Operating instructions for users

BM-2 programming unit

Heating appliance

Heating mode

Burner ON

1x

25.2 °C

1.5 bar
Pressure

Heating appliance

14:12   20.01.2013

GB

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Table of contents

1 Appliance description

▶ **Intended use**

The Wolf BM-2 programming unit is for use exclusively in conjunction with Wolf heating appliances and Wolf accessories.
The Wolf BM-2 programming unit is used to control the entire heating system and to set specific heating parameters.
Intended use also includes observing the operating instructions and all other applicable documents.

 Please note:

• The BM-2 programming unit can also be installed as a remote control, which requires the integration of an AM display module in the heating appliance.

▶ **Incorrect use**

Any use other than the intended use is not permissible. Any other use or changes to the product at any time including during fitting and installation invalidate all warranty claims. The user has sole liability for such use.

This appliance is not designed to be operated by persons (including children) with restricted physical, sensory or mental capacities or who lack the necessary experience and/or knowledge, unless they are supervised by a person responsible for their safety or have received instructions on how to use the appliance from this person.
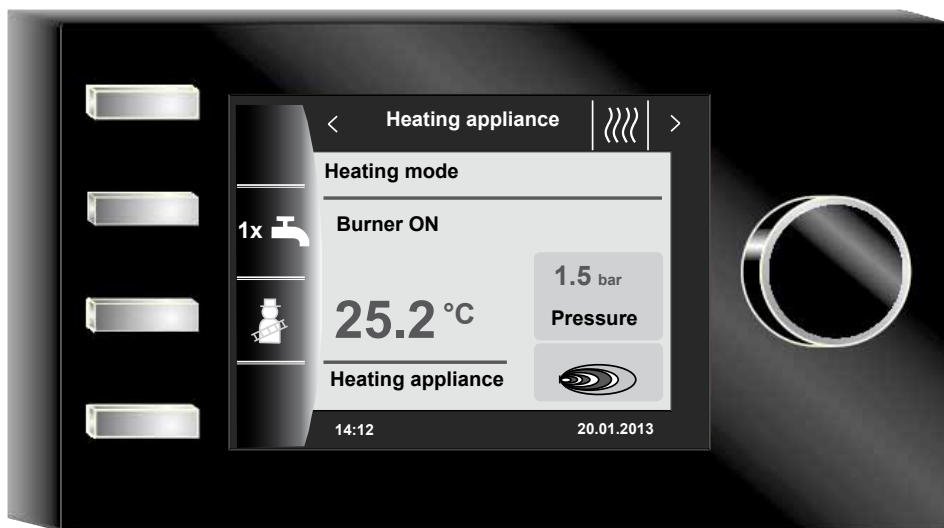
2 Safety and regulations

The general safety instructions must be observed.

2.1 General safety instructions

The BM programming unit must be installed and commissioned by a qualified contractor.

▶ Before installing the BM, disconnect the power supply from the heating appliance and all connected components.
▶ Be aware that there is mains power to the electrics, even when the heating appliance mains isolator is off.
▶ Only replace damaged or faulty components with original Wolf spare parts.
▶ Do not remove, bypass or disable any safety and monitoring equipment.
▶ Only run the system when it is in perfect technical condition.
▶ Immediately rectify any faults and damage that impair safety.
▶ If the domestic hot water temperature is set above 60 °C, install a thermostatic water mixer.
▶ Route mains power cables with a voltage of 230 V in a physically separate place to the eBUS cables.
▶ Electronic assemblies can be damaged by an electrical discharge. Touch earthed objects, e.g. heating or water pipes, before carrying out any work, in order to discharge the static charge.

2.2 Standards / directives

The appliance and control accessories comply with the following regulations:

EC Directives
▶ 2006/95/EC Low Voltage Directive
▶ 2004/108/EC EMC Directive

EN Standards
▶ EN 55014-1 Emission
▶ EN 55014-2 Immunity
▶ EN 60335-2-102
▶ EN 60529

2.3 Installation / commissioning

▶ According to EN 50110-1, only qualified electricians may carry out the installation and commissioning of the heating control unit and connected accessories.
▶ Observe all local and electrical regulations.
▶ Observe all regulations regarding the installation of HV systems up to 1000 V.
▶ Observe all local regulations regarding the installation of electrical systems.

2.4 CE designation

With the CE designation, we as the manufacturer confirm that the BM-2 programming unit conforms to the basic requirements of the Electromagnetic Compatibility Directive (Council Directive 2004/108/EEC). The BM-2 programming unit fulfils the basic requirements of the Low Voltage Directive (Council Directive 2006/95/EEC).

2.5   Symbols and warnings

Symbol for additional information

▶   Symbol for a necessary action

Warnings in the text warn you of possible risks before the start of an instruction. The warnings provide you with information on the possible severity of the risk using a pictogram and a keyword.

Pictogram	Keyword	Explanation
	Danger!	Risk to life or risk of serious injury
	Danger!	Risk to life or risk of serious injury through electrocution
	Warning	Slight risk of injury
	Caution	Possible material damage

Table 2.1   Meaning of warnings

2.5.1 Layout of warnings

You will recognise warnings in these instructions by pictograms and a line above and below the warning section. These warnings are laid out as follows:

Keyword
Type and source of risk.
Explanation of the risk.
▶   Instruction to prevent the risk.

3   Overview of the BM-2

Quick start keys   Operating mode   Page heading

Burner status   Status display

Key 1

Key 2

Key 3

Key 4

Heating appliance

Heating mode

Burner ON

1x

25.2 °C

1.5 bar
Pressure

Boiler temperature

14:12   20.01.2013

Rotary selector
with pushbutton
function

Display of system data
(content varies)

Function display
for quick start keys

Time

eBUS connection
No eBUS connection

Date
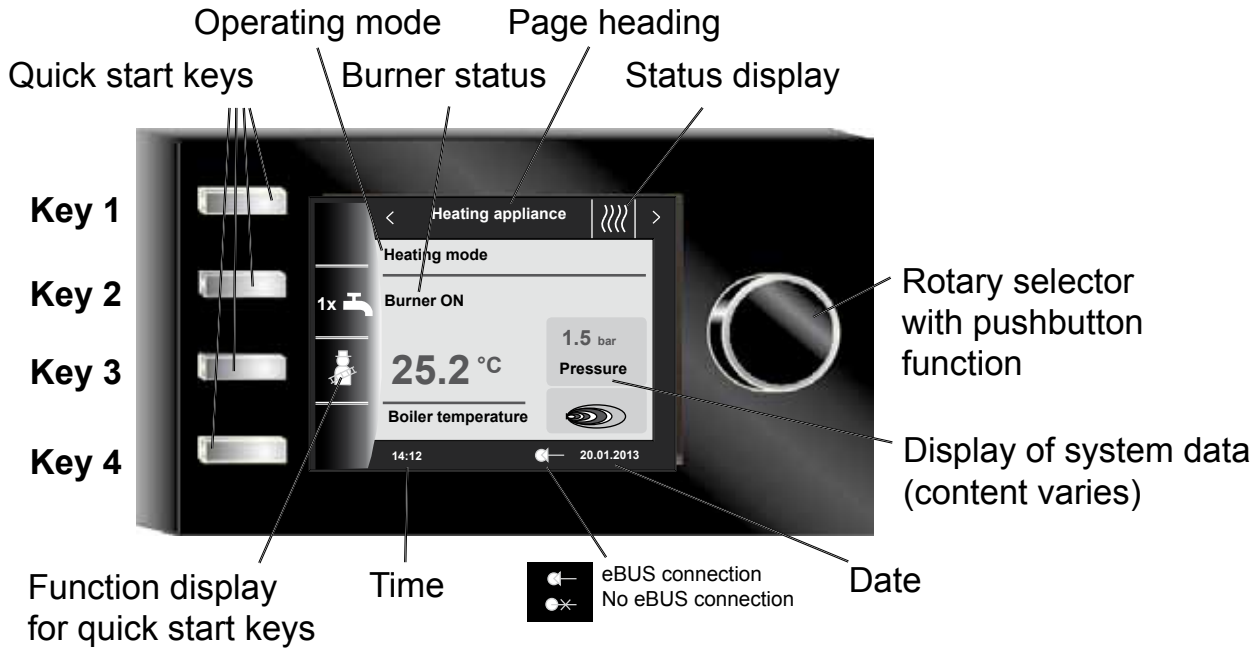
After switching on the heating appliance, the software loads, and a progress bar and the Wolf logo appear. The system is then initialised and the system is reloaded. The start page / home page is now displayed.

FW x.xx

Software version
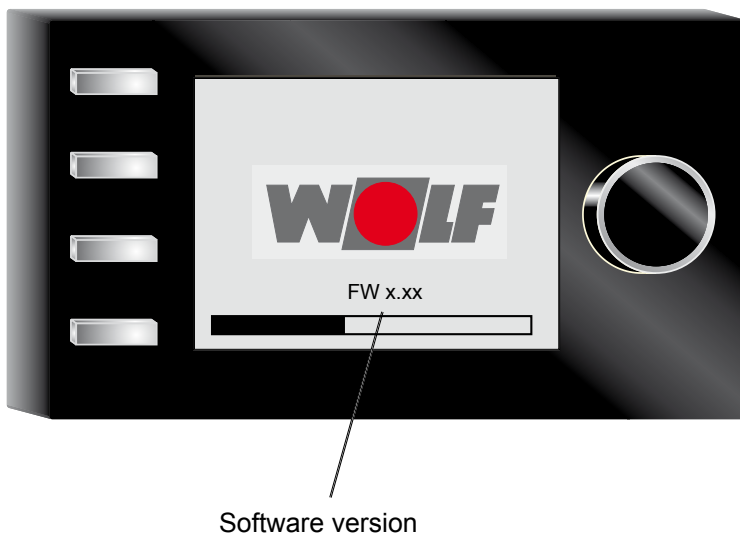
4 Quick start keys/rotary selector

The **4 quick start keys** and the **rotary selector** are used to program the BM-2.
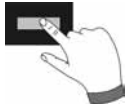
The following settings can be configured using the quick start keys:

- − Key 1 – without function display, no function
- − Key 2 – variable functions (e.g. once-only DHW heating)
- − Key 3 – variable functions (e.g. enabling emissions test)
- − Key 4 – home key

Turn the rotary selector to switch between the different active components.

- − Heating appliances
- − DHW
- − Heating circuit
- − Mixer
- − Solar yield
- − Ventilation unit
- − Messages

The main menu of the display, default settings, time programs and contractor level are activated by **pressing** the rotary selector; the navigation is explained in the following chapter.

Activation and operation in the main menu / submenu / menu item

Operating procedure.

Press the rotary selector to access the main menu page. Press again to access the submenu, and once more to access the menu item.

The following operations are possible:

Clockwise rotation   Cursor moves down through the menu
Selected value is increased
Selected parameter is increased

Anti-clockwise rotation   Cursor moves up through the menu
Selected value is decreased
Selected parameter is decreased

Press rotary selector   Menu selection is confirmed or enabled
Selected value is confirmed or enabled
Selected parameter is confirmed or enabled
Selected function is executed or enabled

For visual orientation, a cursor is displayed that shows the current position in the display. Press the rotary selector once to highlight the currently selected item for editing. Turn the rotary selector to change the value, parameter or function. Press the selector again to confirm the value.

5 Overview of status pages

Turn the rotary selector to display the different status pages. This enables the installed heating appliances and extension modules with the associated configurations.

10 - Heating appliance

Setting options	Info regarding system data
– Once-only DHW heating	– Operating mode
– Emissions test mode (BM-2 in heating appliance)	– Burner status
– Access start page	– Heating appliance temp.
	– System pressure
	– Burner output

11 - DHW

Setting options	Info regarding system data
– Change set DHW temperature	– Selected DHW temperature
– Change operating mode	– Selected operating mode
– Access start page	– DHW temp.
	– Set DHW temperature

12 - Heating circuit

Setting options	Info regarding system data
– Change set heating circuit temperature	– Selected temperature
– Change operating mode	– Selected operating mode
– Access start page	– Room temperature (BM-2 as remote control)
	– Outside temperature (with outside temp. sensor in WRS)
	– Flow temperature

13 - Mixer

Setting options	Info regarding system data
– Change set mixer circuit temperature	– Selected temperature
– Change operating mode	– Selected operating mode
– Access start page	– Room temperature
	– Outside temperature
	– Flow temperature

14 - Solar

Display	Info regarding system data
– Monthly yield	– Collector temperatures
– Annual yield	– Cylinder temperatures

15 - Ventilation unit

Display	Info regarding system data
– Change operating mode	– Selected operating mode
– Access start page	– Air flow rate / extract air temperature

16 - Messages

Setting options	Info regarding system data
– Acknowledging faults for users	– Current faults
– Acknowledging faults for contractors (locking faults)	

i Values are only displayed for modules that are connected (mixer module MM, cascade module KM, solar module SM, ventilation unit)

6   Heating appliance status page

6.1   Using the [1x] key for 1x DHW heating

The special function 1x tap symbol (DHW) bypasses the programmed switching times and heats up the DHW cylinder once, for one hour, to the set DHW temperature.

− Press key 2 again to disable once-only DHW heating
− You are taken back to the home page after 5 seconds

Key 2

| Heating appliance |
| Heating mode |
| Burner ON |
| 1x |
| 25.2 °C | 1.5 bar Pressure |
| Boiler temperature |
| 14:12 | 20.01.2013 |

Screen display changes

1x DHW heating

enable

| Heating appliance |
| Heating mode |
| Burner ON |
| 1x | 1.5 bar Pressure |
| Once-only DHW heating enabled |
| 14:12 | 20.01.2013 |

Enabled

5 s
return to
home page

Key 2

| Heating appliance |
| Heating mode |
| Burner ON |
| 1x |
| 25.2 °C | 1.5 bar Pressure |
| Boiler temperature |
| 14:12 | 20.01.2013 |

Screen display changes

1x DHW heating

disable

| Heating appliance |
| Heating mode |
| Burner ON |
| 1x | 1.5 bar Pressure |
| Once-only DHW heating disabled |
| 14:12 | 20.01.2013 |

Disabled

5 s
return to
home page

6.2 Using the ☃ key for emissions test mode

− Emissions testing is only displayed if the BM-2 is installed in the heating appliance.

Once the emissions test function (key 3) has been enabled, the burner runs for 15 minutes and the time counts down on the display. The time can be extended back to 15 minutes by pressing key 3 again.

Key 3

‹ Heating appliance 〽 ›
Heating mode
1x 🚰 Heating mode ON
☃ **25.2** °C
1.5 bar **Pressure**
Boiler temperature
14:12   20.01.2013

Screen display changes →

Flue gas test

‹ Flue gas test ☃ ›
Flue gas test active
⇐
🕐 **40.0** °C
15 min **Rem. time**
28.0 °C
🏠 Boiler temperature   T_return
14:12   20.01.13

Key 2

‹ Flue gas test ☃ ›
Flue gas test active
⇐
🕐 **40.0** °C
08 min **Rem. time**
28.0 °C
🏠 Boiler temperature   T_return
14:12   20.01.13

Screen display changes →

Back one level

‹ Heating appliance 〽 ›
Heating / DHW mode
1x 🚰
☃ **25.2** °C
1.5 bar **Pressure**
Boiler temperature
14:12   20.01.2013

Key 3

‹ Flue gas test ☃ ›
Flue gas test active
⇐
🕐 **40.0** °C
08 min **Rem. time**
28.0 °C
🏠 Boiler temperature   T_return
14:12   20.01.13

Screen display changes →

Extend time

‹ Flue gas test ☃ ›
Flue gas test active
⇐
🕐 **40.0** °C
15 min **Rem. time**
28.0 °C
🏠 Boiler temperature   T_return
14:12   20.01.13

Key 4

‹ Flue gas test ☃ ›
Flue gas test active
⇐
🕐 **40.0** °C
08 min **Rem. time**
28.0 °C
🏠 Boiler temperature   T_return
14:12   20.01.13

Screen display changes →

Home page

‹ Heating appliance 〽 ›
Heating mode
1x 🚰 Burner ON
☃ **25.2** °C
1.5 bar **Pressure**
Boiler temperature
14:12   20.01.2013

7 DHW cylinder status page

− Only connected cylinders are shown.
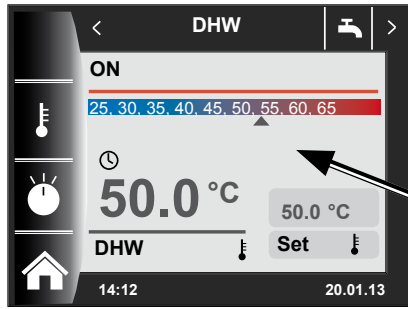
Danger!
Risk of scalding from hot water!
Hot water temperatures in excess of 65 °C can result in scalding.
▶ Do not set the DHW temperature above 65 °C.

7.1 Changing the set DHW temperature

Turn clockwise to increase set temperature; turn anti-clockwise to decrease set temperature

Key 2
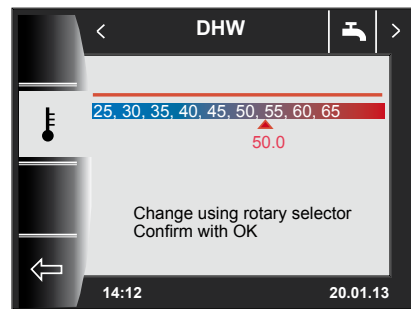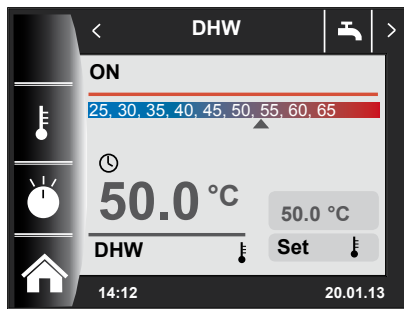
Change

Confirm

7.2 Changing the DHW operating mode

(For description of operating modes, see chapter 17 – Overview of symbols)

Key 3
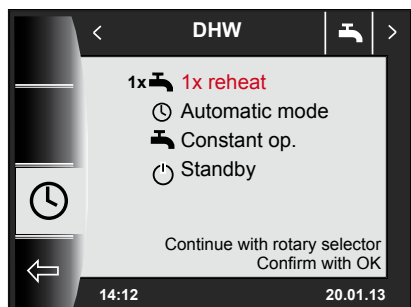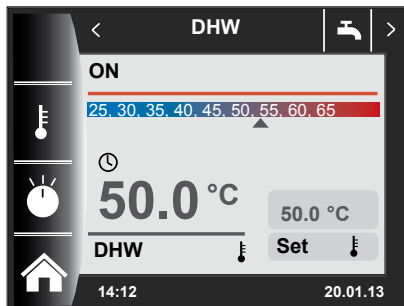
Change

Confirm

Return to the home page

Key 4
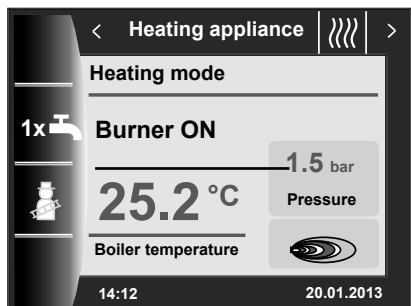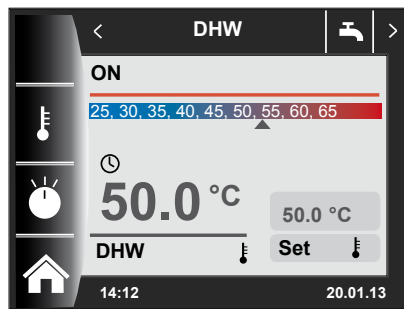
Home page

8 Heating circuit status page
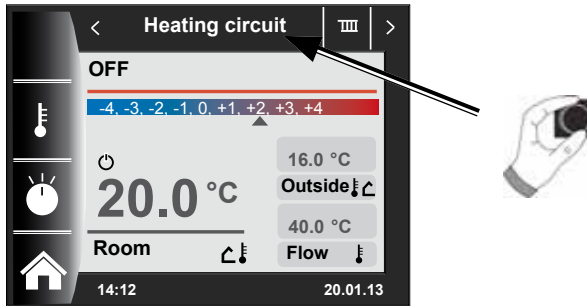
8.1 Changing the set heating circuit temperature

Turn clockwise to increase set temperature; turn anti-clockwise to decrease set temperature

(For description of temperature selection, see specialist contractor installation instructions)

Key 2

Change

Confirm
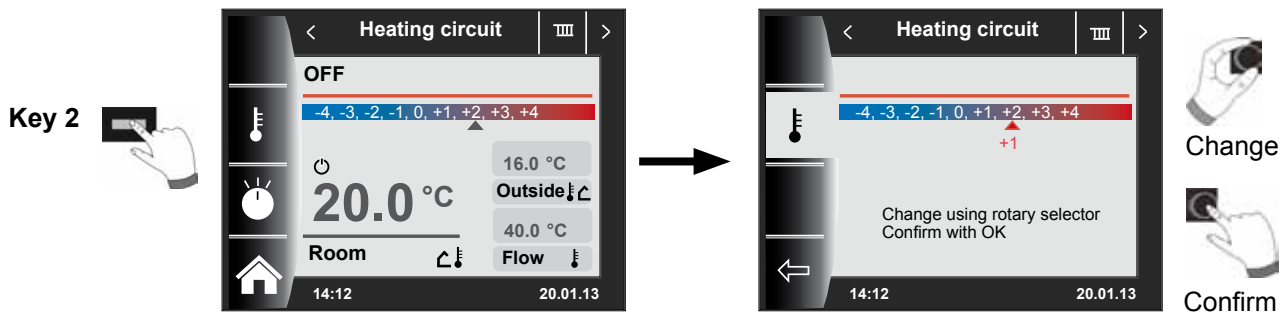
8.2 Changing the heating circuit operating mode

(For description of operating modes, see chapter 17 – Overview of symbols)

Key 3

Change

Confirm

Return to the home page

Key 4
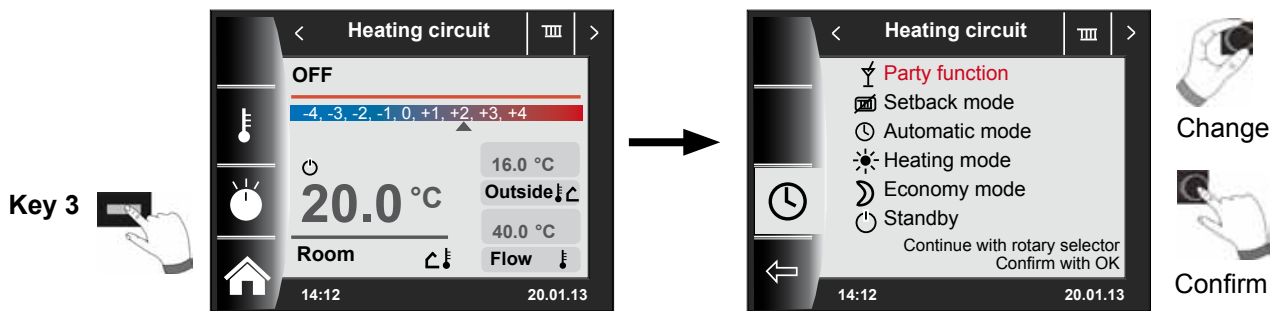
Home page
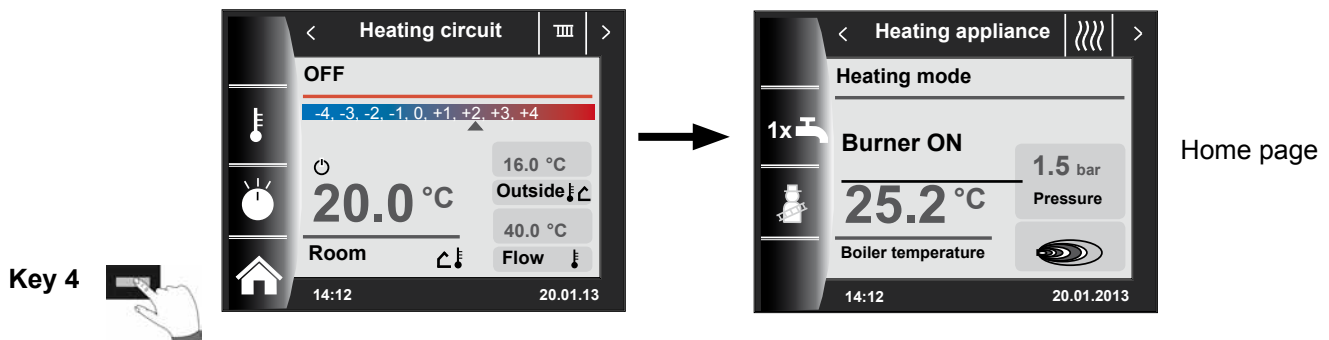
9 Mixer circuit status page

Up to 7 mixer modules can be connected to the WRS and operated via the BM-2. Each mixer module is controlled via its own status page.
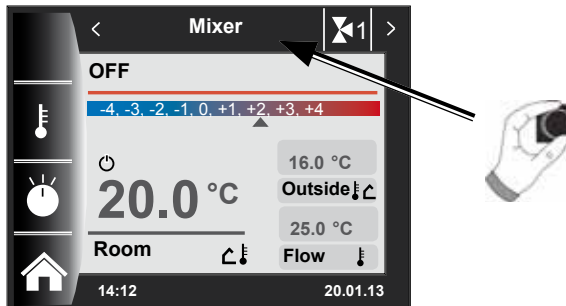
9.1 Changing the set mixer circuit temperature

Turn clockwise to increase set temperature; turn anti-clockwise to decrease set temperature

(For description of temperature selection, see specialist contractor installation instructions)

Key 2

Change

Confirm
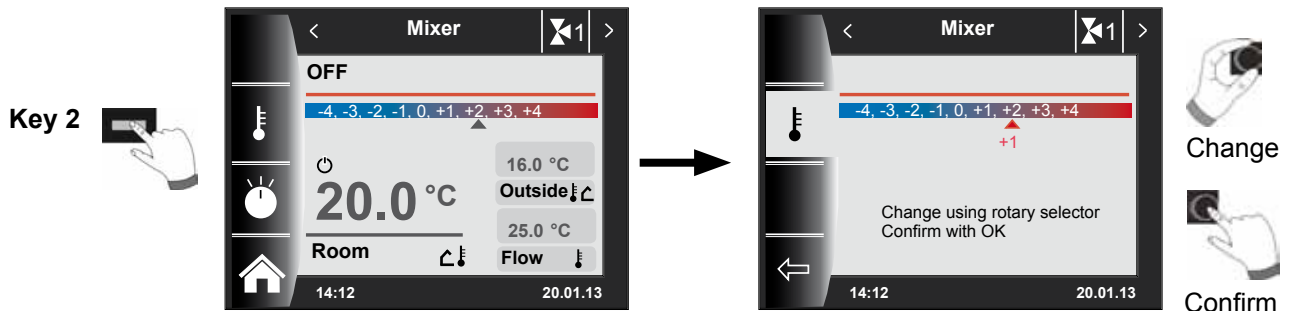
9.2 Changing the mixer circuit operating mode

(For description of operating modes, see chapter 17 – Overview of symbols)

Key 3

Change

Confirm

Return to the home page

Key 4
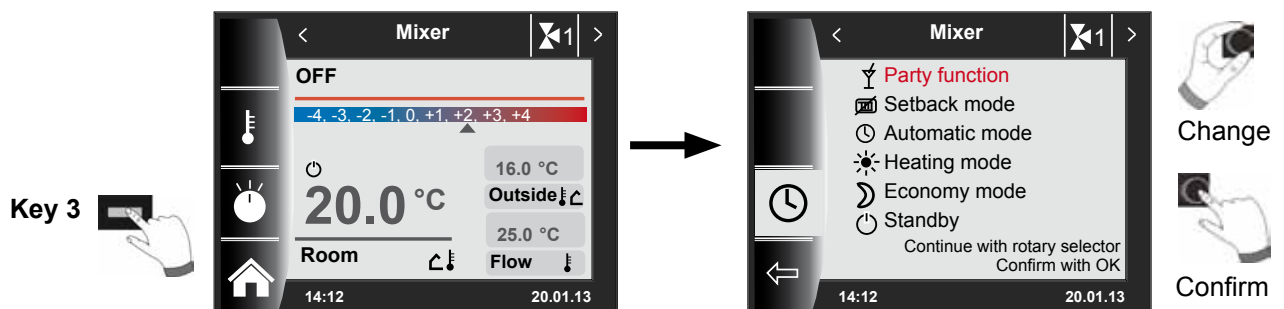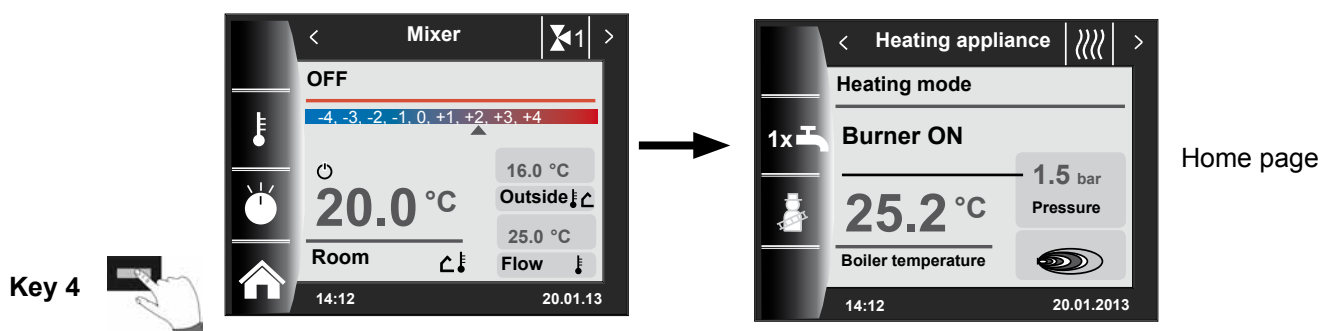
Home page

10 Solar thermal system status page

The solar thermal system settings are only displayed if a solar module has been recognised.

Actual collector temperature / actual cylinder temperature

<	Solar thermal system	☀	>
Collector 1	75 °C
Collector 2	75 °C
Cylinder 1	60 °C
Cylinder 2	60 °C
14:12	20.01.13

Monthly yield

Key 2

<	Solar thermal system	☀	>
Collector 1	75 °C
Collector 2	75 °C
Cylinder 1	60 °C
Cylinder 2	60 °C
14:12	20.01.13

→

<	Solar thermal system	☀	>
Monthly solar yields
1000
01 02 03 04 05 06 07 08 09 10 11 12
14:12	20.01.13

Display

Annual yield

Key 3

<	Solar thermal system	☀	>
Collector 1	75 °C
Collector 2	75 °C
Cylinder 1	60 °C
Cylinder 2	60 °C
14:12	20.01.13

→

<	Solar thermal system	☀	>
Annual solar yields
1000
2010 - 2013
14:12	20.01.13

Display

Return to the home page

Key 4

<	Solar thermal system	☀	>
Collector 1	75 °C
Collector 2	75 °C
Cylinder 1	60 °C
Cylinder 2	60 °C
14:12	20.01.13

→

<	Heating appliance	〉〉〉	>
Heating mode
1x	**Burner ON**
		1.5 bar
	25.2 °C	**Pressure**
Boiler temperature	
14:12	20.01.2013

Home page

11 Ventilation unit status page

The ventilation unit status page is displayed if a CWL Excellent is connected to the WRS.
Please note: Parallel operation in conjunction with a BML is not possible.
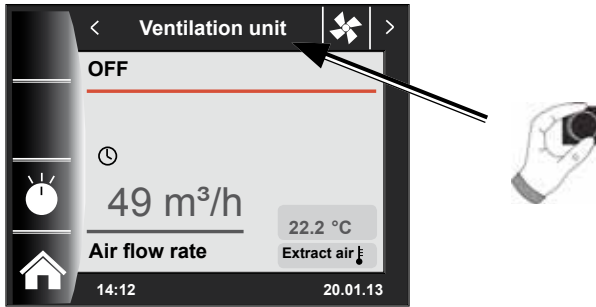
11.1 Changing the operating mode / Start - End / ON - OFF

(For description of operating modes, see chapter 17 – Overview of symbols)

Key 3

Change

Confirm

Select

Call up

Change

Confirm

Return to the home page

Key 4
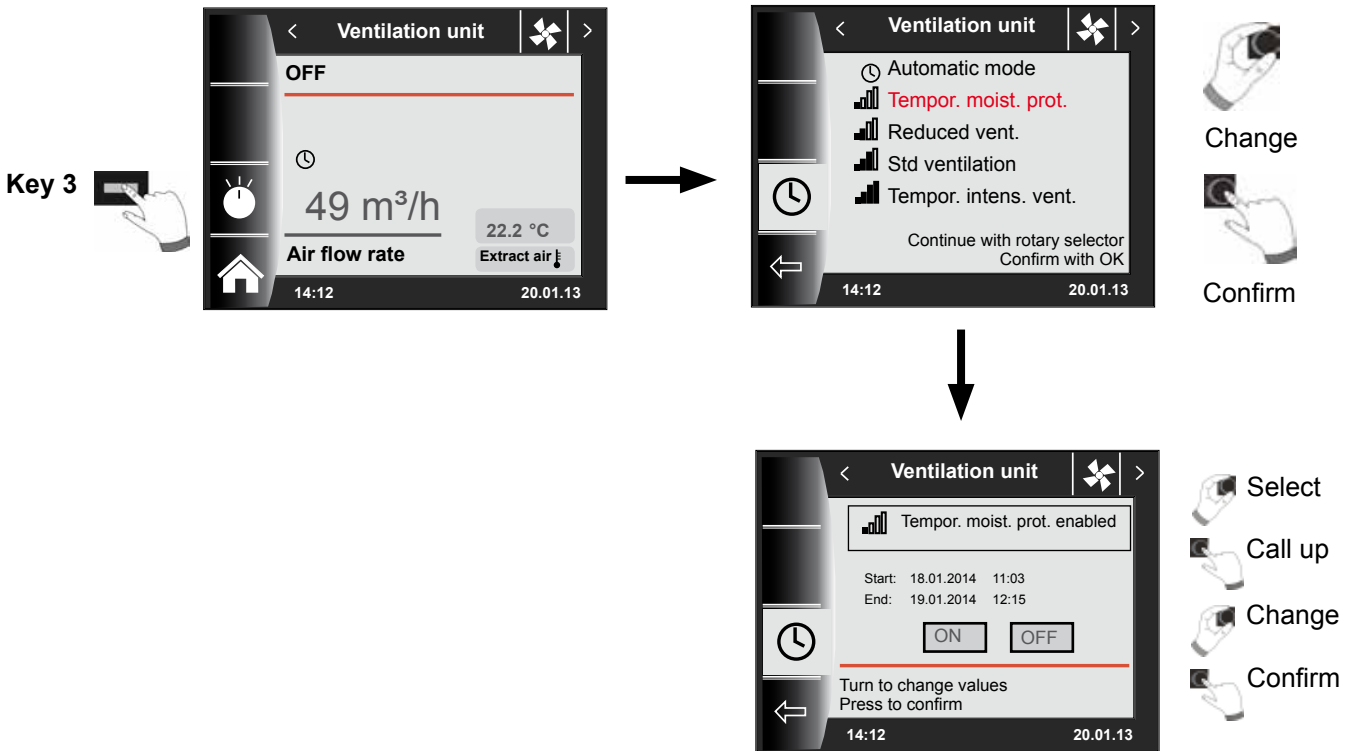
Home page
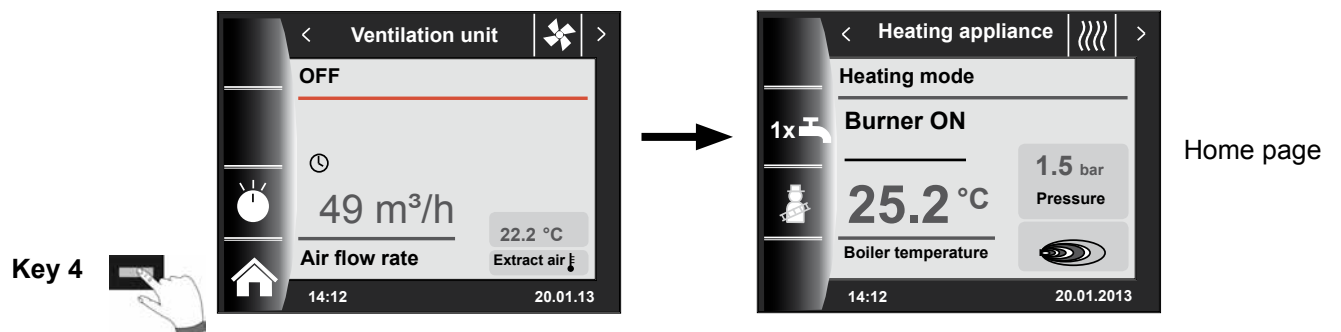
12 Messages status page

⚠ Flashing fault symbol!

12.1 Procedure for faults
− Read fault message
− Possible causes of the fault and remedies can be found in the installation instructions for contractors in the "Faults" chapter
− Determine and remedy the cause of the fault

> ℹ A fault can be cleared on the fault message status page by pressing key 3.
> BM-2 installed in the heating appliance.

− Check that the system is functioning correctly
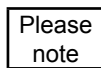
> **Please note**   Lockout faults must only be repaired by qualified personnel. If a lockout fault message is acknowledged several times without the cause of the problem being repaired, this can lead to component or system damage.

12.2 Procedure for warnings
− Read warning message
− Possible causes for the warning and remedies can be found in the "Faults" chapter
− Determine and remedy the cause of the warning message
− With warnings there is no need to acknowledge the fault
− Check that the system is functioning correctly

12.3 Acknowledging faults for users
In case of a fault, the current fault is displayed along with the fault code, date and time. The fault can be cleared by pressing the acknowledge key.

Entry

| Access RESET | ⚠ |
| **Heating appliance 1** ⚠ |
| **Fault 4** |
| 19.02.2013 12:03 |
| **At burner start no flame established** |
| 14:12 ⚠ 20.01.13 |
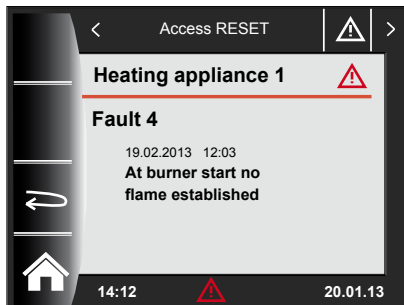
Flashing fault symbol!

RESET key

| Access RESET | ⚠ |
| **Heating appliance 1** ⚠ |
| Fault acknowledged! |
| 14:12 ⚠ 20.01.13 |
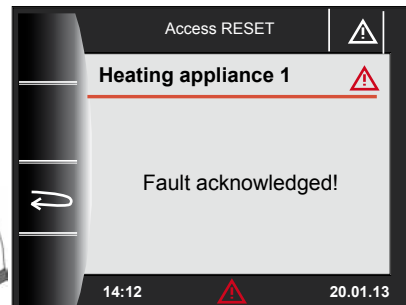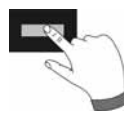
General information
Never remove, bypass or otherwise disable any safety or monitoring equipment. Only operate the heating appliance when it is in perfect technical condition. Any faults or damage which impact or might impact upon safety must be remedied immediately by a qualified contractor. Only replace faulty components and equipment with original Wolf spare parts.
Faults and warnings are shown in plain text on the display of the control accessories – the AM display module or the BM-2 programming unit.
A warning/fault symbol on the display (symbol: triangle with exclamation mark) indicates an active warning or fault message. Fault history is listed at contractor level.
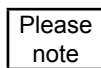
> **Please note**   Warning messages do not need to be acknowledged and do not lead directly to the boiler being switched off. However, the causes of the warnings can lead to malfunctions of the boiler / system or to faults and should therefore be repaired by a qualified contractor.

> ℹ The control unit automatically acknowledges faults such as faulty temperature sensors or other sensors if the part concerned has been replaced and plausible test values have been supplied.

13 Main menu overview

You can open the main menu on a status page (heating appliance, heating circuit, mixer circuit, solar circuit ...) by **pressing** the rotary selector.

This opens

- Display
- Default settings
- Time programs
- Contractor level

in the main menu.

```
┌─────────────────────────────────────┐
│  ‹      Main menu      ▤  │  ›        │
│  ─────  Display                      │
│  ⇐      Default settings             │
│         Time programs                │
│  ─────  Contractor level             │
│  ⌂                                   │
│         14:12            20.01.13     │
└─────────────────────────────────────┘
```
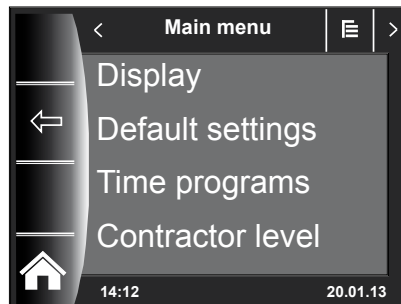
13.1 Display of set / actual temperatures (chapter 14)

All set and actual temperatures are displayed (however, these cannot be changed).

13.2 Default settings (chapter 15)

- Heating appliance
- Heating circuit
- Mixer 1-7
- Language
- Time
- Date
- Min. backlighting
- Screensaver
- Key lock

13.3 Time programs (chapter 16)

Time programs are available for all connected appliances. This allows the switching times to be adjusted for the heating circuit, mixer circuit, DHW heating, DHW circulation and ventilation unit, according to the configurations and appliances which are connected.

13.4 Contractor level is only for use by specialist contractors

The heating contractor can use the contractor level to set system-specific and appliance-specific parameters.
This menu level must only be used by the contractor.

14 Set / actual temperature display

All values are displayed for heating appliances and modules that are connected (mixer module MM, cascade module KM, solar module SM).

Entry

Main menu	⊟
Display	
Default settings	
Time programs	
Contractor level	
14:12	20.01.13

‹ Overview of display	☐ ›
Heating appliance 1	
Cascade module	
Mixer	
Solar	
14:12	20.01.13

‹ Disp., htg. appliance	☐ ›
Boiler temperature Set 60 °C	42 °C
System pressure Set 2.5 bar	2.0 bar
Flue gas temperature	100 °C
Outside temperature	15 °C
14:12	20.01.13

Overview of menu level displays	
Htg. appliance 1	displayed if heating appliance is installed
Htg. appliance 2-4	displayed in conjunction with cascade module and if heating appliance 2-4 installed
Cascade module	displayed if cascade module is installed
Mixer 1	displayed if mixer module 1 (MM) or cascade module (KM) is installed
Mixer 2-7	displayed if mixer module 2-7 (MM) is installed
Solar (SM1/SM2)	displayed if solar module SM1 or SM2 is installed
Ventilation unit	displayed if ventilation unit is installed
Average outside temperature	displayed if outside sensor is installed
Non-average outside temperature	displayed if outside sensor is installed

Displays, heating appliance 1-4	ACT.
Boiler temperature in °C	
System pressure in bar	
Current flue gas temperature in °C	
Outside temperature in °C	
Return temperature in °C	
DHW temperature in °C	
DHW flow rate in °C	
DHW DFL (flow rate) in l/min	
Input E1	
Modulation level in %	
Actual I/O value	
ZHP speed	
Burner starts	
Burner hours run	
Mains hours	
Power ON count	
HCM2 FW	

Displays, cascade module	ACT.
Flow temperature in °C	
DHW temperature in °C	
Buffer temperature in °C	
Return temperature in °C	
Header temperature in °C	

Displays, mixer module 1-7	ACT.
Flow temperature in °C	
DHW temperature in °C	
Buffer temperature in °C	
Return temperature in °C	
Header temperature in °C	

Displays, solar	ACT.
Temperature, collector 1 °C	
Temperature, collector 2 °C	
Temperature, solar cylinder 1 °C	
Temperature, solar cylinder 2 °C	
Temperature, solar cylinder 3 °C	
Temperature, buffer sensor °C	
Temperature, return sensor °C	
Hours run, pump 1	
Hours run, pump 2	
Hours run, pump 3	
Current output	
Total yield	
Yield today	
Yield this month	
Yield this year	

Displays, ventilation	ACT.
Extract air in °C	
Outside temp. in °C	
Air flow rate m³/h	
Bypass	
Preheater coil	

Displays vary depending on configuration and which modules are connected.

15   Default settings overview

A list of all default settings is shown below:

- Heating appliance
- Heating circuit
- Mixer 1-7
- Language
- Time
- Date
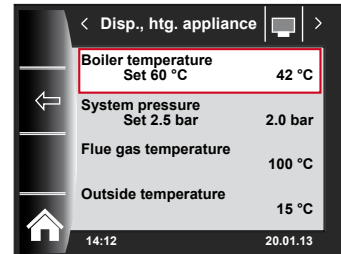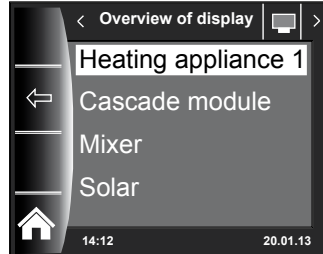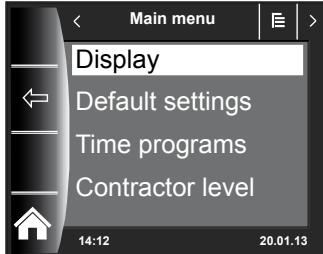- Min. backlighting
- Screensaver
- Key lock

15.1 Heating appliance

15.1.1 DHW operating mode

Setting range: ECO / Comfort
Factory setting: ECO

The DHW operating mode function only applies to combi boilers. The Comfort setting activates a DHW quick start and keeps the heating appliance at the right temperature to ensure rapid DHW heating. In the ECO setting, the heating appliance is not brought up to temperature until the tap is opened.

Entry

< **Main menu** 目 >		< **Default settings** 目 >		< **Heating appliance** 目 >
Display		Heating appliance		DHW operating mode
⇦ Default settings	→	⇦ Heating circuit	→	⇦
Time programs		Mixer 1		Value: **Comfort**
Contractor level		Language English		
⌂ 14:12 20.01.13		⌂ 14:12 20.01.13		⌂ 14:12 20.01.13

15.2 Heating circuit / mixer circuits 1-7

Entry

< **Main menu** 目 >		< **Default settings** 目 >	
Display		Heating appliance	
⇦ Default settings	→	⇦ Heating circuit	→
Time programs		Mixer 1	
Contractor level		Language English	
⌂ 14:12 20.01.13		⌂ 14:12 20.01.13	

The following is a list of all default settings for the heating circuit and mixer circuits 1-7:

- **Economy factor in economy mode**
- **Winter / summer changeover**
- **ECO ABS**
- **Day temperature (BM-2 in wall mounting base and room influence enabled)**
- **Room influence (BM-2 in wall mounting base)**

15.2.1 Setting economy factor in economy mode

Setting range: 0...10
Factory setting: 4

For a detailed description see the "Heating curve / Economy mode" chapter in the installation instructions for contractors

The economy factor describes by how much the heating curve sets back the heating circuit or the mixer circuit when in economy mode. This factor has the same effect as the -4...+4 setting, but is only used in the time program during the setback phase or in setback mode.

Example of economy factor setting (setting procedure is always the same).

Entry

Main menu	≡ >
Display	
Default settings	
Time programs	
Contractor level	
14:12	20.01.13

Default settings	≡ >
Time	12:25
Date	18.12.2014
Heating circuit settings	
Mixer circuit settings	
14:12	20.01.13

Default settings	≡ >
Economy factor	5
Room influence	OFF
Winter / summer Changeover	20 °C
ECO ABS	20 °C
14:12	20.01.13

Default settings	≡ >
Economy factor	
Setting range:	0 - 10
Value:	4
Factory setting:	2
14:12	20.01.13

15.2.2 Setting winter/summer changeover

Setting range: 0 °C – 40 °C
Factory setting: 20 °C

The **winter/summer changeover** function is only enabled if an outside sensor is connected.

The winter/summer changeover function optimises the times when the system operates in heating mode. If the average outside temperature is above the set winter/summer temperature, the heating system switches to standby mode.
If the average outside temperature is below the set winter/summer temperature, the heating system switches to automatic timer mode.
The period used to calculate the average outside temperature is set via the A04 system parameter.

15.2.3 Setting ECO ABS

Setting range: -10 °C – 40 °C
Factory setting: 10 °C

The **ECO ABS** function is only enabled if an outside sensor is connected.

If the average outside temperature is above the ECO ABS temperature when in economy mode, the heating/mixer circuit switches to standby mode.
If the average outside temperature is below the ECO ABS temperature, the control unit switches back to economy mode.
You should only change the ECO ABS setting after consulting your contractor.

15.2.4 Setting day temperature (room temperature)

Setting range: 5 °C – 30 °C
Factory setting: 20 °C

Day temperature is only enabled for this heating/mixer circuit when the room influence is enabled and the BM-2 is installed in the wall mounting base.
Use the day temperature to set the required room temperature in heating mode, party function mode and the heating phases during automatic mode. In setback mode, economy mode and during the setback phase in automatic mode, the room temperature is only set to the day temperature less the economy factor (see installation instructions for contractors).

15.2.5 Setting room influence

ON / OFF setting range
Factory setting: OFF

Room influence is only active if the BM-2 programming unit is installed as a remote control.
Room influence can be used to compensate for fluctuations in room temperature due to external sources of heat and cold (e.g. insolation, woodburning stoves or open windows).

ON   =   Room influence enabled
OFF   =   Room influence disabled

15.3 Language

Entry
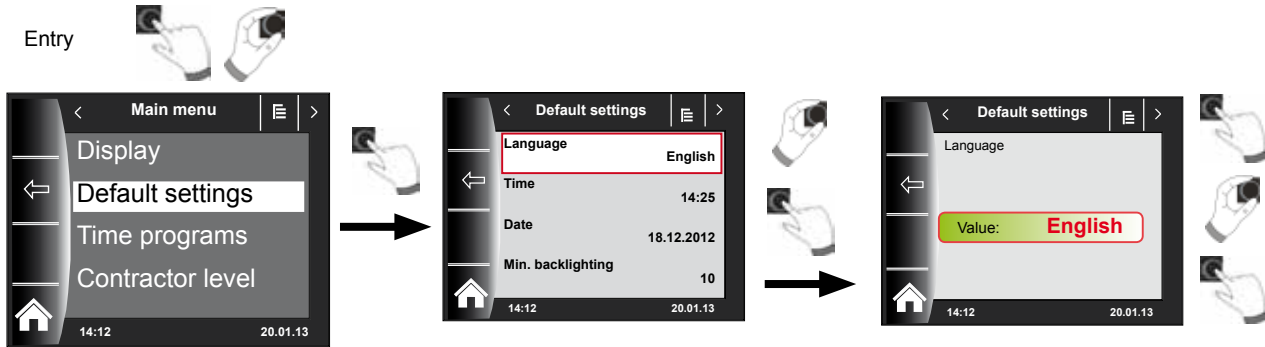
In the Language submenu, 25 different languages can be selected

Setting range:
German, English, French, Dutch, Spanish, Portuguese,
Italian, Czech, Polish, Slovak, Hungarian, Russian,
Greek, Turkish, Bulgarian, Croatian, Latvian, Lithuanian, Norwegian, Romanian,
Swedish, Serbian, Slovenian, Danish, Estonian

Factory setting: German

15.4 Time

Entry

15.5 Date

Entry
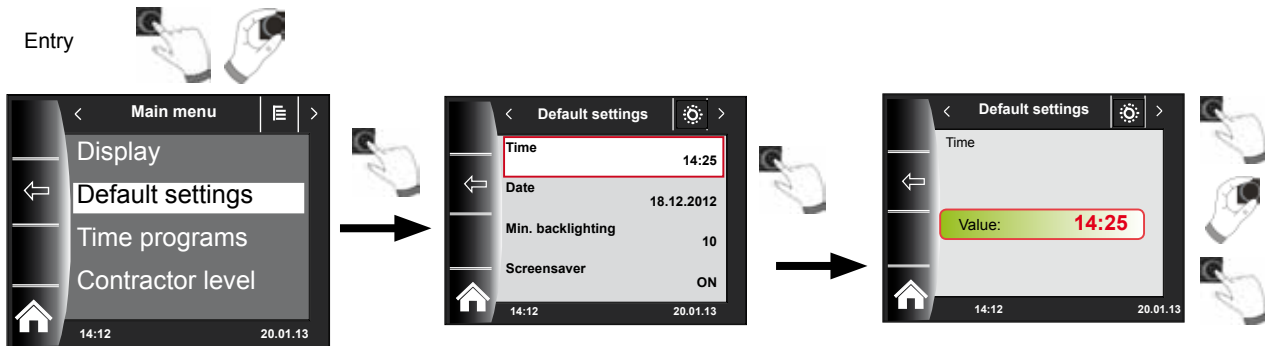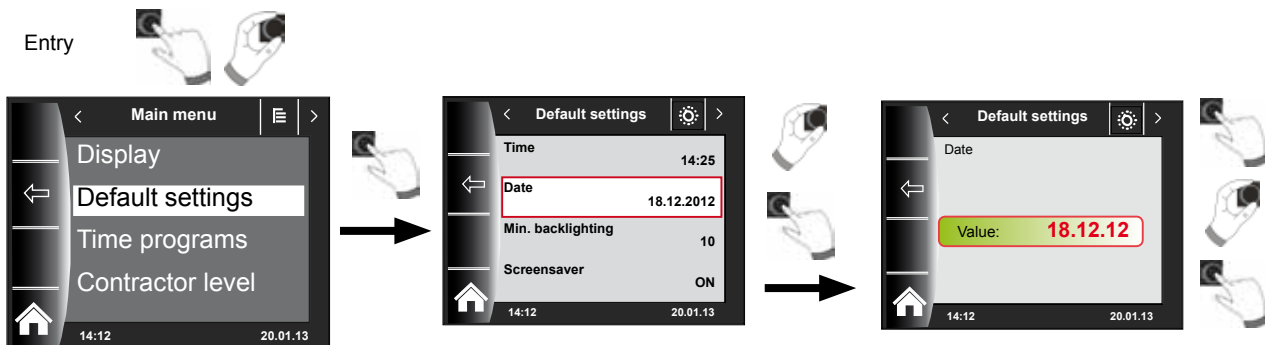
15.6 Minimum backlighting

Setting range: 5 % - 15 %
Factory setting: 10 %

The display will revert to minimum backlighting level if no further settings are made on the BM-2 for one minute.

15.7 Screensaver

You can enable a screensaver. The display reverts to minimum backlighting after one minute and the following values are shown:

▶ Time
▶ Outside temperature (outside sensor connected)
▶ Room temperature (BM-2 installed in wall mounting base)

15.8 Key lock

The key lock prevents a unintentional adjustment of the heating system (e.g. by children or when dusting).
When the key lock is on, it is automatically enabled one minute after the last setting is made.

ON   =   Key lock on
OFF =   Key lock off

▶ To temporarily override the key lock, press and hold the right rotary selector for 3 seconds.

16 Time programs

The switching time parameters for all connected WRS components can be set in the main menu.

3 different freely programmable time programs are available for each function. This menu item is also used to display and select the active time program. A maximum of 3 switching times can be defined for each day.

For pre-programmed times and setting options, see the installation instructions for contactors – chapter "Time program".

Freely programmed switching times can be entered below.

Time program	Day	Switching time	HC		Mixer		DHW		DHW circulation		Ventilation	
			ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
Freely programmed time program	Mo	1										
		2										
		3										
	Tu	1										
		2										
		3										
	We	1										
		2										
		3										
	Th	1										
		2										
		3										
	Fr	1										
		2										
		3										
	Sa	1										
		2										
		3										
	Su	1										
		2										
		3										

17 Symbol description

17.1 Symbols for the quick start keys

Symbol	Function
	The thermometer allows modification of the set temperature
	The rotary selector allows modification of the operating mode
	Press the home key to return to the home page / start page
	Press the arrow key to go back one step
	Press the emissions test key to access emissions test mode Emissions test mode is only necessary for the flue gas test. The heating appliance provides maximum heating output in emissions test mode (full load operation). In full load operation, the heating system is heated up to the maximum set temperature and the DHW cylinder is heated up to the set DHW temperature. When the heating appliance is in full load operation, the flue gas inspector can carry out the necessary flue gas tests. Emissions test mode terminates automatically either after 15 minutes or if the maximum flow temperature has been exceeded. You can only enable emissions test mode using the BM-2 programming unit if it is installed in the heating appliance.
1x	The special function 1x DHW bypasses the programmed switching times and heats up the DHW cylinder once, for one hour, to the set DHW temperature.
	Call up the annual solar yield
	Call up the monthly solar yield
	In time programs, copy a selected day to other days
	Acknowledge fault key in the case of faults
	Reset the filter warning (only for the CWL Excellent)

Burner stage symbol in the heating appliance

Symbol	Function
	This displays the current burner stage in steps of 20 %

17.2 Symbols for possible changes using the rotary selector

Symbol	Function
🕐	The automatic timer switches the **heating circuit** on and off at the programmed switching times. Within the switching times, the heating circuit heats up to the set room temperature (day temperature) with the enabled room influence or in accordance with the set heating curve.
🕐	The automatic timer switches the **mixer circuit** on and off at the programmed switching times. Within the switching times, the mixer circuit heats up to the set room temperature (day temperature) with the enabled room influence or in accordance with the set heating curve.
🕐	The **DHW cylinder** is heated up to the set DHW temperature within the switching times.
🕐	The **DHW circulation pump** (if installed) is only switched on within the switching times.
🕐	In automatic mode with the **CWL Excellent**, the system only switches between "Std ventilation" within the switching time and "reduced ventilation" outside the switching time.
☀	Permanent heating mode In permanent heating mode, the heating system is continuously on. The heating system heats up to the set room temperature (day temperature) or in accordance with the settings of the heating curve.
☾	In economy mode, the heating system heats up to the set economy temperature.
⏻	In standby mode, the heating system and DHW heating are switched off. The DHW circulation pump (if installed) is switched off. The frost protection function is enabled. The heating system pumps are switched on at regular intervals to prevent the equipment from seizing up.
🚰	DHW mode In DHW mode, the BM-2 programming unit keeps DHW heating switched on continuously.
1x🚰	The special function 1x DHW bypasses the programmed switching times and heats up the DHW cylinder once, for one hour, to the set DHW temperature.
▂▃▅	The system targets the set air volume of parameter CWL1. Temporary moisture protection can only be enabled by entering the start and end times. Once this time has elapsed, the program switches back to the previously selected operating mode.
▂▃	During "reduced ventilation", the ventilation unit runs permanently in accordance with the settings in parameter CWL2.
▂▃▅	During "Std ventilation", the ventilation unit runs permanently in accordance with the settings in parameter CWL3.
▃▅▇	The system targets the set air volume of parameter CWL4. Temporary intensive ventilation can only be enabled by entering the start and end times. Once this time has elapsed, the program switches back to the previously selected operating mode.

18 Party key

♈	**Party mode** In party mode, the time and date are entered at which the heating system goes into continuous heating mode. The time and date at which the heating system returns to the previously selected operating mode are also entered.

Select the heating circuit or mixer circuit by turning the rotary selector. Then press key 3 and turn the selector to select and access the party function. Enter the start and end dates, then enable or disable via ON or OFF.

1

Heating circuit

Heating mode

-4, -3, -2, -1, 0, +1, +2, +3, +4

Automatic ON

2 Key 3

🕐 **20.0 °C**

40.0 °C **Flow**

16.0 °C

Room **Outside**

14:12   20.01.13

Heating circuit

- ♈ Party function
- Setback mode
- 🕐 Automatic mode
- ☀ Heating mode
- ☽ Economy mode
- ⏻ Standby

Turn to change value
Press to confirm

14:12   20.01.13

3

Heating circuit

♈ Party function disabled

Start 01.04.2013 13:20

End 03.04.2013 16:20

ON   OFF

Turn to change value
Press to confirm

14:12   20.01.13

4

With the Party function you can:

− Set start date and time.
− Set end date and time.
− The Party function is enabled by selecting and pressing ON.
− The Party function is disabled by selecting and pressing OFF.

Note: The factory setting always adds 3 hours to the start time to determine the end time.

19   Temporary setback mode

	Setback mode
🔲	In setback mode, the time and date are entered at which the heating system goes into continuous economy mode. The time and date at which the heating system returns to the previously selected operating mode are also entered.

Select the heating circuit or mixer circuit by turning the rotary selector. Then press key 3 and turn the selector to select and access setback mode. Enter the start and end dates, then enable or disable via ON or OFF.

1

Heating circuit

Heating mode
-4, -3, -2, -1, 0, +1, +2, +3, +4
Automatic ON
🕐   40.0 °C
20.0 °C   **Flow**
                                      16.0 °C
Room   **Outside**

14:12   20.01.13

Key 3

2

Heating circuit

Ÿ Party function
🔲 Setback mode
🕐 Automatic mode
☀ Heating mode
☽ Economy mode
⏻ Standby
Turn to change value
Press to confirm
14:12   20.01.13

3

Heating circuit

🔲   Setback mode disabled

Start   01.04.2013   13:20

End   03.04.2013   16:20

        ON   OFF
Turn to change value
Press to confirm
14:12   20.01.13

4

In setback mode you can:

− Set start date and time.
− Set end date and time.
− Setback mode is enabled by selecting and pressing ON.
− Setback mode is disabled by selecting and pressing OFF.

Note: The factory setting always adds 3 hours to the start time to determine the end time.

20 Winter mode setting (example)

Heating circuit and mixer circuit (if installed) – automatic
DHW heating according to time program – automatic

Modifying the operating mode in the heating circuit or mixer circuit will affect all heating circuits (heating/mixer circuits). The operating mode in DHW must be set separately.

Select heating circuit **or**
mixer circuit (if installed)

Select DHW

21 Summer mode setting (example)

Heating circuit and mixer circuit (if installed) – standby
DHW heating according to time program – automatic

Modifying the operating mode in the heating circuit or mixer circuit will affect all heating circuits (heating/mixer circuits).
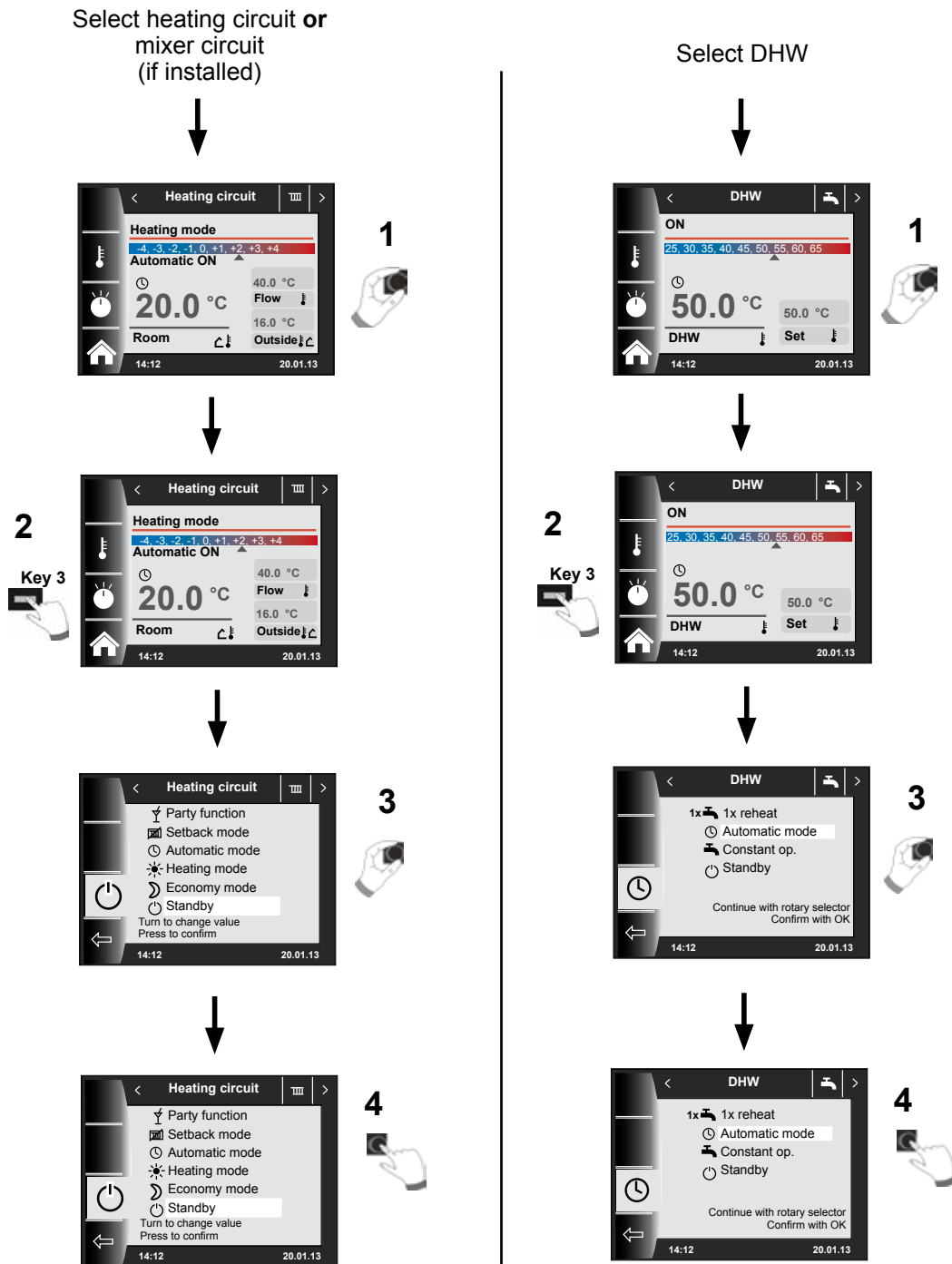The operating mode in DHW must be set separately.

Select heating circuit **or**
mixer circuit
(if installed)

Select DHW

22   Energy saving tips

Room temperature (day temperature)

Set the room temperature high enough so that it feels pleasant.
A room temperature that is one degree higher than necessary represents an additional energy consumption of approx. 6 %.
Do not heat rarely used rooms or bedrooms continuously.

Efficient heating

Heat all rooms in the house or apartment.
A single heated room heats the adjoining rooms unchecked. Heat the rooms according to use. Maintain a minimum temperature in all rooms. In unheated rooms, moisture can form on the walls and damage the building structure.

Thermostatic valves

Thermostatic valves maintain the set temperature. They open at low room temperature and close automatically when the temperature rises. Leave all thermostatic valves fully open in the room where the BM-2 programming unit is located, because otherwise the thermostatic valves and programming unit could influence each other.

Maintenance of the heating system

Soot deposits in a boiler combustion chamber or a poorly adjusted burner can easily reduce a heating system's efficiency by 5 % or more. Regular heating system maintenance by your local heating contractor can therefore quickly pay off.

Easily accessible radiators

Air must be able to circulate freely near the radiators, otherwise the heating system will lose effectiveness. Modern radiators emit some of their heat as radiant heat. Long curtains or poorly positioned furniture can swallow up to 20 % of energy.

Keep the heat inside the room – at night too!

At night, closing blinds and drawing curtains noticeably reduces heat loss via the window areas. Thermally insulated radiator recesses and light coloured paintwork can save up to 4 % on your heating bills. Airtight joints at windows and doors also help to keep energy inside the room.

Ventilation

Ventilate the rooms by turning the thermostatic valves down low and opening wide all the windows in the room, or preferably the whole house or apartment if possible: this is known as peak ventilation. Brief and effective ventilation replaces the air in the room, and the room quickly warms up again as the heat stored in the furniture and walls is emitted back into the cool air.

Bleeding radiators

Regularly bleeding the radiators in all rooms, particularly on the upper floors of apartment buildings, ensures that radiators and thermostatic valves continue to operate smoothly. The radiator responds quickly to changing heat demands.

Setback mode, economy temperature

Set the economy temperature to just 5 °C below the room temperature (day temperature). If you set the setback temperature lower, you lose the saving effect, because a lot of energy is then needed to reheat the rooms. It is only worth setting the setback temperature lower if you are going to be away for a long time, e.g. on holiday.

DHW circulation pump

The DHW circulation pump circulates the DHW through the pipework. This ensures that hot water is always available for you at the draw-off points.

23 Glossary

Cascade

A cascade is a parallel connection of several heating appliances in order to achieve a higher total output.

Contractor level

The setting options in the contractor level are reserved for the heating contractor. This facility ensures your safety, since incorrect entries can cause injury, or damage to the heating system.

Cylinder charging

Cylinder charging refers to the heating of a DHW cylinder that has an internal indirect coil. To do this, a cylinder charging pump transports the boiler water and therefore the heating energy to the heat exchanger of the DHW cylinder.

DHW heating

The term DHW heating refers to the heating up of domestic hot water in a DHW cylinder. This could be an instantaneous water heater, a DHW cylinder, a DHW cylinder with internal indirect coil or a similar appliance.

eBUS

eBUS is a protocol for the networking of components in a heating system with the aim of facilitating central control of the entire system.

ECO ABS

The ECO ABS (eco setback) function causes the heating system to switch on/off automatically during setback mode if the average outside temperature exceeds or falls below a specified value, for example if there are high outside temperatures during the night.

Economy temperature

The economy temperature is the value that the set room temperature is reduced to during periods of low usage.

Emissions test mode

Emissions test mode is only necessary for the flue gas test. The heating appliance provides maximum heating output in emissions test mode (full load operation). Emissions test mode terminates automatically either after 15 minutes or if the maximum flow temperature has been exceeded.

Flow temperature

Flow temperature refers to the temperature of the heating water flowing to the radiator. It lies between 35 °C and 70 °C (depending on the outside temperature) in heating control units which are regulated by the outside temperature. In heating systems with pure surface heating, 25 °C to 40 °C is adequate. In heating systems with no mixer circuit, the flow temperature is the same as the temperature of the boiler water.

Frost protection

The contractor sets a temperature value on the BM-2 programming unit, below which the heating appliance goes into the frost protection function. The boiler circuit pump will start to operate continuously if the outside temperature falls below the selected value. If the boiler water temperature falls below 5 °C, the burner starts and heats the boiler up to the minimum boiler water temperature.

Heating circuit

A heating circuit is a sealed system for heat distribution. It consists of radiators or underfloor heating, the associated valves and pipes for the flow and return.

Heating curve

The heating curve describes the relationship between the outside temperature and the flow temperature that is required to achieve the required room temperature.

Heating mode

In heating mode the room temperature is maintained at around the day temperature value at times of high usage, e.g. during the day.

Mixer circuit

The mixer circuit is a heating circuit in which a mixer is fitted to control the temperature of the heating water. The mixer is fitted in the heating flow to regulate the flow temperature by mixing in cooler return water.

Pasteurisation function

Legionella are a type of bacteria which can cause serious illness. Legionella bacteria can form and multiply if tap water is exposed to long dwell times at temperatures between 25 °C and 50 °C. This can occur in DHW cylinders. The pasteurisation function can kill any bacteria in the hot water by short term heating to temperatures in excess of 65 °C.

Setback mode

In setback mode, the set room temperature is reduced to the economy temperature during times of low usage, e.g. during the night.

24 Documentation information

24.1 Other applicable documents

Installation instructions for contractors – BM-2 programming unit
Operating instructions for users – BM-2 programming unit
Heating appliance installation instructions

The instructions for all accessory modules and other accessories may also apply.

24.2 Safekeeping of these documents

The system user or operator should ensure the safekeeping of all instruction manuals.

▶ Pass on these installation instructions as well as all other applicable manuals to the system user or operator.

24.3 Applicability of these instructions

These installation instructions apply to the BM-2 programming unit.

24.4 Maintenance / cleaning

The BM-2 programming unit is maintenance-free. Do not use a cleaning agent. Please just wipe clean with a damp cloth.

25 Notes