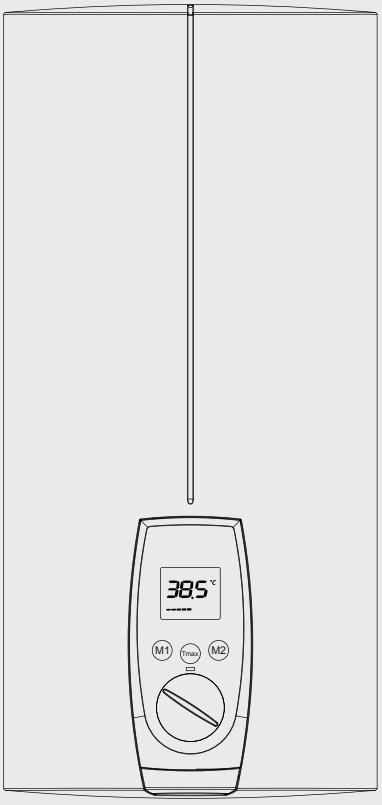
OPERATION AND INSTALLATION

Electronically controlled instantaneous water heater

» DEL 18/21/24 SL electronic LCD
» DEL 27 SL electronic LCD



STIEBEL ELTRON

SPECIAL INFORMATION

- The appliance may be used by children aged 8 and up 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 scalding: The tap can reach temperatures in excess of 50 ℃

- Ensure the appliance can be separated from the power supply by an isolator that disconnects all poles with at least 3mm contact separation.

- Secure the appliance as described in chapter "Installation / Installation".

- Observe the maximum permissible pressure (see chapter “Specification / Dat table”).

- Drain the appliance as described in chapter "Installation / Maintenance / Draining the appliance”.

OPERATION

1. General information

The chapter "Operation" is intended for appliance 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 here.

1.1.2 Symbols, type of risk

Symbol	Type of risk
	Injury
	Electrocution
	Burns or 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
Notes are bordered by horizontal lines above and below the text.General information is identified by the symbol shown on the left.
▶ Read these texts carefully.

Symbol	
	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
Unless specified otherwise, all dimensions are given in mm.

2. Safety

2.1 Intended use

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.

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

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 50°C, e.g. in the case of water that has been preheated by solar energy.
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 up and persons with reduced physical, sensory or mental capabilities or a lack of experience and know-how, provided that they are supervised or they havebeen 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.

ENGLISH

Where children or persons with limited physical, sensory or men tal abilities are allowed to use this appliance, we recommend a permanent temperature limit. The limit can be set by you or a contractor:

- The temperature limit (child-proofing) is user adjustable
- Anti-scalding protection can be enabled by a qualified contractor.

! Damage to the appliance and environment
Protect the appliance and its tap against frost.

2.3 CE designation

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

- Low Voltage Directive
- Electromagnetic Compatibility Directive
  The maximum permissible mains impedance is indicated in chapter "Specification".

2.4 Test symbols

See type plate on the appliance

Country-specific approvals and certifications: Germany

In line with [German] State Building Regulations, a general test certificate has been issued for the appliance, as verification of its suitability regarding noise emissions.

3. Appliance description

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

DHW temperature

The DHW outlet temperature can be variably adjusted. The selected temperature is displayed.

Display backlighting

The display has white backlighting. During the draw-off process or a temperature adjustment, backlighting is enabled.

Temperature limit (child-proofing)/ anti-scalding protection

The temperature limit (child-proofing) can be individually set using the Tmax key. The selected temperature then limits the setting range of the DHW outlet temperature.

The qualified contractor can also enable static anti-scalding protection from 43 for you (see chapter “Alternative installation options/ Anti-scalding protection”). The anti-scalding temperature then functions as the upper limit for the DHW outlet temperature and for the temperature limit (child-proofing).

Heating system

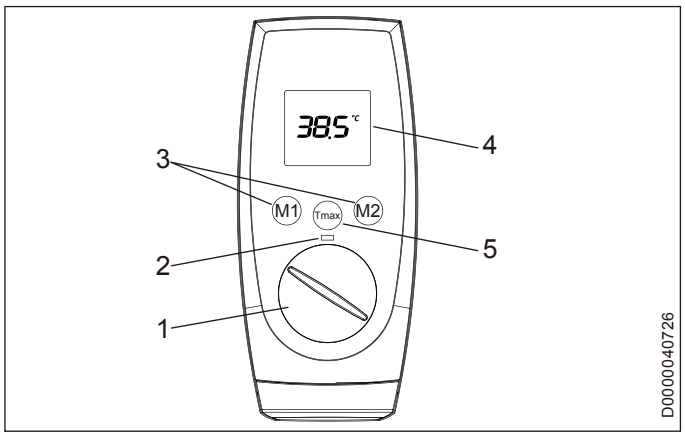
The heating system is suitable for hard and soft water areas; it has low susceptibility to scale build-up. This system ensures rapid and efficient DHW availability.

Note
The appliance is equipped with an air detector, which largely prevents damage to the heating system. If, during operation, air is drawn into the appliance, heating out put is shut down automatically for one minute, thereby protecting the heating system.

ENGLISH

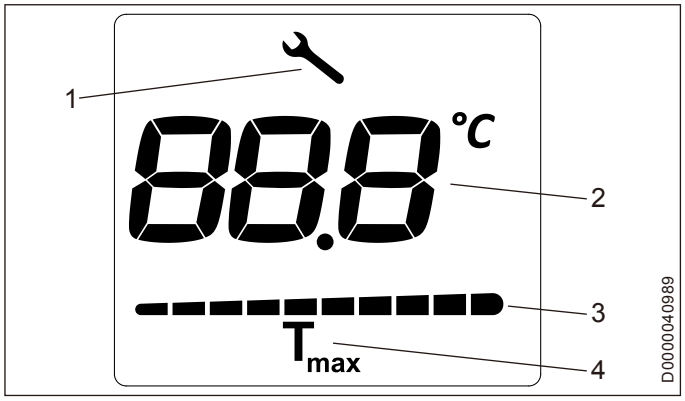
4. Settings and displays

4.1 User interface



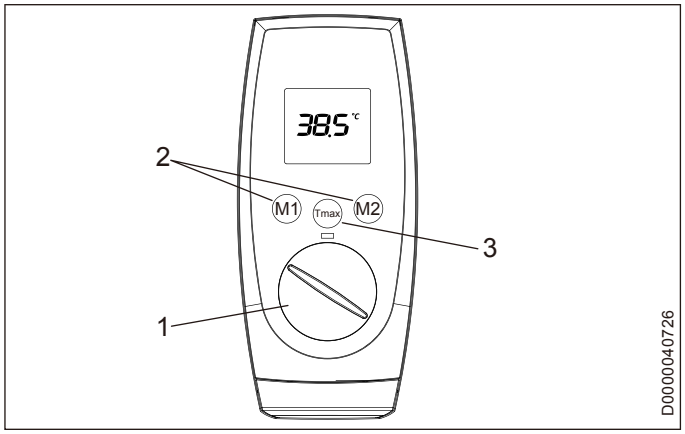
1 Temperature selector
2 LED scalding risk indicator
3 Memory keys M1 and M2
4 Display
5 Temperature limit T max

Display symbols



1 In the event of an appliance fault, a spanner appears
2 Segment display for temperature setting with °C
3 Performance bar, 10-100%
4 Tmax, displayed when temperature limit is enabled

Setting the temperature



1 Set temperature setting range 30 - 60°C (without end-stop) 35°C to 43°C in 0.5°C increments, other temperature ranges in 1°C incerments
2 Call up preferred temperatures
3 Set the temperature limit

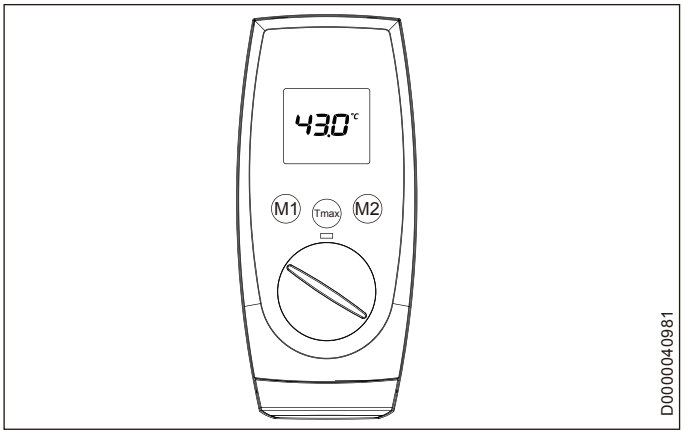
Memory keys M1 and M2 can each be assigned a preferred temperature.

▶ Select a preferred temperature.
▶ Press one of the M keys for 3 seconds to save the preferred temperature . The temperature is confirmed with 1x flashing.

Note
If the outlet temperature is not sufficiently high 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 (working at maximum output).

▶ Reduce the water volume at the draw-off valve until the required temperature delivery is achieved.

4.2 Temperature limit (child-proofing)



The temperature limit can be individually set between 30°C and 60°C

Enabling the temperature limit (child-proofing)

▶ Press and hold the Tmax key for > 6 seconds.The set value display flashes and the current temperature limit is shown.
▶ The value for the temperature limit can be changed while the display is flashing. If no key is pressed for 10 seconds, the display stops flashing and the value is stored. The display then shows the set value and the Tmax symbol.

Disabling the temperature limit (child-proofing)

▶ Press and hold the Tmax key > 6 seconds.
▶ The Tmax symbol on the display is no longer shown.

Inlet temperature information

If the inlet temperature is higher than the preferred temperature, e.g. if water has been preheated by solar energy, the display alternates between showing "hot" and the measured inlet temperature. The LED scalding risk indicator also flashes.

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4.3 Inlet temperature information

If the inlet temperature is higher than the preferred temperature, e.g. if water has been preheated by solar energy, the display alternates between showing "hot" and the measured inlet temperature. The LED scalding risk indicator also flashes.

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

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

4.4 Following an interruption to the water supply

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

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

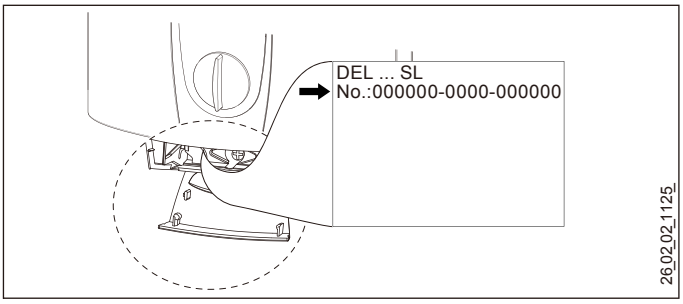
5. Cleaning, care and maintenance

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

6. Troubleshooting

Fault	Cause	Remedy
The appliance will not start despite the DHW valve being fully open.	There is no voltage in the appliance.	Check the fuses/MCBs in your fuse box.
	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 inlet line (see chapter "Settings / Following an interruption to the water supply").
Cold water flows briefly while hot water is being drawn.	The air sensor detects air in the water and the ap - pliance's heating output is briefly switched off.	The appliance restarts automatically after 1 minute.
The temperature at the appliance cannot be set to > 43 °C	The child-proofing Tmax is enabled.	Disable the child-proofing (see chapter "Appliance description")
	The anti-scalding protec - tion in the appliance is enabled.	Your qualified contractor can disable the anti-scald - ing protection for you.

If you cannot remedy the fault, notify your qualified contractor. To facilitate and speed up your enquiry, please provide the serial 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.

Flow pressure

If the flow rate is not sufficient to switch on the appliance even when the tap is open, remove the flow limiter and replace it with the plastic profile washer supplied.

If required, the pressure in the water installation can also be raised.

Note
To ensure the thermostatic valve works properly, you should not replace the flow limiter in this valve not replace the flow limiter in this valve with the plastic profile washer.

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").

7.2 Instructions, standards and regulations

Note
Observe all applicable national and local instructions and regulations, e.g. DIN 1988 / DIN EN 806 in Germany.

- The protection rating IP 25 (hoseproof) 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 net work, factor in the lowest electrical resistance of the water (see chapter " Specification / Application areas"). 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
- Cross-piece
- Tee
- Flat gaskets
- Strainer
- Plastic profile washer
- 2 flow limiters
- Plastic connection pieces / installation aid
- Cover and back panel guides

8.2 Accessories

Taps/valves

- MEKD - kitchen pressure tap
- MEBD - bath pressure tap

Plug G1/2 A

The plugs are required if you use any taps other than the pressure taps for finished walls recommended in the accessories.

Installation set for finished walls

- Solder fitting - copper pipe for solder connection Ø12mm
- Compression fitting - copper pipe
- Compression fitting - plastic pipe (suitable for Viega: San fix-Plus or Sanfix-Fosta)

Universal mounting frame

Mounting frame with electrical connections.

Pipe assembly for undersink appliances

This assembly is required for undersink installation where you need to have the water connections (G3/8A) above the appliance.

Pipe assembly for offset installation

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

Pipe assembly for replacing a gas water heater

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

Pipe assembly for DHB water plug-in couplings

2 water plug-in couplings for connecting the appliance to the existing water plug-in connections of a DHB.

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 simultane ously being operated.

ZTA 3/4 - central thermostatic valve

The thermostatic valve is for central premixing, for example on an instantaneous water heater with solar thermal system.

Service monitor

Diagnostic unit for detecting faults in the appliance.

9. Preparations

▶ Flush the water line thoroughly.

Taps/valves

▶ Use suitable taps (see chapter " Appliance description/ Accessories"). Open vented taps are not permissible.

A safety valve is not required.

Note
Never use the cross-piece to reduce the flow rate. The cross-piece should only be used to shut off the appliance.

Permissible water pipe materials

- Cold water inlet pipe:
  galvanised steel pipe, stainless steel pipe, copper pipe or plastic pipe
- DHW outlet pipe:
  stainless steel pipe, copper pipe or plastic pipe

Material losses
If plastic pipework systems are used, take into account the maximum inlet temperature and the maximum permissible pressure (see chapter " Specification / Data table")

Flow rate

▶ Ensure that the flow rate (see chapter " Specification / Data table", On) is sufficient for switching on the appliance.
▶ Increase the mains water pressure if the required flow rate is not sufficient with an open draw-off valve.

Flexible water connection lines

▶ If the appliance is installed with flexible water connection lines, ensure that the pipe bends do not become twisted. Pipe bends have a bayonet fitting and are installed inside the appliance.
▶ Secure the back panel with an additional screw at the bottom.

Appliance with adjustable connected load

The appliance DEL 18/21/24 SL electronic LCD is factory set to 21kW. For other outputs, proceed as follows:

▶ Plug in the coding card according to the selected output; for selectable output and fuse protection of the appliance, see "Specification".

▶ Tick the selected output on the type plate. Please use a ball point pen to do this.

9.1 Installation site

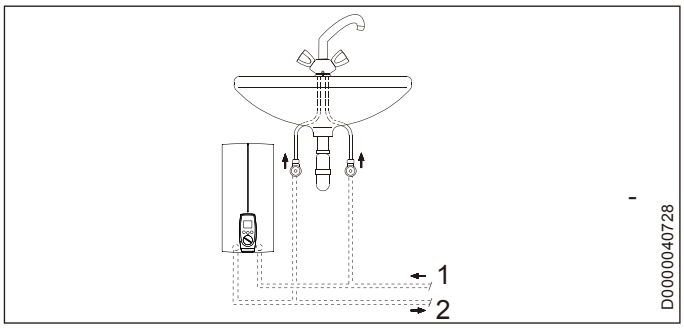
Material losses
Only install the appliance in rooms free from the risk of frost.

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

The appliance is suitable for undersink and oversink installations.

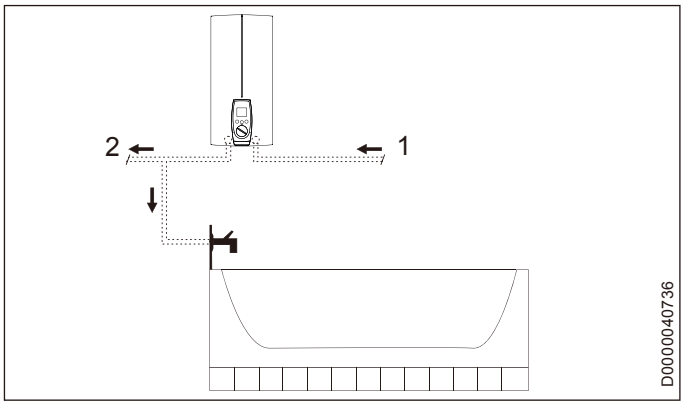
Note
Mount the appliance on a sufficiently load-bearing wall.

Undersink installation



1 Cold water inlet
2 DHW outlet

Oversink installation



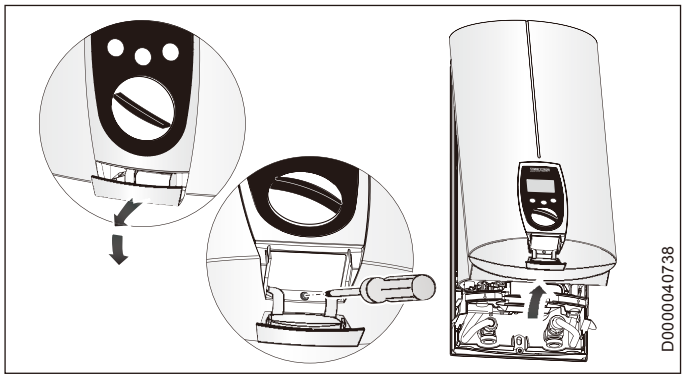
1 Cold water inlet
2 DHW outlet

10. Installation

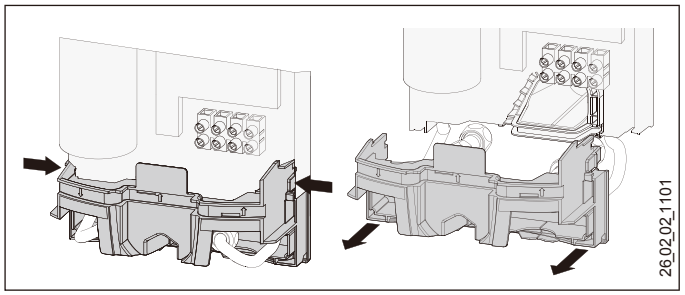
10.1 Standard installation

- Electrical connection in the lower section of the appliance for installation on unfinished walls
- Water connection for installation on unfinished walls
- For the appliance with adjustable connected load, the middle load is preset.

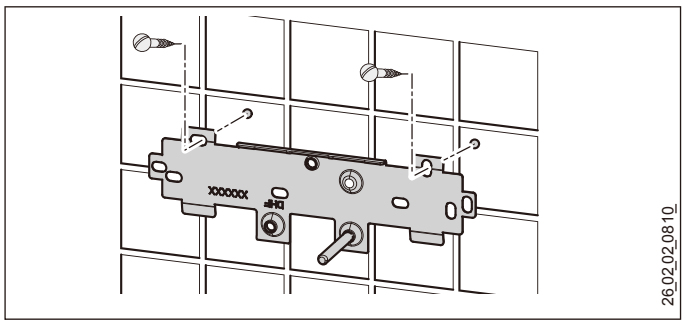
For further installation options, see chapter "Installation options".



▶ Open the appliance.



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

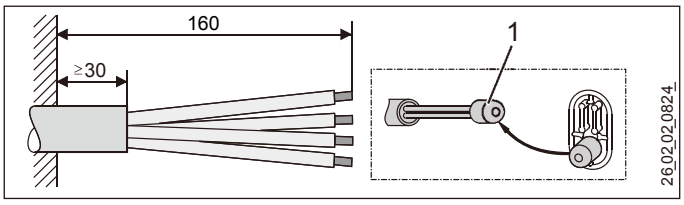


▶ Use the installation template to mark out the holes for drilling. If the appliance is to be installed with water connections for finished walls, also mark out the fixing hole in the lower part of the template.

▶ 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).

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

▶ Fit the wall mounting bracket.

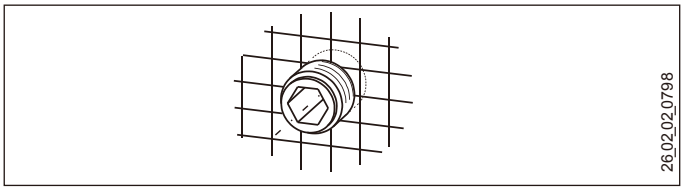


1 Installation aid

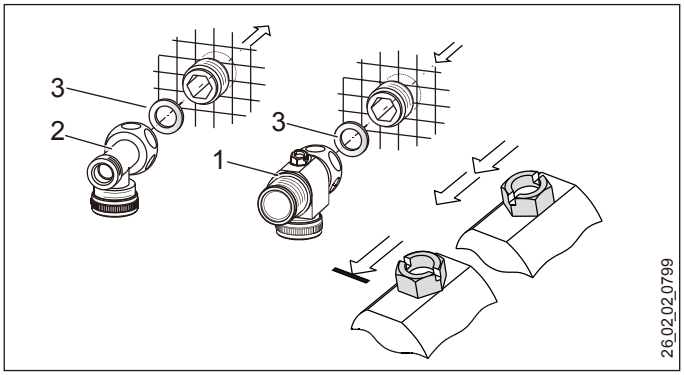
▶ Prepare the power cable.

Making the water connection

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

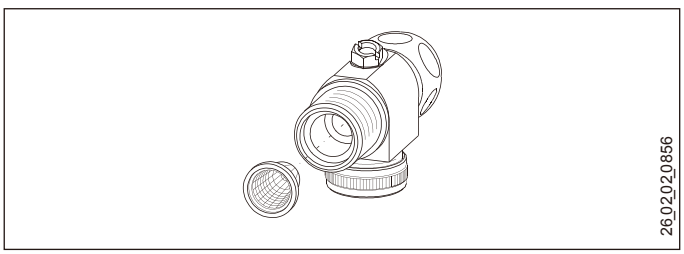


▶ Seal and insert the twin connectors.



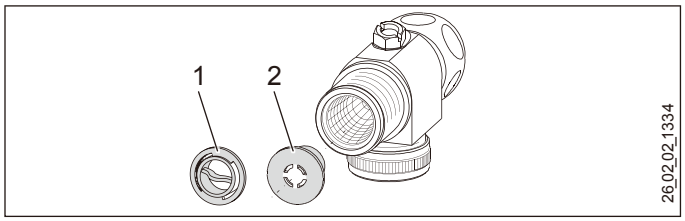
1 Cold water with 3-way ball shut-off valve
2 DHW with tee
3 Gasket

▶ Fit the water connections.



▶ Fit the strainer provided in the 3-way ball shut-off valve

Damage to the appliance and environment
The strainer must be fitted for the appliance to function.
▶ When replacing the appliance, check that the strainer is present.

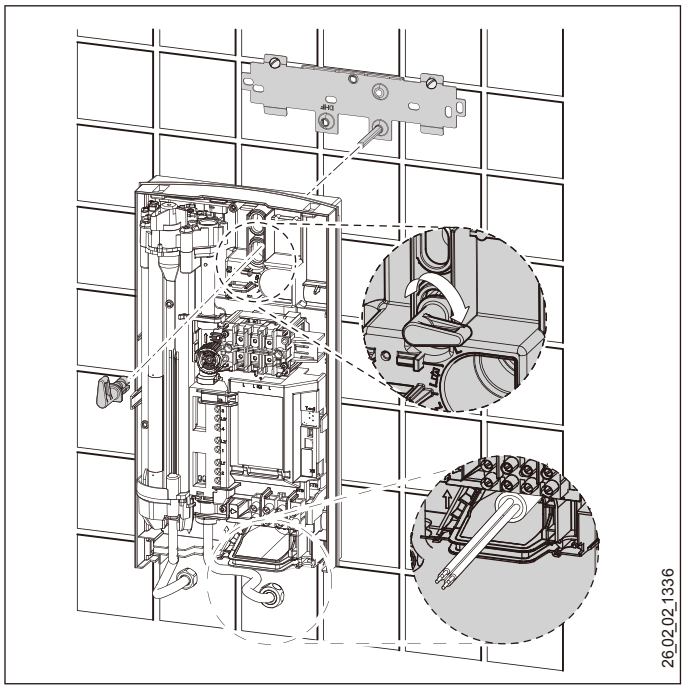


1 Plastic profile washer
2 Flow limiter

Note

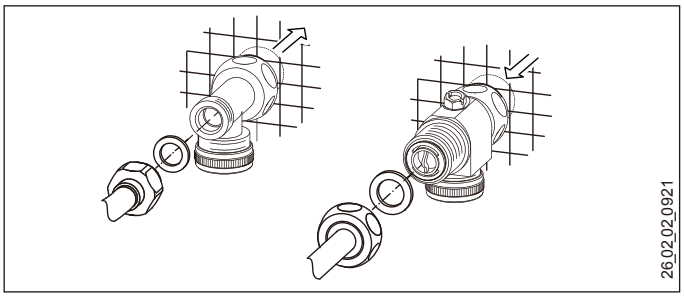
- ▶ Install the blue flow limiter (7.5 l/min) as standard.
- ▶ Use the brown flow limiter (12 l/min) in the following instances:
  - With an increased cold water inlet temperature, e.g. in the case of water preheated by solar energy.
  - When using the appliance for showering.
- ▶ With low water pressure.The pressure drop can be reduced by replacing the flow limiter with the plastic profile washer provided.

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.

  If the cross-section is > 6 mm², enlarge the hole in the cable grommet.
- ▶ Press the appliance over the threaded stud of the wall mounting bracket. When doing so, push through the soft seal in the back panel of the appliance. If necessary, use a screwdriver.
- ▶ Push the fixing toggle on to the threaded stud of the wall mounting bracket.
- ▶ Push the back panel of the appliance on to the wall.Turn the fixing toggle 90° clockwise to lock the appliance in place.



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

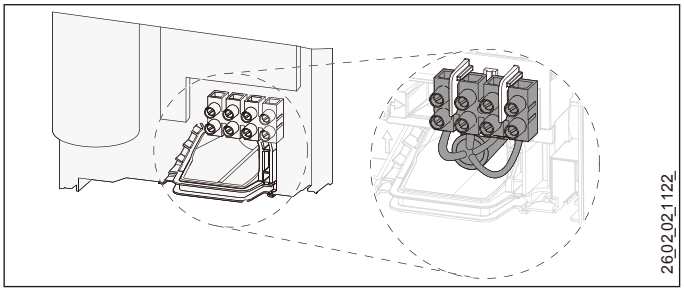
Connecting the power supply

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

WARNING Electrocution
Connection to the power supply is only permissible 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 3mm contact separation.

WARNING Electrocution
Ensure that the appliance is earthed.

Damage to the appliance and environment
Observe the type plate. The specified voltage must match the mains voltage.

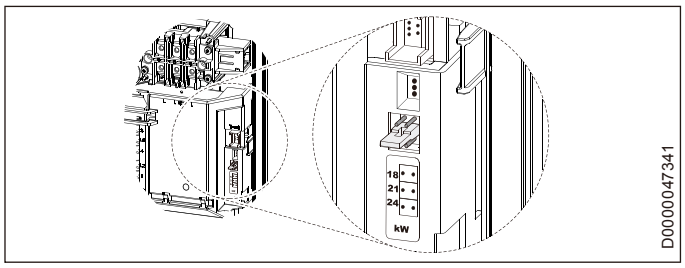


- ▶ Connect the power cable to the mains terminal (see chapter “Specification / Wiring diagram”). The specified voltage must match the mains voltage.

ENGLISH

Adjustable connected load

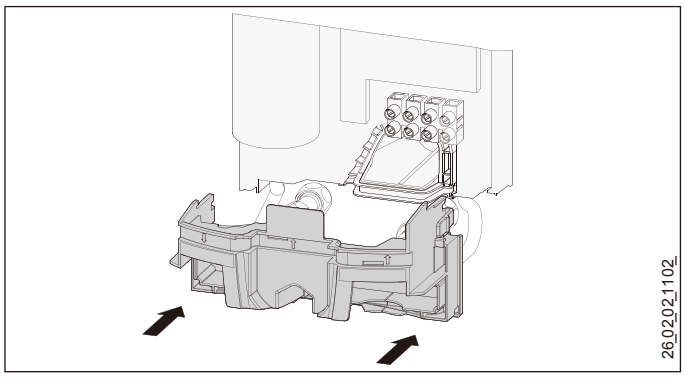
With the DEL 18/21/24 SL, 3 connected load stages can be selected. The middle load is preset. With a different connected load, proceed as follows:



- ▶ Select the connected load you require (see chapter "Specification / Data table").
- ▶ Plug in the coding card according to the selected connected load.
- ▶ Change the type plate.Tick the selected connected load. Please use a ballpoint pen to do this.

10.2 Completing the installation

- ▶ Open the 3-way ball shut-off valve.

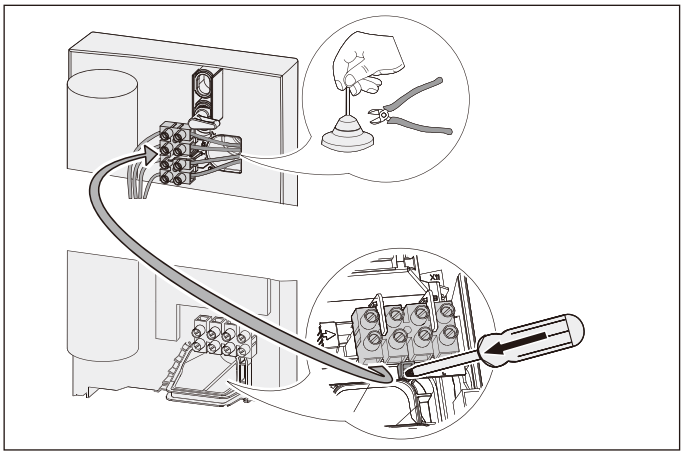


- ▶ Fit the lower part of the back panel. Ensure that it clicks into place.
- ▶ Align the mounted appliance by loosening the fixing toggle, aligning the electrical connection and back panel, and then re-tightening the fixing toggle. If the back panel of the appliance is not flush, the appliance can be secured at the bottom with an additional screw.

10.3 Installation options

- Electrical connection from above on unfinished walls
- Electrical connection on finished walls
- Large cross-section for electrical connection from below
- Connecting a load shedding relay
- Water installation on finished walls
- Water installation for finished walls with solder / compres sion fitting
- Water installation on finished walls, fitting the appliance cover
- Installation of lower back panel with threaded fitting on fin ished walls
- Use of existing wall mounting bracket when replacing an appliance
- Installation with offset tiles
- Pivoting appliance cover
- Operation with preheated water
- Anti-scalding protection / temperature limit

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.
- ▶ Reposition the mains terminal in the appliance from the bottom to the top and secure the mains terminal by sliding it under the locking hook.
- ▶ Route the control wires below the wire guide.

Power cable for finished walls

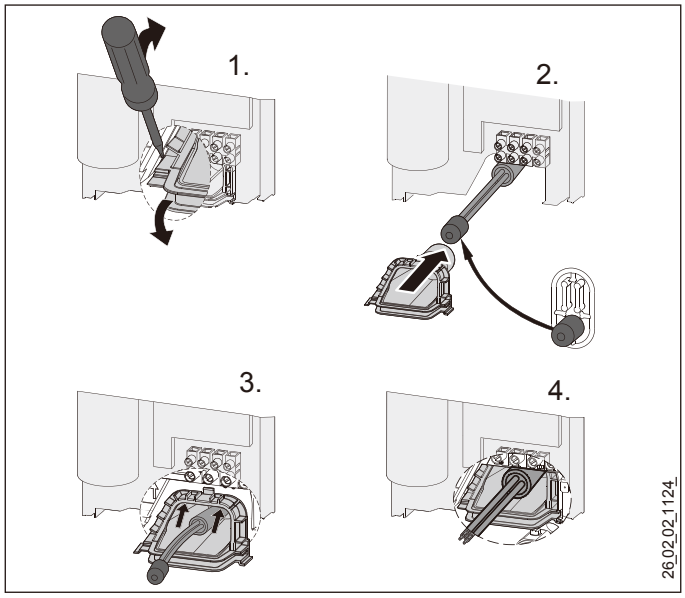
- ▶ Cut or break out the required entries in the back panel and appliance cover cleanly (for positions, see chapter "Specification / Dimensions and connections"). If necessary, use a file.
- ▶ Route the power cable through the cable grommet. Connect the power cable to the mains terminal.

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.

Large 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.For this, use the installation aid. If the cross-section is > 6 mm², enlarge the hole in the cable grommet.
- ▶ Push the cable grommet into the back panel.

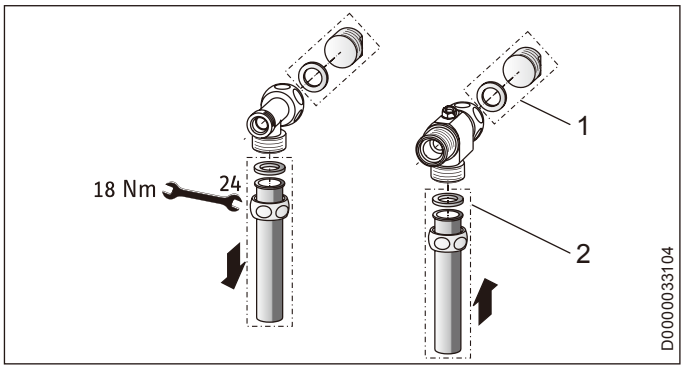
Connecting a load shedding relay

Install the 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. The load shedding relay is available as an accessory.

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”).

Water installation on finished walls

Suitable pressure-tested taps can be ordered as accessories.



1 Water plug
2 Pressure tap for finished walls

- ▶ Fit the water plugs with gaskets to seal the in-wall connection. All pressure taps listed in the accessories are supplied with plugs and gaskets as part of the standard delivery.

  Install the tap.
- ▶ Place the lower section of the back panel under the tap connection pipes. Slide the lower section of the back panel into place.
- ▶ Fit the connection pipes to the appliance.

Water installation for finished walls with solder / compression fitting

With the solder fitting or compression fitting accessories you can connect both copper and plastic pipes.For installation, prepare the appliance cover, see chapter "Water installation on finished walls, fitting the appliance cover".

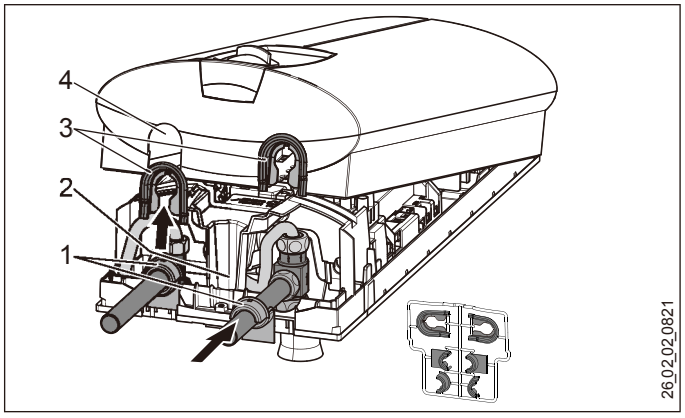
The solder fitting with threaded fitting is suitable for 12 mm copper pipes.

- ▶ Push the union nuts over the connection pipes.

  Solder the inserts to the copper pipes.
- ▶ Slide the lower section of the back panel under the tap connection pipes. Push the lower section of the back panel into place.
- ▶ Fit the sealing elements on to the connection pipes.
- ▶ Fit the connection pipes to the appliance.

Note
Observe the tap manufacturer's instructions.

Water installation on finished walls, fitting the appliance cover



1 Back panel guides
2 Screw
3 Cover guides
4 Pipe aperture

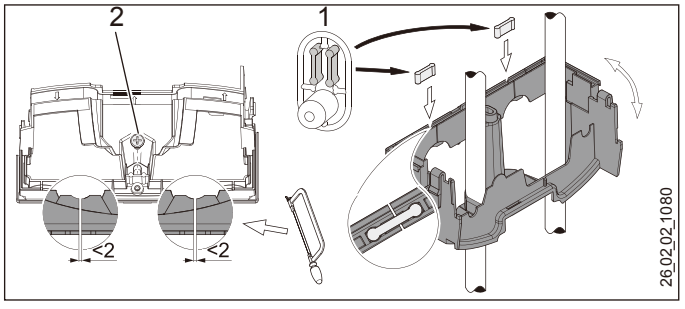
▶ Cleanly break out the knock-out apertures in the appliance cover. If necessary, use a file.

Note
If the tap connection pipes are slightly offset, the appliance can be sealed using the tabs on the cover guides.
▶ If the tap connection pipes are offset, do not fit any back panel guides.

▶ If installing tap connection pipes which are not offset, break off the tabs on the cover guides.
▶ Click the cover guides into place in the pipe apertures.
▶ Position the back panel guides on the pipes.Push them together. Then push the guides until they are resting against the back panel.
▶ Secure the back panel at the bottom with a screw.

Installation of lower back panel with threaded fitting on finished walls

You can install the lower back panel after fitting the taps.



1 Connection pieces delivered in the pack
2 Screw

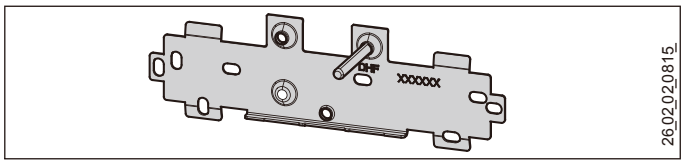
▶ Cut open the lower back panel at the markings.
▶ Fit the lower back panel by bending it out at the sides and guiding it over the pipes.
▶ Insert the connection pieces into the lower back panel from behind.
▶ Click the lower back panel into place.
▶ Secure the lower back panel with a screw.

Wall mounting bracket when replacing an appliance

When replacing an appliance, you can use an existing wall mounting bracket of a Stiebel Eltron appliance.
(except for a DHF instantaneouswater heater).

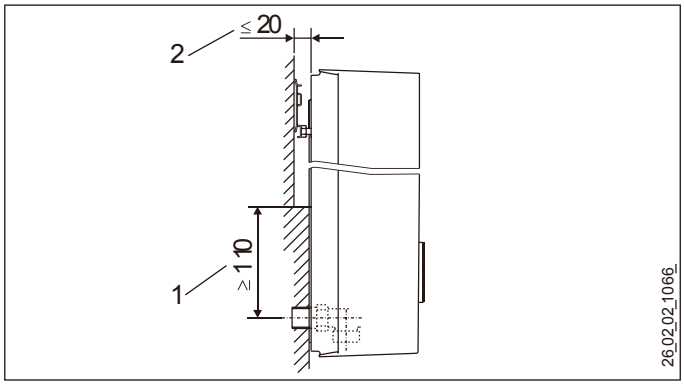
▶ Press the appliance over the threaded stud of the existing wall mounting bracket. When doing so, push through the soft seal in the back panel of the appliance.If necessary, use a screwdriver.

DHF replacement



▶ 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).

Installation with offset tiles

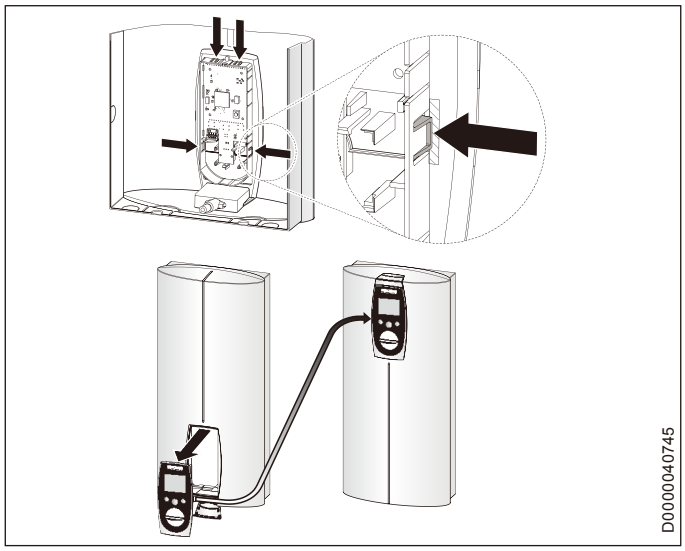


1 Minimum contact area of the appliance
2 Maximum tile offset

▶ Adjust the wall clearance. Lock the back panel with the fixing toggle by turning it 90° clockwise.

Pivoting appliance cover

You can rotate the appliance cover for undersink installation.

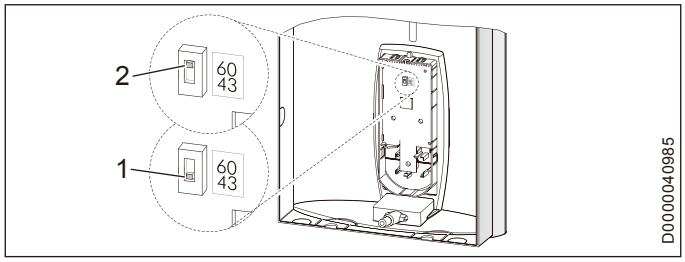


- Remove the programming unit from the appliance cover by pressing the locking hooks and taking out the programming unit.
- Turn the appliance cover (not the appliance) and refit the programming unit, ensuring that all locking hooks click into place. When clicking the locking hooks into place, make sure you press against the inner side of the appliance cover (shaded area).
- Plug the set value transducer cable into the PCB (see chapter “Commissioning / Initial start-up”).
- Hook the appliance cover in at the bottom.Pivot it up to the back panel.
- Ensure the all-round seal of the back panel is firmly seated by pushing the cover gently forwards and back.
- Secure the appliance cover.

Operation with preheated water

By installing a central thermostatic valve you will limit the maximum inlet temperature (see chapter "Appliance description / Accessories").

Anti-scalding protection / temperature limit



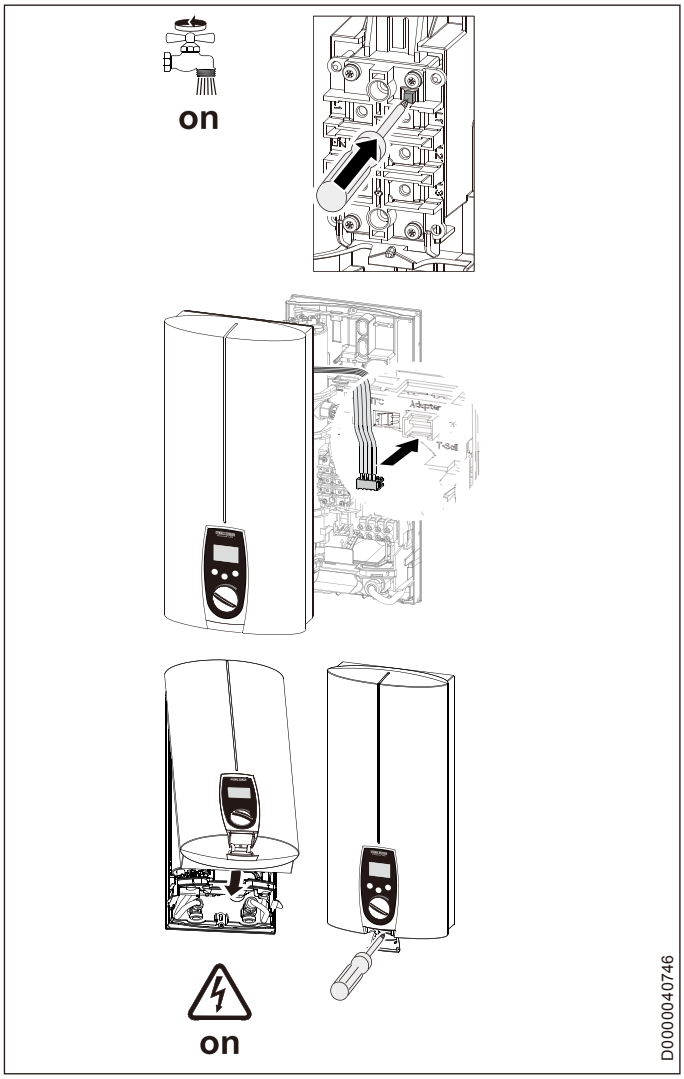
1 Position 43: Maximum temperature setting 43°C
2 Position 60: No temperature limit, for temperature setting range, see chapter “Specification / Data table”.

- Remove the appliance cover.
- Slide the switch to the required position.
- Fit the appliance cover.

11. Commissioning

WARNING Electrocution
Commissioning may only be carried out by an authorised contractor in accordance with the safety regulations.

11.1 Initial start-up



- Open and close all connected draw-off valves several times, until all air has been vented from the pipework and the appliance.
- Check for leaks in the appliance screw joints.
- Activate the safety pressure limiter for flow pressure by firmly pressing in the reset button (the appliance is delivered with the safety pressure limiter disabled).
- Push the temperature selector plug into the "set temperature" PCB.
- Fit the appliance cover and secure with a screw.
- Switch the mains power ON.
- Check the function of the appliance.
- Remove the protective foil from the user interface.

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Appliance handover

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

11.2 Recommissioning

See chapter "Settings and displays / Following an interruption to the water supply"

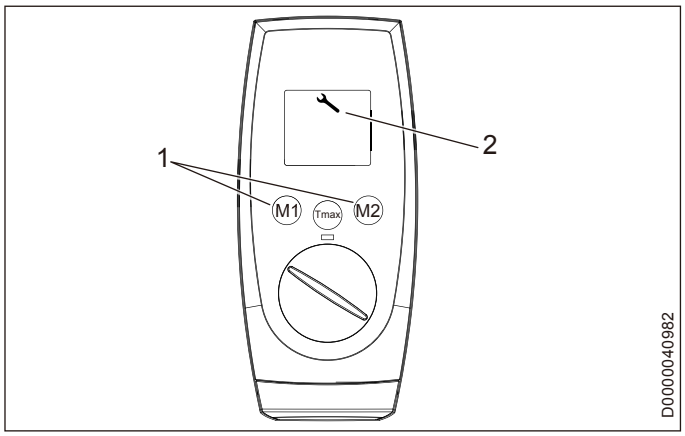
12. Shutting down the system

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

13. Troubleshooting

WARNING Electrocution
In order to check the appliance it must be connected to the power supply.

13.1 Service mode



1 Memory keys M1 and M2
2 Spanner symbol

The spanner symbol is displayed in the event of a fault or when the appliance is in service mode.

- Activate customer service mode by pressing and holding down both memory keys M1 and M2 for > 6 seconds.
- Disable customer service mode by briefly pressing one of the three keys. Service mode is automatically terminated after 30 seconds of inactivity.

Fault displays

---	No display, there is no fault
ntc	Outlet sensor malfunction
ELE	Faulty PCB

13.2 Indicator options for LED diagnostic traffic light

Indicator options		
	Red	Illuminates in the event of a fault
	Yellow	Illuminates during heating mode
	Green	FlashingAppliance is supplied with mains power

13.3 Fault table

LED diagnostic traffic light	Fault	Cause	Remedy
No display	No hot water.	The fuse/MCB in the fuse box has blown/responded.	Check the fuses/MCBs in your fuse box.
		The safety pressure limiter has responded.	Remove the cause of the fault (e.g. faulty pressure washer).
			Protect the heating system against overheating by opening a draw-off valve downstream of 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; see also chapter "Initial start-up".
		The PCB is faulty.	Check the PCB, replace if required.
Flashing green light	The appliance does not start.	Inadequate flow rate.	Descale / clean the connected aerator / shower head.
		Inadequate flow rate.	Clean the strainer in the water inlet.
	No hot water at flow rate > 3 l/min.	The flow sensor (DFE) plug has not been inserted.	Plug the flow sensor plug back in.
		The flow sensor (DFE) is faulty.	Check the flow sensor and replace if required.
Flashing green light and steady yellow light	No hot water at flow rate of > 3 l/min.	The high limit safety cut-out has responded or its lead is broken.	Check the appliance and the high limit safety cut-out.
	The set temperature is not achieved.	One phase down.	Check the fuses/MCBs in your fuse box.
		The heater is faulty.	Measure the resistance of the heating system and replace if required.
		The outlet temperature sensor is faulty.	Check the outlet temperature sensor and replace if required.
		The appliance is at its output limit.	Reduce the flow rate or install the flow limiter.
	The outlet temperature is approx. 45°C , irrespective of the set value transducer	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.
	A set temperature of > 43°C is no achieved.	The temperature limit (child-proofing) / anti-scalding protection is enabled.	Disable the temperature limit (child-proofing)/ anti-scalding protection.
Flashing green light and steady red light	No hot water.	The outlet temperature sensor is faulty.	Check the outlet temperature sensor and replace if required.
		The cold water sensor is faulty.	Check the PCB, replace if required.
		The air sensor detects the presence of air in the water and briefly interrupts the heating output.	The appliance restarts after one minute.
		The flow rate is > 25 l/min	Reduce the flow rate or install the flow limiter.
	Selected temperatures about 45°Care not achieved.	The cold water inlet temperature is above 45°C (e.g.in the case of water preheated by solar energy).	Reduce the cold water inlet temperature to the appliance.

14. Maintenance

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

Draining the appliance

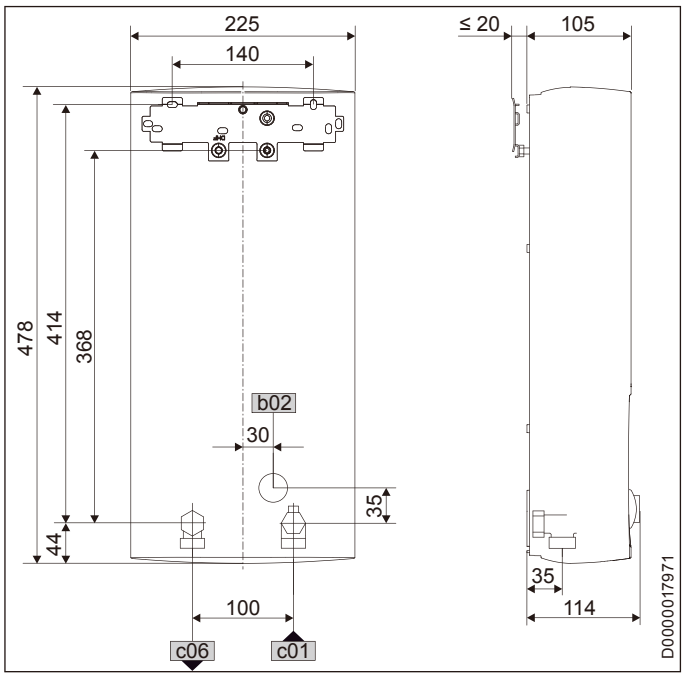
You can drain the appliance for maintenance work or to protect it from frost.

CAUTION Scalding
Hot water may escape when draining the appliance.

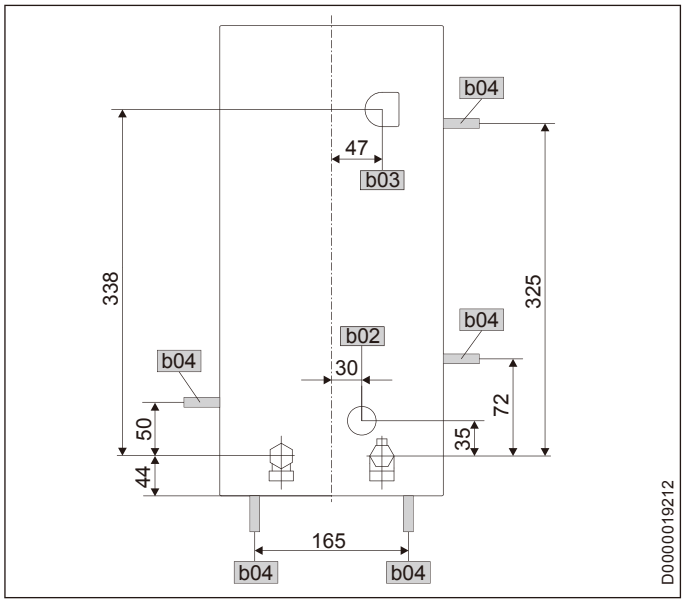
- ▶ Close the shut-off valve in the cold water inlet line.
- ▶ Open all draw-off valves.
- ▶ Undo the water connections on the appliance.
- ▶ Store the dismantled appliance in a room free from the risk of frost, as water residues remaining inside the appliance can freeze and cause damage.

15. Specification

15.1 Dimensions and connections



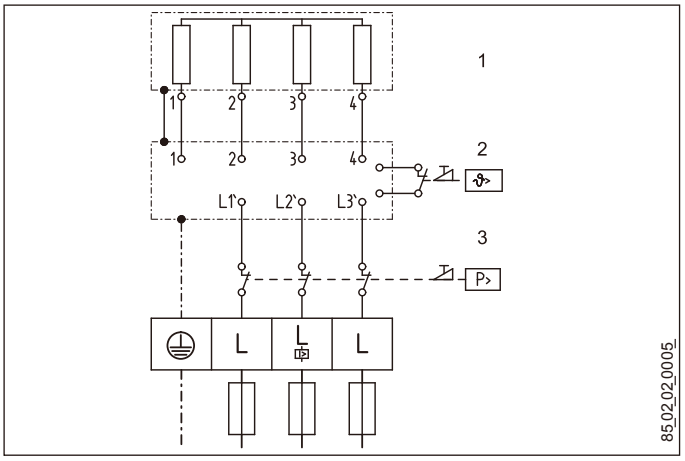
Alternative connection options



		DEL SL
b02 Entry electrical cables I		
b03 Entry electrical cables II		
b04 Entry electrical cables III		
c01 Cold water inlet	Male thread	G 1/2 A
c06 DHW outlet	Male thread	G 1/2 A

15.2 Wiring diagram

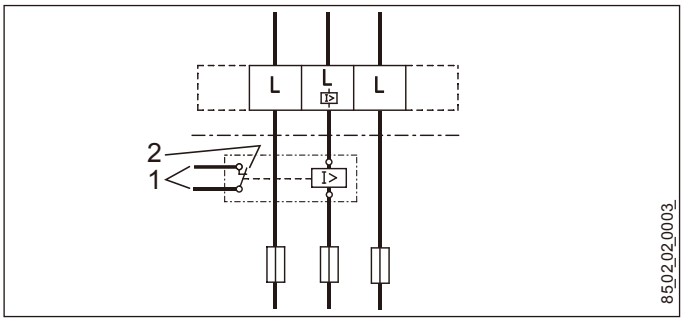
3/PE ~ 380-415 V



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

Priority control with load shedding relay (LR 1-A)

See also chapter “Appliance description / Accessories”.



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

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15.3 DHW output

The DHW output is subject to the mains voltage, the connected load of the appliance and the cold water inlet temperature.

The rated voltage and rated output can be found on the type plate (see chapter "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

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

15.4 Application areas / conversion table

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

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
1000	100	1000	890	112	1124	815	123	1227

15.5 Pressure drop

Taps/valves

Pressure drop at taps, at 10 l/min flow rate		
Mono-lever mixer tap, approx.	MPa	0.04 - 0.08
Thermostatic valve, approx.	MPa	0.03 - 0.05
Hand shower, approx.	MPa	0.03 - 0.15

Sizing the pipework

To calculate pipework sizing, apply a pressure drop of 0.1 Mpa to the appliance.

15.6 Fault conditions

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

15.7 Details on energy consumption

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

		DEL 18/21/24 SL	DEL 27 SL
		233678	233679
Manufacturer		STIEBEL ELTRON	STIEBEL ELTRON
Load profile		S	S
Energy efficiency category		A	A
Annual power consumption	kWh	477	473
Energy efficiency	%	39	39
Default temperature setting	°C	60	60
Sound power level	dB(A)	15	15
Special information on measuring the efficiency		Data at Pmax.	None

ENGLISH

15.8Data table

		DEL 18/21/24 SL			DEL 27 SL		
		233678			233679		
Electrical details							
Rated voltage	V	380	400	415	380	400	415
Rated output	kW	16.2/19/21.7	18/21/24	19.4/22.6/25.8	24.4	27	
Rated current	A	27.6/29.5/33.3	29/31/35	30.1/32.2/36.3	37.1	39	
Fuse	A	32/32/35	32/32/35	32/32/40	40	40	
Phases				3/PE			3/PE
Frequency	Hz	50/60	50/60	50/-	50/-	50/-	50/-
Specific resistance ρ_{15} ≥ (at ϑ_{cold} ≤25 °C)	Ω cm	900	900	1000	900	900	1000
Specific conductivity σ_{15} ≤ (at ϑ_{cold} ≤25 °C)	µS/cm	1111	1111	1000	1111	1111	1000
Specific resistance ρ_{15} ≥ (at ϑ_{cold} ≤45 °C)	Ω cm	1200	1200	1300	1200	1200	1300
Specific conductivity σ_{15} ≤ (at ϑ_{cold} ≤45 °C)	µS/cm	833	833	770	833	833	770
Max. mains impedance at 50Hz	Ω	0.284	0.270	0.260	0.254	0.241	
Connections							
Water connection				G 1/2 A			G 1/2 A
Application limits							
Max. permissible pressure	MPa			1.0			1.0
Max. inlet temperature for reheating	°C			45			45
Values							
Max. permissible inlet temperature	°C			65			65
ON	l/min			>2.5			>2.5
Flow rate for pressure drop	l/min			5.2/6.0/6.9			7.7
Pressure drop at flow rate	MPa	0.08/0.10/0.13 (0.06/0.08/0.10 without DMB)			0.16 (0.12 without DMB)		
Flow rate limit at	l/min			12 (7.5)			12 (7.5)
DHW delivery	l/min			9.2/10.7/12.3			13.3
Δϑ at DHW delivery	K			28			28
Hydraulic data							
Rated capacity	l			0.4			0.4
Versions							
Connected load options				X			-
Temperature adjustment	°C			30-60			30-60
Protection class				1			1
Insulation block				Plastic			Plastic
Heating system heat generator				Bare wire			Bare wire
Cap and back panel				Plastic			Plastic
Colour				white			white
IP-Rating				IP25			IP25
Dimensions							
Height	mm			478			478
Width	mm			225			225
Depth	mm			105			105
Weights							
Weight	kg			3.6			3.6

Guarantee

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

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

Environment and recycling

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

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 Hájům 946 | 155 00 Praha 5 - Stodůlky
Tel. 251116-111 | Fax 235512-122
info@stiebel-eltron.cz
www.stiebel-eltron.cz

Denmark
Pettinaroli A/S
Mandal Allé 21 | 5500 Middelfart
Tel. 06341 666-6 | Fax 06341 666-0
info@stiebel-eltron.dk
www.stiebel-eltron.dk

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

STIEBEL ELTRON

4 017213 131472

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