00 - 22:00 hrs) is fully enabled. Enablement is issued by the factory with just one compressor (outdoor unit Fig. 99)

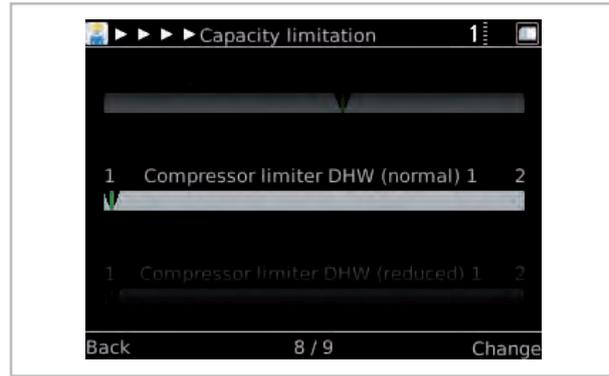


Fig. 99: Compressor restriction (normal) *5)

Restriction of the enabled compressors (outdoor unit), which are in operation during hot water preparation (time program hot water "normal" operation, e.g. 06:00 - 22:00 hrs). Factory setting 1 compressor.



Fig. 98: Output restr. Hot water (reduced)

The output restriction of the hot water preparation (HW) in "reduced" operation (06:00 - 22:00 hrs) is reduced to 60 %. If no hot water preparation should take place during this time, a corresponding time program must be stored at time program, hot water level. The factory setting here is 24 h enabled.



Fig. 100: Compressor restriction (reduced) *5)

Restriction of the enabled compressors (outdoor units), which are enabled during "reduced" operation.

! NOTICE!

When programming night mode/output reduction, note that extreme weather conditions such as heavy snowfall or freezing rain can cause the fan blades to ice up at a low fan speed. In these conditions, deactivate the output reduction or do not reduce the output below 60%.

4.7 Hygiene function

Activating and programming the flow sensor in the Smart-Control controller



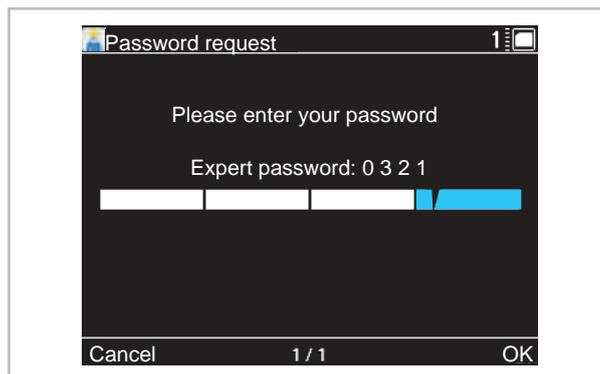
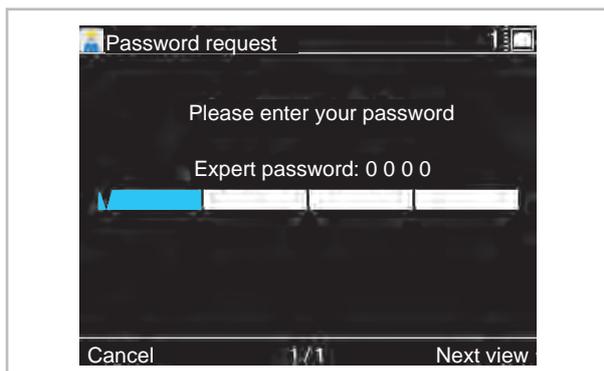
Fig. 101: Smart Control controller

To activate the flow sensor in the Smart-Control regulation, proceed as follows:

1. ➤ Press the menu key and hold it down until the technician code is queried in the controller display.

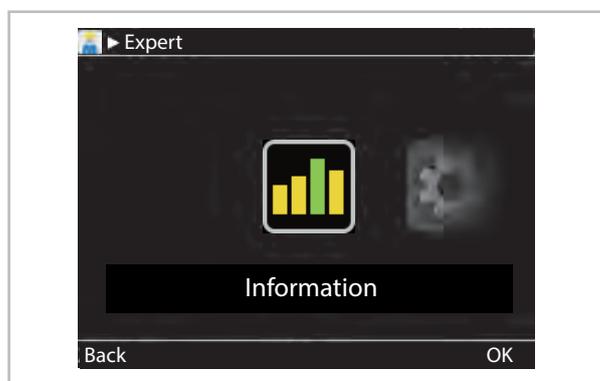


3. ➤ Enter the password "0 3 2 1" by turning the rotary knob and by pressing of the "Next" key.



4. ➤ After entering the password, confirm the input with the "OK" key.

The expert level is now enabled.



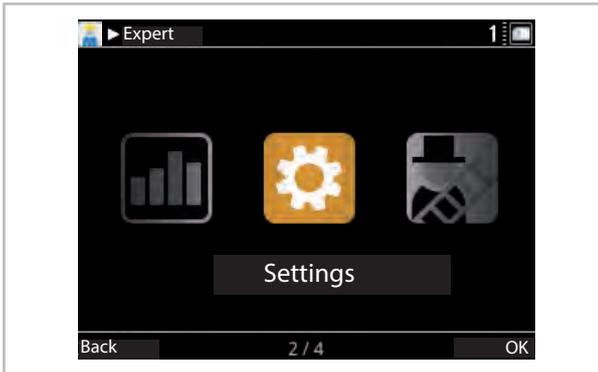
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Enabling and programming the installed flow sensor

The parameters for activation of the flow sensor can be found under the following points.

The hygiene function is not activated ex works. In order to activate this function on the flow sensor, the following parameters must be enabled:

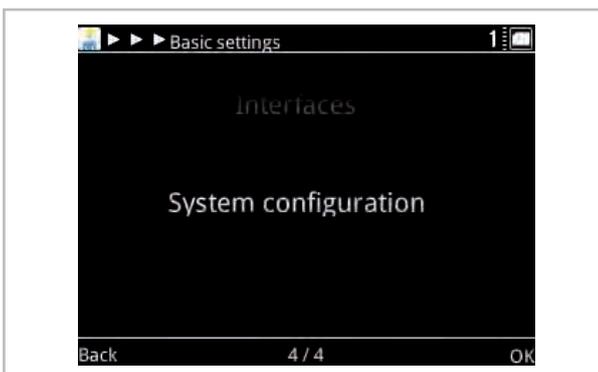
1. After entering the expert password, turn the rotary knob to the level "Settings" appears.



2. Confirm the input with the "OK" key.
3. After confirmation with the "OK" key, the level "Basic settings" appears. If this parameter does not immediately appear in the display, turn the rotary knob until this appears.

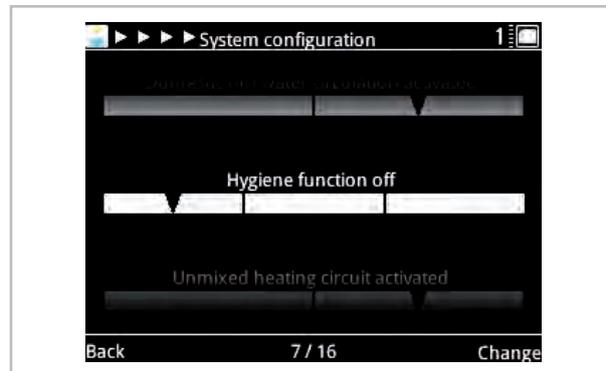


4. Now confirm the "OK" key.
5. Turn the rotary knob until the level "System configuration" appears in the display.

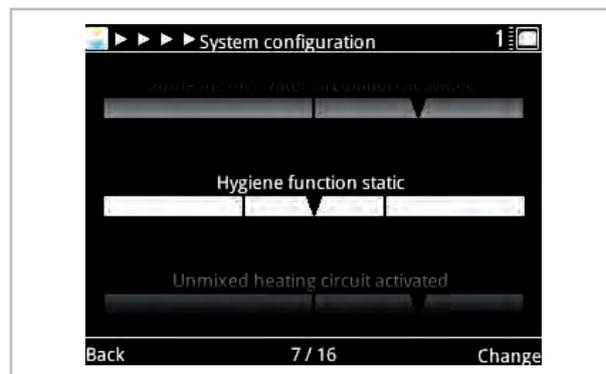


6. Now confirm the "OK" key.

7. Turn the rotary knob until the level "Hygiene function" appears in the display. The hygiene function is deactivated in the example.

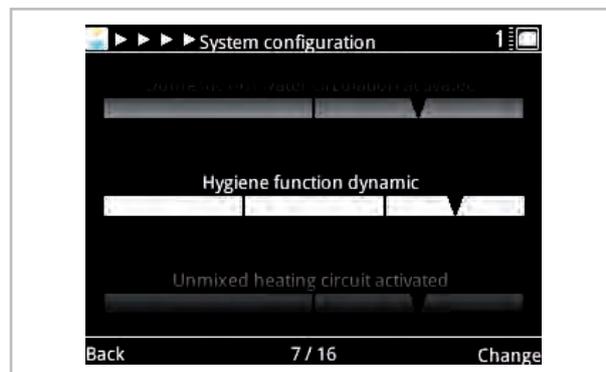


8. Keep pressing until the "Change" key is activated and then keep turning the rotary knob.
9. The hygiene function "Static" appears in the display. This operating mode is possible without flow sensor. The hygiene function is purely activated after a time program. A description of this function can be found in the instructions for the Smart-Control controller.



10. For the function of the flow sensor, continue turning the rotary wheel.

"Hygiene function dynamic" appears in the display (with flow sensor). To activate this function, press the "OK" key. The dynamic function is now activated.

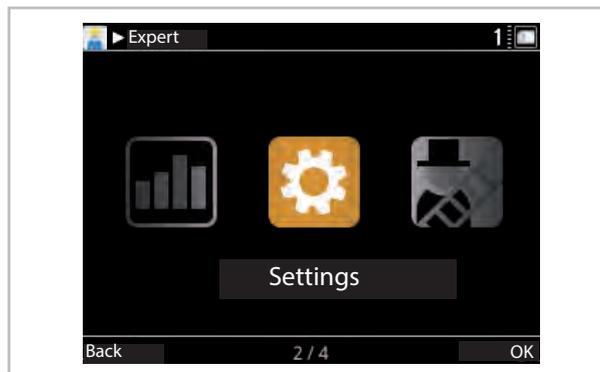


11. ▶ To adapt this function to your system parameters, press the "Back" key until the "Settings" display reappears in the controller display.

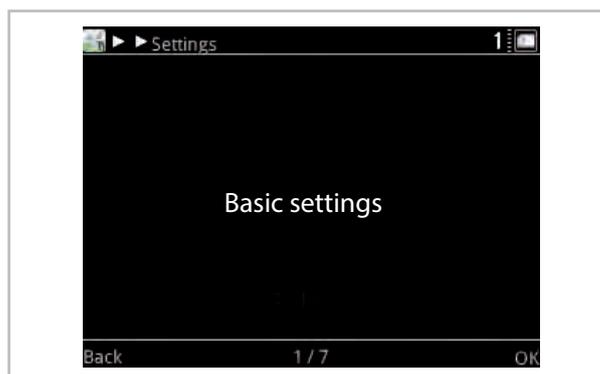
Parameter settings for the hygiene function

The relevant parameters for the function of the flow sensor are activated in the expert level under the menu item "Settings".

1. ▶ Confirm with the "OK" key.



2. ▶ Confirm the level "Basic settings" with the "OK" key (if this display does not appear, turn the rotary knob until this parameter appears).

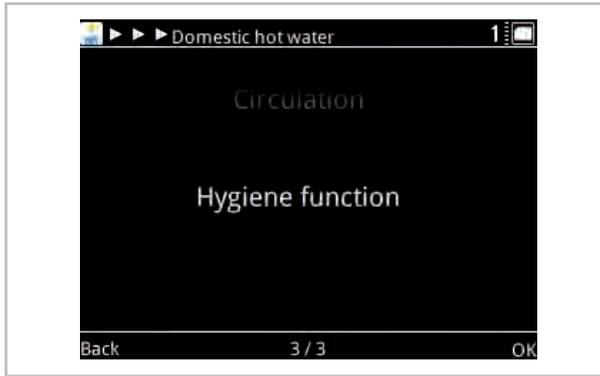


3. ▶ Repeat this procedure in the points described below.
4. ▶ By turning the rotary knob, you get to the parameter "Hot water". You access the individual parameters via the "OK" key.

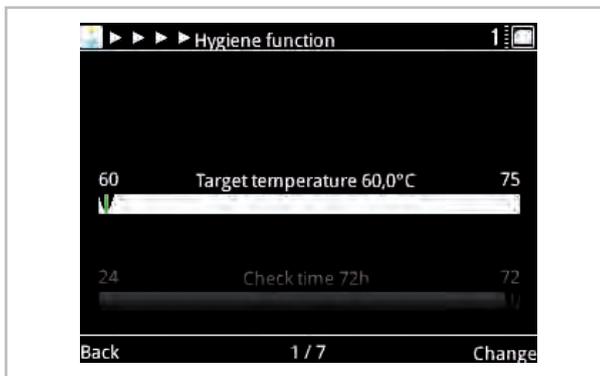


5. ▶ Turn the rotary knob until the parameter "Hygiene function" appears. Press the "OK" key to get to this level.

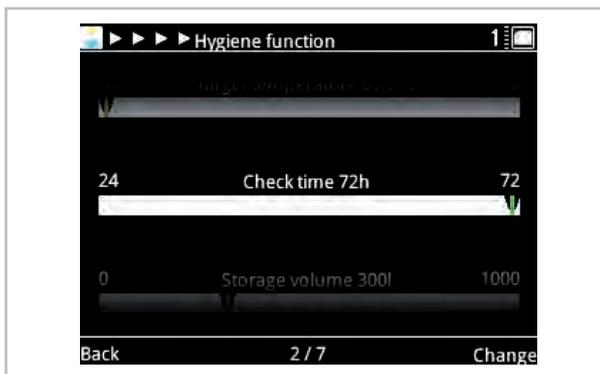
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6. First of all, the parameter appears to adjust the desired Legionella temperature. The corresponding temperature can be set via the "Change" key and turning the rotary knob. After setting the value, confirm with the "OK" key and save it.

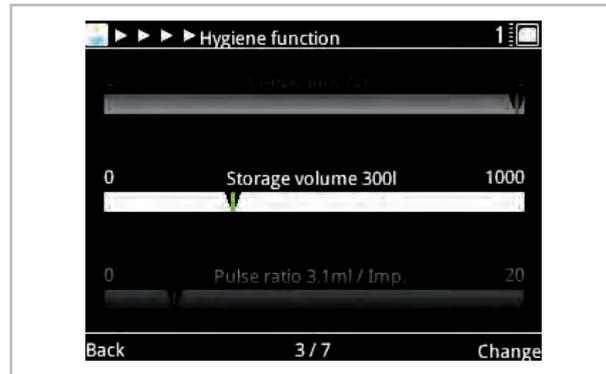


7. You access the next parameter "Setting the test time" by turning the rotary knob further.



8. According to the standard, it is sufficient if the hygiene function is first activated when the storage content of the hot water storage tank has not been changed after three days (72 hrs). In this case, the test time can be adjusted accordingly. To do this, repeat the steps as described above with the "Change" key and the rotary knob. When the setting has been made, proceed to the next parameter, setting of the hot water volume of your hot water tank by turning the rotary knob.

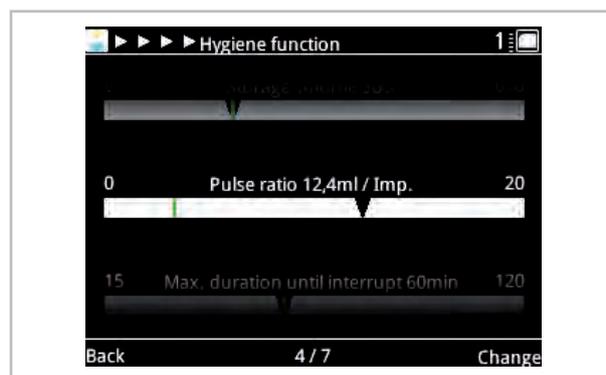
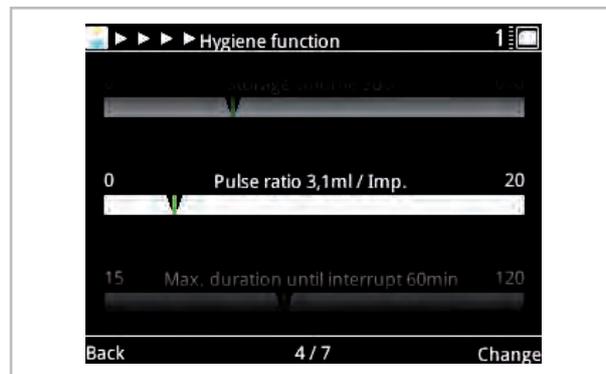
With the REMKO WKF-compact heat pump as well as with our EWS 300 hot water storage tank, it is not necessary to change this parameter, as these are both 300 litre storage tanks. If you have not installed a REMKO storage tank, you must change this value accordingly. To do this, repeat the steps as described above with the "Change" key and the rotary knob.



9. After the setting has been made, you get to the next parameter "Pulse valency" by turning the rotary knob.

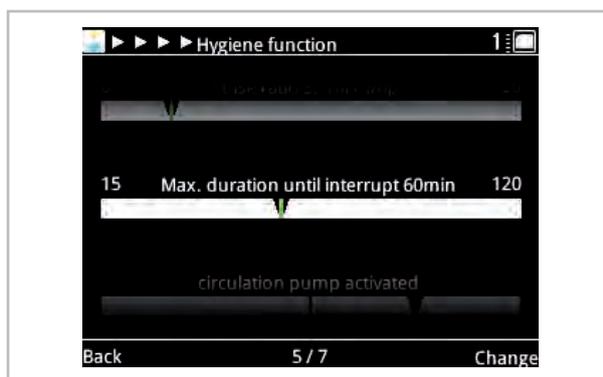
This parameter must be adjusted accordingly after the flow sensor DN15/ DN25 has been installed.

In the case of the flow sensor DN15, the pulse valency is 3.1 ml/Imp and in the case of the flow sensor DN25 the pulse valency is 12.4 ml/Imp



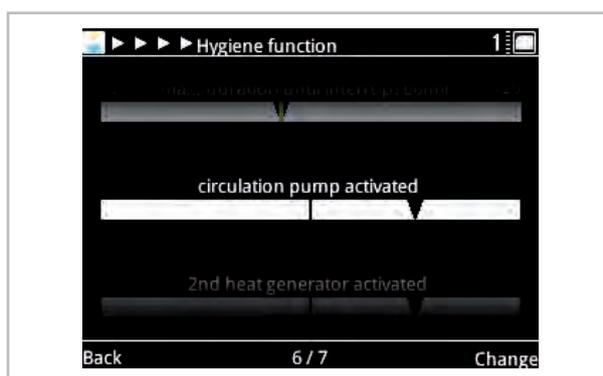
- 10.** After the setting has been made, you get to the next parameter "Setting of the max. time over which the hygiene function should be activated" by turning the rotary knob.

After the set time has elapsed, the hygiene function is interrupted if it has not already been activated via normal operation. If the hygiene function cannot be activated, as the available temperature is insufficient, this function is deactivated after expiry of the set time. If this is the case, a warning (ID 8227) is displayed in the controller. The heat pump continues in normal operation after an interruption.



- 11.** After the setting has been made, you get to the next parameter "Setting the circulation pump" by turning the rotary knob.

If a circulation pump has been installed in the factory system, this must be operational when the hygiene function is activated. If the circulation pump is installed on the I/O module (terminal A 04) of the heat pump, this is activated via the circulation pump function.



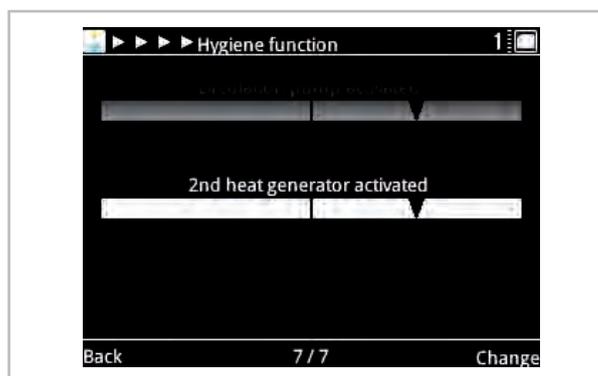
- 12.** After the setting has been made, you get to the next parameter "Activation of the second heat generator" by turning the rotary knob.

If the second heat generator in this level is deactivated, it is enabled in accordance with the set bivalency point after the hygiene function has been enabled. If value for hot water does not fall below the set bivalency point, the second heat generator is enable as required. If value for hot water does fall

below the set bivalency point, it is enabled immediately after the hygiene function is called up. The definitive bivalency point for your system can be found in the Smart-Control controller instructions in the expert level under "Settings/Heat pump".

If the second heat generator is activated in this level, the second heat generator is immediately enabled with activation of the hygiene function.

With bivalent systems (wall heating device/oil/gas boiler), the hygiene function is exclusively activated via the second heat generator.



- 13.** After the parameters described above, activation of the hygiene function is completed. To return to the home display (house icon), press the "Back" key until the house icon reappears in the display.

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5 Error messages on the Smart-Control

Operating messages, warnings and error display on the Smart-Control

Operating messages

ID	Description	Desig.	Details
ID6000	Storage tank 1: Max. temperature reached		The temperature on one of the probes in storage tank 1 is higher than the maximum permitted storage tank temperature
ID6001	HW request		There is an active requirement to charge the storage tank
ID6002	Heat pump compressor start		Heat pump compressor start
ID6003	Switching cycle disabled (I/O2)		The heat pump was disabled in order to reduce the compressor's switching cycles
ID6005	Internal pump lead time		The internal pump runs at reduced speed during the pump lead time
ID6006	Switching cycle disabled		The heat pump was disabled in order to reduce the compressor's switching cycles
ID6007	Min. holding time		The heat pump is disabled due to a minimum holding time
ID6008	Disable signal	S16	The heat pump is disabled due to a disable signal
ID6009	Disable signal (I/O 2)		The heat pump is disabled due to a disable signal
ID6010	Heat pump compressor start (I/O 2)		Heat pump compressor start
ID6012	Defrosting HP (I/O 2)		Defrost heat pump
ID6020	Pump internal after-run time		The internal pump runs at a reduced speed during the pump after-run time
ID6022	Min. holding time (I/O2)		The heat pump is disabled due to a minimum holding time
ID6103	Heat demand HP		Heat demand, heat pump
ID6104	Cooling demand HP		Cooling demand, heat pump
ID6105	Defrost heat pump		Defrost heat pump
ID6107	Standby mode enabled		Standby mode enabled
ID6108	Random delay after power failure		Random delay after power failure (up to 200 seconds after power returns) - the purpose of the random delay is to avoid a system overload due to many consumers being switched on at the same time
ID6109	Outdoor temp. Heat pump usable limit		Outdoor temp. Heat pump usable limit - the heat pump is disabled due to the usable limits being exceeded or not being reached
ID6111	Heat pump bivalence temperature		Heat pump bivalence temperature - the heat pump is disabled because the temperature has dropped below the bivalence temperature
ID6113	Solar heating		Solar heating - heat generators are disabled

ID	Description	Desig.	Details
ID6115	Low pressure difference		The pressure difference is too low to start the compressor
ID6116	Maximum defrosting period		Maximum defrosting period

Error

ID	Description	Desig.	Details
ID7050	Anti-freeze protection		The anti-freeze protection in the heat pump's heat exchanger was triggered due to an inlet temperature that is too low. After rectifying the cause of the error, reset the error in (Expert/Settings/Heat pump/Basic settings) and, if necessary, de-energise the outdoor unit.
ID7103	Incorrect phase sequence (rotating field)	μPC	Please check the phase sequence (the rotating field) of the power supply
ID7108	The anti-freeze protection		In the heat pump's heat exchanger was triggered due to a return temperature that is too low. After rectifying the cause of the error, reset the error in (Expert/Settings/Heat pump/Basic settings) and, if necessary, de-energise the outdoor unit.
ID7150	EEV motor fault	μPC	EEV motor fault. Please contact an authorised service technician
ID7200	Open contact - storage tank 1 bottom probe	S02	Open contact - storage tank 1 bottom probe
ID7201	Short circuit - storage tank 1 bottom probe	S02	Short circuit - storage tank 1 bottom probe
ID7202	Open contact - storage tank 1 middle probe	S09	Open contact - storage tank 1 middle probe
ID7203	Short circuit - storage tank 1 middle probe	S09	Short circuit - storage tank 1 middle probe
ID7204	Open contact - storage tank 1 top probe	S08	Open contact - storage tank 1 top probe
ID7205	Short circuit - storage tank 1 top probe	S08	Short circuit - storage tank 1 top probe
ID7206	Open contact - external probe	S10	Open contact - external probe
ID7207	Short circuit - external probe	S10	Short circuit - external probe
ID7208	Open contact - refrigerant probe	S07	Open contact - refrigerant probe
ID7209	Short circuit - refrigerant probe	S07	Short circuit - refrigerant probe
ID7210	Open contact - circulation temp. probe	S05	Open contact - drinking water circulation temperature probe

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ID	Description	Desig.	Details
ID7211	Short circuit - circulation temp. probe	S05	Short circuit - drinking water circulation temperature probe
ID7212	Open contact - inlet temp. probe	S13	Open contact - inlet temp. probe
ID7213	Short circuit - inlet temp. probe	S13	Short circuit - inlet temp. probe
ID7214	Min. refrigerant temp.	S07	The minimum refrigerant temperature was not reached - anti-freeze protection in the heat exchanger
ID7215	Min. refrigerant temp. (I/O2)	S07.2	The minimum refrigerant temperature (I/O2) was not reached - anti-freeze protection in the heat exchanger
ID7218	Open contact - collector 1 probe	S01	Open contact - collector 1 probe
ID7219	Short circuit - collector 1 probe	S01	Short circuit - collector 1 probe
ID7228	Open contact - inlet temp. probe	S13.2	Open contact - inlet temp. probe
ID7229	Short circuit - inlet temp. probe	S13.2	Short circuit - inlet temp. probe
ID7231	Anti-freeze protection (I/O 2)		The anti-freeze protection in the heat pump's heat exchanger was triggered due to an inlet temperature of less than 5 °C. After eliminating the cause of the error, the controller must be restarted to reset the error
ID7236	Open contact - mix. heating cycle inlet temp. probe	S12	Open contact - mixed heating cycle inlet temperature probe
ID7237	Short circuit - mix. heating cycle inlet temp. probe	S12	Short circuit - mixed heating cycle inlet temperature probe
ID7238	Open contact - mix. heating cycle return temp. probe	S11	Open contact - mixed heating cycle return temperature probe
ID7239	Short circuit - mix. heating cycle return temp. probe	S11	Short circuit - mixed heating cycle return temperature probe
ID7240	Connection to the KNX interface	KNX	Connection to the KNX IP interface lost
ID7241	Negative temp. differential	μPC	The temperature difference when the heat generator is active is implausible
ID7245	Tunnel occupied	KNX	The tunnel with the physical address (PA of the SMT) set on the controller is already taken by another KNXnet/IP unit (e.g.: ETS PC) or is not available on the interface.
ID7246	Low pressure	μPC	The compressor is disabled due to a low pressure malfunction
ID7247	Device Offline	μPC	Device Offline - please check the data connection between the controller board and the inverter
ID7248	Interface is not supported	KNX	The KNXnet/IP tunnelling protocol is not supported by the detected KNX interface

ID	Description	Desig.	Details
ID7249	Incorrect interface detected	KNX	The physical address of the detected KNXnet/IP interface is not consistent with the parameter settings of the SMT controller
ID7250	Min. medium flow rate (I/O 2)		The medium flow rate fell below the heat pump's minimum medium flow rate due to defrosting or in cooling mode. After eliminating the cause of the error, the controller must be restarted to reset the error
ID7251	Min. volumetric flow rate		The medium flow rate fell below the heat pump's minimum medium flow rate due to defrosting or in cooling mode. After eliminating the cause of the error, the indoor and outdoor units must be restarted to reset the error
ID7252	Heat pump malfunction code	S20	Heat pump malfunction code
ID7253	Heat pump 2 malfunction code	S20.2	Heat pump 2 malfunction code
ID7254	General inverter fault	μPC	General inverter fault - please contact an authorised service technician
ID7255	EEPROM error	μPC	EEPROM error. Please contact an authorised service technician
ID7256	Envelope fault	μPC	Envelope fault - the compressor operates outside the programmed curve. Please contact an authorised service technician
ID7257	Fan overload	μPC	The compressor is disabled due to a fan overload
ID7258	Maximum hot gas temperature	μPC	Maximum hot gas temperature - the compressor is blocked by having reached the maximum hot gas temperature
ID7259	High pressure malfunction	μPC	High pressure malfunction. If this fault occurs frequently, please contact an authorised service technician
ID7260	High pressure malfunction transducer	μPC	The compressor is disabled due to a high pressure malfunction
ID7262	Outside temperature sensor error	μPC	Please check the outside temperature sensor on the inverter board and its connection
ID7264	Inlet temperature probe error	μPC	Please check the inlet temperature probe on the inverter board and its connection
ID7267	Outlet temperature probe error	μPC	Please check the outlet temperature probe on the inverter board and its connection
ID7269	Hot gas temperature probe error	μPC	Please check the hot gas temperature probe on the inverter board and its connection
ID7270	Suction gas temperature probe error	μPC	Please check the suction gas temperature probe on the inverter board and its connection.
ID7271	High pressure probe error	μPC	Please check the high pressure probe on the inverter board and its connection
ID7272	Low pressure probe error	μPC	Please check the low pressure probe on the inverter board and its connection
ID7273	WKF fault code E101		Communication error between com. kit and outdoor unit. F1/F2 twisted or cable break

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ID	Description	Desig.	Details
ID7274	WKF fault code E177		Compressor stopped due to an emergency stop signal. After eliminating the cause of the error, the indoor and outdoor units must be restarted to reset the error
ID7275	WKF fault code E221		Short circuit or open contact - probe ambient air temperature motherboard outdoor unit CN43 Pin 1&2
ID7276	Restart required		Due to the changed system (setting / coding resistor), the controller has to be restarted - disconnect it from the power supply for around 10 seconds
ID7278	Low overheating		The compressor is disabled due to overheating being too low.
ID7283	Open contact - internal return temp. probe	S15	Open contact - internal return temperature probe
ID7284	Short circuit - internal return temperature probe	S15	Short circuit - internal return temperature probe
ID7285	Low suction gas temperature	μPC	The compressor is disabled due to the suction gas temperature being too low
ID7286	Coding error	Rc	A unique unit identifier could not be assigned using the coding resistor at the Rc terminal
ID7287	Low evaporation temperature	μPC	The compressor is disabled due to the evaporation temperature being too low
ID7288	High evaporation temperature	μPC	The compressor is disabled due to the evaporation temperature being too high
ID7289	High condensation temperature	μPC	The compressor is disabled due to the condensation temperature being too high
ID7290	WKF fault code E102		Communication error between com. kit and outdoor unit. F1/F2 twisted or cable break
ID7291	WKF fault code E201		Communication error between com. kit and outdoor unit - communication could not be established or incorrect board version
ID7292	WKF fault code E231		Short circuit or open contact - evaporator temperature probe motherboard outdoor unit CN43 Pin 3&4
ID7293	WKF fault code E251		Short circuit or open contact - hot gas temperature probe motherboard outdoor unit CN43 Pin 5&6
ID7294	WKF fault code E320		Short circuit or open contact - overload switch probe (OLP) motherboard outdoor unit CN43 Pin 7&8
ID7295	WKF fault code E416		Compressor stopped by overheating protection
ID7296	Open contact - 2nd mixed heating cycle return flow temp.	S14	Open contact - 2nd mixed heating cycle return flow temp.
ID7297	Short circuit - 2nd mixed heating cycle return flow temp.	S14	Short circuit - 2. acc. to return flow temp.
ID7298	Open contact - 3rd mixed heating cycle inlet temp.	S12.2	Open contact - 3. mixed heating cycle return flow temp.

ID	Description	Desig.	Details
ID7299	Short circuit - 3rd mixed heating cycle inlet temp.	S12.2	Short circuit - 3. mixed heating cycle return flow temp.
ID7300	Open contact - 3rd mixed heating cycle return flow temp.	S11.2	Open contact - 3. mixed heating cycle return flow temp.
ID7301	Short circuit - 3rd mixed heating cycle return flow temp.	S11.2	Short circuit - 3. mixed heating cycle return flow temp.
ID7302	Open contact - 4th mixed heating cycle inlet temp.	S06.2	Open contact - 4. mixed heating cycle return flow temp.
ID7303	Short circuit - 4th mixed heating cycle inlet temp.	S06.2	Short circuit - 4. mixed heating cycle return flow temp.
ID7304	Open contact - 4th mixed heating cycle return flow temp.	S14.2	Open contact - 4. mixed heating cycle return flow temp.
ID7305	Short circuit - 4th mixed heating cycle to return flow temp.	S14.2	Short circuit - 4. mixed heating cycle return flow temp.
ID7306	Open contact - refrigerant probe (I/O 2)	S07.2	Open contact - refrigerant probe (I/O 2)
ID7307	Short circuit - refrigerant probe (I/O 2)	S07.2	Short circuit - refrigerant probe (I/O 2)
ID7308	WKF fault code E464		Overcurrent at the inverter module IPM (IGBT transistor module). Check software status for the motherboard
ID7309	WKF fault code E425		Phase fault malfunction. A phase conductor is missing at the frequency converter (can only occur with WKF 180 - otherwise, check motherboard version)
ID7310	WKF fault code E203		Communication error between motherboard (7-segment display) and inverter board
ID7311	WKF fault code E466		Under-voltage or over-voltage in the intermediate DC circuit of the inverter.
ID7312	WKF fault code E469		Voltage probe fault in the intermediate DC circuit of the inverter. Replace inverter board if necessary
ID7313	WKF fault code E458		Implausibly high current at the current probe or fault at the BLDC motor for fan 1.
ID7314	WKF fault code E475		Fault at the BLDC motor for fan 2
ID7315	WKF fault code E461		Implausibly low current at the current probe or fault on the inverter board at compressor start (can occur with compressor damage)
ID7316	WKF fault code E467		Missing phase conductor on the compressor
ID7317	WKF fault code E462		Overcurrent fault (primary side) - check power supply / fuse for the EMI board
ID7318	WKF fault code E463		Compressor overtemperature (OLP). Probe value greater than 115°C (below 12.7 kohm). Can be caused by a jammed expansion valve

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ID	Description	Desig.	Details
ID7319	WKF fault code E554		Refrigerant quantity / refrigerant loss malfunction
ID7320	WKF fault code E556		Power ratings for the com. kit board (IM) and the motherboard (AM) differ - check board versions.
ID7328	Open contact - 2nd mixed heating cycle return flow temp.	S06	Open contact - 2. mixed heating cycle return flow temp.
ID7329	Short circuit - 2. mixed heating cycle return flow temp.	S06	Short circuit - 2. mixed heating cycle return flow temp.
ID7332	Anti-freeze protection	µPC	The anti-freeze protection in the heat pump's heat exchanger was triggered due to an inlet temperature that is too low. After eliminating the cause of the error, the controller must be restarted to reset the error
ID7333	Negative temp. differential		The temperature difference when the heat generator is active is implausible
ID7334	Comm. signal		Communication between operating unit SMT 1 and power unit SMT 1 I/O was interrupted.

Warnings

ID	Description	Desig.	Details
ID8100	The system temperature is too low		The system temperature is too low to start the heat pump
ID8102	Temperature discrepancy in solar cycle		The collector temperature is at least 60K higher than the storage tank temperature
ID8103	Overnight collector temperature		A collector temperature of at least 45°C (113 °F) occurred overnight
ID8105	Target flow rate		The flow rate has dropped below the target flow rate
ID8106	Low pressure		Low pressure. The compressor is disabled temporarily
ID8107	Compressor status		The active operating mode is safety mode because the compressor is active without demand
ID8108	Compressor start error	µPC	Compressor start error
ID8109	EVD EVO probe fault	µPC	EVD EVO probe fault
ID8110	Driver offline	µPC	Driver offline
ID8111	Device offline		Device offline - please check the data connection between the controller board and the inverter
ID8132	Anti-freeze protection active		The anti-freeze protection function is currently active - check the room climate mode set
ID8138	HW storage tank set temp.		The hot water storage tank set temperature was reduced due to low outside temperatures
ID8139	Lower application area (heating)		The temperature has currently dropped below the guaranteed application area of the external unit in heating mode

ID	Description	Desig.	Details
ID8140	Upper application area (heating)		The guaranteed application area of the external unit in heating mode is currently exceeded
ID8141	Lower application area (cooling)		The temperature has currently dropped below the guaranteed application area of the external unit in cooling mode
ID8142	Upper application area (cooling)		The guaranteed application area of the external unit in cooling mode is currently exceeded
ID8144	Target flow rate (I/O 2)		The flow rate has dropped below the target flow rate
ID8223	SD card error (host)		SD card error (host): The SD card is either not inserted correctly or an error has occurred
ID8224	SD card error		SD card error (CP): The SD card is not inserted or an error has occurred
ID8225	Dewpoint monitoring	CP	Dew point monitoring was activated but no control panel (with integrated humidity and temperature probe) was assigned to the cooling cycle to calculate the dew point
ID8226	Temp. dropped below min. inlet temp.		Temp. dropped below min. inlet temp. (or dew point) - cooling request is suppressed
ID8227	Hygiene function: Setpoint not reached		The hygiene function was cancelled due to the maximum runtime being reached before attaining the set temperature
ID8229	2. heat generator active		Due to the return temperature being too low during defrosting, the 2nd heat generator activated

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6 Assembly

6.1 Room installation of the Smart Control

! NOTICE!

Only use the unit in dry areas and protect it from electromagnetic radiation.

The Smart Control remote can be mounted to a wall, e.g. in the living room.

To wall mount the Smart Control remote, proceed as follows:

1. ➤ Fasten the wall bracket directly to the wall using screws and rawl plugs.
2. ➤ Connect the bus connection (maximum 50 m) with shielded cable (4 x 0.5mm²).
3. ➤ Plug the connectors into the sockets on the Smart Control.
+12V = Yellow / B = Green /
A = Brown / GND = White
4. ➤ Slide the Smart Control into the wall bracket.

You have the option of connecting two Smart Control remotes at the same time. This assignment is performed by allocating a Control Panel Address. The Smart Control for the heat pump is "always" given the address 1. Remote controls can then be assigned under number two or three.

For a room influence the selected address for the remote control must be assigned in the heating cycle settings.



For installation and commissioning of the REMKO Smart-Control remote control, follow the corresponding instructions

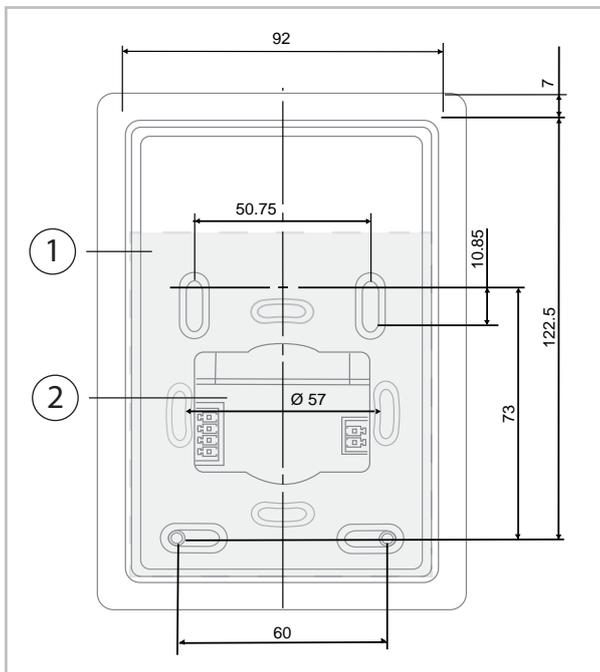


Fig. 102: Layout and dimensions of the back plate of the wall bracket

- 1: Wall bracket / back plate
2: Cable feedthrough for wall installation

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REMKO INTERNATIONAL

*... and also right in your neighbourhood!
Make use of our experience and advice*



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Consulting

Thanks to intensive training, our consultants are always completely up-to-date in terms of technical knowledge. This has given us the reputation of being more than just an excellent, reliable supplier:

REMKO, a partner helping you find solutions to your problems.

Distribution

REMKO offers not just a well established sales network both nationally and internationally, but also has exceptionally highly-qualified sales specialists.

REMKO field staff are more than just sales representatives: above all, they must act as advisers to our customers in air conditioning and heating technology.

SFIbCustomer Service

Our equipment operates precisely and reliably. However, in the event of a fault, REMKO customer service is quickly at the scene. Our comprehensive network of experienced dealers always guarantees quick and reliable service.

