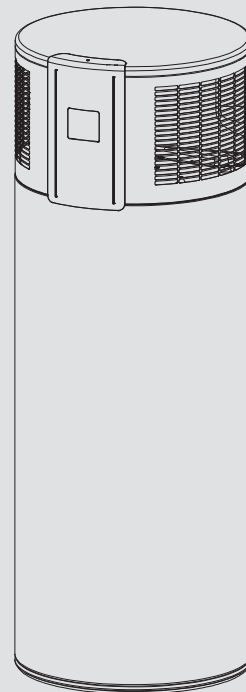


## OPERATION AND INSTALLATION

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DHW heat pump

- » WWK 222
- » WWK 222 H
- » WWK 302
- » WWK 302 H



**STIEBEL ELTRON**

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## SPECIAL INFORMATION

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### GUARANTEE

### ENVIRONMENT AND RECYCLING

## SPECIAL INFORMATION

- The appliance may be used by children over 8 years of age and persons with reduced physical, sensory or mental capabilities or a lack of experience and expertise, provided that they are supervised or they have been instructed on how to use the appliance safely and have understood the potential risks. Children must never play with the appliance. Cleaning and user maintenance must not be carried out by children without supervision.
- Observe all applicable national and regional regulations and instructions.
- Observe the minimum clearances (see chapter "Installation / Preparations / Siting the appliance").
- Observe the requirements concerning the installation room (see "Specification / Data table").
- The appliance is supplied with a flexible power cable without plug. In the case of a permanent connection, the appliance must be able to be separated from the power supply by an isolator that disconnects all poles with at least 3 mm contact separation. Contactors, circuit breakers or fuses can be used for this. This type of isolator must be installed in the fixed electrical installation according to the regulations. For Australia: Ensure that the appliance can be separated from the power supply by a suitable isolator. Contactors, circuit breakers, fuses or general purpose power plugs can be used for this. This type of isolator must be installed according to the electrical installation regulations.
- Observe the safety measures to prevent contact with dangerously high contact voltage.
- Observe the fuse protection required for the appliance (see chapter "Specification / Data table").
- If the power cable is faulty, replace it with a new one. The power cable must only be replaced (for example if damaged) by a qualified contractor.
- The appliance is pressurised. During the heat-up process, expansion water will drip from the safety valve.
- Activate the valves at least every 6 months to prevent them from becoming blocked, e.g. by limescale deposits.
- Drain the appliance as described in chapter "Installation / Maintenance and cleaning / Draining the cylinder".
- A T&P valve or a cold water expansion control valve, or both, must be installed. Observe all applicable national and regional regulations and instructions.
- The maximum pressure in the cold water supply line must be at least 20 % below the lowest response pressure of all installed safety valves. Otherwise a pressure reducing valve is required. If this is the case, install a pressure reducing valve in the cold water supply line. The pressure reducing valve must be set to 540 kPa if a safety valve is installed; otherwise to 700 kPa.
- Fit the drain pipe of the safety valve with a constant fall in a room free from the risk of frost.
- Size the drain pipe so that water can drain off unimpeded when the safety valve is fully opened.
- The safety valve drain aperture must remain open to atmosphere.

# OPERATION

## 1. General information

The chapters "Special information" and "Operation" are intended for both users and qualified contractors. The chapter "Installation" is intended for qualified contractors.



### Note

Read these instructions carefully before using the appliance and retain them for future reference. Pass on these instructions to a new user if required.

### 1.1 Safety instructions

#### 1.1.1 Structure of safety instructions



#### KEYWORD Type of risk

Here, possible consequences are listed that may result from failure to observe the safety instructions.

► Steps to prevent the risk are listed.

#### 1.1.2 Symbols, type of risk

Symbol	Type of risk
	Injury
	Electrocution
	Burns (burns, scalding)

#### 1.1.3 Keywords

KEYWORD	Meaning
DANGER	Failure to observe this information will result in serious injury or death.
WARNING	Failure to observe this information may result in serious injury or death.
CAUTION	Failure to observe this information may result in non-serious or minor injury.

### 1.2 Other symbols in this documentation



#### Note

General information is identified by the adjacent symbol.

► Read these texts carefully.

Symbol	Meaning
	Material losses (appliance damage, consequential losses and environmental pollution)
	Appliance disposal

► This symbol indicates that you have to do something. The action you need to take is described step by step.

These symbols show you the software menu level (in this example level 3).

### 1.3 Units of measurement



#### Note

All measurements are given in mm unless stated otherwise.

## 2. Safety

### 2.1 Intended use

The purpose of this appliance is to heat domestic hot water within the application limits stated in the chapter "Specification / Data table".

The appliance is intended for domestic use. It can be used safely by untrained persons. The appliance can also be used in non-domestic environments, e.g. in small businesses, as long as it is used in the same way.

Any other use beyond that described shall be deemed inappropriate. Observation of these instructions and of the instructions for any accessories used is also part of the correct use of this appliance.

### 2.2 General safety instructions

The appliance should only be operated once it is fully installed and all safety equipment has been fitted.



#### WARNING Injury

The appliance may be used by children over 8 years of age and persons with reduced physical, sensory or mental capabilities or a lack of experience and expertise, provided that they are supervised or they have been instructed on how to use the appliance safely and have understood the potential risks. Children must never play with the appliance. Cleaning and user maintenance must not be carried out by children without supervision.



#### WARNING Electrocution

Contact with live components presents a threat to life. Damage to the cable insulation or to individual components may result in a risk to life.

- ▶ If there is damage to the insulation, switch off the power supply and arrange a repair.

All work on the electrical installation must be carried out by a qualified contractor.



#### WARNING Burns

The water in the DHW cylinder can be heated to temperatures in excess of 60 °C. There is a risk of scalding at outlet temperatures in excess of 43 °C.

Caution must be exercised when coming into contact with the outflowing water.



#### WARNING Burns

Touching hot components can lead to burns.

- ▶ When working on hot components, always wear protective working clothing and safety gloves.

The pipework connected to the DHW outlet of the appliance can reach temperatures in excess of 60 °C.



#### WARNING Burns

The appliance is filled with refrigerant at the factory. In the event of refrigerant escaping due to a leak, avoid coming into contact with the refrigerant or inhaling the released vapours. Ventilate the rooms affected.



#### WARNING Electrocution

Never operate the appliance when the casing is open or without a cover.



#### CAUTION Injury

If objects are left on the appliance, noise emissions may increase due to resulting vibrations, and the objects could fall and cause injury.

- ▶ Never place any objects on top of the appliance.



#### Material losses

At the factory, the appliance is fitted with rechargeable batteries that ensure the power supply to the impressed current anode in the case of a power failure.

In order for the impressed current anode to protect the DHW cylinder in the appliance against corrosion, the appliance must not be disconnected from the power supply for more than 16 hours if the DHW cylinder is filled with water and the impressed current anode is not separately connected to a continuous power supply.

If regular interruptions to the power supply are not anticipated, the batteries will not require any maintenance. Replace the batteries for the impressed current anode every three years in the following cases:

- The impressed current anode is not separately connected to a continuous power supply and a switching contact regularly interrupts the power supply to the appliance.

- The security of supply is inadequate.

Failure to observe this point puts the appliance at risk of damage.

Never use batteries that cannot be charged. Only rechargeable nickel metal hydride batteries (NiMH) are permissible.

Batteries may be damaged in the appliance. Without a power supply, the impressed current anode and the cylinder would not be protected against corrosion.



#### Material losses

Ensure that the appliance, water pipes and safety valves are free from the risk of frost. If you disconnect the appliance from the power supply, it is no longer protected against frost.



#### Material losses

Never cover the appliance. Covering the air intake or air discharge leads to a reduced air supply. If the air supply is restricted, the operational reliability of the appliance cannot be guaranteed.



#### Material losses

Only operate the appliance when the DHW cylinder has been filled. The appliance is equipped with boil-dry protection to prevent operation if the DHW cylinder is not completely full of water.



#### Material losses

Heating liquids other than potable water is not permitted.



#### Material losses

Keep the appliance installation site free from air contaminated with oil or salt (chloride) and corrosive or explosive substances. Avoid contaminating the installation site with dust, hairspray or substances containing chlorine or ammonia.

**Material losses**

Operating the appliance outside the application limits (see chapter "Specification / Data table") is not permitted. The appliance may be damaged if operated continuously outside the application limits.

**Note**

The appliance is pressurised. During the heat-up process, expansion water will drip from the safety valve.

- ▶ If water continues to drip when heating is completed, please inform your qualified contractor.

**2.3 Test symbols**

See type plate on the appliance.

**3. Appliance description**

This appliance enables DHW to be supplied efficiently to several draw-off points using renewable energy. The appliance extracts heat from the ambient air. This heat is used, along with additional electrical energy, to heat up the water in the DHW cylinder. The amount of electrical energy and time required to heat up the DHW depend on the temperature of the air drawn in and the temperature of the water in the cylinder. When the air intake temperature drops, the heating output of the heat pump is reduced and the heat-up time is extended.

In the case of indoor installation, the air inside the installation room can be cooled by 1 °C to 3 °C due to heat extraction. The appliance also extracts moisture from the air, which turns into condensate. The condensate is removed from the appliance via the condensate drain.

The appliance has an electronic control unit with LC display. The display shows parameters of interest, such as the top hot water temperature, mixed hot water volume, etc. It also indicates when the unit is idle, heating or engaged in defrosting, as well as the presence of errors and faults. Subject to the power supply and your draw-off patterns, the water is heated automatically to the selected set temperature.

External signal transmitters can be integrated via the built-in contact input, e.g. a photovoltaic system to make use of solar power generated on site.

When a DHW draw-off point is opened, the hot water is pushed out of the appliance by the inflow of cold water.

The heat pump drive unit is located in the upper section of the appliance. The DHW cylinder is located in the lower section of the appliance. To protect against corrosion, the DHW cylinder is coated internally with special enamel and is additionally equipped with an impressed current anode.

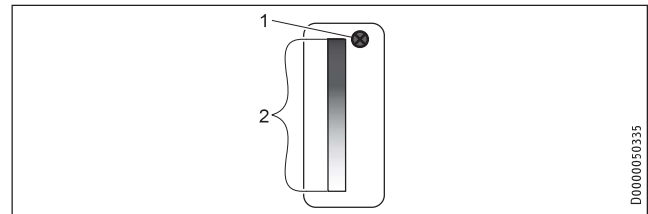
**Available amount of DHW**

The appliance's nominal maximum available amount of DHW is designed for the recommended number of users with average user behaviour.

**3.1 Heat pump operating principle**

A closed circuit within the appliance contains refrigerant (see "Specification / Data table"). This refrigerant evaporates at low temperatures. In the evaporator, which extracts heat from the air drawn in, the refrigerant changes from a liquid into a gaseous state. A compressor draws in the gaseous refrigerant and compresses it. This increase in pressure raises the refrigerant temperature. This requires electrical energy.

The energy (motor heat) is not lost, but reaches the downstream condenser together with the compressed refrigerant. There, the refrigerant transfers heat to the DHW cylinder. An expansion valve then reduces the still prevalent pressure and the cyclical process starts again.

**3.2 DHW heating**

- 1 Cylinder top sensor
- 2 Integral sensor

The appliance is equipped with two temperature sensors.

- The cylinder top sensor captures the water temperature in the upper section of the cylinder.
- The integral sensor is a temperature sensor affixed over the entire cylinder height. The integral sensor determines the average cylinder temperature.

The appliance display indicates the temperature in the upper section of the cylinder, which is captured by the cylinder top sensor. The appliance control unit uses the average cylinder temperature captured by the integral sensor.

DHW heating is started when the available mixed water volume decreases to the percentage of the maximum mixed water volume set in the "Charge level" parameter.

The temperature captured by the cylinder top sensor may still correspond to the set temperature.

For information on the heat-up time, see chapter "Specification". The calculation of the available mixed water volume is based on the average cylinder temperature. The mixed water volume is only calculated if the water temperature in the upper section of the cylinder is higher than 40 °C.

DHW is normally heated by the heat pump of the appliance (see chapter "Specification / Data table").

**Note**

If the appliance has been isolated from the power supply during operation, the compressor will only restart after the pressure inside the refrigerant circuit has been equalised. Pressure equalisation can take several minutes.

**WWK 222 H | WWK 302 H: Electric emergency/booster heater**

When the temperature in the upper section of the DHW cylinder drops 12 K below the selected set temperature, the appliance automatically switches on the electric emergency/booster heater. When the temperature in the upper section of the DHW cylinder rises 2 K above the selected set temperature, the appliance switches off the electric emergency/booster heater.

In the event of an appliance fault, the electric emergency/booster heater can be activated in emergency heating mode, provided a flashing fault key is displayed. See chapter "Settings / 'Rapid heat-up' button / Emergency heating mode".

In the event of a higher hot water demand on a single occasion, use the "Rapid heat-up" button to activate the emergency/booster heater manually for one-off heat-up in addition to the heat pump. See chapter "Settings / 'Rapid heat-up' button / Rapid/comfort heat-up".

**3.3 Appliance operation outside the application limits**

- ▶ To guarantee fault-free operation of the appliance, make sure you operate the appliance within its application limits (see chapter "Specification / Data table").

**3.3.1 Ambient temperatures below the application limit**

Outside the application limits, the appliance blocks the compressor from operating. This could lead to reduced DHW convenience. If the appliance has an electric emergency/booster heater, the appliance enables this when there is a demand for water heating and the lower application limit has been undershot.

Low ambient temperatures may result in the formation of hoar frost on the evaporator depending on the air humidity and water temperature.

**Active defrosting**

The appliance is equipped with active hot gas defrosting, which allows quick defrosting of the evaporator when needed. During defrosting, the appliance fan is disabled. The compressor continues to run. A solenoid valve routes the hot gas directly to the evaporator. While this is happening, refrigerant flow to the condenser is disabled by another solenoid valve.

In contrast to conventional defrosting methods, the appliance guarantees that this defrosting takes place only when needed.

**Note**

Heat-up times are longer while the evaporator is defrosting.

**3.3.2 Ambient temperatures above the application limit**

Outside the application limits, the appliance blocks the compressor. This could lead to reduced DHW convenience. If the appliance has an electric emergency/booster heater, the appliance enables this when there is a demand for water heating and the upper application limit has been exceeded.

**3.4 Frost protection**

The appliance activates the frost protection function if the integral sensor in the DHW cylinder captures a temperature below 8 °C. The appliance then heats the water by means of the heat pump and the electric emergency/booster heater. The heat pump and electric emergency/booster heater switch off when the temperature captured by the integral sensor reaches 16 °C.

**3.5 Minimum runtime and minimum pause time****Material losses**

When operating with external switching devices that can interrupt the power supply to the appliance, such as time switches, energy management systems or home automation systems, the following conditions must be adhered to:

- The minimum ON time is 60 minutes.
- The minimum pause time following a shutdown is 20 minutes.
- The appliance should not be switched on/off more than 10 times per day.
- The breaking capacity of the switching actuator must meet the fuse protection requirements (see chapter "Specification / Data table").

**Material losses**

If you disconnect the appliance from the power supply, it is no longer protected against frost.



### Material losses

At the factory, the appliance is fitted with rechargeable batteries that ensure the power supply to the impressed current anode in the case of a power failure.

In order for the impressed current anode to protect the DHW cylinder in the appliance against corrosion, the appliance must not be disconnected from the power supply for more than 16 hours if the DHW cylinder is filled with water and the impressed current anode is not separately connected to a continuous power supply.

If regular interruptions to the power supply are not anticipated, the batteries will not require any maintenance. Replace the batteries for the impressed current anode every three years in the following cases:

- The impressed current anode is not separately connected to a continuous power supply and a switching contact regularly interrupts the power supply to the appliance.
- The security of supply is inadequate.

Failure to observe this point puts the appliance at risk of damage.

Never use batteries that cannot be charged. Only rechargeable nickel metal hydride batteries (NiMH) are permissible.

Batteries may be damaged in the appliance. Without a power supply, the impressed current anode and the cylinder would not be protected against corrosion.

### 3.6 Connection of an external signal transmitter



#### Note

This type of connection must only be carried out by a qualified electrician.

External signal transmitters can be integrated via the built-in contact input, e.g. a PV system to take advantage of electricity generated on site.

The appliance has a second set temperature preselected at the factory. This is activated when there is an external switching signal. Set temperature 2 takes priority over the standard set temperature while there is an external switching signal. Following a one-off activation (signal is present for at least 1 minute), set temperature 2 applies for at least 20 minutes and takes priority over set temperature 1.

You can change set temperature 2 on the appliance (see chapter "Settings / Settings / Set temperature 2").

## 4. Settings



### Material losses

Optimum operation is achieved with the factory default settings.

Any changes to these are strongly discouraged as they may affect output, service life and compliance with regulations.

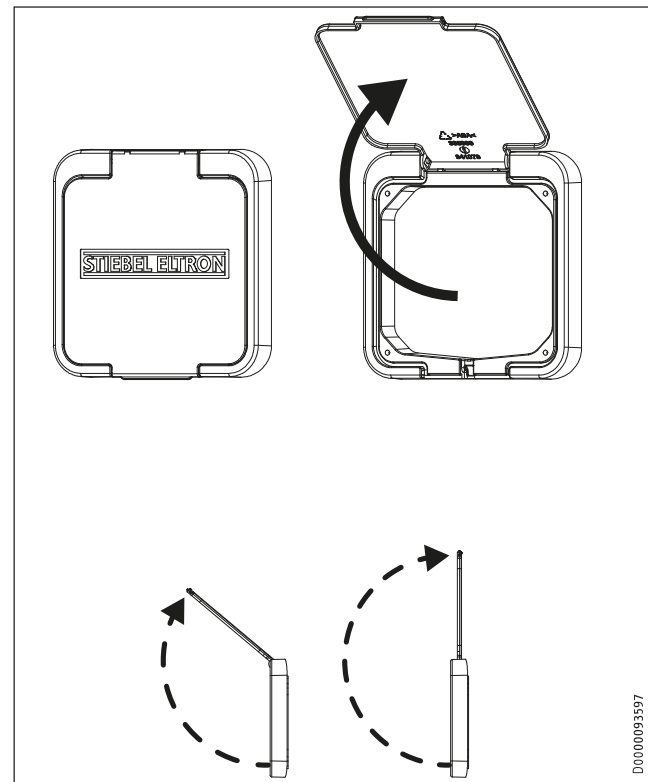
### 4.1 Emergency shutdown

In the event of an emergency, carry out the following steps:

- ▶ Disconnect the appliance from the power supply at the fuse in the domestic distribution board or by unplugging the power plug.
- ▶ Shut off the cold water supply.

### 4.2 Weatherproof cover

The programming unit is equipped with a weatherproof cover to protect it from the elements.



- ▶ Carefully flip up the lid of the weatherproof cover.

Two detents are provided so that you do not have to keep hold of the lid.

To close, carefully press the lid onto the appliance until the locking tabs at the sides lock in place.



# OPERATION

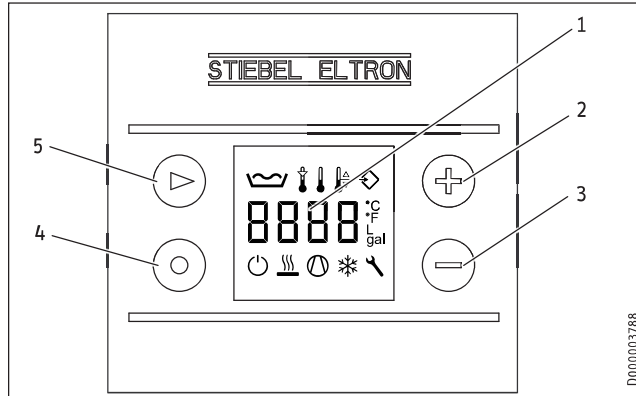
## Settings

### 4.3 Display and operating controls



#### Note

15 seconds after every operation, the appliance automatically reverts to the default display (mixed water volume) and saves the set value.



- 1 Mixed water volume display (litres/40 °C) /  
Display of actual temperature in upper cylinder section /  
Set temperature display 1 /  
Set temperature display 2 /  
Fault code display
- 2 "Plus" button
- 3 "Minus" button
- 4 "Rapid heat-up" button
- 5 "Menu" button

### Symbols

Symbol	Description
	Mixed water volume: The currently available mixed water volume at 40 °C and at 15 °C cold water temperature is shown.
	Set temperature adjustment: Subject to intake temperature and hot gas temperature, the appliance may temporarily reduce the set temperature to the actual value captured by the integral sensor. The appliance displays the "Set temperature adjustment" symbol and blocks DHW heating until the actual temperature captured by the integral sensor is 6 K below the temporary set temperature. DHW heating is then re-enabled and the originally selected set temperature is applied again.
	Actual temperature: The current actual temperature is shown. The actual temperature indicates the temperature in the upper section of the DHW cylinder and therefore largely corresponds to the outlet temperature.
	Set temperature
	External signal transmitter: Set temperature 2 is the DHW temperature to which the appliance regulates if an external signal transmitter is connected and active.
	Standby: The symbol flashes if the appliance PCB and load (compressor) are supplied with power separately. This connection option is required if the appliance is to be operated via switchable sockets in an energy management system, for example (see chapter "Electrical connection").
	Electric emergency/booster heater: This symbol indicates the presence of a demand on this component. This symbol being displayed does not necessarily mean that the electric emergency/booster heater is running.
	Heat pump: This symbol indicates the presence of a demand on this component. This symbol being displayed does not necessarily mean that the compressor is running.
	Defrost active
	Service/fault: Notify your qualified contractor if the "Service/fault" symbol appears on the display. Continuous illumination of the symbol indicates that the fault is not preventing appliance operation. A flashing "Service/fault" symbol indicates that water is not being heated and it is essential you notify your qualified contractor. Switching the appliance to emergency mode is a special case. The electric emergency/booster heater will then heat the water despite the flashing "Service/fault" symbol.


The "Electric emergency/booster heater" and "Heat pump" symbols are displayed when there is a demand for these appliance components. These symbols being displayed does not necessarily mean that the electric emergency/booster heater and the heat pump are running. Example: The appliance is in rapid/comfort heat-up mode. The electric emergency/booster heater switches off when the temperature in the upper cylinder section has reached 65 °C. The heat pump has not yet heated the lower section to 65 °C and the rapid/comfort heat-up function has therefore not been terminated yet. The electric emergency/booster heater symbol is displayed until the rapid/comfort heat-up function has terminated.

# OPERATION

## Settings

### 4.4 Adjusting the settings

The default display shows the mixed water volume.

 The "Menu" button allows you to call up all information and adjustment options in sequence. The relevant symbol appears.


#### ■ Menu

<input type="checkbox"/> Mixed water volume display	
<input type="checkbox"/> Actual temperature display	
<input type="checkbox"/> Set temperature 1	
<input type="checkbox"/> Set temperature 2	
<input type="checkbox"/> Fan speed	
<input type="checkbox"/> Air intake temperature display	
<input type="checkbox"/> Enable the "Runtime-dependent rapid heat-up" function	In appliances with no electric emergency/booster heater, this parameter has no function.
<input type="checkbox"/> Time set for the "Runtime-dependent rapid heat-up" function	In appliances with no electric emergency/booster heater, this parameter has no function.
<input type="checkbox"/> Change units	
<input type="checkbox"/> Charge level	
<input type="checkbox"/> Fault code	
<input type="checkbox"/> E fault code	
<input checked="" type="checkbox"/> Advanced menu (with service plug only)	
<input type="checkbox"/> Integral sensor offset	
<input type="checkbox"/> Set the cylinder volume	
<input type="checkbox"/> Compressor lockout due to evaporator fault	
<input type="checkbox"/> Clear high pressure lockout	
<input type="checkbox"/> Clear low pressure lockout	
<input type="checkbox"/> Temperature of evaporator fins	
<input type="checkbox"/> Number of times hot gas temperature sensor was triggered	
<input type="checkbox"/> Number of defrost faults	
<input type="checkbox"/> Number of low pressure triggers	
<input type="checkbox"/> Number of high pressure triggers	
<input type="checkbox"/> Hot gas temperature switching value	
<input type="checkbox"/> Fan lead time	
<input type="checkbox"/> Integral sensor replacement	
<input type="checkbox"/> Set value limit	

#### ■ Menu

##### Mixed water volume display



 The currently available mixed water volume at 40 °C and at 15 °C cold water temperature is shown.

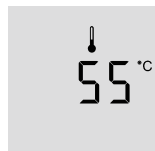



"-- L" is shown if less than 10 l mixed water is currently available.

DHW demand for	Mixed water volume at 40 °C
Bath	120-150 l
Shower	30-50 l
Washing hands	2-5 l

The mixed water volume that can be achieved depends on the cylinder size and the set temperature selected.

##### Actual temperature display



 In the "Mixed water volume" menu, press "Menu" once to access the "Actual temperature" menu.

The "Actual temperature" symbol appears.

The current actual temperature is shown. The actual temperature is the temperature in the upper section of the DHW cylinder, and therefore largely corresponds to the outlet temperature.

##### Set temperature 1

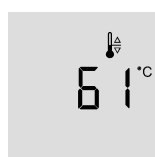



#### Note

For hygiene and other reasons, only change this value if instructed by Stiebel Eltron representative..

Set temperature 1 is the DHW temperature to which the appliance regulates if no external signal transmitter is connected and active.

		Factory setting
Set temperature 1	°C	61



 In the "Actual temperature" menu, press "Menu" once to access the "Set temperature 1" menu.

The set temperature 1 symbol appears.

You can change the value using the "Plus" and "Minus" buttons. Setting range: 61 - 65 °C



# OPERATION

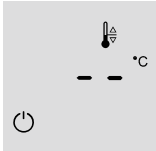
## Settings



### Note

Another way to adjust set temperature 1 is to press the "Plus" or "Minus" buttons from within the default display (mixed water volume).

### Frost protection



Only frost protection remains active if you set the set temperature to below 20 °C using the "Minus" button. The display shows "-- °C".

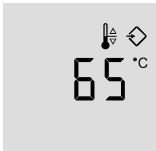
### Set temperature 2



### Note

For hygiene reasons, do not set a DHW temperature of less than 61 °C.

Set temperature 2 is the DHW temperature to which the appliance regulates if an external signal transmitter is connected and active.



In the "Set temperature 1" menu, press "Menu" once to access the "Set temperature 2" menu. The "External signal transmitter" symbol appears.



You can change the value using the "Plus" and "Minus" buttons. Setting range: 61 - 65 °C



### Operation with external signal transmitter



### Material losses

See "Permissible voltage range for external signal transmitters" in chapter "Specification/data table".

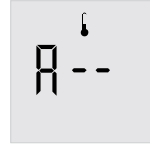
As standard, these appliances are designed to allow you to allocate a separate, individual set DHW temperature to a connected external signal transmitter, such as a PV system or an economy tariff transmitter. This set temperature 2 is activated if the terminal connected to the external signal transmitter receives a signal (see chapter "Electrical connection / External signal transmitter connection option"). While activated, set temperature 2 replaces the standard set DHW temperature ("Set temperature 1").

### Air intake temperature display



An "A" appears as the air intake temperature symbol.

The current air intake temperature is displayed.



The air intake temperature is displayed only while the appliance fan is running. If it is not possible to establish an air intake temperature, two dashes are shown.

### Enabling the "Runtime-dependent rapid heat-up" function



### Note

In appliances with no electric emergency/booster heater, this parameter has no function.



### Note

Only use the runtime-dependent quick heat-up if instructed by a Stiebel Eltron representative.

Enabling this function is likely to impact the efficiency of the product and may lead to unnecessary higher energy consumption and operational costs.

The appliance offers a runtime-dependent rapid heat-up option. If the selected set temperature is not reached by the heat pump after a user defined period, the appliance switches on the electric emergency/booster heater in parallel to back up the heat pump (subject to this function being enabled).

Once the set value has been reached, the electric emergency/booster heater remains inactive until the set time has elapsed again following a heat demand. This function is disabled at the factory.

This function is set in two stages. First enable the function and set the runtime in the second parameter.



The tHE0 setting disables the runtime-dependent rapid heat-up function. This function is enabled via setting tHE1. The function is disabled at the factory.



Switch between the tHE0 and tHE1 settings using the "Plus" and "Minus" buttons. The tHE1 setting allows the electric emergency/booster heater to cut in if the set temperature is not reached after expiry of the runtime selected below.

# OPERATION

## Settings

### Time set for the "Runtime-dependent rapid heat-up" function



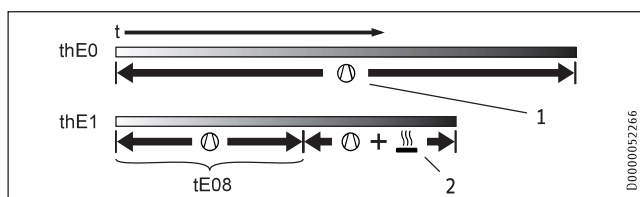
#### Note

In appliances with no electric emergency/booster heater, this parameter has no function.

To avoid increased power consumption, only reduce the factory-set time for runtime-dependent rapid heat-up if necessary. See chapter "Specification / Appliance parameters".



Set the runtime using the "Plus" and "Minus" buttons. After the set number of hours, the appliance checks whether the set temperature has been reached. If this is not the case, the appliance switches on the electric emergency/booster heater.



- 1 "Heat pump" symbol
- 2 "Electric emergency/booster heater" symbol
- tHE0 Runtime-dependent rapid heat-up disabled
- tHE1 Runtime-dependent rapid heat-up enabled
- tE08 Adjustable number of hours (e.g. 8 in this case) during which heating is only provided by the heat pump

### Change units

You can select whether the temperatures and the volume details are displayed in SI units or US units. If you select 1, the values are displayed in degrees Celsius and litres. If you select 0, the values are displayed in degrees Fahrenheit and gallons.



Press the "Menu" button until "SI" appears on the display.

Using the "Plus" and "Minus" buttons, set whether the display should use SI units (1) or US units (0).

### Charge level

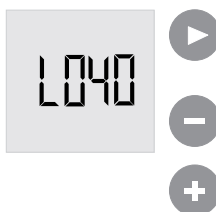
Increasing this value increases the minimum available amount of DHW. The effect corresponds to a virtual shift of the temperature sensor downwards. This results in a faster recovery at the expense of higher energy consumption and reduced efficiency. Reducing this value has the opposite effect and results in a longer recovery at the expense of DHW availability.

DHW heating is started when the available mixed water volume decreases to the percentage of the maximum mixed water volume set in the "Charge level" parameter.

		Factory setting
Charge level WWK 222 (H)	%	56
Charge level WWK 302 (H)	%	64

The displayed mixed water volume is based on a mixed water temperature of 40 °C. At water temperatures below 40 °C (±1 K), the mixed water volume is not calculated or displayed.

A further start condition, which overlaps with the charge level start conditions, is the reduction of the temperature captured by the cylinder top sensor to 6 K below the active set temperature.



Press the "Menu" button until an "L" followed by a number appears on the display.

You can change the value using the "Plus" and "Minus" buttons. Setting range: 30 - 100 %



### Material losses

Do not change this parameter unless instructed by a Stiebel Eltron representative.

### Fault code



If the "Service/fault" symbol is illuminated or flashes, you can call up the fault code using the "Menu" button. This menu remains disabled if no fault has arisen.

See chapter "Troubleshooting / Fault codes".

### E fault code

A fault code preceded by E appears if the fault relates to the refrigerant circuit.

# OPERATION

## Settings

### 4.5 "Rapid heat-up" button



#### Note

In appliances with no electric emergency/booster heater, this button only allows you to clear the high pressure/low pressure lockout. You cannot start rapid/comfort heat-up or emergency heating mode.



#### Note

To start rapid/comfort heat-up with the "Rapid heat-up" button, the start screen must be displayed.



Press the "Rapid heat-up" button for two seconds.

The heat pump and electric emergency/booster heater symbols appear.

#### 4.5.1 Rapid/comfort heat-up

Normally, the "Rapid heat-up" button is used to activate the rapid/comfort heat-up function, which enables you to cover an unexpectedly high DHW demand without changing any of the appliance's standard settings.

If rapid/comfort heat-up is activated manually by pressing the relevant button, the heat pump and the electric emergency/booster heater will start once in parallel, irrespective of the selected set temperature, and will remain active until the DHW temperature in the cylinder has reached 65 °C. To save energy, the electric emergency/booster heater switches off sooner, once a temperature of 65 °C has been achieved in the upper cylinder section (rapid heat-up).

The rapid/comfort heat-up function remains active until a temperature of 65 °C has been achieved in the entire DHW cylinder (comfort heat-up). The appliance then automatically switches back to the previously set parameters.



#### Note

The electric emergency/booster heater and heat pump symbols are displayed until the rapid/comfort heat-up function has terminated.



#### Note

To end rapid/comfort heat-up, press the "Rapid heat-up" button for two seconds.

#### 4.5.2 Emergency mode

If the appliance is faulty, you can use emergency mode to activate the electric emergency/booster heater.

Following a DHW demand, the appliance measures the temperature rise every 15 minutes. If the temperature rise was  $<0.25$  °C within the 15 minute period, this is recorded by a counter. If the temperature rise did not reach  $>0.25$  °C in any 15 minute period over 13 hours, the compressor shuts down. The fault key flashes on the display and a fault code indicates that the appliance is not heating the water.



Press the "Rapid heat-up" button for two seconds.

The "Electrical emergency/booster heater" symbol appears. The "Service/fault" symbol flashes.

After the "Rapid heat-up" button has been pressed, the indicated fault code increments by a value of 256, as the fault codes are added together (see fault code table in chapter "Troubleshooting"). The fault key continues to flash. The electric emergency/booster heater is activated.

The current set temperature (set temperature 1 or set temperature 2) is ignored.

In emergency heating mode, the appliance operates with a fixed set temperature. In the upper cylinder section, the DHW is heated up to 65 °C by the electric emergency/booster heater.

Following one-off enabling of this function by means of the "Rapid heat-up" button, this function remains enabled for 7 days.

Following 7 days of emergency operation the electric emergency/booster heater is disabled. The fault code shown on the display decreases by 256.

If you press the "Rapid heat-up" button again for two seconds within the 7 days of emergency heating mode, the 7-day runtime for emergency heating mode will restart.

If the 7-day runtime for emergency heating mode has expired, you can restart emergency heating mode for a further 7 days by pressing "Rapid heat-up".

Pressing the "Rapid heat-up" button only enables emergency mode if a fault with fault code 8 occurred previously. In standard mode, pressing the "Rapid heat-up" button only triggers one-off heat-up of the DHW cylinder.

Emergency mode is no longer active after an interruption to the power supply. The appliance tries again to heat with the heat pump.

You can avoid having to wait until the temperature increase time has elapsed (see chapter "Specification") by starting manual emergency heating mode.

#### Manual emergency heating mode

If a fault has occurred and no fault code is displayed, you can activate emergency heating mode.



Keep the "Plus" and "Minus" buttons pressed. In addition, press the "Menu" button and keep all three buttons pressed for 5 seconds.

The "Electrical emergency/booster heater" symbol appears. The "Service/fault" symbol flashes.

### 5. Cleaning, care and maintenance



**WARNING Electrocutation**

- Only clean the exterior of the appliance.
- Never open the appliance.
- Do not insert objects through the grille into the interior of the appliance.
- Never spray the appliance with water.
- Never spray water into the appliance.



**WARNING Injury**

Maintenance work, such as checking electrical safety, must only be carried out by a qualified contractor.

Appliance components	Care and maintenance tips
Casing	Use a damp cloth to clean the casing sections. Never use abrasive or corrosive cleaning agents.
Air intake grille / air discharge grille	Clean the air intake grille and air discharge grille every six months. Cobwebs or other dirt could obstruct the air supply to the appliance.
DHW cylinder	The DHW cylinder is equipped with a maintenance-free impressed current anode to protect it against corrosion. In order for the impressed current anode to protect the DHW cylinder in the appliance against corrosion, the appliance must not be disconnected from the power supply for more than 16 hours if the DHW cylinder is filled with water and the impressed current anode is not separately connected to a continuous power supply.
Electric emergency/booster heater	Have the electric emergency/booster heater descaled from time to time. This will extend the service life of the electric emergency/booster heater.
Safety equipment	Activate the valves at least every 6 months to prevent them from becoming blocked, e.g. by limescale deposits.
Evaporator	Have the evaporator regularly checked by a qualified contractor.
Condensate drain	Undo the condensate drain. Check that the condensate drain is clear and remove any dirt from the "Condensate drain" connection.

#### 5.1 Protective anode and battery change

The appliance is equipped with a maintenance-free impressed current anode that protects the cylinder from corrosion when it is connected to the power supply. At the factory, the appliance is fitted with rechargeable batteries that ensure the power supply to the impressed current anode in the case of a power failure. The appliance power supply must not be interrupted for more than 16 hours.

If the power supply is regularly interrupted by a switching contact or the security of supply is inadequate, the batteries of the impressed current anode must be replaced every three years. Failure to comply may result in damage to the appliance.

If regular interruptions to the power supply are not anticipated and there is security of supply, no maintenance of the batteries is required and the appliance is maintenance-free in this regard.

### 6. Troubleshooting

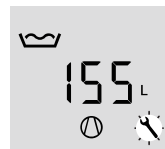
Problem	Cause	► Remedy
No hot water is available.	No power at the appliance.  A fuse in the distribution board has blown.	Check that the appliance is connected to the power supply.  Check whether the fuses in your distribution board have blown. Contact a qualified contractor if the fuse blows again after the appliance is connected to the power supply.
	The air intake or air discharge of the appliance is blocked.	Check the air intake grille and air discharge grille for dirt. Remove any dirt (see chapter "Maintenance and care"). Ensure that the supply and extract air flow are unimpeded.
	Outside the application limits, the appliance blocks the compressor. This could lead to reduced DHW convenience.	No action required. The appliance will restart the compressor automatically within the application limits.
	The DHW cylinder is not completely filled.	The appliance restarts automatically when the DHW cylinder has been filled.
	After DHW was drawn off previously, the appliance was not able to fully heat up the cylinder content.	No action required. Let the appliance complete the heat-up process.
	The safety pressure limiter has responded 5 times in 5 hours.	Notify a qualified contractor. The appliance can only be unlocked with a service programming unit.
The compressor is operational, but the fan is off.	If the appliance is in defrost mode, it may take up to an hour for the fan to switch on again.	No action required. However, if this continues for more than one hour, please consult a qualified contractor.
A safety valve is dripping.	The appliances are under water mains pressure. During the heat-up process, expansion water drips from a safety valve.	If water continues to drip when heating is completed, please inform your qualified contractor.
The condensate drain drips.	The surface temperature of the evaporator is lower than the dew point temperature of the ambient air. Condensate forms.	This is normal. No action required. The amount of condensate depends on the humidity level of the ambient air.
For indoor installation: The room temperature drops too low.		Operation of the appliance can cause the room temperature to fall by 1 to 3 °C. If the room temperature falls by more than 5 °C, check the room size (see chapter "Specification / Data table"). Increasing the room size by opening a door to another room will remedy this.
The "Service/fault" symbol is continuously illuminated.	See chapter "Fault codes".	Notify a qualified contractor. A continuously illuminated "Service/fault" symbol indicates that a fault has occurred, but the heat pump is heating nevertheless.
The "Service/fault" symbol flashes and the water does not heat up.	See chapter "Fault codes".	It is imperative that you notify a qualified contractor quickly. A flashing "Service/fault" symbol indicates that a fault has occurred and the heat pump is no longer heating.
The "Defrost" symbol is shown.	The appliance is in defrost mode.	No action required.
The "Heat pump" symbol is flashing.	There is a heat demand, but the compressor is locked out.	No action required. The compressor restarts automatically after the compressor lockout time has elapsed. The symbol stops flashing automatically.

# Troubleshooting

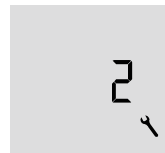
Problem	Cause	► Remedy
The "Electric emergency/booster heater" symbol is flashing.	A temperature controller has switched off the electric emergency/booster heater during rapid heat-up.	No action required. The appliance continues the rapid heat-up process using the heat pump. The symbol stops flashing when the controller re-enables the electric emergency/booster heater. The symbol goes out when the temperature throughout the DHW cylinder reaches the set rapid heat-up temperature.
The "Electric emergency/booster heater" symbol is illuminated but the electric emergency/booster heater is not operational.	The "Electric emergency/booster heater" symbol is illuminated when there is a demand. The internal controller of the electric emergency/booster heater may have ended electric heating. A possible cause may be a fault in the electric emergency/booster heater. A possible cause may be that the high limit safety cut-out has responded.	Have a qualified contractor check whether the controller of the electric emergency/booster heater is set correctly. The controller must be turned fully anti-clockwise. Have a qualified contractor check the high limit safety cut-out.

### Fault code


You can call up a fault code if the "Service/fault" symbol is flashing or continuously illuminated on the display.




▶ Repeatedly press the "Menu" button until the fault code is shown after set temperature 2.



Fault code appears

		Fault description	Remedy
2	Continuously on	The cylinder top sensor is faulty. The actual temperature display switches from the cylinder top sensor to the integral sensor. The appliance continues to heat without any loss of comfort. The mixed water volume cannot be calculated and is displayed as "--".	Notify a qualified contractor.
4	Continuously on	The integral sensor is faulty. In the event of a faulty integral sensor, the integral sensor is set to the value of the cylinder top sensor, and the mixed water volume is calculated using this value. The appliance continues to heat with a reduced start hysteresis. A mixed water volume is still calculated, based on the assumption that the cylinder top temperature is reached throughout the DHW cylinder.	Notify a qualified contractor.
6	Flashing	The cylinder top sensor and the integral sensor are faulty. The appliance no longer delivers heat.	Notify a qualified contractor.

		Fault description	Remedy
8	Flashing	The appliance has ascertained that the DHW cylinder has not been heated within the maximum temperature increase time, despite there being a demand.	You can temporarily continue to use the appliance by pressing the "Rapid heat-up" key to activate emergency heating mode. See chapter "Appliance description / Emergency mode".
16	Continuously on	A short circuit of the impressed current anode has occurred or the protective anode is faulty.	Immediately notify a qualified contractor, as the appliance is not protected against corrosion if the impressed current anode is faulty.
32	Flashing	The appliance is not being operated with a completely filled DHW cylinder. The appliance is not heating.  The anode current is interrupted. The appliance is not heating.	Fill the DHW cylinder of the appliance. The fault code disappears and the appliance starts.  Notify a qualified contractor.
64	Continuously on	The defrost temperature has not yet been reached after the maximum defrost time has lapsed. The compressor is faulty.	The fault is reset automatically once the evaporator temperature has risen to the defrost end temperature.  Notify a qualified contractor.
128	Continuously on	There is no communication between the controller and the programming unit. The most recently selected set values are active. The appliance continues to heat.	Notify a qualified contractor.
256	Flashing	Manually activated emergency mode (only electric emergency/booster heater active)	See chapter "Appliance description / Emergency mode".
512	Flashing	A fault has occurred in the refrigerant circuit.	Notify a qualified contractor.

If several faults occur, the fault codes are added together.

Example: If both the cylinder top sensor and the integral sensor are faulty, the display shows fault code 6 (=2+4).

### Application scenarios for emergency heating mode

If the appliance shows fault code 8, you can manually enable emergency heating mode. If a different fault occurred previously, but did not cause the appliance to shut down, the display may show a fault code that is the result of several faults added together.

Listed below are the fault codes which will allow you to enable emergency heating mode.


Fault code displayed	
8	8
10	Fault code 8 + fault code 2
12	8+4
24	8+16
26	8+2+16
28	8+4+16
138	8+2+128
140	8+4+128
152	8+16+128
154	8+2+16+128
156	8+4+16+128

When the appliance is operating in emergency heating mode, the fault code shown is incremented by 256.

# OPERATION

## Troubleshooting

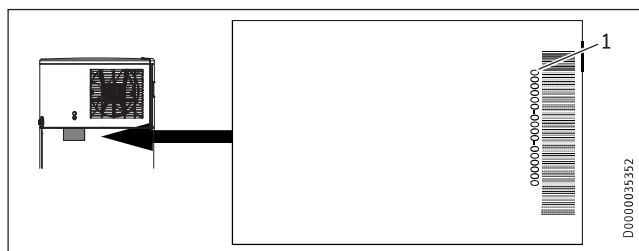
### E fault code

		Fault description	Remedy
E 1	Flashing	The temperature sensor on the air inlet is faulty.	Notify a qualified contractor.
E 2	Flashing	The temperature sensor on the evaporator is faulty.	Notify a qualified contractor.
E 4	Continuously on	The hot gas temperature sensor is faulty. The appliance continues to heat. To protect the appliance, the (possibly higher) set temperature is reduced to the set value for setback.	Notify a qualified contractor.
E 16	Continuously on	The high pressure switch has responded. Compressor heating mode is temporarily blocked. Compressor heating mode will continue as soon as the pressure has normalised.	Wait until the pressure has normalised.
E 32	Continuously on	An electrical fault has occurred.	Notify a qualified contractor.
E 64	Flashing	Evaporator temperature < Minimum evaporator temperature	Notify a qualified contractor.
E 128	Flashing	A permanent pressure switch fault has occurred. A pressure fault occurred multiple times within a defined pressure fault evaluation time.	Notify a qualified contractor.

### Notifying a qualified contractor

If you cannot remedy the fault, notify your qualified contractor. In Australia, contact us directly (1800153351). To facilitate and speed up your enquiry, please provide the serial number from the type plate (000000-0000-000000). The type plate can be found on the left, above the "DHW outlet" connection.

### Sample type plate



1 Number on the type plate