COMBIflo

Indirect High Efficiency Boiler & Stainless Steel Storage Water Heater

100/300
150/300

This manual must be kept with the appliance

ANDREWS
WATER HEATERS

IMPORTANT

This appliance is equipped with an ignition device which automatically lights the burner.

BEFORE OPERATING after a prolonged time off, smell all around the appliance area for gas.

SMELL OF GAS

IF YOU SMELL GAS - FOLLOW THESE SAFETY INSTRUCTIONS:

- ***Do NOT turn off or on any electrical switches (including light switches)***
- ***Do NOT smoke***
- ***Do NOT use the telephone***
- ***DO evacuate persons away from the source of the gas smell***
- ***DO close the main gas shutoff valve***
- ***DO open all the windows and doors where the gas leakage has occurred***
- ***DO inform the gas authority or a competent specialist as soon as possible***

FLAMMABLE SUBSTANCES

Do not store or use explosive or easily inflammable material (such as petrol, paint or paper) in the same room where this appliance has been installed.

All other inflammable materials should be kept a minimum of 500mm away from the appliance and its flue system.

BEFORE START UP

- Ensure the area is clear and free from combustibles, flammable liquids and chemicals.
- Ensure that the primary system is filled with sufficient water and the gas and electic supply is turned on.

APPLIANCE FAILURE

In the event of failure and/or suspected faulty functioning of this appliance. Switch off the appliance and contact suitable qualified technicians. Do not attempt to make any repairs unless you are suitably qualified and competent to do so.

TABLE OF CONTENTS

FOR WHOM IS THIS MANUAL INTENDED?

This manual is intended for the appliance owner, appliance users and service engineers.

A detailed guide to the Installing, Commissioning and Servicing of this appliance (Installation, Commissioning and Servicing Instructions) is supplied separately and this is intended for use by the specialist central heating and hot water system installers and service engineers.

USAGE AND COMPETENCY

IMPROPER USE

This Andrews Water Heaters product has been designed and manufactured to comply with current European standards of safety. However, following an improper use, dangers could arise concerning the safety and life of the user or of other people, or damage could be caused to the appliance or other objects. This appliance is designed to be used in a pumped central heating system and hot water circuit and is intended exclusively to be installed on a gas supply with a meter and a gas pressure regulator. Any other use of this appliance will be considered improper. Andrews Water Heaters declines any responsibility for any damage or injuries caused by an improper use. In order to use the appliance according to its designed scope, it is essential to carefully follow the instructions given in this guide.

USER COMPETENCY

This appliance is not intended for use by persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they are given supervision or Instruction concerning the use of it by a person responsible for their safety. Children under the age of 12 years should not be permitted to use the appliance.

ENGINEER COMPETENCY

The installation, adjustment & servicing of this appliance must be carried out by a competent person (In the UK by a Gas Safe Registered Engineer and in IE by a (RGII) Registered Gas Installer) and installed in accordance with current standards and regulations. Failure to correctly install or maintain this appliance could cause injury to persons or damage to property. The manufacturer shall not be held liable for any such injury and/or damage.

APPLIANCE INSTALLATION AND MAINTENANCE

This appliance has been designed for use with G20 natural gas and is manufactured to give an efficient, safe and long service life. To ensure continued trouble-free operation of this appliance at maximum efficiency, it is essential that correct installation, commissioning, operation and service procedures are carried out strictly in accordance with the instructions given in the "Installation, Commissioning and Servicing Instructions" supplied seperately to this guide.

Only original parts and accessories from the manufacturer may be used on this appliance. Using non-approved parts may compromise the safety of the appliance and invalidate any warranty.

REGULATIONS AND STANDARDS

It is the law that all gas appliances are installed by a competent person (e.g. a Gas Safe registered operative) in accordance with the regulations as at August 2016. Failure to install or maintain appliances correctly could lead to prosecution.

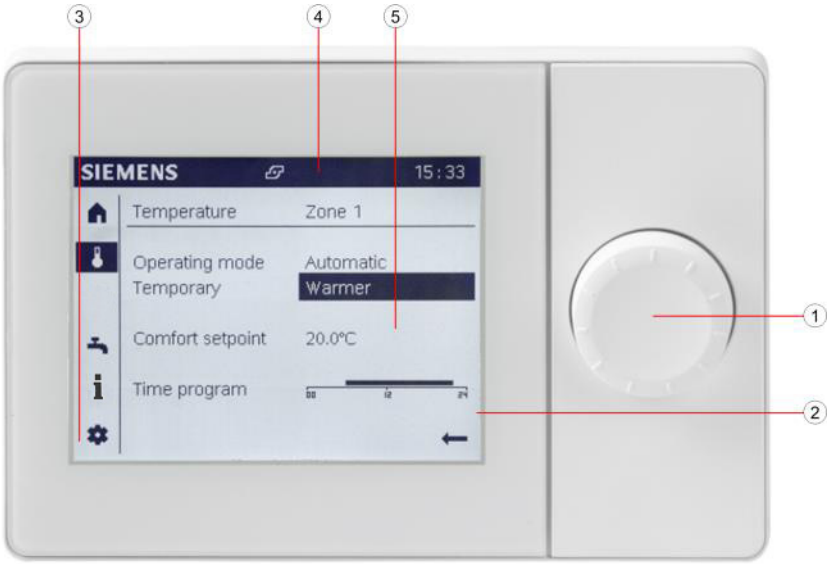
It is in your own interest, and that of safety, to ensure that the law is complied with. The installation of the Heater MUST also be in accordance with the current I.E.T. Wiring Regulations, the Local Building Regulations, Building Standards (Scotland), the Bye Laws of the Local Water Undertaking, any relevant requirements of the Local Authority.

FROST PROTECTION

Protect the appliance and pipe work from frost and freezing conditions, when not in use. The appliance controls have an in built frost protection system which can operate the appliance pumps if the internal water temperatures drop below 8°C. If the temperature of the appliance continues to drops below 5°C, the heat engines will fire up briefly to protect the appliance.

The majority of these settings will have been made by your commissioning engineer after discussion with the individual responsible for the system, these notes cover changing of the basic settings available to the 'User'. More extensive levels of control and diagnostics are also listed for use by the commissioning and service engineer. Some systems will have a Room Unit control and these notes apply to it as well.

1.0 AVS74 GRAPHICAL USER INTERFACE



1 Control knob (push & turn)

2 Display

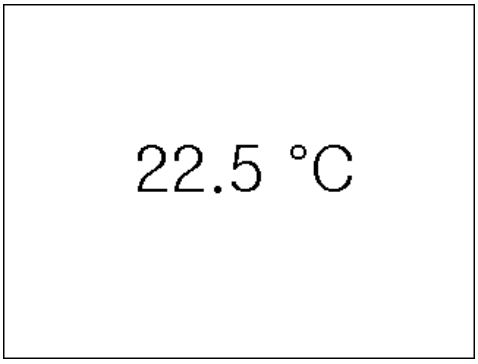
3 Navigation bar

4 Status bar

5 Work area

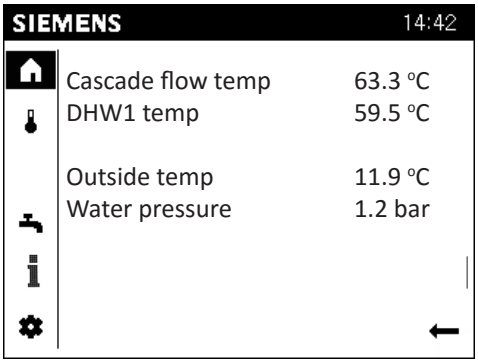
The control knob is used to operate the QAA74 and AVS74. The display is organized into a navigation bar, status bar, and work area.

The following is displayed when the wall thermostat version screen is in standby:



In this example the current room temperature is displayed (what is displayed will depend on system configuration)

Any input on the control knob will take the screen out of standby and the following will be displayed:



The most important present parameters will be displayed (depending on how the system is configured).

The standby screen will resume after 8 mins of inactivity.

1.1 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 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.

Operating tips:

Editing time-out	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 time-out	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 time-out	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.

1.2 DISPLAY 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 system operation mode.
	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: Analyse and test plant.
	Adjust/repair pages: ▪ Adapt parameters in 'Complete parameter list' ▪ Access to commissioning wizards

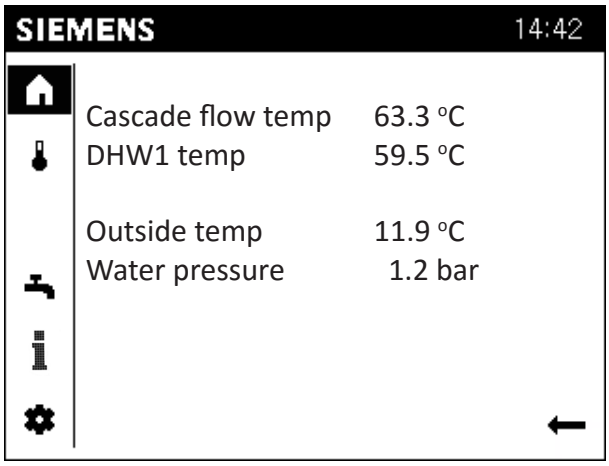
The following symbols can be displayed on the status bar (top, horizontal):

	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. gas boiler) is currently operating.

2.0 OPERATION OF HOME PAGE

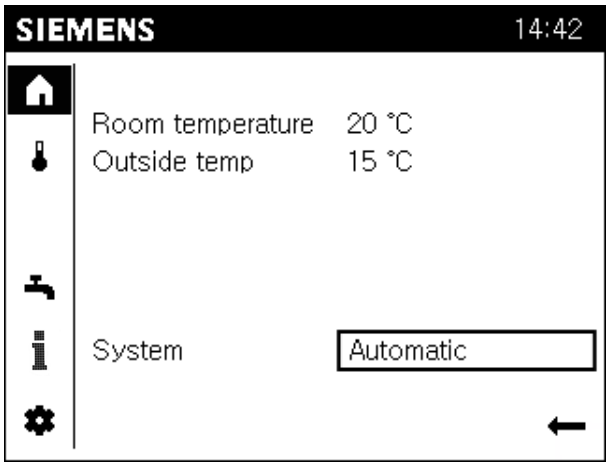
Evaluation of information displayed:

Appliance GUI Display



The start page for the appliance GUI unit displays the most important information on the energy producer and system operation mode.

AVS74 Room unit



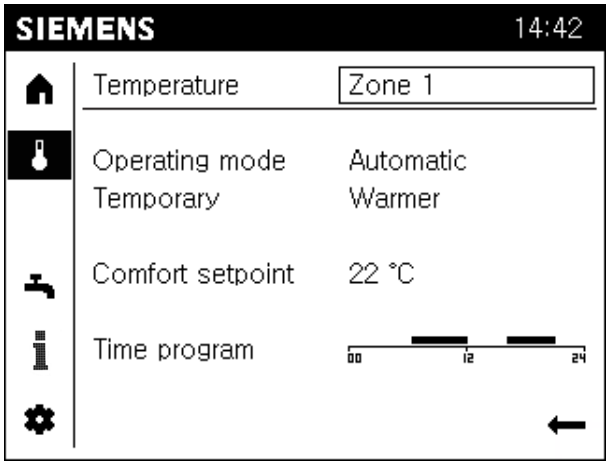
The start page for the QAA74 room unit displays the most important information on the room and system operation mode.

The designation of the plant/zone switch depends on the living zone assignment:

- *"Plant", if all heating zones are assigned.*
- *"Zones", if 2 to 3 heating zones are assigned.*
- *"Zone", if 1 of multiple heating zones is assigned.*

3.0 OPERATION OF HEATING

Select heating/cooling page on the navigation bar.



Notes for navigation area:

- The temperature page is sorted by heating zones. The heating zone is displayed in the title for the work area.
- Separated by a dash, a summary of the present settings for the selected heating 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 set point for heating.
- The time program for the present day.

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

Heating
Operating mode, temporary temperature adjustment, and time switch program apply in common for heating. Only the comfort set point for heating is displayed based on mode and this can be set.

3.1 CHANGE HEATING ZONE

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

Proceed as follows to change heating zone:

1. Select the desired heating zone.
2. Turn the control knob and select the heating zone.
3. Press the control knob. The heating zone setting is selected and is displayed inverted.
4. Turn the control knob to select another heating zone.
5. Press the control knob to confirm the selected heating zone.

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

3.2 SET OPERATING MODE

Modes of operation:

- Protection: The heating zone remains protected (frost protection, protection against heat accumulation).
- Automatic: The heating zone is operated as per the time switch program. Automatic energy savings functions (e.g. summer/winter mode).
- Reduced: The heating zone is operated continuously at a reduced set point.
- Comfort: The heating zone is operated continuously at the comfort set point.

NB. The operating mode can be individually set per heating zone.

Use the system operation mode on start page. It is easier to use the system operation mode 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 heating zone:

1. Select the desired heating zone.
2. Turn the control knob until the operating mode setting (e.g. Automatic) is preselected.
3. Press the control knob. The operating mode setting is selected and is displayed inverted.
4. Turn the control knob to select another operating mode setting.
5. Press the control knob to confirm the setting.

3.3 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 pre-settings.
- Setting '...' disables or switches off the function.

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

- The desired heating 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 heating zone at a warmer temperature
4. Turn the control knob to the left to temporarily operate the heating zone at a cooler temperature.
5. Press the control knob to confirm the setting.

3.4 ADJUST COMFORT SET POINT

Proceed as follows to adjust the comfort set point:

- The desired living zone is selected.

1. Turn the control knob until the comfort set point setting is preselected.
2. Press the control knob. The comfort set point 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.

3.5 SET THE TIME PROGRAM

Settings:
- Phases are defined in the time program during which the heating zone is actively used.
- The heating zone is heated or cooled during these phases to the comfort set point.

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

- The desired heating 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).

3.5.1 DELETE PHASES

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

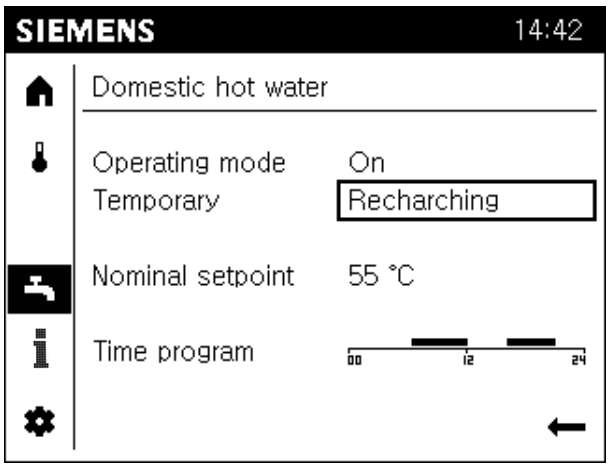
Navigate among phases and create new phases

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.

3.5.2 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”.

4.0 OPERATION OF HOT WATER



- 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 set point.
  – The time program for the present day.

Functions in operating mode "On".
Nominal set point setting and time program are normally available in operating mode "On"

Enter Settings

- Select hot water page on the navigation bar.

No assignment of hot water to heating zones.
The hot water settings apply to the entire building.

4.1 SET OPERATING MODE

Settings:

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

4.2 RECHARGING (TEMPORARILY)

Settings:

- The storage tank can be recharged to the nominal set point if emptied outside of the normal time program.
- The controller returns to operation using the pre-settings 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".

4.3 MODIFY NOMINAL SET POINT

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 set point for hot water, proceed in the manner as described for the temperature, page 10 ("Adjust comfort set point").

4.4 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 set point during these phases.
- To delete a time program phase and to copy daily profiles for hot water, please proceed in the manner as described on page 11

- The desired hot water 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).

5.0 EVALUATE INFORMATION PAGES

The following is displayed on the Info pages ℹ :

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

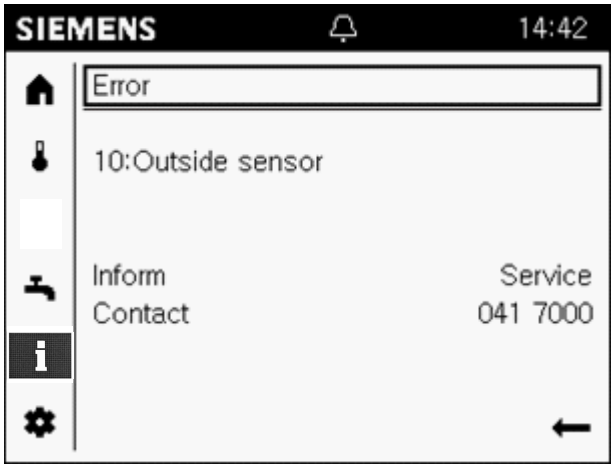
Info page structure :

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

5.1 ERROR MESSAGES

Message pages (errors & maintenance messages) are only displayed if present messages are pending.

Example :

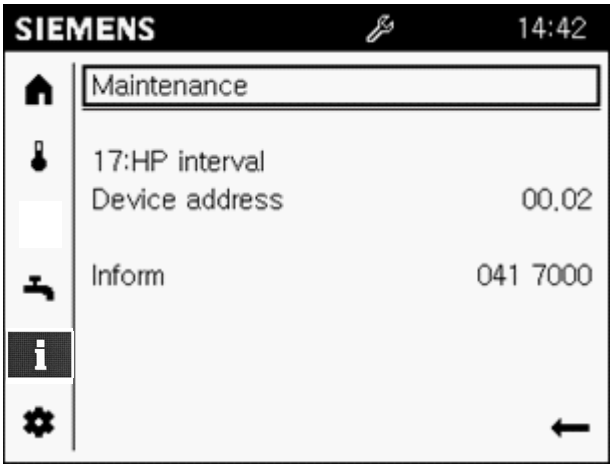


- Pending errors are indicated on the status bar by an alarm symbol 🔔. Go to the Info pages for additional information on pending errors.
- High-priority error messages (dependent on controller) are displayed in front. Operator interventions remain possible in this case. The display automatically switched to error display after a lock time-out 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 appliance.

The error history for the diagnostic pages (see Section “Test plant, diagnostics [Pxx]”) includes timestamps and any additional information on errors.

5.2 MAINTENANCE MESSAGES

Example :

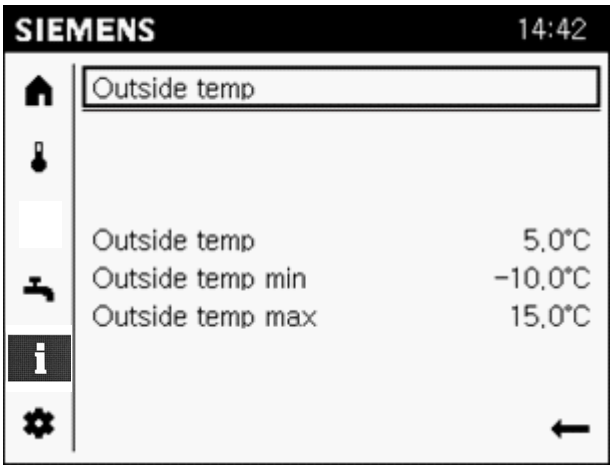


- Pending maintenance messages are indicated on the status bar by a maintenance symbol . Go to the Info pages for additional information on a pending maintenance message.
- A maximum of 2 Info pages with maintenance messages are displayed: The title of the Info page of an error is "Maintenance" or "Maintenance 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).

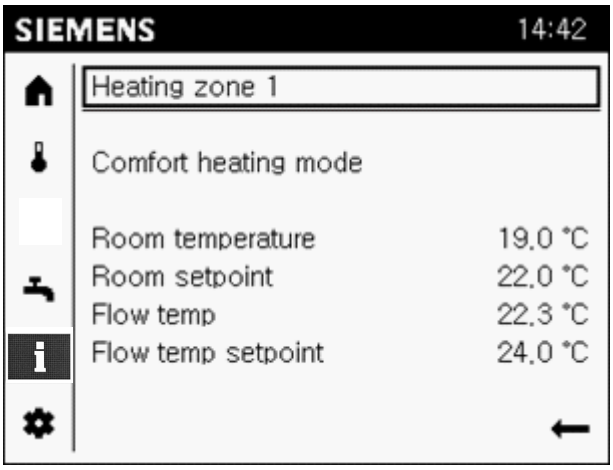
You reset the maintenance messages indirectly by resetting the counter to time clock, or by eliminating the cause of the message.

5.3 INFORMATION PAGES



- Each plant page has a plain-text title, e.g. outside temperature, heating zone 1, or DHW.
- The work area for a plant page displays a summary of selected values from the title topics.
- 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 contain information only and cannot be changed.

Example :



- Title of the plant page with producer and living zone (consumer)
- In the work area, a summary of associated, most important values:

– Status producer/heating zone
– Additional value for producer/heating zone

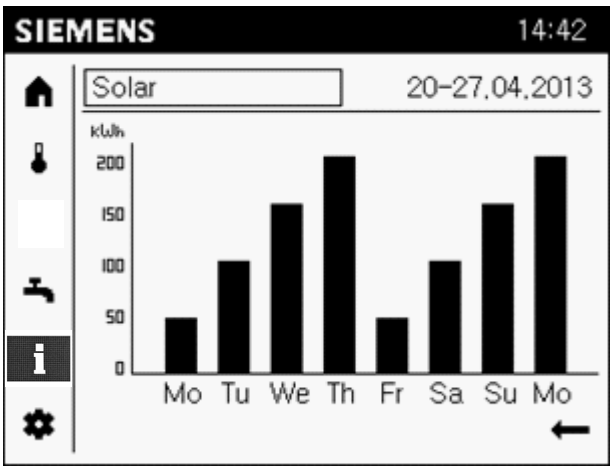
5.3.1 NAVIGATE TO PLANT INFORMATION

- The Info pages ℹ 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.

5.4 ENERGY CONSUMPTION PAGES



- 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.

5.4.1 GO TO ENERGY CONSUMPTION PAGES AND SET VIEWS

- The Info pages ℹ are selected in the navigation bar.

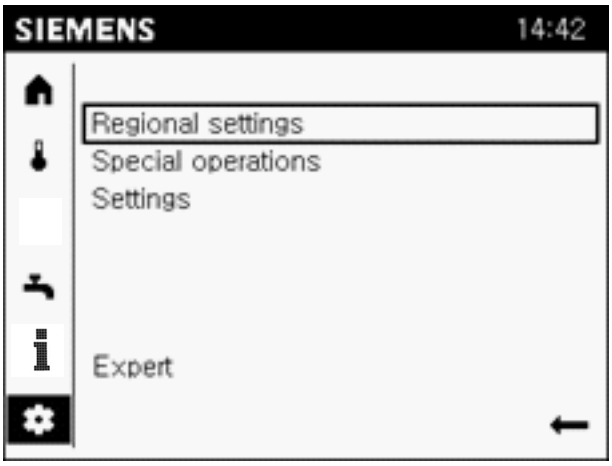
Proceed as follows to go to energy consumption pages and set views:

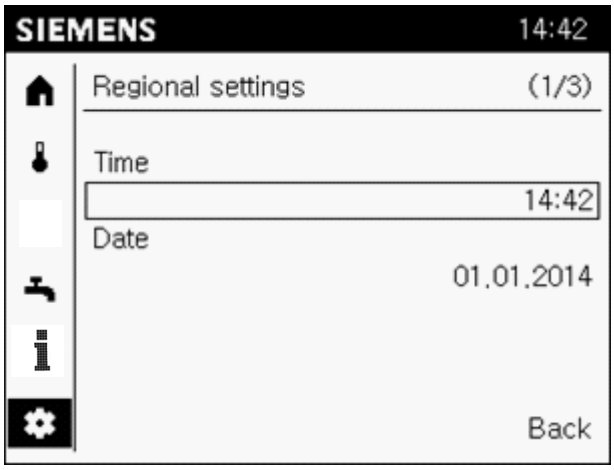
1. Press the control knob to preselect the title of an Info page.
2. Press the control knob. The title of the Info page is selected and is displayed inverted.
3. Turn the control knob to the right until the first energy consumption page is displayed.
   - The title of the energy consumption page consists 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.

6.0 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.





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.

6.1 REGIONAL SETTINGS

Adjustable:

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

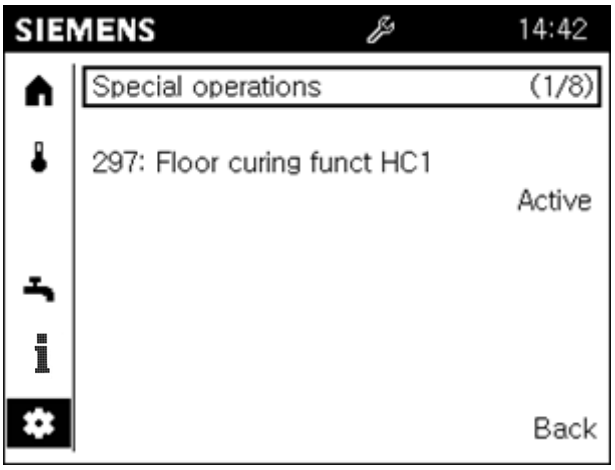
The aforementioned settings, are a component of the commissioning wizard with the exception of start and end of daylight saving time.

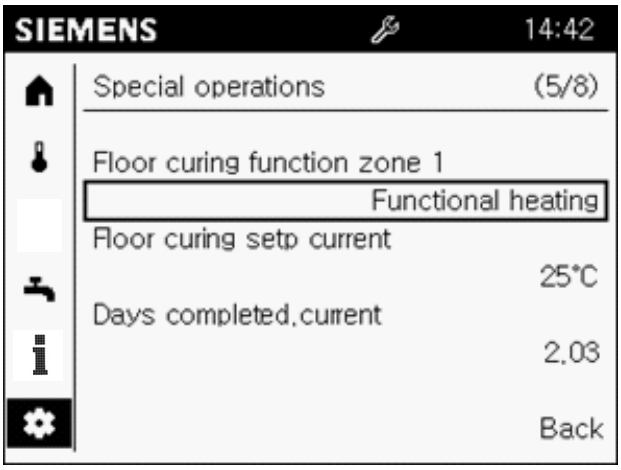
- The service/setting pages are preselected in the navigation bar.

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 OPERATE SPECIAL FUNCTIONS

Examples :





- 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 time-out 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".

  - *Available special functions depend on the connected controller or plant type (boiler controller, Boiler Management Unit (BMU), heat pump controller).*
  - *Section "Special operations [Pxx]" includes special operations and special functions sorted by controller type.*

6.2.1 SETTING SPECIAL FUNCTIONS

- The service/setting pages are preselected in the navigation bar.

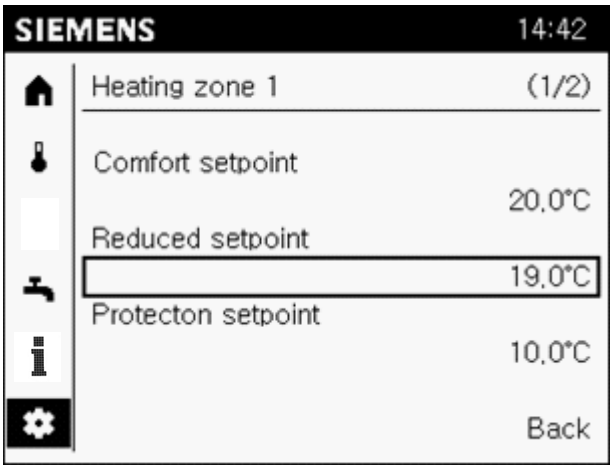
The workflow is explained using the example of floor curing special function:

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

6.3 PLANT SETTINGS



Adjustable:
1. Comfort set point
2. Reduced set point
3. Protection set point
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).

The service/setting pages are preselected in the navigation bar.

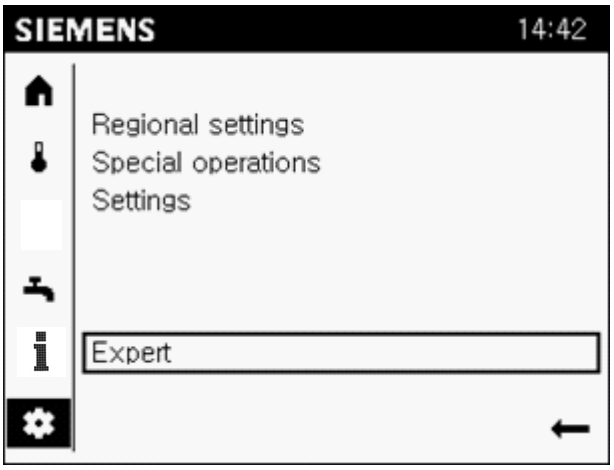
Proceed as follows to set a plant parameter:
1. Turn the control knob and select the “Settings”.
2. Press the control knob. ‘Special operations’ opens. The title of the settings page is preselected.
3. Push the control knob to select the setting page title.
4. Turn the control knob to go to other setting 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”.

7.0 ADVANCED FEATURES AND SETTINGS

"Advanced settings" are done in the expert view.

- The expert view includes the user levels commissioning engineer, heating engineer.
- The expert view is presented in the same way for room units or operator units.

7.1 LOGIN TO EXPERT VIEW



No login is possible 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.

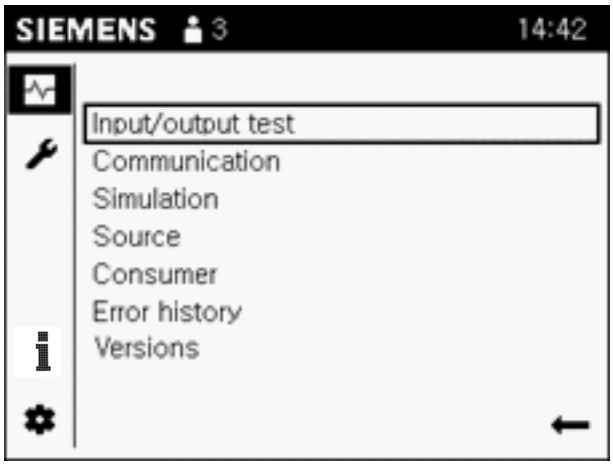
Expert view: Commissioning or engineer selection

- 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 dialogue 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.

7.2 DIAGNOSTIC PAGES

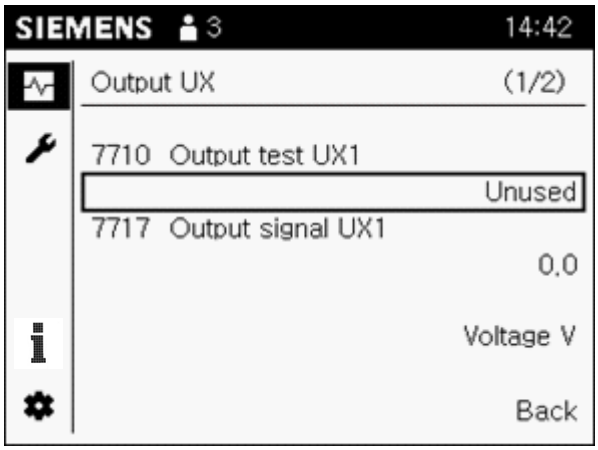


The following is displayed on the Diagnostics pages :

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

7.2.1 EXAMPLE: INPUT /OUTPUT TEST

Example : QX1 is tested



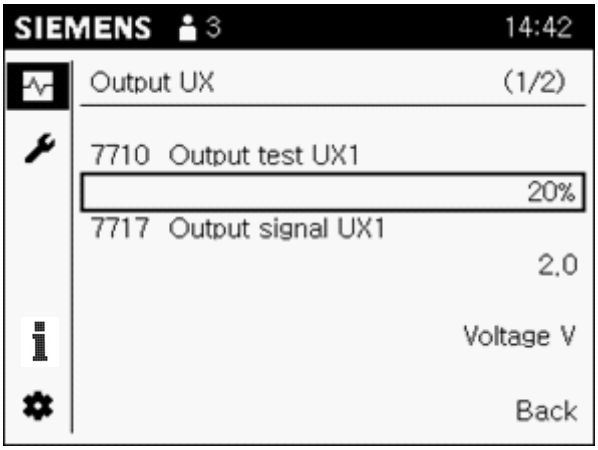
- Select diagnostic pages on the navigation bar. Go to diagnostic page

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***

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%)



- 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.

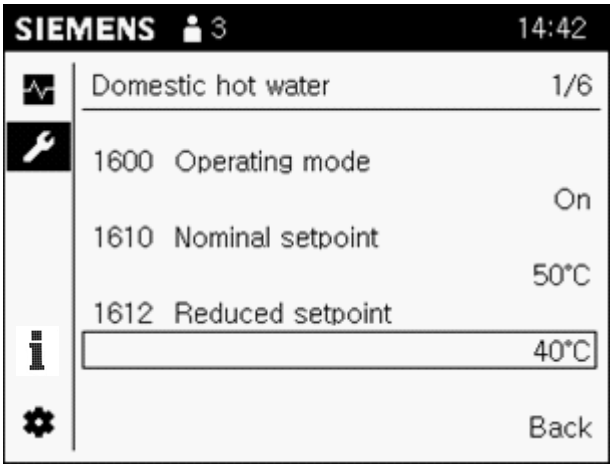
7.4 ADJUSTMENT PAGES

The following is displayed on the Adjustment 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.

7.5 COMPLETE 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.

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

8.1.1 NAVIGATE THROUGH "COMPLETE PARAMETER LIST"

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".

7.6 COMMISSIONING WIZARD

The scope of the commissioning wizard differs between the room unit QAA74 and appliance operator (Graphical User Interface) unit.

7.6.1 GRAPHICAL USER INTERFACE OR ROOM UNIT QAA74

- 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.

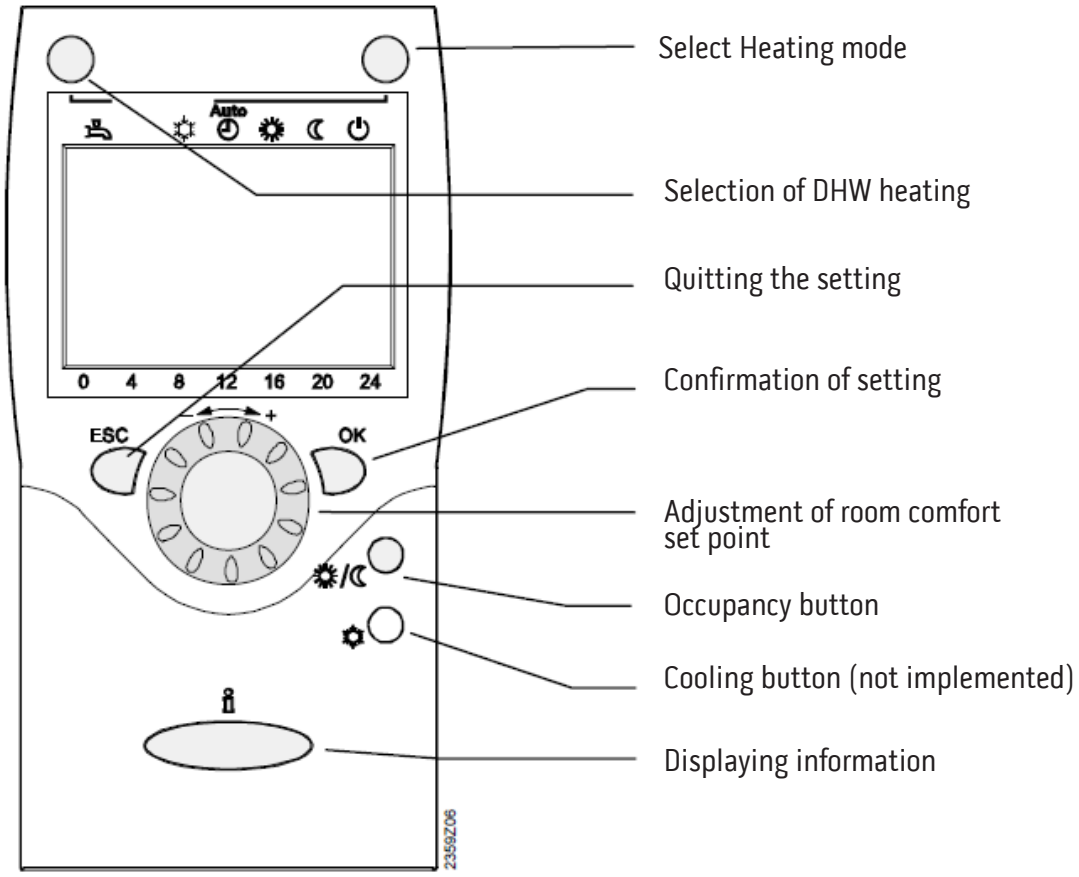
7.7 REFRESH OPERATOR UNIT

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.

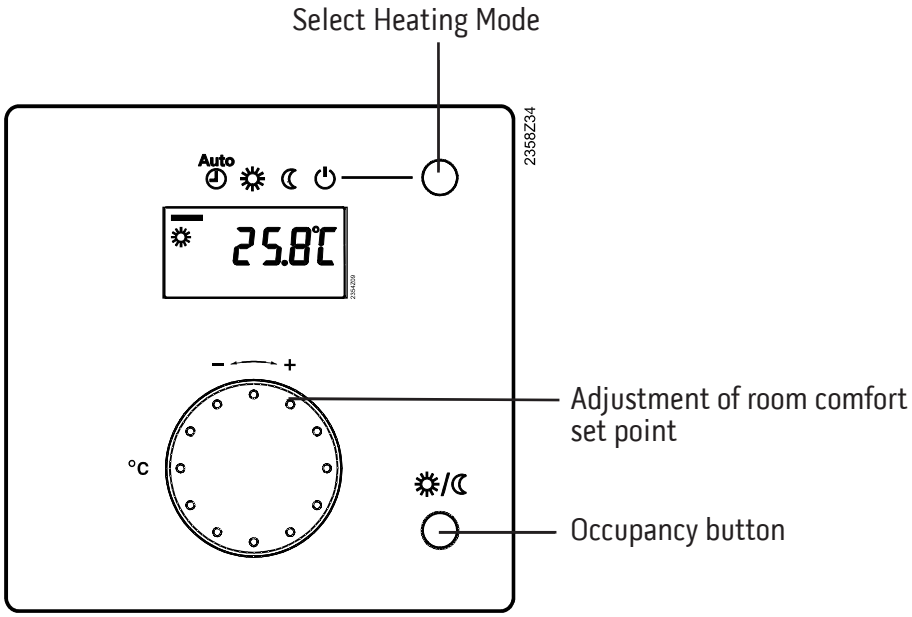
The device checks at the start of each minute whether the configuration has changed that impact the device pages. Wait for the device clock to advance to the next minute after exiting “Complete parameter list” or the commissioning wizard. If a change is made to the configuration of a room unit or operator 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.

8.0 ALTERNATIVE ROOM CONTROL UNITS

8.0.1 THE QAA75 HMI ROOM UNIT (P/N 5117802)

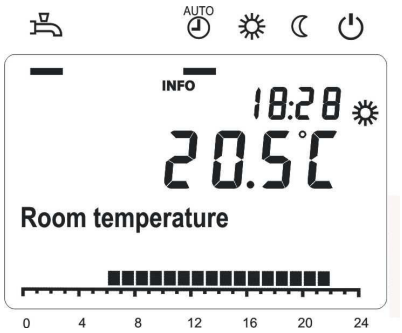


8.0.2 THE QAA55 ROOM UNIT (P/N 5138511)



8.1 Symbols and display meaning

DISPLAY



AUTO *Timed heating programme*

Permanent Comfort temperature

Permanent Reduced temperature

Standby by with Frost protection

Burner Operating

Holiday function active

Reference to active heating circuit

Maintenance or special mode.
If this symbol appears, a maintenance message is delivered or a special operation has been manually activated.

Error message
If this symbol appears for more than 30 seconds, an error in the appliance has occurred

INFO *Info level activated*

PROG *Programming activated*

ECO *Heating temporarily switched off, ECO function active*

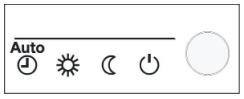
ESC *Cancel last key entry.*

OK *Accept last key entry.*

Rotate knob to change daytime temperature and to bring up additional information in other modes.

CONTROLS

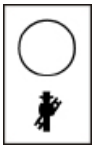
Hot Water, override, on when off, off when on. If pressed and held for 3 seconds the DHW will be immediately start to heat to set point, then turn off. (See 9.4 for full details)



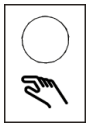
Heating operation selection, see Display symbols for modes.

Info
Pressing this button steps through a number of parameters on the display, they can also be stepped by rotating the knob. If a fault has been detected this will also appear in the list. Typical parameters are as follows:

Cascade Temperature	*70.5 °C*
Boiler Temperature	*73.1 °C*
Outside Temperature	*20.0 °C (if fitted)*
Outside Temp Min Reset?	
Outside Temp Max Reset?	
DHW Temperature 1	*60.0 °C*
State Htg Circuit 1	*Off*
State DHW	*Off*
State Boiler	*Off*
Date	
Telephone Customer Service	



Chimney sweep function
A short press (<3 seconds) enables the chimney sweep mode. It provides maximum loading for flue gas emission measurements

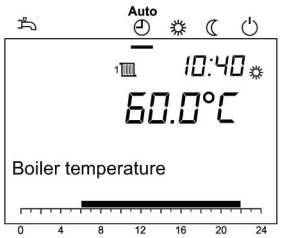


Manual override.
A short press (<3 seconds) enables the manual operating mode. This overrides the relays normally switched by the controller and forces the heat engine to operate manually.

Occupancy Button (Room Unit Only)
For rooms which are not constantly in use, this button will manually switch between comfort and reduced temperature. Only active in automatic operation and remains active until the next switching action.

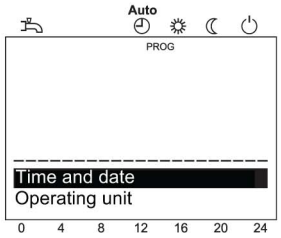
8.2 SETTING THE TIME AND DATE

Basic display:



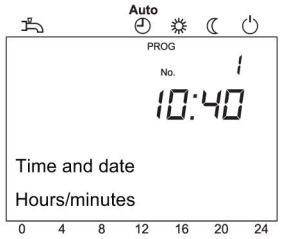
Press OK.

Select the menu point **time and date** with .



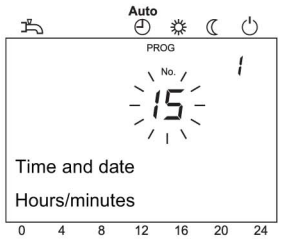
Acknowledge selection with OK.

Select the menu point **hours/minutes** with .



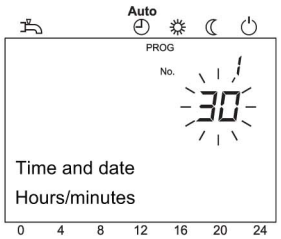
Acknowledge selection with OK.

Carry out hour setting (e.g. 15 hours) with .

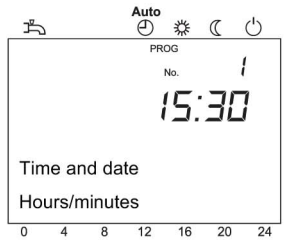


Acknowledge setting with OK.

Carry out minute setting (e.g. 30 minutes) with .



Acknowledge setting with OK.



8.3 DHW PUSH FUNCTION (AVAILABLE ON QAA75 ONLY)

The DHW push is triggered by pressing the DHW heating button for more than 3 seconds. DHW push initiates a single DHW charging cycle to the nominal setpoint. The push is active until the nominal DHW setpoint is reached.

DHW push can also be started when:

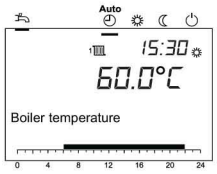
- *DHW mode is "off"*
- *Operating mode changeover is effected via H1 or centrally (LPB)*
- *All heating circuits use the holiday function*

NOTICE

Once triggered, the DHW push cannot be cancelled via the operator or room unit.

8.4 USER LEVELS

The user levels only allow authorised user groups to make changes to the appliance settings. To proceed to the required user level, proceed as follows:



Basic display

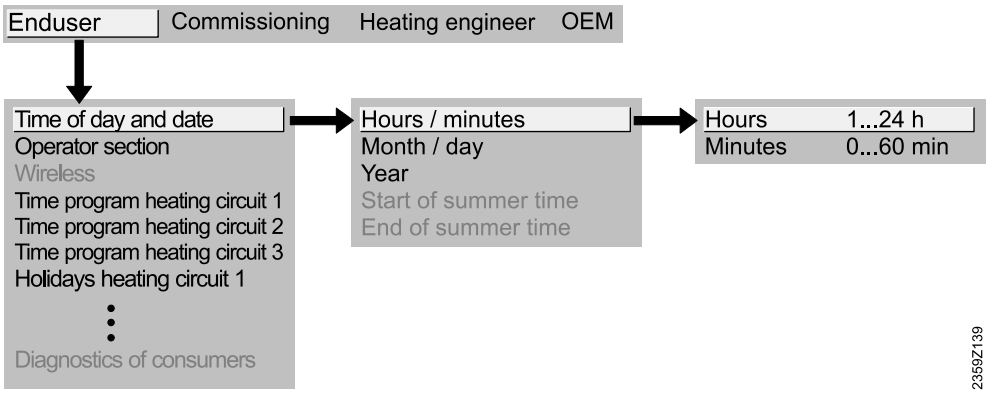
Press OK

Information button

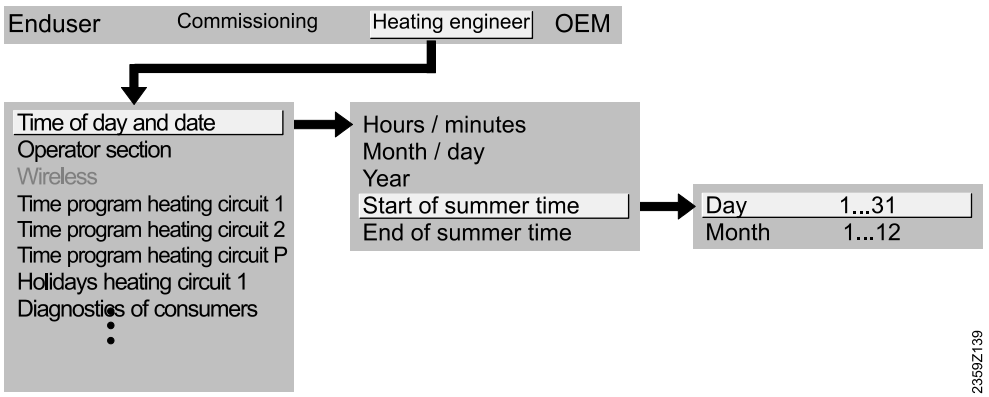
Press for approximately 3 s, until the display *End user* appears.

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

8.4.1 END USER MENU



8.4.2 HEATING ENGINEER MENU



8.5 PROGRAMMING GENERAL

At the normal display press OK and it will show two programming lines, rotate the knob to bring up the others. The lines can be multilayered pressing OK will give entry into the lower lines, the knob will make the change, another OK will confirm the change is adopted. ESC steps backwards and adjusted values are not adopted.
If no setting is made for 8 minutes the display returns to normal. Not all programming lines are visible for certain user levels.
Example menu structure:

PROGRAMMING DHW TIMES

The DHW set point can be can be entered and the generation programmed to be generated 24 hours a day, timed with the Heating or separately timed.

PROGRAMMING HEATING TIMES

The heating set point can be can be entered and the generation programmed to be generated 24 hours a day, timed with the DHW or separately timed.

Menu	Line no.	Operating line	Unit	Min.	Max	Factory setting
Time of day and date	1	Hours / Minutes	hh:mm	00:00	23.59	--.--
	2	Day / Month	tt:MM	01.01	31.12.	--.--
	3	Year	jjjj	2004	2099	--.--
Operator section	20	Language	-	English, Deutsch, Francais, Italiano, Dansk, Nederlands, Español, Česky, Slovenský, Türksçe		English
Time program HC 1	500	Preselection	-	Mo-Su, Mo-Fr, Sa-Su, Mo,Tu,We,Th,Fr,Sa,Su		Mo-Su
	501	Mo-Su: 1. Phase On	hh:mm	00:00	24:00	06:00
	502	Mo-Su: 1. Phase Off	hh:mm	00:00	24:00	22:00
	503	Mo-Su: 2. Phase On	hh:mm	00:00	24:00	--:--
	504	Mo-Su: 2. Phase Off	hh:mm	00:00	24:00	--:--
	505	Mo-Su: 3. Phase On	hh:mm	00:00	24:00	--:--
	506	Mo-Su: 3. Phase Off	hh:mm	00:00	24:00	--:--
	516	Default values	-	Yes, No		No
Time program HC 2 (When activated)	520	Preselection	-	Mo-Su, Mo-Fr, Sa-Su, Mo,Tu,We,Th,Fr,Sa,Su		Mo-Su
	521	Mo-Su: 1. Phase On	hh:mm	00:00	24:00	06:00
	522	Mo-Su: 1. Phase Off	hh:mm	00:00	24:00	22:00
	523	Mo-Su: 2. Phase On	hh:mm	00:00	24:00	--:--
	524	Mo-Su: 2. Phase Off	hh:mm	00:00	24:00	--:--
	525	Mo-Su: 3. Phase On	hh:mm	00:00	24:00	--:--
	526	Mo-Su: 3. Phase Off	hh:mm	00:00	24:00	--:--
	536	Default values	-	Yes, No		No
Time program 3/HC3 (When activated)	540	Preselection	-	Mo-Su, Mo-Fr, Sa-Su, Mo,Tu,We,Th,Fr,Sa,Su		Mo-Su
	541	Mo-Su: 1. Phase On	hh:mm	00:00	24:00	06:00
	542	Mo-Su: 1. Phase Off	hh:mm	00:00	24:00	22:00
	543	Mo-Su: 2. Phase On	hh:mm	00:00	24:00	--:--
	544	Mo-Su: 2. Phase Off	hh:mm	00:00	24:00	--:--
	545	Mo-Su: 3. Phase On	hh:mm	00:00	24:00	--:--
	546	Mo-Su: 3. Phase Off	hh:mm	00:00	24:00	--:--
	556	Default values	-	Yes, No		No

Menu	Line no.	Operating line	Unit	Min.	Max	Factory setting
Time program 4/DHW	560	Preselection	-	Mo-Su, Mo-Fr, Sa-Su, Mo,Tu,We,Th,Fr,Sa,Su		Mo-Su
	561	Mo-Su: 1. Phase On	hh:mm	00:00	24:00	06:00
	562	Mo-Su: 1. Phase Off	hh:mm	00:00	24:00	22:00
	563	Mo-Su: 2. Phase On	hh:mm	00:00	24:00	--:--
	564	Mo-Su: 2. Phase Off	hh:mm	00:00	24:00	--:--
	565	Mo-Su: 3. Phase On	hh:mm	00:00	24:00	--:--
	566	Mo-Su: 3. Phase Off	hh:mm	00:00	24:00	--:--
	576	Default values	-	Yes	No	No
Time program 5	600	Preselection	-	Mo-Su, Mo-Fr, Sa-Su, Mo,Tu,We,Th,Fr,Sa,Su		Mo-Su
	601	Mo-Su: 1. Phase On	hh:mm	00:00	24:00	06:00
	602	Mo-Su: 1. Phase Off	hh:mm	00:00	24:00	22:00
	603	Mo-Su: 2. Phase On	hh:mm	00:00	24:00	--:--
	604	Mo-Su: 2. Phase Off	hh:mm	00:00	24:00	--:--
	605	Mo-Su: 3. Phase On	hh:mm	00:00	24:00	--:--
	606	Mo-Su: 3. Phase Off	hh:mm	00:00	24:00	--:--
	616	Default values	-	Yes	No	No
Holidays HC1	641	Preselection	-	Period 1, 2, 3, 4, 5, 6, 7, 8		Period 1
	642	Period Start Day / Month	tt.MM	01.01	31.12	--.--
	643	Periode End Day / Month	tt.MM	01.01	31.12	--.--
	648	Operating level	-	Frost protection, Reduced		Frost protection
Holidays HC2 (When activated)	651	Preselection	-	Period 1, 2, 3, 4, 5, 6, 7, 8		Period 1
	652	Period Start Day / Month	tt.MM	01.01	31.12	--.--
	653	Periode End Day / Month	tt.MM	01.01	31.12	--.--
	658	Operating level	-	Frost protection, Reduced		Frost protection
HC1	710	Comfort setpoint	℃	Value from Line no. 712	35	20.0
	712	Reduced setpoint	℃	4	Value from Line no. 710	16.0
	714	Frost protection setpoint	℃	4	Value from Line no. 712	10.0
	720	Heating curve slope	-	0.10	4.00	1.50
	730	Summer/winter heating limit	℃	---/8	30	20
HC2 (When activated)	1010	Comfort setpoint	℃	Value from Line no. 1012	35	20.0
	1012	Reduced setpoint	℃	4	Value from Line no. 1010	16.0
	1014	Frost protection setpoint	℃	4	Value from Line no. 1012	4.0
	1020	Heating curve slope	-	0.10	4.00	1.5
	1030	Summer/winter heating limit	℃	---/8	30	20
DHW	1610	Nominal setpoint	℃	Value from Line no. 1612	80	55
	1612	Reduced setpoint	℃	8	Value from Line no. 1610	40

OTHER SYMBOLS

If the wrong buttons are pressed it is possible that an engineering mode might be accidentally entered and different symbols will be displayed. In this instance, do not press any buttons for at least 8 minutes and the control will revert back to a normal display. Alternatively, press ESC button repeatedly until “Cascade temperature” is displayed.

8.6 BASIC PROGRAMMING EXPLAINED

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

8.6.1 DAYLIGHT SAVING TIME/STANDARD TIME CHANGEOVER

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

Line No.	Operating Line	Settings
20	Language	German ¦ English ¦ French ¦ etc
21	Display of special operation	Off ¦ On
22	Info	Temporarily ¦ Permanently
24	Lighting	Off ¦ Temporarily ¦ Permanently
26	Operation lock	Off ¦ On
27	Programming lock	Off ¦ On
28	Direct adjustment	Automatic storage ¦ Storage with confirmation
29	Units	°C, bar ¦ °F, PSI
39	Commissioning menu	Off ¦ On

8.6.2 DISPLAY OF SPECIAL OPERATION

- **OFF**: Special operation is not displayed on the basic display. Display of special operation is available on the info level only.
- **ON:** The "Tool" symbol is displays and special operations are displayed directly in the basic display. Switching to the info level not required. Special operation includes, for example, manual operation, emergency more, outside temperature simulation, Eco mode and output test.

8.6.3 INFO

- **TEMPORARILY:** After pressing the info button, a change to the "predefined" basic display is made after a maximum of 8 minutes or by pressing the operating mode button (with the QAA78... only 2 minutes).
- **PERMANENTLY:** After pressing the info button, a change back to the "new" basic display is made after a maximum of 8 minutes. The info value selected last will be adopted by the new basic display. This setting cannot be made for QAA78...

8.7 OPERATION STATUS

8.7.1 OPERATOR AND HMI ROOM UNITS

Pressing the info button and then using the scroll wheel on the operator or room unit display will cycle through the following display screens:-

Display	**Notes**	**Description**
Room temperature	**Default screen for Room Unit**	**Current Room temperature**
Room temperature Min	Can be reset	Minimum room temperature recorded
Room temperature Max	Can be reset	Maximum room temperature recorded
Cascade flow temperature	**Default screen for Operator unit**	**Heating circuit flow temperature**
Boiler temperature		Flow temperature of heat engine no 1
Outside temperature		Current outside temperature
Outside temperature min	Can be reset	Minimum outside temperature recorded
Outside temperature max	Can be reset	Maximum outside temperature recorded
DHW temp		Hot water tank temperature
State Heating Circuit 1 *State Heating Circuit 2 (optional)* *State Heating Circuit 3 (optional)*		Status of heating circuits *(see next section on state messages)*
State DHW		Status of hot water *(see next section on state messages)*
State Boiler		Status of heat engines *(see next section on state messages)*
Date		Current day & date
Service contact number (optional)		Contact phone number of service company

8.7.2 STATE HEATING CIRCUITS 1,2 & 3

The current operating status of the heating circuits are visualised by means of status displays. A basic status display is available by pressing the "info" button, but more information is available to the engineer by accessing the "state" menu and reading the detailed status from parameter lines 8000 through to 8002. A summary of display messages at info and engineer level is listed below:-

End User (info) Level	Engineer Level	Description
Manual Control Active	Manual Control Active	Manual operation triggered using Operator unit. Heat engine 1 forced to operate in isolation.
Heating mode Restricted	Forced discharging buffer storage tank Forced discharging DHW Forced discharging heat source Forced heat release Overrun active	Heating mode restricted whilst other heat discharge tasks are carried out (temporary tasks).
Forced heat release	Optimum start control Boost heating	Heating operating in optimum start mode (outside heating times) or is having to use extra heat to bring space temperature up to set point.
Heating comfort mode	Heating comfort mode Optimum stop control	Normal operation and early optimum stop
Heating mode reduced	Heating mode reduced	Normal operation with reduced flow temperature
Frost protection active	Frost protection room active Frost protection plant active Frost protection flow active	One of the 3 levels of frost protection activated automatically
Summer operation	Summer operation 24-hour eco active Setback reduced Setback frost protection Room temperature limit	Heating stopped due to outside temperature above summer set point. Other limits reached preventing heating operation
Off	Off	Heat circuit off and there is no demand

8.7.3 STATE DHW

The current operating status of DHW is visualised by means of status displays. A basic status display is available by pressing the "info" button, but more information is available to the engineer by accessing the "state" menu and reading the detailed status from parameter line 8003. A summary of display messages at info and engineer level is listed below:-

End User (info) Level	Engineer Level	Description
Manual Control Active	Manual Control Active	Manual operation triggered using Operator unit. Heat engine 1 forced to operate in isolation.
Charging lock active	Charging time limitation active	The charging limitation time has been exceeded (default setting is 120 mins) DHW charging will stop and will not restart until the limitation time has elapsed.
Forced charging active	Forced max store tank temp Forced max charging temp Forced legionella set point Forced nominal set point	DHW system activated manually to achieve set point or legionella programme has been initiated automatically.
Push active	Push nominal set point	Push has been activated by holding down the DHW button on the room or operator control. Push will remain active until the nominal set point has been reached. Push cannot be cancelled once activated.
Charging activated	Charging nominal set point Charging reduced set point	Normal operation of DHW to either the nominal or reduced set point (depending on the appliance setup)
Overrun active	Overrun active	DHW pumps continue to run for a short period after the heat engines have switched off, in order to dissipate heat.
Standby charging	Standby charging	DHW demand exists, but charging is in standby mode. This could occur for example, if the heating circuits were given priority over DHW.
Charged	Charged max store temp Charged max charge temp Forced legionella temp Charged nominal temp Forced reduced temp	DHW has completed charging. What activated this charging can be viewed by an engineer.
Off	Off	DHW is off and there is no demand

8.7.4 STATE BOILER

The current operating status of the Boiler is visualised by means of status displays. A basic status display is available by pressing the "info" button, but more information is available to the engineer by accessing the "state" menu and reading the detailed status from parameter line 8005. A summary of display messages at info and engineer level is listed below:-

End User (info) Level	Engineer level	Description
Flue Gas temperature too high	Flue gas temperature shutdown	Heat engine has shut down because the high flue gas temperature has exceeded 120°C.
	Flue gas temperature limitation	Heat engine is operating with reduced output, because the flue gas temperature has exceeded 100°C In both cases, investigation into the cause of these errors is recommended to ensure continued safe operation of the appliance.
Chimney sweep function active	Chimney sweep function Hi fire Chimney sweep function Lo-fire	Used by engineers to test operation of the heat engines and to take flue gas samples with electronic equipment. Manually operated using the operator control.
Released for DHW Released for HC Released for HC, DHW		Boilers are released to operate DHW or HC. Ignition sequence should start immediately and the message should change to "In operation" . See below.
In operation for DHW In operation for HC In operation for HC, DHW		Boilers are operating normally at full power output.
In partial load operation for DHW In partial load operation for HC In partial load operation for HC, DHW		Heat engines are operating normally and are modulating power down to maintain stable heat output level.
Frost protection active		Frost protection has activated because the internal temperature of the boiler has dropped below 5°C (default setting)
SLT has cut out		Heat engine operation halted because heat engine has overheated or expected temperature changes in operation were not achieved. For example, a flow sensor that has become unclipped from the pipe work.
Off		Boiler is off and there is no demand

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-BIM files
-CAD files
-Brochures
-Technical specification sheets
-Case studies
-Installation manuals
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