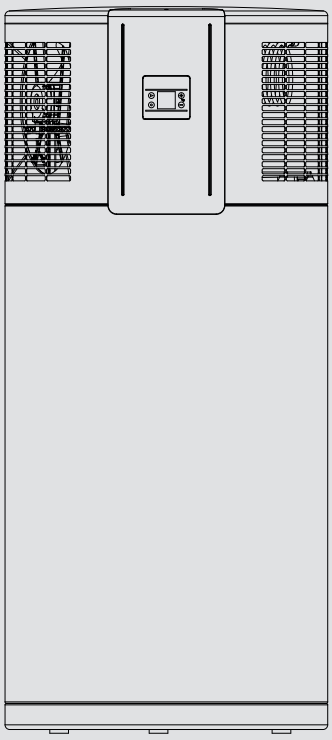
OPERATION AND INSTALLATION
安装和使用说明书

DHW heat pump | 生活热水热泵

» WWK 223 electronic
» WWK 303 electronic



STIEBEL ELTRON

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GUARANTEE

ENVIRONMENT AND RECYCLING

SPECIAL INFORMATION

- The appliance may be used by children aged 8 and older and persons with reduced physical, sensory or mental capabilities or a lack of experience and know-how, provided that they are supervised or they have been instructed on how to use the appliance safely and have understood the resulting risks. Children must never play with the appliance. Children must never clean the appliance or perform user maintenance unless they are supervised.
- Observe all applicable national and regional regulations and instructions during installation.
- Observe the minimum clearances (see chapter "Installation / Preparations / Siting the appliance").
- Observe the requirements concerning the installation room (see chapter "Specification / Data table").
- If the appliance is permanently connected to the power supply, ensure that the appliance can be separated from the power supply by an isolator that disconnects all poles with at least 3 mm contact separation. Contactors, mains isolators or fuses can be used for this.
- Observe the safety measures to prevent contact with dangerous 'live' currents.
- Observe the MCB/fuse protection required for the appliance (see chapter "Specification / Data table").
- The power cable must only be replaced (for example if damaged) by a qualified contractor authorised by the manufacturer (connection type X).
- The appliance is pressurised. During the heat-up process, expansion water will drip from the safety valve.
- Regularly activate the safety valve to prevent it from becoming blocked, e.g. by limescale deposits.
- Drain the appliance as described in chapter "Installation / Maintenance and cleaning / Draining the cylinder".
- Install a type-tested T&P valve using the corresponding connection on the appliance.
- Install a type-tested safety valve in the cold water supply line.
- The maximum pressure in the cold water line must be at least 20 % below the response pressure of the safety valve. If the maximum pressure in the cold water supply line is higher, install a pressure reducing valve.
- Size the drain so that water can drain off unimpeded when the safety valve is fully opened.
- Fit the discharge pipe of the safety valve with a constant downward slope and in a room free from the risk of frost.
- The safety valve discharge aperture must remain open to atmosphere.

OPERATION

1. General information

The chapters "Special Information" and "Operation" are intended for both the user and qualified contractors.

The chapter "Installation" is intended for qualified contractors.

Note
Read these instructions carefully before using the appliance and retain them for future reference.
Pass on the instructions to any new user where appropriate.

1.1 Safety instructions

1.1.1 Structure of safety instructions

KEYWORD Type of risk
Here, possible consequences are listed that may result from failure to observe the safety instructions.
▶ Steps to prevent the risk are listed.

1.1.2 Symbols, type of risk

Symbol	Type of risk
	Injury
	Electrocution
	Burns (burns, scalding)

1.1.3 Keywords

KEYWORD	Meaning
DANGER	Failure to observe this information will result in serious injury or death.
WARNING	Failure to observe this information may result in serious injury or death.
CAUTION	Failure to observe this information may result in non-serious or minor injury.

1.2 Other symbols in this documentation

Note
General information is identified by the adjacent symbol.
▶ Read these texts carefully.

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

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

1.3 Units of measurement

Note
All measurements are given in mm unless stated otherwise.

1.4 Standardised output data

Explanations to determine and interpret the specified standardised output data

Standard: EN 16147

The output data specifically mentioned in text, diagrams and technical datasheets has been determined in line with the test conditions described in the standard shown in the heading of this chapter.

Generally, these standardised test conditions will not fully meet the conditions found at the installation site of the system user. Depending on the chosen test method and the extent to which the selected method deviates from the conditions described in the standard shown in the heading of this chapter, any deviations can have a considerable impact. Further factors that have an influence on the test values are the measuring equipment, the system configuration, the age of the system and the flow rates.

A confirmation of the specified output data can only be obtained if the conditions applicable to the relevant test match those of the standard shown in the heading of this chapter.

2. Safety

2.1 Intended use

The purpose of this appliance is to heat domestic hot water within the application limits stated in the chapter "Specification / data table".

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

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

2.2 General safety instructions

Operate the appliance only when fully installed and with all safety equipment fitted.

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

WARNING Electrocution
Contact with live components presents a threat to life. Damage to the insulation or to individual components may result in a threat to life.
▶ If there is damage to the insulation, disconnect the power supply and arrange a repair.
All work on the electrical installation must be carried out by a qualified contractor.

WARNING Burns
The water in the DHW cylinder can be heated to temperatures in excess of 60 °C. There is a risk of scalding at outlet temperatures in excess of 43 °C.
▶ Ensure you do not come into contact with the water when discharged.

WARNING Burns
Touching hot components can lead to burns.
When working on hot components, always wear protective working clothing and safety gloves.
The pipework connected to the DHW outlet of the appliance can reach temperatures in excess of 60 °C.

WARNING BURNS
The appliance is filled with refrigerant at the factory.
In the event of refrigerant escaping due to a leak, avoid coming into contact with the refrigerant or inhaling the released vapours. Ventilate the rooms affected.

WARNING Electrocution
Never operate the appliance when the casing is open or without a cover.

CAUTION Injury
Never place any objects on top of the appliance. If objects are left on the appliance, noise emissions may increase due to resulting vibrations, and the objects could fall and cause injury.

Material losses
If you disconnect the appliance from the power supply, it is no longer protected against frost or corrosion.
▶ Never interrupt the power supply to the appliance.

Material losses
Never cover the appliance. Covering the air intake or air discharge leads to a reduced air supply. If the air supply is restricted, the operational reliability of the appliance cannot be guaranteed.

Material losses
Only operate the appliance when the DHW cylinder has been filled. If the DHW cylinder is empty, safety equipment switches off the appliance.

Material losses
Heating liquids other than potable water is not permitted.

Material losses
Keep the appliance installation site free from air contaminated with oil or salt (chloride) and corrosive or explosive substances. Avoid heavy contamination of the installation site with dust, hairspray or substances containing chlorine or ammonia.

Material losses
Ensure that the appliance, the water pipes and the safety valve are free from any risk of frost.

Material losses
Operating the appliance outside the application limits (see "Specification / Data table") is not permitted. The appliance may be damaged if operated continuously outside the application limits.

Note
The appliance is pressurised. During the heat-up process, expansion water will drip from the safety valve.
▶ If water continues to drip when heating is completed, please inform your qualified contractor.

2.3 CE designation

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

- Electromagnetic Compatibility Directive
- Low Voltage Directive

2.4 Test symbols

See type plate on the appliance.

3. Appliance description

This appliance enables DHW to be supplied efficiently to several draw-off points using renewable energy. The appliance extracts heat from the ambient air. This heat is used to heat up the water in the DHW cylinder with added electric power. The amount of electrical energy and time required to heat up the DHW depend on the temperature of the air drawn in. When the air inlet temperature drops, the appliance output is reduced and the heat-up time is extended.

In the case of indoor installation, the air inside the installation room can be cooled by 1 °C to 3 °C through heat extraction. The appliance also extracts moisture from the air, which turns into condensate. The condensate is removed from the appliance via the condensate drain.

External signal transmitters can be integrated via the built-in contact input, e.g. a PV system to make use of solar power generated on site.

When a hot water draw-off point is opened, the hot DHW is pushed out of the appliance by the inflow of cold water.

The heat pump drive unit is located in the upper section of the appliance. The DHW cylinder is located in the lower section of the appliance. To protect against corrosion, the DHW cylinder is coated internally with special enamel and is additionally equipped with an impressed current anode.

The electronic control unit makes energy saving adjustments easier. Subject to the power supply and user draw-off behaviour, the water is heated automatically to the selected set temperature.

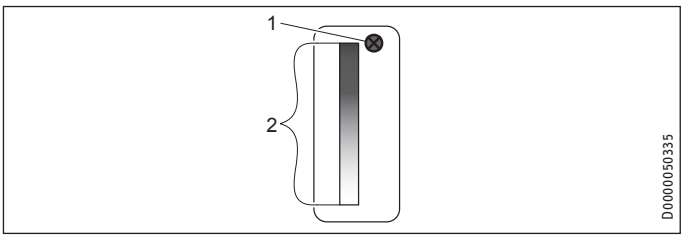
3.1 Heat pump operating principle

A closed circuit within the appliance contains refrigerant (see "Specification / Data table"). This refrigerant evaporates at low temperatures.

In the evaporator, which extracts heat from the air, the refrigerant changes from a liquid into a gaseous state. A compressor draws in the gaseous refrigerant and compresses it. This increase in pressure raises the refrigerant temperature. That requires electrical energy. The energy (motor heat) is not lost, but reaches the downstream condenser together with the compressed refrigerant. There, the refrigerant indirectly transfers heat to the DHW cylinder. An expansion valve then reduces the still prevalent pressure and the cycle starts again.

Note
Following an interruption of the power supply, the compressor operation remains blocked for at least one minute. The PCB delays electronic starting by a minute, during which the appliance goes through its initialising process.
If the compressor subsequently fails to start, it may be blocked by additional safety devices (motor overload relay and high pressure switch). This block should lift after 1 to 10 minutes.
After the power supply has been re-established, the appliance continues to operate with the parameters that were selected before the power supply was interrupted.

3.2 DHW heating



1 Domed sensor
2 Integral sensor

The appliance is equipped with two temperature sensors.

- The domed sensor captures the water temperature in the upper section of the cylinder.
- The integral sensor is a temperature sensor affixed over the entire cylinder height. The integral sensor determines the average cylinder temperature.

The appliance display indicates the temperature in the upper section of the cylinder, which is captured by the domed sensor. The appliance control unit uses the average cylinder temperature captured by the integral sensor.

DHW heating is started when the average cylinder temperature has fallen and there is only 40 % of the heat still available from the cylinder, which was heated fully to the set temperature. The temperature determined by the domed sensor may still correspond to the set temperature.

For information on the heat-up time, see chapter "Specification". The calculation of the available amount of mixed water is based on the average cylinder temperature. The amount of mixed water is only calculated if the water temperature in the upper section of the cylinder is higher than 40 °C.

DHW is normally heated by the heat pump of the appliance within the application limits (see chapter "Specification / Data table").

Electric emergency/booster heater

When the temperature in the upper section of the DHW cylinder drops 10 K below the selected set temperature, the appliance automatically switches on the electric emergency/booster heater. When the temperature in the upper section of the DHW cylinder rises 2 K above the selected set temperature, the appliance switches off the electric emergency/booster heater.

In the event of an appliance fault, you can activate the electric emergency/booster heater manually using the emergency mode. See chapter "Operation / Rapid heating key / Emergency heating mode".

In the event of an increase in hot water demand on a single occasion, you can use the rapid heating key to activate the emergency/booster heater manually for one-off heating in addition to the heat pump. See chapter "Operation / Rapid heating key / Rapid/comfort heating".

3.3 Appliance operation outside the application limits

▶ To guarantee fault-free operation of the appliance, make sure you operate the appliance within its application limits (see chapter "Specification / Data table").

3.3.1 Ambient temperatures below the application limit

Low ambient temperatures may result in the formation of hoar frost on the evaporator depending on the air humidity and water temperature.

Active defrost feature

The frost monitor switches the fan off if the evaporator is covered in hoar frost. The compressor continues to run. A solenoid valve routes the hot gas directly to the evaporator. While this is happening, the condenser is disabled by another solenoid valve. When the temperature at the frost monitor rises above 3 °C, the fan starts again and DHW heating continues.

For heat pump operation, the ambient temperature must be higher than 0 °C. The evaporator is defrosted as required.

▶ To guarantee fault-free operation of the appliance, make sure you operate the appliance within its application limits (see chapter "Specification / Data table").

Note
Heat-up times are longer while the evaporator is defrosting.

3.3.2 Ambient temperatures above the application limit

The safety equipment can switch off the appliance if the ambient temperature is above the application limit. Once the safety pressure limiter has been triggered, a qualified contractor must reset it.

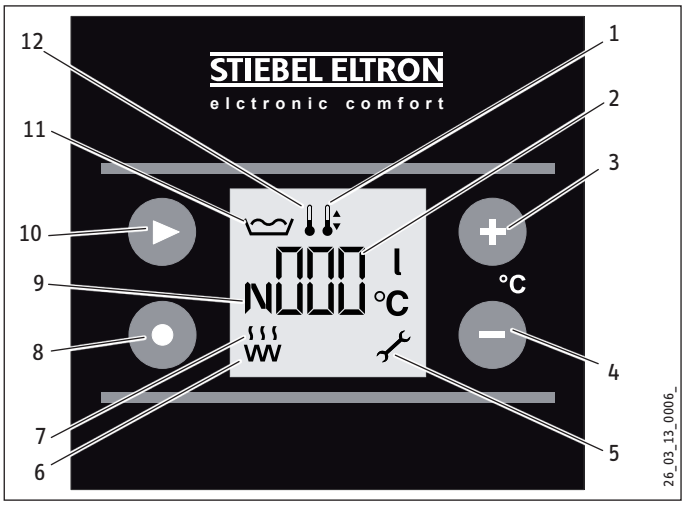
3.4 Frost protection

The appliance activates the frost protection function if the integral sensor in the DHW cylinder captures a temperature below 10 °C. The appliance then heats the water by means of the heat pump and the electric emergency/booster heater. The heat pump and electric emergency/booster heater switch off when the temperature captured by the integral sensor reaches 18 °C.

4. Settings

4.1 Display and controls

Note
15 seconds after every adjustment, the appliance automatically reverts to the standard display (amount of mixed water) and saves the set value.



1 Set temperature symbol
2 Mixed water display (l|40 °C) /
Actual temperature display, upper cylinder section /
Set temperature 1 display / /
Set temperature 2 display /
Fault code display
3 Plus key
4 Minus key
5 Service/fault symbol
6 Electric emergency/booster heater symbol
7 Heat pump symbol
8 Rapid heating key
9 Set temperature 2 symbol
10 Menu key
11 Amount of mixed water symbol
12 Actual temperature symbol

The "electric emergency/booster heater" and "heat pump" symbols are displayed when there is a demand for these appliance components. The display of these symbols does not necessarily mean that the electric emergency/booster heater and the heat pump are running.

Example: The appliance is in rapid/comfort heating mode. The electric emergency/booster heater switches off when the temperature in the upper cylinder section has reached 65 °C. The heat pump has not yet heated the lower section to 65 °C and the rapid/comfort heating function has therefore not been terminated yet. The electric emergency/booster heater symbol is displayed until the rapid/comfort heating function has been terminated.

Service/fault symbol

Note
Notify your qualified contractor if the service/fault symbol appears on the display. Continuous illumination of the symbol indicates that the fault is not preventing appliance operation.
A flashing service/fault symbol indicates that the water is not being heated and that it is essential you notify your qualified contractor.
Switching the appliance to emergency mode is a special case. The heat pump and the electric emergency/booster heater will then heat the water despite the flashing service/fault symbol.

4.2 Settings

In standard display mode, the display shows amount of mixed water.

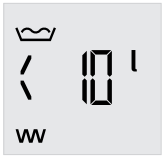
Note
15 seconds after every adjustment, the appliance automatically switches back to standard display and saves the set value.

With the menu key, you call up all information and setting options in sequence. The relevant symbol appears.

4.2.1 Amount of mixed water display (standard display)



The currently available amount of mixed water at 40 °C and at 15 °C cold water temperature is shown.

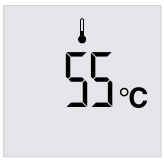


If there is currently less than 10 l mixed water available, "< 10 l" is shown.

DHW demand for	Mixed water volume at 40 °C
Bath	120-150 l
Shower	30-50 l
Hand washing	2-5 l

The amount of mixed water that can be achieved depends on the cylinder size and the selected set temperature.

4.2.2 Actual temperature display



In the mixed water menu, press the menu key once to get to the actual temperature menu.

The actual temperature symbol appears.

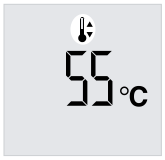
The current actual temperature is shown. The actual temperature indicates the temperature in the upper section of the DHW cylinder and therefore largely corresponds to the outlet temperature.

4.2.3 Set temperature 1

Material losses
Avoid setting a set temperature of > 62 °C if you must expect that the temperature of the intake air can fall below 6 °C.

Note
For reasons of hygiene, never set the DHW temperature lower than 50 °C.

Set temperature 1 is the DHW temperature to which the appliance regulates if no external signal transmitter is connected and active. Set temperature 1 is set to 55 °C at the factory.



In the actual temperature menu, press the menu key once to get to the menu for set temperature 1.

The set temperature 1 symbol appears.

Adjust set temperature 1 from 20 to 65 °C using the plus and minus keys.

Note
Another way to adjust set temperature 1 is to press the plus or minus key when in standard display (amount of mixed water).

Frost protection



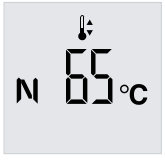
Only frost protection remains active if you set the set temperature with the minus key to less than 20 °C.

4.2.4 Set temperature 2

Material losses
Avoid setting a set temperature of > 62 °C if you must expect that the temperature of the intake air can fall below 6 °C.

Note
For reasons of hygiene, never set the DHW temperature lower than 50 °C.

Set temperature 2 is the DHW temperature to which the appliance regulates if an external signal transmitter is connected and active.



In the set temperature 1 menu, press the menu key once to get to the menu for set temperature 2.

The set temperature 2 symbol appears. The display of set temperature 2 is denoted with an "N".

Adjust set temperature 2 from 20 to 65 °C using the plus and minus keys.

Operation with external signal transmitter (220 V input)

As standard, the appliances feature the ability to allocate a specific, individual set DHW temperature (set temperature 2) to a connected external signal transmitter, such as a PV system or a low tariff transmitter.

This set temperature 2 is activated when a phase (LF signal) is present at terminal X0/2 (see chapter "Connection types"). While activated, set temperature 2 replaces the standard set DHW temperature ("set temperature 1").

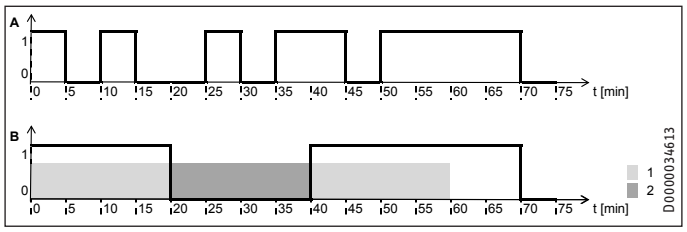
If set temperature 2 has been activated by the external signal transmitter, this set temperature will then be active for at least 20 minutes. If the signal remains active after those 20 minutes have passed, the compressor will run until the LF signal ends. If not, the selected set temperature 1 is activated again.

When the relevant set DHW temperature has been reached, the compressor switches off and remains off for a minimum idle time of 20 minutes.

The following diagram illustrates the connections by means of a sample signal sequence of an external signal transmitter.

Example:

- DHW temperature = 55 °C
- Set temperature 1 = 50 °C
- Set temperature 2 = 65 °C



A LF signal
B Compressor
1 20 min. minimum runtime, set temperature 2
2 20 min. minimum compressor idle time

Note
An LF signal must be active for at least 60 seconds, before the control unit responds to it. This will, for example, prevent a brief burst of sunshine from triggering a heat-up process, which cannot then be supplied with PV power generated on site due to a lack of further insolation.

4.3 Calling up fault codes



In the set temperature 2 menu, press the menu key once to get to the fault code menu. A fault code will appear if a fault has occurred. This menu remains inactive if no fault has occurred.

See chapter "Troubleshooting / Fault codes".

4.4 Rapid heating key



Press the rapid heating key.

The heat pump and electric emergency/booster heater symbols appear.

4.4.1 Rapid/comfort heating

Normally, the rapid heating key is used to activate the rapid/comfort heating function, which enables you to cover an unexpectedly high DHW demand on a single occasion without changing any of the appliance's standard settings.

If rapid/comfort heating is activated manually by pressing the relevant key, the heat pump and the electric emergency/booster heater will start in parallel, irrespective of the selected set temperature, and will remain active until the DHW temperature in the cylinder has reached 65 °C. To save energy, the electric emergency/booster heater switches off early, as soon as a temperature of 65 °C has been achieved in the upper cylinder section (rapid heating).

The rapid/comfort heating function remains active until a temperature of 65 °C has been achieved in the entire DHW cylinder (comfort heating). The appliance then automatically switches back to the previously set parameters.

Note
The electric emergency/booster heater and heat pump symbols are displayed until the rapid/comfort heating function has terminated.
During rapid/comfort heating, the electric emergency/booster heater symbol is displayed until the heat pump has heated the entire cylinder to 65 °C and the function is terminated. The electric emergency/booster heater already switches off when the 65 °C has been achieved in the upper cylinder section.

Note
If the rapid/comfort heating has been activated unintentionally, you can cancel the function by lowering the set temperature.

- ▶ Hold down the minus key, until you hear a clicking noise caused by the heat pump and emergency/booster heater switching off. At the same time, the set temperature also jumps back to the value that was selected before rapid/comfort heating was activated.

4.4.2 Emergency mode

If the appliance is faulty, you can use the emergency mode to activate the electric emergency/booster heater.

The compressor shuts down if, following a DHW demand, no temperature increase is captured for 13 hours (52 intervals of 15 minutes each, during which the temperature increase is <0.25 °C respectively). The fault key flashes on the display and a fault code indicates that the appliance is not heating the water.

In such an event you can activate emergency mode by pressing the rapid heating key. After the rapid heating key has been pressed, the indicated fault code increases by a value of 256, as

the fault codes are added together (see fault code table in chapter "Troubleshooting"). The fault key continues to flash. The electric emergency/booster heater is activated.

The current set temperature (set temperature 1 or set temperature 2) is ignored. In emergency mode, the appliance operates with a fixed set temperature of 40 °C. Following a one-off activation of the function via the rapid heating key, this function remains active for 7 days.

Following 7 days of emergency operation the electric emergency/booster heater is deactivated. The fault code shown on the display decreases by 256.

If you press the rapid heating key again within the 7 days of emergency operation, the 7-day runtime for emergency mode will start afresh from that point.

If the 7-day runtime for emergency mode has passed, you can restart emergency operation for a further 7 days by pressing the rapid heating key.

Pressing the rapid heating key only activates emergency mode if a fault with fault code 8 occurred previously. In standard mode pressing the rapid heating key only triggers a one-off heating of the DHW cylinder.

Emergency mode is no longer active after an interruption of the power supply. The appliance tries to heat with the heat pump again. Fault code 8 is only set after 13 hours. Only then can emergency mode be manually activated again via the rapid heating key.

4.5 Emergency shutdown

In the event of an emergency, carry out the following steps:

- ▶ Interrupt the power supply by unplugging the appliance from the mains or by tripping the MCB.
- ▶ Shut off the cold water supply.
- ▶ Immediately notify a qualified contractor, as the appliance is not protected against corrosion while the power supply is interrupted.

5. Maintenance and care

WARNING Electrocution
Only clean the exterior of the appliance.
Never open the appliance.
Do not insert objects through the grille into the interior of the appliance.
Never spray the appliance with water.
Never spray water into the appliance.

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

Appliance components	Care and maintenance tips
Casing	Use a damp cloth to clean the casing sections. Never use abrasive or corrosive cleaning agents.
Air intake grille / air discharge grille	Clean the air intake grille and air discharge grille every six months. Cobwebs or other kinds of contamination can restrict the air supply to the appliance.
DHW cylinders	The DHW cylinder is equipped with a maintenance-free impressed current anode to safeguard it against corrosion. The power supply must not be interrupted while the appliance is filled with water to enable the impressed current anode to provide protection. Otherwise there is a risk of corrosion.
Electric emergency/booster heater	Have the electric emergency/booster heater descaled from time to time. This will extend the service life of the electric emergency/booster heater.
Appliance	Have the safety assembly and the evaporator checked regularly by a qualified contractor.
Condensate drain	Undo the condensate drain. Check that the condensate drain is clear and remove any dirt from the condensate drain connection of the appliance.

6. Troubleshooting

Problem	Cause	Remedy
No hot water is available.	No power at the appliance.	Check that the appliance is connected to the power supply.
	A fuse/MCB in the fuse box has blown/responded.	Check whether the fuses/MCBs in your fuse box have blown/responded. If required, disconnect the appliance from the power supply and replace the fuses/reset the MCBs. Contact your qualified contractor if the fuse blows again after the appliance is connected to the power supply.
	The air intake or air discharge of the appliance is blocked.	Check the air intake grille and air discharge grille for contamination. Remove any contamination (see chapter "Maintenance and care").
	The ambient temperature exceeds the upper application limit (see chapter "Specification / Data table"). The appliance safety equipment has responded and the appliance has switched off automatically.	Wait for the appliance to cool down. Call a qualified contractor if the appliance does not switch back on automatically.
	The appliance has interrupted DHW heating to defrost the evaporator. The temperature at which the evaporator starts to ice up depends on the relative humidity. Icing-up can start at ambient temperatures of 7 °C.	Wait until the appliance has finished the defrosting process. DHW heating will continue automatically.
	The rated output for the appliance is based on an air inlet temperature of 15 °C. At temperatures below that, the heat-up time is extended.	
The appliance is not heating the DHW cylinder although the heat pump symbol is illuminated.	The blocking time for compressor has not yet elapsed. Once the compressor has been switched off, it will only be switched back on again after the 20 minute compressor blocking time has elapsed.	
The safety valve of the cold water supply line is dripping.	These units are under water mains pressure. During the heat-up process, expansion water will drip from the safety valve.	Notify a qualified contractor if water continues to drip when heating is completed.
The condensate drain drips.	The surface temperature of the evaporator is lower than the dew point temperature of the ambient air. Condensate forms.	The amount of condensate depends on the air humidity level.
The room temperature drops too low.		Operation of the appliance can cause the room temperature to fall by 1 to 3 °C. If the room temperature falls by more than 5 °C, check the room size (see chapter "Specification / Data table"). Increasing the room size by opening a door to another room will remedy this.

Problem	Cause	Remedy
Service/fault symbol is continuously illuminated. 	See chapter "Fault codes".	Notify a qualified contractor.
Service/fault symbol flashes and the water does not heat up. 	See chapter "Fault codes".	It is imperative that you notify a qualified contractor.
The "heat pump" symbol is illuminated but the compressor is not running. The fan is running.	The appliance is in defrost mode.	No action required.
The "heat pump" symbol is flashing.	There is a heat demand, but the compressor is blocked.	No action required. The compressor switches itself on automatically after the compressor blocking time has elapsed. The compressor blocking time lasts 20 minutes once the compressor has been switched off. The symbol stops flashing automatically.
The "electric emergency/booster heater" symbol is flashing.	A temperature controller has switched off the "electric emergency/booster heater" during quick heat-up.	No action required. The appliance continues the quick heat-up process using the heat pump. The symbol stops flashing when the controller releases the "electric emergency/booster heater". The symbol goes out when the temperature throughout the DHW cylinder reaches the set temperature of 65 °C.

Fault code

If the service/fault symbol is flashing or continuously illuminated on the display, you can call up a fault code.



Repeatedly press the menu key until the fault code is shown following set temperature 2.



Fault code appears

Fault code	Service/ fault symbol	Fault description	Remedy
0		No fault	
2	continuously illuminated	Dome sensor faulty. The actual temperature display switches over to the integral sensor. The appliance continues to deliver heat. The amount of mixed water shown is always less than 10 litres.	
4	continuously illuminated	Integral sensor faulty. In the event of a faulty integral sensor, the integral sensor is set to the dome sensor value and amount of mixed water is calculated using this value. The appliance continues to deliver heat.	
6	flashes	Dome sensor and integral sensor faulty. The appliance no longer delivers heat.	
8	flashes	The appliance has ascertained that the DHW cylinder has not been heated for 13 hours, despite there being a demand.	You can continue to use the appliance by activating emergency mode. See chapter "Emergency mode".
16	continuously illuminated	Short circuit impressed current anode / protective anode faulty	Immediately notify a qualified contractor, as the appliance is not protected against corrosion if the impressed current anode is faulty.
32	flashes	The appliance is operating with an empty cylinder or the appliance is not delivering heat.	Fill the appliance. The fault code disappears and the appliance starts.
		The anode current is interrupted. The appliance does not heat up.	The contractor needs to check the impressed current anode and the wiring.
128	continuously illuminated	No communication between controller and programming unit. The most recently selected set values are active.	
256	flashes	Manually activated emergency mode (only electric emergency/ booster heater active).	See chapter "Appliance description / Emergency mode".

If several faults occur, the fault codes are added up.

Example: If both the dome sensor and integral sensor are faulty, the display shows fault code 6 (=2+4).

Application scenarios for emergency mode

If the appliance shows fault code 8, you can manually activate emergency mode. If a different fault occurred previously, but did not cause the appliance to switch off, the display may show a fault code that is the result of several faults added together.

Listed below are the fault codes which will allow you to activate emergency mode.

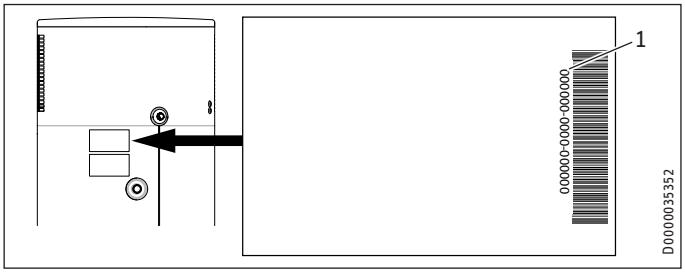
Fault code displayed	
8	8
10	Fault code 8 + fault code 2
12	8+4
24	8+16
26	8+2+16
28	8+4+16
138	8+2+128
140	8+4+128
152	8+16+128
154	8+2+16+128
156	8+4+16+128

When the appliance is operating in emergency mode, the fault code shown is increased by 256.

Notifying a qualified contractor

If you cannot remedy the fault, notify your qualified contractor. To facilitate and speed up your request, provide the number from the type plate (000000-0000-00000). The type plate can be found on the left, above the "DHW outlet" connection.

Sample type plate



1 Number on the type plate

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.

7.2 Instructions, standards and regulations

Note
Observe all applicable national and regional regulations and instructions.

Take note of the appliance type plate and chapter "Specification".

8. Appliance description

The heat pump drive unit is located in the upper section of the appliance. The DHW cylinder is located in the lower section of the appliance.

8.1 Standard delivery

The following are delivered with the appliance:

- Condensate drain bend
- 2 pipe connectors with brass union nuts and gaskets for the "Cold water inlet" and "DHW outlet" connections.

8.2 Required accessories

Various safety assemblies are available that need to be selected subject to the static pressure. These type-tested safety assemblies protect the appliance against unacceptable excess pressure.

8.3 Further accessories

– Condensate pump (if the condensate cannot be drained off with a naturally occurring fall)

8.4 Incorrect use

The following are not permitted:

- Operating the appliance when the casing is open
- Filling the appliance with a refrigerant other than the one detailed in chapter "Specification / Data table"

Observe the list of requirements regarding the installation room and non-permissible installation sites (see chapter "Installation site").

9. Preparations

9.1 Transport

CAUTION Injury
- ▶ **Observe the weight of the appliance.**
- ▶ **Use suitable transport aids (e.g. a sack truck) and enough personnel for transportation.**

Material losses
The appliance has a high centre of gravity and low overturning moment.
- ▶ Safeguard the appliance against falling over.
- ▶ Only set the appliance down on an even base.

Material losses
The appliance casing is not designed to withstand strong forces. Incorrect handling can lead to material losses of considerable extent.
- ▶ Observe the information on the packaging.

Only remove the packaging shortly before the installation.

Where possible, do not unpack the appliance until it has arrived in the installation room.

For transport and handling leave the appliance in its packaging and on the pallet. This enables brief horizontal transport and provides places to hold on to during transport.

If the appliance has to be unpacked before transportation, we recommend using a sack truck. Pad the contact surfaces to avoid damaging the appliance. Secure the appliance to the sack truck using a strap. Pad between the strap and the appliance and avoid overtightening the strap. Where stair wells are narrow, you can carry the appliance by the handles on the sack truck and the foot of the appliance.

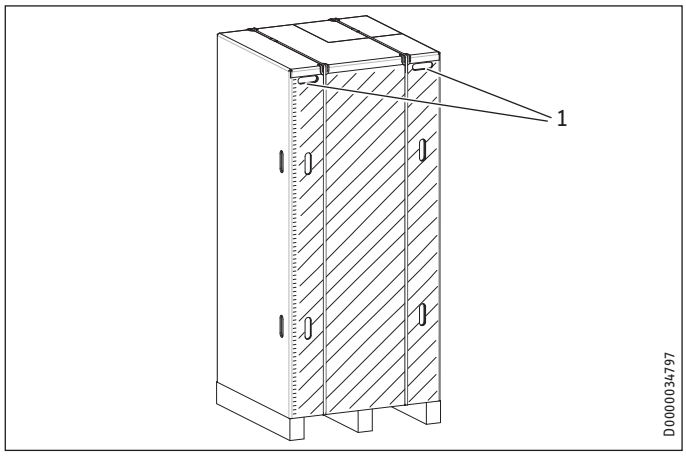
Vehicular transport

Material losses
The appliance must generally be stored and transported vertically.

The appliance may be transported horizontally for brief periods, over a maximum distance of 100 miles and on made-up roads. Strong shocks are not permissible.

Material losses
If transported horizontally, the appliance must always be laid on the shaded side of the box.
The appliance must not remain in a horizontal position for more than 24 hours.
If the appliance was transported horizontally, leave it to rest in a vertical position for at least one hour before commissioning.

- ▶ Observe the information on the packaging.



1 Recessed grips

Transport from vehicle to installation room

The cardboard box has reinforced recessed grips along the top. You can use these recessed grips, as well as the pallet at the lower end, to carry the appliance into the installation room. Take note of the weight of the appliance and ensure a sufficient number of personnel is available for handling the appliance.

9.2 Storage

If it is necessary to store the appliance for a prolonged period before installation, observe the following information:

- Only store the appliance in a vertical position. Never store the appliance horizontally.
- Store the appliance in a location that is dry and largely dust-free.
- Protect the appliance from coming into contact with corrosive substances.
- Ensure the appliance is not subjected to shocks or vibrations.

9.3 Installation site

Material losses
Observe the following list of requirements regarding the installation site.

- The appliance is designed primarily for indoor installation. As long as the appliance is not exposed to rain, snow or direct insolation, it may be installed outdoors, e.g. under a car port.
- Site the appliance where it will be well ventilated. Unhindered air intake and air discharge should be possible. Protect the appliance from the elements and strong wind.
- The installation site must be free from flammable, highly combustible gases and substances, as well as high levels of dust.
- The installation site must be free from the risk of frost.
- The intake temperature of the appliance must be within the permissible application limits (see chapter "Specification / Data table").
- The floor of the installation room must be level and have sufficient load bearing capacity. Take note of the weight of the appliance with a full DHW cylinder (see "Specification / Data table"). A floor with insufficient load bearing capacity is in danger of collapse. If the appliance is not evenly balanced, there may be a risk of appliance damage.
- The size of the installation room must correspond to the application limits of the appliance (see chapter "Specification / Data table").
- Observe the safety clearances and protection zones.
- Always leave sufficient space to provide access for installation, maintenance and cleaning. Observe the required minimum clearances (see chapter "Preparations / Siting the appliance").
- Ensure the operation of other equipment in the installation room is not impaired.
- To keep the duct lengths as short as possible, we recommend installing the appliance close to the kitchen or bathroom.
- To prevent adverse effects from operating noise, never install the appliance close to bedrooms.

The following installation sites are not permissible, due to risk of appliance damage:

- Locations where the air is contaminated with oil, grease or hairspray
- Saline environments
- Environments with thermal water
- Areas in proximity to high frequency machines
- Places where the air contains ammonia (e.g. sewage works)
- Locations where the air contains chlorine or chloride (e.g. swimming pools or saline atmospheres)
- Generally locations where the air contains aggressive substances or is strongly contaminated with dust, e.g. cement dust or flour dust

Note
The output data given for this appliance has been determined in accordance with the relevant standard at an intake temperature of 15 °C. Below 15 °C, the efficiency of the appliance decreases.

Note
You can improve the efficiency of the appliance by utilising the waste heat from other appliances to heat the DHW cylinder, e.g. boilers, tumble dryers or freezers.

Sound emissions

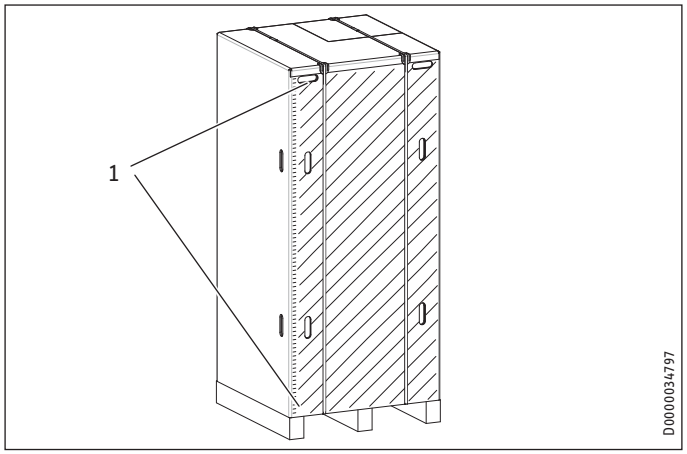
The sound emissions are louder on the air intake and air discharge sides of the appliance than on the closed sides.

▶ Never direct the air intake or air discharge towards noise-sensitive rooms of the house, e.g. bedrooms.

Note
For details on sounds emissions, see chapter "Specification / Data table".

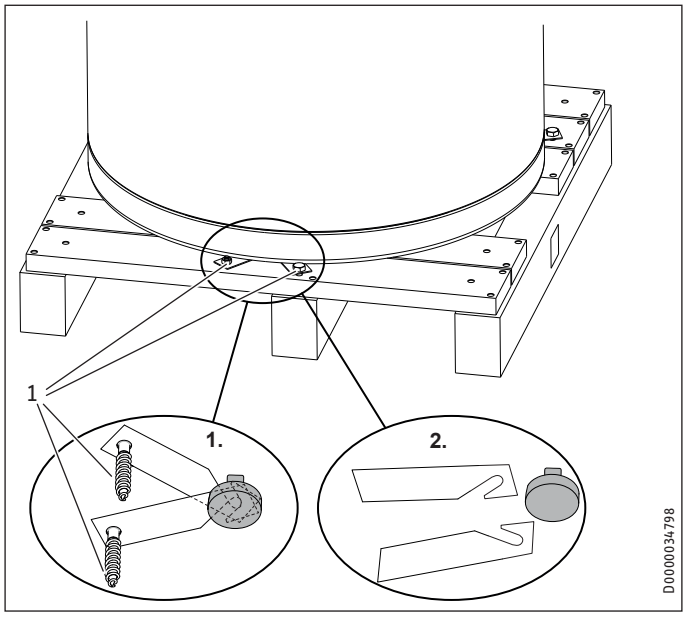
9.4 Siting the appliance

▶ Carefully undo the cardboard packaging at the clips.



1 Cardboard packaging clips

The appliance is secured to the pallet with metal brackets and screws. The metal brackets are hooked on to the feet underneath the floor plate of the appliance.



1 Metal bracket fixing screw

▶ Remove the fixing screws of the metal brackets from the pallet.

▶ Push the metal brackets a little towards the cylinder centre to unhook them from the appliance feet.

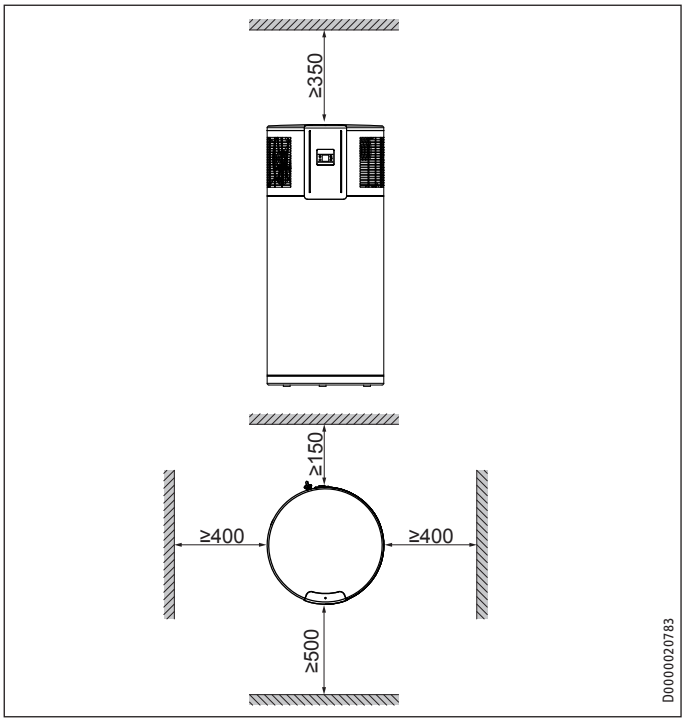
▶ Pull the metal brackets out from underneath the appliance.

Material losses
Take note of the appliance's weight and centre of gravity.

▶ Slightly tip the appliance and carefully roll the appliance off the pallet.

▶ Position the appliance in the final installation site.

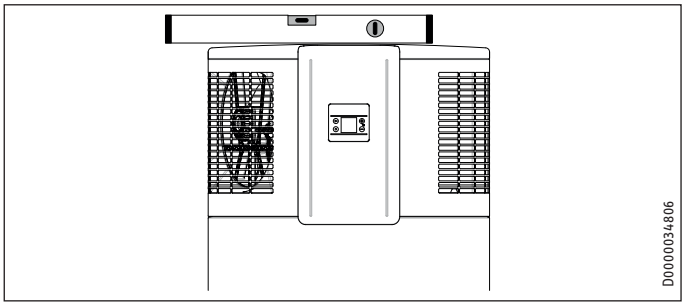
Minimum clearances



▶ Maintain the minimum clearances.

Material losses
The appliance must be positioned vertically to avoid damage.
The feet under the floor plate of the appliance are height-adjustable.

▶ Level the appliance horizontally using the height-adjustable feet.



10. Installation

WARNING Injury
Incorrect installation can lead to serious injury or material losses.
Before any work, ensure sufficient clearances for the installation.
Handle sharp-edged components carefully.

10.1 Water connection

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

The following material combinations are approved for metal pipework installations:

Cold water inlet	DHW outlet
Copper pipe	Copper pipe
Steel pipe	Steel pipe or copper pipe

- ▶ Thoroughly flush the pipework before connecting the appliance. Foreign bodies, such as welding pearls, rust, sand or sealant can impair the operational reliability of the appliance.

Material losses
To protect the connections against corrosion the water connection must be made with flat gaskets. The use of hemp on connections is not permissible.

- ▶ Using the gaskets and brass union nuts provided, connect the flanged copper pipes included in the standard delivery to the "Cold water inlet" and "DHW outlet" connections.
- ▶ Check the gasket and union nut for leaks.

T&P valve

- ▶ If specified, install a type-tested T&P valve using the corresponding connection on the appliance.

The response pressure of the valve must be below or equal to the permissible operating pressure of the DHW cylinder. The valve protects the appliance against unacceptable pressure or temperature rises. The diameter of the cold water supply line must be no greater than the diameter of the valve.

- ▶ Ensure that the expansion water escaping from the valve can drip into a drain, e.g. a tank or funnel.

Ensure the drain cannot be shut off.

- ▶ Size the drain so that water can drain off unimpeded when the safety valve is fully opened.
- ▶ Ensure that the discharge pipe of the safety valve is open to atmosphere.
- ▶ Fit the discharge pipe of the safety valve with a constant downward slope and in a room free from the risk of frost.

Safety valve

The appliance is a sealed unvented DHW cylinder. Provide the appliance with a pressure relief valve.

- ▶ Install a type-tested safety valve in the cold water supply line. The response pressure of the safety valve must be below or equal to the permissible operating pressure of the DHW cylinder.

The safety valve protects the appliance against unacceptable excess pressure. The diameter of the cold water supply line must be no greater than the diameter of the safety valve.

- ▶ Ensure that the expansion water escaping from the safety valve can drip into a drain, e.g. a tank or funnel.

Ensure the drain cannot be shut off.

- ▶ Size the drain so that water can drain off unimpeded when the safety valve is fully opened.
- ▶ Ensure that the discharge pipe of the safety valve is open to atmosphere.
- ▶ Fit the discharge pipe of the safety valve with a constant downward slope and in a room free from the risk of frost.

Pressure reducing valve

The maximum pressure in the cold water line must be at least 20 % below the response pressure of the safety valve. If the maximum pressure in the cold water supply line is higher, install a pressure reducing valve.

Drain valve

- ▶ Install a suitable drain valve at the lowest point in the cold water inlet line.

Thermal insulation

- ▶ Insulate the DHW line against heat loss in accordance with locally applicable regulations.

DHW outlet

WARNING Burns
The water in the DHW cylinder can be heated to temperatures in excess of 60 °C. There is a risk of scalding at outlet temperatures in excess of 43 °C.
Check whether you are required to install a high limit safety cut-out.

10.2 Condensate drain

Install a condensate drain hose in order to remove the condensate which forms.

- ▶ Connect the condensate drain bend included in the standard delivery to the "condensate drain" connection.
- ▶ Connect a condensate drain hose to the condensate drain bend.

Material losses
Ensure condensate cannot back up.
- ▶ Use a condensate drain hose with a diameter greater than the diameter of the condensate drain bend.
- ▶ Ensure the condensate drain hose is not kinked.
- ▶ Route the condensate drain hose with a continuous fall.

The condensate drain must be open to atmosphere.

- ▶ Use a suitable condensate pump if there is insufficient fall. Observe the building characteristics.

10.3 Power supply

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

WARNING Electrocution
If the appliance is permanently connected to the power supply, ensure that the appliance can be separated from the power supply by an isolator that disconnects all poles with at least 3 mm contact separation. Contactors, mains isolators or fuses can be used for this.

WARNING Electrocution
- ▶ **Observe the safety measures to prevent contact with dangerous 'live' currents.**

WARNING Electrocution
Coming into contact with 'live' components presents a threat to life. Disconnect the appliance from the power supply before carrying out work on the control panel. Prevent the power supply from being switched on while you are working on the system.

WARNING Electrocution
Insufficient earthing can lead to electrocution. Ensure the appliance is earthed according to locally applicable requirements.

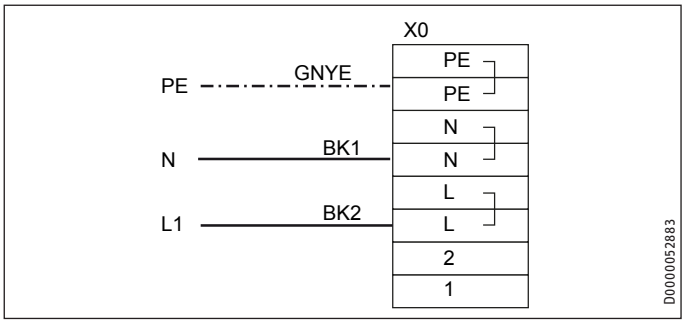
WARNING Electrocution
The power cable must only be replaced (for example if damaged) by a qualified contractor authorised by the manufacturer (connection type X).

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

Material losses
Never connect the appliance to the power supply before the DHW cylinder is filled.

The appliance is supplied with a flexible power cable without plug.
- ▶ If the power cable is not long enough, unclamp it from the appliance. Use a suitable installation cable.
- ▶ When routing the new power cable, ensure that it is waterproof as it passes through the existing cable grommet. Connect the connecting cable properly inside the appliance.

10.3.1 Standard connection without external signal transmitter



10.3.2 Connection with external signal transmitter (220 V)

An external signal transmitter for switching a separate set DHW temperature (set temperature 2) can be connected to terminal X0/2.

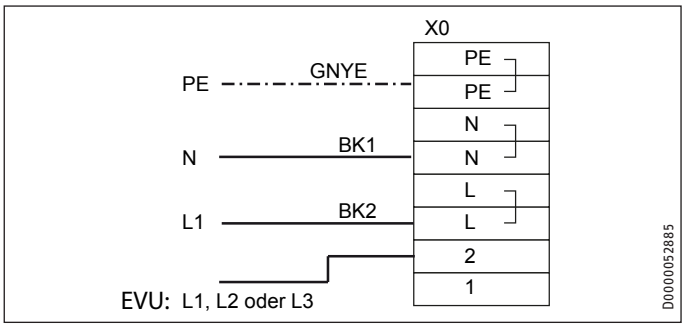
In the delivered condition, terminal X0/2 is not assigned. If this terminal is connected to 220 V, the appliance activates set temperature 2.

Following a one-off activation (signal is present for at least 1 minute), set temperature 2 applies for at least 20 minutes and is ranked higher than set temperature 1.

WARNING Electrocution
If the 220 V signal of an external signal transmitter is to be connected to terminal X0/2, do not connect the appliance to the power supply with the factory fitted power cable and standard plug.
Instead connect the appliance to the power supply permanently. Never interchange L1 and N.

Note
- ▶ Never wire up terminal X0/1.

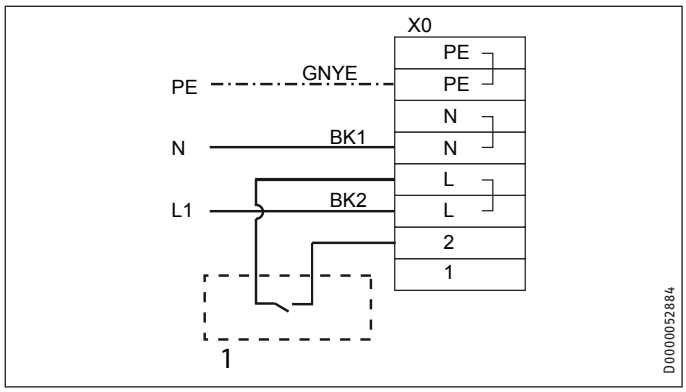
Example 1: Power-OFF signal with own 220 V phase



Example 2: Photovoltaic signal via on-site relay and phase routed outside the appliance

Note
The relay in the inverter must meet the following requirements:
- Potential-free relay (240 V AC / 24 V DC, 1 A) with N/O contact
- Adherence to safety regulations and standards for safety extra low voltage
- The switching output must be programmed so that the relay closes or opens if certain limits are exceeded or undershot (inverter output level).

If necessary, check with the inverter manufacturer whether the product meets the stated criteria.

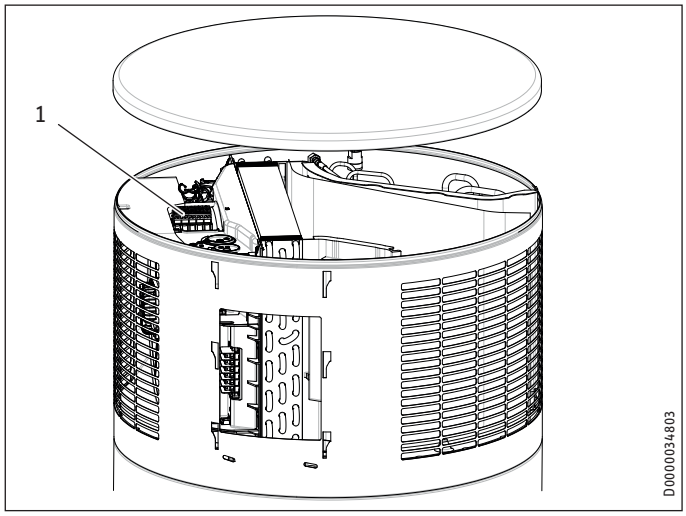


1 Inverter (floating contact)

The inverter power feed is located at a central distribution point (e.g. in the main fuse box).

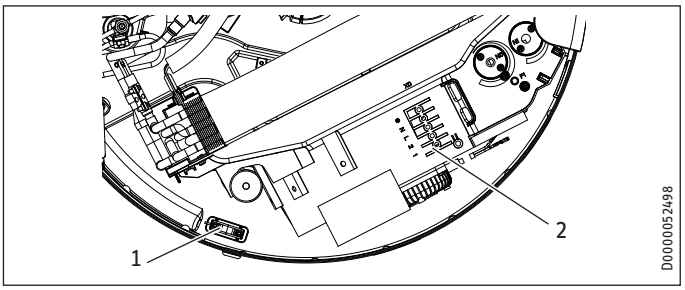
Connection to terminal block X0

▶ Remove the appliance cover (see chapter "Cleaning and maintenance / Removing the appliance cover").



1 Terminal X0

▶ Prepare the leads for connection to X0 in such a manner, that each lead terminating at X0 has a wire ferrule.



1 Strain relief
2 Terminal X0

▶ Route leads through the strain relief. The strain relief is located behind the entry for electrical cables.

▶ Connect the electrical cables to X0.

10.4 Assembling the appliance

Note
Refit the appliance cover after completing your work. See chapter "Maintenance and cleaning / Fitting the appliance cover").

11. Commissioning

11.1 Initial start-up

Note
Fill the DHW cylinder before switching on the power supply to the appliance. In case the appliance is operated with an empty DHW cylinder, it is equipped with boil-dry protection.

Note
Following an interruption of the power supply, the compressor operation remains blocked for at least one minute. The PCB delays electronic starting by a minute, during which the appliance goes through its initialising process.
If the compressor subsequently fails to start, it may be blocked by additional safety devices (motor overload relay and high pressure switch). This block should lift after 1 to 10 minutes.

11.1.1 Filling the DHW cylinder

Fill the DHW cylinder and vent the pipework by following the procedure below:

▶ Close the drain valve.

▶ Open all DHW draw-off points and the shut-off valve in the cold water supply.

▶ Close the DHW draw-off points as soon as water starts to emerge from them.

▶ Check the safety valve by leaving it open until water runs out.

11.1.2 Settings / function check

▶ Switch the mains power ON.

▶ To check the function, select the maximum set temperature.

- ▶ Check the function of the appliance.
- ▶ Check the function of the safety assembly.

Note
Following an interruption of the power supply, the compressor operation remains blocked for at least one minute. The PCB delays electronic starting by a minute, during which the appliance goes through its initialising process.
If the compressor subsequently fails to start, it may be blocked by additional safety devices (motor overload relay and high pressure switch). This block should lift after 1 to 10 minutes.

Establish the customer's comfort requirements and select the appropriate set DHW temperature. For information regarding DHW demand, consult VDI guideline 2067.

Following completion of the function check, reduce the set DHW temperature for a more energy-concious appliance operation.

11.1.3 Appliance handover

- ▶ Explain the appliance function to users and familiarise them with its operation.
- ▶ Make the user aware of potential dangers, especially the risk of scalding.
- ▶ Make users aware of critical environmental factors and requirements concerning the installation site.
- ▶ Inform users that water may drip from the safety valve during the heat-up process.
- ▶ Please note that the appliance is not protected against frost and corrosion when it is disconnected from the power supply.
- ▶ Hand over these operating and installation instructions to users for safe-keeping.

11.2 Recommissioning

If the appliance is switched off due to an interruption to the power supply, no specific measures for restarting are required once the power supply has been restored. The appliance has saved the parameters most recently set and continues operating with these.

If the rapid/comfort heating function was active before interruption of the power supply, this is reactivated with a set temperature of 65 °C once the power supply has been restored.

Emergency mode is not reactivated after an interruption of the power supply.

Note
Following an interruption of the power supply, the compressor operation remains blocked for at least one minute. The PCB delays electronic starting by a minute, during which the appliance goes through its initialising process.
If the compressor subsequently fails to start, it may be blocked by additional safety devices (motor overload relay and high pressure switch). This block should lift after 1 to 10 minutes.

12. Shutdown

Material losses
If you disconnect the appliance from the power supply, it is no longer protected against frost or corrosion.
- ▶ Only disconnect the appliance from the power supply for longer periods if you are also draining the DHW cylinder. See chapter "Maintenance / Draining the appliance".

The appliance can only be switched off by interrupting the power supply.

- ▶ Pull the mains plug from the socket or disconnect the appliance from the mains at the MCB/fuse in the fuse box.

13. Troubleshooting

WARNING Electrocution
Prior to all work on the appliance, isolate it from the power supply.

Material losses
If you disconnect the appliance from the power supply, it is no longer protected against frost or corrosion.
- ▶ Only disconnect the appliance from the power supply for longer periods if you are also draining the DHW cylinder.

- ▶ For work inside the appliance, remove the appliance cover (see chapter "Cleaning and maintenance / Removing the appliance cover").
- ▶ If necessary, remove the upper section of the casing jacket (see chapter "Maintenance and cleaning / Removing the casing ring").

Note
Refit the casing ring after completing the work. See chapter "Maintenance and cleaning / Fitting the casing ring".

Note
Refit the appliance cover after completing your work. See chapter "Maintenance and cleaning / Fitting the appliance cover").

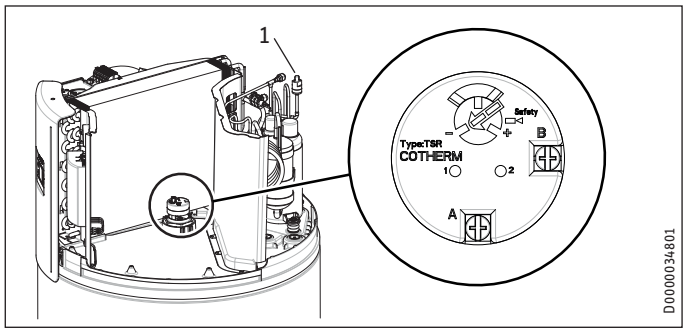
13.1 Fault table

Fault	Cause	Remedy
The appliance switches off unexpectedly and does not switch on again.	Excessive pressure in the refrigerant circuit. The safety pressure limiter has responded. The compressor has been switched off.	Eliminate the cause of the increase in pressure in the refrigerant circuit. Wait approx. 5-15 minutes for the appliance to equalise the pressure. Reset the safety pressure limiter (see chapter "Troubleshooting / Resetting the safety pressure limiter").
	The appliance is operated outside the application limits. The ambient temperature is higher than the permissible value. The safety pressure limiter has responded.	Ensure that the application limits are observed. Wait approx. 5-15 minutes for the appliance to equalise the pressure. Reset the safety pressure limiter (see chapter "Troubleshooting / Resetting the safety pressure limiter").
The compressor switches off unexpectedly.	The thermal load of the compressor has been exceeded. The motor overload relay has responded.	Remedy the cause of the high thermal load. Wait until the appliance restarts.
The heating output of the appliance has reduced.	An inadequate air flow across the evaporator is a possible cause.	Check whether the fan is contaminated. Check whether the evaporator is contaminated. Ensure that the supply and extract air flow are unimpeded.

For explanations of the fault codes, see chapter "Troubleshooting".

13.2 Resetting the safety pressure limiter

The safety pressure limiter shuts down the compressor if the pressure inside the refrigerant circuit exceeds the permissible maximum value. The safety pressure limiter may also respond if the appliance is operated above its permissible application limit or the temperature controller of the heat pump fails to respond.

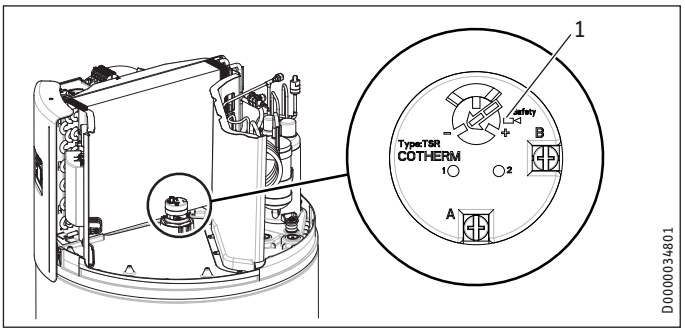


1 Reset button for safety pressure limiter

▶ After removing the cause of the fault, reset the safety pressure limiter by pressing the reset button.

13.3 Resetting the high limit safety cut-out

If the DHW cylinder is overheated, the high limit safety cut-out switches off the electric emergency/booster heater to protect the appliance.



1 Reset button for high limit safety cut-out

▶ Once the cause of the fault has been removed, press the reset button of the high limit safety cut-out on the rod thermostat. To do so, remove the appliance cover.

13.4 Motor overload relay

In the event of excessive thermal load on the compressor, the motor overload relay switches the compressor off.

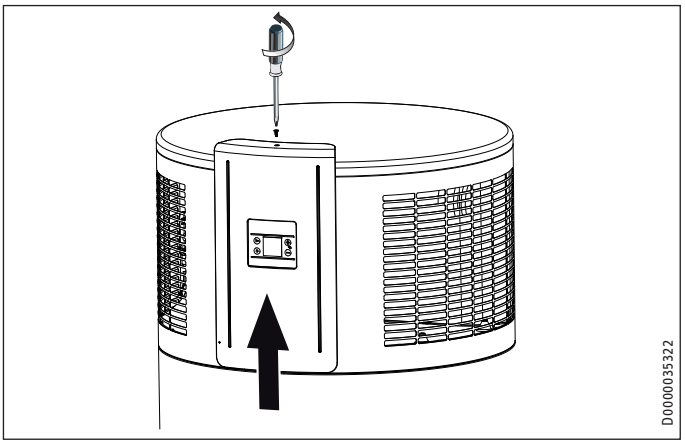
▶ Remove the cause.

After a short cooling period, the motor overload relay will restart the compressor automatically.

14. Maintenance and cleaning

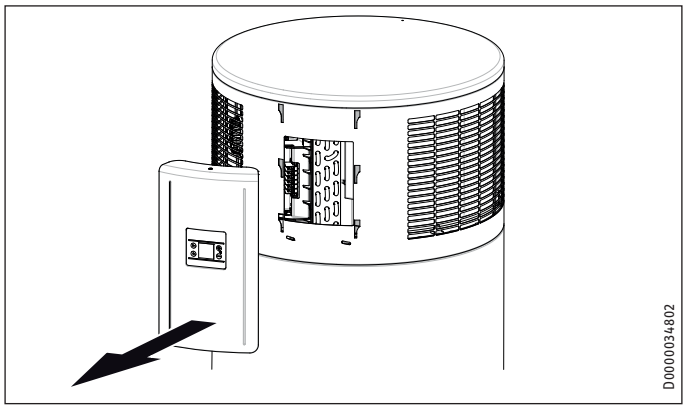
WARNING Electrocution
Prior to all work on the appliance, isolate it from the power supply.

14.1 Removing the appliance cover



▶ Undo the screw (Torx) that fastens the control fascia and the appliance cover to the appliance.

▶ Push the control fascia upwards.

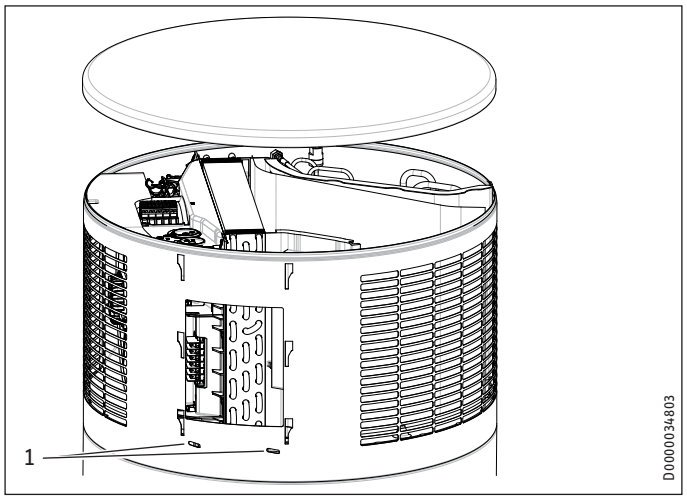


- ▶ Remove the control fascia.
- ▶ A lead connects the operating controls to the appliance PCB. If necessary, pull the plug from the back of the control fascia to fully remove the control fascia.
- ▶ Carefully lift away the appliance cover and undo the earth cable that runs from the appliance control panel to the cover.

Note
Refit the appliance cover after completing your work. See chapter "Maintenance and cleaning / Fitting the appliance cover").

14.2 Removing the casing ring

Note
If you require more space to work inside the appliance, you can remove the casing ring on the upper section of the appliance.

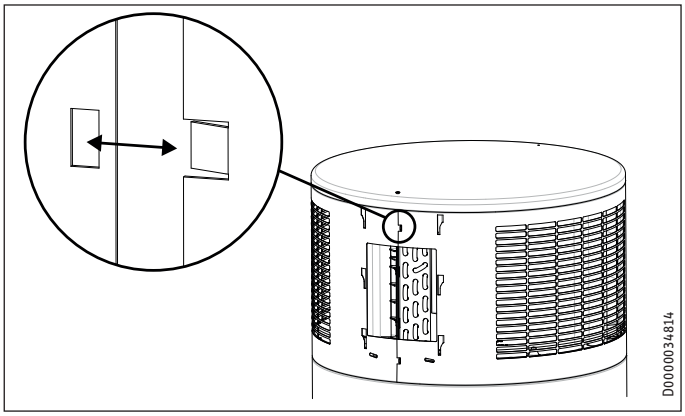


1 Fixing screws on casing ring

The casing ring is fastened with screws.

- ▶ Undo the fixing screws on the casing ring.
- ▶ Remove the condensate drain bend and pipe collar of the drain. Turn anti-clockwise to undo them.

Material losses
An earth cable is connected to the inside of the casing ring. The casing ring can only be removed after the earth cable has been detached.



The casing ring overlaps along the joint. A tab on one end clips into the recess at the other end of the casing ring.

- ▶ Ease the casing ring apart, until it can be removed or slid downwards.

Note
Refit the casing ring after completing the work. See chapter "Maintenance and cleaning / Fitting the casing ring".

14.3 Cleaning the evaporator

WARNING Injury
The evaporator consists of numerous sharp-edged fins. Be careful when cleaning the evaporator and wear protective clothing, especially safety gloves.

To maintain a consistently high appliance output, check the evaporator of the appliance regularly for contamination, and clean as necessary.

- ▶ Undo the screw that secures the appliance cover at the upper side of the control fascia.
- ▶ Remove the control fascia and the appliance cover.
- ▶ Carefully clean the evaporator fins. Only use water and a soft brush for this. Never use acidic or alkaline cleaning agents.

14.4 Draining the cylinder

WARNING Burns
Hot water may escape when draining the DHW cylinder.

To drain the DHW cylinder, e.g. when shutting the appliance down, proceed as follows.

- ▶ Isolate the appliance from the power supply.
- ▶ Close the shut-off valve in the cold water inlet line.

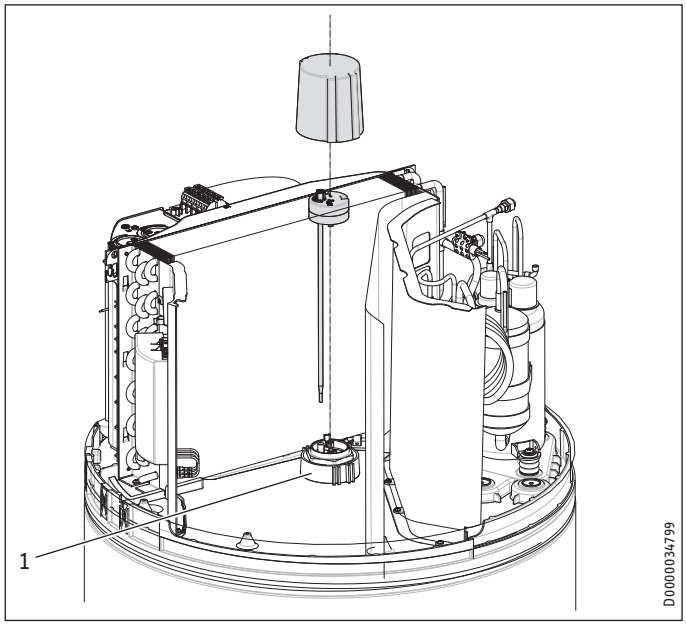
The DHW cylinder is drained via the cold water supply line.

- ▶ Open the drain valve installed in the cold water supply line (see chapter "Water connection"). If no drain valve has been installed, undo the cold water supply line at the "Cold water inlet" connection.
- ▶ To vent the system, undo the DHW line connected to the "DHW outlet" connection.

Some residual water will remain in the lower section of the DHW cylinder.

14.5 Descaling the electric emergency/booster heater

Only descale the flange of the electric emergency/booster heater after removing it, and never treat the interior of the DHW cylinder and the impressed current anode with descaling agents. The electric emergency/booster heater is screwed into the DHW cylinder of the appliance at a central point at the top.



1 Electric emergency/booster heater with protective anode

14.6 Protective anode

The flange of the electric emergency/booster heater is equipped with a protective anode that protects the appliance from corrosion while it is connected to the power supply. The protective anode is a maintenance-free impressed current anode.

If a fault code in the display indicates that the protective anode is faulty, proceed as follows:

- ▶ Remove the controller of the electric emergency/booster heater.
- ▶ Check the protective anode and its wiring.
- ▶ Refit the controller of the electric emergency/booster heater.

14.7 Valves

Regularly check the valves in the system (safety valve, pressure reducing valve, drain valve) to ensure the operational reliability of the appliance. The amount of limescale deposits depends on the local water quality.

- ▶ Check all valves in the system and remove limescale deposits.
- ▶ Replace the valves if necessary.
- ▶ Check the function of the valves.

14.8 Condensate drain

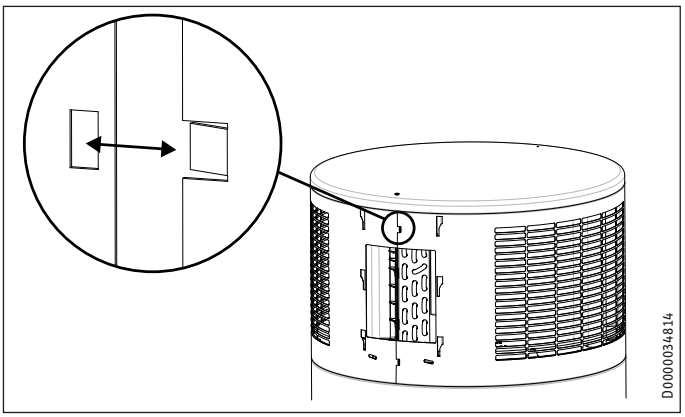
- ▶ Check whether the condensate drain is free from obstruction. Remove contaminants.

14.9 Replacing the power cable

WARNING Electrocution
If the power cable is faulty, replace it with a new one. The power cable should only be replaced by a qualified contractor (connection type X).

14.10 Fitting the casing ring

WARNING Electrocution
▶ Reconnect the earth cable to the casing ring.



- ▶ Fit the upper casing ring. The casing ring overlaps along the joint. A tab on one end clips into the recess at the other end of the casing ring.
- ▶ Secure the casing ring with screws.
- ▶ Fit the pipe collar of the condensate drain and the condensate drain bend.

14.11 Fitting the appliance cover

WARNING Electrocution
▶ Reconnect the earth cable to the appliance cover.

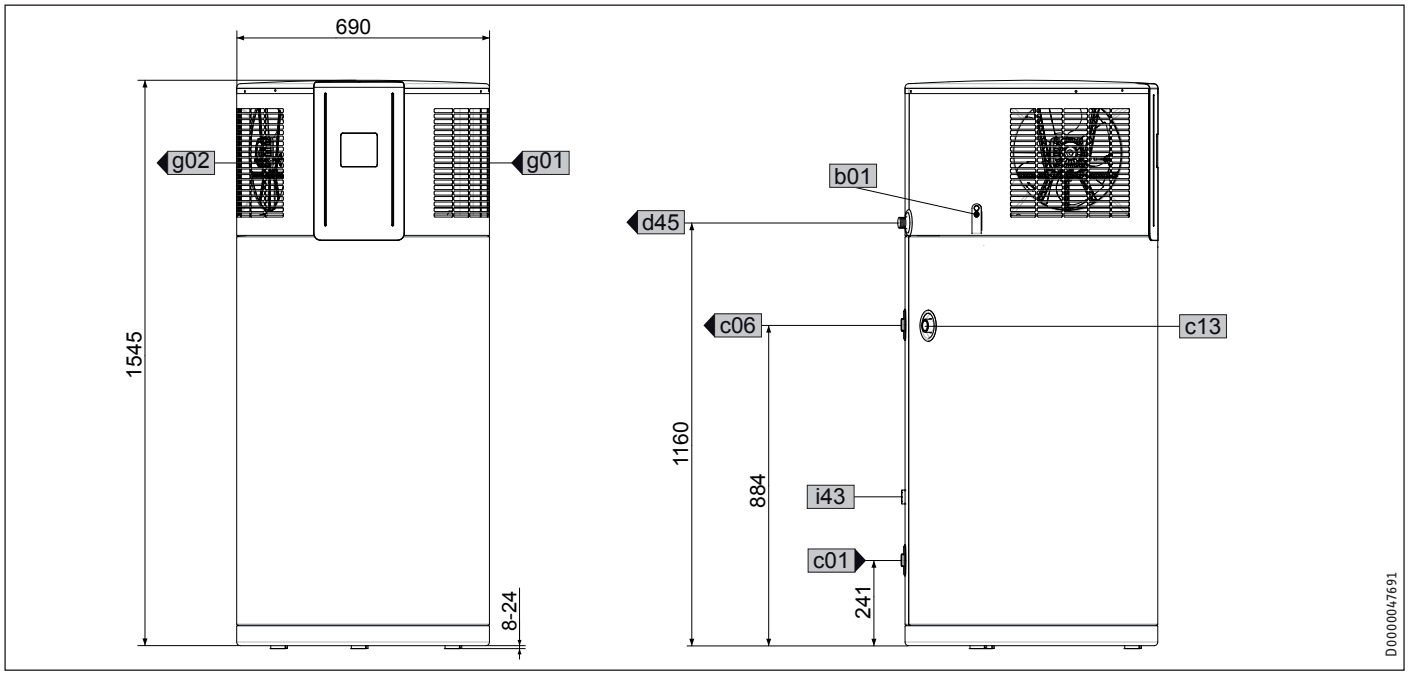
- ▶ Place the cover back on the appliance.
- ▶ Connect the cable linking the control with the appliance PCB to the back of the fascia.
- ▶ Insert the control fascia.
- ▶ Secure the appliance cover and the control fascia using the screw at the top of the control fascia.

ENGLISH

15. Specification

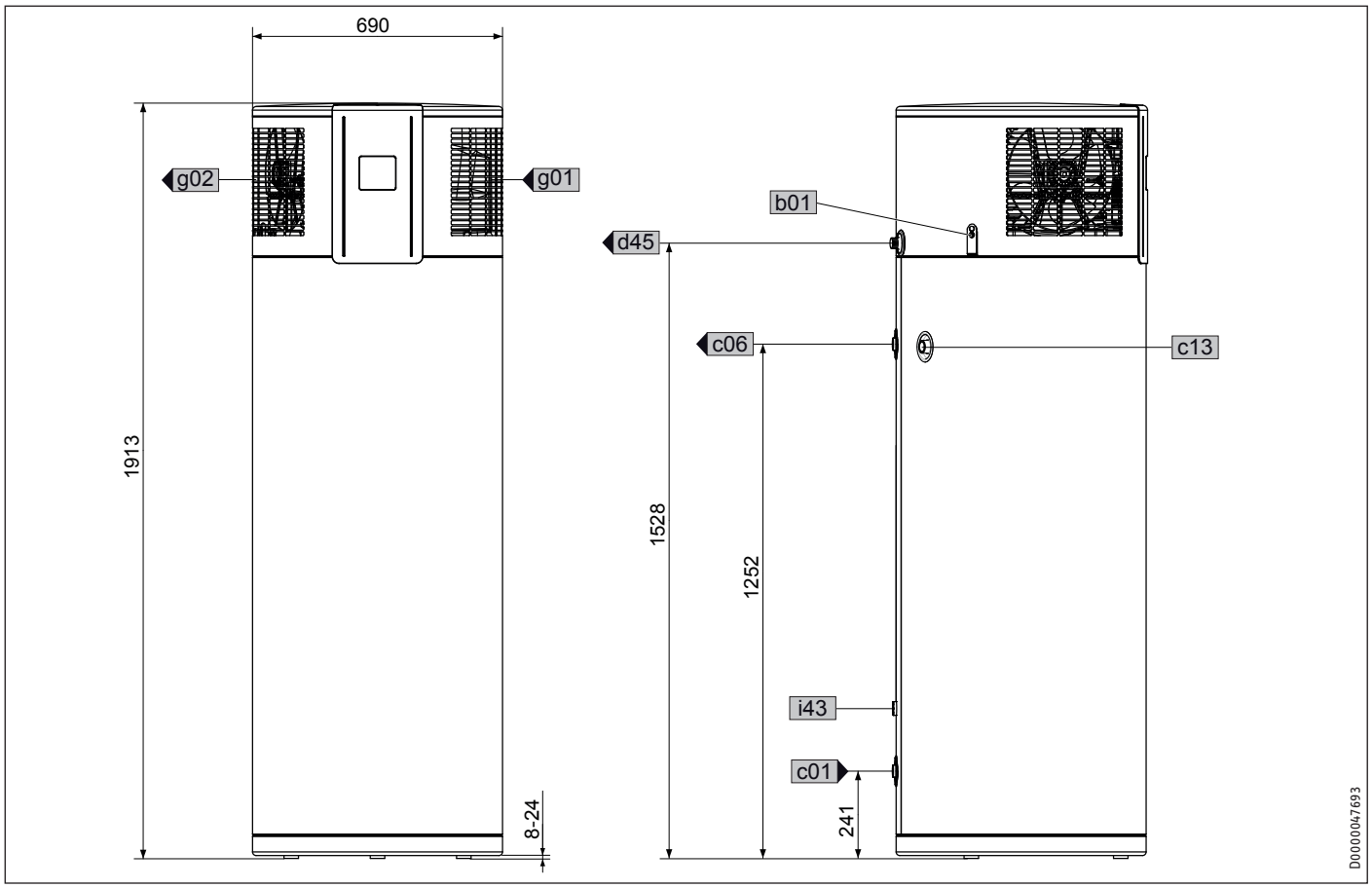
15.1 Dimensions and connections

15.1.1 WWK 223 electronic



				WWK 223 electronic
b01	Entry electrical cables			
c01	Cold water inlet	Male thread		G 1
c06	DHW outlet	Male thread		G 1
c13	T&P valve	Female thread		G 3/4
d45	Condensate drain	Male thread		G 3/4
g01	Air intake			
g02	Air discharge			
i43	Cover for manufacturing aperture			

15.1.2 WWK 303 electronic

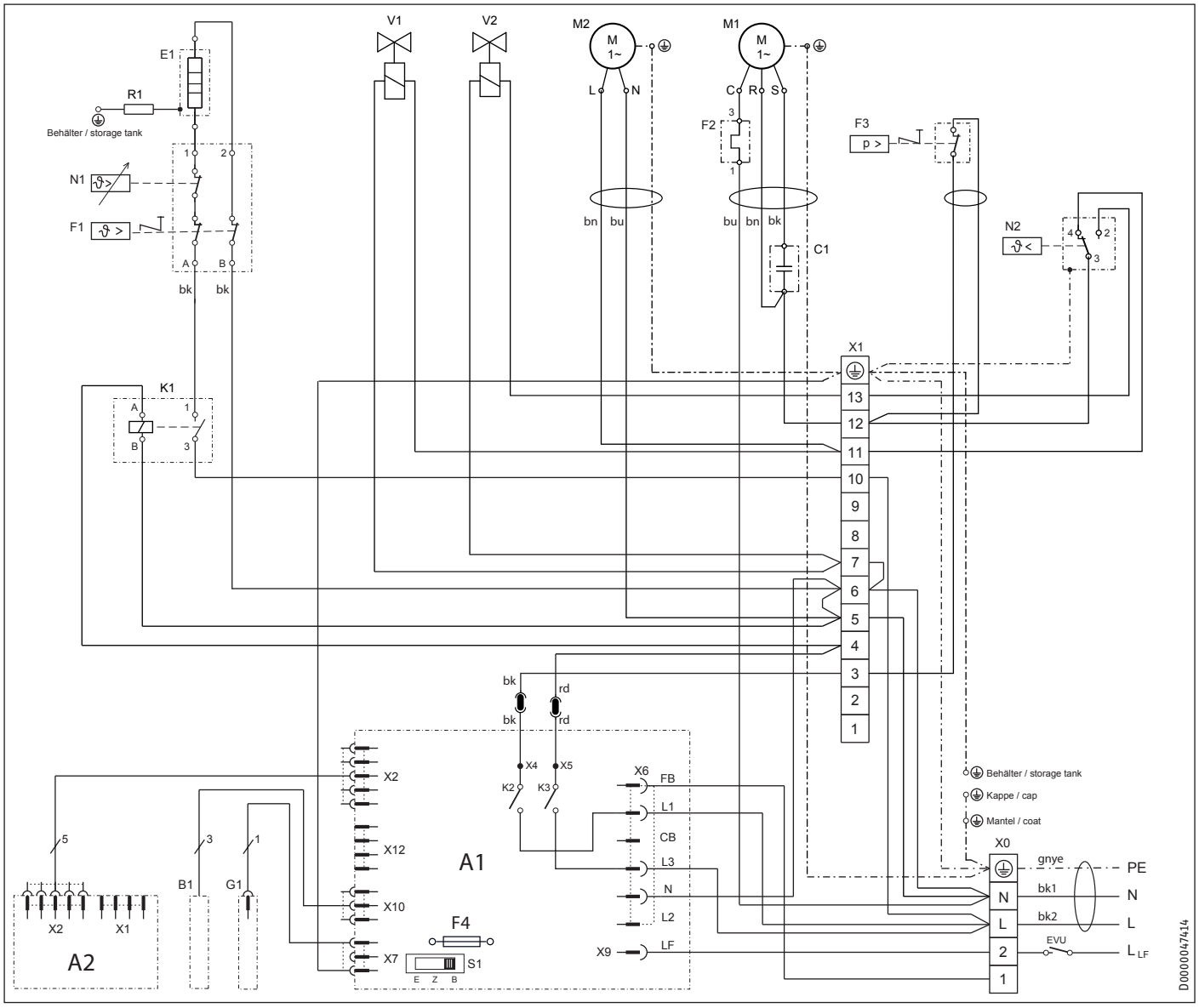


				WWK 303 electronic
b01	Entry electrical cables			
c01	Cold water inlet	Male thread		G 1
c06	DHW outlet	Male thread		G 1
c13	T&P valve	Female thread		G 3/4
d45	Condensate drain	Male thread		G 3/4
g01	Air intake			
g02	Air discharge			
i43	Cover for manufacturing aperture			

15.2 Wiring diagram

Material losses
If X0/2 is connected, the power supply to the appliance must be a permanent connection (see chapter "Electrical connection / Connection with external signal transmitter"). Never interchange L1 and N.

Note
▶ Never wire up terminal X0/1.



A1	Electronic assembly (control unit)	M1	Compressor
A2	Electronic assembly (programming unit)	M2	Fan
B1	Temperature sensor	N1	Thermostat TSR
C1	Run capacitor	N2	Defrost controller
E1	Heating element	R1	Resistance
F1	High limit safety cut-out TSR	S1	DIP switch
F2	Motor overload relay M1	X0	Mains terminal
F3	High pressure switch	X1	Terminal
F4	Fuse	V1	Solenoid valve ('live' in heating mode)
G1	Impressed current anode	V2	Solenoid valve ('live' in defrost mode)
K1	Relay (heating element)	Behälter	Cylinder
K2	Relay (compressor)	Kappe	Cap
K3	Relay (heating element)	Mantel	Jacket
L_{LF}	Optional contact for external signal transmitter (see chapter "Electrical connection / Connection with external signal transmitter").	EVU	Power supply utility

15.3 Data table

		WWK 223 electronic	WWK 303 electronic
		234406	234405
Hydraulic data			
Nominal capacity	l	220	302
Application limits			
Max. DHW temperature with heat pump only	°C	65	65
Maximum DHW temperature with emergency/booster heater	°C	65	65
Application limit heat source for heat pump operation min./max.	°C	0-42	0-42
Application limit ambient temperature cylinder min./max.	°C	6-42	6-42
Min. installation room floor area	m²	6	6
Min. installation room volume	m³	13	13
Maximum permissible operating pressure, cold water/DHW	MPa	0.8	0.8
Electrical conductivity DHW min./max.	µS/cm	100-1500	100-1500
Output details to EN 16147			
Nominal DHW temperature (EN 16147)	°C	55 I 65	55
Nominal load profile (EN 16147)		L I XL	XL
Reference DHW temperature (EN 16147 / A15)	°C	53.8 I 63.1	53.8
Max. available amount of DHW at 40 °C (EN 16147 / A15)	l	288 I 365	404
Heat-up time (EN 16147 / A15)	h	6.98 I 8.70	9.75
Power consumption, standby period (EN 16147 / A15)	kW	0.033 I 0.062	0.045
COP (EN 16147 / A15)		3.22 I 2.95	3.27
Heating output			
Average heating output (EN 16147 / A15)	kW	1.68 I 1.62	1.69
Power consumption			
Average heat pump power consumption (EN 16147 / A15)	kW	0.52 I 0.55	0.52
Max. heat pump power consumption (excl. start-up)	kW	0.68	0.68
Power consumption, emergency/booster heater	kW	3.15	3.15
Max. power consumption heat pump + emergency/booster heater	kW	3.60	3.60
Energy data			
DHW heating energy efficiency class (load profile), indoor air		A (XL)	A[1)] (XL)
COP to EN 255			
COP at A15/W15-45 (EN 255)		3.78	4.22
COP at A15/W15-55 (EN 255)		3.42	3.82
Electrical data			
Power supply		1/N/PE 220V 50/60hz	1/N/PE 220V 50/60hz
Permissible voltage range, external signal transducer		~ 220V 50Hz	~ 220V 50Hz
Max. operating current	A	17.51	17.51
Max. starting current	A	29.37	29.37
MCB/fuse rating	A	C20	C20
Sound data			
Sound power level (EN 12102)	dB(A)	60	60
Average sound pressure level at 1 m distance, free field	dB(A)	45	45
Versions			
IP rating		IP24	IP24
Refrigerant		R134a	R134a
Refrigerant charge	kg	0.85	0.85
Power cable length approx.	mm	2000	2000
Dimensions			
Height	mm	1545	1913
Diameter	mm	690	690
Height when tilted	mm	1692	2034
Height when tilted incl. packaging	mm	1895	2230
Packing unit dimensions height/width/depth	mm	1740/740/740	2100/740/740
Weights			
Weight, dry	kg	120	135
Connections			
Condensate connection		G 3/4 A	G 3/4 A
Safety valve connection		G 3/4	G 3/4
Water connection		G 1 A	G 1 A
Values			
Type of anode		Impressed current anode	Impressed current anode
Air flow rate	m³/h	550	550

Specification

The output data refers to new appliances with clean heat exchangers.

Nominal data to EN 16147 – heat pump for recirculation air

Note on the energy efficiency class: This information complies with the official requirements for water heaters (EU regulation no. 812/2013) that will be mandatory from September 2015, based on the data for DHW heat pumps to EN 16147.
Efficiency classes marked with [1)] would be equivalent to an A+ rating after September 2017.

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.

KYOTO | R134a

This device is filled with refrigerant R134a.

Refrigerant R134a is a CFC greenhouse gas mentioned in the Kyoto protocol with a global greenhouse potential (GWP) = 1300.

Never release refrigerant R134a to atmosphere.

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特别说明

- 本产品可由 8 岁以上儿童和成人使用。体力渐衰者、知觉衰退者和精神衰弱者以及缺乏使用经验的人群，请在负责人的监护和指导下安全使用，并明白可能导致的风险。禁止儿童玩耍本产品。在没有负责人的监护下，禁止儿童清洁和保养本产品。
- 在安装过程中，请遵守所有适用的国家和地区性规范及规定。
- 注意最小安装距离（参见“安装/准备/放置设备”章节）。
- 请注意关于室内安装的要求（参见“技术数据/数据表”章节）
- 如果设备永久性连接到电源，则必须确保有隔离装置可以全极分离电源，使触点之间至少距离 3 mm。可以使用接触器、隔离开关或者保险丝。
- 请注意安全措施防止接触危险的带电部分。
- 请注意本设备对微型断路器/熔断器保护装置的要求（参见“规格/数据表”章节）。
- 如果电源线必须更换（例如已损坏），只允许制造商授权的有资质的代理商进行更换（X 型接线）。
- 本产品是有压设备。在加热期间，从安全阀门内会滴出膨胀的水。
- 请定期检查安全阀，预防阀门堵塞，例如：结垢。
- 请按照“安装/维护及清洁/清空水箱”章节内所述的规定，排空存水。
- 安装经过测试的安全减压阀，尺寸要与设备相一致。
- 在冷水供水管路安装经过测试的安全阀。
- 冷水管内的最高压力必须至少比安全阀动作压力低 20%。如果冷水管内压力比安全阀动作压力要高，则需要安装减压阀。
- 确定排水管尺寸，安全阀完全开启后，能够顺利排水。
- 安全阀的排水管要安装在无霜冻风险的房间内，并且要有一个持续向下的坡度。
- 安全阀的排水口必须与大气相通。

操作指南

1. 基本信息

“特别说明”和“操作指南”章节适用于用户和有资质的代理商。
“安装”章节适用于有资质的代理商。

注意：
在使用产品前，请仔细阅读此说明并保存以便将来参考。
在需要的时候，请将此说明书移交给新用户。

1.1 安全信息

1.1.1 安全信息的结构

关键词 危险类型
此处列举了不遵守安全指引可能导致的后果。
▶ 此处列出了预防危险的办法

1.1.2 警告标志，释义

警告标志	释义
	触电
	烧伤或烫伤
	受伤

1.1.3 关键词

关键词	释义
危险	不遵守该条款将导致重伤或死亡
警告	不遵守该条款将导致重伤或死亡。
小心	不遵守该条款将导致轻微伤害。

1.2 本说明书中其他标志

请仔细阅读此标志内容。

符号	释义
	财物损失 （装置损坏、操作后果造成的损失、环境污染）
	设备的废弃处理

▶ 此三角形图标表示您需要采取措施。这里将逐步介绍操作步骤。

1.3 尺寸单位

除非特别注明，本说明书中所有尺寸均以毫米（mm）为单位。

1.4 标准的输出数据

标准：EN 16147

在文本、图表、技术数据表内特别提到的输出数据是在本章开头标准所描述的相同的测试条件下测出的。
一般来讲，标准规定的测试条件不可能完全与设备安装现场的条件一致。如果测试方法和内容与标准所规定的方法和内容存在偏差，那么结果也会产生偏差。而更多影响测试的因素是测量器材、系统配置、设备使用年限和流量。
只有当测试条件与标准所述条件一致时，其结果才能被采纳。

2. 安全

2.1 使用范围

该电器用于加热生活用水，应用条件限制在“技术数据/数据表”内可见。
该电器适用于家庭环境。即使没有接受过培训的人员也能安全使用该电器。如果在非家庭的环境中，例如：小型营业部门，也可以使用本设备，使用方式相同。
其它超出所述规定范围内的使用将视为不当使用。阅读使用说明书和其他附件使用说明也是正确使用电器的一部分。

2.2 基本安全指示

只能在设备完整安装并配置安全装置后，方可使用该设备。

警告 受伤
本产品可由 8 岁以上儿童和成人使用。体力渐衰者、知觉衰退者和精神衰弱者以及缺乏使用经验的人群，请在负责人的监护和指导下安全使用，并明白可能导致的风险。禁止儿童玩耍本产品。在没有负责人的监护下，禁止儿童清洁和保养本产品。

警告 电击
接触导电部件时，会出现生命危险。如果绝缘部件或单一组件损坏，则会造成生命危险。
▶ 如果绝缘部件损坏，请切断电源并要求维修。必须由有资质的人员进行全部的电气安装工作。

警告 烫伤
生活热水箱中的水温度能被加热到超过 60 °C。当出水温度超过 43 °C 时就会有烫伤的风险。
▶ 确保排放热水时，你不会接触到热水。

警告 烫伤
如果接触高温部件，则可能导致烫伤。
在高温部件附上进行工作时，请穿好防护服，佩戴安全手套。与设备热水出口连接的管路可能达到 60 °C 以上的温度。

警告 烫伤
设备在工厂已经充注制冷剂。如果制冷剂泄露，请避免接触制冷剂，避免吸入气化的制冷剂，同时保持房间通风。

警告 电击
不允许在外壳开启或没有顶盖的状况下，运行设备。

警告 受伤
请不要在设备上顶部置放物品。如果设备上置放的物品，由于会振动，噪音会加大，而且物品可能坠落并导致人身伤害。

财物损失
如果设备断电，则不能进行防冻防护及腐蚀防护。
▶ 禁止中断设备电源。

财物损失
请不要覆盖设备。如果覆盖空气入口或空气出口，空气供给量会下降。如果空气供给下降，则不能确保设备的操作安全。

财物损失
只有当生活热水箱注满水时才能运行设备。如果在空水箱时运行设备，安全装置会切断设备。

财物损失
除了饮用水，不允许加热其他液体。

财物损失
设备安装位置要避免存在有油性或含盐（氯化物）等污染的气体，以及腐蚀性或爆炸性物质。安装场所要避免严重的粉尘、发胶以及含氯或者氨的物质。

财物损失
确保设备、水管和安全阀不受霜冻。

财物损失
设备运行不允许超出使用限制（参见“规格 / 数据表”章节）。如果持续运行在应用限制的范围之外，设备将可能损坏。

注意
设备是有压力的装置。在加热过程中，安全阀出将会滴落膨胀水。
▶ 如果加热结束以后还在持续滴水，请告知您的代理商。

2.3 CE 标志

CE 标志表示设备满足下列规定的所有基本要求：
- 欧盟低电压指令
- 欧盟电磁兼容指令

2.4 测试标志

见产品铭牌

3. 产品介绍

本设备利用可再生能源，向多个用水点，有效供应生活热水。通电后，设备从周围空气中汲取热量加热储水箱内的水。加热消耗的电能和所需的时间取决于吸入空气的温度。当空气进口温度下降时，设备的输出将减少，加热时间会延长。

如果是室内安装，设备汲取周围空气热量，安装空间内的环境温度能够下降 1 °C 至 3 °C。设备还能吸取空气中的湿蒸汽，使之变成冷凝水，并通过冷凝水排水管排出设备。

开启用水点热水后，流入的冷水会将已加热的饮用水压出设备。

热泵上部区域是驱动装置，下部区域是生活热水储水箱。为了抵抗腐蚀，水箱内表面采用搪瓷工艺，涂有专用珐琅，此外，水箱还配备了无损耗的外接电流保护阳极。

热泵采用电子控制，使节能更简单。无论供电电源有波动还是用户使用热水习惯有不同，热泵都能将水自动加热到设定的温度。

3.1 热泵运行原理

制冷剂在设备内部有一个封闭的循环（参见“技术数据 / 数据表”）。所述的制冷剂能在低温时蒸发。

在蒸发器内，制冷剂汲取周围空气热量，从液态转化为气态。压缩机将气态制冷剂抽吸并压缩，使制冷剂的温度和压力上升。该操作需要消耗电能。但消耗的能量（电机热量）没有损失，而是随着压缩的制冷剂，进入下游的冷凝器。在冷凝器内，制冷剂将热量传输至生活热水储水箱。然后，通过膨胀阀，降低当前制冷剂的压力，进入下一轮循环。

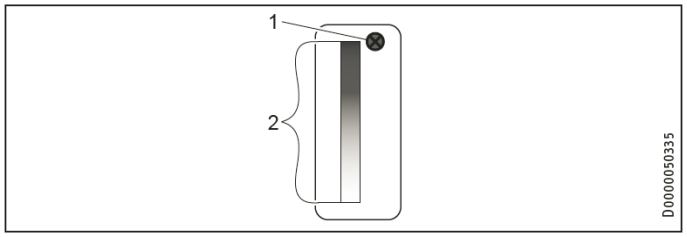
注意：

电源中断后，压缩机停止运行并闭锁至少一分钟。在设备初始化程序当中，电路板将延迟压缩机电控启动一分钟。

如果压缩机随后还是没有启动，可能是其他安全装置闭锁（电机过载继电器和高压开关）。1 至 10 分钟后，该闭锁会解除。

恢复供电后，设备将按照断电以前所设置的参数运行。

3.2 生活热水箱加热



1 半球形传感器
2 集成传感器

设备配备了两个温度传感器。

- 半球形传感器采集水箱内上部区域内的水温。
- 集成传感器是一个粘贴的温度传感器，该传感器贯穿储水箱的整体高度。集成传感器用于计算水箱的平均温度。

显示屏上显示的温度就是采集到的水箱上部区域的温度。而控制装置采用的是集成传感器所采集到的水箱平均温度。

当水箱平均温度开始下降，水箱只有 40%可用热水时，生活热水就开始加热，直到水箱温度到达设置温度。而设置温度就是指水箱上部的半球形传感器所采集到温度。

想要获悉加热时间的信息，参见“规格”章节。可用最大混水量是根据水箱平均温度计算得出的。只有当水箱上部温度高于 40℃时，才能计算出可用混水量。

正常情况下，应该在限制的应用范围内使用热泵加热生活热水。（参见“规格/数据表”章节）。

电力紧急/辅助电加热

如果生活热水箱上部区域的温度下降到低于设置温度 10K 的温度，设备将自动启用电力紧急/辅助电加热器。当水箱上部生活热水温度高于设置温度 2K 时，设备将关闭电力紧急/辅助加热器。

如果设备故障，您可以手动启用应急模式来激活电力应急/辅助加热器。参见“操作/快速加热按键/应急加热模式”章节。

如果偶然遇见热水需求激增，可以使用速热按键来启动电力应急/辅助加热器，实现热泵一次性的加热需求。参见“操作/快速加热按键/快速/舒适加热”章节。

3.3 在应用限制之外的设备运行

▶ 为确保设备无故障运行，请确认是在应用限制范围内使用该设备（参见“规格/数据表”章节）。

3.3.1 环境温度低于应用限制值

受空气湿度和水温的影响，较低的环境温度会导致蒸发器结霜。

主动除霜

如果蒸发器结霜，防冻监视会停止风扇运转。压缩机继续运行。电磁阀将热气直接导入蒸发器。同时，另一个电磁阀将中断冷凝器工作。当防冻监视探测到蒸发器温度超过 3 °C，则会再次启动风扇，生活热水继续加热。

热泵运行的环境温度必须在 0 °C 以上。根据需要，蒸发器会自动除霜。

▶ 为了保证设备无故障运行，请确保设备运行在应用限制范围内（参见“规格/数据表”章节）

注意
蒸发器除霜会导致加热时间较长。

3.3.2 环境温度高于应用限制值

如果环境温度超出应用限制值，安全装置将关闭设备。一旦安全装置动作，必须联系代理商进行重置。

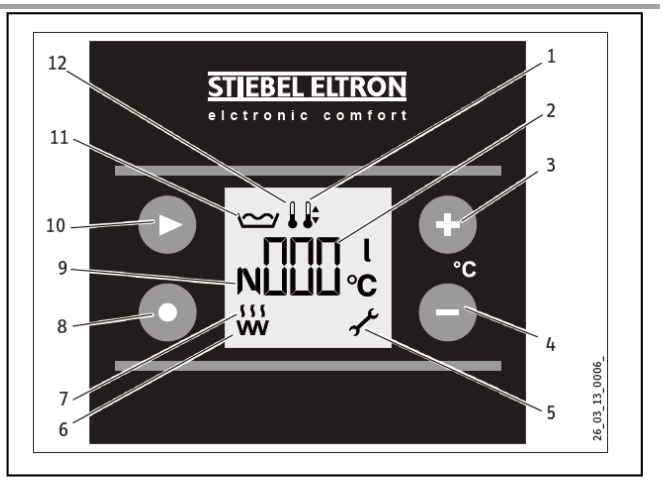
3.4 防冻保护

如果集成传感器采集到生活热水箱温度低于 10 °C，设备将激活防冻保护功能。然后，设备将通过热泵和电力应急/辅助加热器一起加热生活热水。如果集成传感器采集到水箱温度达到 18 °C，则停止热泵和电力应急/辅助加热。

4. 设置

4.1 显示和控制

注意
每次调整完后，15 秒内，设备将重新进入标准化显示（混合水量）并保存设定的数值。



1 设置温度符号
2 混合水量显示（L|40 °C）/
上部区域水箱的实际温度显示/
设置温度显示 1//
设置温度显示 2/
故障代码显示
3 “＋”键
4 “－”键
5 服务/ 故障符号
6 电力应急/辅助加热符号
7 热泵符号
8 快速加热按键
9 设置温度符号 2
10 菜单按键
11 混合水量符号
12 实际温度符号

如果 “电力应急/辅助加热”和“热泵”符号出现在显示屏上，表示他们得到了一个命令，这并不意味着他们一定在正在运行。

例如：设备在快速/舒适加热模式下。当生活热水箱上部区域达到 65 °C 时，则电力应急/辅助加热会关闭。但是水箱下部温度没有到达 65 °C，因此快速/舒适加热功能尚未终止。电力应急/辅助加热符号会一直显示，直至快速/舒适加热功能终止.

服务/故障符号

注意
如果在显示屏上，出现服务/故障符号，请通知代理商。如果该符号持续点亮，则表示该故障不会妨碍设备运行。
如果服务/故障符号闪烁，则表示不会再加热生活热水，必须通知代理商。
如果将设备切换至应急加热状态，则会出现特殊情况。尽管服务/故障符号闪烁，热泵和电力应急/辅助加热器也会加热生活热水

4.2 设置

在标准化显示中，显示屏会显示混合水量。

注意
每次调整完后，15 秒内，设备将返回至标准化显示（混合水量）并保存设定的数值。

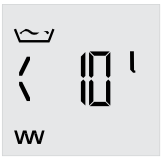
使用菜单键可以依次调出所有信息和设置选项。相关的符号会在显示屏显示。

4.2.1 混合水量显示（标准显示）



显示当前的可用混合水量（进水温度 15 °C，出水温度 40 °C 时）

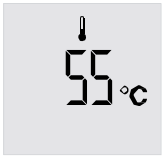
如果当前的可用混合水低于 10 L，则显示“< 10 L”。



生活热水需求	40°C 混水量
泡澡	120L-150L
淋浴	30L-50L
洗手	2-5L

可用的混合水量取决于水箱的尺寸及设置温度。

4.2.2 实际温度显示



在混合水量菜单内，按一次菜单按键，进入实际温度菜单。

显示实际温度符号。

显示当前的实际温度。实际温度显示的是生活热水箱上部区域的温度，与流出水的温度一致。

4.2.3 设置温度 1

财物损失
如果你不希望通风口空气温度低于 6℃，避免设置温度大于 62℃。

注意
处于卫生原因，请不要将水温设置在 50°C 以下。

如果没有连接并激活外部的信号发生器，则设置温度 1 就是设备上的生活热水温度。设置温度 1 的出厂温度设置为 55 °C。



在实际温度菜单内，按一次菜单按键，则可进入菜单对设置温度 1 进行设定。

设置温度 1 符号会显示。使用“＋”和“－”按键，可以在 20 至 65 °C 范围之间调节设置温度 1。

注意
另外一种方法也可以调节设置温度 1：在标准显示状态下（混合水量），按“＋”和“－”按键。

防冻保护



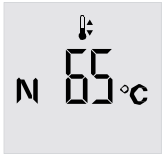
只有使用“－”按键，将设置温度调整至低于 20 °C，才能激活防冻保护功能。

4.2.4 设置温度 2

财物损失
如果你不希望通风口空气温度低于 6℃，避免设置温度大于 62℃。

注意
处于卫生原因，请不要将水温设置在 50°C 以下。

如果连接并激活外部的信号发生器，则设置温度 2 就是该设备上设定的生活热水温度。



在设置温度 1 菜单内，按一次菜单按键，进入置温度 2 菜单。

设置温度 2 符号会显示。使用“N”表示设置温度 2。

使用“＋”和“－”按键，可以在 20 至 65 °C 范围之间调节设置温度 1。

使用外部信号发生器的操作（220V 输入）

作为标准和特色，设备可以将一个特定的、单独的生活热水设置温度（设置温度 2）分配给已连接的外部信号发生器，例如 PV 系统或者低费率信号发生器。

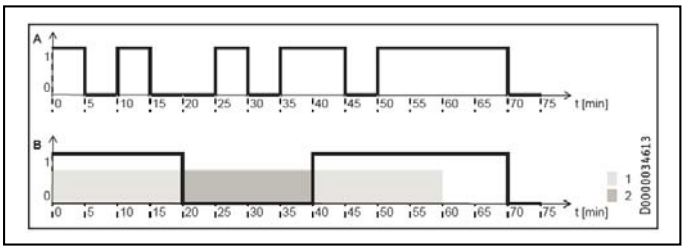
如果在端子 X0/2 上，出现相位（LF 信号），则激活设置温度 2（参见“接口类型”章节）。当激活期间，设置温度 2 取代标准设置生活热水水温（“设置温度 1”）。

如果外部的信号发生器激活设置温度 2，则设置温度 2 保持最少 20 分钟。如果在 20 分钟结束后，该信号仍然存在，则压缩机继续运转，直至 LF 信号消失。否则，激活设置温度 1。

如果达到相应的热水温度设定值，则压缩机关闭，并持续关闭至少 20 分钟作为休息时间。

在下图内，通过一个外部信号发生器的信号流程范例，进行说明。

例如：
- 水温 = 55 °C
- 设置温度 1 = 50 °C
- 设置温度 2 = 65 °C



A LF 信号
B 压缩机
1 20 分钟，设置温度 2 最少运行时间。
2 20 分钟，压缩机的最少休息时间

注意
LF 信号必须至少持续 60 秒，直至调整装置接收该信号。该操作可避免不良状况，例如：持续几秒的阳光照射启动加热过程，然后，在没有阳光照射时，因缺少光热流，不能继续加热过程。

4.3 调出故障编码



在设置温度 2 菜单内，按一次菜单按键，进入故障代码菜单。如果出现故障，则显示故障代码。如果没有故障，则不激活该菜单。

参见“故障排除/故障代码”一节。

4.4 快速加热按钮



按下快速加热按键。
显示热泵和电力紧急/辅助电加热符号。

4.4.1 快速/舒适加热

通常，可以使用快速加热按键，激活快速/舒适加热功能。使用该功能，可以满足超出日常的热水需求，无需变更本设备上的基础设置。

如果通过按键手动激活快速/舒适加热功能，无论设置温度是多少，热泵和电力紧急/辅助加热器将并行启动，直至热水温度达到 65 °C。为能够节省能源，水箱上部区域温度达到 65 °C 后（快速加热），首先停止电力紧急/辅助加热器的工作。

快速/舒适加热保持激活状态，直至整个水箱达到 65 °C（舒适加热）。随后，设备自动返回以前设置的参数。

注意
电力紧急/辅助加热器和热泵符号将显示，直至快速/舒适加热功能终止。
在快速/舒适加热功能下，将显示紧急/辅助电加热符号，直至热泵将整个水箱加热至 65 °C 并结束该功能。水箱上部区域达到 65 °C 后，紧急/辅助电加热器将关闭。

注意
如果意外启动了快速/舒适加热，可以通过降低设置温度，中断该功能。
▶ 持续按下“－”按键，直至听到关闭热泵及电力紧急/辅助加热器发出的咔嚓声。这时，设置温度也会跳回在电力紧急/辅助加热器启动前的数值。

4.4.2 应急模式

如果设备故障，可以使用紧急加热功能，启动电力紧急/辅助加热器。

如果发出供热指令后，13 小时内，传感器没有采集到升温（52 个时间间隔，每个时间间隔为 15 分钟，在时间间隔内，升温<0.25 °C），则说明压缩机故障停机。在显示屏上，故障钥匙闪烁，故障代码表示：本设备没有加热。

在此种情况下，可以按下快速加热按键，激活应急加热模式。按下快速加热按键后，由于故障代码叠加，因此显示的故障代码将增加 256（参见“故障排除”一节内的故障编码表格）。故障代码会持续闪烁。电力应急/辅助加热被激活。

当前设置温度（设置温度 1 或设置温度 2）会被忽略。在应急模式下，设备运行在固定设置温度 40 °C。设置温度工作。使用快速加热按键，一次激活该功能以后，该功能可保持 7 天。

7 天的应急运行结束后，电力应急/辅助加热器加热功能失效。显示屏显示的故障代码减少 256。

如果在应急运行的 7 天内，再次按下快速加热按键，则重新计算时间。

如果七天的紧急加热模式结束，可以再次按下快速加热按键，再次启动七天的紧急操作模式。

如果在按下快速加热按键前，已经出现故障代码 8。在标准模式下，按下快速加热按键只能一次性加热生活热水。

电源中断后，应急模式将不再处于激活状态。设备会再次尝试通过热泵加热。13 小时后，会显示故障代码 8。只有到此时才能通过手动操作快速加热按键，来激活应急加热模式。

4.5 紧急停机

出现紧急状况时，请采取以下操作步骤：

- ▶ 拔出电源插头，或者，跳开断路器，中断电源。
- ▶ 关闭冷水供给。
- ▶ 中断电源后，外加电流阳极不能正常工作，请及时通知专业人员检修，避免设备遭受腐蚀。

5. 维护及保养

警告 电击
仅清洁装置外部。
请不要开启设备。
请不要将物品插入栅格内部。
禁止用水冲洗设备。
禁止将水喷射入设备内部。

警告 受伤
只允有资质的代理商实施维护工作，例如：电气安全检查。

设备部件	保养维护提示
外罩	使用湿布，即可清洁外壳。禁止使用具有磨砂性或腐蚀性的清洁剂。
进风格栅/排风格栅	每半年清洁一次空气进风栅格/空气排风栅格。蜘蛛网或其它的污染物会妨碍设备的供气。
生活热水箱	水箱配备了外接电流保护阳电极，用于腐蚀防护。为了给注满水的设备提供外接电流阳极保护，电源不能断电。否则，会出现腐蚀现象。
电力应急/辅助加热器	电力应急/辅助加热器需偶尔除垢。这样，可以延长电力应急/辅助加热器的使用寿命。
设备	请专业人员定期检查安全组件及蒸发器。
冷凝排水	拆下冷凝排水管。检查冷凝排水管是否干净，清理设备冷凝排水接口的污染物。

6. 故障排除

故障	原因	排除
没有热水	设备没通电。	请检查设备是否连接了电源。
	保险盒内保险丝/微型断路器熔断/动作	检查确认保险丝盒内保险丝/微型断路器是否熔断/动作。必要时，请断开电源，更换保险丝/微型断路器。如果更换以后，保险装置再次动作，请通知有资质的代理商。
	设备进风和排风堵塞	检查进风格栅和排风格栅，查看是否有污物堵住。清除污物（参见“维护和保养”章节）
	环境温度超过限制（参见“规格/数据表”）。安全装置动作，设备会自动关闭。	等设备冷却。如果设备不能重新自动启动，通知代理商。
	设备中断加热，开始除霜。蒸发器结霜的温度取决于空气相对湿度。环境温度低于 7℃时开始结霜。	等待，直到除霜完成。生活热水加热会自动进行。
	设备额定输出是基于进口空气温度 15℃时测得。低于此温度，加热时间会延长。	
尽管显示了热泵符号，但水箱没有被加热	压缩机闭锁时间还没结束。一旦压缩机关闭，将会在 20 分钟闭锁时间后才能再次启动。	
冷水供水管安全阀滴水	装置承受管网压力。在加热期间，安全阀会滴落膨胀水。	当加热结束后还在滴水，通知代理商。
冷凝排水管滴水	蒸发器表面温度低于环境空气露点温度，形成冷凝水。	冷凝水量由空气湿度等级决定。
房间温度下降太多		设备运行会导致房间温度下降 1 到 3℃。如果房间温度低过 5℃，查看空间尺寸（参见“规格/数据表”）。打开房间房门，增加空间。
服务/故障符号持续发亮  	参见“故障代码”章节	通知代理商。
服务/故障符号持续闪烁 并且水不加热。  	参见“故障代码”章节	必须通知代理商。
“热泵”符号点亮，但是压缩机不运行。风扇在运转。	设备在除霜模式	没有加热需求。
“热泵”符号闪烁	没有加热需求，但是压缩机闭锁。	没有加热需求。在压缩机闭锁时间过后自动启动。一旦压缩机关闭，至少闭锁 20 分钟。符号会自动停止闪烁。
“电力应急/辅助加热器”符号闪烁	在快速加热期间，温度控制器关闭“电力应急/辅助加热器”	无加热需求。设备热泵持续快速加热程序。当控制器再次激活“电力应急/辅助加热器”，则符号停止闪烁。当水箱温度到达设置温度 65℃，符号将消失。

故障代码

如果显示屏上的服务/故障代码正在闪烁或持续点亮，你可以



请反复按下菜单按键，直至在设置温度 2 后，出现故障代码。



显示故障代码

故障代码	服务/故障符号	故障描述	排除
0		无故障	
2	持续点亮	半球传感器故障。实际温度切换至集成传感器设备将继续供热。可用热水量将一直显示少于 10L	
4	持续点亮	集成传感器故障。如果集成传感器故障，集成传感器将采用半球传感器数值，可用热水量将根据此数值计算。设备继续供热。	
6	闪烁	半球和集成传感器都故障。设备将不会供热。	
8	闪烁	尽管有供热需求，但是设备已经 1 3 小时不加热。	通过激活应急模式继续使用设备。参见“应急模式”章节
16	持续点亮	外接电流阳极短路 / 保护阳极故障	如果外接电流殃及保护故障，设备将不能抵抗腐蚀。应立即通知代理商，
32	闪烁	设备空水箱运行或设备不能传热。	设备注满水。故障代码将消失且设备重启。
		阳极电流中断。设备不加热。	代理商要检查阳极保护接线
128	持续点亮	控制器和编程装置无通讯。将使用最近一次设置参数。	
256	闪烁	手动激活应急模式（只有电力应急 / 辅助加热器激活）	参见“设备介绍 / 应急模式”

如果出现多种故障，则叠加故障代码。
范例：如果检波传感器和集成传感器损坏，则显示再次故障代码 6（=2+4）

紧急加热操作的应用

如果设备显示故障代码 8，可以手动激活紧急加热操作模式。如果以前出现的故障导致不能停止设备工作，则在显示屏上，显示故障代码，该故障代码显示多个故障的总和。

下面，列举了故障代码，出现下面列举的故障时，可以接通紧急加热操作

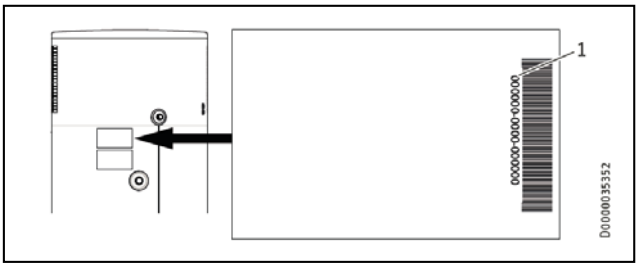
故障代码显示	释义
8	8
10	故障代码 8+故障代码 2。
12	8+4
24	8+16
26	8+2+16
28	8+4+16
138	8+2+128
140	8+4+128
152	8+16+128
154	8+2+16+128
156	8+4+16+128

在紧急加热运行期间，显示的故障代码以 256 的数值上升。

通知代理商

如果您不能排除故障，请呼叫专业人员。为保证更好、更快的服务，请将具有（000000-0000-00000）型号铭牌，告知专业人员。在“热水出口”接口的左上方，可以看到型号铭牌。

铭牌样本



1、铭牌序列号

安装

7. 安全

只允许有资质的代理商对产品进行安装、调试、维护和维修。

7.1 基本安全说明

斯宝亚创仅在使用原装附件及原装备件的情况下，保证产品的功能可靠性和操作的安全性。

7.2 指令、标准和规定

注意
请遵守所有适用的国家和地区性指令和规定。

请注意本设备的型号铭牌及“技术数据”一节。

8. 产品介绍

在本设备的上部区域安装了热泵机组的制冷系统；在本设备的下部区域安装了热水水箱。

8.1 供货范围

与本设备随机提供以下附件：
- 冷凝水排放弯头；
- 2 个配备黄铜活接螺母和垫圈的水管接头，用于联接冷水供水管和及热水出水管。

8.2 必要的附件

根据不同的使用压力，将配置不同的安全组件。所配置的安全组件经过标准试验，可确保设备不会发生不允许的超压情况。

8.3 其它附件

- 冷凝水泵（如果不能通过自然方式排放冷凝水，则采用该附件）

8.4 违规使用

不允许以下使用方式：
- 壳体打开时操作本设备。
- 加注与“技术数据 / 数据表”一节内所述不同的制冷剂。

请注意安装空间的要求及不允许安装地点的列表（参见“安装地点”一节）。

9. 准备

9.1 运输

小心 受伤
▶请注意本设备的重量。
▶运输本设备时请使用适当的辅助工具（例如：双轮推车）及充足的人员。

财物损失
本设备的重心较高，倾斜后易翻倒。
▶ 请确保本设备不会翻倒。
▶ 只能将本设备放置在平直的支撑底面上。

财物损失
本设备的壳体不能承受较高的外部压力。如果违规运输，会导致严重的财物损失。
▶ 请注意包装上的提示。
安装前的较短时间内，才能打开包装。

到达安装位置前，不能打开本设备的包装。

请将本设备存放在包装箱内，将其置放在托板上，以便于进行短途水平运输时能够以吊运的方式搬运本设备。

如果设备运输前没有包装，我们建议您使用麻袋车。在接触面垫一些东西避免损坏设备。用带子将设备固定在车上。在带子和设备之间也要垫东西以免带子过紧损坏设备。当楼梯井过窄，你可以通过抓住车子或者设备的脚来搬运设备。

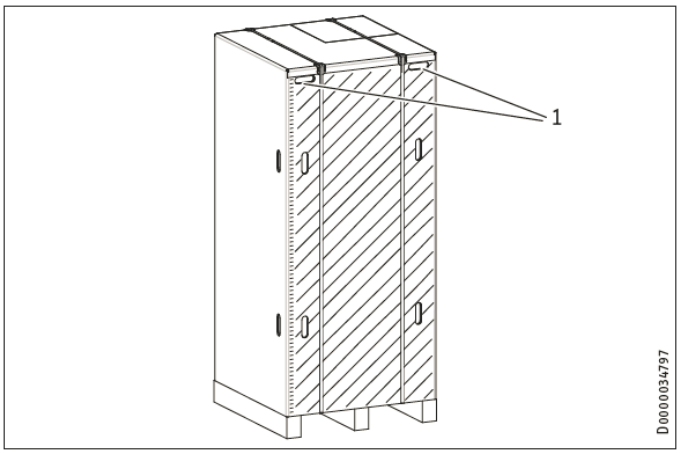
车辆运输

财物损失
本设备必须保持直立运输。

本设备允许短时间水平放倒运输，运输路程不宜超过 160 公里。运输过程中不允许出现强烈振动。

财物损失
在水平置放运输时，只允许将本设备平放在具有影线的纸箱上。本设备的水平置放时间不允许超出 24 小时。如果已经倒放运输本设备，则必须在调试前，静止竖立本设备一小时以上
请注意包装上的提示‘

▶ 阅读包装上的信息。



1、吊钩

使用车辆运输进安装位置

在本设备的上侧，包装纸箱设有加固的吊装槽。搬运至安装位置时，可以通过该吊装槽或托板的下部区域搬运本设备。请注意本设备的重量并委派数量充足的运输人员。

9.2 库存

如果必须长时间库存本设备，请注意以下提示：
- 只允许垂直库存本设备，不允许水平放置。
- 本设备库存在干燥的环境内，尽可能保持无粉尘。
- 避免本设备接触腐蚀性物质。
- 避免本设备摆动或振动。

9.3 安装位置

财物损失
关于安装场所阅读以下要求列表。

- 安装地点必须无易燃、燃烧性的气体及物质，无严重的粉尘影响。
- 安装位置必须无霜冻。
- 本设备的进风温度必须在允许的使用极限值内（参见“技术数据 / 数据表”一节）。
- 安装位置必须是水平、有承重能力的地面。请注意：水箱充满水后，本设备的重量（参见“技术数据 / 数据表”一节）。如果地面没有足够的承重能力，则会出现塌陷的危险。如果本设备未水平安装，则可能导致设备损坏。
- 安装位置必须与本设备的使用限值相符，参见“技术数据 / 数据表”一节。
- 必须遵守关于安全间距及防护区域的要求。
- 针对安装、维护、清洁等工作，必须具有充足的自由空间。必须遵守要求的最低间距（参见“准备工作 / 架设装置”章节）。
- 在架设空间内，不能干扰其它装置的操作。
- 为能够缩短线路长度，我方建议：将设备安装在厨房或浴室附近。
- 为避免操作噪音造成不良影响，设备必应安装在居室附近。

不允许采用以下的安装地点，否则会损坏设备：
- 空气内含油或潮湿成分的地点
- 含有盐分的环境
- 含有热水的环境
- 设置高频机械的环境
- 空气内含氨的位置（例如：污水处理设备）
- 空气污染较高的位置，例如：粉尘污染或具有腐蚀性

注意
根据标准，注明设备的效能数据，在 15 °C 的吸气环境下，确定效能数据。低于 15 °C 时，设备的效能下降。

注意
可以提高设备的效能，方式为：通过其它设备的余热，导入生活热水储水箱，例如：加热锅炉、清洗干燥机或冷冻装置。

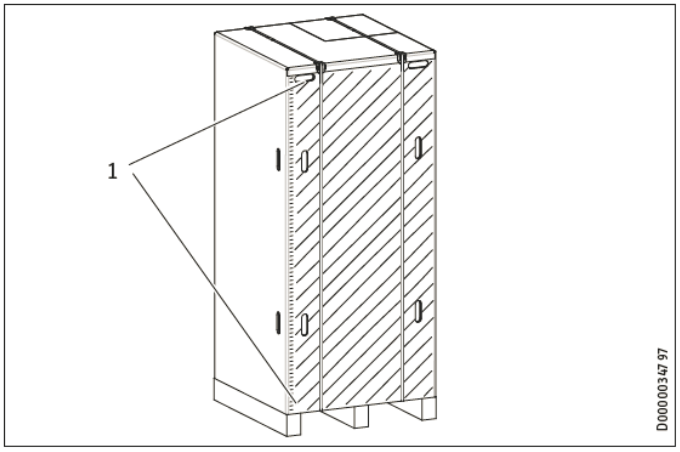
噪音辐射

设备空气入口和空气出口侧的噪音辐射高于封闭侧的噪音。

▶ 请不要将空气入口和空气出口侧朝向房间内噪音敏感的区域，例如：卧室。

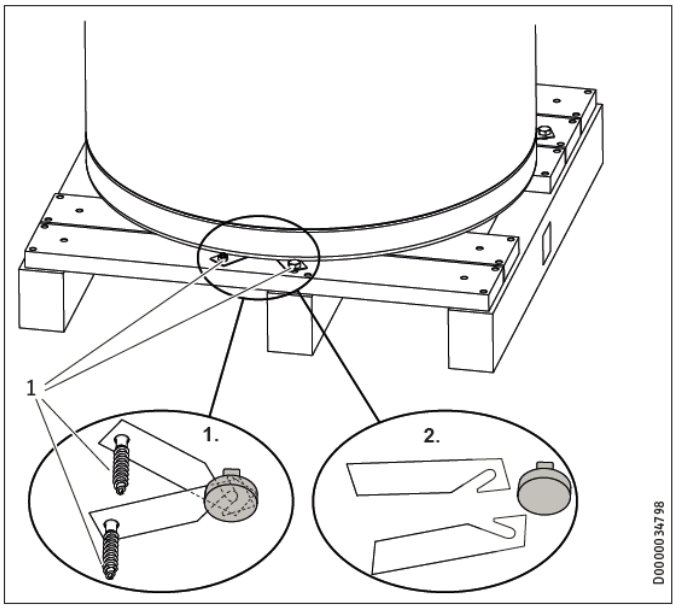
注意
在“技术数据 / 数据表”内，可以获悉关于噪音辐射的说明。

9.4 放置设备



1、纸板抓握位置

使用金属接板，将设备，固定在托板上。金属接板固定在设备地板的地脚上。



1、属接板的固定螺栓

▶ 将金属接板的固定螺栓旋出托板。

▶ 在储水箱中间位置，推送金属接板，使其从设备支脚的钩卡位置退出。

▶ 拉出设备下面的金属接板。

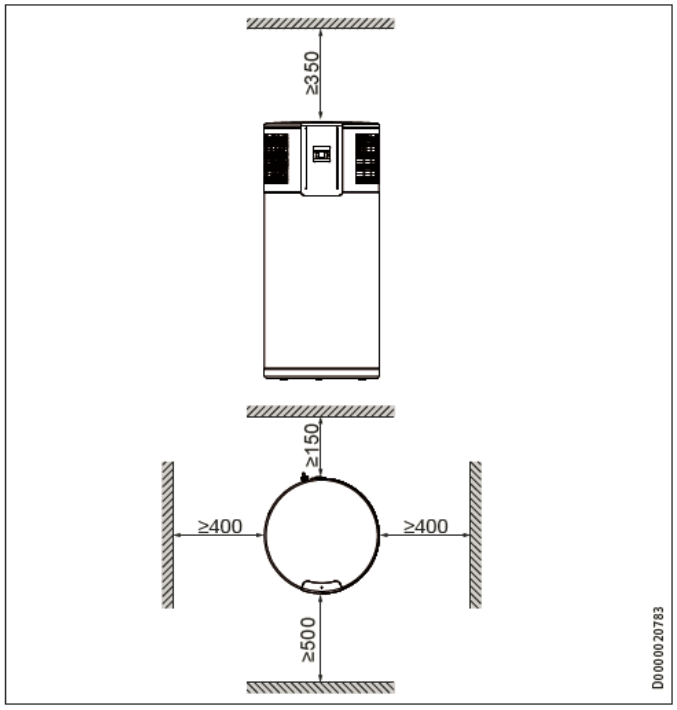
财物损失

请注意设备重心和重量。

▶ 请稍微倾斜设备，在托板上，通过滚轮，小心移动设备。

▶ 将设备置放在架设位置

最小安装间隙



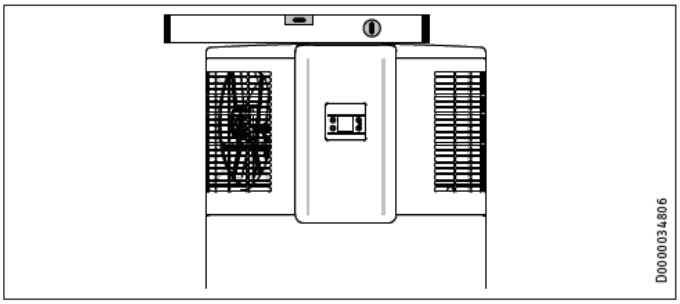
▶ 请遵守最低间距。

财物损失

必须垂直放置设备，从而，避免设备损坏。

设备的底部，配备了可调节高度的支角。

▶ 请使用可调节高度的支脚，将设备设置为水平放置。



10. 安装

警告 受伤
违规安装会导致严重的身体伤害及财物损失。
工作开始前，请保留足够的安装空间。
请小心处理具有尖锐边角的部件。

10.1 水管连接

财物损失
按照规范，完成全部的水管连接及安装工作。

安装金属管件时，可采用以下连接材料。

冷水入口	热水出口
铜管	铜管
钢管	铜管或钢管

▶ 在与设备连接前，请彻底清洗管路。外来物体会妨碍设备安全运行，例如：焊渣、铁锈、沙粒或填充料。

财物损失
为避免管路腐蚀，水管连接必须使用密封垫。不允许使用麻。

▶ 当为“冷水”和“生活热水”连接铜管法兰时（配送的），要使用提供的密封垫和铜活接头。
▶ 检查密封垫和活接螺母是否漏水。

安全减压阀

▶ 如果规定要使用安全阀，请根据设备管路情况安装经过测试的安全减压阀。

阀门的动作压力必须低于或等于储水箱允许的运行压力。该阀门会保护设备抵抗超压和异常温升。阀门的直径必须必大于冷水供水管。

▶ 确保溢出的膨胀水能通过容器或漏斗排走。

请确定排水管不会被关闭
▶ 请确定排水管路的尺寸，当完全开启安全阀时，水能够无阻碍流出。

▶ 请确定，安全阀的排水管与大气联通。

▶ 请将安全阀排水管安装在无霜冻风险的空间内，并且有一个向下的坡度。

安全阀

设备是一个密封不通气的生活热水储水箱。需要为设备提供一个压力释放阀。

▶ 在冷水管安装一个经过测试的安全阀，安全阀动作压力必须低于或等于储水罐的允许运行压力。

安全阀保护设备抵抗超压。安全阀直径必须大于冷水供水管直径。

▶ 确保溢出的膨胀水能通过容器或漏斗排走。

请确定排水管不会被关闭
▶ 请确定排水管路的尺寸，当完全开启安全阀时，水能够无阻碍流出。
▶ 请确定，安全阀的排水管与大气联通。
▶ 请将安全阀排水管安装在无霜冻风险的空间内，并且有一个向下的坡度。

减压阀

冷水管的最大压力必须至少低于安全阀动作压力的20%。如果冷水管最大压力高于此数值，那么需要安装减压阀。

排水阀

▶ 在冷水进水管的最低点安装适合的排水阀。

隔热

▶ 请根据当地适用的规定，对生活热水管路隔热处理，避免热量损失。

生活热水出口

警告 烧伤
储水箱内部水温能够超过 60℃。出水温度超过43℃时有烫伤的风险。
检查是否需要安装高温安全限制器。

10.2 冷凝排水

为了排出冷凝水，需要安装冷凝水软管。
▶ 连冷凝排水连接安装凝排水弯头（配送件）。
▶ 将冷凝排水软管连接至排水弯头上。

财物损失
冷凝水不允许回流。
▶请使用直径大于冷凝排水弯头的冷凝排水软管。
▶冷凝排水软管不能扭折。
▶按照一定的坡度，布置冷凝排水软管。
冷凝排水必须与大气相通。

▶ 如果不能达到足够的坡度，请使用适合的冷凝水泵。请注意建筑结构特点。

10.3 供电电源

警告 电击
请按照本国及当地的规定，完成全部的电气连接工作及安装工作。

警告 电击
如果设备永久性连接到电源，则必须确保有隔离装置能全极分离电源，使触点之间至少距离 3 mm。接触器、隔离开关或者保险丝都可以使用。

警告 电击
请遵守安全措施，避免接触危险的带电部分。

警告 电击
如果接触带电部件，会有生命危险。在设备上进行任何工作前，请先在配电箱内断开电源。防止你正在工作时，设备还在通电。

警告 电击
如果接地不良，则可能导致电击。根据当地适用的规定要求，将设备接地。

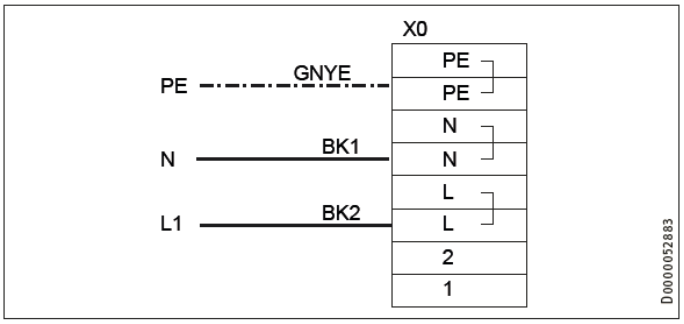
警告 电击
如果电源线必须更换（例如已损坏），只允许制造商授权的有资质的代理商进行（X 型接线）。

财物损失
具体使用的电压必须与电源电压一致。请遵照铭牌。

财物损失
在储水箱注满水以前，禁止将设备连接至电源。

设备配备电源软线，无插头。
▶ 如果电源线长度不足，请将它从设备内拆除。更换合适的电源线来安装。
▶ 布线时，当电源线穿过现有护套时，确保它能防水。将电源线正确连接到设备。

10.3.1 无外部信号发生器的标准接线



10.3.1 配备外部信号发生器的接线（220V）

在端子 X0/2 上，可以连接一个外部信号发生器，用于单独设置热水温度（设置温度 2）。

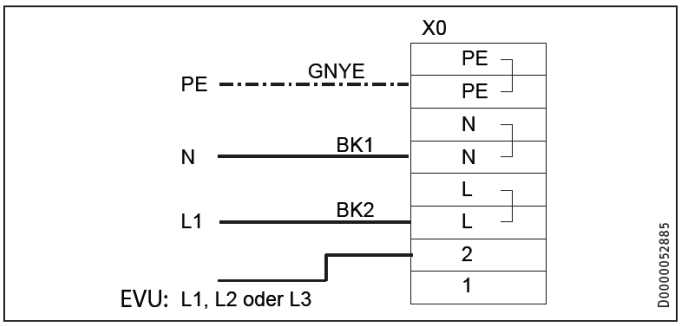
在设备交付时，端子 X0/2 没有被分配。如果该端子连接 220 V 电源，则设备激活设置温度 2。

一次性激活后（信号至少持续 1 分钟），设置温度 2 至少生效 20 分钟，并且优先级高于设置温度 1。

警告 电击
如果想要将外部信号发生器的 220V 信号连接至 X0/2 端子，不能用工厂安装的电源线和标准插头将设备连接至电源 。
而是要永久性把设备连接到电源。禁止互换混淆 L1 和 N。

注意
▶ 禁止连接 X0/1 端子。

示例 1：断电信号，220 V 相位



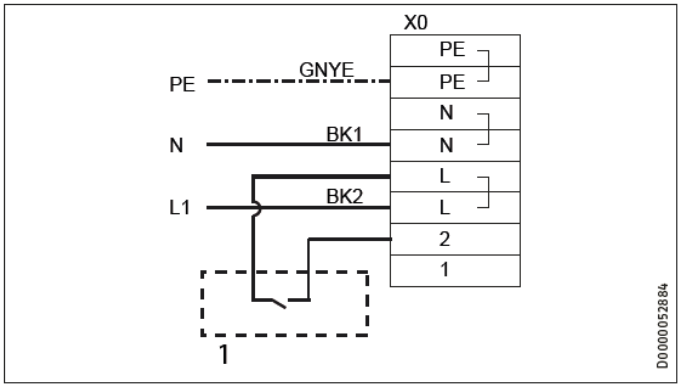
示例 2：光电信号通过现有的继电器和相传输至设备外部

注意

逆变器内的继电器必须满足以下要求：

- 无源继电器（240 V AC / 24 V DC，1 A）配备常开触点。
- 请遵安全特低电压的规范及标准。
- 开关输出必须能够编程，高于或低于某个极限值时（逆变器功率输出），继电器关闭或开启。

必要时，请垂询逆变器的制造商：逆变器是否能够满足所述的条件

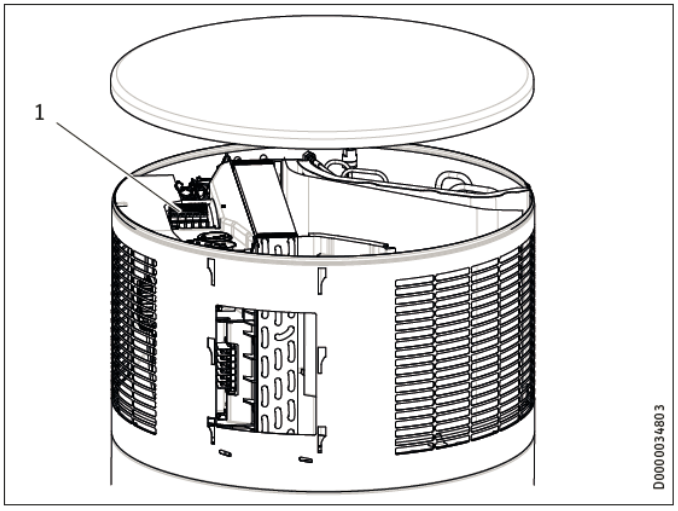


1、逆变器（无电位触点）

通过一个中心转换触点（例如：总保险箱内的触点），向逆变器馈电。

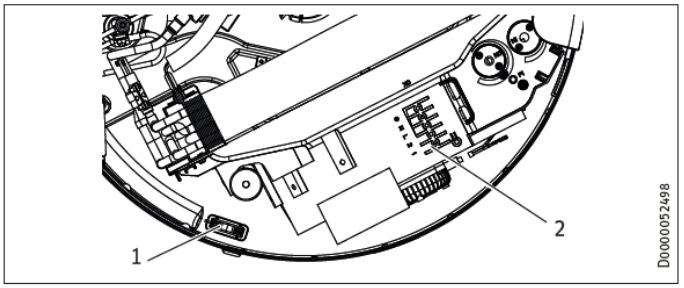
端子排 X0 上的连接

▶ 取下设备的顶盖（参见“维护和清洁 / 取下设备顶盖”章节）。



1、端子 X0

请针对 X0 上的接线，准备好电气导线，电气导线截止至 X0 的接线套管。



1、应力消除装置

2、X0 端子

▶ 把导线穿过应力消除装置。应力消除件在电源线进口后边。

▶ 将电源线连接至端子 X0。

10.4 设备组装

注意

完成工作后，重新装回设备顶盖，参见“维护和清洁 / 安装设备顶盖”章节。

11 调试

11.1 首次启动

注意

设备通电之前先将储水箱注满水。万一设备在空水箱时运行，设备还配置了干烧保护。

注意

电源中断后，压缩机停止运行并闭锁至少一分钟。在设备初始化程序当中，电路板将延迟压缩机电控启动一分钟。

如果压缩机随后还是没有启动，可能是其他安全装置闭锁（电机过载继电器和高压开关）。1 至 10 分钟后，该闭锁会消散。

恢复供电后，设备将按照断电以前所设置的参数运行。

11.1.1 加注生活热水储水箱

请加注生活热水储水箱并对管路排气，采取以下方式：

▶ 关闭排水阀。

▶ 开启全部的热水用水点以及冷水入口内的截止阀。

▶ 如果用水点开始出水，则关闭用水阀。

▶ 检查安全阀，开启安全阀直到出水。

11.1.2 设置 / 功能检测

▶ 打开电源总开关

▶ 为了检查功能，选择最高设置温度。

▶ 检查设备功能。
▶ 检查安全装置功能。

注意
电源中断后，压缩机停止运行并闭锁至少一分钟。在设备初始化程序当中，电路板将延迟压缩机电控启动一分钟。
如果压缩机随后还是没有启动，可能是其他安全装置闭锁（电机过载继电器和高压开关）。1 至 10 分钟后，该闭锁会消散。

根据客户的舒适要求选择合适的生活热水设置水温。关于生活热水的要求的信息，参考 VDI 2067。

功能检查完成后，降低设置温度，可实现节能运行。

11.1.3 设备移交

▶ 请向用户介绍设备的功能，使用户需熟悉设备的操作。

▶ 请提醒用户潜在的危险，特别是烫伤危险。

▶ 请提醒用户关键环境因素和安装地点的要求。

▶ 请告知用户，在加热水的过程中，安全阀可能滴水。

▶ 请告知用户，当断电以后设备将不能防冻和抗腐蚀。

▶ 请将使用说明和安装说明书移交给用户，告知其妥善保管。

11.2 再调试

如果由于供电中断，设备停机，在恢复馈电后，无需采取再次调试措施。设备保留最近一次的参数设置并根据上述参数继续运行。

如果在供电中断前，快速/舒适加热功能已被激活，则在恢复馈电后，重新激活该功能，温度为 65 °C。

供电中断后，不能再次启动紧急加热操作模式。

注意
电源中断后，压缩机停止运行并闭锁至少一分钟。在设备初始化程序当中，电路板将延迟压缩机电控启动一分钟。
如果压缩机随后还是没有启动，可能是其他安全装置闭锁（电机过载继电器和高压开关）。1 至 10 分钟后，该闭锁会消散。

12. 停用设备

财物损失
如果将设备断电，设备将不能对抗霜冻及腐蚀。
▶ 有在排空生活热水储水箱后，方可长时间断电。参见“维护/排空设备”章节。

切断馈电后，方可关闭设备。

▶ 将总插头拔出插座或在保险箱内通过断开微型断路器/保险丝来隔离设备和电源。

13. 故障排除

警告 电击
在设备上进行工作前，先断开电源。

财物损失
如果将设备断电，设备将不能对抗霜冻及腐蚀。
▶ 只有在排空生活热水储水箱后，方可长时间断电。

▶ 如果需要在设备内部进行工作，则取下设备顶盖（参见“维护和清洁 /拆除设备顶盖”章节）。
▶ 必要时，取下上部区域的壳体外罩（参见“维护和清洁 / 拆除外罩”章节）。

注意
结束工作后,重新安装外罩，参见“维护和清洁 / 安装外罩”章节。

注意
结束工作后，重新安装设备顶盖，参见“维护和清洁 / 安装设备顶盖”章节。

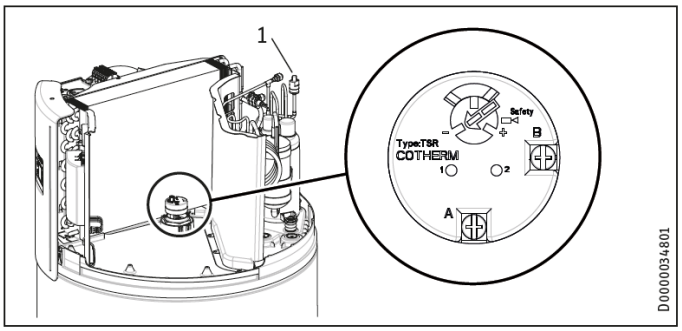
13.1 故障表

故障	原因	排除
设备意外关闭不能在启动	制冷剂循环内压力过高。安全装置限制器动作。压缩机关闭。	设备平衡压力需要等大约 5 到 15 分钟。复位压力限制器（参见“故障排除 / 重置安全压力限制器”）
	设备在应用限制范围外运行。环境温度高于允许数值。安全压力限制器动作。	确保设备运行在应用限制之内。设备平衡压力需要等大约 5 到 15 分钟。复位压力限制器（参见“故障排除 / 重置安全压力限制器”）
压缩机意外关闭	压缩机热负荷过载。电机过载继电器动作	等待直到设备重启。
设备制热输出减少	可能是蒸发器空气流量不足	检查风扇是否有异物。检查蒸发器是否有污染物。确保进排气畅通无阻。

故障代码的释义，参见“故障排除”章节。

13.2 复位安全压力限制器

如果制冷剂循环的压力超过允许的压力数值后，安全压力限制器将停止压缩机工作。如果运行超出允许的应用限制，或者热泵的温度控制器没有响应，安全压力限制器也会动作。

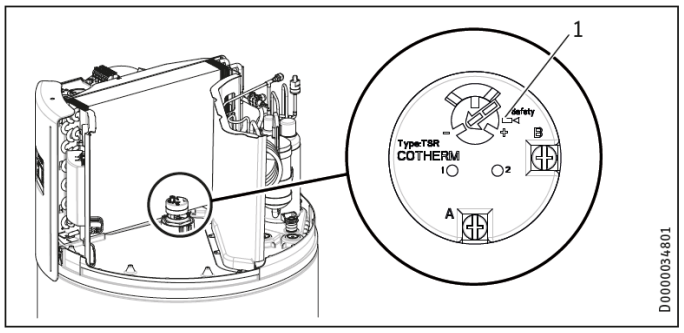


1 安全压力限制器的复位按键

▶ 故障消除后，按下复位按键，复位安全压力限制器。

13.3 安全装置的安装

如果生活热水储水箱过热，高温安全限制器会停止电力应急/辅助加热来保护设备。



1 高温安全限制器的复位按键

▶ 一旦故障消除，请按下恒温器上的高温安全限制器复位按键。进行该操作前，必须取下设备顶盖。

13.4 固定安装支架

如果压缩机热负荷过载，则电机过载继电器会停止压缩机工作。

▶ 请排除故障。

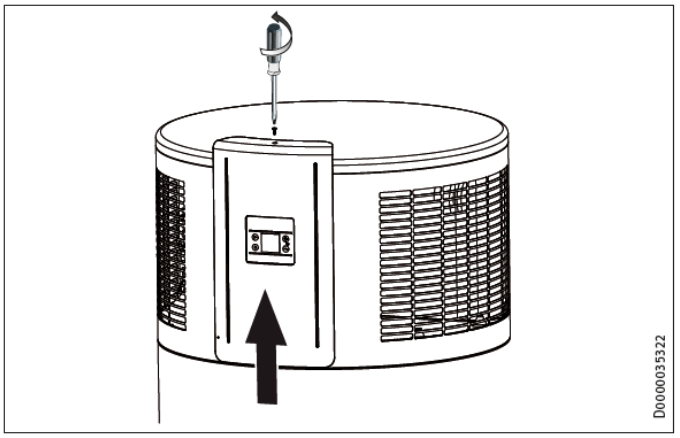
短时间的冷却后，电机过载继电器将自动重新启动压缩机。

14 维护和清洁

警告 电击

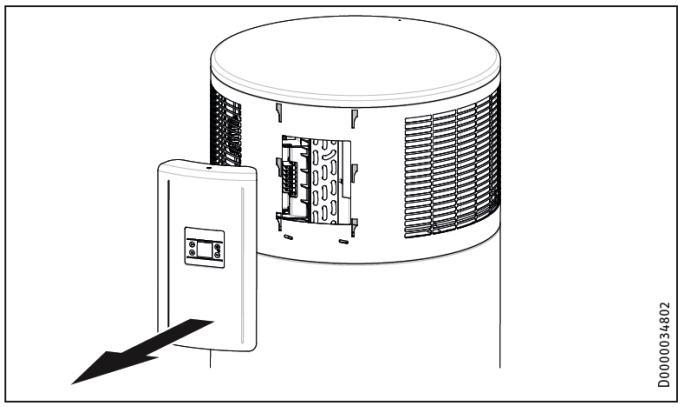
在设备进行任何工作前，需断开设备的电源。

14.1 拆除设备顶盖



▶ 松开固定控制面板和顶盖的螺栓（Torx）。

▶ 向上推控制面板。

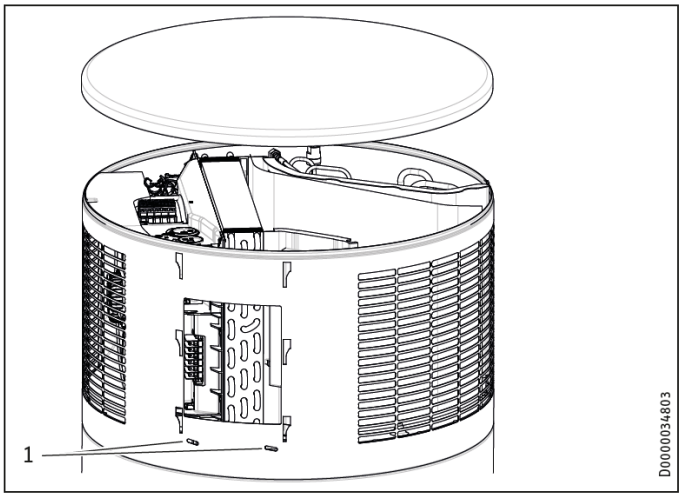


▶ 取下控制面板
▶ 控制面板和电路板之间有一根控制线连接。如果需要可以将控制面板背后插头拔出，从而完全将控制面板移开。
▶ 小心取下设备顶盖，松开从控制面板到顶盖的接地线。

注意
如果想要设备获取更多的工作空间，可以取下设备上部区域的外罩。

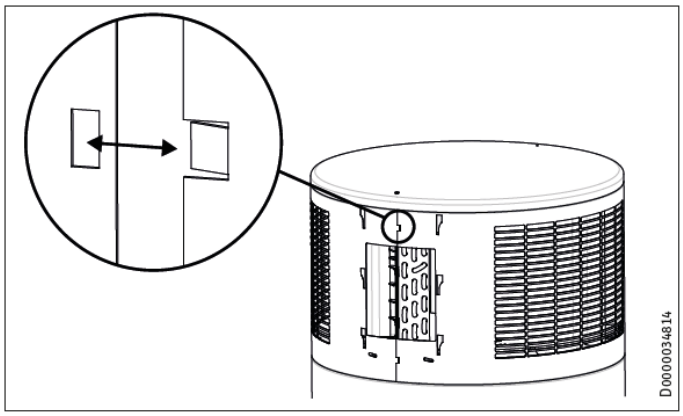
14.2 取下外罩

注意
如果想要设备获取更多的工作空间，可以取下设备上部区域的外罩。



1 外罩的固定螺栓
使用螺栓，可以固定外罩。
▶ 松开外罩的固定螺栓。
▶ 拆除冷凝水排水弯管和管箍。逆时针旋转就可以。

财物损失
外罩内部需要接地，只有在接地线拆掉以后，才能拆除外罩。



外罩在接合点会有重叠。一端的插片会卡入另一端的凹槽。
▶ 松开外罩，从而可以取下，或者，向下滑落外罩。

注意
工作结束后，重新安装外罩。参见“维护和清洁 / 安装外罩”章节。

14.3 清洁蒸发器

警告 受伤
蒸发器由多个边角尖锐的翅片构成。清洁蒸发器时要小心，请穿防护服，特别是保护手套。

为保持设备的性能恒定高效，必须定期检查并清洁设备蒸发器上的污染物。
▶ 请松开在控制面板上部用于固定顶盖的螺栓。
▶ 取下控制面板及顶盖。
▶ 仔细清洁蒸发器。只能使用水和软刷。禁止使用酸性或碱性的清洁剂。

14.4 排空储水箱

警告 烫伤
排空生活热水储水箱时，会流出热水。

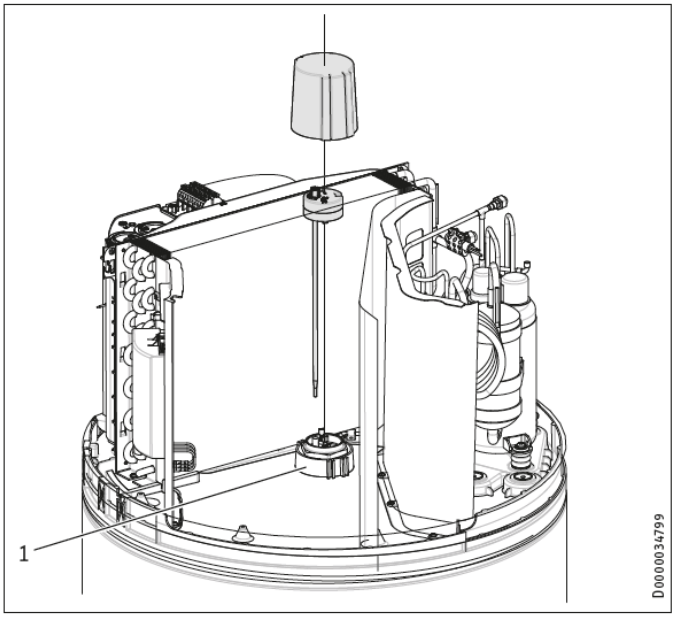
排空生活热水储水箱时，例如：设备停用时，请采用以下措施。
▶ 请将设备与电源隔离。
▶ 请关闭冷水进水管的截止阀。
通过冷水供水管排空生活热水储水箱。

▶ 要打开冷水进水管处安装的排水阀（参见“水管接口”章节）。如果没有安装排水阀，则需要在松开“冷水入口”的管路。

▶ 为了排空系统，松开连接至“热水出口”热水管。
在生活热水储水箱的下部区域，残留少量的水。

14.5 电力应急/辅助加热器除垢

拆卸后，只有电力应急/辅助加热器的法兰才能使用除垢剂除垢，而生活热水储水箱内部及外接电流阳极则不能使用除垢剂。电力应急/辅助加热器在储水箱顶部的中心位置被拧入水箱。



1、配备保护阳极的电力应急/辅助加热器

14.6 阳极保护

电力应急/辅助加热器的法兰配备保护阳极，当它通电以后，可以保护设备，防止腐蚀。此种保护阳极是一种免维护的外接电流阳极。

如果显示屏上的故障代码显示保护阳极故障，则采取以下措施：

▶ 拆下电力应急/辅助加热器的控制器。
▶ 检查保护阳极及其接线。
▶ 重新安装电力应急/辅助加热器的控制器。

14.7 阀门

请定期检查设备的阀门（安全阀、减压阀、排水阀），从而，确保设备的可靠运行。水垢沉积量取决于当地的水质质量。

▶ 请检查设备的所有阀门并清除沉积的水垢。
▶ 必要时，更换阀门。
▶ 检查阀门的功能。

14.8 冷凝排水

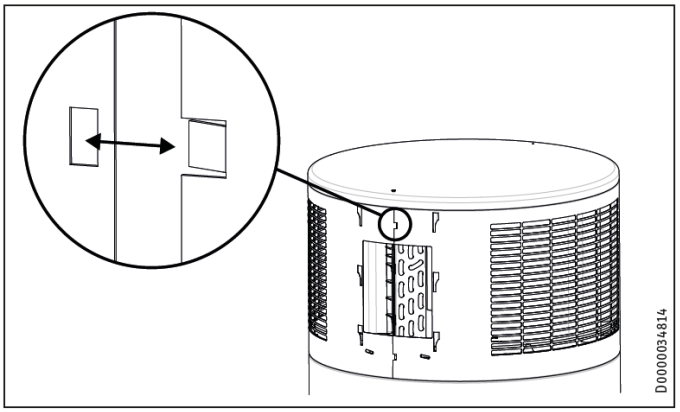
▶ 检查冷凝排水是否堵塞。清除杂物。

14.9 更换电源线

警告 电击
如果电源线损坏，必须更换新的电源线。只允许有资质的代理商人员更换电源线（X 型接线）。

14.10 安装外罩

警告 电击
▶ 接地线重新连接到外罩上。



▶ 安装上部的外罩。外罩有结合点。外罩一端的接片会卡在另一边的凹槽里。
▶ 用螺旋紧固外罩。
▶ 冷凝排水安装管箍和弯管。

14.11 安装设备顶盖

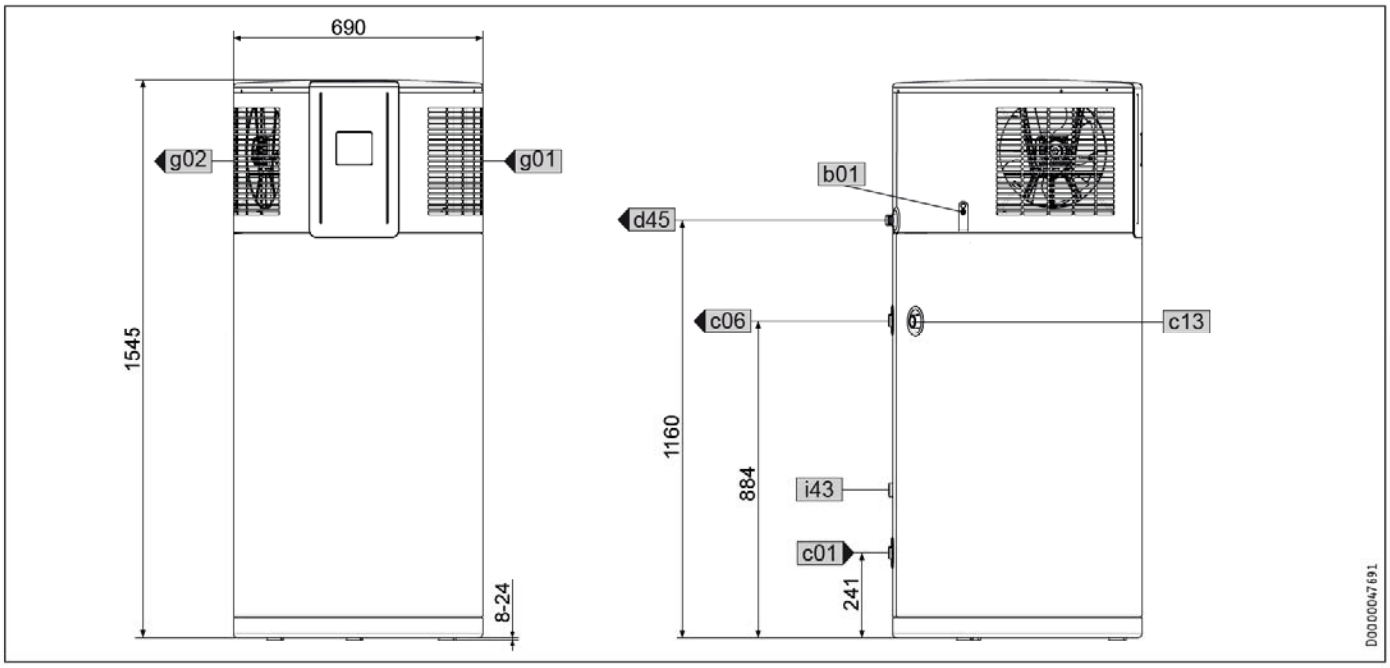
警告 电击
将接地线重新连接到设备顶盖上。

▶ 将顶盖重新放置在设备上。
▶ 用控制线将面板背部连接至电路板上。
▶ 插入面板。
▶ 用控制面板顶部螺栓将顶盖及控制面板固定。

15. 规格

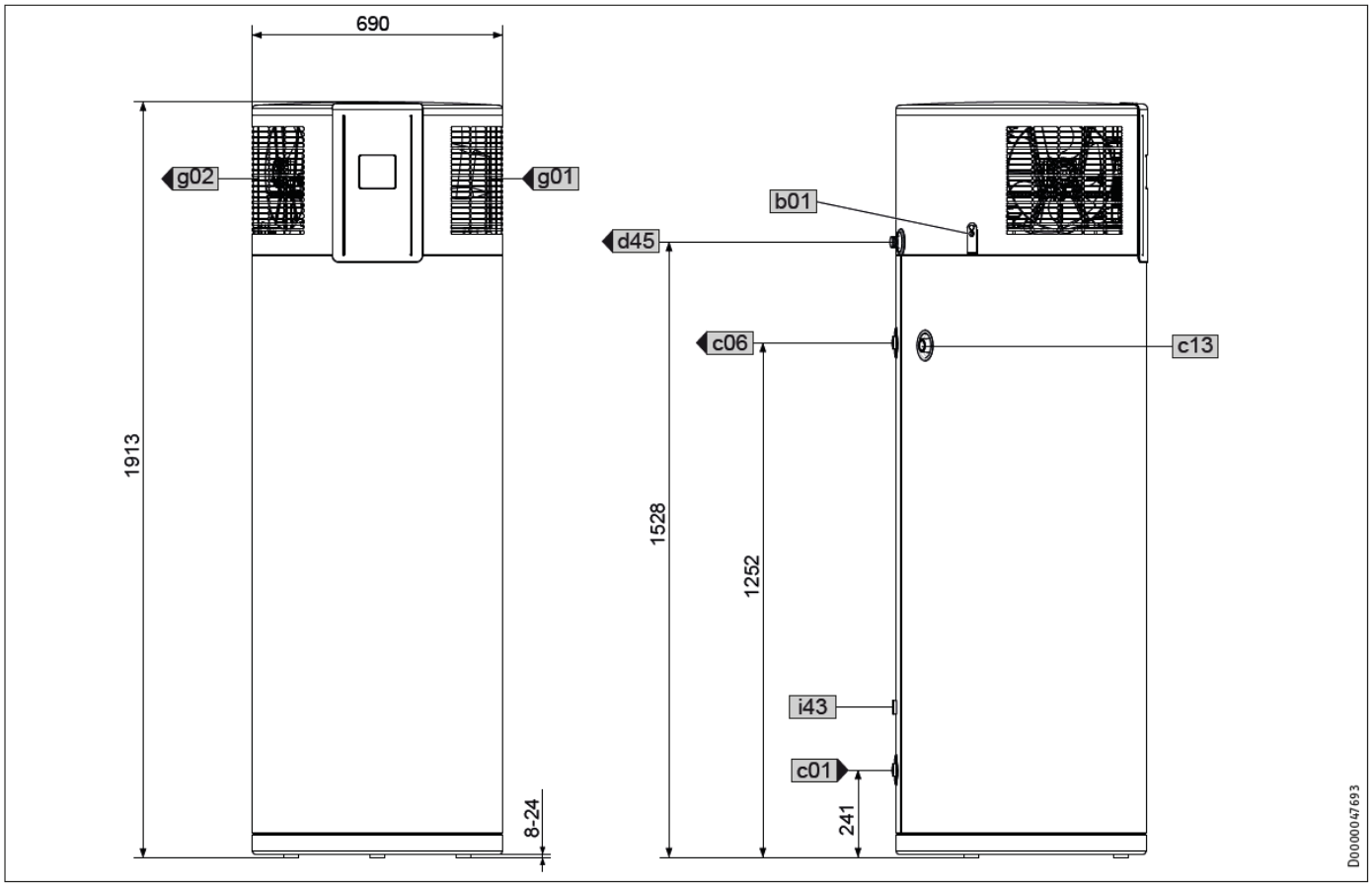
15.1 尺寸和连接

15.1.1 WWK 223 electronic



		WWK 223 electronic
b01 电源进线		
c01 冷水入口	外螺纹	G1
c06 生活热水出口	外螺纹	G1
c13 安全阀和减压阀	内螺纹	G3/4
d45 冷凝排水	外螺纹	G3/4
g01 空气入口		
g02 空气出口		
i43 制造开孔		

15.1.2 WWK 303 electronic

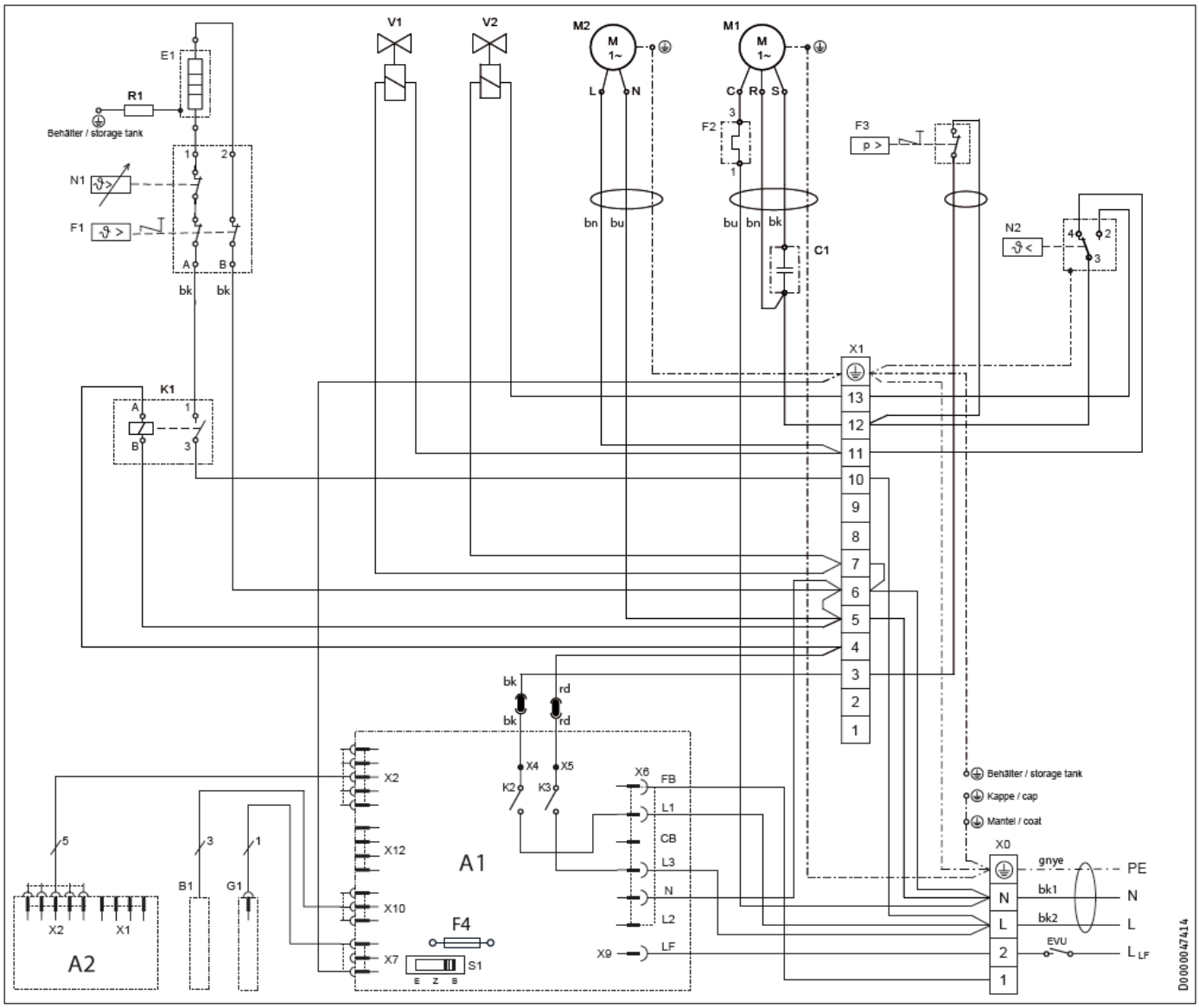


		WWK 223 electronic
b01 电源进线		
c01 冷水入口	外螺纹	G1
c06 生活热水出口	外螺纹	G1
c13 安全阀和减压阀	内螺纹	G3/4
d45 冷凝排水	外螺纹	G3/4
g01 空气入口		
g02 空气出口		
i43 制造开孔		

15.2 接线图

财物损失
如果安装 X0/2，设备的馈电装置只能用作固定接口（参见“配备外部信号发生器的电气接口 / 可选接口”）章节。不能混淆 L1 和 N。

注意
请不要安装 X0/1 接口。



A1	电气组件（控制装置）	M1	压缩机
A2	电气组件（操作装置）	M2	风扇
B1	温度传感器	N1	恒温器 TSR
C1	运行电容器	N2	除霜控制器
E1	发热元件	R1	电阻
F1	安全温度限制器 TSR	S1	DIP 开关
F2	电机过载继电器 M1	X0	主端子排
F3	高压开关	X1	端子排
F4	保险丝	V1	电磁阀（加热模式下馈电）
G	外接电流阳极	V2	电磁阀（除霜模式下馈电）
K1	继电器（加热元件）	储水箱	储水箱
K2	继电器（压缩机）	顶盖	顶盖
K3	继电器（加热元件	外壳	外壳
LLF	可选触点，用于外部的信号发生器（参见“电器连接/配备外部信号发生器的电气接口 / 可选接口”章节）。	EVU	供电设施

15.3 数据表

		WWK 223 electronic	WWK 303 electronic
		234406	234405
水力数据			
额定容量	L	220	302
应用限制			
热泵最大生活热水温度	°C	65	65
应急/辅助加热器最大生活热水温度	°C	65	65
热泵热源温度应用限制最小值/最大值	°C	0-42	0-42
水箱环境温度应用限制最小值/最大值	°C	6-42	6-42
最小安装地面面积	m2	6	6
最小安装空间体积	m3	13	13
冷水/生活热水最大允许运行压力	MPa	0.8	0.8
生活热水电导率最小值/最大值	µS/cm	100-1500	100-1500
详细输出参数（标准 EN 16147）			
额定生活热水温度（EN 16147）	°C	55 I 65	55
额定荷载数值（EN 16147）		L I XL	XL
参考生活热水温度（EN 16147 / A15）	°C	53.8 I 63.1	53.8
40°C 生活热水最大可用热水量（EN 16147 / A15）	L	288 I 365	404
加热时间（EN 16147 / A15）	h	6.98 I 8.70	9.75
待机功耗（EN 16147 / A15）	kW	0.033 I 0.062	0.045
COP（EN 16147 / A15）		3.22 I 2.95	3.27
制热输出			
平均制热输出	kW	1.68 I 1.62	1.69
功耗			
热泵平均功耗（EN 16147 / A15）	kW	0.52 I 0.55	0.52
热泵最大功耗（除去启动功耗）	kW	0.68	0.68
应急/辅助加热功耗	kW	3.15	3.15
热泵最大功耗+应急/辅助加热功耗	kW	3.60	3.60
能量数据			
生活热水能效等级（荷载数值），室内		A（XL）	A1）（XL）
COP（EN 255）			
COP（A15/W15-45，EN255）		3.78	4.22
COP（A15/W15-55，EN255）		3.42	3.82
电气数据			
电源		1/N/PE 220V 50/60Hz	1/N/PE 220V 50/60Hz
允许电压范围，外部信号传感器		~ 220V 50Hz	~ 220V 50Hz
最大运行电流	A	17.51	17.51
最大启动电流	A	29.37	29.37
微型断路器/保险丝额定电流	A	C20	C20
噪音数据			
声功率级（EN 12102）	dB(A)	60	60
1 米处测得平均噪音压力，自由声场	dB(A)	45	45
版本			
IP 等级		IP 24	IP 24
制冷剂		R134a	R134a
制冷剂充注量	kg	0.85	0.85
电源线长度大约	mm	2000	2000
尺寸			
高	mm	1545	1913

直径	mm	690	690
倾斜时高度	mm	1692	2034
倾斜时高度（包括包装）	mm	1895	2230
包装尺寸：高 / 宽 / 厚	mm	1740/740/740	1740/740/740
重量			
重量	kg	120	135
管路连接			
冷凝水管连接		G 3/4 A	G 3/4 A
安全阀连接		G 3/4 A	G 3/4 A
水管连接		G1A	G1A
其他连接			
保护阳极方式		外接电流阳极	外接电流阳极
风量	m3/h	550	550

输出数据引用带干净热交换器的新设备。
额定参数（EN 16147）-循环空气热泵。

注意能效等级：此信息符合热水器的官方规定（EU 规定 no. 812/2013），此规定于 2015 年 9 月起强制执行，以生活热水热泵 EN 16147 为基础。
2017 年 9 月以后能效等级标记为 1) 等同于 A+等级。

保修

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在没有子公司的国家和地区，我们不提供任何保修。
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环保和循环利用

请和我们共同保护环境。在使用后，按照国家法律法规妥善处理各种废弃物。

KYOTO | R134a

设备充注制冷剂 R134a。
制冷剂 R134a 是京都议定书提及的氯氟烃温室气体，其全球变暖潜值（GWP）为 1300。
禁止将 R134a 释放到大气中。

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

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

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