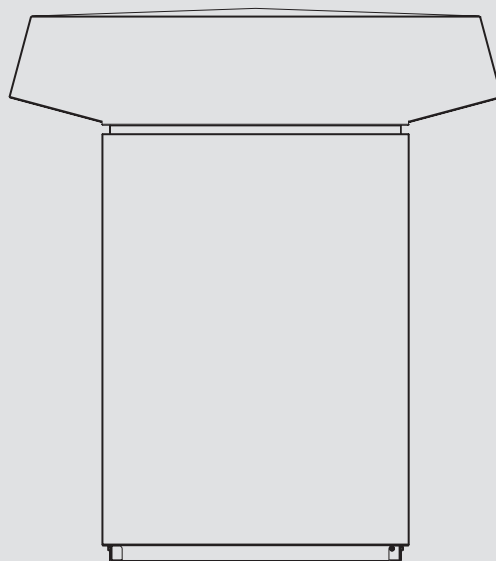




OPERATION AND INSTALLATION

Air | water heat pump

» WPL 33 HT



STIEBEL ELTRON



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GUARANTEE

ENVIRONMENT AND RECYCLING

SPECIAL INFORMATION OPERATION

- 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 potential risks. Children must never play with the appliance. Children must never clean the appliance or perform user maintenance unless they are supervised.
- The connection to the power supply must be in the form of a permanent connection. Ensure the appliance can be separated from the power supply by an isolator that disconnects all poles with at least 3 mm contact separation.
- Maintain the minimum clearances to ensure trouble-free operation of the appliance and facilitate maintenance work.
- Maintenance work, such as checking the electrical safety, must only be carried out by a qualified contractor.
- We recommend regular inspection (to establish the current condition of the system), and maintenance by a qualified contractor if required (to return the system to its original condition).
- Following isolation from the mains supply, parts of the appliance may remain live for up to 2 minutes since the capacitors still have to discharge into the inverter.
- Never interrupt the power supply, even outside the heating season. The system's active frost protection is not guaranteed if the power supply is interrupted.
- The heat pump manager automatically switches the heat pump to summer or winter mode.
- If the heat pump is completely switched off and there is a risk of frost, drain the system on the water side.

1. General information

The chapters "Special information" and "Operation" are intended for both users and qualified contractors.

The chapter "Installation" is intended for qualified contractors.



Note

Read these instructions carefully before using the appliance and retain them for future reference. Pass on the instructions to a new user if required.

1.1 Relevant documents

- Instructions for the WPM heat pump manager
- Operating and installation instructions for system components

1.2 Safety instructions

1.2.1 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.

1.2.2 Symbols, type of risk

Symbol	Type of risk
	Injury
	Electrocution

1.2.3 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.

OPERATION

Safety

1.3 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.

1.4 Units of measurement



Note

All measurements are given in mm unless stated otherwise.

1.5 Standardised output data

Information on determining and interpreting the specified standardised output data.

1.5.1 EN 14511

The output data specifically mentioned in texts, diagrams and technical datasheets has been calculated according to the test conditions of the standard shown in the heading of this section. However, there is a deviation from this norm in the output data for air/water inverter heat pumps at source temperatures of $> -7\text{ °C}$ as this concerns partial load values. The associated percentage weighting in the partial load range can be found in EN 14825 and EHPA quality label regulations.

Generally, the test conditions stated above will not fully match the conditions found at the installation site of the system user.

Depending on the chosen test method and the extent to which this method deviates from the test conditions defined in the first paragraph of this section, any deviations can have a considerable impact.

Additional 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.

Confirmation of the specified output data can only be obtained, if the test conducted for this purpose is also performed in accordance with the test conditions defined in the first paragraph of this section.

2. Safety

2.1 Intended use

The appliance is designed for central heating within the application limits listed in the specification.

The appliance is intended for domestic use. It can be used safely by untrained persons. The appliance can also be used in non-do-

mestic environments, e.g. in small businesses, as long as it is used in the same way.

Any other use beyond that described shall be deemed inappropriate. Observation of this document is also part of the correct use of the unit.

2.2 Safety instructions

Observe the following safety instructions and regulations.

- Only qualified contractors are permitted to carry out electrical work and the installation of the heating circuit.
- The qualified contractor is responsible for adherence to all applicable regulations during installation and commissioning.
- The appliance should only be operated once it is fully installed and all safety equipment has been fitted.



WARNING Injury

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



WARNING Injury

► For safety reasons, only operate the appliance with the casing closed.

2.3 Test symbols

See type plate on the appliance.

3. Appliance description

The appliance is an air/water heat pump that operates as a heating heat pump. Heat is extracted from the outdoor air at a low temperature level, and is then transferred to the heating water at a higher temperature. The heating water can be heated up to a flow temperature of 75 °C .

With the appropriate accessories, this appliance may be installed internally or externally.

The appliance is equipped with an electric emergency/booster heater (DHC). If the dual mode point is undershot in mono mode operation, the electric emergency/booster heater is activated to safeguard heating operation and the provision of high DHW temperatures. If the same thing happens in mono energetic operation, the electric emergency/booster heater is activated as a booster heater.

Operational characteristics:

- Suitable for underfloor and radiator heating systems
- Still extracts heat from the outdoor air at -20 °C outdoor temperature.
- Corrosion-protected, external casing made from zinc-plated sheet steel plus powder-coated finish.

OPERATION

Settings

- Comprises all components and safety equipment required for operation.
- Filled with non-combustible safety refrigerant.



Note

To control the heating system, you will need the heat pump manager "WPM".

3.1 Function

Heat is extracted from the outdoor air via the heat exchanger (evaporator) on the air side. The now evaporated refrigerant is compressed with one or two compressors. This process requires electrical energy. Now, the refrigerant is at a higher temperature level and transfers the heat drawn from the air via an additional heat exchanger (condenser) to the heating system. The refrigerant then expands again and the cycle restarts from the beginning.

At air temperatures below approx. +7 °C, the humidity in the air condenses as hoarfrost on the evaporator fins. This hoarfrost is automatically defrosted. Water created by this defrosting process collects in the defrost pan and is drained off via a hose.



Material losses

In the defrost cycle, the fan is switched off and the heat pump circuit is reversed. The heat required for defrosting is drawn from the buffer cylinder.

For operation without a buffer cylinder, observe the information in the WPM instruction manual and the BUFFER OPERATION parameter in the SETTINGS / STANDARD SETTING menu.

Otherwise the heating water freezes under unfavourable conditions.

The heat pump automatically reverts to heating mode at the end of the defrost cycle.



Material losses

In dual mode operation, return water from the second heat generator may flow through the heat pump. Please note that the return temperature must be no higher than 60 °C.

4. Settings

The appliance is controlled by the heat pump manager WPM and does not require any special operator actions.

- ▶ Please observe the heat pump manager operating and installation instructions.

5. Maintenance and care



Material losses

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

A damp cloth is sufficient for cleaning all plastic and sheet metal parts. Never use abrasive or corrosive cleaning agents.

- ▶ Protect the appliance from dust and dirt during building work.

- ▶ Once a month, check that the condensate drain is working correctly (visual inspection). When doing so, check for water collecting below or next to the appliance. See chapter "Troubleshooting".



Material losses

Keep the air discharge and intake apertures free from snow and leaves.

We recommend regular inspection (to establish the current condition of the system), and maintenance by a qualified contractor if required (to return the system to its original condition).

6. Troubleshooting

Fault	Cause	Remedy
There is no hot water or the heating system remains cold.	No power at the appliance.	Check the fuses/MCBs in your distribution board. Replace the fuses/reset the MCBs if required. Notify your qualified contractor if the fuses/MCBs blow/trip again.
Water is leaking from the appliance.	The condensate drain may be blocked.	Call your qualified contractor to have the condensate drain cleaned out.
Indoor installation: Condensate is collecting on the outside of the appliance or on the air hoses.	The drying out phase of the building is not yet complete.	This condensate should no longer form on the appliance after the house is approx. two years old, providing the room is sufficiently well ventilated and dehumidified.
	The relative humidity in the air is high (≥60 %).	A change in weather conditions should no longer cause condensation to form on the appliance.
	The appliance is sited in a damp room. Damp rooms are those where humidity in the air is high. They may, for example, be used for drying laundry.	Ensure that the room is adequately ventilated and dehumidified. If necessary, hang your laundry in a different room. Use a vented tumble dryer. Please note that condenser tumble dryers do not reduce the level of humidity in the air.
	The air hoses are incorrectly fitted or poorly sealed. Cold air is escaping.	Check that the air hoses are correctly fitted and sealed. If necessary, contact your qualified contractor.
Outdoor installation: Condensate is collecting on the outside of the appliance.	The heat pump is extracting heat from the outdoor air to heat the building. This can cause the humidity in the outdoor air to accumulate as dew or frost on the cooled heat pump casing. This is not a defect.	
The fan runs when the compressor is switched off.	At outside temperatures below 10 °C, the fan is regularly started at the lowest speed when the compressor is idle. This prevents the evaporator and fan from freezing or icing up due to water draining off. At temperatures above the freezing point, the time between two defrost cycles is increased, thereby improving overall efficiency.	
The appliance produces rhythmic scraping or grinding noises.	Ice has formed on the air grille, on the fan blades or in the air routing.	Call your qualified contractor (see chapter "Installation / Troubleshooting / Fan noises").

INSTALLATION

Safety

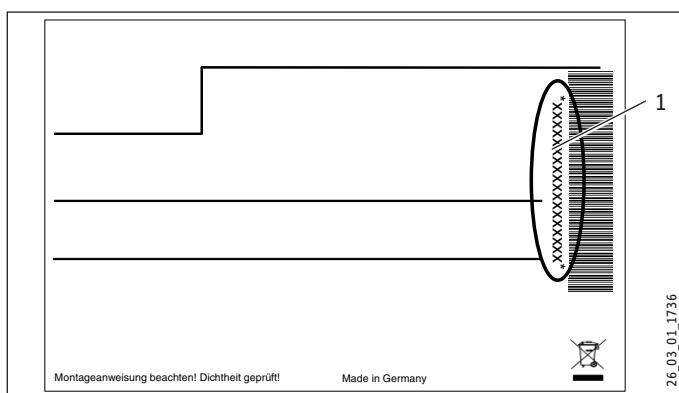


Note

Even when the condensate is draining away correctly, it is not unusual for water to drip from the appliance onto the floor.

If you cannot remedy the fault, notify your qualified contractor. To facilitate and speed up your request, provide the number from the type plate. The type plate is located at the front top, on the right or left hand side of the casing.

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.

7.3 Operation of the appliance in buildings with combustion equipment

As the appliance can produce negative pressure in the installation room, we recommend using a tightly sealing door between the installation room and the living space containing combustion equipment.

If, due to its use, the installation room is connected to the extract air system, you must also allow for a supply air valve in the installation room in this particular case to prevent any further increase in the negative pressure in the installation room. The negative pressure created by the appliance in the installation room is heavily influenced by the pressure drop in the outdoor air line. For this reason, the outdoor air line in particular should be as short as possible.

8. Appliance description

For outdoor installation the appliance offers additional frost protection of the heating water pipes. The integral frost protection circuit starts the circulation pump in the heat pump circuit automatically at +8 °C condenser temperature, and thereby ensures circulation in all water-filled sections. The heat pump is started automatically no later than when the temperature inside the buffer cylinder drops below +5 °C.

8.1 Standard delivery

The following are delivered with the appliance:

- Type plate

8.2 Required accessories

You require the following accessories to operate the heat pump:

- WPM 3 heat pump manager
- Remote control
- Buffer cylinder
- Contact sensor
- Immersion sensor

INSTALLATION

Preparation

- Accessory for external installation WPL 33 HT
- Accessory for indoor installation WPL 33 HT

9. Preparation

9.1 Sound emissions

The appliance is louder on the air intake and air discharge sides than on the two enclosed sides. Take the following information into account when selecting the installation location.



Note

For details regarding the sound power level, see chapter "Specification / Data table".

9.1.1 Sound emissions for external installation

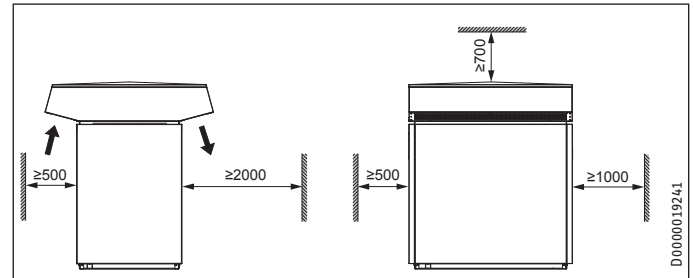
- Lawn areas and shrubs help reduce the spread of noise.
- Noise propagation can also be reduced through dense palisades or similar.
- ▶ Ensure that the entire appliance frame is in full contact with the substrate. Uneven substrates can increase sound emissions.
- ▶ Ensure that the air intake direction is the same as the dominant wind direction. Air should not be drawn in against the wind.
- ▶ Ensure that the air intake and air discharge are never directed towards noise-sensitive rooms of the house, e.g. bedrooms, or neighbouring houses.
- ▶ Avoid installation on large, echoing floor areas, e.g. tiled floors.
- ▶ Avoid installation between reflective building walls. Reflecting building walls can increase the noise level.

9.1.2 Acoustic emissions for internal installation

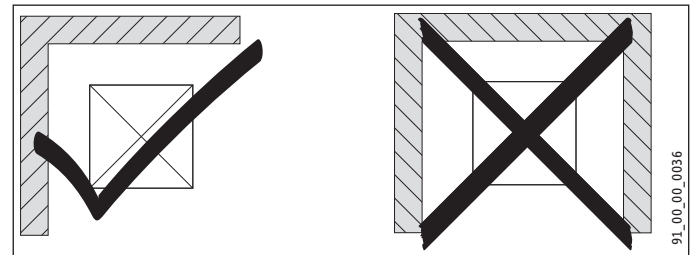
- Never site the appliance on joist floors.
- ▶ Ensure that the entire appliance frame is in full contact with the substrate. Uneven substrates can increase sound emissions.
- ▶ Never install the appliance directly below or next to a living room or bedroom.
- ▶ Isolate the installation surface. See chapter "Preparing the installation location / Indoor installation".
- ▶ Ensure that the air intake and discharge apertures in external walls are not directed towards the neighbouring windows of living rooms or bedrooms.
- ▶ Implement pipe outlets through walls and ceilings with anti-vibration insulation.

9.2 Minimum clearances

9.2.1 Outdoor installation



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



- ▶ Never install the appliance in a recess. Two sides of the appliance must remain exposed.
- ▶ In order to prevent air "short circuits", maintain the minimum clearances in the case of surrounding structures and in particular in the case of cascades. Maintain the flow rate on the heat source side (see chapter "Specification / data table").



Material losses

Please note that both the flow of outdoor air into the appliance, and the flow of exhaust air from the appliance must be unimpeded.

If the air intake and discharge of the appliance are obstructed by surrounding objects, this may cause a thermal short circuit.

- ▶ Ensure that the appliance is not fully enclosed by objects such as buildings, walls or fences.

If the air discharge side of the appliance faces the wall of a house, the cool air from the air discharge may cause condensate to form on this wall.



Material losses

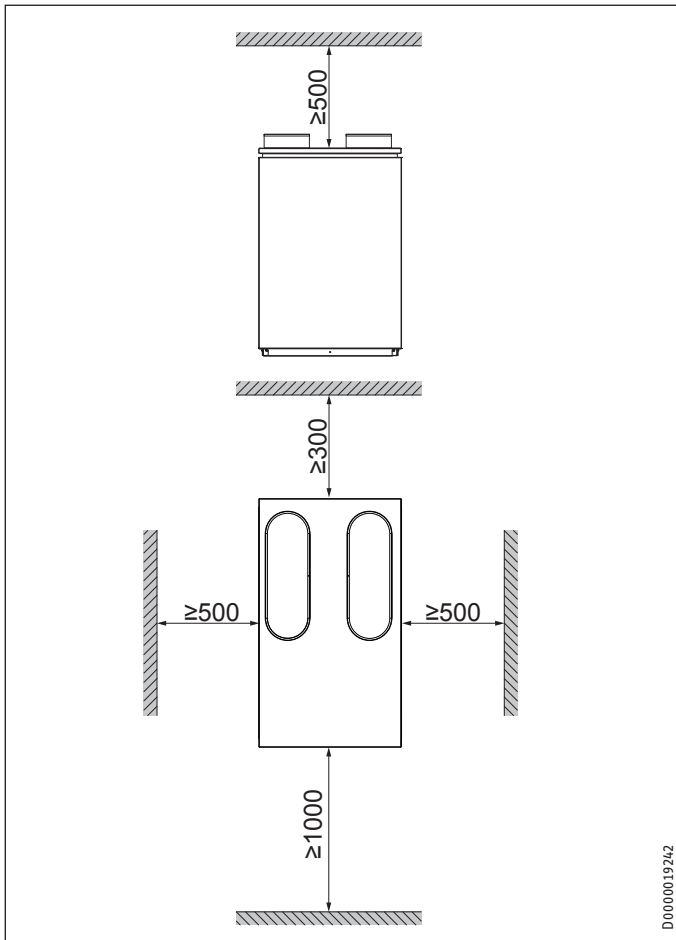
The air flow rate through the appliance must not fall below the minimum level. If the air flow rate falls below the minimum level, trouble-free operation of the appliance is not guaranteed.

- ▶ Ensure that the minimum air flow rate is maintained (see chapter "Specification / Data table").

INSTALLATION

Preparation

9.2.2 Indoor installation



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

9.3 Preparation of the installation site

- Observe chapter “Sound emissions”.
- Observe chapter “Minimum clearances”.
- Ensure that the appliance is accessible from all sides.
- Ensure that the substrate is level, even, solid and permanent.

9.3.1 Outdoor installation



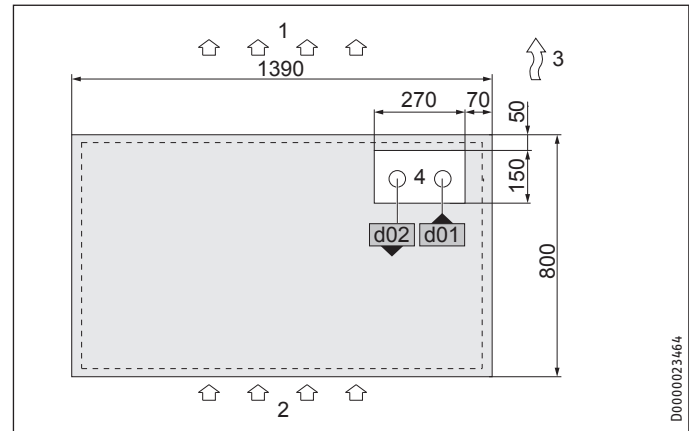
WARNING Injury
The discharged cold air can cause condensation to be formed in the vicinity of the air outlet.
► Ensure that no risk of slipping due to wet conditions or ice formation occurs on adjacent footpaths and driveways at low temperatures.

► Provide a recess (space) in the base to enable supply pipes/cables to be routed into the appliance from below.



Note
To facilitate connection to the appliance, we recommend using flexible supply pipes/cables in the case of outdoor installation.

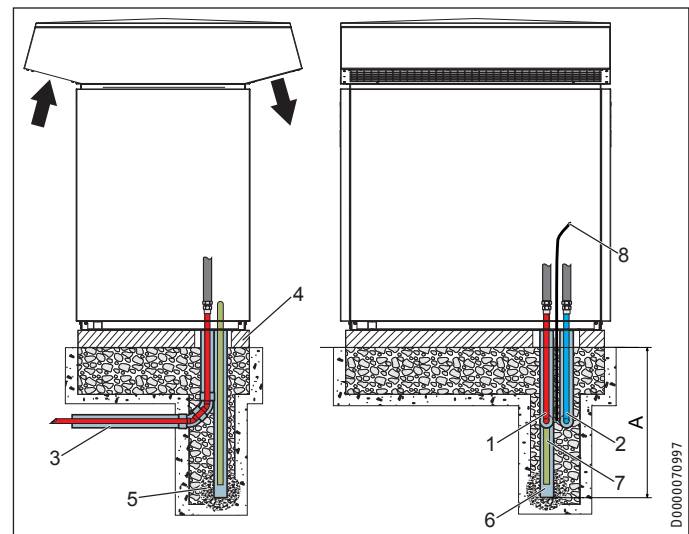
Example: Foundations with recess



- 1 Air discharge
- 2 Air intake
- 3 Main wind direction
- 4 Entry supply lines
- d01 Heat pump flow
- d02 Heat pump return

► Ensure that the foundations offer an adequate recess.

Example: Installation on foundations



- A Depth of frost line
- 1 Heating flow
- 2 Heating return
- 3 Conduit for supply lines
- 4 Foundation
- 5 Gravel bed
- 6 Drainage pipe
- 7 Condensate drain
- 8 Power cable

► Also protect all supply lines/cables against humidity, damage and UV radiation by means of a conduit.

► Allow the conduits for the supply lines to protrude slightly above the foundations. Ensure that no water can enter the conduits.

► Only use weather-resistant cables.

INSTALLATION

Preparation

- ▶ Protect the flow and return lines against frost with sufficient thermal insulation. The thermal insulation must be at least twice as thick as the diameter of the pipe. Provide thermal insulation in accordance with applicable regulations.



Note

When routing the condensate hose, observe chapter "Installation / Condensate drain".

9.3.2 Indoor installation

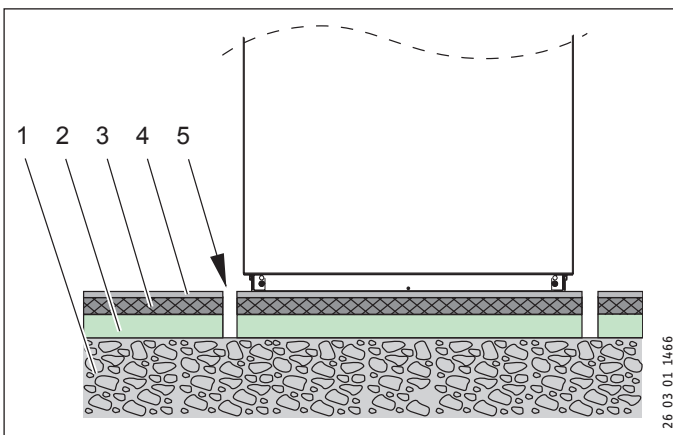


Material losses

The installation room floor must be water resistant. During appliance operation, the outdoor air releases up to 50 l of condensate per day. If humidity levels in the installation room are high, condensate may form on the appliance and air hoses. If the condensate drain is not installed correctly or if maintenance is not carried out properly, water may leak out. We recommend installing a drain in the floor of the installation room.

The room where the appliance is installed must meet the following conditions:

- No risk from frost
- The room must not be subject to a risk of explosions arising from dust, gases or vapours.
- If installing the appliance in a plant room together with other heating equipment, ensure that the operation of other heating equipment will not be compromised.
- Minimum volume of the installation room. The minimum volume of the installation room is assured if the minimum clearances are observed.
- Load bearing floor (for the weight of the appliance, see chapter "Specification / Data table").
- ▶ For installation on floating screeds, make provisions for quiet heat pump operation.



- 1 Concrete base
- 2 Impact sound insulation
- 3 Floating screed
- 4 Floor covering
- 5 Recess

- ▶ Isolate the installation surface around the heat pump by means of a recess. After completing the installation, seal the recess with a water-impervious and sound insulating material, such as silicone for example.

Observe the following information:

- Connect the heating circuit flow and return lines via flexible pressure hoses. Suitable pressure hoses are listed in chapter "Appliance description / Required accessories for indoor installation".



Note

For details of the dimensions and positions of the air intake and discharge apertures, as well as the outlets for hydraulic lines and power cables, see chapter "Specification / Dimensions and connections / indoor installation".

9.4 Electrical installation



WARNING Risk of electrocution!

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



WARNING Risk of electrocution!

Only use a permanent connection to the power supply. The appliance must be able to be separated from the power supply by an isolator that disconnects all poles with at least 3 mm contact separation. This requirement can be met by using contactors, circuit breakers, fuses/ MCBs, etc.



Material losses

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

- ▶ Use cables with the relevant cross-sections. Observe the applicable national and regional regulations.

MCB/fuse rating	Assignment	Cable cross-section
C 32 A	Heat pump	10.0 mm ²
B 16 A	Electric emergency/booster heater (DHC)	2.5 mm ²
B 16 A	Control unit	1.5 mm ²

The electrical specifications are given in the "Data table". You require a J-Y (St) 2x2x0.8 mm² cable as a BUS cable.



Note

Provide separate fuses/MCBs for the 3 power circuits of the appliance, the control unit and the electric emergency/booster heater.



Note

The appliance includes an inverter for the variable speed compressor. In the event of a fault, inverters can cause DC residual currents. If RCDs are provided, they have to be type B AC/DC-sensitive.

A DC residual current can block type A RCDs.

- ▶ Ensure that the appliance power supply is disconnected from the distribution board.

INSTALLATION

Installation

9.5 Buffer cylinder

A buffer cylinder is recommended to ensure trouble-free appliance operation.

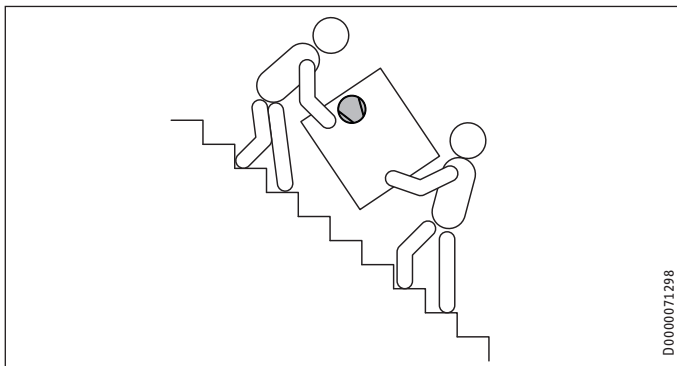
The buffer cylinder provides hydraulic separation of the volume flows in the heat pump circuit and heating circuit, and also serves as an energy source for defrosting.

- ▶ For operation without a buffer cylinder, observe the details in chapter "Minimum flow rate with individual room control via remote control in systems without buffer cylinder".

10. Installation

10.1 Transport

- ▶ When transporting the appliance, be aware of its centre of gravity.
- The centre of gravity is in the area where the compressors are located.
- Lifting slings for handling the standard appliance can be hooked in anywhere on the bottom of the frame.
- ▶ Protect the appliance against heavy impact during transport.



- If the appliance needs to be tilted during transport, this must only be for a short time and it must only be tilted on one of its longitudinal sides. When transporting the appliance, ensure the compressor is on the upper appliance side.
- The longer the appliance is tilted, the greater the distribution of refrigerant oil inside the system.
- ▶ Wait approx. 30 minutes before starting the appliance after it has been tilted.

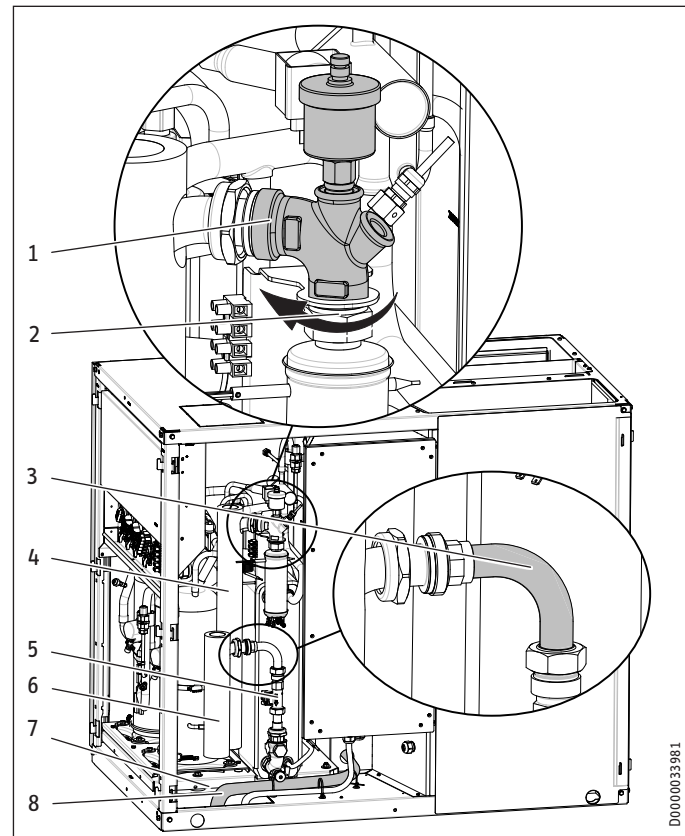
10.2 Outdoor installation

- ▶ Pay attention to the air discharge direction.
- ▶ Position the standard appliance on the prepared substrate.



Material losses

Observe the torque of the flow meter (see chapter "Specification/Data table") when carrying out the following procedure.



- 1 Connector
- 2 Union nut
- 3 Pipe bend, heating circuit return
- 4 Heating flow
- 5 Flow meter
- 6 Heating return
- 7 Entry supply lines
- 8 Condensate hose

- ▶ Undo the union nut from the heating flow.
- ▶ Turn the connector through approx. 30°.
- ▶ Retighten the union nut.
- ▶ Install the pipe bend for the heating circuit return (component from "Accessories for outdoor installation").
- ▶ Install the pressure hoses and pipe bends for the heating circuit flow and return (part of "Accessories for outdoor installation").
- ▶ Route the water pipes and electrical cables into the appliance from below through the knock-outs in the base.



Note

Do not fit the casing components until the electrical and hydraulic connections have been made.

INSTALLATION

Installation

10.3 Indoor installation

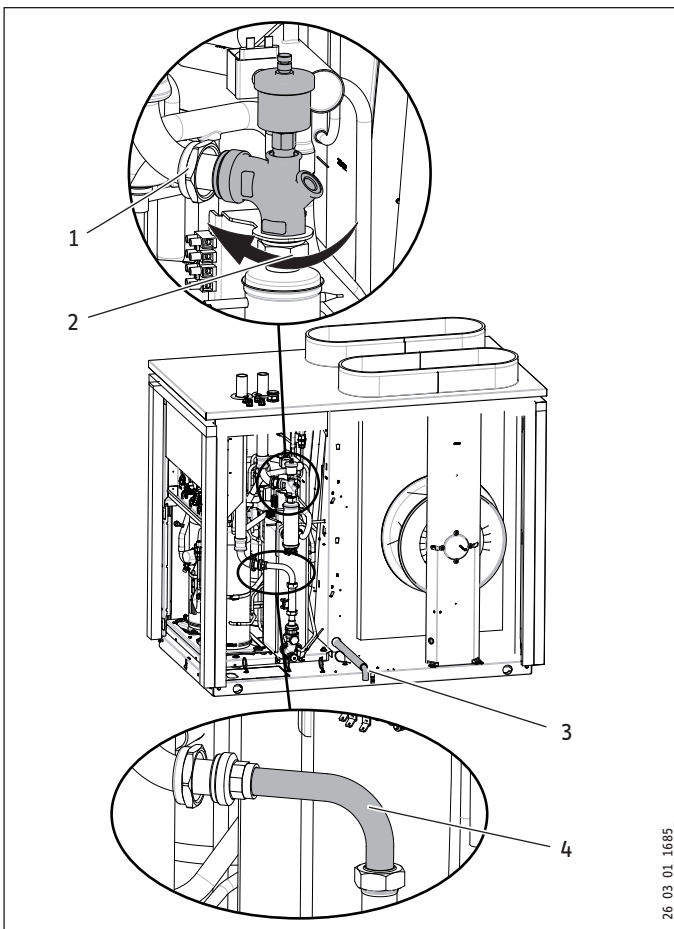
- ▶ Position the standard appliance on the prepared substrate.



Material losses

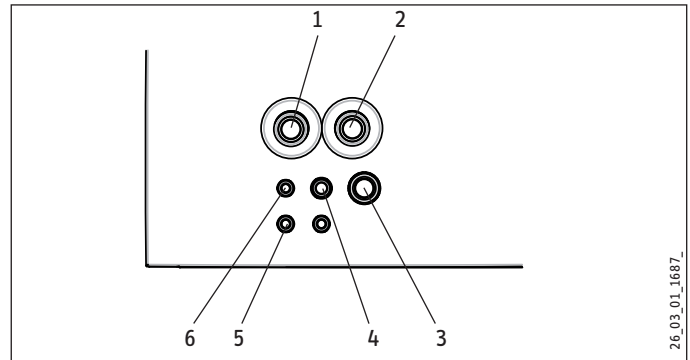
Observe the torque of the flow meter (see chapter "Specification/Data table") when carrying out the following procedure.

- ▶ Remove the knock-out at the top in the appliance cover panel.



- 1 Connector
- 2 Union nut
- 3 Condensate drain hose
- 4 Pipe bend, heating circuit return

- ▶ Undo the union nut from the heating flow.
- ▶ Turn the connector through approx. 45°.
- ▶ Retighten the union nut.
- ▶ Install the pipe bend for the heating circuit return (component from "Accessories for indoor installation").
- ▶ Route the condensate hose to the right out of the appliance.



- 1 Heating return
- 2 Heating flow
- 3 Appliance power cable
- 4 Electric emergency/booster heater power cable
- 5 Control cable
- 6 Bus cable

- ▶ Place the cover on the appliance and secure with two screws.
- ▶ Cut out the hood to accommodate the water pipe outlets.
- ▶ Route the water pipes inwards through the hood.
- ▶ Route the electrical cables from above into the appliance through the cable entries and through the strain relief fittings (PG fittings).
The open PG fittings are used to route the power cable for the appliance, control cable and BUS cable.

10.4 Heating water connection

The heating system to which the heat pump is connected must be installed by a qualified contractor in accordance with the water installation drawings that are part of the technical guides.

- ▶ Thoroughly flush the pipework before connecting the heat pump.

Foreign bodies, such as rust, sand and sealant, can impair the operational reliability of the heat pump.

10.5 Oxygen diffusion



Material losses

Avoid open vented heating systems and underfloor heating systems with plastic pipes that are permeable to oxygen.

In underfloor heating systems with plastic pipes that are permeable to oxygen and in open vented heating systems, oxygen diffusion may lead to corrosion on the steel components of the heating system (e.g. on the indirect coil of the DHW cylinder, on buffer cylinders, steel radiators or steel pipes).

- ▶ With heating systems that are permeable to oxygen, separate the heating system between the heating circuit and the buffer cylinder.



Material losses

The products of corrosion (e.g. rusty sludge) can settle in the heating system components, which may result in a lower output or fault shutdowns due to reduced cross-sections.

INSTALLATION

Installation

10.6 Filling the heating system

Heating water quality

Carry out a fill water analysis before filling the system. This analysis may, for example, be requested by the relevant water supply utility.

To avoid damage as a result of scaling, it may be necessary to soften or desalinate the fill water. Always observe the fill water limits specified in the "Specification / Data table" chapter.

- ▶ Recheck these limits 8-12 weeks after commissioning and as part of the annual system maintenance.

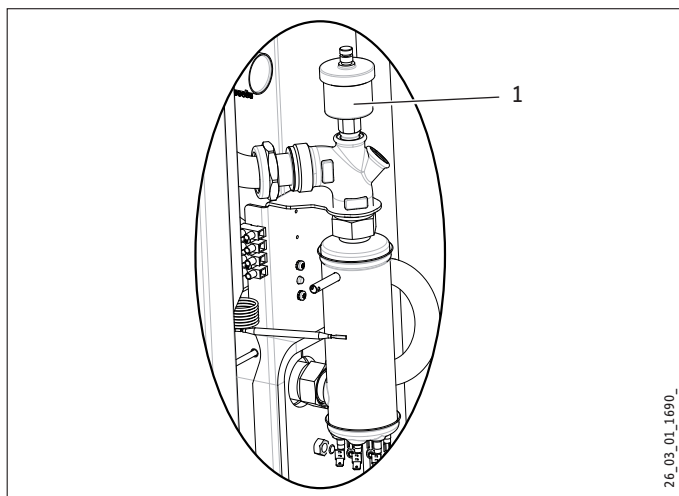
Note With a conductivity > 1000 µS/cm, desalination treatment is recommended in order to avoid corrosion.

Note If you treat the fill water with inhibitors or additives, the same limits apply as for desalination.

Note Suitable appliances for water softening, as well as for filling and flushing heating systems, can be obtained via trade suppliers.

Venting the heating system

- ▶ Vent the pipework carefully. For this, also activate the air vent valve integrated into the heating flow inside the heat pump.



1 Air vent valve

10.7 Minimum flow rate

The minimum flow rate and the defrost energy must always be assured (see chapter "Specification / Data table").

10.8 Setting the flow rate on the heating side

Material losses For operation without a buffer cylinder, it is essential that the electric emergency/booster heater (DHC) is connected.

The appliance is designed in such a way that no buffer cylinder is required to provide hydraulic separation of the flow in the heat pump circuit and the heating circuit in conjunction with area heating systems.

We recommend the use of a buffer cylinder for installations with several heating circuits.

You can set the flow rate in heat pump mode. In order to do this, firstly make the following settings:

- ▶ Temporarily remove the fuse from the electric emergency/booster heater to isolate the emergency/booster heater from the power supply. Alternatively, switch OFF the second heat generator.
- ▶ Operate the appliance in heating mode.

10.8.1 Minimum flow rate with individual room control via remote control in systems without buffer cylinder

For systems without a buffer cylinder, in the "SETTINGS / HEATING / STANDARD SETTING" menu, set the "BUFFER OPERATION" parameter to "OFF".

In such cases, one or more heating circuits in the heating system must be left open. Ensure the minimum flow rate (see "Specification / Data table") by means of the correspondingly opened heating circuits (see table "Design recommendation for underfloor heating system in the lead room").

Note The table applies if individual room control is installed.

Design recommendation for underfloor heating system inside the lead room:

	Minimum flow rate	Minimum water content of the buffer cylinder or the open circuits	Composite pipework 16 x 2 mm / clearance 10 cm		Composite pipework 20 x 2.25 mm / clearance 15 cm	
			Lead room floor area m ²	Number of circuits n x m	Lead room floor area m ²	Number of circuits n x m
WPL 33 HT	930 L/h	20 L	-	-	21	2x70
	Buffer cylinder always required	Recommended buffer cylinder volume, underfloor heating system	Recommended buffer cylinder volume, radiators		Activate the integral emergency/booster heater	
WPL 33 HT	no	200	400		yes	

INSTALLATION

Installation

- ▶ Install the open heating circuit(s) in the lead room (room where the external programming unit of the heat pump control unit is installed, such as in the living room). The individual room can then be controlled either with the external programming unit or indirectly by adjusting the heating curve or the room influence.
- ▶ Fully open the heating circuit(s) in the lead room.
- ▶ Close all other heating circuits.
- ▶ If an overflow valve has been installed in the heating system, fully close this overflow valve in order to determine the minimum flow rate.

In combination with an HM hydraulic module:

- ▶ Under menu item "COMMISSIONING / HEATING" set the parameter "HEATING CIRC PUMP RATE" (heating circuit pump rate) so that the minimum flow rate required for system operation is assured (see chapter "Specification / Data table").

If the appliance is operated on its own with a WPM:

- ▶ Set the heating circuit pump so that the minimum flow rate required to operate the system is safeguarded.

The current flow rate can be called up in the menu "INFO / HEAT PUMP INFO / PROCESS DATA" under "WP WATER FLOW RATE".

10.8.2 Minimum flow rate for systems with a buffer cylinder

When using a buffer cylinder, in menu "SETTINGS / HEATING / STANDARD SETTINGS", set parameter "BUFFER OPERATION" to "ON".

In combination with an HM hydraulic module:

- ▶ In menu "COMMISSIONING / HEATING", set parameter "HEATING CIRC PUMP RATE" so that the nominal flow rate required for system operation is assured (see chapter "Specification / Data table").

If the appliance is operated on its own with a WPM:

- ▶ Set the buffer charging pump so that the nominal flow rate required for system operation is assured.

The current flow rate can be called up in the menu "INFO / HEAT PUMP INFO / PROCESS DATA" under "WP WATER FLOW RATE".

10.9 Heat meter



Material losses

When installing a heat meter, note that most heat meters cause a substantial pressure drop, and therefore you should select a larger circulation pump.

10.10 High limit safety cut-out for underfloor heating systems



Material losses

In order to prevent excessively high flow temperatures in the underfloor heating system causing damage in the event of a fault, we always recommend using a high limit safety cut-out to limit the system temperature

10.11 Condensate drain

A hose is fitted at the factory to the defrost pan to act as condensate drain. The hose terminates near the knock-out on the bottom plate to the right of the refrigeration drive.



Material losses

Ensure the hose is not kinked. Route the hose with a slope.

Use a suitable condensate pump if there is insufficient fall. Observe the delivery head of the building.

Outdoor installation

- ▶ Route the hose downwards out of the appliance. The condensate hose can also be routed out of the appliance to the right through the knock-out in the side panel.
- ▶ Channel the condensate into a drain or allow it to drain into a coarse gravel soakaway. Ensure the pipework is free from the risk of frost.

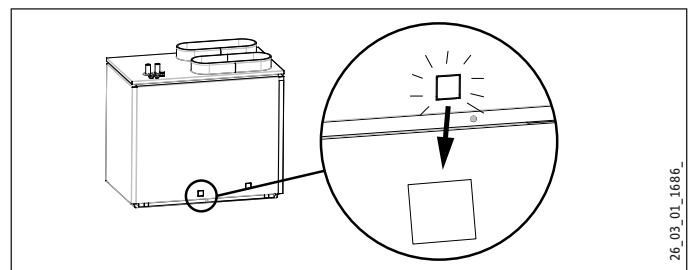
If required, you may install a ribbon heater on the condensate hose. We recommend that you install a ribbon heater if the routing of the condensate hose means it is at risk of frost or is fully exposed to the elements. The ribbon heater is switched on at a temperature $< 0^{\circ}\text{C}$.

- ▶ Observe the chapter "Electrical connection".

Indoor installation

- ▶ Route the condensate into a drain. For this, route the hose through an opening in the floor plate and frame, and route it out of the appliance to the right by removing the knock-out in the bottom of the side panel.

In the following diagram the position of the knock-out for the condensate hose can be seen.



10.12 Checking the condensate drain

After routing the condensate drain hose, check that the condensate can drain off correctly. For this, proceed as follows:

- ▶ Pour water onto the evaporator, which will then flow into the defrost pan. Observe the maximum condensate drain capacity of 6 l/min.
- ▶ Check whether the water is draining off through the condensate drain hose.

10.13 Second heat generator

For dual mode systems, always connect the heat pump into the return of the second heat generator (e.g. oil boiler).

INSTALLATION

Electrical connection

11. Electrical connection

11.1 General



WARNING Electrocutation

► Before working on the appliance, isolate it from the power supply at the control panel.

The connection must only be carried out by a qualified contractor and in accordance with these instructions.

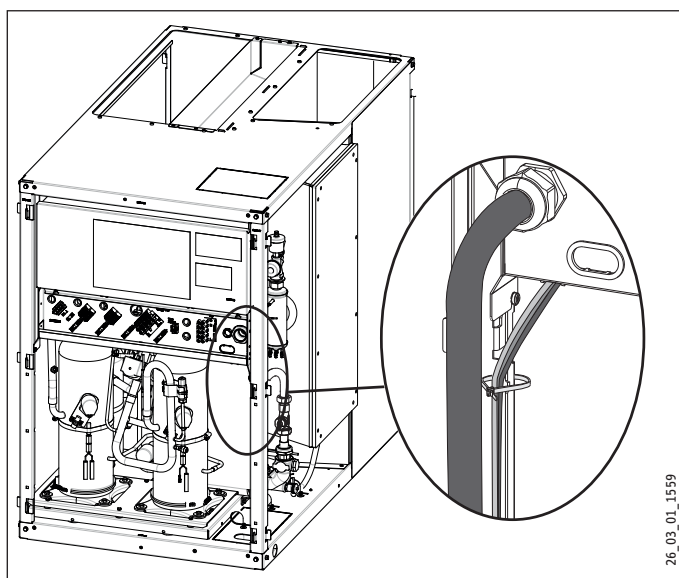
You must have permission to connect the appliance from the relevant power supply utility.



Note

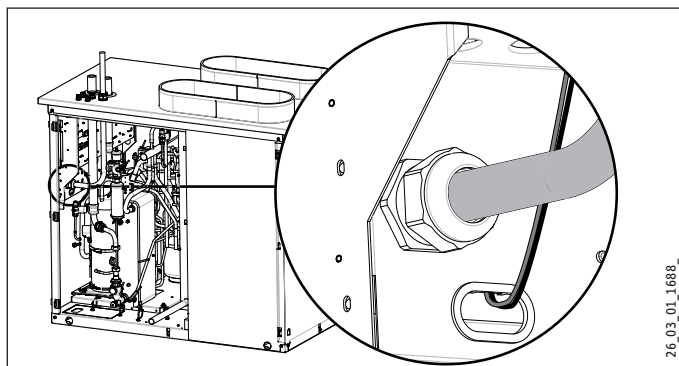
Observe the operating and installation instructions of the WPM heat pump manager.

11.2 Cable routing for outdoor installation



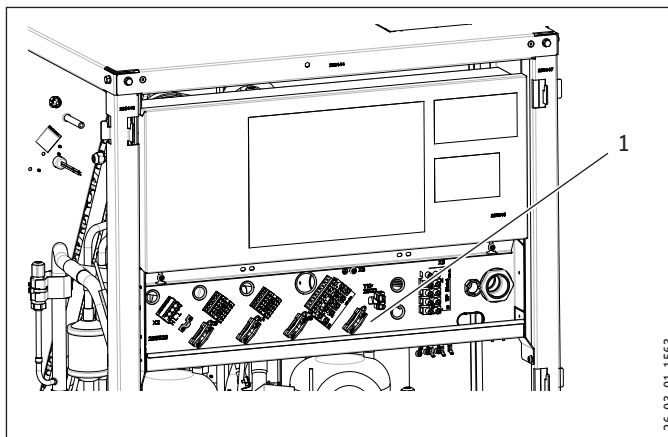
- Route the electric cables along the right-hand support.
- Secure the cables with cable ties using the holes provided in the support.

11.3 Cable routing for indoor installation



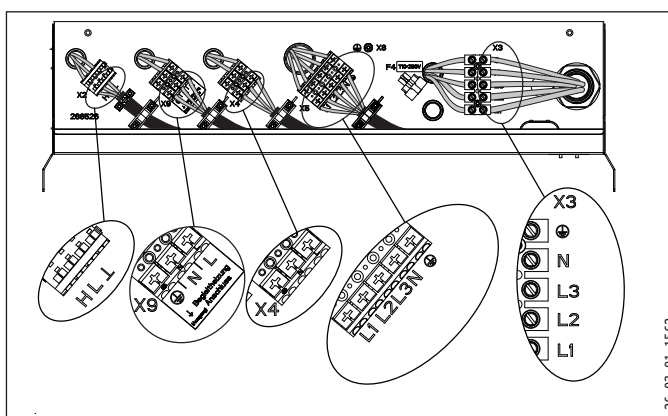
11.4 Making the electrical connections

- Observe chapter "Preparing the electrical installation".



1 Terminal area

- Connect the three power circuits (for the appliance, the electric emergency/booster heater and the control) in accordance with the following diagrams.



X3 Power supply (heat pump, compressor)

L1, L2, L3, N, PE

X5 DHC (electric emergency/booster heater)

L1, L2, L3, N, PE

Connected load	Terminal assignment			
2.6 kW	L1			N PE
3.0 kW		L2		N PE
3.2 kW			L3	N PE
5.6 kW	L1	L2		N PE
5.8 kW	L1		L3	N PE
6.2 kW		L2	L3	N PE
8.8 kW	L1	L2	L3	N PE

X4 Control cable terminal

L, N, PE

Control inputs:

DHC (electric emergency/booster heater)

X9 Terminal, ribbon heater

Control output: L, N, PE

X2 LV terminal

H Bus high

L BUS Low

Bus earth

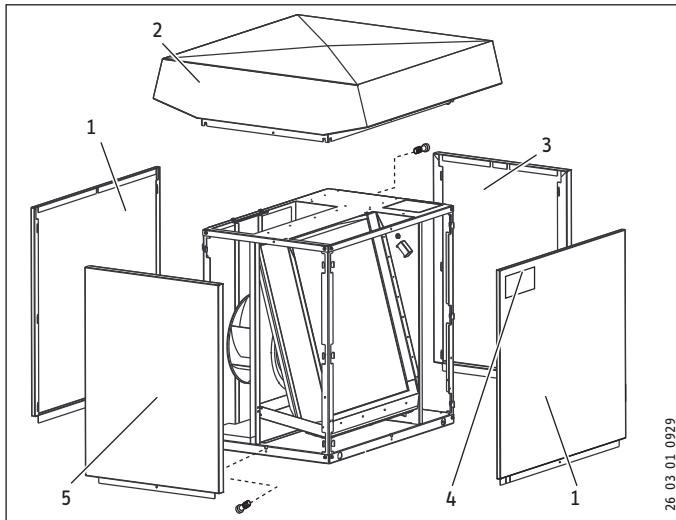
" + " BUS "+" (is not connected)

INSTALLATION

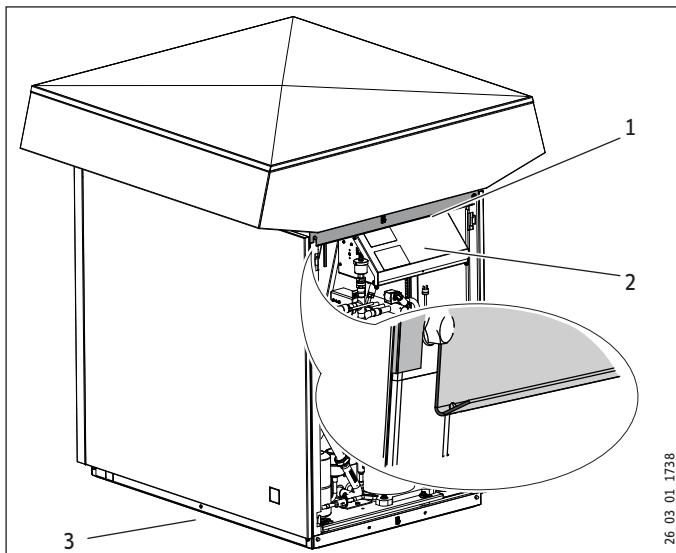
Fitting casing parts

12. Fitting casing parts

12.1 Fitting the casing sections for outdoor installation



- 1 Side panel
- 2 Cover
- 3 Front panel
- 4 Type plate
- 5 Back panel

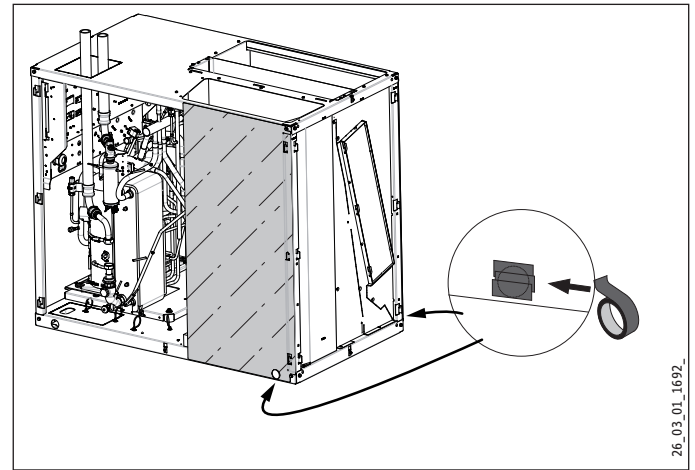


- 1 Bevelled edge
- 2 Control panel
- 3 Screw

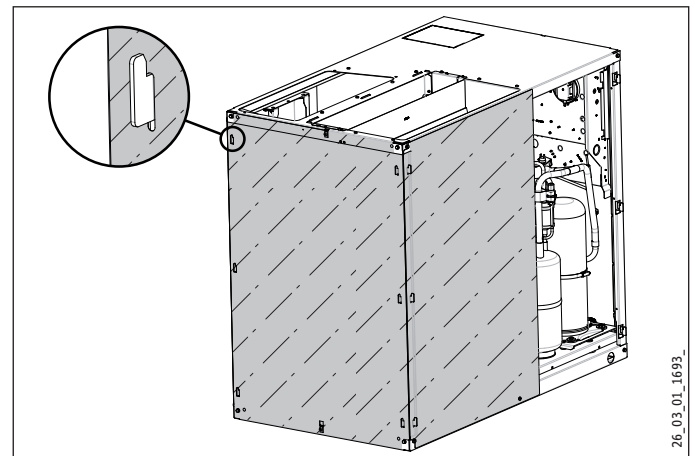
- ▶ Position the cover on the appliance. Ensure that the bevelled edge of the appliance cover is on the same side as the control panel.
- ▶ Secure the cover with two screws.
- ▶ Hook the side panels, front panel and back panel into the hooks on the standard appliance. Secure the casing parts at the bottom with one screw each.
- ▶ Affix the type plate supplied in a highly visible position on one of the appliance casing panels.

12.2 Fitting casing parts for indoor installation

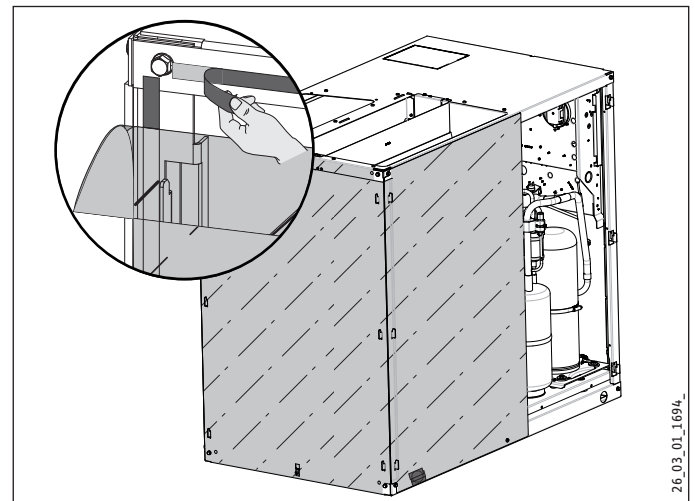
Before fitting the casing parts, seal the appliance by affixing plastic sheets. The plastic sheets are supplied with the casing parts.



- ▶ Use fabric tape to affix the sheets over the holes at the bottom of the frame on the r.h. and l.h. sides. The fabric tape is supplied with the "air hose" accessories.



- ▶ Hang the sheets with the pre-cut holes onto the hooks on the appliance.



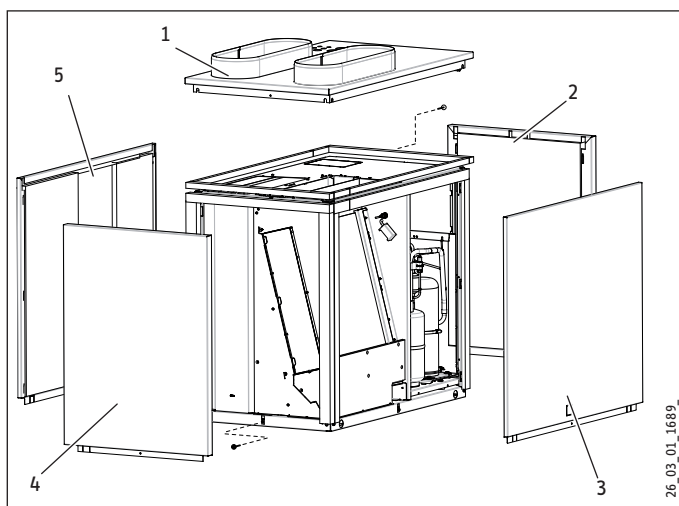
- ▶ Remove the backing from the adhesive tape strips on the frame and on the plastic sheets.

INSTALLATION

Routing the air hoses

- ▶ Secure the plastic sheets by pressing them onto the appliance. Seal the apertures around the hooks using adhesive strips with slits. The adhesive strips with slits are supplied with the casing parts.

Fitting casing parts



- 1 Cover
- 2 Front panel
- 3 L.h. side panel
- 4 Back panel
- 5 R.h. side panel, with cut-out in the insulation

- ▶ Place the cover on the appliance and secure with two screws.
- ▶ Hang the side panels, front panel and back panel into the hooks on the standard appliance. Secure each of these with one screw.
- ▶ Affix the type plate supplied to top front r.h. or l.h. side of the side panel where it will be clearly visible.

13. Routing the air hoses



Note

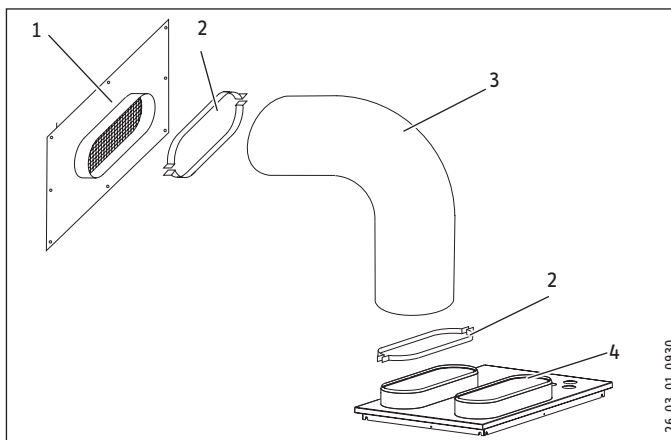
In the case of heat pumps installed indoors, if a blower door test to EN 13829 is to be carried out, apply Procedure B (checking the building envelope). This involves closing or sealing off all apertures which are purposely provided in the building envelope before the air hoses are installed.

- ▶ Seal off the wall outlets for the blower door test.

The air hose can be extended by turning the hose spirals into each other. There must be an overlap of approx. 30 cm. The total length of hoses on the air intake and discharge sides must not exceed 8 m.

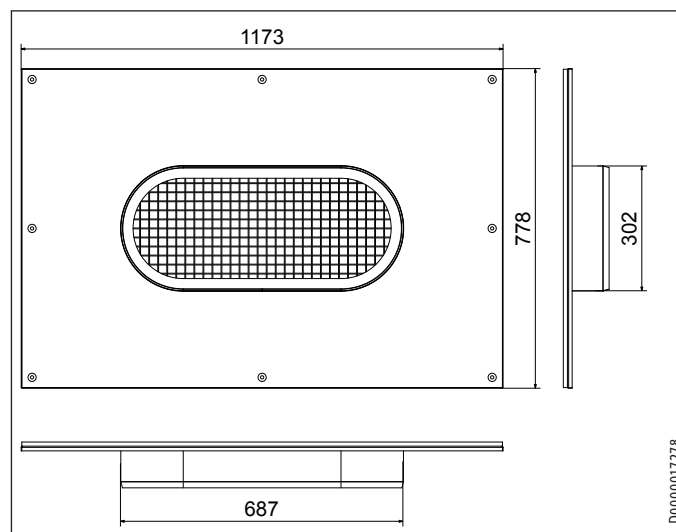
- ▶ Never incorporate more than four 90° bends. The radius of the bends must be at least 600 mm, relative to the centre of the hose.
- ▶ Cut to size using a sharp knife. The wire spirals can be cut using wire cutters.
- ▶ Secure the air hose at intervals of approx. every 1 m to prevent it from sagging.

- ▶ Manipulate the ends of the air hoses to fit the oval shape of the connectors on the cover and the hose connection panels or wall outlets.



- 1 Hose connection panel
- 2 Hose clip (oval)
- 3 Air hose
- 4 Cover

Hose connection panel dimensions



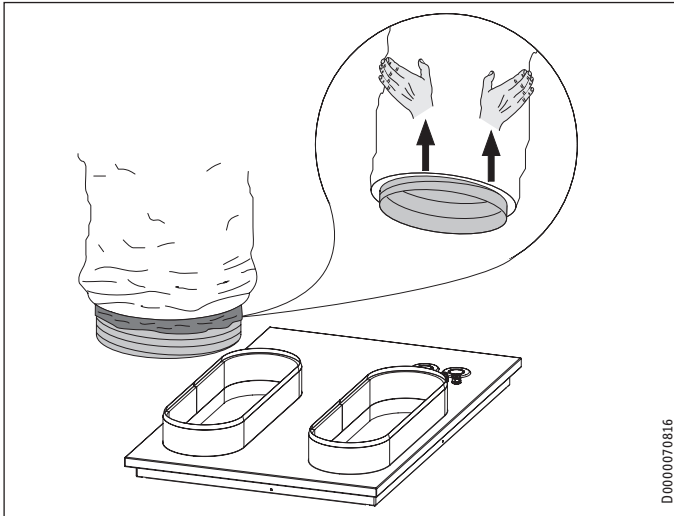
Material losses

Always cover the external apertures with wire grilles. Secure the hoses against slippage.

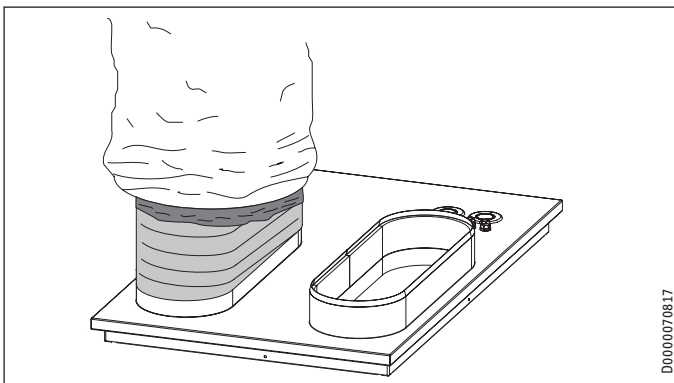
INSTALLATION

Routing the air hoses

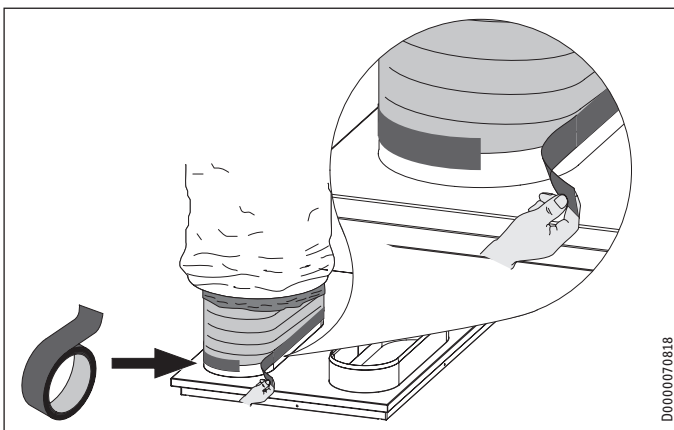
13.1 Fitting the air hoses



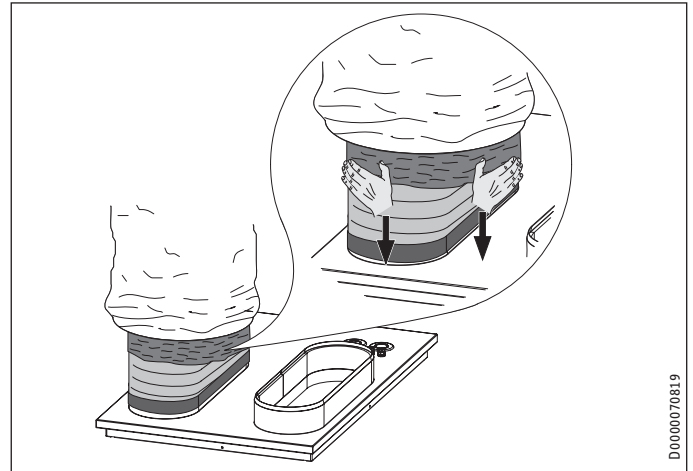
► Firstly, push the outer hose slightly upwards.



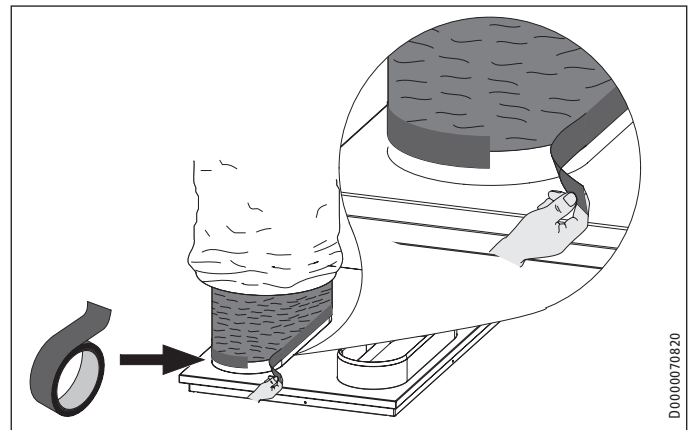
► Push the inner hose halfway down the connector.



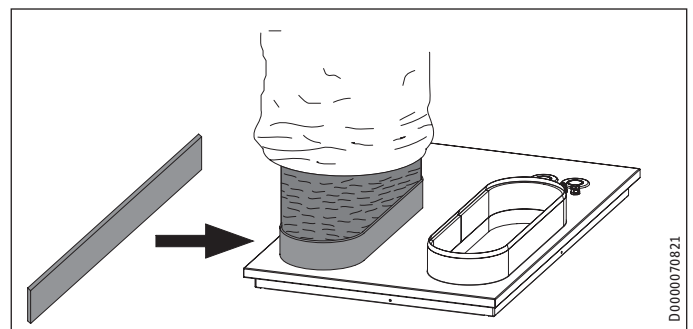
► Seal the inner hose by affixing it to the connector using the fabric tape provided.



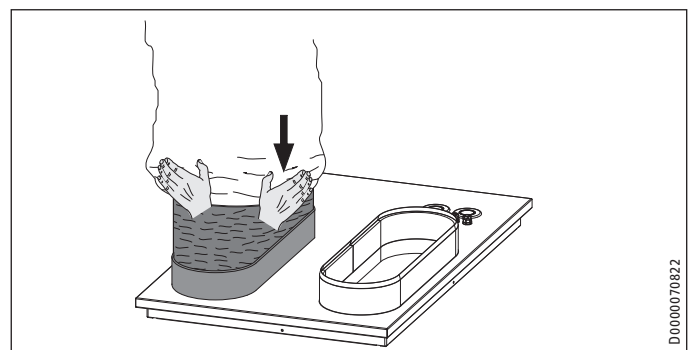
► With the sound-optimised hoses (LSWP 560-4 S), pull the sheet over the connector.



► With the sound-optimised hoses (LSWP 560-4 S), seal the sheet to the connector using the fabric tape provided.



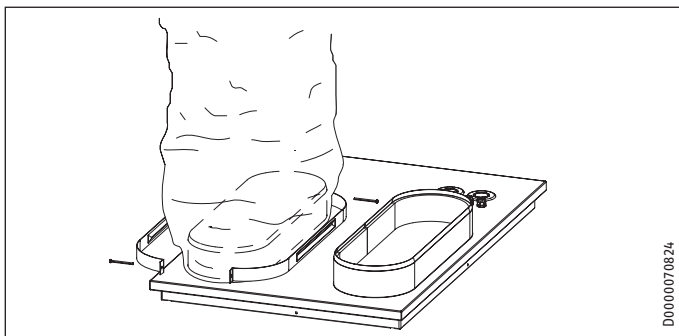
► Place the sealing strip provided around the connector.



INSTALLATION

Commissioning

- ▶ Pull the outer hose over the connector.



- ▶ Secure the hose using the oval hose clip provided and seal it.

13.2 Insulating the wall outlets

Prevent cold bridges forming between the wall outlets to be installed on site and the brickwork. To prevent condensation forming in the brickwork, insert suitable insulation between the wall outlets and the brickwork.

As an alternative, you can also use the insulated wall outlet AWG 560. Wall outlet AWG 560 is available as an accessory.

14. Commissioning

A WPM heat pump manager is required to operate the appliance. All necessary adjustments prior to and during operation are made on this device.

Only qualified contractors may make the settings in the heat pump manager commissioning report, commission the appliance and instruct the owner in its use.

Commissioning is to be carried out in accordance with these installation instructions and the operating and installation instructions of the heat pump manager. Our customer support can assist with commissioning, which is a chargeable service.

Where this appliance is intended for commercial use, the regulations of the relevant Health & Safety at Work Act may apply during commissioning. For further details, check your local authorising body.

14.1 Checks before commissioning

Before commissioning, check the following points:

14.1.1 Heating system

- Have you filled the heating system to the correct pressure, and opened the quick-action air vent valve?

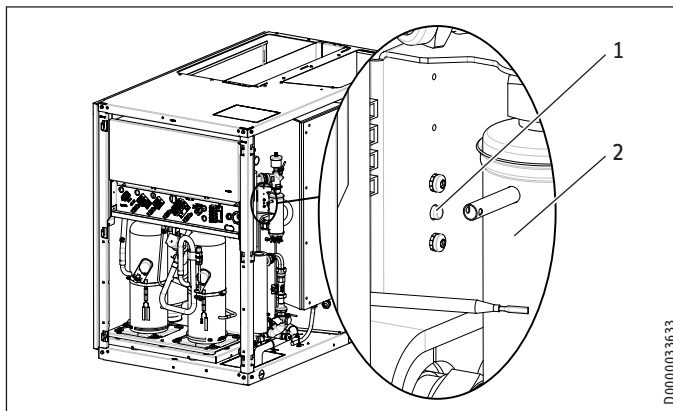
14.1.2 Temperature sensors

- Have you correctly placed and connected the outside temperature sensor and the external return temperature sensor (in conjunction with a buffer cylinder)?

14.1.3 High limit safety cut-out

At ambient temperatures below $-15\text{ }^{\circ}\text{C}$ it is possible that the high limit safety cut-out of the electric emergency/booster heater may trip.

- ▶ Check whether the high limit safety cut-out has tripped.



- 1 High limit safety cut-out reset button
- 2 Electric emergency/booster heater

- ▶ Reset the high limit safety cut-out by pressing the reset button.

14.1.4 Power supply

- Have you correctly connected the power supply?

14.2 Settings

14.2.1 Heating curve adjustment

The efficiency of a heat pump decreases as the flow temperature rises. The heating curve should therefore be adjusted with care. Heating curves that are set too high cause the zone valves or thermostatic valves to close, which may lead to the minimum flow rate required for the heating circuit not being achieved.

- ▶ Observe the WPM operating and installation instructions.

The following steps will help you to adjust the heating curve correctly:

- Fully open thermostatic or zone valves in a lead room (e.g. living room and bathroom). We do not recommend installing thermostatic or zone valves in the lead room. Control the temperature for these rooms via remote control.
- At different outside temperatures (e.g. $-10\text{ }^{\circ}\text{C}$ and $+10\text{ }^{\circ}\text{C}$), adjust the heating curve so that the required temperature is set in the lead room.

Standard values to begin with:

Parameters	Underfloor heating system	Radiator heating system
Heating curve	0.4	0.8
Control response time	10	10
Comfort temperature	$20\text{ }^{\circ}\text{C}$	$20\text{ }^{\circ}\text{C}$

If the room temperature is not high enough in spring and autumn (approx. $10\text{ }^{\circ}\text{C}$ outside temperature), raise the "COMFORT TEMPERATURE" parameter in the heat pump manager menu under "SETTINGS / HEATING / HEATING CIRCUIT".



Note

If no remote control is installed, raising the "COMFORT TEMPERATURE" parameter will lead to a parallel offset of the heating curve.

INSTALLATION

Appliance shutdown

Increase the "HEATING CURVE" parameter, if the room temperature is not high enough when outside temperatures are low.

If the "HEATING CURVE" parameter has been raised, in the case of high outside temperatures, adjust the zone valve or thermostatic valve in the lead room to the required temperature.



Note

Never reduce the temperature in the entire building by closing all zone or thermostatic valves, instead use the setback programs.

When everything has been implemented correctly, the system can be heated to its maximum operating temperature and vented once again.



Material losses

For underfloor heating systems, observe the maximum permissible system temperature.

14.2.2 Other settings

- ▶ For operation with and without a buffer cylinder, see chapter "Operation / Menu structure / Menu SETTINGS / STANDARD SETTING / BUFFER OPERATION" in the WPM operating and installation instructions.

Using the heat-up program

If you use the heat-up program, make the following settings on the WPM:

- ▶ Initially set the "DUAL MODE TEMP HZG" parameter to 30 °C.
- ▶ Then set the "LOWER APP LIMIT HZG" parameter to 30 °C.



Note

After completing the heat-up process, reset the "DUAL MODE TEMP HZG" and "LOWER APP LIMIT HZG" parameters to their respective standard values or to the respective system values.

15. Appliance shutdown



Material losses

Never interrupt the heat pump power supply, even outside of the heating season. Otherwise, system frost protection is not guaranteed. The heat pump manager automatically switches the heat pump to summer or winter mode.

15.1 Standby

To shut the system down, simply set the heat pump manager to "Standby mode". That way the safety functions that protect the system and frost protection remain enabled.

15.2 Power interruption

If the system is to be isolated from the power supply permanently, please observe the following:



Material losses

If the heat pump is completely switched off and there is a risk of frost, drain the system on the water side.

16. Troubleshooting



WARNING Electrocutation

- ▶ Before working on the appliance, isolate it from the power supply at the control panel. Following isolation from the mains supply, parts of the appliance may remain live for up to 2 minutes since the capacitors still have to discharge into the inverter.



Note

Please observe the heat pump manager operating and installation instructions.



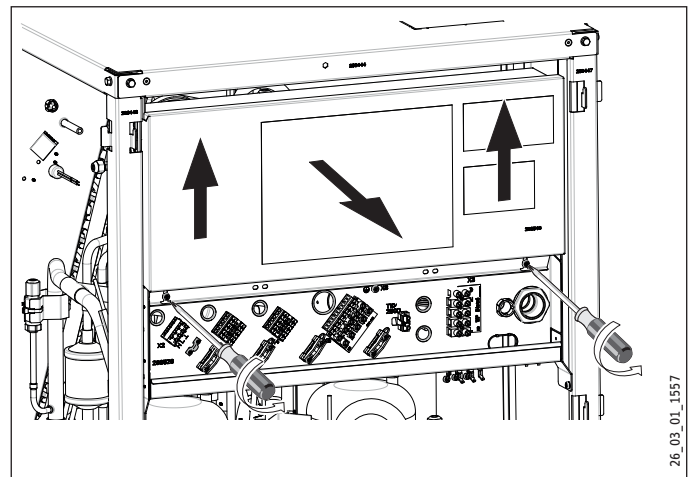
Note

The following inspection instructions may only be carried out by a qualified contractor.

If you are unable to identify this fault with the heat pump manager, check the elements on the IWS HT.

open the control panel by proceeding as follows:

- ▶ Undo the screws,
- ▶ lift the cover,
- ▶ and remove the cover towards the front.



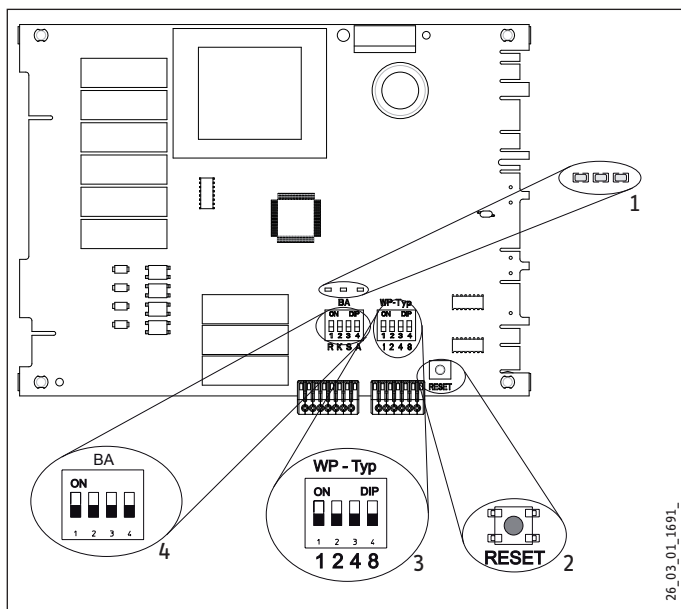
- ▶ Read the following sections on troubleshooting and follow the instructions.

INSTALLATION

Troubleshooting

16.1 Elements on the IWS HT

The IWS HT (integral heat pump controller) helps you to troubleshoot if the fault cannot be identified using the WPM.



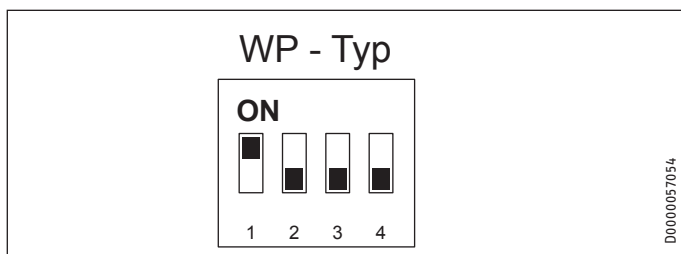
- 1 LEDs
- 2 Reset button
- 3 DIP switch (WP-Typ)
- 4 DIP switch (BA)

DIP switch (WP-Typ)

With the DIP switch (WP-Typ), you can set the IWS to suit the relevant heat pump type.

Factory setting:

Dual compressor mode with electric emergency/booster heater (DHC)



- ▶ Check whether the DIP switch is set correctly.

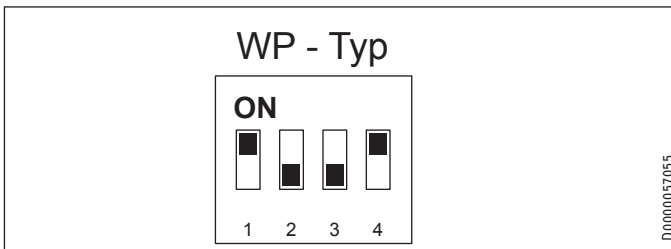
Dual compressor mode with a second external heat generator



Material losses

The electric emergency/booster heater must not be connected if a second heat generator is also used.

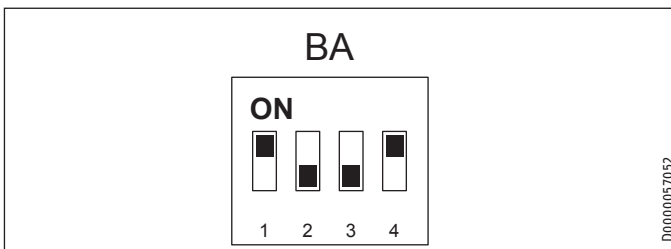
If the appliance is operated in dual mode with a second heat generator, set the DIP switch as follows.



- ▶ Check whether the DIP switch is set correctly.

DIP switch (BA)

- ▶ Check whether the DIP switch (BA) is set correctly.



16.1.1 LEDs

Red LED

Fault	Cause	Remedy
Appliance stops and restarts after the idle period has expired. Red LED flashes.	Heat pump fault.	Check the fault message in the WPM. Find the solution in the WPM instructions (fault list). Perform a reset of the IWS (see WPM instructions).
Appliance stops permanently. Red LED illuminates.	Five faults within two hours compressor runtime.	Check the fault message in the WPM. Find the solution in the WPM instructions (fault list). Perform a reset of the IWS (see WPM instructions).

Green LED centre

The LED flashes during initialisation, and illuminates constantly after the bus address has been assigned successfully. Only then has communication with the WPM been established.

16.1.2 Reset button

If the IWS was incorrectly initialised, the settings can be reset with this button. For this, also observe chapter "Reinitialising the IWS" in the heat pump manager operating and installation instructions.

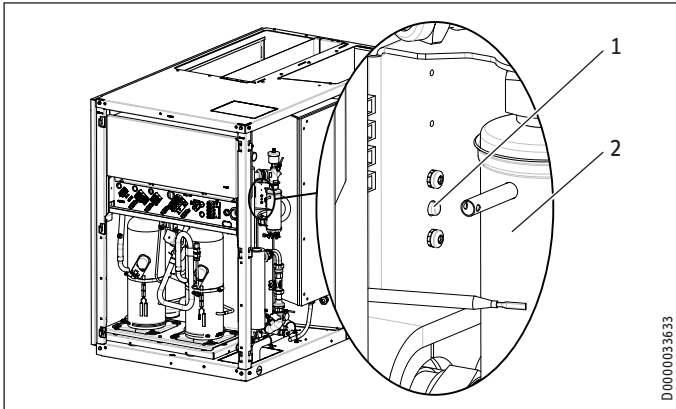
16.2 Resetting the high limit safety cut-out

The electric emergency/booster heater (DHC) stops if the heating water temperature exceeds 85 °C on account of a low flow rate.

- ▶ Remove the cause of the fault.

INSTALLATION

Maintenance



- 1 High limit safety cut-out reset button
- 2 Electric emergency/booster heater

- ▶ Reset the high limit safety cut-out by pressing the reset button.
- ▶ Check whether the heating water is being circulated at a sufficiently high flow rate.

16.3 Fan noise

The heat pump draws heat from the outdoor air. This causes the outdoor air to cool down. At outside temperatures of 0 °C to 8 °C, the air may be cooled to below freezing point. If under these conditions precipitation occurs in the form of rain or fog, ice may form on the air grille, the fan blades or the airways. If the fan comes into contact with this ice, this creates noise.

How to remedy rhythmic scratching or grinding noises:

- ▶ Check whether the condensate drain is clear of obstructions.
- ▶ Check whether the design output and temperature are set correctly. Ice formation is particularly pronounced when a high heating output is called for at moderate outside temperatures.
- ▶ Carry out a manual defrost, as many times as necessary, until the fan runs freely again. Observe the information in the heat pump manager instructions and the “START DEFROST” parameter in the “COMMISSIONING / COMPRESSOR” menu.
- ▶ At outside temperatures above +1 °C, shut down the appliance or switch it over to emergency mode for approx. 1 hour. After this, the ice should have melted.
- ▶ Check that the appliance is installed in line with installation conditions.
- ▶ If the noises occur frequently, notify customer support.

17. Maintenance

We recommend a regular inspection (to establish the current condition of the system), and maintenance if required (to return the system to its original condition).

If heat meters are installed, their sieves should be cleaned regularly.

Regularly remove all leaves and accumulated dirt from the evaporator fins, which can be accessed by removing the side panel on the condenser side.



Note

Keep the air discharge and intake apertures free from snow and ice.

17.1 Clean condensate pan and drain

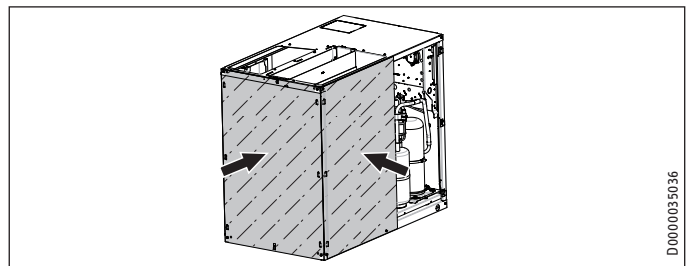


WARNING Risk of electrocution!

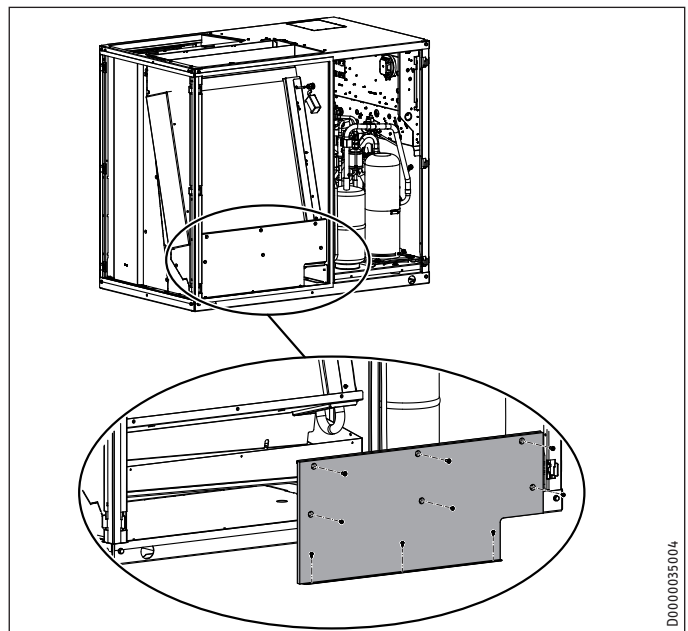
Before removing the casing parts, disconnect all poles of the appliance from the power supply.

Environmental influences can lead to the condensate pan and drain becoming contaminated or blocked. To clean, proceed as follows:

- ▶ Remove the casing parts (see chapter “Fitting casing parts”).



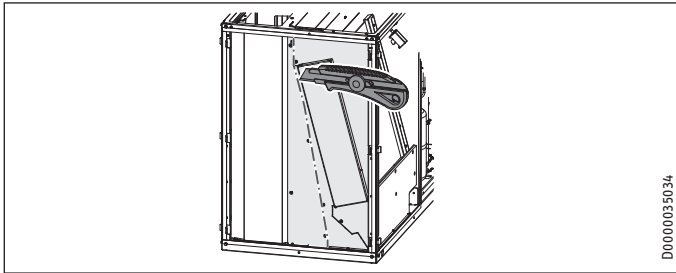
- ▶ When installed indoors, also carefully remove the foil from the appliance frame.



- ▶ Remove the lower cover panel.

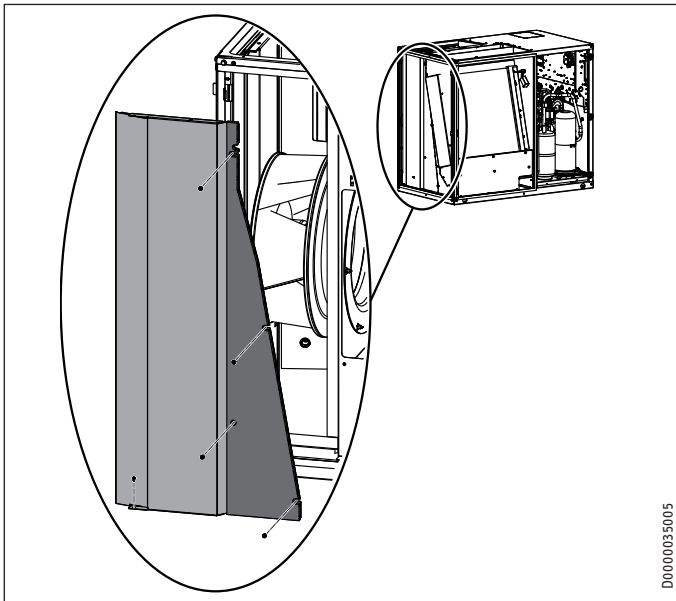
INSTALLATION

Maintenance



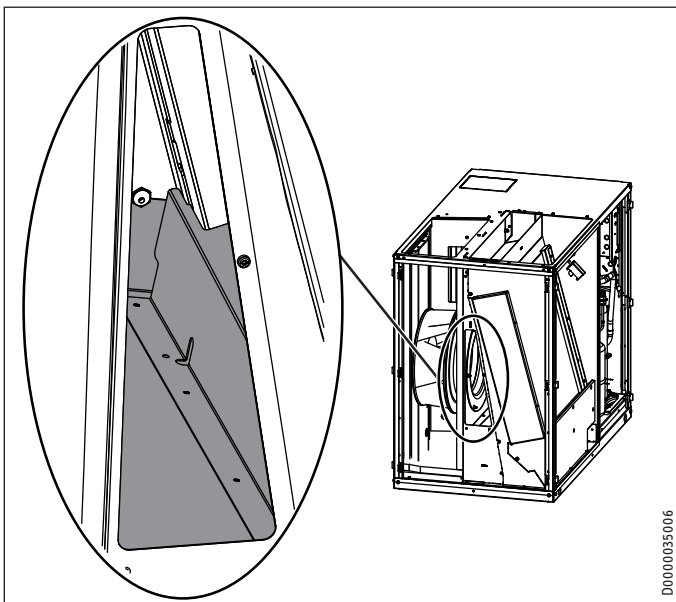
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- ▶ Cut a recess into the thermal insulation around the perforation.



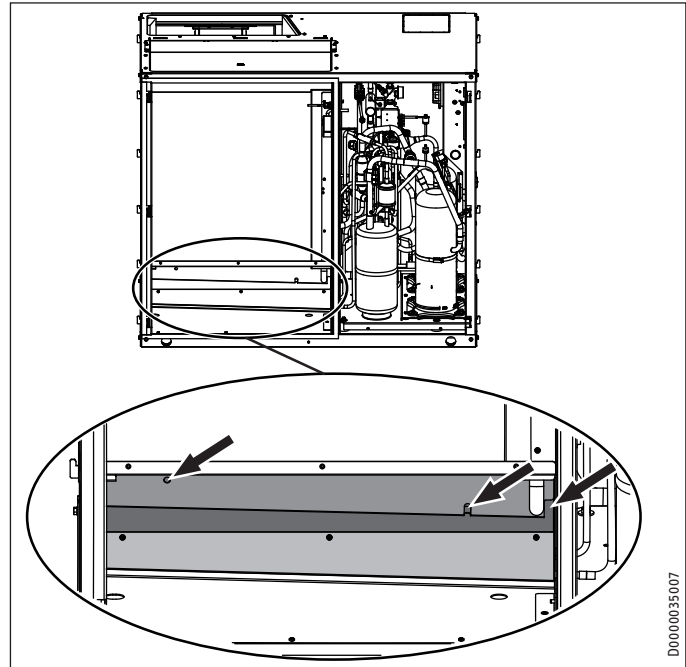
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- ▶ Then remove the side cover panel.



D0000035006

- ▶ Clean out the rear section of the condensate pan.



D0000035007

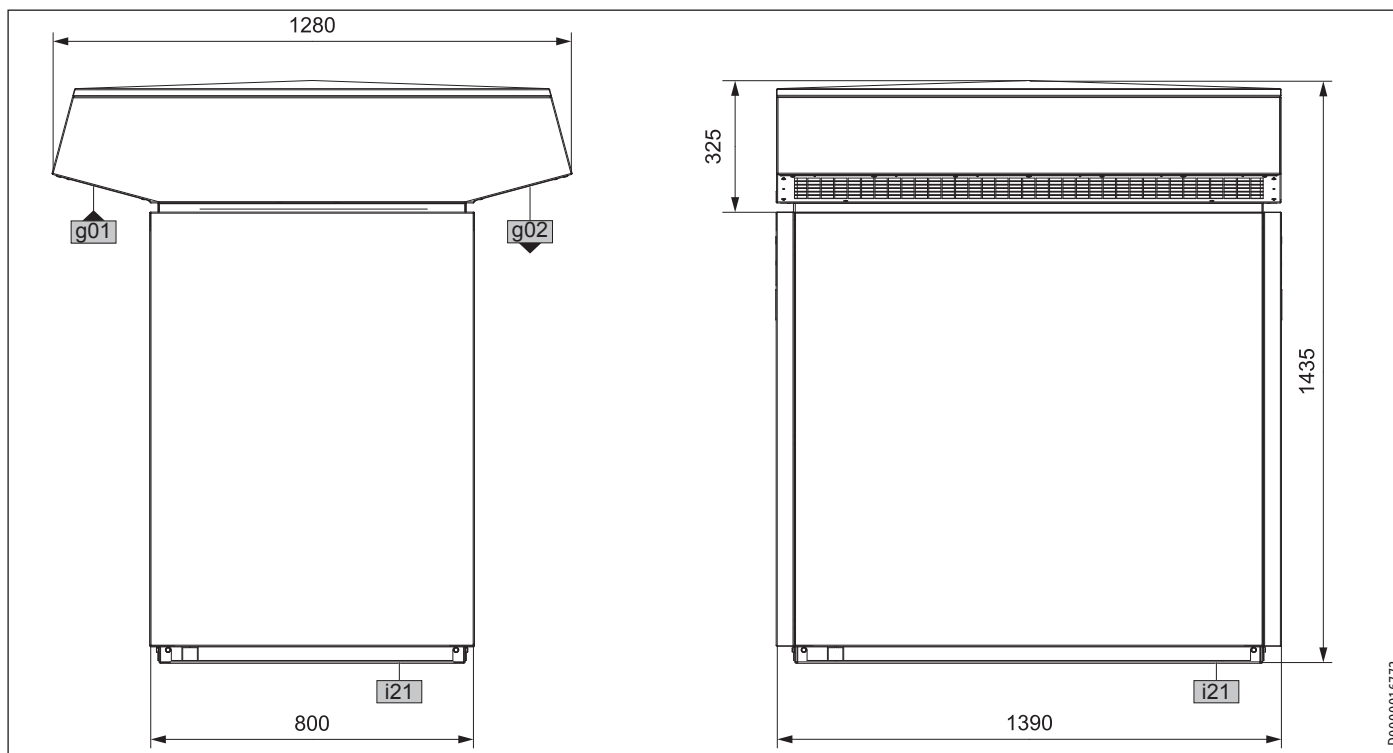
- ▶ Clean out the front section of the condensate pan.
- ▶ Clear all blockages from openings in the separating plate of the condensate pan.
- ▶ Check the hose and the condensate drain pipe, and remove all contaminants and blockages.
- ▶ When installed indoors, carefully re-affix the foil to the appliance frame.
- ▶ Refit the casing parts on the appliance (see chapter “Fitting casing parts”).

INSTALLATION Specification

18. Specification

18.1 Dimensions and connections

18.1.1 Outdoor installation

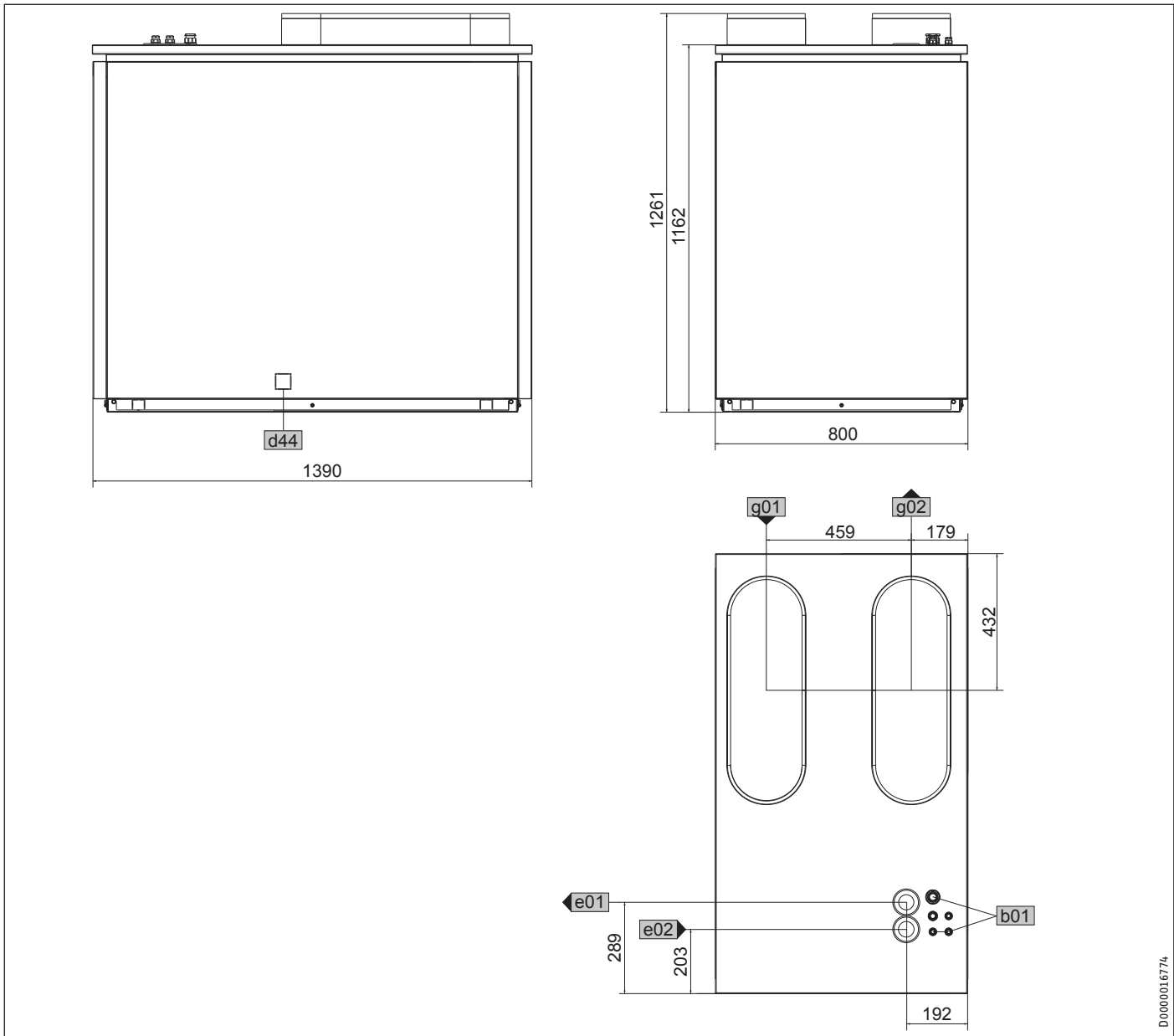


WPL 33 HT

- g01 Air intake
- g02 Air discharge
- i21 Entry supply line

INSTALLATION Specification

18.1.2 Indoor installation



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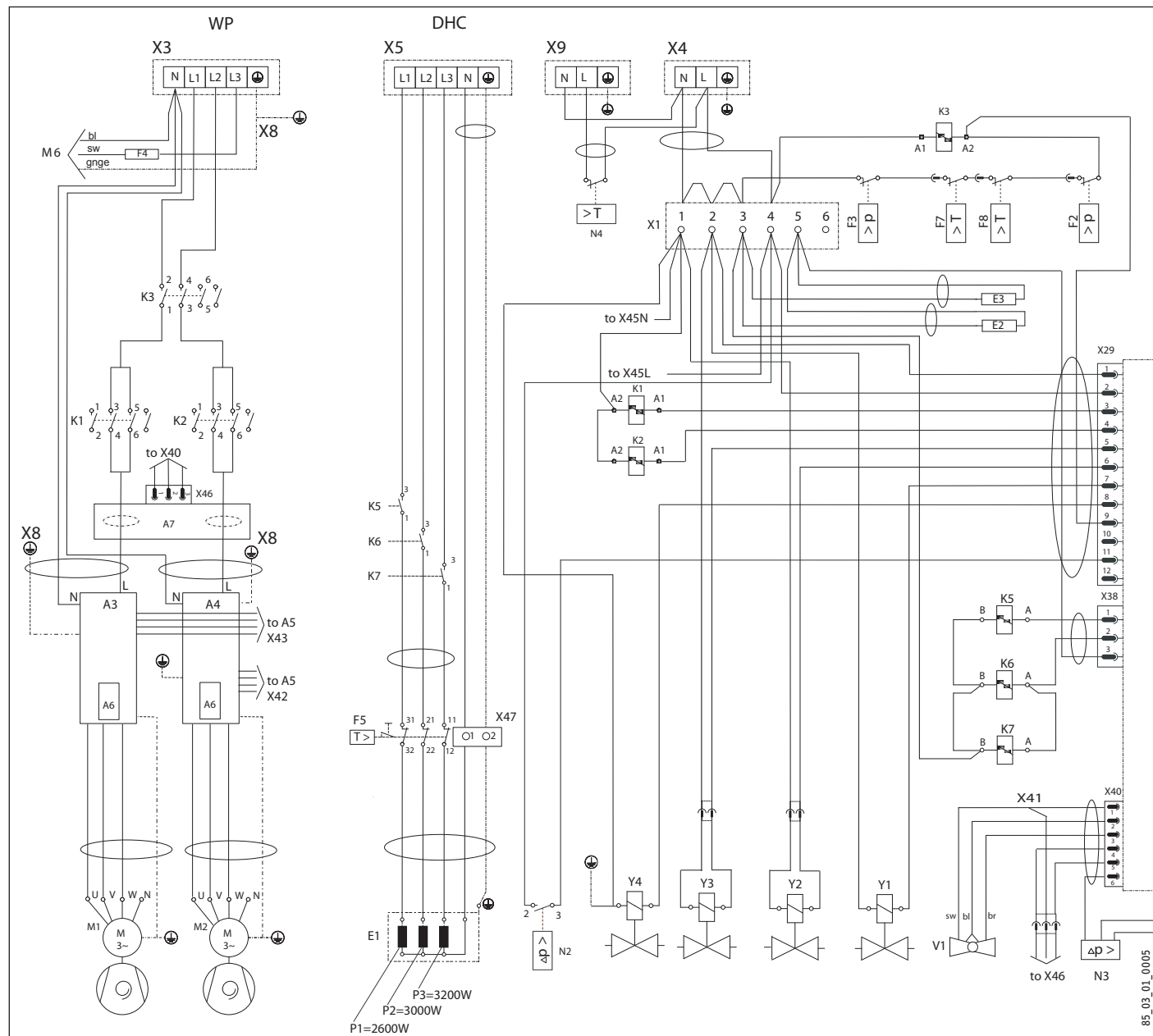
			WPL 33 HT
b01	Entry electrical cables		
d44	Condensate drain outlet		
e01	Heating flow	Male thread	G 1 1/4
e02	Heating return	Male thread	G 1 1/4
g01	Air intake	Nominal diameter	DN 560
g02	Air discharge	Nominal diameter	DN 560

INSTALLATION

Specification

INSTALLATION Specification

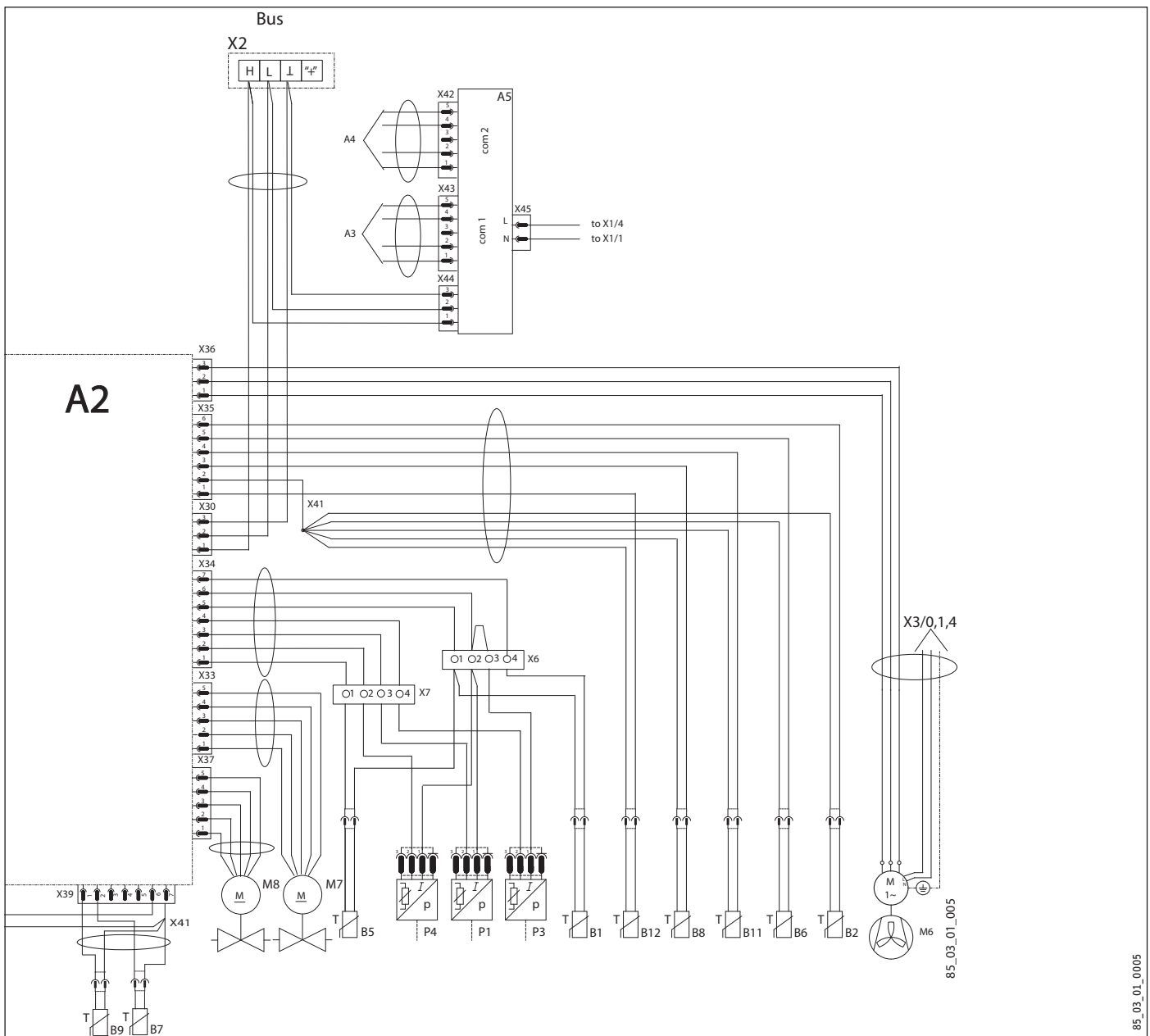
18.2 Wiring diagram



- A2 Integral heat pump control unit (IWS)
- A3 Inverter, compressor L
- A4 Inverter, compressor H
- A5 CAN serial converter (CSW)
- A6 SMPS assembly
- A7 Current measuring board
- B1 Heat pump flow temperature sensor - KTY
- B2 Heat pump return temperature sensor - KTY
- B5 Hot gas temperature sensor - PT1000
- B6 Intake air temperature sensor - PT1000
- B7 Condenser outlet temperature sensor - KTY
- B8 Evaporator discharge temperature sensor - PT1000
- B9 Frost protection temperature sensor - KTY
- B11 Low pressure compressor inlet temperature sensor - PT1000
- B12 High pressure compressor inlet temperature sensor - PT1000
- E1 DHC cartridge
- E2 Oil sump heater L

- E3 Oil sump heater H
- F2 High pressure switch 30 bar
- F3 High pressure limiter 40 bar
- F4 Fuse 10 A (fan)
- F5 High limit safety cut-out (DHC)
- F6 Compressor hot gas Klixon H
- F7 Compressor winding Klixon H
- F8 Compressor winding Klixon L
- F9 Compressor hot gas Klixon L
- K1 Compressor start contactor L
- K2 Compressor start contactor H
- K3 Safety contactor
- K5 DHC relay
- K6 DHC relay
- K7 DHC relay
- M1 Compressor motor L
- M2 Compressor motor H
- M6 Fan motor
- M7 Electrical expansion valve stepper motor

INSTALLATION Specification



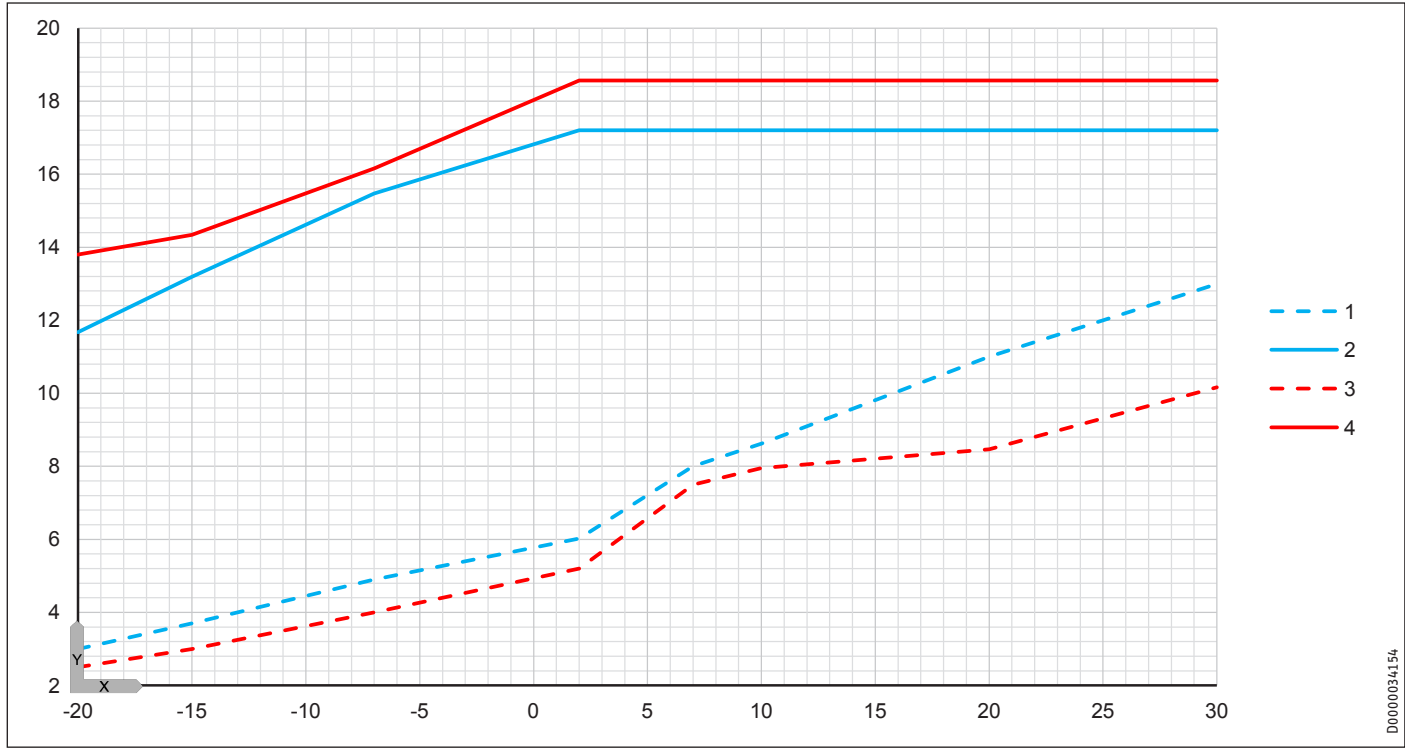
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- | | | | |
|-----|---|-----|--|
| M8 | Electrical injection valve stepper motor | X34 | IWS plug 7-pin - sensors |
| N2 | Differential pressure switch (defrost) | X35 | IWS plug 6-pin - temperature sensors |
| N3 | Differential pressure transmitter (defrost) | X36 | IWS plug 3-pin - fan |
| P1 | High pressure sensor (42 bar) | X37 | IWS plug 5-pin - elec. injection valve |
| P3 | Low pressure sensor (16 bar) | X38 | IWS plug 3-pin - oil sump |
| P4 | Mean pressure sensor (30 bar) | X39 | IWS plug 7-pin - temperature |
| V1 | Flow sensor | X40 | IWS plug 6-pin HT - special |
| X1 | Internal distribution terminal | X41 | Connecting board |
| X2 | External bus terminal | X42 | CSW plug 5-pin - com2 |
| X3 | External mains terminal | X43 | CSW plug 5-pin - com1 |
| X4 | External control unit terminal | X44 | CSW plug 3-pin - CAN |
| X5 | External DHC terminal | X45 | CSW plug 2-pin - supply |
| X6 | 4-pole terminal | X46 | Plug 3-pin - current measuring board |
| X7 | 4-pole terminal | X47 | DHC connection plug |
| X8 | Earth stud | Y1 | Diverter valve, defrost |
| X9 | Terminal, ribbon heater | Y2 | Oil compensation valve |
| X29 | IWS plug 12-pin - control unit | Y3 | Pressure compensation valve |
| X30 | IWS plug 3-pin - BUS | Y4 | HP compressor shut-off valve |
| X33 | IWS plug 5-pin - electrical expansion valve | | |

INSTALLATION Specification

18.3 Output diagrams

Heating output



- X Outside temperature [°C]
Y Heating output [kW]
1 min. W35
2 max. W35
3 min. W55
4 max. W55

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INSTALLATION

Specification

18.4 Data table

Output details apply to new appliances with clean heat exchangers.

The power consumption figures for the integral auxiliary drives are maximum values and may vary subject to operating point.

The power consumption of the integral auxiliary drives is included in the output details of the heat pump (to EN 14511).

		WPL 33 HT
		229938
Heating output		
Heating output at A2/W35 (min./max.)	kW	6.02/17.20
Heating output at A-7/W35 (min./max.)	kW	4.90/15.47
Heating output at A10/W35 (EN 14511)	kW	6.02
Heating output at A7/W35 (EN 14511)	kW	5.61
Heating output at A2/W35 (EN 14511)	kW	7.45
Heating output at A-7/W35 (EN 14511)	kW	12.38
Heating output at A-15/W35 (EN 14511)	kW	12.18
Heating output at A10/W55 (EN 14511)	kW	6.05
Heating output at A7/W55 (EN 14511)	kW	5.06
Heating output at A2/W55 (EN 14511)	kW	7.38
Heating output at A-7/W55 (EN 14511)	kW	12.9
Heating output at A-15/W55 (EN 14511)	kW	14.03
Heating output at A-15/W75 (EN 14511)	kW	14.69
Power consumption		
Power consumption, emergency/booster heater	kW	8.8
Max. power consumption, fan heating	kW	0.26
Power consumption at A10/W35 (EN 14511)	kW	1.24
Power consumption at A7/W35 (EN 14511)	kW	1.27
Power consumption at A2/W35 (EN 14511)	kW	2.15
Power consumption at A-7/W35 (EN 14511)	kW	5.01
Power consumption at A-15/W35 (EN 14511)	kW	5.48
Power consumption at A10/W55 (EN 14511)	kW	2.27
Power consumption at A7/W55 (EN 14511)	kW	2.02
Power consumption at A2/W55 (EN 14511)	kW	3.44
Power consumption at A-7/W55 (EN 14511)	kW	6.37
Power consumption at A-15/W55 (EN 14511)	kW	8.21
Power consumption at A-15/W75 (EN 14511)	kW	9.83
Coefficient of performance		
COP at A10/W35 (EN 14511)		4.85
COP at A7/W35 (EN 14511)		4.41
COP at A2/W35 (EN 14511)		3.47
COP at A-7/W35 (EN 14511)		2.47
COP at A-15/W35 (EN 14511)		2.22
COP at A10/W55 (EN 14511)		2.66
COP at A7/W55 (EN 14511)		2.50
COP at A2/W55 (EN 14511)		2.30
COP at A-7/W55 (EN 14511)		2.03
COP at A-15/W55 (EN 14511)		1.71
COP at A-15/W75 (EN 14511)		1.49
Sound emissions		
Sound power level (EN 12102)	dB(A)	58
Max. sound power level for outdoor installation, silent mode	dB(A)	57
Sound power level for outdoor installation (EN 12102)	dB(A)	58
Sound power level for indoor installation, air intake/discharge (EN 12102)	dB(A)	55
Sound power level for indoor installation (EN 12102)	dB(A)	53
Application limits		
Min. application limit on the heating side	°C	15
Max. application limit on the heating side	°C	75
Min. application limit, heat source	°C	-20
Max. application limit, heat source	°C	30
Energy data		
Energy efficiency class		A+/A+

INSTALLATION

Specification

		WPL 33 HT
Electrical data		
Compressor fuse/MCB	A	3 x C32
Control unit fuse/MCB	A	1 x B 16
MCB/fuse protection, emergency/booster heater	A	3 x B 16
Frequency	Hz	50
Compressor phases		3/N/PE
Control unit phases		1/N/PE
Emergency/booster heater phases		3/N/PE
Rated voltage, compressor	V	400
Rated voltage, control unit	V	230
Rated voltage, emergency/booster heater	V	400
Starting current (with/without starting current limiter)	A	18/-
Max. operating current	A	30
Versions		
Refrigerant		R407 C
Refrigerant charge	kg	5.8
CO ₂ equivalent (CO ₂ e)	t	10.29
Global warming potential of the refrigerant (GWP100)		1774
Defrost type		Circuit reversal
IP rating		Miscellaneous
Frost protection		X
Dimensions		
Height	mm	1116
Width	mm	784
Depth	mm	1332
Height (outdoor installation)	mm	1434
Width (outdoor installation)	mm	1280
Depth (outdoor installation)	mm	1390
Height (indoor installation)	mm	1182
Width (indoor installation)	mm	800
Depth (indoor installation)	mm	1390
Weight		
Weight	kg	240
Total weight, outdoor installation	kg	400
Total weight, indoor installation	kg	330
Connections		
Connection on the heating side		G 1 1/4 A
Torque, flow meter, return	Nm	10
Air hose intake and discharge connectors		DN 560
Water quality requirements		
Water hardness	°dH	≤3
pH value (with aluminium fittings)		8.0-8.5
pH value (without aluminium fittings)		8.0-10.0
Chloride	mg/l	<30
Conductivity (softening)	µS/cm	<1000
Conductivity (desalination)	µS/cm	20-100
Oxygen 8-12 weeks after filling (softening)	mg/l	<0.02
Oxygen 8-12 weeks after filling (desalination)	mg/l	<0.1
Values		
Min. heating flow rate	m ³ /h	0.7
Pressure differential on the heating side	hPa	115
Flow rate on the heating side	m ³ /h	0.93
Flow rate on heat source side	m ³ /h	3500
Max. available external pressure differential, heat source side, intake side	hPa	0.8
Total available external pressure differential on heat source side	hPa	1
Heating flow rate (EN 14511) for A7/W35, B0/W35 and 5 k	m ³ /h	0.94
Nominal heating flow rate at A-7/W35 and 7 K	m ³ /h	0.94

Guarantee

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

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

Environment and recycling

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

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