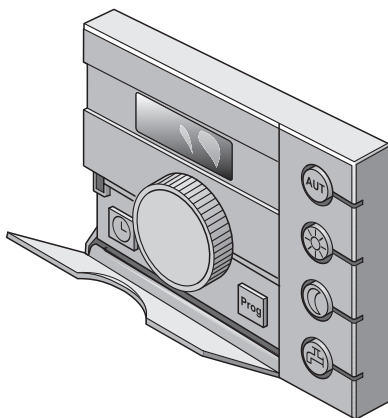


# Installation and service instructions

## RC20 room controller



# Buddebus

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## 1 Safety instructions and user notes

### 1.1 Correct use

The RC20 room controller may only be used to operate and control Buderus heating systems in houses and flats.

The boiler must be equipped with EMS (energy management system) or UBA1.x (universal burner control). We recommend that the heating system is always operated via the room controller (only emergency operation possible without room controller).

The RC20 room controller must not be used with the control devices of the Logamatic 2000/3000/4000 family.

### 1.2 Please observe these safety instructions

The RC20 room controller has been designed and built in accordance with currently recognised standards and safety requirements.

However, material damage resulting from inappropriate handling of this device cannot be completely excluded.

- Only use the room controller for the purposes for which it is intended and only use if it is in perfect working order.
- Please read these operating instructions carefully.



**WARNING!**

#### **RISK OF SCALDING**

The domestic hot water temperature can be as high as 80 °C. There is a risk of scalding at the taps, if the temperature is set higher than 60 °C.

- Please advise your customers of the correct way to handle the various DHW fittings to avoid the risk of scalding.



**CAUTION!**

**SYSTEM DAMAGE**

through frost.

The heating system can freeze up in cold weather if it is shut down.

- Protect your heating system against freezing by draining the heating system and DHW pipework at the lowest possible point.
- Please read the note on frost protection (see section 4.3 "Operating tips", page 15).



The design and operation of this product conforms to European Directives and the supplementary national requirements. Its conformity is demonstrated by the CE Declaration of Conformity. You can view the Declaration of Conformity on the Internet at [www.buderus.de/konfo](http://www.buderus.de/konfo) or request a copy from your local Buderus office.

## 1.3 System handover

- On the BC10 base controller set both rotary selectors to "Aut" so that the DHW and flow temperature are controlled by the programming unit.
- After commissioning, complete the setup report on page 29.
- Explain to the customer how the heating system works and how to use the programming unit.
- Please inform the end user about the settings you have made, especially those for:
  - Allocation of the heating circuits ("address" parameter)
  - Heating and DHW program
  - The programming unit (e.g. RC30/RC35 if used)
- We recommend that these installation and service instructions are handed over to the customer and stored in the vicinity of the heating system.

## 1.4 Other notes

Installation, maintenance and repairs as well as fault diagnosis may only be carried out by authorised and qualified personnel.

Only use the RC20 room controller in combination with the accessories and spare parts specified in these instructions. Use alternative accessories and wearing parts only if these are specifically designed for the intended application and impair neither the performance nor infringe the mandatory safety requirements.



### **USER NOTE**

All modifications and settings made on the RC20 room controller must consider the implications for the heating system.



### **USER NOTE**

Never open the housing of the room controller.

## 2 Specifications

### 2.1 Specification for the RC20 room controller

|                                    | Unit | RC20      |
|------------------------------------|------|-----------|
| Supply voltage                     | V    | 16 V DC   |
| Power consumption                  | W    | 0.15      |
| Dimensions<br>(Width/Height/Depth) | mm   | 108/90/35 |
| Weight                             | g    | 140       |
| Operating temperature              | °C   | 0 to +50  |
| Storage temperature                | °C   | 0 to +70  |
| Relative humidity                  | %    | 0 to 90   |

Tab. 1 Specification for the RC20 room controller

### 2.2 Standards and guidelines

Observe all standards and guidelines applicable to the installation and operation of this heating system in your country.

Observe all local regulations and the regulations of the energy supply company applicable to the electrical installation.

| Applicable product standards                    |   |
|---|---|
| Safety of electrical appliances                 | EN 60335-1                                |
| Electromagnetic compatibility<br>(EMC emission) | EN 50081-1, EN 61000-3-2,<br>EN 61000-3-3 |
| EMC immunity                                    | EN 60730-1, EN 61000-6-2                  |

Tab. 2 Applicable product standards

## 3 Installation

### 3.1 Tools required

For the wall mounting you will require:

- Percussion drill with Ø 6 mm masonry bit
- Phillips screwdriver

### 3.2 Requirements

Before starting to install the system, ensure that the following requirements are satisfied:

#### 3.2.1 Suitable reference room

To ensure the heating control unit works properly, the RC20 room controller must be installed in a suitable reference room (see User Manual).

Alternative heat sources (sunlight or other heat sources, such as an open fire) in the reference room affect the control function of the RC20. If there are alternative heat sources in the reference room, rooms without alternative heat sources may be too cold.



#### USER NOTE

With a room temperature control system there is no need for thermostatic valves on the radiators in the reference room. If there are thermostatic radiator valves in the reference room they must be kept fully open at all times.



### 3.2.2 Installation position

Choose an internal wall in the reference room and install the RC20 room controller as shown in Fig. 1. The clearance below the room controller and the distance from the door are important in order to obtain accurate measurement results.

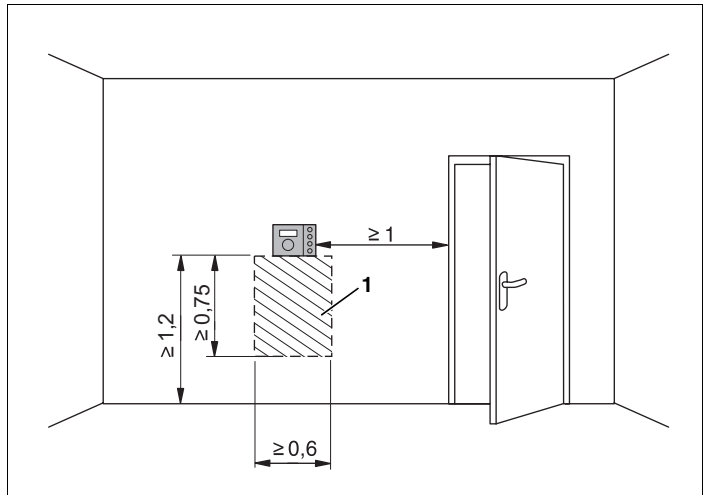


Fig. 1 Installation position for the RC20 room controller in the reference room (dimensions in metres)

**Item 1:** Free space

### 3.2.3 Connection cable

The cable used to connect the RC20 room controller to the heating system (Energy Management System, EMS) must meet the following specifications:

|                          |   |
|--------------------------|---|
| Number of cores:         | 2   |
| Conductor cross section: | 0,75 mm <sup>2</sup> (0.5 – 1.5 mm <sup>2</sup> , solid conductor, not flexible cord) |
| Cable length:            | max. 100 m  |

## 3.3 Installation and connections

### 3.3.1 Attaching the mounting plate

Before installation, remove the room controller from the mounting plate.

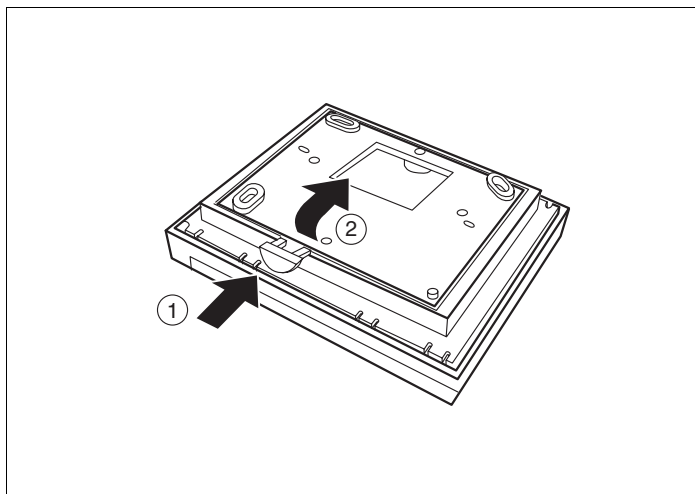


Fig. 2 Removing the room controller from the mounting plate

- Press the release button on the bottom of the mounting plate (Fig. 2, **step 1**).
- Remove the mounting plate in the direction shown by the arrow (Fig. 2, **step 2**).



#### USER NOTE

The mounting plate can be affixed directly to the plaster or to a flush-mounted box. If you mount the room controller on a flush-mounted box, ensure that any draught from the box cannot distort the measurement of the room temperature in the room controller (if necessary pack the box with insulating material).

The mounting surface must be level so that the mounting plate is not distorted when the screws are tightened.

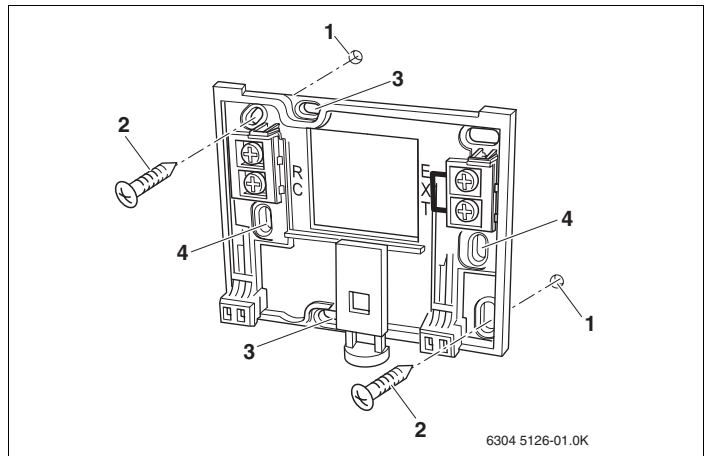


Fig. 3 Fixing the mounting plate to the wall surface

**Item 1:** Hole drilled in the wall

**Item 2:** Screws supplied for installation on plastered walls

**Item 3:** Vertical fixing holes for installation on a flush-mounted box

**Item 4:** Horizontal fixing holes for installation on a flush-mounted box

- Drill two holes in the wall at the required position; use the mounting plate as a template (Fig. 3).
- Insert the supplied wall plugs into the drilled holes (Fig. 3, **Item 1**).
- Fix the mounting plate using the screws supplied (Fig. 3, **Item 2**).



### USER NOTE

When fitting to a flush-mounted box, use the vertical or horizontal fixing holes (Fig. 3, **Item 3** or **Item 4**).

## 3.3.2 Making the electrical connections

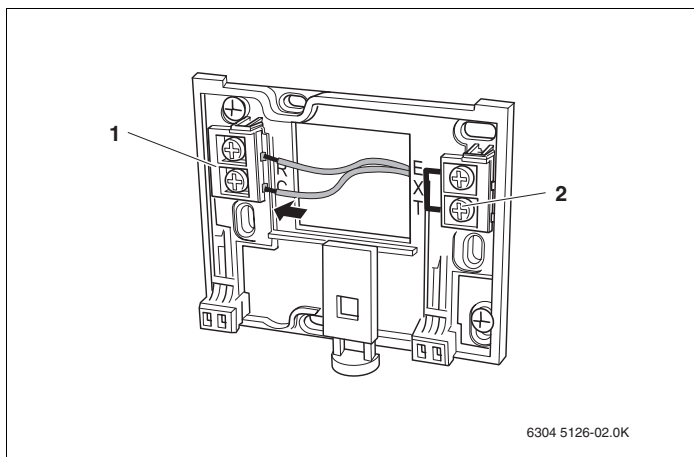


Fig. 4 Making electrical connections

**Item 1:** "RC" connection to the EMS (boiler)

**Item 2:** "EXT" connection (no function on RC20)

- Feed the cable ends through the opening in the mounting plate.
- Connect the two-core bus cable from the Energy Management System (EMS) to the "RC" cable terminals (Fig. 4). There is no fixed polarity.



### USER NOTE

It is not possible to connect an external temperature sensor to the "EXT" (Fig. 4, **Item 2**) cable terminals. The "EXT" cable terminals have no function on the RC20 room controller.

### 3.3.3 Fitting the RC20 room controller

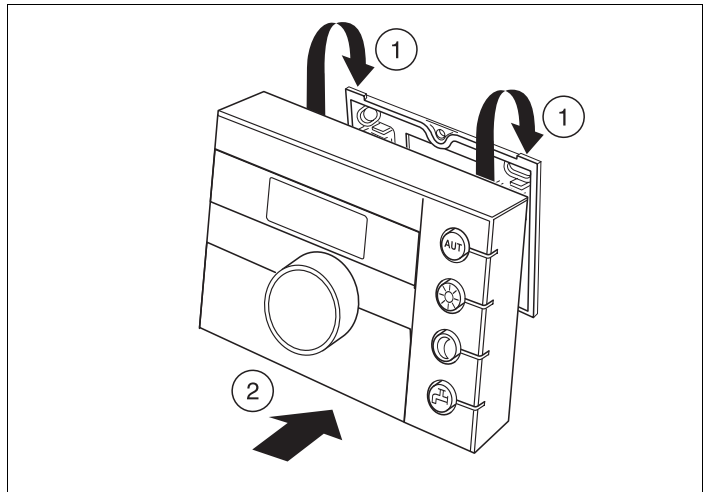


Fig. 5 Fitting the RC20 room controller

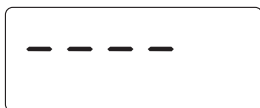
- Hook the top of the RC20 room controller to the mounting plate in the direction shown by the arrow (Fig. 5, **step 1**).
- Push the bottom of the RC20 room controller against the mounting plate in the direction shown by the arrow until it clicks into place (Fig. 5, **step 2**).

### 3.3.4 Removing the RC20 room controller

- Unclip the RC20 room controller from the bottom of the plate (Fig. 5, **step 2**) and unhook from the top.

### 4 Switching on and off

#### 4.1 Start-up



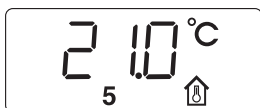
- Switch ON the heating system.

When the system is switched on the segments "----" in the display and the LEDs in the buttons flash. The EMS bus connection is established and initialised.



#### USER NOTE <sup>1)</sup>

On commissioning the system for the first time: during initialisation, the "address" parameter is used to specify whether the room controller is to be installed as the sole programming unit or as a remote control unit. Press the pin button on the RC20 and enter the address (see section 5.4 "Address <sup>1)</sup>", page 19).



Following initialisation the room controller displays the actual room temperature (standard display).



#### USER NOTE

On commissioning the system for the first time you must carry out the additional parameter settings as described in section 5.

If initialisation fails, a corresponding error message is displayed (see section 6 "Troubleshooting", page 26).

#### 4.2 Shutdown

The RC20 room controller can be switched off by switching off the heating system.

<sup>1)</sup> For boilers with UBA 1.5, only operation as a sole programming unit is possible.

## 4.3 Operating tips

### Devices on the EMS bus

Only one device can be the master on the EMS bus. If a programming unit (e.g. RC30/RC35) is installed in a heating system, this assumes the master function. The RC20 room controller must be installed as a remote control unit with the relevant heating circuit address (see section 5.4 "Address <sup>1)</sup>", page 19).

### Frost protection

- If the RC20 room controller is installed as a remote control unit, the frost protection function can be set on the programming unit (e.g. RC30/RC35).
- When the RC20 is the sole programming unit <sup>1)</sup>, the heating system operates with the room temperatures specified for day and night mode. Switch-off is not possible in night mode (temperature reduction only).  
Important: If the room temperatures have been set below 10 °C, there is no absolute frost protection because, for example, pipes routed through external walls could freeze up, even though the temperature in the reference room is substantially higher than 5 °C due to external heat sources.



**CAUTION!**

### SYSTEM DAMAGE

caused by frost if the RC20 is the sole programming unit.

- Set the room temperatures higher than 10 °C.

### Pump kick <sup>2)</sup>

In all operating modes all pumps are switched on and then off again for 10 seconds every Wednesday at 12 noon to prevent pump damage. The mixers are then switched for 10 seconds to "OPEN" and then to "CLOSED". All pumps and mixers then return to normal operation.

The pump kick is not carried out if the room controller has been installed as a remote control unit for a RC30/RC35 programming unit.

<sup>1)</sup> This always applies to operation using boilers with UBA 1.5.x.

<sup>2)</sup> Not possible for boilers with UBA 1.5.

## 5 Service

### 5.1 Using the service level

During commissioning various parameters need to be set or checked. These parameters are set at the service level.

The service level is operated using the pin button and the rotary selector.

#### Calling up the service level



Press the pin button to call up the service level.  
Release the pin button.

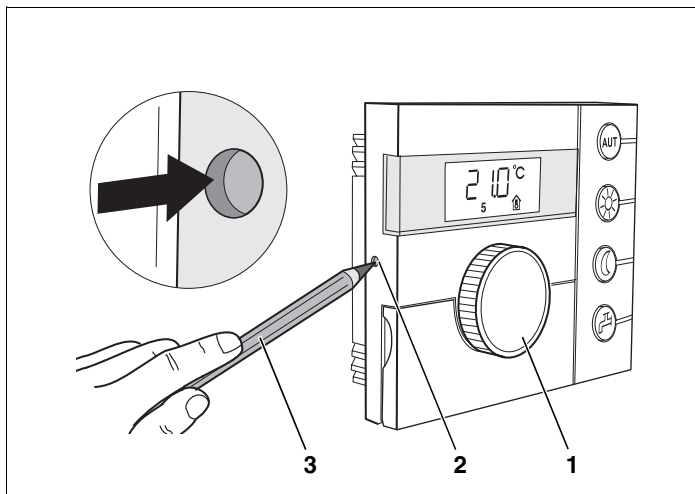


Fig. 6 Pin button

**Item 1:** Rotary selector

**Item 2:** Pin button

**Item 3:** Pin to press the pin button



### Working at the service level



Turn the rotary selector in either direction to scroll through the service level menu (Fig. 7).



Hold down the pin button to display the parameter value.



+



Hold down the pin button and turn the rotary selector at the same time to change the value displayed.

Release the pin button to save the value.

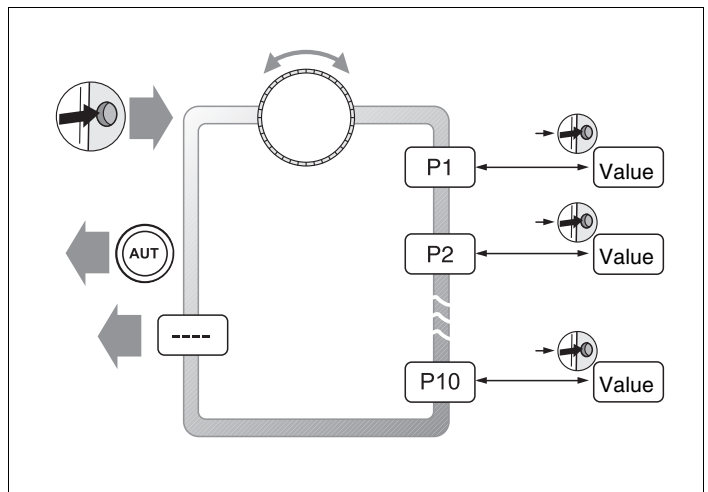


Fig. 7 Service level menu structure

### Exiting the service level



Press the "AUT" button or turn the rotary selector until "----" appears and then press the pin button.  
The standard display appears.

**USER NOTE**

If no button is pressed, the room controller automatically switches back to the standard display after five minutes.

**5.2 Parameter overview**

| Parameter | Function                                      | Displayed   |
|-----------|---|---|
| P1        | Adjusting the address                         | always <sup>1)</sup>                                |
| P2        | Adjusting the heating system                  | only if master (P1 = 0)                             |
| P3        | Calibrating the room temperature              | always  |
| P4        | Installing DHW                                | only if master (P1 = 0)                             |
| P5        | Setting pump type for boiler                  | only if master (P1 = 0) <sup>1)</sup>               |
| P6        | Setting pump run-on time                      | only if internal boiler pump (P5 = 1) <sup>1)</sup> |
| P7        | Setting standard display                      | always  |
| P8        | Adjusting time                                | only if master (P1 = 0)                             |
| P9        | Setting pasteurisation (thermal disinfection) | only if master and P4 = 1 <sup>1)</sup>             |
| P10       | Displaying the software version               | always  |
| ----      | Exiting the service level                     |   |

Tab. 3 Overview of parameters

<sup>1)</sup> Not possible for operation on boilers with UBA 1.5.

### 5.3 Adjusting parameters

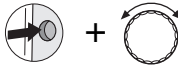
#### Example: Setting the "P1" address



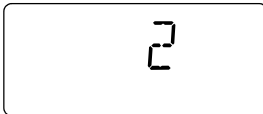
Press the pin button to call up the service level.



Use the rotary selector to select the required parameter ("P1").



Hold down the pin button and turn the rotary selector to set the address.



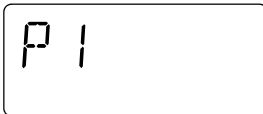
Release the pin button. The value is saved and the room controller is initialised with the modified address. During the initialisation "----" flashes in the display.



#### USER NOTE

All other parameters can be set in the same way.

### 5.4 Address <sup>1)</sup>



Use "address" (P1) to specify how the RC20 room controller is installed in the system (see the RC20 User Manual).

| Setting   | Explanation   |
|---|---|
| 0   | Sole programming unit (factory setting): RC20 operates independently without any other programming units in the system. RC20 is master on the EMS bus. Only room temperature dependent control is possible. |
| Heating circuit address:<br>1 – 4<br>(HC 1 – 4) | Remote control for this heating circuit: RC20 is installed as remote control unit for the allocated heating circuit. A programming unit (e.g. RC30/RC35) is master on the EMS bus.                          |

<sup>1)</sup> Not possible for operation using boilers with UBA 1.5.

## 5.5 Heating system

P2

If the RC20 room controller is the sole programming unit in the system ( $P1 = 0$ ) or operation takes place using UBA 1.5, this parameter determines the type of control for the heating system (only room temperature dependent control is possible).

| Setting | Explanation   |
|---------|---|
| 1       | <p>Room flow (factory setting)<br/>Room temperature control that responds dynamically to deviations between the temperature setting and the actual room temperature by changing the <b>flow temperature</b>.</p> <p>Set P2 to 1 if you want changes in heat output (e.g. due to the opening of thermostatic valves in rooms <b>other</b> than the reference room) to be compensated for.</p>  |
| 2       | <p>Room output:<br/>Room temperature control that responds dynamically to deviations between the temperature setting and the actual room temperature by changing the <b>boiler output</b>.</p> <p>Set P2 to 2 if there are no major variations in load and only the reference room is to be controlled (e.g. open-plan house). This means that changes in the heat output due to the opening of thermostatic radiator valves in rooms <b>other</b> than in the reference room are compensated for only very slowly.</p> <p>This room temperature control is somewhat slower but also leads to fewer burner starts than "room flow".</p> |

**USER NOTE**

This parameter is not shown if the room controller is installed as a remote control unit ( $P1 \neq 0$ ). In this case set the type of control for the heating system on the RC30/RC35. If the outside temperature dependent control is activated in the RC30/RC35, this will also apply to the RC20.

## 5.6 Room temperature compensation



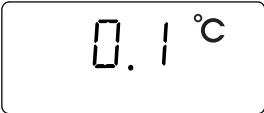
There may be a separate thermometer near to the room controller, displaying a different value. If you wish to adjust the room controller in accordance with the thermometer, you can use the "calibration" function. Before calibrating the room temperature, please consider the following points:

- Is the thermometer more accurate than the room controller?
- Is the thermometer directly adjacent to the room controller?



### USER NOTE

A thermometer may show temperature changes more slowly or more quickly than the room controller, so never calibrate the room controller when your heating system is in the process of cooling down or heating up.



If the RC20 room controller measures a temperature that is 0.1 °C below the value measured by the thermometer, then enter "+0.1 °C" as the calibration value. The RC20 room controller then displays a temperature that is 0.1 °C higher than the measured value.

|                  | Input range        | Factory setting |
|------------------|--------------------|-----------------|
| P3 (calibration) | -5.0 °C to +5.0 °C | 0.0 °C          |

## 5.7 DHW heating



Here you can specify whether you require instantaneous water heating from the boiler.

| Setting | Explanation          |
|---------|----------------------|
| 0       | No (factory setting) |
| 1       | Yes                  |

**USER NOTE**

This parameter is not shown if the room controller is installed as a remote control unit ( $P1 \neq 0$ ). In this case, adjust the DHW on the RC30/RC35.

**5.8 Pump type <sup>1)</sup>**

This parameter determines which pump is used to pump the heating water through the boiler: an internal pump ("1") or a heating circuit pump ("2").

| Setting | Explanation   |
|---------|---|
| 0       | No pump   |
| 1       | Internal pump (factory setting):<br>In the event of a DHW or heat demand from the UBA3/MC10 the internal pump is switched on at the same time as the burner and switches off again after the preset pump run-on time. If a low loss header or a three-way changeover valve is installed, you must select "1". |
| 2       | Heating circuit pump:<br>The heating circuit pump is started by the UBA3/MC10 when the heating circuit demands heat.  |

**USER NOTE**

This parameter is not shown if the room controller is installed as a remote control unit ( $P1 \neq 0$ ). In this case, set the pump type on the RC30/RC35.

<sup>1)</sup> Not possible for operation using boilers with UBA 1.5.

## 5.9 Pump run-on time <sup>1)</sup>



The pump run-on time indicates how many minutes after the burner the internal pump is switched off. Choose "24 h" for constant operation.

| Setting | Explanation   |
|---------|---|
| 0 – 60  | Run-on time for internal pump (factory setting 5 min) |
| 24 h    | Internal pump in constant operation                   |



### USER NOTE

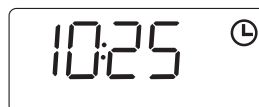
Parameter P6 is only available with internal pumps (P5 = 1). P6 is hidden if "No pump" (P5 = 0) or "Heating circuit pump" (P5 = 2) is selected.

## 5.10 Standard display



Parameter P7 enables one of the following values to be selected as the standard display:

- Actual room temperature (factory setting)
- Outside temperature  
If no outside sensor is available, the display will show four bars "----".
- Time



<sup>1)</sup> Not possible for operation using boilers with UBA 1.5.

## 5.11 Adjusting the time

If the clock tends to run fast or slow, this function can be used to correct it. If the clock in the RC20 room controller is slow, e.g. by two seconds a day, enter "2" as the correction value.

|                         | Input range      | Factory setting |
|-------------------------|------------------|-----------------|
| P8 (adjusting the time) | -30 to +30 s/day | 0 s/day         |

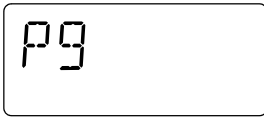


### USER NOTE

This parameter is not shown if the room controller is installed as a remote control unit ( $P1 \neq 0$ ). The time of day and the day of the week are taken automatically from the RC30/RC35 where they can also be adjusted if necessary.



## 5.12 Pasteurisation process <sup>1)</sup>



With the "Thermal disinfection" [pasteurisation] function the DHW is heated once a week to a temperature that is high enough to destroy pathogenic agents (e.g. legionella). Parameter P9 is only displayed if the room controller is the sole programming unit (P1 = 0).

If you activate pasteurisation (P9 = 1), the thermal disinfection process begins every Tuesday night at 1 a.m. and heats the water to a minimum temperature of 70 °C. During the pasteurisation process the circulating pump runs constantly.

P9 is not shown if the RC20 is installed as a remote control unit (P1 ≠ 0). In this case, adjust the thermal disinfection on the programming unit (e.g. RC30/RC35) as described in the RC30/RC35 User Manual.

| Setting | Explanation   |
|---------|---|
| 0       | No pasteurisation (factory setting)                                   |
| 1       | Pasteurisation every Tuesday night at 1 a.m. (time cannot be altered) |



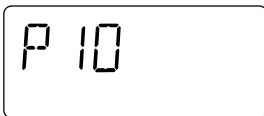
**WARNING!**

### RISK OF SCALDING

During the thermal disinfection process, the DHW is heated to a temperature above 60 °C. This creates a risk of scalding at the taps.

- Please advise your customers of the correct way to handle the various DHW fittings to avoid the risk of scalding.

## 5.13 Displaying the software version



The RC20 software version is stored in parameter P10. For example, "2.00" denotes version V2.00.

<sup>1)</sup> Not possible for operation using boilers with UBA 1.5.

## 6 Troubleshooting

This fault table lists possible system faults such as EMS component faults. As far as possible, the heating system remains in operation in the case of a system fault, i.e. heat can still be generated (albeit with an unfavourable operating point).

**USER NOTE**

Other faults are described in the documents relating to the individual boiler.

**Abbreviations used:**

SC = Service code

FC = Fault code: turn the rotary selector to display it

| SC  | FC                | Fault                                   | Effects on control characteristics   | Possible cause  | Remedy  |
|-----|-------------------|---|--|---|---|
| A01 | 808 <sup>1)</sup> | DHW sensor faulty                       | No domestic hot water is produced.   | Sensor connected or mounted incorrectly.<br>Sensor cable broken or short-circuited.<br>Sensor faulty. | Check sensor connection and sensor cable.<br>Check mounting of sensor on storage cylinder.<br>Compare resistance value with sensor curve. |
| A01 | 810 <sup>1)</sup> | DHW remains cold                        | The system constantly tries to heat the hot water cylinder to the hot water temperature setting.<br>DHW priority is switched OFF after the error message is displayed. | Constant drawing or system leak.  | If necessary fix the leak.  |
|     |                   |   |  | Sensor connected or mounted incorrectly.<br>Sensor cable broken or short-circuited.<br>Sensor faulty. | Check sensor connection and sensor cable.<br>Check mounting of sensor on storage cylinder.<br>Compare resistance value with sensor curve. |
|     |                   |   |  | Charge pump connected incorrectly or faulty.  | Check operation of charge pump.   |
| A01 | 816               | No communication with UBA 1/ UBA 3/MC10 | Boiler not receiving heat demands, heating system not heating.   | EMS bus system is overloaded.   | Reset by switching the heating system off and then on again.<br>If necessary inform your local service centre.                            |
|     |                   |   |  | UBA 1/UBA 3/MC10 is faulty.   |   |

Tab. 4 Fault table (system faults)

<sup>1)</sup> Not possible for operation on boilers with UBA 1.5.

| SC                | FC                | Fault  | Effects on control characteristics  | Possible cause  | Remedy  |
|-------------------|-------------------|--|---|---|---|
| A02               | 816 <sup>1)</sup> | No communication with BC10                     | BC10 settings are not accepted by RCxx devices.   | Contact problem on BC10 or BC10 faulty.   | Check the BC10 connection. If necessary replace BC10.                           |
| A11               | 802 <sup>1)</sup> | No time set                                    | Changeover between day and night mode occurs at the wrong times. Incorrect system time in controller.   | No time or date set on the RC30/RC35 or values are invalid.   | Set time or date on the RC30/RC35.  |
| A11               | 803 <sup>1)</sup> | No date set                                    |   |   |   |
| A11               | 816 <sup>1)</sup> | No communication with RC30/RC35                | RC20 unable to transmit data to RC30/RC35. Room temperature control not possible for RC20 heating circuit.  | RC20 address incorrect.   | Check address (parameter P1) in RC20.   |
|                   |                   |  |   | RC30/RC35 not present or not connected correctly.   | Check connection to RC30/RC35.  |
| A18               | 802               | No time set                                    | Changeover between day and night mode occurs at the wrong times. Incorrect system time in controller.   | No time or day of week set on the RC20 or values are invalid.   | Set time or day of week on the RC20.  |
| A18               | 825 <sup>1)</sup> | Address conflict                               | RC30/RC35 and RC20 control both HC1 and DHW. Depending on the heating programs selected and the room temperature required, the heating system may no longer operate correctly. Faulty operation of DHW heating. | RC20 logged in the system as sole programming unit (master) with RC30/RC35 as master.   | Change the address (parameter P1) in the RC20 or remove RC30/RC35 from the EMS. |
| A18               | 806               | Room temperature sensor faulty                 | Room temperature for RC20 heating circuit can no longer be controlled.  | Temperature sensor in RC20 faulty (A18 = sole programming unit; x = 1 – 4, corresponds to HC address 1 – 4).                                      | Replace RC20 for this heating circuit.  |
| A2x <sup>1)</sup> |                   |  |   |   |   |
| A2x <sup>1)</sup> | 829 <sup>1)</sup> | Address conflict with RC20 remote control unit | RC20 unable to transmit data to RC30/RC35. Room temperature control not possible for RC20 heating circuit.  | RC20 address incorrectly allocated on the RC30/RC35 or not installed on the RC30/RC35. (x = 1 – 4, corresponds to heating circuit address 1 – 4). | Check the "remote control" parameter on the RC30/RC35 for this heating circuit. |
| Hxx <sup>1)</sup> | <sup>1)</sup>     | Service message, not a system fault            | Heating system continues to operate if possible.  | E.g. maintenance due.   | Maintenance required, see boiler documentation.                                 |

Tab. 4 Fault table (system faults)

<sup>1)</sup> Not possible for operation on boilers with UBA 1.5.



### **USER NOTE**

System faults do not require a reset. If you cannot rectify the system fault, please contact your service engineer or your local Buderus sales office.

Refer to the boiler documentation for information on how to remedy other faults.

## 7 Setup report

|     |                               | Input range  | Factory setting  | Setting | Displayed  |
|-----|-------------------------------|--|------------------|---------|--|
| P1  | Address                       | 0 – 4<br>(0 = sole programming unit;<br>HC 1 – 4)              | 0                |         | always <sup>1)</sup>                                     |
| P2  | Heating system                | 1 (room flow),<br>2 (room output)                              | 1                |         | only if master<br>(P1 = 0)                               |
| P3  | Room temperature compensation | -5.0 °C to +5.0 °C   | 0.0 °C           |         | always   |
| P4  | DHW heating                   | 0 (no),<br>1 (yes)   | 0                |         | only if master<br>(P1 = 0)                               |
| P5  | Pump type                     | 0 (no pump),<br>1 (internal pump),<br>2 (heating circuit pump) | 1                |         | only if master<br>(P1 = 0) <sup>1)</sup>                 |
| P6  | Pump run-on time              | 0 – 60 min, 24 h   | 5 min            |         | only if internal boiler pump<br>(P5 = 1) <sup>1)</sup>   |
| P7  | Standard display              | Room temperature,<br>outside temperature,<br>time              | Room temperature |         | always   |
| P8  | Adjusting the time            | -30 to +30 s/day   | 0                |         | only if master<br>(P1 = 0)                               |
| P9  | Thermal disinfection          | 0 (no),<br>1 (yes)   | 0                |         | only if master<br>(P1 = 0) and<br>(P4 = 1) <sup>1)</sup> |
| P10 | Software version              | –  |                  |         | always   |

Tab. 5 Setup report

<sup>1)</sup> Not possible for operation using boilers with UBA 1.5.

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Your installer:

# **Buderus**

Buderus  
Cotswold Way, Warndon, Worcester WR4 9SW  
Tel.: 01905 752794, Fax: 01905 753130  
[www.buderus-commercial.co.uk](http://www.buderus-commercial.co.uk)

BBT Thermotechnik GmbH  
D-35573 Wetzlar  
[www.heiztechnik.buderus.de](http://www.heiztechnik.buderus.de)  
[info@heiztechnik.buderus.de](mailto:info@heiztechnik.buderus.de)

In the UK, Buderus is a trading name of  
BBT Thermotechnology Ltd.