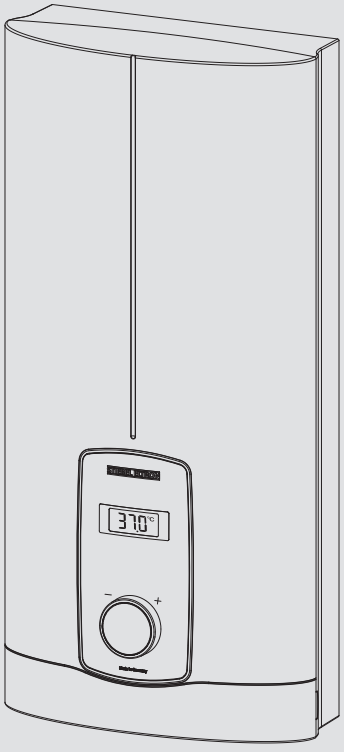
BEDIENUNG UND INSTALLATION
OPERATION AND INSTALLATION
UTILISATION ET INSTALLATION
GEBRUIK EN INSTALLATIE
OBSLUHA A INSTALACE

الاستعمال والتركيب

Elektronisch geregelter Komfort-Durchlauferhitzer | Electronically controlled comfort instantaneous water heater | Chauffe-eau instantané confort à régulation électronique | Elektronisch geregelde comfort-doorstromer | Elektronicky regulovaný komfortní průtokový ohřívač | سخان الماء الفوري المريح الذي يتم ضبطه إلكترونيًا

- DHB-E 11/13 LCD
- DHB-E 18 LCD 25A
- DHB-E 18/21/24 LCD
- DHB-E 27 LCD



STIEBEL ELTRON

CONTENTS

SPECIAL INFORMATION

- The appliance may be used by children aged 3 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 potential risks. Children must never play with the appliance. Children must never clean the appliance or perform user maintenance unless they are supervised.
- The tap can reach temperatures of up to 70 °C. There is a risk of scalding at outlet temperatures in excess of 43 °C.
- The appliance is suitable for supplying a shower (shower operation). If the appliance is also or exclusively used for shower operation, the qualified contractor must adjust the temperature setting range to 55 °C or less using the internal anti-scalding protection on the appliance. When using preheated water, it must be ensured that the inlet temperature does not exceed 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.
- The specified voltage must match the power supply.
- The appliance must be connected to the earth conductor.
- The appliance must be permanently connected to fixed wiring.
- Secure the appliance as described in chapter "Installation / Installation".
- Observe the maximum permissible pressure (see chapter "Installation / Specification / Data table").
- The specific water resistivity of the mains water supply must not be undershot (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 users and qualified contractors.

The chapter "Installation" is intended for qualified contractors.

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

This appliance is suitable for heating domestic hot water or for reheating preheated water. The appliance can supply one or more draw-off points.

Water will not be reheated if the maximum inlet temperature for reheating is exceeded.

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

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

2.2 General safety instructions

CAUTION Burns
During operation, the tap can reach temperatures up to 70 °C. 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
The appliance may be used by children aged 3 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 potential risks. Children must never play with the appliance. Children must never clean the appliance or perform user maintenance unless they are supervised.

Where children or persons with limited physical, sensory or mental abilities are allowed to use this appliance, we recommend a permanent temperature limit. The following limitation options are available:

- User adjustable: Temperature limit (e.g. for childproofing)
- Qualified contractor adjustable: Internal anti-scalding protection.

ENGLISH

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

3. Appliance description

The appliance switches on automatically as soon as you open the hot water valve on the tap. When you close the tap, the appliance switches off again automatically.

The appliance heats water as it flows through it. The DHW outlet temperature can be variably adjusted. From a certain flow rate, the control unit regulates the correct heating output, subject to the temperature selected and the current cold water temperature.

The electronically controlled instantaneous water heater with automatic output matching maintains a consistent outlet temperature. It is irrespective of the inlet temperature, up to the maximum output of the appliance.

If the appliance is operated with preheated water and the inlet temperature exceeds the chosen set temperature, the water will not be heated further.

You can set the temperature unit (°C or °F) according to preference.

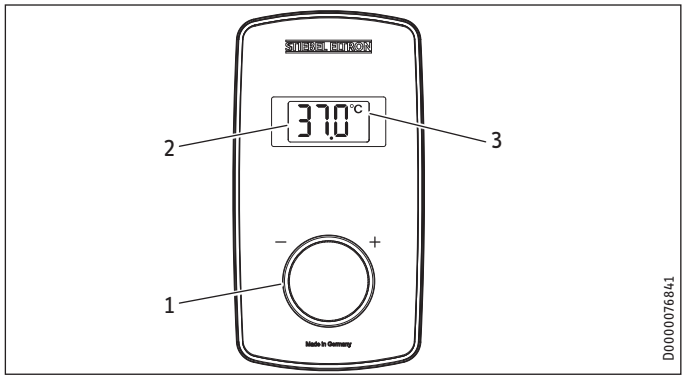
Heating system

The bare wire heating system is enclosed within a pressure-tested plastic jacket. The heating system with its stainless steel internal indirect coil is suitable for hard and soft water areas and is largely insusceptible to scale build-up. The heating system ensures rapid and efficient DHW provision.

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. Settings and displays

4.1 Setting the temperature



1 Temperature selector for adjusting set temperature (no end-stop): "OFF", 20 - 60 °C (factory setting)
2 Display
3 Temperature unit [°C/°F]

Temperature settings in steps			
Temperature range	Step	Temperature range	Step
20 °C ... 60 °C	1 °C	68 °F ... 140 °F	1 °F

Selecting the temperature indicator

You can choose to display the temperature in °C or °F, as required.

▶ Turn the temperature selector anti-clockwise, past the OFF indicator and another five complete turns, until you find yourself in temperature unit selection mode. Then select the temperature unit using the temperature selector. After 30 s, the appliance exits selection mode automatically and the selected temperature unit is retained.

Note
If the outlet temperature is not high enough when the draw-off valve is fully open and the temperature selector is set to maximum, then more water is flowing through the appliance than can be heated by the heating system (appliance working at maximum output).
▶ Reduce the water volume until the preferred temperature delivery is achieved.

4.2 Recommended settings

Your instantaneous water heater offers maximum precision and maximum convenience in DHW provision. Should you nonetheless be operating the appliance with a thermostatic valve, we recommend that you:

▶ Adjust the set temperature on the appliance to over 50 °C. Then set the required set temperature on the thermostatic valve.

Saving energy

The following recommended settings will result in the lowest energy consumption:

- 38 °C for hand washbasins, showers, bath
- 55 °C for kitchen sinks

Internal anti-scalding protection (qualified contractors)

If required, the qualified contractor can set a permanent temperature limit, for example in nurseries, hospitals etc.

When supplying a shower, the appliance temperature setting range must be adjusted by the qualified contractor to 55 °C or less.

Limiting it in this way prevents water from flowing out of the appliance at temperatures which could cause injury.

Recommended setting for operation with a thermostatic valve and water preheated by solar energy

▶ Set the temperature at the appliance to the maximum temperature.

Following an interruption to 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 taking the following steps.
- ▶ 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 power back ON.

5. Cleaning, care and maintenance

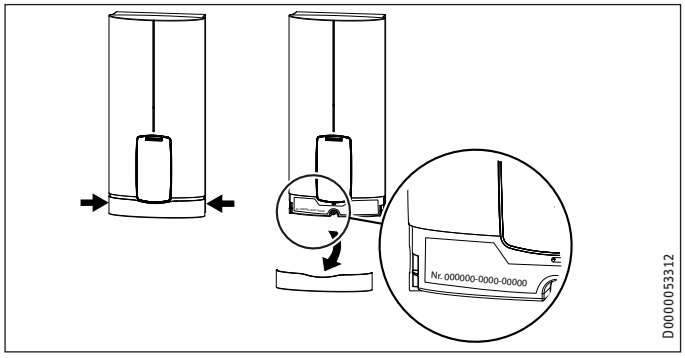
- ▶ Never use abrasive or corrosive cleaning agents. A damp cloth is sufficient for cleaning the appliance.
- ▶ Check the taps regularly. Limescale deposits at the tap outlets can be removed using commercially available descaling agents.

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 board.
	The aerator in the tap or the shower head is scaled up or soiled.	Clean and/or descale the aerator or shower head.
	The water supply has been interrupted.	Vent the appliance and the cold water inlet line.
When hot water is being drawn off, cold water flows for a short period.	The air detector detects air in the water. It switches off the heating output briefly.	The appliance restarts automatically after 1 minute.
The required temperature cannot be set.	Internal anti-scalding protection is activated.	The internal anti-scalding protection can only be adjusted by the qualified contractor.

Note
After a power failure
Programming unit displays and selected settings are retained following a power failure.

If you cannot remedy the fault, contact 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 function and operational reliability only if original accessories and spare parts intended for the appliance are used.

Material losses
Observe the maximum inlet temperature. Higher temperatures may damage the appliance. You can limit the maximum inlet temperature by installing a central thermostatic valve (see chapter "Appliance description / Accessories").

WARNING Electrocution
This appliance contains capacitors which are discharged when disconnected from the power supply. The capacitor discharge voltage may briefly reach > 60 V DC.

7.2 Shower operation

CAUTION Burns
- ▶ **When supplying a shower, set the internal anti-scalding protection to 55 °C or less; see chapter "Commissioning / Preparations".**

CAUTION Burns
If the water supplied to the appliance is preheated, please note the following points:
- **The internally adjustable anti-scalding protection may be exceeded.**
- **The dynamic anti-scalding protection between the appliance and the wireless remote control may not be effective.**

▶ **In both cases, limit the temperature with an upstream central thermostatic valve (ZTA 3/4).**

7.3 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. 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 template
- 2 twin connectors
- 3-way ball shut-off valve for cold water
- Tee for domestic hot water
- Flat gaskets
- Strainer
- Flow limiter (x2 for the DHB-E 18/21/24 LCD)
- Plastic profile washer
- Plastic connection pieces / Installation aid
- Cap and back panel guides
- Jumper for internal anti-scalding protection
- Jumper for changing the output (only for appliances with adjustable output)

8.2 Accessories

Wireless remote control
- FFB 4 Set EU

Taps/valves
- MEKD mono lever kitchen pressure tap
- MEBD mono lever bath pressure tap

Plugs G ½ A

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

Installation set for finished walls
- Solder fitting - copper pipe for soldered connection Ø 12 mm
- Press-fit fitting - copper pipe
- Press-fit 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 ⅜ A) at the top of the appliance.

Pipe assembly for offset installation

Use this pipe assembly if you intend to offset the appliance by up to 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 for DHB water plug-in couplings

Use the water plug-in couplings if the existing installation contains water plug-in connections from a DHB 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.

Central thermostatic valve (ZTA 3/4)

Use the thermostatic valve for central premixing when, for example, operating an instantaneous water heater with preheated water. For use in shower operation, the valve must be set to a maximum of 55 °C.

9. Preparation

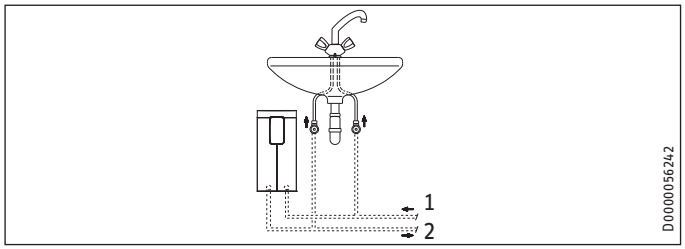
9.1 Installation location

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.

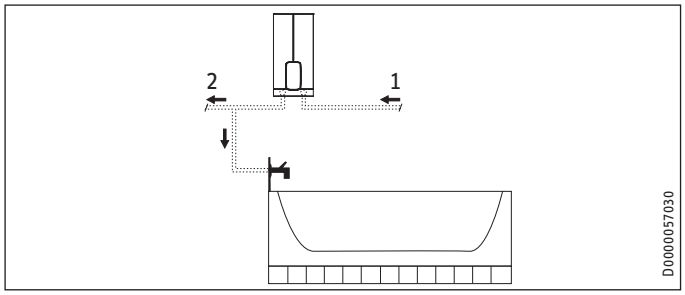
The appliance is suitable for undersink and oversink installation.

Undersink installation



1 Cold water inlet
2 DHW outlet

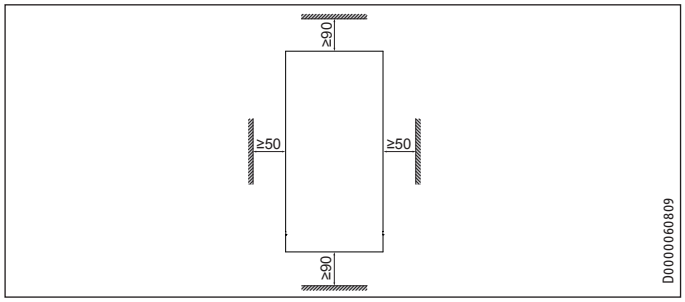
Oversink installation



1 Cold water inlet
2 DHW outlet

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

9.2 Minimum clearances



▶ Maintain the minimum clearances to ensure trouble-free operation of the appliance and facilitate maintenance work.

9.3 Water installation

▶ Flush the water line thoroughly.

Taps/valves

Use appropriate pressure taps. Open vented taps are not permissible.

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 only to shut off the cold water inlet.

Permissible water line materials

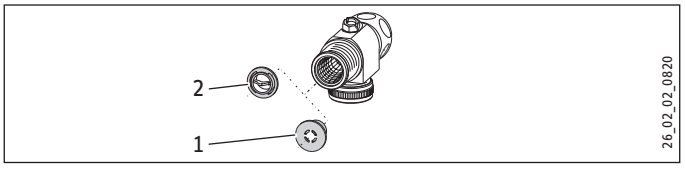
- Cold water inlet line:
  Pipes made from galvanised steel, stainless steel, copper or plastic
- DHW outlet line:
  Pipes made from stainless steel, copper or plastic

Material losses
If plastic pipework systems are used, take into account the maximum inlet temperature and the maximum permissible pressure.

Flow rate

▶ Ensure that the flow rate for switching on the appliance is achieved.

▶ 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

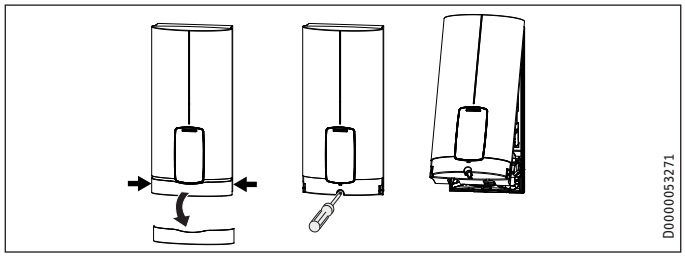
Factory settings	DHB-E 11/13 LCD	DHB-E 18 LCD 25A	DHB-E 18/21/24 LCD	DHB-E 27 LCD
Internal anti-scalding protection in °C	60	60	60	60
Connected load in kW	13.5	18	21	27

Standard installation	DHB-E 11/13 LCD	DHB-E 18 LCD 25A	DHB-E 18/21/24 LCD	DHB-E 27 LCD
Electrical connection from below on unfinished walls	x	x	x	x
Water connection on unfinished walls	x	x	x	x

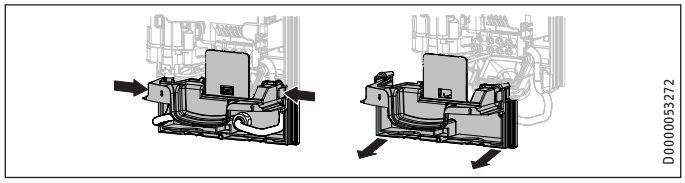
For further installation options, see chapter "Alternative installation methods".

10.1 Standard installation

Opening the appliance

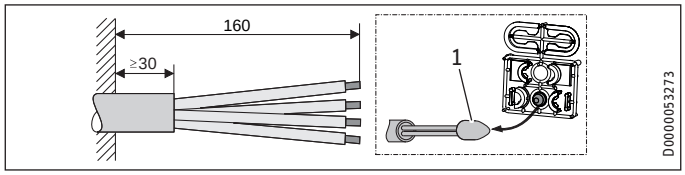


▶ Open the appliance by holding the fascia at the side and pulling forwards away from the appliance cover. Undo the screw. Pivot open the appliance cover.



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

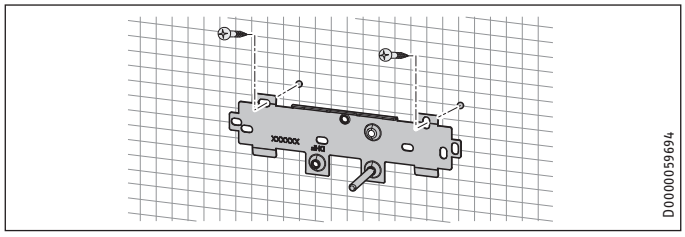
Preparing the power cable on unfinished walls, for connection from below



1 Cable entry installation aid

▶ Prepare the power cable.

Fitting the wall mounting bracket



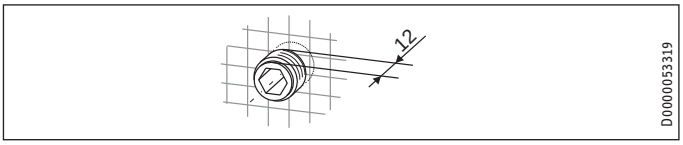
▶ Mark out the holes for drilling using the installation template. If the appliance is to be installed on finished walls, also mark out the fixing hole in the lower section of the template.

▶ Drill the holes and secure the wall mounting bracket at 2 points using suitable fixing materials (screws and rawl plugs are not part of the standard delivery).

▶ Fit the wall mounting bracket.

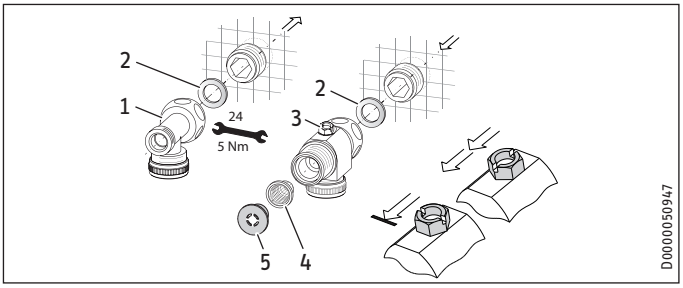
Installing the twin connectors

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



▶ Seal and insert the twin connectors.

Making the water connection



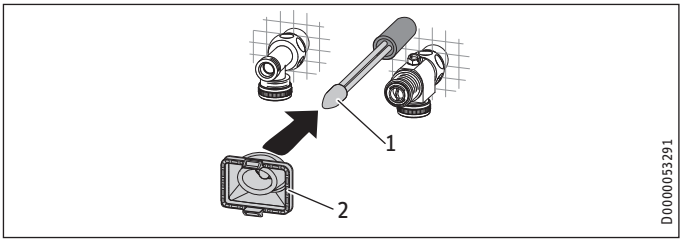
1 DHW with tee
2 Gasket
3 Cold water with 3-way ball shut-off valve
4 Strainer
5 Flow limiter or plastic profile washer (see chapter "Installation / Water installation / Flow rate")

Note
A second flow limiter is provided with the DHB-E 18/21/24 LCD. Install the appropriate flow limiter for output of the appliance (see "Flow rate regulator" in chapter "Installation / Specification / Data table"):
4.0 l/min = pink
7.5 l/min = blue
8.5 l/min = green

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

Installing the appliance

Note
If you are installing the appliance with flexible pipe connections, also secure the back panel with a screw.

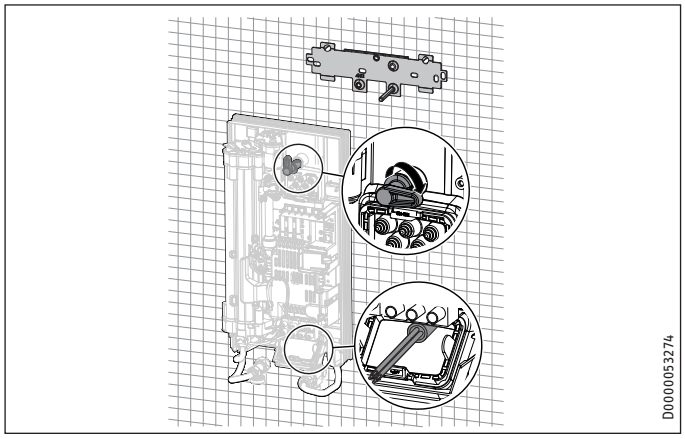


1 Cable entry installation aid
2 Cable grommet

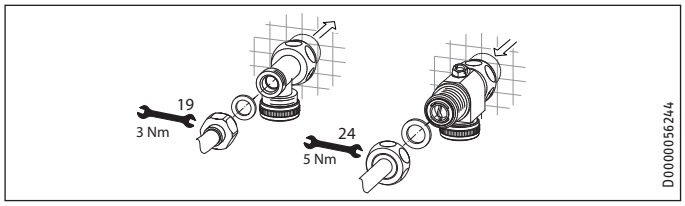
Use the installation aid for easier wiring access through the cable grommet (see plastic parts set supplied).

▶ Remove the cable grommet from the back panel.

▶ Pull the cable grommet over the cable sheath of the power cable. For large cable cross-sections, enlarge the hole in the cable grommet if necessary.



▶ Remove the transport protection plugs from the appliance pipe connections.
▶ Bend the power cable 45° upwards.
▶ Route the power cable and cable grommet through the back panel from the rear.
▶ Install the appliance on the threaded studs of the wall mounting bracket.
▶ Press the back panel firmly into place, aligning it correctly.
▶ Lock the fixing toggle by turning it 90° clockwise.
▶ Pull the cable grommets into the back panel, until both locking tabs engage.



▶ Fit the pipe connections with flat gaskets onto the water connections.
▶ Open the 3-way ball shut-off valve or the shut-off valve in the cold water supply line.

Making the electrical connection

WARNING Electrocution
Carry out all electrical connection and installation work in accordance with relevant regulations.

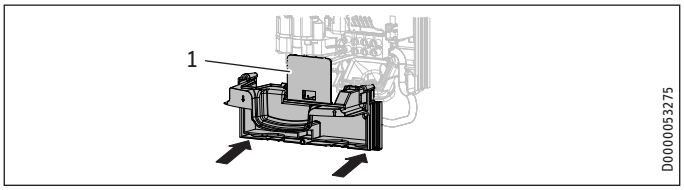
WARNING Electrocution
The connection to the power supply must be in the form of a permanent connection in conjunction with the removable cable grommet. Ensure the appliance can be separated from the power supply by an isolator that disconnects all poles with at least 3 mm contact separation.

WARNING Electrocution
Ensure that the appliance is earthed.

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

▶ Connect the power cable to the mains terminal.

Fitting the lower back panel section



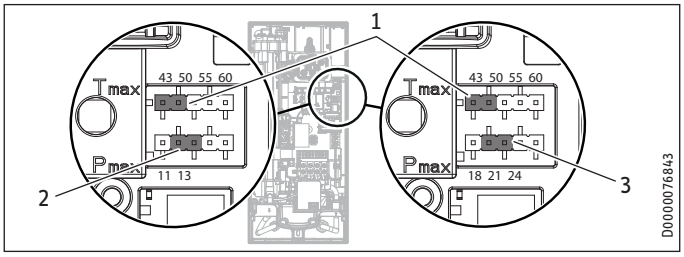
1 Diffuser on lower back panel

▶ Fit the lower back panel section into the back panel. Check that both locking tabs are engaged.
▶ Align the mounted appliance by undoing the fixing toggle, aligning the power supply and back panel, and then re-tightening the fixing toggle. If the back panel does not sit flush against the wall, you can secure the appliance at the bottom with an additional screw.

Material losses
Do not bend the diffuser on the lower back panel when installing.

11. Commissioning

11.1 Preparation



1 Jumper for anti-scalding protection setting
2 Jumper for connected load: DHB-E 11/13 LCD
3 Jumper for connected load: DHB-E 18/21/24 LCD

Internal anti-scalding protection via jumper slot

Jumper position	Description
43	For example, nurseries, hospitals etc.
50	
55	Max. for shower operation
60	Factory setting
No jumper	Limited to 43 °C

▶ Install the anti-scalding protection setting jumper in the required position (= temperature in °C) on the pin strip.

CAUTION Burns
If the water supplied to the appliance is preheated, the internal anti-scalding protection and the temperature limit that is adjustable by the user may be exceeded. In such cases, limit the temperature with an upstream central thermostatic valve (ZTA 3/4).

Changing the connected load via the jumper slot; only for appliances with adjustable output

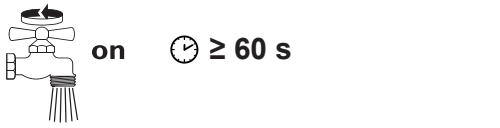
If you select a connected load other than the factory setting for appliances with selectable connected load, you will need to reposition the jumper.

▶ Install the jumper in the required position on the pin strip.

Jumper position DHB-E 11/13 LCD	Connected load
11	11 kW
13	13.5 kW
No jumper	11 kW

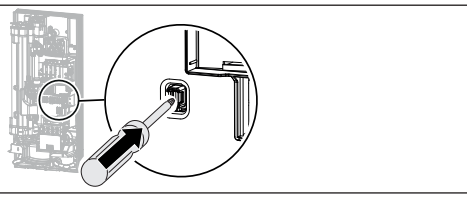
DHB-E 18/21/24 LCD	
18	18 kW
21	21 kW
24	24 kW
No jumper	18 kW

11.2 Initial start-up

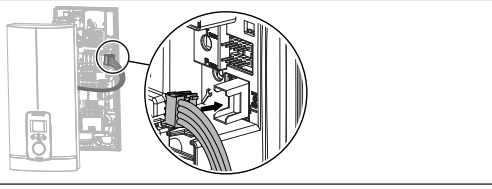


▶ Open and close all connected draw-off valves several times, until all air has been purged from the pipework and the appliance.

▶ Carry out a tightness check.

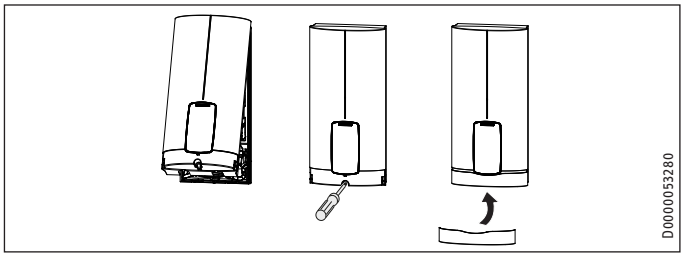


▶ Activate the safety switch by firmly pressing the reset button (the appliance is delivered with the safety switch disabled).



▶ Connect the programming unit connecting cable to the PCB.

Note
For undersink installation, the appliance cover should be turned round for easier operation; see chapter "Alternative installation methods / Pivoting appliance cover".



▶ Hook the appliance cover at the top rear into the back panel. Pivot the appliance cover downwards. Check that the appliance cover is securely seated at both top and bottom.

▶ Tick the selected connected load and rated voltage on the appliance cover type plate (on both sides). Use a ballpoint pen to do this.

▶ Secure the appliance cover with the screw.

▶ Fit the fascia to the appliance cover.

▶ Switch on the power supply.

11.2.1 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 the instructions.

11.3 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 taking the following steps.

▶ Disconnect the appliance from the power supply by removing the fuses/tripping the MCBs.

▶ Open the tap for a minimum of one minute until the appliance and its upstream cold water inlet line are free of air.

▶ Switch the power back ON.

12. Appliance shutdown

▶ Isolate all poles of the appliance from the power supply.

▶ Drain the appliance (see chapter "Installation / Maintenance / Draining the appliance").

13. Alternative installation methods

Overview of the alternative types of installation

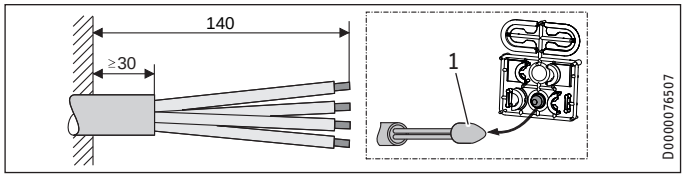
Electrical connection	IP rating
On unfinished walls, connected from above	IP 25
Unfinished walls, from below, short power cable	IP 25
Installation on finished walls	IP 24

Water connection	IP rating
Installation on finished walls	IP 24

Other	IP rating
Installation with offset tiles	IP 25
Pivoting appliance cover	IP 25

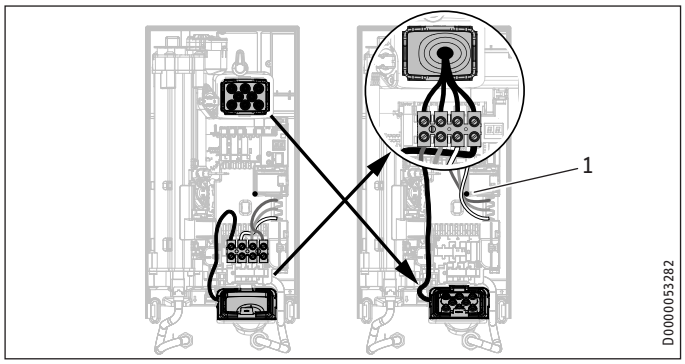
WARNING Electrocution
Before any work on the appliance, disconnect all poles from the power supply.

13.1 Electrical connection from above on unfinished walls



1 Cable entry installation aid

▶ Prepare the power cable.



1 Cable routing

▶ Reposition the mains terminal from the bottom to the top. To do this, undo the fixing screw. Turn the mains terminal with connecting cables 180° clockwise. Route the cable around the cable guide when doing so. Secure the mains terminal in place.

▶ Replace the cable grommets.

▶ Install the cable grommet downwards from above.

▶ Pull the cable grommet over the cable sheath of the power cable.

▶ Install the appliance on the threaded studs of the wall mounting bracket.

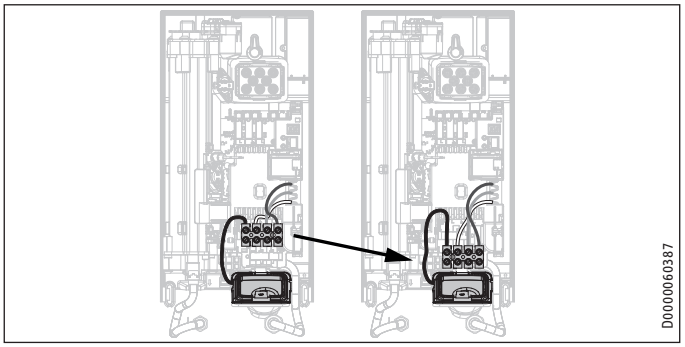
▶ Push the back panel firmly against the wall. Lock the fixing toggle by turning it 90° clockwise.

▶ Pull the cable grommets into the back panel, until both locking tabs engage.

▶ Connect the power cable to the mains terminal.

WARNING Electrocution
The connecting wires must not protrude beyond the level of the mains terminal.

13.2 Electrical connection on unfinished walls with short power cable

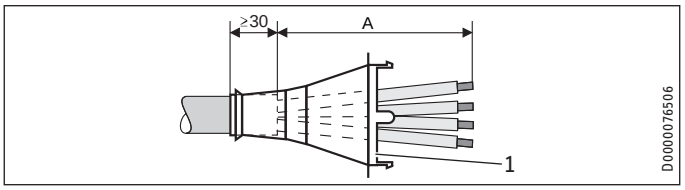


▶ Reposition the mains terminal further downwards. To do this, undo the fixing screw. Secure the mains terminal in place.

13.3 Electrical connection on finished walls

Note
This type of connection changes the IP rating of the appliance.

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



1 Cable grommet

Dimension A	Electrical connection on finished walls
160	Positioned in lower section of appliance
110	Positioned in upper section of appliance

▶ Prepare the power cable. Fit the cable grommet.

Material losses
If you break out the wrong knock-out in the back panel/appliance cover by mistake, you must use a new back panel/appliance cover.

▶ Cleanly cut and break out the required cable entries from the back panel and appliance cover (for the positions, see chapter "Specification / Dimensions and connections"). Deburr any sharp edges with a file.

▶ Route the power cable through the cable grommet.

▶ Connect the power cable to the mains terminal.

ENGLISH

13.4 Connecting a load shedding relay

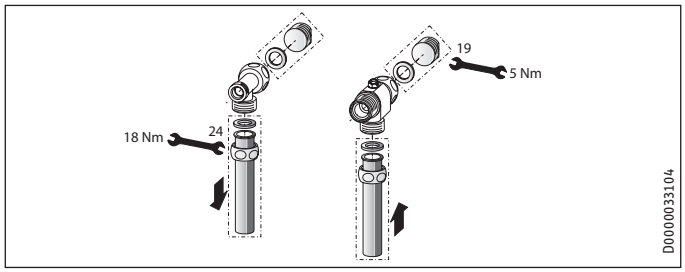
Install a load shedding relay in the distribution board in conjunction with other electric appliances, e.g. electric storage heaters. The relay responds when the instantaneous water heater starts.

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

13.5 Water installation on finished walls

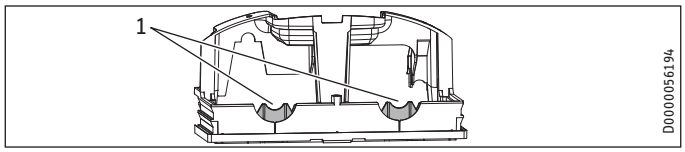
Note
This type of connection changes the IP rating of the appliance.

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



- ▶ Fit water plugs with gaskets to seal the concealed connections. All taps obtained as accessories are supplied with plugs and gaskets as standard. For pressure taps other than those recommended by us, plugs and gaskets can be ordered as accessories.
- ▶ Fit a suitable pressure tap.
- ▶ Push the lower back panel section under the connecting pipes of the tap and push it into the back panel.
- ▶ Secure the connection pipes to the tee and the 3-way ball shut-off valve.

Note
You can break off the pipe fitting tabs on the lower back panel section if required.



1 Tab

13.6 Water installation on finished walls with solder/press-fit fittings

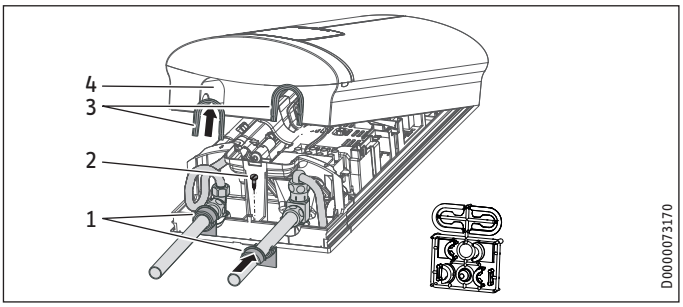
You can connect copper or plastic pipes using the accessories "solder fitting" or "press-fit fitting".

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

- ▶ Push the union nuts over the connection pipes.
- ▶ Solder the inserts to the copper pipes.
- ▶ Push the lower back panel section under the connecting pipes of the tap and push it into the back panel.
- ▶ Secure the connection pipes to the tee and the 3-way ball shut-off valve.

Note
Observe the tap manufacturer's instructions.

13.7 Fitting appliance cover over water installation on finished walls

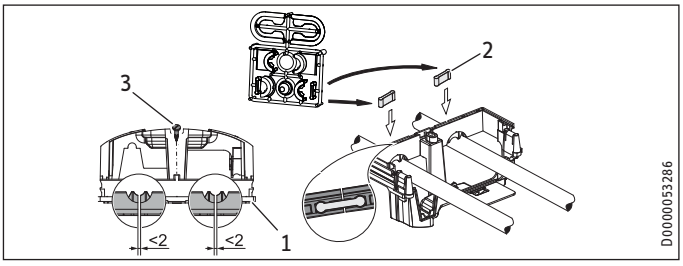


1 Back panel guides
2 Screw
3 Cover guides with sealing lips on the pipe side
4 Pipe knock-out

- ▶ Cleanly saw and break out the pipe knock-outs in the appliance cover. If necessary, use a file.
- ▶ When installing the connection pipes without offset, break off the sealing lips on the cover guides.
- ▶ Click the cover guides into place in the knock-outs.
- ▶ Position the back panel guides on the pipes. Push them together. Then push the guide pieces against the back panel as far they will go.
- ▶ Secure the lower back panel section with a screw.

Note
Use the cover guides with sealing lips if the connection pipes are slightly offset. In this case, the back panel guides are not fitted.

13.8 Lower back panel section installation with threaded fittings on finished walls



1 Lower back panel section
2 Connection piece in the standard delivery
3 Screw

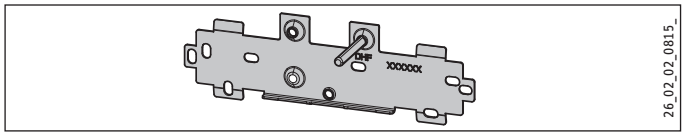
If using threaded fittings on finished walls, the lower back panel section can also be installed after fitting the taps/valves. To do this, carry out the following steps:

- ▶ 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 back panel section with a screw.

13.9 Wall mounting bracket when replacing appliance

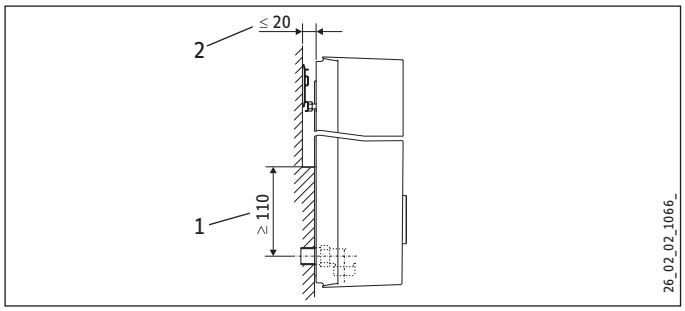
An existing STIEBEL ELTRON wall mounting bracket may be used when replacing appliances (except for DHF instantaneous water heater), as long as the fixing screw is in the lower right position.

Replacing a DHF instantaneous water heater



- ▶ Reposition the fixing screw on the wall mounting bracket (the securing screw 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

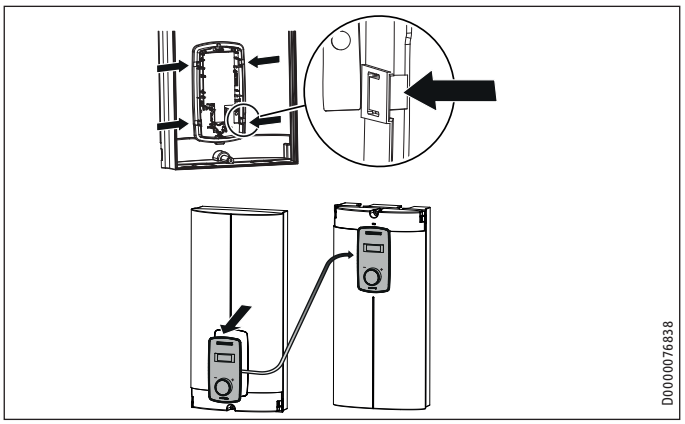


1 Minimum contact area of the appliance
2 Maximum tile offset

- ▶ Adjust the wall clearance. Lock the back panel in place using the fixing toggle (turn 90° clockwise).

13.11 Pivoting appliance cover

The appliance cover should be turned round for undersink installation.



- ▶ Remove the programming unit from the appliance cover by pressing the locking hooks and removing the programming unit.
- ▶ Turn the appliance cover (not the appliance) and refit the programming unit. Push the programming unit home in parallel until all locking tabs engage. When engaging the locking tabs, apply counter pressure by pushing against the appliance cover from the inside.

WARNING Electrocution
All 4 locking tabs on the programming unit must click into place. The locking tabs must be complete and undamaged. If the programming unit is not inserted correctly, protection of users against contact with live components cannot be ensured.

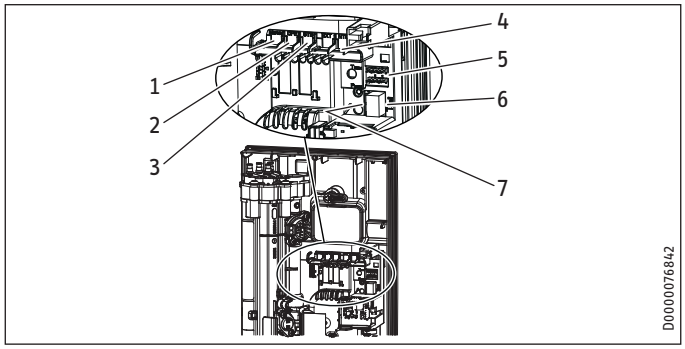
- ▶ Insert the connecting cable plug of the programming unit into the PCB (see chapter "Commissioning / Initial start-up").
- ▶ Hook the appliance cover in at the bottom. Pivot the appliance cover up to the back panel.
- ▶ Secure the appliance cover.
- ▶ Fit the cover on to the appliance cover.

13.12 Operation with preheated water

You can restrict the maximum inlet temperature by installing a central thermostatic valve.

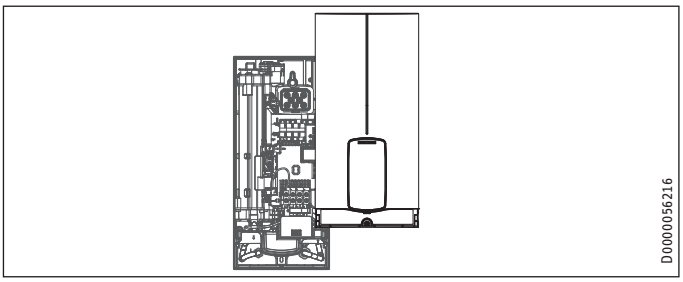
14. Service information

Overview of connections



1 Flow limiter
2 Flow sensor
3 High limit safety cut-out, automatic reset
4 NTC sensor
5 Pin strips for connected load and anti-scalding protection
6 Programming unit plug-in position
7 Diagnostic traffic light

Appliance cover retainer



15. Troubleshooting

WARNING Electrocution
To test the appliance, it must be connected to the power supply.

Note
The diagnostic traffic light is displayed when water flows.

Indicator options for diagnostic traffic light (LED)		
●○○	Red	Illuminates in the event of a fault
○●○	Yellow	Illuminates in heating mode/flashes when output restriction reached
○○●	Green	Flashing: Appliance connected to power supply

Diagnostic traffic light	Fault	Cause	Remedy
No LED illuminates.	The appliance does not heat up.	There is no power supply.	Check the fuse/MCB in your fuse box/distribution board.
		The PCB is faulty.	Replace the test assembly.
Green flashes, yellow off, red off	No DHW	The shower head / aerator are scaled up.	Descale or replace the shower head / aerator if necessary.
		The strainer in the cold water inlet is dirty.	Clean the strainer.
		The flow meter is not plugged in.	Reconnect the connecting cable on the PCB.
		The flow meter is faulty.	Replace the flow meter.
		The PCB is faulty.	Replace the test assembly.
Green flashes, yellow on, red off	The display is completely off.	Loose set value transducer cable between PCB and display.	Check the set value transducer cable and plug the cable into the programming unit and/or PCB.
		The programming unit connecting cable is faulty.	Check the connecting cable and replace if required.
		The programming unit PCB is faulty.	Check the programming unit and replace if required.
Green flashes, yellow on, red off	No DHW, the outlet temperature does not match the set value.	The downstream tap is faulty.	Replace the faulty tap.
		Internal anti-scalding protection is activated.	Deactivate the internal anti-scalding protection.
		The heating system is faulty.	Replace the test assembly.
		The outlet detector is faulty.	Replace the outlet sensor.
		The PCB is faulty.	Replace the test assembly.
		Appliance is operating at its output limit.	Reduce the flow rate. Install the flow limiter.
Green flashes, yellow off, red on	No DHW, the outlet temperature does not match the set value.	The high limit safety cut-out is not enabled.	Activate the safety switch.
		The high limit safety cut-out is not connected.	Reconnect the connecting cable on the PCB.
		The high limit safety cut-out has tripped.	Remedy the cause and activate the safety switch.
		The high limit safety cut-out is faulty.	Replace the high limit safety cut-out.

16. Maintenance

WARNING Electrocution
Before any work on the appliance, disconnect all poles from the power supply.

Draining the appliance

The appliance can be drained for maintenance work.

WARNING Burns
Hot water may escape when you drain the appliance.

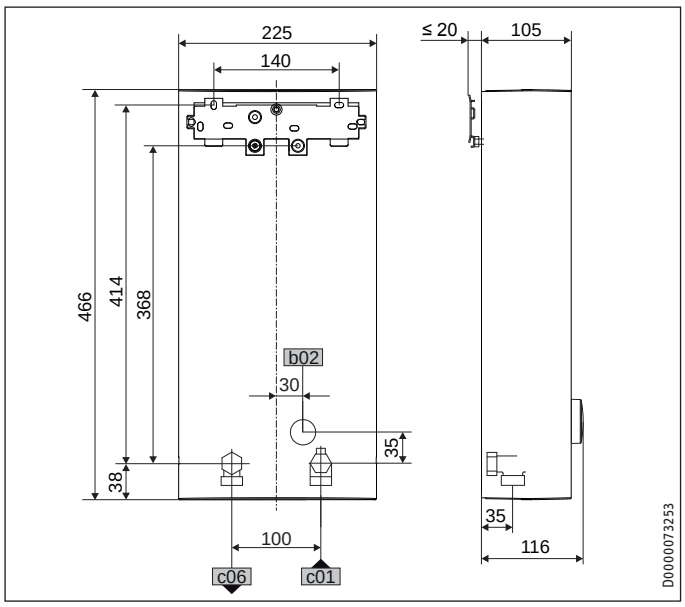
- ▶ Close the 3-way ball shut-off valve or the shut-off valve in the cold water supply line.
- ▶ Open all draw-off valves.
- ▶ Undo the pipe connections from the appliance.
- ▶ Store the dismantled appliance in a room free from the risk of frost, as water residues remaining inside the appliance can freeze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

Cleaning the strainer

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

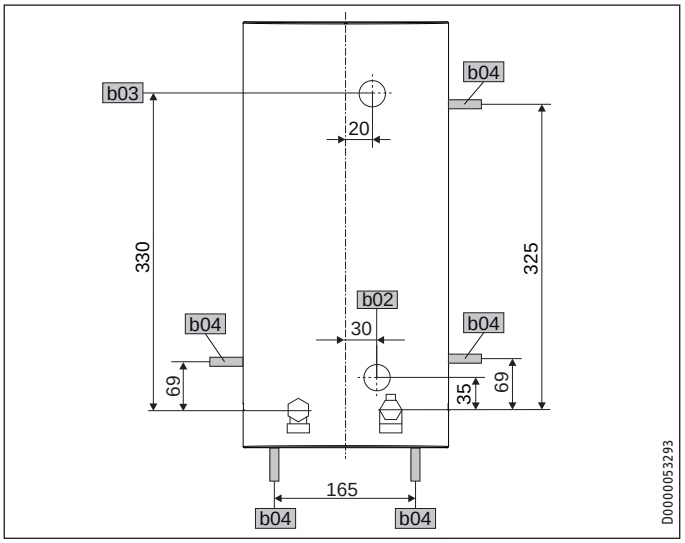
17. Specification

17.1 Dimensions and connections



			DHB-E LCD
b02	Entry electrical cables I	Installation on unfinished walls	
c01	Cold water inlet	Male thread	G 1/2 A
c06	DHW outlet	Male thread	G 1/2 A

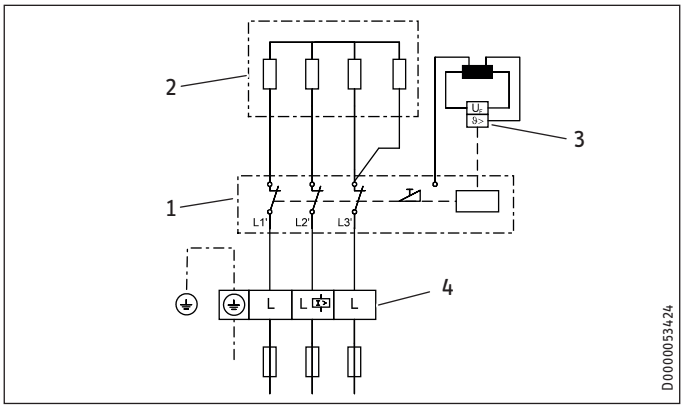
Alternative connection options



			DHB-E LCD
b02	Entry electrical cables I	Installation on unfinished walls	
b03	Entry electrical cables II	Installation on unfinished walls	
b04	Entry electrical cables III	Installation on finished walls	

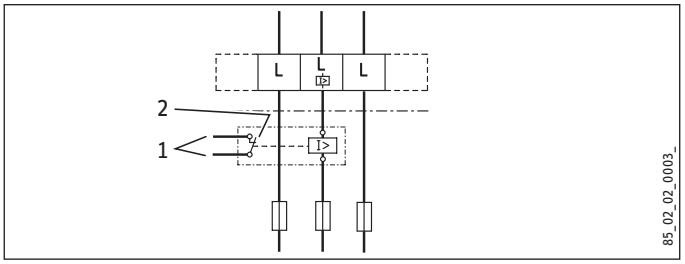
17.2 Wiring diagram

3/PE ~ 380-415 V



1 Power PCB with integral safety switch
2 Bare wire heating system
3 High limit safety cut-out
4 Mains terminal

Priority control with LR 1-A



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

17.3 Domestic hot water output

The DHW output is subject to the connected power supply, the appliance's connected load and the cold water inlet temperature. The rated voltage and rated output can be found on the type plate.

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
9.9			4.3	5.1	6.1	7.9
12.2			5.3	6.2	7.6	9.7
	11		4.8	5.6	6.8	8.7
	13.5		5.8	6.9	8.4	10.7
		11.8	5.1	6.0	7.3	9.4
		14.5	6.3	7.4	9.0	11.5
16.2			7.0	8.3	10.1	12.9
	18		7.8	9.2	11.2	14.3
		19.4	8.4	9.9	12.0	15.4
16.2			7.0	8.3	10.1	12.9
19			8.2	9.7	11.8	15.1
21.7			9.4	11.1	13.5	17.2
	18		7.8	9.2	11.2	14.3
	21		9.1	10.7	13.0	16.7
	24		10.4	12.2	14.9	19.0
		19.4	8.4	9.9	12.0	15.4
		22.6	9.8	11.5	14.0	17.9
		25.8	11.2	13.2	16.0	20.5

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
9.9			3.1	3.5	4.0	4.7
12.2			3.9	4.4	5.0	5.8
	11		3.5	3.9	4.5	5.2
	13.5		4.3	4.8	5.5	6.4
		11.8	3.7	4.2	4.8	5.6
		14.5	4.6	5.2	5.9	6.9
16.2			5.1	5.8	6.6	7.7
	18		5.7	6.4	7.3	8.6
		19.4	6.2	6.9	7.9	9.2
16.2			5.1	5.8	6.6	7.7
19			6.0	6.8	7.8	9.0
21.7			6.9	7.8	8.9	10.3
	18		5.7	6.4	7.3	8.6

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
	21		6.7	7.5	8.6	10.0
	24		7.6	8.6	9.8	11.4
		19.4	6.2	6.9	7.9	9.2
		22.6	7.2	8.1	9.2	10.8
		25.8	8.2	9.2	10.5	12.3

17.4 Application areas / Conversion table

Specific electrical resistance and specific electrical conductivity

Standard specification at 15 °C			20 °C			25 °C		
Resistance ρ ≥	Conductivity σ ≤		Resistance ρ ≥	Conductivity σ ≤		Resistance ρ ≥	Conductivity σ ≤	
Ωcm	mS/m	µS/cm	Ωcm	mS/m	µS/cm	Ωcm	mS/m	µS/cm
900	111	1111	800	125	1250	735	136	1361

17.5 Pressure drop

Taps/valves

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.

17.6 Fault conditions

In the event of a fault, loads up to 80 °C at a pressure of 1.0 MPa can occur briefly in the installation.

17.7 Test symbols

See type plate on the appliance.

17.8 Energy consumption data

The product data complies with EU regulations relating to the directive on the ecodesign of energy related products (ErP).

		DHB-E 11/13 LCD	DHB-E 18 LCD 25A	DHB-E 18/21/24 LCD	DHB-E 27 LCD
		236743	236744	236745	236746
Manufacturer		STIEBEL ELTRON	STIEBEL ELTRON	STIEBEL ELTRON	STIEBEL ELTRON
Load profile		S	S	S	S
Energy efficiency class		A	A	A	A
Energy conversion efficiency	%	39	39	39	39
Daily power consumption	kWh	2,211	2,211	2,211	2,217
Annual power consumption	kWh	480	480	480	481
Default temperature setting	°C	60	60	60	60
Sound power level	dB(A)	15	15	15	15
Special information on measuring efficiency		Measured with integral flow limiter, maximum output and maximum set value	Measured with integral flow limiter and maximum set value	Measured with integral flow limiter with highest flow rate, maximum output and maximum set value	Measured with integral flow limiter and maximum set value

Specification

17.9 Data table

		DHB-E 11/13 LCD			DHB-E 18 LCD 25A			DHB-E 18/21/24 LCD			DHB-E 27 LCD	
				236743			236744			236745		236746
Electrical data												
Rated voltage	V	380	400	415	380	400	415	380	400	415	380	400
Rated output	kW	9.9/12.2	11/13.5	11.8/14.5	16.2	18	19.4	16.2/19/21.7	18/21/24	19.4/22.6/25.8	24.4	27
Rated current	A	16.6/18.5	17.5/19.5	18.2/20.2	24.7	26	27	27.6/29.5/33.3	29/31/35	30.1/32.2/36.3	37.1	39
Fuses	A	20	20	20	25	25	32	32/32/35	32/32/35	32/32/40	40	40
Frequency	Hz	50/60	50/60	50/-	50/60	50/60	50/-	50/60	50/60	50/-	50/-	50/-
Phases				3/PE			3/PE			3/PE		3/PE
Specific resistance ρ15 ≥	Ω cm			900			900			900		900
Specific conductivity σ15 ≤	µS/cm			1111			1111			1111		1111
Max. mains impedance at 50 Hz	Ω	0.459	0.436	0.42	0.331	0.315	0.304	0.248	0.236	0.227	0.221	0.21
Versions												
Heating system heat generator				Bare wire			Bare wire			Bare wire		Bare wire
Adjustable connected load				X			-			X		-
Temperature setting range	°C			Off, 20-60			Off, 20-60			Off, 20-60		Off, 20-60
Protection class				1			1			1		1
Insulating block				Plastic			Plastic			Plastic		Plastic
Cover and back panel				Plastic			Plastic			Plastic		Plastic
IP rating				IP25			IP25			IP25		IP25
Colour				White			White			White		White
Connections												
Water connection				G 1/2 A			G 1/2 A			G 1/2 A		G 1/2 A
Application limits												
Max. permissible pressure	MPa			1			1			1		1
Max. inlet temperature for reheating	°C			55			55			55		55
Values												
Max. inlet temperature (e.g. pasteurisation)	°C			70			70			70		70
ON	l/min			>2.5			>2.5			>2.5		>2.5
Flow rate limit at	l/min			4.0			7.5			7.5/7.5/8.5		8.5
Flow rate at 28 K	l/min			5.6/6.9 at 400 V			9.2 at 400 V			9.2/10.7/12.3 at 400 V		13.8 at 400 V
Flow rate at 50 K	l/min			3.2/3.9 at 400 V			5.2 at 400 V			5.2/6.0/6.9 at 400 V		7.7
Pressure drop for flow rate at 50 K (without flow limiter)	MPa			0.03/0.04			0.06			0.06/0.08/0.1		0.13
Pressure drop for flow rate at 50 K (with flow limiter)	MPa			0.08/0.2			0.1			0.1/0.13/0.17		0.2
Hydraulic data												
Nominal capacity	l			0.4			0.4			0.4		0.4
Dimensions												
Height	mm			466			466			466		466
Width	mm			225			225			225		225
Depth	mm			116			116			116		116
Weights												
Weight	kg			3.2			3.2			3.2		3.2

Note
The appliance conforms to IEC 61000-3-12.

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.

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Stand 9147

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