# *BWP 30 HLW*
# *BWP 30 H*

Dimplex

## Montage- und Gebrauchsanweisung

## Installation and Operating Instructions

## Instructions d'installation et d'utilisation

Deutsch

English

Français


## Warmwasser-Wärmepumpe für Innenaufstellung

## Hot Water Heat Pump for Indoor Installation

## Pompe à chaleur de production d'eau chaude à installation intérieure

**Bestell-Nr. / Order no. / N° de commande : 451902.66.47**

**FD 8803**

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English

# 1 Please Read Immediately

## 1.1 Important Information

**⚠ ATTENTION!**
The device cover cannot be used for carrying (the cover cannot withstand larger forces!)

**⚠ ATTENTION!**
When installing the on-site pipework, ensure the pipes do not get contaminated (flush pipes before connecting hot-water heat pump)!

**⚠ ATTENTION!**
Only operate hot-water heat pump when filled with water!

**⚠ ATTENTION!**
Disconnect the power supply before opening the hot-water heat pump; observe possible coasting of ventilator.

**⚠ ATTENTION!**
Ensure water does not come into contact with the operator controls. Unplug mains plug/disconnect the power supply before beginning any cleaning work.

## 1.2 Regulations / Safety Information

**⚠ ATTENTION!**
Read these installation and operating instructions before start-up!

- The hot-water heat pump is exclusively used to heat water for domestic use and drinking water within the specified operating temperature limits! Heating fluids other than domestic water is not permitted. Observe the technical regulations for domestic water installation (DIN 1988).
- Exhaust air should not fall below +15 °C (evaporator may freeze). Sinking exhaust air temperatures reduce economical heat pump operation.
- It is not permitted to
  - operate the pump with solvent-laden or explosive exhaust air
  - use exhaust air containing fat, dust or sticky aerosols
  - to connect extractor hoods to the ventilation system
- Installation of the device is not permitted
  - outdoors
  - in rooms which are exposed to frost
  - in wet rooms (e.g. bathrooms)
  - in rooms with air which is potentially explosive because of gases, vapours or dust
- Operation of the device is not permitted
  - with an empty cylinder
  - during building construction
- The construction and design of the hot-water heat pump complies with all relevant EG directives (see also CE declaration of conformity).
- The technician must ensure that the refrigerant is flushed adequately to allow maintenance and repair work on refrigerant circuit components without risk. Refrigerant must be properly used and disposed of; it must not be released into the environment! (The refrigerant R134a is CFC-free, non-inflammable and not ozone depleting.)
- When working on the hot-water heat pump, always disconnect the power supply.
- When connecting the hot-water heat pump to the power supply, the relevant VDE, EN and IEC standards are to be fulfilled. Also observe the technical connection requirements of the electrical utility companies.

**⚠ ATTENTION!**
Work on the hot-water heat pump is to be performed by qualified personnel only!
Observe accident prevention regulations!

# 2 Description

## 2.1 General Information

The hot-water heat pump is a ready-to-use heating device and mainly consists of hot water cylinders, the components for the refrigerant, air and water circuits, as well as all of the control, regulation and monitoring devices required for automatic operation.

Using electrical energy, the hot-water heat pump heats water using the heat stored in the air which is sucked in. The hot-water heat pump with internal heat exchanger can be connected to additional heat generators such as heat boilers or solar installations. A vertical cladding tube (inner ∅ ≥ 12 mm) houses an external temperature sensor. The devices are standard equipped with an electric heating element (1.5 kW).

The temperature of the air sucked in (the heat source) is used as reference value for energy consumption and DHW preparation heat-up time.

For this reason, an air duct system (DN 160, max. length 10 m) can be connected to the standard spigot of the hot-water heat pump for specific waste heat recovery. In principle, effective operation of the heat pump requires that there is no air short-circuit between the air that is sucked in and the air that is blown out. This can, for example, be achieved by a flexible air hose on the intake and outlet side.

Falling outlet air temperatures reduce heat pump performance and increase heat-up time. Air inlet temperature should not fall below 15 °C for economical heat pump operation. If the air inlet temperature falls below 8 °C ±1.5 (dead-band value 3 K), the heat pump is switched off and the DHW is heated by the standard heating element (1.5 kW).

### The electric heating element fulfils four functions:

- **Supplementary heating**
  The heating-up period is approx. halved by switching on the heating element (using the “Heating Element” switch, see Point 2.3) in addition to the heat pump.
- **Frost protection**
  If the air temperature falls below 8 ±1,5 °C (dead-band value 3 K), the electric heating element switches on automatically and (nominally) heats the water up to the set hot water temperature. The hot-water temperature generated by the heating element in antifreeze mode can exceed the set value!
- **Emergency heating**
  The water supply is maintained by the electric heating element if the heat pump is out of order.
- **Higher water temperature**
  If the required hot water temperature is higher than the temperature achievable by the heat pump (approx. 60 °C), it can be raised to a max. of 85 °C by using the heating element.

**⚠ ATTENTION!**

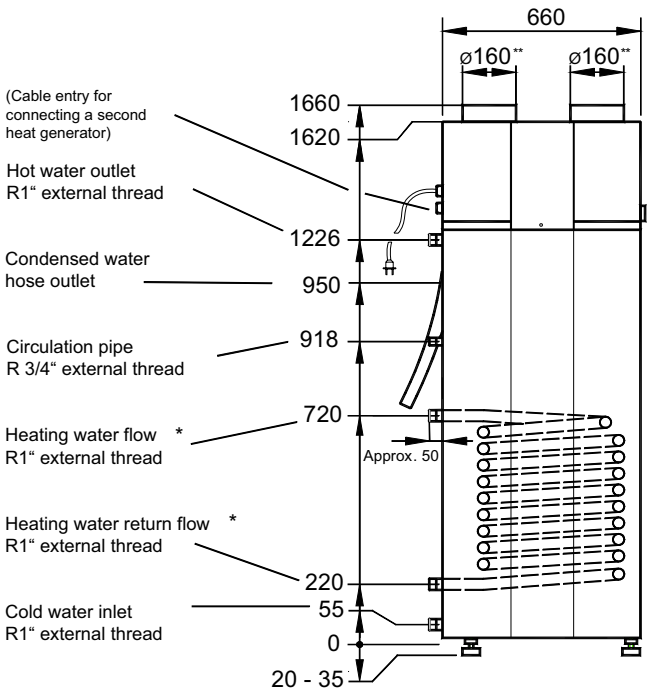
When the hot water temperature reaches > 60 °C, the heat pump switches off and the hot water is heated solely by the heating element. The heating element controller is factory set to 65 °C (see 3.3.3).

## 2.2 Refrigerant Circuit (Heat Pump Operating Principle)

The refrigerant circuit is a closed-loop system in which the refrigerant R134a is the energy source. The finned heat exchanger extracts heat from the air sucked in at a low evaporation temperature, and transfers it to the refrigerant. The vaporous refrigerant is sucked in by a compressor where it is compressed to a higher pressure and temperature level before being transported to the liquifier, where the heat taken up in the evaporator and part of the compressing energy is transferred to the water. Subsequently, the high condensation pressure is lowered to the evaporation pressure via a throttle mechanism (expansion valve). In the evaporator, the refrigerant will again take up heat from the air that is sucked in.

## 2.3 Water Circuit

The hot-water heat pump water circuits depend on the pump type (with or without internal heat exchanger). They must be installed on site. The water connections (see illustration) are at the rear of the unit.




* Hot-water heat pumps with internal tube heat exchanger only

** Nominal width ⇒ outer diameter 160 $^{-2}$

### Important information:

- **Circulation pipe**
  For energy efficiency reasons, the circulation pipe circuit type should not be used. When installing a circulation pipe in the hot water distribution system, provide a valve or a similar device as shut-off facility. Circulation is enabled according to use (time or requirement control).
- **Condensate outflow**
  See Point 5.2 "Connecting the Condensed Water Pipe".

English

## 2.4 Safety and Control Devices

The hot-water heat pump has the following safety features:

### High-pressure switch

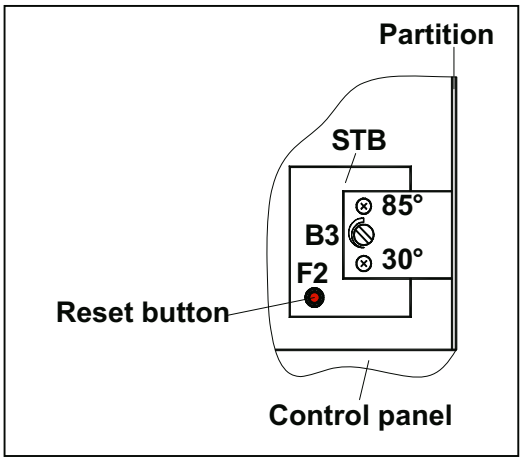
The high-pressure switch protects the heat pump against impermissibly high operating pressure in the refrigerant circuit. In the event of fault, the pressure switch will switch off the heat pump. The heat pump is restarted automatically if there has been a pressure drop in the refrigerant circuit.

### Safety temperature limiter for heating element (STL)

The STL protects the hot-water installation against impermissible temperature increases.

The heating element is switched off if the set switching value (99°C) is exceeded.

The heating element cannot be re-started until the hot-water temperature has decreased to ≤ 90 °C and the reset button (see illustration) on the STL is pressed (this may be done by qualified personnel only).




The hot-water heat pump is equipped with the following regulation and control devices:

### Heating element temperature controller (TC)

The heating element temperature controller regulates the hot water temperature during heating element operation. The maximum controller temperature is factory set to 65 °C (the controller and the STL are installed together in a casing). Temperature settings can be changed using suitable tools (see illustration). Changes to this setting may be carried out by qualified personnel only!

In automatic operation (activated via air temperature thermostat), the water is heated by the heating element until the set value has been reached (by the heat pump temperature controller). In contrast to heat pump operation only, a smaller amount of water is heated up in order to minimise heating element operating periods. In continuous manual operation, the hot water is heated until the set maximum temperature of the heating element has been reached. The heating element may optionally be controlled via an external switch (see Point “Electrical Connection”). The water is again heated until the set maximum temperature of the heating element controller has been reached.

### Heat pump temperature controller

Temperature control in the water cylinder and the regulation for compressor operation is carried out by the temperature controller. This controller measures the hot-water temperature via a sensor and controls it in relation to the set value. The desired temperature level (set value) is set via the rotary knob on the control panel.

### Air temperature thermostat

This thermostat sensor measures the hot-water heat pump temperature directly upstream of the evaporator (air inlet temperature). If the temperature falls below the set value (8 ±1,5 °C, dead-band value 3 K), hot water preparation automatically switches from heat pump operation to heat element operation.

# 3 Storage and Transport

## 3.1 General Information

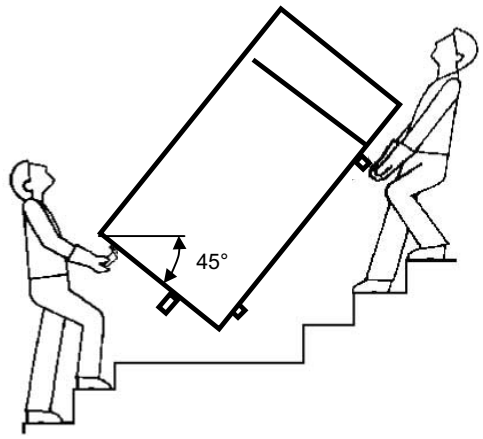
The hot-water heat pump should generally be stored and transported wrapped up, upright and containing no water. If handled carefully, the unit can be transported over short distances with a max. tilt angle of 45°. Ambient temperatures between -20 and +60 °C are permissible during transport and storage.

## 3.2 Fork-Lift Truck (or Lift Truck) Transport

The hot-water heat pump must remain installed on the pallet during fork-lift transport. The pump should be lifted slowly. Because of its high centre of mass, the hot-water heat pump must be secured against canting. To prevent damage, the hot-water heat pump must be lowered onto a level surface.

## 3.3 Manual Transport

Use the wooden pallet for manual transport. A second or third carrying position can be determined with the help of ropes or carrying slings (these may be positioned around the ventilator case and fixed to the water pipe nipples). If the pump is transported in this manner (or with a sack barrow), the max. tilt angle of 45° must not be exceeded (see illustration). If the pump can only be transported in a tilted position, the hot-water heat pump ("heat pump" switch) should not be operated until at least one hour after installation in its final location.




**⚠ ATTENTION!**
The device cover cannot be used for carrying (the cover cannot withstand larger forces!)

# 4 Set-Up

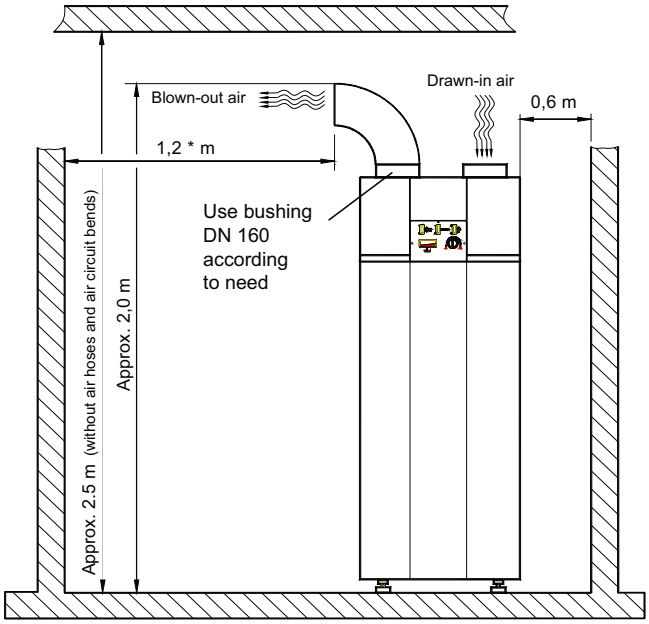
## 4.1 Installation Location

**Installation location criteria:**

- The hot-water heat pump must be installed in a frost-free and dry room. The room temperature / air sucked in by the hot-water heat pump should be within a temperature range of 15 °C to 35 °C (required for heat pump operation).
- Furthermore, installation and air intake is not permitted in rooms with air which is potentially explosive because of gases, vapours or dust.
- In order to prevent damage to interior walls caused by dampness, it is recommended to provide good thermal insulation between the room into which the exhaust air is released and the neighbouring rooms.
- Condensate drainage (with a siphon) must be provided.
- The air sucked in must not be excessively contaminated or contain large amounts of dust.
- The load-bearing capacity of the foundation must be sufficient (weight of the filled hot-water heat pump approx. 410 kg!).

To ensure smooth operation and facilitate repair and maintenance work there should be a minimum clearance of 0.6 m on all sides of the device, as well as a minimum room height of approx. 2.50 m for operation without air ducts/hoses or bends (➔ "free venting") when the hot-water heat pump is installed (see illustration). Hot-water heat pump connection is (optionally) performed with insulated ductwork of the NW 160, which must not exceed a total length of 10 m.

To ensure effective operation, an air circuit bend (90° NW 160) must be installed on the blow-out side in rooms with lower ceilings and without ductwork. If the air circuit bend is used, place it onto the spigot (nominal width DN 160) of the outlet side so that the exhaust air outlet of the air circuit bend is as far away from the unit's intake opening as possible. Also observe the minimum clearances as shown in the illustration. The hot-water heat pump air connection stubs ("intake stub" and "outlet stub") are labelled with stickers.




* Minimum clearance between the exhaust air outlet in the air circuit bend and the wall is 1.2 m
Minimum room height for “free venting” is approx. 2.5 m

## 4.2 Set-Up

- Remove the three M12 transport restraint screws fixing the unit to the pallet.
- Remove pallet and install the three M12 supporting feet (in plastic bag attached to the cylinder barrel nipple).
- Position the hot-water heat pump and align vertically by adjusting the device feet! Then tighten the counternuts on the device feet.

# 5 Installation

## 5.1 Connecting the Water Pipes

The nominal pipe widths for the on-site sanitary installation must be determined by taking into account the available water pressure and any pressure drops expected to occur in the pipework.

Water installations must be executed according to DIN 1988 (see Appendix – for example, a pressure reducing valve must be used if water pipe pressure is impermissibly high); also observe local regulations for domestic water installations!

Both rigid and flexible water pipes are possible. Observe corrosion behaviour of the pipework materials to prevent damage caused by corrosion (see Section: Start-Up).

**⚠ ATTENTION!**
When installing the on-site pipework, ensure the pipes do not get contaminated (flush pipes before connecting hot-water heat pump)!

English

## 5.2 Connecting the Condensed Water Pipe

The condensed water hose is fed through the foil cladding at the rear of the device. It should be routed so that the condensate produced (during heat pump operation) can flow away freely.

There is a pressureless seal valve which must **also be relocated** when shortening the condensed water hose (valve can be easily removed and replaced into the hose). This valve is of special importance if longer air hoses are fitted to the device or if a filter is installed on the exhaust air side. The condensate should be drained into a siphon (see maintenance information 7.1).

## 5.3 Electrical Connection

The hot-water heat pump is wired ready for use; power is supplied via connection cables plugged into an earthed wall socket (~230 V, 50 Hz). This socket has to remain accessible after installation.

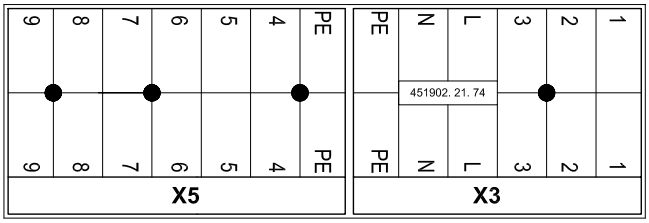
To control external devices for the second heat generator (hot-water heat pumps with internal heat exchanger only), a separate cable has to be connected to the device via an available cable union and be strain relieved. (For this electrical connection, the hot-water heat pump plastic cover has to be removed.) The cable must then be led through the available cable feedthrough provided, and guided through the partition. The electrical connection terminal (X5 – 4/5/PE) with a floating contact to control (ON/OFF) the external ancillary devices (pump, solenoid valve etc.) is located on the rear of the partition in the device.

### External heating element control

It is possible to optionally control the heating element via an external switch (e.g. timer), in parallel to the “Heating Element” switch on the hot-water heat pump operator panel. For this connection, a floating contact on the external switchgear is required.

Furthermore, an additional cable (min. 2 x 1.0 mm$^2$ / max. cable outside diameter 10 mm) must be inserted into the device and attached to connection 6 and 7 of terminal strip X5.

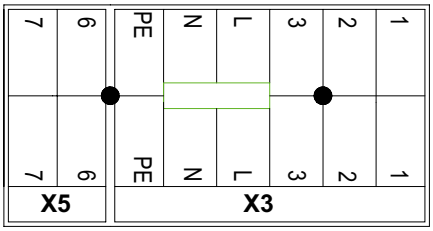
### Hot-water heat pump with heat exchanger




| | |
|---|---|
| X3 | Internal wiring only |
| X5 (4 + 5) | Connection terminal with floating contact for second heat generator |
| X5 (6 + 7) | Connection for external heating element control (optional) |
| X5 (8 + 9) | External release contact |

Heat pump operation is blocked if the factory-mounted copper bridge between pole terminals 8 and 9 is removed (see Section 6.2).

### Hot-water heat pump without heat exchanger




# 6 Start-Up

## 6.1 Hot-Water System

**⚠ ATTENTION!**

Only operate hot-water heat pump when filled with water!

### Hot-water system requirements

The following materials may be found in the consumer's hot-water system:

- Copper
- Stainless steel
- Brass
- Plastic

Depending on the materials used in the hot-water system (customer installation), material incompatibility may lead to corrosion damage. This especially applies to zinc-plated and aluminous materials. If there is a risk of water contamination during operation, the installation of a filter may be required.

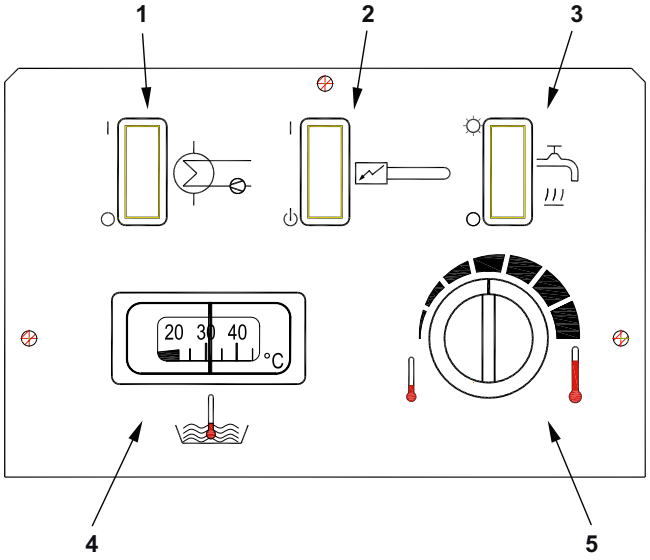
### Hot-water system start-up

- All installations at the water circuit, air circuit, as well as all electrical installations must have been performed correctly and fully completed
- Filling hot-water system via external connection.
- De-aerate hot water system (open hot-water taps at the highest extraction points until there are no more traces of air).
- Check entire hot-water system for leaks.
- Supply voltage.
- Switch on “Heat Pump” switch (see illustration).
- The desired hot-water temperature is infinitely adjustable (up to 60 °C) via the temperature control button (see illustration). A certain heat-up time should always be allowed for, until the desired temperature level has been reached.

# 6.2 Hot-Water Heat Pump Operation

## Control panel

- **Temperature indicator**
  The thermometer sensor (analogue distance thermometer) measures the hot-water temperature in the upper part of the hot-water cylinder. The indicator is located on the control panel.




1 **"Heat Exchanger" switch**
The switch position “I” allows a second heat generator to be connected [1]

2 **"Heating Element" switch**
When the switch is in “I” position, the heating element is permanently switched on. In the “⏻” position, the heating element switches into automatic operation

3 **"Heat Pump" switch**
Switch position “O” → heat pump “OFF”,
in switch position “☼” → heat pump “ON”

4 **Temperature indicator**

5 **“Hot-Water Temperature” rotary controller**
Hot-water temperature switch (set-value generator)
Left-hand stop → min. temperature
Right-hand stop → max. temperature

1. The illustration shows the hot-water heat pump control panel with internal heat exchanger. The “Heat Exchanger” switch is not required for hot-water heat pumps without internal heat exchanger.

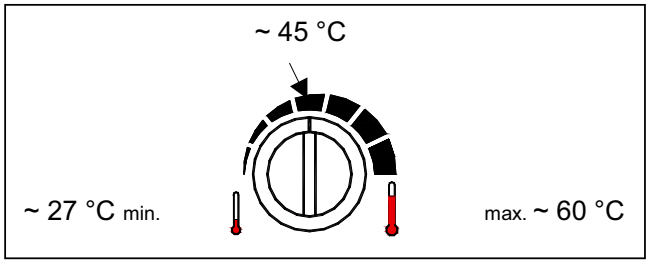
## Hot-water temperature controller (rotary controller)

The rotary button is used to set the desired hot-water temperature. If the cylinder temperature is lower than the set hot-water temperature, the heat pump is switched on (if the heat pump switch is in the “Heat Pump Operation ON” position).

The maximum hot-water temperature that can be attained with the heat pump is 60 °C ±1.5 K. The standard heating element can be used if higher temperatures are required.

## Notes on economical use of energy:

- To achieve a high COP with the integrated heat pump while cutting water level losses, the hot-water heat pump should normally not be operated at a hot-water temperature of more than 45 °C (see illustration).
- Only set the temperature controller to higher values or manually switch on the heating element if necessary.
- To ensure optimum compressor operating times and down-times, it is important to avoid manual and repeated switching on and off of the heat pump!




## "Heat Pump" switch

The heat pump is ready for operation when the “Heat Pump” switch is in the “☼” position. If the hot-water temperature in the cylinder drops below the set value, the heat pump will be activated until the desired hot-water temperature has been reached.

## "Heating Element" switch

If more hot water is needed or if a higher water temperature (> 60 ±2 °C) is desired, the "Heating Element" switch can be used to switch on the integrated 1.5 kW radiator.

If the "Heating Element" switch is in the "I" position, the approx. upper third of the cylinder will be heated up to the maximum temperature of the heating element controller (factory setting 65 °C); at hot-water temperatures > 60 °C, DHW preparation is done by heating element only. It is possible to optionally control the heating element via an external switch (see point 5.3). If the "Heating Element" switch is in the "⏻" position (automatic operation) and the air temperature is 8 ±1.5 °C (dead-band value 3 K), the cylinder volume is heated up (nominally only) to the setpoint temperature of the hot-water temperature controller.

## Note → Heating element controller

The heating element controller is a second control unit for the operating range of the electric heating element, and independent of the hot-water controller. The factory set switch-off temperature of 65 °C can be changed by a technician (see Point 2.4)

## "Heat Exchanger" switch (hot-water heat pumps with internal heat exchanger only)

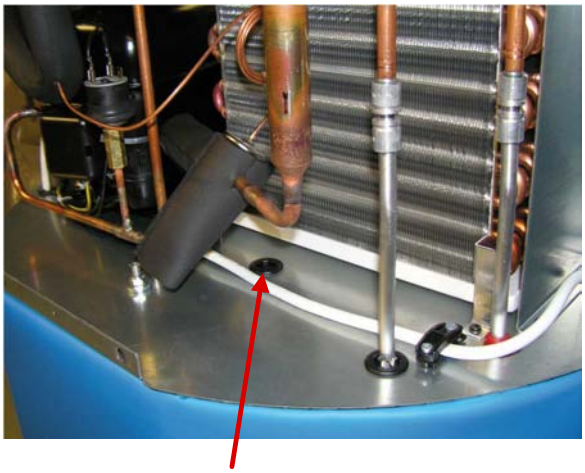
When this switch is operated, external heat exchanger operation is enabled, i.e. hot water can be prepared (e.g. in winter) using a second heat generator (e.g. boiler, solar installation etc. - if the necessary electrical connection is established at the heat pump). Hot-water temperature is controlled using the hot-water heat pump temperature controller.

English

Heat pump operation can be blocked as required if domestic hot water is to be prepared using a second heat generator. This is achieved by removing the factory-mounted copper bridge A2 (at terminal strip X5, see Section 5.3) and integrating a floating contact from the second heat generator regulation in the same position. An external regulation must not lead to the maximum switching frequency (12 operations/h) of the heat pump being exceeded. It may be necessary to take the local utility company (EVU) specifications into consideration in this regard.

**Relay for heat exchanger operation**
Relay with a floating contact (hot-water heat pumps with internal heat exchanger only) to control the ancillary devices (pump, solenoid valve etc.) for operation with a second heat generator. The relay contact is closed when the "Heat Exchanger" switch is activated and a hot water request from the hot-water heat pump temperature controller is present.

**Sensor pipe for external temperature sensors**
A vertical sensor pipe $\varnothing_i$ 12mm (opening in the bottom plate sealed with a leading-in tube) for an external heat sensor is fitted in the rear of the hot-water heat pump and a cable feedthrough is available in the rear panel.



**External temperature sensor installation position**
(device cover removed)

# 7 Maintenance

⚠ ATTENTION!
Disconnect the power supply before opening the hot-water heat pump; observe possible coasting of ventilator.

### General information

The hot water heat pump is virtually maintenance-free. A one-off visual inspection for possible leakage in the water system or stopping-up of the condensate outflow should take place a few days after the maintenance work has been carried out.

Do not carry out any maintenance work on the refrigerating circuit of the heat pump.

Only use a damp cloth and soap solution for cleaning the hot-water heat pump.

⚠ ATTENTION!
Ensure water does not come into contact with the operator controls. Unplug mains plug/disconnect the power supply before beginning any cleaning work.

## 7.1 Water Circuit / Condensate Outflow

The water circuit check is limited to filters that may have been installed on-site, and possible leakage. Dirty water filters should be cleaned and replaced if necessary. Occasionally check the seal valve in the condensed water hose for contamination; replace if necessary.

## 7.2 Air Circuit

Maintenance work is limited to cleaning the evaporator on a regular basis, and as needed.

⚠ ATTENTION!
Risk of injury caused by sharp-edged fins. Fins must not be deformed or damaged!

If air filters are used, they should be regularly checked for contamination and cleaned and replaced if necessary.

## 7.3 Corrosion Protection Anode

The corrosion protection anode installed in the hot water cylinder should be electrically checked on a regular basis, at least every two years after start-up, and be replaced if necessary. Electrical checking is carried out by means of a suitable ammeter, without draining the tank.

### Procedure:

1) Unplug PE cable from protection anode tab.
2) Connect ammeter (0...50mA) between PE cable and tab.
3) Evaluation of protection anode wear:
   Measured value > 1 mA ⇒ protection anode is in working order.
   Measured value < 1 mA ⇒ protection anode must be tested or replaced.

If electrical testing does not provide any clear results, a visual inspection of the protection anode by a technician is recommended.

Should replacement of the protection anode [by a technician] be necessary, the tank must be drained via the valve provided (fitted during installation - see Appendix).

⚠ ATTENTION!
Malfunctioning protection anodes reduce the operating life of the device!
(Reactive anode: electrically insulated magnesium anode with selenium according to DIN 4753 Part 6)

# 8 Faults / Trouble-Shooting (for Users)

**⚠ ATTENTION!**

Work on the hot-water heat pump is to be performed by qualified personnel only!
Observe accident prevention regulations!

### The heat pump will not run!

Please check whether

- the plug is plugged in
- the operating switch is switched on
- the socket has voltage
- air inlet temperature or ambient temperature is ≥ 12.5 °C
- heat pump has not been switched off via the temperature controller
- the hot water temperature has already reached (or exceeds) 60 °C

### The heat pump switches off prematurely (set temperature has not been reached)

Please check whether

- ducts have been bent or their openings have been sealed, or whether any air filters are heavily contaminated (clogged).

### Condensate cannot flow away (there is water under the device)

Please check whether

- the seal valve in the condensed water hose is contaminated or clogged - clean if necessary; the valve can be easily removed and replaced.
- ventilation is extremely reduced (bent duct / clogged air filter)

If the above questions cannot help you eliminate these faults, please contact your technician or customer services.

# 9 Shut-Down

### Tasks to be carried out:

- Disconnect hot-water heat pump from power source.
- Completely shut off water circuit (hot water, cold water and circulation pipe) and drain hot water cylinder.

# 10 Environmental Requirements

During start-up and shut-down of the hot-water heat pump, all environmental requirements regarding recovery, recycling and disposal of materials and components should be observed in accordance with DIN EN 378.

# 11 Technical Data

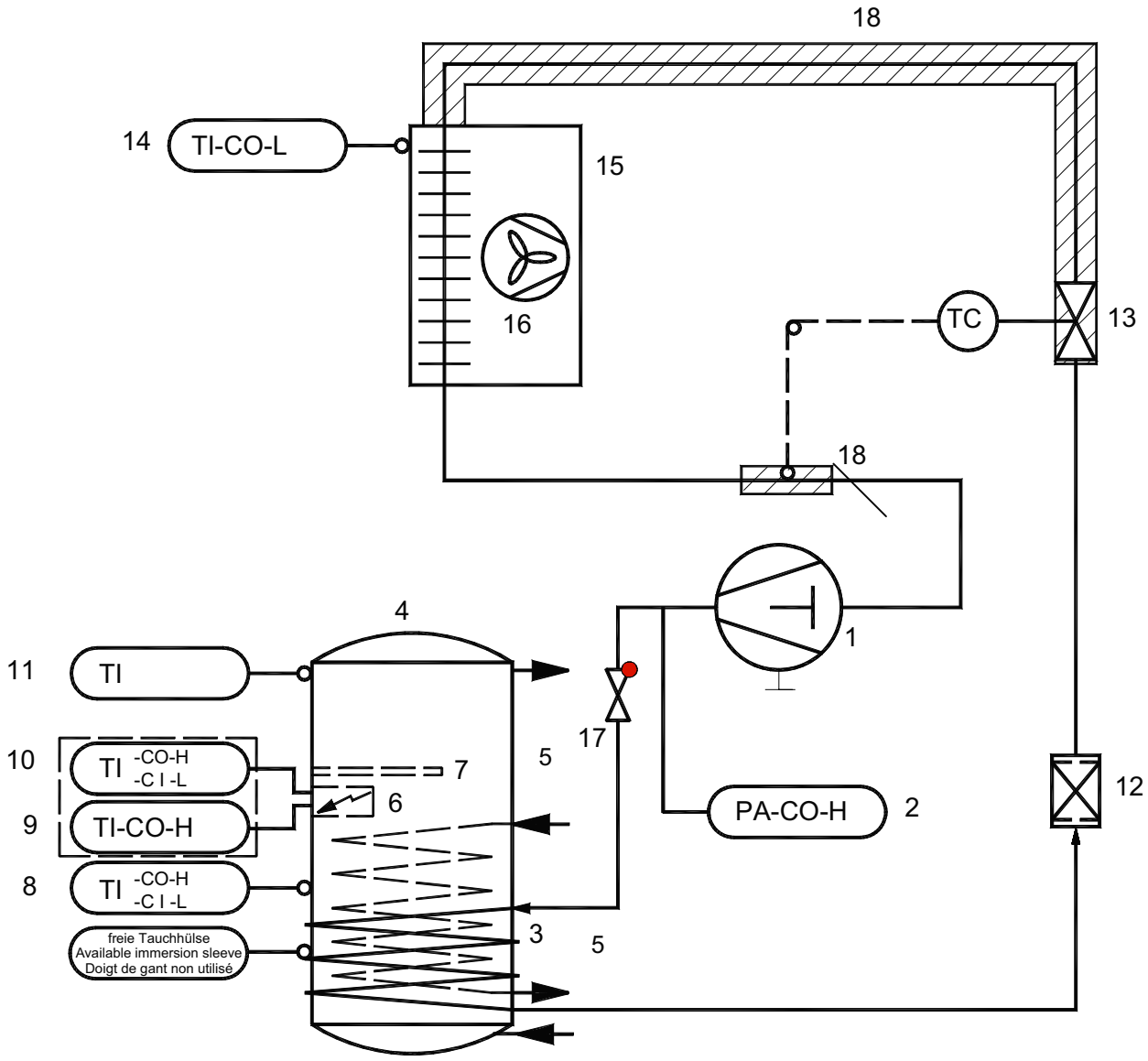
| | | | | |
|---|---|---|---|---|
| **1** | **Type and order code** | | BWP 30H | BWP 30HLW |
| **2** | **Design** | | Without additional internal heat exchanger | With additional internal heat exchanger |
| **2.1** | **Casing** | | Foil cladding | Foil cladding |
| **2.2** | **Colour** | | White, similar to RAL 9003 | White, similar to RAL 9003 |
| **2.3** | **Nominal cylinder volume** | **l** | 300 | 290 |
| **2.4** | **Cylinder material** | | Enamelled steel according to DIN 4753 | Enamelled steel according to DIN 4753 |
| **2.5** | **Nominal cylinder pressure** | **bar** | 10 | 10 |
| **3** | **Model** | | | |
| **3.1** | **Dimensions height (max.) x cross-section (max.)** | **mm** | 1695 x 700 | 1695 x 700 |
| **3.2** | **Weight** | **kg** | Approx. 110 | Approx. 125 |
| **3.3** | **Electrical connection (plug-in - lead length approx. 2.7 m)** | | 1/N/PE ~ 230 V, 50 Hz | 1/N/PE ~ 230 V, 50 Hz |
| **3.4** | **Fuse** | **A** | 16 | 16 |
| **3.5** | **Refrigerant / total filling weight** | **- / kg** | R134a / 1.0 | R134a / 1.0 |
| **4** | **Operating conditions** | | | |
| **4.1** | **Selectable water temperature (heat pump operation $^{\pm 1.5\ K}$)** | **°C** | 23 to 60 | 23 to 60 |
| **4.2** | **Air temperature operating range of heat pumps [1]** | **°C** | 8 to 35 | 8 to 35 |
| **4.3** | **Sound pressure level [2]** | **dB(A)** | 53 | 53 |
| **4.4** | **Air flow during heating-only heat pump operation** | **$m^3/h$** | 450 | 450 |
| **4.5** | **External compression** | **Pa** | 100 | 100 |
| **4.6** | **Maximum length of pipe that can be used for the air duct** | **m** | 10 | 10 |
| **5** | **Connections** | | | |
| **5.1** | **Diameter of the air duct connection (inlet/outlet)** | **mm** | 160 | 160 |
| **5.2** | **Transfer area of the internal tube heat exchanger** | **$m^2$** | - | 1,45 |
| **5.3** | **Sensor pipe $D_{internal}$ (for sensor – heat exchanger operation)** | **mm** | - | 12 |
| **5.4** | **Water connections - cold water / hot water** | | R 1“ | R 1“ |
| **5.5** | **Circulation pipe** | | R 3/4" | R 3/4" |
| **5.6** | **Heat exchanger flow / return flow** | | - | R 1“ |
| **6** | **Performance data** | | | |
| **6.1** | **Power consumption supplementary electrical heating** | **W** | 1500 | 1500 |
| **6.2** | **Mean power consumption [3] at 60 °C** | **W** | 615 | 615 |
| **6.3** | **Mean heat output [4] at 45 °C** | **W** | 1870 | 1870 |
| **6.4** | **$COP_{(t)}$ according to EN 255 at 45 °C** | **-** | 3,5 | 3,5 |
| **6.5** | **Stand-by energy consumption at 45 °C/24h** | **(W)** | 47 | 47 |
| **6.6** | **Max. mixed water volume at 40 °C $V_{max.}$** | **l** | 300 | 290 |
| **6.7** | **Heating-up period from 15 °C to 60 °C $t_h$** | **h** | 9,1 | 9,1 |

1. Temperatures below 8 °C (+/- 1.5 °C) will cause the heating element to switch on and the heat pump module to switch off automatically; the dead-band value of the controller is 3 K
2. At a distance of 1 m (free-standing installation without inlet and outlet ducting or without 90° pipe bends on the outlet side)
3. Heating up of the nominal volume from 15 °C to 60 °C at an air inlet temperature of 15 °C and 70 % relat. humidity
4. Heating up of the nominal volume from 15 °C to 45 °C at an air inlet temperature of 15 °C and 70 % relat. humidity

# Anhang / Appendix / Annexes

# 1 Hydraulische Prinzipschemen / Hydraulic Plumbing Diagram / Schémas hydrauliques

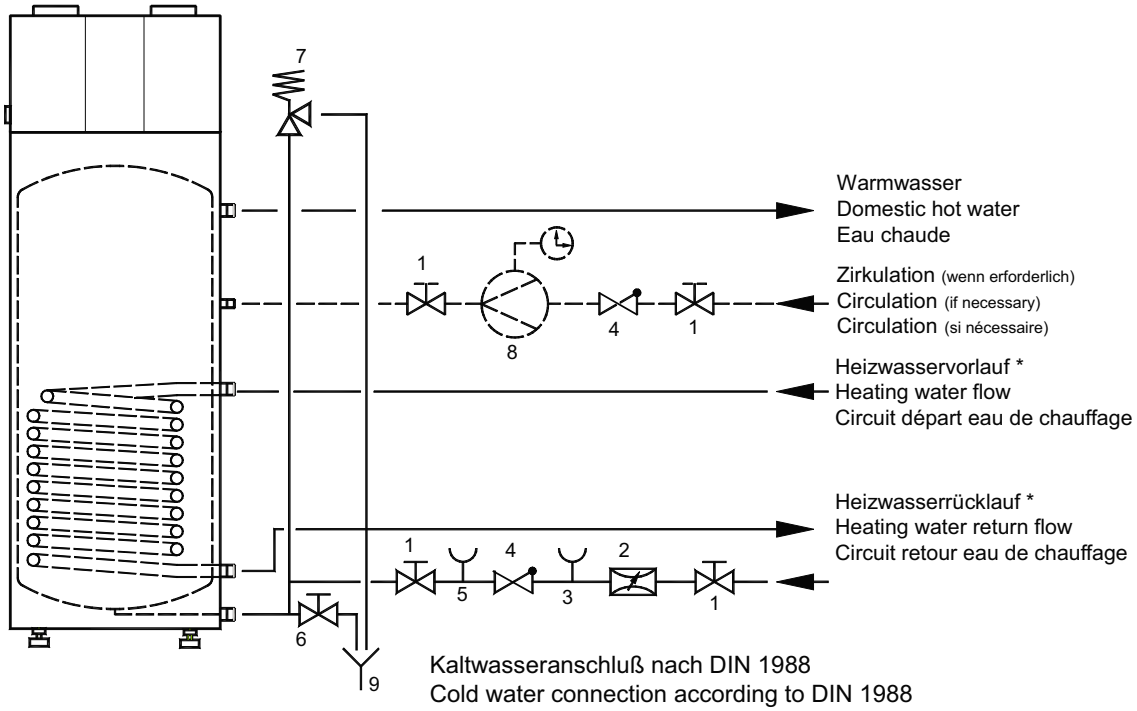
## 1.1 Kältemittelkreislauf / Refrigerant Circuit / Circuit réfrigérant




## 1.2 Legende / Legend / Légende

| | | | |
|---|---|---|---|
| 1 | Verdichter | Compressor | Compresseur |
| 2 | Pressostat HD | High-pressure switch | Pressostat HP |
| 3 | Verflüssiger | Liquifier | Condenseur |
| 4 | Warmwasserspeicher | Hot water cylinder | Ballon d'eau chaude |
| 5 | Wärmetauscher (nicht alle Typen) | Heat exchanger (not all types) | Echangeur thermique (pas sur tous les types) |
| 6 | Heizstab | Heating element | Cartouche chauffante |
| 7 | Korrosionsschutzanode | Corrosion protection anode | Anode anticorrosion |
| 8 | Temperaturregler WP | HP temperature controller | Régulateur de température PC |
| 9 | Schutztemperaturbegrenzer | Protection temperature limiter | Limiteur de température de protection |
| 10 | Temperaturregler Heizstab | Heating element temperature controller | Régulateur de température cartouche chauffante |
| 11 | Temperaturanzeige | Temperature indicator | Indicateur de température |
| 12 | Filtertrockner | Filter dryer | Sèche-filtre |
| 13 | Expansionsventil | Expansion valve | Détendeur |
| 14 | Lufttemperaturthermostat | Air temperature thermostat | Thermostat de température de l'air |
| 15 | Verdampfer | Evaporator | Evaporateur |
| 16 | Ventilator | Ventilator | Ventilateur |
| 17 | Rückschlagventil | Check valve | Clapet anti-retour |
| 18 | Isolierung | Insulation | Isolation |

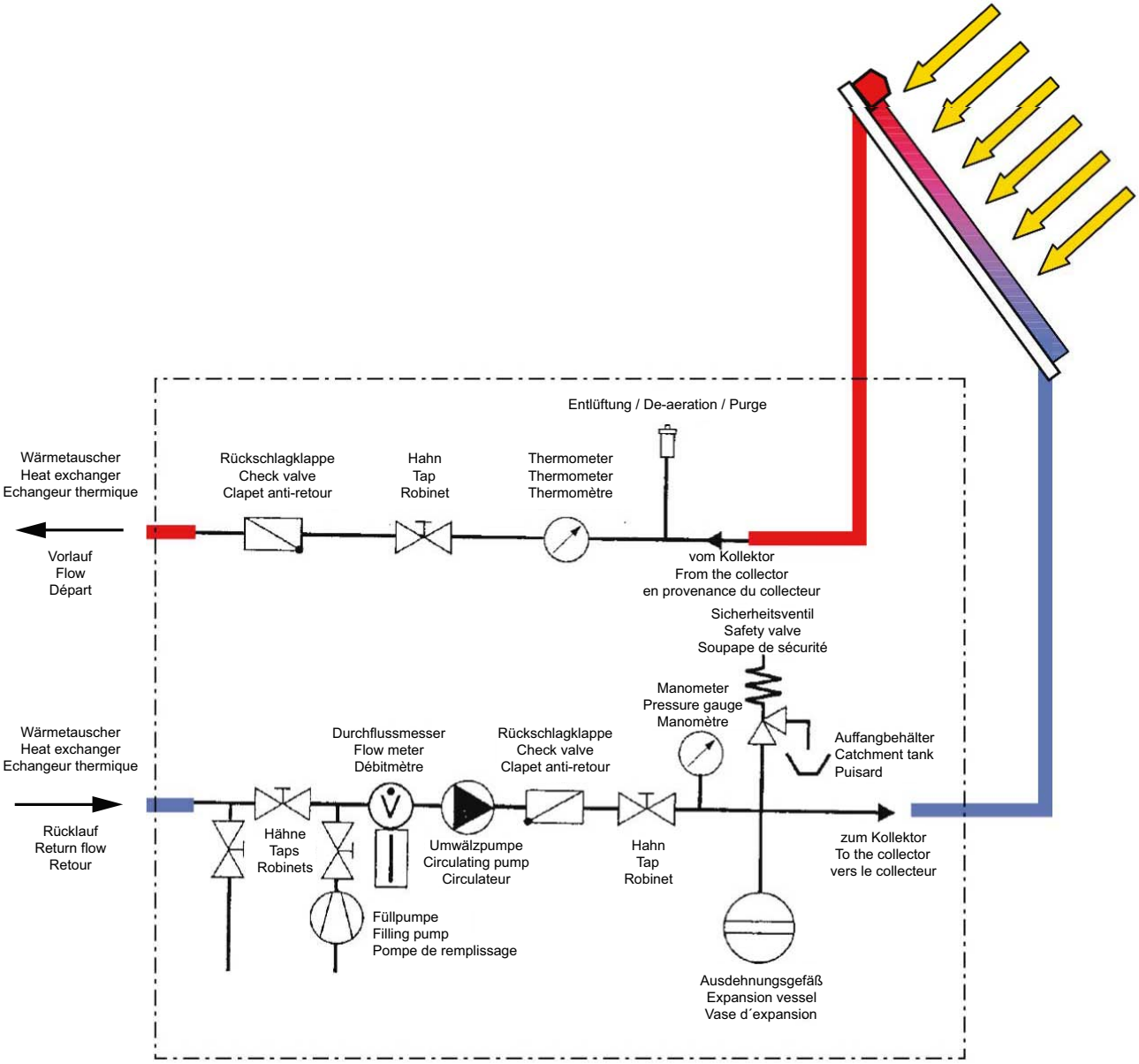
## 1.3 Hydraulisches Einbindungsschema / Hydraulic Block Diagram / Schéma d'intégration hydraulique




## 1.4 Legende / Legend / Légende

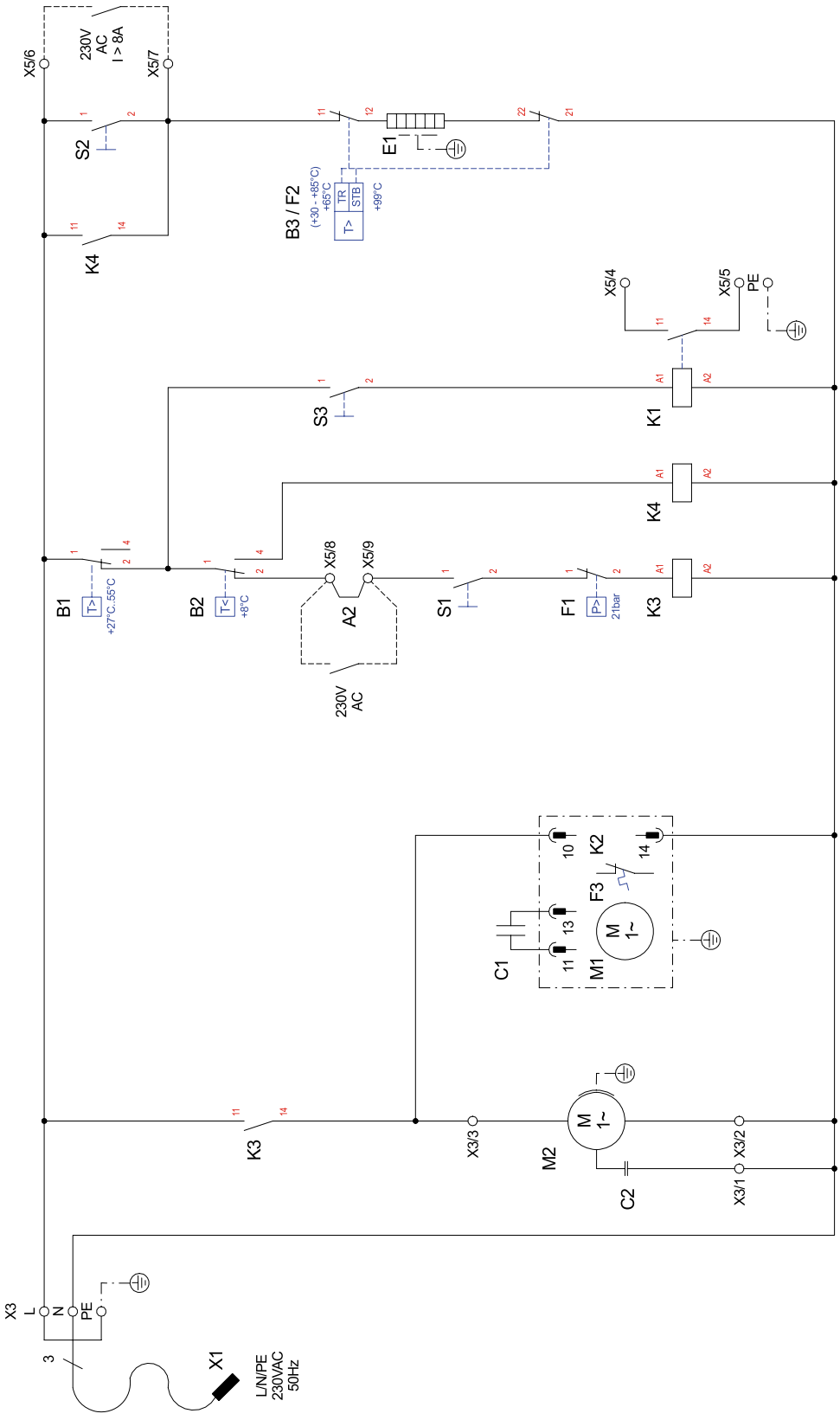
| | | | |
|---|---|---|---|
| 1 | Absperrventil | Shutoff valve | Robinet d'arrêt |
| 2 | Druckminderventil | Pressure reducing valve | Réducteur de pression |
| 3 | Prüfventil | Test valve | Soupape de contrôle |
| 4 | Rückflussverhinderer | Return flow inhibitor | Clapet anti-reflux |
| 5 | Manometeranschlussstutzen | Pressure gauge connecting stubs | Tubulures de raccordement manomètre |
| 6 | Entleerungsventil | Drain valve | Vanne de vidange |
| 7 | Membran-Sicherheitsventil | Diaphragm safety valve | Soupape de sécurité à membrane |
| 8 | Zirkulationspumpe | Circulation pump | Pompe de circulation |
| 9 | Abfluss | Outlet | Ecoulement |
| * | bei Warmwasser-Wärmepumpen ohne innerem Wärmetauscher entfallen die Anschlüsse für den zweiten Wärmeerzeuger (d.h. kein Heizwasservorlauf und kein Heizwasserrücklauf) | No connections for second heat generator required (i.e. no heating water flow and no heating water return flow) for hot-water heat pumps without internal heat exchanger | les pompes à chaleur pour eau chaude sans échangeur thermique intégré ne possèdent pas de raccords pour le deuxième générateur de chaleur (c-à-d. qu'ils n'ont ni circuit départ ni circuit retour eau de chauffage) |

# 1.5 Einbindungsschema Wärmetauscher an thermische Solaranlage / Heat Exchanger Integration Diagram for Thermal Solar Installation / Schéma d'intégration échangeur therm. à installation solaire therm.

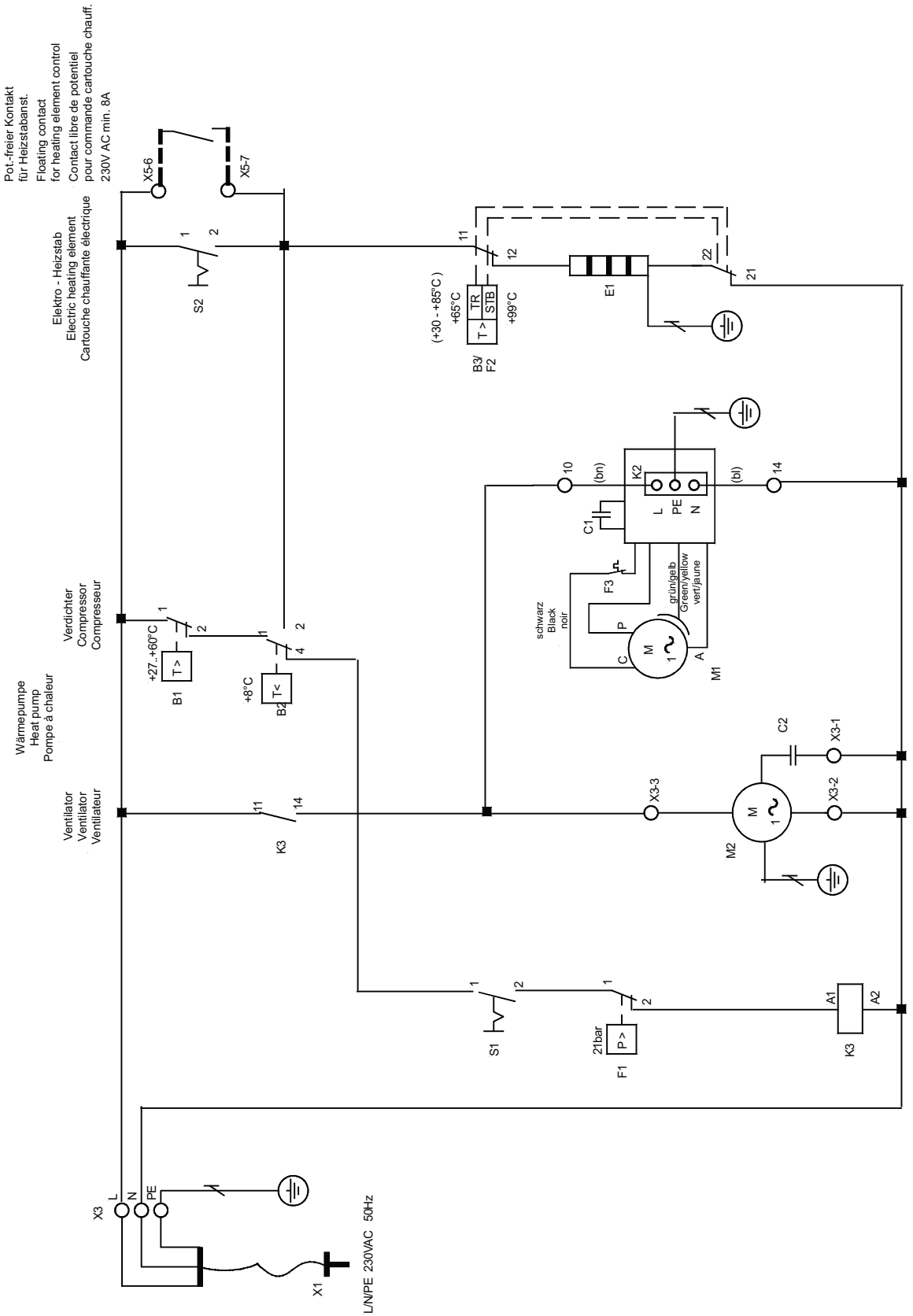


# 2 Stromlaufpläne / Circuit Diagrams / Schémas électriques

## 2.1 Warmwasser-Wärmepumpen mit innerem Wärmetauscher / Hot-Water Heat Pumps with Internal Heat Exchanger / Pompes à chaleur pour eau chaude à échangeur thermique intégré



## 2.2 Warmwasser-Wärmepumpen ohne innerem Wärmetauscher / Hot-Water Heat Pumps without Internal Heat Exchanger / Pompes à chaleur pour eau chaude sans échangeur thermique intégré



# 2.3 Legende / Legend / Légende

| | | | |
|---|---|---|---|
| A2 | Brücke Sperre extern – Brücke muss bei Verwendung der Sperre entfernt werden (Kontakt offen = Wärmepumpe gesperrt) | External bridge block - bridge must be removed if block is used (contact open = heat pump blocked) | Pont de câble externe - lorsqu'un blocage est requis, retirer le pont (contact ouvert = PAC bloquée). |
| B1 | Betriebsthermostat | Operating thermostat | Thermostat de service |
| B2 | Lufttemperaturthermostat | Air temperature thermostat | Thermostat de température de l'air |
| B3 | Regelthermostat E1 | Control thermostat for E1 | Thermostat de régulation - E1 |
| C1 | Anlaufkondensator M1 | Starting condenser for M1 | Condensateur de démarrage - M1 |
| C2 | Betriebskondensator M2 | Operating condenser for M2 | Condensateur de service - M2 |
| E1 | Elektroheizung | Electric heater | Chauffage électrique |
| F1 | Hochdruckpressostat | High-pressure switch | Pressostat haute pression |
| F2 | Sicherheitstemperaturbegrenzer E1 | Safety temperature limiter E1 | Limiteur de température de sécurité E1 |
| F3 | Klixon M1 | Klixon M1 | Klixon M1 |
| K1 | Relais externe Pumpe | Relay, ext. Pump | Relais - ext. pompe |
| K2 | Anlaufrelais M1 | Starting relay for M1 | Relais de démarrage - M1 |
| K3 | Schaltrelais F1 | Switching relay for F1 | Relais de commutation - F1 |
| K4 | Relais Heizstab | Relay, heating element | Relais cartouche chauffante |
| M1 | Verdichter | Compressor | Compresseur |
| M2 | Ventilator | Ventilator | Ventilateur |
| N2 | Fernbedienung | Remote control | Télécommande |
| S1 | Schalter „EIN/AUS“ Wärmepumpe | "ON/OFF" switch, heat pump | Commutateur « Marche / Arrêt » pompe à chaleur |
| S2 | Schalter „EIN/AUS“ Elektroheizung | "ON/OFF" switch, elec. heating | Commutateur « Marche / Arrêt » chauffage électr. |
| S3 | Schalter „EIN/AUS“ externe Pumpe - Wärmetauscher | "ON/OFF" switch, external pump - heat exchanger | Commutateur « Marche / Arrêt » pompe externe - échangeur thermique |
| X1 | Netzstecker | Mains plug | Fiche |
| X2 | Anschluss Fernbedienung | Remote control connection | Raccordement de la télécommande |
| X3 | Klemmleiste intern | Terminal strip, internal | Bornier interne |
| X5 | Klemmleiste Netz / potentialfreie Kontakte | Terminal strip, mains / floating contacts | Bornier réseau / contacts libres de potentiel |

# 3 Konformitätserklärung / Declaration of Conformity / Déclaration de conformité

## EG - Konformitätserklärung
## EC Declaration of Conformity
## Déclaration de conformité CE ©

CE

*Der Unterzeichnete*
*The undersigned*
*La société soussignée,*

***Glen Dimplex Deutschland GmbH***
***Geschäftsbereich Dimplex***
***Am Goldenen Feld 18***
***D - 95326 Kulmbach***

*bestätigt, dass das (die) nachfolgend bezeichnete(n) Gerät(e) aufgrund seiner (ihrer) Konzipierung und Bauart sowie in der von uns in Verkehr gebrachten Ausführung den einschlägigen grundlegenden Anforderungen der EG-Richtlinien entspricht (entsprechen).*

*Bei einer nicht mit uns abgestimmten Änderung des (der) Gerät(e)s verliert diese Erklärung ihre Gültigkeit.*

*hereby confirm that the design and construction of the product(s) listed below, in the version(s) placed on the market by us, conform to the relevant requirements of the applicable EC directives.*

*This declaration becomes invalidated if any modifications are made to the product(s) without our prior authorisation.*

*certifie que l'appareil / les appareils ci-après, par leur conception et leur mode de construction ainsi que par la définition technique avec laquelle il(s) sont mis en circulation par notre société, est / sont conforme(s) aux directives fondamentales CEE afférentes.*

*Ce certificat perd sa validité pour tout appareil modifié sans notre consentement.*

| ***Bezeichnung / Designation / Désignation*** | ***EG - Richtlinien / EC Directives / Directives CEE*** |
|---|---|
| ***Warmwasser-Wärmepumpen*** *mit R134a* | *EG- Niederspannungsrichtlinie / EC Low Voltage Directive / Directive CEE relative à la basse tension (73/23/EWG)* |
| ***Hot water heat pumps*** *containing R134a* | *EG-EMV-Richtlinie / EC EMC Directive / Directive CEE relative à la compatibilité électromagnétique (89/336/EWG)* |
| ***Pompes à chaleur eau chaude sanitaire*** *avec R134a* | *Druckgeräterichtlinie / Pressure Equipment Directive / Directive CEE relative aux appareils sous pression (97/23/EG)* |

| ***Typ(e):*** | ***Harmonisierte EN / Harmonized EB Standards / Normes EN harmonisées:*** | |
|---|---|---|
| ***BWP 30H*** | *EN 255:1997* | |
| ***BWP 30HLW*** | *EN 378:2000* | |
| | *DIN EN 60335-1 (VDE 0700 T1):2005-07* | *EN 60335-1:2002+A11:2004+A1:2004* |
| | *DIN EN 60335-2-40 (VDE 0700 T40):2004-03* | *EN 60335-2-40:2003* |
| | *DIN EN 55014-1 (VDE 0875 T14-1):2003-09* | *EN 55014-1:2000+A1:2001+A2:2002* |
| | *DIN EN 55014-2 (VDE 0875 T14-2):2002-08* | *EN 55014-2:1997+A1:2001* |

***Nationale Richtlinien / National Directives / Directives nationales***

| ***D*** | ***A*** | ***CH*** |
|---|---|---|
| *VBG20* | | *SVTI* |

*Kulmbach, 17.03.2006*

*CE03W011.doc*

*Wolfgang Weinhold*
*Geschäftsführer / Managing Director*

*Andreas Tilch*
*Spartenleiter / Head of business unit*

# EG - Konformitätserklärung
# EC Declaration of Conformity
# Déclaration de conformité CE

CE ©

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*La société soussignée,*

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***Bezeichnung / Designation / Désignation***

***Warmwasser-Wärmepumpen***
*mit R134a*
***Hot water heat pumps***
*containing R134a*
***Pompes à chaleur eau chaude sanitaire***
*avec R134a*

***EG - Richtlinien / EC Directives / Directives CEE***

*EG- Niederspannungsrichtlinie / EC Low Voltage Directive / Directive CEE relative à la basse tension (73/23/EWG)*

*EG-EMV-Richtlinie / EC EMC Directive / Directive CEE relative à la compatibilité électromagnétique (89/336/EWG)*

*Druckgeräterichtlinie / Pressure Equipment Directive / Directive CEE relative aux appareils sous pression (97/23/EG)*

***Typ(e):***

***AWP 30HLW***

***Harmonisierte EN / Harmonized EB Standards / Normes EN harmonisées:***

| | |
|---|---|
| *EN 255:1997* | |
| *EN 378:2000* | |
| *DIN EN 60335-1 (VDE 0700 T1):2005-07* | *EN 60335-1:2002+A11:2004+A1:2004* |
| *DIN EN 60335-2-40 (VDE 0700 T40):2004-03* | *EN 60335-2-40:2003* |
| *DIN EN 55014-1 (VDE 0875 T14-1):2003-09* | *EN 55014-1:2000+A1:2001+A2:2002* |
| *DIN EN 55014-2 (VDE 0875 T14-2):2002-08* | *EN 55014-2:1997+A1:2001* |

***Nationale Richtlinien / National Directives / Directives nationales***

| ***D*** | ***A*** | ***CH*** |
|---|---|---|
| *VBG20* | | *SVTI* |

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