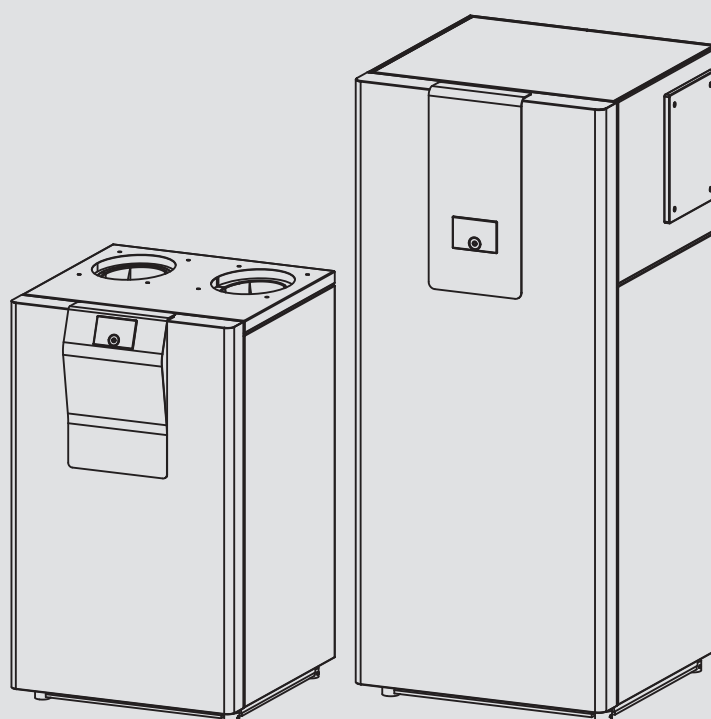


OPERATION AND INSTALLATION

Air source heat pump

- » WPL 09 ICS classic
- » WPL 09 IKCS classic
- » WPL 17 ICS classic
- » WPL 17 IKCS classic



STIEBEL ELTRON

SPECIAL INFORMATION

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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 disconnection from the power supply, parts of the appliance may remain energised for 2 minutes until the inverter capacitors have discharged.
- 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.
- 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



Operating instructions for the WPM heat pump manager



Commissioning 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.

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 $> -7^{\circ}\text{C}$, 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 differs from the test conditions defined in the first paragraph of this section, any deviations can be considerable.

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 and cooling within the application limits provided 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-domestic environments, e.g. in small businesses, as long as it is used in the same way.

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

2.2 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.
- Protect the appliance from dust and dirt during building work.



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 source heat pump that operates as a heating heat pump. The appliance extracts heat from the outdoor air at a low temperature level and transfers it to the heating water at a higher temperature level. The heating water can be heated up to a flow temperature of 60 °C.

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

Additional features

- Suitable for underfloor and radiator heating systems
- Preferred for low temperature heating systems
- Still extracts heat from the outdoor air at -20 °C outside temperature
- Corrosion-protected, external casing made from hot-dipped galvanised sheet steel plus stove-enamelled finish
- Comprises all components and safety equipment required for operation
- Filled with non-combustible safety refrigerant

3.1 Function

3.1.1 Heating

Heat is extracted from the outdoor air via the heat exchanger (evaporator) on the air side. The evaporated refrigerant is compressed by a compressor. This process requires electrical energy. At this point, the refrigerant is at a higher temperature level. A further heat exchanger (condenser) transfers the heat to the heating circuit. 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 process collects in the defrost pan and is drained off via a hose.



Material losses

During 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 chapter "Menu / Menu description / SETTINGS / HEATING / STANDARD SETTING / BUFFER OPERATION" in the WPM installation instructions. This prevents damage to the heat pump as a result of 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.

3.1.2 Cooling



Material losses

The heat pump is not suitable for continuous, year-round cooling.

- Observe the application limits (see chapter "Specification / Data table").



Material losses

In cooling mode, condensate can form when the dew point temperature is undershot.

- Take suitable measures to prevent the formation of condensate.

Rooms are cooled by reversing the heat pump circuit. Heat is extracted from the heating water. The evaporator transfers this heat to the outdoor air.

Area cooling and fan cooling require the installation of the FET remote control unit in a reference room to capture the relative humidity and the room temperature as part of dew point monitoring.

With fan cooling, it is also necessary to install a buffer cylinder.

Heat pump application limit

The heat pump is switched off if the outside temperature falls below the selected lower application limit for cooling (LIMIT COOLING parameter).

4. Settings

The system is operated exclusively via the WPM heat pump manager.

- Observe the heat pump manager operating and commissioning instructions.

5. Maintenance and care



Material losses

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



Material losses

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

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".

We recommend a 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

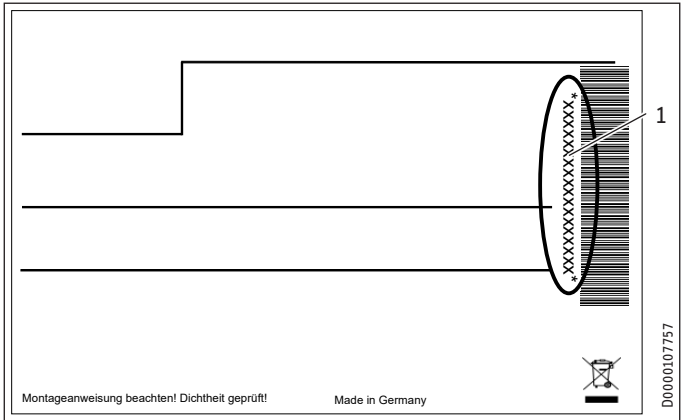
Fault	Cause	Remedy
There is no hot water or the heating system remains cold.	No power at the appliance.	Check the fuses/MCBs in your distribution board. Replace the fuses/reset the MCBs if required. Notify your qualified contractor if the fuses/MCBs blow/trip again after switching the system back on.
Water is leaking from the appliance.	The condensate drain may be blocked.	Call your qualified contractor to have the condensate drain cleaned out.
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 %).	Condensation should no longer form on the appliance once the weather conditions have changed.
	The appliance is sited in a damp room. Damp rooms contain increased levels of humidity, for example because they are 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.

 **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, contact your qualified contractor. To facilitate and speed up your request, provide the number from the type plate (000000-0000-000000).

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.

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

7.3 Operation of the appliance in buildings with combustion equipment



WARNING Injury

The unit generates pressure drops on the air intake and air discharge side. The pressure drop on the air intake side must not be greater than the pressure drop on the air discharge side, otherwise negative pressure will occur.

► Ensure that the pressure drop is higher on the air discharge side.

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 make special arrangements for a supply air vent in the installation room, to prevent any further increase in the negative pressure in this 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

At +8 °C condenser temperature, the integral frost protection circuit automatically starts the heating circulation pump in the heat pump circuit, thereby ensuring circulation in all water carrying sections.

The heat pump starts automatically when the temperature in the heat pump circuit drops below +5 °C.

8.1 Standard delivery

- Base unit
- Outside temperature sensor AF PT
- Snap-on ferrite bead for outside temperature sensor AF PT

appliance

WPL 09 I(K)CS	742 711 12
WPL 17 I(K)CS	742 721 31

- 2x Immersion/contact sensor TAF PT
- Transport aid
- 4x Sliding block
- Jumper
- Connecting cable for connecting the programming unit to the control panel

WPL 09 IKCS classic | WPL 17 IKCS classic

- 2 dummy covers

8.2 Required accessories

If installing a new appliance

- 2x air routing accessory LSWP 315 AWG Set

The air routing accessory is available in different lengths (0.7-4 m), in silver (SR) or grey (GL), and as a version for light wells (L):

- LSWP 315-0.7 S AWG SR Set
- LSWP 315-2 S AWG SR Set
- LSWP 315-3 S AWG SR Set
- LSWP 315-4 S AWG SR set
- LSWP 315-0.7 S AWG GL Set
- LSWP 315-2 S AWG GL set
- LSWP 315-3 S AWG GL Set
- LSWP 315-4 S AWG GL Set
- LSWP 315-0.7 S AWG L Set
- LSWP 315-2 S AWG L Set
- LSWP 315-3 S AWG L set
- LSWP 315-4 S AWG L Set

If using existing air hoses and wall outlets AWG 315

- 2x quick-fit adaptor ZSA 315

8.3 Additional accessories

- Water softening fitting HZEA
- Condensate pump PK 10
- Internet Service Gateway ISG
- Remote control FET
- FE7 remote control
- TAF PT immersion/contact sensor

9. Preparation

9.1 Sound emissions

Take the following information into account when selecting the installation location.



Note

The appliance is designed for indoor installation, except in damp areas.



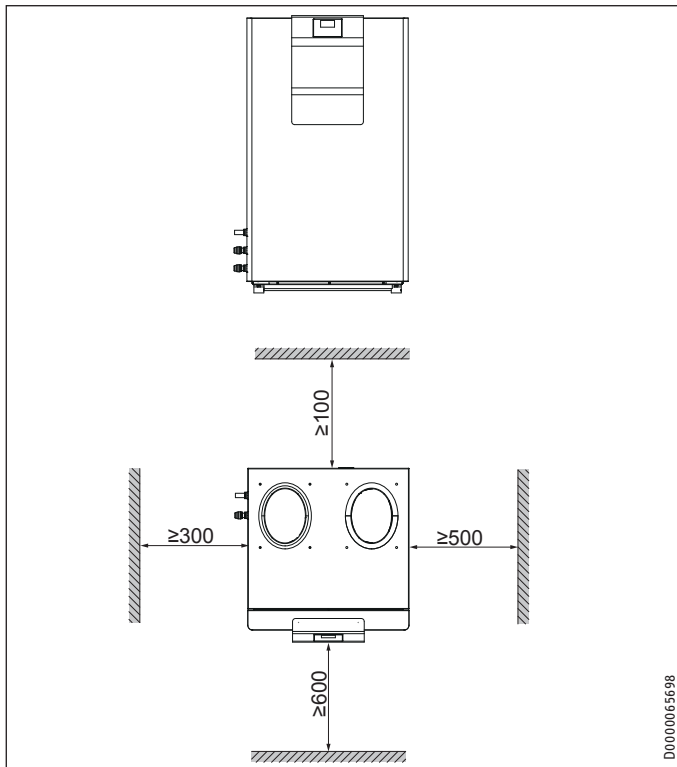
Note

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

- 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.
- ▶ 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.

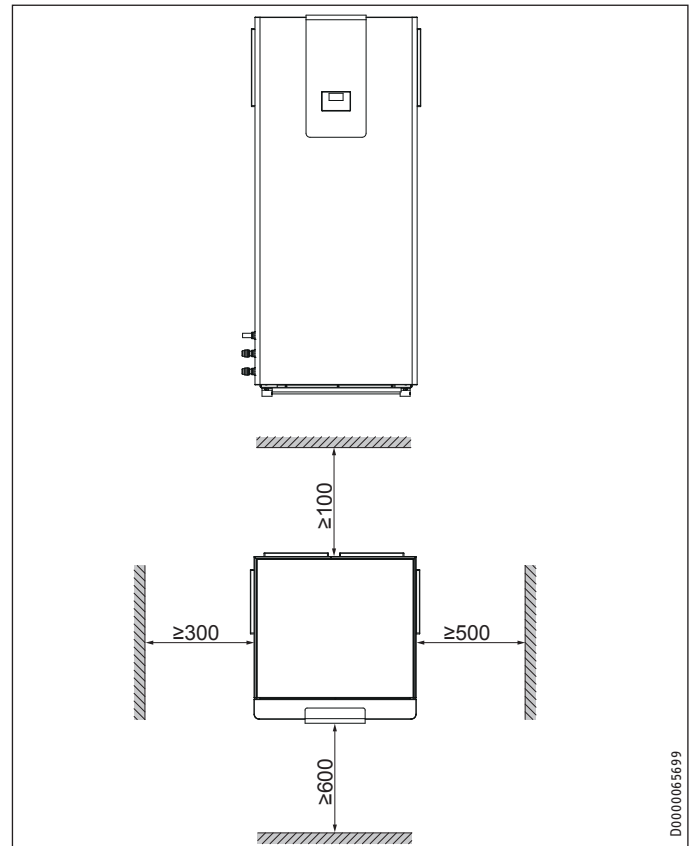
9.2 Minimum clearances

WPL 09 ICS classic | WPL 17 ICS classic



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

WPL 09 IKCS classic | WPL 17 IKCS classic



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

INSTALLATION

Preparation

9.3 Preparing the installation location

- Observe chapter "Sound emissions".

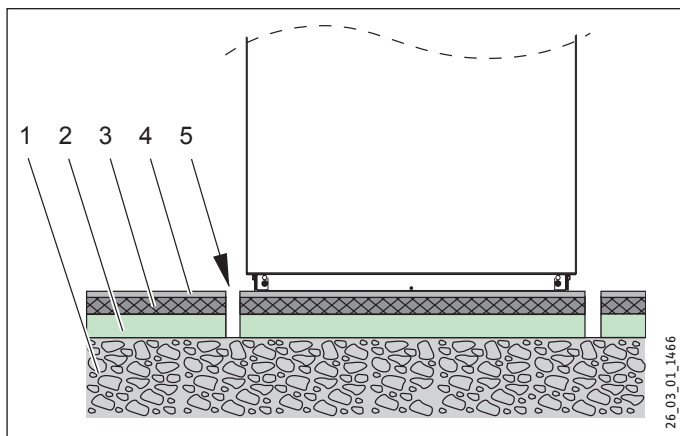


Material losses

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 in which the appliance is to be 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").
- Ensure that the substrate is level, even, solid and permanent.
- For installation on floating screeds, make provisions for quiet heat pump operation.
- Isolate the installation surface around the heat pump by means of a recess. After completing the installation, seal the recess with a waterproof, sound insulating material, such as silicone.



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



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".

9.4 Wall outlet

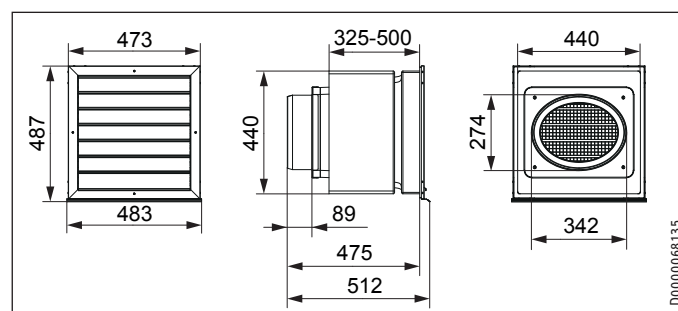


Note

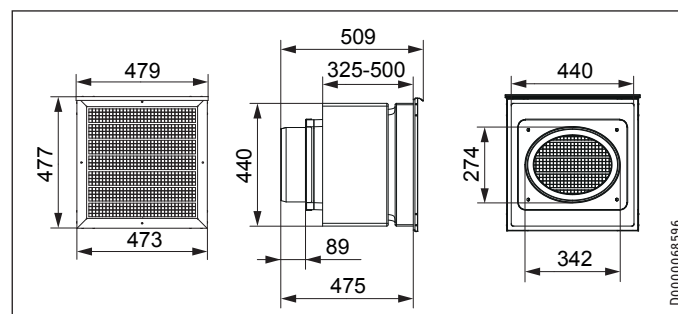
The air duct connection on the wall outlet is oval. When selecting the installation position for the wall outlet, note how the connections on the appliance are arranged, to ensure that the air hose will not have to be twisted.

- Observe the wall outlet installation instructions.

AWG 315 SR Premium | AWG 315 GL Premium



AWG 315 L Premium



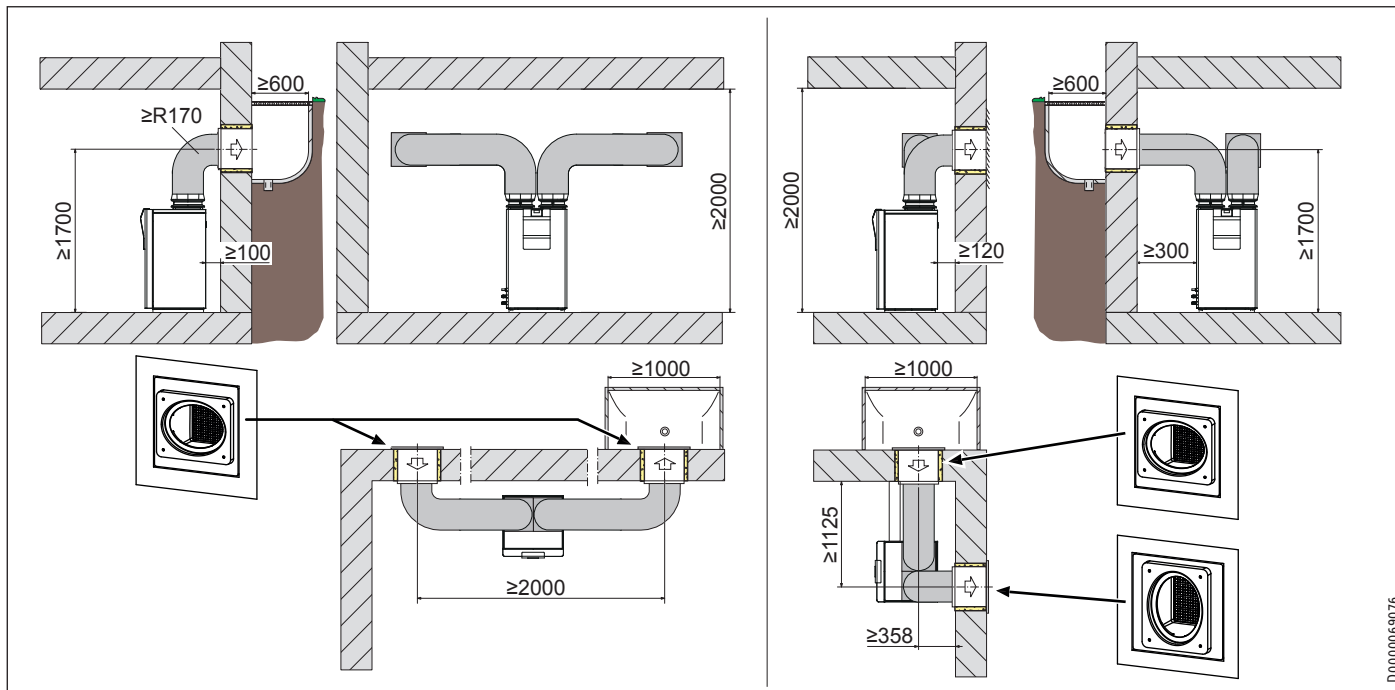
INSTALLATION

Preparation

9.4.1 WPL 09 ICS classic | WPL 17 ICS classic

- Select one of the possible installation versions.

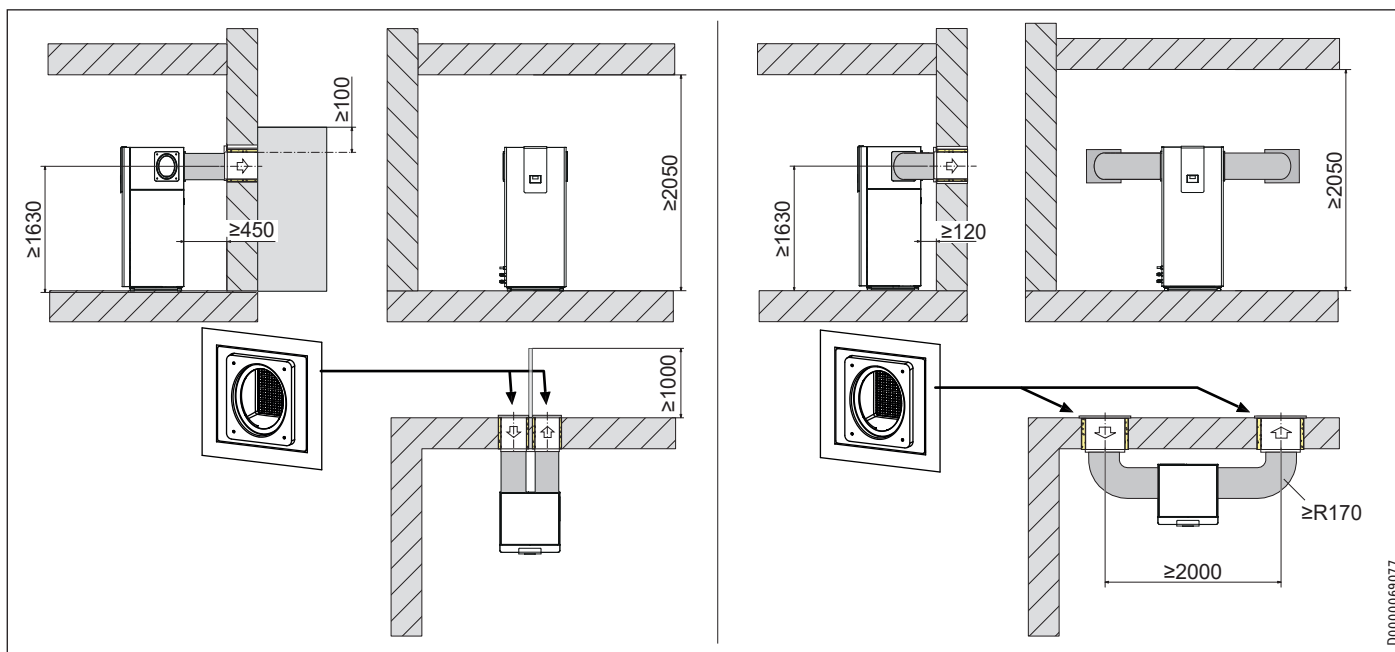
Air routing with a shaft: Through an exterior wall | Through two external walls around a corner



9.4.2 WPL 09 IKCS classic | WPL 17 IKCS classic

- Select one of the possible installation versions.

Air routing without a shaft: Through an exterior wall

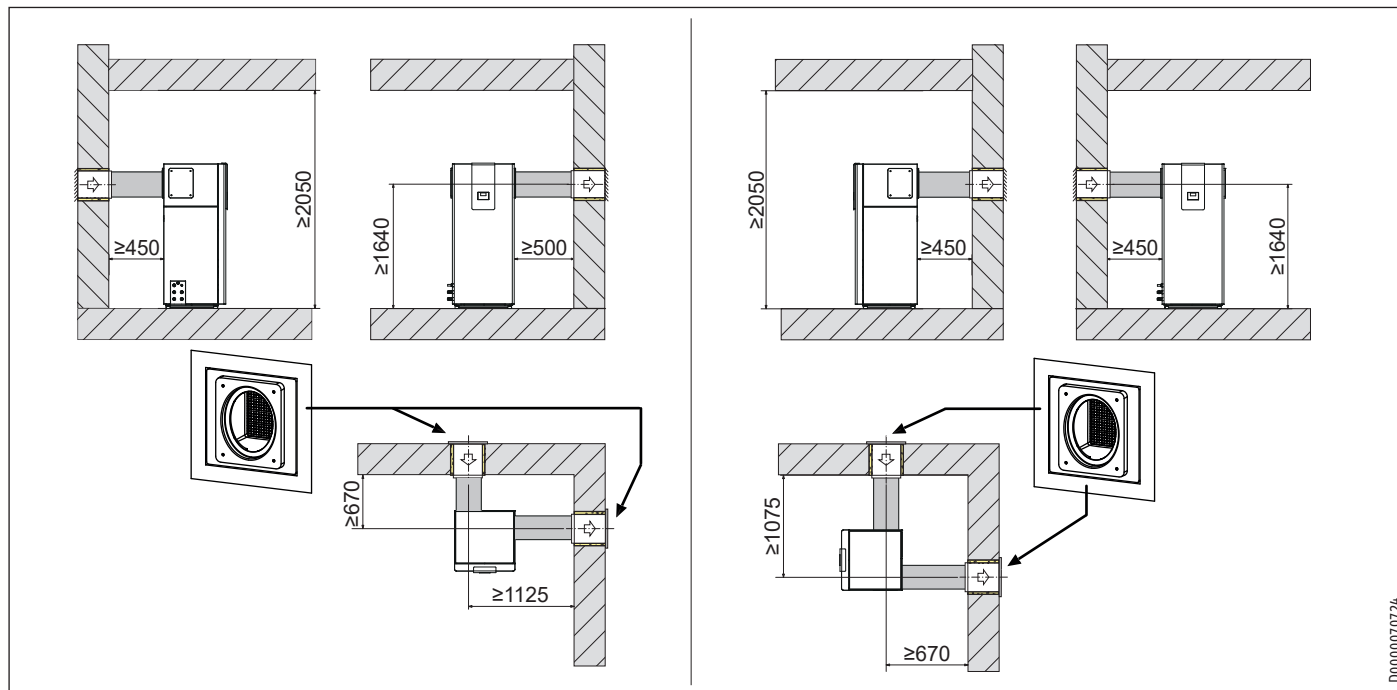


INSTALLATION

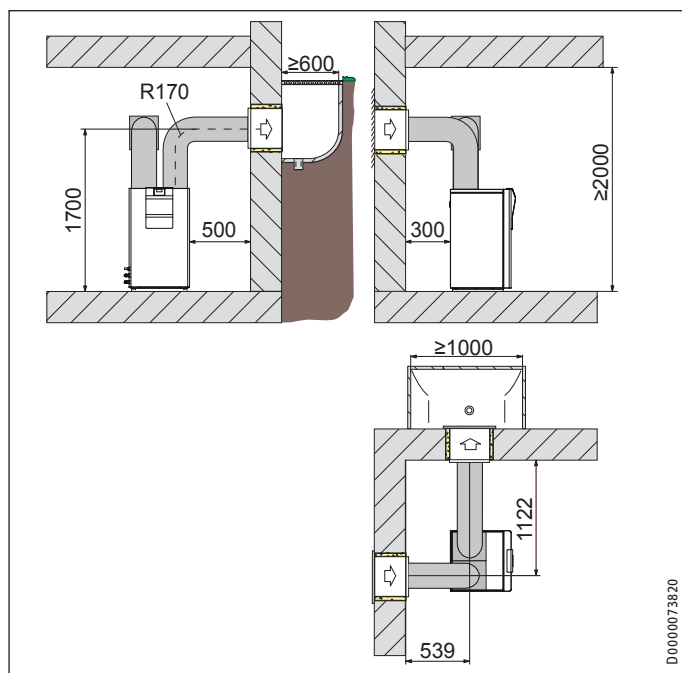
Preparation

Air routing without a shaft: Through two external walls around a corner

		LSWP 315-0.7 S AWG SR Set	LSWP 315-0.7 S AWG GL Set
		236930	237762
Length	m	0.7	0.7



9.4.3 Example: Installation with an air hose of 2 m in length



Note

If the distance from the back of the appliance to the wall is less than the stated dimension, trim the air hose.
If the distance from the back of the appliance to the wall is greater than the stated dimension, use a longer air hose.
► Observe chapter "Routing air hoses".

9.4.4 Insulating the brickwork

Ensure that no cold bridges form between the brickwork and the wall outlets. Cold bridges can result in condensation forming in the brickwork.

- If necessary, fit suitable insulation between the brickwork and the wall outlets.

9.5 Preparing the electrical installation



WARNING Electrocutation

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



WARNING Electrocutation

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. 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.



Material losses

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

INSTALLATION

Installation



Material losses

Provide common fuses/MCBs for the appliance control cable and the heat pump manager.



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 must be type B, AC/DC-sensitive, with 30 mA fuse protection. A DC residual current can block type A RCDs.

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

The electrical data can be found in the chapter "Specification". The bus requires a J-Y (St) 2x2x0.8 mm² cable.

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

Fuse protection	Assignment	Cable cross-section
1x B 16 A	Compressor (single phase) WPL 09 ICS classic WPL 09 IKCS classic	2.5 mm ² for routing through a wall 1.5 mm ² when routing above the surface
1x B 25 A	Compressor (single phase) WPL 17 ICS classic WPL 17 IKCS classic	≥ 2.5 mm ²
Alternatively: 1x B 16 A further details below table	Compressor (single phase) WPL 17 ICS classic WPL 17 IKCS classic	≥ 2.5 mm ²
1x B 16 A	Control unit	1.5 mm ²
2x B 16 A	Electric emergency/ auxiliary heater	2.5 mm ²

You can safeguard the compressor using the alternative, smaller fuse protection.

- If you have selected a lower fuse protection for the compressor, you will need to limit the maximum power consumption. In the COMMISSIONING / COMPRESSOR menu, adjust the MAXIMUM CURRENT parameter. Observe the information in the commissioning instructions for the heat pump manager.

Output reduction in the case of 16 A compressor fuse protection

If you select 16 A fuse protection, the output will be reduced under the given ambient conditions. The output reduction primarily affects DHW heating.

Source temperature [°C]	Flow temperature [°C]	Output reduction [%]
WPL 17 ICS classic, WPL 17 IKCS classic		
-7	35	3
	45	14

9.6 Buffer cylinder



Material losses

A buffer cylinder with diffusion-proof insulation is essential to enable cooling by means of fan convectors.



Note

When providing cooling via an underfloor heating system no buffer cylinder is required.

We recommend the use of a buffer cylinder 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.

- If operating without a buffer cylinder, observe the details in chapter "Commissioning / Ensuring a minimum flow rate".

10. Installation

10.1 Transport

If possible, transport the appliance to the installation site on the non-returnable pallet. Alternatively, transport the appliance using a sack truck, creeper board or tension belt, which can be positioned around the left-hand adjustable feet as a carrying strap.

- When transporting the appliance, be aware of its centre of gravity.
- 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 onto the r.h. side panel. Ensure that the plug-in connectors point upwards during transport.
- The longer the appliance is tilted, the greater the distribution of refrigerant oil inside the system.
- Wait approximately 30 minutes before starting the appliance after it has been tilted.
- If possible, transport the appliance in its packaging.



Material losses

If the appliance is transported without packing and without using a pallet, its outer casing may be damaged. To prevent this, remove the side and front panels (see chapter "Fitting the appliance casing").

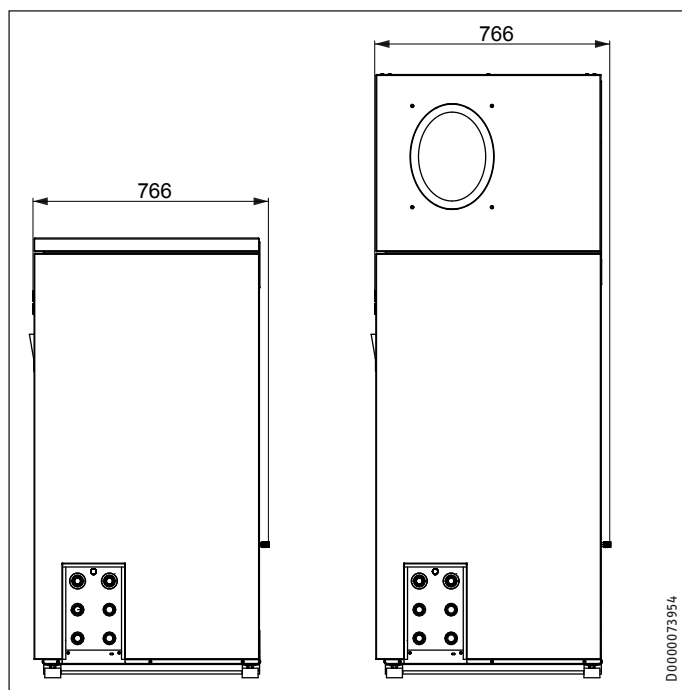


Note

You may need to remove the front panel to manoeuvre the appliance through a door (see chapter "Fitting the appliance casing").

INSTALLATION

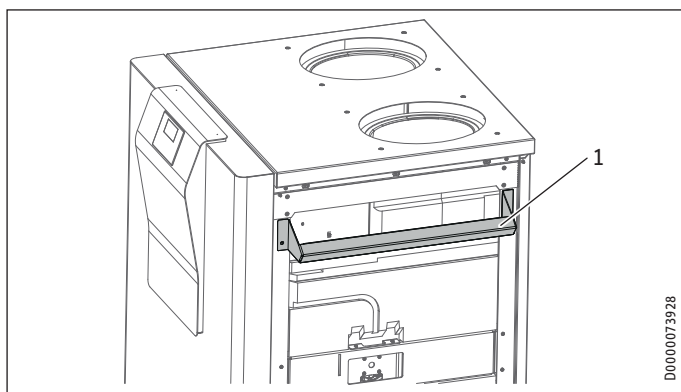
Installation



10.1.1 Transport using a transport aid

To facilitate transport, you can fit a transport aid to the r.h. side panel of the appliance (see chapter "Appliance description / Further accessories").

- Remove the r.h. side panel of the appliance (see chapter "Fitting the appliance casing").



1 Transport aid

- Fit the transport aid to the appliance frame using the screws provided.
- Tilt the appliance through about 45° onto its r.h. side.
- Lift the appliance carefully.
- Transport the appliance to the installation location.

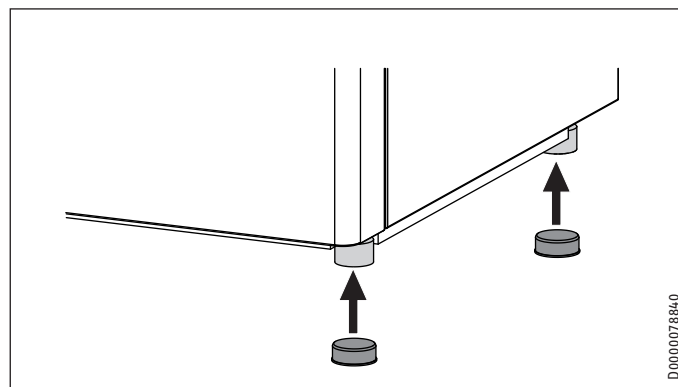
10.2 Siting



Note

There are fixing screws at the bottom of the appliance frame to secure the front and side panels.

- When siting the appliance, observe the air discharge direction.
- Position the appliance on the prepared substrate.



- Push the sliding blocks supplied under the adjustable feet, so the appliance can be moved more easily to the required position.
- Observe minimum clearances (see chapter "Preparations / Minimum clearances").

To prevent the adjustable feet from bending during transport and installation, in the delivered condition a transport lock is fitted to each adjustable foot. To enable height adjustment of the adjustable feet, you can pull out the transport locks of the adjustable feet sideways.

- Level the appliance vertically by turning the height-adjustable feet.

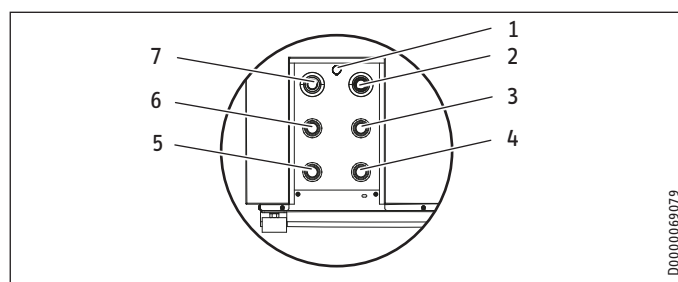
10.3 Flow and return connection



Material losses

In cooling mode, condensate can form when the dew point temperature is undershot.

- For cooling with fan convectors, the heating flow and heating return lines must be provided with vapour diffusion-proof insulation.



- 1 Manual air vent valve
- 2 "Safety valve drain" connection
- 3 "Heat pump DHW flow" connection
- 4 "Heat pump DHW return" connection
- 5 "Heating return" connection
- 6 "Heating flow" connection
- 7 Condensate drain outlet

- If only one return connection is used, seal off the one that is unused.

Cooling with a buffer cylinder

- Install an immersion/contact sensor in the heating flow, downstream of the buffer cylinder.

INSTALLATION

Installation

10.4 Fitting the push-fit connectors



Note

The plastic push-fit connectors are not suitable for installation in the DHW line.

- Install the push-fit connectors only in the heating circuit.



Material losses

Tighten the screw cap of the push-fit connector by hand. Never use a tool.



Material losses

To ensure the push-fit connector is held securely, pipes with a surface hardness > 225 HV (e.g. stainless steel) must have a groove.

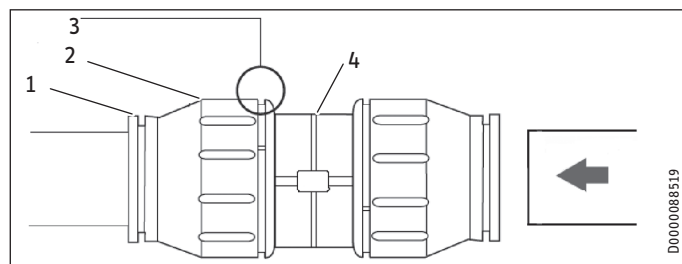
- Using a pipe cutter, cut a groove (depth approx. 0.1 mm) at a defined distance from the end of the pipe.
- Pipe diameter 22 mm: 17 ± 0.5 mm
- Pipe diameter 28 mm: 21 ± 0.5 mm

How the push-fit connectors work

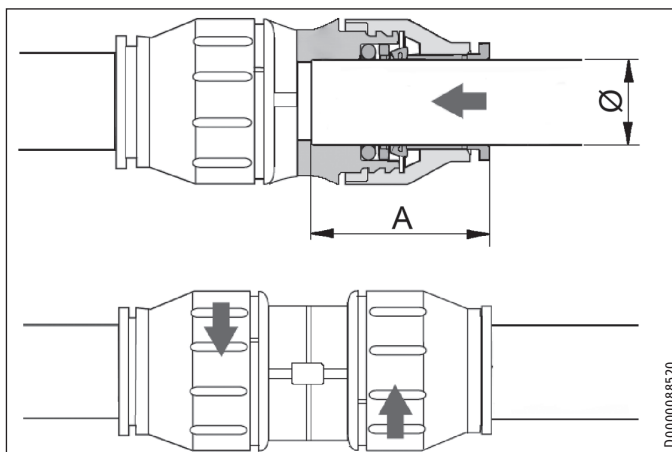
The push-fit connectors are equipped with a retainer with stainless steel serrations and an O-ring for sealing. The push-fit connectors also have a "twist and secure" function. Simply turning the screw cap by hand will secure the pipe in the connector and push the O-ring against the pipe to seal it.

Making the push-fit connection

The connector must be in its relaxed position before the pipe is inserted. In this position, there is a small gap between the screw cap and main body.



- 1 Retainer
- 2 Screw cap
- 3 Gap between screw cap and main body
- 4 Main body



Pipe Ø	22 mm
Depth of insertion A	max. 38 mm



Material losses

Pipe ends must be deburred.

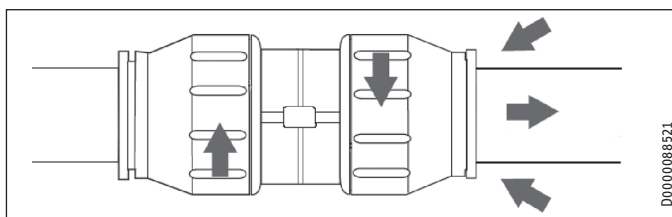
- Always use a pipe cutter to trim pipes.

- Push the pipe past the O-ring into the push-fit connector until it reaches the prescribed insertion depth.
- Tighten the screw cap by hand against main body as far as it will go. This secures the push-fit connection.

Undoing the push-fit connection

If the push-fit connectors later need to be undone, proceed as follows:

- Turn the screw cap anti-clockwise until there is a narrow gap of approx. 2 mm. Press the retainer back with your fingers and hold on to it.
- Pull out the inserted pipe.



10.5 Heating water connection



Material losses

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 guide.



Note

The use of non-return valves in the charging circuits between the heat generator and the buffer or DHW cylinder can impair the function of the integral multifunction assembly (MFG) and lead to faults in the heating system.

- Only use our standard hydraulic solutions for the installation of the appliances.

INSTALLATION

Installation

- ▶ Before connecting the heat pump, flush the pipework thoroughly with suitable water. Foreign bodies, such as welding pearls, rust, sand or sealant can impair the operational reliability of the heat pump.
- ▶ Connect the heat pump on the heating water side. Check for tightness.
- ▶ Ensure that the heating flow and return are connected correctly.
- ▶ Provide thermal insulation in accordance with applicable regulations.
- ▶ When sizing the heating circuit, observe the internal pressure differential (see chapter "Specification / Data table").

The pressure hoses acting as anti-vibration insulation for direct connection of the on-site pipework are integrated inside the appliance.

10.6 Oxygen diffusion



Material losses

Do not use open vented heating systems. Use oxygen diffusion-proof pipes in underfloor heating systems with plastic pipework.

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).

- ▶ In the case of oxygenation, separate the heating system between the heating circuit and the buffer cylinder.



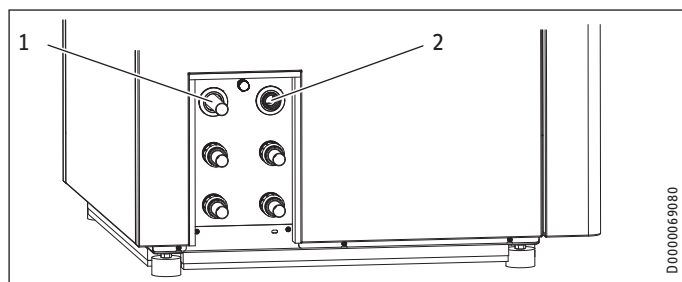
Material losses

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.

10.7 Second heat generator

For dual mode systems, always connect the heat pump into the return of the second external heat source, e.g. oil boiler.

10.8 Condensate drain and overpressure valve



- 1 "Outlet condensate drain" connection
- 2 "Safety valve drain" connection

On its l.h. side the appliance is equipped with the "Outlet condensate drain" connection.

- ▶ Connect a condensate line to the "Outlet condensate drain" connection.



Material losses

To ensure the condensate drains off correctly, never kink the condensate line. If necessary, create a loop.

- ▶ Route the condensate line with a sufficient fall.

- ▶ Route the condensate into a drain near the floor. When doing so, ensure the drain is adequately ventilated, e.g. free discharge into a trap. Use a condensate pump if there is insufficient fall.
- ▶ Check the position of the condensate pump. The condensate pump must fully rest on the floor.

Pressure relief valve drain

On the l.h. side of the appliance, the "Safety valve drain" connection routes the pressure relief valve discharge hose out of the casing. Ensure that draining water can run off freely.

10.9 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.

10.10 High limit safety cut-out for area heating system



Material losses

In order to prevent excessively high flow temperatures in the area heating system causing damage in the event of a fault, install a high limit safety cut-out to limit the system temperature.

10.11 Filling the heating system

Heating water quality

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



Material losses

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

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



Note

- ▶ Never add inhibitors or other additives to the fill water.

INSTALLATION

Electrical connection



Note

If conductivity is $>1000 \mu\text{S}/\text{cm}$, desalination treatment is recommended as the best option for preventing corrosion.



Note

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

Filling the heating system



Material losses

Never switch on the power before filling the system.



Material losses

High flow rates or water hammer can damage the appliance.

► Fill the appliance at a low flow rate.

In the delivered condition, the diverter valve of the MFG is positioned at the centre. This ensures the heating and DHW circuits are filled equally. When the power is switched on, the diverter valve automatically moves into the heating position.

If you intend to fill or drain the system later, first return the diverter valve to its centre position.

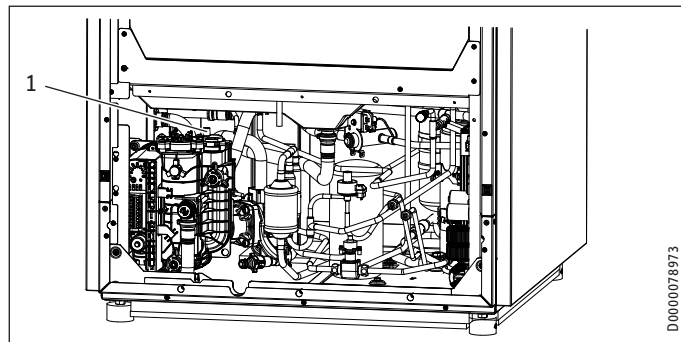
For this, enable controller parameter DRAIN HYD in the menu DIAGNOSIS / RELAY TEST SYSTEM.

- Fill the heating system via the drain.
- After filling the heating system, check the connections for tightness (visual and physical inspection).

10.12 Venting the heating system

Automatic air vent valve in the multifunction assembly MFG

- Remove the cover panel in front of the refrigerant circuit (see chapter "Fitting the appliance casing").



1 Air vent valve

- Vent the pipework by pulling up the red cap on the air vent valve.
- Close the air vent valve after the venting process.

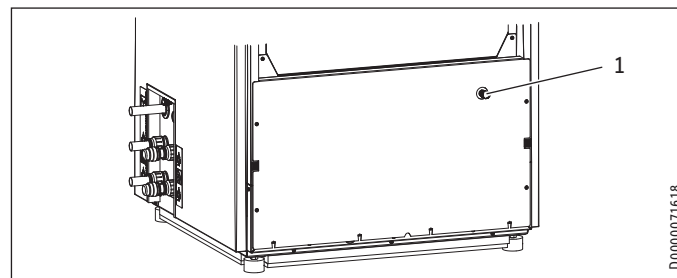
Air vent valve on the inverter



Material losses

The air vent in the knurled cap of the air vent valve must not point towards the PCB.

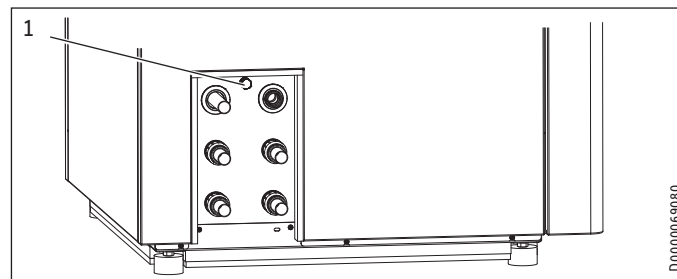
► Turn the air vent away from the PCB.



1 Air vent valve

- Vent the pipework by turning the grey cap on the air vent valve.
- Close the air vent valve after the venting process.

Manual air vent valve



1 Manual air vent valve

- Vent the pipework by activating the ventilation.
- Close the air vent valve after the venting process.

11. Electrical connection



Note

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

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

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

11.1 Terminal area



WARNING Electrocutation

Before working on the appliance, isolate it from the power supply at the terminal area.



Note

The leakage current of this appliance can be $> 3.5 \text{ mA}$. Since the unit is connected to the distribution board, the leakage current from the unit and the residual currents of the installation are recorded together during a residual current test.

- Evaluate the percentage of leakage current from the unit and the residual currents in the test result.
- Take into account the local and unit-specific conditions at the test location, as well as any insulation faults or other influencing factors.



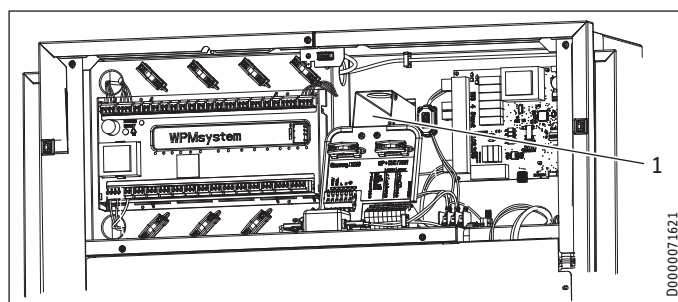
Note

The terminals are located in the terminal area of the appliance.

- Observe the information in chapter "Preparations / Electrical installation".
- Use appropriate electrical cables in accordance with local regulations.

Access to the terminal area

- Remove the front panel of the appliance (see chapter "Fitting the appliance casing").
- Remove the cover panel in front of the terminal area (see chapter "Fitting the appliance casing").



1 Cable duct

- Route the cables from the back through the apertures to the terminal area.
- Route the low voltage leads to the left behind the terminal area.
- Check that the strain relief fittings are working as intended.

11.1.1 Compressor and electric emergency/booster heater

- Connect the power supply for the electric emergency/booster heater to terminal XD01 if you want to utilise the following appliance functions:

Appliance function	Effect of the electric emergency/booster heater
Mono energetic operation	If the dual mode point is undershot, the electric emergency/booster heater safeguards both the heating operation and the provision of high DHW temperatures.
Emergency mode	If the heat pump shuts down due to a fault, the heating output is covered by the electric emergency/booster heater.

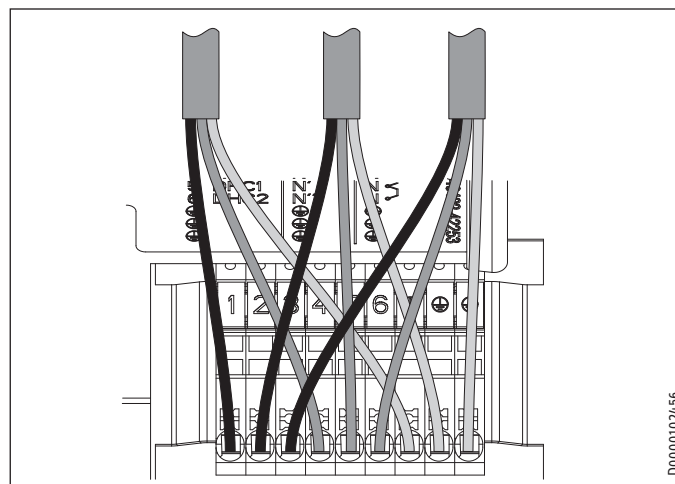
Appliance function	Effect of the electric emergency/booster heater
Heat-up program (only for underfloor heating systems)	Where return temperatures are $< 25^\circ\text{C}$, the electric emergency/booster heater must provide the necessary heat for screed drying. With such low system temperatures, the heat for screed drying must not be provided by the heat pump, otherwise the frost protection of the appliance can no longer be guaranteed during the defrost cycle. When the heat-up program has ended, the electric emergency/booster heater can be disconnected if it is not required for appliance operation. Please note that during the heat-up program, emergency mode is not available.
Pasteurisation mode	The electric emergency/booster heater starts automatically when pasteurisation mode is active. The DHW is then regularly heated to 60°C to protect it against the growth of legionella bacteria.

You can choose between two connection options. The compressor connection remains single-phase.

Connection option	Connection type
A	separate connections for compressor and emergency/booster heater
B	connection for compressor and emergency/booster heater using a 5-core cable

Connection option A (230 V)

- Connect the cables according to the following diagram. The emergency/booster heater is connected with the larger connected load.



XD01	Compressor (inverter)					
	L, N, PE					
XD01	Electric emergency/booster heater (NHZ)					
	L', L'', N', N'', PE					
	Connected load [kw]	Cable cross-section [mm²]	Terminal assignment			
	2.9	2.5	PE		L''	N''
	5.9	2.5	PE	L'	N'	L'' N''
XD03	Control voltage					
	EVU L', EVU L, L, N, PE					

- Connect the cables for the electric emergency/booster heater with the required rating as per the table.
- Route cables and leads through the strain relief fittings. Check that the strain relief fittings are working as intended.

INSTALLATION

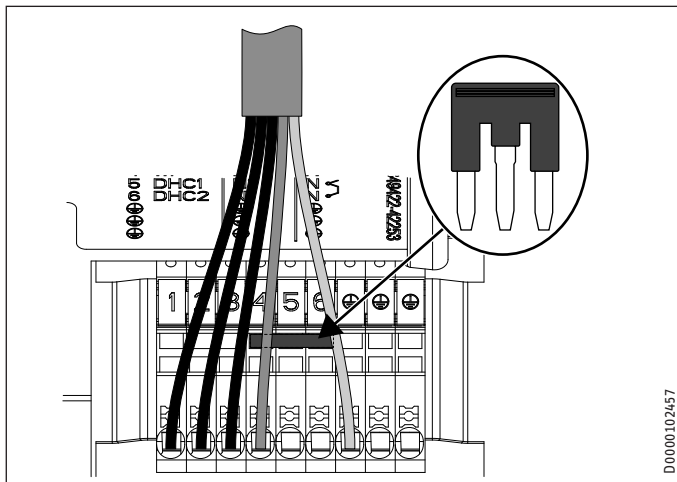
Electrical connection

If no voltage is applied to the power supply utility enable signal, the heat pump will not start.

- If no ripple control receiver is fitted, install a jumper between EVU1 and EVU2.

Connection option B (400 V)

- Connect the cables according to the following diagram.



XD01	Compressor (inverter) Electric emergency/booster heater (NHZ) L1, L2, L3, N, PE
XD03	Control voltage EVU L', EVU L, L, N, PE

- Connect the N, N', and N'' connections with the supplied jumper.
- Route cables and leads through the strain relief fittings. Check that the strain relief fittings are working as intended.

If no voltage is applied to the power supply utility enable signal, the heat pump will not start.

- If no ripple control receiver is fitted, install a jumper between EVU1 and EVU2.

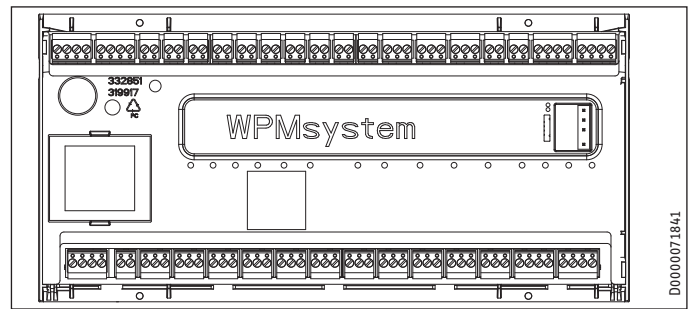
11.1.2 Heat pump manager terminal assignment



WARNING Electrocutation

Only components that operate with safety extra low voltage (SELV) and that ensure secure separation from the mains voltage supply may be connected to the low voltage terminals of the appliance. Connecting other components can make parts of the appliance and connected components live.

- Only use components which have been approved by us.



Safety extra low voltage

X1.1	+	+	CAN (connection for heat pump and WPE heat pump extension)
CAN A	-	-	
	L	L	
	H	H	
X1.2	+	+	CAN (connection for programming unit)
CAN B	-	-	
	L	L	
	H	H	
X1.3	Signal	1	Outside temperature sensor
	Earth	2	
X1.4	Signal	1	Buffer sensor (heating circuit sensor 1)
	Earth	2	
X1.5	Signal	1	Flow sensor
	Earth	2	
X1.6	Signal	1	Heating circuit sensor 2
	Earth	2	
X1.7	Signal	1	Heating circuit sensor 3
	Earth	2	
X1.8	Signal	1	DHW cylinder sensor
	Earth	2	
X1.9	Signal	1	Source sensor
	Earth	2	
X1.10	Signal	1	Heat source 2 (2.WE)
	Earth	2	
X1.11	Signal	1	Cooling flow
	Earth	2	
X1.12	Signal	1	DHW circulation sensor
	Earth	2	
X1.13	Signal	1	FE7 remote control / telephone remote switch / heating curve optimisation / SG Ready
	Earth	2	
	Signal	3	
X1.14	Constant 12 V	+	Analogue input 0-10 V
	Input	IN	
	GND	⊥	
X1.15	Constant 12 V	+	Analogue input 0-10 V
	Input	IN	
	GND	⊥	
X1.16	Signal	1	PWM output 1
	Earth	2	
X1.17	Signal	1	PWM output 2
	Earth	2	
X1.18	+	+	CAN (connection for FET remote control and ISG Internet Service Gateway)
CAN B	-	-	
	L	L	
	H	H	
X1.19	+	+	CAN (connection for heat pump and WPE heat pump extension)
CAN A	-	-	
	L	L	
	H	H	

Mains voltage

X2.1	L	L	Power supply
	L	L	
	N	N	
	PE	⊕	
X2.2	L' (power supply utility input)	L'	L' (power supply utility input)
	L* (pumps L)	L* (pumps L)	L* (pumps L)

INSTALLATION

Fitting the appliance casing

Mains voltage			
X2.3	L N PE	L N ⊕ PE	Heating circuit pump 1
X2.4	L N PE	L N ⊕ PE	Heating circuit pump 2
X2.5	L N PE	L N ⊕ PE	Heating circuit pump 3
X2.6	L N PE	L N ⊕ PE	Buffer charging pump 1
X2.7	L N PE	L N ⊕ PE	Buffer charging pump 2
X2.8	L N PE	L N ⊕ PE	DHW charging pump
X2.9	L N PE	L N ⊕ PE	Source pump / defrost
X2.10	L N PE	L N ⊕ PE	Fault output
X2.11	L N PE	L N ⊕ PE	DHW circulation pump / 2nd heat source DHW
X2.12	L N PE	L N ⊕ PE	2nd heat source heating
X2.13	L N PE	L N ⊕ PE	Cooling
X2.14	Mixer OPEN N PE Mixer CLOSE	▲ N ⊕ PE ▼	Mixer, heating circuit 2 (X2.14.1 Mixer OPEN X2.14.2 Mixer CLOSE)
X2.15	Mixer OPEN N PE Mixer CLOSE	▲ N ⊕ PE ▼	Mixer, heating circuit 3 (X2.15.1 Mixer OPEN X2.15.2 Mixer CLOSE)



Note

For every appliance fault, output X2.10 issues a 230 V signal.

In the case of temporary faults, the output switches the signal through for a specific time.

In the case of faults that result in a permanent appliance shutdown, the output switches through permanently.

11.1.3 Internet Service Gateway ISG

The Internet Service Gateway ISG enables you to operate the heat pump within your local home network and via the internet when you are away. Connect the Internet Service Gateway to the appropriate terminals in the heat pump manager.

The ISG is not supplied with power by the heat pump.

- Also refer to the ISG operating and installation instructions.

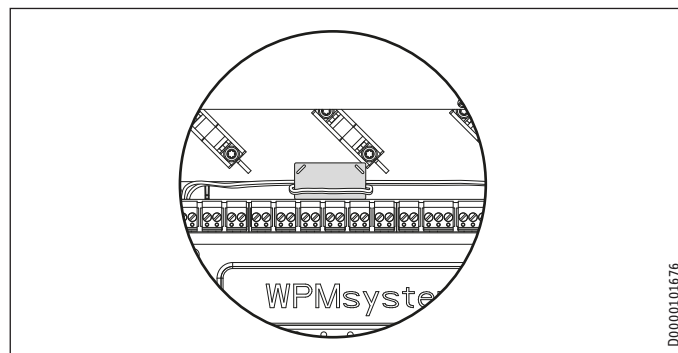
11.1.4 Sensor installation



Note

In order to prevent faults in the electromagnetic field, use the supplied snap-on ferrite bead for the bus cable of the outside temperature sensor.

- Ensure that you use the correct snap-on ferrite bead (see chapter “Appliance description / Standard delivery”).



- Wrap the bus cable once around the snap-on ferrite bead, as close as possible to the WPM.
- When installing a sensor, follow the commissioning instructions for the heat pump manager (see chapter “Connecting external components”).

12. Fitting the appliance casing

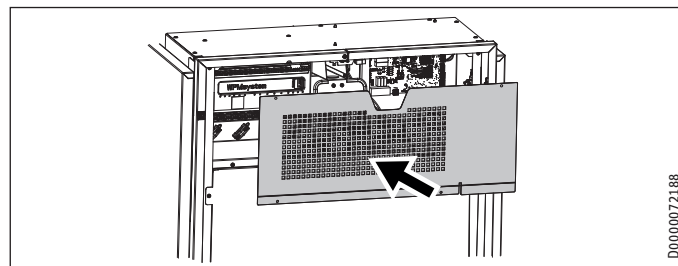


Note

- Remove the appliance casing in reverse order.

12.1 Fitting the cover panels

12.1.1 Fitting the panel in front of the terminal area

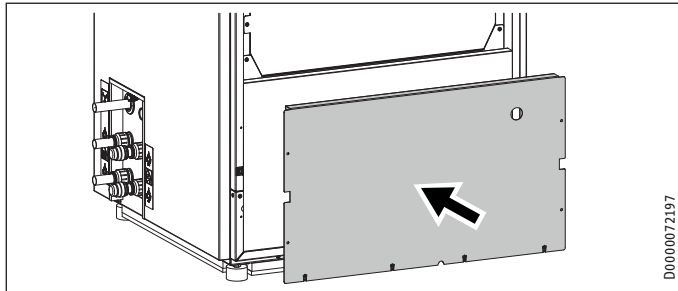


- Slide the cover panel from below behind the control cabinet panel.
- Secure the cover panel at the bottom with two screws.

INSTALLATION

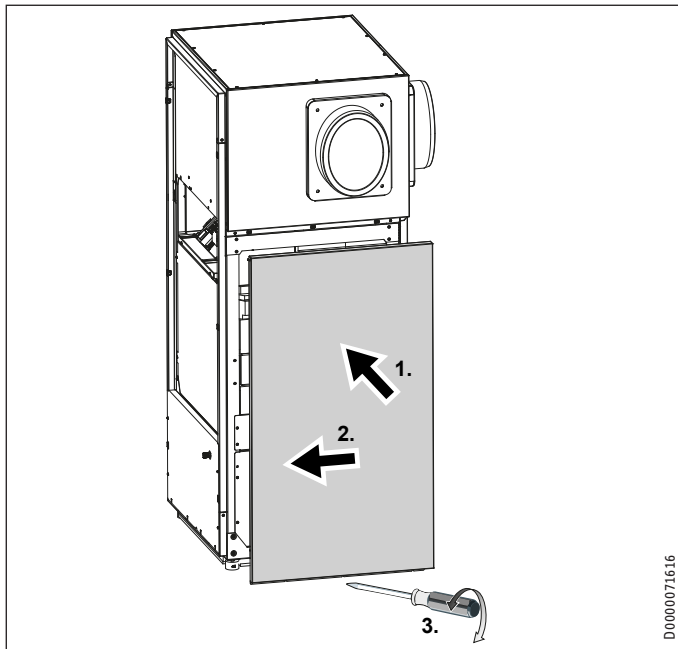
Fitting the appliance casing

12.1.2 Fitting the panel in front of the refrigerant circuit



- ▶ Hook the bottom of the cover panel into the edge of the frame panel.
- ▶ Secure the cover panel with the four screws.

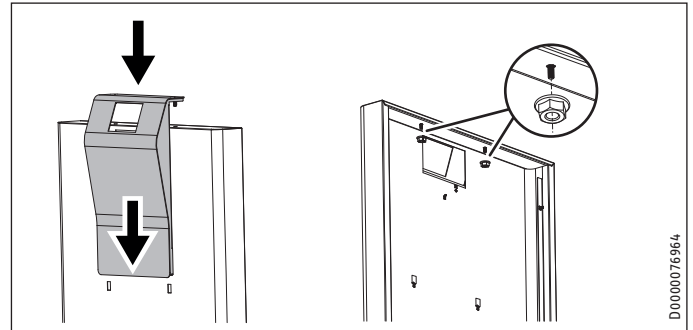
12.2 Fitting the side panels



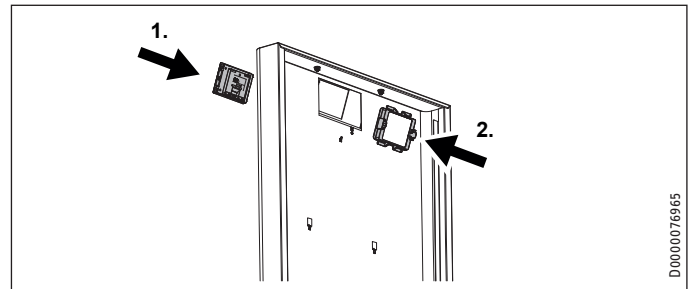
- ▶ Position the side panel against the appliance, slightly offset to the back.
- ▶ Hook the side panel into the upper casing cover.
- ▶ Slide the side panel forwards.
- ▶ Secure the l.h. side panel at the bottom with three screws.
- ▶ Secure the r.h. side panel at the bottom with two screws.

12.3 Fitting the front panel

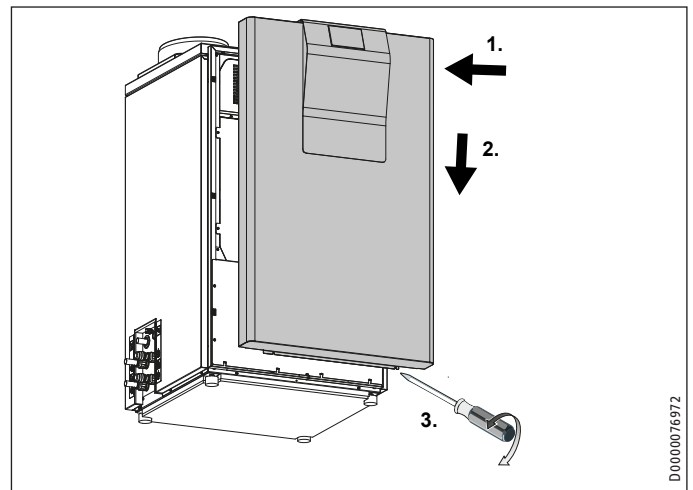
WPL 09 ICS classic | WPL 17 ICS classic



- ▶ Position the designer fascia from above on the front fascia. Ensure that the hooks on the front fascia click into place.
- ▶ Secure the designer fascia to the front fascia using the nuts provided (torque = 1.2 Nm).



- ▶ Position the programming unit from the front in the designer fascia.
- ▶ Keep hold of the programming unit as you push the retaining frame onto it from behind.
- ▶ Connect the connecting cable to the adaptor plug.
- ▶ Connect the connecting cable to the programming unit. Ensure the connection to the programming unit is correct. The cable must face upwards and the numbers must be visible.
- ▶ Earth the front panel with the earthing cable.



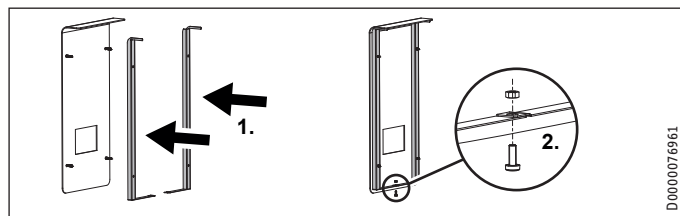
- ▶ Hook the front fascia into the hooks provided at the front of the appliance.
- ▶ Slide the front fascia down.

INSTALLATION

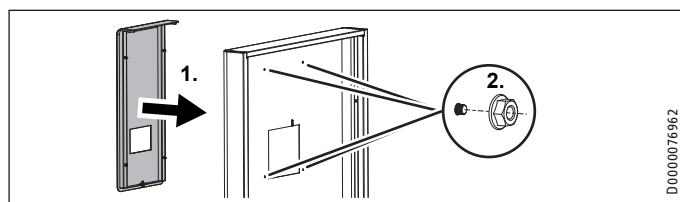
Routing the air hoses

- Secure the front fascia at the bottom with two screws and two serrated washers.

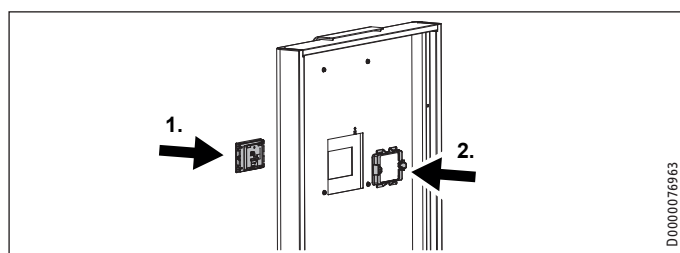
WPL 09 IKCS classic | WPL 17 IKCS classic



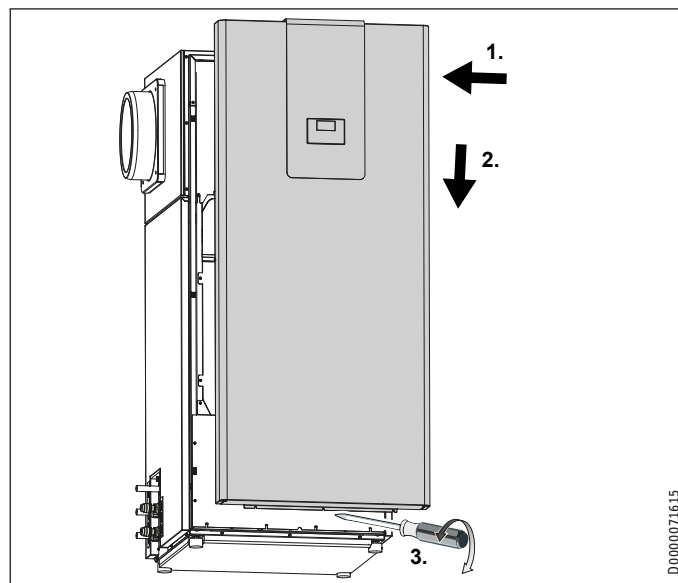
- Position the two frame sections at the back of the designer fascia.
- Connect the two frame sections using the screw provided.



- Position the designer fascia from the front on the front fascia.
- Secure the designer fascia to the front fascia at the back using the nuts provided (torque = 1.2 Nm).



- Position the programming unit from the front in the designer fascia.
- Keep hold of the programming unit as you push the retaining frame onto it from behind.
- Connect the connecting cable to the adaptor plug.
- Connect the connecting cable to the programming unit. Ensure the connection to the programming unit is correct. The cable must face upwards and the numbers must be visible.
- Earth the front panel with the earthing cable.



- Hook the front fascia into the hooks provided at the front of the appliance.
- Slide the front fascia down.
- Secure the front fascia at the bottom with two screws and two serrated washers.

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.



Note

Air hoses guide the intake air to the appliance and route the discharge air from the appliance to the outside. The air hoses are highly flexible, thermally insulated and self-extinguishing in the case of fire.



Note

A pressure drop of 60 Pa each is permitted for the air intake and the air discharge side. The value may also be exceeded as long as the total pressure drop of 120 Pa is not exceeded.

The overall length of hoses on the air intake and discharge sides must not exceed 8 m in total.

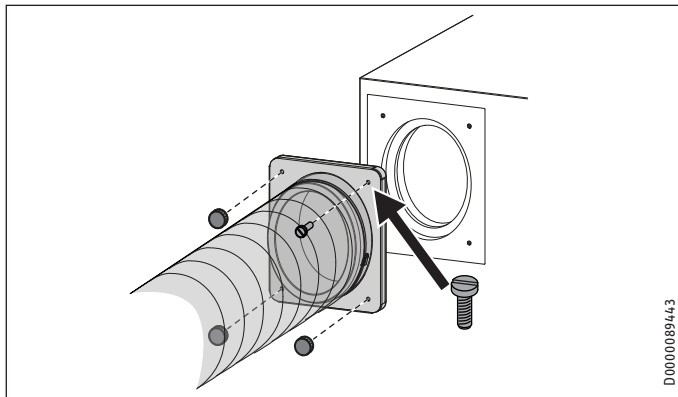
- Never incorporate more than four 90° bends. The radius of the bends must be at least 170 mm, relative to the centre of the hose.
- Secure the air hose at intervals of approx. every 1 m to prevent it from sagging.

INSTALLATION

Commissioning

13.1 Connection with air routing accessory LSWP 315 AWG Set

- If the air hose is too long for the installation situation, you may need to trim it. Observe the air routing accessory installation instructions.

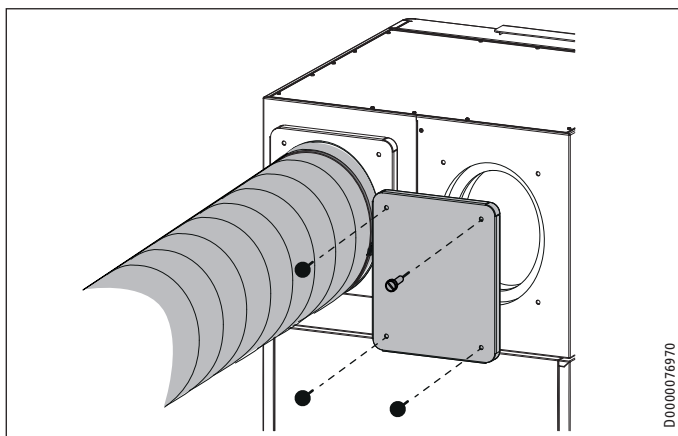


Note

- Do not use any tools for the knurled screws.
- Tighten the screws by hand.

- Fit a hose end with a prefitted quick-fit adaptor to the air intake of the appliance. Use three knurled screws and a slotted screw for this.
- Fit a hose end with a prefitted quick-fit adaptor to the air discharge of the appliance. Use three knurled screws and a slotted screw for this.
- Fit the other hose ends with prefitted quick-fit adaptors to the wall outlet.

WPL 09 IKCS classic | WPL 17 IKCS classic



- Seal the air intake and discharge that have not been used with dummy covers. Use three knurled screws and a slotted screw for this.

13.2 Connection with quick-fit adaptor ZSA 315



Note

If air hoses and wall outlets AWG 315 are available, the quick-fit adaptors ZSA 315 can be used to connect the air hoses to the appliance.

- Observe the quick-fit adaptor installation instructions.
- If the air hose is too long for the installation situation, you may need to trim it. Cut to size using a sharp knife. The wire spirals can be cut using wire cutters.

14. Commissioning

The commissioning of the appliance, all settings at the commissioning level of the heat pump manager and instruction of the user must be performed by a qualified contractor.

Carry out commissioning in accordance with these installation instructions and the heat pump manager instructions. Our customer support can assist with commissioning, which is a chargeable service.

Where this appliance is intended for commercial use, the regulations of the Operational Safety Ordinance may apply during commissioning. For further details, check with your local authorising body; in Germany for example, this is the TÜV.

14.1 Checks to be carried out before commissioning the heat pump manager



Material losses

Observe the maximum system temperature for underfloor heating systems.

- Check that the heating system is filled to the correct pressure and the air vent valve has been closed.
- Check whether the outside temperature sensor and the return sensor are correctly placed and connected.
- Check whether additional sensors are correctly positioned and connected.
- Check whether the power supply is connected correctly.

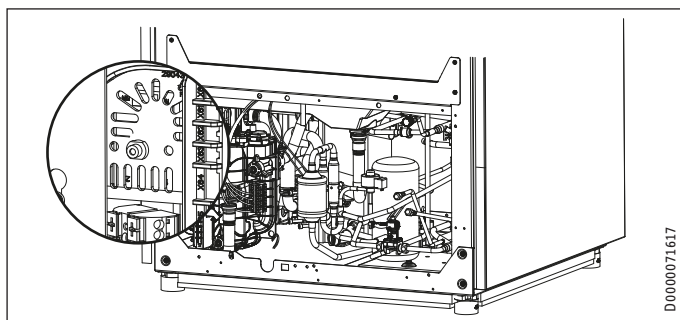
14.1.1 High limit safety cut-out

At ambient temperatures below -15 °C it is possible that the temperature controller of the electric emergency/booster heater may trip.

- Check whether the temperature controller has tripped.
- Remove the cause of the fault if necessary.
- Remove the front panel (see chapter "Fitting the appliance casing").

INSTALLATION

Commissioning



- Reset the temperature controller by pressing the reset button.

14.2 Commissioning the heat pump manager

Commission the heat pump manager and make all settings in accordance with the heat pump manager operating and installation instructions.

14.3 Ensuring a minimum flow rate



Note

The minimum flow rate and the defrost energy must always be assured (see chapter "Specification / Data table"). When heating circuit temperatures are very low, in exceptional circumstances it is possible that the electric emergency/booster heater will be activated during a defrost operation in order to provide the required defrost energy.

The appliance is designed in such a way that no buffer cylinder is required in conjunction with appropriately sized area heating systems.

Installations with several heating circuits require a buffer cylinder to be used.

14.3.1 Sizing the heating circuits

For systems with a buffer cylinder, we recommend checking the sizing of the heating circuits in order to ensure that the system operates efficiently.

For systems without a buffer cylinder, you will need to check the sizing of the heating circuits in order to ensure that the flow rate is sufficient for defrosting and to avoid system failures due to defrosting faults.

The design of the underfloor heating system determines the possible flow rate through the permanently open heating circuits.

If the flow rate of the permanently open heating circuits is less than the minimum flow rate of the heat pump, check whether the available external delivery head of the heating circulation pump is sufficient.

Delivery head test

$$\Delta p_{UP}^* \geq (V_{min} / V_{HK0})^2 \times (\Delta p_{HK} + \Delta p_v) + \Delta p_{WP}$$

Δp_{UP}^*	External delivery head of the circulation pump at V_{min} * If the circulation pump is integrated in an indoor unit, the available external head can be found in the specification for the indoor unit.
V_{min}	Minimum flow rate of heat pump
V_{HK0}	Design flow rate of the permanently open heating circuits
Δp_{HK}	Design pressure drop of the permanently open heating circuits
Δp_v	Design pressure drop to and from floor distributors
Δp_{WP}	Pressure drop in the heat pump at V_{min}

For heat pumps with an integral circulation pump, the pressure drop of the heat pump (Δp_{WP}) is not taken into account.

If the external delivery head is not sufficient for the minimum flow rate, additional heating circuits for the underfloor heating must be permanently opened.

Checking the minimum flow rate

The setting is made 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.
- Ensure that hydronic balancing has been performed.
- Check the connected pumps against the hydraulic diagram.

14.3.2 Systems without a buffer cylinder



Note

If the appliance is operated solely through the WPM heat pump manager, and an external pump that is not controlled by the WPM is used as a heating circuit pump, you will have to adjust the heating circuit pump manually.

For systems without a buffer cylinder, one or more heating circuits in the system must remain open. The open heating circuit(s) must be installed in the lead room (room in which the external programming unit is installed, e.g. living room or bathroom). The lead room can be individually controlled using the external programming unit, or indirectly by adjusting the heating curve or activating room influence.

- Operate the appliance in heating mode.
- When designing underfloor heating in the lead room, observe our recommendations. The table applies if individual room control is installed.

INSTALLATION

Settings

	WPL 09 I(K)CS classic	WPL 17 I(K)CS classic
Minimum flow rate of heat pump		
l/h	400	600
Minimum water content of the open heating circuits during operation without buffer cylinder		
l	13	16
Composite pipework 16 x 2 mm / installation spacing 10 cm		
Lead room floor area		
m ²	21	21
Number of circuits		
n x m	3x70	3x70
Composite pipework 20 x 2.25 mm / installation spacing 15 cm		
Lead room floor area		
m ²	21	21
Number of circuits		
n x m	2x70	2x70
Buffer cylinder always required		
	no	no
Buffer cylinder volume in relation to product range		
l	100-200	100-400
Activate the integral emergency/booster heater		
	yes	yes

- ▶ Fully open the heating circuit(s) in the lead room.
- ▶ Close all other heating circuits.
- ▶ If an overflow valve is installed in the heating system, close this valve.
- ▶ Adjust the parameters.

Parameter	Setting
MINIMUM PUMP RATE (COMMISSIONING / CHARGING PUMP CONTROL / STANDBY / TYPE OF CONTROL)	OFF
MAXIMUM PUMP RATE (COMMISSIONING / CHARGING PUMP CONTROL / STANDBY / TYPE OF CONTROL)	ON

- ▶ Check the current flow rate.

Parameter
WP WATER FLOW RATE (INFO / HEAT PUMP / PROCESS DATA)

- ▶ Compare the value with the minimum flow rate (see chapter "Specification / Data table").

Minimum flow rate has been reached

No further measures required.

- ▶ Reset the parameters to their original values.

Parameter	Setting
MINIMUM PUMP RATE (COMMISSIONING / CHARGING PUMP CONTROL / STANDBY / TYPE OF CONTROL)	ON
MAXIMUM PUMP RATE (COMMISSIONING / CHARGING PUMP CONTROL / STANDBY / TYPE OF CONTROL)	OFF

Minimum flow rate has not been reached

If the specified flow rate is not met, take suitable measures to achieve the flow rate.

- ▶ Open the heating circuit permanently in another room.
- ▶ Check the current flow rate.
- ▶ If the minimum flow rate is not reached, repeat these steps.
- ▶ Set the overflow valve correctly.

14.3.3 Systems with a buffer cylinder

- ▶ Operate the appliance in heating mode.
- ▶ Adjust the parameters.

Parameter	Setting
MINIMUM PUMP RATE (COMMISSIONING / CHARGING PUMP CONTROL / STANDBY / TYPE OF CONTROL)	OFF
MAXIMUM PUMP RATE (COMMISSIONING / CHARGING PUMP CONTROL / STANDBY / TYPE OF CONTROL)	ON

- ▶ Check the current flow rate.

Parameter
WP WATER FLOW RATE (INFO / HEAT PUMP / PROCESS DATA)

- ▶ Compare the value with the minimum flow rate (see chapter "Specification / Data table").

Minimum flow rate has been reached

No further measures required.

- ▶ Reset the parameters to their original values.

Parameter	Setting
MINIMUM PUMP RATE (COMMISSIONING / CHARGING PUMP CONTROL / STANDBY / TYPE OF CONTROL)	ON
MAXIMUM PUMP RATE (COMMISSIONING / CHARGING PUMP CONTROL / STANDBY / TYPE OF CONTROL)	OFF

Minimum flow rate has not been reached

- ▶ Check the technical guide to the heating system.

14.3.4 In cooling mode

If the buffer cylinder is bypassed in cooling mode, the flow rate must be checked for cooling mode in the same way as for heating mode.

- ▶ Observe chapter "Systems without a buffer cylinder".

15. Settings

15.1 Heating curve adjustment

The efficiency of a heat pump decreases as the flow temperature rises. Adjust the heating curve carefully. Heating curves that are set too high result in the zone or thermostatic valves closing, which may result in the minimum required flow rate in the heating circuit being undershot.

- ▶ 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 a remote control.
- At different outside temperatures (e.g. -10 °C and +10 °C), adjust the heating curve so that the required temperature is achieved in the lead room.

INSTALLATION

Settings

Standard values to begin with:

Parameters	Underfloor heating system	Radiator heating system
Heating curve	0.4	0.8
Control response time	25	50
Comfort temperature	20 °C	20 °C

If the room temperature is too low in spring and autumn (approx. 10 °C outside temperature), open the heat pump manager menu, select "SETTINGS / HEATING / HEATING CIRCUIT" and raise the "COMFORT TEMPERATURE" parameter.



Note

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

If the room temperature is too low when outside temperatures are also low, increase the "HEATING CURVE" parameter.

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



Material losses

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

Once 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 for that particular underfloor heating.

15.2 Reduced night mode (Silent mode)

- Look up the sound power level in the data table (see chapter "Specification / Data table").

To reduce the sound power level of the appliance for a specified period, you can set the appliance to night mode if required.

You can specify the times during which the appliance is set to night mode using the time programs.

Parameter	Meaning
PROGRAMS (SILENT PROGRAM 1)	reduced night mode
PROGRAMS (SILENT PROGRAM 2)	Appliance switched off

Two versions of night mode are available for you to use.

Version 1: reduced night mode

You can reduce the sound power level of the appliance through its output or through the fans. If the emergency/booster heater cuts in, this will result in higher running costs.

Version 2: appliance switched off

You can switch the appliance off. If the appliance is switched off, central heating and DHW heating will be supplied solely through the emergency/booster heater. If the emergency/booster heater cuts in, this will result in higher running costs.

15.2.1 Reduced night mode



Note

When reduced night mode is active, this may result in higher running costs.

	Meaning
max. reduced night mode	Output and fans cannot be reduced below these levels.
reduced night mode	The appliance operates at the set reduced output or fan control.

The output and fan control are infinitely variable.

- Adjust the fan control and compressor output in the heat pump manager.

Parameter

OUTPUT (COMMISSIONING / SILENT MODE / OUTPUT REDUCTION)

FAN (COMMISSIONING / SILENT MODE / OUTPUT REDUCTION)

- Note the sound data and the heating output in the specification (see chapter "Specification / Data table").

15.2.2 Appliance switched off



Note

If the appliance is switched off, central heating and DHW heating will be supplied solely through the emergency/booster heater. This will result in higher running costs.

- Switch the appliance off in the heat pump manager.

Parameter

HEAT PUMP OFF (COMMISSIONING / SILENT MODE)

15.3 Other settings

- For operation with or without a buffer cylinder, see chapter "Menu / SETTINGS / HEATING / STANDARD SETTING / BUFFER OPERATION" in the WPM commissioning 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.

16. Appliance handover

Explain the appliance function to users and familiarise them with its operation.



Note

Hand over these operating and installation instructions to users for safekeeping. All information in these instructions must be closely observed. The instructions provide information on safety, operation, installation and maintenance of the appliance.

17. 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.

17.1 Standby mode

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

17.2 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.

18. Troubleshooting



WARNING Electrocutation

► Before working on the appliance, isolate it from the power supply at the terminal area. Following disconnection from the power supply, parts of the appliance may remain energised for 2 minutes until the inverter capacitors have discharged.



Note

Please observe the heat pump manager operating and installation instructions.



Note

If faults occur on the appliance, they are shown in the heat pump manager display.

► Isolate the appliance across all poles from the power supply for one minute. If this faults occurs repeatedly, notify customer support.



Note

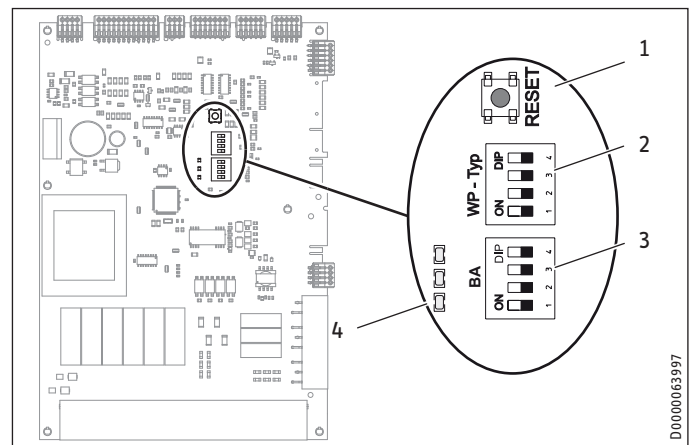
The following inspection instructions may only be carried out by a qualified contractor.

If you cannot locate the fault using the heat pump manager, check the control elements on the IWS.

- Remove the front panel from the appliance. The IWS is located on the right, next to the terminal area.
- If required, disconnect the connector plug of the programming unit from the connection in the appliance. The functionality of the appliance will not be affected. However, it will not be possible to operate the appliance via the programming unit.
- Read the following sections on troubleshooting and follow the instructions.

18.1 Control elements on the IWS

If the fault cannot be identified using the WPM, the IWS will help you to troubleshoot.



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

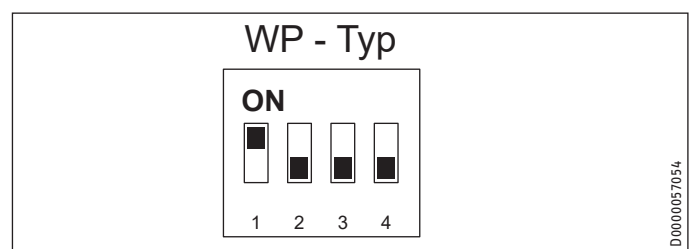
18.1.1 DIP switch

DIP switch (WP-Typ)

The DIP switch (WP-Typ) on the IWS serves to set the relevant heat pump type.

Factory setting

Compressor mode with electric emergency/booster heater



- Check whether the DIP switch is set correctly.

INSTALLATION

Troubleshooting

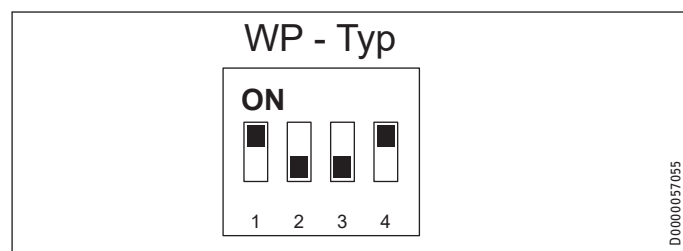
Compressor mode with an external second heat generator



Material losses

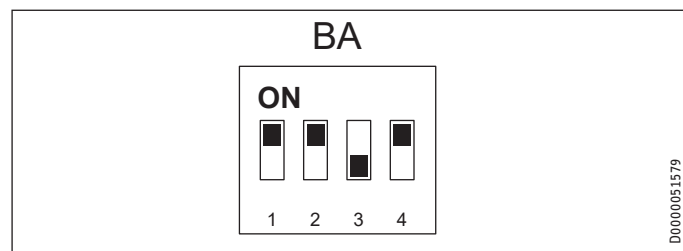
- For operation with a second external heat generator, do not connect the electric emergency/booster heater.

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

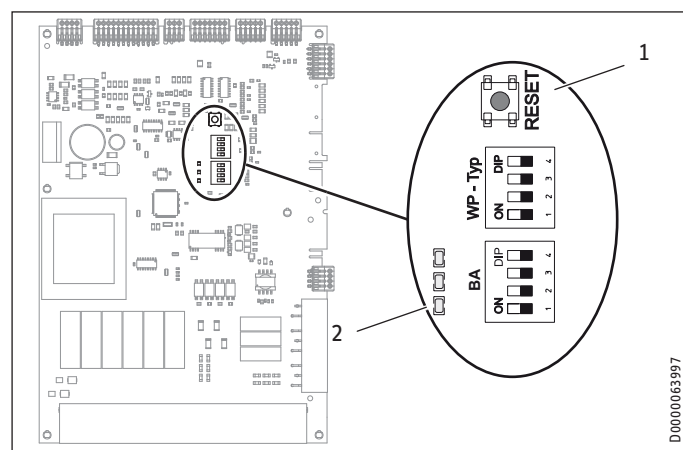


DIP switch (BA)

Factory setting



18.1.2 Light emitting diodes (LEDs)



- 1 Reset button
- 2 LEDs

The following table shows the meaning of the LEDs on the IWS.

LED indicator	Meaning
Red LED flashes	Single fault. The appliance shuts down. The appliance restarts after 10 minutes. The LED extinguishes.
Red LED illuminates	Multiple faults have occurred. The appliance shuts down. The appliance only restarts following a reset on the IWS. This also resets the internal fault counter. The appliance can be restarted after 10 minutes. The LED extinguishes.
Green LED (centre) flashes	The heat pump is initialising.
Green LED (centre) illuminates	The heat pump was initialised successfully and the connection with the WPM is active.

Faults indicated by the red LED:

- High pressure fault
- Low pressure fault
- Central fault
- Hardware fault on the IWS (see notification list for the heat pump manager)

18.1.3 Reset button

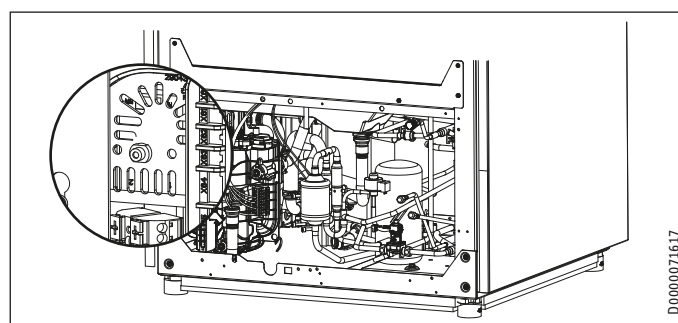
If the IWS was incorrectly initialised, you can reset the settings with this button.

- For this, also observe chapter "Reinitialising the IWS" in the heat pump manager commissioning instructions.

18.2 Resetting the temperature controller

If the heating water temperature exceeds 85 °C, the electric emergency/booster heater shuts down.

- Remove the cause of the fault.
- Remove the front panel (see chapter "Fitting the appliance casing").



- Reset the temperature controller by pressing the reset button. If necessary, use a pointed object to do this.
- Check whether the heating water is being circulated at a sufficiently high flow rate.

18.3 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 air routing pipes. 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 demanded 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 the installation requirements.
- ▶ If noise occurs frequently, notify the service department.

19. Maintenance



WARNING Electrocutation

- ▶ Prior to commencing any service or cleaning work, isolate the appliance across all poles from the power supply.

Following disconnection from the power supply, parts of the appliance may remain energised for 2 minutes until the inverter capacitors have discharged.



Material losses

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

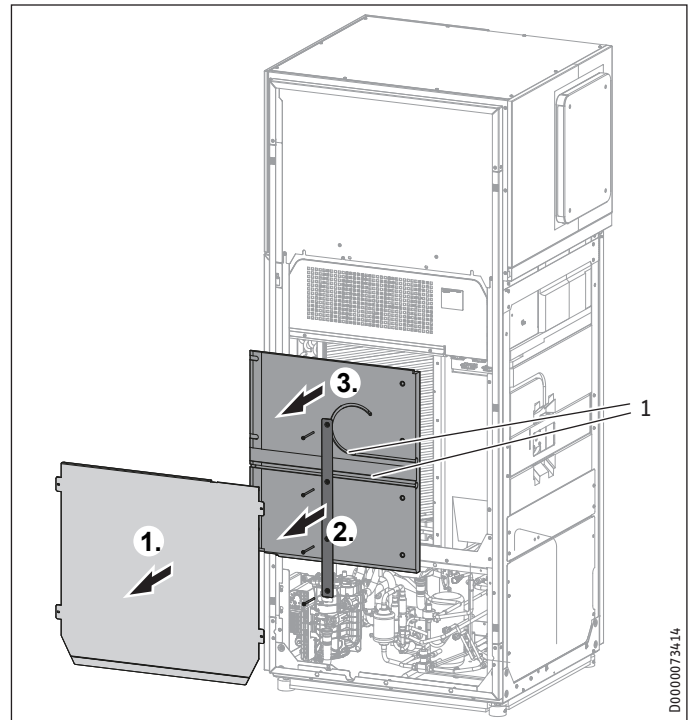
We recommend a regular inspection (to establish the current condition of the system), and maintenance if required (to return the system to its original condition).

If heat meters are installed, clean their strainers regularly.

- ▶ Periodically remove any leaves or other foreign bodies from the evaporator fins (see chapter "Cleaning the evaporator fins").
- ▶ Check the condensate drain is working correctly. Remove accumulated dirt if necessary (see chapter "Cleaning the condensate pan").

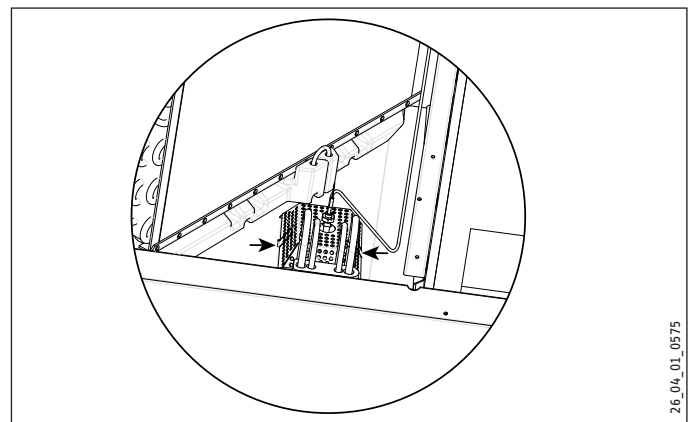
19.1 Cleaning the evaporator fins

Check the evaporator fins for dirt from time to time.



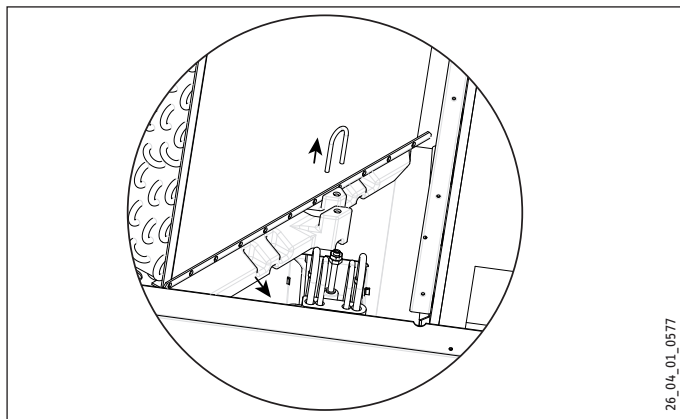
- 1 Defrost hose (hose of the pressure differential switch for capturing the end of defrosting)

- ▶ Remove the front panel.
- ▶ Undo the screws and remove the centre cover panel.
- ▶ Undo the screws in the metal rail.
- ▶ Remove the lower defrost hose from the guide groove in the EPS cover.
- ▶ Pull the EPS cover 6 to 8 cm to the right.
- ▶ Tilt the top of the EPS cover towards you from the appliance.
- ▶ Pull the EPS cover upwards to remove.

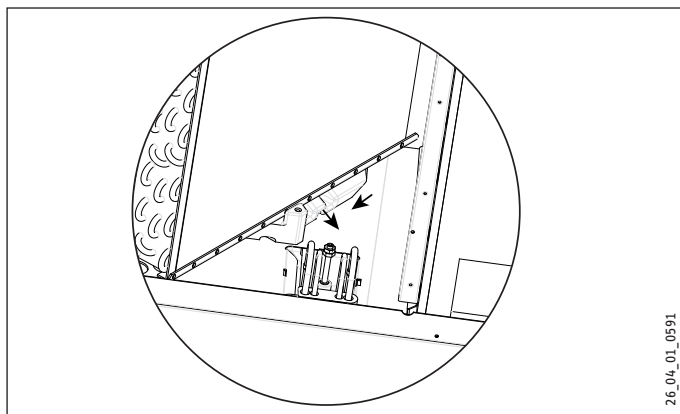


- ▶ Remove the dirt grille fitted above the condensate pan by compressing it from its sides and removing it upwards.
- ▶ Check the defrost pan drain and clean it, if required.

Below the evaporator is a two-part evaporator gasket. The two parts of the gasket are connected with a bracket.



- Pull the bracket upwards to remove.
- First remove the l.h. half of the evaporator cover.



- Then remove the r.h. half of the evaporator cover.



Material losses

When cleaning the evaporator fins, ensure that no water comes into contact with the PCB.



Material losses

Do not use any cleaning agents, just water.



Material losses

Do not use a high pressure cleaner otherwise the evaporator fins may be bent.

- Spray water across the evaporator fins.
- Remove the water from the appliance using a wet suction device.
- Remove contaminants and blockages.



Note

Check the condensate drain regularly, at least once a year.

19.2 Cleaning the condensate drain

Check the condensate drain regularly.

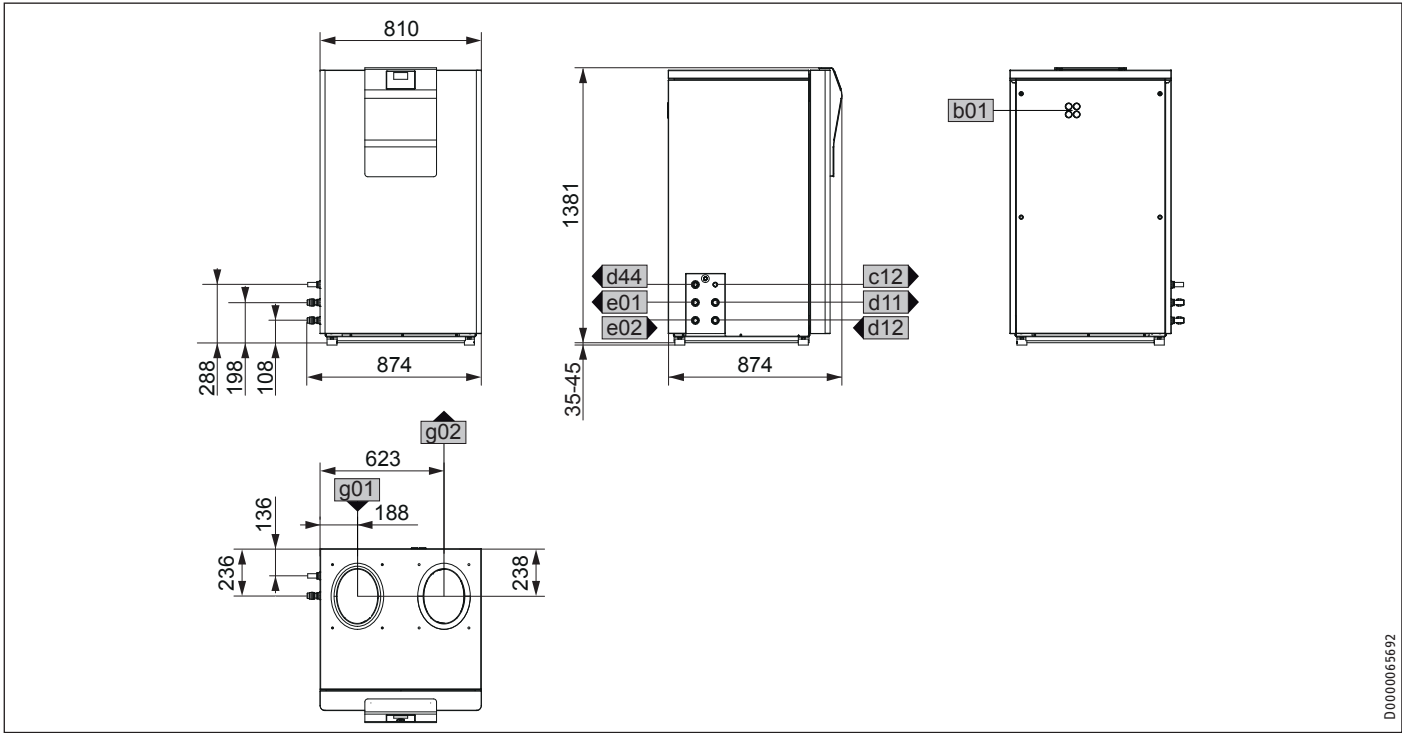
- Remove the evaporator cover (see chapter "Cleaning the evaporator fins").
- Remove contaminants and blockages.
- To test the drain, pour a litre of water into the condensate collector.

If the condensate collector does not overflow, the drainage facility is adequate.

20. Specification

20.1 Dimensions and connections

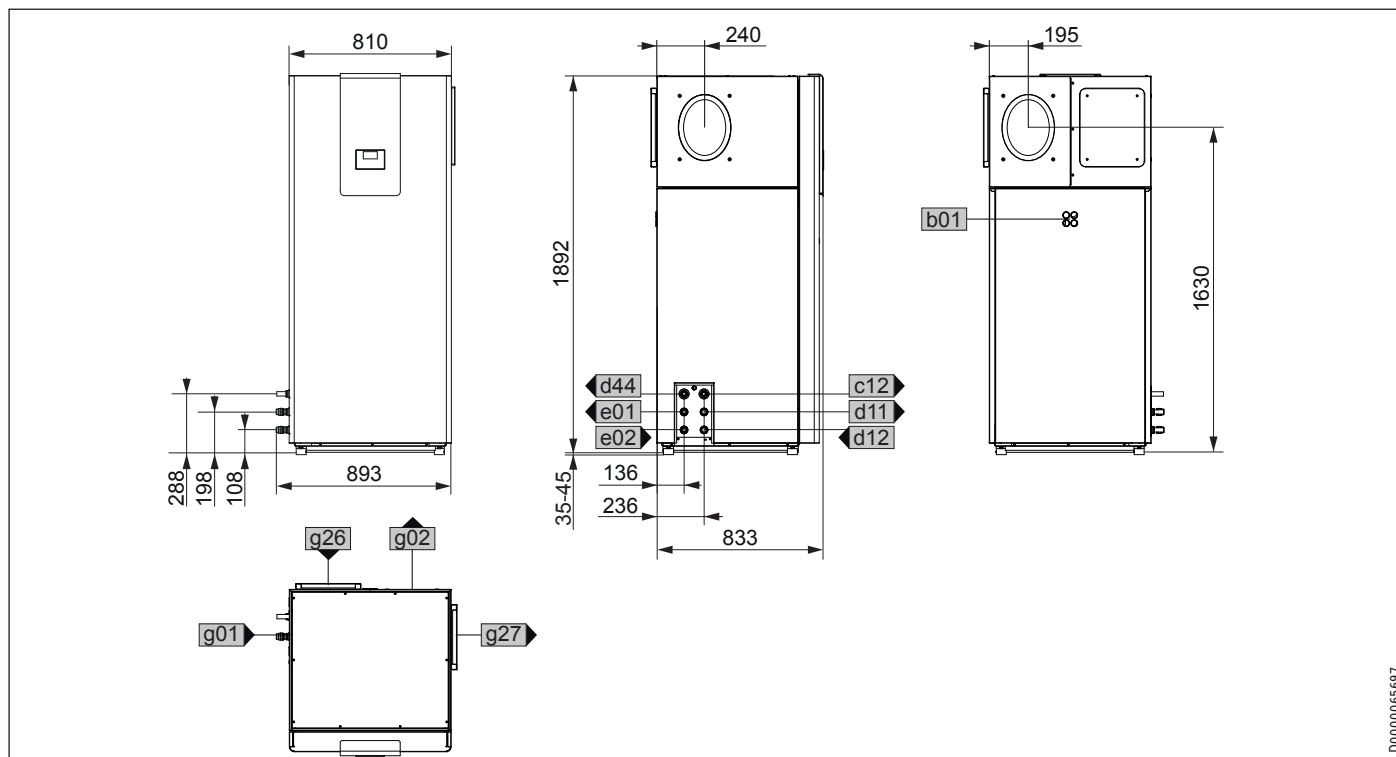
WPL 09 ICS classic | WPL 17 ICS classic



			WPL 09 ICS classic	WPL 17 ICS classic
b01	Entry electrical cables			
c12	Safety valve drain	Diameter	mm	22
d11	Heat pump DHW flow	Diameter	mm	22
d12	Heat pump DHW return	Diameter	mm	22
d44	Outlet condensate drain	Diameter	mm	22
e01	Heating flow	Diameter	mm	22
e02	Heating return	Diameter	mm	22
g01	Air intake	Nominal diameter	DN 315	DN 315
g02	Air discharge	Nominal diameter	DN 315	DN 315

INSTALLATION Specification

WPL 09 IKCS classic | WPL 17 IKCS classic



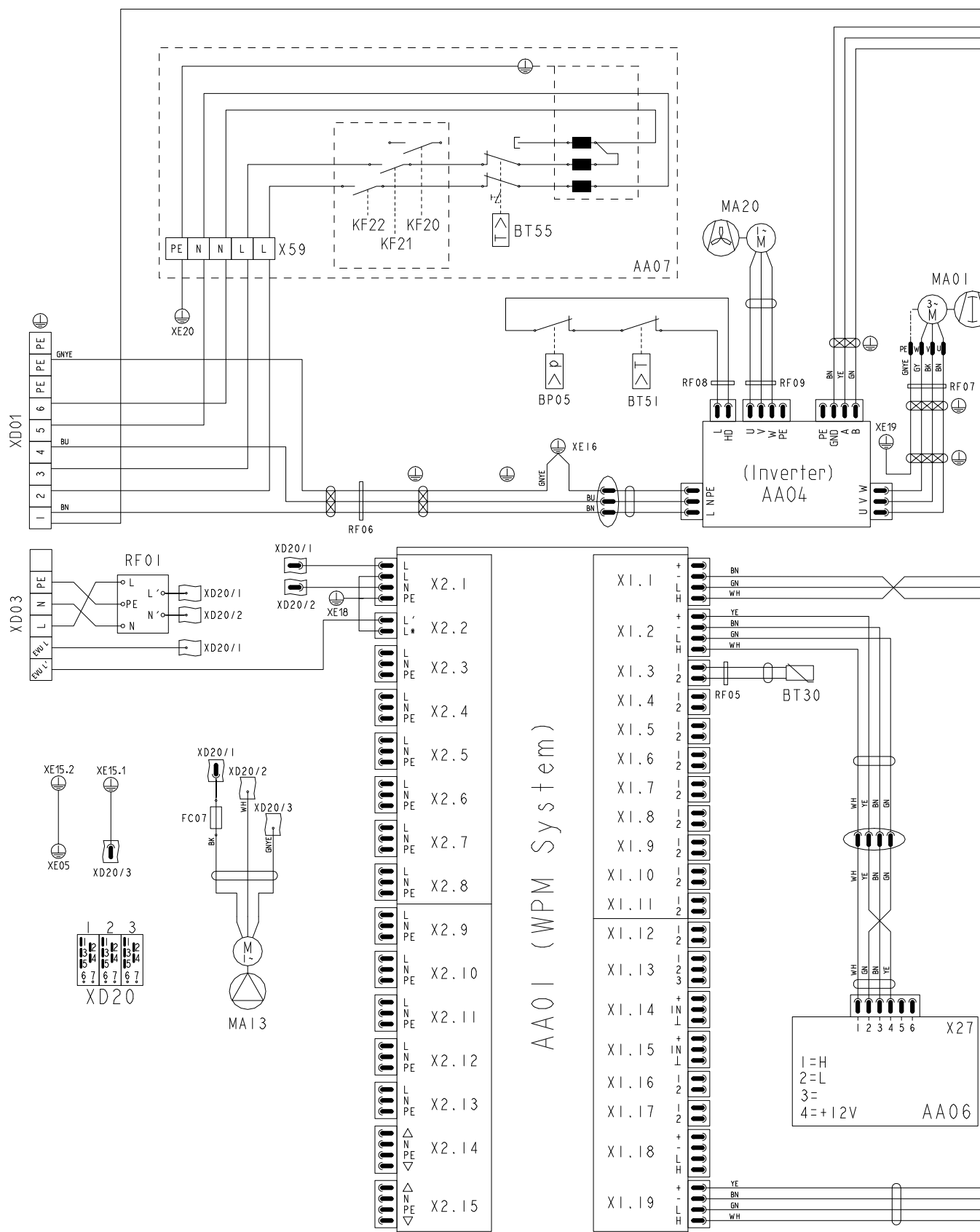
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			WPL 09 IKCS classic	WPL 17 IKCS classic
b01	Entry electrical cables			
c12	Safety valve drain	Diameter	mm 22	22
d11	Heat pump DHW flow	Diameter	mm 22	22
d12	Heat pump DHW return	Diameter	mm 22	22
d44	Outlet condensate drain	Diameter	mm 22	22
e01	Heating flow	Diameter	mm 22	22
e02	Heating return	Diameter	mm 22	22
g01	Air intake	Nominal diameter	DN 315	DN 315
g02	Air discharge	Nominal diameter	DN 315	DN 315
g26	Air intake optional	Nominal diameter	DN 315	DN 315
g27	Air discharge optional	Nominal diameter	DN 315	DN 315

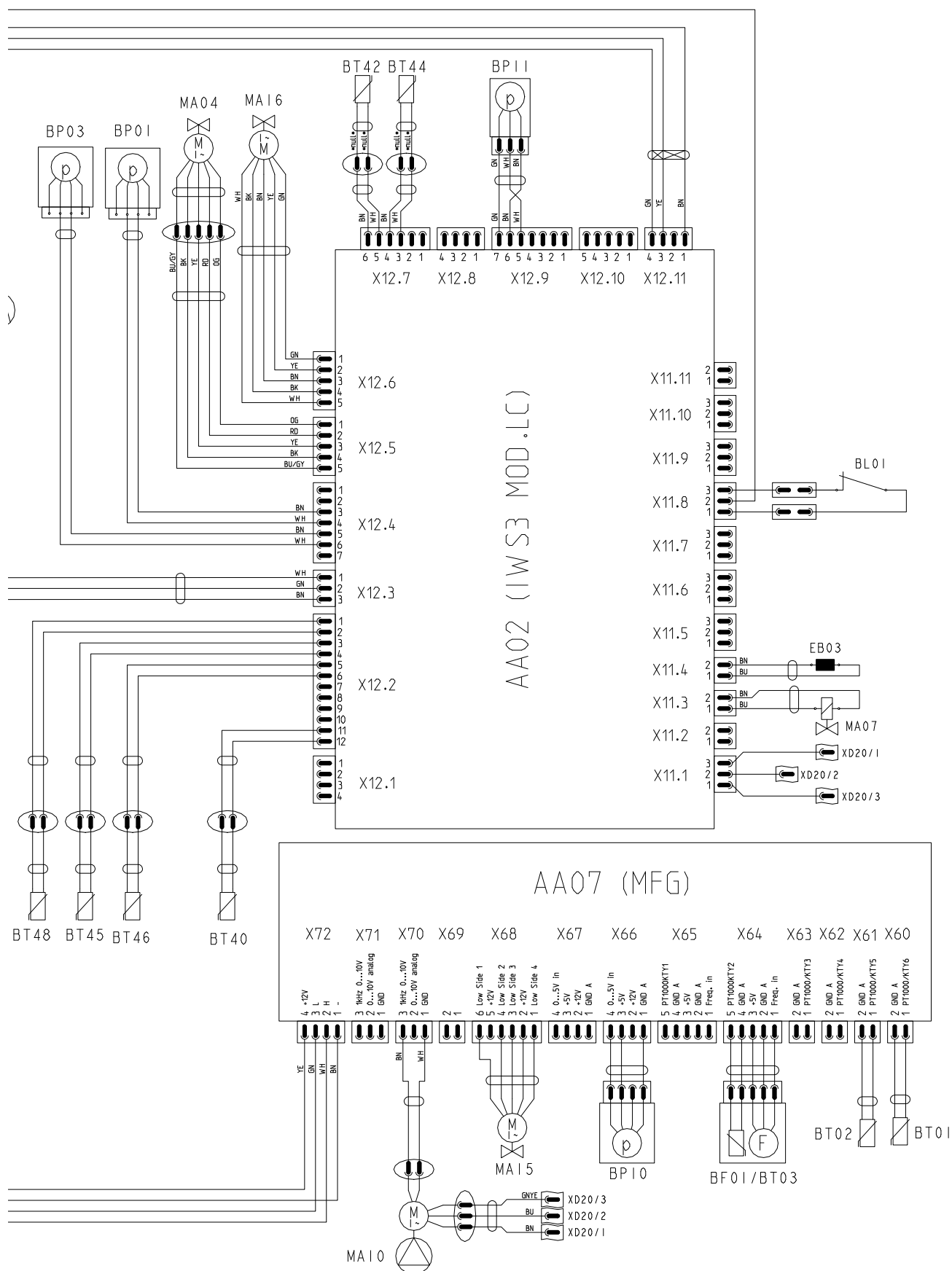
INSTALLATION Specification

20.2 Wiring diagram

WPL 09 I(K)CS classic



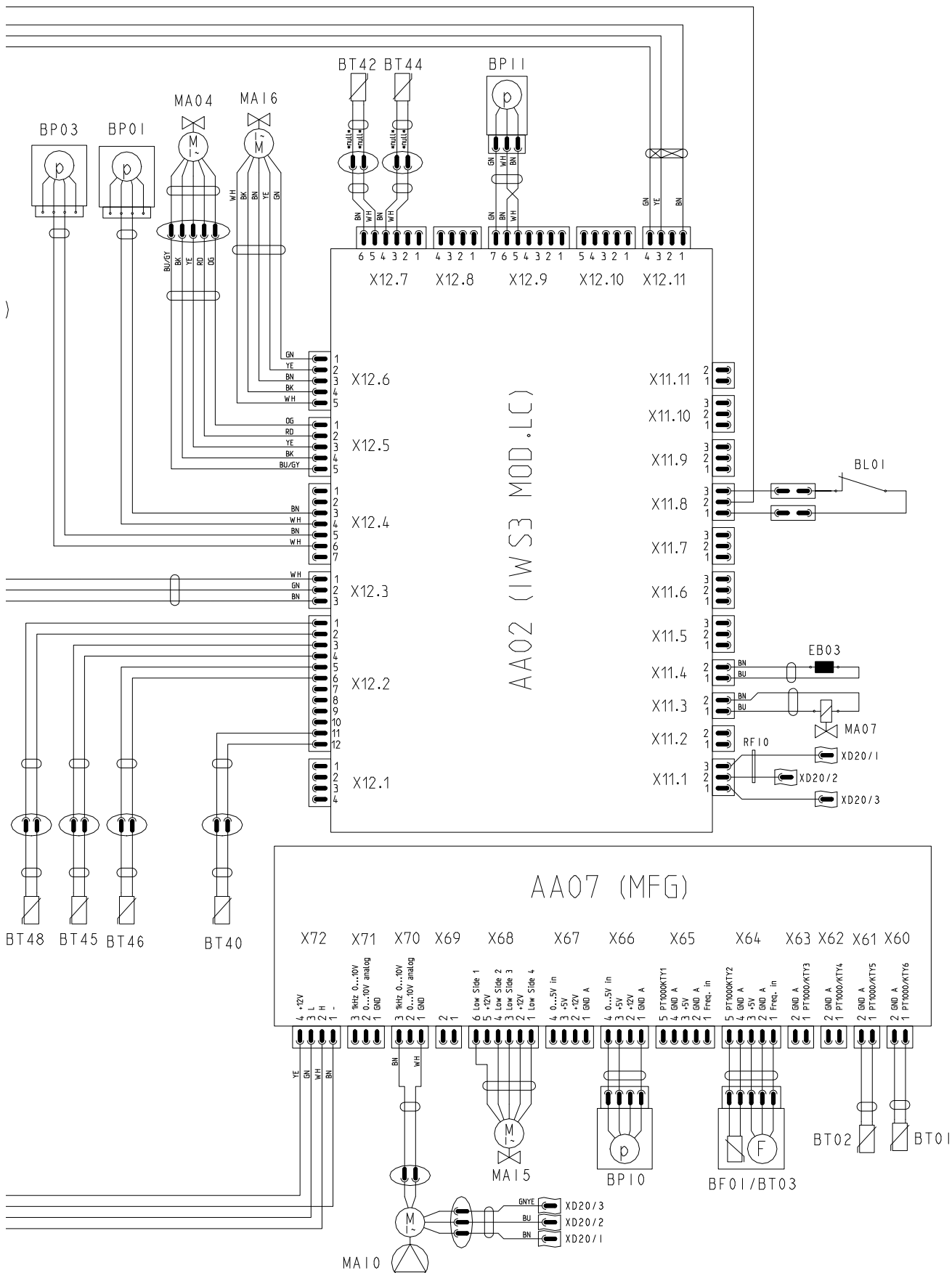
INSTALLATION Specification



WPL 17 I(K)CS classic



INSTALLATION Specification



INSTALLATION

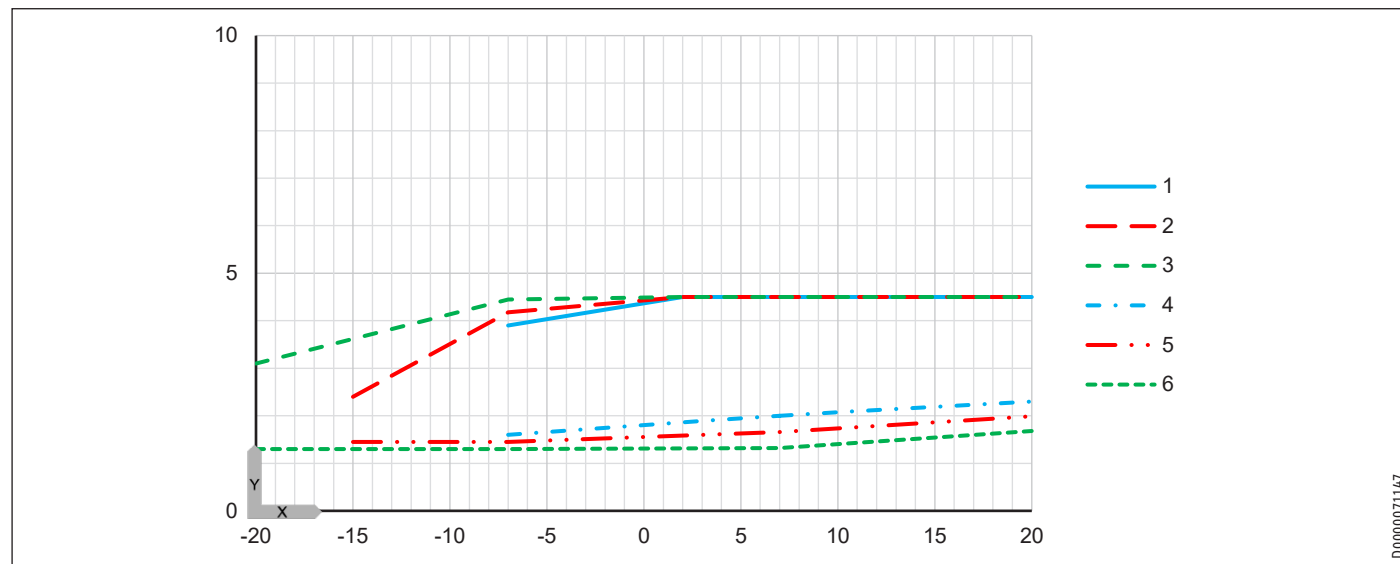
Specification

AA01		WPM heat pump manager	BT42	Condenser temperature sensor (frost protection)
Safety extra low voltage				
AA01	X1.1	CAN A (heat pump connection)	BT44	Evaporator inlet temperature sensor
AA01	X1.2	CAN B (FET / ISG connection)	BT45	Evaporator discharge temperature sensor
AA01	X1.3	Outside temperature sensor	BT46	Compressor intake temperature sensor
AA01	X1.4	Buffer temperature sensor	BT48	Oil sump temperature sensor
AA01	X1.5	Flow temperature sensor	BT51	Compressor temperature limiter
AA01	X1.6	Heating circuit temperature sensor 2	BT55	Temperature limiter, high limit safety cut-out, MFG
AA01	X1.7	Heating circuit temperature sensor 3		
AA01	X1.8	DHW cylinder sensor	EB03	Oil sump heater
AA01	X1.9	Source sensor	FC07	Condensate pump fuse 10 A
AA01	X1.10	Connector, 2nd heat generator	KF20	Emergency/booster heater relay, multifunction assembly MFG
AA01	X1.11	Connector, flow, cooling		
AA01	X1.12	Connector, DHW circulation sensor	KF21	Emergency/booster heater relay, multifunction assembly MFG
AA01	X1.13	FE7 remote control		
AA01	X1.14	Analogue input 0-10 V	KF22	Emergency/booster heater relay, multifunction assembly MFG
AA01	X1.15	Analogue input 0-10 V		
AA01	X1.16	PWM output 1	MA01	Compressor motor
AA01	X1.17	PWM output 2	MA04	Expansion valve motor
AA01	X1.18	CAN B (FET / ISG connection)	MA07	Motor, diverter valve, defrost
AA01	X1.19	CAN A (MFG)	MA10	Motor, pump, heat pump, heating circuit
Mains power supply			MA13	Condensate pump motor
AA01	X2.1	Power supply	MA15	Motor, diverter valve, heating/DHW
AA01	X2.2	Power-OFF contact	MA16	Motor, valve, inverter cooling
AA01	X2.3	Heating circuit pump 1	MA20	Motor, heat pump, fan
AA01	X2.4	Heating circuit pump 2	RF01	Interference suppression filter
AA01	X2.5	Heating circuit pump 3	RF05	Snap-on ferrite bead
AA01	X2.6	Buffer charging pump 1	RF06	Snap-on ferrite bead
AA01	X2.7	Buffer charging pump 2	RF07	Snap-on ferrite bead
AA01	X2.8	DHW charging pump	RF08	Snap-on ferrite bead
AA01	X2.9	Source pump / defrost	RF09	Snap-on ferrite bead
AA01	X2.10	Fault output	RF10	Snap-on ferrite bead
AA01	X2.11	DHW circulation pump / 2nd heat generator DHW	XD01	Terminal, heat pump and MFG power supply
			XD03	Terminal, control unit power supply
AA01	X2.12	2nd heat generator, heating	XD20	Distributor, main connection, internal
AA01	X2.13	Cooling	XD70	Plug-in connector (inverter)
AA01	X2.14	Mixer heating circuit 2 (X2.14.1 mixer OPEN / X2.14.2 mixer CLOSE)	XD80	Plug-in connector (CAN bus)
AA01	X2.15	Mixer heating circuit 3 (X2.15.1 mixer OPEN / X2.15.2 mixer CLOSE)	XE05	Earthing point, front panel
			XE15.1	Earthing point 1, control panel
			XE15.2	Earthing point 2, control panel
AA02		Integral control unit	XE16	Earthing point, inverter, internal
AA04		Inverter	XE18	Earthing point, WPM
AA06		Programming unit	XE19	Earthing point, inverter, heat sink
AA07		PCB, emergency/booster heater, MFG	XE20	Earthing point, MFG retaining bracket
BF01		Heating circuit flow rate sensor		
BL01		Condensate float switch		
BP01		Pressure sensor, high pressure (42 bar)		
BP03		Pressure sensor, low pressure (16 bar)		
BP05		Pressure switch, high pressure (45 bar)		
BP10		Heating circuit pressure sensor		
BP11		Air differential pressure sensor		
BT01		Heat pump flow temperature sensor		
BT02		Heat pump return temperature sensor		
BT03		Heat pump flow temperature sensor downstream of emergency/booster heater		
BT30		Outside temperature sensor		
BT40		Temperature sensor, hot gas		

20.3 Output diagrams

20.3.1 WPL 09 ICS classic | WPL 09 IKCS classic

Heating output



X Outside temperature [°C]

Y Heating output [kW]

1 max. W55

2 max. W45

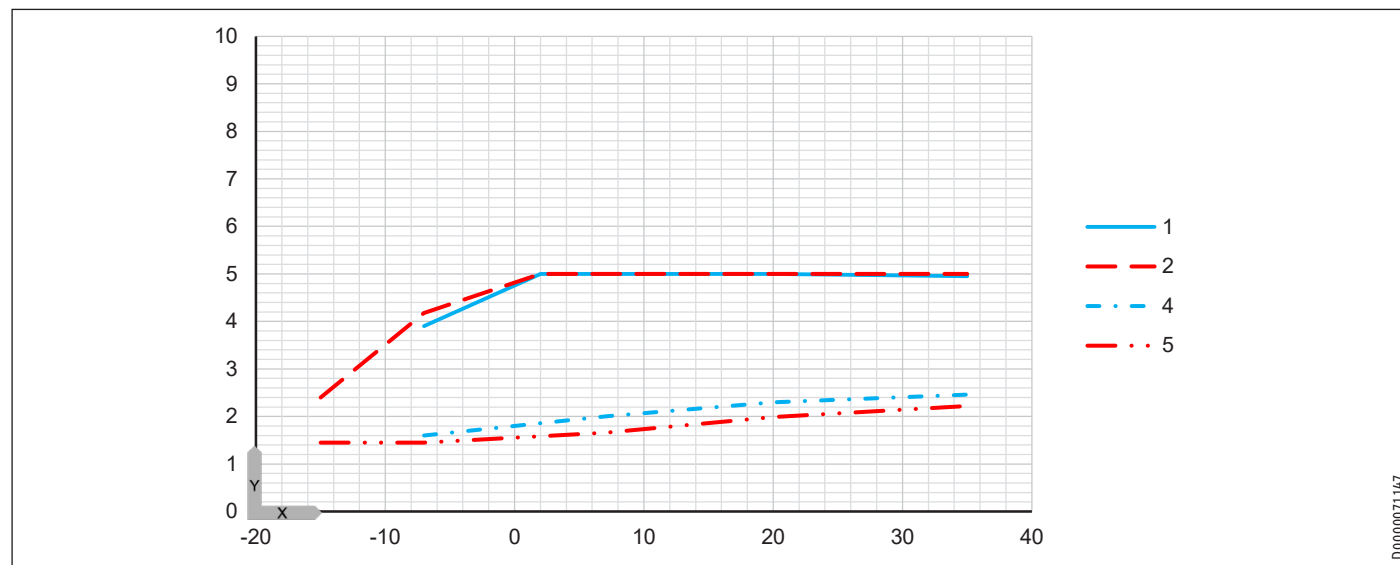
3 max. W35

4 min. W55

5 min. W45

6 min. W35

DHW output



X Outside temperature [°C]

Y DHW output [kW]

1 max. W55

2 max. W45

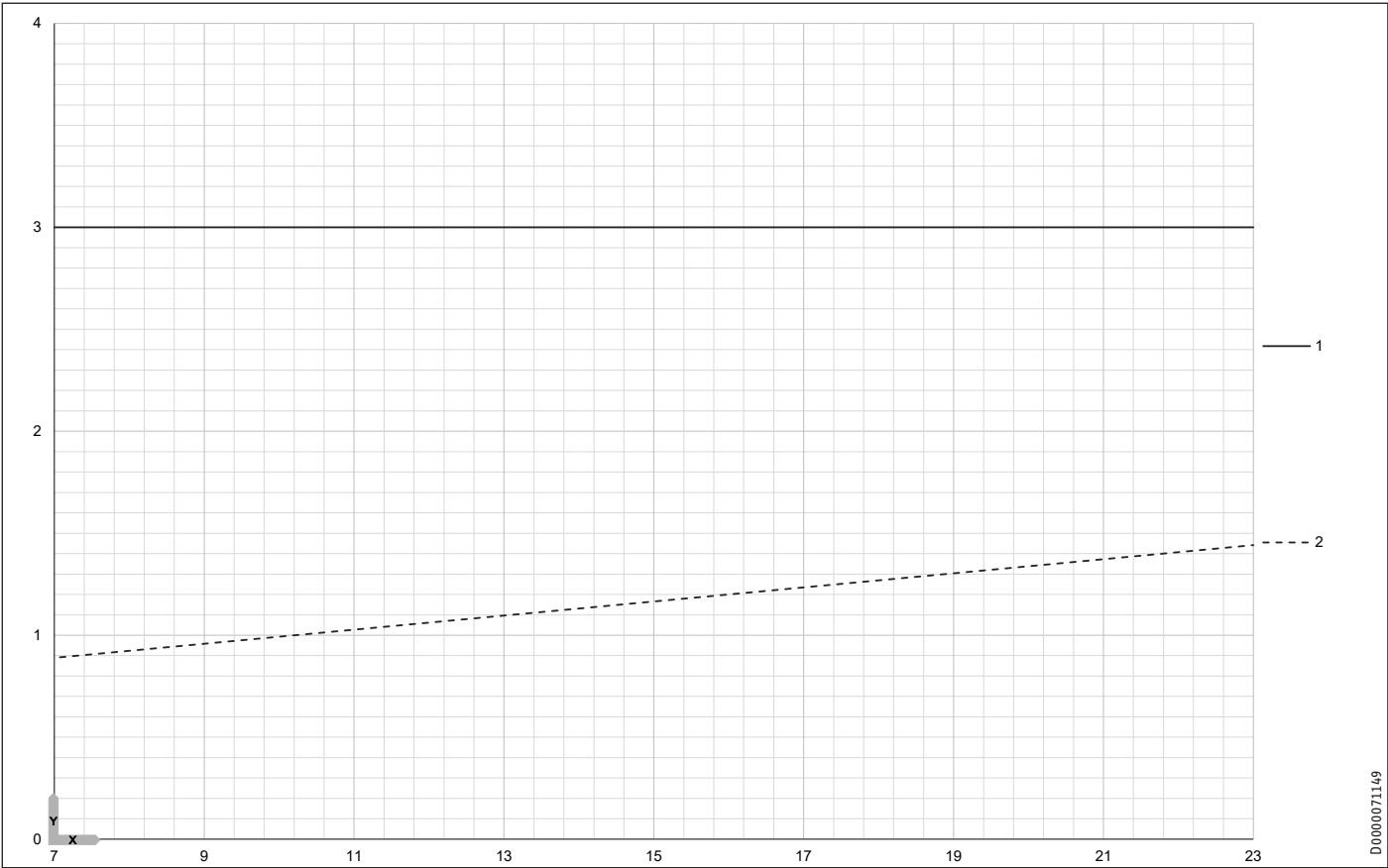
4 min. W55

5 min. W45

INSTALLATION

Specification

Cooling capacity

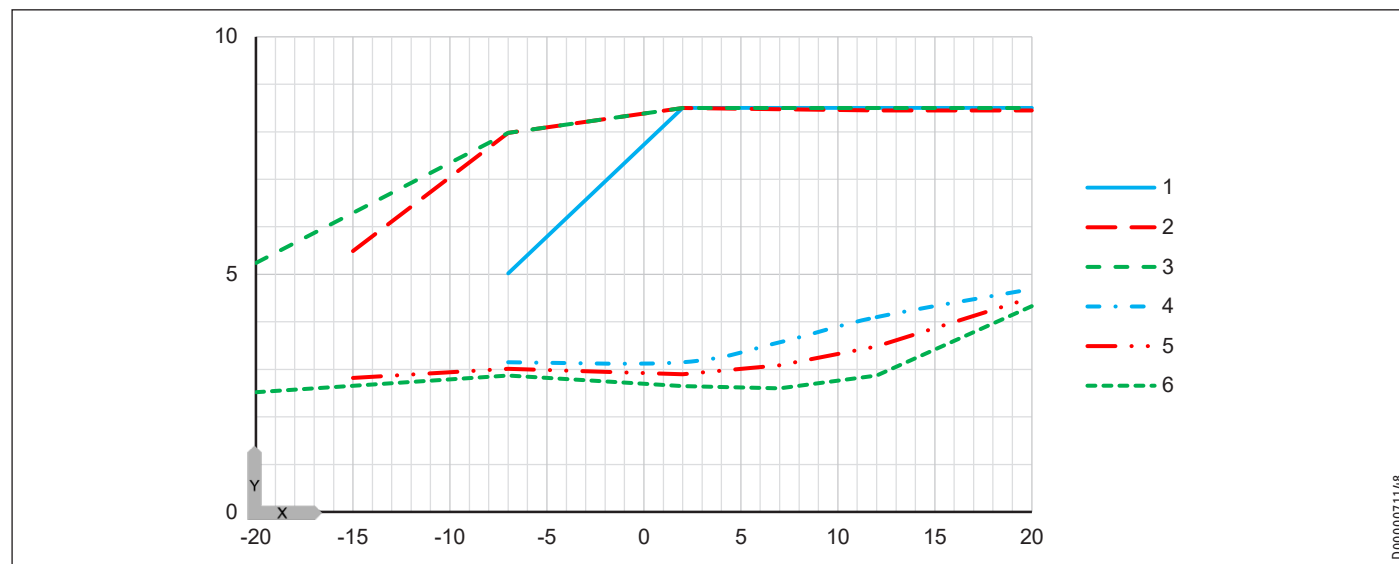


X Flow temperature [°C]
Y Cooling capacity [kW]
1 max. A35
2 min. A35

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20.3.2 WPL 17 ICS classic | WPL 17 IKCS classic

Heating output



X Outside temperature [°C]

Y Heating output [kW]

1 max. W55

2 max. W45

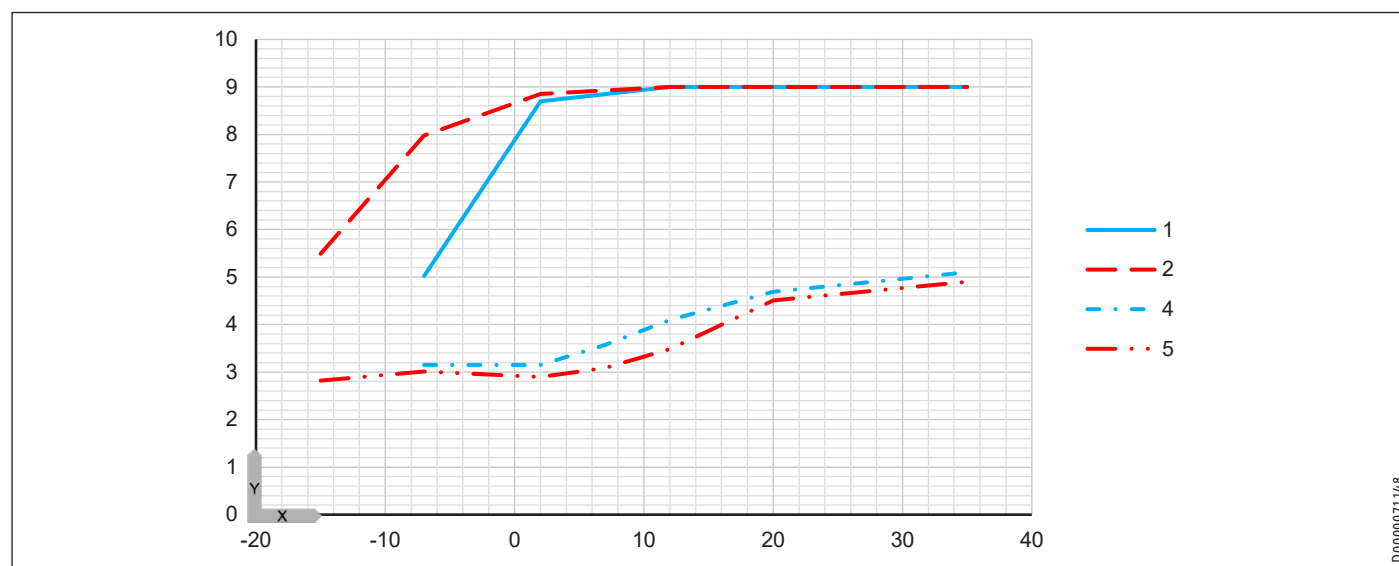
3 max. W35

4 min. W55

5 min. W45

6 min. W35

DHW output



X Outside temperature [°C]

Y DHW output [kW]

1 max. W55

2 max. W45

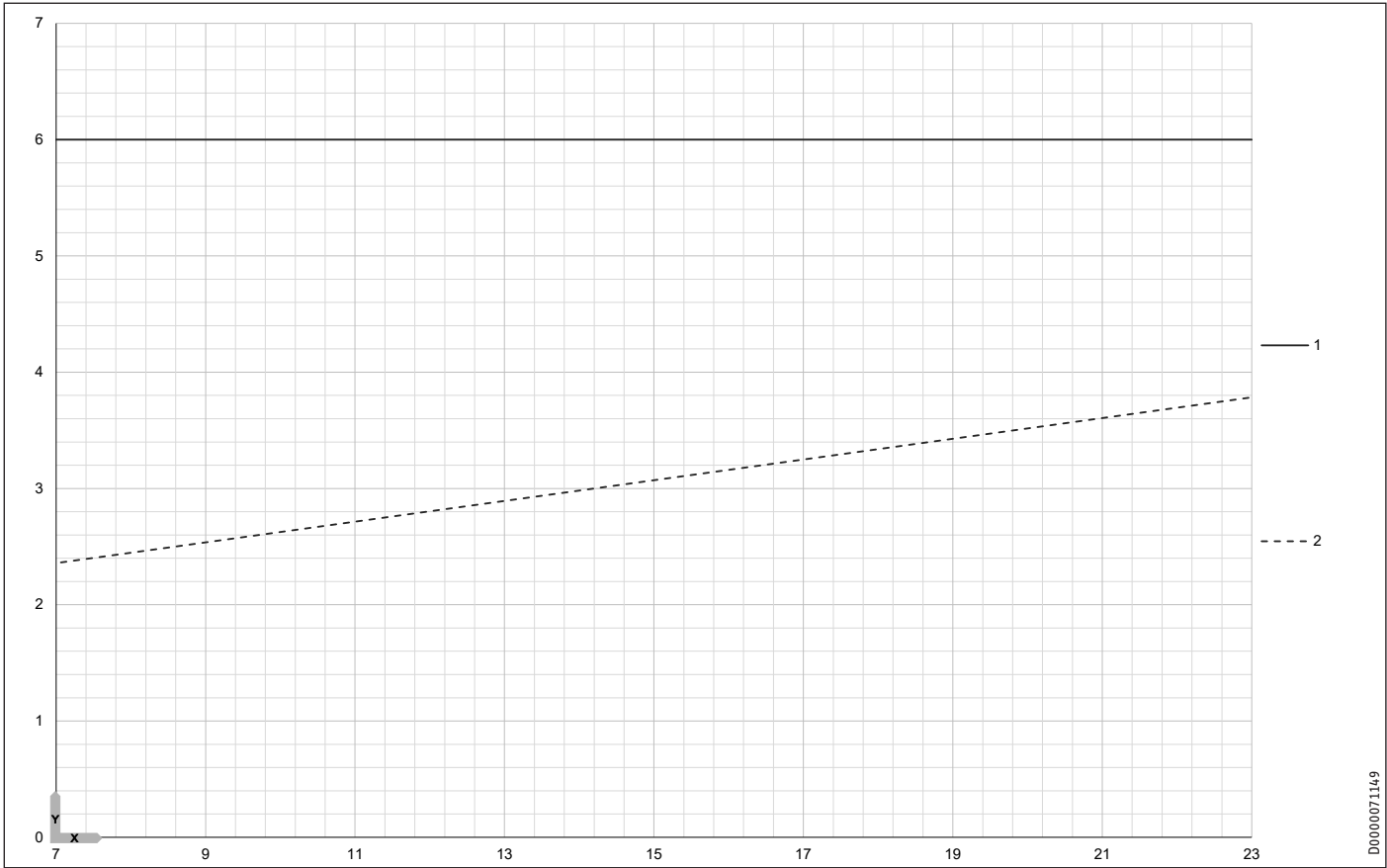
4 min. W55

5 min. W45

INSTALLATION

Specification

Cooling capacity



X Flow temperature [°C]
Y Cooling capacity [kW]
1 max. A35
2 min. A35

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INSTALLATION

Specification

20.4 Data table

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

The power consumption of the integral auxiliary drives represents the maximum value and may vary subject to operating point.

The power consumption of the integral auxiliary drives is included in the output data for the appliance (to EN 14511).

		WPL 09 ICS classic	WPL 09 IKCS classic	WPL 17 ICS classic	WPL 17 IKCS classic
		236375	236377	236376	236378
Heating output					
Heating output at A7/W35 (min./max.)	kW	1.3/4.5	1.3/4.5	2.5/9.0	2.5/9.0
Heating output at A2/W35 (min./max.)	kW	1.3/4.5	1.3/4.5	2.7/9.0	2.7/9.0
Heating output at A-7/W35 (min./max.)	kW	1.3/4.2	1.3/4.2	2.9/8.0	2.9/8.0
Heating output at A10/W35 (EN 14511)	kW	1.98	1.98	4.34	4.28
Heating output at A7/W35 (EN 14511)	kW	2.06	2.06	4.27	4.22
Heating output at A7/W55 (EN 14511)	kW	2.10	2.10	3.81	3.75
Heating output at A2/W35 (EN 14511)	kW	2.64	2.62	5.02	4.95
Heating output at A2/W55 (EN 14511)	kW	2.39	2.37	4.42	4.34
Heating output at A-7/W35 (EN 14511)	kW	4.23	4.18	8.02	7.80
Heating output at A-7/W55 (EN 14511)	kW	3.93	3.89	3.14	3.03
Heating output at A-15/W35 (EN 14511)	kW	3.64	3.45	6.29	6.21
Heating output at A-20/W35 (EN 14511)	kW	3.16	2.99	5.24	5.13
Max. cooling capacity at A35/W18	kW	3.00	3.00	6.00	6.00
Cooling capacity at A35/W18 partial load	kW	1.85	1.85	3.60	3.60
Max. cooling capacity at A35/W7	kW	3.00	3.00	5.25	5.25
Cooling capacity at A35/W7 partial load	kW	1.44	1.44	3.27	3.27
Heating output in max. reduced night mode A-7/W35	kW	1.27	1.27		
Heating output in reduced night mode A-7/W35	kW	3.12	3.12	5.14	5.14
Power consumption					
Power consumption at A10/W35 (EN 14511)	kW	0.40	0.40	0.83	0.85
Power consumption at A7/W35 (EN 14511)	kW	0.44	0.44	0.90	0.92
Power consumption at A7/W55 (EN 14511)	kW	0.80	0.80	1.48	1.49
Power consumption at A2/W35 (EN 14511)	kW	0.69	0.70	1.31	1.34
Power consumption at A2/W55 (EN 14511)	kW	1.03	1.04	1.94	1.96
Power consumption at A-7/W35 (EN 14511)	kW	1.34	1.36	3.03	3.02
Power consumption at A-7/W55 (EN 14511)	kW	1.83	1.84	1.58	1.56
Power consumption at A-15/W35 (EN 14511)	kW	1.36	1.31	2.55	2.56
Power consumption at A-20/W35 (EN 14511)	kW	1.26	1.27	2.25	2.26
Power consumption, emergency/auxiliary heater	kW	5.90	5.90	5.90	5.90
Coefficients of performance					
COP at A10/W35 (EN 14511)		4.95	4.95	5.20	5.04
COP at A7/W35 (EN 14511)		4.68	4.68	4.74	4.60
COP at A7/W55 (EN 14511)		2.64	2.64	2.58	2.51
COP at A2/W35 (EN 14511)		3.83	3.76	3.83	3.70
COP at A2/W55 (EN 14511)		2.33	2.28	2.27	2.21
COP at A-7/W35 (EN 14511)		3.16	3.07	2.63	2.58
COP at A-7/W55 (EN 14511)		2.15	2.11	1.99	1.94
COP at A-15/W35 (EN 14511)		2.68	2.63	2.47	2.43
COP at A-20/W35 (EN 14511)		2.50	2.35	2.33	2.27
SCOP (EN 14825)		4.525	4.45	4.25	4.125
Max. cooling capacity factor at A35/W18		2.22	2.02	1.83	1.63
Cooling capacity factor at A35/W18 partial load		3.96	3.76	2.78	2.58
Max. cooling capacity factor at A35/W7		2.11	1.91	1.56	1.36
Cooling capacity factor at A35/W7 partial load		2.61	2.41	2.00	1.80
Sound emissions					
Sound power level, indoor installation (EN 12102)	dB(A)	45	45	51	50
Max. sound power level, indoor installation	dB(A)	53	51	59	56
Sound power level, indoor installation, reduced night mode	dB(A)	52	50	56	55
Sound power level, indoor installation, max., reduced night mode	dB(A)	45	45	51	49
Sound power level at air intake/discharge (EN 12102)	dB(A)	30/32	29/32	43/48	40/44
Max. sound power level at air intake/discharge	dB(A)	46/51	43/48	48/52	47/50
Sound power level, reduced night mode, air intake/discharge	dB(A)	45/49	43/48	49/50	44/48
Sound power level max. reduced night mode, air intake/discharge	dB(A)	30/32	29/32	43/48	40/44

INSTALLATION

Specification

		WPL 09 ICS classic	WPL 09 IKCS classic	WPL 17 ICS classic	WPL 17 IKCS classic
Application limits					
Min. application limit, heat source	°C	-20	-20	-20	-20
Max. application limit, heat source	°C	35	35	35	35
Min. application limit on heating side	°C	15	15	15	15
Max. application limit on the heating side	°C	60	60	60	60
Application limit, heat source at W45	°C	-20	-20	-20	-20
Application limit, heat source at W60	°C	-2	-2	-2	-2
Energy data					
Energy efficiency class		A++/A+++	A++/A+++	A++	A++
Electrical data					
Max. power consumption excl. emergency/auxiliary heater	kW	2.60	2.60	5.40	5.40
Starting current (with/without starting current limiter)	A	5	5	7	7
Compressor fuse protection	A	1 x B 16	1 x B 16	1 x B 25	1 x B 25
Emergency/auxiliary heater fuse protection	A	2 x B 16	2 x B 16	2 x B 16	2 x B 16
Control unit fuse protection	A	1 x B 16	1 x B 16	1 x B 16	1 x B 16
Phases, control unit		1/N/PE	1/N/PE	1/N/PE	1/N/PE
Phases, emergency/auxiliary heater		2/N/PE	2/N/PE	2/N/PE	2/N/PE
Phases, compressor		1/N/PE	1/N/PE	1/N/PE	1/N/PE
Rated voltage, compressor	V	230	230	230	230
Rated voltage, emergency/auxiliary heater	V	230	230	230	230
Rated voltage, control unit	V	230	230	230	230
Max. operating current	A	11.30	11.30	23.50	23.50
Max. mains impedance Zmax	Ω	0.385	0.385	0.385	0.385
Versions					
IP rating		IP1XB	IP1XB	IP1XB	IP1XB
Condenser material		1.4401/Cu	1.4401/Cu	1.4401/Cu	1.4401/Cu
Refrigerant		R410A	R410A	R410A	R410A
Refrigerant charge	kg	2.2	2.2	2.6	2.6
Global warming potential of the refrigerant (GWP100)		2088	2088	2088	2088
CO ₂ equivalent (CO ₂ e)	t	4.59	4.59	5.43	5.43
Defrost type		Circuit reversal	Circuit reversal	Circuit reversal	Circuit reversal
Dimensions					
Height (standard appliance)	mm	1381	1892	1381	1892
Width (standard appliance)	mm	810	810	810	810
Depth (standard appliance)	mm	766	766	766	766
Height (indoor installation)	mm	1381	1892	1381	1892
Width (indoor installation)	mm	874	893	874	893
Depth (indoor installation)	mm	874	833	874	833
Height when tilted	mm		2050		2050
Weights					
Weight	kg	173	219	175	221
Connections					
Connection, heating flow/return		22 mm	22 mm	22 mm	22 mm
DHW connection		22 mm	22 mm	22 mm	22 mm
Condensate drain connection		22 mm	22 mm	22 mm	22 mm
Connection, air hoses, intake and discharge connectors		DN 315	DN 315	DN 315	DN 315
Heating water quality requirements					
Water hardness	°dH	≤3	≤3	≤3	≤3
pH value (with aluminium fittings)		8.0-8.5	8.0-8.5	8.0-8.5	8.0-8.5
pH value (without aluminium fittings)		8.0-10.0	8.0-10.0	8.0-10.0	8.0-10.0
Chloride	mg/l	<30	<30	<30	<30
Conductivity (softening)	µS/cm	<1000	<1000	<1000	<1000
Conductivity (desalination)	µS/cm	20-100	20-100	20-100	20-100
Oxygen 8-12 weeks after filling (softening)	mg/l	<0.02	<0.02	<0.02	<0.02
Oxygen 8-12 weeks after filling (desalination)	mg/l	<0.1	<0.1	<0.1	<0.1
Values					
Permissible operating pressure, heating circuit	MPa	0.30	0.30	0.30	0.30
Heating flow rate (EN 14511) at A7/W35, B0/W35 and 5 K	m³/h	0.40	0.40	0.60	0.60
Nominal flow rate of heating system at A-7/W35 and 5 K	m³/h	0.74	0.74	1.50	1.50
Min. flow rate, heating	m³/h	0.40	0.40	0.60	0.60
Flow rate on heat source side	m³/h	1240	1240	1240	1240
Available external pressure differential, heating	hPa	765	765	740	740
Available external pressure, outdoor/exhaust air	Pa	120	120	120	120

Further details

		WPL 09 ICS classic	WPL 09 IKCS classic	WPL 17 ICS classic	WPL 17 IKCS classic
		236375	236377	236376	236378
Maximum altitude for installation	m	2000	2000	2000	2000

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.

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

Kundendienst

Ersatzteilverkauf

Tel. 05531 702-110 | Fax 05531 702-95108 | info-center@stiebel-eltron.de
Tel. 05531 702-111 | Fax 05531 702-95890 | kundendienst@stiebel-eltron.de
www.stiebel-eltron.de/ersatzteile | ersatzteile@stiebel-eltron.de

Australia

STIEBEL ELTRON Australia Pty. Ltd.
294 Salmon Street | Port Melbourne VIC 3207
Tel. 03 9645-1833 | Fax 03 9644-5091
info@stiebel-eltron.com.au
www.stiebel-eltron.com.au

Austria

STIEBEL ELTRON Ges.m.b.H.
Gewerbegebiet Neubau-Nord
Margaritenstraße 4 A | 4063 Hörsching
Tel. 07221 74600-0 | Fax 07221 74600-42
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 (Tianjin) Electric Appliance Co., Ltd.
Plant C3, XEDA International Industry City
Xiqing Economic Development Area
300385 Tianjin
Tel. 022 8396 2077 | Fax 022 8396 2075
info@stiebeleltron.cn
www.stiebeleltron.cn

Czech Republic

STIEBEL ELTRON spol. s r.o.
Dopraváků 749/3 | 184 00 Praha 8
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

New Zealand

Stiebel Eltron NZ Limited
61 Barrys Point Road | Auckland 0622
Tel. +64 9486 2221
info@stiebel-eltron.co.nz
www.stiebel-eltron.co.nz

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. +7 495 125 0 125
info@stiebel-eltron.ru
www.stiebel-eltron.ru

Slovakia

STIEBEL ELTRON Slovakia, s.r.o.
Hlavná 1 | 058 01 Poprad
Tel. 052 7127-125 | Fax 052 7127-148
info@stiebel-eltron.sk
www.stiebel-eltron.sk

South Africa

STIEBEL ELTRON Southern Africa (PTY) Ltd
30 Archimedes Road
Wendywood
Johannesburg, 2090
Tel. +27 10 001 85 47
info@stiebel-eltron.co.za
www.stiebel-eltron.co.za

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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Stand 9734

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