

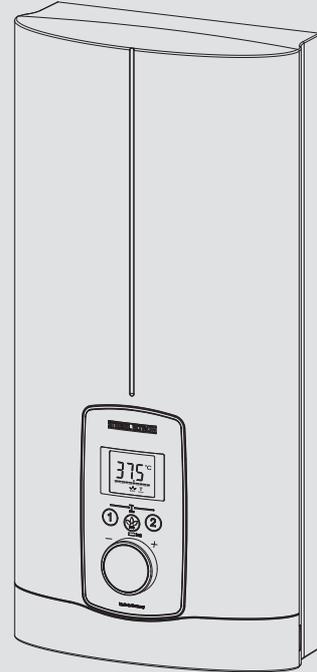
**BEDIENUNG UND INSTALLATION  
OPERATION AND INSTALLATION  
UTILISATION ET INSTALLATION  
BEDIENING EN INSTALLATIE**

الاستعمال والتركيب

Elektronisch geregelter Komfort-Durchlauferhitzer | Electronically controlled  
comfort instantaneous water heater | Chauffe-eau instantané confort à régulation  
électronique | Elektronisch geregelde comfort-doorstomer |

سخان الماء الفوري المريح الذي يتم ضبطه إلكترونيًا

- » DEL 18/21/24 Plus
- » DEL 27 Plus



**STIEBEL ELTRON**

## SPECIAL INFORMATION

### OPERATION

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### GUARANTEE

### ENVIRONMENT AND RECYCLING

# 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.
- 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.
- 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 children or persons with limited physical, sensory or mental capabilities use the appliance, set a temperature limit. Once set, check the temperature limit is working correctly.  
If a permanent and unchangeable temperature limit is required, have the internal anti-scalding protection set by a qualified contractor.

## Appliance description

**CAUTION Burns**

If operating with preheated water, e.g. if using a solar thermal system, observe the following information:

- The DHW temperature may exceed the set temperature or a set temperature limit.
  - The dynamic anti-scalding protection between the appliance and a wireless remote control may not be effective.
- In such cases, limit the temperature with an up-stream central thermostatic valve (e.g. ZTA 3/4).

**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.

**Material losses**

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

**2.3 Test symbols**

See type plate on the appliance.

**2.4 EU Declaration of Conformity****Note**

DEL Plus: STIEBEL ELTRON hereby declares that the radio equipment type complies with Directive 2014/53/EU. The full text of the EU Declaration of Conformity can be found at the following internet address: [www.stiebel-eltron.de/downloads](http://www.stiebel-eltron.de/downloads)

**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 set temperature is adjustable. Upwards of a certain flow rate, the control unit selects the required heating output, subject to the temperature selected and the 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 selected temperature, the word "hot" and the inlet temperature are displayed alternately, and the "hot" LED flashes. The water is not heated further.

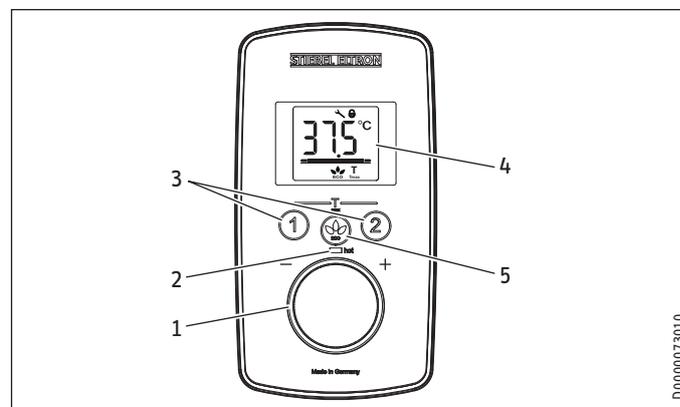
You can store different set temperatures and call them up quickly. With the ECO function, the flow rate is limited to 3 preset levels. The appliance has setting options for a temperature limit (Tmax function, user) and internal anti-scalding protection (qualified contractor). The backlight switches on automatically as soon as water starts to flow through the appliance or you make a change on the user interface. The backlight switches off automatically after water stops flowing or if no action is performed.

**Heating system**

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

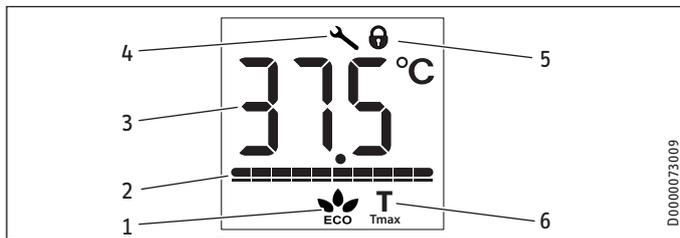
**Note**

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 User interface**

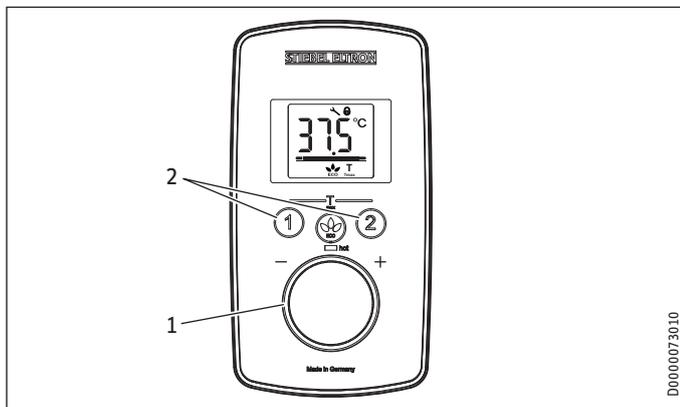
- 1 Temperature selector
- 2 "hot" scald warning LED, at temperatures higher than 43 °C
- 3 Temperature memory buttons 1 and 2
- 4 Display
- 5 ECO button with ECO level selection / Menu call-up

4.2 Display symbols



- 1 ECO indicator [rolling, levels 1 - 3, OFF]
- 2 Output bar [10 - 100 %]
- 3 Segment display [°C/°F]
- 4 In the event of an appliance fault, a spanner appears
- 5 Operating lock [ON/OFF]
- 6 Tmax, displayed when temperature limit is enabled

4.3 Selecting the set temperature



- 1 Set temperature settings: OFF, 20 - 60 °C
- 2 Call up/assign preferred temperatures

Setting steps			
Temperature range	Step	Temperature range	Step
20 °C ... 35 °C	1 °C	68 °F ... 140 °F	1 °F
35 °C ... 43 °C	0.5 °C		
43 °C ... 60 °C	1 °C		



**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).  
 ► Use the ECO button to reduce the water volume until the required temperature is achieved.

4.4 Temperature limit via internal anti-scalding protection (qualified contractor)

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.

If the anti-scalding protection function is enabled, "Tmax" flashes continually once the set temperature has been reached.

4.5 Temperature limit Tmax (user)

The temperature limit allows you as a user to restrict the adjustable set temperature at the appliance to a maximum value.

Your qualified contractor can set an additional temperature limit for anti-scalding protection. This temperature then dictates the upper limit of the setting range for the temperature limit function.

4.5.1 Enabling the temperature limit

- Press and hold buttons "1" and "2" for longer than 5 seconds, until "Tmax" and the temperature display flash.
- Select a temperature limit.

10 seconds after completing the setting, the menu item will disappear automatically.

If the high limit safety cut-out is enabled, "Tmax" is continuously displayed.

Check that the upper temperature limit has been correctly applied.

4.5.2 Disabling the temperature limit

- Disable the high limit safety cut-out by pressing and holding buttons "1" and "2" for longer than 5 seconds.

4.6 Allocating temperature memory buttons

Memory buttons "1" and "2" can each be assigned a required temperature.

- Select the required temperature.
- To store the required temperature, press and hold button "1" or "2" for longer than 3 seconds. The selected temperature flashes once to confirm.

4.7 Settings menu

Menu	Description
Temperature display	Select °C or °F
Operating lock	Select ON or OFF. Symbol displayed
Fault code display	Displays E1...E3 if there is a fault on the appliance. Call qualified contractor.

- To call up the menu, press and hold the ECO button for longer than 5 seconds.
- To select, turn the temperature selector.
- Press the ECO button once more.
- To quit the menu, press and hold the ECO button for longer than 5 seconds.

The menu switches off automatically if no operation has been performed for 30 seconds.



**Note**  
 To call up the menu when the operating lock is enabled, press and hold the ECO button for longer than 10 seconds.

### 4.8 Selecting ECO level

ECO level	Display	Flow rate limitation
Level 1		8 l/min (factory setting)
Level 2		7 l/min
Level 3		6 l/min
OFF	No symbol	No flow rate limit

- ▶ Briefly press the ECO button. Rolling selection, "Level 1 - 3/ OFF".

### 4.9 Inlet temperature information

If the appliance is operated with preheated water and the inlet temperature exceeds the selected temperature, the word "hot" and the inlet temperature are displayed alternately, and the "hot" LED flashes.

### 4.10 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.

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 by 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

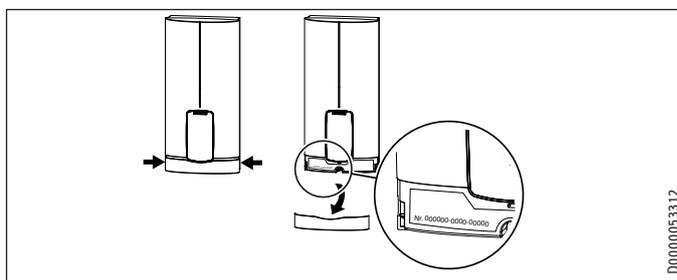
Problem	Cause	Remedy
The appliance will not start despite the DHW valve being fully open.	There is no power.	Check the fuses/MCBs in your fuse box/distribution board.
	The aerator in the tap or the shower head is scaled up or dirty.	Clean and/or descale the aerator or shower head.
When hot water is being drawn off, cold water flows for a short period.	The water supply has been interrupted.	Vent the appliance and the cold water inlet line.
	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.	The high limit safety cut-out and/or internal anti-scalding protection are enabled.	Disable temperature limiting. The internal anti-scalding protection can only be adjusted by the qualified contractor.
The flow rate is too low.	ECO function is enabled.	Select a different ECO level or disable the ECO function.
No settings can be made on the programming unit.	The operating lock is enabled.	Press and hold the ECO button for more than 10 seconds to disable the operating lock.



#### Note

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).



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# 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 Electrocutation

This appliance contains capacitors which are discharged when disconnected from the power supply. The capacitor discharge voltage may briefly exceed 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 operating with preheated water, e.g. if using a solar thermal system, observe the following information:

- The DHW temperature may exceed the set temperature or a set temperature limit.
- The dynamic anti-scalding protection between the appliance and a wireless remote control may not be effective.

► In such cases, limit the temperature with an upstream central thermostatic valve (e.g. ZTA 3/4).

### 7.3 Instructions, standards and regulations



#### Note

Observe all applicable national and regional regulations and instructions.

- The IP 24 / IP 25 protection rating can only be ensured with a correctly fitted cable grommet.
- The specific electrical resistivity of the water must not fall below that stated on the type plate. In a linked water network, factor in the lowest electrical resistivity of the water. Your water supply utility will advise you of the specific electrical water resistivity 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
- Plastic profile washer
- Plastic connection pieces/installation aid
- Cover and back panel guides
- Jumper for internal anti-scalding protection
- Jumper for output changeover (only on DEL 18/21/24 Plus)

### 8.2 Accessories

#### Wireless remote control

- FFB 4 Set EU

#### Taps

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

#### Plugs G 1/2 A

If you use taps 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 3/8 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.

# INSTALLATION

## Preparation

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

## 9. Preparation

### 9.1 Installation location



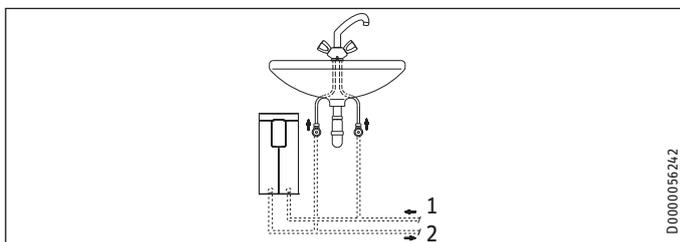
#### Material losses

Install the appliance in a room free from the risk of frost.

- ▶ Always install the appliance vertically and near the draw-off point. For horizontal installation, see chapter "Alternative installation methods / Horizontal installation of the appliance".

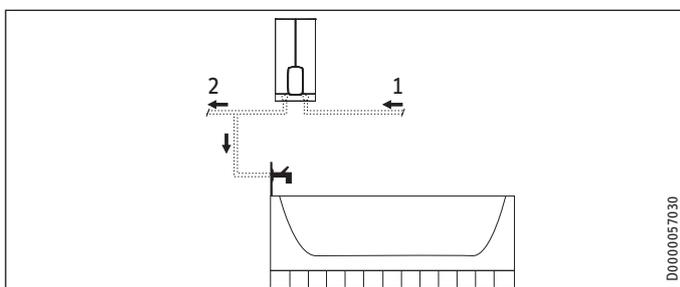
The appliance is suitable for undersink and oversink installation.

#### Undersink installation



- 1 Cold water inlet
- 2 DHW outlet

#### Oversink installation



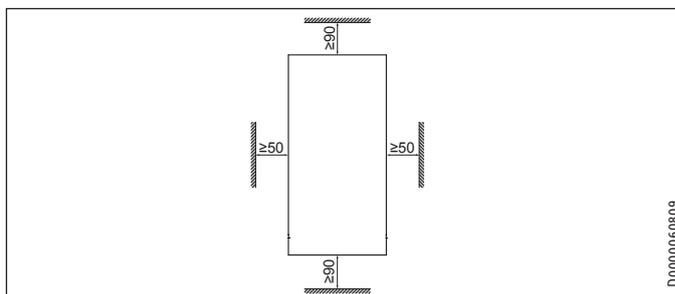
- 1 Cold water inlet
- 2 DHW outlet



#### 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

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.

# INSTALLATION

## Installation

### 10. Installation

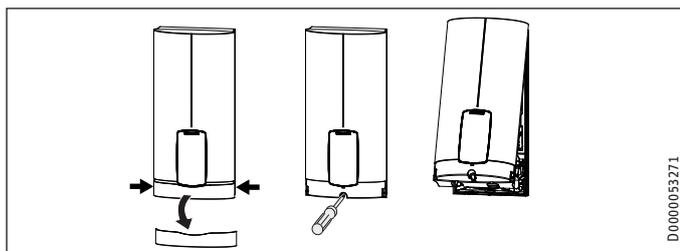
Factory settings		DEL 18/21/24 Plus	DEL 27 Plus
Internal anti-scalding protection	°C	60	60
Connected load	kW	21	27
Adjustable connected load		x	-

Standard installation		DEL 18/21/24 Plus	DEL 27 Plus
Electrical connection from below on unfinished walls		x	x
Water connection on unfinished walls		x	x

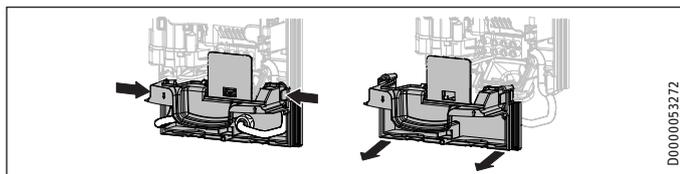
For further installation options, see chapter "Alternative installation methods".

#### 10.1 Standard installation

##### Opening the appliance

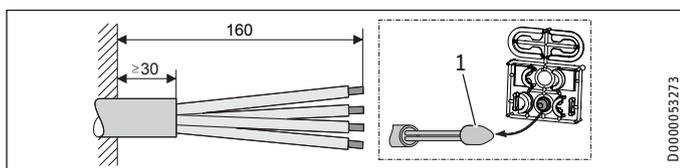


- ▶ Open the appliance by holding the fascia at the side and pulling forwards away from the appliance cover. Undo the screw. Pivot open the appliance cover.



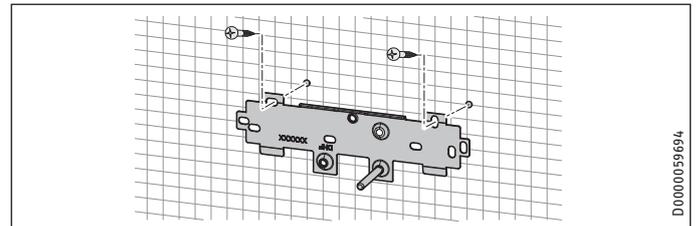
- ▶ Remove the back panel by pressing the two locking tabs and pulling the lower back panel section forwards.

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



- 1 Cable entry installation aid
- ▶ Prepare the power cable.

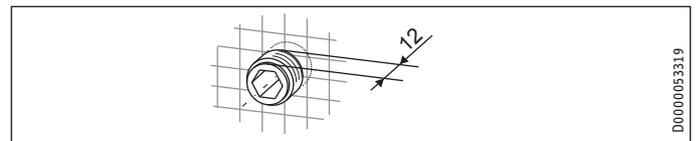
##### Fitting the wall mounting bracket



- ▶ 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.

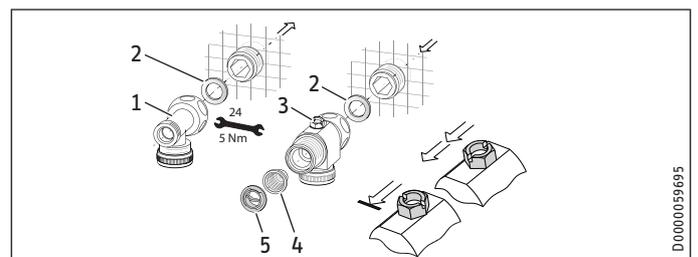
##### Installing the twin connectors

- ! **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 Plastic profile washer
- ▶ Secure the tee and 3-way ball shut-off valve, each with a flat gasket, to the twin connector.

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

# INSTALLATION

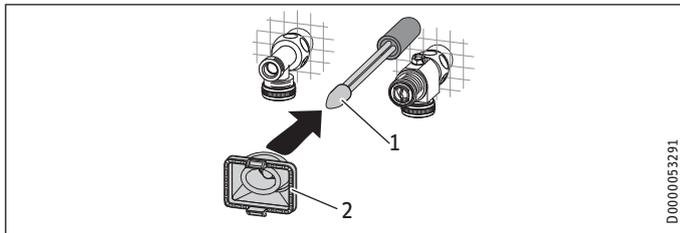
## Installation

### Installing the appliance



#### Note

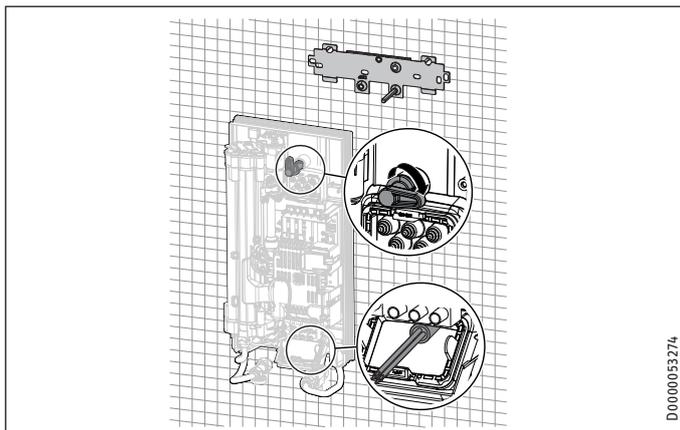
If you are installing the appliance with flexible pipe connections, also secure the back panel with a screw.



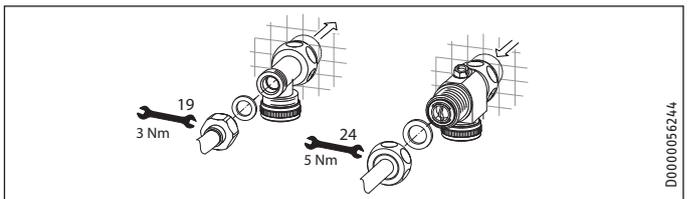
- 1 Cable entry installation aid
- 2 Cable grommet

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 inlet line.

### Making the electrical connection



#### WARNING Electrocutation

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



#### WARNING Electrocutation

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



#### WARNING Electrocutation

Ensure that the appliance is earthed.

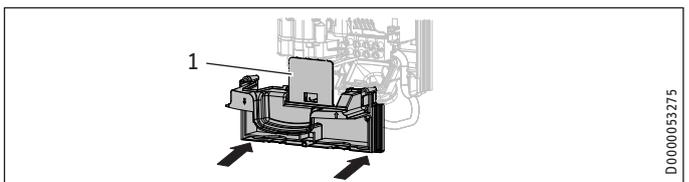


#### Material losses

Observe the type plate. The specified 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.



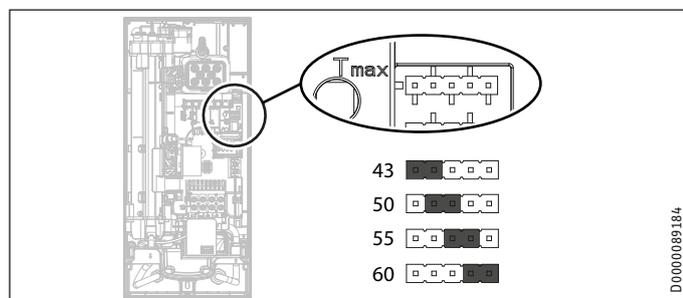
#### Material losses

The cover plate of the lower back panel section must not bend when installed.

### 11. Commissioning

#### 11.1 Preparation

##### Internal anti-scalding protection via jumper slot



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

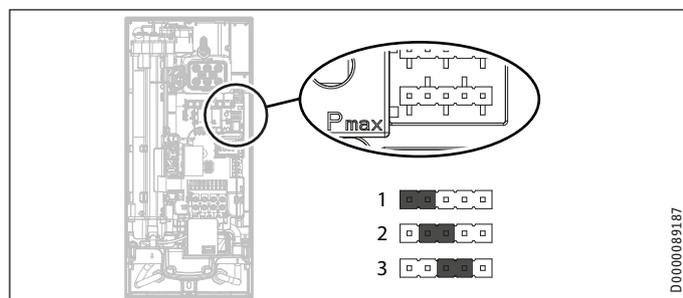
- ▶ Install the anti-scalding protection setting jumper in the required position (= temperature in °C) on the pin strip.



**CAUTION Burns**  
 If operating with preheated water, e.g. if using a solar thermal system, the internal anti-scalding protection and the temperature limit Tmax, which can be set by the user, may be exceeded.  
 ▶ In this case, limit the temperature with an upstream central thermostatic valve (e.g. ZTA 3/4).

##### Changing connected load via jumper slot, DEL 18/21/24 Plus only

If you select a connected load other than the 21 kW factory setting for appliances with selectable connected load, you will need to reposition the jumper.



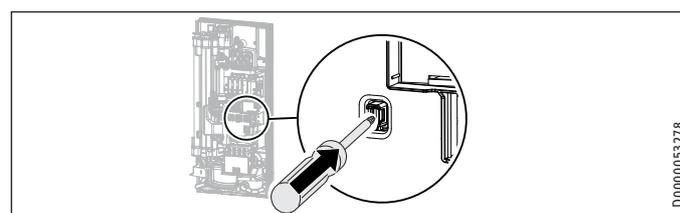
- ▶ Install the jumper in the required position on the pin strip.

Jumper position	Connected load
1	18 kW
2	21 kW
3	24 kW
No jumper	18 kW

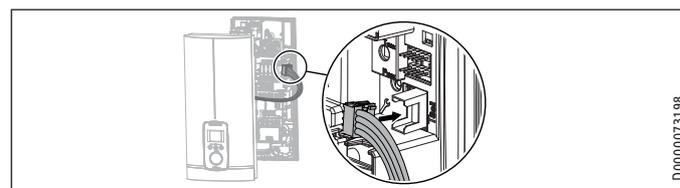
#### 11.2 Initial start-up



- ▶ 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.



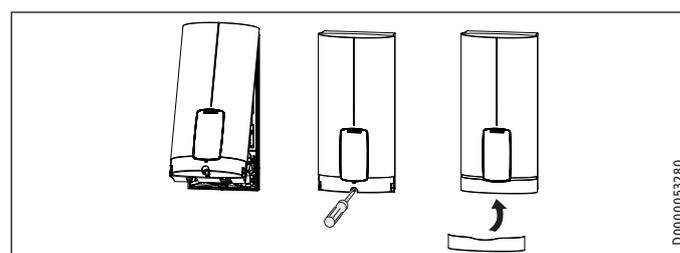
- ▶ Activate the safety switch by firmly pressing the reset button (the appliance is delivered with the safety switch disabled).



- ▶ 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.
- ▶ Remove the protective film from the user interface.



- ▶ Switch on the power supply.

# INSTALLATION

## Appliance shutdown

### 11.2.1 Appliance handover

- ▶ Explain the appliance function to users and familiarise them with how it works.
- ▶ 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 by 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

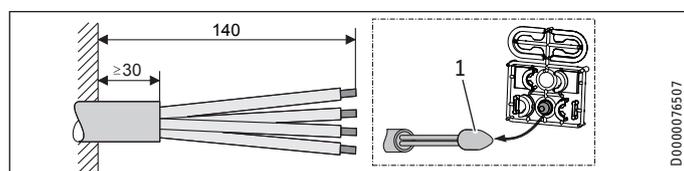
Electrical connection	IP rating
On unfinished walls, connected from above	IP 25
On unfinished walls, connected from below, short power cable	IP 25
On finished walls	IP 24
Water connection	IP rating
On finished walls	IP 24
Other	IP rating
Installation with offset tiles	IP 25
Pivoting appliance cover	IP 25
Horizontal installation of the appliance	IP 24



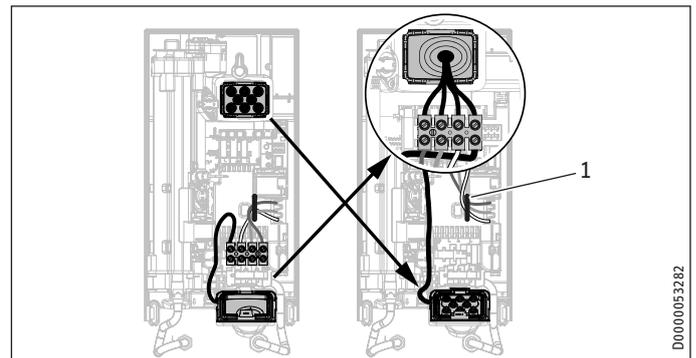
#### WARNING Electrocutation

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

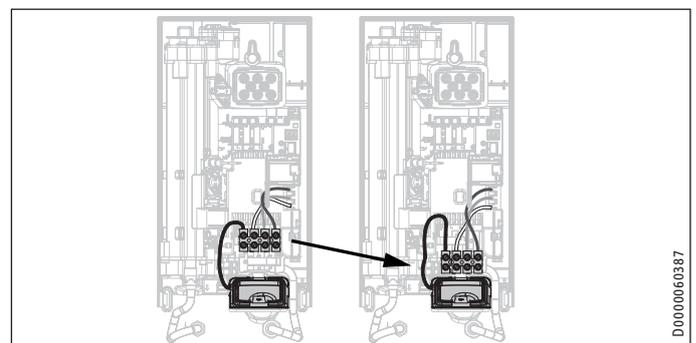
- ▶ Reposition the mains terminal from the bottom to the top. To do this, undo the fixing screw. Turn the mains terminal with connecting cables 180° clockwise. Route the cable around the cable guide when doing so. Secure the mains terminal in place.
- ▶ Replace the cable grommets.
- ▶ Install the cable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

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

### 13.2 Electrical connection on unfinished walls with short power cable



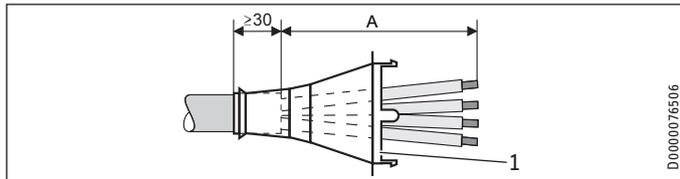
- ▶ Reposition the mains terminal further downwards. To do this, undo the fixing screw. Secure the mains terminal in place.

### 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

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

- ▶ 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.

### 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.



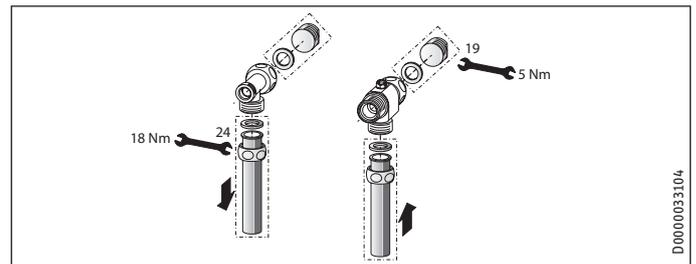
**Material losses**  
Connect the phase that switches the load shedding relay to the indicated terminal of the mains terminal in the appliance (see chapter "Specification / Wiring diagram").

### 13.5 Water installation on finished walls



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

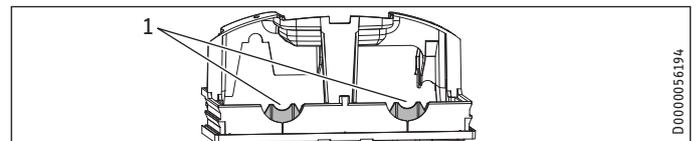
- ▶ Change the type plate. Cross out "IP 25" and mark the box "IP 24". Use a ballpoint pen to do this.



- ▶ 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 connection 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



**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.

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

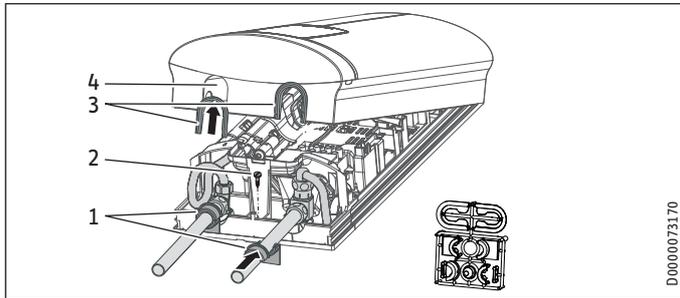
With "solder fitting" with threaded fitting for 12 mm copper pipes, proceed as follows:

- ▶ Push the union nuts over the connection pipes.
- ▶ Solder the inserts to the copper pipes.
- ▶ Push the lower back panel section under the connection 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 for 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.
  - ▶ Click the cover guides into place in the knock-outs.

**Only if using the "solder fitting" accessory and with precise adherence to all installation dimensions:**

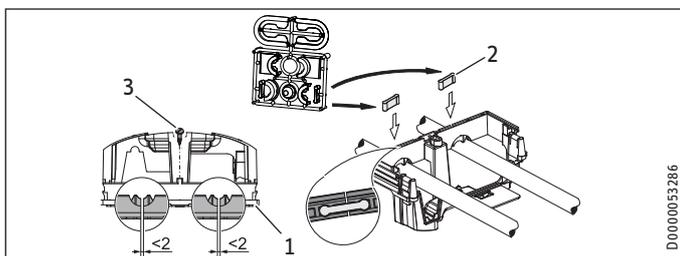
- ▶ Break the sealing lips out of the cover guides.
- ▶ Position the back panel guides on the pipes. Push them together. Then push the guides against the back panel as far they will go.
- ▶ Secure the lower back panel section with a screw.



#### Note

You can use the cover guides with sealing lips to compensate for a slight offset of the connection pipes and/or if using the "press fitting" accessory. 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. To do this, carry out the following steps:

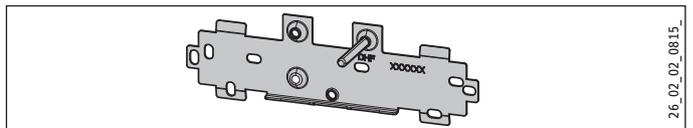
- ▶ Cut open the lower back panel section.
- ▶ Fit the lower back panel section by bending it out at the sides and guiding it over the pipes.
- ▶ Insert the connection pieces into the lower back panel section from behind.

- ▶ Click the lower back panel section into place.
- ▶ Secure the lower back panel section with a screw.

### 13.9 Wall mounting bracket when replacing an appliance

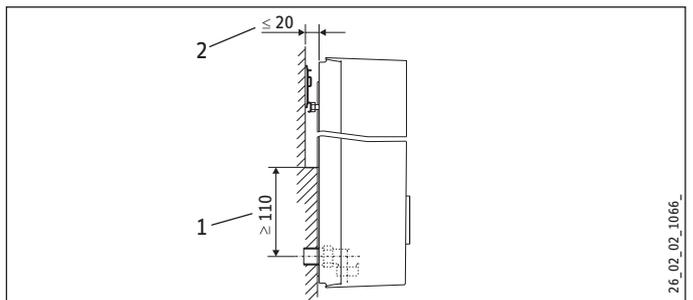
An existing STIEBEL ELTRON wall mounting bracket may be used when replacing appliances (except the DHF instantaneous water heater), as long as the fixing screw is in the lower right position.

#### Replacing a DHF instantaneous water heater



- ▶ Reposition the fixing screw on the wall mounting bracket (the fixing 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 you).

### 13.10 Installation with offset tiles

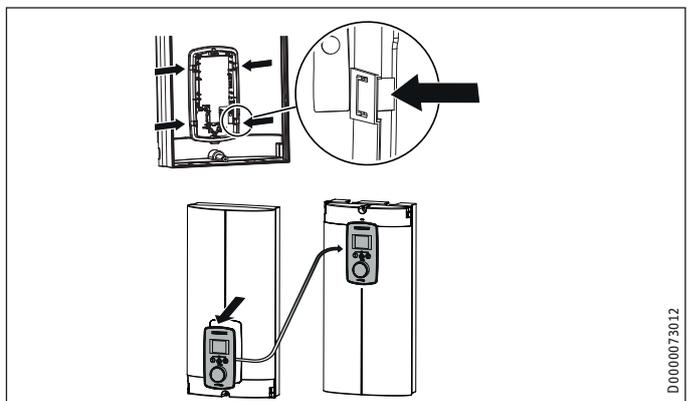


- 1 Minimum contact area of the appliance
- 2 Maximum tile offset

- ▶ 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) the other way up 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 Electrocutation

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, user protection 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 onto the appliance cover.

### 13.12 Operation with preheated water

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

### 13.13 Horizontal installation of the appliance



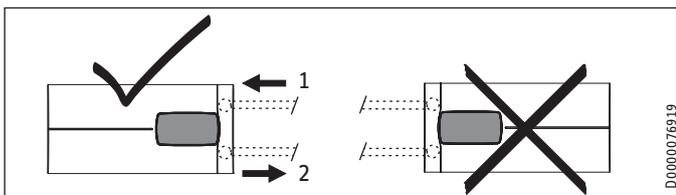
#### Note

For the horizontal installation alternative, please note the following points:

- Installation is only permissible with direct wall mounting. The universal mounting frame cannot be used.
- The installation versions "Installation with offset tiles" and "Rotated appliance cover" are not permissible.
- This type of connection changes the IP rating of the appliance. Cross out "IP 25" on the type plate and mark the box "IP 24". Use a ballpoint pen to do this.

### Horizontal installation

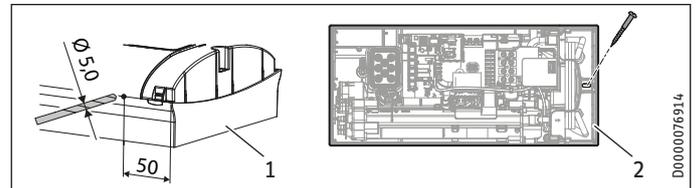
The appliance can also be mounted horizontally on the wall (turned 90° to the left, with the water connections on the right). The installation, water and electrical connections are described in chapters "Standard installation" and "Alternative installation methods".



- 1 Cold water inlet
- 2 DHW outlet

### Preparation

The appliance cover must be provided with a condensate drain opening of min.  $\varnothing$  5.0 mm to max.  $\varnothing$  6.0 mm at the marked position.



- 1 Appliance cover with opening for condensate drain
  - 2 Back panel with additional fixing screw
- ▶ Drill a hole from the outside through the dismantled appliance cover at the marked point. Alternatively, you can punch a hole in the appliance cover from the inside at the marked point. In this case, you must then enlarge the hole to the required diameter from the outside. Deburr any sharp edges with a file.
  - ▶ Secure the appliance back panel with an additional screw.

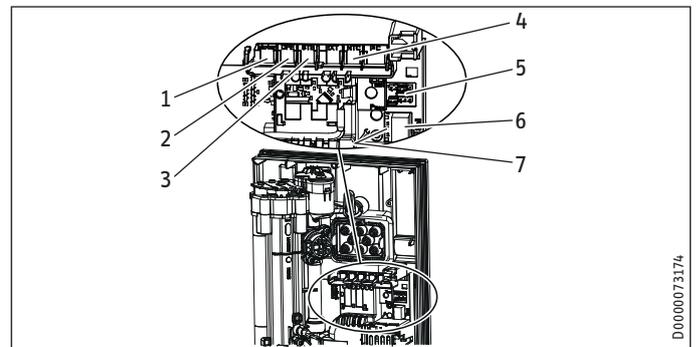


### Material losses

An appliance cover with an existing condensate drain opening must no longer be used for vertical installation of the appliance.

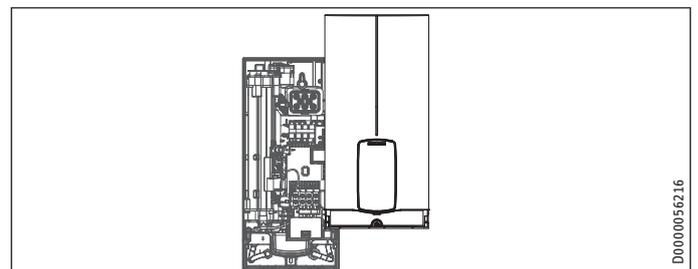
## 14. Service information

### 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



# INSTALLATION

## Troubleshooting

### 15. Troubleshooting



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



**Note**  
When testing the appliance using the diagnostic traffic lights, water must be flowing.

#### Indicator options for diagnostic traffic light (LED)

	Red	Illuminates in the event of a fault
	Yellow	Illuminates in heating mode/ flashes when output limit reached
	Green	Flashing: Appliance connected to power supply

Diagnostic traffic lights (draw-off mode)	Fault	Cause	Remedy
No LED illuminates	Appliance does not heat up	One or more mains power phases missing Faulty PCB	Check fuses/MCBs in distribution board Replacing the function module
Green flashing, yellow off, red off	No DHW	Appliance starting flow rate not reached; shower head/aerator scaled up Appliance starting flow rate not reached; strainer in cold water inlet dirty Flow meter not attached Flow meter faulty or dirty Faulty PCB	Descale/replace the shower head/aerator Cleaning the strainer Check plug-in connection; correct if necessary Replacing the flow meter Replacing the function module
Green flashing, yellow on, red off	No display	Loose connecting cable between PCB and programming unit Faulty connecting cable between PCB and programming unit Programming unit faulty Faulty PCB	Check plug-in connections; correct if necessary Check connecting cable; replace if necessary Replacing the programming unit Replacing the function module
Green flashing, yellow on, red off	No DHW; outlet temperature does not match set value	Tap faulty Faulty outlet sensor Heating system faulty Faulty PCB	Replace tap Replace the outlet sensor Replacing the function module Replacing the function module
Green flashing, yellow flashing, red off	No DHW; outlet temperature does not match set value	Appliance is operating at its output limit Appliance is operating at its output limit Heating system faulty	Reduce flow rate; select one of the ECO levels Check jumper position for connected load Replacing the function module
Green flashing, yellow off, red on	No DHW; outlet temperature does not match set value	One or more mains power phases missing Air detection has responded	Check fuses/MCBs in distribution board Continue draw-off for >1 min

#### 15.1 Fault code display

If there is an appliance fault, the spanner flashes on the display.

- To call up the fault code display, press the ECO button for more than 5 seconds.

Diagnostic traffic lights (draw-off mode)	Display shown	Fault	Cause	Remedy
Green flashing, yellow off, red on	Spanner flashes (display E1 and spanner in menu "Fault code display")	No DHW; outlet temperature does not match set value	Safety switch not activated during "Commissioning" Safety switch triggered by high limit safety cut-out Safety switch responds again after high limit safety cut-out has been checked; high limit safety cut-out faulty Safety switch responds again; PCB faulty	Activate safety switch by pressing the reset button firmly Check high limit safety cut-out (plug-in connection, connecting cable); activate safety switch Replace high limit safety cut-out; activate safety switch and draw off water at the maximum set value for >1 min Replacing the function module
Green flashing, yellow off, red on	Spanner flashes (display E2 and spanner in menu "Fault code display")	No DHW	PCB faulty (lead break or short circuit in inlet sensor)	Replacing the function module
Green flashing, yellow off, red on	Spanner flashes (display E3 and spanner in menu "Fault code display")	No DHW	Short circuit in outlet sensor	Check outlet sensor; replace if necessary

### 16. Maintenance



**WARNING Electrocutation**  
 Before any work on the appliance, disconnect all poles from the power supply.  
 This appliance contains capacitors which are discharged when disconnected from the power supply. The capacitor discharge voltage may briefly exceed 60 V DC.

#### Draining the appliance

The appliance can be drained for maintenance work.



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

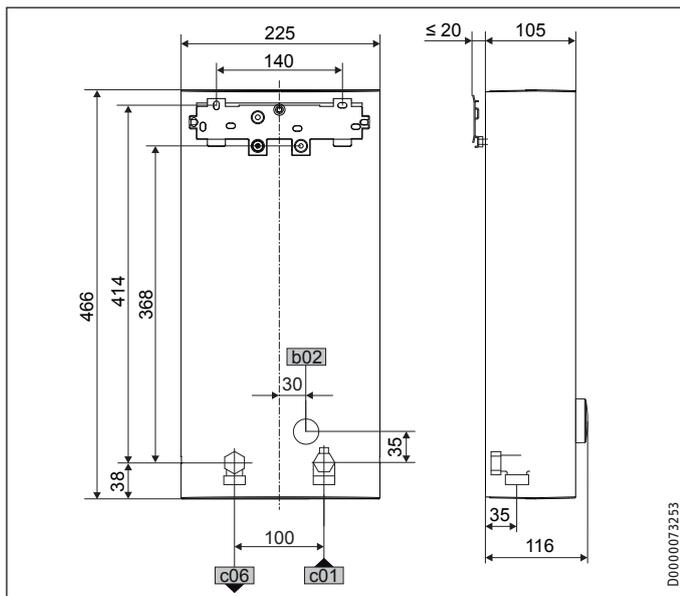
- ▶ Close the 3-way ball shut-off valve or the shut-off valve in the cold water inlet line.
- ▶ Open all draw-off valves.
- ▶ Undo the pipe connections from the appliance.
- ▶ Store the dismantled appliance in a room free from the risk of frost, as water residues remaining inside the appliance can freeze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

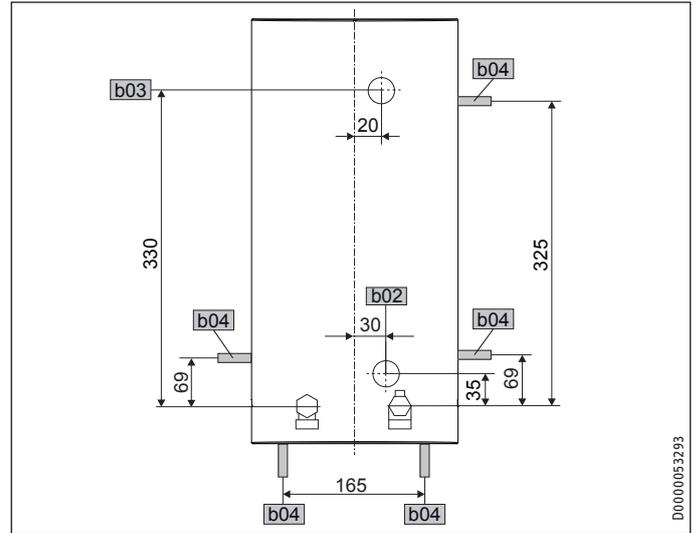
### 17. Specification

#### 17.1 Dimensions and connections



		DEL Plus
b02	Entry electrical cables I	On unfinished walls
c01	Cold water inlet	Male thread G 1/2 A
c06	DHW outlet	Male thread G 1/2 A

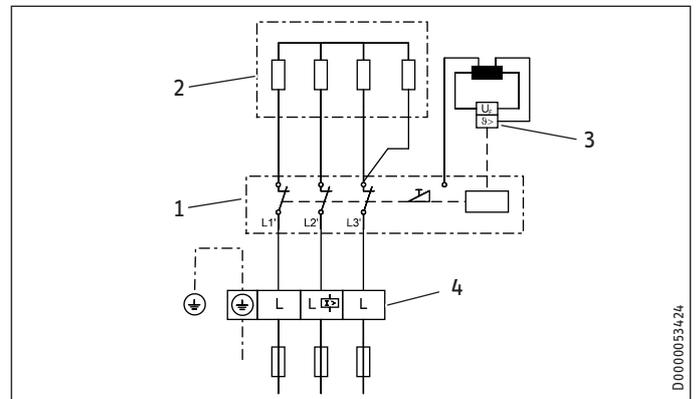
#### Alternative connection options



		DEL Plus
b02	Entry electrical cables I	On unfinished walls
b03	Entry electrical cables II	On unfinished walls
b04	Entry electrical cables III	On finished walls

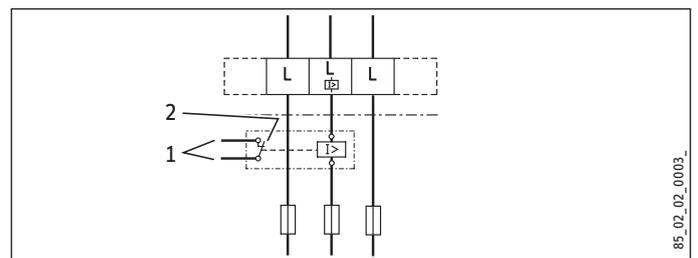
#### 17.2 Wiring diagram

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 (e.g. electric storage heater)
- 2 Control contact drops out when switching the instantaneous water heater on.

# INSTALLATION Specification

## 17.3 DHW 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

DEL 18/21/24 Plus						
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
DEL 27 Plus						
24.4			10.6	12.4	15.2	19.4
	27		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

DEL 18/21/24 Plus						
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
	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
DEL 27 Plus						
24.4			7.7	8.7	10.0	11.6
	27		8.6	9.6	11.0	12.9

## 17.7 Energy consumption data

Product datasheet: Conventional water heaters to regulation (EU) no. 812/2013 and 814/2013

		DEL 18/21/24 Plus	DEL 27 Plus
		236739	236740
Manufacturer		STIEBEL ELTRON	STIEBEL ELTRON
Load profile		S	S
Energy efficiency class		A	A
Energy conversion efficiency	%	39	39
Annual power consumption	kWh	476	475
Default temperature setting	°C	60	60
Sound power level	dB(A)	15	15
Special information on measuring efficiency		Measured at ECO level at highest flow rate, maximum output and maximum set value.	Measured at ECO level at highest flow rate and maximum set value
Daily power consumption	kWh	2,184	2,177

## 17.4 Application areas / Conversion table

Specific electrical resistance and specific electrical conductivity

Standard specification at 15 °C			20 °C			25 °C		
Resis- tivity $\rho \geq$	Conductivity $\sigma \leq$		Resis- tivity $\rho \geq$	Conductivity $\sigma \leq$		Resis- tivity $\rho \geq$	Conductivity $\sigma \leq$	
$\Omega\text{cm}$	mS/m	$\mu\text{S/cm}$	$\Omega\text{cm}$	mS/m	$\mu\text{S/cm}$	$\Omega\text{cm}$	mS/m	$\mu\text{S/cm}$
900	111	1111	800	125	1250	735	136	1361

## 17.5 Pressure drop

### Taps

Tap pressure drop at a flow rate of 10 L/min		
Mono lever mixer tap, approx.	MPa	0.04 - 0.08
Thermostatic valve, approx.	MPa	0.03 - 0.05
Shower head, approx.	MPa	0.03 - 0.15

### Sizing the pipework

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

## 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.

### 17.8 Data table

		DEL 18/21/24 Plus			DEL 27 Plus	
		236739			236740	
<b>Electrical data</b>						
Rated voltage	V	380	400	415	380	400
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 protection	A	32/32/35	32/32/35	32/32/40	40	40
Frequency	Hz	50/60	50/60	50/-	50/-	50/-
Phases				3/PE		3/PE
Specific resistivity $\rho_{15} \geq$	$\Omega$ cm			900		900
Specific conductivity $\sigma_{15} \leq$	$\mu S/cm$			1111		1111
Max. mains impedance	$\Omega$	0.248	0.236	0.227	0.221	0.21
<b>Versions</b>						
Heating system heat generator				Bare wire		Bare wire
Adjustable connected load				X		-
Temperature settings	$^{\circ}C$			Off, 20-60		Off, 20-60
Protection class				1		1
Insulating block				Plastic		Plastic
Cover and back panel				Plastic		Plastic
IP rating				IP25		IP25
Colour				White		White
<b>Connections</b>						
Water connection				G 1/2 A		G 1/2 A
<b>Application limits</b>						
Max. permissible pressure	MPa			1		1
Max. inlet temperature for reheating	$^{\circ}C$			55		55
<b>Values</b>						
Max. inlet temperature (e.g. pasteurisation)	$^{\circ}C$			70		70
ON	l/min			>2.5		>2.5
Flow rate at 28 K	l/min			9.2/10.7/12.3 at 400 V		13.8 at 400 V
Flow rate at 50 K	l/min			5.2/6.0/6.9 at 400 V		7.7 at 400 V
Pressure drop for flow rate at 50 K (without flow limiter)	MPa			0.06/0.08/0.1		0.13
<b>Hydraulic data</b>						
Nominal capacity	l			0.4		0.4
<b>Dimensions</b>						
Height	mm			466		466
Width	mm			225		225
Depth	mm			116		116
<b>Weights</b>						
Weight	kg			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.