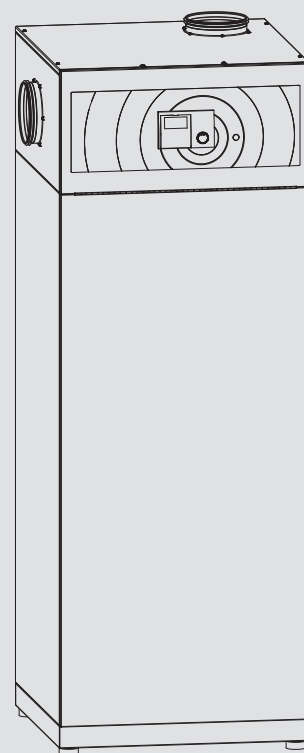


OPERATION AND INSTALLATION

Central ventilation appliance

- » LWA 252
- » LWA 252 SOL



STIEBEL ELTRON



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GUARANTEE

ENVIRONMENT AND RECYCLING

SPECIAL INFORMATION

- The appliance may be used by children aged 8 and older and persons with reduced physical, sensory or mental capabilities or a lack of experience and know-how, provided that they are supervised or they have been instructed on how to use the appliance safely and have understood the resulting risks. Children must never play with the appliance. Children must never clean the appliance or perform user maintenance unless they are supervised.
- If the power circuit is protected by an RCD, the appliance can be connected to the mains with a plug. If there is no RCD, the appliance may only be supplied with power via a permanent connection.
- Observe all applicable national and regional regulations and instructions during installation.
- Install a pressure reducing valve when the water pressure is higher than 0.48 MPa.
- Special measures are required at a water pressure in excess of 1 MPa.
- A 0.6 MPa safety valve must be installed on site.

OPERATION

1. General information

The chapter "Operation" is intended for appliance users and qualified contractors.

The chapter "Installation" is intended for qualified contractors.



Note

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

1.1 Safety instructions

1.1.1 Structure of safety instructions



KEYWORD Type of risk

Here, possible consequences are listed that may result from failure to observe the safety instructions.

► Steps to prevent the risk are listed.

1.1.2 Symbols, type of risk

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

1.1.3 Keywords

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

1.2 Other symbols in this documentation



Note

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

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

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

1.3 Units of measurement



Note

All measurements are given in mm unless stated otherwise.

1.4 Standardised output data

Explanations to determine and interpret the specified standardised output data

Standard: EN 255

The output data specifically mentioned in text, diagrams and technical datasheets has been calculated according to the test conditions of the standard shown in the heading of this section. Generally, these standardised test conditions will not fully meet the conditions found at the installation site of the system user.

Depending on the chosen test method and the extent to which this method deviates from the conditions defined in the norm shown in the heading of this section, any deviations can have a considerable impact. Further factors that have an influence on the test values are the measuring equipment, the system configuration, the age of the system and the flow rates.

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

2. Safety

2.1 Intended use

The appliance is a complete system with heat recovery for centralised ventilation and extraction, as well as for centralised DHW heating. Supply air is delivered on a decentralised basis.

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

Any other use beyond that described shall be deemed inappropriate. Observation of these instructions is also part of the correct use of this appliance. Any changes or modifications to this appliance void all warranty rights.

2.2 General safety instructions

All steps up to the complete commissioning of this appliance must only be carried out by qualified contractors.

The qualified contractor is responsible for adherence to all currently applicable regulations during installation and commissioning.

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

Never adjust the ventilation and extract air valves inside the rooms. These have been adjusted during commissioning.

Never make any modifications to the internal equipment electrics or controls.

**WARNING Burns**

There is a risk of scalding at outlet temperatures in excess of 43 °C.

**WARNING Injury**

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

**WARNING Electrocutation**

Never splash the appliance with water or other liquids.

**Note**

Do not change any system-specific settings at the control unit. Your qualified contractor has set the control unit to match the local conditions for your building and your individual requirements. The system-specific parameters are protected by a CODE check so they cannot be unintentionally modified.

The parameters that serve to adapt the appliance to your personal requirements are not protected by a code.

2.3 Test symbols

see type plate

The type plate is located on the l.h. side of the appliance.

3. Appliance description

3.1 Properties

The air/water heat pump recovers waste heat from the extracted air via a duct system. This energy is transferred to the DHW. The cooled air is discharged outdoors as exhaust air.

Outside wall valves channel in fresh outdoor air, that replaces air expelled by the heat pump.

Special features of the LWA 252 SOL

This appliance version has an additional indirect coil integrated into the DHW cylinder that is designed for DHW heating with solar energy.

3.2 Function description

3.2.1 Heat pump operation

This is the standard operating mode, to which the limits of scope of the heat pump apply (see: "Specification / Data table"). To heat or reheat the cylinder content of approx. 300 litres of water from 15 °C to 55 °C, in accordance with EN 255 part 3, the appliance requires the following:

T _{Heat-up}	T _{Reheat}	θ _{Extract air}	F _{rel}	V _{air}
11 h	5.5 h	20 °C	40 %	125 m ³ /h
10 h	5.0 h	20 °C	40 %	250 m ³ /h

Electric emergency/booster heater

When there is a higher DHW demand or when the appliance heat pump has been switched OFF for a longer period, and you require hot water quickly, you can accelerate the heat-up process by means of an electric booster heater. For this, adjustments are required on the third operating level. These must only be carried out by a heating contractor.

To save energy, the electrical booster heater only heats the top third of the cylinder (approx. 100 litres). This takes approx. 3 hours.

3.2.2 Ventilation operation

When the appliance is being supplied with power, the appliance fan is in operation. It cannot be switched off separately at the appliance.

3.2.3 Operation outside the scope of applications

Extract air temperature below 15 °C

Subject to the relative humidity and the flow rate, the evaporator begins to build up hoar frost at an ambient temperature of below 15 °C.

The appliance is stopped by a frost protection function.

The appliance will restart automatically after expiry of the defrost time.

Extract temperature in excess of 30 °C

The heat pump will be stopped by safety equipment at extract air temperatures in excess of approx. 30 °C. The heat pump will be re-started automatically after a brief cooling down period. The heat pump will be stopped again, if the extract air temperature is still higher than 30 °C.

**Material losses**

Take appropriate steps to prevent the extract air temperature rising above 30 °C.

3.3 Minimum runtime and minimum OFF time

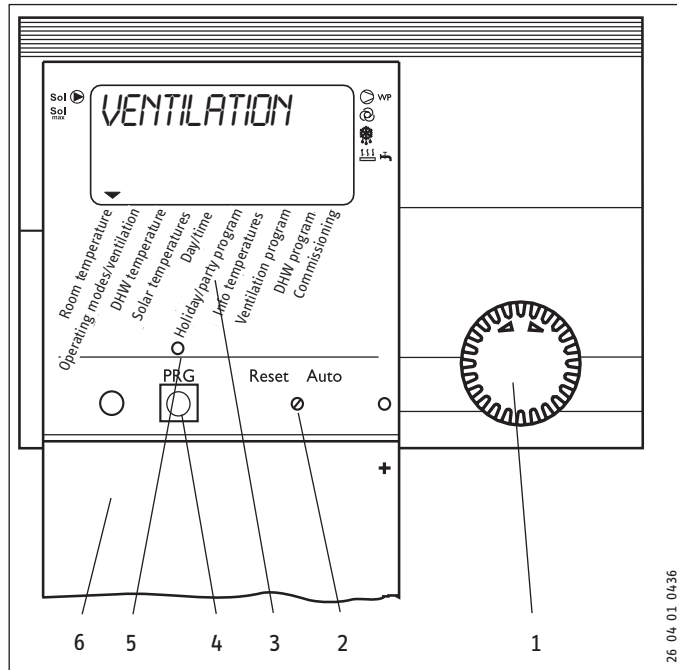
**Material losses**

When operating with external switching devices that can interrupt the power supply to the appliance, such as time switches, energy management systems or home automation systems, observe the following conditions:

- The minimum runtime is 60 minutes.
- The minimum OFF time following a shutdown is 20 minutes.
- The appliance should not be switched on/off more than 10 times per day.
- The external switching device must have a minimum breaking capacity of 240 V~ / 16 A / AC3.
- Ensure sufficient ventilation to protect against humidity/dampness at daily average values.

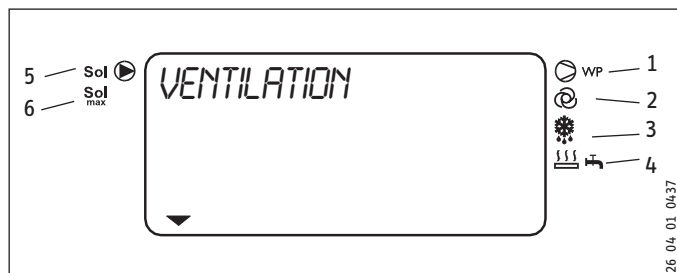
4. Operation

4.1 Description of the user interface



- 1 Rotary selector
- 2 Rotary switch Reset / Auto
- 3 Appliance menu
- 4 Programming key
- 5 Programming indicator
- 6 Control flap (open)

System status display



- 1 Heat pump operation
- 2 Fan mode
- 3 Defrosting
- 4 DHW booster heater
- 5 Solar circuit pump
- 6 Maximum cylinder temperature

4.2 Operation

The appliance operation is divided into three control levels. Control levels 1 and 2 are accessible to both users and qualified contractors. Control level 3 is reserved for contractors:

Control level 1 (control flap closed)

Here, the operating mode, such as standby operation, programmed operation, constant day and setback operation of the DHW program can be adjusted.

Control level 2 (control flap open)

Here, system parameters, such as DHW temperatures etc. can be adjusted.

Control level 3 (only for qualified contractors)

This level is protected by a code and should only be used by a qualified contractor. It serves for determining specific heat pump and heating system data.

4.3 Essential facts in brief

Settings

All settings follow the same pattern:

Opening the control flap switches the manager into programming mode. An indicator symbol ▼ is shown at the bottom of the display at system parameter *ROOM TEMP*. Turning the rotary selector ○ allows you to move the indicator to the system parameter you want to change.

To change the system parameter, press . Whenever the red indicator above illuminates, you can modify the current value by turning rotary selector ○. Press again, the indicator then extinguishes and the new set value has been saved. You can modify further values for this parameter by pressing , if the red indicator above has not been extinguished after saving. The programming step can only be terminated when the red indicator has extinguished.

Terminating the programming process

After entering and saving the required parameter changes you can terminate the programming process by closing the control flap. However, if you want to make further changes, turn the rotary selector ○ until the display shows *BACK*, then press . This will return you to the previous level. Closing the control flap with illuminated indicator above returns the manager into its original position. The modified value will then not be saved.



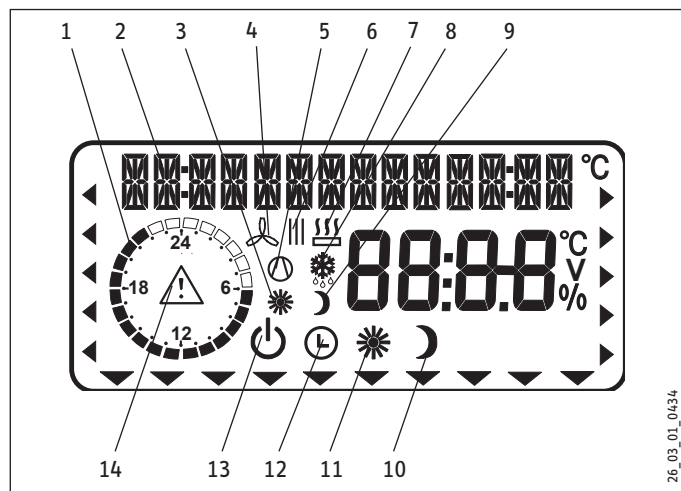
Note

During commissioning, a system check will be implemented, e.g. all sensors that are currently connected are displayed upon request. Sensors not connected before the system went 'live' are not registered by the manager and are therefore not displayed. The pointer symbol skips this system parameter.

Example

The system parameter *SOLAR TEMP* will be skipped if, at commissioning, the solar collector sensor was not connected. No values can therefore be programmed for these parameters.

4.4 Display



- 1 Heating times for DHW (black)
- 2 14-digit plain text display
- 3 Day mode
- 4 Fan running
- 5 Compressor running
- 6 Fan stages (control level 1)
Switching time pair for ventilation and DHW operation (control level 2)
- 7 Booster in operation
- 8 Defrosting
- 9 Setback mode
- 10 Constant setback mode
- 11 Constant day mode
- 12 Automatic mode
- 13 Standby mode
- 14 Fault message (flashing)

4.5 Operating modes (control level 1)

The operating modes are changed by turning the rotary selector with the control flap closed.

Standby mode

Frost protection is activated for DHW operation. With the flap closed, the display shows FROST PROTECT. Ventilation runs in setback mode.

Purpose: During holidays.

At control level 2 under parameter VENTILATION, ventilation can be completely stopped. For this, adjustments are required on the third operating level. These must only be carried out by a heating contractor.

Automatic mode

DHW heating according to time switch program. Changeover between day temperature and setback temperature. When flashing, the heat pump idle time is counting down.

Purpose: To reduce the DHW temperature during the day, so that the maximum solar yield can be achieved with the solar version.

Constant day mode

DHW heating is held constantly at the day temperature.

Purpose: For maximum DHW convenience.

Constant setback mode

DHW heating is held constantly at the setback temperature.

Fault message (flashing)

Indicates faults in the system.

4.6 Equipment menu (control level 2)

Select the required menu item with the rotary selector.

Example: *VENTILATION*



Under parameter *ROOM TEMP* you can check the current temperature of the assigned reference room on the display subject to the connection of remote control RC 1 with room temperature sensor.

With parameter *VENTILATION*, you can adjust the operating modes for ventilation operation.

With the parameter *DHW TEMP* you can allocate a set day and night temperature to be maintained inside the DHW cylinder.

With parameter *SOLAR TEMP* you can assign the temperatures for solar operation.

With the parameter *TIME/DATE* you can adjust the clock and set summertime. Summertime is factory-set to begin on 25 March and to end on 25 October.

OPERATION

Operation

You can set holiday programs with the *HOLIDAY* parameter. In the holiday program, the heat pump system operates in setback mode. Frost protection for the DHW cylinder is active.

You can extend the day mode by a few hours with the *PARTY* parameter.

In parameter *TEMPERATURES*, you can scan the sensor temperatures of the ventilation and heat pump system, comparing set with actual temperatures.

In parameter *VENTILAT PROG* you can adjust the times for the day and setback temperatures for the ventilation program.

In parameter *DHW PROGRAM* you can adjust the times for the day and setback temperatures for DHW heating.

During *COMMISSIONING*, you need to determine the settings of control level 2 and the system-specific parameters. These parameters are adjusted at control level 3 by your heating contractor, access to which is protected by code.

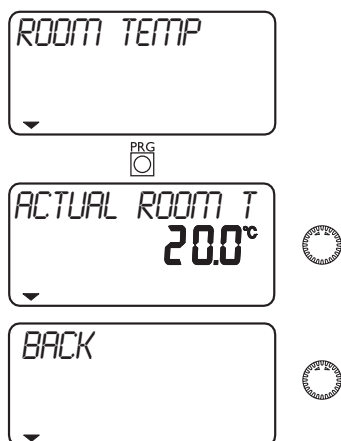
Your contractor needs to check all parameters in sequence, Enter all selected values into the relevant column (system value) provided in the commissioning report.

4.7 Adjustments at control level 2

To make any adjustments at control level 2, open the control flap.

4.7.1 Room temperature

Under parameter *ROOM TEMP* the current temperature of the assigned reference room is displayed, subject to the connection of the remote control RC 1 with the room temperature sensor. The *ROOM TEMP* parameter will only be displayed if the remote control RC 1 is connected.



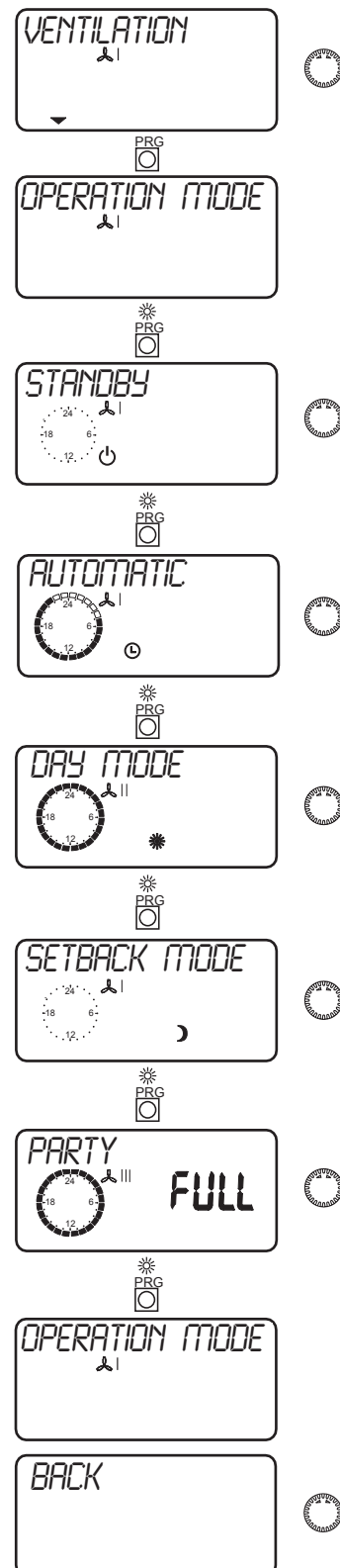
Night cooling

Connecting the remote control RC 1 and the outside temperature sensor AFS 2 enables you to cool down your residence over night. For this, your contractor needs to set parameter *NIGHT COOLING* at **control level 3** to *ON*.

4.7.2 Ventilation

With parameter *VENTILATION*, you can adjust the **operating modes** for ventilation operation.

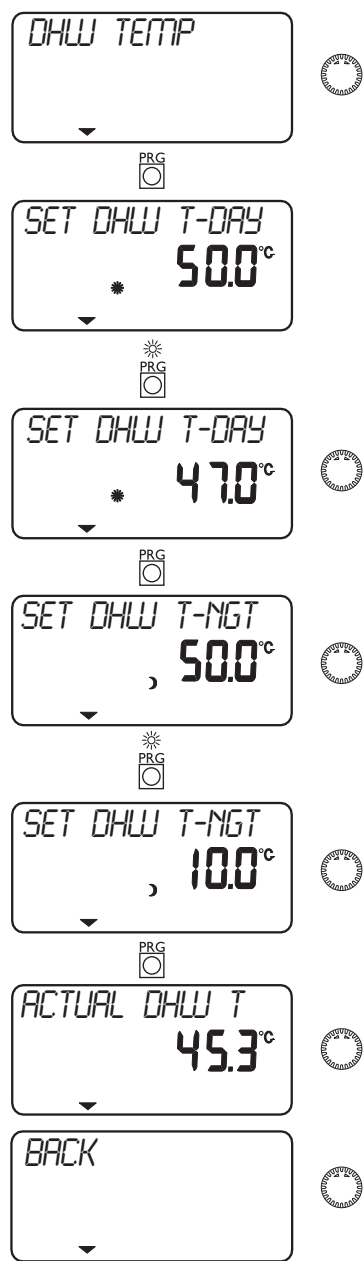
When the required operating mode is shown, press PRG; the operating mode is then set.



4.7.3 DHW temperature

Note
If you choose a set DHW temperature higher than that specified in the attribute "DHW temperature with heat pump", the appliance heats with the electrical emergency/booster heater. See chapter "Specification / Data table".
For efficient operation, we recommend that you do not choose a set DHW temperature higher than this.

With the parameter *DHW TEMP* you can allocate a set day and night temperature to be maintained inside the DHW cylinder.

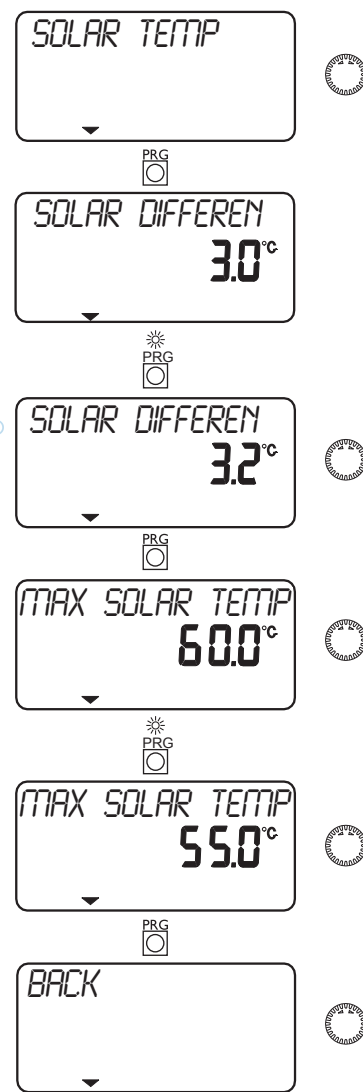


4.7.4 Solar temperatures

You can set the parameters for solar operation under the *SOLAR TEMP* parameter.

A sensor is installed in the appliance that measures the temperature in the lower region of the DHW cylinder. This actual value will be taken into consideration for the start condition of the solar circuit pump.

Parameter *SOLAR DIFFEREN* determines by what amount the collector temperature must be above the water temperature in the lower region of the cylinder to start the solar circuit pump. If the water temperature in the lower region of the cylinder reaches the value selected under *MAX SOLAR TEMP*, then the solar circuit pump stops.



4.7.5 Time and date

With the parameter *TIME/DATE* you can adjust the clock and set summertime.

Summer time is factory set to begin on 25 March and end on 25 October.

TIME/DATE

PRG

SET CLOCK

PRG

TIME 12:08

PRG

TIME 12:08

PRG

YEAR 2009

PRG

MONTH 05

PRG

DAY 20

PRG

SET CLOCK

SUMMER TIME

BACK

4.7.6 Holiday and party program

In the holiday program, the heat pump system runs in setback mode, and frost protection for DHW heating is enabled. HOLIDAY MODE is displayed when the flap is closed. The holiday program is set under the *HOLIDAY* parameter. For the start of the holidays, the year, month and day are entered; also enter the year, month and day for the end of the holidays. The start time is always 00:00 h and the end time 23:59 h of the date entered. After the holiday period has expired, the heat pump system operates again in accordance with the previous heating and DHW program.

You can extend the day mode by a few hours with the *PARTY* parameter. Party mode is displayed when the flap is closed.

For example, if the heating program would normally switch to setback mode at 22:00 h and you have set party mode for 2 hours, then setback mode would not start until midnight.

HOL-PARTY

PRG

HOLIDAY

PRG

YEAR START 2009

PRG

MONTH START 07

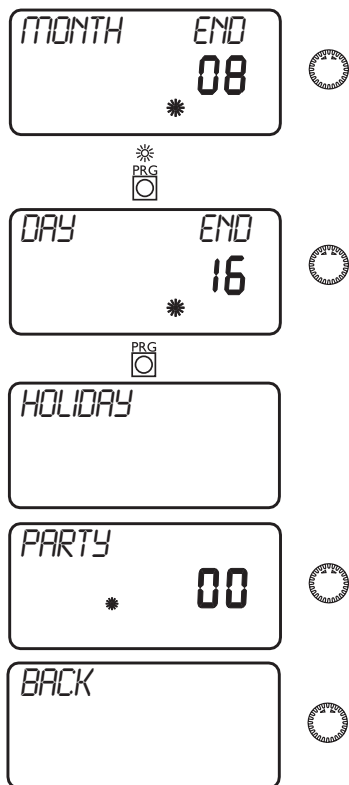
PRG

DAY START 26

PRG

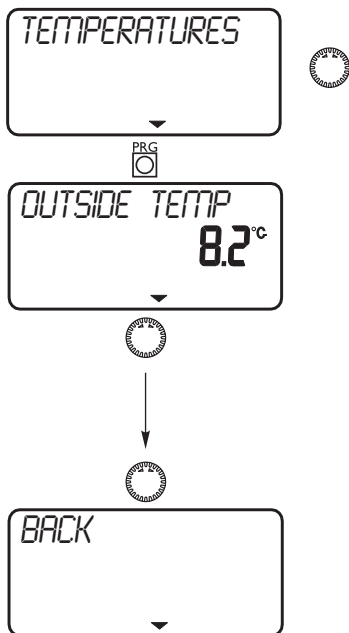
YEAR END 2009

PRG



4.7.7 Temperatures

Under parameter *TEMPERATURES*, you can scan the sensor temperatures of the ventilation system.



Actual or set temperatures will not be displayed if the corresponding sensor is not connected.

INFO LWM	Meaning
OUTDOOR TEMP	Outside temperature (will only be displayed if an outside temperature sensor is connected)
ROOM TEMP	Actual room temperature (will only be displayed if the remote control RC 1 is connected)
ACTUAL DHW T	Actual DHW temperature
SET DHW TEMP	Set DHW temperature
EVAPOR TEMP	Actual evaporator temperature
EVAPOR MIN	Evaporator frost protection temperature
COLLECTOR	Solar collector temperature (operation with differential controller)
CYLINDER BELOW	DHW cylinder temperature, bottom(operation with differential controller)
CYLINDER MAX	Maximum DHW cylinder temperature (operation with differential controller)

4.7.8 Ventilation program

Under parameter *VENTILAT PROG*, you can set the times for *VENTILATION*.

You can adjust the *VENTILATION* as follows:

- For each individual day of the week (Monday, ..., Sunday)
- Monday to Friday (Mon - Fri)
- Saturday and Sunday (Sat - Sun)
- the whole week (Mon - Sun)

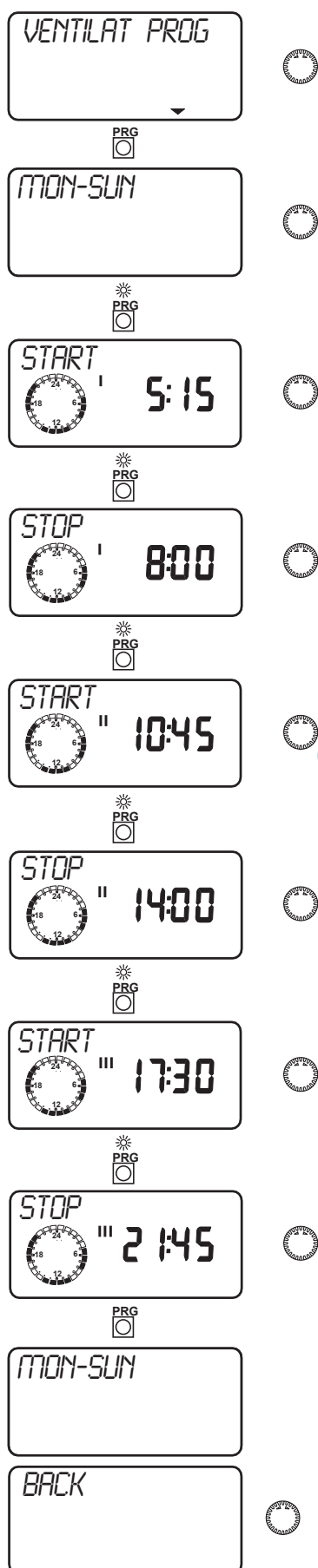
You can set three switching time pairs (I, II, III) for each of these options.

Exception: You will need two switching time pairs, if you want to ventilate from 22:00 h until 06:00 h the following day.

This determines when and how often the appliance should operate in ventilation mode. You will already have set the corresponding operating mode for the ventilation program under system parameter *VENTILATION*.

Example

You want to ventilate your residence daily at three different times, i.e. from 05:15 h until 08:00 h and then from 10:45 h to 14:00 h, finally from 17:30 h to 21:45 h.



4.7.9 DHW program

Under parameter *DHW PROGRAM* you can adjust the times for the day and night temperatures for DHW heating.

You can set your DHW heating as follows:

- For each individual day of the week (Monday, ..., Sunday)
- Monday to Friday (Mon - Fri)
- Saturday and Sunday (Sat - Sun)
- the whole week (Mon - Sun)

You can set three switching time pairs (I, II, III) for each of these options. Exception: You will need two switching time pairs if you want to heat DHW from 22:00 h until 06:00 h the following day.

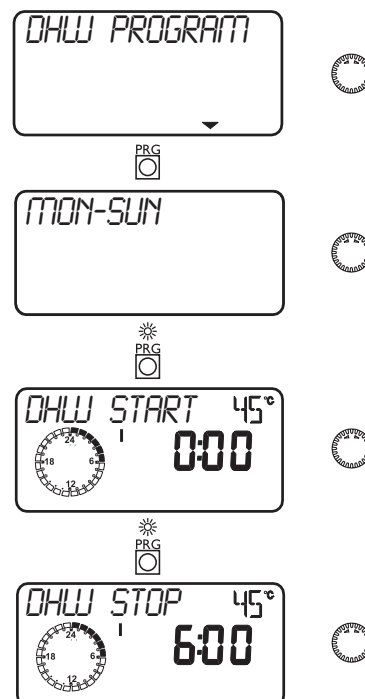
This determines when and how often the appliance should heat DHW. You will already have selected the corresponding set values for day and night mode under the *DHW TEMP* system parameter.

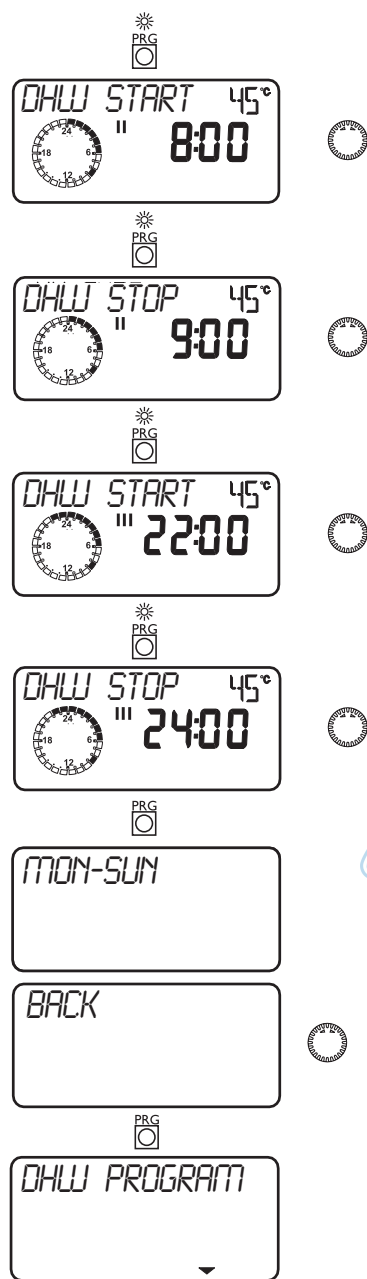
Example:

You want to heat up DHW daily at two different times, i.e. from 22:00 h until 06:00 h the following day, and then from 08:00 h until 09:00 h.

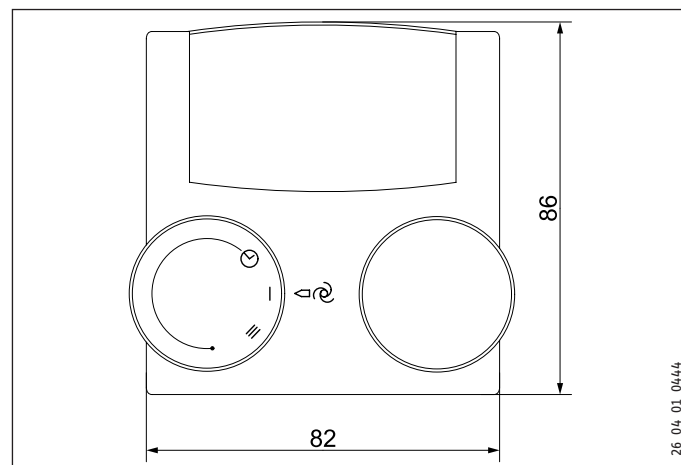
The day begins at 00:00 h; therefore begin programming for this example at 00:00 h. The first switching times pair runs from 00:00 until 06:00 h. The second switching time pair runs from 08:00 until 09:00 h. The third switching times pair runs from 22:00 h until 23:59 h.

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4.8 Remote control RC 1



The room temperature is captured by the remote control RC 1 .

A night cooling can be programmed at control level 3 subject to connection of an outside temperature sensor AFS 2.

The fan stages can also be changed manually.

I Continuously fan stage 1

⌚ Programmed mode

III Continuously fan stage 3

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5. Cleaning, care and maintenance



Material losses

Maintenance work, such as checking the electrical safety, must only be carried out by a qualified contractor. Protect the appliance from dust and dirt ingress during building work.

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

- Check the condensate drain at least monthly (visual inspection). Remove contaminants and blockages immediately.

Scaling

Almost every type of water will deposit limescale at high temperatures. This settles inside the appliance and affects both the performance and service life.

- Ask your qualified contractor to check the level of scale build-up on the electric emergency/booster heater when the contractor is servicing the protective anode. A qualified contractor who knows the local water quality will tell you when the next service is due.
- Check the taps regularly. Limescale deposits at the tap outlets can be removed using commercially available descaling agents.
- Regularly activate the safety valve to prevent it from becoming blocked, e.g. by limescale deposits.

6. What to do if...

6.1 . . . no hot water is available

- Check the fuse/circuit breaker in your fuse box. If it has blown/tripped, replace/reset the fuse/MCB. Notify your qualified contractor if the fuse/MCB blows/trips again.
- Check whether the air inlet and air discharge are unobstructed or whether a filter is blocked that may be incorporated.

The thermoswitch trips out or the safety pressure limiter switches the compressor OFF if the compressor is overloaded due to excessive ambient temperature, excessive extract temperature (>30 °C), or because of a fault in the refrigerant circuit. The thermoswitch automatically switches itself ON again.



Material losses

The safety pressure limiter must only be reset by your contractor after he has removed the cause of the relevant fault.

6.2 . . . the safety valve of the cold water supply line is dripping

This may occur during the heat-up phase and is completely normal as water expands when heated.

6.3 . . . the condensate drain drips

After the initial commissioning or after prolonged idel times it may occur that air is sucked in through the condensate drain. If the pump runs for a few hours, the siphon in the condensate drain will fill with condensate, which prevents an ingress of air.

6.4 . . . the red indicator in the fascia illuminates

In this situation the safety pressure limiter has responded and may only be reset by your contractor.

6.5 . . . other faults occur

Call your qualified contractor. For better and faster help, provide him with the type plate number (no. 000000-0000-000000). The type plate is located at the front top, on the right or left hand side of the casing.

INSTALLATION

7. Safety

Only a qualified contractor should carry out installation, commissioning, maintenance and repair of the appliance.

7.1 General safety instructions

All required steps up to and including commissioning must be carried out by a qualified contractor. During this process, these installation instructions must be observed.

We guarantee trouble-free function and operational reliability only if original accessories and spare parts intended for the appliance are used.

Observe local building regulations, commercial and fire regulations as well as regulations and laws concerning emissions.

For example in Germany these are:

TA-Lärm: Technical instructions to protect against noise emissions

ENEV: Energy Savings Order

Observe the requirements of the local water supply utility.

7.2 Instructions, standards and regulations



Note

Observe all applicable national and regional regulations and instructions.

7.2.1 Electrical installation



WARNING Electrocutation

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



WARNING Electrocutation

Always switch OFF the power to the appliance before cleaning and maintenance.



Material losses

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

DIN VDE 0100: Regulations for the installation of HV systems with rated voltages up to 1000 V.

VDE 0701: Regulations regarding the repair, modification and testing of used electrical equipment.

DIN-EN 60335 part 2-40: Safety of electrical equipment for domestic use and similar purposes.

VDE 0298-4: Recommended values for the electrical capacity of cables and leads for fixed routing in and to buildings and of flexible cables.

TAB: Technical connection conditions for connections to the LV mains.

7.2.2 Water installation

DIN 1988, DIN EN 806: Technical rules for DHW installations

TRD 721 - Safety equipment to prevent excess pressure - safety valves.

7.2.3 Ventilation installation

DIN 1946 T1, T6 - Ventilation and air conditioning

EN 779 - Particle air filter for general ventilation and air conditioning

VDI 2087 - Air ducts

7.2.4 Refrigerant circuit

EN 378: Safety and environmental requirements, or local regulations.

Safety datasheet of the refrigerant.

7.3 Operation of the appliance in buildings with combustion equipment

If the building contains combustion equipment (tiled stoves, fireplaces, etc.), approval must be obtained from the responsible flue gas inspector. The flue gas inspector assesses whether all statutory regulations are observed. We recommend that the flue gas inspector be involved at an early stage in the design process.

For simultaneous operation of combustion equipment and a ventilation unit, we recommend choosing approved room sealed combustion equipment. Planning should always include the option of installing safety equipment (e.g. differential pressure switch).

A 5-core cable must be routed from the combustion equipment to the appliance or to the control panel fuse box to which the appliance is connected.



WARNING Injury

Ensure that no flue gas can enter the installation room and that combustion equipment will always be supplied with sufficient combustion air. Tested safety equipment must be installed to monitor the chimney draught and to switch off the ventilation unit in the event of a fault.

Requirements of the safety equipment

The equipment for differential pressure monitoring should fulfil the following requirements:

- Monitoring of the differential pressure between the connection piece to the chimney and the room where the combustion equipment is installed.
- Possibility of matching the shutdown value for the differential pressure to the minimum draught requirement for the combustion equipment.
- Floating contact to switch off the ventilation or heat pump function.
- Optional connection of a temperature capturing device so that differential pressure monitoring is only enabled when the combustion equipment is in operation and so that unwanted shutdowns due to environmental influences can be avoided.



Note

Differential pressure switches that use the pressure differential between the outdoor air pressure and the pressure in the room where the combustion equipment is sited as a response criterion are not suitable.

- Install the safety equipment in such a way that it interrupts the appliance power supply when required.



WARNING Injury

If you notice flue gas escaping from the combustion equipment, switch off any air extraction appliances, e.g. exhaust air extractor hoods, exhaust air tumble dryers, the central vacuum cleaning system and the ventilation unit. Interrupt any voltage supply to the ventilation unit, including the integral heat pump, via the fuses/MCBs in your fuse box/distribution board.

- Open windows and doors.

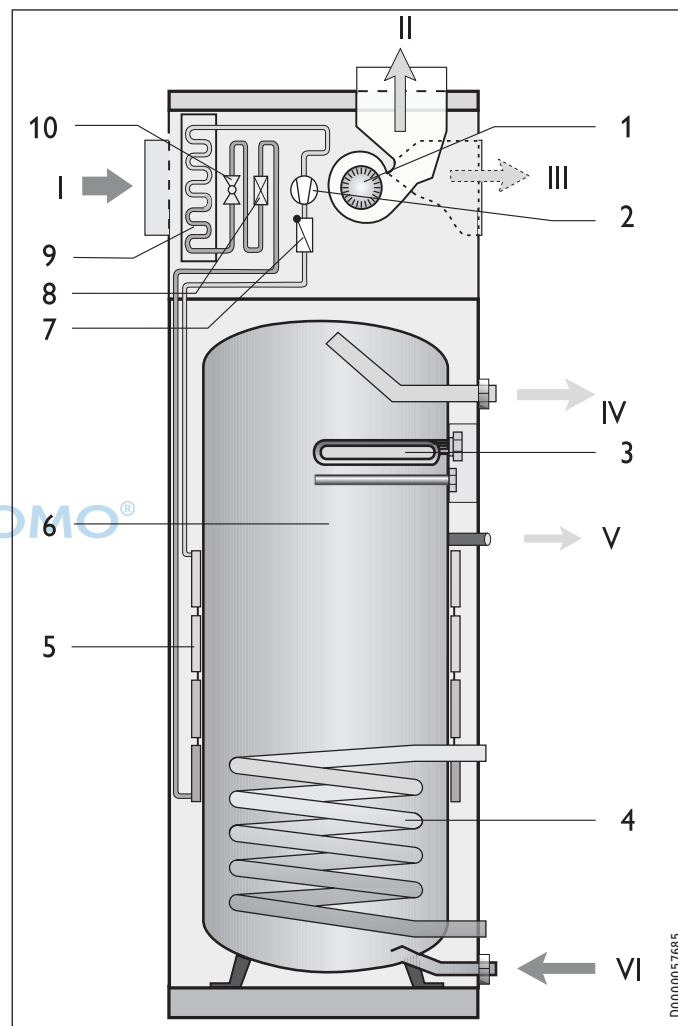
8. Appliance description

8.1 Function

Extract air is drawn in by the extract air fan and channelled through the evaporator to the outside.

The energy made available by the heat pump is transferred in a separate condenser to the DHW system.

Where there is a high DHW demand, the DHW is heated by an electric immersion heater.



- 1 Extract fan
- 2 Compressor
- 3 Electric heater rod
- 4 Indirect coils
- 5 Condenser
- 6 DHW cylinders
- 7 Non-return valve
- 8 Filter dryer
- 9 Evaporator
- 10 Expansion valve
- I Extract air
- II Exhaust air
- III Exhaust air (optional)
- IV DHW
- V DHW circulation
- VI Cold water

8.2 Design operation

This appliance is designed for ventilation in apartments and detached houses as well as centralised DHW heating for several domestic draw-off points.

Never

- Use extract air loaded with grease, explosive gases, dust or adhesive aerosols
- Connect cooker hoods to the ventilation system
- Heating liquids other than DHW

Never install the appliance:

- outside
- in rooms where there is a risk of frost
- in wet rooms, such as bathrooms

Never operate the appliance:

- without exhaust air and extract air ducts
- without decentralised inlet air elements
- without ventilation function
- with an empty cylinder
- whilst building work is in progress

8.3 Standard delivery

The following are delivered with the appliance:

- Power cable with standard plug
- 4 anti-vibration appliance feet
- For the "Cold water inlet" and "DHW outlet" connections: 2 insulated screw fittings comprising a flanged pipe, a gasket, a union nut and an insulating sleeve

LWA 252 SOL:

- PT 1000 solar collector sensor

8.4 Accessories

Designation	Part no.
Outside temperature sensor AFS 2	165339
Remote control with room sensor RC 1	170328
Exterior wall valve ALD 160	189813
Installation pipe ALD 160	189816

9. Installation

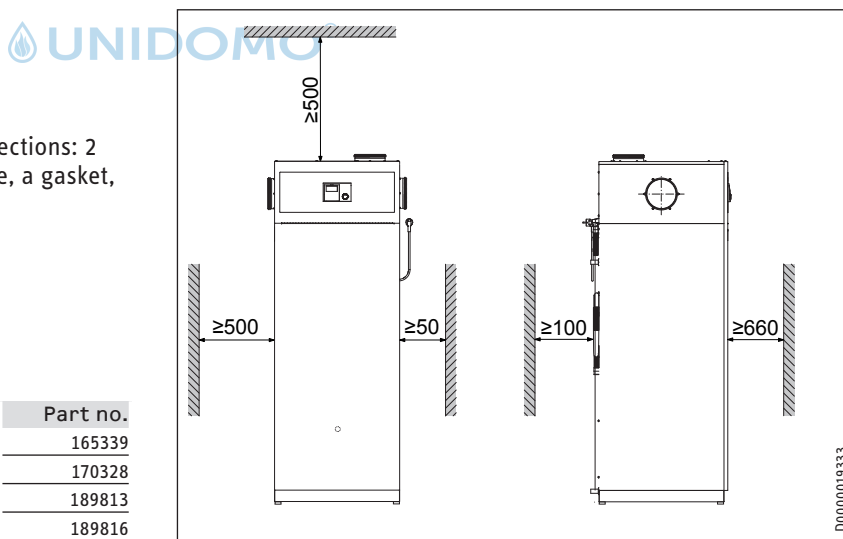
9.1 Installation conditions

The system may be installed in any rooms apart from wet areas.

The room in which the appliance is to be installed must meet the following conditions:

- The room must be free from the risk of frost.
- The floor must have sufficient load-bearing capacity. On top of the weight of the appliance, there will be 300 l of water.
- The substrate must be solid and permanent.
- When installing the appliance inside a boiler room, ensure that the boiler operation will not be impaired.
- The available floor area in the installation room must be at least 2 m² because of the volume of refrigerant. The volume must not be less than 4 m³.
- Never operate the appliance in rooms at risk from explosion due to dust, gases or vapours.
- The extract air supplied to the equipment must not be lower than +15 °C, otherwise the evaporator would ice-up. Also, the lower the extracted air temperature, the lower the heat pump efficiency.

Never restrict the available space around the appliance through walls or ceilings closer than shown in the diagram.



10. Installation

10.1 Transport

To protect the appliance against damage, it should be transported vertically inside its packaging. Where space is restricted, you may also move the equipment tipped backwards at an angle.

10.1.1 Siting

- Undo the four screws from the non-returnable pallet.
- Remove the washers.
- Before removing the appliance from the pallet, remove the anti-vibration mounts from the pack supplied, and insert into the appliance.

INSTALLATION

Installation

- Level the appliance horizontally by adjusting the anti-vibration mounts.

10.2 Water connection



Material losses

To protect the connections against corrosion the water connection must be made with flat gaskets. The use of hemp on connections is not permissible. The insulated screw fittings included in the standard delivery serve to prevent and insulate against cathodic scaling due to highly conductive water.



Material losses

The corrosion protection provided by the anode can only be guaranteed when the electrical conductivity of the domestic hot water is within the limits stated in the chapter "Specification / Data table".

Cold water line

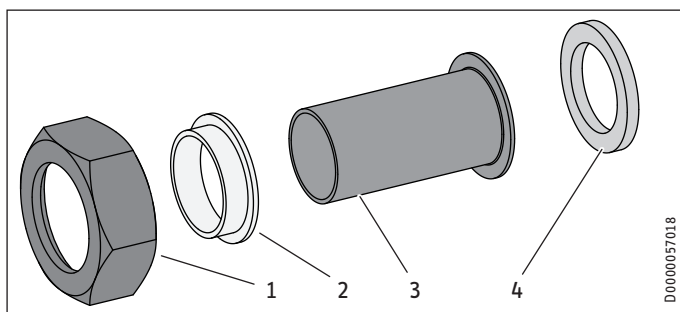
Galvanised steel, stainless steel, copper and plastic are approved materials. A safety valve is required.

DHW line

Stainless steel, copper and plastic pipework are approved materials.

Connection

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

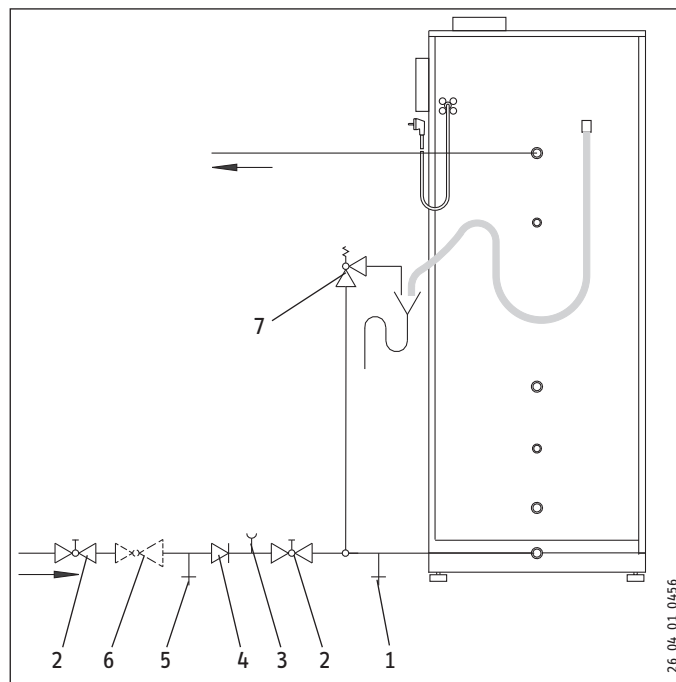


- 1 Union nut
- 2 Insulating sleeve
- 3 Flanged pipe
- 4 Gasket

- Using the gaskets, insulating sleeves and union nuts provided, connect the flanged pipes included in the standard delivery to the "Cold water inlet" and "DHW outlet" connections.
- Check the insulated screw fitting for tightness.
- Connect the water supply pipes to the "cold water inlet" and the "hot water outlet" connections.

Insulate the DHW line in accordance with local regulations.

Accurately maintain the order of fittings on the cold water side. Flush the line prior to installation.



- 1 Drain & fill valve
- 2 Straight-through shut-off valve
- 3 Pressure gauge test connector
- 4 Non-return valve
- 5 Inspection valve
- 6 Pressure reducing valve
- 7 Safety valve

Install a drain valve at the lowest point of the cold water supply line.

Install a pressure reducing valve when the water pressure is higher than 0.48 MPa.

Special measures are required at a water pressure in excess of 1 MPa.

A 0.6 MPa safety valve must be installed on site.

Discharge pipe:

- Size the discharge pipe for a fully opened safety valve. The blow-off aperture of the safety valve must remain open to the atmosphere.
- The safety valve's discharge pipe should be installed with a constant downward incline.
- Observe the information in the "Safety valve" installation instructions.

DHW circulation line

The heat losses incurred in the DHW circulation line and the electrical power consumption of the circulation pump reduce the efficiency of the system. The cooled water in the DHW circulation line mixes with the cylinder content.

Where possible, avoid installing a DHW circulation line. Where that is not possible, control the DHW circulation pump thermally or by time switch.

10.3 Condensate drain

For the condensate drain, a hose is fitted to the defrost pan connector.



Material losses

To ensure the condensate drains perfectly, never kink the hose. If necessary, create a loop. Route the hose with an adequate slope.

After installing, check the condensate line for function and tightness.

Route the condensate into a drain. When doing so, ensure the drain is adequately ventilated (e.g. free outlet into a siphon). Use a condensate pump if there is insufficient fall.

10.4 LWA 252 SOL: Connection of an external heat generator

Pipe bends with union nuts are supplied with the appliances that are fitted with internal coils, to enable an easy connection to the solar thermal system. The pipe bends are prefitted at the factory and are tightened without torque.

Heating circuit oxygen diffusion



Material losses

Avoid open heating systems and plastic pipes in under-floor heating systems which are permeable to oxygen.

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



Material losses

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

Solar circuit oxygen diffusion



Material losses

Avoid open vented solar thermal systems and plastic pipes which are permeable to oxygen.

With plastic pipes that are permeable to oxygen, oxygen diffusion can cause corrosion on the steel components of the solar thermal system (e.g. on the indirect coil of the DHW cylinder).

Water quality, solar circuit



Material losses

A glycol-water mixture up to 60 % is permissible for the solar circuit, provided only dezincification-resistant metals, glycol-resistant gaskets and diaphragm expansion vessels suitable for glycol are used throughout the installation.

10.5 Installing extract air and exhaust air pipes

In line with DIN 24145, folded spiral pipes NW 160 are envisaged for connection to this appliance.

Insulate the extract air line to prevent heat loss in case it is routed through rooms that are colder than those from which the air is extracted (e.g. attics, cellars, garages and false ceilings). Fit the extract air pipe to the connector on the l.h. side of the appliance so that it is neither subject to stresses nor torque.

Fit the exhaust air pipe either to the r.h. side or the top of the equipment so that neither stresses nor torque are applied to the equipment. Insulate the exhaust air duct against condensation with a vapour-proof layer.

The exhaust air connector is located at the top of the equipment as standard. The following steps are necessary for conversion:

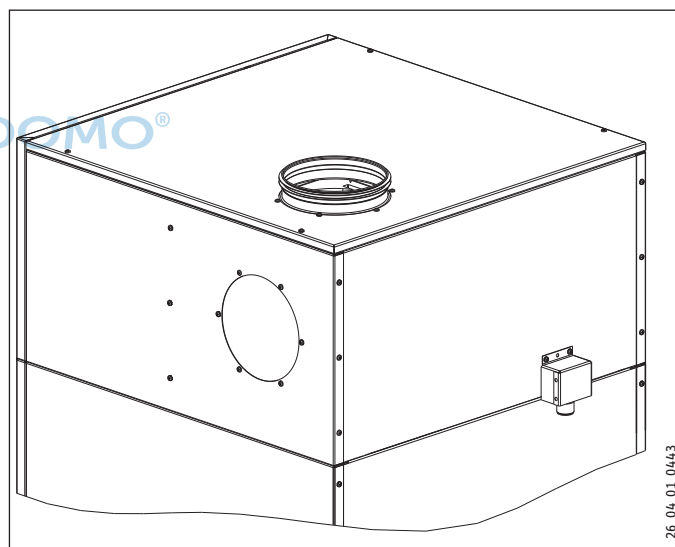


WARNING Electrocutation

Disconnect the power supply before carrying out any work on the appliance.

If the appliance is connected via a plug, pull out the plug.

If the appliance is installed with a permanent connection, stop the power supply at the fuse/MCB in the fuse box.



- ▶ Removing the cover from the top of the appliance.
- ▶ Undo the 6 self-tapping screws from the r.h. upper side panel.
- ▶ Tip the side panel approx. 10 degrees to the side and remove the EPS profile that faces to the front of the appliance upwards.
- ▶ Pull the second EPS profile about 20 mm in the direction of the appliance front and then remove it upwards by tipping the side panel by approx. 10 degrees.
- ▶ Remove the cover panel from the side panel.
- ▶ Remove the exhaust air connector from the appliance cover.
- ▶ Fit the cover panel to the appliance cover.
- ▶ Fit the exhaust air connector from the inside to the side panel.
- ▶ Install the EPS profiles in reverse order, so that the airway now points towards the appliance side panel.
- ▶ Secure the r.h. top side panel with 6 self-tapping screws.

INSTALLATION

Installation

- Fit the appliance cover with 4 self-tapping screws.

For anti-vibration separation and service reasons, connect the equipment to extract and exhaust air ducts with about 1 m length of flexible pipe each.

Also insulate these lines.



Material losses

When operating a dryer or a cooker hood that extracts air, ensure also, that a sufficiently large air flow rate is supplied to that equipment, independent of the ventilation equipment.

10.6 Power supply

A power cable with standard plug is included in the standard delivery.



Material losses

If the power circuit is protected by an RCD, the appliance can be connected to the mains with a plug. If there is no RCD, the appliance may only be supplied with power via a permanent connection.



WARNING Electrocutation

Disconnect the power supply before carrying out any work on the appliance.

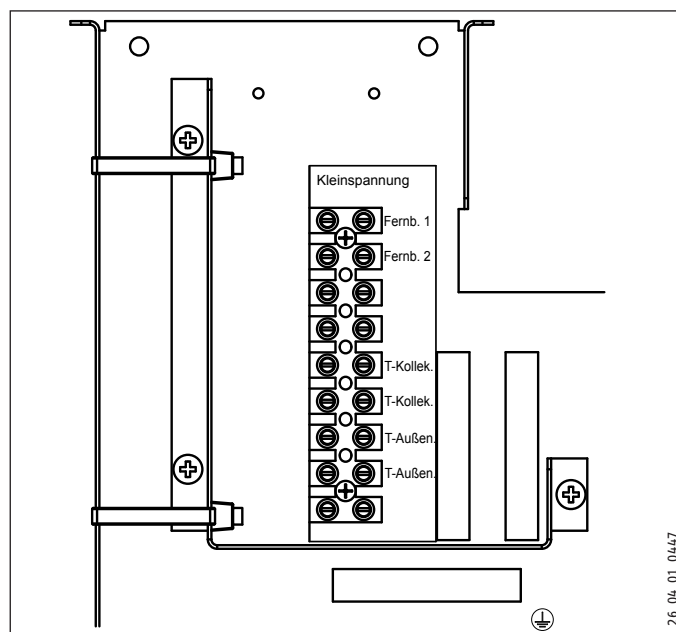
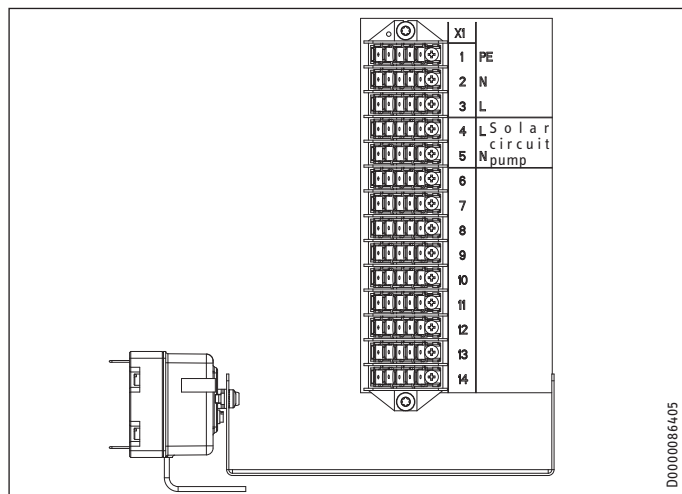
If the appliance is connected via a plug, pull out the plug. If the appliance is installed with a permanent connection, stop the power supply at the fuse/MCB in the fuse box.

The connection work must be carried out by an approved contractor.

Route power supply and control cables separately.

Observe VDE 0100 [or local regulations] and the regulations of your local power supply utility.

The terminals are located beneath the lower front fascia, top right hand side. When removing the front fascia ensure that the earth cable is not ripped off the front fascia. If necessary, remove the cable from the blade terminal.



Kleinspannung Safety extra low voltage

Fernb. 1 Remote control

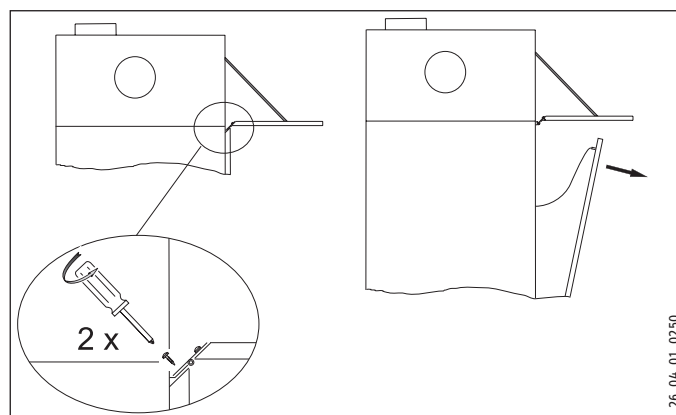
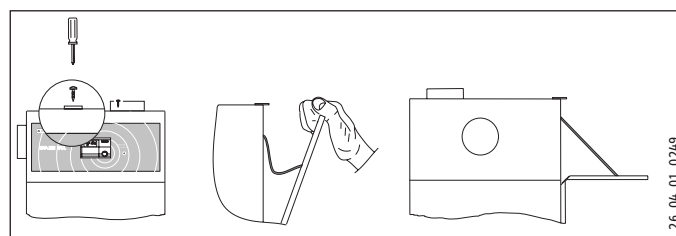
Fernb. 2

T-Kollek. Collector sensor

T-Kollek.

T-Außen. Outside temperature sensor

T-Außen.



When replacing the front fascia ensure that the earth cable is correctly connected.

Route all connecting cables and sensor leads through the entries in the back panel (see chapter "Dimensions and connections").

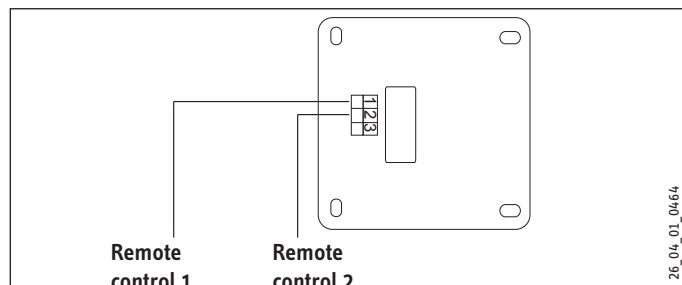
- Push the power cable into the appliance through the cable entry on the back of the appliance.

INSTALLATION

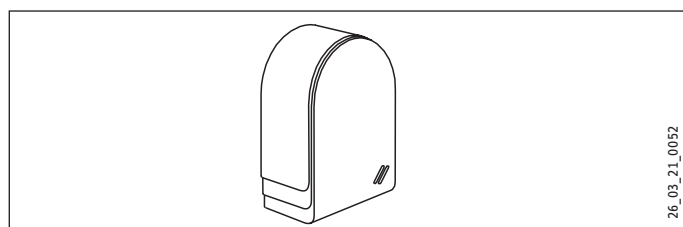
Installation

- Protect the power cable by securing it with a strain relief.
- Connect the power cable to terminal X1 (PE, N, L).

10.6.1 Connection, remote control RC 1



10.6.2 Fitting outside temperature sensor AFS 2



The outside temperature sensor should be freely exposed to the elements. Never fit it above windows, doors, light wells or air ducts, and never subject it to direct insolation.

Install the outside temperature sensor on a north or north-eastern wall.

The minimum height above the ground is 2.5 m, and 1 m to the side of windows and doors.

- Remove the cover of the sensor enclosure.
- Secure the sensor enclosure to the wall using the screw provided.
- Route the sensor cable through the cable entry located on the upper edge of the back panel.
- Connect the sensor lead to the outside temperature sensor.
- Place the cover on the sensor enclosure so that it clicks audibly into place.

10.6.3 Fitting the collector sensor



The collector sensor is included in the separate pack for LWA...SOL appliances.

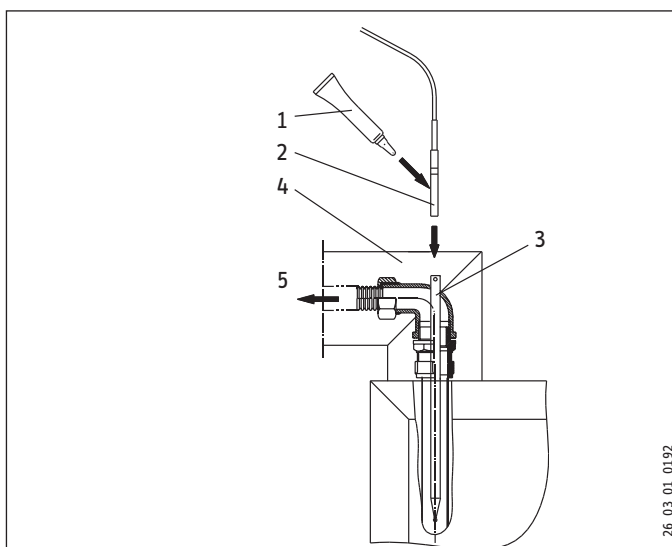
Dimensions: Diameter 6 mm, lead length 2 m (silicone lead)

Insert the collector sensor into the collector sensor well.

The correct connection of the collector sensor is crucial to the trouble-free function of a solar thermal system. The sensor on our collectors is installed on the last collector, viewed in the flow direction of the heat transfer medium.

- Fit and seal-in the collector sensor well on the collector.
- Coat the collector sensor with heat conducting paste and insert it into the sensor well until it bottoms out.

Provide thermal insulation for the collector sensor well and the roof outlet, which must be tightly sealed and UV resistant.



- 1 Heat conducting paste
- 2 Temperature sensor
- 3 Sensor well
- 4 Thermal insulation
- 5 Flow direction of the heat transfer medium

Sensor resistance values

The sensors integrated in the appliance, the sensors provided and the outside temperature sensor are PTC sensors. The collector sensor is a PT 1000 sensor.

Temperature [°C]	PT 1000 sensor Resistance [Ω]	PTC sensor Resistance [Ω]
- 30	882	---
- 20	922	1367
- 10	961	1495
0	1000	1630
10	1039	1772
20	1078	1922
25	1097	2000
30	1117	2080
40	1155	2245
50	1194	2417
60	1232	2597
70	1271	2785
80	1309	2980
90	1347	3182
100	1385	3392
110	1423	---
120	1461	---



Note

When measuring with a multimeter, the resistance values serve only to identify faulty or incorrect sensors. Measuring with a multimeter is too imprecise to test for accuracy.

11. Commissioning

**WARNING Injury**

Only approved contractors may commission this equipment and instruct the operator in its use.

- Commission the system in accordance with these operating and installation instructions. Our customer service can provide commissioning support, which is chargeable.

11.1 Checks before commissioning

Ventilation system

- Have the air ducts been installed and insulated correctly?

Cylinders

- Has the cylinder been filled (hot tap open until water flows out)?
- Has a pressure reducing valve been installed if the water pressure is above 5 bar?

Temperature sensor

- Have all temperature sensors been correctly placed and connected?

**Material losses**

Operating the ventilation appliance is not permitted whilst building work is still in progress.

UNIDOMO®

INSTALLATION

Commissioning

11.2 Commissioning overview, control unit LWM

(Control level 3)

No. Parameter (shown in the display)

	COMMISSIONING	PRG	
1	ENTRY CODE	PRG	
2	CHANGE CODE	PRG	
3	LANGUAGE	PRG	DEUTSCH --- ESPANOL PRG
4	CONTRAST	PRG	
5	DISPLAY	PRG	OUTSIDE TEMP DAY DHW TEMP PRG
6	EVAPOR MIN	PRG	
7	DHW ONCE	PRG	ON / OFF PRG
8	PASTEUR TEMP	PRG	
9	PASTEURISATION	PRG	00 / 01 / 02 PRG
10	DHW HYSTERESIS	PRG	
11	FLOW RATE	PRG	STANDBY SETBACK STANDARD PARTY MINIMUM
12	FROST PROTECT	PRG	BACK PRG
13	NIGHT COOLING	PRG	ON / OFF PRG
14	QUICK START	PRG	
15	RELAY TEST	PRG	SOLAR PUMP IMM HEATER PRG
16	LCD TEST	PRG	
17	LWM SOFTWARE		
18	ANALYSIS		
19	HP RESET	PRG	ON / OFF PRG
20	RUNTIME COMP	PRG	
21	STARTS COMP	PRG	
22	RUNTIME POWER	PRG	
23	STARTS POWER	PRG	
24	RUNTIME SOLAR	PRG	
25	STARTS SOLAR	PRG	
	BACK	PRG	

INSTALLATION

Commissioning

11.3 Commissioning the LWM control unit

In addition to inputting the settings at control level 2, the system-specific parameters must also be determined during the commissioning of the heat pump system. These parameters are adjusted at control level 3, access to which is protected by code.



Note

The controller should be in standby mode during commissioning. This prevents an uncontrolled heat pump start. Please remember to reset the system to its last operating mode.

Check all parameters in sequence. Enter all selected values into the relevant column (system value) provided in the commissioning report.

Note: Not all adjustments take immediate effect. Some adjustments only become effective in certain situations or after a delay.

1 ENTRY CODE

Enter the correct four-digit code to change parameters at control level 3. The factory-set code is 1 0 0 0.

After pressing PRG (indicator illuminates), the first digit can be selected by turning the rotary selector. Pressing PRG again confirms the value, the second digit of the code then begins to flash. Turning the rotary selector enables the second digit of the code to be entered, etc. When all four digits have been entered correctly, four lines appear in the display. This enables access to control level 3, and the display shows *CODE-OK*. Closing and re-opening the flap requires that the code be entered again. The code does not need to be entered for checking existing settings.

2 CHANGE CODE

If the standard code is to be changed, then select the required code as described under parameter *ENTRY CODE*.

3 LANGUAGE

Press PRG and select the required language with the rotary selector. Then confirm your selection by pressing PRG again.

4 CONTRAST

The display contrast can be adjusted here.

5 DISPLAY

Here you can select what will be displayed when the programming unit flap is closed. You can select between outside room temperature, return temperature, day and time or DHW temperature.

6 EVAPOR MIN

Setting range: -7 °C bis $+3\text{ °C}$

Standard settings: -5 °C

The evaporator sensor should prevent the evaporator from freezing up during operation.

When this value has been met for at least 10 minutes, the heat pump stops, the fan runs at minimum air flow rate and the warm extract air defrosts the evaporator.

The heat pump will be switched off permanently by the control unit if the evaporator defrosts 5 times within a five hour period. Symbol Δ flashes on the controller display and the fault *DEFROST* will be shown permanently on the display.

After rectifying the fault, the heat pump has to be reset via parameter *HP RESET*.

7 DHW ONCE

When a service is required, the DHW cylinder can be heated once by means of the immersion heater to the selected set DHW temperature, if this function is set to ON.

8 PASTEUR TEMP

With this parameter, the maximum DHW temperature with pasteurisation enabled can be set.

9 PASTEURISATION

When setting pasteurisation to 01, the DHW cylinder will be heated every Saturday morning at 03:00h to the temperature selected under parameter *PASTEUR TEMP*.

When setting pasteurisation to 02, the DHW cylinder will be heated every day at 03:00h to the temperature selected under parameter *PASTEUR TEMP*.

Given that the immersion heater continues to heat DHW beyond 60 °C , check in a detached house whether the regular DHW throughput enables this function to be omitted.

10 DHW HYSTERESIS

This determines the switching hysteresis for DHW heating.

Starting DHW heating at the set DHW temperature minus hysteresis.

11 FLOW RATE

Here, the flow rates are determined with the assistance of the diagram "fan curve" (see specification) for the following operating modes:

Settings for a 150 m² living area (example for Germany):

During **Standby** a flow rate of $125\text{ m}^3/\text{h} = 3.2\text{ V}$ is recommended. Where required there is the option of stopping ventilation completely by setting 0 V.

For Standard ventilation select the design flow rate. Where that is not available, a 0.4-fold air change is appropriate. With a 0.4-fold air change: $150\text{ m}^3/\text{h} \rightarrow 4.0\text{ V}$.

For setback ventilation we recommend reducing standard ventilation by 30 %. $150\text{ m}^3/\text{h} \cdot 0.7 = 105\text{ m}^3/\text{h} \rightarrow 2.5\text{ V}$.

For party ventilation we recommend increasing standard ventilation by 30 %. $150\text{ m}^3/\text{h} \cdot 1.3 = 195\text{ m}^3/\text{h} \rightarrow 5.3\text{ V}$.

INSTALLATION

Commissioning

With **Minimum ventilation** a flow rate of 125 m³/h = 3.2 V should be selected. This flow rate is required when the heat pump is in operation.

12 FROST PROTECT

This parameter can only be adjusted when an outside temperature sensor is connected.

The ventilation program switches to setback mode at an outside temperature of - 2 °C. The temperature can be adjusted between - 10 °C and 5 °C.

13 NIGHT COOLING

This parameter is only adjustable if the remote control RC 1 and the outside temperature sensor AFS 2 are connected.

The ventilation program in setback mode with setting ON compares the actual room temperature with the outside temperature. The fan operates at stage 3 as soon as a room temperature is ≥ 24 °C (- 2 K) and the outside temperature is ≤ 4 K (+2 K).

Night cooling is disabled at an outside temperature of ≤ 10 °C.

14 QUICK START

During commissioning, you can test the heat pump function by triggering a heat pump quick start.

When navigating to this parameter, the value 10 appears on the right hand side of the display. By pressing the PRG key, quick start is initiated. The fan starts. The display visibly counts down from 10 to 0. The compressor then starts.

The function is terminated by pressing the PRG key or closing the control flap. The controller reverts to its control state.

This function only starts if none of the set limits has been reached. The warning symbol flashes when limits are reached. Reaching a maximum DHW temperature of 60 °C or the idle time of the heat pump running down would be two such limits.

15 RELAY TEST

Under this parameter, pressing PRG and continuing to turn the rotary selector allows you to individually switch all LWA relays. This way, the correct wiring can be checked following installation.

Order of the switched relay outputs:

01. Solar circuit pump
02. Immersion heater

16 LCD TEST

This function allows you to test the LCD display. Pressing PRG displays all available symbols.

17 LWM SOFTWARE

Display of the current software issue.

18 ANALYSIS

Function that enables you to view the system status during initialisation or operation.

Indicator symbol left/right

System status indication (pump, heat pump, DHW immersion heater)

Figures on the right

Shows the remaining idle time of the heat pump. The time is counted down in minutes.

Clock symbol

Flashes during idle times.

19 HP RESET

The heat pump can be reset if a fault occurs. The fault is reset by pressing PRG, setting the system to *ON* and then pressing PRG repeatedly. The compressor starts again after the idle time has expired. The fault remains stored in the fault list.

20 RUNTIME COMP

The run time of the compressor will be displayed. The display is shown in hours. Pressing PRG twice deletes the runtime.

21 STARTS COMP

This displays the number of compressor starts. Pressing PRG twice deletes the corresponding starts.

22 RUNTIME POWER

This displays the runtime of the DHW immersion heater. The display is shown in hours. Pressing PRG twice deletes the runtime.

23 STARTS POWER

This displays the number of starts of the DHW immersion heater. Pressing PRG twice deletes the corresponding starts.

24 RUNTIME SOLAR

The run time of the solar pump will be displayed. The display is shown in hours. Pressing PRG twice deletes the runtime.

25 STARTS SOLAR

This displays the number of starts of the solar circuit pump. Pressing PRG twice deletes the corresponding starts.

INSTALLATION

Troubleshooting

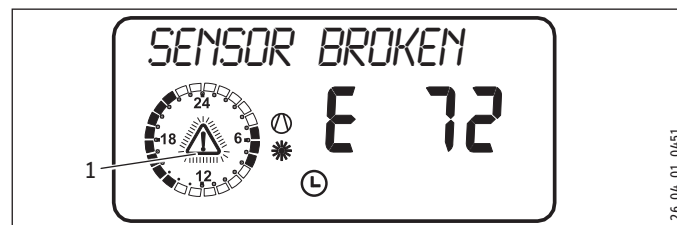
11.4 Commissioning report

No.	Parameters	Setting range	Standard	System value
1	ENTRY CODE	0000 to 9999	1000	
2	CHANGE CODE	0000 to 9999		
3	LANGUAGE		DEUTSCH	
4	CONTRAST	- 20 to + 20	0	
5	DISPLAY		Actual DHW temperature	
6	EVAPOR MIN (Minimum evaporator temperature)	- 7 °C to + 3 °C	- 5 °C	
7	DHW ONCE (DHW heating once only by immersion heater)	OFF / ON	OFF	
8	PASTEUR TEMP (Pasteurisation temperature)	+ 60 °C to + 70 °C	+ 60 °C	
9	PASTEURISATION	00 to 02	00	
10	DHW HYSTERESIS (DHW hysteresis)	+ 2 °C to + 10 °C	+ 3 °C	
11	FLOW RATE			
	STANDBY	0 - 10 V	3 V	
	SETBACK (setback ventilation)	2 - 10 V	3 V	
	STANDARD (standard ventilation)	2 - 10 V	6 V	
	PARTY (party ventilation)	2 - 10 V	8 V	
	MINIMUM (Minimum ventilation)	2 - 10 V	5 V	
12	FROST PROTECT	- 10 °C to + 5 °C	- 2 °C	
13	NIGHT COOLING	OFF / ON	OFF	
14	QUICK START			
15	RELAY TEST	OFF / ON	OFF	
16	LCD TEST			
17	LWM SOFTWARE			
18	ANALYSIS			
19	HP RESET (Reset heat pump)	OFF / ON	OFF	
20	RUNTIME COMP (Runtime - compressor)			
21	STARTS COMP (Starts compressor)			
22	RUNTIME POWER (Runtime immersion heater)			
23	STARTS POWER (Starts immersion heater)			
24	RUNTIME SOLAR			
25	STARTS SOLAR			

12. Troubleshooting

All faults are displayed.

Sensor break



1 Fault message (flashing)

The fault code refers to temperature sensors that can be called up under system parameter TEMPERATURES. The system will not be shut down. The display message will extinguish immediately after the fault has been removed.

Sensors	Fault code
Outside temperature	E 70
Room temperature	E 71
Actual cylinder temperature, top	E 72
Set cylinder temperature	
Actual evaporator temperature	E 75
Evaporator frost protection	
Solar collector temperature	E 77
Actual cylinder temperature, bottom	E 76
Max cylinder temperature	

Evaporator defrosting fault



When  symbol flashes, but no fault code is displayed, the compressor has stopped due to a fault during defrosting (see parameter EVAPOR MIN).

13. Maintenance, cleaning and safety equipment

13.1 Maintenance

The appliance operates under automatic control and requires no specific maintenance.

Keep the air inlet and discharge apertures on the external wall free from snow and leaves.

13.2 Cleaning

Clean evaporator fins from time to time.

Regularly check the condenser drain and remove contamination and blockages.

13.3 Safety equipment

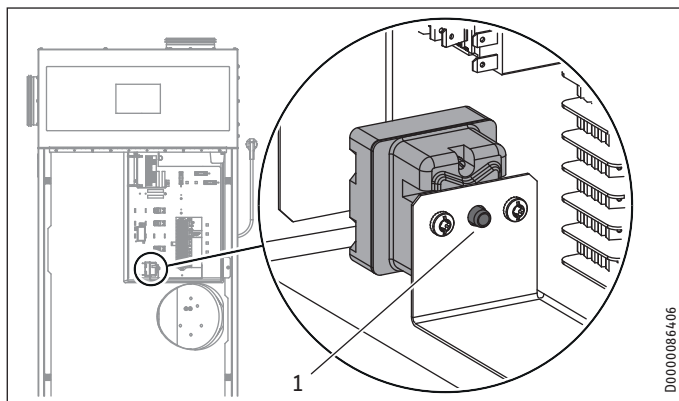
13.3.1 Safety equipment fitted to the appliance

In case of a fault, the safety equipment interrupts the relevant power circuit.

Pull the power plug prior to commencing any work on the appliance.

High limit safety cut-out (STB)

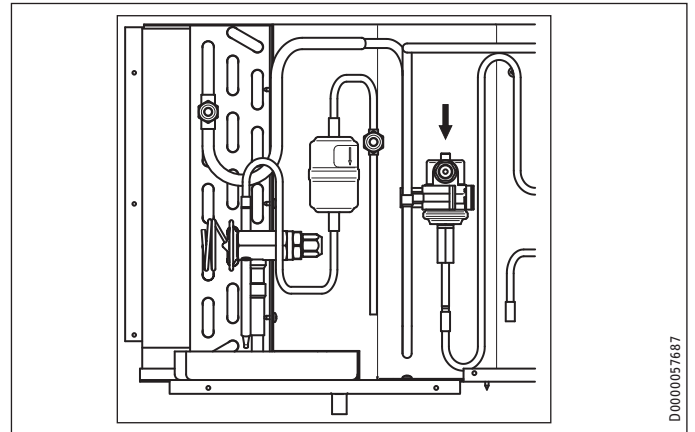
This will shut the equipment down if the DHW temperature exceeds 95 °C. Reset the high limit safety cut-out (F2) by pressing the reset button after removing the cause of the fault. For this, the appliance must be opened (see chapter "Installation/Electrical connection").



1 Reset button, high limit safety cut-out

Safety pressure limiter

The safety pressure limiter stops the compressor in case of excessive pressure in the refrigerant circuit, i.e. if the water flow rate is too low. In this case, the red control indicator on the operating fascia will illuminate. The safety pressure limiter may also respond, if the appliance is operated above its permissible limit (>30 °C extract air temperature). Reset the high limit safety cut-out by pressing the reset button, after the cause of the fault has been removed. For this, the appliance must be opened (see chapter "Electrical connection").



Motor overload relay

The motor overload relay will shut down the compressor if it is overloaded because of excessive thermal load. Remove the relevant fault. After a short while, the protective motor switch will restart the compressor automatically.

Protective anode

Two protective anodes are integrated into the cylinder to protect it against corrosion.

The protective anodes are pushed through the flange from inside outwards and secured. For inspections, the flange will be removed to enable the simultaneous inspection of the electrode, the immersion heater and the internal enamel coating. When replacing the anode, ensure a perfect contact with a metallic, conductive surface during assembly.

The timing of the inspection is subject to the local water quality and is determined by your local contractor.

13.3.2 System safety equipment

Safety valve (on-site provision)

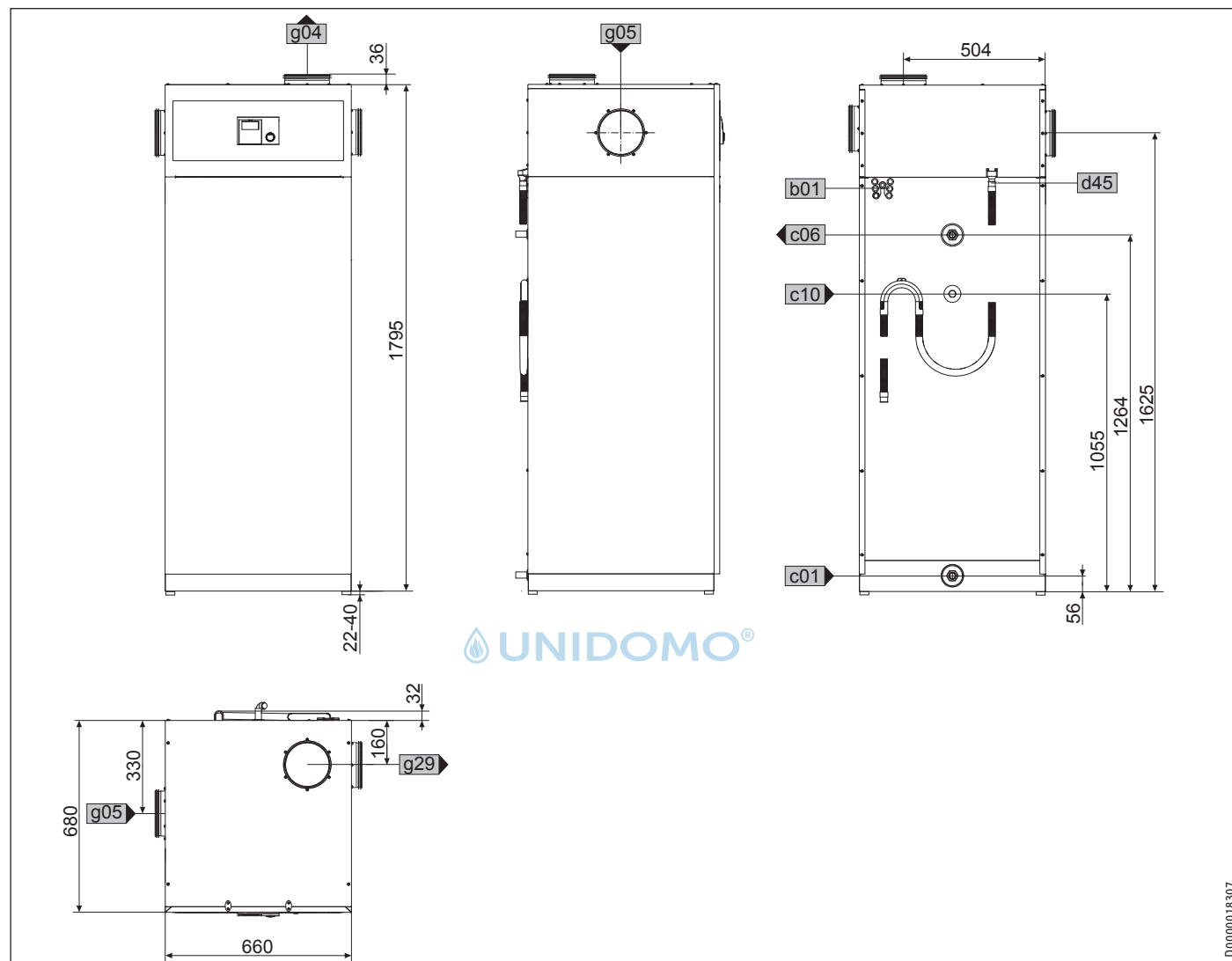
This valve opens when the water pressure exceeds the preset value of 6 bar, thereby relieving the pressure. It is adjusted so that no water will be expelled when heating is switched OFF. Should it continue to drip excessively, either the valve seat has become contaminated, the water pressure is too high or the pressure reducing valve has become faulty.

Pressure reducing valve (on-site provision)

Check the valve for perfect function. Replace it if required.

14. Specification

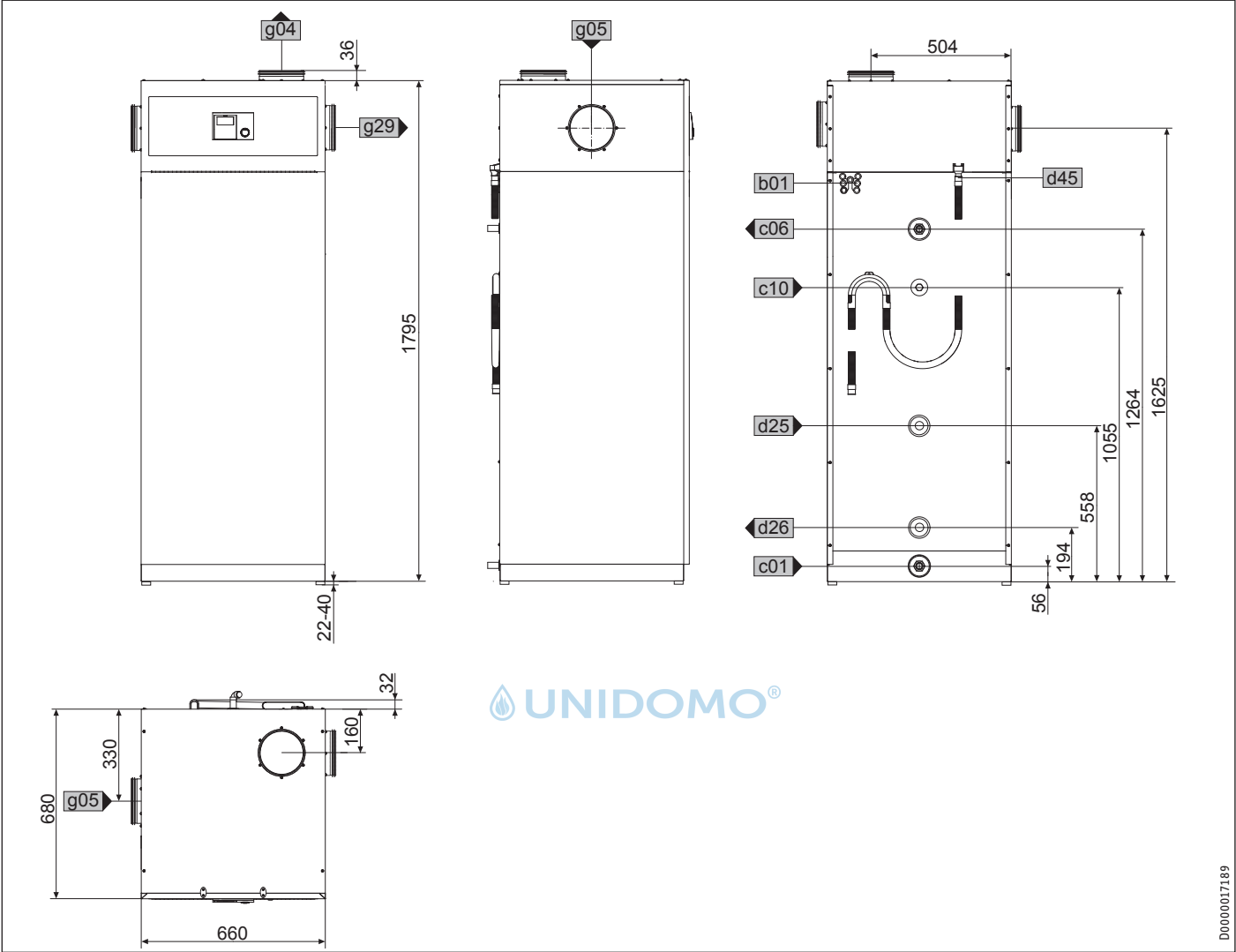
LWA 252



LWA 252			
b01	Entry electrical cables		
c01	Cold water inlet	Male thread	G 1
c06	DHW outlet	Male thread	G 1
c10	DHW circulation	Male thread	G 1/2
d45	Condensate drain	Diameter	mm 22
g04	Exhaust air	Nominal diameter	DN 160
g05	Extract air	Nominal diameter	DN 160
g29	Exhaust air optional	Nominal diameter	DN 160

INSTALLATION Specification

LWA 252 SOL



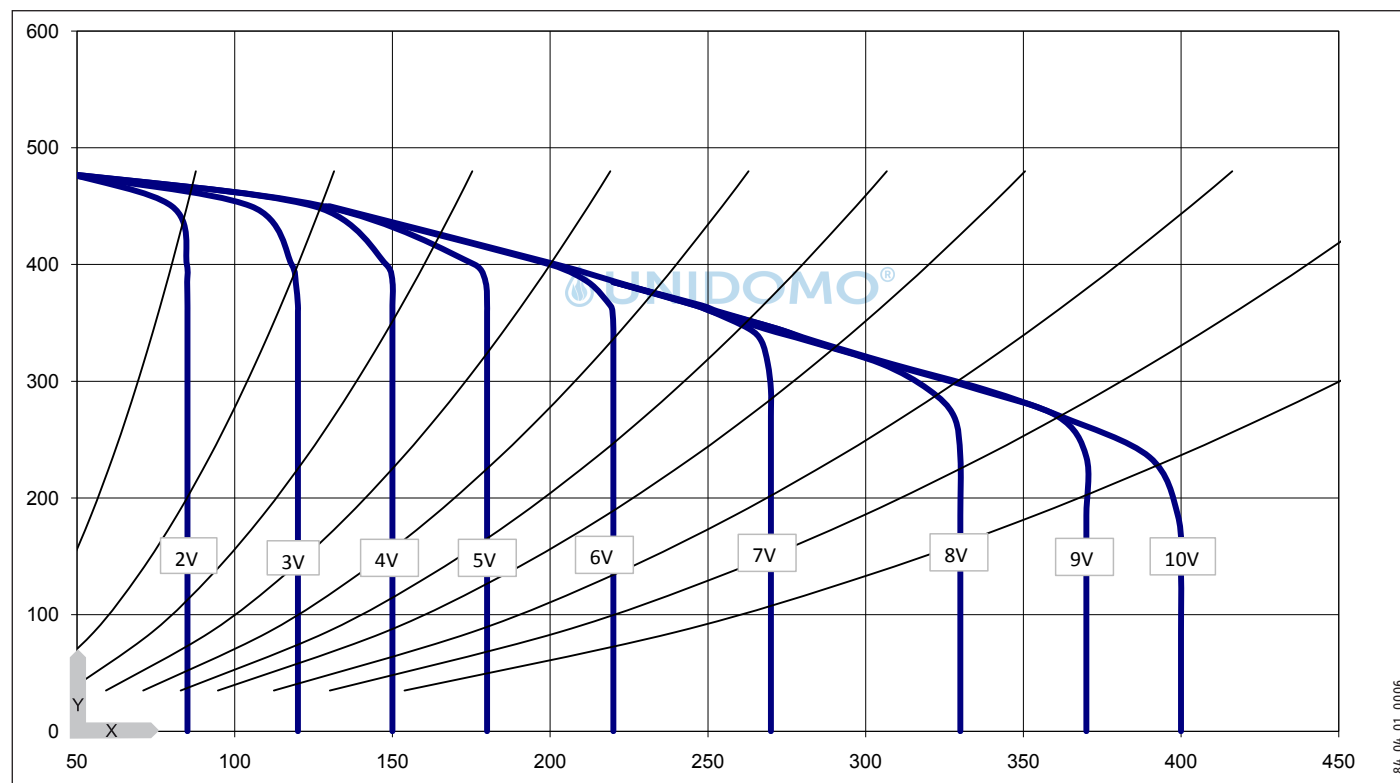
LWA 252 SOL			
b01	Entry electrical cables		
c01	Cold water inlet	Male thread	G 1
c06	DHW outlet	Male thread	G 1
c10	DHW circulation	Male thread	G 1/2
d25	Solar flow	Male thread	G 1
d26	Solar return	Male thread	G 1
d45	Condensate drain	Diameter	mm 22
g04	Exhaust air	Nominal diameter	DN 160
g05	Extract air	Nominal diameter	DN 160
g29	Exhaust air optional	Nominal diameter	DN 160

INSTALLATION

Specification

B2	DHW sensor, top	X1-1/2/3	Power supply (PE/N/L)
B3	DHW sensor, bottom	X1-4	SOLAR PUMP L
B4	Defrost sensor	X1-5	SOLAR PUMP N
C1	Capacitor	X1-9/10	floating contact (switches in parallel to compressor relay K1)
E1	Immersion heater	X2-1	Remote control (Terminal 1)
F2	High limit safety cut-out	X2-2	Remote control (Terminal 3)
F3	Pressure limiter, high pressure	X2-5/6	Collector sensor (SOL only)
F4	Klixon compressor	X2-7/8	Outside sensor
H1	High pressure fault message	X6	Earthing, electric heater rod
K1	Relay, compressor	X7	Earthing, partition wall
K2	Immersion heater	X8	Earthing, door, top
K3	Relay (Optional)	X9	Earthing, door, bottom
K7	Relay, high pressure indicator	X18	Flat pin connector
LWM	Control unit	X20	Terminal, extra low voltage/partition wall
M1	Compressor		
M2	Extract air fan		

14.2 Fan curve



X Flow rate [m³/h]
Y External pressure [Pa]

INSTALLATION | GUARANTEE | ENVIRONMENT AND RECYCLING

Specification

14.3 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.

		LWA 252	LWA 252 SOL
		074264	074265
Heating output			
Heating output, heat pump L20/F58/W45	kW	1.40	1.40
Power consumption			
Power consumption, emergency/booster heater	kW	1.50	1.50
Fan power consumption at 250 m ³ /h / 200 Pa	W	50	50
Rated power consumption for L20/F58/W45	kW	0.43	0.43
Output data to EN 16147			
Nominal DHW temperature (EN 16147)	°C	55	55
Nominal load profile (EN 16147)		XL	XL
Reference DHW temperature (EN 16147/A20 extract air)	°C	52.70	52.70
Maximum available amount of DHW at 40 °C (EN 16147 / A20 extract air)	l	412	412
Heat-up time (EN 16147 / A20 extract air)	h	11.3	11.3
Average heating output (EN 16147 / A20 extract air)	kW	1.40	1.40
Power consumption, standby period (EN 16147 / A20 extract air)	kW	0.031	0.031
Performance factor (EN 16147 / A20 extract air)		3.42	3.42
Sound emissions			
Sound power level (EN 12102)	dB(A)	45	45
Application limits			
Permissible operating pressure, DHW	MPa	0.60	0.60
DHW temperature with heat pump	°C	60	60
Min. application limit, heat source	°C	15	15
Max. application limit, heat source	°C	30	30
Min. installation room floor area	m ²	3	3
Min. installation room volume	m ³	6	6
Min./max. conductivity, drinking water	µS/cm	100-1500	100-1500
Hydraulic data			
Max. DHW temperature	°C	70	70
Cylinder capacity	l	303	290
Energy data			
Energy efficiency class		A+	A+
Electrical data			
Rated voltage	V	230	230
Fuse protection	A	C 16	C 16
Phases		1/N/PE	1/N/PE
Starting current	A	10	10
Frequency	Hz	50	50
Versions			
IP rating		IP20	IP20
Refrigerant		R134a	R134a
Refrigerant charge	kg	0.85	0.85
CO ₂ equivalent (CO ₂ e)	t	1.22	1.22
Global warming potential of the refrigerant (GWP100)		1430	1430
Dimensions			
Height	mm	1860	1860
Width	mm	696	696
Depth	mm	735	735
Height when tilted	mm	1985	1985

		LWA 252	LWA 252 SOL
Weights			
Weight, empty	kg	150	180
Weight, full	kg	453	464
Connections			
DHW connection		G 1	G 1
Cold water connection		G 1	G 1
DHW circulation connection		G 1/2	G 1/2
Heat exchanger connection			G 1
Condensate connection	mm	22	22
Exhaust air/extract air connection		DN 160	DN 160
Values			
DHW heat-up time with heat pump from 25 °C to 55 °C (L20/F40)	h	10.10	9.00
Permissible operating pressure, refrigerant circuit	MPa	2.34	2.34
Extract air flow rate for ventilation	m ³ /h	80-400	80-400
Min. extract air flow rate during heat pump operation	m ³ /h	125	125
Available external pressure, ventilation	Pa	200	200

Further details

		LWA 252	LWA 252 SOL
		074264	074265
Maximum altitude for installation	m	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.

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



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