

Logamatic EMS RC25 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 RC25 programming unit.

Introduction to the service level

Chapter 5.3 explains in detail the steps needed for programming all settings at the service level. Operation is only briefly dealt with in the following sections.

Display texts

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

1 Key to symbols and safety instructions

1.1 Key to symbols

Warnings



Warnings in this document are framed and identified by a warning triangle 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.

Keywords 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 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 (level 2)

Tab. 1

1.2 Safety instructions

Installation and commissioning

- ▶ Observe these instructions to ensure satisfactory operation.
- ▶ The appliance must only be installed and commissioned by an approved contractor.

Risk to life from electric shock

- ▶ Ensure that electrical connections are only made by authorised electrical contractors.
- ▶ Observe the connection diagram.
- ▶ Before installation, isolate all poles of the power supply. Secure against unintentional reconnection.
- ▶ Never install this appliance in wet rooms.
- ▶ Never connect this appliance to the 230 V mains.

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: remedy any faults immediately.

2 Product information

2.1 Correct use

This programming unit must only be used to operate and control heating systems, when used in conjunction with Buderus EMS or UBA based products.

- ▶ 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 UBA (universal burner controller).

Never operate the programming unit with the control units of the Logamatic 2000/3000/4000 series.

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

2.2 EU Declaration of Conformity

The design and operation of this product conforms to 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 or request a copy from your local Buderus sales office.

2.3 Standard delivery

- Programming unit
- Operating instructions
- Installation and service instructions
- Wall mounting base, fixing material

2.4 Specification

	Unit	RC25
Supply voltage	V	16 V DC
Power consumption	W	0.15
Power consumption with backlighting	W	0.6
Dimensions (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
CE designation		CE

3 Regulations



Observe all standards, directives and requirements of the local power supply utility applicable to the installation and operation of this heating system in the country in which it is used.

Product standards	
Safety of electrical equipment	EN 60335-1
Electromagnetic compatibility (electromagnetic emissions)	EN 50081-1, EN 61000-3-2, EN 61000-3-3
EMC resistance	EN 60730-1, EN 61000-6-2

4 Installation

4.1 Selecting the correct installation location

Installation in the reference room

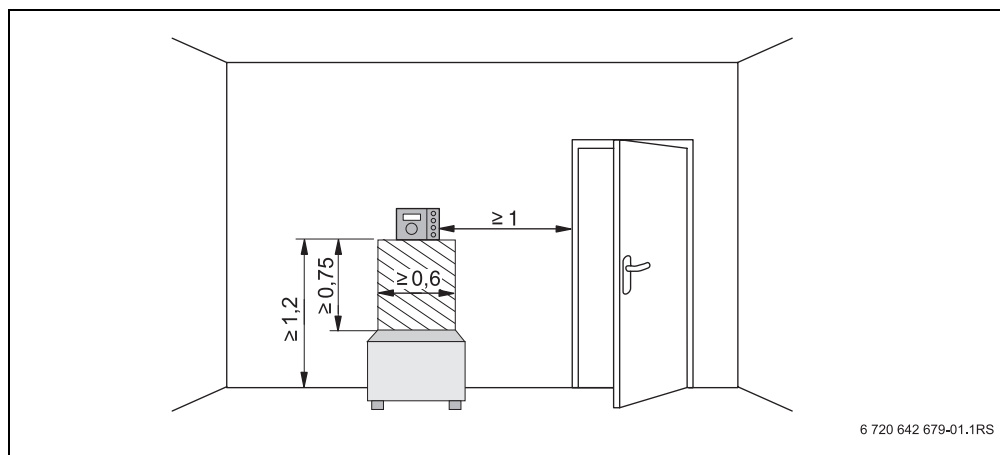
If the system is operated in room temperature-dependent mode, observe the following requirements:

- 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 converting 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 heat demand (e.g. living room).



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Fig. 1 Minimum clearances for installation in the reference room

4.2 Types of installation

The programming unit can be installed in two different ways:

- As the only programming unit in the system (factory setting): the programming unit is installed in the living space or on the boiler.

Example: detached house with one heating circuit. In the UK if DHW is to be controlled an RC35 programming unit will be necessary to comply with part L.

- As a remote control for one heating circuit:¹⁾

The RC25 programming unit is operated in unison with a higher programming unit (e.g. RC35). The RC35 programming unit is installed either in the living space or on the boiler, and regulates one heating circuit (e.g. for the main apartment). The RC25 programming unit captures the room temperature in a separate living area and regulates this second heating circuit. Basic settings for the heating system are made at the RC35. Consequently, these settings become available for the heating circuit with the RC25 programming unit.

Examples: underfloor heating on one floor, radiators on another; or a flat together with a separate living area or clinic.

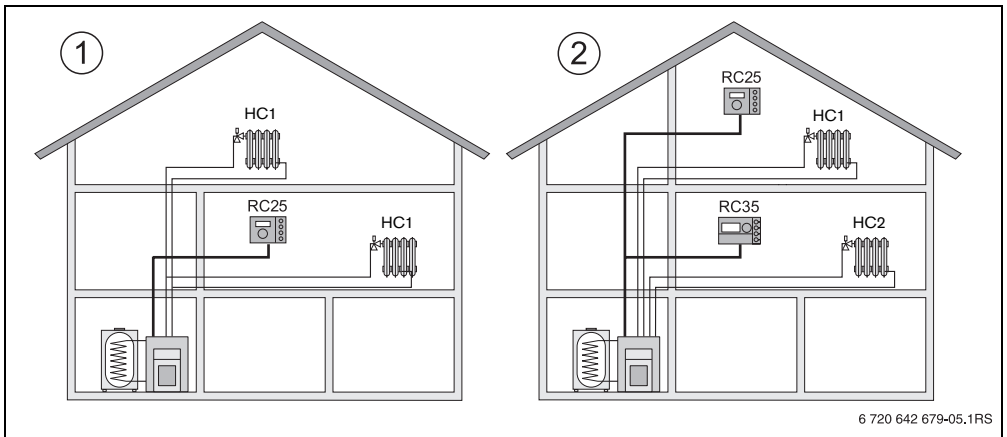


Fig. 2 Options for a heating system with one or two heating circuits

- 1 One programming unit controls one heating circuit. (Must be used in conjunction with an RC35 to comply with part L).
- 2 Each heating circuit has its own programming unit / remote control unit.

1) Not available on boilers with UBA.

4.3 Installation and connection



Only use the wall mounting base with screw terminals.

- ▶ Replace a wall mounting base without screw terminals.

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

When mounting on a flush box, observe 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 [3,4].
- ▶ Fit the wall mounting base.
- ▶ Connect the two-core BUS cable from the Energy Management System (EMS) at terminals "RC" [5].
 - Cable type: 2 x 0.75 mm² (0.5 – 1.5 mm²), max. length 100 m
 - Polarity is irrelevant for the two wires.
- ▶ Do not lay the cables parallel to power cables.

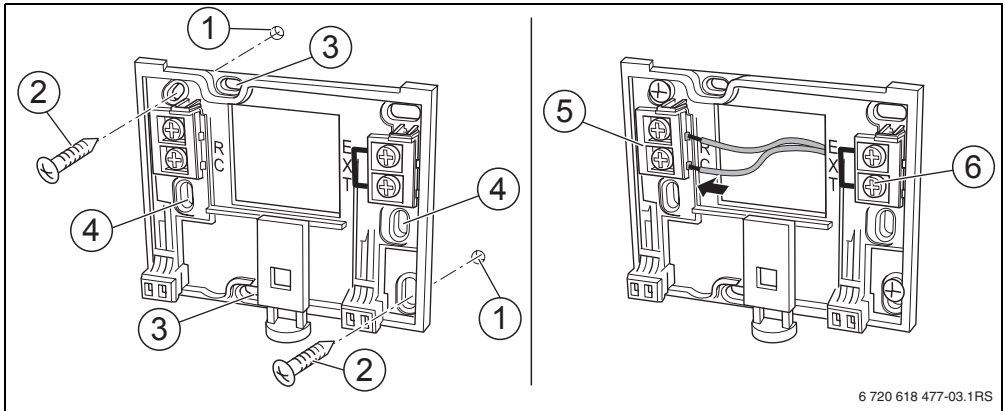


Fig. 3 Mounting the wall mounting base (left) and the electrical connection (right)

- 1 Hole drilled in the wall
- 2 Screws (supplied) for mounting on a finished wall
- 3 Vertical mounting holes for mounting on a flush box
- 4 Horizontal mounting holes for mounting on a flush box
- 5 "RC" connection for EMS (boiler)
- 6 "EXT" connection (no function with the RC25)

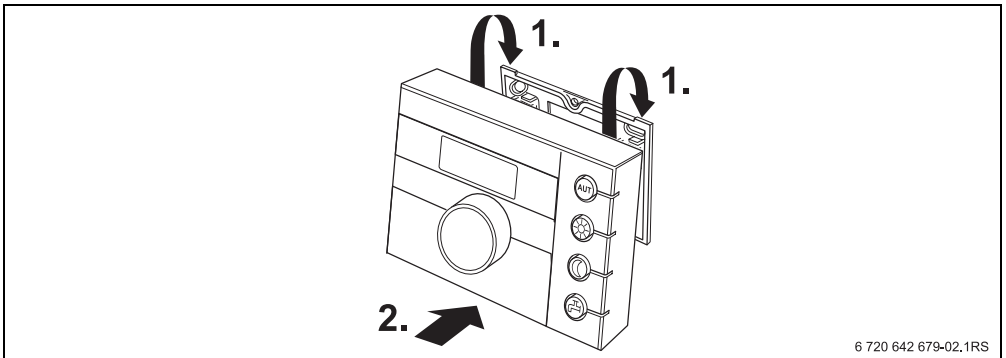


An external room temperature sensor cannot be connected to the "EXT" terminals (→ Fig. 3, [6], page 11). The "EXT" terminals have no function with the RC25 programming unit.

4.4 Hooking in or removing the programming unit

Hooking in the programming unit

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

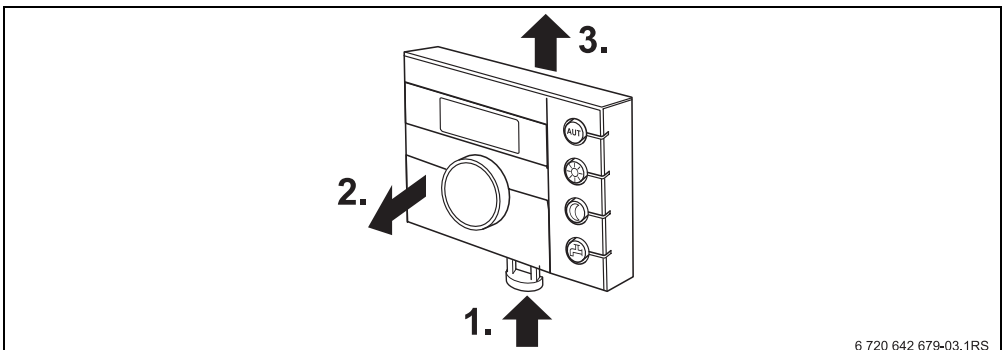


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Fig. 4 Hooking in the programming unit

Removing the programming unit

1. Press the key 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.



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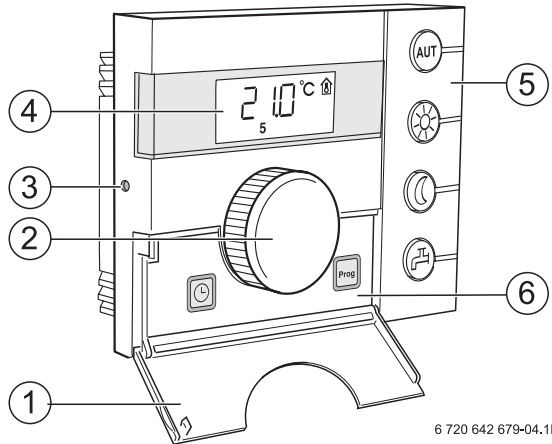
Fig. 5 Removing the programming unit

5 Principles of operation

5.1 Overview of controls





Key to diagram:

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





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5 Keys for basic functions:

-  "AUT" (automatic)
-  "Day mode" (manual)
-  "Night mode" (manual)
-  "DHW"

6 Keys for additional functions:

-  "Prog" (program)
-  "Time"

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 on (factory setting).
- the heating system operates at the set night 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).

Function:

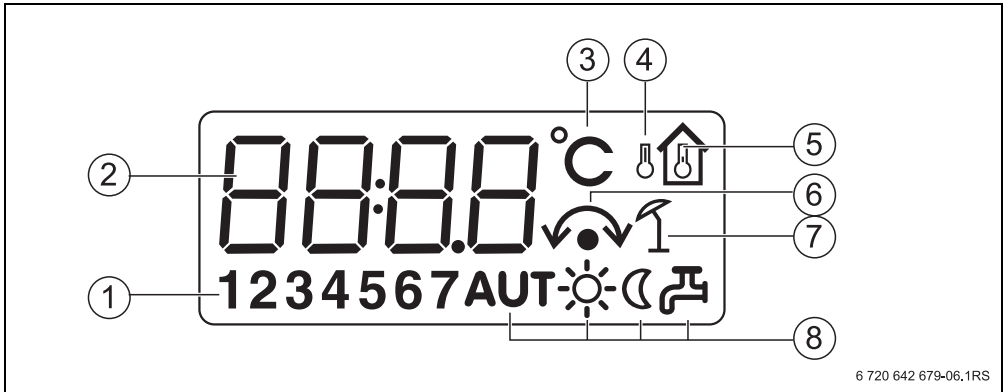
Selecting a heating program

Setting the time

In automatic mode, an additional LED lights up with the "AUT" LED to indicate the current operating status ("day mode" or "night mode"). Exception: in the case of boilers with UBA, only the "AUT" LED illuminates. The "DHW" LED on boilers with UBA will not illuminate.

5.2 Display

The display shows set and actual values and temperature, e.g. the actual room temperature (factory-set to be the permanent display).

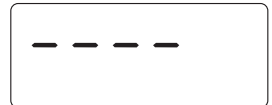


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Fig. 6 Display elements explained








- 1 Day (1 = Mo, 2 = Tu, ...7 = Su)
- 2 Set or actual value/temperature
- 3 "Temperature" display in °C
- 4 "Outside temperature" display
- 5 "Actual room temperature" display
- 6 Display:
 - a) Room temperature can now be adjusted or
 - b) Room temperature has temporarily changed
- 7 "Summer mode" display
- 8 Operating status symbols

The display shows four horizontal bars if you try to change a value which cannot be modified or if an adjustment is not possible.



5.3 Introduction

You can adjust and check the parameters at the service level. The service level is called up using the pin button and the rotary selector. The procedure for operation is always the same:

- ▶ Press pin button .
The service level is called up.
- ▶ Release the pin button.
- ▶ Turn rotary selector  in either direction.
You can scroll through the menu at the service level.
- ▶ Hold down pin button .
The parameter is displayed.
- ▶ Hold down pin button  and simultaneously turn rotary selector .
- ▶ Release the pin button.
The value is saved.
- ▶ Press  or turn rotary selector , until ---- appears, then press the pin button.
The permanent display appears.



The programming unit automatically reverts to its permanent display if no key is pressed within five minutes.

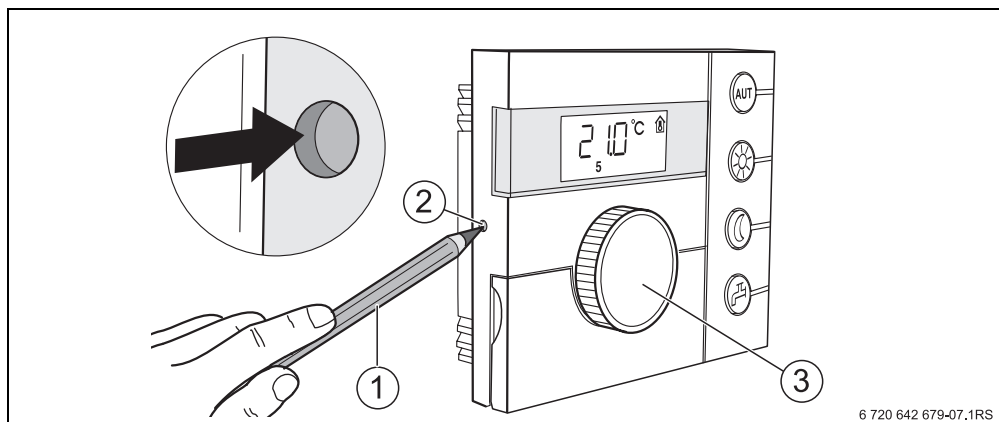


Fig. 7 Pin button

- 1 Pen to press the pin button
- 2 Pin button
- 3 Rotary selector

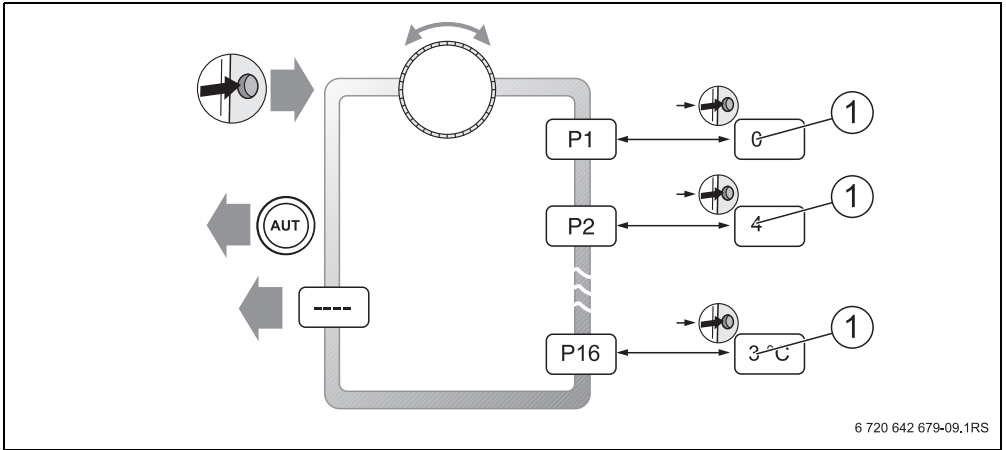


Fig. 8 Service level menu structure

1 Value that can be changed

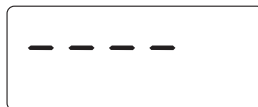
6 Commissioning

6.1 General commissioning/starting

- ▶ To start the heating system: set the ON/OFF switch on the boiler programming unit to 1 (ON).

When the system is switched on the segments ---- in the display and the LEDs flash.

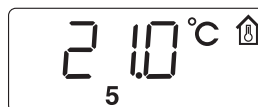
Follow the establishment of a connection and initialisation at the EMS BUS.



When commissioning: during initialisation, select in parameter **P1** "Address" whether the programming unit is to operate on its own or as a remote control.

- ▶ Press pin button and set parameter **P1** "Address".
- ▶ Make further adjustments (→ Chapter 7, page 19).

Following initialisation the programming unit displays the actual room temperature (permanent display).



If initialisation fails, a corresponding fault message is displayed (→ Chapter 8, page 36).

6.2 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 programming unit.
- ▶ After commissioning, complete the setup report (→ Chapter 10, page 41).
- ▶ Explain to the customer how the appliance 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.

6.3 Taking the system out of use/shutdown

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

- ▶ To shut down the heating system: set the ON/OFF switch on the boiler programming unit to 0 (OFF).

6.4 Operating information

EMS BUS subscribers

In a BUS system, only **one subscriber** must be assigned the master function. If only one programming unit (e.g. RC30/RC35) is installed in a heating system, it assumes the master function. Install the RC25 programming unit as a remote control¹⁾ with a set heating circuit address (→ Chapter 7.2, page 22).

Frost protection

- The frost protection function can be set on the programming unit (e.g. RC35) if the RC25 programming unit is installed as a remote control.
- Shutdown is not possible in night mode (temperature setback only) if the RC25 programming unit is the sole programming unit.



NOTICE: System damage due to frost!

There is no secure frost protection if the RC25 programming unit operates as the sole programming unit with room temperature control, and the room temperature is set below 10 °C. Pipes routed through external walls can freeze up even if the temperature inside the reference room is substantially higher than 5 °C on account of external heat sources.

- ▶ Set room temperatures higher than 10 °C.

Pump kick

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. The pump kick is only implemented if the programming unit is installed as a remote control.

1) Function not available on boilers with UBA.

7 Setting the system (programming parameters)

7.1 Parameter overview

Parameter	Function	Displayed
P1	Adjusting the address	always ¹⁾
P2	Heating system: type of control and setback	only if master (P1 = 0)
P3	Calibrating the room temperature (calibration)	always
P4	Installing DHW	only if master (P1 = 0)
P5	Setting pump type for boiler	only if master (P1 = 0) ¹⁾
P6	Setting pump run-on time	only if internal boiler pump (P5 = 1) ¹⁾
P7	Setting permanent display	always
P8	Adjusting the time	only if master (P1 = 0)
P9	Setting thermal disinfection	only if master and P4 = 1) ¹⁾
P10	Displaying the software version	always
P12	Minimum outside temperature	only with weather-compensated mode (P2 > 2)
P13	Maximum flow temperature/design temperature	only if master (P1 = 0)
P14	Maximum room influence	only with weather-compensated mode (P2 > 2)
P15	Summer/winter changeover threshold	only with weather-compensated mode (P2 > 2)
P16	Temperature threshold for outside setback mode	only with outside setback mode (P2 = 4)
----	Exiting the service level	

Tab. 2 Parameter overview

1) Function depends on the boiler used

7.1.1 Types of controls

Room temperature control

With control mode, the programming unit must be fitted in a room that is fairly typical for the home. The programming unit records the room temperature in this “reference room”. Control of the flow temperature is determined by the set room temperature and the recorded room temperature. This means that external temperature influences in the reference room (e.g. an open window, sunlight or heat from a fireplace) will have an effect on the entire home.

Weather-compensated control

The temperature of the heating water in the boiler is defined by the heating curve. You can select whether this heating curve will be influenced solely by the outside temperature, or whether the temperature in the reference room should also have an influence.

- **Purely weather-compensated control:**

The boiler temperature is regulated subject to the actual outside temperature and the set room temperature.

- **Weather-compensated control with room temperature hook-up:**

This type of control is similar to weather-compensated control, except that via parameter **P14** “maximum room influence” you can determine whether and to what extent the room temperature should influence the heating curve.

The programming unit must be installed in a reference room to ensure that a representative room temperature is captured.

The higher this parameter is set, the greater the influence on the heating curve.

The control unit will operate exclusively in weather-compensated mode as long as parameter **P14** “maximum room influence” is set to **0**.

7.1.2 Setting the heating curve

To set the heating curve, parameters **P12** "minimum outside temperature" and **P13** "maximum flow temperature/design temperature" must be set.

Example of set heating curves:

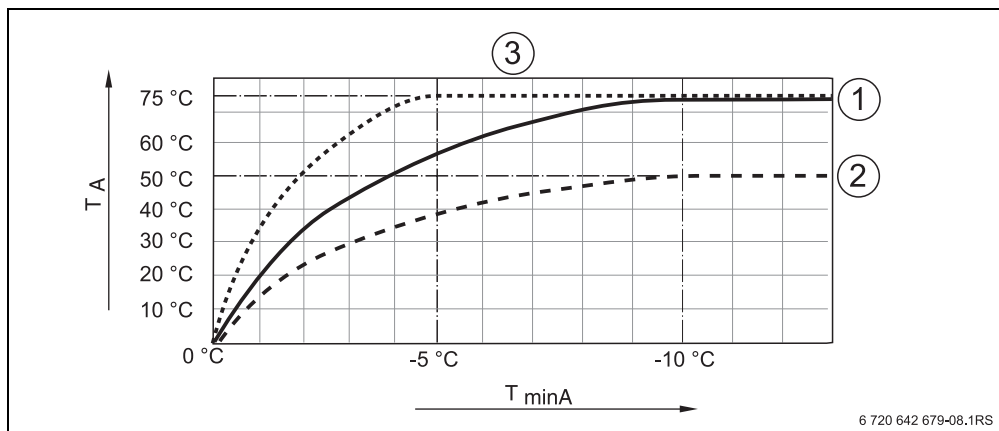


Fig. 9 Setting the heating curve





$T_{\min A}$ Min. outside temperature

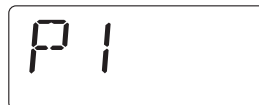
T_A Max. flow temperature/design temperature

- 1 Setting: min. outside temperature - 10 °C, max. flow temperature/design temperature 75 °C
- 2 Setting: min. outside temperature - 10 °C, max. flow temperature/design temperature 50 °C
- 3 Setting: min. outside temperature - 5 °C, max. flow temperature/design temperature 75 °C


7.2 Address

With parameter **P1**, you determine how the programming unit is installed in the system (see RC25 operating instructions).

- ▶ Press pin button .
- ▶ Use rotary selector  to select the required parameter (here: **P1**).
- ▶ Hold down pin button  and simultaneously turn rotary selector .



The corresponding setting can now be selected.






- ▶ Release pin button .

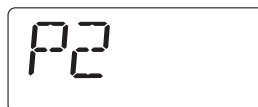
The setting is saved.

Parameter/ function	Input range		Factory setting
	Setting	Explanation	
P1/Address	0	Sole programming unit: RC25 programming unit operates on its own without any other programming units in the system. RC25 programming unit is the master in the EMS BUS.	0
	Heating circuit address: 1 – 4 (HC 1 – 4)	Remote control for the corresponding heating circuit: RC25 programming unit is installed as a remote control for the assigned heating circuit. An alternative RC30/RC35 programming unit is the master in the EMS BUS.	

7.3 Heating system: type of control and setback

If the programming unit is the sole programming unit in the system ($P1 = 0$), this parameter **P2** determines the type of control for the heating system.

- ▶ Press pin button .
- ▶ Use rotary selector  to select the required parameter (here: /heating system).
- ▶ Hold down pin button  and simultaneously turn rotary selector .
The corresponding setting can now be selected.
- ▶ Release pin button .
The setting is saved.



Parameter/ function	Input range					Factory setting
	Setting	Type of control	Type of setback	Heating system Room temp. -dependent control	Explanation	
P2/Heating system	1	Room temp. -dependent control	Room setback	Room flow	Room flow (factory setting): Room temperature control that responds dynamically to deviations between the set and actual room temperatures by changing the flow temperature. Select P2 = 1 if you want changes in heat output (e.g. due to the opening of thermostatic valves in rooms other than the reference room) to be compensated for.	1
	2	Room temp. -dependent control	Room setback	Room output	Room output: Room temperature control that responds dynamically to deviations between the set and the actual room temperatures by changing the boiler output. If there are no major load fluctuations and only the reference room is being controlled, select P2 = 2. This means that changes in heat output due to the opening of thermostatic radiator valves in rooms other than the reference room are compensated for only very slowly. This room temperature control is somewhat slower but also leads to fewer burner starts than "Room flow".	

Parameter/ function	Input range				Explanation	Factory setting
	Setting	Type of control	Type of setback	Heating system Room temp. -dependent control		
P2/Heating system	3	Weather- comp. control	Reduced	–	Setback mode "Reduced": The rooms maintain a certain temperature level during the night due to constant heating mode (heating circuit pump runs permanently). A set room temperature can be set for night time. 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.	
	4	Weather- comp. control	Outside setback	–	Setback mode "Outside setback": The heating system operates as in reduced mode when the outside temperature falls below an adjustable value for outside temperature threshold (→ operating instructions "Setting the room temperature"). The heating system remains off above this threshold. The operating mode protects the rooms from cooling down too much once a certain outside temperature is reached.	








Frost protection function for "Weather-compensated control":

The heating circuit pump starts automatically if the outside temperature falls below the fixed threshold of 5 °C.

The heating circuit pumps stops automatically if the outside temperature rises above 7 °C.

7.4 Adjusting the room temperature (calibration)

- ▶ Press pin button .
- ▶ Use rotary selector  to select the required parameter (here: **P3**).
- ▶ Hold down pin button  and simultaneously turn rotary selector .
The corresponding value can be adjusted.
- ▶ Release pin button .
The value is saved.



Parameter/function	Input range	Factory setting	Other information
P3/Calibration	- 5.0 °C to +5.0 °C	0.0 °C	

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 parameter **P3** to adjust ("calibrate") the programming unit display to match that of the thermometer.

Before adjusting 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 the heating system is cooling down or heating up.

Example:

If the thermometer is showing a temperature 0.1 °C higher than the programming unit, enter +0.1 °C as a calibration value.

7.5 DHW heating








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.

With this parameter, you can specify whether DHW heating from the boiler is required.

- ▶ Press pin button .
- ▶ Use rotary selector  to select the required parameter (here: **P4**).
- ▶ Hold down pin button  and simultaneously turn rotary selector .
- The corresponding setting can now be selected.
- ▶ Release pin button .
- The setting is saved.








Parameter/ function	Input range		Factory setting
	Setting	Explanation	
P4/DHW heating	0	no	0
	1	yes	



This parameter is not shown if the programming unit is installed as a remote control (**P1** unlike **0**). In this case adjust DHW heating at the RC30/RC35 programming unit. In the UK an RC35 programming unit will be necessary if DHW is to be controlled, in order to comply with Part L.

7.6 Type of pump¹⁾

Parameter **P5** determines which pump transports heating water through the boiler:

- with an internal boiler pump (**1**)
 - with a heating circuit pump (**2**)
- ▶ Press pin button .
- ▶ Use rotary selector  to select the required parameter (here: **P5**).
- ▶ Hold down pin button  and simultaneously turn rotary selector .
- The corresponding setting can now be selected.
- ▶ Release pin button .
- The setting is saved.



Parameter/ function	Input range		Factory setting
	Setting	Explanation	
P5/Type of pump	0	No pump	1
	1	Internal boiler pump: in the event of a DHW or heat demand from the boiler control unit, the internal pump is switched on simultaneously with the burner. After a set pump run-on time, it stops again. Generally select 1 if a low loss header or a 3-way diverter valve is installed.	
	2	Heating circuit pump: the heating circuit pump is switched by the boiler control unit if the heating circuit demands heat.	







This parameter is not shown if the programming unit is installed as a remote control (**P1** unlike **0**). In this case set the type of pump at the RC30/RC35 programming unit.

1) This function is not available on boilers with UBA


7.7 Pump run-on time¹⁾

The pump run-on time indicates how many minutes after the burner the internal boiler pump is switched off. Constant operation is possible with the setting 24 h.


- ▶ Press pin button .
- ▶ Use rotary selector  to select the required parameter (here: **P6**).
- ▶ Hold down pin button  and simultaneously turn rotary selector .



The corresponding setting can now be selected.

- ▶ Release pin button .
- The setting is saved.






Parameter/ function	Input range		Factory setting
	Setting	Explanation	
P6/Pump run- on time	0 – 60 min	Run-on time for internal boiler pump	5 min
	24 h	Internal boiler pump in constant operation	

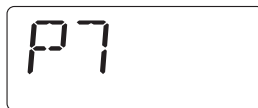
 Parameter **P6** is only available in conjunction with internal boiler pumps (**P5 = 1**). In the setting “no pump” (**P5 = 0**) and “Heating circuit pump” (**P5 = 2**) **P6** remains hidden.





1) Function not available on boilers with UBA

7.8 Permanent display

With parameter **P7** you can select from three permanent displays.






- ▶ Press pin button .
 - ▶ Use rotary selector  to select the required parameter (here: **P7**).
 - ▶ Hold down pin button  and simultaneously turn rotary selector .
- The corresponding setting can now be selected.
- ▶ Release pin button .
- The setting is saved.



Parameter/ function	Input range		Factory setting
	Setting	Explanation	
P7/ Permanent display		Actual room temperature	
		Outside temperature The display shows ---- if no outside temperature sensor is installed	
		Time	

7.9 Adjusting the time

With parameter **P8** you can correct the indicated time.

- ▶ Press pin button .
 - ▶ Use rotary selector  to select the required parameter (here: **P8**).
 - ▶ Hold down pin button  and simultaneously turn rotary selector .
- The corresponding value can be selected.
- ▶ Release pin button .
- The value is saved.



Parameter/function	Input range	Factory setting	Other information
P8/Time adjustment	- 30 to +30 s/day	0 s/day	

Example:

If the clock in the programming unit is slow, e.g. by 2 seconds a day, enter +2 as the correction value.



This parameter is not shown if the programming unit is installed as a remote control (**P1** unlike **0**). The time and day are taken automatically from the RC30/RC35 programming unit where they can also be adjusted if necessary.






7.10 Thermal disinfection¹⁾



WARNING: Risk of scalding from hot water at the draw-off points!
During the thermal disinfection process the DHW can be heated to a temperature above 60 °C.

- ▶ Do not open a hot water tap without mixing in cold water during or after the thermal disinfection process.

With this parameter **P9** you can enable thermal disinfection. DHW will be heated once a week or once a day to a temperature high enough to kill off pathogens (e.g. legionella bacteria). Parameter **P9** is only displayed if the programming unit is the sole programming unit (**P1 = 0**).

- ▶ Press pin button .
 - ▶ Use rotary selector  to select the required parameter (here: **P9**).
 - ▶ Hold down pin button  and simultaneously turn rotary selector .
The corresponding value can be selected.
 - ▶ Release pin button .
- The setting is saved.



If you enable thermal disinfection (**P9 = 1**), then it will commence every Tuesday at 01:00 h and heat the water to at least 70 °C. During the pasteurisation process the DHW circulation pump runs constantly.

1) Function depends on the boiler used.



Parameter/ function	Input range		Factory setting
	Setting	Explanation	
P9/Thermal disinfection	0	No thermal disinfection	0
	1	Thermal disinfection every Tuesday at 01:00 h (time cannot be altered) to at least 70 °C	



This parameter is not shown if the programming unit is installed as a remote control (**P1** unlike **0**). In this case set the thermal disinfection at the RC30/RC35 programming unit.

7.11 Displaying the software version






Parameter **P10** stores the software version of the programming unit.

- ▶ Press pin button .
- ▶ Use rotary selector  to select the required parameter (here: **P10**). The software version is displayed.



7.12 Minimum outside temperature

The minimum outside temperature is the average of all the coldest outside temperatures of recent years in the respective region. The value can be taken from the heat demand calculation which should be done for every building, or from the climatic zone chart for your region.

- ▶ Press pin button .
- ▶ Use rotary selector  to select the required parameter (here: **P12**).
- ▶ Hold down pin button  and simultaneously turn rotary selector .
- The corresponding value can be selected.
- ▶ Release pin button .
- The value is saved.








Parameter/function	Input range	Factory setting	Other information
P12/minimum outside temperature	- 30 °C to 0 °C	- 10 °C	



Parameter **P2** is only shown if "Weather-compensated control" (**P2 = 3** or **P2 = 4**) was selected under parameter **P12**.

7.13 Maximum flow temperature/design temperature

Parameter **P13** together with parameter **P12** "min. outside temperature" determines the gradient of the heating curve and describes the maximum flow temperature.

- ▶ Press pin button .
- ▶ Use rotary selector  to select the required parameter (here: **P13**).
- ▶ Hold down pin button  and simultaneously turn rotary selector .
- The corresponding value can be selected.
- ▶ Release pin button .
- The value is saved.








Parameter/function	Input range	Factory setting	Other information
P13/maximum flow temperature/design temperature	30 °C to 90 °C	75 °C	

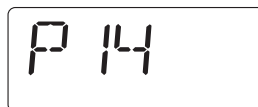


Parameter **P2** will only be shown if "Weather-compensated control" (**P2 = 3** or **P2 = 4**) was selected under parameter **P13**.

7.14 Maximum room influence

Parameter **P14** determines the extent of the room temperature influence on the heating curve. The higher this parameter is set, the greater the influence on the heating curve. The control unit will operate only in weather-compensated mode as long as the parameter is set to **0**.

- ▶ Press pin button .
- ▶ Use rotary selector  to select the required parameter (here: **P14**).
- ▶ Hold down pin button  and simultaneously turn rotary selector . The corresponding value can be selected.
- ▶ Release pin button . The value is saved.








Parameter/function	Input range	Factory setting	Other information
P14/maximum room influence	0 K to 10 K	0 K	



Parameter **P2** is only shown if "Weather-compensated control" (**P2 = 3** or **P2 = 4**) was selected under parameter **P14**.

7.15 Summer/winter changeover threshold

Below this adjustable outside temperature threshold, the heating system automatically switches over to winter mode (heating on).

- ▶ Press pin button .
- ▶ Use rotary selector  to select the required parameter (here: **P15**).
- ▶ Hold down pin button  and simultaneously turn rotary selector .
The corresponding value can be selected.
- ▶ Release pin button .
The value is saved.








Parameter/function	Input range	Factory setting	Other information
P15/Summer/winter changeover threshold	9 (= constantly off) 10 °C to 30 °C 31 (= constantly on)	17 °C	



Parameter **P2** is only shown if "Weather-compensated control" (**P2 = 3** or **P2 = 4**) was selected under parameter **P15**.

7.16 Outside temperature threshold for setback mode “Outside setback”

The heating system operates as in reduced mode when the outside temperature falls below this value (→ operating instructions “Setting the room temperature”). The heating system remains off above this threshold.

- ▶ Press pin button .
- ▶ Use rotary selector  to select the required parameter (here: **P16**).
- ▶ Hold down pin button  and simultaneously turn rotary selector .
The corresponding value can be selected.
- ▶ Release pin button .
- The value is saved.



Parameter/function	Input range	Factory setting	Other information
P16/Outside temperature threshold for “Outside setback” mode	- 20 °C to 10 °C	5 °C	



Parameter **P2** will only be displayed if “Weather-compensated control” with setback mode “Outside setback” has been selected (**P2 = 4**) under parameter **P16**.

8 Troubleshooting

This table lists possible faults, i.e. faults in EMS components. In case of faults, the heating system stays operational for as long as possible; in other words, central 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 = Service 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	Fault	Effect on control characteristics	Possible cause	Remedy
A01	800	Outside temperature sensor faulty.	The minimum outside temperature is applied.	<p>Temperature sensor is incorrectly connected or fitted.</p> <p>Breakage or short circuit in the sensor lead.</p> <p>Temperature sensor faulty.</p>	<ul style="list-style-type: none"> ▶ Check sensor connection and sensor lead. ▶ Check sensor mounting. ▶ Compare resistance values with the sensor curve.
A01	808 ¹⁾	DHW temperature sensor faulty.	DHW heating has stopped.	<p>Temperature sensor is incorrectly connected or fitted.</p> <p>Breakage or short circuit in the sensor lead.</p> <p>Temperature sensor faulty.</p>	<ul style="list-style-type: none"> ▶ Check sensor connection and sensor lead. ▶ Check sensor mounting. ▶ Compare resistance values with the sensor curve.

Tab. 3 Fault table

SC	FC	Fault	Effect on control characteristics	Possible cause	Remedy
A01	810 ¹⁾	DHW stays cold	The system continuously tries to heat the DHW cylinder to the set DHW temperature. DHW priority is switched off once the fault message has been displayed.	Constant drawing or system leak.	▶ Stop any leaks.
				Temperature sensor is incorrectly connected or fitted. Breakage or short circuit in the sensor lead. Temperature sensor faulty.	▶ Check sensor connection and sensor lead. ▶ Check sensor mounting. ▶ Compare resistance values with the sensor curve.
				Cylinder primary pump incorrectly connected or faulty.	▶ Check that the cylinder primary pump is working, e.g. by carrying out a function test.
A01	816	No communication with UBA1/UBA3/MC10	The boiler no longer receives heat demand signals; the heating system may no longer generate heat.	EMS BUS system is overloaded. UBA1/UBA3/MC10 faulty.	▶ Reset by switching the heating system OFF and ON. ▶ If necessary inform your local service engineer.
A02	816 ¹⁾	No communication with boiler programming unit.	Settings made at the boiler programming unit are no longer adopted by RCxx devices.	Contact problem at the boiler programming unit or boiler programming unit faulty.	▶ Check the boiler programming unit connection. ▶ If required, replace the boiler programming unit.
A11	802 ¹⁾	Time is not yet set.	Restricted functionality for: <ul style="list-style-type: none"> • All switching programs • Fault messages 	Time details are missing, e.g. due to lengthy power failure.	▶ Enter the current time.

Tab. 3 Fault table

SC	FC	Fault	Effect on control characteristics	Possible cause	Remedy
A11	803 ¹⁾	Date is not yet set.	Restricted functionality for: <ul style="list-style-type: none"> All switching programs Holiday function Fault messages 	Date details are missing, e.g. due to lengthy power failure.	► Enter the current date.
A11	816 ¹⁾	No communication with RC30/RC35.	RC25 unable to transmit data to RC30/RC35. Room temperature control therefore not possible for HC.	RC25 address incorrect.	► Check address (parameter P1) in the RC25 programming unit.
				RC30/RC35 not present or not connected correctly.	► Check connection to RC35.
A18	802	Time is not yet set.	Restricted functionality for: <ul style="list-style-type: none"> All switching programs Fault messages 	Time details are missing, e.g. due to lengthy power failure.	► Enter the current time.
A18	825 ¹⁾	Two master programming units in the system.	RC35 and RC25 are both controlling heating circuits and DHW. Subject to the selected heating programs and the required room temperatures, the heating system may no longer function correctly. DHW heating is malfunctioning.	Both RC25 and RC35 are logged on as master.	► Change parameter P1 in the RC25 or remove RC35 from the EMS BUS.
A18 A2x ¹⁾	825	Room temperature sensor for HCx is faulty.	Room temperature for the heating circuit of that programming unit can no longer be regulated.	Temperature sensor in the RC25 programming unit faulty (A18 = sole programming unit; x = 1 – 4, corresponds to heating circuit address 1 – 4).	► Replace RC25 programming unit for this heating circuit.

Tab. 3 Fault table

SC	FC	Fault	Effect on control characteristics	Possible cause	Remedy
A2x ¹⁾	829 ¹⁾	Conflicting addresses for the RC25 programming unit as remote control.	RC25 programming unit unable to transmit data to RC35. Room temperature control therefore not possible for this HC.	RC25 programming unit address incorrectly assigned in the RC35 programming unit or not installed.	<ul style="list-style-type: none"> ▶ Set the Programming unit parameter in RC35 to RC25 programming unit. ▶ Check the assignment of the RC25 programming unit.
Hxx ¹⁾		Service message, not a fault.	The heating system keeps operating as far as possible.	Example: service interval has expired.	Maintenance is required, see boiler documentation.

Tab. 3 Fault table

1) Function not available on boilers with UBA.



Faults do not require a reset. Contact your local service engineer or Buderus sales office if you cannot remedy the fault yourself.

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

9 Environment / disposal

Environmental protection is a fundamental corporate strategy of the Bosch Group. The quality of our products, their economy and environmental safety are all of equal importance to us and all environmental protection legislation and regulations are strictly observed. We use the best possible technology and materials for protecting the environment taking account of economic considerations.

Packaging

Where packaging is concerned, we participate in country-specific recycling processes that ensure optimum recycling. All packaging materials are environmentally compatible and can be recycled.

Used appliances

Used appliances contain materials that should be recycled. The components are easy to separate and the plastics carry identification markings. This allows the various assemblies to be appropriately sorted for recycling or disposal.

10 Setup report

		Input range	Factory setting	Setting	Displayed
P1	Address	0 – 4 (0 = sole programming unit; HC 1 – 4)	0		always
P2	Heating system: type of control and setback	1 (room flow) 2 (room output) 3 (reduced) 4 (outside setback)	1		only if master (P1 = 0)
P3	Room temperature compensation	- 5.0 °C to +5.0 °C	0.0 °C		always
P4	DHW heating	0 (no) 1 (yes)	0		only if master (P1 = 0)
P5	Pump type	0 (no pump) 1 (internal boiler pump) 2 (heating circuit pump)	1		only if master (P1 = 0)
P6	Pump run-on time	0 – 60 min 24 h	5 min		only if internal boiler pump (P5= 1)
P7	Permanent display	Room temperature Outside temperature Time	Room temperature		always
P8	Adjusting the time	- 30 to +30 s/day	0		only if master (P1 = 0)
P9	Thermal disinfection	0 (no) 1 (yes)	0		only if master (P1 = 0 and P4 = 1)
P10	Software version	-			always
P12	Minimum outside temperature	- 30 °C to 0 °C	- 10 °C		only with weather-compensated mode (P2 > 2)
P13	Max. flow temperature/design temperature	30 °C to 90 °C	75 °C		only if master (P1 = 0)
P14	max. room influence	0 K to 10 K	0 K		only with weather-compensated mode (P2 > 2)
P15	Summer/winter changeover threshold	9 (= constantly off) 10 °C to 30 °C 31 (= constantly on)	17 °C		only with weather-compensated mode (P2 > 2)
P16	Temperature threshold for outside setback mode	- 20 °C to 10 °C	5 °C		only with outside setback mode (P2= 4)

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Notes

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