Remote control unit RSC
for high efficiency condensing boilers
in connection with mixer expansion module ZMC 1
Table of contents

General operation
   Operating instruments ................................................................. 3

Standard operating modes
   Operation - the LCD display - the Standard display .................................. 4
   Temperature settings (required daytime temperature, required reduced temperature, required hot water temperature) .................. 5
   Operational mode selection (holiday, absence, party, automatic, summer, permanent heating, permanent reduced heating, standby) .......... 6
   Function of operational modes ...................................................... 7
   Quick operational mode selection (party, absence, hot-water reloading) ................................................................. 8
   Heating characteristics (heating curves) ........................................... 9
   Plant information ........................................................................... 10

Programming level
   Entry into the programming level, programming level synoptic .......................... 12
   OPERATING TIMES (Programming, copying, return loading of standard programs, individual programs) ..................................... 14
   SYSTEM-Parameters (Language selection, clearing of time programs, control mode, summer switching-off) .......................... 22
   HOT-WATER CIRCUIT (Economic temperature, legionella protection) ................................................................. 25
   UNMIXED HEATING CIRCUIT, MIXED HEATING CIRCUIT(S) (Reduced mode, heating system) ........................................ 26
   TIME-DATE (Time, calendar year, calendar month, calendar day, automatic summer-/wintertime reset) ........................................ 28

Error messages .................................................................................. 29
Technical specifications (Mixer expansion module ZMC1, remote control unit RSC) ................................................................. 31
General operation
Operating instruments

- Heating and set back programs
- Setting heating characteristics
- Displaying heating plant information
- Setting daytime temperature
- Setting reduced temperature
- Setting hot-water temperature

LCD display
Rotary-push button
The center-positioned rotary-push button and the labeled keys guarantee a simple and easy operation. It is however recommended to read this manual attentively to be informed about the repeating steps.

- Each value in the display appears flashing and can be modified with the rotary-push button.
  
  A flashing display is appropriately marked in this manual.
  
  Turn to the right (+): Increase values
  
  Turn to the left (-): Decrease values
  
  Press once: Acceptance of the selected and indicated value, store.
  
  Keep pressed: Entry into the programming level (level selection),

The last operation step will be stored automatically after approx. 60 seconds if it was not stored by means of the rotary-push button.

The LCD display
The control is equipped with a large display. All displays appear in plain text and are available in several languages (see page 22 - SYSTEM/parameter LANGUAGE). In case of starting up the plant or after power failure a segment test with an automatic error diagnosis is carried out, after that the type of instrument and software version will momentarily appear.

The standard display
The standard display shows weekday, date, time and actual boiler temperature resp. actual room temperature (only after releasing the built-in room sensor). The upper time bar shows the heating periods and the corresponding operating times of the current weekday.
Temperature settings

For separated control mode select heating circuit first!

**Required daytime room temperature**
- Setting range: 5.0...30°C
- Factory preset: 20°C

**Required set back room temperature**
- Setting range: 5.0...30°C
- Factory preset: 16°C

**Domestic hot water temperature**
- Setting range: 10...80°C
- Factory preset: 50°C

- This button is used to set the required daytime room temperature
- This button is used to set the required set back room temperature
- This button is used to set the required domestic hot water temperature

**Adjustment** (standard display mode only): After pressing the button for the required temperature the current value appears flashing and can be adjusted directly with the rotary-push button.

For separated control mode the corresponding heating circuit must be selected first before setting daytime or set back temperature.

Re-entry into the standard display is done by pressing the rotary-push button or the corresponding temperature button or automatically after approx. 60 seconds.
Operational mode selection for heating and hot water

With this button the required operational mode is selected. It appears in plaintext on the display, simultaneously an arrow at the lower edge of the display points to the appertaining program symbol. The selected operational mode is valid for all heating circuits.

Select: Pressing the button, the previously selected operational mode appears flashing. The other operational modes can be selected and activated with the rotary-push button according to the following scheme.

Entry into the previously selected heating operation mode

Select operational mode

- Plant off during holiday
- Interupt heating operation
- Extend heating operation
- Heating operation via timer
- Domestic hot water only
- Permanent heating operation
- Permanent red. heating operation
- Plant off frost protection

For separate selection of operational mode select heating circuit first

Accept, activate

Set date or time

Note: This mode is skipped in case of separate selection (see page 7 and 23).

Activate, re-entry to standard display
Functions of operational modes

- **Plant off during holiday**

 ### Holiday Till
  - **1927 24.09**

  **Setting range:**
  - Actual date...actual date + 250 days

  Return to the previously selected operational mode at 0.00 o’clock of the set return date.

  Hot water operation is set to frost protection temperature of 5 °C.

  **Earlier termination:**
  - Press button (GA2), select required operational mode with rotary-push button and press again to activate.

  **Operating times:**
  - (see page 19-21 operating times programs).

### Interrupt heating operation

- **Absent Till**
  - **1027 19.30**

  **Setting range:**
  - P1: Heating operation is interrupted until next switching-on time of current operating times program (see page 19-21 operating times programs).

  **Operating times:**
  - 0.5 ... 24 h: Heating operation is interrupted until set time of return.

### Extend heating operation

- **Party Till**
  - **1927 02.27**

  **Setting range:**
  - P1: Heating operation is continued until next switching-on time of current operating times program (see page 19-21 operating times programs).

  **Operating times:**
  - 0.5 ... 24 h: Heating operation is continued until end of party.

### Heating operation via timer

- **TH. 2 AUG. ‘03**
  - **1927 56.5**

  **Setting range:**
  - P1: Heating operation is continued until next switching-on time of current operating times program (see page 19-21 operating times programs).

  **Operating times:**
  - 0.5 ... 24 h: Heating operation is continued until end of party.

### Domestic hot water only

- **SUMMER**
  - **1027 24.0**

  **Setting range:**
  - P1: Heating and domestic hot water operation automatically according to settings of temperature values (see page 5) and selected operating times program.

  **Operating times:**
  - Only hot water operation according to settings of hot water temperature (see page 5) and selected operating times program.

  **The heating operation is interrupted and frost protected.**

### Permanent heating operation

- **HEATING**
  - **1927 72.0**

  **Setting range:**
  - P1: Heating and reduced hot water operation round the clock according to the settings of daytime room temperature and domestic hot water temperature (see page 5).

### Permanent reduced heating operation

- **RED HEEATING**
  - **1927 45.0**

  **Setting range:**
  - P1: Permanent reduced heating and reduced hot water operation round the clock according to the settings of set back temperature (see page 5), reduced heating mode (see page 26) and hot water economic temperature (see page 25).

### Plant off frost protection

- **STANDBY**
  - **1927 19.0**

  Heating and hot water plant completely switched off except for frost protection mode.
**Quick operational mode selection**

Modify if required

![Diagram](image)

**Automatic mode**

![Diagram](image)

**Party mode**

![Diagram](image)

**Absence mode**

![Diagram](image)

**Manual hot-water loading**

![Diagram](image)

**Short-time operational modes**

Frequently used operating modes such as PARTY or ABSENT or reloading the hot water tank during set back mode can be selected quickly according to the left scheme.

**Direct automatic mode**

Pressing button for approx. 3 seconds activates the automatic mode via timer inevitably. Functions and setting ranges see Selection and function of operational mode page 6-7.

**Manual hot water loading**

To activate manual hot water loading outside of operation times the button has to be pressed for about 3 seconds. This turns on hot water preparation at any time for a period which may be adjusted with the rotary-push button between 0 ...240 minutes. Pressing the rotary-push button activates loading. After this period the controller returns to the selected program.

At adjustment 0.0 the loading is independent of any time period. The tank will be loaded up once to the set DHW-temperature.
Setting the heating characteristics (heating curve)

This button regulates the heating characteristics of each heating circuit in relation to outdoor temperature.

The adjustment is dependent on the structural factors of the building and shows the relation between outdoor temperature and boiler resp. flow temperature (MC1, MC2).

The slope determines the change of the boiler resp. flow temperature, if the outside temperature changes for 1 K.

Diagram of heating curves

Re-entry into the standard display is done by pressing the button again or automatically after approx. 60 seconds.

1) as far as available by numbers of expansion modules ZMC 1
The info button displays general information such as plant temperatures, states of heating circuits and plant equipment.

**Turning the rotary-push button clockwise** displays from all temperatures:
- the actual values as well as the consumption figures.
- the nominal values pressing the rotary-push button.

**Turning the rotary-push button anti-clockwise** displays heating-circuit information such as:
- Type of operational mode (holiday, absent, party, auto, etc.)
- Operating times program P1(P2, P3 when enabled)
- Mode of operation (daytime mode, reduced mode, ECO mode)
- Status of pumps (ON, OFF)
- Heating-circuit identification (HC, MC1, MC2, DHW)

1) displays heating-circuit information such as:
- Direct heating circuit
- Mixing heating circuit
- Status of mixing valve
- Status of mixing valve
- Return flow temperature
- Flue gas temperature
- Hot water temperature

2) Boiler information such as:
- Boiler status (ON, OFF)
- Number of operating hours (burner)
- Number of burner starts
Hot water circuit 1)

Boiler status 2)

Boiler starts 2)

Boiler operating hours 2)

Room thermostat function (upper room temperature limit) Direct heating circuit 1)

Room thermostat function upper room temperature limit Mixed heating circuit 2 1)

DHW thermostat status (when using mechanical thermostat instead of sensor)

Flow temperature Mixed heating circuit 1 1)

Flow temperature Mixed heating circuit 2 1)

Room temperature Direct heating circuit

Room temperature Mixed heating circuit 1 1)

Room temperature Mixed heating circuit 2 1)

DHW OFF

Flow MC1 3.5°C

Flow MC2 32°C

Room Temp HC 20.5°C

Room Temp MC1 21.0°C

Room Temp MC2 19.0°C

if room sensor is enabled:

- Room thermostat function (Heating ON/OFF)
- current room temperature of the respective heating circuit

with mixer expansion module(s) ZMC 1 only
To enter the level selection press rotary-push button for approx. 5 seconds.

Programming level synoptic

To enter the programming level press rotary-push button for approx. 3 seconds during the standard display.

**LEVEL SELECTION**

- **TIME-DATe**
- **TIMEPROGRAMS**
- **SYSTEM**
- **DHW**
- **UNMIXED CIRC. HC**
- **MIXED CIRCUIT MC1**
- **MIXED CIRCUIT MC2**
- **SELECT CIRCUIT HC-MC1-MC2-DHW**
- **LANGUAGE**
- **ECO TEMPERATURE**
- **REduced HEATING ECO/reduction**
- **LEGIONELLA PROTECTION**
- **HEATING SYSTEM Underfloor-radiator-convector.**
- **REDUCED HEATING ECO/reduction**

**Standard Display**

Example: operational mode **AUTOMATIC**

To enter the level selection press rotary-push button for approx. 5 seconds.
Selection and modification of parameters and setting values

Entering into the programming level, principally the OPERATING-TIMES LEVEL appears at first. All other levels, such as
- DATE/TIME
- SYSTEM PARAMETERS
- DOMESTIC HOT WATER CIRCUIT
- DIRECT HEATING CIRCUIT
- MIXER-HEATING CIRCUIT-1 ¹)
- MIXER-HEATING CIRCUIT-2 ¹)

can be selected directly via the rotary-push button.

The selected flashing level is activated by pressing the rotary-push button, the first value resp. parameter appears flashing and can be modified and taken over via the rotary-push button. The following parameters within the selected level can be treated in the same way if necessary.

Re-entry into the level selection is done via the info button \( \text{INFO} \), re-entry into the standard display via the program-selection button \( \text{PRG SELECT} \) or automatically after approx. 60 seconds.

¹) only in connection with expansion module(s) ZMC 1
Programming of operating times

With this mode of operation individual programs, other than standard programs for heating and hot-water mode can be set up. For this purpose after selecting the heating- resp. hot-water circuit the factory preset standard program (P1) is called and can be overwritten individually.

For programming the operation times, for each week day maximum three heating cycles with one switch-on and switch-off time each are available. Furthermore, the heating- resp. hot-water cycle can be combined with a required room temperature resp. hot-water temperature for the duration of the cycle.

For example unmixed heating circuit HC... For this purpose after selecting the heating- resp. hot-water circuit the factory preset standard program (P1) is called and can be overwritten individually.

Only in connection with expansion modules ZMC 1...
Select day and cycle
For example Tuesday - heating cycle 1
accept

Modify switching-on time
Setting range: 0.00...24.00 h
accept

Modify switching-off time
Setting range: 0.00...24.00 h
accept

Modify temperature
At heating circuit: Room temperature
Setting range: 5.0...30.0°C
accept
At hot-water circuit: Hot-water temperature
Setting range: 10.0...80.0°C (resp. DHW-max)

Note: The 3rd heating cycle is skipped if the 2nd heating cycle does not include any operating times.

Modify - Exit:
Confirm the selected flashing value by pressing the rotary-push button and modify if required. Take over by pressing the rotary-push button again.

Re-entry into the former step is done by pressing the button 1, exit into the standard display via the button 2 or automatically after approx. 60 seconds.
Copy operating times

Programming of operating times possesses a large copying function which allows to copy any day of the week to other days (Mo..Su) resp. to the whole week (1-7) or parts of a week such as workdays (1-5) or weekends (6-7).

Standard display

Push for approx. 3 seconds

Enter operating times level

Select heating circuit

For example unmixed heating circuit HC

select program P1...P3, if available

only in connection with expansion modules ZMC 1

Enter operating times level

Select copy function

3sec

accept

accept
Select source

Example: Monday

Accept

Setting range: Monday (MO)...Sunday (SU)

Select first destination

Example: Monday to Friday

Copy

Setting range:
- Days (MO...SU), whole week (1-7),
- Working days (1-5), weekend (6-7)

Confirmation

Source and destination are identical

Select next destination

Example: Saturday and Sunday

Modify - Exit:
Confirm the selected flashing value by pressing the rotary-push button and modify if required. Take over by pressing the rotary-push button again.

Re-entry into the former step is done by pressing the button 1, exit into the standard display via the button 2 or automatically after approx. 60 seconds.

etc..
The standard programs do not get lost by overwriting with individual programs. Individual programs however are cancelled at a later call of the corresponding standard programs and have to be set up again. For this purpose individual switching-on and switching-off times should always be noted (see page 20/21).

**Modify - Exit:**

Confirm the selected flashing value by pressing the rotary-push button and modify if required. Take over by pressing the rotary-push button again.

Re-entry into the former step is done by pressing the button, exit into the standard display via the button or automatically after approx. 60 seconds.
Reset press approx. 3 seconds

Standard program was reloaded
Individual Program was deleted!

Standard operating times programs

<table>
<thead>
<tr>
<th>Circuit</th>
<th>Day</th>
<th>Heating from...to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heating circuits (HC, MC1(^2), MC2(^2))</td>
<td>Mo-Su</td>
<td>06.00 - 22.00 h</td>
</tr>
<tr>
<td>Domestic hot water (DHW)</td>
<td>Mo-Su</td>
<td>05.00 - 22.00 h</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Circuit</th>
<th>Day</th>
<th>Heating from...to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heating circuits (HC, MC1(^2), MC2(^2))</td>
<td>Mo-Th</td>
<td>06.00-08.00</td>
</tr>
<tr>
<td></td>
<td>Fr</td>
<td>06.00-08.00</td>
</tr>
<tr>
<td></td>
<td>Sa-Su</td>
<td>07.00-23.00 h</td>
</tr>
</tbody>
</table>

| Domestic hot water (DHW)         | Mo-Th    | 05.00-08.00       |
|                                  | Fr       | 05.00-08.00       |
|                                  | Sa-Su    | 06.00-23.00 h     |

1) see page 22 - parameter PROGRAM
2) only in connection with mixer expansion module(s)
# Table for individual operating times and programs

<table>
<thead>
<tr>
<th>Day</th>
<th>Operating times program P1</th>
<th>Operating times program P2</th>
<th>Operating times program P3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1st cycle</td>
<td>2nd cycle</td>
<td>3rd cycle</td>
</tr>
<tr>
<td></td>
<td>From</td>
<td>till</td>
<td>From</td>
</tr>
<tr>
<td>Mon</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tue</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thu</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fri</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sat</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sun</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Unmixed heating circuit (HC)

- **Day:** Mon, Tue, Wed, Thu, Fri, Sat, Sun

## Domestic hot-water circuit (DHW)

- **Day:** Mon, Tue, Wed, Thu, Fri, Sat, Sun
<table>
<thead>
<tr>
<th>Day</th>
<th>Operating times program P1</th>
<th></th>
<th>Operating times program P2</th>
<th></th>
<th>Operating times program P3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1st cycle</td>
<td>2nd cycle</td>
<td>3rd cycle</td>
<td>1st cycle</td>
<td>2nd cycle</td>
<td>3rd cycle</td>
</tr>
<tr>
<td></td>
<td>From till</td>
<td>From till</td>
<td>From till</td>
<td>From till</td>
<td>From till</td>
<td>From till</td>
</tr>
<tr>
<td>Mon</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tue</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thu</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fri</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sat</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sun</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Day</th>
<th>Operating times program P1</th>
<th></th>
<th>Operating times program P2</th>
<th></th>
<th>Operating times program P3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1st cycle</td>
<td>2nd cycle 2</td>
<td>3rd cycle</td>
<td>1st cycle</td>
<td>2nd cycle</td>
<td>3rd cycle</td>
</tr>
<tr>
<td></td>
<td>from till</td>
<td>from till</td>
<td>from till</td>
<td>From till</td>
<td>From till</td>
<td>From till</td>
</tr>
<tr>
<td>Mon</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tue</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thu</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fri</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sat</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sun</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1) Only in connection with expansion module(s) ZMC1
**SYSTEM**

This level includes general delimiting parameters and options referring to the corresponding heating system.

### Language

**Setting range:**
- D = GERMAN
- GB = ENGLISH
- F = FRENCH
- I = ITALIAN

**Factory preset:** D

All information appearing on the display are available in the languages German, English, French and Italian. After entry as first parameter appears the language selection. The required language can be selected and accepted according to the above assignment.

### Operating times program

**Setting range:** P1, P1-P3

**Factory preset:** P1

This parameter specifies the number of the cleared time programs. With the regulation P1 only one operating-times program is available, with the setting value P1-P3 all three programs are available and can be programmed individually.

**Application:** Use of the instrument in the respective linguistic field.

**Entry:** see »Programming level synoptic« page 12-13.

**Exit:** via button or automatically after 60 seconds

**Modify:** Confirm selected flashing parameter by pressing the rotary-push button. Then set the new required value and accept by pressing the rotary-push button again. If necessary, the next parameters can be modified in the same way.

**Application:** Shift work, different programs for summer, transition period, winter etc.
**Control mode**

Setting range:  1 = common mode  
2 = separated mode

Factory preset: 1

**Common control mode:**
The selected operational mode (via button for Holiday, Absence, Party, Automatic etc.) applies to the heating circuit and to the hot-water circuit together.

**Separated control mode:**
Heating- and hot-water circuits can be assigned with their own operational modes and temperature settings. To that the respective circuit has to be selected in accordance with the following scheme before setting the required operational mode.

**Application:** Objects with uniform seizure character (One-family houses etc).

**Application:** Objects with different use of heating and hot-water (for example heating operation in Holiday mode, hot-water permanently in reduced mode).

---

**Operational mode**

**Daytime temperature**

**Set back temperature**

Select circuit

HC, DHW (MC1 and/or MC2 when using extension module(s) ZMC1)

accept

[further operation see page 5 and 6]
Summer switching-off
Setting range: OFF, 10.0 to 30.0 °C
Factory preset: 20.0 °C

This parameter specifies the heating delimiting value regarding the average resp. current outside temperature and puts the heating plant automatically out of service as soon as the outside temperature exceeds the set heating delimiting value. During summer switching-off the pump of the heating circuit is activated each day for approx. 10 seconds to protect it against corrosion.

With the regulation OFF summer switching-off is not effective. Hot water preparation is not affected by summer switching-off.

Note: The active summer switching-off appears on the standard display with a sunshade symbol.

Application: All objects which do not require a heating operation during summertime

Parameter-reset
This function resets all individually entered values in the programming level to the factory preset.

Exception: Time-date, operating times

Reset: Press rotary-push button for approx. 5 sec. while indication SET is flashing, until standard display appears.

Important: Reset may only be executed if all individually entered values shall be replaced by the factory preset values!
DOMESTIC HOT WATER

This level includes the necessary parameters for programming the hot-water circuit with the exception of hot-water operating-times.

Hot-water economic temperature
Setting range: 10.0 °C up to the required hot water temperature
Factory preset: 40.0 °C

This parameter specifies the height of the reduced hot-water temperature outside the hot-water service readiness times (between the hot-water operating cycles) as well as in the operational mode ABSENCE for the duration of absence.

Legionella protection (day)
Setting range: OFF, MO...SU, ALL
Factory preset: OFF

The legionella protection serves to avoid a legionella infestation inside the hot-water tank an is activated on the selected weekday (Mon to Sun) or on every day at 2.00 o’clock. If the hot-water temperature should drop below 65 °C, the tank is reloaded. With setting to OFF the legionella protection is not available.

Exit: via button or automatically after 60 seconds
Modify: Confirm selected flashing parameter by pressing the rotary-push button. Then set the new required value and accept by pressing the rotary-push button again. If necessary, the next parameters can be modified in the same way.

Application: Supporting temperature inside the hot-water tank in order to avoid a cooling down of the tank.
Note: This parameter is skipped if a hot-water thermostat is used instead of an electronic hot-water sensor.

Note: Other legionella protection times can be regulated exclusively by the heating plant specialist.
Important: Danger of scalding! Use thermostatic mixing valve on DHW outlets.
Unmixed heating circuit (mixed circuits only when using expansion modules ZMC-1)

This level includes the parameters required for programming the heating circuit(s) with the exception of the related operating-times programs.

**Note:** The parameters in this level refer to the direct circuit and are valid in same manner for mixed circuits provided that mixer expansion modules ZMC1 are used.

**Reduction heating mode**

Setting range: ECO, ABS

Factory preset: ECO

During the reduced operation the following modes can be selected:

ECO mode: At outside temperatures above the set plant frost protection the heating circuit is switched off completely. At temperatures below frost protection the heating circuit is controlled with reduced heating characteristic according to the required reduced temperature (see page 5).

RED mode: During the reduced mode the heating circuit pump remains activated. The heating circuit is controlled according to the reduced heating characteristic, the temperature does not drop below the set minimum temperature value.

**Entry:** see »Programming level synoptic« on page 12-13.

**Exit:** via button or automatically after 60 seconds

**Modify:** Confirm selected flashing parameter by pressing the knob. Then set the new required value via the knob and accept by pressing the knob again. If necessary, the next parameters can be corrected in the same way.

**Application:** Objects with high insulation values

**Application:** Objects with low insulation values
Adaptation to the heating system
Setting range:  1.00 to 10.0
Factory preset:  1.30

This parameter refers to the type of the heating system inside the heating circuit and has to be adapted to the exponents of the corresponding consumer (underfloor-radiator-convector). The setting value specifies the curvature of the heating curve of the weather dependent heating circuit and compensates the system-related efficiency losses at the lower temperature range by a progressive heating curve in conformity with the adjustment.

Applications:
The following setting values are recommended for the below-mentioned applications

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00 . . . 1.10</td>
<td>Heating curve for underfloor heating systems or other static heating surfaces</td>
</tr>
<tr>
<td>1.30 . . . 2.20</td>
<td>Normal standard heating curves for radiators</td>
</tr>
<tr>
<td>3.00 . . . 4.00</td>
<td>Heating curves for convectors</td>
</tr>
<tr>
<td>4.00 . . . 10.0</td>
<td>Special heating curves for ventilators with high starting temperatures</td>
</tr>
</tbody>
</table>
**TIME-DATE**

**Entry:**
- Set time
- Set year
- Set day & month
- Set time co. mode

**Exit:**

**Modify:**
- Confirm selected flashing parameter by pressing the rotary-push button. Then set the new required value and accept by pressing the rotary-push button again. If necessary, the next parameters can be corrected in the same way.

**Current time**
Set time range: 0.00...24.00 h

**Calendar year**
Set year range: 2001...2099

**Calendar day-month-weekday**
Set date range: 01.01...31.12.
Weekday is set automatically

**Time changeover mode** (summer-winter)
Set mode range:
- Auto: last Sunday in March & October
- Manual: no time changeover

The beside standing values are factory preset and normally need not be updated. If in some exceptional cases corrections should be necessary, the values can be adapted to the real conditions.

The internal pre-programmed calendar provides an automatic time changeover at the yearly repeating summer-wintertime changeover dates.

If required, the automatic time reset can be switched off (manual reset).

**Application:** Countries without summer-wintertime mode, change of changeover dates.
Error messages

Example for error messages »sensor« (short or open circuit)
Error code 10...20 with index 0 or 1

Example for error messages »boiler« (control status)
Error code 30...40 with index 2...5

Example for logical error messages (control functions)
Error code 50...60 with index 2...4

Example for error messages »data bus« (address error)
Error code 70 with index 0 or 1

The instrument is equipped with an extensive error diagnostic features. The error displayed takes priority over other displays and varies dependent on the model in question.

Note: Error messages only appear alternating with the standard display.

⚠️ In case of error messages the heating specialist has to be informed!
Technical specification mixer expansion module ZMC1

Supply voltage: Via data bus from MCBA-controller (DC-safety voltage)
Power consumption: 300 mW
Bus interface: RS 485
Inputs: Flow sensor VF 202
Variable input
Outputs (floating): Mixer actuator OPEN / CLOSED
Heating pump (mixed circuit)
Variable output

Ambient temperature: 0...50 °C
Storage temperature: -25...60 °C
Protection type acc. to EN 60529: IP 20
Protection class acc. to EN 60730: III
Approval according to: VDE 60730
Casing dimensions (BxHxD): 76 x 105 x 41 mm
Casing material: ABS, antistatic
Electrical connections: Screw terminals
Max. length of cable (data bus): 50 m
Recommended cable: J-Y(St)Y 2x2x0.6

Electrical installation ZMC1

Setting address:
Jumper at right position: mixed circuit 1
Jumper at left position: mixed circuit 2

Variable input:
Flow sensor VF 202
Data bus line (A/B)
Power supply

Variable output:
Heating pump MC
Actuator (mixing valve)
Technical specification

Supply voltage: Via data bus (DC-safety voltage by EN 60730)
Power consumption: 300 mW
Bus interface: RS 485
Ambient temperature: 0...50 °C
Storage temperature: -25...60 °C
Protection type acc. to EN 60529: IP 20
Protection class acc. to EN 60730: III
Approval according to: VDE 60730
Casing dimensions (BxHxD): 90 x 138 x 28 mm
Casing material: ABS, antistatic
Electrical connections: 2-wire mode with plugable connection
Recommended cable: J-Y(St)Y 2x2x0.6
Max. length of cable: 50 m
Data and timer back up: Min. 5 years from date of delivery
Display: Alphanumeric plain text and symbols
Weight: Approx. 150 g

Important: The two wires of the data bus (A, B) may not be changed!