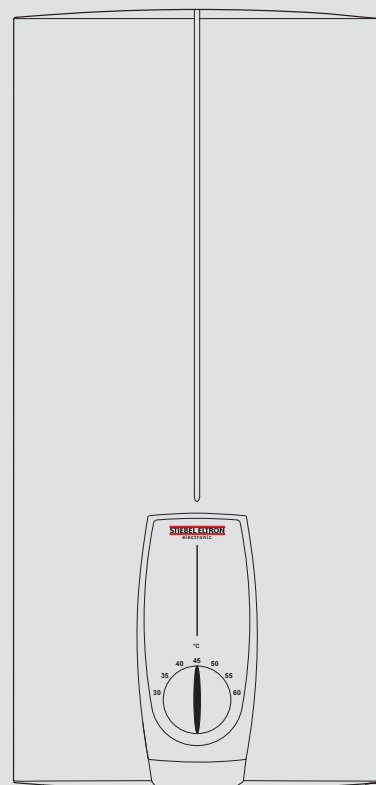


## OPERATING AND INSTALLATION

Electronically controlled instantaneous water heater

- » DHB-E 11 SLi electronic
- » DHB-E 13 SLi electronic
- » DHB-E 18 SLi 25 A electronic
- » DHB-E 18/21/24 SLi electronic
- » DHB-E 27 SLi electronic
- » DHB-E 13 A



**STIEBEL ELTRON**

**OPERATION**

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**WARRANTY | ENVIRONMENT AND RECYCLING**

# OPERATION

## 1. General information

The chapter "Operation" is intended for appliance users and heating contractors.

The chapter "Installation" is intended for heating contractors.



**Note**  
Read these instructions carefully before using the appliance and retain them for future reference. Pass on the 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 symbol shown on the left.

- ▶ Read these texts carefully.

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

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

### 1.3 Units of measurement

**Note**

All measurements are given in mm unless stated otherwise.

## 2. Safety

### 2.1 Correct use

The appliance is a pressure appliance for heating domestic hot water.

Any other use beyond that described shall be deemed inappropriate. Observation of these instructions is also part of the correct use of the appliance. Any changes or conversions to the appliance void any warranty.

### 2.2 Safety instructions

**Observe the following safety information and instructions.**

Only heating contractors should install and commission the appliance.

The contractor is responsible for adherence to all currently applicable regulations during installation and commissioning.

Operate this appliance only if it is fully installed and all safety equipment is fitted.

**CAUTION Burns**

There is a risk of scalding at outlet temperatures in excess of 43 °C.

**CAUTION Burns**

If operating with preheated water, e.g. from a solar thermal system, the DHW temperature may vary from the selected set temperature.

**WARNING Injury**

Where children or persons with limited physical, sensory or mental capabilities are to be allowed to control this appliance, ensure that this will only happen under supervision or after appropriate instructions by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

**Material damage**

Do not operate the appliance following an interruption to the water supply. This can destroy the bare wire heating system. Run water for at least a minute before restarting the appliance (see chapter "Troubleshooting").

### 2.3 CE designation

The CE designation shows that the appliance meets all the essential requirements:

- Low Voltage Directive (Council Directive 2006/95/EC).
- Electromagnetic Compatibility Directive  
The maximum permissible mains impedance is indicated in chapter "Specification / Data table".

# Appliance description

## 3. Appliance description

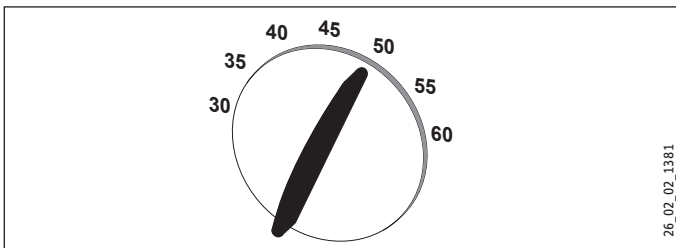
This electronically controlled instantaneous water heater with automatic output matching keeps the outlet temperature constant. This occurs regardless of the inlet temperature up to the output limit. The DHW outlet temperature can be freely selected.

The bare wire heating system is suitable for hard and soft water areas; it has low susceptibility to scale build-up. The heating system ensures quick and efficient DHW availability.

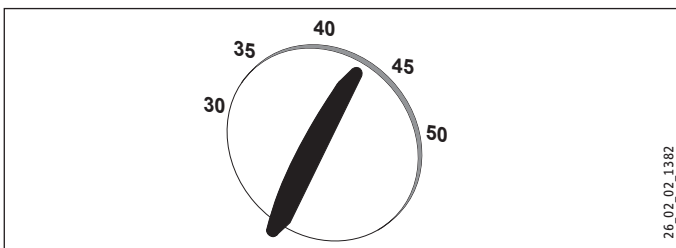
## 4. Operation

### 4.1 Temperature selector

DHB-E ... SLi



DHB-E ... A



Should the outlet temperature fail to reach the required level with the draw-off valve fully open and the temperature selector set to maximum, then more water flows through the appliance than can be heated by the heating element.

- ▶ Reduce the flow rate with the draw-off valve.

### 4.2 Draw-off capacities

Subject to season, varying maximum mixed water or draw-off capacities result from different cold water temperatures. Further information can be found in the chapter "Specification".

### 4.3 Thermostatic valve

We recommend adjusting the appliance to the maximum temperature setting.

### 4.4 Temperature limit/Anti-scalding protection

The maximum outlet temperature for the appliance can be limited to 43 °C. Refer in this case to your local heating contractor.

## 5. Cleaning, care and maintenance

- ▶ Never use abrasive or corrosive cleaning agents. A damp cloth is sufficient for cleaning the appliance.

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

## 6. Troubleshooting



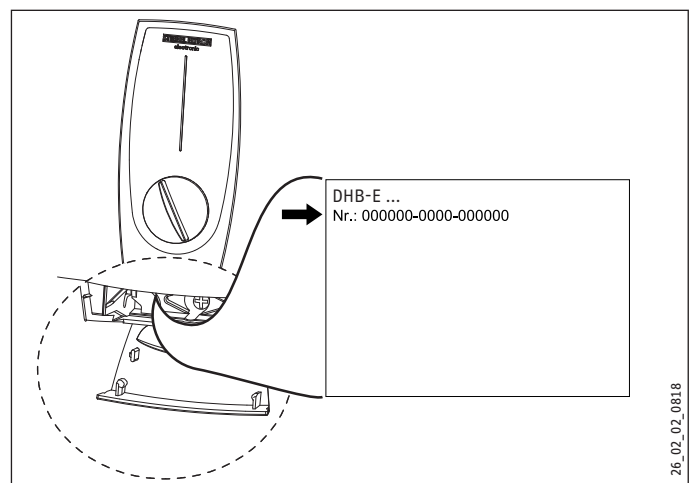
### Material damage

Following an interruption of the water supply, recommission the appliance by carrying out the following steps, in order to prevent the destruction of the bare wire heating system.

- ▶ Disconnect the appliance from the power supply by removing the fuses/tripping the MCBs.
- ▶ Open the tap until the appliance and its upstream cold water inlet line are free of air.
- ▶ Switch the mains power back ON again.

Fault	Cause	Remedy
The appliance will not start in spite of a fully open DHW valve.	There is no voltage.	Check the fuse/MCB in your fuse box/distribution panel.
	Starting volume is not achieved. The perlator in the tap or shower head is scaled up or dirty.	Clean and/or descale the perlator or the shower head.
	The heating system is faulty.	Contact your heating contractor.
	The air sensor detects air in the water and briefly switches the heater off.	The appliance restarts automatically after one minute.
Required temperature > 45 °C is not achieved.	Cold water inlet temperature is > 45 °C.	Reduce the cold water inlet temperature.

If you cannot remedy the fault, contact your heating contractor. For better and faster help, provide him with the serial number from the type plate (no. 000000-0000-000000):



# INSTALLATION

## 7. Safety

### 7.1 General safety instructions

All required steps to complete commissioning must be carried out by a heating contractor. During this process, these installation instructions must be observed.

We guarantee trouble-free function and operational reliability only if the original accessories and spare parts intended for the appliance are used.

### 7.2 Instructions, standards and regulations



**Material damage**

Observe the type plate. The stated voltage must match the mains voltage.



**WARNING Risk of electrocution**

All electrical connection and installation work must be conducted in accordance with VDE regulations (DIN VDE 0100) [or local regulations], the rules of your local power supply utility and relevant national and local regulations.



**WARNING Risk of electrocution**

Connection to the power supply is only possible as a fixed connection. The appliance must be able to be separated from the mains power supply by an isolator that disconnects all poles with at least 3 mm contact separation.



**Note**

Observe all national and local instructions and regulations relating to water connection.

- The protection IP 25 (hoseproof) can only be ensured with a correctly fitted cable grommet.
- The specific electrical resistant of the water used must not fall below that stated on the type plate. In a linked water network, observe the lowest electrical water resistance (see chapter "Application areas"). Your water supply utility will advise you of the specific electrical water resistance or conductivity.

### 7.3 Water installation

#### 7.3.1 Cold water line

Permissible materials: Galvanised steel pipe, stainless steel pipe, copper pipe or plastic pipe.

#### 7.3.2 DHW line

Permissible materials: Stainless steel pipe, copper pipe or plastic pipe.



**Material damage**

If plastic pipework is used, observe the most extreme operating and fault conditions that can occur in the appliance.



**Note**

Observe the plastic pipe manufacturer's instructions.

- A safety valve in the hot water pipe is not permissible.
- Never operate with valves intended for open vented appliances.

### 7.4 Risk of frost

The installation of the appliance must be carried out in a room free from the risk of frost.

- ▶ Store the dismantled appliance in a room free from the risk of frost, as water residues remaining inside the appliance can freeze and cause damage.

### 8. Appliance description

The bare wire heating system is suitable for hard and soft water areas. The heater has low susceptibility to scale build-up.

The appliance is suitable for heating cold water or for reheating preheated water. For temperatures, see chapter "Specification / Data table".

The max. inlet temperature for reheating must not be exceeded. There will be no reheating, if the inlet temperatures exceed this maximum value.

Observe the "Max. inlet temperature". The appliance can be damaged at higher temperatures. If a "central thermostat" is installed (see chapter "Installation / Accessories"), you can limit the "Max. inlet temperature".

The outlet temperature can be infinitely adjusted. The electronic control unit enables automatic matching of the electrical output corresponding to the selected temperature subject to the actual throughput.

#### 8.1 Standard delivery

- Mounting bracket
- Installation template
- Twin nipple
- Cross-piece
- Tee
- Flat packing
- Sieve
- Flow limiter
- Plastic profile washer
- Plastic cap
- Flexible plastic couplings
- Cap and back panel guides

#### 8.2 Installation

The following conditions have been prepared for the appliance at the factory:

- Power supply from "below", installation on unfinished walls
- Water connection, installation on unfinished walls

The appliance must be fitted vertically, over or undersink, to a solid wall.

#### 8.3 Temperature limiting/anti-scalding protection

The maximum temperature can be limited to 43 °C via the user interface on the appliance cap. The following steps are necessary for this procedure:

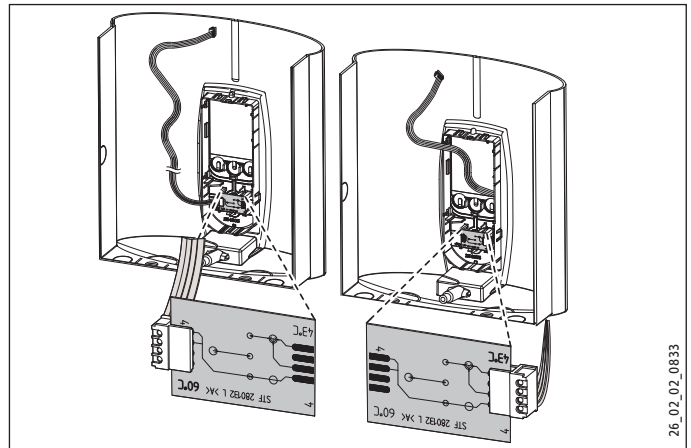
- ▶ Remove the appliance cap.
- ▶ Remove the electronic PCB from the user interface on the appliance cap. Be careful of the snap-on hooks.
- ▶ Move the plug from left to right (position "43 °C").
- ▶ Refit the user interface, ensuring the snap-on hooks click into place. Observe the positions of the pushbutton and shaft.



#### CAUTION Burns

If operating with preheated water, the set temperature limit and anti-scalding protection may be ineffective.

- ▶ In this case, restrict the temperature at the upstream central thermostatic valve; see chapter "Accessories".



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#### 8.4 Installation versions

The following installation versions are possible/permissible:

- Power supply for unfinished walls - from above
- Power supply for finished walls
- Water installation for finished walls
- Installation with repositioned appliance cap
- Installation for offset tiles
- Installation of a load shedding relay

#### 8.5 Accessories

##### Taps

- WKMD – twin-lever pressure-tested kitchen tap
- WBMD – twin-lever pressure-tested bath tap

##### Plug G ½ A

These plugs are required if you use twin-lever pressure-tested taps for finished walls other than the ones recommended by us.

##### Installation sets for installation on finished walls

- Solder fitting – copper pipe for solder connection Ø 12 mm.
- Compression fitting – copper pipe.
- Compression fitting – plastic pipe (suitable for Viega: Sanfix-Plus or Sanfix-Fosta).

##### Universal mounting frame

- Mounting frame with electrical wiring.

##### Pipe set for undersink appliances

The set for undersink installation is required if you want to have the water connections (G ¾ A) above the appliance.

# INSTALLATION

## Installation

### Pipe set, offset installation

This pipe set with pipe bends is required if you want to have the appliance vertically offset against the water connection by approx. 90 mm downwards.

### Pipe set for replacing a gas water heater

This pipe set is required if the installation has existing gas water heater connections (cold water connection on the left and DHW connection on the right).

### DHB replacement pipe set

2 water couplings. These allow the appliance to be connected to the available water plug-in connections of a DHB.

### Load shedding relay LR 1-A

The load shedding relay for installation in the electric distribution board enables priority control of the instantaneous water heater when electric storage heaters are being operated simultaneously, for example.

### ZTA 3/4 – Central thermostatic valve

Thermostatic valve for centralised premixing, e.g. an instantaneous water heater in conjunction with a solar thermal system.

## 9. Installation

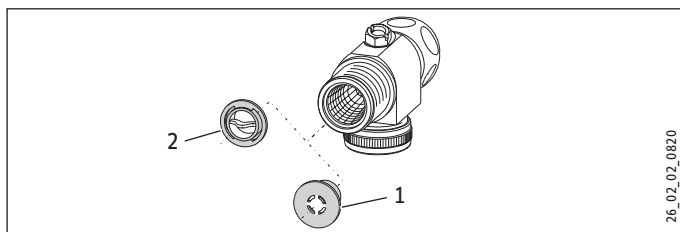
### 9.1 Installation information

#### 9.1.1 Flow pressure

If the flow rate required for the appliance to switch on is not achieved even with the tap fully open, remove the flow limiter. Replace it with the plastic profile washer. If required the pressure in the water installation can also be raised.



**Note**  
For the thermostatic valve to function correctly, the flow limiter for this valve must not be replaced with the plastic profile washer.



- 1 Flow limiter
- 2 Plastic profile washer

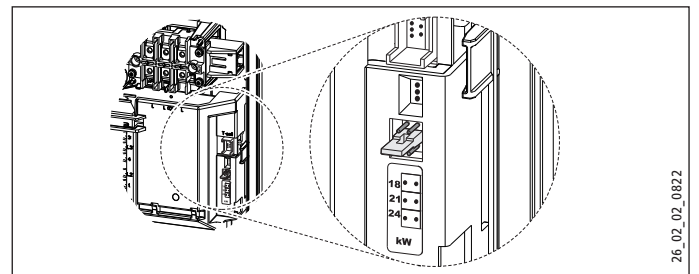
#### 9.1.2 Flexible water connection lines

If the appliance is connected with flexible water connection lines, ensure that the bayonet fittings of the pipe bends do not become twisted inside the appliance.

#### 9.1.3 Appliance with changeover connected load

The appliance DHB-E 18/21/24 SLi is set to 21 kW when delivered. If the appliance is installed with a different output, take the following steps:

- ▶ Re-plug the coding card according to the selected output; for selectable output and fuse protection of the appliance see "Specification".
- ▶ Mark the selected output on the type plate using a permanent marker.
- ▶ Install the flow limiter with a rating corresponding to that of the appliance. The colour of the flow limiter is given in the table "Specification".



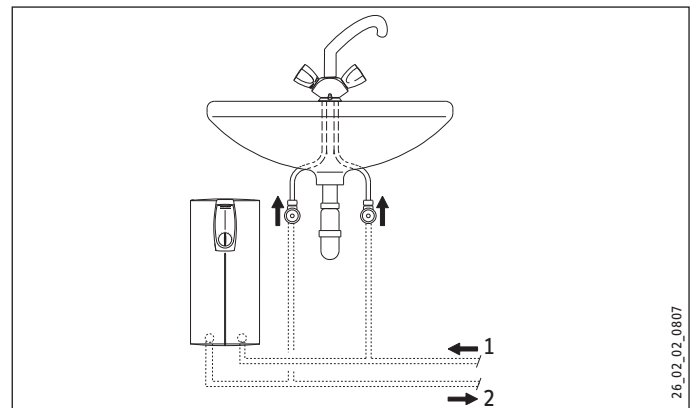
## 10. Installation

### 10.1 Installation location

The appliance is exclusively designed for installation on a solid wall. Ensure that the wall has a sufficient load-bearing capacity.

Always install the appliance vertically (over or undersink) in a room free from the risk of frost.

#### 10.1.1 Undersink

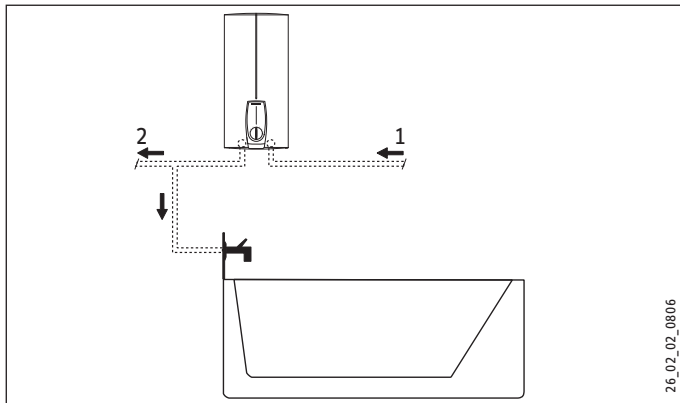


- 1 Cold water inlet
- 2 DHW outlet

# INSTALLATION

## Installation

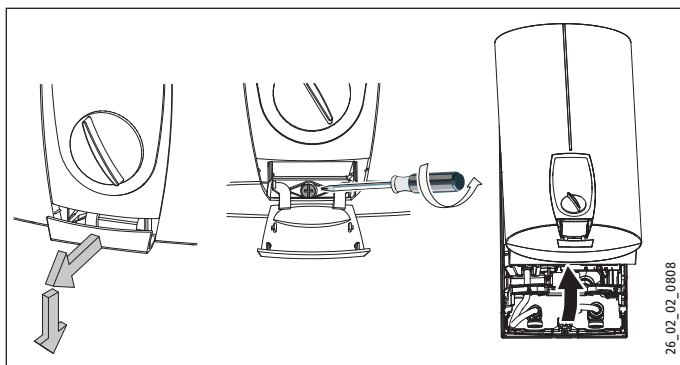
### 10.1.2 Oversink



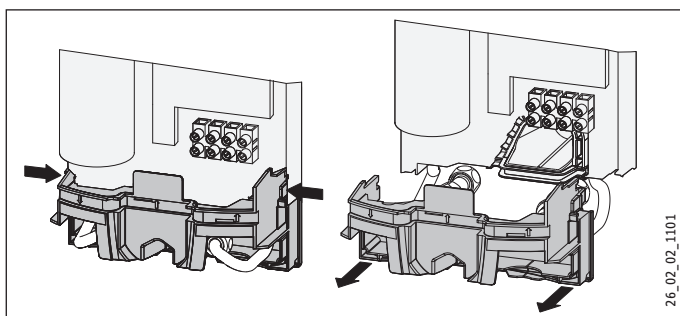
- 1 Cold water inlet
- 2 DHW outlet

## 10.2 Installation

### 10.2.1 Opening the appliance



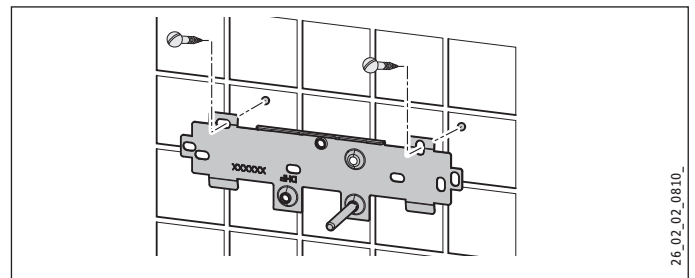
### 10.2.2 Removing the back panel



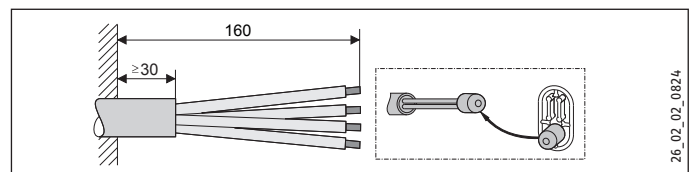
- ▶ Press the two locking hooks on the r.h. and l.h. side and remove the lower part towards the front.

### 10.2.3 Fitting the mounting bracket

- ▶ Mark out the holes for drilling using the installation template. If the appliance is to be installed with water connections for finished walls, the fixing hole in the lower part of the template must also be marked out.
- ▶ Drill the holes and secure the mounting bracket with two screws and two rawl plugs. The screws and rawl plugs are not part of the standard delivery.

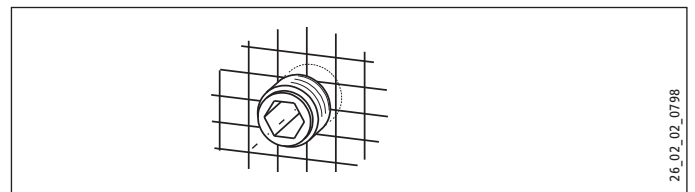


### 10.2.4 Fitting the power cable



- ▶ Prepare the power cable.
- ▶ Use the plastic cap as an installation aid.

### 10.2.5 Inserting the twin nipples



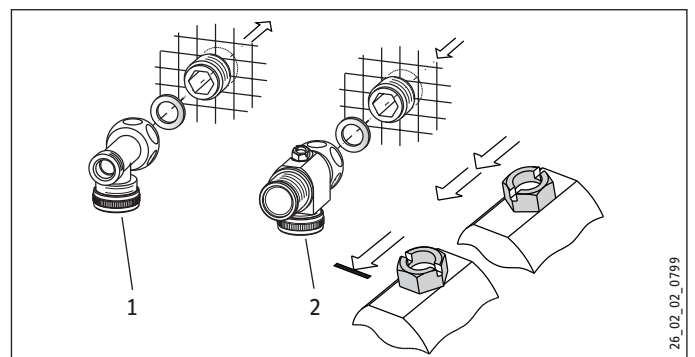
### 10.2.6 Preparing the water connection

- ▶ Secure the tee and cross-piece to the twin nipples with flat packing.
- ▶ Thoroughly flush the cold water supply line.



#### Note

Never use the three-way shut-off valve to reduce the flow rate; it is only designed to shut off a circuit.



- 1 Tee
- 2 Cross-piece



# INSTALLATION

## Installation

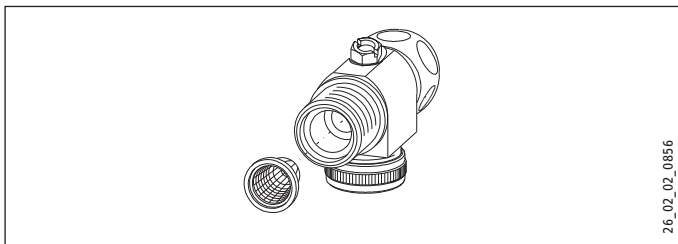
### 10.2.7 Fitting the sieve

- ▶ Fit the sieve provided in the cold water inlet of the appliance.



#### Note

The sieve must always be fitted for the function of the appliance to be guaranteed. If an appliance is being replaced during installation, ensure that a sieve is available.



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### 10.2.8 Installing the DMB flow limiter

- ▶ Position the flow limiter provided in the cold water inlet of the appliance.

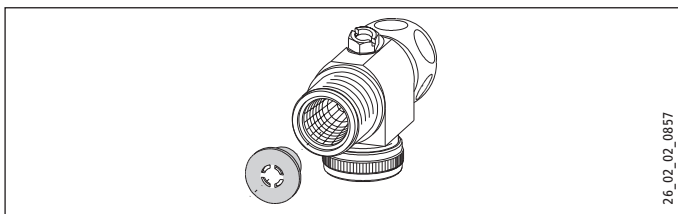
A second flow limiter is provided with the DHB-E 18/21/24 SLi. Install the flow limiter with an output corresponding to that of the appliance.

Flow limiter, see "flow rate limit" in chapter "Specification":

4.0 l/min = pink

7.5 l/min = blue

8.5 l/min = green

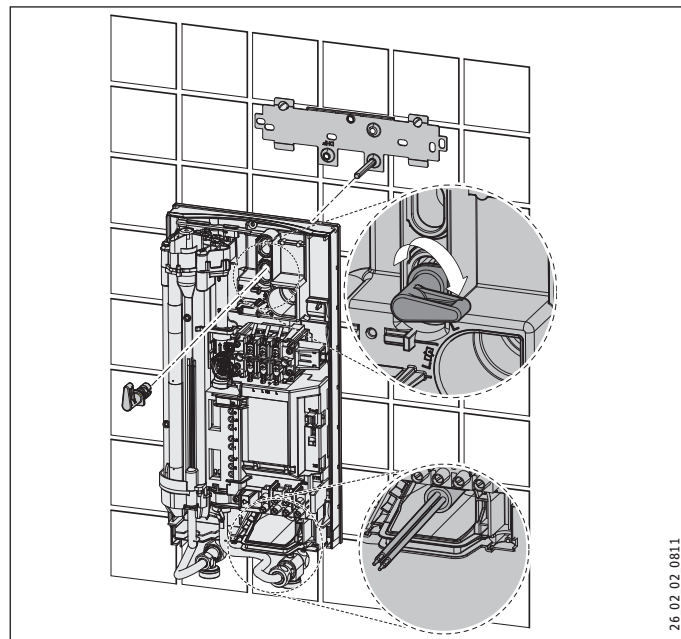


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### 10.2.9 Mounting the appliance

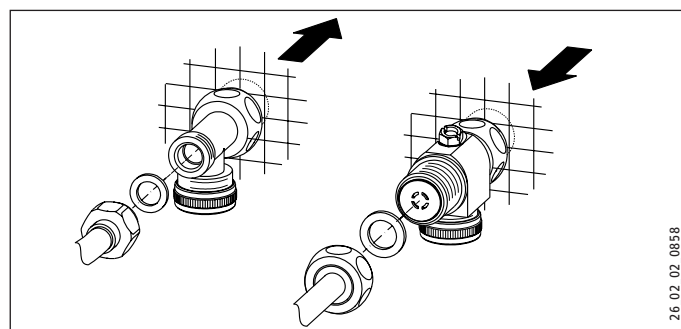
The cable grommet pointing towards the wall may hinder the mounting of the appliance close to the wall. To prevent such problems, it is advisable to briefly press the cable grommet from behind into the back panel, to reduce the stiffness or the grommet.

- ▶ Remove the fixing toggle from the upper part of the back panel (diagram "Mounting the appliance").
- ▶ Route the power cable from behind through the cable grommet until it rests against the cable sheath. Align the power cable. If the cross-section of the power cable is greater than 6 mm, enlarge the hole in the cable grommet (see also "Power supply for larger cross-sections").
- ▶ Push the appliance over the stud of the mounting bracket, so that it breaks through the soft seal. If necessary pierce the soft seal with a screwdriver.
- ▶ Put the fixing toggle onto the stud of the mounting bracket that penetrates the back panel.
- ▶ Press the back panel firmly into place and lock the fixing toggle by turning it through 90°.



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### 10.2.10 Finalising the water connection



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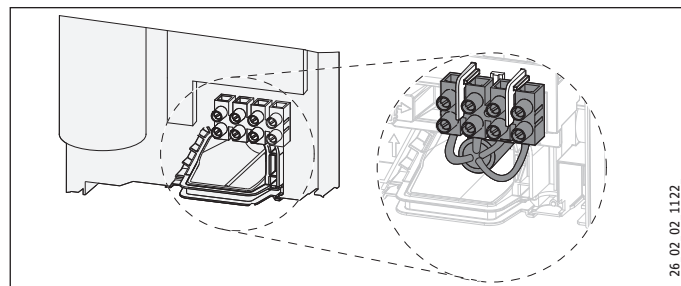
### 10.2.11 Connecting the power supply

- ▶ Connect the power cable to the mains terminal (see chapter "Wiring diagram").



#### WARNING Risk of electrocution

Ensure that the appliance is connected to earth.

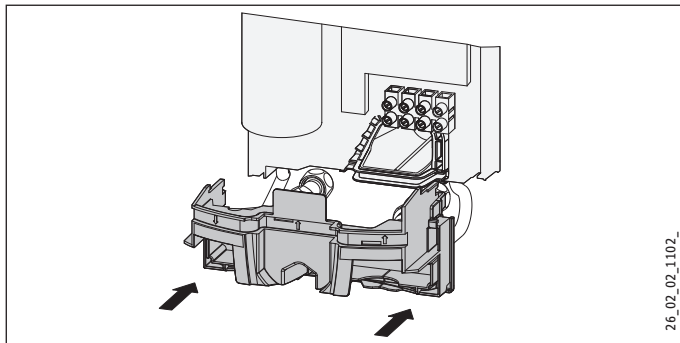


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# INSTALLATION

## Installation

### 10.2.12 Fitting the lower back panel



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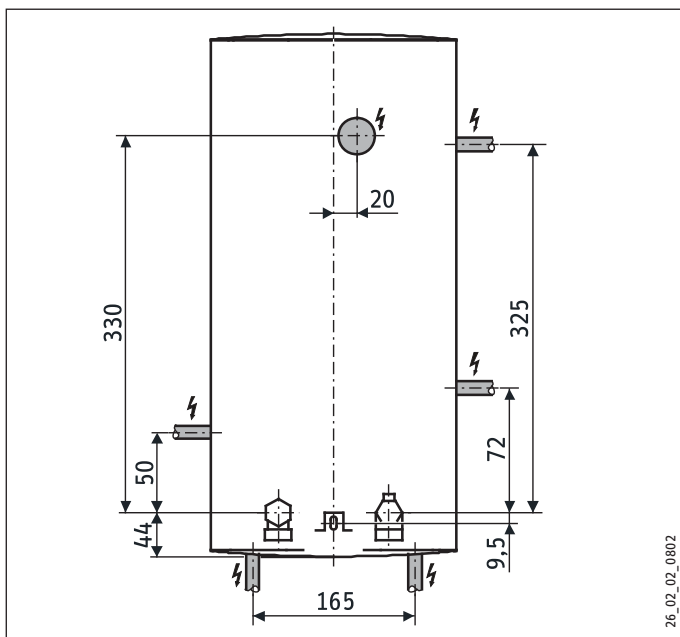
### 10.2.13 Completing the installation process

- ▶ Align the mounted appliance by loosening the fixing toggle, aligning the power supply and back panel, and then retightening the fixing toggle. If the back panel of the appliance is not flush against the wall, the appliance can be fixed with a screw in the lower part.

## 10.3 Installation versions

### 10.3.1 Power supply from above for unfinished walls

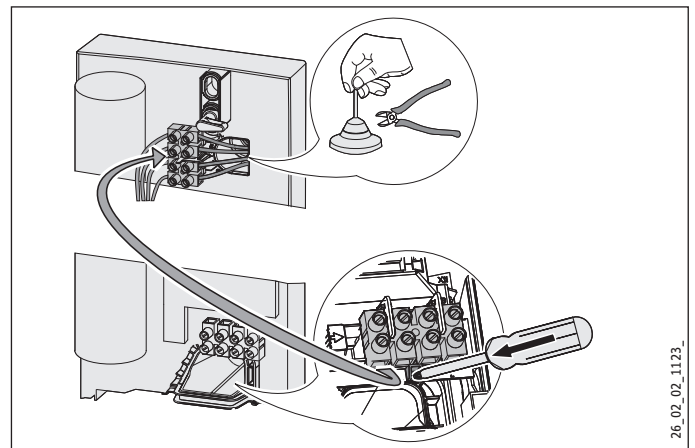
The following diagram shows the dimensions for the power supply from above.



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To connect the power supply, take the following steps:

- ▶ Open out the cable grommet to match the cross-section of the power cable.
- ▶ Push down and remove the locking hook that secures the mains terminal.
- ▶ Move the mains terminal in the appliance from the bottom to the top and click into place.



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### 10.3.2 Power supply for finished walls

The appliance can also be connected if the power supply has been routed over finished walls. This applies to the connection from below and above. Take the following steps:

- ▶ Cut or break knock-outs in the back panel and appliance cap. Possible knock-out points can be seen in the diagram "Dimensions for power supply".

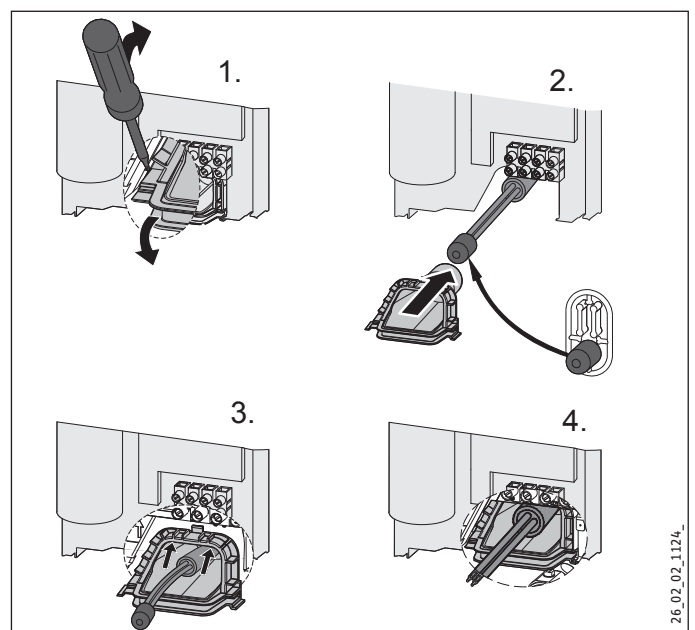


#### Note

If the appliance has been connected with a power supply on finished walls, the type of protection on the type plate must be changed from IP 25 to IP 24. Use a permanent marker for that.

- ▶ Cross out "IP 25" and mark the box "IP 24".

### 10.3.3 Power supply for large cross-sections



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If cables with a large cross-section are used, the cable grommet can be fitted after the appliance has been installed. Take the following steps:

- ▶ Before installing the appliance, use a screwdriver to push the cable grommet out.

# INSTALLATION

## Installation

- ▶ Push the appliance over the stud of the mounting bracket, so that it breaks through the soft seal.
- ▶ Push the fixing toggle onto the stud of the mounting bracket that penetrates the back panel.
- ▶ Press the back panel firmly into place and lock the fixing toggle by turning it through 90°.
- ▶ Push the cable grommet over the power cable. For this, use the installation aid. For a power cable of 10 or 16 mm<sup>2</sup>, the hole in the cable grommet must be enlarged. Click the cable grommet into place in the back panel.

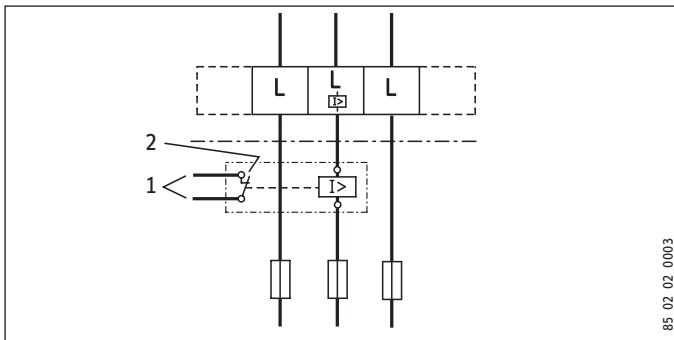
### 10.3.4 Connecting a load shedding relay

Install the load shedding relay in conjunction with other electric appliances, e.g. electric storage heaters. The relay responds when the instantaneous water heater starts. The load shedding relay is available from Stiebel Eltron as a special accessory.



**Note**

Connect the phase that switches the load shedding relay to the indicated terminal of the mains terminal in the appliance.

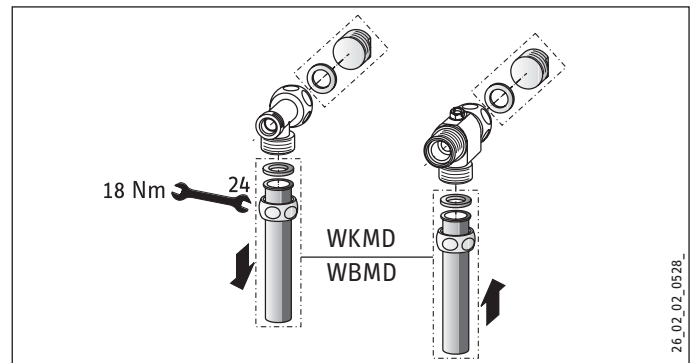


- 1 Control cable to the contactor of the second appliance (e.g. electric storage heater).
- 2 Control contact, opens when switching the instantaneous water heater on.

### 10.3.5 Water installation for finished walls

Suitable pressure taps WKMD or WBMD for installation on finished walls are available as special accessories.

- ▶ Fit the water plugs with gaskets to seal the connection (below the plaster). With Stiebel Eltron pressure taps, plugs and gaskets are part of the standard delivery. For third party pressure taps, plugs and gaskets can be ordered as special accessories.
- ▶ Install the tap.
- ▶ Push the lower part of the back panel under the connection pipes of the pressure tap and click it into place in the back panel.
- ▶ Secure the connection pipes to the appliance.



### 10.3.6 Water installation for finished walls with solder/compression fitting

With the special accessories "solder fitting" or "compression fitting" (see "Accessories"), copper or plastic pipes can be connected in installations for finished walls.

With special accessory "solder fitting", a threaded connection with on-site 12 mm copper pipes is possible. For this the following steps are required:

- ▶ Push the union nuts over the connection pipes.
- ▶ Solder the inserts to the copper pipes.
- ▶ Push the lower part of the back panel under the connection pipes and click it into place in the back panel.
- ▶ Secure the connection pipes to the appliance.



**Note**

Observe the valve manufacturer's installation instructions.

### 10.3.7 Water installation for finished walls, fitting the appliance cap

The following steps are necessary to complete the appliance cap installation.

- ▶ Cleanly break out the knock-out in the appliance cap. If necessary, use a file.
- ▶ Break the tabs out of the cap guides.



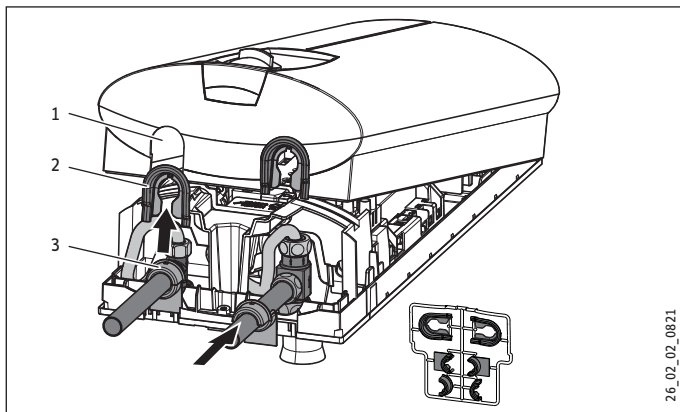
**Note**

The appliance can be sealed by fitting the cap guides with tabs if the tap pipes are slightly offset. The back panel guides are not required in this case.

- ▶ Click the cap guides provided into place in the knock-outs.
- ▶ Position the back panel guides on the pipes and push them together. Then push the guides until they meet the back panel.
- ▶ Secure the back panel at the bottom with a screw. This is also relevant if flexible water supply systems are used.

# INSTALLATION

## Installation

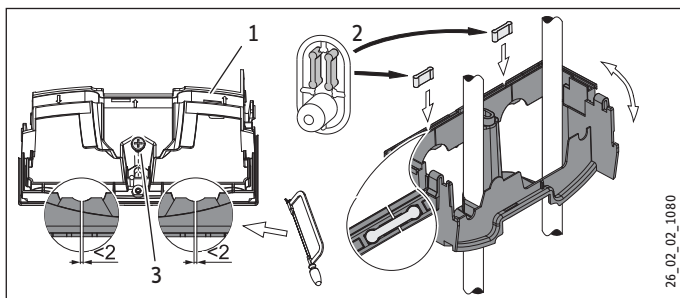


- 1 Knock-out
- 2 Cap guides
- 3 Back panel guides

### 10.3.8 Installing lower part of back panel

If using threaded connections for finished walls, the lower part of the back panel can also be installed after fitting the taps/valves. To do this, carry out the following steps:

- ▶ Cut open the lower part of the back panel.
- ▶ Fit the lower part of the back panel by bending it out at the sides and guiding it over the pipes.
- ▶ Insert the connection pieces from behind into the lower part of the back panel.
- ▶ Click the lower part of the back panel into place.
- ▶ Secure the lower part of the back panel with a screw.



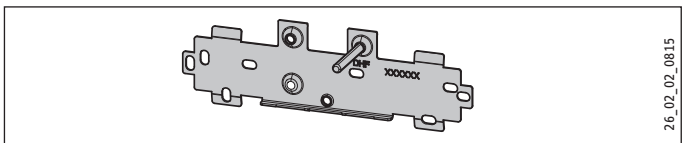
- 1 Lower part of back panel
- 2 Connection piece from the pack
- 3 Screw

### 10.3.9 Installation in case of appliance replacement

An existing mounting bracket can be used when replacing Stiebel Eltron appliances (except "DHF"). For this, open a suitable knock-out in the back panel for the stud of the existing mounting bracket.

If the appliance is being installed in place of a DHF, move the stud on the mounting bracket as shown in the diagram "Mounting bracket for DHF appliance replacement". The stud cuts its own groove. Then turn the mounting bracket through 180° to be mounted on the wall. The logo "DHF" is then turned towards the reader.

If replacing a third party appliance, suitable holes for rawl plugs can be used.



### 10.3.10 Undersink installation with turned appliance cap

The appliance cap can be positioned on the back panel turned through 180°. This is particularly advantageous for undersink installation. For this take the following steps:

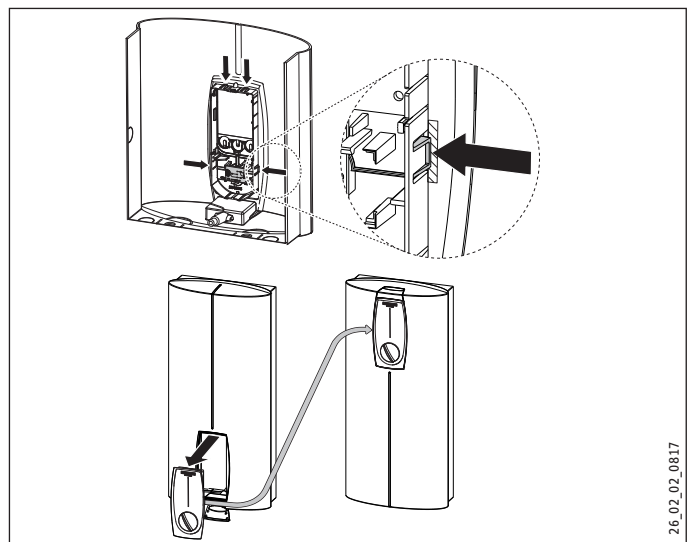
- ▶ Remove the user interface from the appliance cap by pressing the locking hooks.
- ▶ Turn the appliance cap and click the user interface into place, ensuring that all locking hooks click into place. To install the user interface more easily, press against the inner side of the appliance cap (in the shaded area, see diagram "Appliance cap for undersink installation").



#### Material damage

Never install a user interface with a faulty locking hook. Otherwise the safety of the appliance cannot be guaranteed.

- ▶ Plug the set value transducer cable into the "set temperature" PCB; see "Commissioning".
- ▶ Hook the appliance cap in at the bottom and pivot it up onto the back panel. Ensure the all-round seal of the back panel sits tightly by pushing the cap gently forwards and back.
- ▶ Close the appliance with the screw in the cap.

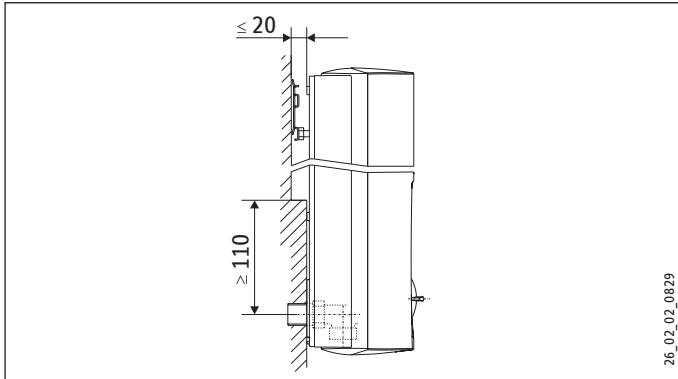


# INSTALLATION

## Commissioning

### 10.3.11 Installation for offset tiles

This appliance can be installed where tiles are offset. See diagram for maximum tile offset and minimum contact area of the appliance. Adjust the wall clearance and lock the back panel with the fixing toggle by turning it clockwise through 90°.

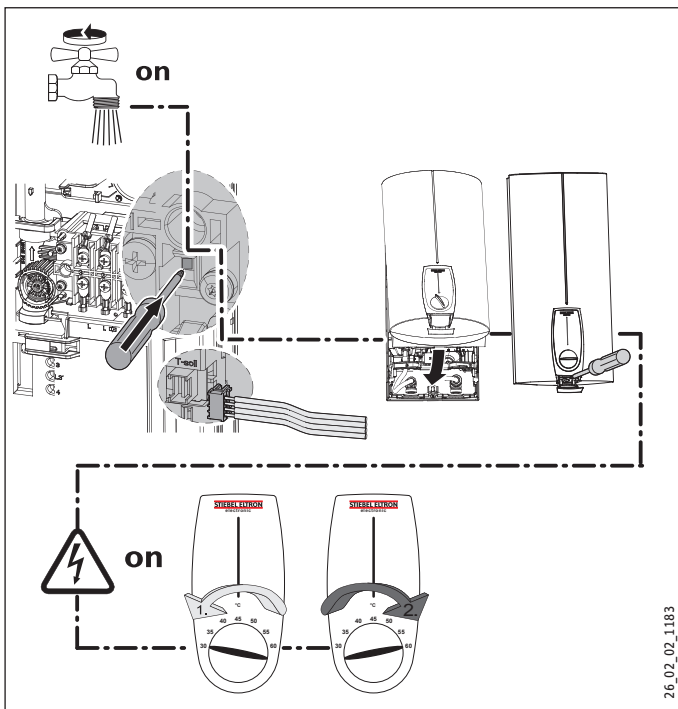


## 11. Commissioning



### WARNING Risk of electrocution

Commissioning must only be carried out by an authorised contractor in accordance with safety regulations.



- ▶ Open and close all connected draw-off valves several times, until all air has been vented from the pipework and the appliance.
- ▶ Activate the safety pressure switch at flow pressure by pressing the reset button. The appliance is supplied with the safety pressure limiter deactivated.
- ▶ Push the temperature selector plug into the "set temperature" PCB.
- ▶ Fit the appliance cap and secure with a screw.
- ▶ Switch the mains power ON.

- ▶ Calibrate the temperature by turning the temperature selector as far as possible clockwise and then anti-clockwise.
- ▶ Check the appliance function.
- ▶ Remove the protective foil from the user interface.

## 12. Appliance handover

- ▶ Explain the appliance function to the user and familiarise him/her with its operation.
- ▶ Make the user aware of potential dangers, especially the risk of scalding.
- ▶ Hand over these instructions to the user for safe-keeping.

# INSTALLATION

## Troubleshooting

### 13. Troubleshooting



#### WARNING Risk of electrocution

To test the appliance, it must be supplied with power.

#### 13.1 Display options LED diagnostic "traffic lights"

##### Display options

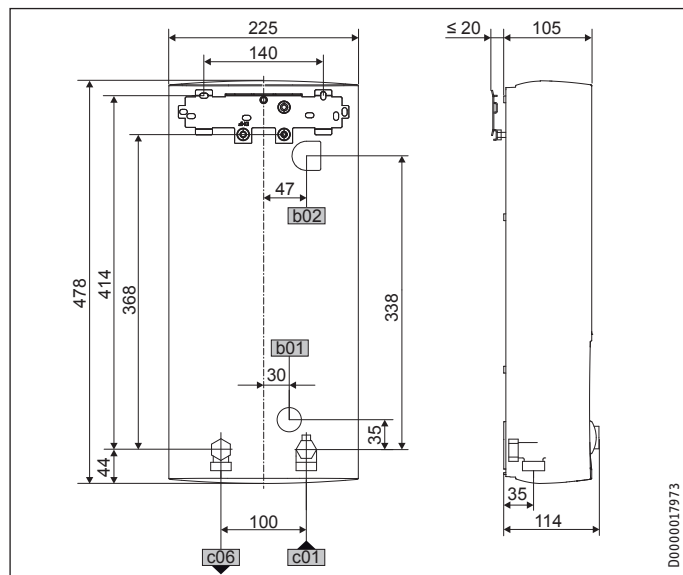
	red	illuminates in case of faults
	yellow	illuminates when the appliance is heating water
	green	flashing: The appliance is supplied with power

#### 13.2 Fault table

Fault / LED diagnostic "traffic light" display	Cause	Remedy
The appliance does not start.	The shower head / perlators are scaled up.	Descale or if necessary replace the shower head / perlators.
Inadequate flow rate.	The sieve in the appliance is dirty.	Clean the sieve.
Set temperature is not achieved.	One phase down.	Check the MCB/fuse in your fuse box.
Heating does not switch on.	The air sensor detects the presence of air in the water and briefly switches the heater off.	The appliance restarts after one minute.
	No hot water and no "traffic light" display.	The MCB/fuse has responded/blown. Safety pressure limiter AP 3 has tripped.
		Check the MCB/fuse in your fuse box. Remove the cause of the fault (e.g. faulty pressure washer).
		Protect the system against overheating by opening a draw-off valve downstream of the appliance for 1 minute. This depressurises and cools down the heating system. Activate the safety pressure switch at flow pressure by pressing the reset button.
	Traffic light display: Green flashing No hot water at flow rate of > 3 l/min.	The PCB is faulty. Flow sensor (DFE) is not plugged in.
		Check the PCB and replace if necessary. Plug the flow sensor plug back in.
	The set temperature is not achieved.	Flow sensor DFE is faulty.
		Check the flow sensor and replace if necessary.
		The set value transducer or connecting cable is faulty or the connecting cable is not attached. Temperature limiting is activated.
	Traffic light display: Yellow constantly ON; green flashing No hot water at flow rate of > 3 l/min.	The high limit safety cut-out has responded or its lead is broken. The heating system is faulty.
		Check the high limit safety cut-out and replace if necessary. Measure the resistance of the heating system and replace if necessary.
		The PCB is faulty.
	Traffic light display: yellow constantly ON; green flashing	The outlet sensor is faulty.
		Check the connection and replace the outlet sensor if necessary.
	Set temperature is not achieved.	Appliance operates at its output limit.
		Reduce the flow rate or install the flow limiter.
	Traffic light display: red constantly ON; green flashing	The outlet sensor is faulty.
		Check the connection and replace the outlet sensor if necessary.
	No hot water	The cold water sensor is faulty.
	Required temperature > 45 °C is not achieved.	The cold water inlet temperature exceeds 45 °C.
		Check the PCB and replace if necessary. Reduce the cold water inlet temperature to the appliance.

## 14. Specification

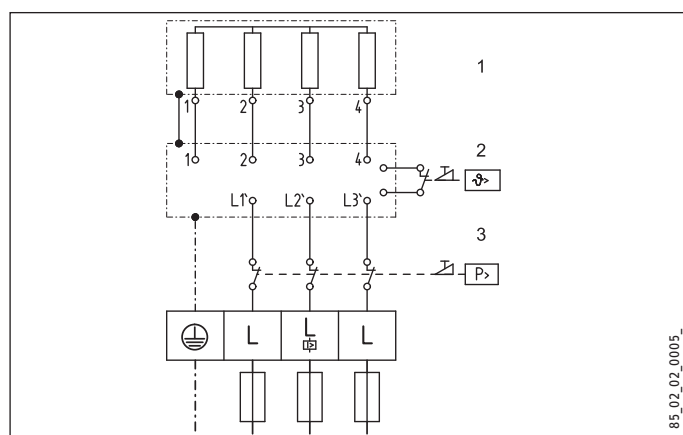
### 14.1 Dimensioned drawing



b01	Entry electrical cables		
b02	Entry electrical cables 1		
c01	Cold water inlet	male thread	G 1/2 A
c06	DHW outlet	male thread	G 1/2 A

### 14.2 Wiring diagram

3/PE ~ 380 - 415 V



- 1 Heater
- 2 High limit safety cut-out
- 3 Safety pressure limiter

### 14.3 Mixed water volume / outlet volume

Available temperature approx. 38 °C in the shower, for hand washing, filling the bath etc.

#### Mixed water volume

Appliance		kW	11	18	21	24	27
Cold water inlet temperature	6 °C	l/min	5.0	8.0	9.4	10.7	12.1
	10 °C	l/min	5.7	9.2	10.7	12.3	13.8
	14 °C	l/min	6.6	10.7	12.5	14.5	16.1

Outlet temperature approx. 60 °C for the kitchen sink and when using thermostatic valves.

#### Outlet volume

Appliance		kW	11	18	21	24	27
Cold water inlet temperature	6 °C	l/min	2.9	4.8	5.6	6.4	7.2
	10 °C	l/min	3.2	5.2	6.0	6.9	7.7
	14 °C	l/min	3.4	5.6	6.5	7.5	8.4

The values in the table are relative to a rated voltage of 400 V. The outlet volume is subject to the available supply pressure and the available mains voltage.

### 14.4 Application areas

#### Specific electrical resistance and specific electrical conductivity

Cold water inlet temperature ≤ 25 °C

	Standard value at 15 °C	at 20 °C		at 25 °C			
		≥ 900	≥ 1000	≥ 800	≥ 890	≥ 735	≥ 815
Resistance	Ω cm	≥ 900	≥ 1000	≥ 800	≥ 890	≥ 735	≥ 815
Conductivity	mS/m	≤ 111	≤ 100	≤ 125	≤ 112	≤ 136	≤ 123
Conductivity	µS/cm	≤ 1110	≤ 1000	≤ 1250	≤ 1120	≤ 1360	≤ 1230

Preheated water > 25 °C

	Standard value at 15 °C	at 20 °C		at 25 °C			
		≥ 1200	≥ 1300	≥ 1070	≥ 1175	≥ 985	≥ 1072
Resistance	Ω cm	≥ 1200	≥ 1300	≥ 1070	≥ 1175	≥ 985	≥ 1072
Conductivity	mS/m	≤ 83	≤ 77	≤ 94	≤ 85	≤ 101	≤ 93
Conductivity	µS/cm	≤ 830	≤ 770	≤ 940	≤ 850	≤ 1010	≤ 930

### 14.5 Pressure drop

#### 14.5.1 Taps/valves

Pressure drop at flow rate 10 L/min

Mono-lever mixer tap, approx.	MPa	0.04 - 0.08
Thermostatic valve, approx.	MPa	0.03 - 0.05
Hand shower, approx.	MPa	0.03 - 0.15

#### 14.5.2 Sizing the pipework

When calculating the size of the pipework, a pressure drop for the appliance of 0.1 MPa is recommended.

### 14.6 Fault conditions

In case of faults, loads up to a maximum of 95 °C at a pressure of 1.2 MPa can occur temporarily in the installation.

### 14.7 Country-specific approvals and certifications

Test symbols can be seen on the type plate.

# INSTALLATION Specification

## 14.7.1 Notice for Australia / New Zealand:

The installation shall comply with AS/NZS 3500.4.

## 14.8 Specification

		DHB-E 11 SLi 232013	DHB-E 13 SLi 232014	DHB-E 13 A 232360	DHB-E 18 SLi 25A 232015	DHB-E 18/21/24 SLi 232016	DHB-E 27 SLi 232017
<b>Electrical details</b>							
Rated voltage 1	V	380	380	380	380	380	380
Rated output 1	kW	10.1	12.2		16.2	16.2/19/21.7	24.4
Rated current 1	A	15.4	18.5		24.7	27.6/29.5/33.3	37.1
Fuse 1	A	16	20		25	32/32/35	40
<b>Rated voltage 2</b>							
Rated voltage 2	V	400	400	400	400	400	400
Rated output 2	kW	11	13.5		18	18/21/24	27
Rated current 2	A	16	19.5		26	29/31/35	39
Fuse 2	A	16	20		25	32/32/35	40
<b>Rated voltage 3</b>							
Rated voltage 3	V	415	415	415	415	415	415
Rated output 3	kW			14.5			
Rated current 3	A			20.2			
Fuse 3	A			20			
<b>Phases</b>							
Phases		3/PE	3/PE	3/PE	3/PE	3/PE	3/PE
Frequency	Hz	50/60	50/60	50	50/60	50/60	50/-
Max. mains impedance Zmax to DIN EN 61000-3-11	Ohm		0.45	0.43	0.45	0.33	0.3
Specific resistance (≤25 °C)	Ohm cm	900	900	1000	900	900	900
Specific resistance (>25 °C)	Ohm cm	1200	1200	1300	1200	1200	1200
<b>Connections</b>							
Water connection		G 1/2 A	G 1/2 A	G 1/2 A	G 1/2 A	G 1/2 A	G 1/2 A
<b>Application limits</b>							
Max. permissible pressure	MPa	1	1	1	1	1	1
Max. inlet temperature for reheating	°C	45	45	45	45	45	45
<b>Values</b>							
Max. permissible inlet temperature	°C	60	60	60	60	60	60
ON	l/min	>3.0	>3.0	>3.0	>3.0	>3.0	>3.0
Flow rate for pressure drop	l/min	3.1	3.9	3.9	5.2	5.2/6.0/6.9	7.7
Pressure drop at flow rate	MPa	0.07 (0.02 without flow rate limit)	0.11 (0.03 without flow rate limit)	0.11 (0.03 without flow rate limit)	0.08 (0.06 without flow rate limit)	0.08/0.10/0.13 (0.06/0.08/0.10 without flow rate limit)	0.16 (0.12 without flow rate limit)
Flow rate limit at	l/min	4.0	4.0	4.0	7.5	7.5/7.5/8.5	8.5
DHW delivery	l/min	5.6	6.9	6.9	9.2	9.2/10.7/12.3	13.8
Delta T if presented	K	28	28	28	28	28	28
<b>Hydraulic data</b>							
Rated capacity	l	0.4	0.4	0.4	0.4	0.4	0.4
<b>Versions</b>							
Connected load options		-	-	-	-	X	-
Temperature adjustment	°C	30 - 60	30 - 60	30-50	30 - 60	30 - 60	30 - 60
Protection class		1	1	1	1	1	1
Insulation block		Plastic	Plastic	Plastic	Plastic	Plastic	Plastic
Heating system		Bare wire	Bare wire	Bare wire	Bare wire	Bare wire	Bare wire
Cap and back panel		Plastic	Plastic	Plastic	Plastic	Plastic	Plastic
Colour		white	white	white	white	white	white
IP-Rating		IP25	IP25		IP25	IP25	IP25
<b>Dimensions</b>							
Height	mm	478	478	478	478	478	478
Width	mm	225	225	225	225	225	225
Depth	mm	105	105	105	105	105	105
<b>Weights</b>							
Weight	kg	3.6	3.6	3.6	3.6	3.6	3.6



### **Warranty**

The warranty conditions of our German companies do not apply to appliances acquired outside of Germany. In countries where our subsidiaries sell our products, it is increasingly the case that warranties can only be issued by those subsidiaries. Such warranties are only granted if the subsidiary has issued its own terms of warranty. No other warranty will be granted.

We shall not provide any warranty for appliances acquired in countries where we have no subsidiary to sell our products. This will not affect warranties issued by any importers.

### **Environment and recycling**

We would ask you to help protect the environment. After use, dispose of the various materials in accordance with national regulations.

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## NOTES

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## NOTES

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**STIEBEL ELTRON**



Irrtum und technische Änderungen vorbehalten! | Subject to errors and technical changes! | Sous réserve d'erreurs et de modifications techniques! | Onder voorbehoud van vergissingen en technische wijzigingen! | Salvo error o modificación técnica! | Excepto erro ou alteração técnica | Zastrzeżone zmiany techniczne i ewentualne błędy | Omyly a technické změny jsou vyhrazeny! | A muszaki változtatások és tévedések jogát fenntartjuk! | Отсутствие ошибок не гарантируется. Возможны технические изменения. | Chyby a technické zmeny sú vyhradené!

Stand 8753