



## Logamatic EMS

### RC35 programming unit

For contractors

Read carefully  
before installation  
and servicing.

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# Guide to instructions

These installation and service instructions contain all information on the function and settings of the Logamatic RC35 programming unit.

## Introduction to the service menu

Chapter 4.2 explains in detail the steps needed for programming all the settings in the service menu. Operation is only briefly dealt with in the following sections.

## Display texts

Words appearing on the display are shown in **bold** in flowing text.

Example: **USER MENU**

USER MENU	
▶standard display	
operation modes	
switching programme	
sum./win. threshold	

# 1 Key to symbols and safety instructions

## 1.1 Key to symbols

### Warning information



Warnings in this document are identified by a warning triangle and printed against a grey background.



If there is a danger due to electricity, the exclamation mark in the warning triangle is replaced by a lightning symbol.

Signal words at the start of a warning indicate the type and seriousness of the ensuing risk if measures to prevent the risk are not taken.

- **NOTE** indicates that material losses may occur.
- **CAUTION** indicates that minor to medium injury may occur.
- **WARNING** indicates that severe injury may occur.
- **DANGER** indicates a risk to life.

### Important information



Important information where there is no risk to people or property is indicated with the adjacent symbol. It is bordered by horizontal lines above and below the text.

### Additional symbols

Symbol	Explanation
►	Action step
→	Cross-reference to other parts of this document or to other documents
•	List/list entry
–	List/list entry (second level)

Tab. 1

## 1.2 Safety instructions

### Installation and commissioning

- ▶ Observe these instructions to ensure correct operation.
- ▶ The appliance must only be installed and commissioned by an authorised installer.

### Risk to life from electric shock

- ▶ The power supply must be connected by a qualified electrician.
- ▶ Observe the connection diagram.
- ▶ Before installation: isolate all poles of the power supply (230 V AC). Secure against unintentional reconnection.
- ▶ Never install this appliance in wet rooms.
- ▶ Never connect this appliance to the 230 V mains.

### Risk of damage due to operator error

Operator errors can lead to injuries and/or material losses.

- ▶ Ensure that children never operate this appliance unsupervised or play with it.
- ▶ Ensure that only individuals who can operate this appliance correctly have access to it.

### Warning: frost

The heating system can freeze up in cold weather if it is not in operation.

- ▶ Leave the heating system permanently switched on.
- ▶ Enable frost protection.
- ▶ In case of faults: immediately remedy the fault.

## 2 Product information

### 2.1 Correct use

The RC35 programming unit must only be used to operate and control Buderus heating systems.

- ▶ Always use this appliance correctly and in conjunction with the specified control systems.
- ▶ Observe all regulations and standards applicable to the installation and operation of the system in your country!

The boiler must be equipped with EMS (energy management system) or UBA1.x (universal burner controller).

Never operate the programming unit with the control units of the Logamatic 2000/4000 series.

We recommend always operating the heating system with the programming unit (only emergency operation possible without programming unit).

If using remote control units RC2x produced before or in 2005, only two remote control units can be connected. In case of related questions, please contact your local Buderus sales office.

These instructions describe all possible functions of the RC35 programming unit. Some of these functions may not be available, depending on which boiler (combustion controller) is used. You will find information on this in the relevant chapter.

For information regarding the combustion controller, see menu **DIAGNOSIS\VERSIONS** (→ page 45).


### 2.2 EU Declaration of Conformity

The design and operation of this product conform to the European Directives and the supplementary national requirements. Its conformity is demonstrated by the CE designation. You can call up the Declaration of Conformity for this product on the internet at [www.buderus.de/konfo](http://www.buderus.de/konfo) or request it from your local Buderus sales office.

### 2.3 Standard delivery

- RC35 programming unit
- Operating instructions
- Installation and service instructions
- Wall mounting base, mounting materials

## 2.4 Specification

	Unit	RC35
Power supply via BUS system	V	16 V DC
Power consumption	W	0.3
Power consumption with backlighting	W	0.6
Dimensions (width/height/depth)	mm	150/90/32
Weight	g	233
<b>Operating temperature</b>	°C	0 to +50
Storage temperature	°C	0 to +70
Relative humidity	%	0 to 90
CE designation		

Tab. 2 Specification - RC35 programming unit

### Temperature sensor characteristics

When measuring temperature sensors, observe the following requirements:

- Isolate the system before measuring.
- Measure the resistance at the cable ends.
- The resistances represent mean values and are subject to tolerances.

Outside temperature sensor		Flow temperature sensor			
		DHW temperature sensor			
°C	k Ω	°C	k Ω	°C	k Ω
- 20	96.358	10	19.872	60	2.490
- 15	72.510	16	15.699	65	2.084
- 10	55.054	20	12.488	70	1.753
- 5	42.162	25	10.001	75	1.481
0	32.556	30	8.060	80	1.256
5	25.339	35	6.535	85	1.070
10	19.872	40	5.331	90	0.915
15	15.699	45	4.372	95	0.786
20	12.488	50	3.606	100	0.677
25	10.001	55	2.989		
30	8.060				

Tab. 3 Resistances of the temperature sensors, for EMS only



## 2.5 Validity of these instructions for function modules (accessories)

These instructions also apply to the programming unit when used in conjunction with the MM10 mixer module and the WM10 low loss header module.

Additional setting options may be found in some menus, if your heating system is equipped with alternative function modules (e.g. solar module SM10). These setting options are explained in a separate manual.

## 2.6 Accessories

For detailed information regarding suitable accessories, see the catalogue.

- Mixer module MM10<sup>1)</sup> for control of a 3-way valve. A description of the MM10 is included in the RC35 instructions.
- Low loss header module WM10<sup>1)</sup> for operating a low loss header
- Solar module and additional EMS modules (e.g. connection module ASM10)<sup>1)</sup>
- Remote control<sup>1)</sup> (e.g. RC2x, RC20/RF) respectively for controlling one heating circuit
- Outside temperature sensor, external room temperature sensor

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1) The use of modules is not possible for boilers with UBA1.x or DBA.

## 3 Installation

### 3.1 Choosing the right installation position

#### 3.1.1 Installation in reference room

If the system is room-temperature controlled, the following requirements must be observed:

- Installation position on an internal wall (→ Fig. 1)
- Maintain the specified distance from the door (to avoid draughts).
- Allow clearance below the programming unit (→ Fig. 1, shaded area) (to ensure correct temperature measurement).
- The reference room (= installation room) must be as representative as possible of the entire home. External heat sources in the reference room (e.g. sunlight or other heat sources such as an open fire) affect the control functions. This means it may be too cold in rooms without external heat sources.
- Always open the thermostatic radiator valves fully in the reference room to prevent the two temperature controllers influencing each other.



If there is no suitable reference room, we recommend setting the system to weather-compensated control instead (this requires an outside temperature sensor).

Alternatively, you could install an external room temperature sensor in the room with the greatest heating requirements (e.g. living room).

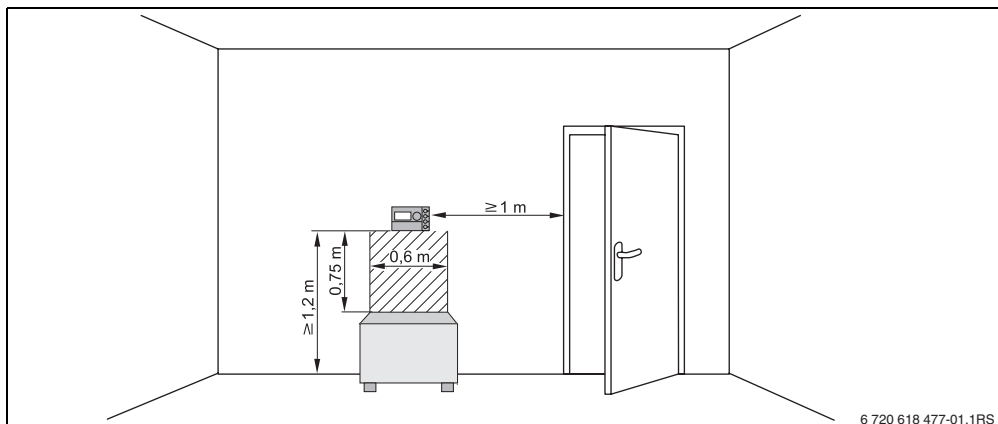


Fig. 1 Minimum clearances for installation in a reference room

### 3.1.2 Installation on boiler

Installation directly on the boiler is possible where the boiler is equipped with the Energy Management System (EMS).

The outside temperature sensor for weather-compensated control is not delivered as standard, but can be ordered as an accessory.

## 3.2 Types of installation

The programming unit can be installed in three different ways:

- As only programming unit in the system (factory setting): the programming unit is installed in the living space (reference room) or on the boiler.  
Example: detached house with one heating circuit.
- As the only programming unit in a heating system with two or more heating circuits<sup>1)</sup> (→ Fig. 2 [1]).  
Examples: underfloor heating on one floor, radiators on the others; or a main flat together with a separate granny flat or doctor's surgery.
- In conjunction with a remote control (e.g. RC2x, RC20/RF, Fig. 2, [2]). In this case there are always two separate heating circuits. Remote control units cannot be used for boilers with UBA1.x.  
Examples: underfloor heating on one floor, radiators on the others; or a main flat together with a separate granny flat or doctor's surgery.

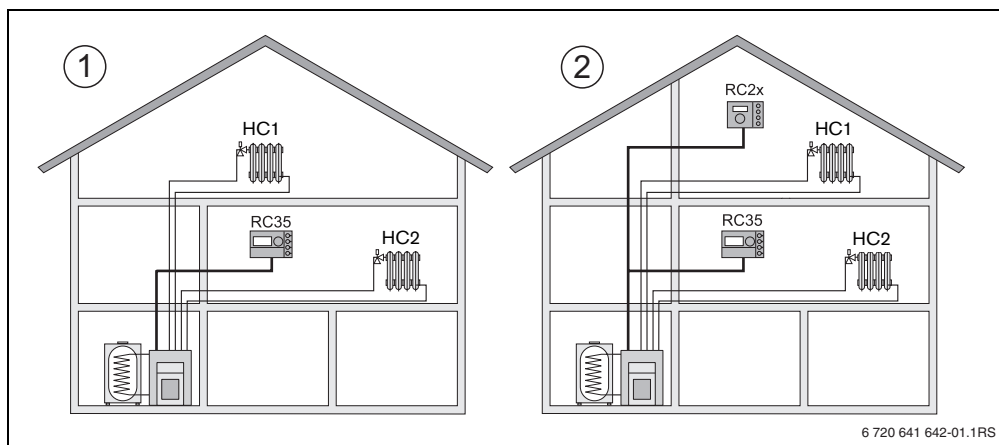


Fig. 2 Options for a heating system with two heating circuits

- 1 Both heating circuits are controlled by one programming unit.
- 2 Each heating circuit has its own programming unit / remote control unit.

1) Not possible with boilers with UBA1.x and DBA.

### 3.3 Installation and connections



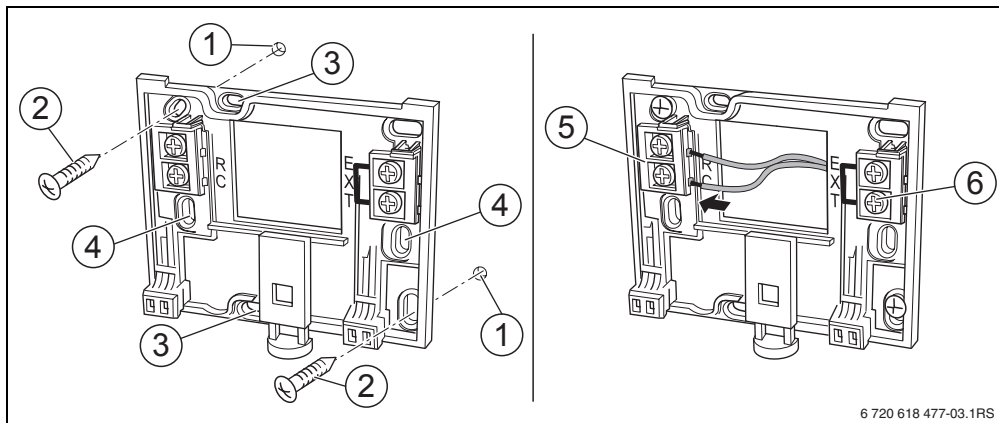
Only use the wall mounting base with screw terminals.

- Replace wall mounting bases without screw terminals that may already be installed.

The wall mounting base can be attached directly to the wall or on a flush box.

When mounting on a flush box, note the following:

- Draught from within the flush box must not be able to falsify the capture of the room temperature by the programming unit.  
If required, stuff the flush box with insulation material.
- Use horizontal or vertical fixing holes [4].
- Fit the wall mounting base (→ Fig. 3, left).
- Connect the two-core BUS cable from the Energy Management System (EMS) at terminals “RC” [5].
  - Cable type:  $2 \times 0.75 \text{ mm}^2$  ( $0.5 - 1.5 \text{ mm}^2$ ), max. length 100 m
  - Polarity is irrelevant for the two wires.
- Do not lay the cables parallel to power cables.



6 720 618 477-03.1RS

Fig. 3 Mounting the wall mounting base (left) and connecting the wires (right)

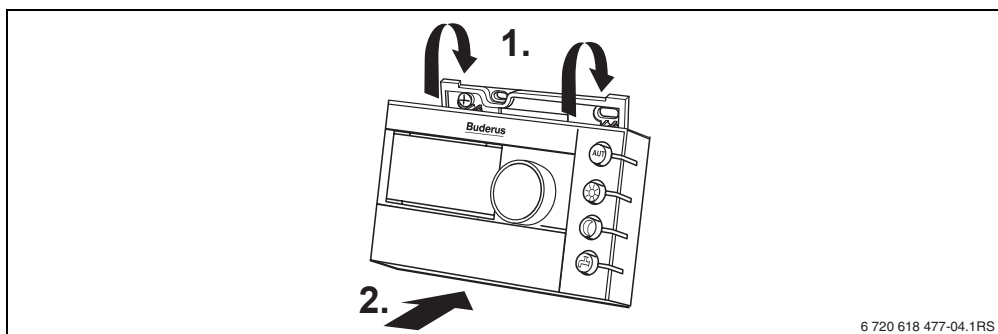
- 1 Hole drilled in the wall
- 2 Screws (included with the unit) for surface-mounting on the wall
- 3 Vertical mounting holes for mounting on a flush box
- 4 Horizontal mounting holes for mounting on a flush box
- 5 “RC” terminals for EMS (boiler)
- 6 “EXT” terminals for external room temperature sensor or for jumper

- ▶ A jumper is required at terminals “EXT” [6] (delivered condition) if the RC35 programming unit is operated without an external room temperature sensor.
- ▶ If the RC35 programming unit operates together with an external room temperature sensor, remove the factory-fitted jumper at “EXT” and connect the external room temperature sensor in its place.

## 3.4 Attaching or removing the programming unit

### Attaching the programming unit

1. Hook the programming unit at the top into the mounting plate in the direction of the arrow.
2. Push the programming unit at the bottom in the direction of the arrow against the mounting plate until it clicks into place.

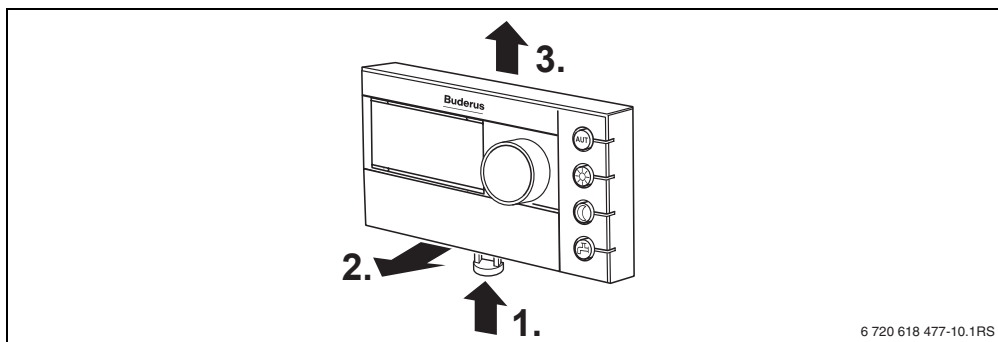


6 720 618 477-04.1RS

Fig. 4 Attaching the programming unit

### Removing the programming unit

1. Press the button underneath the mounting plate in the direction of the arrow.
2. At the same time pull the programming unit forwards.
3. Remove the programming unit by lifting upward.



6 720 618 477-10.1RS

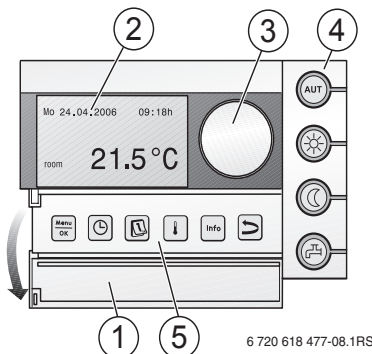
Fig. 5 Removing the programming unit

## 4 Principles of operation





### 4.1 Overview of controls

#### Key to diagram:

- 1 Flap; pull the recessed grip on the left to open
- 2 Display
- 3 Rotary selector for changing values and temperatures or for navigating through the menus







#### 4 Buttons for basic functions:

-  "AUT" (automatic)
-  "Daytime operation" (manual)
-  "Nighttime operation" (manual)
-  "DHW"

#### When the LED lights up,

- the switching program is active (automatic changeover between day and night room temperatures).
- the heating system operates at the set day room temperature. DHW heating is enabled (factory setting).
- the heating system operates at the set nighttime room temperature. Frost protection is active. DHW heating is off (factory setting).
- the DHW temperature has fallen below its set value. Pushing this key means DHW will be heated up again (the LED flashes during heat-up).

#### 5 Buttons for additional functions:

-  "Menu/OK"
-  "Time"
-  "Date"
-  "Temperature"
-  "Info"
-  "Back"

#### Function:

Open the user menu and confirm the selection.

When rotary selector is turned at the same time: change setting.  
Set the time.

Set the date.

Set the room temperature.











Open the Info menu (to view values).

Go back one step or one menu item.

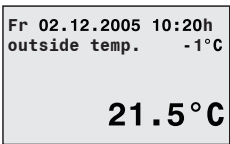



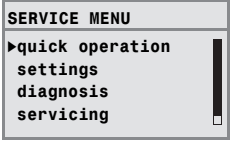


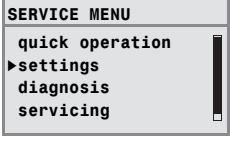
In Automatic mode, an additional LED lights up with the "AUT" LED to indicate which operating status is currently active ("day mode" or "night mode"). Exception: in the case of boilers with UBA1.x, only the "AUT" LED lights up. The "DHW" LED can also be switched off. On boilers with UBA1.x the "DHW" LED does not illuminate.

# 4.2 Introduction to the service menu


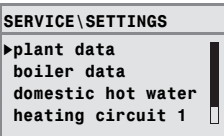

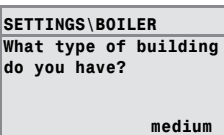


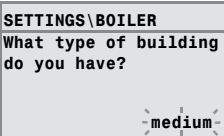

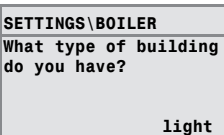
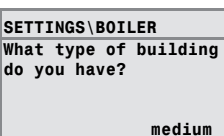


You can use the **SERVICE MENU** to set the parameters for the system. It also contains functions for diagnosis, maintenance purposes, and carrying out a reset. The procedure for operation is always the same:

1. Open the flap (by pulling the recessed grip on the left).
2. Press  +  +  at the same time to open the **SERVICE MENU**.
3. Turn rotary selector  to change the selection.
4. Press  to make your selection.
5. To change the value, hold down  (the value starts flashing) and turn rotary selector  at the same time. Release .  
The modified value is saved.
6. Press  to go back one step.  
Press  several times or close the flap to show the standard display again.

**Example:** Setting the **building type** (adjusted time)

	Operation	Result
1.	Open the flap (by pulling the recessed grip on the left).	
2.	Press  +  +  simultaneously, to open the <b>SERVICE MENU</b> .	
3.	Turn rotary selector  anti-clockwise, until <b>settings</b> is selected. Press  to confirm the selection.	

Tab. 4 How to use the service menu (example)

	Operation	Result
4.	The <b>SERVICE\SETTINGS</b> menu opens. Turn rotary selector  anti-clockwise until <b>boiler data</b> is selected.	
5.	Press  to select <b>boiler data</b> . Menu <b>SETTINGS\BOILER</b> opens.	
6.	To change the value, hold down  (the value starts flashing) and turn rotary selector  at the same time.	
7.	Release  . The value stops flashing. The modified value is saved.	
8.	If you have carried out this example as practice only, make sure that the original setting is retained. To do so, repeat steps 6 and 7 if necessary.	
9.	Press  to go back one step. -or- To finish entering the settings: press  several times or shut the flap. The standard display re-appears.	
<b>You can enter all settings in the SERVICE MENU using this procedure.</b>		

Tab. 4 How to use the service menu (example)



### 4.3 Overview of the service menu

The **SERVICE MENU** is divided into the following menus and submenus:

Menu	Submenu	Contents/function	Page
quick operation		The most important parameters from the "settings" menu to configure the heating system	20
settings (all parameters)	plant data <sup>1)</sup>	Parameters: language, number of heating circuits, installed modules, building type, minimum outside temperature	23
	boiler data <sup>1)2)</sup>	Parameters: pump run-on time and modulation	26
	heating circuit data <sup>1)</sup>	Parameters of the installed heating circuits	27
	domestic hot water <sup>1)</sup>	Parameters for domestic hot water	36
	solar data <sup>2)</sup>	If solar is installed: see documentation for the solar module	39
	RC35 calibration	Parameters: calibration of the displayed room temperature	40
	contact data	Entering the heating contractor's name and telephone number	41
diagnosis	function test <sup>1)2)</sup>	Activating individual components for test purposes	42
	monitor value	Viewing target values and actual values	43
	error message <sup>1)</sup>	Viewing error messages	44
	htg. charact. curve	Viewing the set heating curve in the form of a graph	45
	versions	Viewing software versions	45
servicing <sup>1)2)</sup>	service interval	Setting times for maintenance, by hours run or by date	46
	current messages	Viewing service messages	46
	RESET servicing	Resetting service messages	46
Reset <sup>1)</sup>	factory setting	Resetting all parameters to their factory settings	47
	error list		47
	service message		47
	operating hours		47

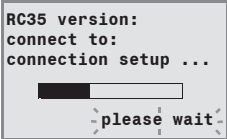


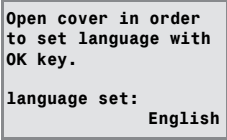




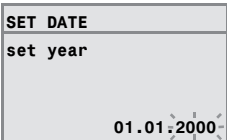



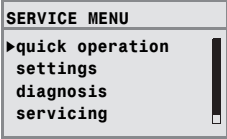
Tab. 5 Service menu navigator

1) Limited use depending on the boiler used.

2) May not be available or possible, depending on the boiler used.

## 5 Commissioning




### 5.1 General commissioning

	Operation	Result
1.	<p>Switch on the heating system.</p> <p>While setting up the connection between the RC35 and EMS or UBA1.x, the display shows the message on the right.</p> <p>If the display shows a different message, look it up in Chapter 10, page 48.</p>	
2.	<p>Set the language:</p> <p>Open flap. Hold down  and select the language with rotary selector .</p>	
3.	<p>Set the date and time:</p> <p>Hold down  and set the flashing values with rotary selector . Release button.</p> <p>Hold down  and set the flashing values with rotary selector . Release button.</p> <p>In the event of a power failure, the date and time are retained for up to 8 hours. All other settings are saved.</p>	
4.	<p>Press  +  +  simultaneously, to open the <b>SERVICE MENU</b>.</p>	

Tab. 6 General commissioning



If necessary, you can change the contrast on the display:

- ▶ Hold down  and  and turn rotary selector  at the same time.

## 5.2 Checklist: important parameters for commissioning

When commissioning the device, ensure the satisfaction of both parties, making sure that the heating system meets the customer's needs and will not give cause for complaints. In our experience, the following parameters are very important for the satisfaction of the system user:


- Find out the system owner's requirements and preferences regarding:

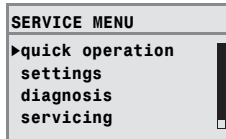
	<b>Setting options</b>	<b>Factory setting</b>	<b>SERVICE MENU\ settings\</b>
The required type of reduction (night setback)	Outdoor setback mode; reduced operation; Room setback mode; shut-down mode	Outdoor setback mode	heating circuit x, page 28
The required control mode	outside temp. contr., room temp. controlled	outside temp. contr.	heating circuit x, page 31
The correct heating curve	By means of the following parameters: design temperature, minimum outside temperature, offset, and set room temperature		heating circuit x, page 28
The correct building type (adjusting the outside temp.)	light, medium, heavy	medium	plant data, page 24
The switching frequency of the DHW circulation pump <sup>1)</sup>	permanent operation, 1 x, 2 x, 3 x, 4 x, 5 x, 6 x per hour for 3 minutes at a time	2 x	domestic hot water, page 37
Priority DHW	yes, no	yes	heating circuit x, page 29
Switching program (times)	Standard program (e.g. family), user defined program	family	heating circuit x, page 30

Tab. 7 Checklist: important parameters for commissioning

- 1) This function is not available for boilers with UBA1.x, DBA, UBA-H3 or for DHW heating according to the instantaneous water heating principle.

### 5.3 Quick commissioning (menu quick operation)

► Press  to open menu **quick operation**.



SHORTCUT\	Menu item	Input range	Factory setting	Other information
BASIC SETUP	Which language should be used?	English, ...	Francais	
HYDR. SEP.	Have you installed a module for the hydraulic separator?	yes, no	no	In conjunction with MCM10 this setting is automatically set to "yes"; the mask is hidden. <sup>1)2)</sup>
	Is a sensor for a low loss header connected?	no, on the boiler, on the low loss header module	no	When a low loss header is used, connect the temperature sensor to the low loss header module. <sup>3)</sup>
SYSTEM	Is heating circuit 1 installed (unmixed heating circuit)?	yes, no	yes	
NO. OF MIXERS	How many mixed heating circuits are installed?	0 to 3	0	Set the address at the rotary coding switch on the mixer module (factory setting HC2). <sup>1)</sup>
HEATING CIRCUIT 1 (and other heating circuits)	Which operating unit is assigned to heating circuit 1?	RC2x/ RC20/RF, RC35, none	RC35	Assigning programming units to heating circuits (→ page 31). General heating circuit data (→ page 27). Set up any other heating circuits as per heating circuit 1.  Heating curve (→ page 32)
	How should heating circuit 1 be controlled?	outside temp. contr., room temp. controlled	outside temp. contr.	
	Which heating system does heating circuit 1 have?	radiator, convector, floor	radiator	

Tab. 8 Quick operation menu navigator

SHORTCUT\	Menu item	Input range	Factory setting	Other information
DHW	Have you installed domestic hot water?	yes, no	no	4)
	What should be used for domestic hot water heating?	3-way switching valve cylinder primary pump	3-way switching valve	5)
	To which temperature should your domestic hot water be heated?	30 °C to 80 °C	60 °C	To be able to change the DHW temperature, set DHW on the boiler programming unit to "AUT" or enable DHW.
SOLAR MODULE	Have you installed a solar module?	yes, no	no	1)

Tab. 8 Quick operation menu navigator

- 1) Not possible or available on boilers with UBA1.x or DBA.
- 2) Not possible on boilers with UBA4.
- 3) Only possible on boilers with UBA4.
- 4) Not possible or not available with boilers with DBA.
- 5) Not available with boilers with UBA1.x, DBA or UBA-H3.



Check whether further settings are required using the checklist on page 19.

## 5.4 Detailed commissioning

- Check whether the factory settings in menu **SERVICE\SETTINGS** suit your heating system.
- Note down modified settings if needed.

## 5.5 System handover

- Ensure that no temperature limits for central heating and DHW have been set at the boiler programming unit, so DHW and flow temperature can be regulated via the RC35 programming unit.
- Explain to the customer how the device works and how to operate it.
- Inform customer about the selected settings.



We recommend you hand these installation and service instructions to the customer for safekeeping near the heating system.

## 5.6 Shutting down/switching off

The RC35 programming unit is powered via the heating system and remains permanently ON. The heating system is only switched off, for example, for maintenance work.

- To start up and shut down the heating system: set the ON/OFF switch on the boiler programming unit to 1 (ON) or 0 (OFF).



After shutting down or in the event of a power failure, the date and time are retained for up to 8 hours. All other settings are retained permanently.

## 5.7 Operating information

### EMS BUS subscribers

In a BUS system, only **one subscriber** can carry out the calculations for a heating circuit. Consequently, only one RC35 programming unit may be installed in each heating system. If additional room controllers (e.g. RC2x) are required, these must be installed as remote control units<sup>1)</sup> with a set heating circuit address (→ page 27).



Disable this on boilers with integral weather-compensated control.

### Thermostatic radiator valves in the reference room

Radiators in the reference room do not require thermostatic valves<sup>2)</sup> for room temperature-dependent control. Fully open any thermostatic radiator valves in the reference room.






### Pump kick<sup>1)</sup>

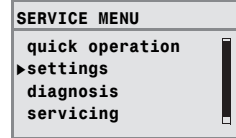
In all operating modes, all the heating circuit pumps are switched on and then off again for 10 seconds every Wednesday at 12 noon to prevent pump damage. The mixers are then set to "OPEN" for 10 seconds and then "CLOSED". All pumps and mixers then return to their normal, regulated operation.

1) This function is not available on boilers with UBA1.x or DBA.

2) Room where a RC35 or RC2x/RC20/RF is installed.

## 6 System settings (Service menu – Settings)

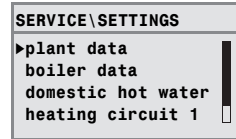
- ▶ Press  +  +  simultaneously to open the **SERVICE MENU**.
- ▶ Turn rotary selector  anti-clockwise, until **settings** is selected.
- ▶ Press  to open menu **SERVICE\SETTINGS**.



Note that the menu items shown will vary depending on the heating system.

### 6.1 Plant data

- ▶ Press  to select **plant data**.  
The menu **SETTINGS\SYSTEM** opens.



Menu item	Input range	Factory setting	Other information
Which language should be used?	English, ...	Francais	
Have you installed a module for the hydraulic separator?	yes, no	no	In conjunction with MCM10, this setting is automatically set to “yes”; the mask is hidden. <sup>1)2)</sup>
Is a sensor for a low loss header connected?	no, at the boiler, at the low loss header module	no	When a low loss header is used, connect the temperature sensor to the low loss header module. <sup>3)</sup>
Is heating circuit 1 installed (unmixed heating circuit)?	yes, no	yes	
How many mixed heating circuits are installed?	0 to 3	0	Set the address at the rotary coding switch on the mixer module (factory setting HC2). <sup>1)</sup>
Have you installed a solar module?	yes, no	no	<sup>1)</sup>

Tab. 9 Navigator for service menu SETTINGS\SYSTEM

Menu item	Input range	Factory setting	Other information
Should the outside temp. damping be switched off?	yes, no	no	When selecting “yes” the following parameter building type will be hidden.
What type of building do you have?	light, medium, heavy	medium	Building type (heat storage capacity), → Chapter 6.1.1, page 24.
What is the lowest expected outside temp. in your region?	– 30 °C to 0 °C	– 10 °C	→ Chapter 6.1.2, page 25

Tab. 9 Navigator for service menu *SETTINGS\SYSTEM*

- 1) Not possible or available on boilers with UBA1.x or DBA.
- 2) Not possible on boilers with UBA4.
- 3) Only possible on boilers with UBA4.

### 6.1.1 Building type (adjusting the outside temperature)

A building's heat storage capacity and its characteristic resistance to heat transfer will delay the effect of outside temperature fluctuations on the rooms inside. Consequently, it is not the current outside temperature that is crucial but the so-called adjusted outside temperature.

Parameter **building type** enables the adjustment to be applied that takes account of the fluctuating outside temperatures. This enables the control to be matched to the characteristics of the building.

The control unit calculates the time constant for adjusting the outside temperature, using the factor given in Tab. 10 for the stated building type and an internal multiplier, the “runtime” (= 6 minutes). The time constant is the product of: factor x runtime = adjustment time constant in hours.

Parameter: building type	Type of construction	Factor
light	E.g. prefabricated building, wood-frame construction	10
medium	E.g. a building constructed of hollow breeze blocks (factory setting)	30
heavy	E.g. brick house	50

Tab. 10 Calculating the adjustment time constant



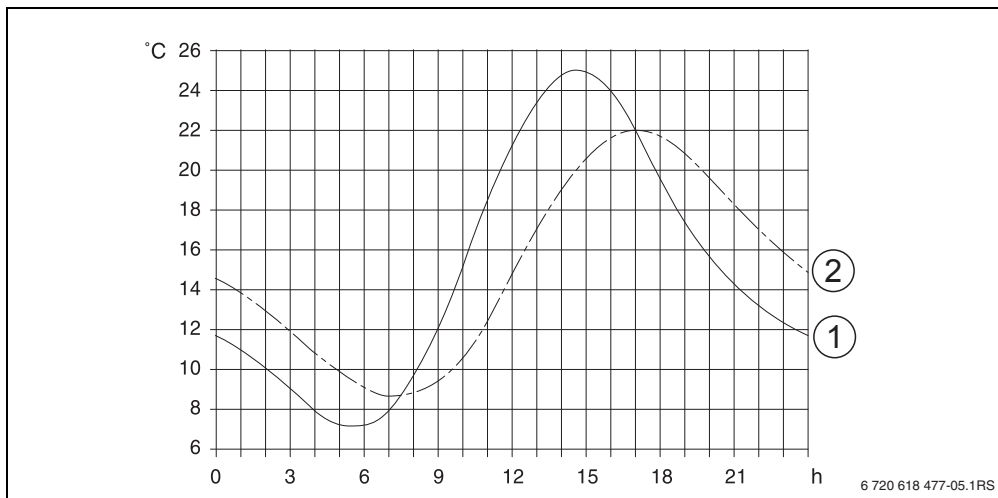
**Example:**

Fig. 6 This greatly simplified example shows how the adjusted outside temperature follows the outside temperature, but does not reach its extreme values.

- 1 Current outside temperature
- 2 Adjusted outside temperature





With the factory settings, changes in the outside temperature affect the calculation of weather-compensated control after no more than three hours (30 x 6 minutes = 180 minutes).

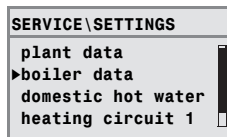
- To monitor the calculated, adjusted outside temperature and the currently captured outside temperature: open the menu **diagnosis\monitor value ► boiler / burner**.

### 6.1.2 Minimum outside temperature

The minimum outside temperature is the mean of all the coldest outside temperatures of recent years, and helps to determine the heating curve. The value can be taken from the heat requirement calculation which should be done for every building, or from the climatic zone chart for your region.

## 6.2 Boiler data

- Turn rotary selector  anti-clockwise until **boiler data** is selected.
- Press  to select **boiler data**.  
The menu **SETTINGS\BOILER** is opened.



Menu item	Input range	Factory setting	Other information
Boiler pump after-run time after burner stops?	deactivated, 1 to 60 min, 24 h	5 min	Setting only possible with boilers with internal pump. <sup>1)</sup>
Set the pump logic temperature:	0 to 65 °C	47 °C	Setting only possible in conjunction with BRM10.

Tab. 11 Navigator for service menu **SETTINGS\BOILER**

1) Not possible or not available with boilers with UBA1.x.

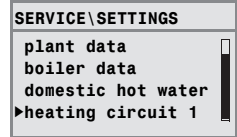
### 6.3 Heating circuit data

This chapter explains the settings for all heating circuits using heating circuit 1 as an example.

- ▶ Turn rotary selector  anti-clockwise until **heating circuit 1** is selected.

- ▶ Press  to select **heating circuit 1**.

The menu **SETTINGS\HTG. CIRC. 1** is opened.



Menu item	Input range	Factory setting	Other information
Should heating circuit 1 be activated?	yes, no	yes	
Which operating unit is assigned to heating circuit 1?	RC2x/RC20/RF, RC35, none	RC35	See page 31. For UBA1.x, RC2x is not available.  If “none” is selected, then the type of control is changed over to “outside temp. contr.” and is then hidden.
How should heating circuit 1 be controlled?	outside temp. contr., room temp. controlled	outside temp. contr.	“room temp. controlled” can only be set if RC2x or RC35 have been assigned.  When selecting “room temp. controlled” room flow will be used.
Which heating system does heating circuit 1 have?	radiator, convector, floor	radiator	In case of HC1 setting “floor” only if this concerns an oil/gas condensing boiler. Additional heating circuits can then be installed.  Use a safety thermostat with underfloor heating systems.

Tab. 12 Navigator for service menu **SETTINGS\HTG. CIRC. 1**

Menu item		Input range	Factory setting	Other information
<b>Heating curve</b>				
	std. tmp. ( – 10 °C)	30 °C to 90 °C	75 °C (radiator, convector) 45 °C (floor)	The value in brackets is the setting for the minimum outside temperature (→ page 27). Adjustment only if the control type is set to “outside temp. contr.” (→ page 32).
	max flow temp.	radiator, convector: 30 °C to 90 °C <sup>1)</sup>	radiator, convector: 75 °C	Adjustment only if the control type is set to “outside temp. contr.” (→ page 32).
	Enter the maximum flow temperature:	floor: 30 °C to 60 °C	floor: 50 °C	Adjustment only if the control type is set to “room temp. contr.” (→ page 32).
	min flow temp.	5 °C to 70 °C	5 °C	Adjustment only if the control type is set to “outside temp. contr.” (→ page 32).
	Enter the minimum flow temperature:			Adjustment only if the control type is set to “room temp. contr.” (→ page 32).
	rm. tmp. offset	– 5.0 K to +5.0 K	0.0 K	Offset of heating curve.  Adjustment only if the control type is set to “outside temp. contr.” (→ page 32).
	Enter the maximum room influence:	0 K to 10 K	3 K	Adjustment only if the control type is set to “outside temp. contr.” (→ page 31)
	Which type of reduction should be implemented?	Outdoor setback mode, reduced operation, Room setback mode (only if RC35 or RC2x has been assigned to the heating circuit), shut-down mode	Outdoor setback mode	Night setback (→ page 33)

Tab. 12 Navigator for service menu *SETTINGS\HTG. CIRC. 1*

Menu item	Input range	Factory setting	Other information
What outside temp. should be used for reduced operation?	– 20 °C to +10 °C	5 °C	Temperature threshold for outdoor setback mode (→ page 33). Adjustment only if the setback mode is set to “Outdoor setback mode”.
<b>Frost protection</b>			
What temp. should be used to trigger frost protection?	outside temp., room temperature, no frost protection	outside temp.	Room temperature adjustment only if RC2x or RC35 have been assigned to the heating circuit (→ page 34).
Which frost protection temp. should be used?	– 20 °C to +10 °C	5 °C	Refers to outside temperature (→ page 34).
At what outside temp. should reduction be interrupted?	OFF, – 30 °C to +10 °C	OFF	Setback in accordance with EN 12831 standard (→ page 34).
Should domestic hot water priority be activated?	yes, no	no	
<b>Mixer<sup>2)</sup></b>			
Is a mixer installed?	yes, no	yes	Can only be set for heating circuit 2 onwards. <sup>2)</sup>
What running time does the mixer have?	10 sec. to 600 sec.	120 sec.	<sup>2)</sup>
What increase should be used for the boiler?	0 K to 20 K	5 K	<sup>2)</sup>
<b>Screed drying<sup>2)</sup></b>			
Should a drying cycle be carried out?	yes, no	no	Adjustment only if floor has been selected. DHW heating is not enabled while screed is drying. <sup>2)</sup>
Every how many days should the flow temp. be raised?	every day, every 2nd day to every 5th day	every day	<sup>2)</sup>
By how many Kelvin should the flow temp. be raised each time?	0 K to 40 K	5 K	<sup>2)</sup>

Tab. 12 Navigator for service menu SETTINGS\HTG. CIRC. 1

Menu item		Input range	Factory setting	Other information
	What is the desired maximum flow temperature?	25 °C to 60 °C	45 °C	<sup>2)</sup>
	For how many days should maximum flow temp. be maintained?	0 days to 20 days	4 days	<sup>2)</sup>
	Every how many days should the flow temp. be reduced?	direct normal operat., every day, every 2nd day to every 5th day	Every day	<sup>2)</sup>
	By how many K should the flow temp. be reduced each time?	0 K to 20 K	5 K	Adjustment only if, for flow temperature reduction, “direct normal operat.” has not been selected. <sup>4)</sup>
	Do you wish to change the switching programme?	yes, no	no	When selecting “yes” the system jumps to the heating circuit switching program.
	Should the switching programme be optimised?	yes, no	no	Start and stop times are automatically adjusted according to the outside temperature, room temperature and building type (heat storage capacity).
	What reduction mode should be used for holiday?	Outdoor setback mode, reduced operation, Room setback mode, shut-down mode	Outdoor setback mode	See page 33.  Adjustment “Room setback mode” only if a remote control (e.g. RC2x) has been allocated to the heating circuit.  If “reduced operation” has been selected, the standard night temperature will be applied.
	What outside temp. should be used?	– 20 °C to +10 °C	5 °C	Temperature threshold for outdoor setback mode (→ page 33). Adjustment only if setback mode for holiday was set to “Outdoor setback mode.”

Tab. 12 Navigator for service menu SETTINGS\HTG. CIRC. 1

- 1) The setting range can be limited, subject to boiler.
- 2) Not possible or available on boilers with UBA1.x or DBA.

### 6.3.1 Assignment of programming unit/remote control unit in the software

This function is not available with boilers with UBA1.x and DBA.

Example: heating system with heating circuit 1 and heating circuit 2 (→ page 11)

Alternative	Setting: Which operating unit is assigned to the heating circuit?	Effect
<b>A</b>	HC 1 = RC35, HC 2 = RC35 (→ Fig. 2, [1], page 11)	Same room temperatures for HC 1 and HC 2
<b>B</b>	HC 1 = none, HC 2 = RC35 (→ Fig. 2, [1], page 11)	Room temperatures for HC 1 and HC 2 can be set separately
<b>C</b>	HC 1 = RC2x, HC 2 = RC35 (→ Fig. 2, [2], page 11)	Room temperatures for HC 1 and HC 2 separately adjustable; adjust the room temperature for HC 1 at the RC2x

Tab. 13 Settings for room temperature depending on programming unit

### 6.3.2 Control mode (outside temp. contr./room influence)

The temperature of the heating water in the boiler is defined by the heating curve in the Logamatic control unit. You can select whether this heating curve will be influenced solely by the outside temperature, or by a mixture of outside temperature and room temperature.

- **outside temp. contr.:** If this setting is entered, the boiler temperature calculated in the control unit will be regulated by variation in the adjusted outside temperature in combination with selected settings for set room temperature, offset, design temperature and minimum outside temperature. This temperature is then delivered to the radiators or underfloor heating system by means of permanent operation of the heating circuit pump.  
The only circumstances in which this setting can result in the heating circuit pump being switched off are summer mode, night setback (subject to the selected setback mode) or DHW mode (only with DHW priority).
- **outside temp. contr. with room temperature hook-up** (factory setting): this form of control functions like a pure weather-compensated control with the difference that parameter **maximum room influence** enables the determination whether and to what extent the room temperature can influence the heating curve.  
The programming unit/remote control must be installed in a reference room to ensure that a representative room temperature is captured.  
The higher the parameter is set, the higher the proportion of the room temperature effect on the heating curve (factory setting 0 Kelvin). This applies when the room temperature exceeds or falls below the set room temperature. If the **maximum room influence** parameter is set to **0**, the heating characteristics will be controlled solely by outside temperature.

### 6.3.3 Heating curve

Parameters: design temperature, maximum and minimum flow temperature and room temperature offset (parallel offset)

The heating curve is the basis for economical and comfortable operation of the heating system with weather-compensated control. To calculate this curve, the Logamatic control system requires you to enter a number of parameters for the heating system, from which it automatically calculates the optimum heating curve by means of a mathematical formula, taking the adjusted outside temperature and room control temperature into account.

The room control temperature is an internal operand which is a combination of the required room temperature (set room temperature) and room influence.

This can be used by the user to influence the heating curve directly by varying the set room temperature.

The heating curve (→ Fig. 7, page 33) is generally determined by its base and end points. The base point is located at 20 °C flow temperature at a room temperature of 20 °C with an adjusted outside temperature of 20 °C. The end point of the heating curve must be set in accordance with the design temperature of the heating system.

The two parameters **minimum outside temperature** (the lowest outside temperature to be expected in a region, page 25) and **std. temp.** (the flow temperature that should be reached at minimum outside temperature) are crucial for the heating curve (level/slope) (→ Fig. 7, left).



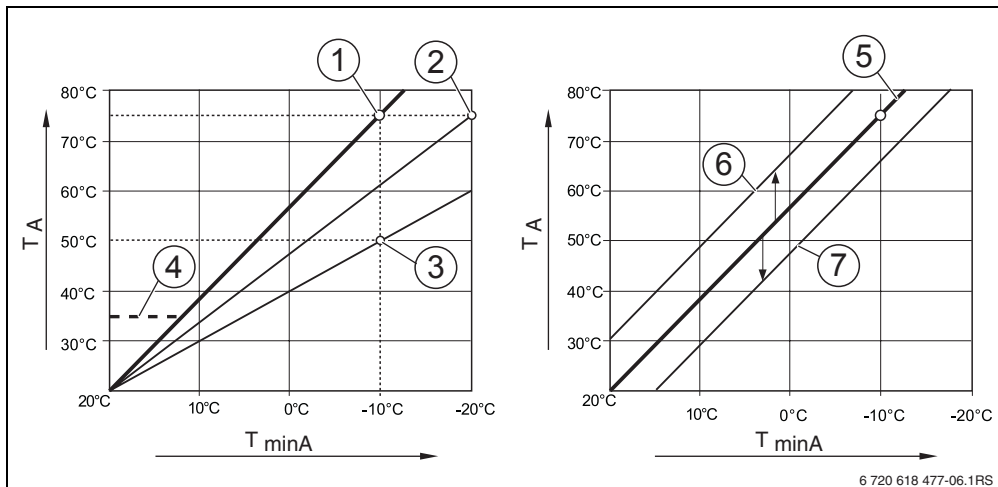
The X-axis of the heating curve graph refers to the range from +20 °C to – 20 °C. For parameter **std. temp.** the minimum outside temperature set under system data is shown by a circle. However, if a minimum outside temperature below – 20 °C is entered, then the depiction is no longer accurate (the circle then lies away from the heating curve).

---

The **minimum flow temperature** parameter can be used to define a minimum set value (→ Fig. 7, [4], page 33). The burner starts again if the set value is no longer achieved.

The heating curve is offset in parallel either up or down by adjusting parameter **rm. tmp. offset** and/ or the set room temperature (→ Fig. 7, right, page 33). Setting the offset may be advisable should the room temperature measured by a thermometer deviate from the selected set value.





6 720 618 477-06.1RS

Fig. 7 Setting the heating curve. Left: setting the gradient by means of design temperature and minimum outside temperature. Right: parallel offset possible by means of offset or set room temperature.

**T<sub>minA</sub>** Minimum outside temperature

**T<sub>A</sub>** Design temperature (flow temperature that should be achieved at min. outside temperature)

**1** Setting: design temperature 75 °C, minimum outside temperature – 10 °C (standard curve)

**2** Setting: design temperature 75 °C, minimum outside temperature – 20 °C

**3** Setting: design temperature 50 °C, minimum outside temperature – 10 °C

**4** Setting: minimum flow temperature 35 °C

**5** Setting: design temperature 75 °C, minimum outside temperature – 10 °C (standard curve)

**6** Parallel offset of standard curve by changing the offset +3 or by increasing the set room temperature

**7** Parallel offset of the standard curve by changing the offset – 3 or by reducing the set room temperature

### 6.3.4 Setback modes (night setback)

There are a number of different setback modes available, which allow night setback to be adjusted to suit the differing needs of the user:

- **reduced operation:** the rooms are maintained at a reasonable temperature at night by constant heating operation (pump runs constantly). A set room temperature for nighttime can be set. It is at least 1 K lower than the set day temperature. The heating curve is calculated in accordance with these details.

We recommend these settings for an underfloor heating system.

- **shut-down mode:** boiler and heating circuit pump are off, frost protection is active. The pump only starts in frost protection mode.

This setting is not recommended if there is a risk that the building would cool down too severely.

- **Room setback mode:** The heating system operates as if in setback mode (as described under “reduced operation”), if the room temperature falls below the selected night temperature (set value). Boiler and heating circuit pump stop (as described under setback mode “shut-down mode”) if the room temperature exceeds the set night temperature by more than 1 K. This setback mode is only possible if a programming unit/remote control is installed in a representative room (reference room) or if the room temperature is captured by an external room temperature sensor.
- **Outdoor setback mode:** The heating system operates as in reduced heating mode (as described under setback mode “reduced operation”) if the adjusted outside temperature does not reach the value of an adjustable outside temperature threshold. The heating system remains off above this threshold (as described under setback mode “shut-down mode”). This setback mode is suitable for heating circuits which do not have their own programming unit / remote control unit. The operating mode protects the rooms from cooling down too much once a certain outside temperature is reached.

### 6.3.5 Frost protection

The frost protection function offers the following options:

- **no frost protection** (frost protection is switched off).
- **outside temp.** (outside temperature sensor required) The heating circuit pump starts automatically if the outside temperature falls below the adjustable frost protection temperature threshold.
- **room temperature** (room temperature sensor of the RC35 or RC2x) The heating circuit pump starts automatically if the room temperature falls below the permanently set value of 5 °C. The heating circuit pump stops automatically if the room temperature rises above 7 °C.



#### **CAUTION:** System damage due to frost!

The settings **no frost protection** and **room temperature** provide either no frost protection or inadequate frost protection. When these settings are selected, the display shows a message indicating the risk of freezing.

► For reliable frost protection, use the **outside temp.** setting.



The setting **room temperature** offers no absolute frost protection, as lines routed through external walls may freeze up, for example, although the temperature in the reference room may be significantly above 5 °C.

### At what outside temp. should reduction be interrupted?

EN 12831 requires that, for the maintenance of a level of comfortable heat, heating areas and heat sources be designed to deliver a specific output if the heating system cools down to a specific value through night setback.

In parameter **At what outside temp. should reduction be interrupted?**, you can set an outside temperature threshold (relative to the adjusted outside temperature, → page 24).

Fig. 8 shows how the frost protection function works, with and without this parameter activated. Settings selected: frost protection by **outside temp.**; **frost protection temp. 5 °C**.

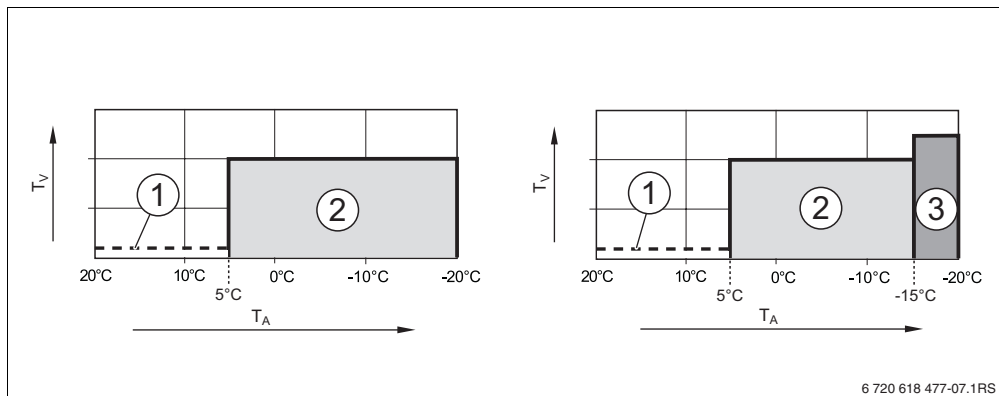


Fig. 8 Effects of the parameter "At what outside temp. should reduction be interrupted?".  
Left: parameter set "OFF" (factory setting). Right: parameter set to -15 °C.

- T<sub>A</sub>** Outside temperature
- T<sub>V</sub>** Flow temperature
- 1** Standby
- 2** Reduced mode (at set nighttime room temperature)
- 3** Heating mode (at set daytime room temperature)

The heating system changes from reduced mode to standard heating mode [3] if the outside temperature falls below -15 °C. This allows smaller heating surfaces to be utilised.

## 6.4 DHW




**WARNING:** Risk of scalding at the hot water draw-off points.

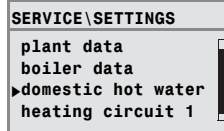
There is a risk of scalding at the hot water draw-off points if DHW temperatures can be set above 60 °C and during thermal disinfection.

- Advise customers that they should only draw off mixed water.

► Turn rotary selector  anti-clockwise until DHW is selected.

► Press  to select **domestic hot water**.

Menu **SETTINGS\DHW** opens.



Menu item	Input range	Factory setting	Other information
Have you installed domestic hot water?	yes, no	no	DHW cannot be uninstalled in the case of boilers with DBA.
Limiting value for maximum dom. hot water temp. setting:	60 °C to 80 °C	60 °C	Subject to the boiler in use, a the maximum possible set DHW temperature is limited to 60 °C.
To which temperature should your domestic hot water be heated?	30 °C to 80 °C	60 °C	If the limit has been set to > 60 °C, this higher value can also be selected in the “USER MENU”.
What should be used for domestic hot water heating?	3-way switching valve, cylinder primary pump	3-way switching valve	<sup>1)</sup>
Do you wish to change the dom. hot water switching programme?	yes, no	no	When selecting “yes” the system jumps to the DHW switching program.

Tab. 14 Navigator for service menu **SETTINGS\DHW**

Menu item		Input range	Factory setting	Other information
<b>DHW circulation<sup>2)3)</sup></b>				
	Is a circulation pump installed?	yes, no	no	
	How frequently should the circul. pump be switched on per hour?	once for 3 minutes, twice for 3 minutes, 3 times for 3 minutes, 4 times for 3 minutes, 5 times for 3 minutes, 6 times for 3 minutes, permanent operation	Twice for 3 minutes	
	switch on circ. pump			Graphical display of number of times the pump is switched on per hour.
	Do you wish to change the circulation switching programme?	yes, no	no	When selecting "yes" the system jumps to the DHW circulation switching program.
<b>Thermal disinfection<sup>2)</sup></b>				
	Should a thermal disinfection be carried out?	yes, no	no	
	What temperature should be used for thermal disinfection?	60 °C to 80 °C <sup>4)</sup>	70 °C	At temperatures above 60 °C there is a risk of scalding at the draw-off points during and after thermal disinfection!
	On which day should the thermal disinfection be performed?	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday, daily	Tuesday	
	At what time of day should the th. disinfection be performed?	0:00h to 23:00h	1:00h	Times entered must be whole hours only (no minutes).



Tab. 14 Navigator for service menu SETTINGS\DHW

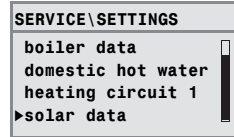
Menu item	Input range	Factory setting	Other information
Should the LED of the single charge key be activated?	yes, no	yes	The heating once only function is retained, but is no longer indicated by the LED. <sup>5)</sup>
Start delay for preheated DHW (e.g. solar):	OFF, 1 sec. to 50 sec.	OFF	This function depends on the boiler used.

Tab. 14 Navigator for service menu *SETTINGS\DHW*

- 1) Not possible or available on boilers with UBA1.x, UBA-H3 or DBA.
- 2) Not possible or available on boilers with UBA1.x or DBA.
- 3) On boilers with UBA-H3 subject to the availability of the PZ output (e.g. with module LM10).
- 4) Subject to the boiler in use, the temperature is permanently fixed and cannot be modified.
- 5) Not possible or available on boilers with UBA1.x.

# 6.5 Solar data

- ▶ Turn rotary selector  anti-clockwise, until **solar data**<sup>1)</sup> is selected.
- ▶ Press  to select **solar data**.  
Menu **SETTINGS\SOLAR** opens.



Menu item	Input range	Factory setting	Other information
What is the max. stor. cylinder temp. of the solar system?	30 °C to 90 °C	60 °C	1)
What temp. must the storage cylinder not fall below?	30 °C to 54 °C, OFF	OFF	1)
What is the minimum pump rating?	20 % to 100 %	100 %	1)



Tab. 15 Navigator for service menu\Settings\Solar data

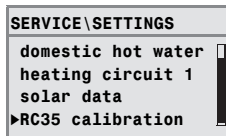
1) Not possible or not available with boilers with UBA1.x or DBA.



For explanations of the settings, see the documentation for the solar module.

## 6.6 RC35 calibration

- Turn rotary selector  anti-clockwise, until **RC35 calibration** is selected.
- Press  to select **RC35 calibration**.  
Menu **SETTINGS\CALIB. RC35** opens.



Menu item	Input range	Factory setting	Other information
RC35 calibration	– 5.0 K to +5.0 K	0.0 K	

Tab. 16 Navigator for service menu *SETTINGS\CALIB. RC35*

### Calibrating the displayed room temperature (calibration)

If there is a separate thermometer near the programming unit, it may show a different room temperature to that shown on the programming unit. You can use this function to adjust (“calibrate”) the programming unit to match the thermometer.

Before calibrating the room temperature, consider the following:

- Is the thermometer more accurate than the programming unit?
- Is the thermometer located close to programming unit so that they are both subject to the same heat influences (e.g. sunlight, fireplace)?



A thermometer may indicate temperature fluctuations more slowly or rapidly than the programming unit.



- Therefore, never calibrate the programming unit during phases when your heating system is cooling down or heating up.

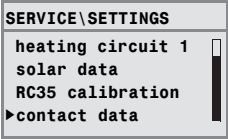
Example: if the thermometer is showing a temperature 0.5 °C higher than the programming unit, enter **+0.5 K** as the calibration value.



### 6.7 Contact details

Contact details are automatically displayed to the end user if a fault develops.

- ▶ Turn rotary selector  anti-clockwise, until **contact data** is selected.
- ▶ Press  to select **contact data**.  
Menu **SETTING\CONTACT** opens.








Menu item	Input range	Other information
Name and tel. No. of supplier:	<div>-----</div> <div>-----</div>	

Tab. 17 Navigator for service menu SETTING\CONTACT

#### Entering company name and telephone number






Two rows are available, each with 21 characters (capital letters, numbers and some other symbols).

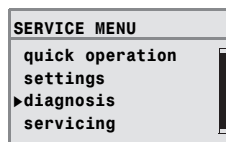
The current cursor position will flash (marked by “\_”).

1. Hold down  and turn rotary selector  at the same time to select another character.  
Release .  
The modified character is saved.
2. Turn rotary selector  anti-clockwise or clockwise to move the cursor.
3. Enter a space to delete a character.
4. Press  to save your entries and leave the menu.

## 7 Diagnosis

The **diagnosis** service menu contains a number of tools for diagnosis:



- function test<sup>1)2)</sup>
  - monitor value
  - error message<sup>3)</sup>
  - htg. charact. curve
  - versions
- ▶ Press  +  +  simultaneously to open the **SERVICE MENU**.
- ▶ Turn rotary selector  anti-clockwise until **diagnosis** is selected.
- ▶ Press  to open the **SERVICE\DIAGNOSIS** menu.




Note that the menu items shown will vary depending on the heating system.

### 7.1 Function test

You can use this menu to activate separate EMS components individually in order to test their functions<sup>1), 2)</sup>. The available functions and the possible settings vary depending on the system installed.

- ▶ Hold down  and simultaneously turn the rotary selector to change the setting:  
e.g. **BURNER OFF** to **BURNER ON**.  
The change takes effect when you release .

FCT. TEST\BOILER	
valve 1 cl. 2 cl.	
ignition	OFF
flame	OFF
flame current	0.0µA
▶BURNER	ON

- ▶ Turn rotary selector  to change between different displays (function test).

FCT. TEST\BOILER	
act. boil. tmp.	60°C
air temperature	32°C
flue gas temp.	78°C
flame	OFF
▶BURNER	OFF

- 1) This function has a limited application on boilers with UBA-H3.
- 2) Not possible or not available with boilers with UBA1.x or DBA.
- 3) Boilers with DBA, UBA1.x or UBA-H3: restricted functionality only.



Observe the information which appears on the display when you switch to menus or enter settings. Press any key or turn the rotary selector to confirm the information.



No settings will be allowed that might result in damage to the components. This is why some settings may not be accepted.

## 7.2 Monitor value

You can use the **monitor value** menu to view the set and actual values for the heating system. The set value will be displayed first and then the actual value. The values displayed for monitoring purposes vary depending on the system installed.








If the values to be displayed do not all fit on the screen, they are displayed as a list. The list can be moved up or down by turning rotary selector.

DIAGNOSIS\MONITOR VALUE	Other information
<b>boiler/burner</b>	
<b>MCM10/cascade</b>	Only in conjunction with MCM10 (instead of "boiler/burner")
<b>boiler<sup>1)</sup></b>	Only in conjunction with MCM10 (instead of "boiler/burner")
<b>Pump module</b>	
<b>hydraulic separator<sup>2)</sup></b>	
<b>domestic hot water</b>	
<b>heating circuit 1</b>	Values are displayed for additional heating circuits, if these are installed.
<b>solar<sup>2)</sup></b>	
<b>module UM10<sup>2)</sup></b>	For solid fuel boilers; EV2 = external interlock (input)
<b>wireless transm.<sup>2)</sup></b>	FB = strength of the wireless signal
<b>bus users<sup>2)</sup></b>	

Tab. 18 Navigator for service menu DIAGNOSIS\MON. VALUE

- 1) Depending on the boiler used, the monitor values are displayed in individual masks. Call up the monitor values for the next boiler by turning the rotary selector. Symbol present = the corresponding function is active. Explanation of symbols → Tab. 19, page 44.
- 2) Not possible or available on boilers with UBA1.x or DBA.

	Burner operational
	Heating demand
	DHW demand
	Flue gas test active
	Service required / fault has occurred

Tab. 19 Explanation of the symbols for footnote 1), page 43

### 7.3 Error message


You can use the **error message** menu to view the most recent faults in the fault memory, in order to investigate a fault, for example.

Faults are categorised as follows:

- **current errors** are all unresolved faults currently present in the system. These can be one of the following types: **locking**, **blocking** or **plant error**.
- **locking fault**<sup>1)</sup>: Manually reset the heating system after the fault has been removed. For this, press **RESET** on the boiler.
- **blocking fault**<sup>1)</sup>: With blocking faults, the heating system continues to operate automatically, as soon as the fault has been removed.
- **plant errors** relating to the heating system are logged in the RC35. Exceptions are boiler or burner faults that are either "locking" or "blocking" faults. The heating system keeps operating as much as possible during the fault; a reset is not required.




For a list of the locking and blocking faults, which vary depending on the boiler, see the installation and maintenance instructions for the boiler.

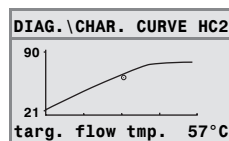
- Turn rotary selector  to show the next message.

1) Not possible on boilers with UBA1.x, DBA or UBA-H3

## 7.4 Heating curve


With the **htg. charact. curve** you can graphically display the heating curves of individual heating circuits.

- If the system comprises several heating circuits:  
Turn rotary selector  to display the heating curve of the next heating circuit.



## 7.5 Versions

You can use the **INFO\VERSIONS** menu to view the software versions for heating system components.

- If the information cannot be shown in one display:  
Turn rotary selector  to scroll to the next display.


INFO\VERSIONS	
RC35	1.02
UBA1.5	1.21

## 8 Service

With the **servicing** menu (not possible on boilers with UBA1.x and DBA) you can set a service interval as well as view and reset current service messages.

The interval can expire after a certain number of hours run or when a specific date is reached<sup>1)</sup>. The RC35 programming unit will then show a service message so that the customer can notify you to arrange an appointment.

Service messages are indicated by an **Hxx** code, e.g. H07.

SERVICE MENU\ SERVICE	Menu item	Input range	Factory setting	Other information
service interval	How should servicing messages be triggered?	No messages, by date, by operation hours	No messages	When selecting “date” or “operating hours” the system changes automatically to the corresponding setting.
	For “by date”: Annual servicing, starting on:	01.01.2000	01.01.2000	To set the date: hold down  and turn rotary selector at the same time.
	For “by operation hours”: Boiler operation hours until next servicing message	1.000 h to 6.000 h	1.000 h	Number of hours of operation with burner switched on.
current messages	Message/code			To view further messages: turn rotary selector.
RESET servicing	Do you wish to reset the servicing messages?	no, yes	no	When selecting “yes” all service messages are reset. Observe the information on the display.

Tab. 20 Navigator for SERVICE MENU\SERVICE

1) Depending on the boiler used, additional service intervals may be able to be set at the boiler programming unit.

## 9 Reset





The **RESET** menu allows you to reset

- all parameters to their factory setting<sup>1)</sup>,
- the fault list<sup>1)</sup>,
- the service message<sup>2)</sup> and
- the hours run<sup>2)</sup>.



Following a reset to factory settings, you may need to adjust the parameters in accordance with the actual system configuration.

---

- ▶ Turn rotary selector  to select a menu, e.g. **error list**.
- ▶ Press  to change to the display, e.g. **Do you wish to reset the error list?**
- ▶ Press  and turn rotary selector  to set the display to **yes**.  
The reset is implemented after you release the button.  
An appropriate message is shown during the reset; this will close automatically.
- ▶ Once reset is complete: confirm the new message by pressing any key.

---

1) On boilers with UBA1.x, DBA or UBA-H3 only all RC35 parameters are reset, but not the combustion controller parameters.

2) This function is not available with boilers with UBA1.x or DBA.

# 10 Troubleshooting

This fault table lists possible system faults, i.e. faults in EMS components. The heating system keeps operating as long as possible in the event of a system fault; in other words, heating can continue.



Only use original Buderus spare parts. Losses caused by the use of parts not supplied by Buderus are excluded from the Buderus warranty.



The fault displays are subject to the specific type of boiler used.

## Abbreviations used:

SC = Fault code; x = heating circuit with number x, e.g. A23 for heating circuit 3

FC = Fault code

HCx = Heating circuit with the number x

SC	FC	Events display	Effect on control characteristics	Possible cause	Remedy
A01	800	Outside sensor is defect.	The minimum outside temperature is applied.	Temperature sensor is incorrectly connected or fitted.  Breakage or short circuit in the sensor lead.  Temperature sensor is faulty.	► Check sensor connection and sensor lead. ► Check sensor mounting. ► Compare resistance values with the sensor curve.
A01	808	DHW sensor 1 is defect.	DHW heating has stopped.	Temperature sensor is incorrectly connected or fitted.	► Check sensor connection and sensor lead. ► Check sensor mounting. ► Compare resistance values with the sensor curve.
A01	809	DHW sensor 2 is defect.		Breakage or short circuit in the sensor lead.  Temperature sensor is faulty.	

Tab. 21 Fault table



SC	FC	Events display	Effect on control characteristics	Possible cause	Remedy
A01	810	<b>DHW stays cold.</b>	The system continuously tries to heat the DHW cylinder to the set DHW temperature.  Priority DHW is switched off once the error message has been displayed.	Constant drawing or system leak.	► Stop any leaks.
				Temperature sensor is incorrectly connected or fitted.	► Check sensor connection and sensor lead.
				Breakage or short circuit in the sensor lead.	► Check sensor mounting.
				Temperature sensor faulty.	► Compare resistance values with the sensor curve.
A01	811	<b>Thermal disinfection was unsuccessful.</b>	Thermal disinfection has been interrupted.	Cylinder primary pump incorrectly connected or faulty.	► Check that the cylinder primary pump is working, e.g. by carrying out a function test.
				Too much water drawn during thermal disinfection.	► Select thermal disinfection at a time when no additional heat demand is made.
				Boiler output is too low for heat to be used simultaneously for other purposes (e.g. second heating circuit).	
				Temperature sensor is incorrectly connected or fitted.	► Check sensor connection and sensor lead.
				Breakage or short circuit in the sensor lead.	► Check sensor mounting.
				Temperature sensor is faulty.	► Compare resistance values with the sensor curve.
				Cylinder primary pump faulty.	► Check that the cylinder primary pump is working, e.g. by carrying out a function test.

Tab. 21 Fault table

SC	FC	Events display	Effect on control characteristics	Possible cause	Remedy
A01	815	<b>Low loss header sensor faulty.</b>	This may result in the following heating circuits receiving insufficient heat.	<p>Temperature sensor is incorrectly connected or fitted.</p> <p>Breakage or short circuit in the sensor lead.</p> <p>Temperature sensor is faulty.</p>	<p>► Check sensor connection and sensor lead.</p> <p>► Check sensor mounting.</p> <p>► Compare resistance values with the sensor curve.</p>
A01	816	<b>No communication with UBA/MC10, DBA, UBA-H3 or MCM10.</b>	The boiler no longer receives heat demand signals; the heating system may no longer generate heat.	<p>EMS BUS system is overloaded.</p> <p>UBA3/MC10, DBA, UBA-H3 or MCM10 is faulty.</p>	<p>► Reset by switching the heating system ON and OFF.</p> <p>► If necessary inform your local service centre.</p>
A01	828	<b>Water pressure sensor is defect.</b>		Digital water pressure sensor is faulty.	► Replace the water pressure sensor.
A02	816	<b>No communication with BC10.</b>	BC10 settings are no longer adopted by RCxx devices.	Contact problem on BC10 or BC10 is faulty.	<p>► Check BC10 connection.</p> <p>► Replace BC10 if required.</p>
A11	801	<b>internal error</b>	Heating system is in emergency mode.	Internal runtime error in RC35.	► Replace RC35.
A11	802	<b>Time is not yet set.</b>	<p>Restricted functionality for:</p> <ul style="list-style-type: none"> <li>• All switching programs</li> <li>• Error messages</li> </ul>	Time details are missing, e.g. due to lengthy power failure.	► Enter the current time.
A11	803	<b>Date is not yet set.</b>	<p>Restricted functionality for:</p> <ul style="list-style-type: none"> <li>• All switching programs</li> <li>• Holiday function</li> <li>• Error messages</li> </ul>	Date details are missing, e.g. due to lengthy power failure.	► Enter the current date.

Tab. 21 Fault table

SC	FC	Events display	Effect on control characteristics	Possible cause	Remedy
A11	804	<b>internal error</b>	Heating system is in emergency mode.	Internal runtime error in RC35.	► Replace RC35.
A11	806	<b>Room temperature sensor is defect.</b>	<p>Since the actual room temperature is missing, the following cannot function:</p> <ul style="list-style-type: none"> <li>• Room influence (for weather-compensated control)</li> <li>• Switching point optimisation</li> </ul> <p>In the case of room temperature-dependent control, the system is regulated to max. temperature for HCx.</p>	Faulty integral temperature sensor on the heating circuit's programming unit / remote control unit.	► Replace the remote control unit.
A11	816	<b>No communication with RC35.</b>	RC20/RF unable to transmit data to RC35. Room temperature control therefore not possible for HC.	RC20/RF has incorrect address.	► Check the address (parameter P1) in RC20/RF.
				RC35 not present or not connected correctly.	► Check connection to RC35.
A12	815	<b>Low loss header sensor faulty.</b>	This may result in the following heating circuits receiving insufficient heat.	<p>Temperature sensor is incorrectly connected or fitted.</p> <p>Breakage or short circuit in the sensor lead.</p> <p>Temperature sensor faulty.</p>	<p>► Check sensor connection and sensor lead.</p> <p>► Check sensor mounting.</p> <p>► Compare resistance values with the sensor curve.</p>
A12	816	<b>No communication with separator module.</b>	Heating circuit pump for heating circuit 1 is permanently activated.	WM10 or BUS incorrectly connected or faulty.	► Check connections on WM10 and BUS cable.
				RC35 does not recognise WM10.	► Replace WM10.

Tab. 21 Fault table

SC	FC	Events display	Effect on control characteristics	Possible cause	Remedy
A18	825	<b>Two master operating units in system.</b>	RC35 and RC2x regulate both heating circuits and DHW. Subject to the selected heating programs and the required room temperature, the heating system may no longer function correctly.  DHW heating is malfunctioning.	RC2x and RC35 are both logged on as master.	► Change parameter P1 in RC2x or remove RC35 from the EMS BUS.
A2x	806	<b>Room temperature for HCx is defect.</b>	Since the actual room temperature is missing, the following cannot function: <ul style="list-style-type: none"> <li>• Room influence (for weather-compensated control)</li> <li>• Switching point optimisation</li> </ul> In the case of room temperature-dependent control, the system is regulated to max. temperature for HCx.	Faulty integral temperature sensor on the heating circuit's programming unit / remote control unit.	► Replace the remote control unit.
A2x	816	<b>No communication with operating unit HCx.</b>	Since the actual room temperature is missing, the following cannot function: <ul style="list-style-type: none"> <li>• Room influence</li> <li>• Switching point optimisation</li> </ul>	RC2x incorrectly addressed, wired or faulty.  Heating circuit has not been registered on the RFM20.	<ul style="list-style-type: none"> <li>► Check address in RC2x.</li> <li>► Check function and connection of the remote control unit.</li> <li>► Replace the remote control unit.</li> </ul>

Tab. 21 Fault table

SC	FC	Events display	Effect on control characteristics	Possible cause	Remedy
A2x	829	RC20/RF as remote control.	RC20/RF unable to transmit data to RC35. Room temperature control therefore not possible for this HC.	RC20/RF address incorrectly allocated in RC35 or not installed in RC35.	<ul style="list-style-type: none"> <li>► Set the <b>operating unit</b> parameter in RC35 to RC20/RF.</li> <li>► Check the assignment of the RC20/RF.</li> </ul>
A2x	830	Low battery for wireless oper. unit HCx.	No effect if the battery is replaced in time.	Battery in RC20/RF for HCx is low.	<ul style="list-style-type: none"> <li>► Replace batteries.</li> </ul>
A2x	839	No wireless comm. with oper. unit HCx. Wireless malfunction.	<p>Since the actual room temperature is missing, the following cannot function:</p> <ul style="list-style-type: none"> <li>• Room influence</li> <li>• Switching point optimisation</li> </ul> <p>The RFM20 operates with the last values set on the remote control unit.</p>	RC20/RF is outside the range of reception.	<ul style="list-style-type: none"> <li>► Bring the RC20/RF within the range of reception.</li> </ul>
				Heating system has been switched off.	<ul style="list-style-type: none"> <li>► Switch on the heating system.</li> </ul>
				When RFM20 was replaced, the RC20/RF was not registered on the new RFM20.	<ul style="list-style-type: none"> <li>► Register the RC20/RF (see documentation for RC20/RF).</li> </ul>
A2x	842	Frost prot.selected but no rem.contr. HCx.	<p>Since the actual room temperature is missing, the following cannot function:</p> <ul style="list-style-type: none"> <li>• Room influence</li> <li>• Switching point optimisation</li> </ul>	No programming unit / remote control unit assigned, although <b>frost protection</b> is set to <b>room temperature</b> .	<ul style="list-style-type: none"> <li>► Check the <b>operating unit</b> parameter.</li> <li>► Possibly change over <b>frost protection</b> to <b>outside temp.</b></li> </ul>
A2x	843	Room control selected but no rem.contr. HCx.	EMS operates with the last values set on the remote control unit.	No programming unit / remote control unit assigned, although <b>room temp. controlled</b> is set.	<ul style="list-style-type: none"> <li>► Check the <b>operating unit</b> parameter.</li> <li>► Possibly change over to <b>outside temp. contr.</b></li> </ul>

Tab. 21 Fault table

SC	FC	Events display	Effect on control characteristics	Possible cause	Remedy
A3x	807	HCx flow sensor is defect.	<p>The heating circuit pump continues to be controlled with reference to the default value.</p> <p>The actuator is switched to zero volt and remains in the last active state (manually adjustable).</p>	<p>Temperature sensor is incorrectly connected or fitted.</p> <p>Breakage or short circuit in the sensor lead.</p> <p>Temperature sensor is faulty.</p>	<p>► Check sensor connection and sensor lead.</p> <p>► Check sensor mounting.</p> <p>► Compare resistance values with the sensor curve.</p>
A3x	816	No communication with HCx mixer module.	<p>Heating circuit x cannot be operated correctly.</p> <p>MM10 and actuator (mixer) are running independently in emergency mode.</p> <p>Heating circuit pump is being continuously actuated.</p> <p>Monitor data in RC35 is invalid.</p>	<p>Heating circuit addresses on MM10 and RC35 do not match.</p> <p>MM10 or BUS cable incorrectly connected or faulty.</p> <p>RC35 does not recognise MM10.</p>	<p>► Check rotary coding switch on MM10.</p> <p>► Check connections on MM10 and BUS cable.</p> <p>► Replace MM10.</p>
Hxx		Service message, no plant error.	The heating system keeps operating as far as possible.	Example: service interval has expired.	Maintenance is required, see boiler documentation.

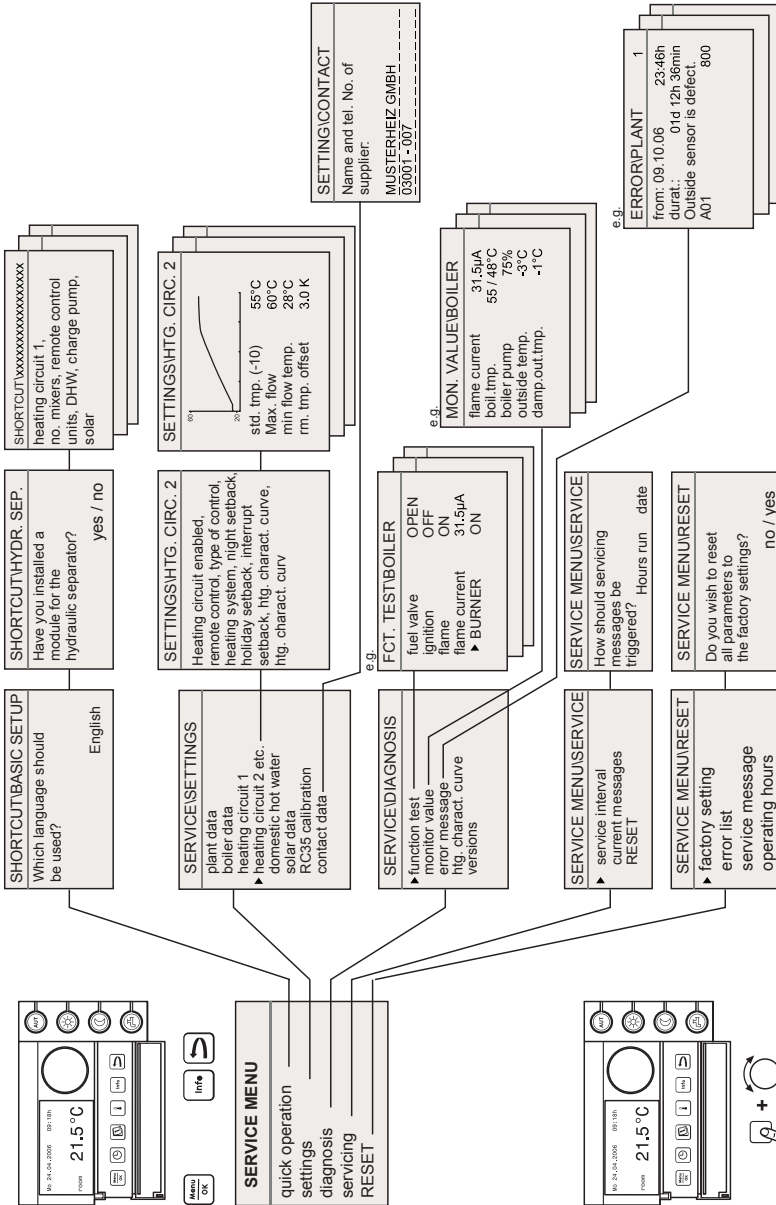
Tab. 21 Fault table



System faults do not need resetting. Contact your local service engineer or your Buderus sales office if you cannot remedy the system fault yourself.  
Other faults are described in the documents relating to the individual boiler.

# 11 Service menu RC35

## RC35 Service menu



6720 618 477-09.1TL

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# Notes



# Notes

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Bosch Thermotechnology Ltd.

**Buderus**