Operating manual

REMKO Smart-Control
Series HTS, WKF/WKF-compact and WKF Duo
Quick manual for users

0122-2018-06 Edition 2, en_GB

Read the instructions prior to performing any task!

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 manufactured 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.

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-authorised 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.

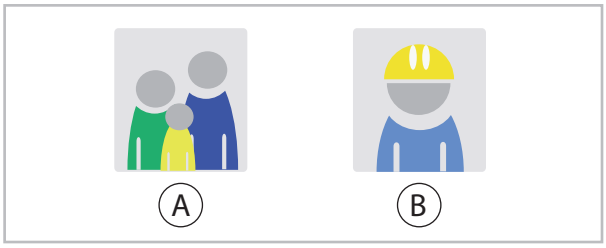


Fig. 3: The user and expert icons

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.

Navigation and changing parameters

Calling up the main menu

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

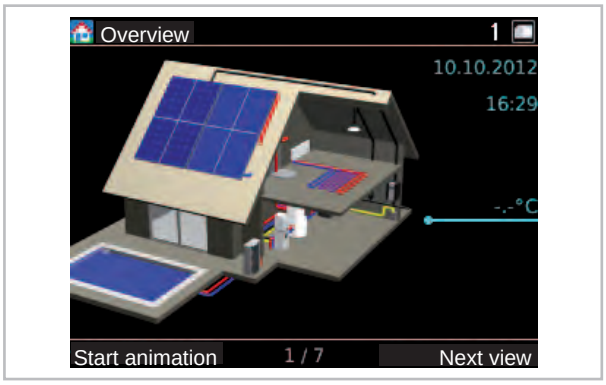


Fig. 4: Calling up the main menu

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.

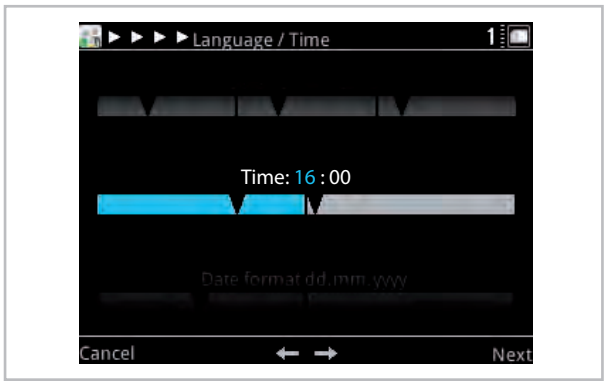


Fig. 9: Selecting a parameter 2

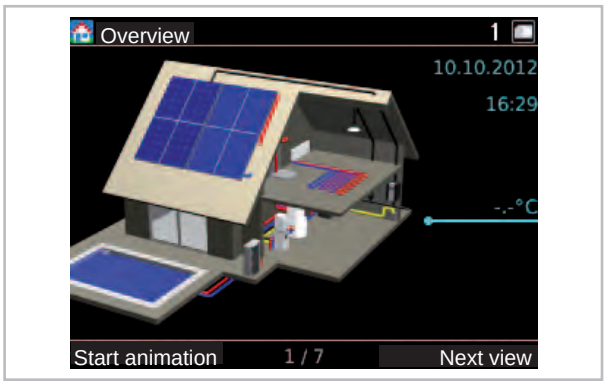


Fig. 11: Exiting the menu

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.)

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 my 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)

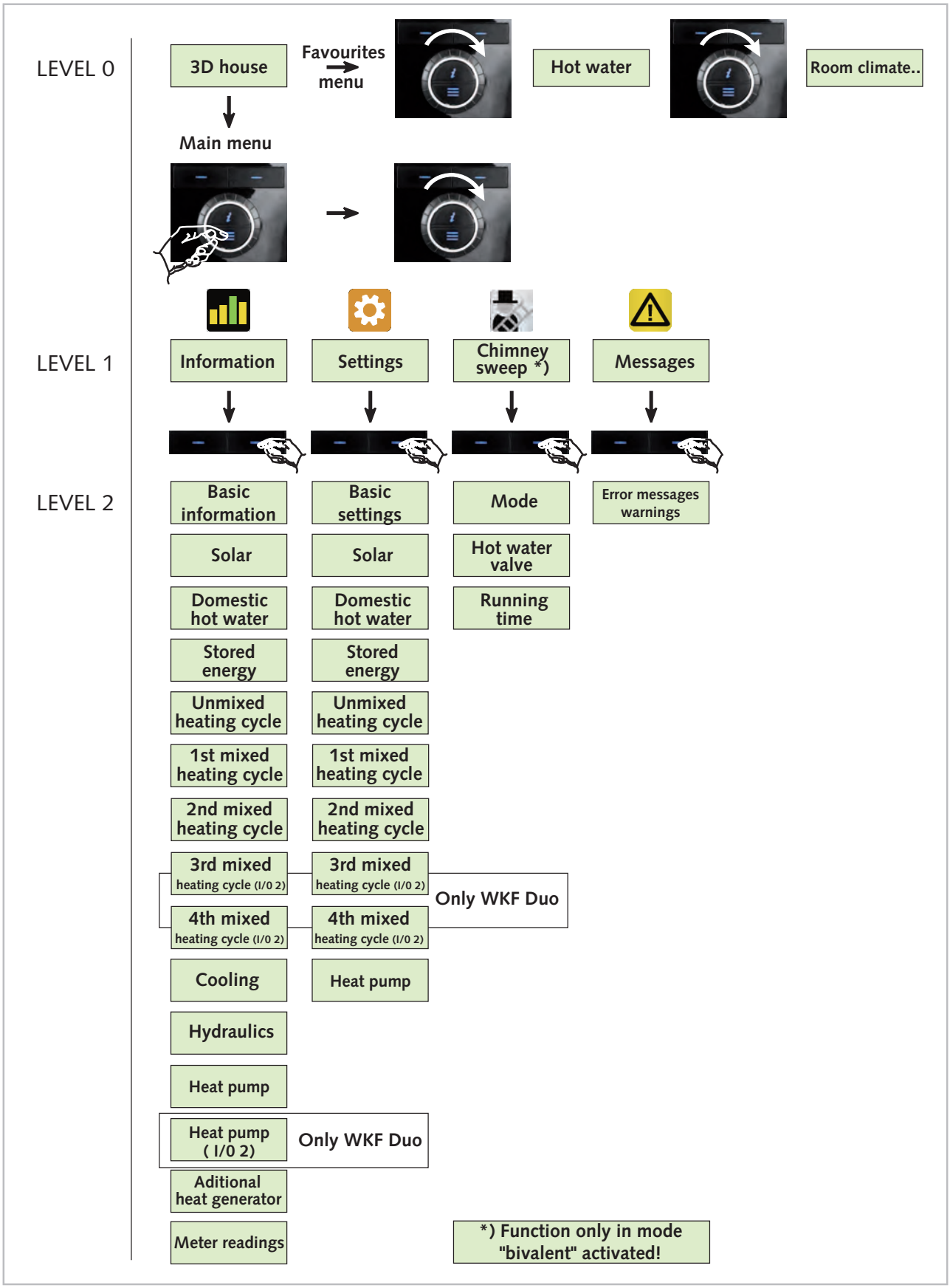


Fig. 12: Menu structure overview

"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).

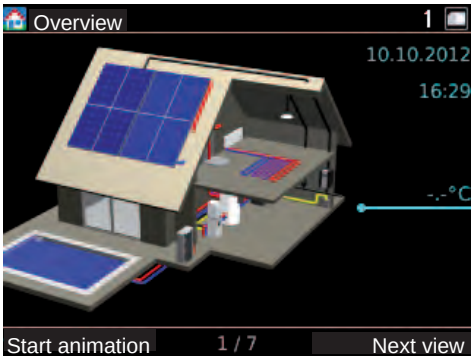


Fig. 13: 3D house

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.

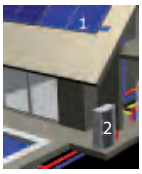


Fig. 14: Explanation of View 1

1: Collector array
2: Heat pump outdoor unit

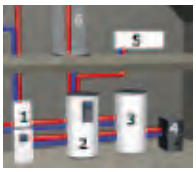


Fig. 15: Explanation of View 2

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.

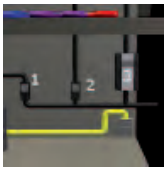


Fig. 16: Explanation of View 3

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

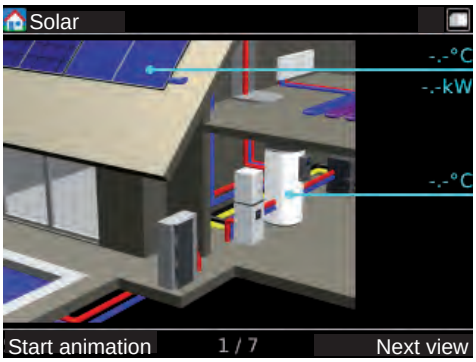


Fig. 17: Component zoom, solar

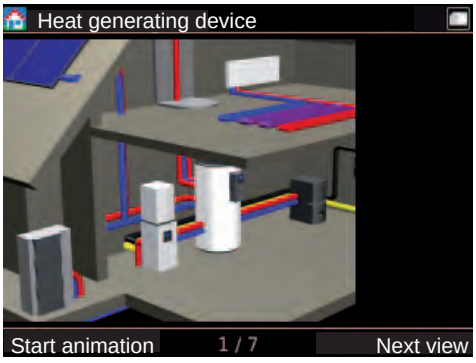


Fig. 18: Component zoom, heat generator

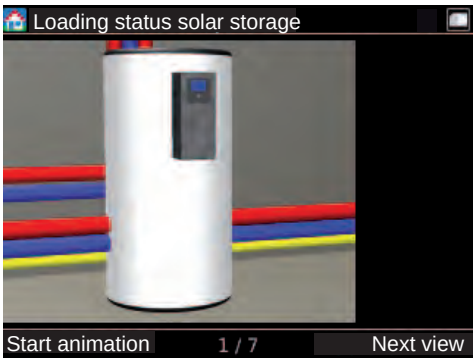


Fig. 19: Component zoom, solar storage tank charging status

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)

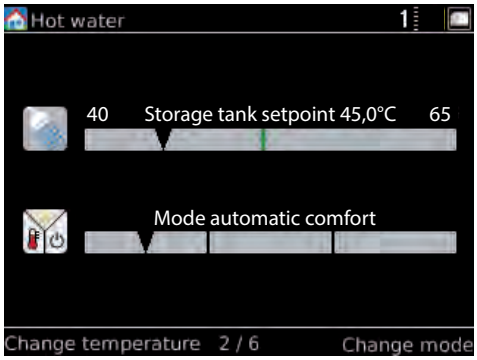


Fig. 20: Warmwasser

Then turn the rotary knob clockwise.

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.

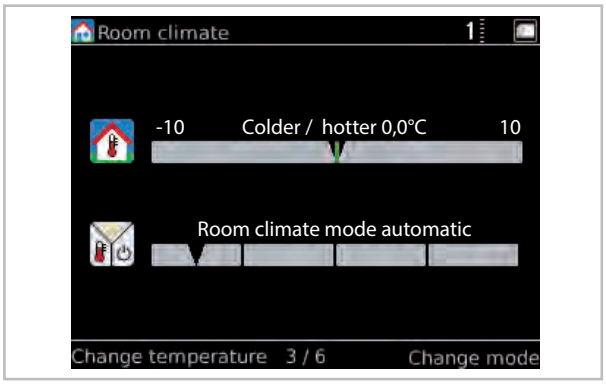


Fig. 21: Room climate

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).

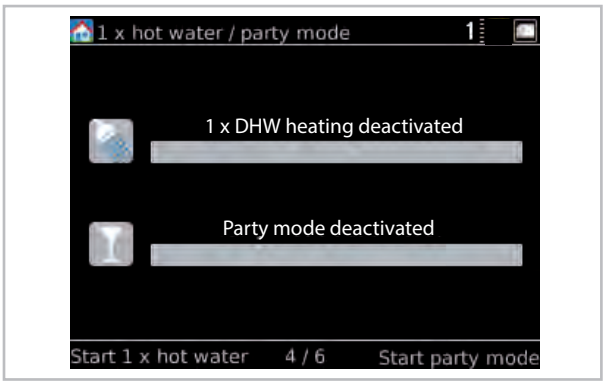


Fig. 22: One-off hot water/party mode

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.

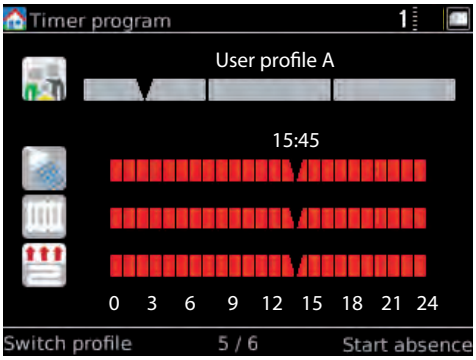


Fig. 23: Time programmes

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.

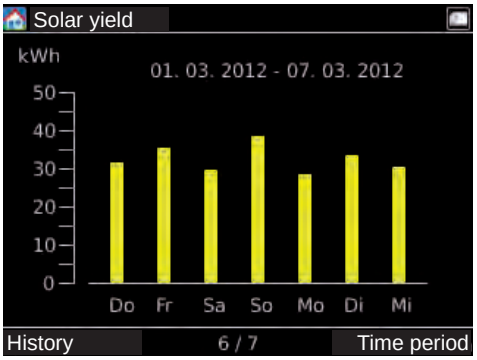
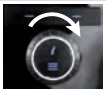


Fig. 24: Example diagram: Solar yield

NOTE:

These yields are also displayed with an activated PV function

Then turn the rotary knob clockwise.



CO_2 savings

CO_2 savings specifies how much CO_2 emissions have been avoided. The calculation of CO_2 savings is based on the amount of renewable energy generated.

The CO_2 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 CO_2 per year.

Fig. 25: CO_2 savings

"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!

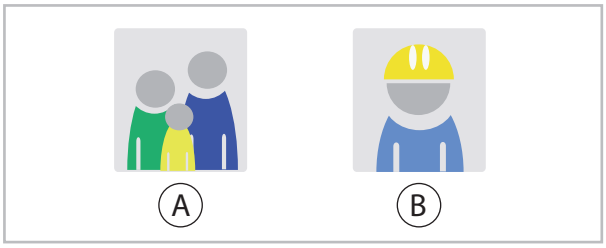


Fig. 26: The user and expert icons

A: User
B: Expert

Authorisation level		Level 1 menu item	Description
		Information	In this menu item, you can view important information, such as temperatures, pump requirements, the current collector temperature or any configured parameter settings.
		Settings	This menu item is used to configure all the settings of the system, i.e. for heating cycle, hot water or solar.
		Chimney sweep	In this menu item the test function of an additional heat generator is active (only with "bivalent" operating mode!)
		Messages	This menu item displays status, fault and warning 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 *a) Please find additional information on these menu items in the special manuals
			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	
			µPC version *2)	
			µPC software date *2)	
		Licence information		

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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/0 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/0 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		

REMKO Smart-Control

"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	Inertia of the heating curve	
			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		You can find many of the individual info texts about the level 2-4 menu items on your Smart Control
		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 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.

3.2 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.

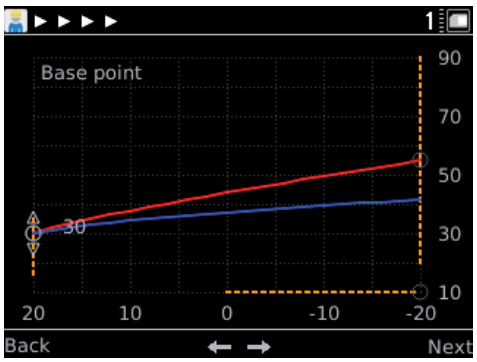

Fig. 27: Heating curve adjustment

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.

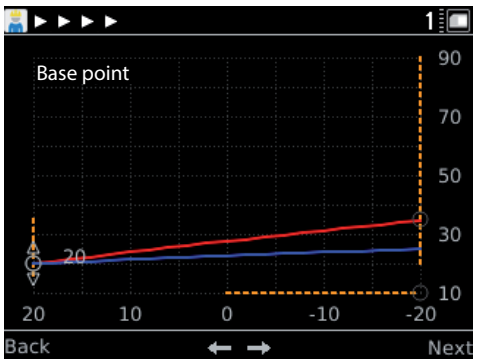

Fig. 28: Setting the base point

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

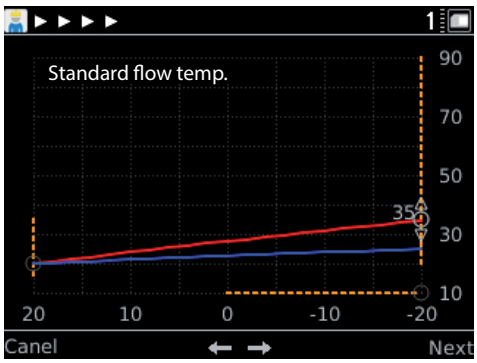

Fig. 29: Setting the standard inlet temperature

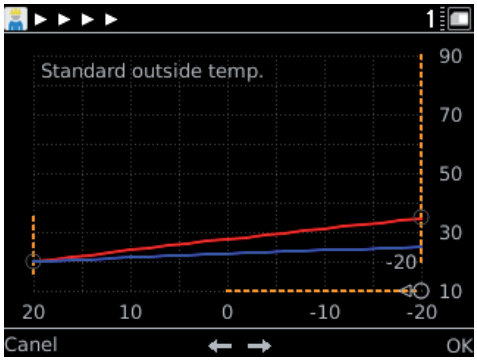

Fig. 30: Setting the outside temperature

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.

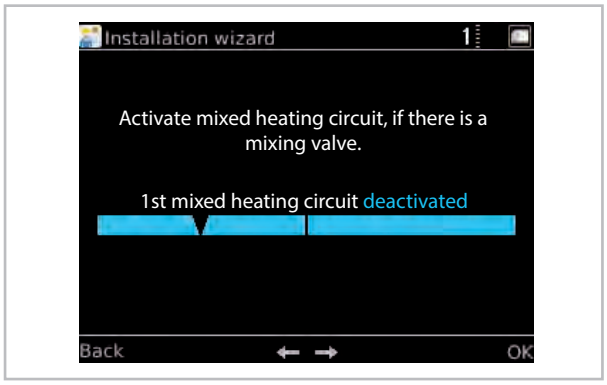

Fig. 31: Activate mixed heating cycle

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.

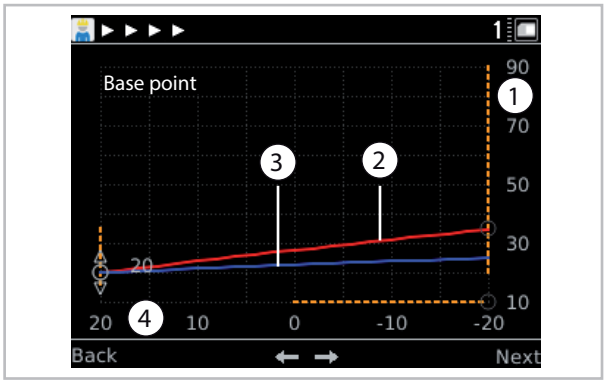

Fig. 32: Heating curve adjustment

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.

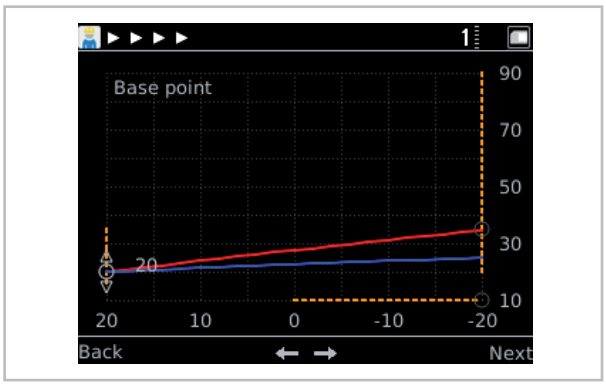

Fig. 33: Setting the base point

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

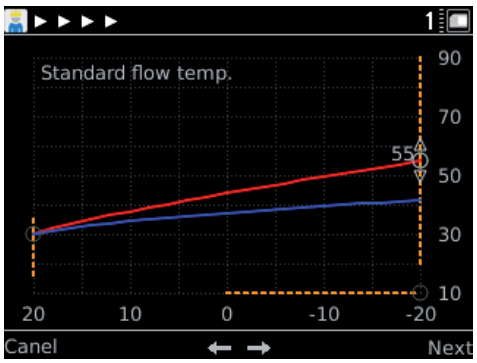

Fig. 34: Setting the standard inlet temperature

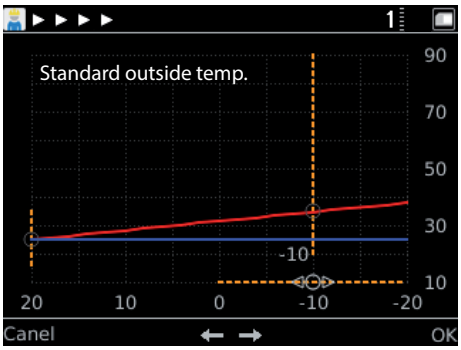

Fig. 35: Set the standard outside temperature

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

4 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 disa-bled (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 disa-bled		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

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

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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

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.

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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 - refrig-erant probe (I/O 2)	S07.2	Open contact - refrigerant probe (I/O 2)
ID7307	Short circuit - refrig-erant 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

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

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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

5 Assembly

5.1 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.

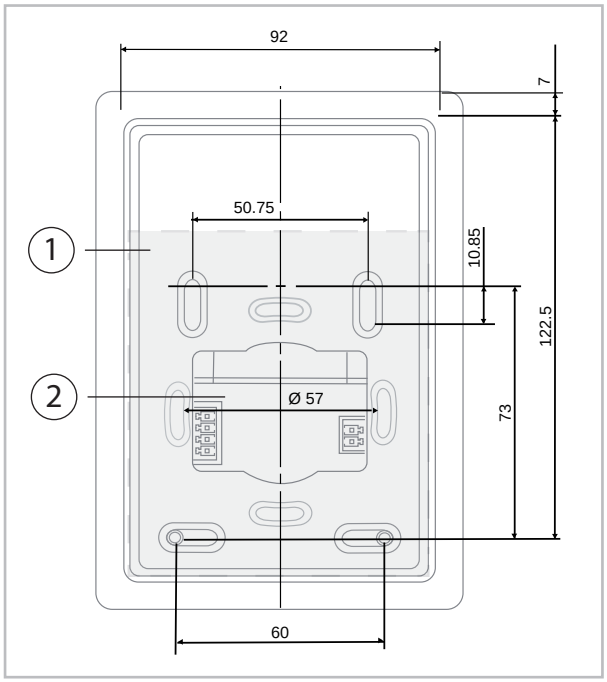

Fig. 36: Layout and dimensions of the back plate of the wall bracket

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

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

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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:
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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.
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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.

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