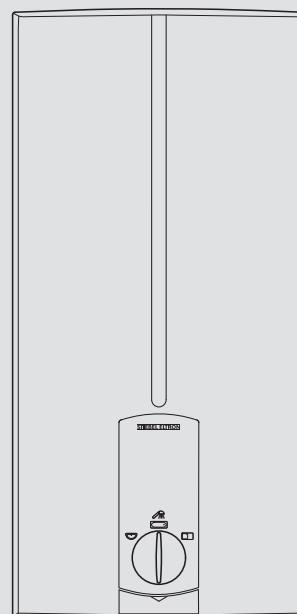


**BEDIENUNG UND INSTALLATION  
OPERATING AND INSTALLATION  
UTILISATION ET INSTALLATION  
GEBRUIK EN INSTALLATIE  
OBSŁUGA I INSTALACJA  
OBSLUHA A INSTALACE  
HASZNÁLATI ÉS TELEPÍTÉSI ÚTMUTATÓ  
UPRAVLJANJE IN NAMESTITEV**

Elektronisch gesteuerter Durchlauferhitzer | Electronically controlled instantaneous water heater | Chauffe-eau instantané à gestion électronique | Elektronisch gestuurde elektrische doorstromer | Elektronicznie sterowany przepływowy ogrzewacz wody | Elektronicky řízený průtokový ohříváč | Elektromos vezérlésű átfolyós vízmelegítő | Elektronsko krmiljen pretočni grelnik

- » DHB 18 STi
- » DHB 21 STi
- » DHB 24 STi
- » DHB 27 STi



**STIEBEL ELTRON**

## SPECIAL INFORMATION

### OPERATION

<b>1. General information</b>	<b>19</b>
1.1 Safety instructions	19
1.2 Other symbols in this documentation	19
1.3 Units of measurement	19
<b>2. Safety</b>	<b>19</b>
2.1 Intended use	19
2.2 General safety instructions	19
2.3 Test symbols	19
<b>3. Appliance description</b>	<b>20</b>
<b>4. Operation</b>	<b>20</b>
4.1 Recommended settings	20
<b>5. Cleaning, care and maintenance</b>	<b>20</b>
<b>6. Troubleshooting</b>	<b>20</b>

### INSTALLATION

<b>7. Safety</b>	<b>21</b>
7.1 General safety instructions	21
7.2 Instructions, standards and regulations	21
<b>8. Appliance description</b>	<b>21</b>
8.1 Standard delivery	21
8.2 Accessories	21
<b>9. Preparations</b>	<b>22</b>
9.1 Installation site	22
9.2 Water installation	22
<b>10. Installation</b>	<b>23</b>
10.1 Standard installation	23
<b>11. Commissioning</b>	<b>25</b>
11.1 Initial start-up	25
11.2 Recommissioning	25
<b>12. Shutdown</b>	<b>25</b>
<b>13. Alternative installation options</b>	<b>25</b>
13.1 Electrical connection from above on unfinished walls	25
13.2 Electrical connection on finished walls	26
13.3 Large conductor cross-section for electrical connection from below	26
13.4 Connecting a load shedding relay	26
13.5 Water installation on finished walls	26
13.6 Water installation on finished walls with brazing / compression fitting	27
13.7 Water installation on finished walls; fitting the appliance cover	27
13.8 Installation of lower back panel with threaded fittings on finished walls	27
13.9 Wall mounting bracket when replacing an appliance	27
13.10 Installation with offset tiles	27
13.11 Pivoting appliance cover	28

<b>14. Troubleshooting</b>	<b>29</b>
<b>15. Maintenance</b>	<b>30</b>
<b>16. Specification</b>	<b>30</b>
16.1 Dimensions and connections	30
16.2 Wiring diagram	30
16.3 DHW output	31
16.4 Application areas / conversion table	31
16.5 Pressure drop	31
16.6 Fault conditions	31
16.7 Country-specific approvals and certifications: Germany	31
16.8 Details on energy consumption	32
16.9 Data table	32

### GUARANTEE

### ENVIRONMENT AND RECYCLING

## SPECIAL INFORMATION

- The appliance may be used by children aged 8 and older and persons with reduced physical, sensory or mental capabilities or a lack of experience and know-how, provided that they are supervised or they have been instructed on how to use the appliance safely and have understood the resulting risks. Children must never play with the appliance. Children must never clean the appliance or perform user maintenance unless they are supervised.
- Risk of burns: the tap can reach temperatures in excess of 55 °C.
- Ensure the appliance can be separated from the power supply by an isolator that disconnects all poles with at least 3 mm contact separation.
- Secure the appliance as described in chapter "Installation / Installation".
- Observe the maximum permissible pressure (see chapter "Installation / Specification / Data table").
- Drain the appliance as described in chapter "Installation / Maintenance / Draining the appliance".

# OPERATION

## 1. General information

The chapters "Special Information" and "Operation" are intended for both the user 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 the instructions to any new user where appropriate.

### 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.

### 1.3 Units of measurement



**Note**  
All measurements are given in mm unless stated otherwise.

## 2. Safety

### 2.1 Intended use

The appliance is intended for heating domestic hot water and can supply one or more draw-off points.

This appliance is intended for domestic use. It can be used safely by untrained persons. The appliance can also be used in a non-domestic environment, e.g. in a small business, 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 instructions for any accessories used is also part of the correct use of this appliance.

### 2.2 General safety instructions



**CAUTION Burns**  
During operation, the tap can reach temperatures in excess of 55 °C.  
There is a risk of scalding at outlet temperatures in excess of 43 °C.



**WARNING Injury**  
The appliance may be used by children aged 8 and older and persons with reduced physical, sensory or mental capabilities or a lack of experience and know-how, provided that they are supervised or they have been instructed on how to use the appliance safely and have understood the resulting risks. Children must never play with the appliance. Children must never clean the appliance or perform user maintenance unless they are supervised.



**Material losses**  
The user should protect the appliance and its tap against frost.

### 2.3 Test symbols

See type plate on the appliance.

# Appliance description

## 3. Appliance description

You can adjust the DHW outlet temperature via the temperature selector. From a flow rate of approx. 3 l/min and above, the control unit regulates the correct heating output, subject to the temperature setting and cold water temperature.

### Heating system

The bare wire heating system has a pressure-tested plastic casing. The heating system is suitable for (both) soft and hard water and is largely resistant to scale build-up. This heating system ensures rapid and efficient DHW availability.

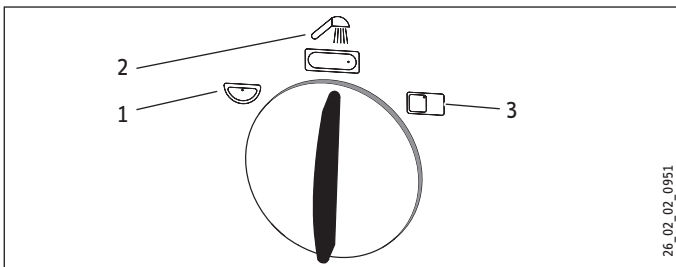


**Note**

The appliance is equipped with an air detector that largely prevents damage to the heating system. If, during operation, air is drawn into the appliance, the appliance shuts down for one minute, thereby protecting the heating system.

## 4. Operation

The DHW outlet temperature can be adjusted in 3 stages.



- 1 Hand wash basin (approx. 35 °C)
- 2 Shower / bath (approx. 45 °C)
- 3 Kitchen sink (approx. 55 °C)

► Turn the temperature selector to the required position.

Should the outlet temperature fail to reach the required level with the tap fully open and the temperature selector set to maximum, then more water is flowing through the appliance than can be heated by the heating element.

► Reduce the flow rate at the tap.

## 4.1 Recommended settings

### Thermostatic valve

If you operate the appliance with a thermostatic valve, we recommend that you set the temperature on the appliance to the maximum level (kitchen sink). You can then select the required temperature using the thermostatic valve.

### Following an interruption of the water supply



**Material losses**

To ensure that the bare wire heating system is not damaged following an interruption to the water supply, the appliance must be restarted in the following sequence.

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

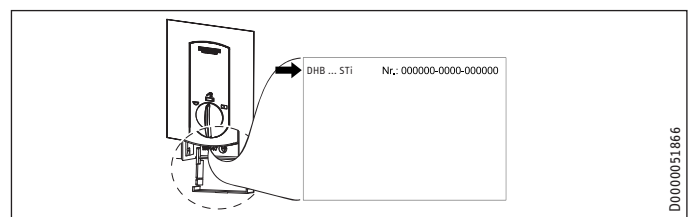
## 5. Cleaning, care and maintenance

- Never use abrasive or corrosive cleaning agents. A damp cloth is sufficient for cleaning the appliance.
- Check the taps regularly. Limescale deposits at the tap outlets can be removed using commercially available descaling agents.

## 6. Troubleshooting

Problem	Cause	Remedy
The appliance will not start despite the DHW valve being fully open.	There is no power.	Check the fuses/MCBs in your fuse box/distribution panel.
	The aerator in the tap or the shower head is scaled up or contaminated.	Clean and/or descale the aerator or shower head.
	The water supply has been interrupted.	Vent the appliance and the cold water supply line (see chapter "Operation / Recommended settings / Following an interruption to the water supply").
Whilst hot water is being drawn off, initially cold water flows for a short period.	The air sensor detects air in the water and briefly switches the heater off.	The appliance restarts automatically after 1 minute.

If you cannot remedy the fault, notify your qualified contractor. To facilitate and speed up your request, provide the number from the type plate (000000-0000-000000).





# INSTALLATION

## 7. Safety

Only a qualified contractor should carry out installation, commissioning, maintenance and repair of the appliance.

### 7.1 General safety instructions

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



#### Material losses

Observe the maximum permissible inlet temperature (see chapter "Installation / Specification / Data table"). Higher temperatures may damage the appliance. You can limit the inlet temperature by means of a central thermostatic valve (see chapter "Installation / Appliance description / Accessories").

### 7.2 Instructions, standards and regulations



#### Note

Observe all applicable national and regional regulations and instructions.

- The IP 25 (hoseproof) rating can only be ensured with a correctly fitted cable grommet.
- The specific electrical resistance of the water must not fall below that stated on the type plate. In a linked water network, factor in the lowest electrical resistance of the water (see chapter "Installation / Specification / Data table"). Your water supply utility will advise you of the specific electrical water resistance or conductivity.

## 8. Appliance description

### 8.1 Standard delivery

The following are delivered with the appliance:

- Wall mounting bracket
- Installation plate
- 2 twin connectors
- Cold water 3-way ball shut-off valve
- DHW tee
- Flat gaskets
- Strainer
- Flow limiter
- Plastic profile washer
- Plastic connection pieces / installation aid
- Cover guides

### 8.2 Accessories

#### Taps

- MEKD mono lever kitchen pressure tap
- MEBD mono lever bath pressure tap

#### Plug G 1/2 A

If you use pressure taps on finished walls other than those recommended in the accessories, please use plugs.

#### Installation set for finished walls

- Brazing fitting - copper pipe for brazed 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 connections

#### Pipe assembly for undersink appliances

You will need the undersink installation set if you make the water connections (G 3/8 A) at the top of the appliance.

#### Pipe assembly for offset installation

You will need this pipe assembly set if you intend to offset the appliance by 90 mm downwards from the water connection.

#### Pipe assembly for replacing a gas water heater

You will need this pipe assembly set if the existing installation has gas water heater connections (cold water connection on the left-hand side, DHW connection on the right-hand side).

#### Pipe assembly DHB water plug-in couplings

Use the water plug-in couplings if the existing installation has water plug-in connections from an instantaneous water heater.

#### Load shedding relay (LR 1-A)

The load shedding relay for installation in the distribution board provides priority control for the instantaneous water heater when other appliances, such as electric storage heaters, are being operated simultaneously.

### 9. Preparations

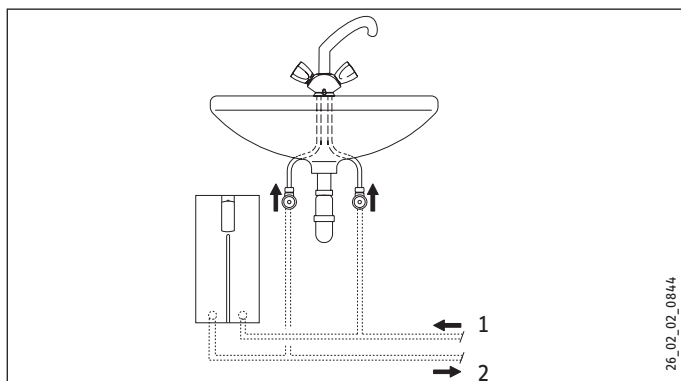
#### 9.1 Installation site

**! Material losses**  
Install the appliance in a room free from the risk of frost.

- ▶ Always install the appliance vertically and near the draw-off point.

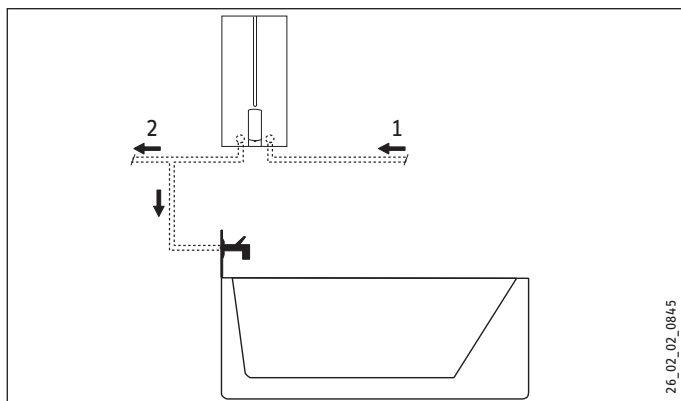
The appliance is suitable for undersink and oversink installations.

##### Undersink installation



- 1 Cold water Inlet
- 2 DHW outlet

##### Oversink installation



- 1 Cold water Inlet
- 2 DHW outlet

**Note**  
▶ Mount the appliance on the wall. The wall must have a sufficient load-bearing capacity.

#### 9.2 Water installation

- A safety valve is not required.
- Never operate with preheated water.
- ▶ Flush the water line thoroughly.

##### Taps

Use suitable pressure taps/valves (see chapter "Installation / Appliance description / Accessories"). Open vented taps are not permitted.

**Note**  
Never use the 3-way ball shut-off valve in the cold water inlet to reduce the flow rate. The 3-way ball shut-off valve is intended to shut off the appliance.

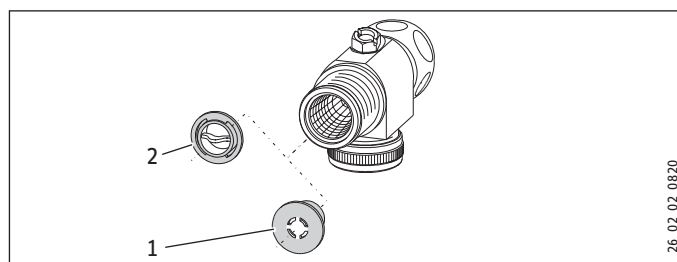
##### Permissible water line materials

- Cold water inlet line:  
Pipes made from galvanised steel, stainless steel, copper or plastic
- DHW outlet line:  
Pipes made from stainless steel, copper or plastic

**! Material losses**  
If plastic pipework is used, take into account the maximum inlet temperature and the maximum permissible pressure (see chapter "Installation / Specification / Data table").

##### Flow rate

- ▶ Ensure that the flow rate for switching on the appliance is achieved (see chapter "Installation / Specification / Data table", On).
- ▶ Increase the water line pressure if the required flow rate is not achieved when the draw-off valve is fully open. If the flow rate is not reached despite increasing the pressure, remove the flow limiter and install the plastic profile washer.



- 1 Flow limiter
- 2 Plastic profile washer

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

### 10. Installation

#### Standard installation

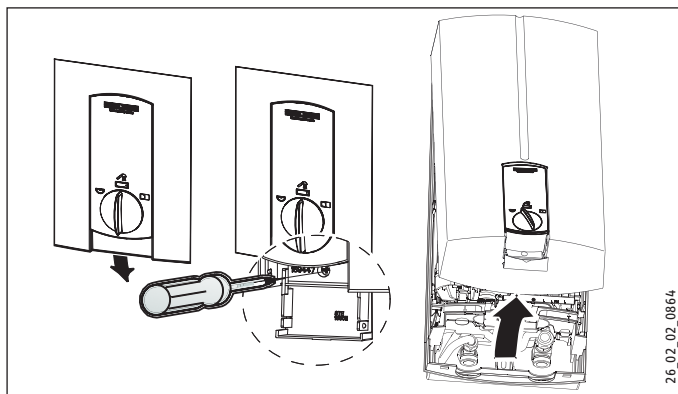
- Electrical connection from below on unfinished walls
- Water connection on unfinished walls

#### For further installation options, see chapter "Installation / Installation options":

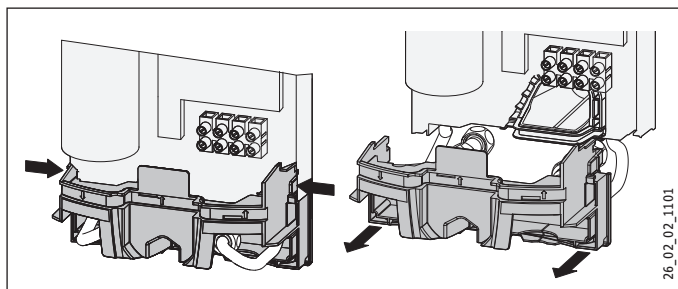
- Electrical connection from above on unfinished walls
- Electrical connection on finished walls
- Large conductor cross-section for electrical connection from below
- Connecting a load shedding relay
- Water installation on finished walls
- Water installation on finished walls with brazing / compression fitting
- Water installation on finished walls; fitting the appliance cover
- Installation of lower back panel with threaded fittings on finished walls
- Wall mounting bracket when replacing an appliance
- Installation with offset tiles
- Pivoting appliance cover

#### 10.1 Standard installation

##### Opening the appliance

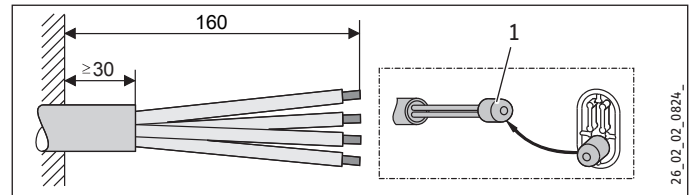


- ▶ Open the appliance by pulling the flap downwards, undo the screw and lift up the appliance cover.



- ▶ Remove the back panel by pressing the two locking hooks and pulling the lower section of the back panel forwards.

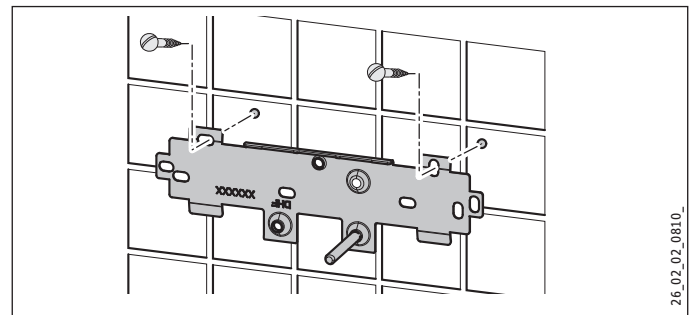
##### Preparing the power cable



- 1 Installation aid

- ▶ Prepare the power cable.

##### Fitting the wall mounting bracket



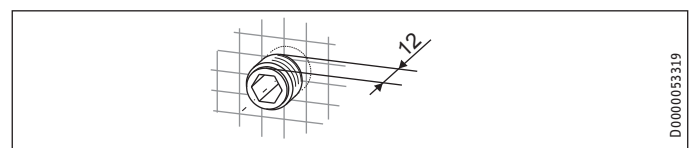
- ▶ Mark out the holes for drilling using the installation plate. If the appliance is to be installed with water connections on finished walls, also mark out a fixing hole in the lower part of the template.
- ▶ Drill the holes and secure the wall mounting bracket with 2 screws and 2 rawl plugs (screws and rawl plugs are not part of the standard delivery).
- ▶ Fit the wall mounting bracket.

##### Making the water connection



#### Material losses

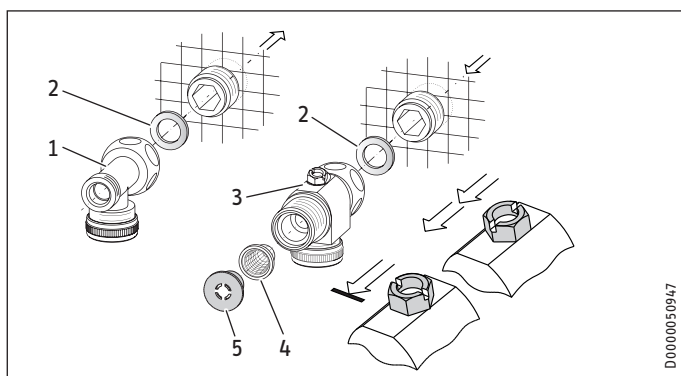
Carry out all water connection and installation work in accordance with regulations.



- ▶ Seal and insert the twin connectors.

# INSTALLATION

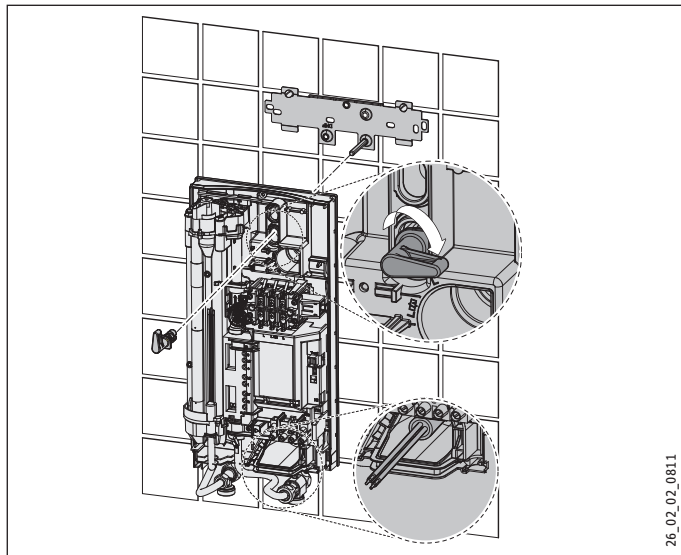
## Installation



- 1 DHW with tee
  - 2 Gasket
  - 3 Cold water with 3-way ball shut-off valve
  - 4 Strainer
  - 5 Flow limiter or plastic profile washer (see chapter "Installation / Water installation / Flow rate")
- ▶ Secure the tee and 3-way ball shut-off valve, each with a flat gasket, to the twin connectors.

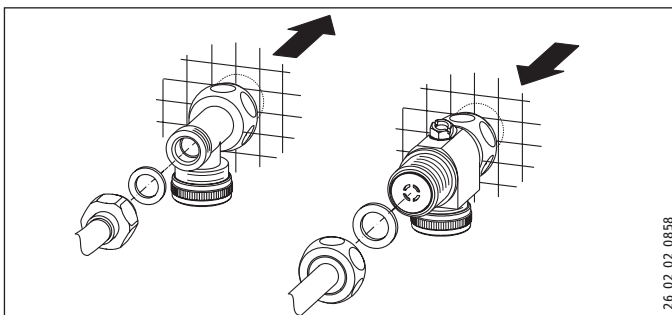
**! Material losses**  
Never use the 3-way ball shut-off valve in the cold water inlet to reduce the flow rate.

### Installing the appliance



- ▶ For easy installation, push the cable grommet of the upper electrical connection into the back panel from behind.
- ▶ Remove the transport plugs from the water connections.
- ▶ Remove the fixing toggle from the upper part of the back panel.
- ▶ Route the power cable through the cable grommet from behind until the power cable rests against the cable sheath. Align the power cable. Enlarge the hole in the cable grommet if the cross-section of the power cable is  $> 6 \text{ mm}^2$ .
- ▶ Push the appliance over the threaded stud of the wall mounting bracket, so that it breaks through the soft seal. If necessary, use a screwdriver.

- ▶ Push the fixing toggle on to the threaded stud of the wall mounting bracket.
- ▶ Push the back panel firmly against the wall. Lock the fixing toggle by turning it 90° clockwise.



- ▶ Fit the pipes with flat gaskets onto the twin connectors.

**! Material losses**  
The strainer must be fitted for the appliance to function.  
▶ When replacing an appliance, check whether the strainer is installed.

- ▶ Open the 3-way ball shut-off valve or the shut-off valve in the cold water supply line.

### Making the electrical connection

**⚡ WARNING Electrocutation**  
Carry out all electrical connection and installation work in accordance with relevant regulations.

**⚡ WARNING Electrocutation**  
The connection to the power supply must be in the form of a permanent connection in conjunction with the removable cable grommet. Ensure the appliance can be separated from the power supply by an isolator that disconnects all poles with at least 3 mm contact separation.

**⚡ WARNING Electrocutation**  
Ensure that the appliance is earthed.

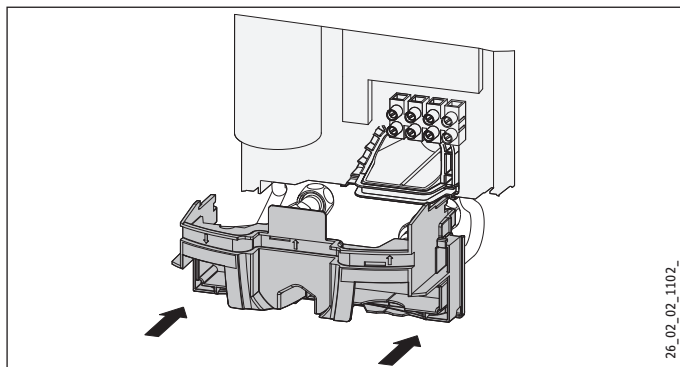
**! Material losses**  
Observe the type plate. The specified voltage must match the mains voltage.

- ▶ Connect the power cable to the mains terminal (see chapter "Installation / Specification / Wiring diagrams").

# INSTALLATION

## Commissioning

### Fitting the lower back panel



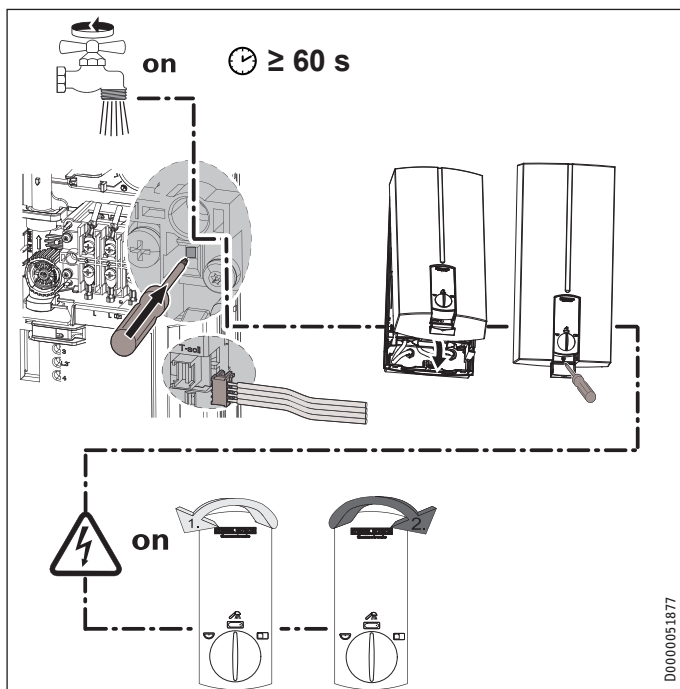
- ▶ Fit the lower back panel into the back panel. Click the lower back panel into place.
- ▶ Align the mounted appliance by loosening the fixing toggle, aligning the power supply and back panel, and then re-tightening the fixing toggle. If the back panel of the appliance is not flush, you can secure the appliance at the bottom with an additional screw.

## 11. Commissioning



**WARNING Electrocutation**  
Commissioning may only be carried out by a qualified contractor in accordance with safety regulations.

### 11.1 Initial start-up



- ▶ Open and close all connected draw-off valves several times, until all air has been purged from the pipework and the appliance.
- ▶ Carry out a tightness check.
- ▶ Activate the safety pressure limiter under flow pressure by firmly pressing in the reset button (the appliance is delivered with the safety pressure limiter disabled).

- ▶ Plug the set value transducer cable plug into the PCB.
- ▶ Fit the appliance cover. Check that the appliance cover is seated correctly.
- ▶ Secure the appliance cover with the screw.
- ▶ Switch the mains power ON.
- ▶ Calibrate the temperature. Turn the temperature selector fully clockwise then fully anti-clockwise.
- ▶ Remove the protective foil from the control fascia.
- ▶ Check the function of the appliance.

### Appliance handover

- ▶ Explain the appliance function to users and familiarise them with its operation.
- ▶ Make the user aware of potential dangers, especially the risk of scalding.
- ▶ Hand over these instructions.

### 11.2 Recommissioning



#### Material losses

To ensure that the bare wire heating system is not damaged following an interruption to the water supply, the appliance must be restarted in the following sequence.

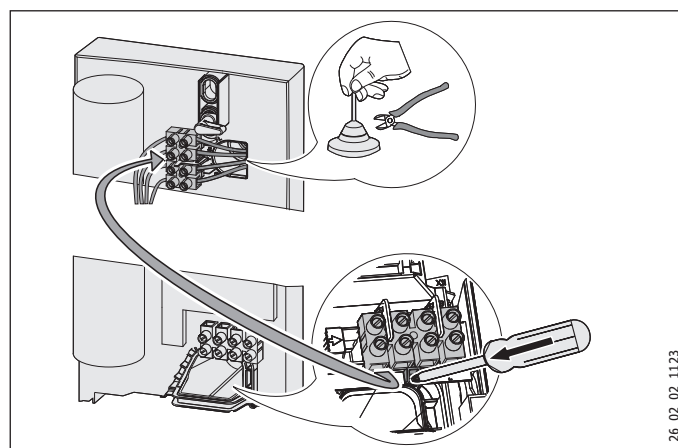
- ▶ Disconnect the appliance from the power supply by removing the fuses/tripping the MCBs.
- ▶ Open the tap for one minute until the appliance and its upstream cold water inlet line are free of air.
- ▶ Switch the mains power back ON again.

## 12. Shutdown

- ▶ Isolate all poles of the appliance from the power supply.
- ▶ Drain the appliance (see chapter "Installation / Maintenance / Draining the appliance").

## 13. Alternative installation options

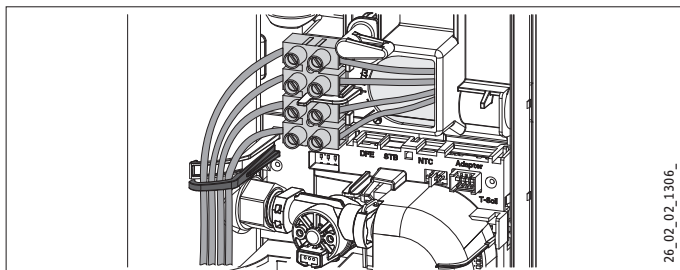
### 13.1 Electrical connection from above on unfinished walls



- ▶ Cut open the cable grommet for the power cable.
- ▶ Push down the locking hook to secure the mains terminal. Pull out the mains terminal.

## Alternative installation options

- ▶ Reposition the mains terminal from the bottom to the top. Secure the mains terminal by pushing it under the locking hook.



- ▶ Lay the control wires below the wire guide.

### 13.2 Electrical connection on finished walls



#### Note

This type of connection changes the protection rating of the appliance.

- ▶ Change the type plate. Cross out "IP 25" and mark the box "IP 24". Please use a ballpoint pen to do this.



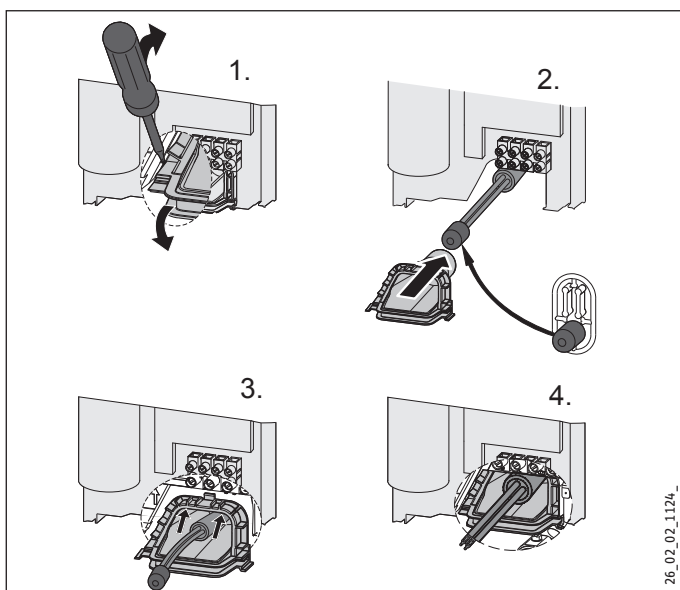
#### Material losses

If you break out the wrong knock-out by mistake, use a new back panel.

- ▶ Cleanly cut or break out the required cable entries in the back panel (for positions, see chapter "Installation / Specification / Dimensions and connections"). Deburr sharp edges with a file if necessary.
- ▶ Route the power cable through the cable grommet and connect the power cable to the mains terminal.

### 13.3 Large conductor cross-section for electrical connection from below

If you use cables with a large cross-section, you can fit the cable grommet after the appliance has been installed.



- ▶ Before installing the appliance, use a screwdriver to push out the cable grommet.
- ▶ Slide the cable grommet over the power cable. Use the installation aid supplied in the standard delivery. If the cross-section is  $> 6 \text{ mm}^2$ , enlarge the hole in the cable grommet.
- ▶ Push the cable grommet into the back panel. Engage the cable grommet in position.

### 13.4 Connecting a load shedding relay

When operating additional electric appliances, such as electric storage heaters, install a load shedding relay in the distribution board. The relay responds when the instantaneous water heater starts.



#### Material losses

Connect the phase that switches the load shedding relay to the indicated terminal of the mains terminal in the appliance (see chapter "Installation / Specification / Wiring diagrams").

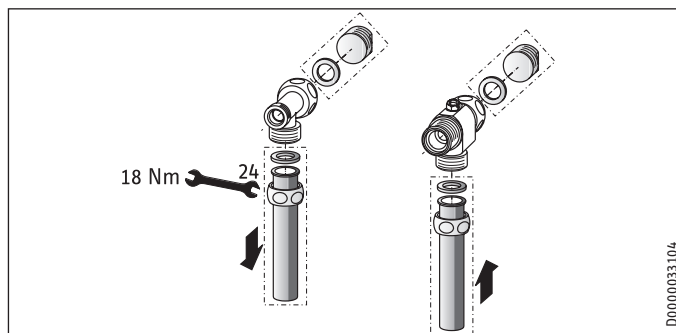
### 13.5 Water installation on finished walls



#### Note

This type of connection changes the protection rating of the appliance.

- ▶ Change the type plate. Cross out "IP 25" and mark the box "IP 24". Please use a ballpoint pen to do this.



- ▶ Fit water plugs with gaskets to seal the connection on unfinished walls. All taps listed under "Accessories" are supplied with plugs and gaskets as part of their standard delivery. For pressure taps other than those we recommend, plugs and gaskets can be ordered as "Accessories".
- ▶ Fit a suitable pressure tap.
- ▶ Push the lower part of the back panel under the connecting pipes of the tap and push it into the back panel.
- ▶ Fit the connection pipes together with the tee and 3-way ball shut-off valve.



## Alternative installation options

### 13.6 Water installation on finished walls with brazing / compression fitting

You can connect copper or plastic pipes with "solder fittings" or "compression fittings" (accessories).

With "solder fittings" with threaded connection for 12 mm copper pipes, proceed as follows:

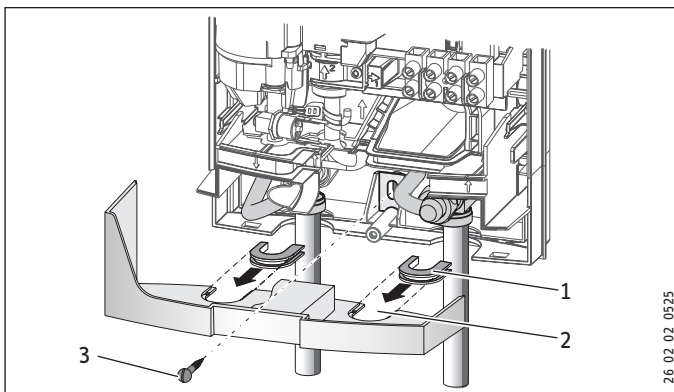
- ▶ Push the union nuts over the connection pipes.
- ▶ Braze the inserts to the copper pipes.
- ▶ Push the lower part of the back panel under the connecting pipes of the tap and push it into the back panel.
- ▶ Fit the connection pipes together with the tee and 3-way ball shut-off valve.



#### Note

Observe the tap manufacturer's instructions.

### 13.7 Water installation on finished walls; fitting the appliance cover



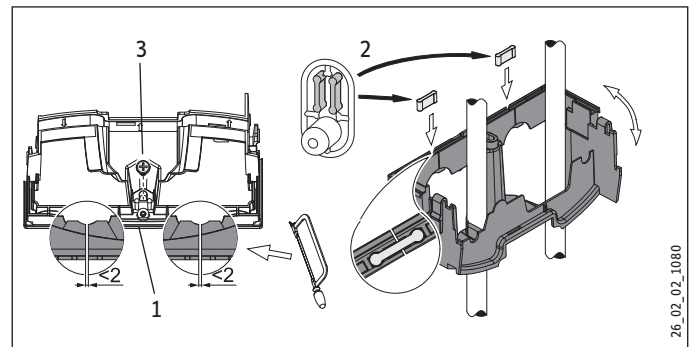
- 1 Cover guides
- 2 Pipe aperture
- 3 Screw

- ▶ Cleanly break out the knock-outs in the appliance cover. If necessary, use a file.
- ▶ Click the cover guides into place in the knock-outs.
- ▶ Secure the back panel at the bottom with a screw.
- ▶ If you use flexible water connection pipes, please prevent pipe bends from twisting (bayonet connections in the appliance).

### 13.8 Installation of lower back panel with threaded fittings on finished walls

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:

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



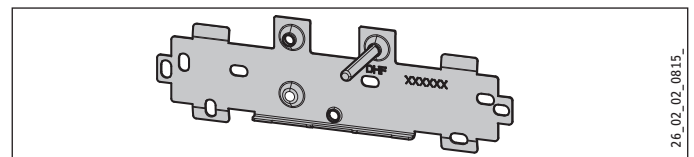
- 1 Back panel bottom section
- 2 Connection pieces delivered in the pack
- 3 Screw

### 13.9 Wall mounting bracket when replacing an appliance

An existing STIEBEL ELTRON wall mounting bracket may be used when replacing appliances (except instantaneous water heater DHF).

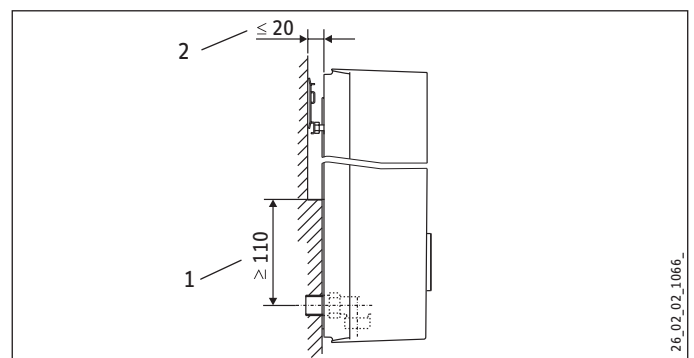
- ▶ Break through the back panel of the appliance for the threaded stud on the installed wall mounting bracket.

#### Replacing instantaneous water heater DHF



- ▶ Reposition the threaded stud on the wall mounting bracket (the stud has a self-tapping thread).
- ▶ Rotate the wall mounting bracket 180° and mount it on the wall (the DHF logo is then turned towards the reader).

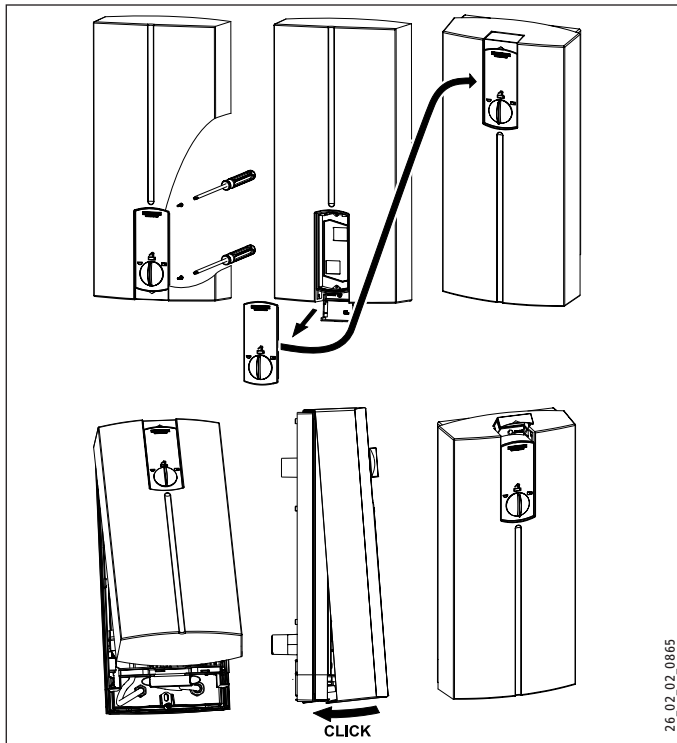
### 13.10 Installation with offset tiles



- 1 Minimum contact area of the appliance
  - 2 Maximum tile offset
- ▶ Adjust the wall clearance. Lock the back panel in place using the fixing toggle (turn through 90° clockwise).

### 13.11 Pivoting appliance cover

The appliance cover can be rotated for undersink installation.



- ▶ Remove the programming unit from the appliance cover by undoing the screws.
- ▶ Turn the appliance cover (not the appliance) and refit the programming unit.
- ▶ Plug the set value transducer cable into the PCB (see chapter "Installation / Commissioning / Initial start-up").
- ▶ Hook the appliance cover in at the top. Swivel the appliance cover down onto the back panel and press it until it engages audibly.
- ▶ Secure the appliance cover.



# INSTALLATION

## Troubleshooting

### 14. Troubleshooting



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

#### Possible indications of diagnostic traffic light (LED)

●	Red	Illuminates in the event of a fault
●	Yellow	Illuminates during heating mode
●	Green	Flashing: Appliance is supplied with mains power

Fault / diagnostic traffic light LED	Cause	Remedy
The appliance does not start.	The shower head / aerators are scaled up.	Descale or if necessary replace the shower head / aerators.
The flow rate is too low.	The strainer in the appliance is dirty.	Clean the strainer.
The set temperature is not achieved.	One phase down.	Check the fuse/MCB in your fuse box/distribution panel.
The heater switches off.	The air detector senses air in the water. Heating output cuts out temporarily.	The appliance restarts after one minute.
No hot water and no traffic light display.	The MCB/fuse has responded/blown.	Check the fuse/MCB in your fuse box/distribution panel.
	Safety pressure limiter AP 3 has tripped.	Remove the cause of the fault (e.g. faulty pressure flush). Protect the heating system against overheating by opening a draw-off valve downstream from the appliance for one minute. This depressurises and cools down the heating system. Activate the safety pressure limiter at flow pressure by pressing the reset button, also see chapter "Installation / Commissioning / Initial start-up".
	The PCB is faulty.	Check the PCB and replace if necessary.
Traffic light display: Green flashing No hot water at flow rate > 3 l/min.	Flow sensor DFE is not plugged in.	Re-insert the flow sensor plug.
	Flow sensor DFE is faulty.	Check the flow sensor and replace if necessary.
The set temperature is not achieved.	The set value transducer or connecting cable is faulty, or the connecting cable is not attached.	Attach the connecting cable; replace the set value transducer if required.
	Temperature limiting is enabled.	Disable temperature limiting.
Traffic light display: Yellow constantly on; green flashing No hot water at flow rate > 3 l/min.	The high limit safety cut-out has responded or its lead is broken.	Check the high limit safety cut-out and replace if necessary.
	The heating system is faulty.	Check the resistance of the heater and replace if necessary.
	The PCB is faulty.	Check the PCB and replace if necessary.
Traffic light display: Yellow constantly on; green flashing Set temperature not reached.	Appliance is operating at its output limit.	Reduce the flow rate. Install the flow limiter.
	The cold water sensor is faulty.	Check the PCB and replace if necessary.
Traffic light display: Red constantly on; green flashing No hot water Required temperature > 35 °C not reached	The cold water inlet temperature exceeds 45 °C.	Reduce the cold water inlet temperature to the appliance.

### 15. Maintenance



**WARNING Electrocutation**  
Before any work on the appliance, disconnect it omnipolar from the power supply.

#### Draining the appliance

The appliance can be drained for maintenance work.



**WARNING Scalding**  
Hot water may escape when you drain the appliance.

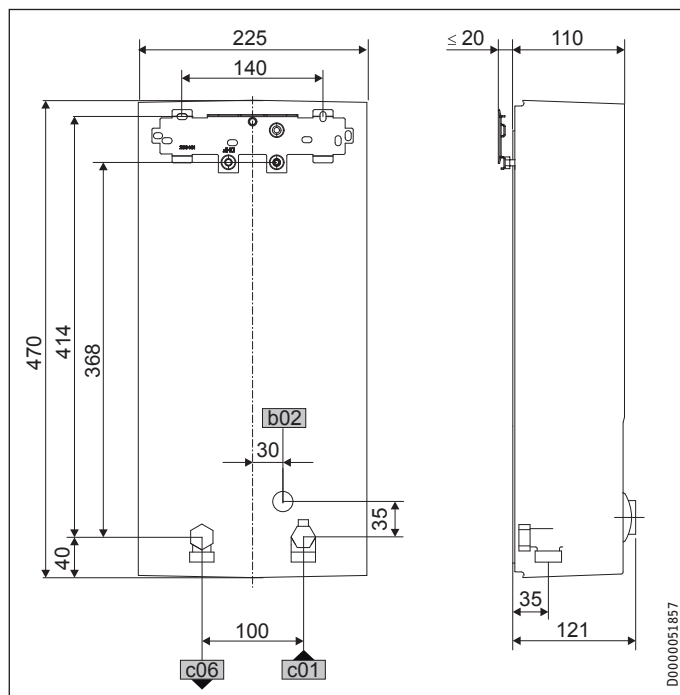
- ▶ Close the 3-way shut-off valve or the shut-off valve in the cold water supply line.
- ▶ Open all draw-off valves.
- ▶ Undo the water connections on the appliance.
- ▶ If dismantled, store the appliance in a room free from the risk of frost, as water residues remaining inside the appliance can freeze and cause damage.

#### Cleaning the strainer

If contaminated, clean the strainer in the threaded cold water fitting. Close the 3-way shut-off valve or the shut-off valve in the cold water supply line before removing, cleaning and refitting the strainer.

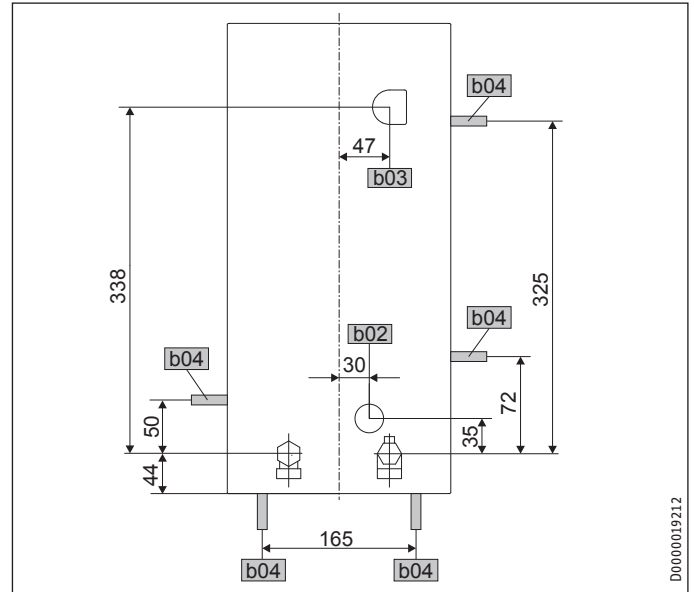
### 16. Specification

#### 16.1 Dimensions and connections



		DHB STi	
b02	Entry cables I		
c01	Cold water Inlet	Male thread	G 1/2 A
c06	DHW outlet	Male thread	G 1/2 A

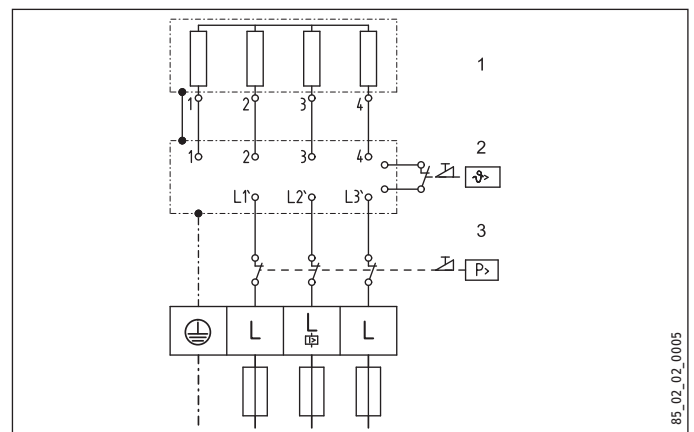
#### Alternative connection options



		DHB STi	
b02	Entry cables I		
b03	Entry cables II		
b04	Entry cables III		

#### 16.2 Wiring diagram

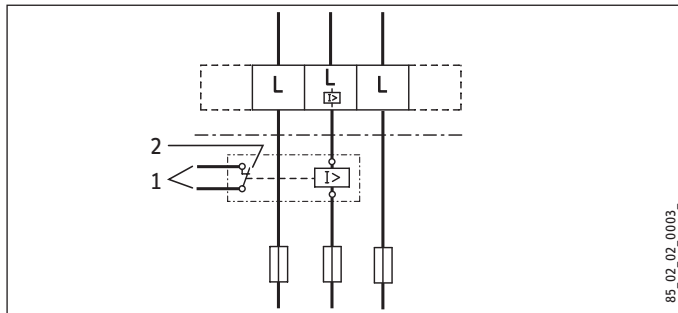
3/PE ~ 380-415 V



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

# INSTALLATION Specification

## Priority control with LR 1-A



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

## 16.3 DHW output

The DHW output is subject to the mains voltage, the appliance's connected load and the cold water inlet temperature. The rated voltage and rated output can be found on the type plate (see chapter "Operation / Troubleshooting").

Connected load in kW			38 °C DHW output in L/min.			
Rated voltage			Cold water inlet temperature			
380 V	400 V	415 V	5 °C	10 °C	15 °C	20 °C
16.2			7.0	8.3	10.1	12.9
16.3			7.1	8.3	10.1	12.9
	18.0		7.8	9.2	11.2	14.3
19.0			8.2	9.7	11.8	15.1
		19.4	8.4	9.9	12.0	15.4
	21.0		9.1	10.7	13.0	16.7
21.7			9.4	11.1	13.5	17.2
		22.6	9.8	11.5	14.0	17.9
23.5			10.2	12.0	14.6	18.7
	24.0		10.4	12.2	14.9	19.0
24.4			10.6	12.4	15.2	19.4
		25.8	11.2	13.2	16.0	20.5
	26.0		11.3	13.3	16.1	20.6
		27.0	11.7	13.8	16.8	21.4
		28.0	12.1	14.3	17.4	22.2

Connected load in kW			50 °C DHW output in L/min.			
Rated voltage			Cold water inlet temperature			
380 V	400 V	415 V	5 °C	10 °C	15 °C	20 °C
16.2			5.1	5.8	6.6	7.7
16.3			5.2	5.8	6.7	7.8
	18.0		5.7	6.4	7.3	8.6
19.0			6.0	6.8	7.8	9.0
		19.4	6.2	6.9	7.9	9.2
	21.0		6.7	7.5	8.6	10.0
21.7			6.9	7.8	8.9	10.3
		22.6	7.2	8.1	9.2	10.8
23.5			7.5	8.4	9.6	11.2
	24.0		7.6	8.6	9.8	11.4
24.4			7.7	8.7	10.0	11.6
		25.8	8.2	9.2	10.5	12.3
	26.0		8.3	9.3	10.6	12.4
		27.0	8.6	9.6	11.0	12.9
		28.0	8.9	10.0	11.4	13.3

## 16.4 Application areas / conversion table

Specific electrical resistance and specific electrical conductivity (see chapter "Installation / Data table").

Standard specification at 15 °C		20 °C			25 °C		
Resistance $\rho \geq$	Conductivity $\sigma \leq$	Resistance $\rho \geq$	Conductivity $\sigma \leq$	Resistance $\rho \geq$	Conductivity $\sigma \leq$	Resistance $\rho \geq$	Conductivity $\sigma \leq$
$\Omega\text{cm}$	$\text{mS/m}$ $\mu\text{S/cm}$	$\Omega\text{cm}$	$\text{mS/m}$ $\mu\text{S/cm}$	$\Omega\text{cm}$	$\text{mS/m}$ $\mu\text{S/cm}$	$\Omega\text{cm}$	$\text{mS/m}$ $\mu\text{S/cm}$
1100	91 909	970	103 1031	895	112 1117		
1200	83 833	1070	93 935	985	102 1015		

## 16.5 Pressure drop

### Taps

Tap pressure drop at a flow rate of 10 L/min

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

### Sizing the pipework

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

## 16.6 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.

## 16.7 Country-specific approvals and certifications: Germany

A general test certificate as verification of suitability regarding noise emissions has been issued for this appliance, based on the State Building Regulations [Germany].



# INSTALLATION Specification

## 16.8 Details on energy consumption

Product data complies with EU regulations relating to the Directive on the ecodesign of energy-related products (ErP).

		DHB 18 STi	DHB 21 STi	DHB 24 STi	DHB 27 STi
		227612	227613	227614	227615
<b>Versions</b>					
Manufacturer		STIEBEL ELTRON	STIEBEL ELTRON	STIEBEL ELTRON	STIEBEL ELTRON
Default temperature setting	°C	55	55	55	55
Special information on measuring efficiency		None	None	None	None
<b>Output data</b>					
Load profile		S	S	S	S
<b>Energy data</b>					
Energy efficiency category		A	A	A	A
Annual power consumption	kWh	480	477	475	475
Energy efficiency	%	39	39	39	39
<b>Sound data</b>					
Sound power level	dB(A)	15	15	15	15

## 16.9 Data table

		DHB 18 STi			DHB 21 STi			DHB 24 STi			DHB 27 STi		
		227612			227613			227614			227615		
<b>Electrical details</b>													
Rated voltage	V	380	400	415	380	400	415	380	400	415	380	400	415
Rated output	kW	16.2	18	19.4	19	21	22.6	21.7	24	25.8	23.5	26	28
Rated current	A	24.7	26	27	29.5	31	32.2	33.3	35	36.3	35.6	37.7	38.9
Fuse	A	25	25	32	32	32	32	35	35	40	35	40	40
Phases		3/PE			3/PE			3/PE			3/PE		
Frequency	Hz	50/60	50/60	50/-	50/60	50/60	50/-	50/60	50/60	50/-	50/-	50/-	50/-
Max. mains impedance at 50Hz	Ω	0.379	0.360	0.347	0.325	0.308	0.297	0.284	0.270	0.260	0.254	0.241	
Specific resistance $\rho_{15} \geq$ (at $\vartheta_{\text{cold}} \leq 35^\circ\text{C}$ )	Ω cm	$\geq 1100$	$\geq 1100$	$\geq 1200$	$\geq 1100$	$\geq 1100$	$\geq 1200$	$\geq 1100$	$\geq 1100$	$\geq 1200$	$\geq 1100$	$\geq 1100$	$\geq 1200$
Specific conductivity $\sigma_{15} \leq$ (at $\vartheta_{\text{cold}} \leq 35^\circ\text{C}$ )	μS/cm	$\leq 910$	$\leq 910$	$\leq 830$	$\leq 910$	$\leq 910$	$\leq 830$	$\leq 910$	$\leq 910$	$\leq 830$	$\leq 910$	$\leq 910$	$\leq 830$
<b>Connections</b>													
Water connection		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		
<b>Values</b>													
Max. permissible inlet temperature	°C	35			35			35			35		
ON	l/min	> 3.0			> 3.0			> 3.0			> 3.0		
Flow rate for pressure drop	l/min	5.2			6.0			6.9			7.7		
Pressure drop at flow rate	MPa	0.08 (0.06 without DMB)			0.1 (0.08 without DMB)			0.13 (0.1 without DMB)			0.16 (0.12 without DMB)		
Flow rate limit at	l/min	7.5			7.5			8.5			8.5		
DHW delivery	l/min	9.2			10.7			12.3			13.8		
$\Delta\vartheta$ at DHW delivery	K	28			28			28			28		
<b>Hydraulic data</b>													
Rated capacity	l	0.4			0.4			0.4			0.4		
<b>Versions</b>													
Temperature adjustment	°C	Approx. 35, 45, 55			Approx. 35, 45, 55			Approx. 35, 45, 55			Approx. 35, 45, 55		
Protection class		1			1			1			1		
Insulation block		Plastic			Plastic			Plastic			Plastic		
Heating system heat generator		Bare wire			Bare wire			Bare wire			Bare wire		
Cap and back panel		Plastic			Plastic			Plastic			Plastic		
Colour		white			white			white			white		
IP rating		IP25			IP25			IP25			IP25		
<b>Dimensions</b>													
Height	mm	470			470			470			470		
Width	mm	225			225			225			225		
Depth	mm	110			110			110			110		
<b>Weights</b>													
Weight	kg	3.6			3.6			3.6			3.6		

## Guarantee

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

We shall not provide any guarantee 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.

## Deutschland

STIEBEL ELTRON GmbH & Co. KG  
Dr.-Stiebel-Straße 33 | 37603 Holzminden  
Tel. 05531 702-0 | Fax 05531 702-480  
info@stiebel-eltron.de  
www.stiebel-eltron.de

## Verkauf

Tel. 05531 702-110 | Fax 05531 702-95108 | info-center@stiebel-eltron.de

## Kundendienst

Tel. 05531 702-111 | Fax 05531 702-95890 | kundendienst@stiebel-eltron.de

## Ersatzteilverkauf

Tel. 05531 702-120 | Fax 05531 702-95335 | ersatzteile@stiebel-eltron.de

## Australia

STIEBEL ELTRON Australia Pty. Ltd.  
6 Prohasky Street | Port Melbourne VIC 3207  
Tel. 03 9645-1833 | Fax 03 9645-4366  
info@stiebel.com.au  
www.stiebel.com.au

## Austria

STIEBEL ELTRON Ges.m.b.H.  
Eferdinger Str. 73 | 4600 Wels  
Tel. 07242 47367-0 | Fax 07242 47367-42  
info@stiebel-eltron.at  
www.stiebel-eltron.at

## Belgium

STIEBEL ELTRON bvba/sprl  
't Hofveld 6 - D1 | 1702 Groot-Bijgaarden  
Tel. 02 42322-22 | Fax 02 42322-12  
info@stiebel-eltron.be  
www.stiebel-eltron.be

## China

STIEBEL ELTRON (Guangzhou) Electric  
Appliance Co., Ltd.  
Rm 102, F1, Yingbin-Yihao Mansion, No. 1  
Yingbin Road  
Panyu District | 511431 Guangzhou  
Tel. 020 39162209 | Fax 020 39162203  
info@stiebeleltron.cn  
www.stiebeleltron.cn

## Czech Republic

STIEBEL ELTRON spol. s r.o.  
K Hájiřm 946 | 155 00 Praha 5 - Stodůlky  
Tel. 251116-111 | Fax 235512-122  
info@stiebel-eltron.cz  
www.stiebel-eltron.cz

## Finland

STIEBEL ELTRON OY  
Kapinakuja 1 | 04600 Mäntsälä  
Tel. 020 720-9988  
info@stiebel-eltron.fi  
www.stiebel-eltron.fi

## France

STIEBEL ELTRON SAS  
7-9, rue des Selliers  
B.P 85107 | 57073 Metz-Cédex 3  
Tel. 0387 7438-88 | Fax 0387 7468-26  
info@stiebel-eltron.fr  
www.stiebel-eltron.fr

## Hungary

STIEBEL ELTRON Kft.  
Gyár u. 2 | 2040 Budaörs  
Tel. 01 250-6055 | Fax 01 368-8097  
info@stiebel-eltron.hu  
www.stiebel-eltron.hu

## Japan

NIHON STIEBEL Co. Ltd.  
Kowa Kawasaki Nishiguchi Building 8F  
66-2 Horikawa-Cho  
Saiwai-Ku | 212-0013 Kawasaki  
Tel. 044 540-3200 | Fax 044 540-3210  
info@nihonstiebel.co.jp  
www.nihonstiebel.co.jp

## Netherlands

STIEBEL ELTRON Nederland B.V.  
Daviottenweg 36 | 5222 BH 's-Hertogenbosch  
Tel. 073 623-0000 | Fax 073 623-1141  
info@stiebel-eltron.nl  
www.stiebel-eltron.nl

## Poland

STIEBEL ELTRON Polska Sp. z O.O.  
ul. Działkowa 2 | 02-234 Warszawa  
Tel. 022 60920-30 | Fax 022 60920-29  
biuro@stiebel-eltron.pl  
www.stiebel-eltron.pl

## Russia

STIEBEL ELTRON LLC RUSSIA  
Urzhumskaya street 4,  
building 2 | 129343 Moscow  
Tel. 0495 7753889 | Fax 0495 7753887  
info@stiebel-eltron.ru  
www.stiebel-eltron.ru

## Slovakia

TATRAMAT - ohrievače vody s.r.o.  
Hlavná 1 | 058 01 Poprad  
Tel. 052 7127-125 | Fax 052 7127-148  
info@stiebel-eltron.sk  
www.stiebel-eltron.sk

## Switzerland

STIEBEL ELTRON AG  
Industrie West  
Gass 8 | 5242 Lupfig  
Tel. 056 4640-500 | Fax 056 4640-501  
info@stiebel-eltron.ch  
www.stiebel-eltron.ch

## Thailand

STIEBEL ELTRON Asia Ltd.  
469 Moo 2 Tambol Klong-Jik  
Amphur Bangpa-In | 13160 Ayutthaya  
Tel. 035 220088 | Fax 035 221188  
info@stiebeleltronasia.com  
www.stiebeleltronasia.com

## United Kingdom and Ireland

STIEBEL ELTRON UK Ltd.  
Unit 12 Stadium Court  
Stadium Road | CH62 3RP Bromborough  
Tel. 0151 346-2300 | Fax 0151 334-2913  
info@stiebel-eltron.co.uk  
www.stiebel-eltron.co.uk

## United States of America

STIEBEL ELTRON, Inc.  
17 West Street | 01088 West Hatfield MA  
Tel. 0413 247-3380 | Fax 0413 247-3369  
info@stiebel-eltron-usa.com  
www.stiebel-eltron-usa.com



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 9046

**STIEBEL ELTRON**