SIEMENS

Albatros2

Operator units / Room units / Auxiliary devices

Technical Manual

CE1U2358en_04
2014-09-26

Building Technologies

Content

1 Overview

This document

The room and operator units described in this document operate in an optimum manner BMUs for floor-standing or wall-mounted boiler controllers. The room and operator units are suitable for plants that do not require cooling.

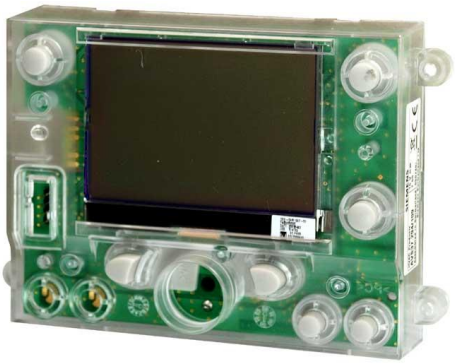
List of described devices

Room unit QAA5x.110/101.

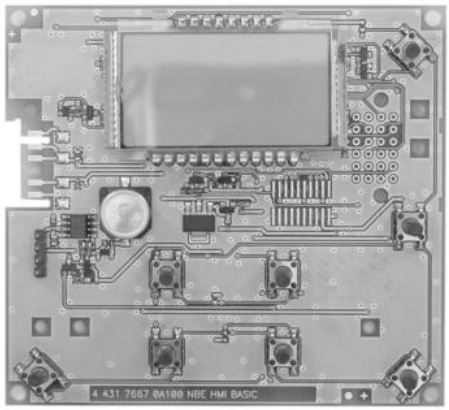
Room unit QAA7x.61x/101, room unit QAA7x.61x/501

Operator unit AVS37.294/109, operator unit AVS37.294/509

Operator unit AVS37.296/109



Operator unit AVS37.394/109



Operator unit AVS37.390/209

RF module AVS71.390

RF module BSB AVS71.393

RF repeater AVS14.390

RF outside sensor AVS13.399

2 Mounting and installation

2.1 Wired components

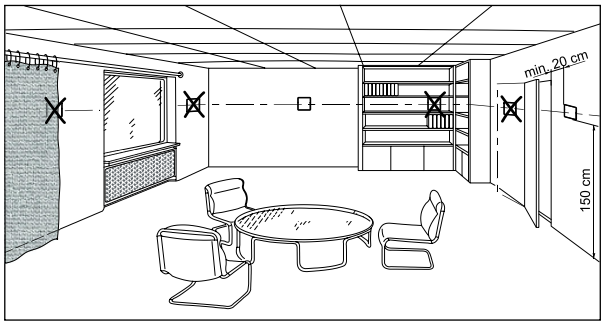
Devices in general

Do not expose devices to dripping water.

Room units

Install room units in the main occupancy rooms.

The place of installation should be chosen so that the sensor can capture the room temperature as accurately as possible without getting adversely affected by direct solar radiation or other heat or refrigeration sources (about 1.5 meters above the floor)

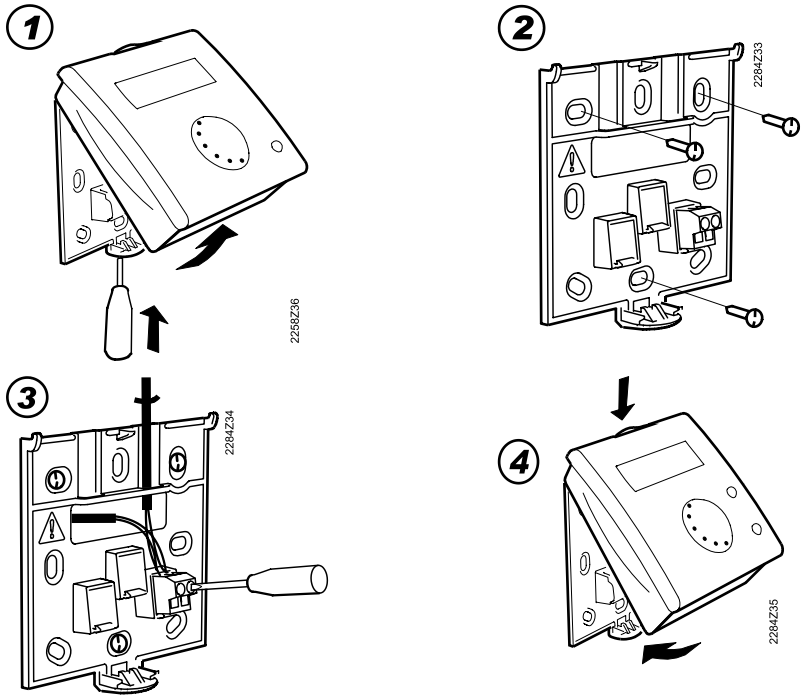


Powered by base

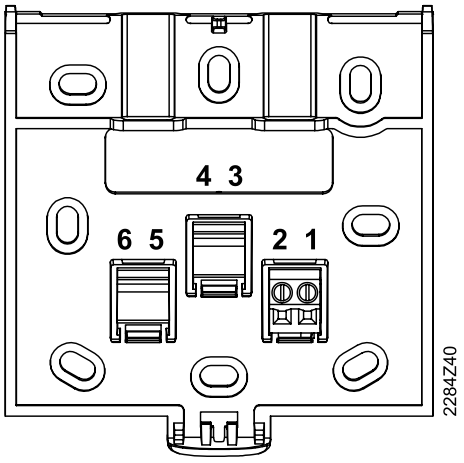
The base provides the power for QAA55 and QAA75. When the units are removed from the base, power is cut off (i.e. the units are out of operation).

2.1.1 Room unit QAA55…

Installation

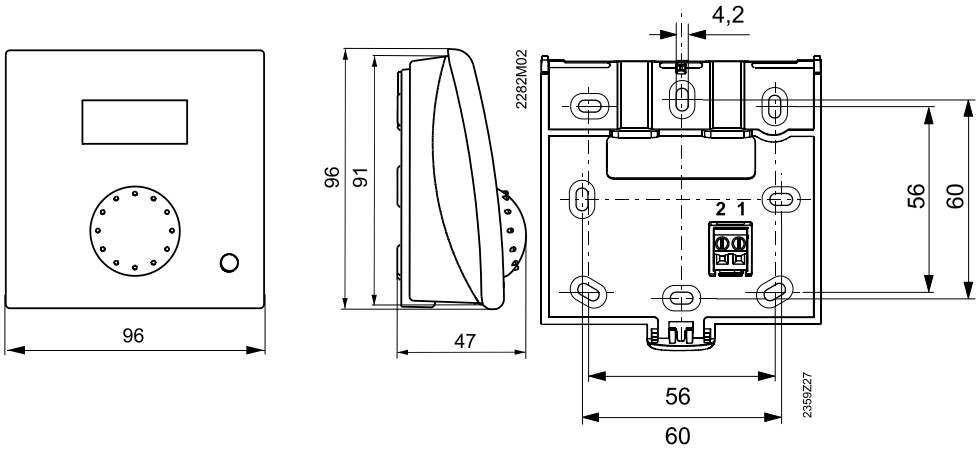


Connections



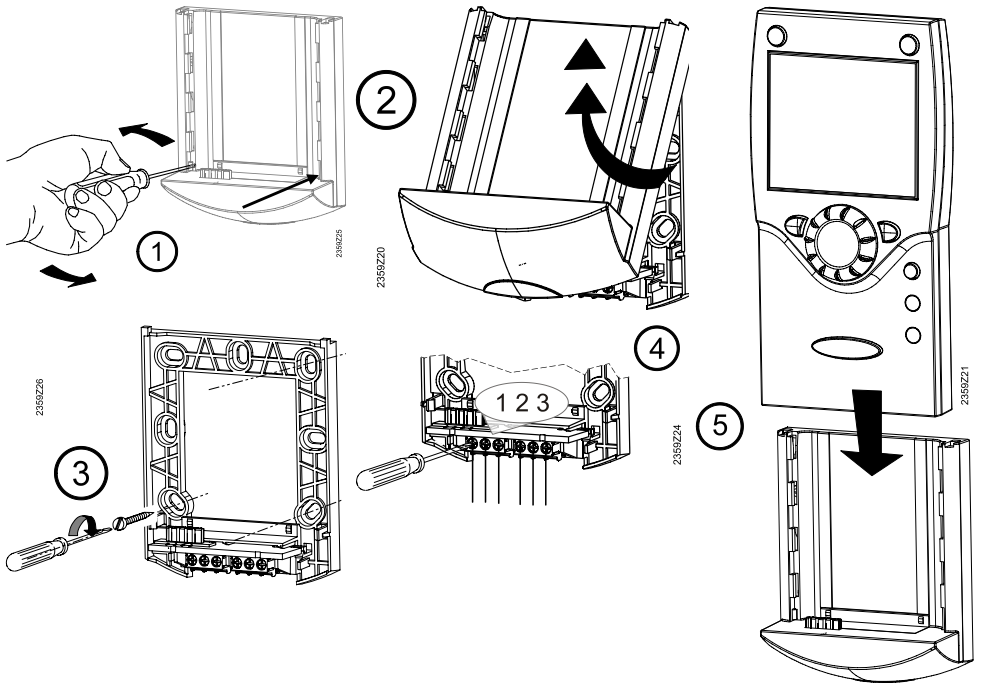
1	CL+	BSB data
2	CL-	BSB ground

Dimensions and drilling plan



2.1.2 Room unit QAA75…

Installation

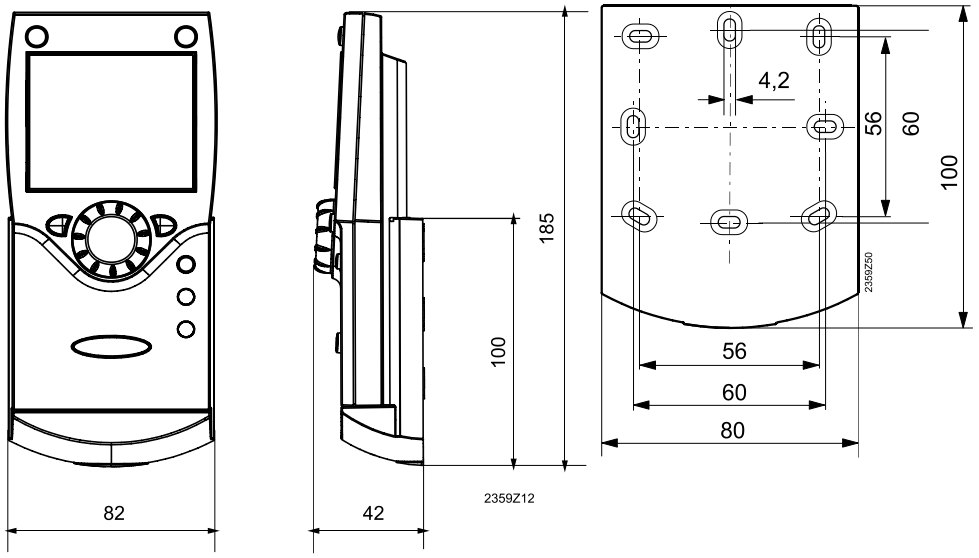


There must be sufficient clearance above the unit to install and remove it as needed.

Connections

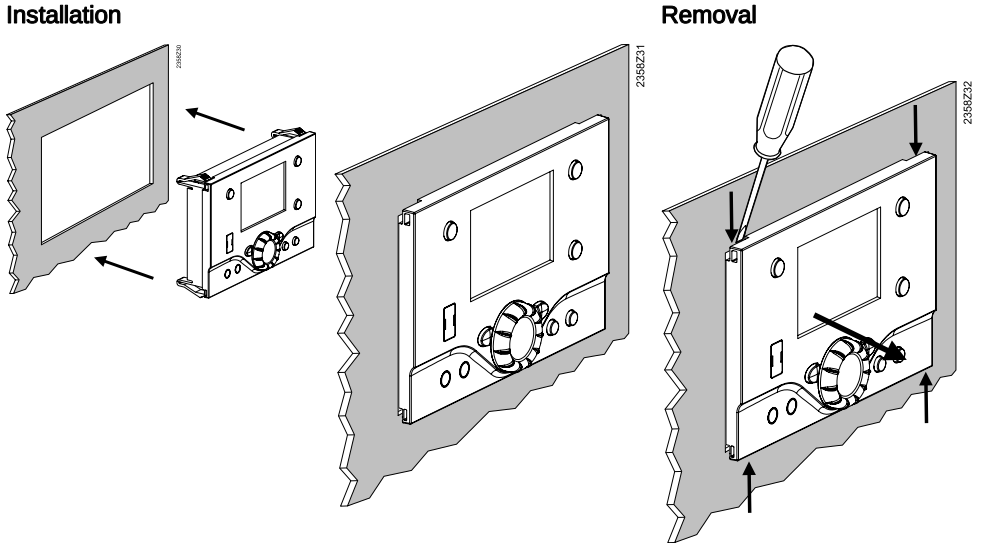
Terminal	Designation	QAA75.610	QAA75.611
1	CL+	BSB data	BSB data
2	CL-	BSB ground	BSB ground
3	G+	Reserved	Power supply DC 12 V

Dimensions and drilling plan



2.1.3 Operator unit AVS37.29x

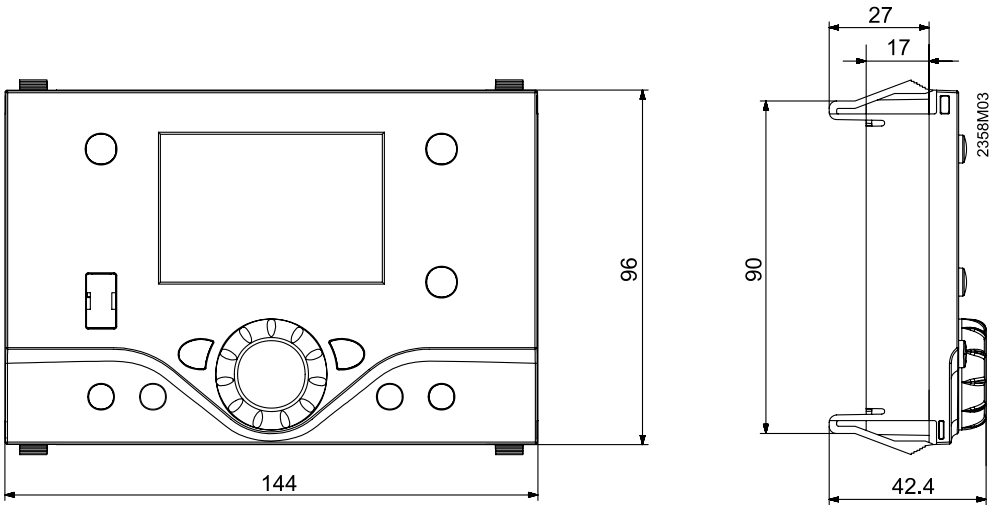
Installation



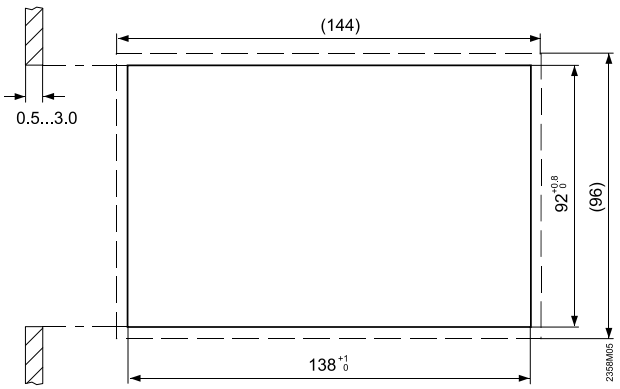
Connections

The AVS37.294 operator unit must be connected to terminal X30 of the basic unit using the AVS82.491/109 connecting cable. The connectors are coded.

Dimensions

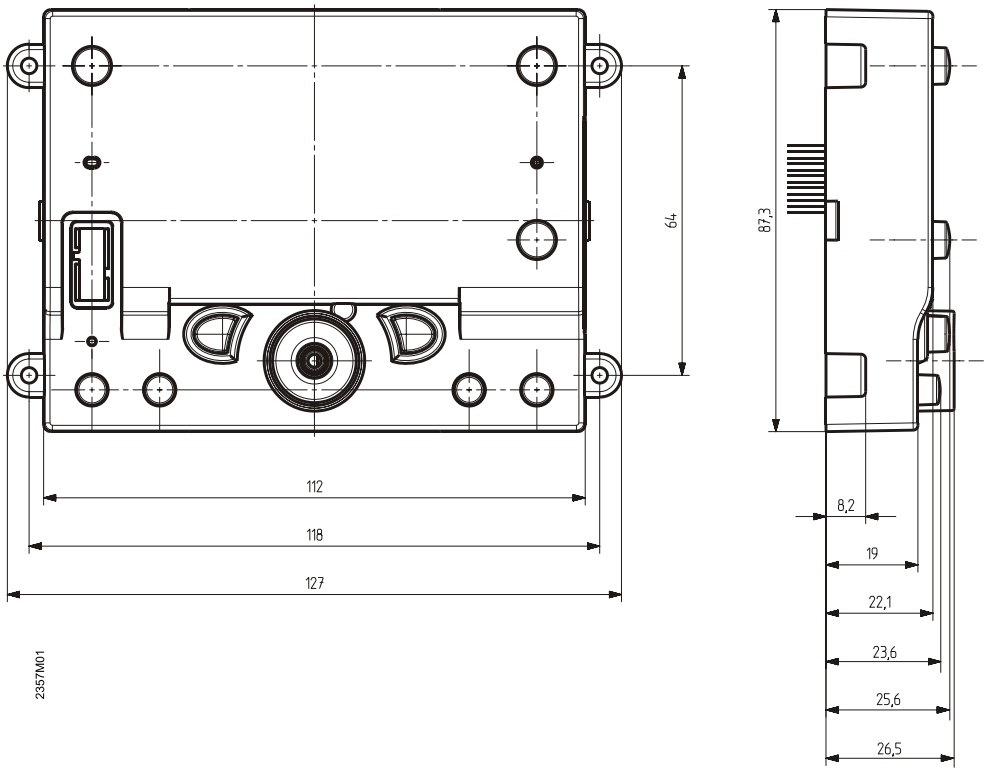


Panel cutout



2.1.4 Operator unit AVS37.394

Dimensions



Siemens supplies operator unit AVS37.394 without a housing.

Connections

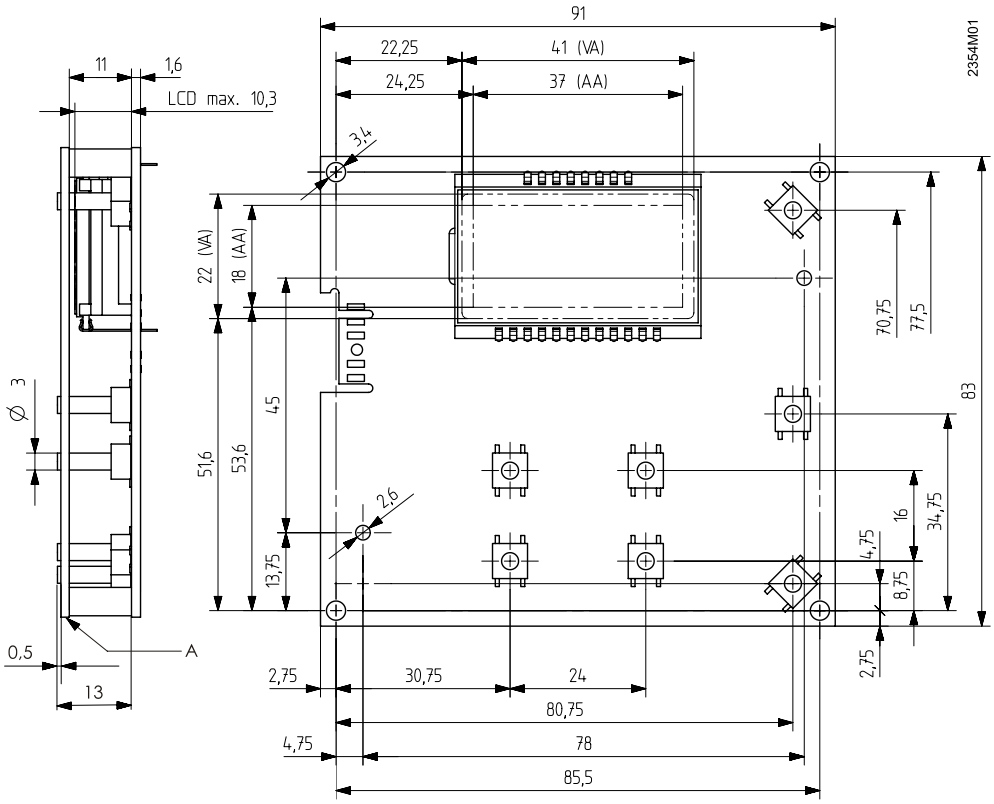
The AVS37.394 operator unit must be connected to terminal X30 on the basic unit using the AVS82.491/109 connecting cable. The connectors are coded.

2.1.5 Operator unit AVS37.390...

Connections

The AVS37.390 operator unit must be connected to terminal X30 of the basic unit using the AVS82.491/109 connecting cable. The connectors are coded.

Dimensions



VA	Visual area
AA	Active area
A	Control panel, front

The AVS37.390 operator unit is a PCB version without casing, supplied by Siemens.

2.2 RF components

RF devices in general

The wireless components should be located such that transmission is as interference-free as possible. For installation, the following points must be observed:

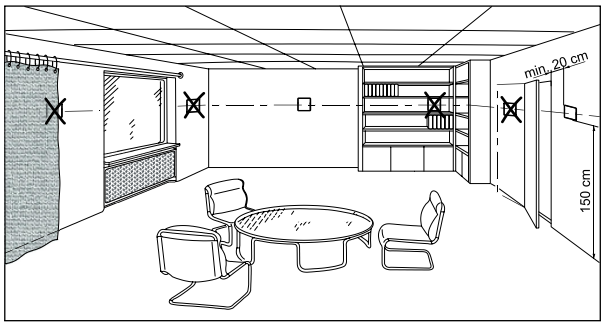
- Not in the vicinity of electrical cables, strong magnetic fields or equipment such as PCs, TVs, microwave ovens, etc.
- Not near larger metal structures or constructional elements with fine metal meshes, such as special glass or concrete.
- The distance to the transmitter should not exceed 30 meters or 2 floors

Do not expose devices to dripping water.

Room units

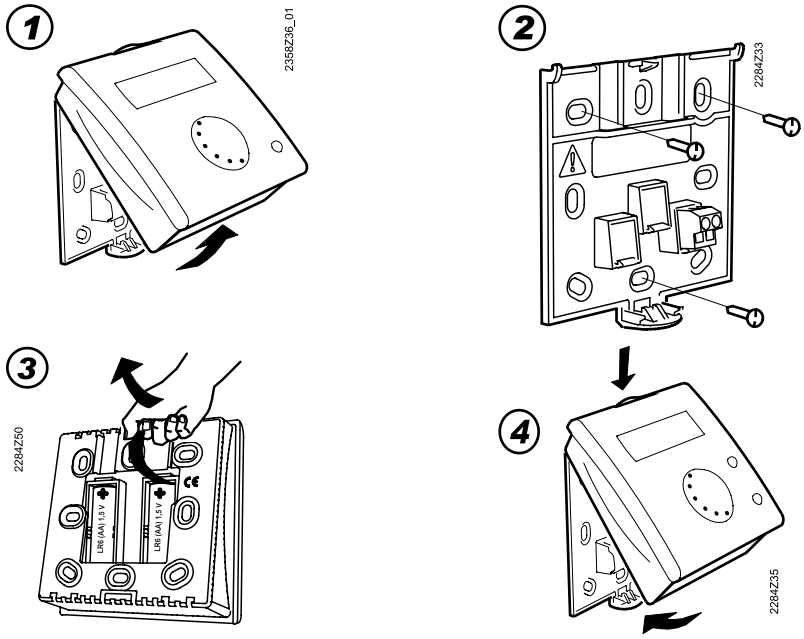
Install room units in the main occupancy rooms.

The place of installation should be chosen so that the sensor can capture the room temperature as accurately as possible without getting adversely affected by direct solar radiation or other heat or refrigeration sources (about 1.5 meters above the floor)

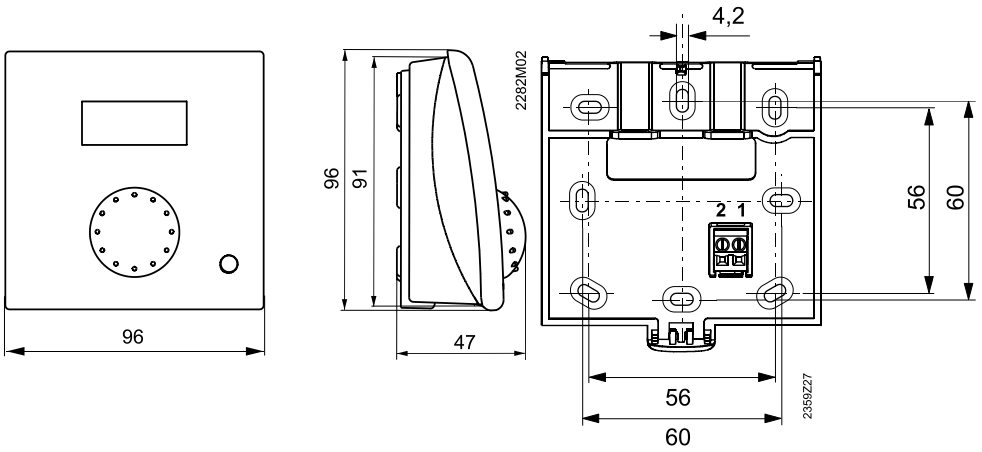


2.2.1 Room unit QAA58…

Installation



Dimensions and drilling plan



RF connection

	NOTICE
	• Establish RF connection while unmounted and near the RF module (BSB). • The base unit powers the RF module (BSB). • The devices battery supply must be activated (remove the battery protective strip).

Establishment

1. Press the button on the RF module (BSB) for at least 8 seconds.
   ⇨ The LED on the RF module (BSB) **blinks rapidly**.
2. Press the occupancy button for at least 3 seconds.
   ⇨ The room unit switches to the service level (Display "**ru 1**").
3. Depending on the heating circuit, turn knob to "**ru 2**", "**ru 3**".
4. Press occupancy button 3 times, until "**P3**" appears.
5. Press operating mode button.
   ⇨ The process of opening the connection is started.

⇨ The connection is complete as soon as the LED RF module (AVS71.390) turns off and the room unit re-starts.

⇨ The LED of the RF module BSB (AVS71.393) lights again after 5 seconds (operating state "On").

⇨ The room unit displays the room temperature.

Refer to Section Operation [→ 37] for button labels.

Testing

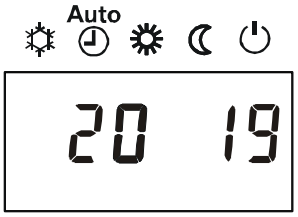
	NOTICE
	• The test is made to check the quality of the radio link. • Testing takes place at the final installation location.

1. Press the occupancy button for at least 3 seconds.
   ⇨ The room unit switches to the service level (Display "**ru**..").
2. Press occupancy button 4 times, until "**P4**" appears.
3. Press operating mode button.

⇨ Test mode begins. 24 telegrams are sent.

The test can be stopped by pressing the operating mode or occupancy buttons.

Example of a display during the test:

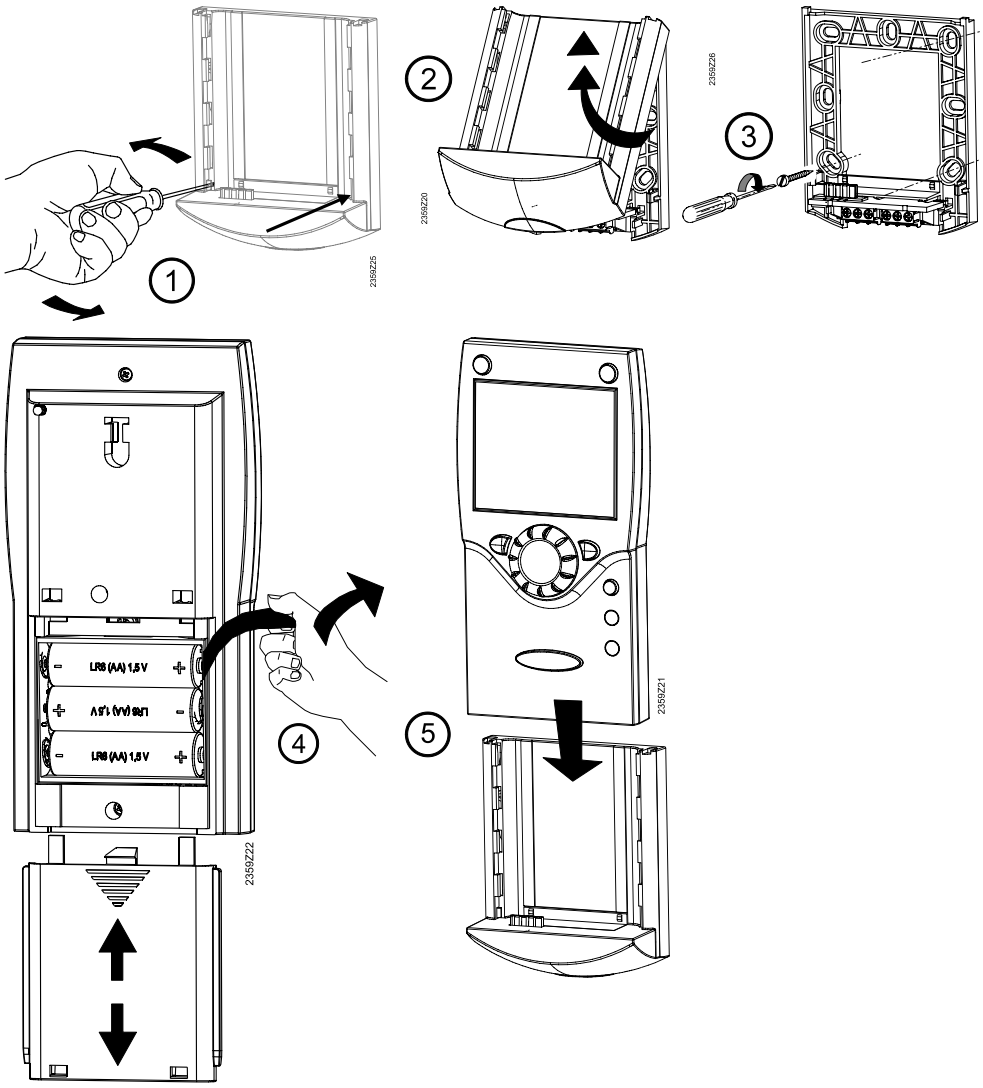


The test results are displayed on the display:

- The digits on the left show telegrams that have been sent, the digits on the right telegrams that have been received.
- The test will be ended after 24 telegrams. The test is considered successful when at least 50% of the telegrams sent have been received.
- If the test was not successful, some other mounting location should be chosen, or the AVS14.390 RF repeater should be used.

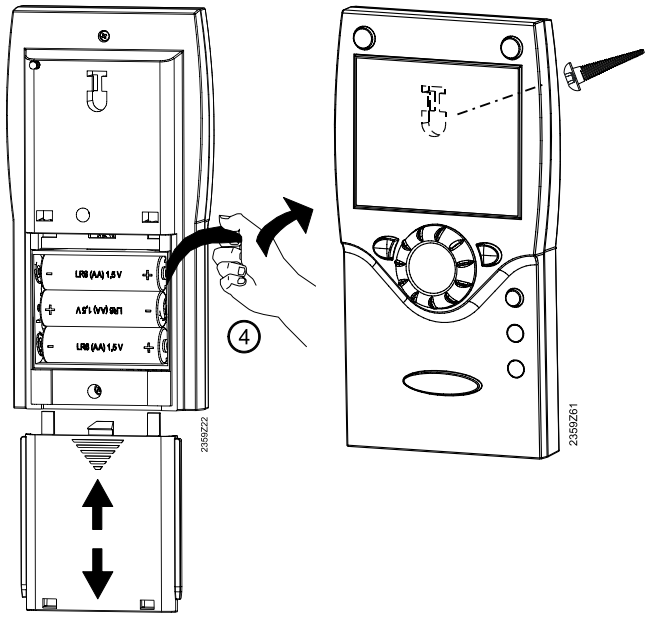
2.2.2 Room unit QAA78...

Mounting with base.



In the case of mounting with base, there must be sufficient clearance above the unit, enabling it to be fitted and removed

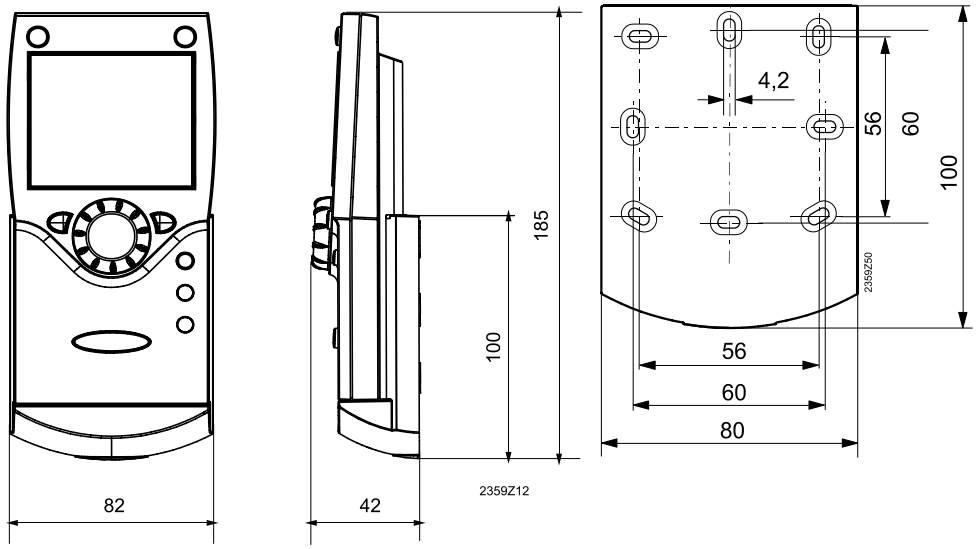
Mounting without base.



Connections / power supply

Power is supplied via three 1.5 V alcaline batteries of type AA (LR06).

Dimensions and drilling plan



RF connection

	NOTICE
	• Establish RF connection while unmounted and near the RF module (BSB). • The base unit powers the RF module (BSB). • The devices battery supply must be activated (remove the battery protective strip).

Establishment

1. Press the button on the RF module (BSB) for at least 8 seconds.
   ⇨ The LED on the RF module (BSB) **blinks rapidly**.
2. Press the OK button on the room unit.
   ⇨ The room unit switches to the programming level.
3. Press the Info button for at least 3 seconds.
4. Using the knob, select "Commissioning" operating level and press the OK button.
5. Using the knob, select "Operator unit" operating page and press the OK button.
6. Select operating line 40 "Used as" and make the proper settings.
7. Press the OK button to confirm.
8. Using the knob, select "RF" operating page and press the OK button.
9. Select operating line 120 "Binding" and press the OK button.
10. Use the setting knob to set to "Yes".
11. Press the OK button to confirm.
    ⇨ The process of opening the connection is started.

⇨ The display shows the progress of opening the connection in %. This process can take 2...300 seconds.

⇨ The connection is established when "Device ready" appears and the LED on the RF module (AVS71.390) turns off.

⇨ The LED of the RF module BSB (AVS71.393) lights again after 5 seconds (operating state "On").

Refer to Section Operation [→ 42] for button labels.

Testing

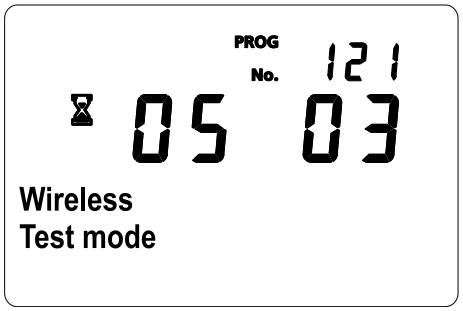
	NOTICE
	• The test is made to check the quality of the radio link. • Testing takes place at the final installation location.

1. On unit (as described above), select operating page "RF".
2. Select operating line 121 "Test mode" and press the OK button.
3. Use the setting knob to set to "On".
4. Press the OK button to confirm.

⇨ Test mode begins. 24 telegrams are sent.

The test can be stopped by pressing the ESC button

Example of a display during the test:



The test results are displayed on the display:

- The digits on the left show telegrams that have been sent, the digits on the right telegrams that have been received.
- The test will be ended after 24 telegrams. The test is considered successful when at least 50% of the telegrams sent have been received.
- If the test was not successful, some other mounting location should be chosen, or the AVS14.390 RF repeater should be used.

2.2.3 RF module AVS71.390

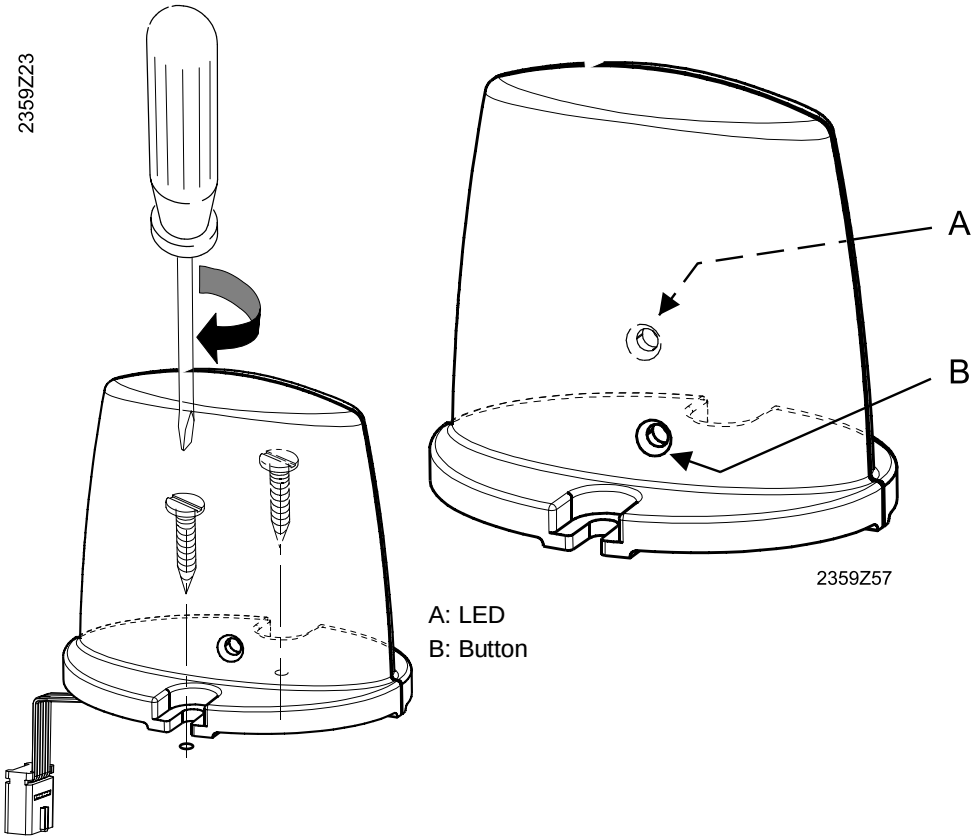
The RF module extends the product range by introducing wireless communication. The RF modules allow system components, such as room units, to transmit data without laying cables.

RF module (AVS71.390) and RF module BSB (AVS71.393) **cannot** be used concurrently.

Engineering

Do not install the unit inside metal casings (e.g. inside the boiler).

Installation



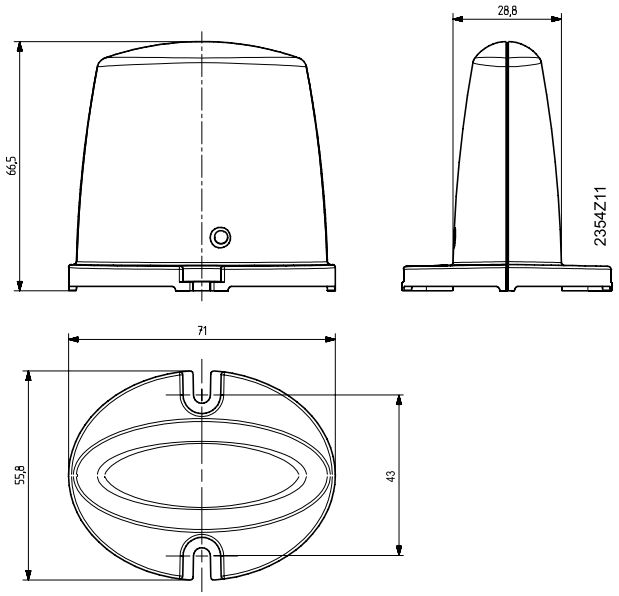
A: LED
B: Button

Terminals

The cable of the RF module has a plug to connect to the controller (connection X60).

Disconnect all power prior to connecting the basic unit!

Dimensions and drilling plan



RF connection via RF module

The RF link is establishing using the RF module as described in the corresponding section on RF components.

2.2.4 RF module BSB AVS71.393

The RF module BSB extends the product range by introducing wireless communication. The RF module BSB allows system components, such as room units, to transmit data without laying cables.

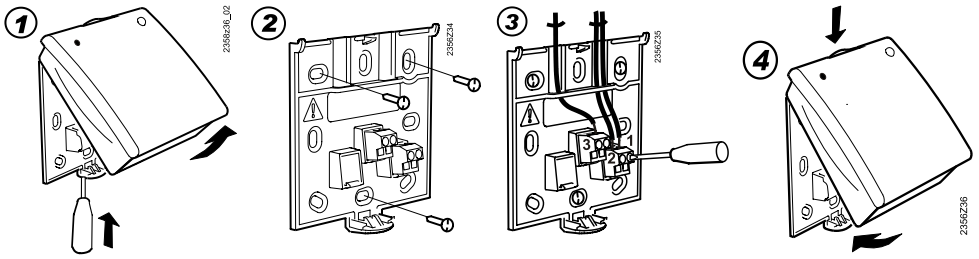
In contrast to the RF module AVS71.390 communication occurs between RF module BSB and basic unit (controller) via BSB. As a result, the RF module BSB can be placed farther away from the basic unit (controller) (see Technical data).

RF module (AVS71.390) and RF module BSB (AVS71.393) **cannot** be used concurrently.

Engineering

- Do not install the unit inside a metal housing.
- Use the device only inside a building.

Installation



	min.	max.
	0.25 mm²	1x 1.5 mm²
	0.25 mm²	2x 1.5 mm²
	⚠	

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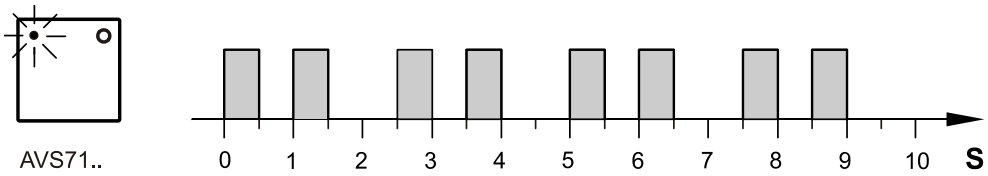
Connections

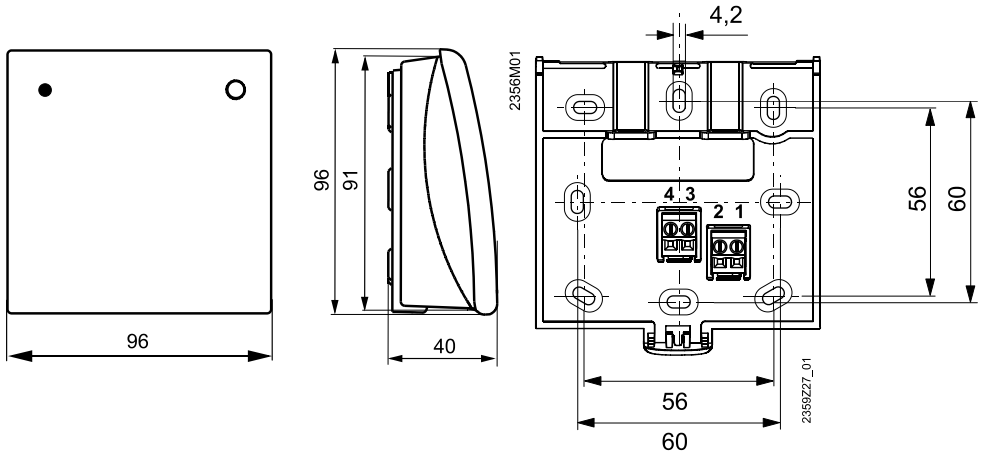
1	CL+	BSB data
2	CL-	BSB ground
3	G+	DC 12 V

Troubleshooting



This pattern means: "No communication BSB" or "No communication BSB-RF".

Dimensions and drilling plan



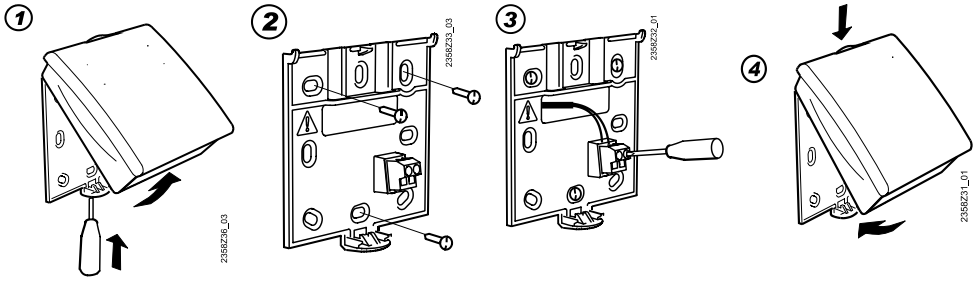
RF connection via RF module BSB

- The RF link is establishing using the RF module BSB as described in the corresponding section on RF components.
- LED on: Device is ready for operation.

2.2.5 RF repeater AVS14.390

	NOTICE
	• The radio repeater must be installed inside the building • A power supply near the RF module (BSB) is required for the RF repeater to set up the RF connection (see below).

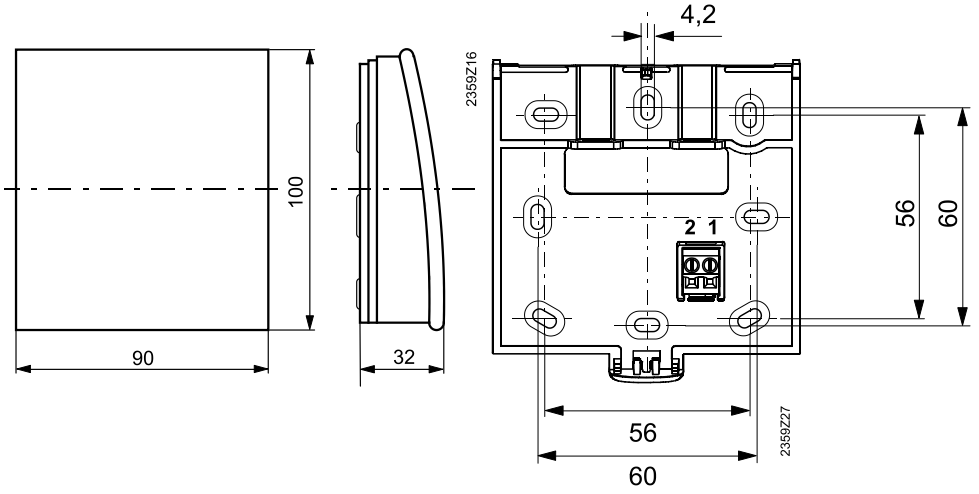
Installation



Connections

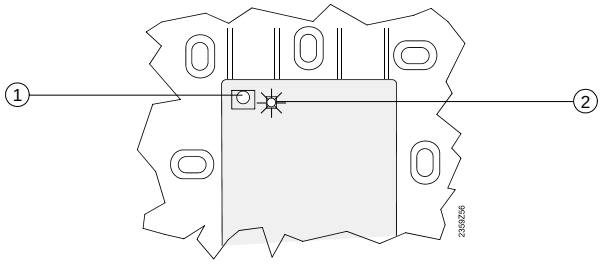
Power is supplied via the enclosed power pack. The wires are interchangeable.

Dimensions and drilling plan



RF connection

	NOTICE
	• Establish RF connection while unmounted and near the RF module (BSB). • The base unit powers the RF module (BSB). • Power to the RF repeater must be properly installed.



1 Button 2 LED

Establishment

1. Press the button on the RF module (BSB) for at least 8 seconds.
   ⇨ The LED on the RF module (BSB) **blinks rapidly**.
2. Press the button on the installed RF repeater until the LED starts **flashing quickly**.

⇨ The connection is established when the LED on the RF module (AVS71.390) extinguishes.

⇨ The LED of the RF module BSB (AVS71.393) lights again after 5 seconds (operating state "On").

Testing

	NOTICE
	• The test is made to check the quality of the radio link. • Testing takes place at the final installation location.

1. Press the button on the RF repeater from 3 to (at most) 8 seconds.
   ⇨ The LED **blinks slowly**.
   - When radio communications are operating correctly, the LED on the RF module (AVS71.390) flashes briefly at 10-second intervals.
   - With RF module BSB (AVS71.393), the LEDs go off every 10 seconds.
2. After the test, press the button on the RF repeater again briefly until the LED extinguishes.

The test can be cancelled by pressing the ESC button.

Operating principle

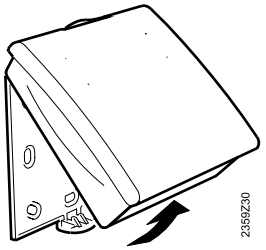
The RF repeater forwards the RF signals between RF module (BSB) and base unit. No further binding between the RF repeater and room unit required.

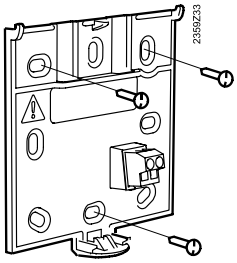
2.2.6 RF outside sensor AVS13.399

!	*NOTICE*
	• The RF transmitter must be installed inside the building • Place the RF transmitter to be able to exchange batteries.

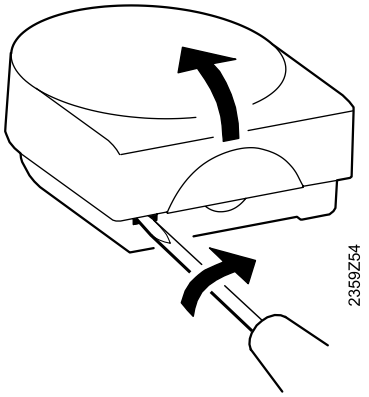
Mounting type

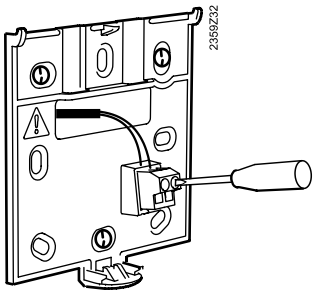
RF transmitter

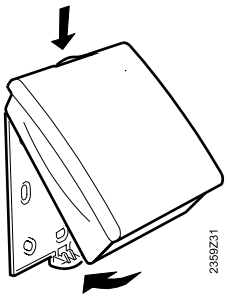


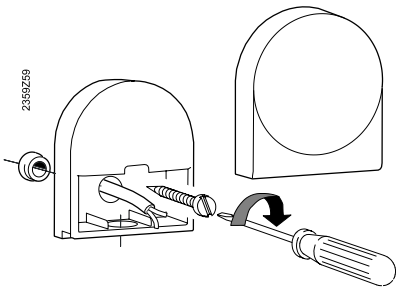


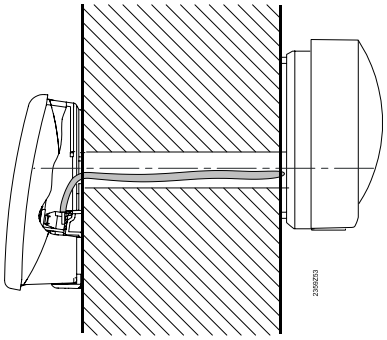
Outside sensor

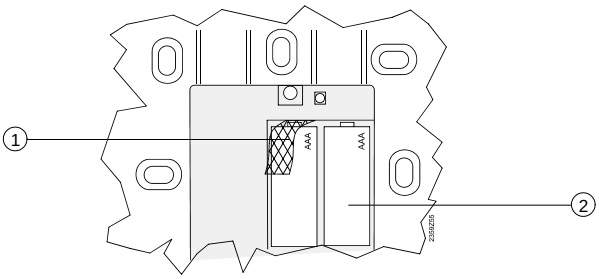












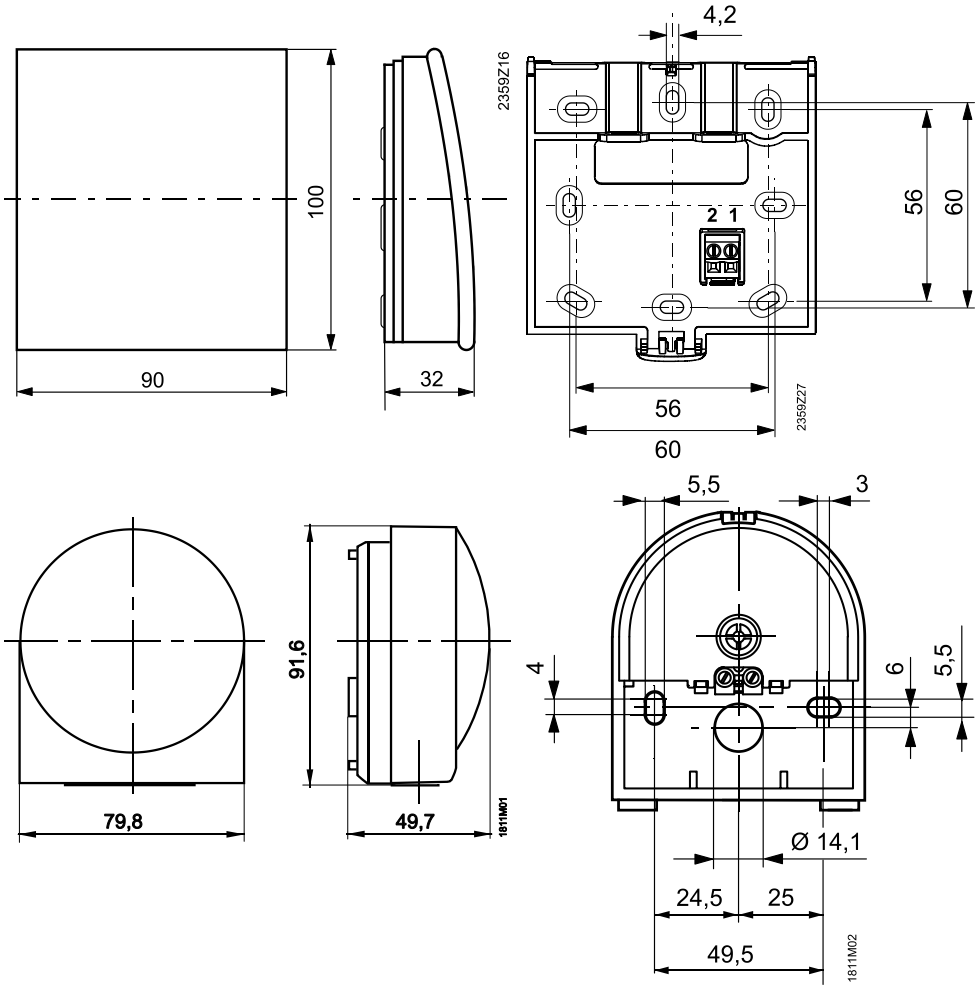
1 Remove the battery transit tab.

2 Battery

Connections

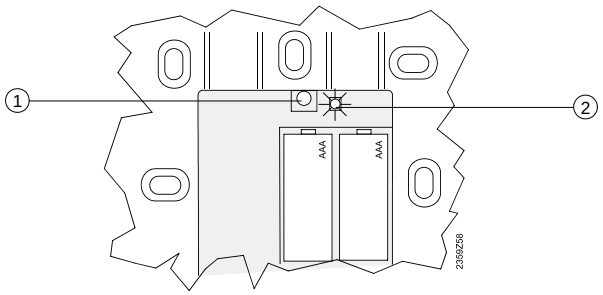
- Connect the outside sensor to the RF transmitter via 2-core-line; the connections can be interchanged.
- Power is supplied via three 1.5 V alcaline batteries of type AAA (LR03).

Dimensions and drilling plan



RF connection

	NOTICE
	• Establish RF connection while unmounted and near the RF module (BSB). • The base unit powers the RF module (BSB). • The devices battery supply must be activated (remove the battery protective strip).



1 Button

2 LED

Establishment

1. Press the button on the RF module (BSB) for at least 8 seconds.
   ⇨ The LED on the RF module (BSB) **blinks rapidly**.
2. Press the button on the transmitter of the RF outside sensor for at least 8 seconds.
   ⇨ This LED also **blinks rapidly**.
   - The connection is established when the LED on the RF module (AVS71.390) extinguishes.
   - The LED of the RF module BSB (AVS71.393) lights again after 5 seconds (operating state "On").
3. Press the button on the RF outside sensor again briefly until the LED extinguishes.

Testing

	NOTICE
	• The test is made to check the quality of the radio link. • Testing takes place at the final installation location.

1. Press the button on the transmitter of the RF outside sensor between 3 and max 8 seconds.
   ⇨ The LED **blinks slowly**.
   - When radio communications are operating correctly, the LED on the RF module (AVS71.390) flashes briefly at 10-second intervals.
   - With RF module BSB (AVS71.393), the LEDs go off every 10 seconds.
2. After checking, press again briefly the button on the transmitter of the RF outside sensor until the LED extinguishes.

The test can be cancelled by pressing the ESC button.

2.2.7 Checking the RF components

To check required RF components, go to the "RF" operating page, operating lines 130 to 132 and 134 to 137.

Via the operating level "Commissioning".

In the aforementioned operating lines, you can see whether the desired room units, operator units and RF repeaters (as applicable) are operations or not (or no reception).

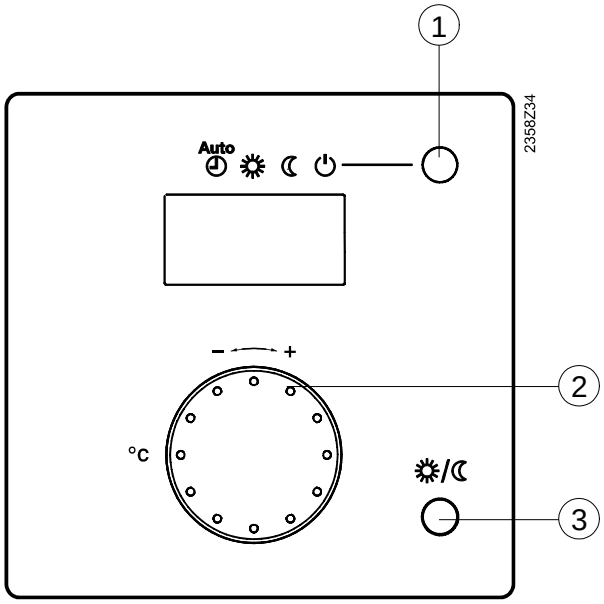
The final check of the RF components is conducted using an operator or room unit featuring operating line display (not QAA5x).

3 Handling

3.1 QAA55... / QAA58...

3.1.1 Operation

Operating elements



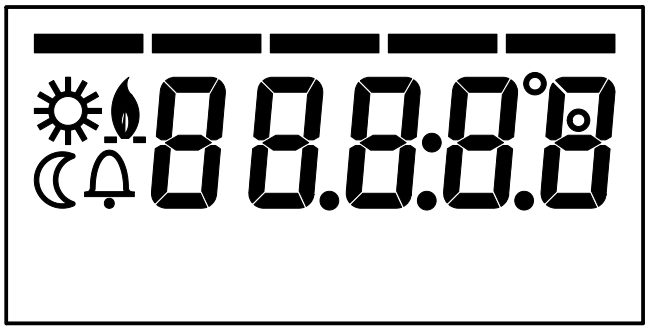
1 Select heating mode

2 See room comfort setpoint. Other settings.

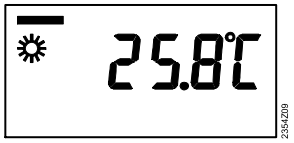
3 Occupancy button. navigation

Display

Displays all segments:



Example of basic display:

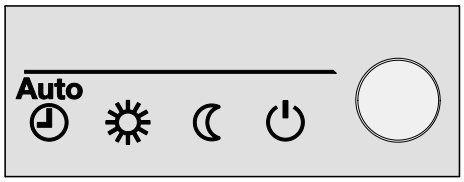


Explanation

The display has the following meaning:

☼	Heating to Comfort setpoint	🔔	Error messages
☾	Heating to the Reduced set point	🔥	Burner in operation (oil/gas burner).

Selecting pace heating mode



This button is used to switch between the different operating modes.
The selection is displayed by a bar below the heating mode symbol.

Automatic operation AUTO

In automatic mode the room temperate is controlled as per the scheduler.
Characteristics of automatic mode:

- Heating mode according to the time program
- Room setpoints per the heating program "Comfort setpoint" ☼ or "Reduced setpoint" ☾
- Protective functions active.
- Automatic summer / winter changeover and automatic 24-hour heating limit active (ECO functions)

Continuous operation ☼ or ☾

Under continuous operation, the room temperature is maintained at a constant to the selected operating level.

☼ Heating to the Comfort setpoint

☾ Heating to the Reduced set point

Characteristics of continuous operation:

- Heating mode with no time program.
- Protective functions active.
- Automatic summer / winter changeover (ECO functions) and automatic 24-hour heating limit inactive in the case of continuous operation with Comfort setpoint

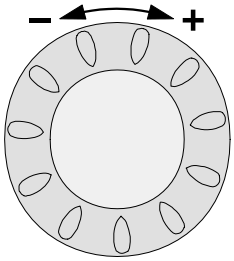
Protection ⏻

When using Protection, the heating system is off. But it remains protected against frost (frost protection temperature) provided there is no power failure.

Characteristics of Protection:

- Heating OFF.
- Temperature according to frost protection.
- Protective functions active.
- Automatic summer / winter changeover (ECO functions) and automatic 24-hour heating limit active

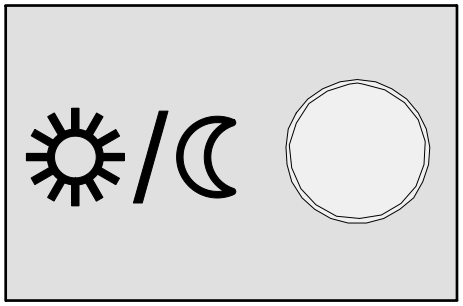
Adjusting the room temperature setpoint



Turn the setting knob to increase or decrease the Comfort setpoint heating .

	NOTICE
	• Direct settings using the knob have no effect if the plant is in an operating state other than Comfort heating . • Each time you make a readjustment, wait at least 2 hours, allowing the room temperature to adapt.

Presence button



If you do not use the rooms for short periods of time, you can press the presence button to temporarily reduce heating.

Heating operation changes from Comfort setpoint heating to reduced setpoint heating.

Press the occupancy button again as soon as the rooms are occupied.

	NOTICE
	• The occupancy button is only active in automatic mode. • The current selection is active until the next switching action as per the switching program.

3.1.2 Programming

Setting principle

1. Press the occupancy button (> 3 seconds).
   ⇨ The room unit switches to the service level.
   The first parameter is selected; the present value blinks.
2. Use the setting knob to set the parameter.
3. Briefly press the occupancy button.
   ⇨ The next parameter is selected for setting.
4. Exit service level:
   - After 8 seconds without activity, the room unit exists the service level.
   - Briefly press the operating mode button.

Settings

Parameter	Display	Function
Used as	ru = 1	The room unit is addressed as **RU1** (default setting).
	ru = 2	The room unit is addressed as **RU2**.
	ru = 3	The room unit is addressed as **RU3**.
Direct adjustment	P1 = 1	**Automatic storage**: (default setting) A setpoint readjustment with the knob is adopted either by pressing the operating mode button or without any further confirmation (timeout).
	P1 = 2	**Save with confirmation**: A setpoint readjustment with the knob is adopted only after pressing the operating mode button.
Programming lock	P2 = 0	**OFF**: All operating elements released (default setting).
	P2 = 1	**ON**: Following operating elements are locked: - Operating mode changeover heating circuit. - Readjustment of Comfort setpoint. - Changeover of operating level (occupancy button).
RF connection*	P3	Start connection with operating mode button.
Test mode*	P4	Start test of RF connection with operating mode button.

* QAA58… only.

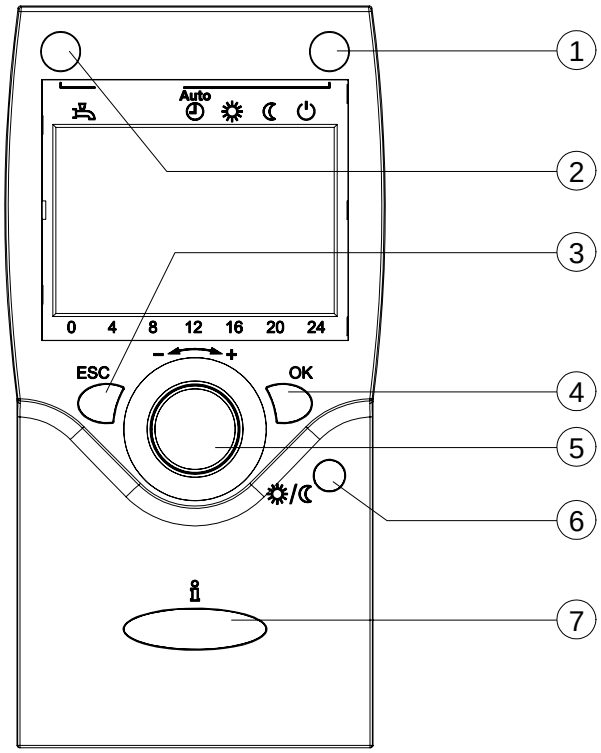
	*NOTICE*
	• If operation lock is active and one of the locked buttons is pressed, "OFF" is displayed for 3 seconds. • The operation lock does not prevent the service level from being accessed.

3.2 QAA75... / QAA78… / AVS37…

3.2.1 Operation

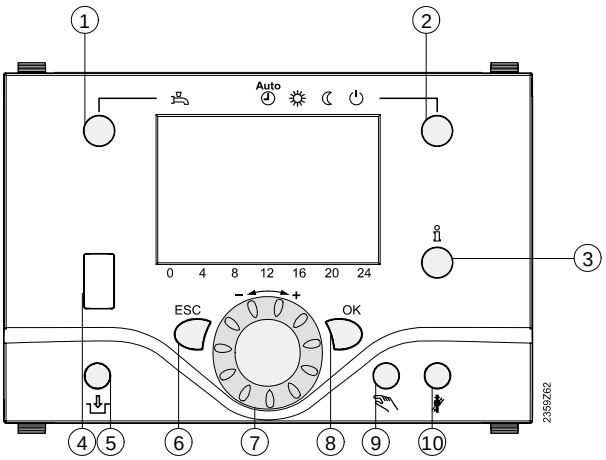
Operating elements

Room units QAA75... / QAA78…



1 Selecting pace heating mode
2 Selecting DHW heating
3 Quitting the setting
4 Adopting the setting
5 Navigation and setting
6 Presence button
7 Display information

Operator unit AVS37…



1 Selecting DHW heating

2 Selecting pace heating mode

3 Display information

4 Service socket (BSB)

5 Unlock (only AVS37.296)

6 Quitting the setting

7 Navigation and setting

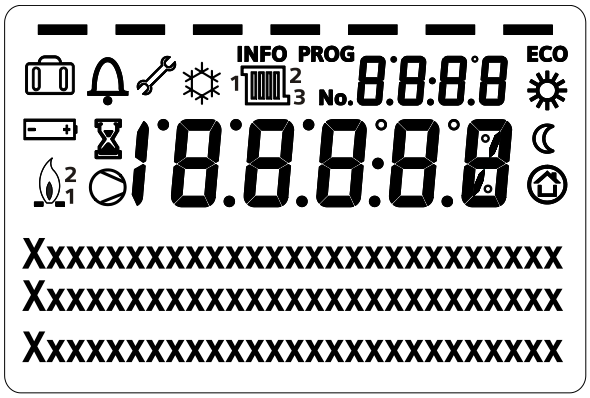
8 Adopting the setting

9 Manual operation

10 Chimney sweep function

Display

Displays all segments:

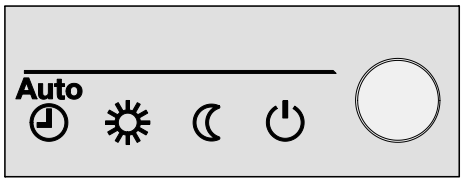


Explanation

The display has the following meaning:

	Heating to the Comfort setpoint		Holiday function active
	Heating to the Reduced set point		Reference to heating circuit.
	Heating to the frost protection setpoint		Service / special functions
	Cooling to cooling setpoint.		Error messages
	Process running – please wait	INFO	Info level activated
	Change battery	PROG	Programming activated
	Burner operating (only oil/gas boiler); active burner stage.	ECO	Heating temporarily switched off ECO function active
	Compressor operating (HP only).		

Selecting pace heating mode



This button is used to switch between the different operating modes.
The selection is displayed by a bar below the heating mode symbol.

Automatic operation AUTO

In automatic mode the room temperate is controlled as per the scheduler.

Characteristics of automatic mode:

- Heating mode according to the time program
- Room setpoints per the heating program "Comfort setpoint" or "Reduced setpoint"
- Protective functions active.
- Automatic summer / winter changeover (ECO functions)

Continuous operation or

Under continuous operation, the room temperature is maintained at a constant to the selected operating level.

	Heating to the Comfort setpoint
	Heating to the Reduced set point

Characteristics of continuous operation:

- Heating mode with no time program.
- Protective functions active.
- Automatic summer / winter changeover (ECO functions) and automatic 24-hour heating limit inactive in the case of continuous operation with Comfort setpoint

Protection

When using Protection, the heating system is off. But it remains protected against frost (frost protection temperature) provided there is no power failure.

Characteristics of Protection:

- Heating OFF.
- Temperature according to frost protection.
- Protective functions active.
- Automatic summer / winter changeover (ECO functions) and automatic 24-hour heating limit active

Controller stop function

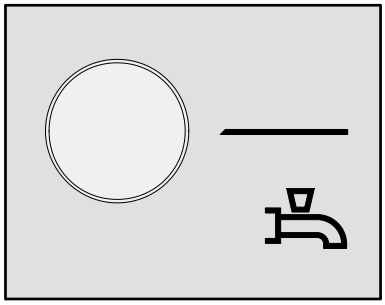
The controller stop function is triggered by pressing the operating mode buttons for an extended period (> 3 seconds).

The controller stop function can be used to manual control the burner.
The operator's output specifications override the control algorithm for the LMS14...

Exception

The 2-point controller places the burner out of service, if the flow temperature achieves the maximum boiler temperature (OL 2212: Setpoint).

Selecting DHW heating



The button is used to set DHW heating mode.

The following functions are available, depending on whether it is a DHW storage tank or instantaneous DHW heater:

Plant type	Operating mode	Press button	Display
DHW storage tank	On.	1x	1. bar to the left (under DHW symbol).
	Off	2x	No bar.
Instantaneous heater.	On.	1x	1. + 2. Bar left
	ON ECO	2x	1. bar to the left (under DHW symbol).
	Off	3x	No bar.

DHW mode

On: The DHW is treated according to the selected switching program. Keep hot function is generally released.

On Eco: Same as operating mode "On", but: Keep hot function is off.

Off: No DHW heating, but the protective function is active.

The keep hot function maintains the temperature of the instantaneous DHW heater so that warm water is quickly available the next time the facet is turned on.

DHW push

The DHW push function is only available for the DFW storage tank.

The DHW push is triggered by pressing the DHW mode button for an extended period (> 3 seconds).

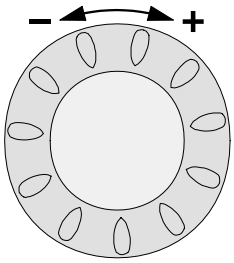
DHW push initiates a single DHW charging cycle to the nominal setpoint. The push is active until the nominal DHW setpoint is reached.

DHW push can also be started when:

- DHW mode is "off".
- Operating mode changeover is effected via H1 or centrally (LPB)
- All heating circuits use the holiday function

!	*NOTICE*
	Once triggered, the DHW push cannot be cancelled via the operator unit.

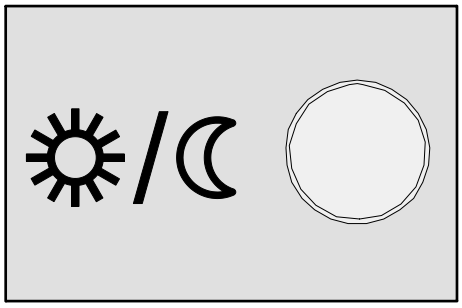
Adjusting the room temperature setpoint



Turn the setting knob to increase or decrease the Comfort setpoint heating .

	NOTICE
	• Direct settings using the knob have no effect if the plant is in an operating state other than Comfort heating . • For reduced setpoint, press OK, select operating page “Heating circuit“ and adjust the “Reduced setpoint”. • Each time you make a readjustment, wait at least 2 hours, allowing the room temperature to adapt.

Presence button



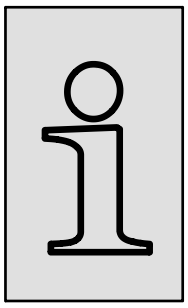
If you do not use the rooms for short periods of time, you can press the presence button to temporarily reduce heating.

Heating operation changes from Comfort setpoint heating to reduced setpoint heating.

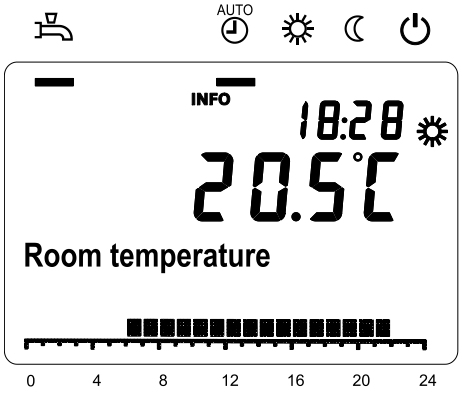
Press the occupancy button again as soon as the rooms are occupied.

	NOTICE
	• The occupancy button is only active in automatic mode. • The current selection is active until the next switching action as per the switching program.

Displaying information



Various data can be displayed by pressing the info button.



Displays

The following information is displayed:

- Error message (error code list).
- Maintenance messages (maintenance code list).
- Special mode messages (special mode code list).
- Info lines.

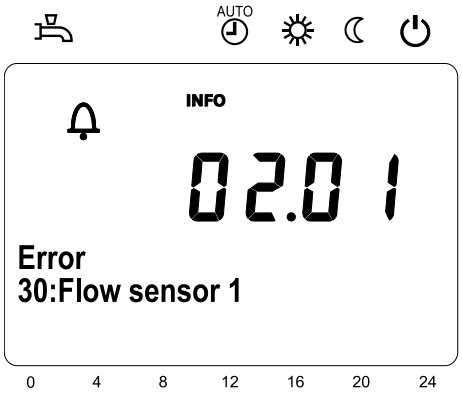
	NOTICE
	• The code lists are documents in the corresponding controller user's guides. • The info line texts are self explanatory.

Error / maintenance

In exceptional cases, the basic display shows one of the following symbols:

Error message.

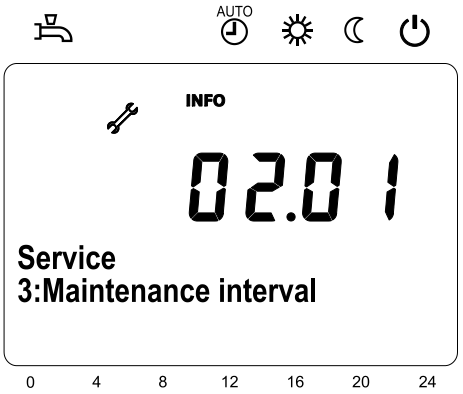
If this symbol appears, an error in the plant has occurred.



Press the info button and read further information.

Maintenance or special mode.

If this symbol appears, a maintenance message is delivered or the plant has changed to special operation.



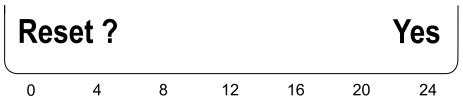
Press the info button and read further information.

The LPB number on the display indicates the device in the LPB system from which the error or maintenance message, or special operation, was triggered. The first 2 digits give the segment address, the 2 digits after the dot the device address.

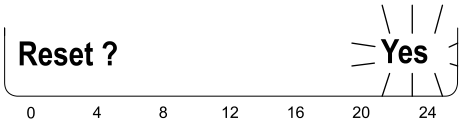
Hence, 02.01 denotes segment 2, device 1.

Reset function

The reset function for meters and the resettable parameters appears on the bottom line of the display, provided a reset is permitted on the current operating line (end user / commissioning / heating engineer).

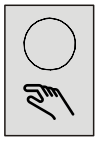


After activation with the OK button, the display will show a flashing “Yes”.



After confirmation with the OK button, the relevant parameter or meter is reset.

Manual operation



A short press (< 3 seconds) of the manual operation button enable the manual operating mode.

When manual operation is active, the relays are no longer switched according to the control state, but are set to a predefined manual operation state depending on their function.

The burner relay switched on in manual control can be switched off by the electronic temperature controller (TR).

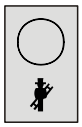
Setpoint adjustment in manual control

The device switches to the basic display after enabling manual operation.

The (maintenance) special mode symbol is displayed.

1. Press the INFO button.
   ⇨ Device switches to the Info display for manual operation.
2. Use the knob to set the setpoint.

Chimney sweep function



A short press (< 3 seconds) of the chimney sweep function enables the manual operating mode.

It produces the operating state required for making measuring emissions (flue gas).

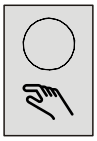
Set burner output

The device switches to the basic display after enabling chimney sweep function.

The (maintenance) special mode symbol is displayed.

1. Press the INFO button.
   ⇨ Device switches to the Info display for the chimney sweep function.
2. Depending on the device: Use the knob to set the burner output.

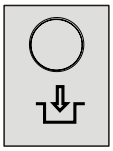
Bleed function



A long press (> 3 seconds) of the manual operation button enables the bleeding function.

The bleeding function bleeds any air in the heating/hot water system using an automatic bleeder installed above the boiler. The system pumps are switched on in a specified sequence.

Unlocking function



Some errors result in a lock of LMS14/15...

These errors cannot be reset via standard menu ("Reset?").

Locking error features:

- Remain saved also after mains off.
- Unlocking is required even after the fault no longer is present.
- If error still persists, remove first the error.

Operation of unlocking button:

- 0.4...10 seconds: LMS14/15... is unlocked.
- > 10 seconds: LMS14/15... is locked.
  Note: Unlock by unlocking button (0.4...10 seconds).

The unlocking button executes the same function as switching of LMS input "Reset" (X4/X4a).

3.2.2 Programming

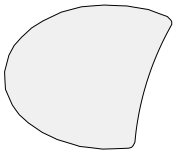
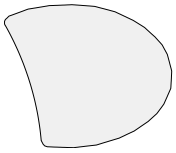
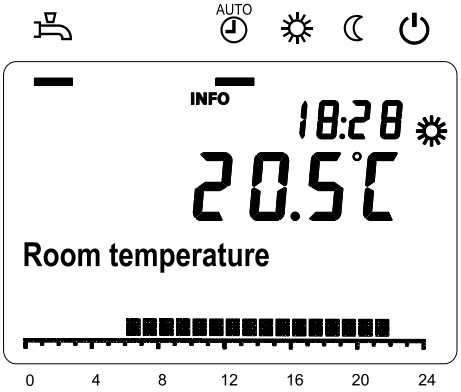
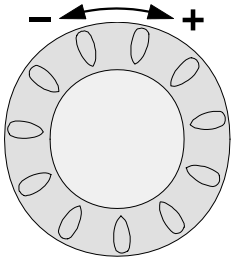
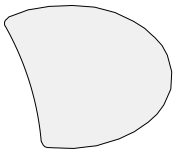
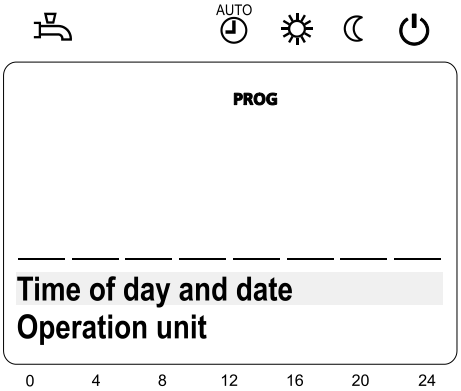
Setting principle

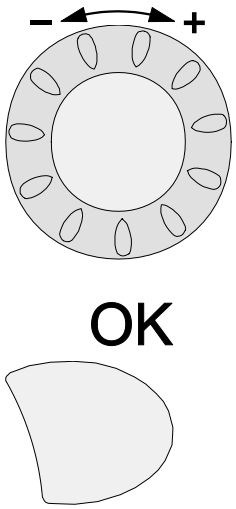
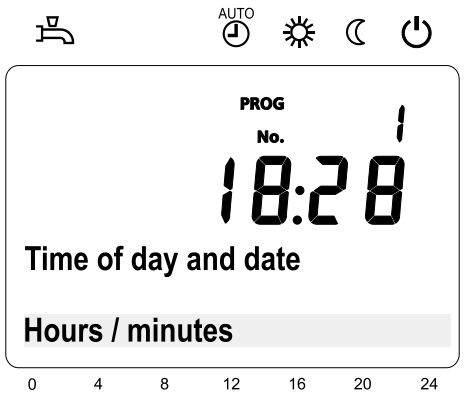
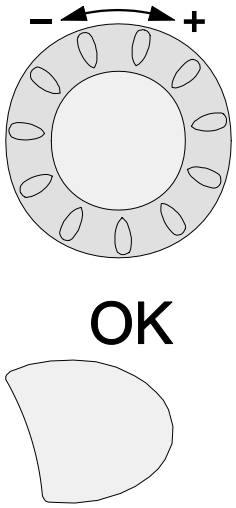
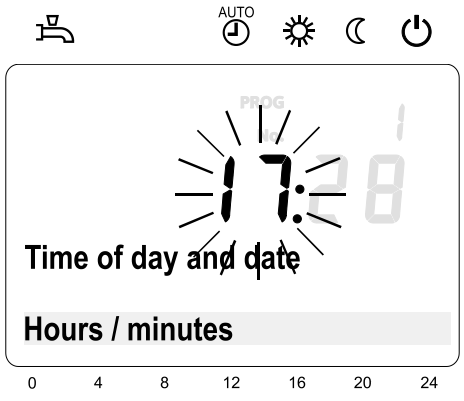
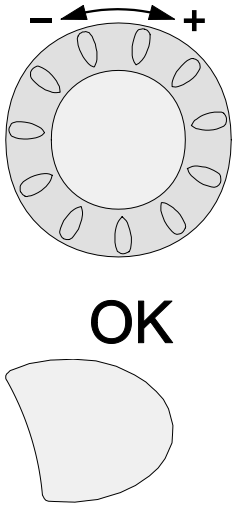
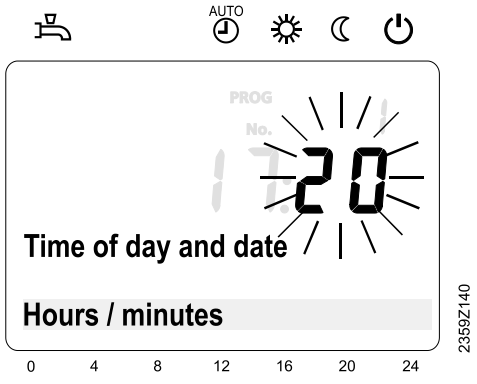
Settings that cannot be made directly with the help of operating elements are made through programming. For this purpose, the individual settings are structured in the form of menus and operating lines, thus creating practical groups of settings.

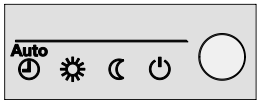
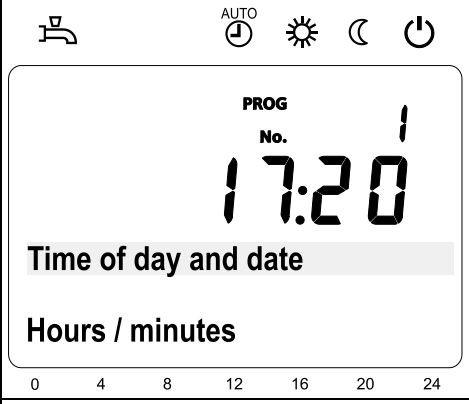
The following example shows how to set the time of day and the date.

Example "Setting the time of day"

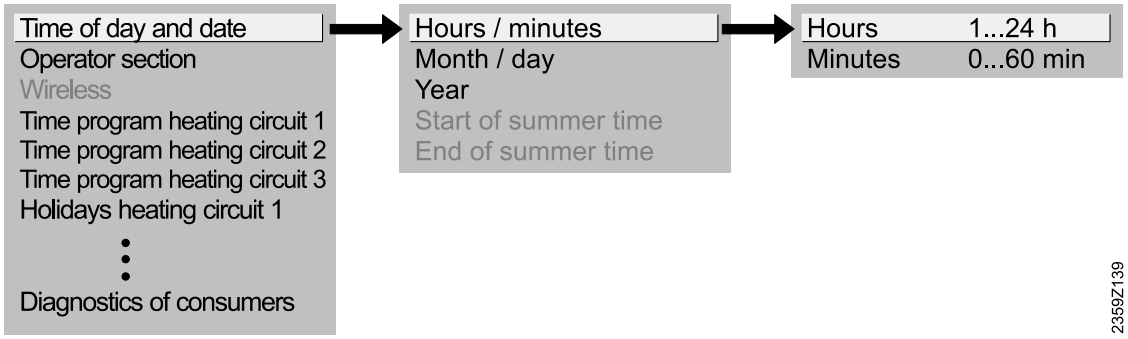
	NOTICE
	• When pressing the ESC button, you go one step back; adjusted values will not be adopted • If no setting is made for 8 minutes, the display returns automatically to the basic display • Operating lines may be hidden, depending on the type of controller, the configuration made and the user level

	Operation	Display example	Description
1	ESC  OK 		Basic display. If the basic display is not shown, press the ESC button to go back. Press OK.
2	 OK 		The bottom section of the display shows various menus. Turn the setting knob until operating page *Time of day and date* appears. Press the OK button to confirm.

	Operation	Display example	Description
3			In the bottom section of the display, the first operating line of operating page *Time of day and date* appears. Turn the setting knob until operating line *Hours / minutes appears*. Press the OK button to confirm.
4			The display shows the hours blinking. Turn the setting knob until the hours of the time of day are correct. Press the OK button to confirm.
5			The display shows the minutes blinking. Turn the setting knob until the minutes of the time of day are correct. Press the OK button to confirm.

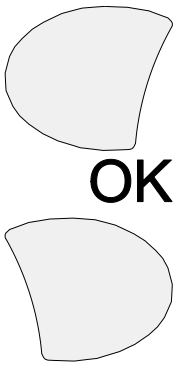
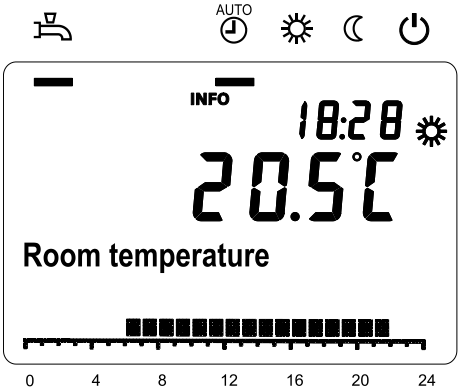
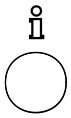
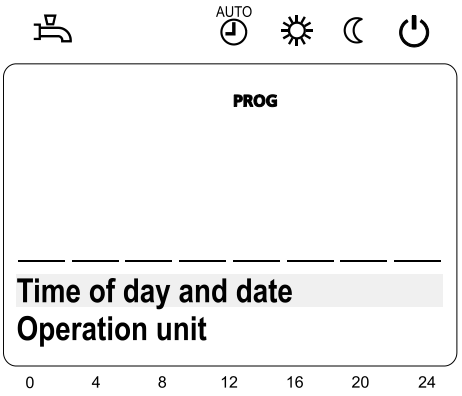
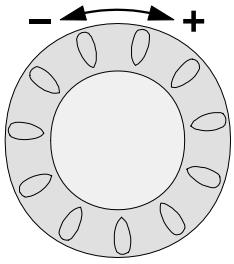
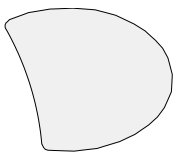
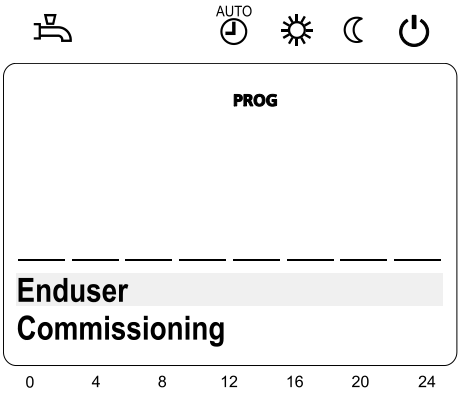
	Operation	Display example	Description
6			The settings are saved and the displays stops blinking. Now, you can make further settings or press the operating mode button to return to the basic display.
7			Unit now returns to basic display.

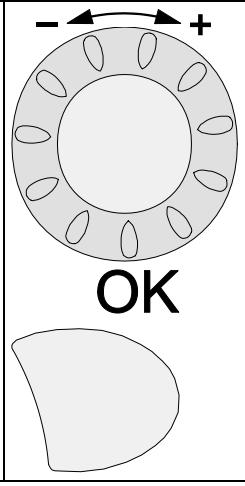
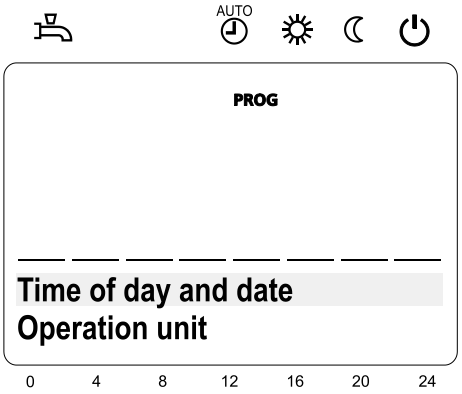
Example of menu structure



3.2.3 User levels

The user levels only allow authorized user groups to make settings. To reach the required user level, proceed as follows:

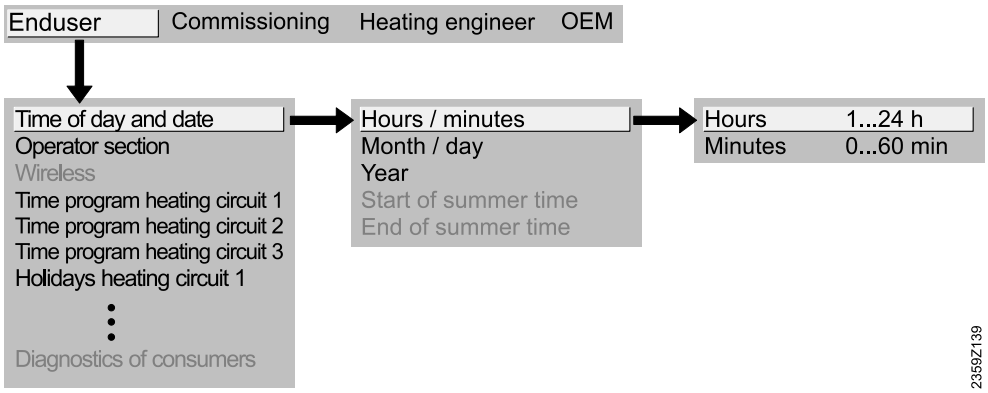
	Operation	Display example	Description
1	ESC  OK		Basic display. If the basic display is not shown, press the ESC button to go back. Press OK.
2			You are on user level *Enduser*. Long press of the INFO button (> 3 Seconds).
3	 OK 		You are now given a choice of user levels. Turn the setting knob until the required user level is reached. Press OK.

	Operation	Display example	Description
			You are now at the required user level.

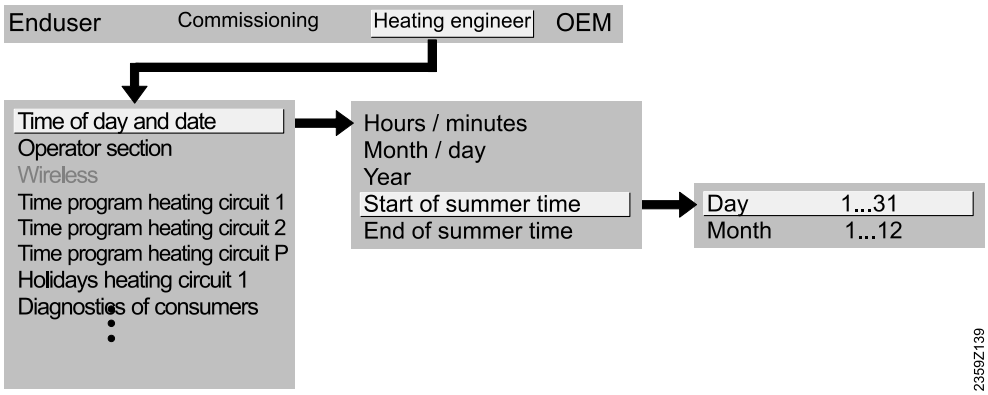
To reach the OEM level, the relevant code must be entered.

Setting structure "End user"

The example given here shows that certain user levels do not allow certain settings. The example shows them highlighted. On the unit, they are hidden.



Setting structure "Heating engineer"



3.2.4 Room unit, operator unit settings

The table displays settings relevant to room and operator units.

Key

E	End-user	F	heating engineer
I	Commissioning	O	OEM

Operating line						
	User level					
		Function [value range]	**Standard**	**Min**	**max**	**Unit**
Time of day and date						
1	E	Hours/minutes	-	00:00	23:59	hh:mm
2	E	Day / month	-	01.01	31.12	dd.mm
3	E	Year	-	2004	2099	yyyy
5	F	Start of summertime	25.03	01.01	31.12	dd.mm
6	F	End of summertime	25.10	01.01	31.12	dd.mm
Operator section						
20	E	Language German ¦ English ¦ French ¦ Italian ¦ etc.	German			-
21	O	Display of special operation Off ¦ On	On: QAA7x.6xx/101,201,501; AVS37.x9x/109,509 Off: QAA7x.6xx/301,701; AVS37.x9x/209,309,709			
22	F	Info Temporarily ¦ Permanently	Temporarily			-
24***	O	Lighting Off ¦ Temporarily ¦ Permanently	Temporary			-
26	F	Operation lock Off ¦ On	Off			-
27	F	Programming lock Off ¦ On	Off			-
28	I	Direct adjustment Automatic storage ¦ Storage with confirmation	Storage with confirmation			-
29	E	Units °C, bar ¦ °F, PSI	°C, bar			-
30	O	Save basic settings No ¦ Yes	No			-
31	O	Activate basic settings No ¦ Yes	No			-
32	O	Basic settings Compatible ¦ Compatibility restricted ¦ Incompatible ¦ Incompatible operator unit	Incompatible			-
39	O	Commissioning menu Off ¦ On	On.			-
40*	I	Used as Room unit 1 ¦ Room unit 2 ¦ Room unit 3 ¦ Operator unit 1 ¦ Operator unit 2 ¦ Operator unit 3 ¦ Service unit	Room unit 1			-
42*	I	Assignment device 1 Heating circuit 1 ¦ Heating circuits 1 and 2 ¦ Heating circuits 1 and 3 ¦ All heating circuits	Heating circuit 1			-
44	I	Operation HC2 Jointly with HC1 ¦ Independently	Jointly with HC1			-
46	I	Operation HC3 Jointly with HC1 ¦ Independently	Jointly with HC1			-

47*	I	Room temperature device 1 None Heating circuit 1 only ¦ For all assigned HCs	For all assigned HCs			-
48*	I	Occupancy button device 1 None ¦ Heating circuit 1 only ¦ For all assigned HCs	For all assigned HCs			-
54*	F	Readjustment room sensor	0.0	-3	99.9	-

70	F	Software version		-

Wireless				
120**	I	Binding No ¦ Yes	No	
121**	I	Test mode Off ¦ On	Off	
130	I	Room unit 1 Missing ¦ In operation ¦ No recept'n ¦ Change batt	-	-
131	I	Room unit 2 Missing ¦ In operation ¦ No recept'n ¦ Change batt	-	-
132	I	Room unit 3 Missing ¦ In operation ¦ No recept'n ¦ Change batt	-	
133	I	Outside sensor Missing ¦ In operation ¦ No recept'n ¦ Change batt	-	-
134	I	RF repeaters Missing ¦ In operation ¦ No recept'n ¦ Change batt	-	-
135	I	Operator unit 1 Missing ¦ In operation ¦ No recept'n ¦ Change batt	-	
136	I	Operator unit 2 Missing ¦ In operation ¦ No recept'n ¦ Change batt	-	
137	I	Operator unit 3 Missing ¦ In operation ¦ No recept'n ¦ Change batt	-	-
138	I	Service unit Missing ¦ In operation ¦ No recept'n ¦ Change batt	-	-
140	I	Delete all devices No ¦ Yes	No	-

* QAA7x only
** QAA78 only
*** Not QAA78

3.2.5 Settings in detail

Operating page "Time of day and date"

The controller has a yearly clock with time of day, weekday and date.

Time of day and date must be set for the time switch automatic.

No.	Operating line	Settings
1	Hours/minutes	
2	Day / month	
3	Year	
5	Start of summertime	
6	End of summertime	

Daylight saving time/standard time changeover

The dates set for the changeover from wintertime to summertime, and vice versa, ensure that on the first Sunday after the set date the time of day will change from 02:00 (wintertime) to 03:00 (summertime) and from 03:00 (summertime) to 02:00 (wintertime).

Operating page "Operator unit"

Operation and display

No.	Operating line	Settings
20	Language	German ¦ English ¦ French ¦ Italian ¦ etc.
21	Display of special operation	Off ¦ On
22	Info	Temporarily ¦ Permanently
24	Lighting	Off ¦ Temporarily ¦ Permanently
26	Operation lock	Off ¦ On
27	Programming lock	Off ¦ On
28	Direct adjustment	Automatic storage ¦ Storage with confirmation
29	Units	°C, bar ¦ °F, PSI
30	Save basic settings	No ¦ Yes
31	Activate basic settings	No ¦ Yes
32	Basic settings	Compatible ¦ Compatibility restricted ¦ Incompatible ¦ Incompatible operator unit
39	Commissioning menu	Off ¦ On

Languages

Available languages vary depending on country and version.

Display of special operation

- Off

Special operation is **not** displayed on the basic display. Display of special operation is available on the info level only.

- On.

The "Tool" symbol is displays and special operations are displayed directly in the basic display. Switching to the info level not required.

Special operation includes, for example, manual operation, emergency more, outside temperature simulation, Eco mode and output test.

Info

- Temporary

After pressing the info button, a change to the “predefined” basic display is made after a maximum of 8 minutes or by pressing the operating mode button (with the QAA78… only 2 minutes) .

- Permanently

After pressing the info button, a change back to the "new" basic display is made after a maximum of 8 minutes. The info value selected last will be adopted by the new basic display.

This setting cannot be made for QAA78…

Lighting

- Off

No lighting.

- Temporary

Operator intervention (press of a button, turn of a knob) switches on lighting and then switches it off 8 minutes after the last action.

- Permanently

Continuous lighting

Operation lock

All operating elements are locked when operation lock is switched on that would allow intervention in plant operations (heating circuit operating mode, hot water operating mode, etc.).

Programming lock

Parameter values can still be displayed, but not changed if the programming lock is enabled.

- Temporary cancellation of programming

On the programming level, locked programming can temporarily be deactivated. To do this, press the OK and ESC buttons simultaneously for 3 seconds. Temporary deactivation of the programming lock is maintained until programming is quit.

- Continuous cancellation of programming

First run a temporary cancellation, then operating line 27 "Programming lock" to cancel the programming lock.

Direct adjustment

- Automatic storage:

A setpoint readjustment made with the knob is adopted either by pressing the OK button or without any further confirmation (timeout).

- Storage with confirmation

A setpoint readjustment made with the knob is adopted only after pressing the OK button.

Units

- Temperature/Pressure values in °C, bar.
- Temperature/Pressure values in °F, PSI.

Save basic setting

With the exception of the data listed below, the setting data are transferred from the memory of the controller to the connected operator unit.

Enable basic setting

With the exception of the data listed below, the setting data of all operating levels are transferred from the memory of the operator unit to the connected controller. Former setting data in the controller will be overwritten.

The following data will not be overwritten:

line number	Operating line
130	Room unit 1
131	Room unit 2
132	Room unit 3
133	Outside sensor
134	RF repeaters
135	Operator unit 1
138	Service unit
140	Delete all devices
516	Default values
536	Default values
556	Default values
576	Default values
6222	Device hours run
6600	Device address
6601	Segment address
6650	Outside temp source

The following data will not be overwritten either:

RF list, hours run / start counter, yield meter, maintenance meter, slave pointer, and error history.

RF connection must be restored following "Enable basic setting".

"Enable basic setting" is only shown under certain circumstances. Refer to following associations under "Basic setting" (operating line 32).

Basic setting

"Basic setting" displays the compatibility of device versions and data sets on the controller and operator unit. The following applies:

Compatibility check	Output	Operating line 31 / Write data set
Device versions/revisions are the same; data is the same.	Compatible	BZ 31 shown/data set writable.
Device versions/revisions are not the same; data is the same.	Compatibility restricted	BZ 31 shown/data set writable after query.
All other cases.	'Incompatible'	BZ 31 hidden/download to controller not possible.

Commissioning menu.

The commissioning menu is automatically displayed upon PowerUp and must be processed. The user must enter the language settings and time. Once completed, the basic display is displayed and the menu no longer appears at PowerUp. It can, however, be enabled again using the parameter "Commissioning menu" and then is displayed again the next time power is interrupted.

Addition: The process can be bypassed by pressing the ESC button on the commissioning menu. The basic display is immediately displayed and the commissioning menu returns at the next PowerUp (since it has not yet been processed).

Used as

No.	Operating line	Settings
40*	Used as	Room unit 1 ¦ Room unit 2 ¦ Room unit 3 ¦ Operator unit 1 ¦ Operator unit 2 ¦ Operator unit 3 ¦ Service unit
* QAA7x only		

Basic principle: the number (1, 2, or 3) after the room unit or operator unit indicates the heating circuit (1, 2, or 3) controlled by the operator unit.

Additional assignments are available for room unit/operator unit 1 on heating circuits 1 to 3 (heating circuit assignment: Operating lines 42 to 48).

Heating circuit assignment

No.	Operating line	Settings
42*	Assignment device 1	Heating circuit 1 ¦ Heating circuits 1 and 2 ¦ Heating circuits 1 and 3 ¦ All heating circuits
44	Operation HC2	Jointly with HC1 ¦ Independently
46	Operation HC3	Jointly with HC1 ¦ Independently
47*	Room temperature device 1	None ¦ Heating circuit 1 only ¦ For all assigned HCs
48*	Occupancy button device 1	None ¦ Heating circuit 1 only ¦ For all assigned HCs
* QAA7x only		

The following example illustrates applications available using the settings "Used as" (operating line 40) together with "Heating circuit assignment" (operating lines 42 to 48).

Examples

Existing heating circuits 1 and 2 should be controlled centrally from room unit 1 for logistical reasons. The room temperature on room unit 1 is relevant to only heating circuit 1 since climatic conditions for the heating circuit 2 (e.g. winter garden) may differ from heating circuit 1. A room unit 2 allows for separate temperature measurements and individually setting of heating circuit 2. Conversely, operating unit 1 operates the occupancy button.

Settings for the example:

QAA7x, unit 1	
Operating line 40	Room unit 1
Operating line 42	Heating circuits 1 and 2
Operating line 47	For heating circuit 1 only
Operating line 48	For all assigned heating circuits

QAA7x, unit 2	
Operating line 40	Room unit 2

"Used as" in detail (operating line 40).

Definition of the operator unit (QAA7x only) as room unit, operator unit or service unit. Assignment to a heating circuit (can be extended for room unit/operator unit 1).

Room unit/operator unit 1.	controls heating circuit 1; can be extended using settings in operator line 42; provided the heating circuit is activated on the basic unit.
Room unit/operator unit 2.	controls heating circuit 2; provided the heating circuit is activated on the basic unit.
Room unit/operator unit 3.	controls heating circuit 3; provided the heating circuit is activated on the basic unit.
Operator unit 1	control the heating circuits activated on the basic unit.

	NOTICE
	• One user ("Used as") can be assigned to exactly one operator unit. • The operator unit neither records nor sends room temperature if QAA7x is defined as the operator or service unit.

Heating circuit assignment in detail.

Assignment device 1 (operating line 42)

Extended assignment of heating circuits 1 to 3 for room unit/operator unit 1.

Heating circuit 1	controls heating circuit 1.
Heating circuits 1 and 2	controls heating circuits 1 and 2.
Heating circuits 1 and 3	controls heating circuits 1 and 3.
All heating circuits	controls heating circuits 1, 2, and 3.

Operation of HC2 (operating line 44).

Defines the effect of operation (operating mode button, knob) on the room unit/operating unit 1 for heating circuit 2 or on the service unit.

Commonly with HC1	Operation acts commonly on heating circuits 1 and 2.
Independently	The action of operation is queried on the display as soon as the operating mode button is pressed or the setting knob is operated.

Operation of HC3 (operating line 46).

See "Operation of HC2" (operating line 44).

Room temperature device 1 (operating line 47)

The room temperature value for room unit 1 can be assigned to the relevant heating circuits. If only 1 heating circuit is assigned, the room temperature value is always assigned to it.

None	Heating circuit 1 has no room temperature value; room temperature values from heating circuits 2 and 4 do not come from room unit 1.
For heating circuit 1 only	Heating circuits 2 and 3 do not receive their room temperature values from room unit 1; except for heating circuit 1.
For all assigned heating circuits	Heating circuits 2 and 3 receive their room temperature values from room unit 1; heating circuit 1 as well.

Occupancy button device 1 (operating line 48).

The action of the occupancy button on room unit/operator unit 1 can be assigned to the relevant heating circuits. If only heating circuit 1 is assigned, the occupancy button always acts on that heating circuit.

None	Heating circuit 1 has no occupancy function; the occupancy functions for heating circuits 2 and 3 and not operated on room unit/operator unit 1.
For heating circuit 1 only	Occupancy functions for heating circuits 2 and 3 are not operated on room unit/operator unit 1; exclusively those for heating circuit 1.
For all assigned heating circuits	Occupancy functions for heating circuits 2 and 3 are operated on room unit/operator unit 1; as well as those for heating circuit 1.

Overview of dependencies

Settings for QAA7x

Depending on the selected "Used as" of the unit (operating line 40), the following settings (marked with X) can be made when assigning the heating circuit.

Operating line					
40	**42**	**44**	**46**	**47**	**48**
Room unit 1	Heating circuit 1				
	Heating circuits 1 and 2	x		x	x
	Heating circuits 1 and 3		x	x	x
	All heating circuits	x	x	x	x
Room unit 2					
Room unit 3					
Operator unit 1	Heating circuit 1				
	Heating circuits 1 and 2	x			x
	Heating circuits 1 and 3		x		x
	All heating circuits	x	x		x
Operator unit 2					
Operator unit 3					
Operator unit 1		X	X		(x)

Settings for AVS37.294

Operating unit AVS37.294 is factory set as "Operating unit1" (see operating line 40) acting on "All heating circuits " (see operating line 42). Operating lines 44 and 46 can be set.

Operating line					
40	**42**	**44**	**46**	**47**	**48**
Operator unit 1	All heating circuits	x	x		

Room sensor

No.	Operating line	Settings
54*	Readjustment room sensor	
* QAA7x only, configured as room unit.		

The temperature display can be readjusted.

Device data

No.	Operating line	Settings
70	Software version	

The information represents the latest version of the room unit.

Operating page "RF"

Binding

No.	Operating line	Settings
120**	Binding	No ¦ Yes
121**	Test mode	Off ¦ On
* QAA78 only		

For more detailed information, refer to the descriptions in Section "Wireless components" [→ 17].

Binding

When commissioning the system, the wireless peripheral devices (room units) are assigned to the basic unit.

Test mode

The test mode is used for checking the radio link. The test should be made when the installation is entirely completed.

RF device list

No.	Operating line	Settings
130	Room unit 1	Missing ¦ In operation ¦ No recept'n ¦ Change batt
131	Room unit 2	Missing ¦ In operation ¦ No recept'n ¦ Change batt
132	Room unit 3	Missing ¦ In operation ¦ No recept'n ¦ Change batt
133	Outside sensor	Missing ¦ In operation ¦ No recept'n ¦ Change batt
134	RF repeaters	Missing ¦ In operation ¦ No recept'n ¦ Change batt
135	Operator unit 1	Missing ¦ In operation ¦ No recept'n ¦ Change batt
136	Operator unit 2	Missing ¦ In operation ¦ No recept'n ¦ Change batt
137	Operator unit 3	Missing ¦ In operation ¦ No recept'n ¦ Change batt
138	Service unit	Missing ¦ In operation ¦ No recept'n ¦ Change batt
140	Delete all devices	No ¦ Yes

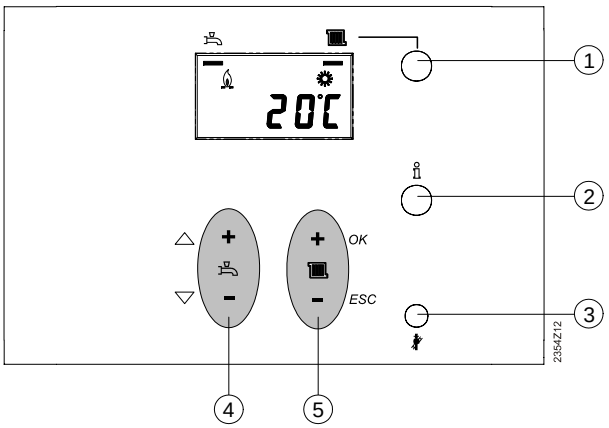
Delete all devices

The radio link to all devices will be cancelled. If radio communication is required again, a new binding must be established.

3.3 AVS37.390...

3.3.1 Operation

Operating elements



1 Selecting the operating mode

2 Display information

3 Chimney sweep function

4 Adjusting the nominal DHW setpoint

4 Navigation and settings

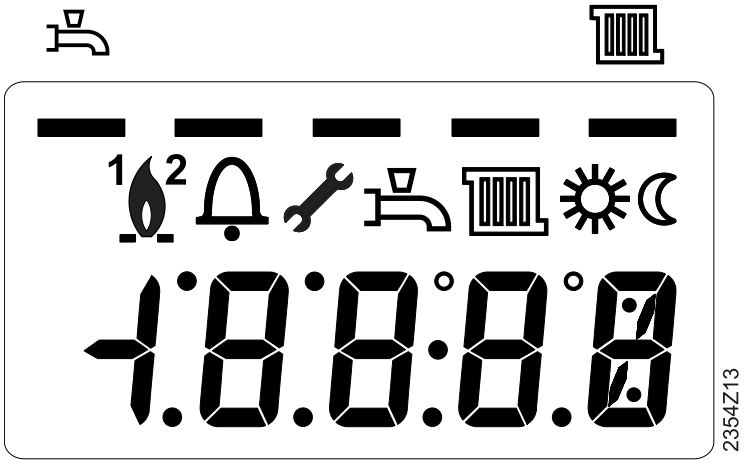
5 Set room comfort setpoint.

5 Navigation and settings

The above illustration shows an example of the front of an operator unit (not supplied as standard).

Display

Displays all segments:

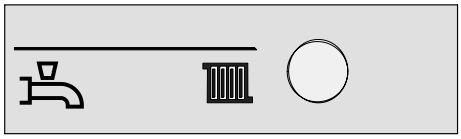


Explanation

The display has the following meaning:

☀	Heating to the Comfort setpoint	1 2	Burner in operation; active burner stage.
☾	Heating to the Reduced set point	🔔	Error messages
▥	Boiler operation active	🔧	Service / special operation
🚰	Boiler operation DHW heating active		

Selecting the operating mode



Press the button to switch from heating mode on / off to DHW heating, and vice versa.

The selection made is indicated by a bar which appears below the respective symbol.

Controller stop function

The controller stop function is triggered by pressing the operating mode buttons for an extended period (> 3 seconds).

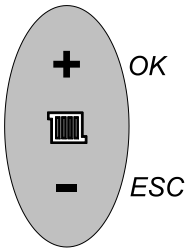
The controller stop function can be used to manual control the burner.

The operator's output specifications override the control algorithm for the LMS14...

Exception

The 2-point controller places the burner out of service, if the flow temperature achieves the maximum boiler temperature (OL 2212: Setpoint).

Adjusting the room temperature setpoint



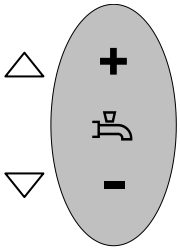
Press the +/- buttons to directly lower or increase the **Comfort setpoint** ☼.

For the **Reduced setpoint** ☾

- Press OK.
- Select the operating line for the “Reduced setpoint”.

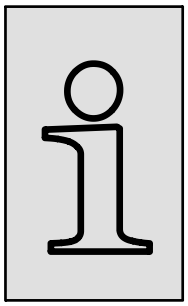
Each time you make a readjustment, wait at least 2 hours, allowing the room temperature to adapt.

Set nominal DHW setpoint

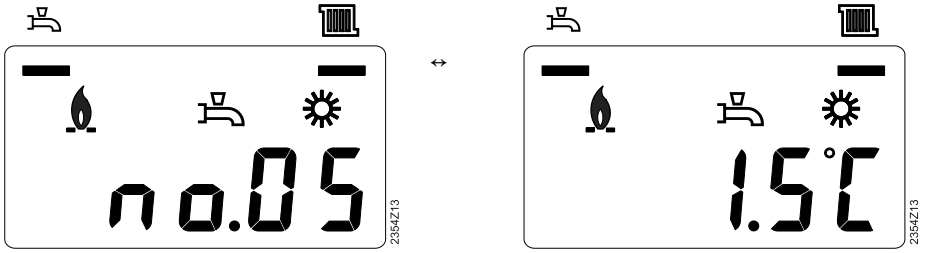


Press the + / - buttons to increase or decrease the nominal DHW setpoint.

Displaying information



Various data can be displayed by pressing the info button.
The display alternates, showing the value and the info no.



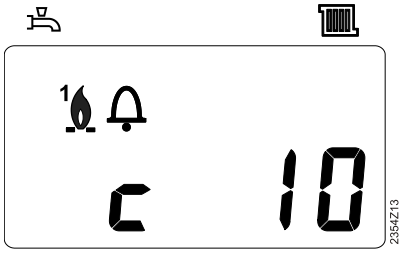
No. 1	Boiler temp	No. 12	State DHW
No. 2	Return temperature	No. 13	State of boiler
No. 3	Outside temperature	No. 14	State solar
No. 4	DHW temp 1	No.15	flue gas temperature
No. 5	DHW temp 2	No.16	Indication of operation FA
No.6	Collector temp	No.17	Ionization flow
No. 10	State heating circuit 1	No.18	SW diagnostic code
No. 11	State heating circuit 2		

Error / maintenance

In exceptional cases, the basic display shows one of the following symbols:

Error messages

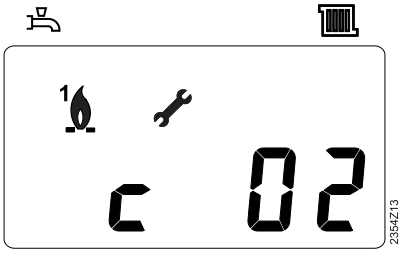
If this symbol appears, an error in the plant has occurred.



The display shows letter “c”, followed by the error no.

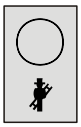
Maintenance or special mode.

If this symbol appears, a maintenance message is delivered or the plant has changed to special operation.



The display shows letter “c”, followed by the error no.

Chimney sweep function

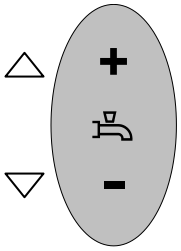


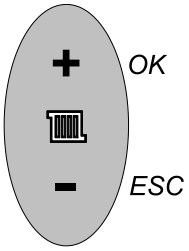
The chimney sweep function is activated by a short press (maximum 3 seconds) of the chimney sweep button. This function produces the operating state required to make emission measurements (flue gas).

3.3.2 Programming

Setting principle

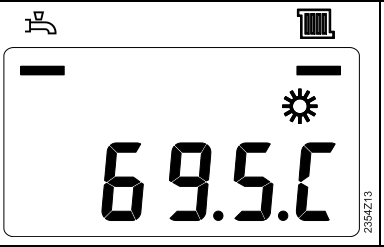
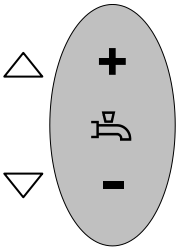
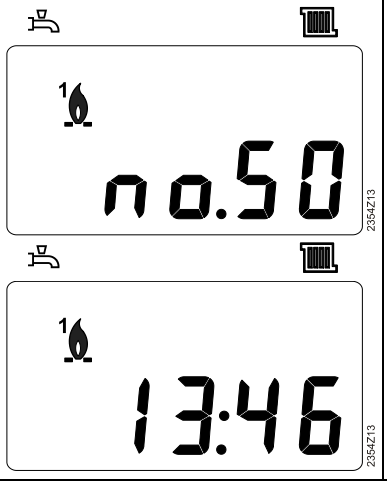
Settings that cannot be made directly with the help of operating elements are made through programming. For that, the respective setting buttons are used as follows:

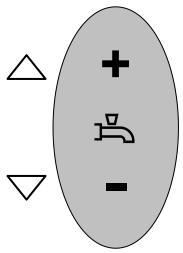
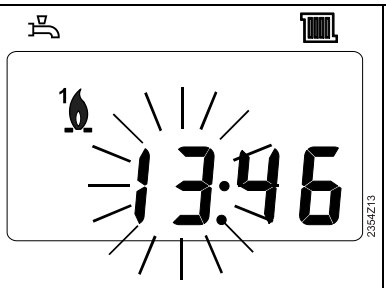
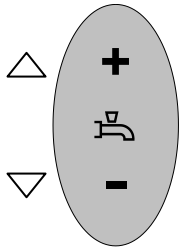
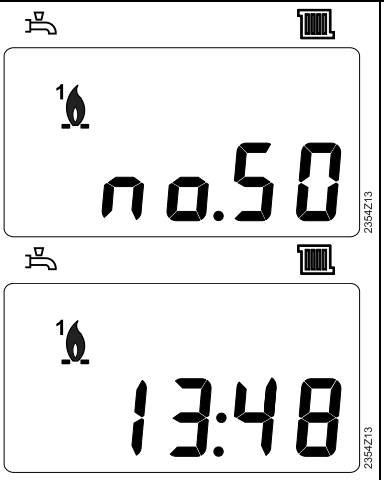




Example "Setting the time of day"

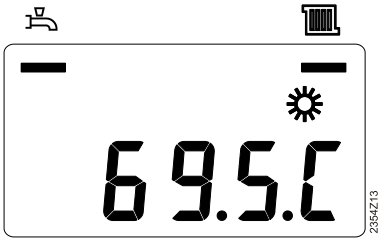
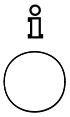
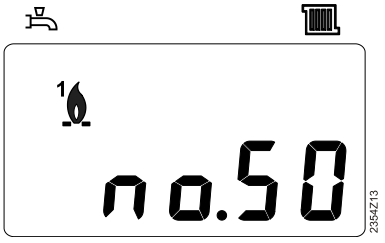
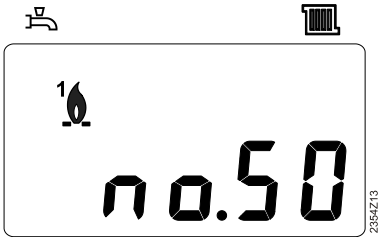
	NOTICE
	• When pressing the ESC button, you go one step back; adjusted values will not be adopted • If no setting is made for 8 minutes, the display returns automatically to the basic display • Operating lines may be hidden, depending on the type of controller, the configuration made and the user level

	Operation	Display example	Description
1			Basic display. If the basic display is not shown, press the ESC button to return to it. Press OK.
2			The display shows the first operating line, alternating with the value. Press the arrow button until you reach operating line “Hours / minutes” (e.g. 50). Press the OK button to confirm.

3			The display shows the hours blinking. Press the "+/-" button until the hours of the time of day are correct. Press the OK button to confirm.
4			The display shows the minutes blinking. Press the "+/-" button until the minutes of the time of day are correct. Press the OK button to confirm.
5			The settings are saved and the displays stops blinking. You can continue with other settings or press the operating mode button to go to the basic display.
6			Unit now returns to basic display.

3.3.3 User levels

The user levels only allow authorized target groups to make settings. To reach the required user level, proceed as follows:

	Operation	Display example	Description
1			You see the basic display. Press the OK button for 3 seconds.
2			Now, you are on the user level “End user”. Press the INFO button for 3 seconds.
3			You are on user level “Enduser”. If the change to the “Heating engineer” level was successful, the display shows “ON” as a confirmation.

3.3.4 Overview of the settings

The table displays **all** available settings.

Key

E	End-user	F	heating engineer	BZ	Operating line

Operating line							
	Operating line clear-text units						
		User level					
			Function	Default value	Min	max	Unit
Time of day and date							
50	1	E	Hours/minutes	01:00	00:00	23:59	hh:mm
51	2	E	Day / month	1.01	01.01	31.12	dd.mm
52	3	E	Year	2004	2004	2099	yyyy
53	4	F	Start of summertime	25.03	01.01	31.12	dd.mm
54	5	F	End of summertime	25.10	01.01	31.12	dd.mm
59	6220	F	software version	-	0	99.9	-
Time prog heating circuit 1							
60	500	E	Preselection	Mo - Su			-
61	501	E	1. Phase on	6:00	00:00	24:00	hh:mm
62	502	E	1. phase off	22:00	00:00	24:00	hh:mm
63	503	E	2. Phase on	--:--	00:00	24:00	hh:mm
64	504	E	2. phase off	--:--	00:00	24:00	hh:mm
65	505	E	3. Phase on	--:--	00:00	24:00	hh:mm
66	506	E	3. phase off	--:--	00:00	24:00	hh:mm
Time prog heating circuit 2							
67	520	E	Preselection	Mo - Su			
68	521	E	1. Phase on	6:00	00:00	24:00	hh:mm
69	522	E	1. phase off	22:00	00:00	24:00	hh:mm
70	523	E	2. Phase on	--:--	00:00	24:00	hh:mm
71	524	E	2. phase off	--:--	00:00	24:00	hh:mm
72	525	E	3. Phase on	--:--	00:00	24:00	hh:mm
73	526	E	3. phase off	--:--	00:00	24:00	hh:mm
Time program for DHW							
74	560	E	Preselection	Mo - Su			
75	561	E	1. Phase on	6:00	00:00	24:00	hh:mm
76	562	E	1. phase off	22:00	00:00	24:00	hh:mm
77	563	E	2. Phase on	--:--	00:00	24:00	hh:mm
78	564	E	2. phase off	--:--	00:00	24:00	hh:mm
79	565	E	3. Phase on	--:--	00:00	24:00	hh:mm
80	566	E	3. phase off	--:--	00:00	24:00	hh:mm
Heating circuit 1							
81	712	E	Reduced setpoint HC1.	16	4	35	°C
82	720	E	Heating curve slope HC1.	1.5	0.10	4.00	°C
83	721	F	Heating curve displacement HC1.	0	-4.5	4.5	°C
84	730	E	Summer/winter heating limit HC1.	18	- - - / 8	30	°C
85	741	F	Flow temperature setpoint maximum HC1.	80	8	95	°C
Heating circuit 2							

86	1012	E	Reduced setpoint HC2.	16	4	35	°C
87	1020	E	Heating curve slope HC2.	1.5	0.10	4.00	°C
88	1021	F	Heating curve displacement HC2.	0	-4.5	4.5	°C
89	1030	E	Summer/winter heating limit HC2.	18	- - - / 8	30	°C
90	1041	F	Flow temperature setpoint maximum HC2.	80	80	95	°C
Domestic hot water							
91	1612	E	reduced setpoint	40	8	80	°C
92	1620	F	Release	1	0	4	-
Configuration							
94	5701	F	Hydraulic diagram.	3	2	85	-
95	5920	F	Configuration output.	0	0	17	-
96	5950	F	Function input H1	0	0	9	-
LPB system							
97	6600	F	Device address	1	0	16	-
Maintenance							
99	7010	F	Acknowledge message.	-	-	-	-

4 Technical data

4.1 Operator unit and room units QAA5x... / QAA7x... / AVS37...

Power supply	**For devices without batteries (wired):**	
	QAA55	Bus power BSB
	QAA75.610	Bus power BSB, with optional G+ (BG lighting **not** possible)
	QAA75.611	Bus power BSB (without BG lighting) with G+ (with BG lighting).
	AVS37.x9x, AVS37.390	G+ mandatory (always with BG lighting)
	Notes	BG lighting: Background lighting G+ Voltage value: see basic unit.
	For battery-powered devices:	
	Batteries	QAA58: 2 pcs / QAA78: 3 pcs
	Type of batteries	1.5 V alkaline size AA (LR06)
	Battery life	approx. 1.5 years
Room temperature measurement (only with QAA7x.../QAA55...)	Measuring range	0..0.50 °C
	As per EN12098: Range 15...25 °C Range 0...15 °C or 25...50 °C Resolution	 within a tolerance of 0.8 K Within a tolerance of 1.0 K 0.1 K.
Interfaces	AVS37... / QAA75... / QAA55...	BSB-W, 2-wire connection, not interchangeable.
	Line length base unit/peripheral device QAA75... / QAA55... AVS37...	 Max. 200 m Max. 3 m
	QAA58..., QAA78...	BSB-RF Frequency band 868 MHz
Degree of protection	Protection class	If correctly installed, low-voltage live parts meet the requirements of safety class III according to EN 60730-1
	Protection degree of housing QAA7x... / QAA5x... AVS37...	 IP20 as per EN 60529 IP40 as per EN 60529, when mounted
	Degree of pollution	2 according to EN 60730-1 suitable for residential, commercial and industrial environment

Directives and Standards	Product standard	EN 60730-1
		Automatic electrical controls for household and similar use
	Electromagnetic compatibility (Applications)	For use in residential, commerce, light-industrial and industrial environments
	EU Conformity (CE)	AVS37: CE1T2357xx3 QAA7x: CE1T2357xx2 QAA55: CE1T2358x2
	Environmental compatibility	The product environmental declarations CE1E2358en01, CE1E2358en04 (AVS37..), CE1E2357en01 (QAA7x) and CE1E2358en03 (QAA55) contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).
Climatic conditions	**For devices without batteries (wired):**	
	Storage as per IEC721-3-1	Class 1K3, temp. -20….65 °C
	Transport as per IEC721-3-2	Class 2K3, temp. -25….70 °C
	Operation as per IEC721-3-3	Class 3K5, temp. 0...50 °C (non-condensing)
	For battery-powered devices:	
	Storage as per IEC721-3-1	Class 1K3, temp. -20….30 °C
	Transport as per IEC721-3-2	Class 2K3, temp. -25….70 °C
	Operation as per IEC721-3-3	Class 3K5, temp. 0...50 °C (non-condensing)
Weight	Excl. packaging	AVS37.294: 160 g AVS37.296: 161 g AVS37.394: 112 g AVS37.390: 45 g QAA75.61x: 170 g QAA78.610: 312 g QAA55.11x: 115 g QAA58.11x: 165 g

4.2 RF module AVS71.390

Power supply	Powered via basic unit RVS… Power consumption	5.5 V DC Max. 0.11 VA
Interfaces	Connection to basic units RVS… (power supply, communication) Length	6-pole prefabricated flat-ribbon cable, ready fitted, 1.5 m
	RF transmitter	BSB-RF Frequency band 868 MHz
Degree of protection	Protection class	If correctly installed, low-voltage live parts meet the requirements of safety class III according to EN 60730-1
	Protection degree of housing	IP40 according to EN 60529
	Degree of pollution	2 according to EN 60730-1 suitable for residential, commercial and industrial environment
Directives and Standards	Product standard	EN 60730-1
		Automatic electrical controls for household and similar use
	Electromagnetic compatibility (Applications)	For use in residential, commerce, light-industrial and industrial environments
	EU Conformity (CE)	CE1T2357x8
Climatic conditions	Storage to EN 60721-3-1	Class 1K3, temp. -20…65 °C
	Transport to EN 60721-3-2	Class 2K3, temp. -25…70 °C
	Operation to EN 60721-3-3	Class 3K5, temp. 0...50 °C (non-condensing)
Weight	Excl. packaging	54 g

4.3 RF module BSB AVS71.393

Power supply	Powered via basic unit RVS… Power consumption	G+ (11.3...13.2 V) Max. 0.3 VA
Interfaces	Connection to basic unit RVS… (power supply, communication) Length basic / peripheral unit	BSB-W, 2-wire connection, not interchangeable Max. 200 m
	RF transmitter	BSB-RF Frequency band 868 MHz
Degree of protection	Protection class	If correctly installed, low-voltage live parts meet the requirements of safety class III according to EN 60730-1
	Protection degree of housing	IP20 according to EN 60529
	Degree of pollution	2 according to EN 60730-1 suitable for residential, commercial and industrial environment
Directives and Standards	Product standard	EN 60730-1
		Automatic electrical controls for household and similar use
	Electromagnetic compatibility (Applications)	For use in residential, commerce, light-industrial and industrial environments
	EU Conformity (CE)	CE1T2358xx04
	Environmental compatibility	The product environmental declaration CE1E2358en03 contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).
Climatic conditions	Storage to EN 60721-3-1	Class 1K3, temp. -20….65 °C
	Transport to EN 60721-3-2	Class 2K3, temp. -25….70 °C
	Operation to EN 60721-3-3	Class 3K5, temp. 0...50 °C (non-condensing)
Weight	Excl. packaging	115 g

4.4 RF repeater AVS14.390

Power supply	Nominal voltage	AC 230 V (+10% /-15%) (primary side AC/AC adapter)
	Nominal frequency	50 Hz ±6%
	Power consumption	max. 0.5 VA
	Supply line protection	Fuse slow max. 10 A or Circuit breaker max. 13 A Characteristic B, C, D according to EN 60898
Interfaces	RF transmitter	BSB-RF Frequency band 868 MHz
Degree of protection	Protection class	If correctly installed, low-voltage live parts meet the requirements of safety class III according to EN 60730-1
	Protection degree of housing	IP20 according to EN 60529
	Degree of pollution	2 according to EN 60730-1 suitable for residential, commercial and industrial environment
Directives and Standards	Product standard	EN 60730-1
		Automatic electrical controls for household and similar use
	Electromagnetic compatibility (Applications)	For use in residential, commerce, light-industrial and industrial environments
	EU Conformity (CE)	CE1T2357x8
	Environmental compatibility	The product environmental declaration CE1E2357en13 contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).
Climatic conditions	Storage as per IEC721-3-1	Class 1K3, temp. -20….65 °C
	Transport as per IEC721-3-2	Class 2K3, temp. -25….70 °C
	Operation as per IEC721-3-3	Class 3K5, temp. 0...50 °C (non-condensing)
Weight	Excl. packaging	RF repeater: 112 g Power supply: 195 g

4.5 RF outside sensor AVS13.399

Power supply	Batteries	2 pieces.
	Type of batteries	1.5 V alkaline size AAA (LR03)
	Battery life	approx. 2 years
Interfaces	RF transmitter	BSB-RF Frequency band 868 MHz
Degree of protection	Protection class	If correctly installed, low-voltage live parts meet the requirements of safety class III according to EN 60730-1
	Protection degree of housing	IP20 according to EN 60529
	Degree of pollution	2 according to EN 60730-1 suitable for residential, commercial and industrial environment
Directives and Standards	Product standard	EN 60730-1
		Automatic electrical controls for household and similar use
	Electromagnetic compatibility (Applications)	For use in residential, commerce, light-industrial and industrial environments
	EU Conformity (CE)	CE1T2357x8
	Environmental compatibility	The product environmental declaration CE1E2357en12 contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).
Climatic conditions	**For devices without batteries:**	
	Storage as per IEC721-3-1	Class 1K3, temp. -20….65 °C
	Transport as per IEC721-3-2	Class 2K3, temp. -25….70 °C
	Operation as per IEC721-3-3	Class 3K5, temp. 0...50 °C (non-condensing)
	For battery-powered devices:	
	Storage as per IEC721-3-1	Class 1K3, temp. -20….30 °C
	Transport as per IEC721-3-2	Class 2K3, temp. -25….70 °C
	Operation as per IEC721-3-3	Class 3K5, temp. 0...50 °C (non-condensing)
Outside temperature measurement	Outside sensor	QAC34/101
	Measuring range	-50..0.50 °C
	Cable length	Max. 5 m
Weight	Excl. packaging	RF transmitter: 160 g Outside sensor QAC34: 73 g Cable: 70 g

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