SIEMENS

Albatros2

Graphical User Interface UI400

Technical Manual

Building Technologies

Legal note

Legal note concept

The guide includes notes that must be followed for your own personal safety as well as to prevent damage to property.

Notes on your personal safety are identified by a warning triangle and use the signal word CAUTION.

CAUTION identifies a situation that can result in slight injuries.

Notes dealing only with damage to property do not have the warning triangle and use the signal word NOTE and an exclamation point.

The notes are depicted as follows:

⚠	⚠ CAUTION
	Type and source of hazard
	Consequences in the event the hazard occurs
	• Measures/prohibitions to prevent the hazard

!	*NOTICE*
	Type and source of hazard
	Consequences in the event the hazard occurs
	• Measures/prohibitions to prevent the hazard

Qualified personnel	Only qualified personnel may commission the device/system. Qualified personnel are in this regard qualified due to training and experience to recognize and avoid risks when working with this device/system.
Proper use	The device/system described here may only be used in building technical plants and for the described applications only.
	The trouble-free and safe operation of the device/system described here requires proper transportation, correct warehousing, mounting, installation, commissioning, operation, and maintenance.
	You must comply with permissible ambient conditions. You must comply with the information provided in the Section "Technical data" and notes in the associated documentation.
	Fuses, switches, wiring and earthing must comply with local safety regulations for electrical installations. Observe all local and currently valid laws and regulations.
Exemption from liability	The content of this document was reviewed to ensure it matches the hardware and firmware described herein. Deviations cannot be precluded, however, so that we cannot guarantee that the document matches in full with the actual device/system. The information provided in this document is reviewed on a regular basis and any required corrections are added to the next edition.
Software used	This product was developed using a licensed version of the SEGGER Microcontroller.
	All open source software components used in this product (including copyright owners and license agreements) can be viewed on the following web server:
	http://siemens.com/bt/download "Keyword": A6V10434565.

Contents

1   Overview

1.1   Product overview

Room units QAA74   Operator unit AVS74
                                    (here: without cover)

Use of QAA74 and AVS74

The units QAA74 and AVS74 are part of the standard range (UI400) of the operator unit product range. The room unit QAA74 and operator unit AVS74 offer advanced, intuitive operation on a monochrome graphical display.
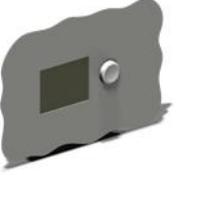
QAA74 and AVS74 are backwards compatible and provide basic operating functionality for existing Albatros2 controllers.

Additional features may be used, depending on controller generation, such as displaying energy trends or operating ventilation plants.

The QAA74 and AVS74 units have the following features:

Feature	QAA74 / AVS74
Communication	BSB
Power supply	Via Bus or DC + 12 V
Service interface	USB
LCD	3.8", monochrome display, 320 x 240 pixels, white backlight
Operating function	• Self-explanatory operation of heating, cooling, ventilation, and hot water • Dedicated views for end users and installers/service personnel • Commissioning wizard • Plant switch/quick access • Energy trend display • Easy-to-read Info menu • Time switch program with graphical support
Dimensions	QAA74: 144 x 96 x 20.0 (27.6 with control knob) mm AVS74: 144 x 96 x 26 (33.6 with control knob) mm

The QAA74 and AVS74 units vary with the following features:

Feature	QAA74.611	QAA74.614	AVS74.261	AVS74.661	AVS74.761
installation	Wall	Wall	Panel, front side	Panel, rear side	Panel, rear side
Terminals	Screw terminal	Screw terminal	Ribbon cable	Ribbon cable	Ribbon cable
Entry elements	Control knob	Control knob	Control knob, unlock button	Control knob, unlock button	Control knob, unlock button
Degree of protection	IP40	IP40	IP40	IP40, Air tight	IP44, Air tight
Operation	0...50 °C	0...50 °C	0...60 °C	0...60 °C	0...60 °C
Sensors	Temperature	Temperature, humidity	None	None	None

1.2 Design of QAA74 room units

Face view

① Control knob

② Display

Rear view
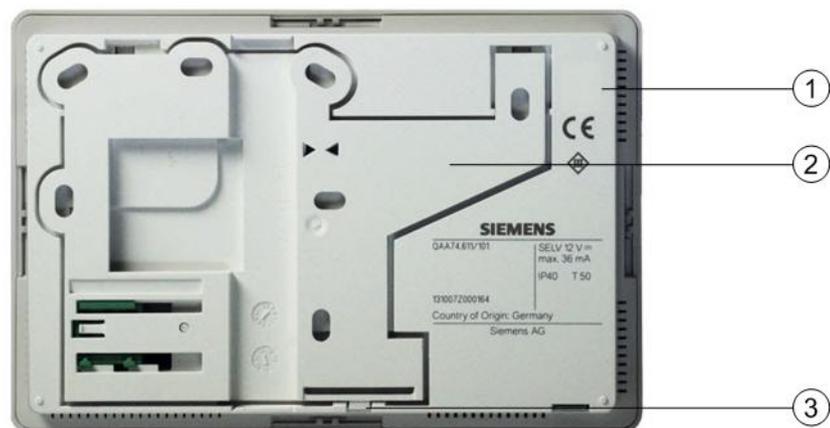
① Housing

② Mounting plate

③ Snapper to release/attach the mounting plate

Bottom view

① USB connection

② Snapper to release/attach the mounting plate

1.3 Design AVS74 operator units

Face view
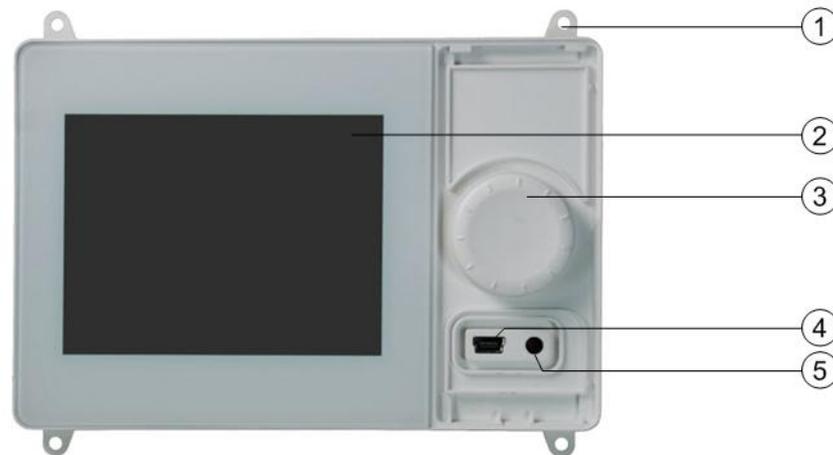
① Mounting bracket to screw on for rear side mounting (here: AVS74.661)

② Display

③ Control knob

④ USB connection

⑤ Unlock button

Rear view

① Mounting bracket to screw on for rear side mounting

② Housing

③ Plug-in connection for cable AVS82.49x

Bottom view

① Snapper for front side mounting (here: AVS74.261)

2 Engineering use

2.1 Room units QAA74

Climatic ambient conditions

Ambient conditions	Permissible range	Comments
Temperature	0 to 50 °C	
Relative humidity	0 to 95%	Non-condensing

Installation mode

QAA74 room units are suitable for:

● Wall mounting, with wiring outlet under the surface.
● Wall mounting, with wiring installed on the wall surface.

Installation location
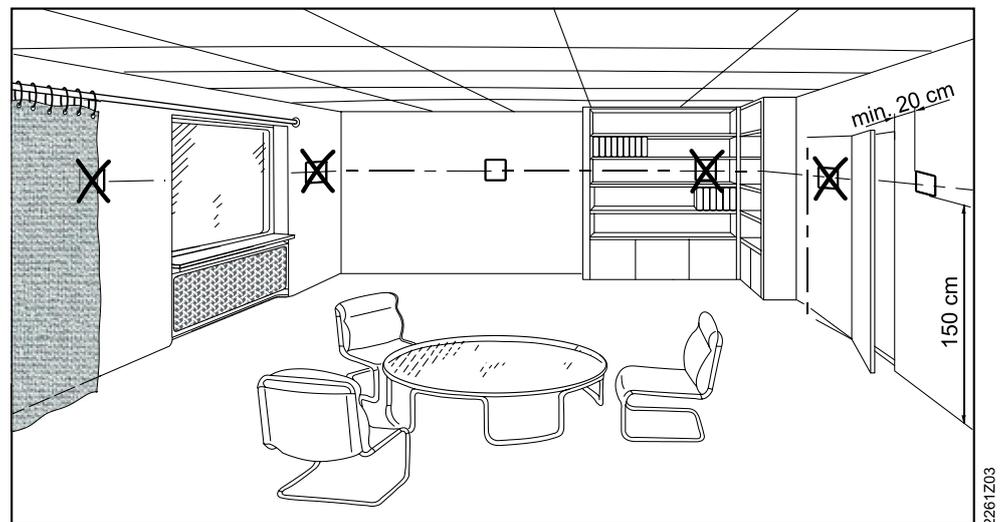
Please observe the following when selecting the installation location:

● Position the room unit so that it is not exposed to direct sunlight.
● Position the room unit in a manner that does not expose it to other heat sources or sources of cold.
● Position the room unit in an ergonomic manner. Select the appropriate installation height (e.g. 150 cm about the floor).
● When installing, do not cover the inlet opening for the sensors integrated in the units.
● Ensure that objects in the facility (drapes, door, etc. do not hinder the air flow measured by the integrated sensors.

| Orientation | It is normally installed vertically (90°), e.g. on a wall surface. The mounting surface may be inclined however. |

Protection against foreign objects and water protection

Device	Protection as per EN 60529
QAA74	IP40 ● Mounted

Power supply

The following table shows possible power supplies.

Power supply	Explanation	Note
Via bus (2-wire)	Bus power BSB	Not backlit
Via controller (3-wire)	At connection G+ on the controller	Backlit
Via external power supply	Observe section "External power supply"	Backlit

Bill of quantity for wiring variants

Application	Wiring	Bill of quantity (maximum)
Renovation	2-wire	1x AVS74, 1x QAA74, 2x QAA55
New building, simple	3-wire, to controller	1x AVS74, 1x QAA74
New building, extended	3-wire with external power supply	1x AVS74, 3x QAA74
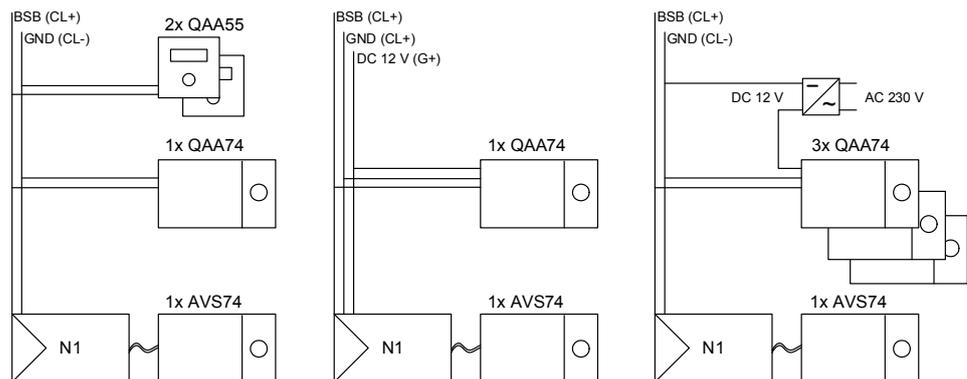
Extern al supply

Extern al supply	Notes
DC +12 V SELV	● Power consumption: 36 mA per device ● Power limitation: 1 A

Dimensions
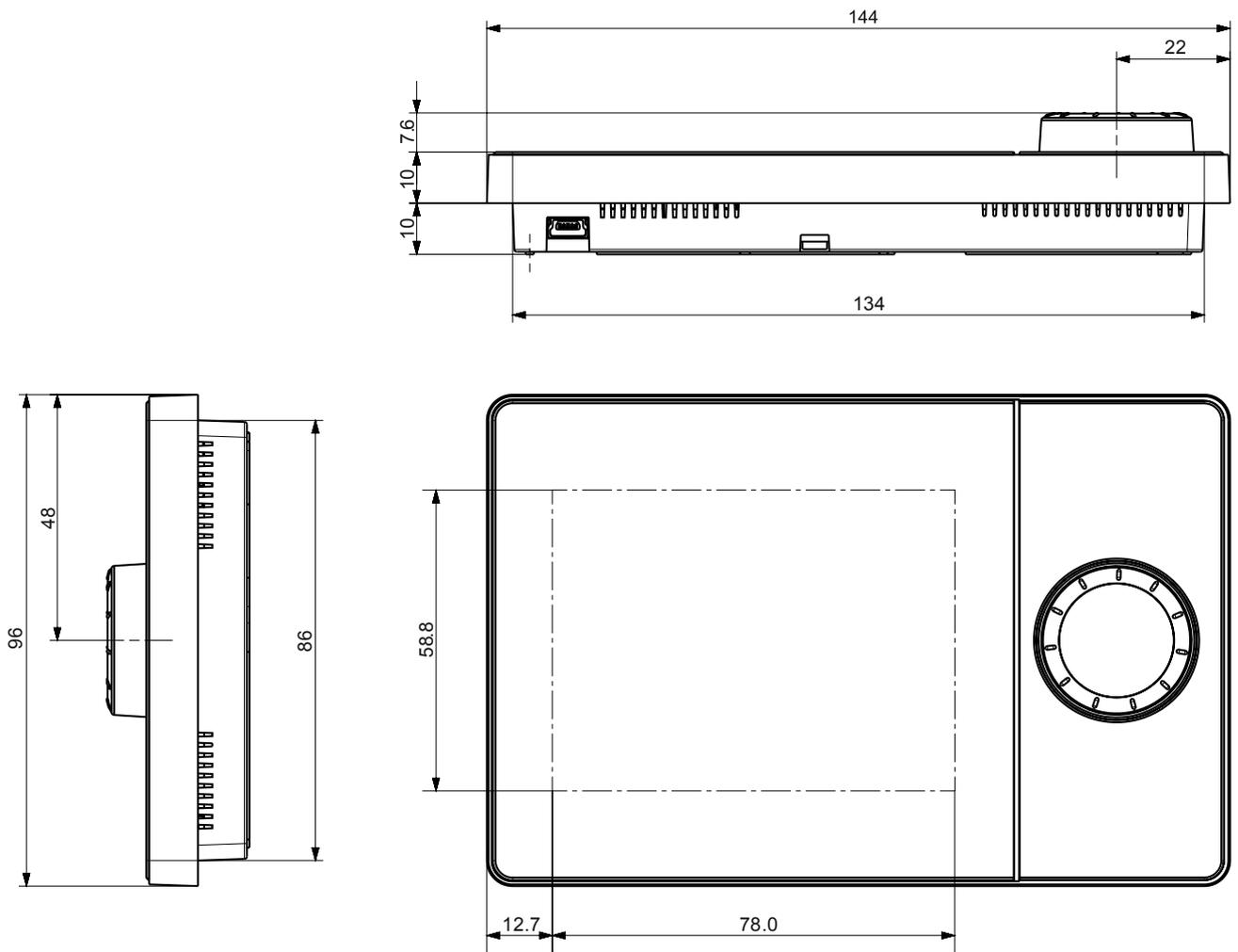
2.2 Operator units AVS74

Climatic ambient conditions

Ambient conditions	Permissible range	Comment
Temperature	From 0 to 60 °C	
Relative humidity	0 to 95%	Non-condensing

Installation mode

2 installation types are available for AVS74 operator units:
- Front side mounting (AVS74.261)
- Rear side mounting (AVS74.661, AVS74.761)

Dimensions of installation cutout

The installation cutout for AVS74.261 and AVS74.761 as per IEC 61554.
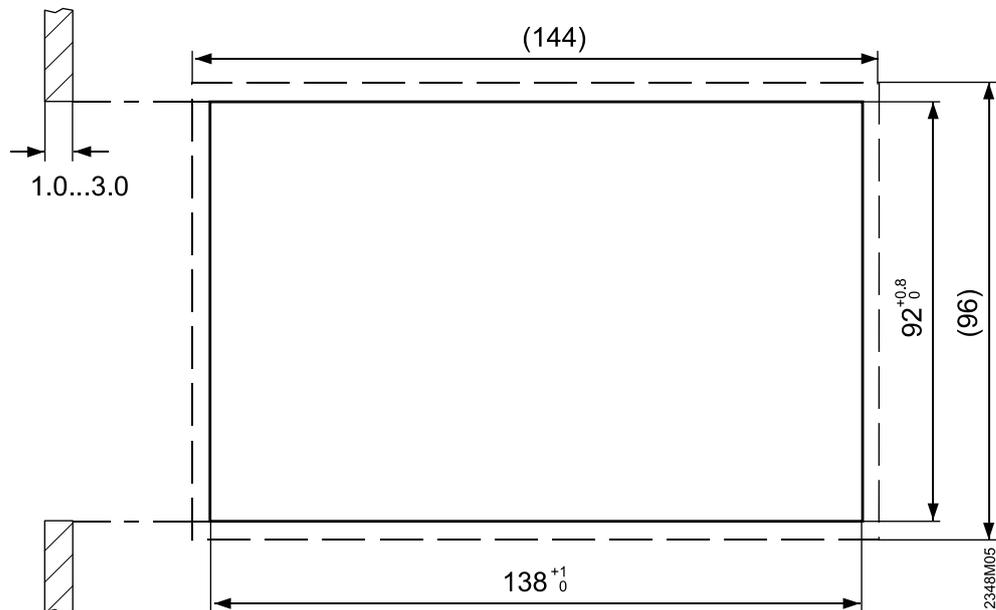
Installation cutout	Ground
Width	138 +1 mm
Height	92 +0.8 mm
Depth, for front side mounting	At least 16 mm
Wall thickness	1.0 to 3.0 mm

Orientation

Normally vertically mounted at the installation location (90°) on the producer housing. The mounting surface may be inclined however.

The inclination is limited for AVS74.761 together with IP protection type (see next section).

Protection against foreign objects, water protection, and air tightness

Device	Protection standard to IEC 60529	Air tightness
AVS74.261 (with cover)	IP40 ● Installed	No data
AVS74.261 (without cover)	IP40 ● Installed	* Suitable for applications as per EN 15502-2-1 with leakage rate ≥ 0.4 m³/h at 0.5 mbar
AVS74.761 (with cover)	* IP44 ● Installed ● All housing parts are mounted ● Inclination: Deviation from vertical ≤40°	* Suitable for applications as per EN 15502-2-1 with leakage rate ≥ 0.4 m³/h at 0.5 mbar
* See following note		

i

The indicated degree of protection IP44 on the AVS74.761 and the indicated air tightness on the AVS74.661 and AVS74.761, both require sealing of the mounting housing and unit on the part of the customer.

Terminals

Connection via cable AVS82.49x from controller.

Dimensions AVS74.261
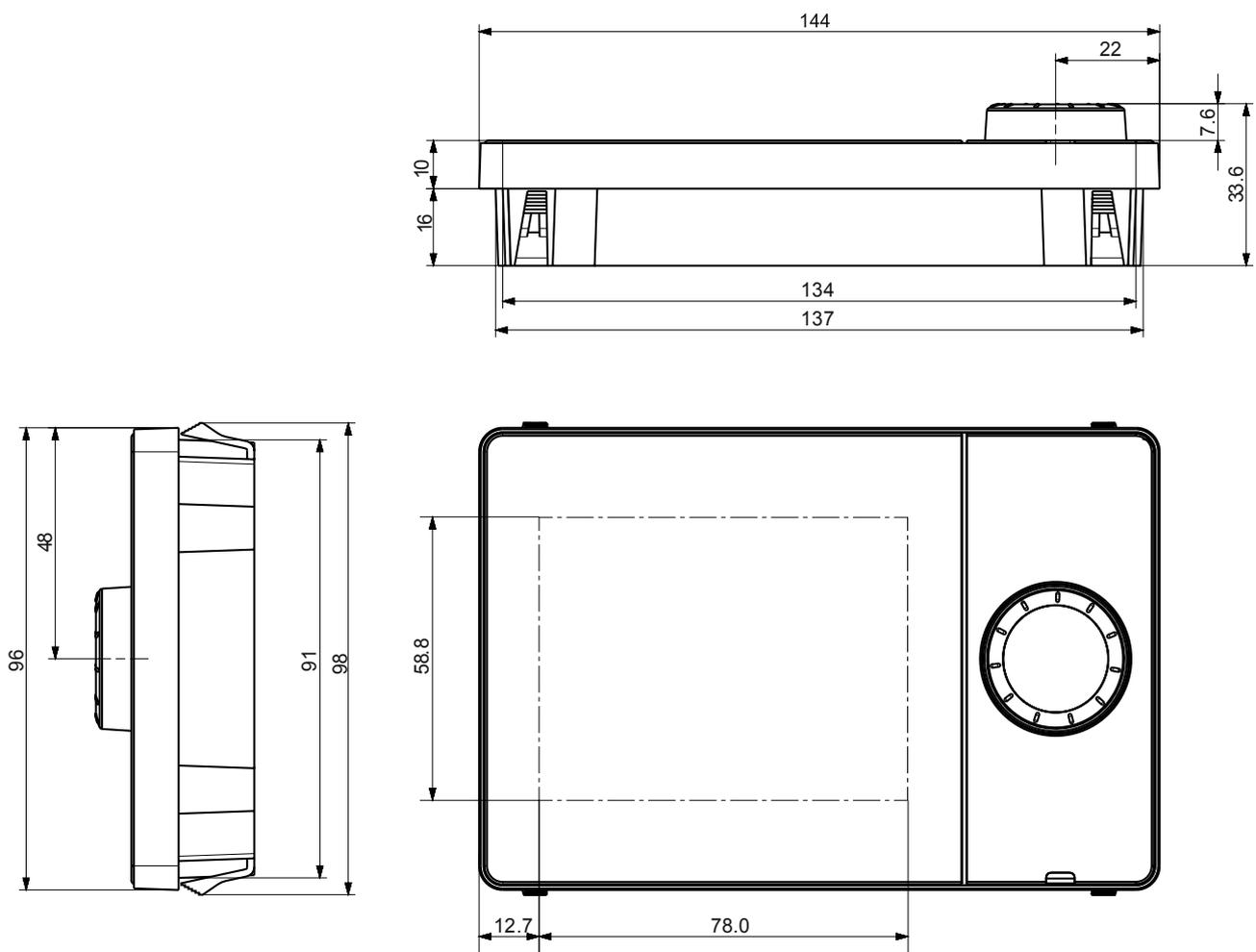
Dimensions AVS74.661

Dimensions AVS74.761

Graphical User Interface UI400
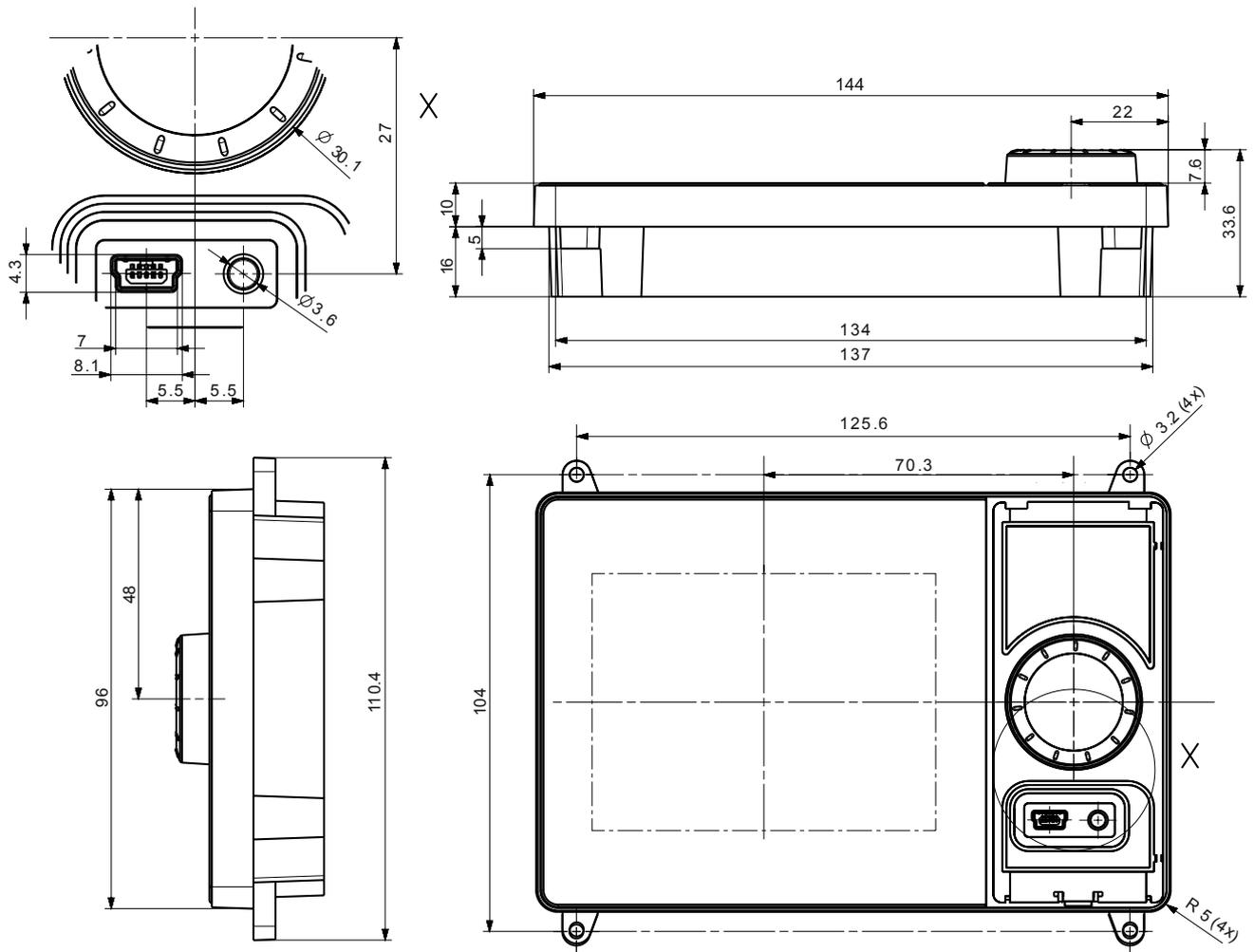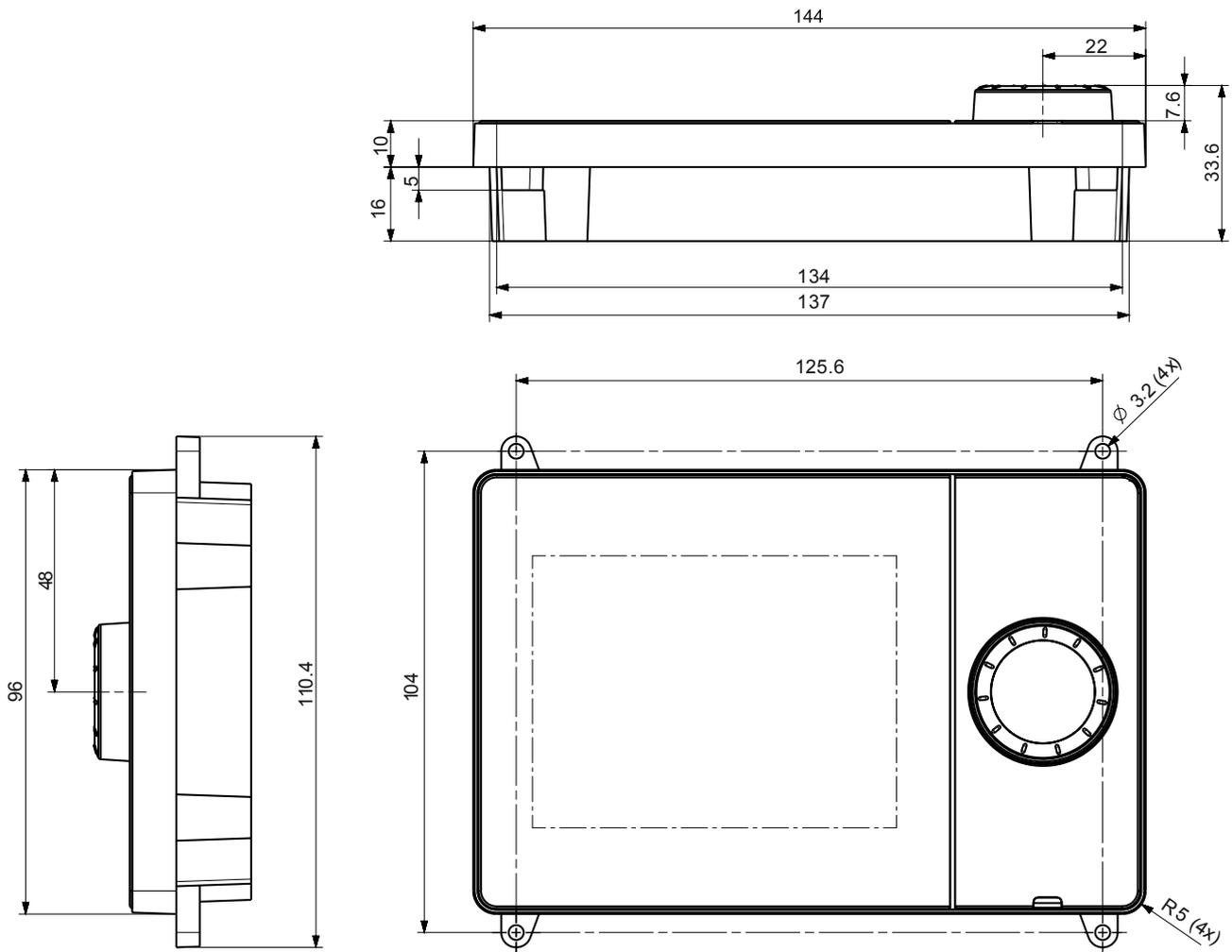
3   Mount and connect

3.1   Unpack device

Package content

Check the package contents for visible damage from transport.

!	*NOTICE*
	Malfunctions of damaged units.
	Units damaged during transportation may result in malfunctions.
	• Do not install damaged units. In this case, contact the supplier.

Protective foil

The display glass surface of the QAA74 or AVS74 is covered with a protective foil.

The film can stay on the unit as long as you need to protect against scratches.

3.2 Mounting QAA74 room unit

Prerequisites
- The clarifications outlined in Section "Room units QAA74 [➜ 11]" have been made.
- You need the following to mount the QAA74:
  – At least 3, a maximum of 7 screws
  – Maximum screw diameter: 3.5 mm
  – Maximum screw head height: 2.4 mm

The QAA74 is suitable for Flush mount cable routing [➜ 20] and Surface mount cable routing [➜ 25].

3.2.1 Flush mount cable routing

Take off the rear side mounting plate

Attach the mounting plate

ℹ️
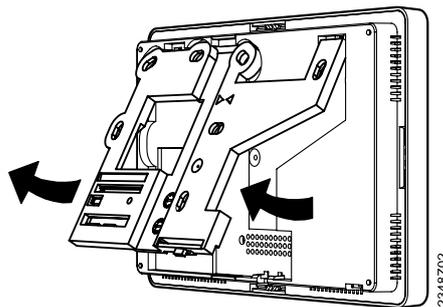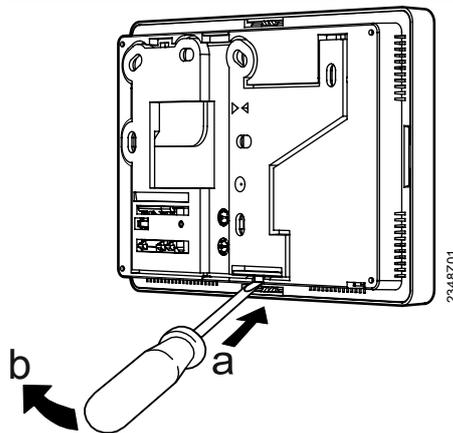
Mounting tip.
Use the drilling template in the installation guide supplied with the product, scale 1:1.

Mounting plate dimensions

Fixed with screws

ℹ️
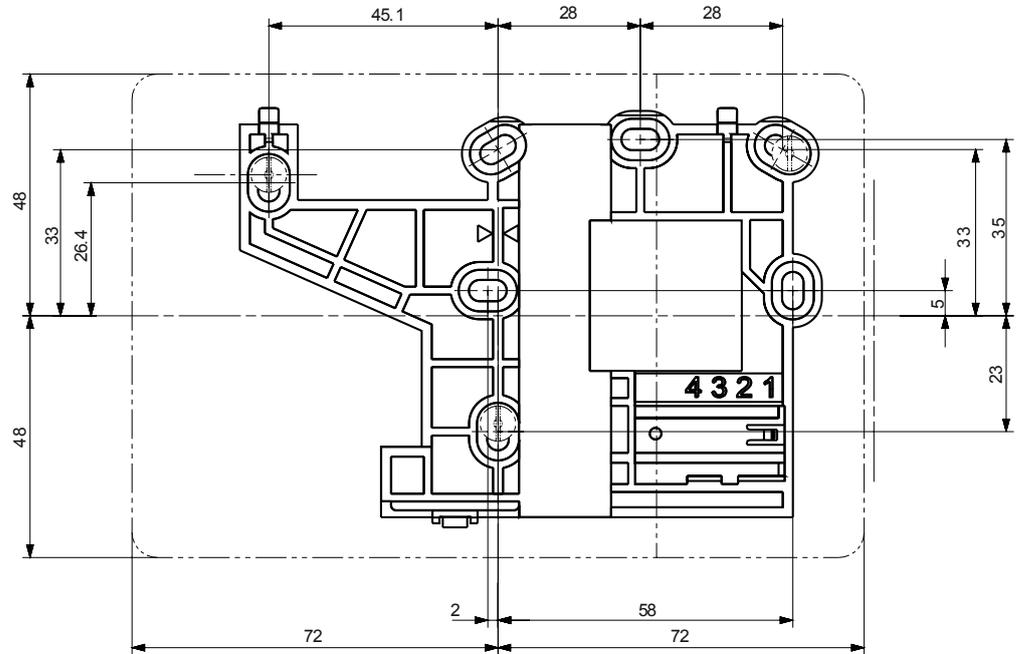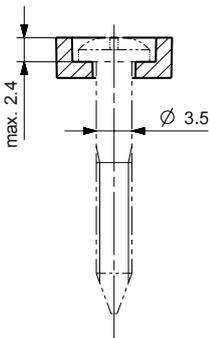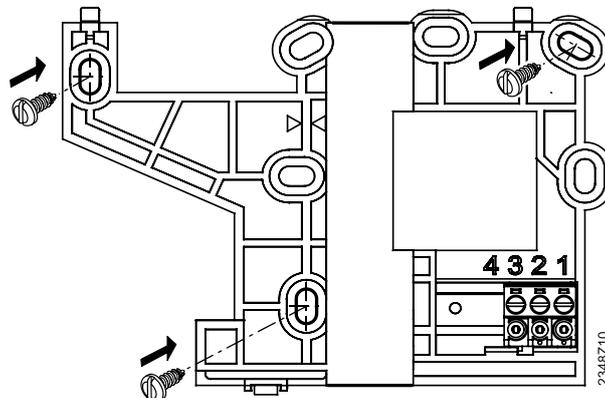
Stability.
At a minimum, include the screws highlighted by the arrows. Additional screws may be used if the connection between the mounting plant and mounting surface is not sufficient.

Cabling

Rigid cable

ℹ️

Mounting tip.

Rigid cables are easier to mount on the green screw terminals, if the terminals are already snapped on.
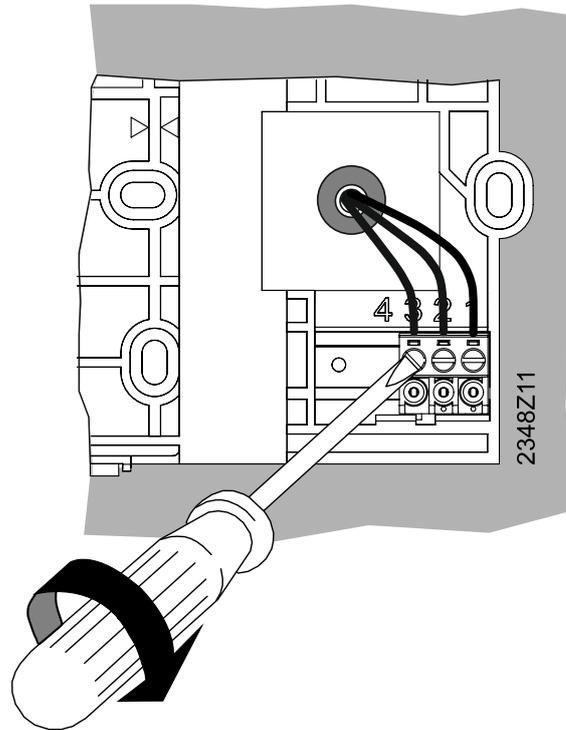
Flexible cable

> **Mounting tip.**
> Flexible cables are easier to mount on the green screw terminals, if the terminals have been removed in advance from the mounting plate.

Terminal assignment

1	DC +12 V (G+)
2	GND (CL-)
3	BSB (CL+)

Permitted cable ends

0.25 mm².........1.5 mm²
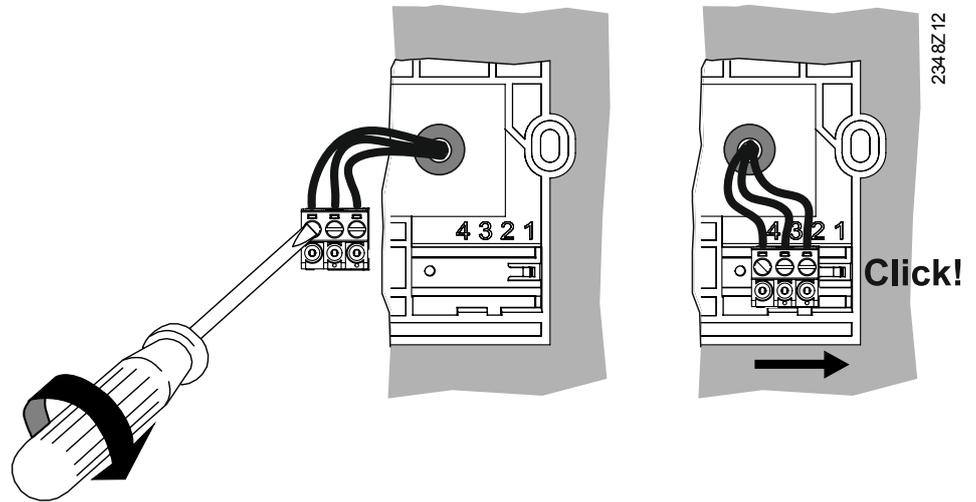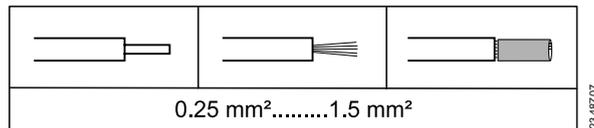
Attach housing
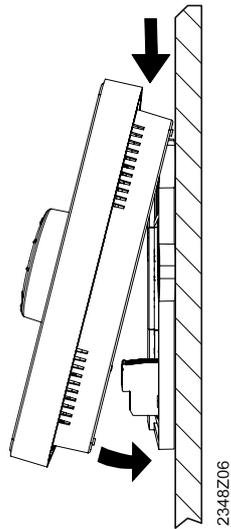
1. Insert the device top on the top.
2. Lower the unit top toward the wall until if noticeably snaps into the base.

3.2.2 Surface mount cable routing

Take off the rear side mounting plate

See Flush mount cable routing [➜ 20].

Attach the mounting plate

!	NOTICE
	Mountability.
	The top of the unit and a cable duct from above could mutually hinder mounting. • Use the drilling template in the installation guide supplied with the product, scale 1:1. • For surface mounting, maintain at least 10 mm between the top edge of the mounting plate and the end of the cable duct. The unit top part must be able to be moved up freely when installing or taking it off.

Mounting plate dimensions   See Flush mount cable routing [➜ 20].

Fixed with screws   See Flush mount cable routing [➜ 20].

Cabling
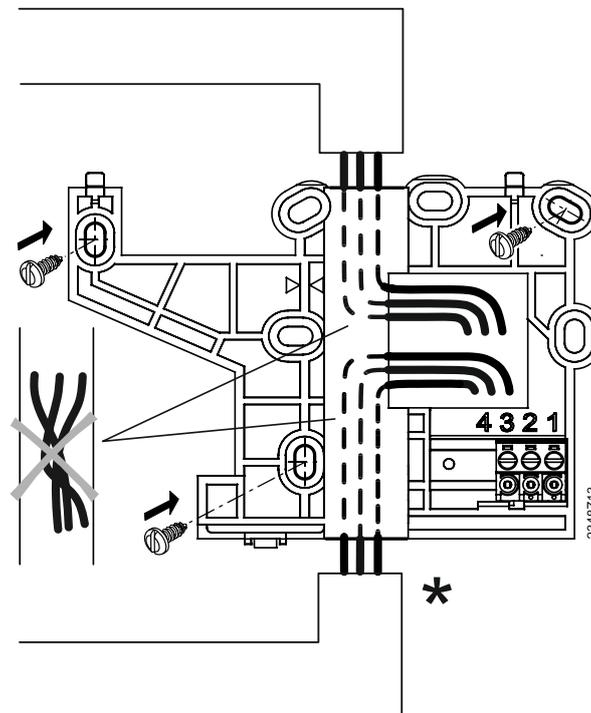
* Alternative cable path

●   The cables can be installed from above or, as an alternative, from below to the mounting plate.

●   Cable cannot cross under the mounting plate due to the small unit height.

Break out cable access

2348Z03

Cabling

Rigid cable

> **i**
>
> **Mounting tip.**
> Rigid cables are easier to mount on the green screw terminals, if the terminals are already snapped on.

2348Z14

Flexible cable

[i]

> **Mounting tip.**
> Flexible cables are easier to mount on the green screw terminals, if the terminals have been removed in advance from the mounting plate.

Terminal assignment

1	DC +12 V (G+)
2	GND (CL-)
3	BSB (CL+)

Permitted cable ends

0.25 mm².........1.5 mm²

Attach housing

See Flush mounting cable routing.

3.2.3 Uninstall QAA74

2348Z06
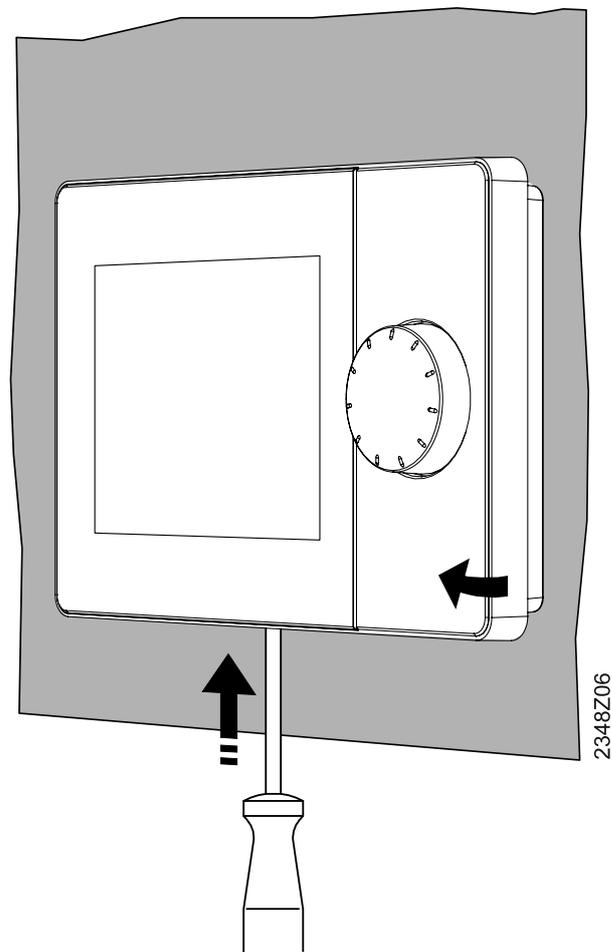
1. Place a screwdriver from below in the movable snappers.

2. Press the snap and simultaneously lift the housing top.
   The housing remains in place at the top.

3. Unhinge the housing top at the top.
   The housing top is now separated from the housing base.

3.3   Switch on room unit QAA74

Prerequisites

- The QAA74 is mounted and connected.
- A connection to the controller via BSB exists.

The QAA74 starts up automatically as soon as the controller is supplied with power and begins to communicate with the controller.

3.4 Mount AVS74 operator unit

Prerequisites
- The clarifications outlined in Section "Operator units AVS74 [➜ 14]" have been made.
- Ribbon cable AVS84.49x is required to connect the controller to the operator unit.

The AVS74 is available for
- Front side installation
- Rear side installation

3.4.1   Front side installation (AVS74.261)

No additional tools are required to front-side mount the AVS74.261.

Attachment principle   The AVS74.261 for front-side mounting has 4 snappers attached to the housing side.

Snap housing
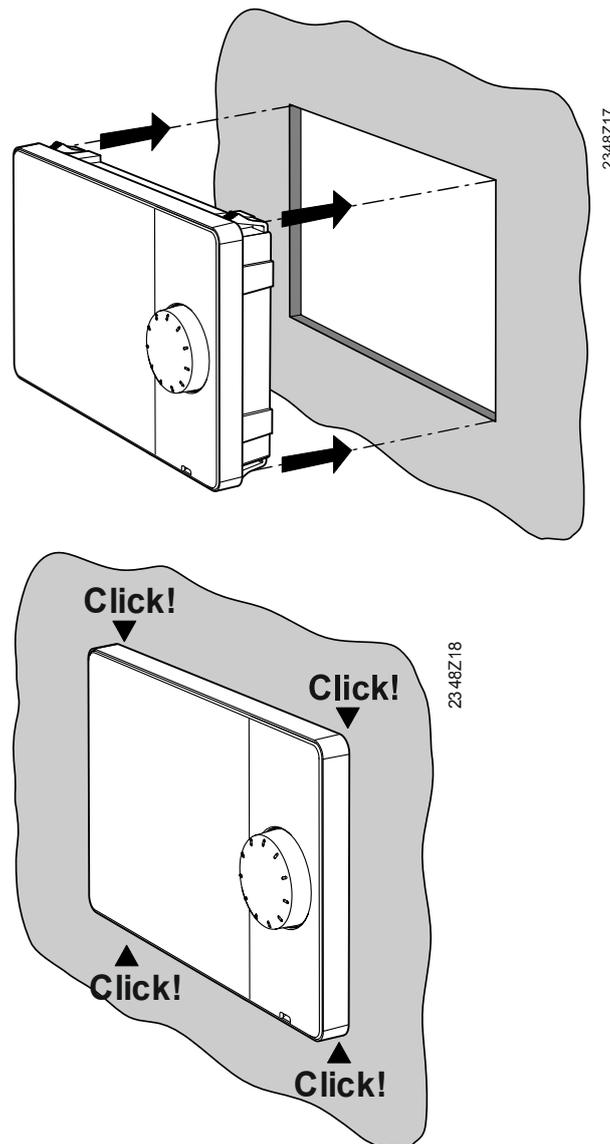
1. Place the housing on the prepared section.
2. Press the unit in the prepared section until it snaps in place.

3.4.2   Rear side installation (AVS74.661, AVS74.761)

Prerequisites
- The following is required for rear-side mounting of an AVS74.661 or AVS74.761:
  - 4 screws M3. Maximum diameter 3.2 mm
  - 4 threaded bolts

Attachment principle

AVS74.661 and AVS74.761 for rear mounting have 4 brackets on the housing corners that are screwed down tightly to the threaded bolts on the source housing.

![i]	NOTICE
	• The customer must provide seals between the AVS74 and producer housing. • The seals must seal the unit on the sides.

Drilling plan
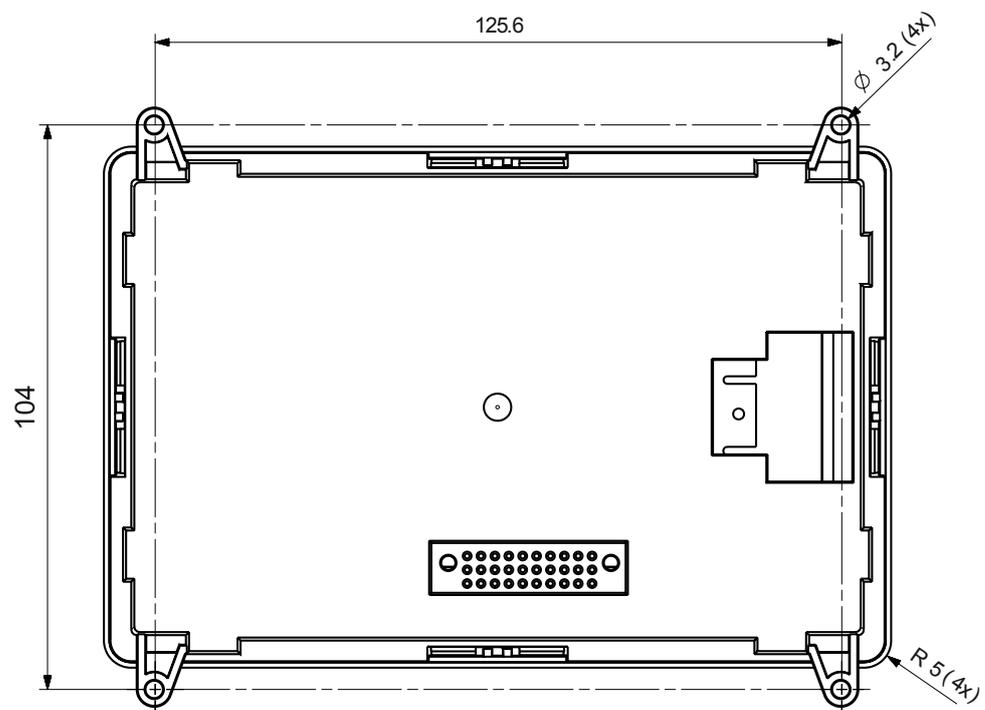
Screw on housing

● Place the unit from the rear on the housing cutout.
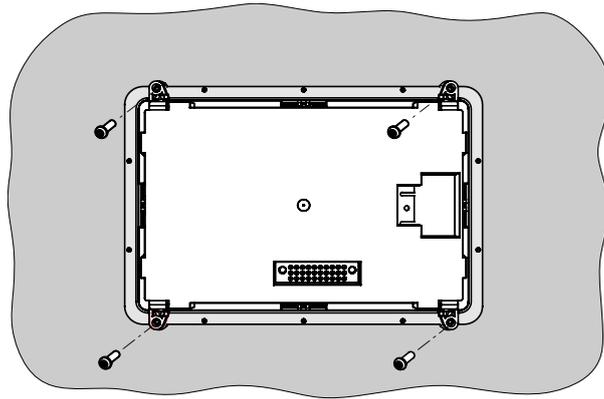
● Attach the unit to the source housing using 4 screws.
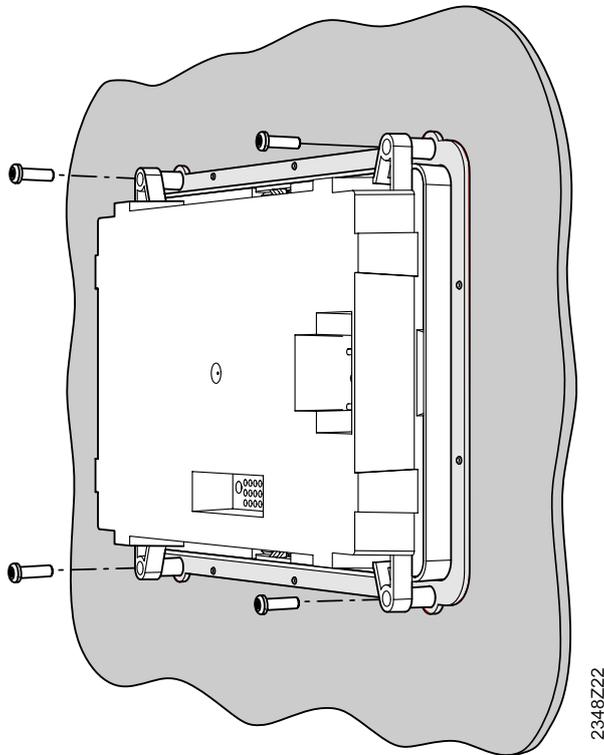
3.5 Switch-on operator unit AVS74

Prerequisites
- The AVS74 is mounted.
- The AVS74 is connected to the controller with cable AVS82.49x.

ℹ The plug-in connection for AVS82.49x on the rear of the AVS74 is illustrated in Section "Design AVS74 operator units [➜ 10]".

The AVS74 starts up automatically as soon as the controller is supplied with power and begins to communicate with the controller.

3.6   USB connection, unlock button

USB connection, unlock
button

QAA74:
USB Mini-B connection

AVS74:
USB Mini-B connection, unlock button

The AVS74 has an unlock button. Use a sharp object (e.g. ballpoint pen) or a screwdriver, up to size 2.

The unlock button function for Boiler Management Units is explained in Section "Unlock button on Boiler Management Units [➜ 99]".

AVS74.761: Remove
cover

On the AVS74.761, the USB Mini-B connection and unlock button are protected by the cover.

You must remove the cover as follows to access these operating elements:

▷   You require a screwdriver, up to size 2.

1.   Place the screwdriver in the front in the opening under the snap.

2.   Push up the snap using the screwdriver.
      The cover is released from the housing.

3.   Remove the cover.

⇨   The USB interface and unlock button can now be accessed.

4 Operation

Operating elements and display
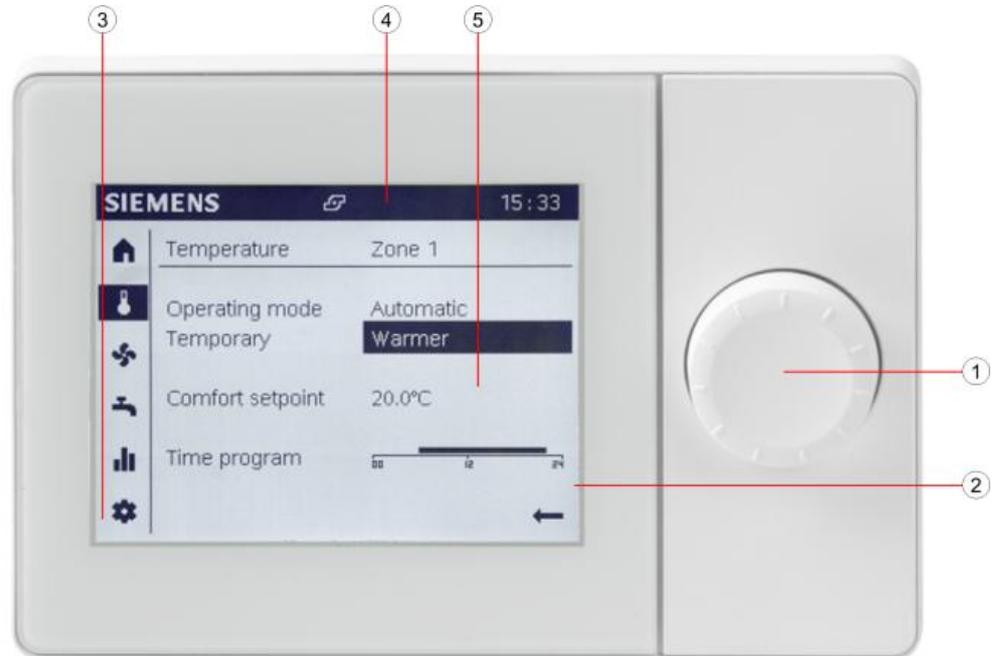
①	Control knob (push and roll)	③	Navigation bar
②	Display	④	Status bar
		⑤	Work area

The control knob is used to operate the QAA74 and AVS74.

The display is organized into a navigation bar, status bar, and work area.

Display in standby   The following is displayed in standby.
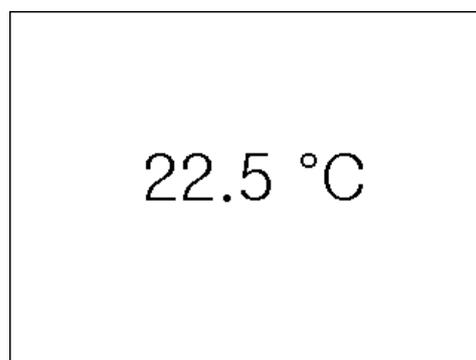
Room unit QAA74: Present room temperature
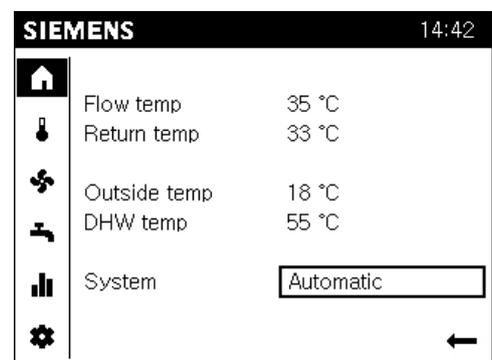
Operator unit AVS74: The most important, present plant parameters (depending on how the plant is configured).

Navigate and set using the control knob

Operating objects may have three display states:

🏠	Not selected: The operating object is displayed normally, black on white background.
🏠	Preselected: The operating object is framed.
🏠	Selected: The operating object is inverted with white on black background.

To go to the navigation bar:

◔	Turn control knob. ● The preselection is displayed with a frame around the symbol. ● The related topic page is displayed in the work area.
⬇	Press control knob. ● The symbol is selected on the navigation bar and is displayed inverted. ● The first adjustable operating object of the work area is preselected.
←	Go back using the Back arrow on the navigation bar. ● The symbol in the navigation bar is once again preselected.

To set the values in the work area:

◔	Turn control knob. ● The preselection is displayed with a frame around the operating object.
⬇	Press control knob. ● The operating object is selected and is displayed inverted. ● The lower level is displayed if the operating object consists of multiple levels (e.g. time program).
◔	Turn control knob. Set value.
⬇	Press control knob. Confirm the set value. ● The set operating object is once again preselected.
◔	Continue navigation ● To other pages, for selected and inverted displayed page titles.
Back	"Back" goes a level higher within the work area.
←	Back arrow to return to navigation bar.

Symbol meanings

The following symbols are located on the navigation bar (left, vertical):

Accessible for end-user and experts:	
🏠	Start page: Plant status. Access to plant switch (or zone switch).
🌡	Temperature page. Access to heating and cooling.
✦	Ventilation page. Access to ventilation.
🚰	Domestic hot water page. Access to hot water handling.
📊	Info pages: • Messages (errors, events) • Plant information • Energy data and consumption on a time axis
⚙	Service/setting pages: • Setting options on device or plant • Operate special operations (e.g. for maintenance work) • Login in expert view (see note below)
Available in addition for experts:	
〽	Diagnostic pages: Analyze and test plant.
🔧	Adjust/repair pages: • Adapt parameters in 'Complete parameter list' • Access to commissioning wizards

The following symbols can be displayed on the status bar (top, horizontal):

🔔	Symbol 'Alarm' indicates a plant error.
🔧	Symbol 'Maintenance/Special operations' indicates the presence of a maintenance message or special operation feedback.
📑	Symbol 'Event' indicates an event message from the plant.
✋	'Hand' symbol The 'Hand' symbol is displayed if the plant/zone switch setting is changed by making an adjustment on the topic pages. Adjustments made on the topic pages can be reset at the plant/zone switch.
12:00	The device clock is synchronized with the clock from the connected controller.
👤	Symbol 'User' and the number to the right (access level 1 to 3) indicate which user level is currently active. • 1: Commissioning engineer • 2: Heating engineer • 3: OEM
🔥	Symbol 'Producer' indicates the main producer (e.g. oil/gas boiler, heat pump) that is currently switched on.

The following symbol can be displayed in the work area:

←	The back arrow returns from the work area to the navigation bar.

Basic menu structure

The room/operator unit QAA74 and AVS74 provide views with adapted structures for various types of application.

Type of application/User/View	Example display	Structure and handling	Sec.
• Daily use • End-user • End-user view (without access protection)	SIEMENS 14:42 Room temperature 20 °C Outside temp 15 °C System Automatic	Main functions: Direct page access. Info pages: Sorted by plant components. Scroll by selected page titles. Service/setting pages: Selection from topic list, then scroll by selected page title.	5, 6
• Commissioning • Commissioning engineer • Commissioning wizard	SIEMENS 14:42 Commissioning Wizard Overview of chapters 1 Plant Configuration 2 Functions 3 System setup 4 Secure Continue	Commissioning wizard: Automatic start during initial commissioning. User is guided step-by-step through the commissioning process. You can repeat and skip chapters.	7
• Diagnostics • Heating engineer, OEM • Expert view, diagnostic pages	SIEMENS 3 14:42 Input/output test Communication Simulation Source Consumer Error history Versions	Diagnostic pages: Selection from topic list, then scroll by selected page title.	8.1
• Upgrade, repair, adjust • Commissioning engineer, heating engineer, OEM • Expert view, Adjust/repair pages	SIEMENS 3 14:42 Domestic hot water 1/6 1600 Operating mode On 1610 Nominal setpoint 50°C 1612 Reduced setpoint 40°C Back	Complete parameter list: Scroll by selected page title; left to select the topic, right within a topic.	8.2.1
	SIEMENS 14:42 Commissioning Wizard Overview of chapters 1 Plant Configuration 2 Functions 3 System setup 4 Secure Continue	Commissioning wizard: Manual start. User is guided step-by-step through the commissioning process. You can repeat and skip chapters.	8.2.2
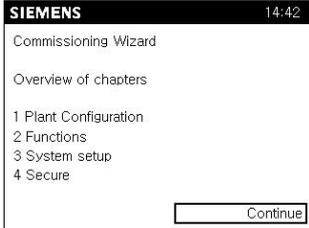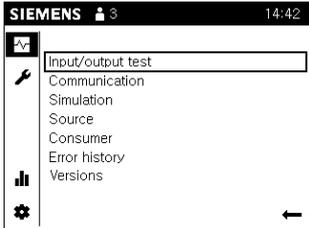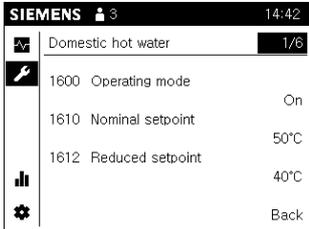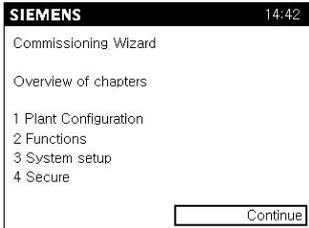
Operating tips

Editing timeout	5 seconds	A changed setting reverts to the original state if not confirmed within this period.
Long button pressure	≥ 3 seconds	A long press of the knob on any expert view returns to the "Expert view start page" (diagnostics page).
Locking timeout	1 minute	Certain plant states are displayed in the foreground, e.g. special operations page. However, users are still able to go to any page and set values. The foreground page returns after this period without operator intervention.
Operating timeout	8 minutes	The display switches automatically after this period without operation to the start page on the operator unit or display in standby on the room unit.

5 Plant operation, quick access

"Plant operation, quick access" is done in the end user view.

You can conduct the operating steps described below on a room unit QAA74 or operator unit AVS74. Differences between the information provided on the operator unit and room unit are limited to the following areas:

● The room unit's start page (⌂) presents the values relevant to the room.

● The operator unit's start page (⌂) focuses on producer information.

● In the event of multiple room units, individual room units can be assigned to individual living zones. Operator units are normally assigned to all living zones.

ℹ   Additional information on assignment of room/operator units to living zones is available in Section "Settings in detail [➔ 88]".

Basic navigation

Basic navigation on the navigation bar and work area for the following menus is described in Section "Operation [➔ 36]", section "Navigate and set with the control knob".

5.1   Operate start page

Evaluation information

QAA74
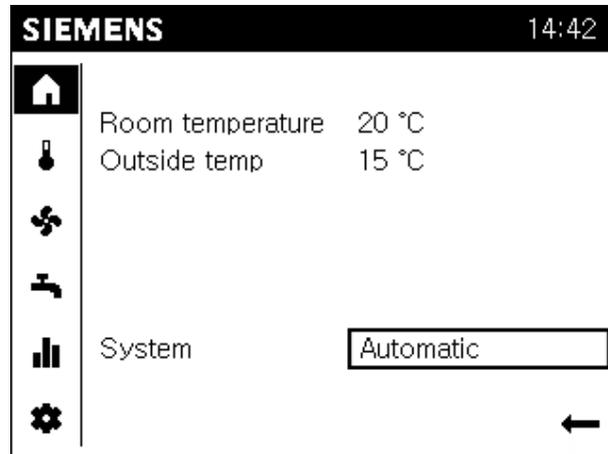
The start page for the QAA74 room unit displays the most important information on the room and plant/zone switch.

AVS74
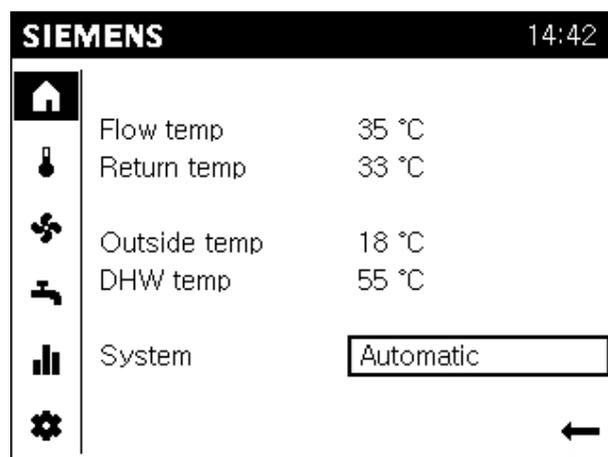
The start page for the AVS74 operator unit displays the most important information on the energy producer and plant/zone switch.

i	*NOTICE*
	The designation of the plant/zone switch depends on the living zone assignment: • "Plant", if all living zones are assigned. • "Zones", if 2 to 3 living zones are assigned. • "Zone", if 1 of multiple living zones is assigned.

Enter settings

Prerequisites

● Select start page (🏠) on the navigation bar.

Operate plant/zone switch

Settings:

● If changed to manual operating mode on the topic pages, it is reset to **Automatic** mode with a single operating step.

● In the '**Off**' position, the plant or zones are switched off. Energy consumption is reduced to a minimum. The building or zones remain, however, protected (e.g. in protection mode).

Proceed as follows to operate the plant/zone switch:

1. Turn the control knob and select the plant/zone switch.

2. Press the control knob.
   The plant-zone switch setting (e.g. Automatic) is selected and is displayed inverted.

3. Press the control knob and select the desired setting (Automatic or Off).

4. Press the control knob to activate the setting.

⇨ The entire plant or assigned zones are set to Automatic mode or off as a group.

i

The hand symbol "✋" alongside the plant/zone switch and on the status bar indicates that the operating modes on the topic pages are set to manual.

5.2 Operating heating/cooling

Evaluation information
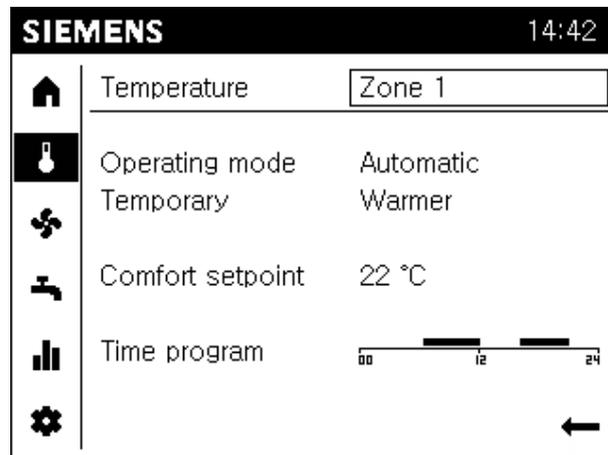
- The temperature page is sorted by living zones.
  The living zone is displayed in the title for the work area.
- Separated by a dash, a summary of the present settings for the selected living zone are displayed.
- The following is displayed at a maximum:
  - Operating mode.
  - Whether a temporary temperature adjustment (warmer, cooler) is active.
  - Depending on the mode, the comfort setpoint for heating or the comfort setpoint for cooling.
  - The time program for the present day.

i	**Functions in Automatic mode.** Temporary temperature adjustment and time program are available exclusively to the Automatic operating mode.

i	**Heating or cooling.** Operating mode, temporary temperature adjustment, and time switch program apply in common for heating and cooling. Only the comfort setpoint for heating or cooling is displayed based on mode and can be set.

Enter settings

Prerequisites

● The temperature page (🌡) is selected on the navigation bar.

Change living zone

ℹ

Selectable zones.

The living zone cannot be selected or edited, if the room or operator unit is assigned to only one living zone or jointly operates all assigned living zones.

Proceed as follows to change living zone:

1. Turn the control knob and select the living zone.

2. Press the control knob.
   The living zone setting is selected and is displayed inverted.

3. Turn the control knob to select another living zone.

4. Press the control knob to confirm the selected living zone.

⇨ Information and settings for the selected living zone is now displayed below the dash.

Set operating mode

Settings:

● **Protection**: The living zone remains protected (frost protection, protection against heat accumulation).

● **Automatic**: The living zone is operated as per the time switch program. Automatic energy savings functions (e.g. summer/winter mode).

● **Reduced**: The living zone is operated continuously at a reduced setpoint.

● **Comfort**: The living zone is operated continuously at the comfort setpoint.

The operating mode can be individually set per living zone.

i

Use plant/zone switch on start page.

It is easier to use the plant/zone switch on the start page if you want to operate the entire building in automatic mode.

Proceed as follows to set the operating mode for a living zone:

▷   The desired living zone is selected.

1. Turn the control knob until the operating mode setting (e.g. Automatic) is preselected.

2. Press the control knob.
The operating mode setting is selected and is displayed inverted.

3. Turn the control knob to select another operating mode setting.

4. Press the control knob to confirm the setting.

**Adapt temperature
temporarily**

Settings:

● Temporarily **'warmer'** or **'cooler'** allows the user to temporarily adjust the temperature for special situations.

● A temporary adjustment is made when selecting **'warmer'** or **'cooler'**; afterwards, the controller returns to the presettings.

● Setting '**...**' disables or switches off the function.

Proceed as follows to adjust the temperature for a living zone to your needs:

▷ The desired living zone is selected.

1. Turn the control knob until the temporary setting is preselected.

2. Press the control knob.
   The temporary setting is selected and is displayed inverted.

3. Turn the control knob to the right to temporarily operate the living zone at a warmer temperature.

4. Turn the control knob to the left to temporarily operate the living zone at a cooler temperature.

5. Press the control knob to confirm the setting.

Adjust comfort setpoint

Proceed as follows to adjust the comfort setpoint:

▷ The desired living zone is selected.

1. Turn the control knob until the comfort setpoint setting is preselected.

2. Press the control knob.
   The comfort setpoint setting is selected and is displayed inverted.

3. Turn the control knob and set the desired comfort temperature.

4. Press the control knob to confirm the setting.

Set the time program

Settings:
● Phases are defined in the time program during which the living zone is actively used.
● The living zone is heated or cooled during these phases to the comfort setpoint.

Proceed as follows to set the time switch program for a living zone:

Set phases

▷ The desired living zone is selected.

1. Turn the control knob until the time switch program is preselected.

2. Press the control knob to start the time switch program.
   The display goes to the weekly overview.

3. Turn the control knob to select the desired daily program.

4. Press the control knob to start the daily program.
   The display goes to the daily overview. The first adjustable phase is preselected.

5. Turn the control knob to select the desired phase.

6. Press the control knob to select the phase.
   The selected phase is displayed inverted. The start time is highlighted by a small vertical dash.

7. Turn the control knob (to the right) for a later start time or (to the left) for an earlier start time.

8. Press the control knob to confirm the start time.
   The stop time is highlighted by a small vertical dash.

9. Turn the control knob (to the right) for a later stop time or (to the left) for an earlier stop time.

10. Press the control knob to confirm the stop time.
    The phase is once again preselected (frame around the phase).

Delete phases

Set the start and stop time to the same time to delete a phase.

Navigate among phases and create new phases

1. Turn the control knob to move among phases for a day.

2. Turn to the left past the first phase of the day to create another one.
   Up to 3 phases per day are allowed.

Copy daily profiles

1. Turn to the right past the last phase of the day to preselect "Copy".

2. Press the control knob to confirm copy.
   The display goes to the weekly overview. The day for copy is preselected.

3. Turn the control knob to select the day used to overwrite the copied daily program.

4. Press the control knob to confirm the selected day.
   The daily program is overwritten.

5. Repeat overwrite of daily programs for all desired days.

6. Conclude copy function with "Done".

5.3   Operate ventilation

Evaluation information
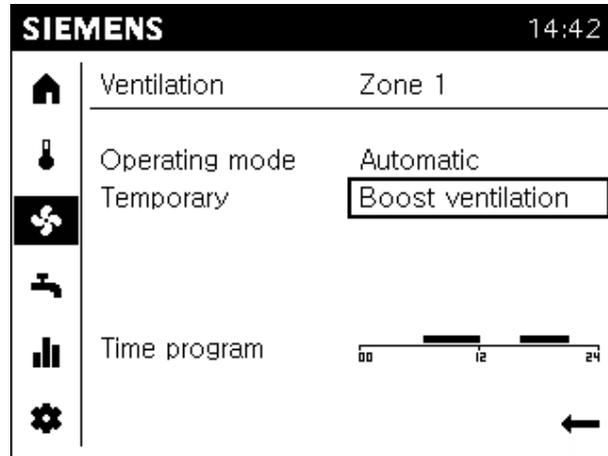
- The information on the ventilation page is sorted by living zones.
  The living zone is displayed in the title for the work area.
- Separated by a dash, a summary of the present settings for the selected living zone are displayed.
- The following is displayed at a maximum:
  - Operating mode.
  - Whether boost ventilation is active.
  - The time program for the present day.

ℹ️   **Functions in Automatic mode.**

The time program is available exclusively to the Automatic operating mode.

Enter settings

Prerequisites

● Select ventilation page ( ) on the navigation bar.

Change living zone

i

> **Selectable zones.**
>
> The living zone cannot be selected or edited, if the room or operator unit is assigned to only one living zone or jointly operates all assigned living zones.

To change living zones, proceed in the manner as described for the temperature page.

Set operating mode

> Settings:
>
> ● **Off**: Ventilation is switched off.
> ● **Automatic**: The living zone is controlled as per the time switch program.
> ● **Stage 1** to **Stage 3**: Ventilation is continuously operated at the set stage.

The operating mode can be individually set per living zone.

i

> **Use plant/zone switch on start page.**
>
> It is easier to use the plant/zone switch on the start page if you want to operate the entire building in automatic mode.

To change operating mode, proceed in the manner as described for the temperature page.

Boost ventilation (temporary)

> Settings:
>
> ● **Boost ventilation** ventilates the living zone at the highest stage.
> ● The controller returns to operation using the presettings as soon as the living zone is ventilated.
> ● Setting '**...**' disables or switches off the function.

Proceed as follows to conduct boost ventilation:

▷ The desired living zone is selected.

1. Turn the control knob until the temporary setting is preselected.
2. Press the control knob.
   The temporary setting is selected and is displayed inverted.
3. Turn the control knob to temporarily conduct boost ventilation in the desired living zone.
4. Press the control knob to confirm "boost ventilation".

Set the time program

> Settings:
>
> ● Phases are defined in the time program during which the living zone is actively used.
> ● The living zone is ventilated during these phases at the comfort stage.

To change the time switch program, proceed in the manner as described for the temperature page.

5.4   Operate hot water

Evaluation information
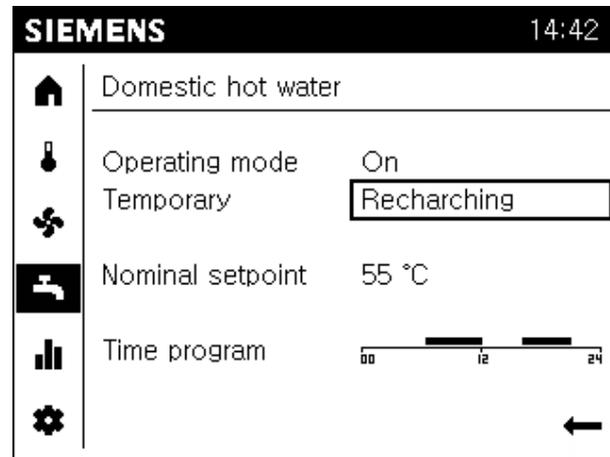
- The hot water page provides a summary of present hot water settings.
- The following is displayed at a maximum:
  – Operating mode.
  – Whether recharging is active.
  – Nominal setpoint.
  – The time program for the present day.

Functions in operating mode "On".

Nominal setpoint setting and time program are normally available in operating mode "On" (depending on the controller configuration).

Enter settings

Prerequisites

● Select hot water page (🚰) on the navigation bar.

No change in living zones

[i] **No assignment of hot water to living zones.**

The hot water settings apply to the entire building.

Set operating mode

Settings:

● **Off**: Hot water heating is switched off.
● **On**: Hot water is heated to the nominal setpoint as per time program.
● **Eco**: Hot water is heated to a reduced setpoint.

[i] Possible configurations for hot water operating mode Eco depends on the particular controller. Your controller manual includes additional information.

To set the operating mode for hot water, proceed in the manner as described for the temperature page.

Recharging (temporarily)

Settings:

● The storage tank can be **recharged** to the nominal setpoint if emptied due to high consumption.
● The controller returns to operation using the presettings as soon as the storage tank is recharged.
● Setting '...' disables or switches off the function.

Proceed as follows to recharge:

1. Turn the control knob until the temporary setting is preselected.
2. Press the control knob.
   The temporary setting is selected and is displayed inverted.
3. Turn the control knob to temporarily recharge.
4. Press the control knob to confirm "Recharge".

Modify nominal setpoint

!	⚠ CAUTION
	Danger of burns.
	Excessively hot water can result in burns.
	● Set the nominal set points so that scalding at the taps is not possible.

To set the nominal setpoint for hot water, proceed in the manner as described for the temperature page ("Set comfort setpoint").

Set the time program

Settings:
● The phases are defined in the time switch program during which hot water is provided.
● Hot water is heated to the nominal setpoint during these phases.

To set the time program for hot water, proceed in the manner as described for the temperature page.

6   Evaluate plant and set

"Evaluate plant and set" is done in the end-user or expert view.
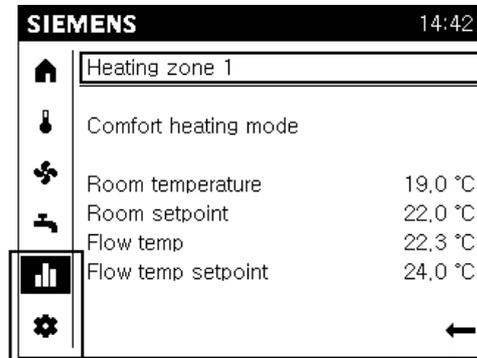
End-user view   Expert view (here: User levels 3=OEM)
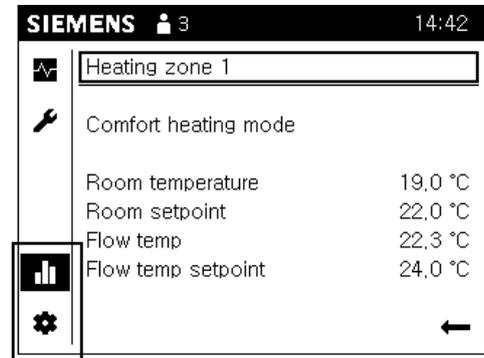
The information and settings are the same in both views, with the exception of special functions that are still based on the user level.

You can conduct the following operating steps on one room unit QAA74 or one operator unit AVS74, but with fewer or even no special functions available on the room unit.

Basic navigation

Basic navigation on the navigation bar and work area for the following menus is described in Section "Operation [➜ 36]", section "Navigate and set with the control knob".

6.1 Evaluate and operate Info pages

The following is displayed on the Info pages (▮▮▮):

1. Messages (errors, events, maintenance alarms)
2. Plant information (by zone)
3. Energy data and consumption on a time axis

Info page structure

Work area of the first Info page is displayed (no topic list) for preselection or selection of Info pages (▮▮▮) in the navigation.

Message pages are only displayed if messages are pending. The message pages are assigned to the top if messages are pending.
Each Info page has a title. Information by topic is displayed separated by a dash.

6.1.1 Operate messages (errors, maintenance messages)

i	*NOTICE*
	Message pages (errors, maintenance messages) are only displayed if present messages are pending.

Evaluate errors
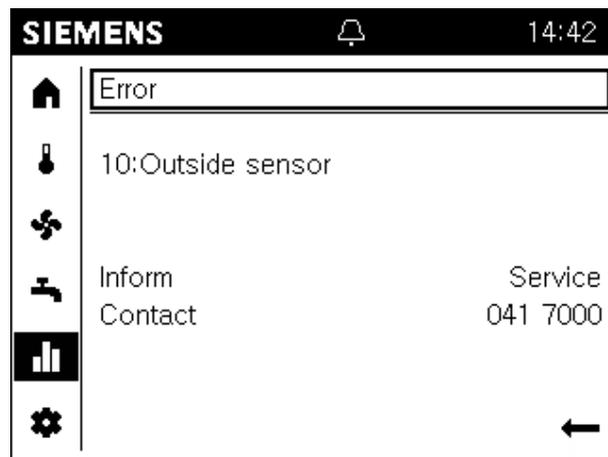
- Pending errors are indicated on the status bar by an alarm symbol (🔔). Go to the Info pages for additional information on pending errors.

- High-priority error messages (dependent on controller) are displayed in front. Operator interventions remain possible in this case. The display automatically switched to error display after a lock timeout of 1 minute.

- A maximum of 2 Info pages with errors are displayed: The title of the Info page of an error is "Error" or "Error 2" accordingly.

- Error messages have the following structure: "Error number:Error text". The error text is normally plain text. Additional information is available on the controller user guide's.

- Non-interactive errors disappear automatically from the display after troubleshooting (e.g. outside temperature sensor missing).

- For interactive sensors, the user must troubleshoot and then reset the sensor (see the following instruction).

i	The error history for the diagnostic pages (see Section "Test plant, diagnostics [→ 74]") includes timestamps and any additional information on errors.

Reset interactive errors

Prerequisites
- An interactive error exists on the plant.
- The Info pages (▮▮) are selected. The title of the first error page is preselected.

Proceed as follows to reset an interactive error:

1. Turn the control knob to preselect "Reset".

SIEMENS	🔔	14:42

Error

225:Low-pressure HP
Device address   00,02

Inform   Service
Contact   041 7000
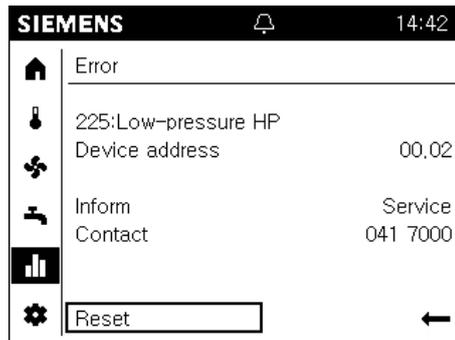
Reset   ←

2. Press the control knob.
   The text changes to "Confirm" and is displayed inverted.

SIEMENS	🔔	14:42

Error

225:Low-pressure HP
Device address   00,02

Inform   Service
Contact   041 7000

Confirm   ←
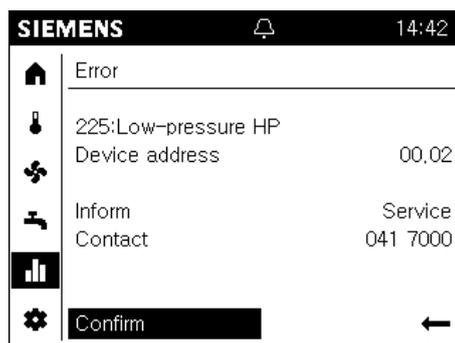
3. Press the control knob to initiate reset on the controller.
   During the reset, the text changes to "Activated" and is preselected.

SIEMENS	🔔	14:42

Error

225:Low-pressure HP
Device address   00,02

Inform   Service
Contact   041 7000

Activated   ←
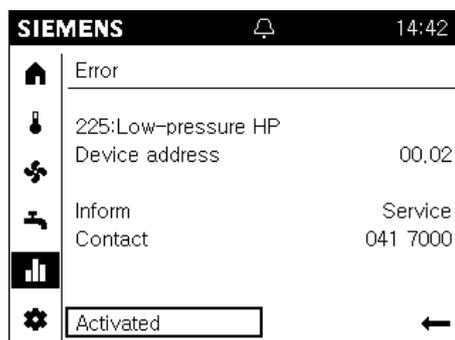
4. The page is automatically closed if the error is reset.

ℹ️   The device address ("Segment.Device") is not displayed on a directly connected controller.

Evaluate maintenance messages
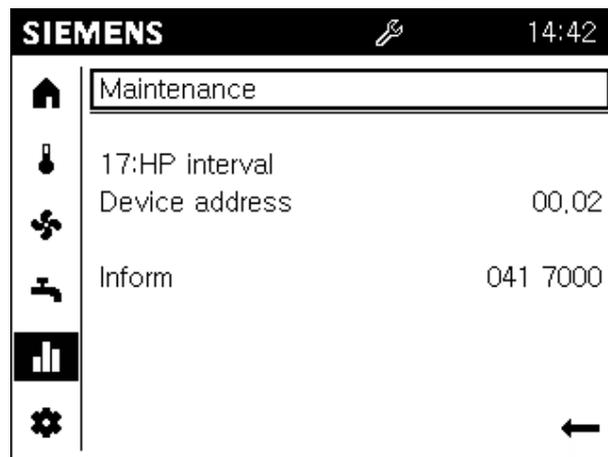
- Pending maintenance messages are indicated on the status bar by a maintenance symbol (🔧). Go to the Info pages for additional information on a pending maintenance message.

- A maximum of 2 Info pages with maintenance messages are displayed: The title of the Info page of an error is "Maintenance" or "Maintenance 2" accordingly.

- Maintenance messages have the following structure: "Maintenance number:Maintenance text". The maintenance text is normally plain text. Additional information is available on the controller user guide's.

- Maintenance messages are generated as follows:
  - By counters and time clocks operating on the controller (e.g. time since the last service).
  - Sensors that monitor specific states (e.g. battery level or water pressure).

Reset maintenance messages

You reset the maintenance messages indirectly by resetting the counter to time clock, or by eliminating the cause of the message.

ℹ️ | The user's guide for your controller includes additional information on resetting maintenance messages.

6.1.2   Plant information pages

Evaluate plant information
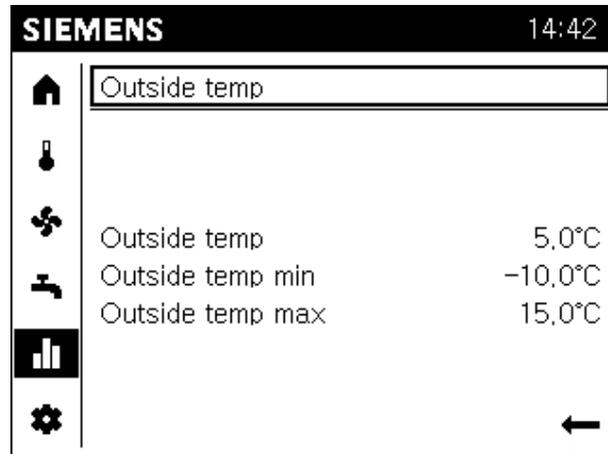
- Each plant page has a plain-text title, e.g. outside temperature, heating zone 1, or solar.
- The work area for a plant page displays a summary of selected values from the title topics.
- Benefits:
    - The summary avoids searching and increases legibility.
    - The selection permits the user to focus on the most commonly searched for values.

ⓘ	*NOTICE*
	• The scope of the displayed plant pages is adapted to actual plant configuration. • Only zones assigned to the plant pages are displayed. • The plant pages have no operating elements.

Examples

```
SIEMENS                        14:42
┌──────────────────────────────────┐
│ 🏠  │ Heating zone 1              │
│     │                            │
│ 🌡  │ Comfort heating mode        │
│     │                            │
│ ✺  │ Room temperature    19,0 ℃  │
│     │ Room setpoint       22,0 ℃  │
│ ⤵  │ Flow temp           22,3 ℃  │
│     │ Flow temp setpoint  24,0 ℃  │
│ ▮▮ │                            │
│     │                            │
│ ✿  │                         ←   │
└──────────────────────────────────┘
```
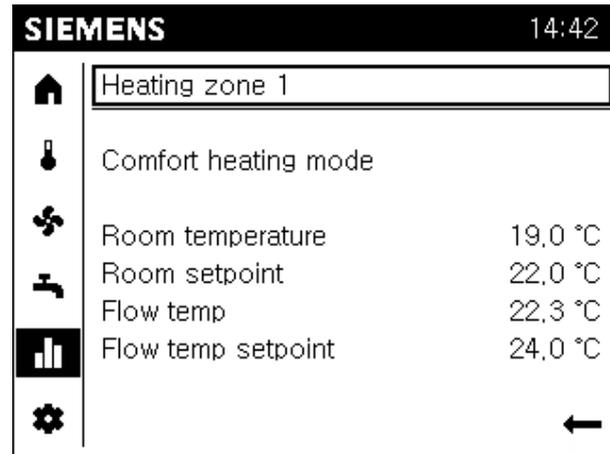
- Title of the plant page with producer and living zone (consumer)
- In the work area, a summary of associated, most important values:
  - Status producer/living zone
  - Additional value for producer/living zone

Navigate to plant information

Prerequisites

- The Info pages (▮▮) are selected in the navigation bar.

Proceed as follows to navigate to plant information:

1. Press the control knob to preselect the title of an Info page.

2. Press the control knob.
   The title of the Info page is selected and is displayed inverted.

3. Turn the control knob to the right until the first plant page is displayed.

4. Continue to turn the control knob to go to other plant pages.

5. Press the control knob to preselect the title of a plant page.

6. Exit Info pages with the back arrow.

6.1.3   Energy consumption pages

Evaluate energy consumption
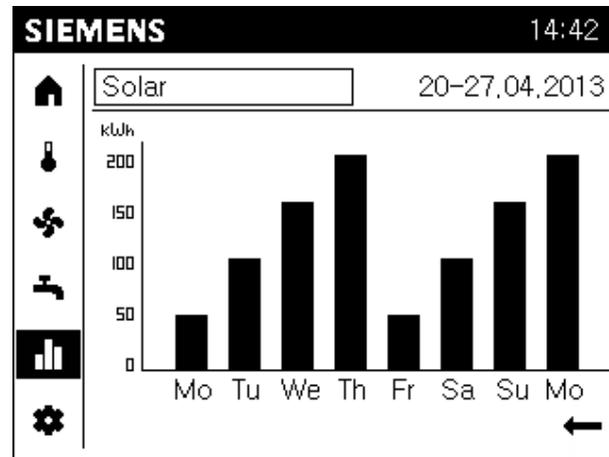
- The energy pages displayed depend on available plant energy producers (oil, natural gas, heat pump, solar, solid fuel, etc.).
- Energy consumption is displayed on a time axis.
- The display range can be set: 8 days, 12 months, or 10 years.

Go to energy consumption pages and set views

Prerequisites

- The Info pages (▟▍) are selected in the navigation bar.

Proceed as follows to go to energy consumption pages and set views:

1. Press the control knob to preselect the title of an Info page.

2. Press the control knob.
   The title of the Info page is selected and is displayed inverted.

3. Turn the control knob to the right until the first energy consumption page is displayed.

   ⇨ The title of the energy consumption page consists of the energy producer and evaluated time frame.
   ⇨ The consumption diagram bar is displayed in the work area.

4. Turn the control knob to go to other energy producers.

5. Press the control knob to preselect the title of the energy producer.

6. Turn the control knob to go to the time frame in the title.

7. Press the control knob to select the time frame.

8. Turn the control knob to change to 8 days, 12 months, or 10 years.

9. Exit Info pages with the back arrow.

6.2 Operating service/setting pages

The following is displayed on the service/setting pages (✿):

1. Regional settings: Settings relating to the room/operator unit.
2. Special operation: Operating special functions.
3. Settings: Settings relating to the plant.
4. Expert: Login to expert view.

Structure
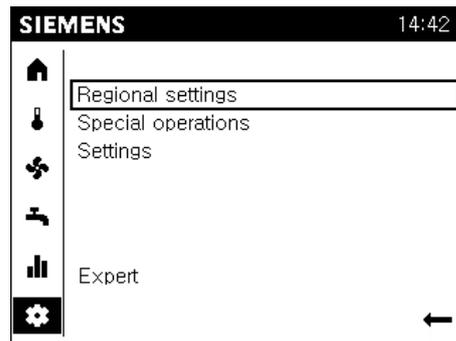
A topic list is displayed in the work area when selecting service/setting pages.

The entries can be individually selected. The actual service/setting pages open.

6.2.1 Regical settings
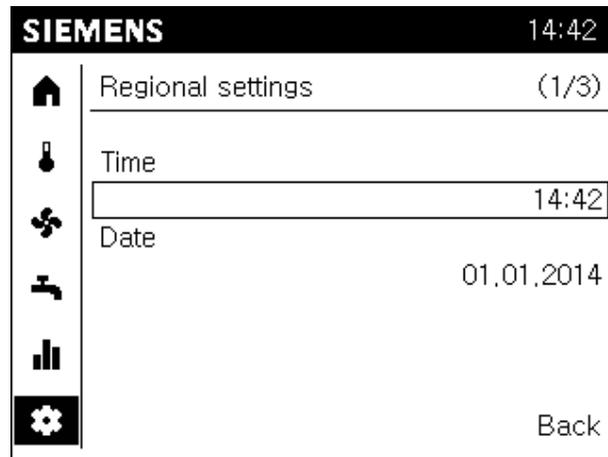
Adjustable:

1. Time
2. Date
3. Daylight saving time start and end
4. Language

i	The aforementioned settings, are a component of the commissioning wizard with the exception of start and end of daylight saving time.

Prerequisites

● The service/setting pages (⚙) are preselected in the navigation bar.

Proceed as follows to change regional settings:

1. Turn the control knob and select the Regional settings.

2. Press the control knob.
   'Regional settings' opens. The title of the regional settings page is preselected.

3. Turn the control knob to go to an adjustable value.

4. Press the control knob to access the setting.

5. Turn the control knob and enter the value.

6. Press the control knob to confirm the settings.
   The value is once again preselected.

7. Go to the title for additional regional settings or exit regional settings with "Back".

6.2.2 Operate special functions

Recognize and evaluate special operations
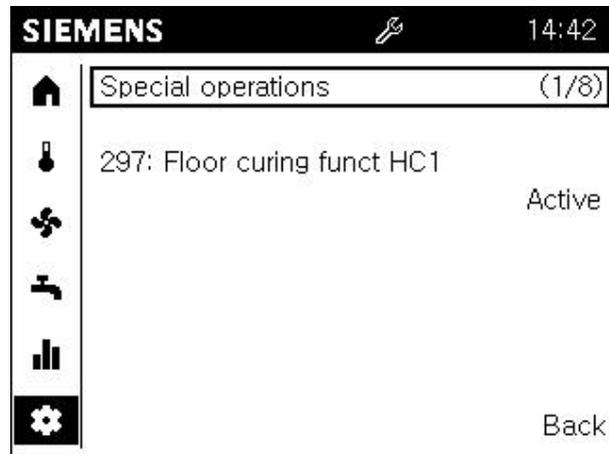
- Automatic display
    - You do not need to navigate the menu for active special operations. Display and information on special operation is placed in the front.
    - After operator intervention, the display changes after a lock timeout of 1 minute automatically back to the display and information on special operation.
- An active special function is indicated with the service special operation symbol (▨) in the status bar.
- A special operation message has the syntax "Special operation number.special operation message". The status is also indicated as "active".

i	*NOTICE*
	• Available special functions depend on the connected controller or plant type (boiler controller, Boiler Management Unit (BMU), heat pump controller). Section "Special operations [➜ 94]" includes special operations and special functions sorted by controller type. • The technical background on special operations and special functions is provided in the user's guide for your controller.

Operate special functions

Special functions are required in special plant and service situations.

Prerequisites

● The service/setting pages (✿) are preselected in the navigation bar.

The workflow is explained using the example of floor curing special function:

1. Turn the control knob and select "Special operations".

2. Press the control knob.
   'Special operations' opens. The title of the first special operations page is preselected. The first special operation page indicates whether a special operation is active.

3. Push the control knob to select the special operation page title.

4. Turn the control knob and go to the page "Floor curing zone 1".

5. Press and turn the control knob to change to the work area for the flooring curing function.
   The state of the floor curing function (off) is preselected.

6. Press the control knob to select state "off".

7. Press the control knob and select the desired floor curing function, e.g. function heating.

8. Press the control knob to confirm selection.

   In the work area, two additional operating lines are now displayed.
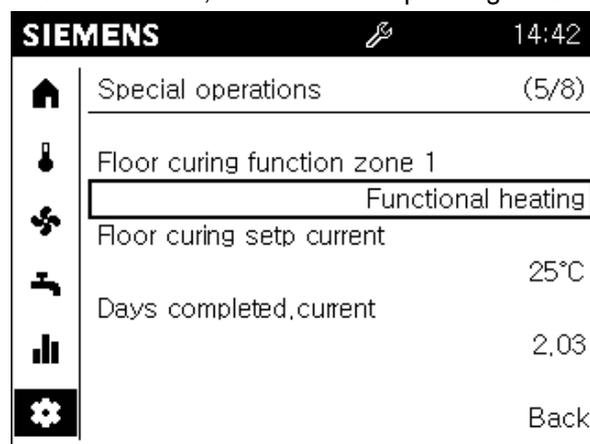
⇨ The floor curing function is now activated, visible on the service special operation symbol (◩) on the status bar.

Deactivate

Deactivate the floor curing function by setting the status for "Floor curing zone 1" to "Off".

6.2.3 Set important plant parameters.

Adjustable:

1. Comfort setpoint
2. Reduced setpoint
3. Protection setpoint
4. Characteristic curve slope (heating) and flow setpoint at OT 25 °C or 35 °C (cooling).
5. Summer/winter heating limit (heating) and cooling limit at OT (cooling).

i

The parameters adapt the plant to meet your needs.

The controller manual provides technical details on these parameters.

Prerequisites

● The service/setting pages (⚙) are preselected in the navigation bar.

Proceed as follows to set a plant parameter:

1. Turn the control knob and select the "Settings".
2. Press the control knob.
   'Special operations' opens. The title of the settings page is preselected.
3. Push the control knob to select the setting page title.
4. Turn the control knob to go to other setting pages.
5. Push and turn the control knob to go to the work area of a setting page.
6. Set the values as per the needs of your building or living zone.
7. Exit the settings page with "Back".

6.2.4 Login to expert view.
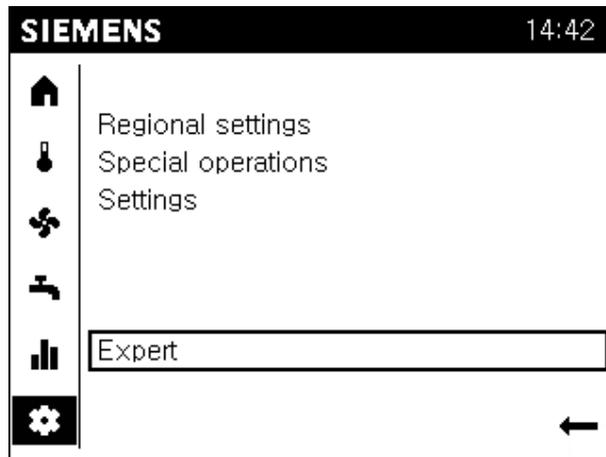
i	*NOTICE*
	No login when bus traffic is high. The login can be blocked if the loading process to another room or operator unit results in too much bus traffic. Wait for the loading process of the other unit.

Expert view: Commissioning and engineer

Prerequisites

▷ You are in the end user view.

▷ The service/setting pages are preselected.

1. Turn the control knob and select "Expert".

2. Press the control knob.
   The login dialog box opens. The user level setting is preselected.

3. Press the control knob.
   The user level is selected and is displayed inverted.

4. Turn the control knob to select the desired user level.

5. Press the control knob to confirm selection.

6. You receive feedback on successful login that you confirm with "Continue".

⇨ The user symbol (⊡) with the corresponding level is displayed on the status
   bar.

Expert view: OEM

1. You must turn the control to password entry if you have selected the OEM level.

2. Press the control knob.
The first digit position is selected.

3. Turn the control knob to enter the first digit of the OEM password.

4. Press the control knob to confirm entry.
The second digit is selected.

5. Do the same for the 5 digits of the OEM password.

6. You receive feedback on successful login that you confirm with "Continue".

⇨ The user symbol (⊟) with the corresponding level is displayed on the status bar.

7 Commission plant using the commissioning wizard

i	*NOTICE*
	Startup response of the commissioning wizards.
	• Depending on the controller, operating line 39 (OEM) of the room/operator unit-specific section or the entire commissioning wizard can be suppressed at initial power-up (initial commissioning).
	• Depending on the controller, a query is displayed on the operator unit at the end of the commissioning dialogs on whether to switch off Automatic start of the commissioning wizards at the next power-up.
	• The commissioning wizard can be queried at any time (see Section "Start commissioning wizards [➜ 80]"). Operating line 39 and the auto start setting is then ignored.

Structure

The commissioning wizard is structured in a room/operator unit-specific part (in the graphic white) and a plant-specific part (in the graphic gray).

● Notes on room/operator unit settings available in Section "Room/operator unit parameters [➜ 86]".

● Notes on plant settings are available in user's guide for your controller.

Repeat chapter and skip

● The entire room/operating-specific part as well as chapter or sub-chapter of the plant-specific part can be repeated (in graphic: Redo).

● The chapter or sub-chapter of the plant-specific part can be skipped (in graphic: Skip).

Operator unit

Regional settings

Language
Time & Date

Operator unit configuration

(Use as)
Assignement/Grouping

Redo

Skip

1 Plant configuration

1.1 Select plant/partial diagram
1.2 Configure inputs/outputs
1.3 Test wiring

Redo

Skip

2 Functions

2.1 Heating/Cooling
2.2 Domestic hot water
2.3 Buffer storage tank

Redo

Skip

3 System setup

3.1 LPB system
3.2 Modbus

Redo

4 Secure

Save sensors
Backup

Redo

End

Room unit

Regional settings

Language
Time & Date

Room unit configuration

Use as
Assignement/Grouping

Redo

End

8 Analyze plant and set

"Analyze plant and set" is done in the expert view.

Expert view

- The expert view includes the user levels commissioning engineer, heating engineer, OEM (can be selected at login).
- The expert view is presented in the same way for room units or operator units.

Basic navigation

Basic navigation on the navigation bar and work area for the following menus is described in Section "Operation [➜ 36]", section "Navigate and set with the control knob".

8.1   Test plant, diagnostics

The following is displayed on the Diagnostics pages (⌁):

1.   Input/output test
2.   Communication
3.   Simulation
4.   Producer
5.   Consumers
6.   Error history
7.   Versions

Structure
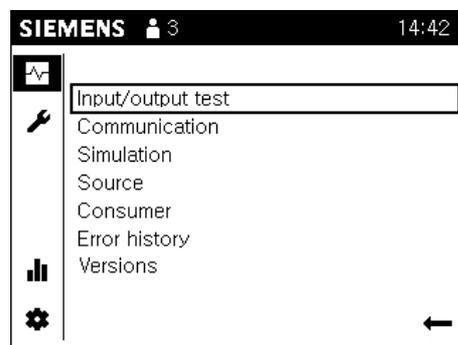
A topic list is displayed in the work area when selecting diagnostics pages.

The entries can be individually selected. The actual diagnostics pages open.

[i]   The user's guide for the controller includes detailed information on the individual diagnostic and test parameters.

Operating and use of diagnostic pages is illustrated below using the input/output test as an example.

8.1.1 Example input/output test

Output UX1 is tested.

Prerequisites
- Select diagnostic pages () on the navigation bar.

Go to diagnostic page

1. Turn the control knob and select "Input/output test".

2. Press the control knob.
   'Input/output test' opens. The title of the first page of the input/output test is preselected. The associated parameters with operating lines are displayed in the work area.

3. Press the control knob to select the title.

4. Turn the control knob until you see the input or output to be tested. In this case: "Output UX".

Conduct output test

!	NOTICE
	Unwanted operating states due to a lack of limitation.
	Limitations do not act during the output test.
	• Ensure that the components controlled during the output test cannot result in undesired operating states.

1. Press the control knob to go to the work area.

2. Turn the control knob until the setting value for "Output test UX1" is highlighted.
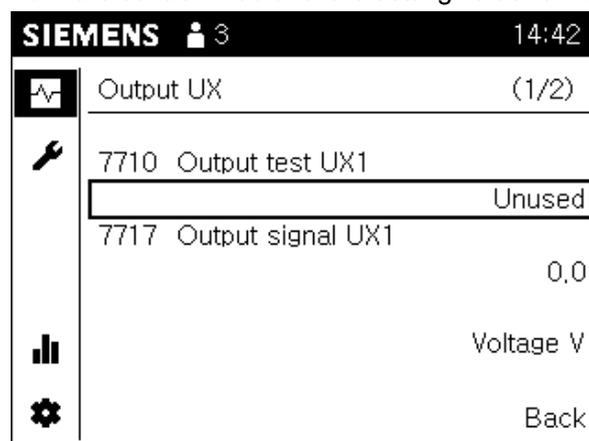
3. Press the control knob to select the test value.

4. Turn the control knob and enter the test value (e.g. 20%).

```
SIEMENS  👤 3                    14:42
┌─────────────────────────────────────┐
│ 〰  Output UX              (1/2)      │
│                                      │
│ 🔧  7710  Output test UX1            │
│    ┌──────────────────────────────┐  │
│    │                          20%  │  │
│    └──────────────────────────────┘  │
│     7717  Output signal UX1          │
│                                      │
│                              2.0     │
│                                      │
│ ▮▮▮                  Voltage V       │
│                                      │
│ ⚙                       Back         │
└─────────────────────────────────────┘
```
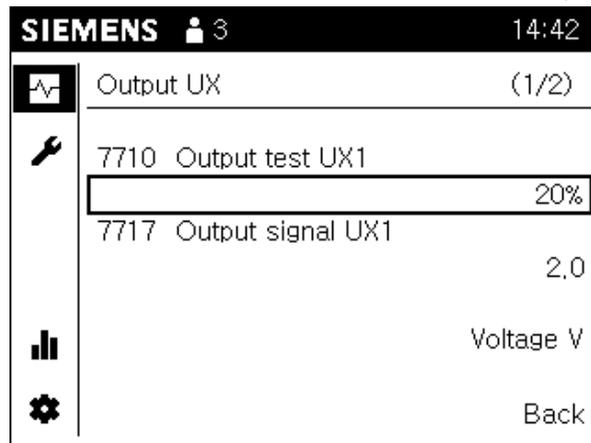
⇨ The maintenance symbol (🔧) on the status bar indicates that an output test is active.

⇨ You can see the present output value at the value for "Output signal UX1".

⇨ A unit is indicated below the value (e.g. voltage V).

Conclude output test

Conclude the output test as follows if the testing of the output is completed:

1. Press the control knob to select the test value.

2. Turn the control knob to the left until "- - - %" is displayed.

3. Press the control knob to confirm the setting.

   ⇨ Control of UX1 for testing is concluded; the maintenance symbol on the status bar disappears; after a brief period, the display of the test value returns to the original display "Unused".

4. Go to the title of the diagnostics page to conduct additional diagnostics or select "Back" to return to the topic list.

8.2   Set plant and troubleshoot

The following is displayed on the Adjust/repair pages ( ):

1.   Complete parameter list
2.   Commissioning wizard
3.   Update operator unit *

* The list entry "Update operator unit" is displayed if changes are made on the "Complete parameter list" or commissioning wizard that impact the device pages.

Structure
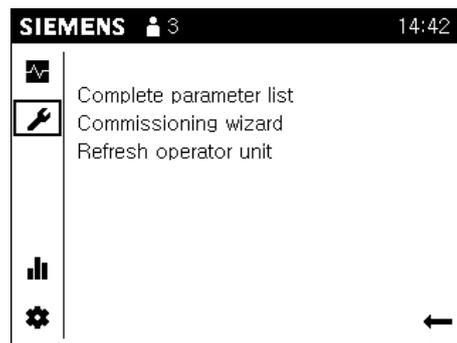
A topic list is displayed in the work area when selecting Adjust/repair pages.

The entries can be individually selected. The actual Adjust/repair pages open.

8.2.1 Complete parameter list

Structure and design of the parameter list

The complete parameter list has the following structure:

- The title of the parameter list page is a technology topic (e.g. heating circuit 1) for the plant encompassing multiple parameters (operating line).
- 3 operating lines are displayed per parameter list page. "Current page of total" is displayed to the right of the title if a title includes more than 3 operating lines.
- You can scroll through the parameter list pages on highlighted page titles; left for topics, right within a topic.
- The operating line numbers are sorted chronologically in ascending order via topics and pages.
- The user's guide for your controller includes an overview table and detailed explanations on all parameters.

Hint
A long press of the knob (> 3 seconds) jumps from any page to the "Expert view start page" (diagnostics page).

Navigate through "Complete parameter list"

Prerequisites

● The Adjust/repair pages ( ) are selected in the navigation bar.

1. Turn the control knob and select 'Complete parameter list'.

2. Press the control knob.
   The 'Complete parameter list' opens. The title of the first parameter list page is preselected.

   ⇨ The device may have to first generate the parameter list.

3. Press the control knob and select the title of the parameter list page.

4. Turn the control knob and go to additional technology topics.

5. Press the control knob to only preselect the topic.

6. Turn the control knob to preselect to the right of title "Current page of total".

7. Press the control knob to select "Current page of total".

8. Turn the control knob within a topic to go to other parameter list pages.

9. Go to the work area to make the settings or exit the parameter list pages with "Back".

8.2.2   Start commissioning wizards

You can start the commissioning wizard at any time via the menu item described below and benefit from the structured processing of commissioning parameters.

```
┌──────────────────────────────────────┐
│ SIEMENS  ▮ 3              14:42        │
│ ┌──┐                                   │
│ │Λ̄│  Complete parameter list          │
│ ├──┤  Commissioning wizard             │
│ │🔧│  Refresh operator unit            │
│ └──┘                                   │
│                                        │
│                                        │
│  ▮▮                                    │
│  ✿                          ←          │
└──────────────────────────────────────┘
```
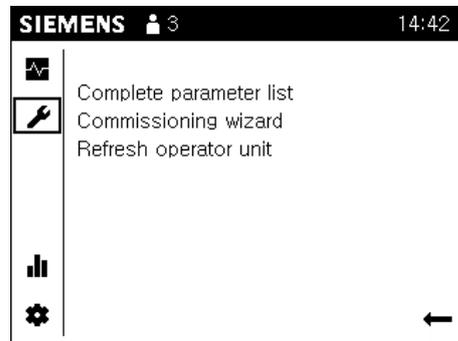
ℹ   The scope of the commissioning wizard differs between the room unit QAA74 and operator unit AVS74.

Section "Commission plant using the commissioning wizard [→ 71]" includes a sketch of the commissioning wizard structure and notes about its start-up behavior.

QAA74

Prerequisites   ● The Adjust/repair pages (🔧) are selected.

Proceed as follows to start the commissioning wizard:
From the topic list, select "Commissioning wizard" and confirm the selection.

ℹ   Notes on these parameters are available in Section "Room/operator unit parameters [→ 86]".

AVS74

Prerequisites   ● The Adjust/repair pages (🔧) are selected.

Proceed as follows to start the commissioning wizard:
From the topic list, select "Commissioning wizard" and confirm the selection.

ℹ   Notes on plant parameters are available in the user's guide for your controller.

8.2.3   Update operator unit

The list entry "Update operator unit" is displayed if changes are made on the "Complete parameter list" or commissioning wizard that impact the device pages.

ⓘ	**NOTICE**
	Backup present views. • The device checks at the start of each minute whether the configuration has changed that impact the device pages. Wait for the device clock to advance to the next minute after exiting "Complete parameter list" or the commissioning wizard. • If a change is made to the configuration of a room unit or operator unit that relates to the entire plant (e.g. heating circuit 2 "On"), all devices on the plant must be updated prior to hand off to the end user.

9   Technical data

9.1   QAA74

Power supply	Via bus (2-wire)	Bus power BSB
	Via controller (3-wire)	DC 12 V (to connection G+ on the controller)
	With external power supply (3-wire) - Power consumption - Power limitation (external power supply)	DC +12 V SELV 36 mA 1 A
Wiring of terminals	Power supply and bus	Solid wire or stranded wire (twisted or ferrule). 0.25…1.5 mm²

!	*NOTICE*
	Overload during short circuit. Incorrectly sized cable cross sections can be overloaded during a short circuit. • Use the cable cross sections as per national regulations.

Room temperature measurement	Measuring range	0...50 °C
	as per EN12098: - Range 15...25 °C - Range 0...15 °C or 25...50 °C Resolution	 Within a tolerance of +/-0.5 K Within a tolerance of 0.8 K 0.1 K
Room humidity measurement (QAA74.614 only)	Measuring range	10...90% (relative humidity)
Interfaces	Bus.	BSB-W, 2-wire connection, non-interchangeable
	Maximum wire length controller/room unit	200 m
	USB	Type Mini-B
Classification as per EN 60730	Degree of pollution	2
	Design type	Safety class III (for proper installation)
Housing	Protection as per EN 60529	IP40 - Mounted
Standards, guidelines	Electromagnetic compatibility (application range)	For residential, commercial, and industrial environments.
	EU conformity (CE)	T7471x5

Climatic conditions	Storage as per IEC60721-3-1	Class 1K3, temp. -20….65 °C
	Transport as per IEC60721-3-2	Class 2K3, temp. -25….70 °C
	Operation as per IEC60721-3-3	Class 3K5, temp. 0...50 °C (non-condensing)
Mechanical conditions	Storage as per IEC60721-3-1	Class 1M2
	Transport as per IEC60721-3-2	Class 2M2
	Operation as per IEC60721-3-3	Class 3M2
Environmental compatibility	The product environmental declaration () contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).	CE1E2348
Color	Housing parts	RAL 9003 (signal white).
Dimensions	Width x Height x Depth	144 x 96 x 20.0 (27.6 with control knob) mm
Weight	Without/with packaging	QAA74.611: 228 / 288 g QAA74.614: 231 / 291 g

9.2   AVS74

Power supply		Via cable (with plug) from controller
Interfaces	Bus.	BSB-W, Via cable (with plug)
	Maximum wire length controller/operator unit	1 m
	USB	Type Mini-B
Classification as per EN 60730	Degree of pollution	2
	Design type	Safety class III (for proper installation) Suitable for installation in equipment safety class I and II
Housing	Protection as per EN 60529	AVS74.261: IP40 - Installed. AVS74.661: IP40 - Installed AVS74.761: IP44 - Installed. - All housing parts mounted. - Installation: Deviation from vertical ≤ 40°.
Air tightness	As per EN 15502-2-1	AVS74.661 / AVS74.761: Suitable for applications with leakage rate ≥ 0.4 m³/h at 0.5 mbar
Standards, guidelines	Electromagnetic compatibility (application range)	For residential, commercial, and industrial environments.
	EU conformity (CE)	T7471x5
Climatic conditions	Storage as per IEC60721-3-1	Class 1K3, temp. -20….65 °C
	Transport as per IEC60721-3-2	Class 2K3, temp. -25….70 °C
	Operation as per IEC60721-3-3	Class 3K5, temp. 0...60 °C (non-condensing)
Mechanical conditions	Storage as per IEC60721-3-1	Class 1M2
	Transport as per IEC60721-3-2	Class 2M2
	Operation as per IEC60721-3-3	Class 3M2
Environmental compatibility	The product environmental declaration () contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).	CE1E2348
Color	Housing parts (no glass)	RAL 9003 (signal white).
Dimensions	Width x Height x Depth	144 x 96 x 26 (33.6 with control knob) mm
Weight	Without/with packaging *	AVS74.261: 219 / 276 g AVS74.661: 214 / 271 g AVS74.761: 221 / 278 g * AVS74 devices are in multipacks. As a share of packaging weight.

10   Additional information

Documentation landscape   This user's guide is a component of the Albatros2 documentation landscape.

Documentation type	Contents
User guides for Albatros2 controllers [code letter U]	Controller hardware and parameter description
Cross-product range basic documents [code letter P]	e.g. "Hydraulic partial diagrams and supplemental functions"
Product inserts [code letters B and G]	Delivered operating and mounting instructions
Environmental declarations [code letter E]	Material product components, environmental compatibility, and compliance with environmental laws (e.g. RoHS)
CE declaration of conformity [code letter T]	Declaration on the compliance with applicable electrical standards.

Additional support   For questions on the described products, please contact your point-of-contact at the responsible Siemens offices.

Additional information   http://www.buildingtechnologies.siemens.com/bt/partners/oem

11 Appendix

11.1 Room/operator unit parameters

11.1.1 Overview

The following table lists room unit and operator unit parameters:

Key

E	End-user
I	Commissioning
F	Heating engineer
O	OEM

Operating line (one-up)						
	User level					
		Function [value range]	**Standard**	**Min**	**max**	**Unit**
Time of day and date						
1	E	Time	01:00	00:00	23:59	hh:mm
2	E	Date	01.01.2030	01.01.2004	31.12.2099	dd.mm.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			-
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	QAA74: Room unit 1	AVS74: Operator unit 1		-
42	I	Assignment device 1 Zone 1 ¦ Zone 1 and 2 ¦ Zone 1 and 3 ¦ All zones	QAA74: Zone 1	AVS74: All zones		-
44	I	Operation zone 2 Jointly with zone 1 ¦ Independently	Jointly with zone 1			-
46	I	Operation zone 3 Jointly with zone 1 ¦ Independently	Jointly with zone 1			-
47*	I	Room values device 1 Zone 1 only ¦ For all assigned zones	For all assigned zones			-
48	I	Warmer / Cooler device 1 None ¦ Zone 1 only ¦ For all assigned zones	For all assigned zones			-
50*	I	Room temperature		0	50	°C
51*	I	Room temperature min		0	50	°C
52*	I	Room temperature max		0	50	°C
54*	F	Readjustment room sensor (Temperature).	0.0	-3.0	+3.0	°C
55*	I	Room humidity		0	100	%
59*	F	Readjustment room sensor (Humidity).	0	-20	+20	%

* Operating lines available on QAA74 only
** AVS74: Only operator units 1...3

70	F	Software version		-

Wireless *				
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	Repeater 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	-

* Operating page "RF" is only displayed if the system has at least one RF participant.

11.1.2   Settings in detail

Operating page "Time of day and date"

No.	Operating line	Settings
1	Time	
2	Date	
5	Start of summertime	
6	End of summertime	

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

i   Time and date must be correctly set to guarantee year round, fully automatic control operation.

Daylight saving time/standard time changeover

The dates set for the changeover to summer or wintertime 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).

If the entered date is on a Sunday, it changes over on that Sunday.

Operating page "Operator unit"

Operation and display

No.	Operating line	Settings
20	Language	German ¦ English ¦ French ¦ Italian ¦ etc.
39	Commissioning menu	Off ¦ On

Language

Select unit language.

Commissioning menu

Depending on the controller, the setting switches on or off the entire commissioning wizard or just the chapter of the commissioning wizard specific to the operator unit.

Setting	Description
On*	The very first time a room unit or operator unit is commissioned, the entire commissioning wizard or the supplemental chapter specific to the operator unit is switched on.
	The value is set to off after initial commissioning.
Off*	The entire commissioning wizard or the chapter specific to the operator unit is switched off.
* Impact depends on controller	

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
* AVS74: Operator unit 1...3 only		

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

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

Zone assignment

No.	Operating line	Settings
42	Assignment device 1	Zone 1 ¦ Zone 1 and 2 ¦ Zone 1 and 3 ¦ All zones
44	Operation zone 2	Jointly with zone 1 ¦ Independently
46	Operation zone 3	Jointly with zone 1 ¦ Independently
47*	Room values device 1	Zone 1 only ¦ For all assigned zones
48	Warmer / Cooler device 1	None ¦ Zone 1 only ¦ For all assigned zones
* Operating lines only available on QAA74		

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

Examples

Available zones 1 and 2 can be centrally operated from one room unit 1.

Room values (e.g. temperature) on room unit 1 is only be relevant to zone 1 since the climate in zone 2 (bedrooms) differs from zone 1 (e.g. living area).

The Warmer/Cooler function on room unit 1 acts on zone 1 only.

A room unit 2 allows for separate temperature measurement and individual operation of zone 2.

Settings for the example:

QAA74, unit 1	
Operating line 40	Room unit 1
Operating line 42	Zone 1 and 2
Operating line 47	Zone 1 only
Operating line 48	Zone 1 only

Unit 2	
Operating line 40	Room unit 2

"Used as" in detail (operating line 40)

Definition of operator unit as room or operator unit. Assignment to a zone (can be extended for room unit/operator unit 1).

Setting	Description
Room unit 1/operator unit 1.	Controls zone 1. Can be extended with settings on operating line 42. Activation of heating circuit 1 and/or cooling circuit 1 and/or ventilation in zone required on the controller.
Room unit 2/operator unit 2.	Controls zone 2. Activation of heating circuit 2 and/or cooling circuit 2 and/or ventilation in zone 2 required on the controller.
Room unit 3/operator unit 3.	Controls zone 3. Activation of heating circuit 3 and/or cooling circuit 3 and/or ventilation in zone 3 required on the controller.

i	*NOTICE*
	• One use ("Used as") can be assigned to exactly one operator unit. • The operator unit neither records nor sends room values (temperature and/or humidity) if QAA74 is defined as the operator unit.

Zone assignment in detail

Assignment device 1 (operating line 42)

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

Setting	Description
Zone 1	Controls zone 1.
Zone 1 and 2	Controls zones 1 and 2.
Zone 1 and 3	Controls zones 1 and 3.
All zones	Controls zones 1, 2, and 3.

Operation of Zone 2 (operating line 44)

Defines possible selection of zone 2 on room/operator unit 1.

Setting	Description
Jointly with zone 1	A selection of zones is not possible in operation. Operation acts jointly on zone 1 and 2. Zone 1 is displayed.
Independently	A zone can be selected in operation.

Operation of Zone 3 (operating line 46)

See "Operation of Zone 2" (operating line 44).

Room values device 1 (operating line 47)

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

Setting	Description
Zone 1 only	Zones 2 and 3 do not receive their room values from room unit 1; except for zone 1.
For all assigned zones	Zones 2 and 3 do not receive (if assigned) their room values from room unit 1; zone 1 too.

'Warmer/Cooler' function device 1 (operating line 48)

The action of the 'Warmer/Cooler' function from room unit/operator unit 1 can be assigned to the relevant heating circuits. 'Warmer/Cooler' acts on only zone 1, if only zone 1 is assigned.

Setting	Description
None	Zone 1 has no 'Warmer/Cooler' function. 'Warmer/Cooler' functions for zones 2 and 3 cannot be operated on room/operator unit 1.
Zone 1 only	'Warmer/Cooler' functions for zones 2 and 3 cannot be operated on room/operator unit 1; exclusively those from zone 1.
For all assigned zones	'Warmer/Cooler' functions for zones 2 and 3 (if assigned) cannot be operated on room/operator unit 1; as well as those from zone 1.

Overview of dependencies

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

Operating line					
40	42	44	46	47	48
Room unit 1	Zone 1				
	Zone 1 and 2	x		x	x
	Zone 1 and 3		x	x	x
	All zones	x	x	x	x
Room unit 2					
Room unit 3					
Operator unit 1	Zone 1				
	Zone 1 and 2	x			x
	Zone 1 and 3		x		x
	All zones	x	x		x
Operator unit 2					
Operator unit 3					

Room sensor

No.	Operating line	Settings
50*	Room temperature	
51*	Room temperature min	
52*	Room temperature max	
54*	Readjustment room sensor (Temperature).	
55*	Room humidity	
59*	Readjustment room sensor (Humidity).	
* Operating lines only available on QAA74. QAA74 must be configured as room unit.		

Display of room values (temperature, humidity).

The temperature and humidity displays can be corrected.

Device data

No.	Operating line	Settings
70	Software version	

Present version of the room/operator unit.

Operating page "RF"

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	Repeater	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.

11.2   Special operations

Available special operations depend on the controller. The following depicts how to proceed with selected special operations. The list is not all-encompassing.

The technical functionality of special functions is described on the user guide for your controller.

!	*NOTICE*
	Damage to property caused by the improper use of special functions. Special functions can trigger unwanted operating states. • Read the corresponding information in the user's guide for your controller. • Contact a heating engineer if you are unsure about the consequences of a special function.

Eco mode

Notes on Eco mode are available in user's guide for your controller.

Procedure

▷ Navigation to special operation menu is described in Section "Operate special functions [➔ 66]".

1. Select "Eco mode" = "On".
The function is activated.

2. Conclude the function with "Eco mode" = "Off".

ℹ️   Depending on the controller, the energy savings function Eco mode is displayed without the maintenance/special operating symbol is displayed.

Chimney sweep function

The chimney sweep function produces the operating state required for measuring emissions/flue gas.

Procedure

▷ Navigation to special operation menu is described in Section "Operate special functions [➜ 66]".

1. Select "Chimney sweep mode" = "On".
   The function is activated. The additional operating line "Burner output" is displayed.

2. Conclude the function with "Chimney sweep function" = "Off".

SLT test (safety limit thermostat test)

Notes on STB test are available in user's guide for your controller.

Procedure

▷ Navigation to special operation menu is described in Section "Operate special functions [➜ 66]".

1. Press and hold the control knob.

   ⇨ The function is active. The additional operating line "Boiler temperature" is displayed.

2. End the function by releasing the control knob.

Manual operation

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.

Procedure

▷ Navigation to special operation menu is described in Section "Operate special functions [→ 66]".

1. Select "Manual mode" = "On".
   The function is activated. The additional operating line "Setpoint manual mode" is displayed.

2. Conclude the function with "Manual mode" = "Off".

Floor curing function

The floor curing function is used to dry floors in a controlled manner. It can execute a temperature profile or a fixed manual temperature can also be set.

Procedure [Temperature profile]

▷ Navigation to special operation menu is described in Section "Operate special functions [→ 66]".

1. Select "Floor curing function" = [Temperature profile].
   The additional Info line "Present floor curing setpoint"" and " Days fulfilled.current" are displayed.

2. Conclude the function with "Floor curing function" = "Off".

Procedure "Manual"

1. Select "Floor curing function" = "Manual".
   The additional Info line "Present floor curing setpoint"" is displayed.

2. Enter the "Present floor curing setpoint".

3. Conclude the function with "Floor curing function" = "Off".

Deaeration function

The deaeration function removes any air in the heating/hot water system using an automatic deaerator installed above the boiler.

Procedure

▷ Navigation to special operation menu is described in Section "Operate special functions [➜ 66]".

1. Select "Deaeration function" = "On".
   The function is activated. The additional operating line "Type of venting" is displayed.

2. Conclude the function with "Deaeration function" = "Off".

Controller stop function

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

Procedure

▷ Navigation to special operation menu is described in Section "Operate special functions [➜ 66]".

1. Select "Controller stop function" = "On".
   The function is activated. The additional operating line "Controller stop setpoint" is displayed.

2. Conclude the function with "Controller stop function" = "Off".

Emergency mode

Emergency mode can be maintained in the event the heat pump is not working properly.

Procedure

▷   Navigation to special operation menu is described in Section "Operate special functions [➜ 66]".

1.   Select "Emergency mode" = "On".
The function is activated.

2.   Conclude the function with "Emergency mode" = "Off".

Drain refrigerant

You manually initiate the draining of refrigerant with this special function.

Procedure

▷   Navigation to special operation menu is described in Section "Operate special functions [➜ 66]".

1.   Select "Drain refrigerant" = "On".
The function is activated.

2.   Conclude the function with "Drain refrigerant" = "Off".

Initiate defrost

The manual defrost function is used for the evaporator of an air/water heat pump.

Additional information on the defrost function is available in the user's guides for your controller.

Procedure

▷   Navigation to special operation menu is described in Section "Operate special functions [➜ 66]".

●   Select "Initiate defrost" = "Yes".

11.3 Unlock button on Boiler Management Units

ℹ️ The unlock button (see Section USB connection, unlock button [➜ 35]) functions only on Boiler Management Units (BMU).

Unlocking function

Certain errors result in a locking of LMS14/15. These errors cannot be reset via menus.

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.

Unlock

▷ Use a sharp object (e.g. ballpoint pen) or a screwdriver, up to size 2.

- To unlock an LMS14/15, hold the unlock button down for 0.4...10 seconds. The LMS14/15 is now unlocked.

Lock and unlock

1. To lock an LMS14/15, hold the unlock button down for more than 10 seconds. The LMS14/15 is now locked.

2. You unlock the LMS14/15 again using the unlock button, by holding it down between 0.4...10 seconds.

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