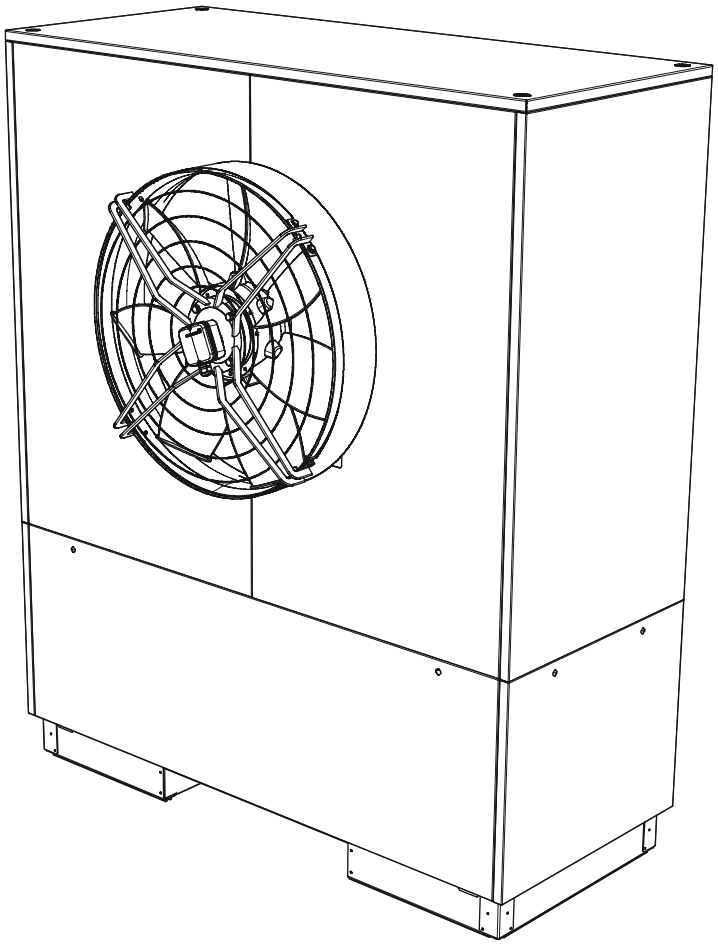
Glen Dimplex Deutschland

Dimplex

LA 25TU-2
LA 40TU-2



Montage- und Gebrauchsanweisung

Luft-Wasser-Wärmepumpe für Außenaufstellung

Installation and Operating Instruction

Air-to-Water Heat Pump for Outdoor Installation

Instuctions d'installation et d'utilisation

Pompe à chaleur air-eau pour installation estérieure

Bestell-Nr. | Order no. | No de commande: 452163.66.72a

DE | EN | FR · FD 0101

Table of contents

1 Safety notes EN-2
1.1 Symbols and markings EN-2
1.2 Intended use EN-2
1.3 Legal regulations and directives EN-2
1.4 Energy-efficient use of the heat pump EN-2
2 Purpose of the heat pump EN-3
2.1 Application EN-3
2.2 Operating principle EN-3
3 Scope of supply EN-3
3.1 Basic device EN-3
3.2 Switch box EN-4
3.3 Heat pump manager EN-4
4 Transport EN-4
5 Installation EN-5
5.1 General EN-5
5.2 Condensate pipe EN-5
6 Assembly EN-5
6.1 General EN-5
6.2 Connection on heating side EN-6
6.3 Electrical connection EN-7
7 Start-up EN-7
7.1 General EN-7
7.2 Preparation EN-7
7.3 Procedure EN-7
8 Cleaning / maintenance EN-8
8.1 Maintenance EN-8
8.2 Cleaning the heating system EN-8
8.3 Cleaning the air system EN-8
9 Faults / troubleshooting EN-9
10 Decommissioning / disposal EN-9
11 Device information EN-10
12 Product information as per Regulation (EU) No 813/2013, Annex II, Table 2 ..... EN-12

Anhang · Appendix · Annexes ..... A-I
Maßbilder / Dimension Drawings / Schémas coté ..... A-II
Diagramme / Diagrams / Diagrammes ..... A-IV
Stromlaufpläne / Circuit Diagrams / Schémas électriques ..... A-VII
Hydraulische Einbindungsschemen / Hydraulic integration Diagram / Schémas d'intégration hydrauliques ..... A-XI
Konformitätserklärung / Declaration of Conformity / Déclaration de conformité ..... A-XIV

1 Safety notes

1.1 Symbols and markings

Particularly important information in these instructions is marked with CAUTION! and NOTE.

⚠ CAUTION!

Immediate danger to life or danger of severe personal injury or significant damage to property.

i NOTE

Risk of damage to property or minor personal injury or important information with no further risk of personal injury or damage to property.

1.2 Intended use

This device is only intended for use as specified by the manufacturer. Any other use beyond that intended by the manufacturer is prohibited. This requires the user to abide by the relevant project planning documents. Please refrain from tampering with or altering the device.

1.3 Legal regulations and directives

This heat pump is designed for use in a domestic environment according to Article 1, Paragraph 2 k) of EU directive 2006/42/EC (machinery directive) and is thus subject to the requirements of EU directive 2014/35/EU (low-voltage directive). It is thus also intended for use by non-professionals for heating shops, offices and other similar working environments, in agricultural establishments and in hotels, guest houses and similar / other residential buildings.

The construction and design of the heat pump complies with all relevant EU directives, DIN/VDE regulations (see CE declaration of conformity).

When connecting the heat pump to the power supply, the relevant VDE, EN and IEC standards are to be adhered to. Any further connection requirements stipulated by the network operator must also be observed.

When connecting the heating system, all applicable regulations must also be adhered to.

This unit can be used by children aged 8 and over and by persons with limited physical, sensory or mental aptitude or lack of experience and/or knowledge, providing they are supervised or have been instructed in the safe use of the unit and understand the associated potential dangers.

Children must not play with the device. Cleaning and user maintenance must not be carried out by children without supervision.

⚠ CAUTION!

When operating or maintaining a heat pump, the legal requirements of the country where the heat pump is operated apply. Depending on the refrigerant quantity, the heat pump must be inspected for leaks at regular intervals by a certified technician, and these inspections must be recorded.

More information can be found in the accompanying log book.

1.4 Energy-efficient use of the heat pump

By operating this heat pump, you are helping to protect the environment. A prerequisite for energy-efficient operation is the correct design of the heat source system and heating system.

It is particularly important for the efficiency of a heat pump to keep the temperature difference between heating water and heat source as small as possible. For this reason, it is advisable to design the heat source and heating system very carefully. **A temperature difference of approx. one Kelvin (one °C) increases the power consumption by around 2.5 %.** When designing the heating system, it should be borne in mind that special consumers such as e.g. domestic hot water preparation should also be taken into consideration and dimensioned for low temperatures. **Underfloor heating systems (panel heating)** are optimally suited for heat pump use on account of the low flow temperatures (30 °C to 40 °C).

It is important to ensure that the heat exchangers are not contaminated during operation because this increases the temperature difference, in turn reducing the COP.

Correct adjustment of the heat pump manager is also important for energy-efficient use of the heat pump. Further information can be found in the operating instructions of the heat pump manager.

2 Purpose of the heat pump

2.1 Application

The air-to-water heat pump is to be used exclusively for the heating of heating water. It can be used in new or already-existing heating systems.

The heat pump is suitable for mono-energy and bivalent operation down to an external temperature of -25 °C.

Proper defrosting of the evaporator is guaranteed by maintaining a heating water return temperature of more than 18 °C during continuous operation.

The heat pump is not designed for the increased heat consumption required when a building is being dried out. For this reason, the additional heat consumption should be met using special devices provided by the customer. If a building is to be dried out in autumn or winter, we recommend installing an additional electric heating element (available as an accessory).

NOTE

The device is not suitable for operation with a frequency converter.

2.2 Operating principle

Surrounding air is drawn in by the fan and fed through the evaporator (heat exchanger). The evaporator cools the air, i.e. it extracts heat from it. This extracted heat is then transferred to the working medium (refrigerant) in the evaporator.

The heat is brought to a higher temperature level by increasing its pressure with the aid of the electrically driven compressor. It is then transferred to the heating water via the liquefier (heat exchanger).

Electrical energy is used to raise the temperature of the heat in the environment to a higher level. As the energy extracted from the air is transferred to the heating water, this type of device is called an air-to-water heat pump.

The air-to-water heat pump consists of the main components: evaporator, ventilator and expansion valve, as well as the low-noise compressors, the liquefier and the electrical control system.

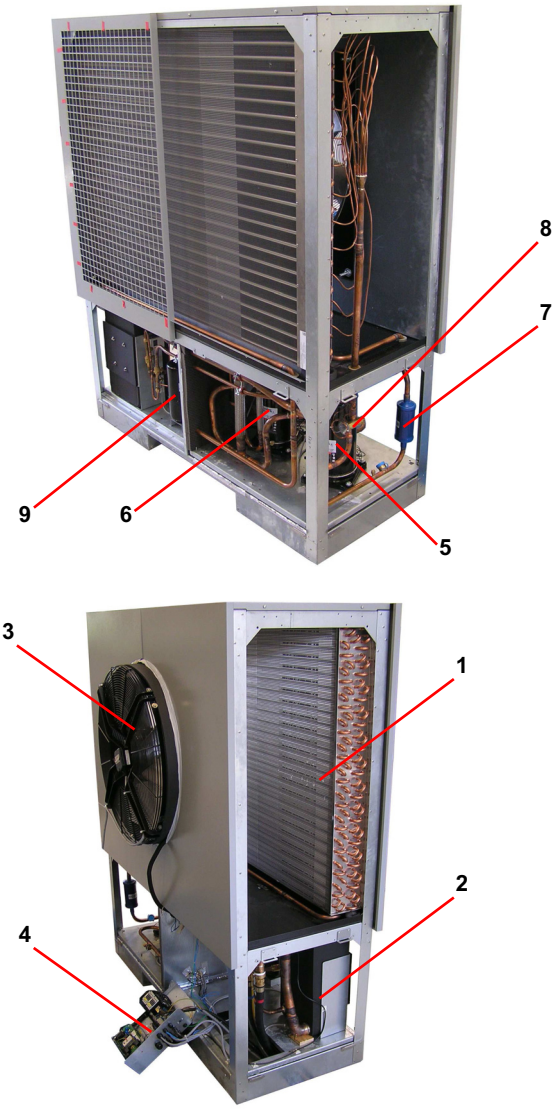
At low ambient temperatures, humidity accumulates on the evaporator in the form of frost, reducing the transfer of heat. Uneven accumulation during this process does not indicate a fault. The evaporator is defrosted automatically by the heat pump as required. Steam may be emitted from the air outlet depending on the atmospheric conditions.

3 Scope of supply

3.1 Basic device

The heat pump contains the components listed below.

The refrigeration circuit is "hermetically sealed" and contains the fluorinated refrigerant R449A included in the Kyoto protocol. Information on the GWP value and CO_2 equivalent of the refrigerant can be found in the chapter Device information. The refrigerant is CFC-free, non-ozone depleting and non-combustible.



1) Evaporator
2) Liquefier
3) Ventilator
4) Switch box
5) Compressor 1
6) Compressor 2
7) Filter dryer
8) Expansion valve
9) Collector

3.2 Switch box

The switch box is located in the heat pump. It can be swung out after removing the lower front cover and loosening the fastening screw located in the upper right-hand corner.

The switch box contains the supply connection terminals as well the power contactors and the soft starter unit.

The plug connectors for the control line are located on the switch box panel near the pivotal point.

3.3 Heat pump manager

Use the heat pump manager included in the scope of supply to operate the air-to-water heat pump.

The heat pump manager is a convenient electronic regulation and control device. It controls and monitors the entire heating system based on the external temperature, as well as domestic hot water preparation and safety systems.

The customer must install the external temperature sensor, which is included in the scope of supply of the unit heat pump and manager together with the necessary fixing accessories.

The enclosed operating instructions describe the function and use of the heat pump manager.

4 Transport

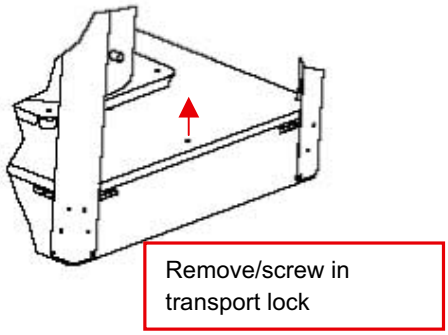
⚠ CAUTION!

When transporting the heat pump, ensure that it is not tilted more than 45° (in any direction).

A pallet should be used to transport the heat pump to its final installation location. The heat pump is fixed to the transport pallet by four transit bolts. These must be removed (only in the case of LA 25TU-2). The basic device can be transported with a lift truck, a crane, or by means of 3⁄4" pipes fed through the holes in the base plate. The holes are to be covered at the installation location using the 8 black dust caps which are included in the packaging of the device (only in case of LA 25TU-2:

The transport eyebolts must be removed after transportation, and the sheet metal openings must be closed using the 4 vent plugs supplied.

After transportation, the transport fastening in the device is to be removed from both sides of the base.



⚠ CAUTION!

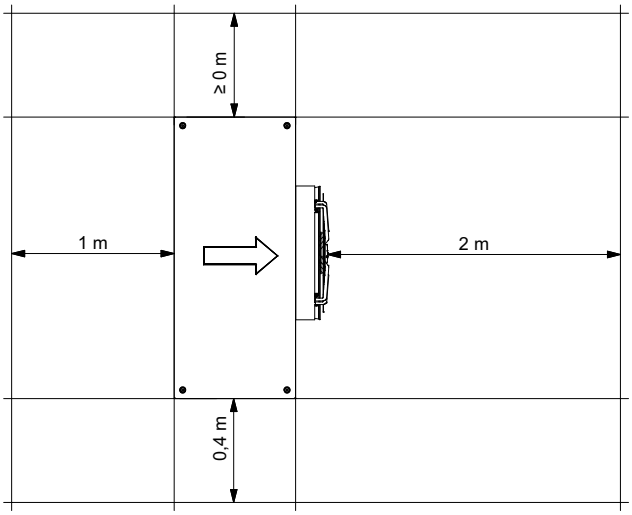
Before start-up, the transport fastening must be removed.

5 Installation

5.1 General

The device must be installed on a permanently level, smooth and horizontal surface. The frame around the device must lie tightly against the floor to guarantee adequate sound insulation, to prevent water-bearing parts from cooling out and to protect the inside of the device from small animals. If this is not the case, additional insulation measures may be necessary. To prevent small animals from entering the inside of the device, it may be necessary to seal the connection hole in the base plate, for example. Furthermore, the heat pump should be set up so that the air outlet direction of the ventilator is perpendicular to the main wind direction to allow unrestricted defrosting of the evaporator.The heat pump is designed for installation on even ground. If the installation conditions differ (installation on a platform or flat roof) or there is a greater risk of the heat pump tipping over (due to an exposed position or high wind exposure), additional protection against tipping over must be provided. The responsibility for the heat pump installation lies with the specialist system construction company. During the installation, local requirements such as building regulations, static load of the building, and wind exposure must be accounted for.

It must be possible to carry out maintenance work without hindrance. This is ensured if the clearance displayed below is maintained.



The specified dimensions are valid for stand-alone installation only.

⚠ CAUTION!
Do not restrict or block the area around the air intake or outlet.

⚠ CAUTION!
Observe country-specific building regulations!

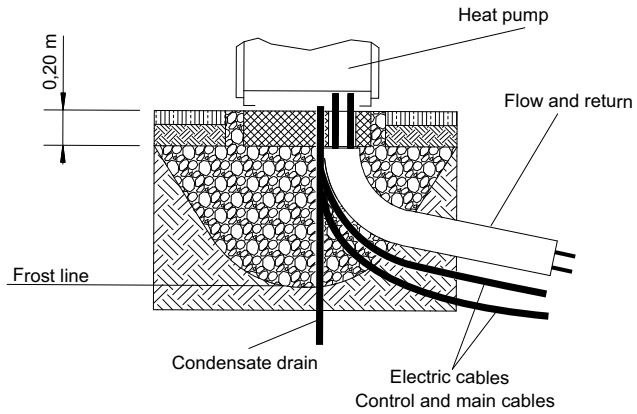
⚠ CAUTION!
For installation close to walls the physical influences of the building must be considered. No windows or doors should be present in the area surrounding the air outlet of the ventilator.

⚠ CAUTION!
In cases of installation close to a wall, there may be more sediment in the air inlet and outlet areas due to the air current. The colder outside air outlet should discharge in such a way as to not increase the heat losses in heated neighbouring rooms.

⚠ CAUTION!
Installation in a hollow or in an inner courtyard is not permitted because cooled air collects at ground level and is drawn in again by the heat pump during lengthy operation.

5.2 Condensate pipe

Condensate that forms during operation must be drained off frost-free. To ensure proper drainage, the heat pump must be mounted horizontally. The condensate pipe must have a minimum diameter of 50 mm and must be fed into a sewer in such a way that it is safe from frost. Do not discharge the condensate directly into clearing tanks or cesspits, as aggressive vapours or a condensed water pipe which has not been laid in a frost-free manner could destroy the evaporator.



⚠ CAUTION!
The frost line can vary according to the climatic region. The regulations of the countries in question must be observed.

6 Assembly

6.1 General

The following connections need to be established on the heat pump:

- Heating system flows and returns
- Condensate outflow
- Control line to the heat pump manager
- Power supply

6.2 Connection on heating side

The heating system connections on the heat pump are to be made inside the device. Refer to the device information for the connection sizes. Route the connection hoses out of the device in a downwards direction. An optional pipe kit is available as an accessory, which can be used to lead the connections out to the side.

Use a spanner to firmly grip the transitions when connecting the heat pump.

Before connecting the heating water system to the heat pump, the heating system must be flushed to remove any impurities, residue from sealants, etc. Any accumulation of deposits in the liquefier could cause the heat pump to completely break down.

⚠ CAUTION!

The dirt trap included in the scope of supply is to be installed in the heat return before the heat pump.

Cleaning and maintenance instructions can be found in the dirt trap's installation and operating instructions.

Once the heat pump has been connected to the heating system, it must be filled, de-aerated and pressure-tested.

Consideration must be given to the following when filling the system:

- Untreated filling water and make-up water must be of drinking water quality (colourless, clear, free from sediments)
- Filling water and make-up water must be pre-filtered (pore size max. 5µm).

Scale formation in domestic hot water heating systems cannot be avoided, but in systems with flow temperatures below 60 °C, the problem can be disregarded. With high-temperature heat pumps and in particular with bivalent systems in the higher performance range (heat pump + boiler combination), flow temperatures of 60 °C and more can be achieved. The following standard values should therefore be adhered to with regard to the filling and make-up water according to VDI 2035, sheet 1: The total hardness values can be found in the table.

Total heat output in kW	Total alkaline earths in mol/m³ and/or mmol/l	Specific system volume (VDI 2035) in l/kW		
		< 20	≥ 20 < 50	≥ 50
		Total hardness in °dH		
< 50	≤ 2,0	≤ 16,8	≤ 11,2	< 0,11[1]
50 - 200	≤ 2,0	≤ 11,2	≤ 8,4	
200 - 600	≤ 1,5	≤ 8,4	< 0,11[1]	
> 600	< 0,02	< 0,11[1]		

1. This value lies outside the permissible value for heat exchangers in heat pumps.

Fig. 6.1:Guideline values for filling and make-up water in accordance with VDI 2035

For systems with an above-average specific system volume of 50 l/kW, VDI 2035 recommends using fully demineralized water and a pH stabiliser to minimize the risk of corrosion in the heat pump and the heating system.

⚠ CAUTION!

With fully demineralized water, it is important to ensure that the minimum permissible pH value of 7.5 (minimum permissible value for copper) is complied with. Failure to comply with this value can result in the heat pump being destroyed.

Minimum heating water flow

The minimum heating water flow rate through the heat pump must be assured in all operating states of the heating system. This can be accomplished, for example, by installing either a dual differential pressureless manifold or an overflow valve. The procedure for setting an overflow valve is described in the chapter "Start-up". When the minimum heating water flow rate is undershot, the plate heat exchanger in the refrigeration circuit can freeze, which can lead to total loss of the heat pump.

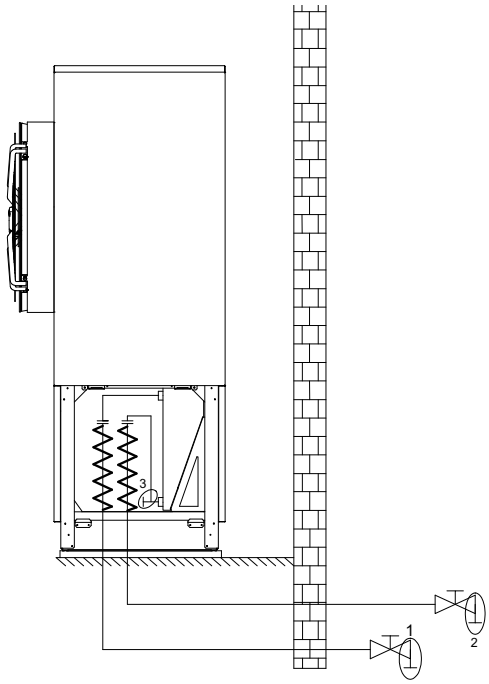
The nominal flow rate is specified depending on the max. flow temperature in the device information and must be taken into account during planning. With design temperatures below 30 °C in the flow, the design must be based on the max. volume flow with 5 K spread for A7/W35.

i NOTE

The use of an overflow valve is only recommended for panel heating and a max. heating water flow of 1.3 m³/h. System faults may result if this is not observed.

Antifreeze

Heat pump systems, which cannot be guaranteed to be frost-free, should be equipped with a drainage option (see Fig.). The antifreeze function of the heat pump manager is active whenever the manager and the heat circulating pump are ready for operation. The system has to be drained if the heat pump is taken out of service or in the event of a power failure. The heating circuit should be operated with a suitable antifreeze if heat pump systems are implemented in buildings where a power failure cannot be detected (holiday home).



6.3 Electrical connection

A standard four-core cable is used for connecting the heat pump to the power supply.

The cable must be provided by the customer. The conductor cross section is selected in accordance with the power consumption of the heat pump (see appendix Device information) and the applicable VDE (EN) and VNB regulations.

An all-pole disconnecting device with a contact gap of at least 3 mm (e.g. utility blocking contactor or power contactor) as well as a 3-pole circuit breaker with common tripping for all external conductors must be installed in the power supply (tripping current in compliance with the device information).

The relevant components in the heat pump contain an internal overload protection.

When connecting, ensure that the incoming supply has a clockwise rotating field.

Phase sequence: L1, L2, L3.

⚠ CAUTION!

Ensure that there is a clockwise rotating field: With incorrect wiring the starting of the heat pump is prevented. A corresponding warning is indicated on the display of the heat pump manager (adjust wiring).

The control voltage is supplied via the heat pump manager.

The heat pump manager has a 230 V AC-50 Hz power supply and is connected in compliance with its own operating instructions (16 A fuse).

⚠ CAUTION!

The control line is essential for the operation of air-to-water heat pumps for outdoor installation. The control cable and mains cable are to be routed separately. It is not permissible for the customer to extend the control line.

The control lines (not included in the scope of supply) have rectangular plug connectors on both ends. One end is connected to the heat pump manager, and the other end is connected to the switch box in the heat pump. The plug connections to the heat pump are located on the bottom of the switch box.

Two separate lines are used as control lines. One of the lines is designed for the 230 V control voltage level, the other for the signal and/or extra-low voltage level.

More detailed information can be found in the operating instructions of the heat pump manager.

For detailed information, see circuit diagrams in the appendix.

7 Start-up

7.1 General

To ensure that start-up is performed correctly, it should only be carried out by an after-sales service technician authorised by the manufacturer. These measures can also include an additional warranty under certain conditions (see Warranty).

7.2 Preparation

The following items need to be checked prior to start-up:

- All of the heat pump connections must be installed as described in Cap. 6 on page 5.
- All valves that could impair the proper flow of the heating water in the heating circuit must be open.
- The air intake and air outlet paths must be clear.
- The fan must turn in the direction indicated by the arrow.
- The settings of the heat pump manager must be adapted to the heating system in accordance with the manager's operating instructions.
- Ensure the condensate outflow functions properly.

7.3 Procedure

The heat pump is started up via the heat pump manager. Adjustments should be made in compliance with the instructions.

At hot water temperatures under 7 °C, start-up is not possible. The water in the buffer tank must be heated to a minimum of 18 °C with the second heat generator.

To ensure a problem-free start-up, the following procedure is to be implemented:

1) Close all consumer circuits.
2) Ensure that the heat pump has the correct water flow.
3) Use the manager to select the automatic operating mode.
4) In the special functions menu, start the "Start-up" program.
5) Wait until a return temperature of at least 25 °C has been reached.
6) Now slowly reopen the heating circuit valves in succession so that the heating water flow is constantly raised by slightly opening the respective heating circuit. The heating water temperature in the buffer tank must not be allowed to drop below 20 °C during this process. This ensures that the heat pump can be defrosted at any time.
7) When all heat circuits are fully open and a return temperature of at least 18 °C is maintained, the heat pump start-up is complete.

⚠ CAUTION!

Operating the heat pump at low system temperatures may cause the heat pump to break down completely.

8 Cleaning / maintenance

8.1 Maintenance

To protect the paintwork, avoid leaning anything against the device or putting objects on the device. External heat pump parts can be wiped with a damp cloth and domestic cleaner.

NOTE

Never use cleaning agents containing sand, soda, acid or chloride as these can damage the surfaces.

To prevent faults due to sediment in the heat exchanger of the heat pump, ensure that the heat exchanger in the heating system cannot be contaminated. In the event that operating malfunctions due to contamination still occur, the system should be cleaned as described below.

8.2 Cleaning the heating system

The ingress of oxygen into the heating water circuit may result in the formation of oxidation products (rust), particularly if steel components are used. They enter the heating system via the valves, the circulating pumps and/or plastic pipes. It is therefore essential - in particular with respect to the entire pipework - that only diffusion-resistant materials are used.

NOTE

We recommend the installation of a suitable corrosion protection system to prevent the formation of deposits (e.g. rust) in the condenser of the heat pump. We recommend equipping diffusion-open heating systems with an electrophysical anti-corrosion system (e.g. ELYSATOR system).

Residue from lubricants and sealants may also contaminate the heating water.

In the case of severe contamination leading to a reduction in the performance of the liquefier in the heat pump, the system must be cleaned by a heating technician.

Based on current information, we recommend using a 5 % phosphoric acid solution for cleaning purposes. However, if cleaning needs to be performed more frequently, a 5 % formic acid solution should be used.

In either case, the cleaning fluid should be at room temperature. We recommend flushing the heat exchanger in the direction opposite to the normal flow direction.

To prevent acidic cleaning agents from entering the heating system circuit, we recommend connecting the flushing device directly to the flow and return of the liquefier of the heat pump.

It is then important that the system be thoroughly flushed using appropriate neutralising agents to prevent any damage from being caused by cleaning agent residue remaining in the system.

Acids must be used with care and the regulations of the employers' liability insurance associations must be adhered to.

The manufacturer's instructions regarding cleaning agent must be complied with at all times.

8.3 Cleaning the air system

The evaporator, ventilator and condensate outflow should be cleaned of contamination (leaves, twigs, etc.) before each new heating period.

⚠ CAUTION!

Before opening the device, ensure that all circuits are powered down.

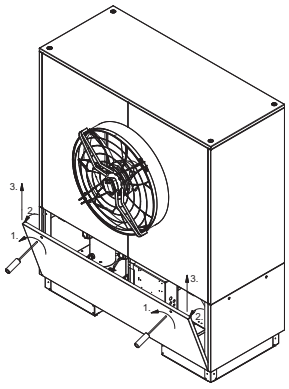
To prevent the evaporator and the condensate tray from being damaged, do not use hard or sharp objects when cleaning.

Under extreme weather conditions (e.g. snow drifts), ice may form on the air intake and air outlet grids. If this happens, the ice must be removed in the vicinity of the air intake and air outlet grids to ensure that the minimum air flow is maintained.

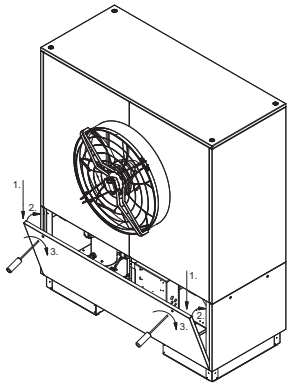
To ensure proper drainage from the condensate tray, it must be regularly inspected and cleaned, if necessary.

All panelling can be removed to allow accessing the inside of the device. Note that the upper covers can only be removed after the lower covers have been taken off.

The two sash fasteners must be opened for this purpose. The cover must then be slightly tilted forward and lifted off toward the top.

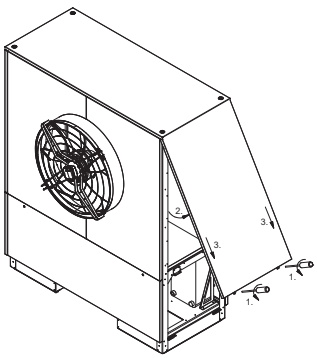


Opening the lower covers

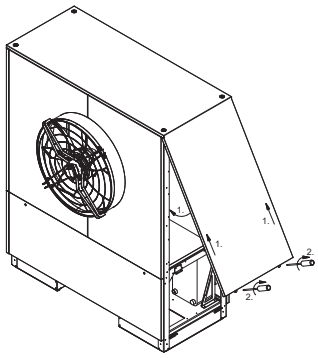


Closing the lower covers

The lateral and rear panels are hooked into the cover panel. Loosen the two screws for dismantling and unhook the panels by pulling them back.

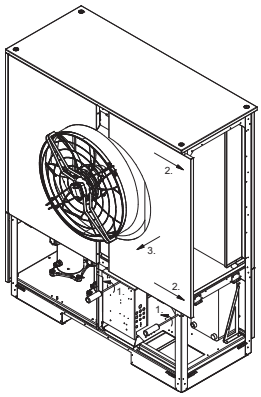


Opening the lateral and rear cover panels on top

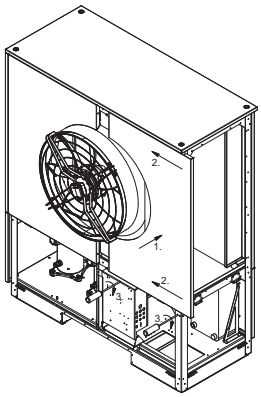


Closing the lateral and rear cover panels on top

The cover panels on the ventilator side can be dismantled after the two upper lateral side panels have been removed. Loosen the screws for this purpose, slide the panel slightly to the right or left and then lift it off towards the front.



Opening the upper front covers



Closing the upper front covers

9 Faults / troubleshooting

This heat pump is a quality product and is designed for trouble-free operation. In the event that a fault should occur, it will be indicated on the heat pump manager display. In this case, consult the Faults and troubleshooting page in the operating instructions of the heat pump manager. If you cannot correct the fault yourself, please contact your after-sales service technician.

⚠ CAUTION!

Any work on the heat pump may only be performed by authorised and qualified after-sales service technicians.

10 Decommissioning / disposal

Before removing the heat pump, disconnect it from the power source and close all valves. The deinstallation of the heat pump must be performed by technical personnel. Observe all environmentally-relevant requirements regarding the recovery, recycling and disposal of materials and components in accordance with all applicable standards. Particular attention should be paid to the proper disposal of refrigerants and refrigerant oils.

11 Device information

					LA 25TU-2	LA 40TU-2
1	**Type and order code**					
2	**Design**					
2.1	**Model / controller**				Universal / external	Universal / external
2.2	**Thermal energy metering**				Integrated	Integrated
2.3	**Installation location / degree of protection according to EN 60529**				Outdoor / IP24	Outdoor / IP24
2.4	**Antifreeze condensate tray / heating water**				Heated / yes[1]	Heated / yes[1]
2.5	**Performance levels**				2	2
3	**Operating limits**					
3.1	**Heating water flow / return [2]**		**°C**		up to 55 - 2 / from 18	up to 55 - 2 / from 18
	Air (heat source) [2]		**°C**		-22 to +35	-22 to +35
4	**Performance data / flow rate**					
4.1	**Heating water flow rate / internal pressure differential**	**A7/W35/30**	**m³/h / Pa**		4.5 / 8300	6.4 / 4100
		A7/W45/40	**m³/h / Pa**		4.2 / 7200	6.2 / 3900
	Minimum heating water flow	**A7/W55/47**	**m³/h / Pa**		2.5 / 2600	4.0 / 1600
4.2	**Heat output / COP [3]**				EN 14511	EN 14511
		at A-7 / W35	**kW / ---**	**4**	16.3 / 3.0	22.6 / 2.9
			kW / ---	**5**	8.5 / 2.7	11.6 / 2.6
		at A2 / W35	**kW / ---**	**4**	19.5 / 3.7	27.6 / 3.6
			kW / ---	**5**	10.9 / 3.5	15.2 / 3.4
		at A7 / W35	**kW / ---**	**4**	24.5 / 4.3	32.7 / 4.1
			kW / ---	**5**	13.2 / 4.2	19.5 / 4.3
		at A7 / W55	**kW / ---**	**4**	22.1 / 2.7	31.6 / 2.7
			kW / ---	**5**	12.3 / 2.7	18.9 / 2.9
		at A10 / W35	**kW / ---**	**4**	26.1 / 4.5	36.1 / 4.3
			kW / ---	**5**	14.0 / 4.5	20.1 / 4.4
		at A12 / W35	**kW / ---**	**4**	26.3 / 4.6	38.0 / 4.5
			kW / ---	**5**	14.7 / 4.7	20.6 / 4.6
4.3	**Sound power level**		**dB(A)**		67	70
4.4	**Sound pressure level at a distance of 10 m (air outlet side)[6]**			**dB(A)**	40	43
4.5	**Air flow**			**m³/h**	7500	11000
5	**Dimensions, connections and weight**					
5.1	**Device dimensions without connections [7]**			**H x W x L mm**	1940 x 1600 x 952 (750)	2100 x 1735 x 952 (750)
5.2	**Device connections for heating system**			**Inches**	Thread 1 1/2" flat sealing	1 1/2" internal thread
5.3	**Weight of the transportable unit(s) incl. packaging**			**kg**	510	585
5.4	**Refrigerant / total filling weight**			**type / kg**	R449A / 10.2	R449A / 11.8
5.5	**GWP value / CO_2 equivalent**			**--- / t**	1397 / 14	1397 / 16.5
5.6	**Refrigeration circuit hermetically sealed**				yes	yes
5.7	**Lubricant; total filling quantity**			**type / litres**	Polyolester (POE) / 3.8	Polyolester (POE) / 4.1

6	**Electrical connection**			
6.1	**Load voltage; Fuse protection**		3~/PE 400 V (50 Hz) / C 25 A	3~/PE 400 V (50 Hz) / C 25 A
6.2	**Control voltage; Fuse protection**		- / -	- / -
6.3	**Starting current with soft starter**	**A**	22	30
6.4	**Nominal power consumption A7 W35 / max. consumption [3] [4]**	**kW**	5.6 / 9.2	8.2 / 13.4
6.5	**Nominal current A7 W35 / cosφ[4]**	**A / ---**	10.2 / 0.8	15.6 / 0.76
6.6	**Max. power consumption of compressor protection (per compressor)**	**W**	70, thermostatically controlled	70, thermostatically controlled
7	**Complies with the European safety regulations**		[8]	[8]
8	**Additional model features**			
	Type of defrosting (according to need)		Reverse circulation	Reverse circulation

1. The heat circulating pump and the heat pump manager must always be ready for operation.
2. At air inlet temperatures of -22 °C to -5 °C flow temperature rising from 43 °C to 55 °C
3. This data indicates the size and capacity of the system according to EN 255 (10K at A2) and EN 14511 (5K at A7) without a weather-proof protective cover. For an analysis of the economic and energy efficiency of the system, other parameters, in particular the defrosting capacity, the bivalence point and the regulation, should also be taken into consideration. The specified values have the following meaning, e.g. A7 / W35: External air temperature 7 °C and heating water flow temperature 35 °C.
4. 2-compressor operating mode
5. 1-compressor operating mode
6. The specified sound pressure level corresponds to the operating noise of the heat pump in heating operation with a flow temperature of 35 °C.
   The specified sound pressure level represents the free sound area level. The measured value can deviate by up to 16 dB(A), depending on the installation location.
7. Note that additional space is required for pipe connections, operation and maintenance.
8. See CE declaration of conformity

12 Product information as per Regulation (EU) No 813/ 2013, Annex II, Table 2

Information requirements for heat pump space heaters and heat pump combination heaters

Model		LA 25TU-2					
Air-to-water heat pump		yes					
Water-to-water heat pump		no					
Brine-to-water heat pump		no					
Low-temperature heat pump		no					
Equipped with a supplementary heater		no					
Heat pump combination heater		no					
Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.							
Parameters shall be declared for average climate conditions:							
Item	**Symbol**	**Value**	**Unit**	**Item**	**Symbol**	**Value**	**Unit**
Rated heat output (*)	Prated	14	kW	**Seasonal space heating energy efficiency**	η_s	111	%
Declared capacity for heating foer part load at indoor temperature 20°C and outdoor temperature T*j*				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T*j*			
Tj = - 7°C	P*dh*	15,2	kW	Tj = - 7°C	COP*d*	1,94	-
Tj = + 2°C	P*dh*	19,0	kW	Tj = + 2°C	COP*d*	2,81	-
Tj = + 7°C	P*dh*	23,6	kW	Tj = + 7°C	COP*d*	3,55	-
Tj = + 12°C	P*dh*	26,1	kW	Tj = + 12°C	COP*d*	4,16	-
Tj = bivalent temperature	P*dh*	13,9	kW	Tj = bivalent temperature	COP*d*	1,71	-
Tj = operation limit temperature	P*dh*	13,9	kW	Tj = operation limit temperature	COP*d*	1,71	-
For air-to-water heat pumps				For air-to-water heat pumps:			
Tj = -15°C (if TOL < -20°C)	P*dh*	11,6	kW	Tj = -15°C (if TOL < -20°C)	COP*d*	1,31	-
Bivalent temperature	T_{biv}	-10	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	P*cych*	-	kW	Cycling interval efficiency	COP*cyc*	-	-
Degradation co-efficient (**)	C*dh*	0,90	-	Heating water operating limit temperature	WTOL	55	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0,015	kW	Rated heat output (*)	P*sup*	0	kW
Thermostat-off mode	P_{TO}	0,020	kW	Type of energy input		eletrical	
Standby mode	P_{SB}	0,015	kW				
Crankcase heater mode	P_{CK}	0,000	kW				
Other items							
Capacity control		fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	7500	m^3/h
Sound power level, indoors/ outdoors	L_{WA}	-/67	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m^3/h
Emissions of nitrogen oxides	NO_x	-	mg/kWh				
For heat pump combination heater:							
Declared load profile		-		**Water heating energy efficiency**	η_{wh}	-	%
Daily electricity consumption	Q_{elec}	-	kWh	Daily fuel consumption	Q_{fuel}	-	kWh
Contact details	Glen Dimplex Deutschland GmbH, Am Goldenen Feld 18, 95326 Kulmbach						

(*) For heat pump space heaters and heat pump combination heaters, the rated output P*rated* is equal to the design load for heating P*designh* , and the rated heat output of a supplementary capacity for heating sup(*Tj*).

(**) If C*dh* is not determined by measurement nthen the default degradation is C*dh* = 0,9

(--) not applicable

Information requirements for heat pump space heaters and heat pump combination heaters

Model	LA 40TU-2
Air-to-water heat pump	yes
Water-to-water heat pump	no
Brine-to-water heat pump	no
Low-temperature heat pump	no
Equipped with a supplementary heater	no
Heat pump combination heater	no

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

Parameters shall be declared for average climate conditions:

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	22	kW	**Seasonal space heating energy efficiency**	η_s	122	%
Declared capacity for heating foer part load at indoor temperature 20°C and outdoor temperature T*j*				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T*j*			
Tj = - 7°C	P*dh*	22,7	kW	Tj = - 7°C	COP*d*	2,04	-
Tj = + 2°C	P*dh*	15,4	kW	Tj = + 2°C	COP*d*	3,05	-
Tj = + 7°C	P*dh*	19,7	kW	Tj = + 7°C	COP*d*	4,15	-
Tj = + 12°C	P*dh*	21,9	kW	Tj = + 12°C	COP*d*	5,05	-
Tj = bivalent temperature	P*dh*	21,0	kW	Tj = bivalent temperature	COP*d*	1,89	-
Tj = operation limit temperature	P*dh*	21,0	kW	Tj = operation limit temperature	COP*d*	1,89	-
For air-to-water heat pumps				For air-to-water heat pumps:			
Tj = -15°C (if TOL < -20°C)	P*dh*	-	kW	Tj = -15°C (if TOL < -20°C)	COP*d*	-	-
Bivalent temperature	T_{biv}	-22	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-22	°C
Cycling interval capacity for heating	P*cych*	0,00	kW	Cycling interval efficiency	COP*cyc*	0,00	-
Degradation co-efficient (**)	C*dh*	0,00	-	Heating water operating limit temperature	WTOL	55	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0,015	kW	Rated heat output (*)	P*sup*	0,00	kW
Thermostat-off mode	P_{TO}	0,02	kW	Type of energy input		eletrical	
Standby mode	P_{SB}	0,015	kW				
Crankcase heater mode	P_{CK}	0,04	kW				
Other items							
Capacity control		variable		For air-to-water heat pumps: Rated air flow rate, outdoors	-	11000	m³ /h
Sound power level, indoors/ outdoors	L_{WA}	-/70	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	--	m³ /h
Emissions of nitrogen oxides	NO_x	0	mg/kWh				
For heat pump combination heater:							
Declared load profile		0		**Water heating energy efficiency**	η_{wh}	0	%
Daily electricity consumption	Q_{elec}	0,00	kWh	Daily fuel consumption	Q_{fuel}	0,00	kWh
Contact details	Glen Dimplex Deutschland GmbH, Am Goldenen Feld 18, 95326 Kulmbach						

(*) For heat pump space heaters and heat pump combination heaters, the rated output P*rated* is equal to the design load for heating P*designh* , and the rated heat output of a supplementary capacity for heating sup(*Tj*).

(**) If C*dh* is not determined by measurement nthen the default degradation is C*dh* = 0,9
(--) not applicable

Anhang · Appendix · Annexes

1 Maßbilder / Dimension Drawings / Schémas coté ..... A-II
1.1 Maßbild / Dimension Drawing / Schéma coté LA 25TU-2 ..... A-II
1.2 Maßbild / Dimension Drawing / Schéma coté LA 40TU-2 ..... A-III

2 Diagramme / Diagrams / Diagrammes ..... A-IV
2.1 Kennlinien / Characteristic Curves / Courbes caractéristiques LA 25TU-2 ..... A-IV
2.2 Kennlinien / Characteristic Curves / Courbes caractéristiques LA 40TU-2 ..... A-V
2.3 Einsatzgrenzendiagramm / Operating limits diagram / Diagramme des seuils d'utilisation ..... A-VI

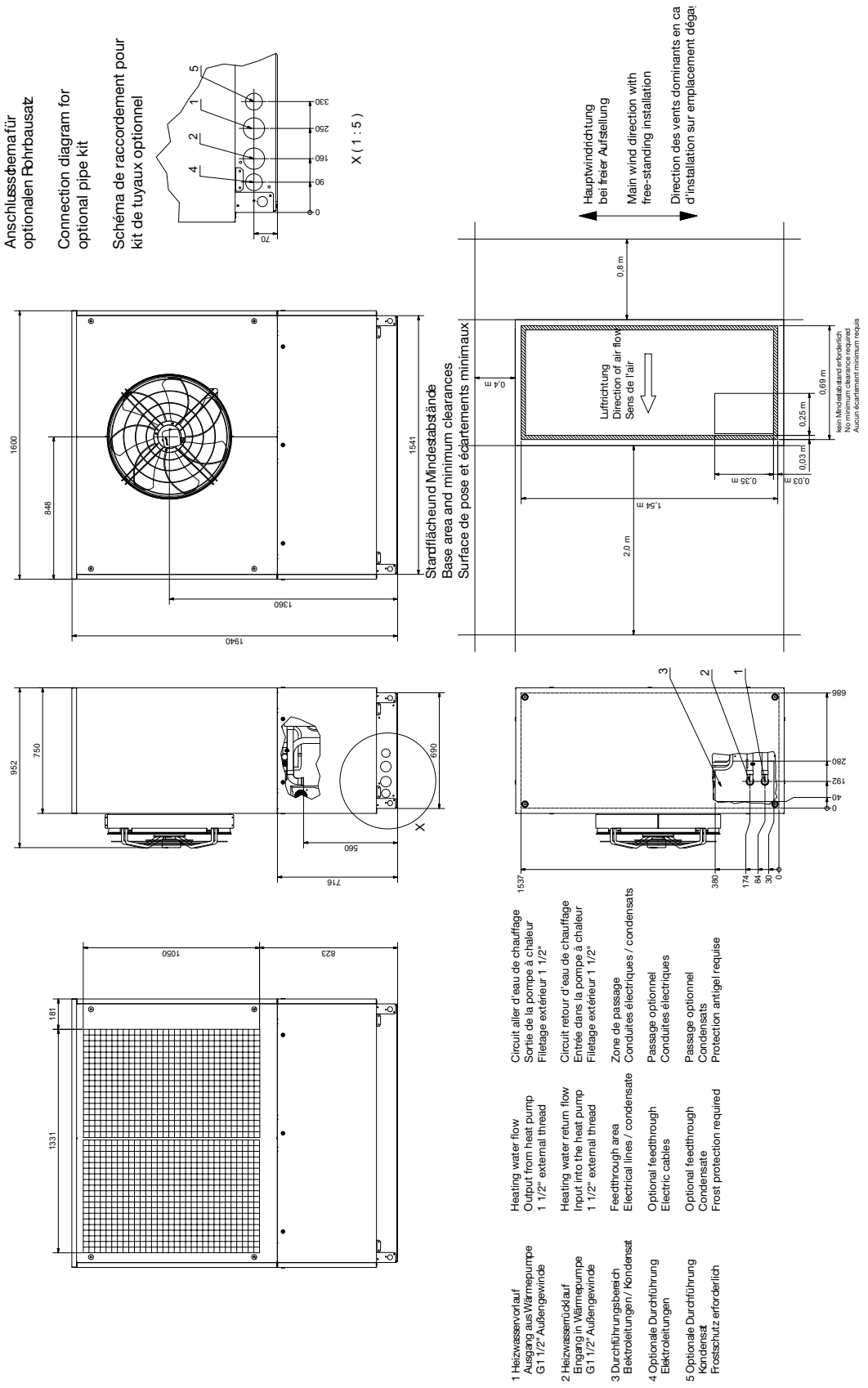
3 Stromlaufpläne / Circuit Diagrams / Schémas électriques ..... A-VII
3.1 Steuerung / Control / Commande ..... A-VII
3.2 Last / Load / Charge ..... A-VIII
3.3 Anschlussplan / Circuit Diagram / Schéma électrique ..... A-IX
3.4 Legende / Legend / Légende ..... A-X

4 Hydraulische Einbindungsschemen / Hydraulic integration Diagram / Schémas d'intégration hydrauliques ..... A-XI
4.1 Monoenergetische Anlage mit doppelt differenzdrucklosem Verteiler / Mono energy system and dual differential pressureless manifold / Installation mono-énergétique et distributeur double sans pression différentielle ..... A-XI
4.2 Monoenergetische Anlage mit einem Heizkreis und Warmwasserbereitung / Mono energy system with one heating circuit and domestic hot water preparation / Installation mono-énergétique avec un circuit de chauffage et production d'eau chaude sanitaire ..... A-XII
4.3 Legende / Legend / Légende ..... A-XIII

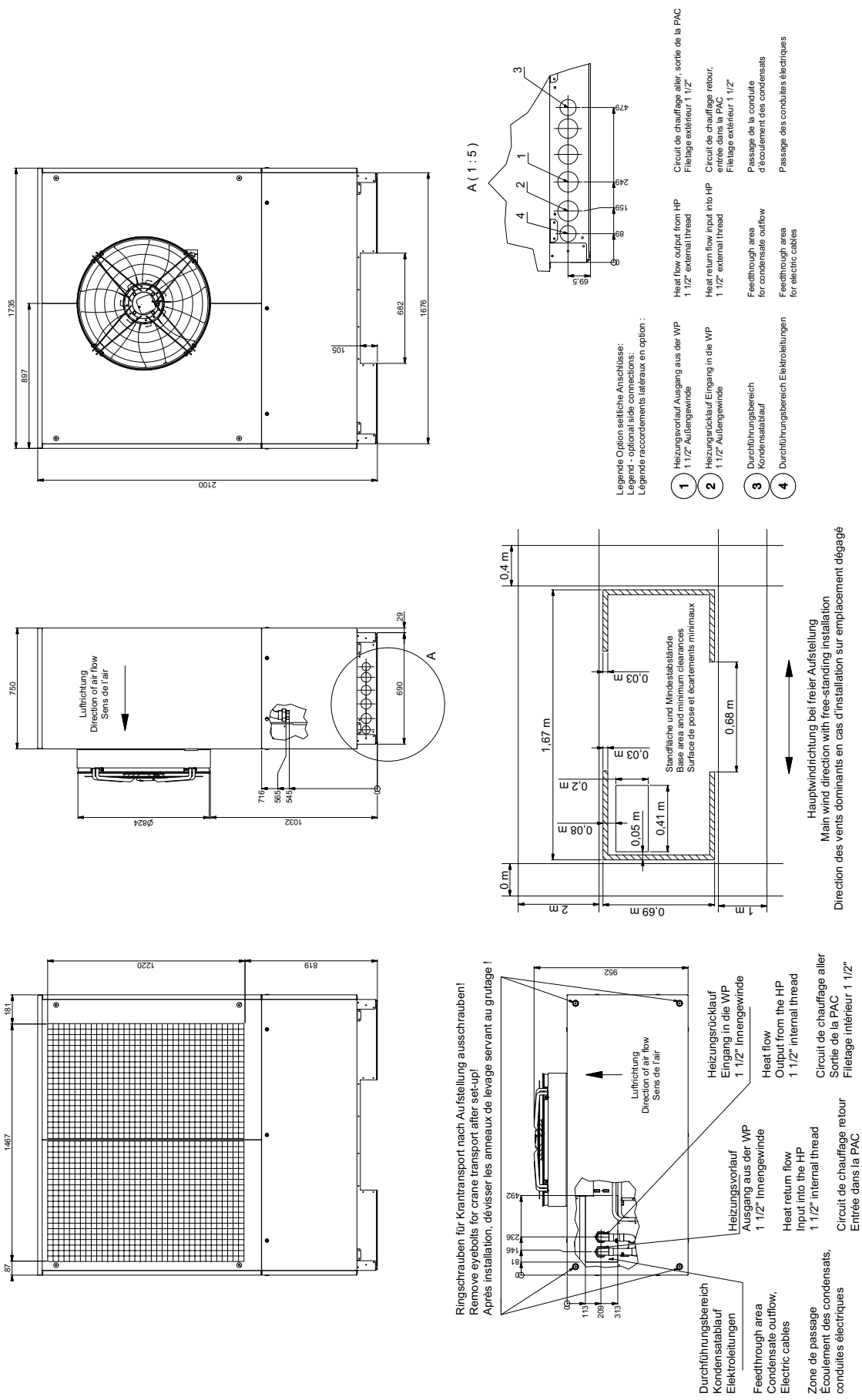
5 Konformitätserklärung / Declaration of Conformity / Déclaration de conformité ..... A-XIV

1 Maßbilder / Dimension Drawings / Schémas coté

1.1 Maßbild / Dimension Drawing / Schéma coté LA 25TU-2

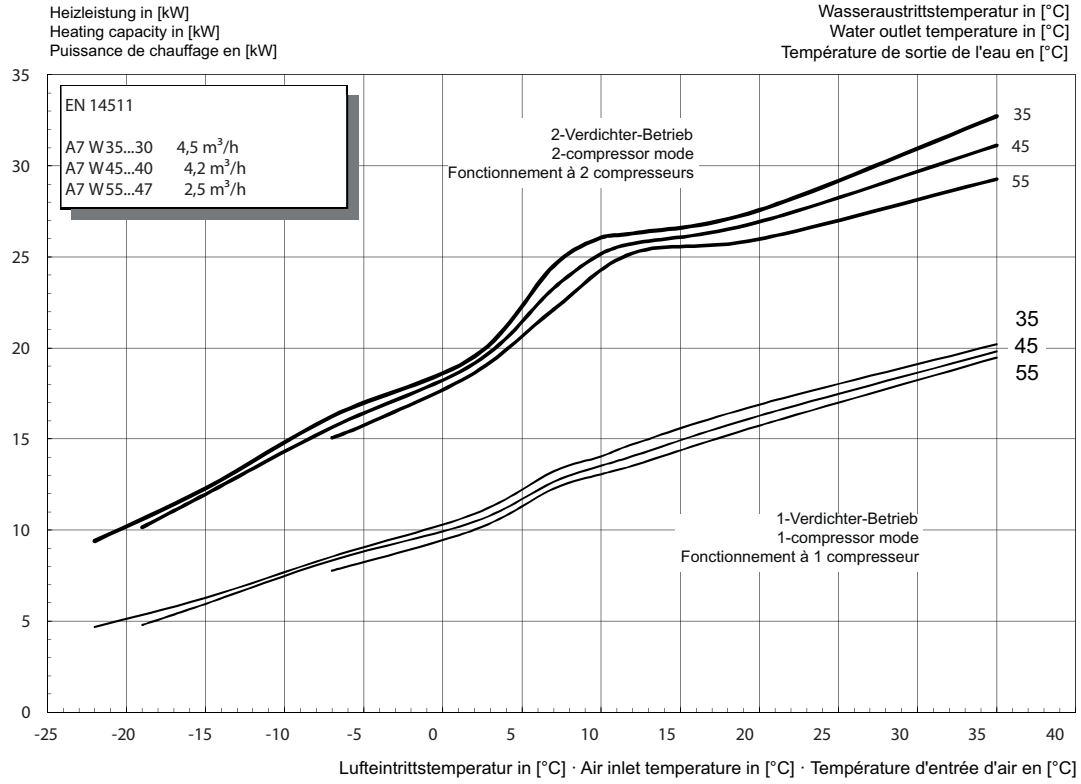


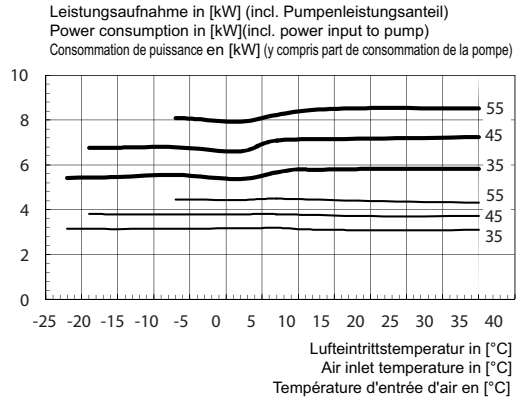
1.2 Maßbild / Dimension Drawing / Schéma coté LA 40TU-2

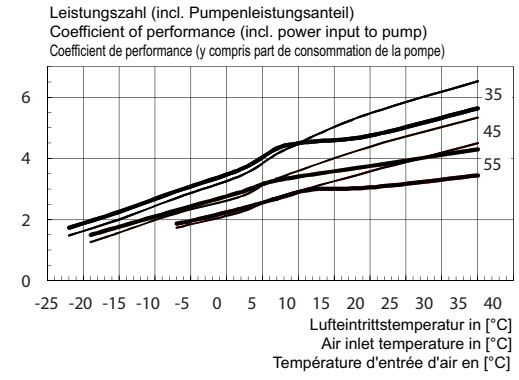


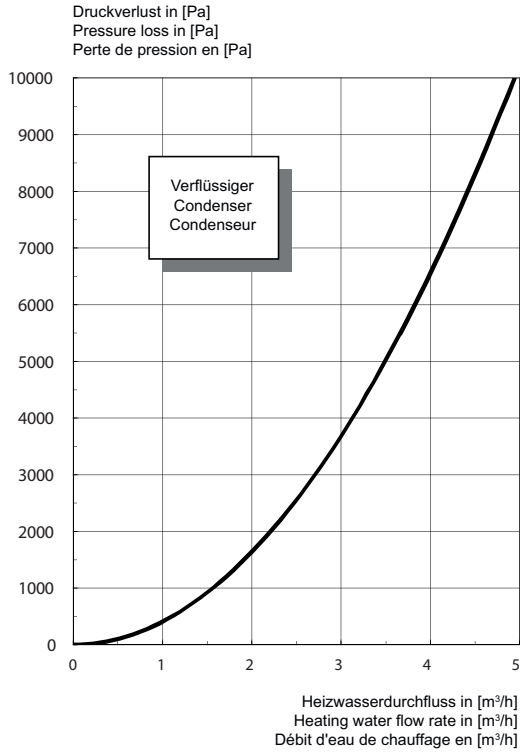
2 Diagramme / Diagrams / Diagrammes

2.1 Kennlinien / Characteristic Curves / Courbes caractéristiques LA 25TU-2

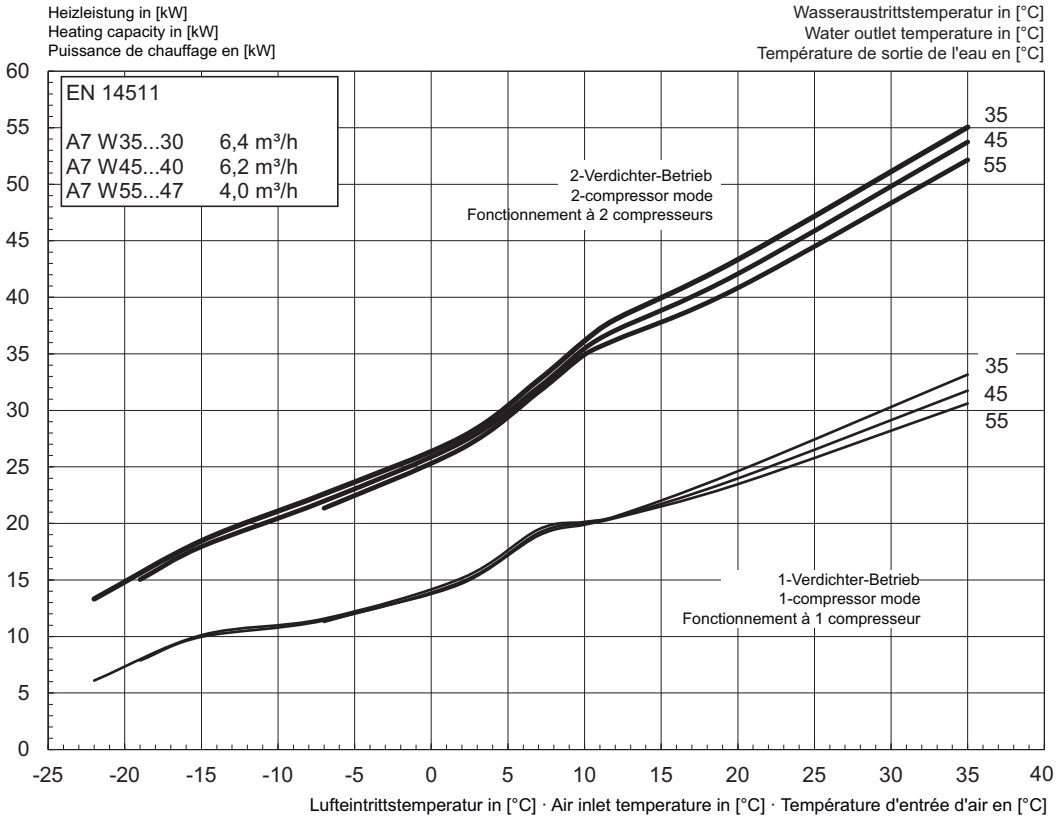


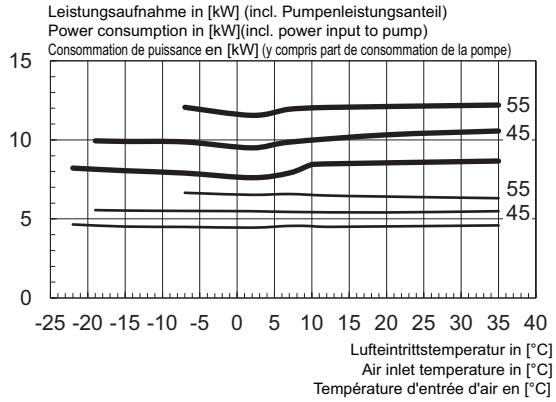


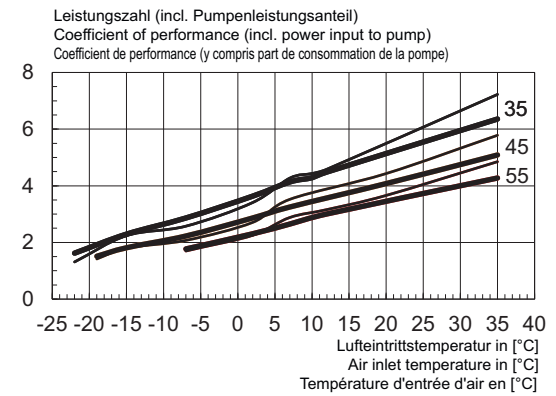


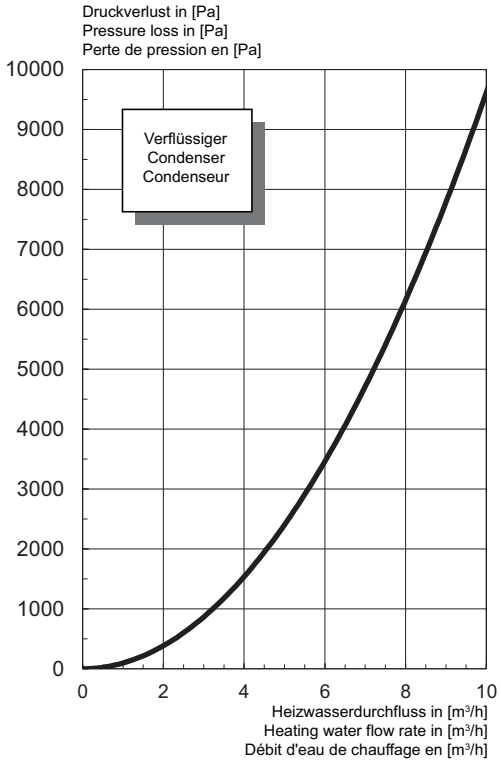


2.2 Kennlinien / Characteristic Curves / Courbes caractéristiques LA 40TU-2

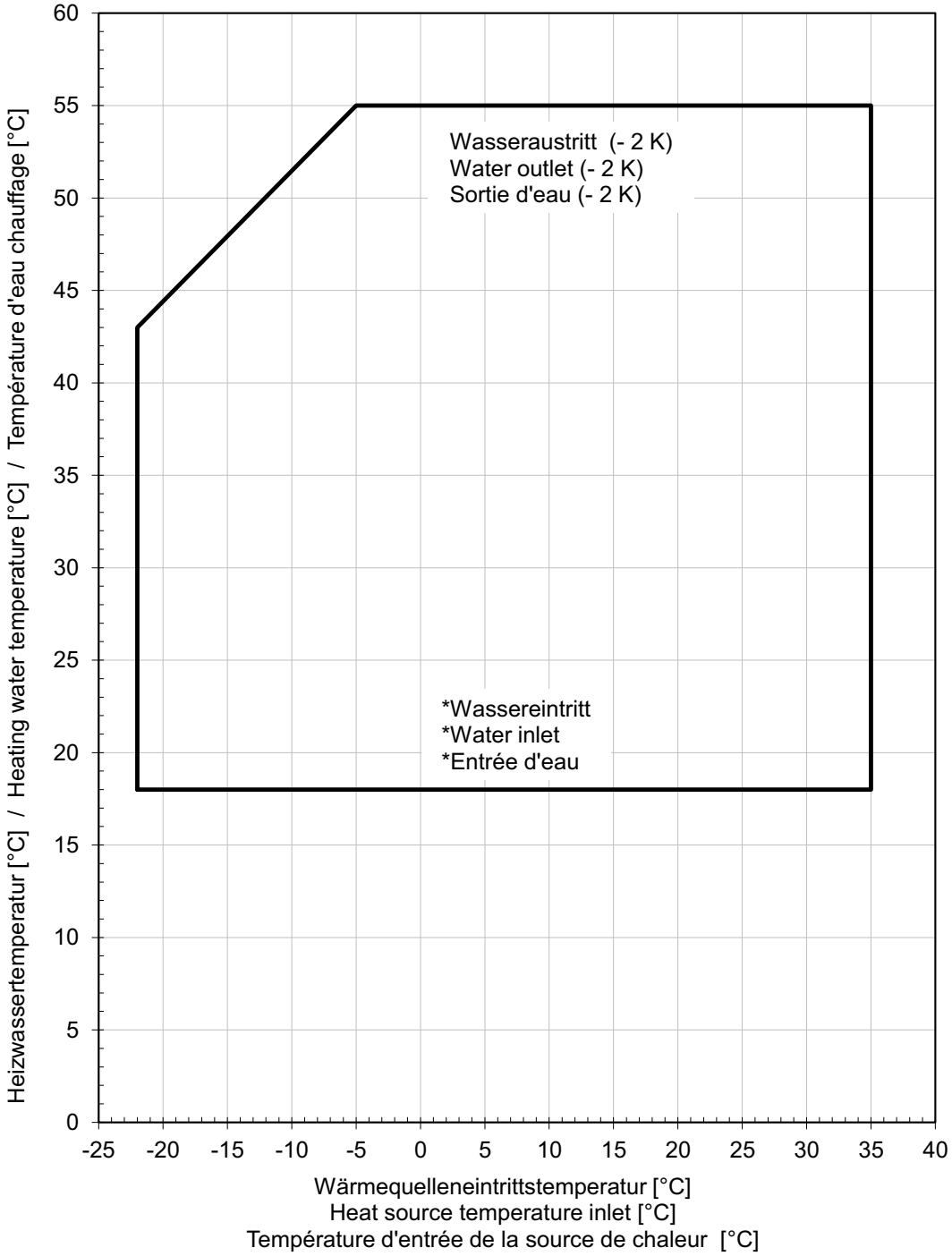








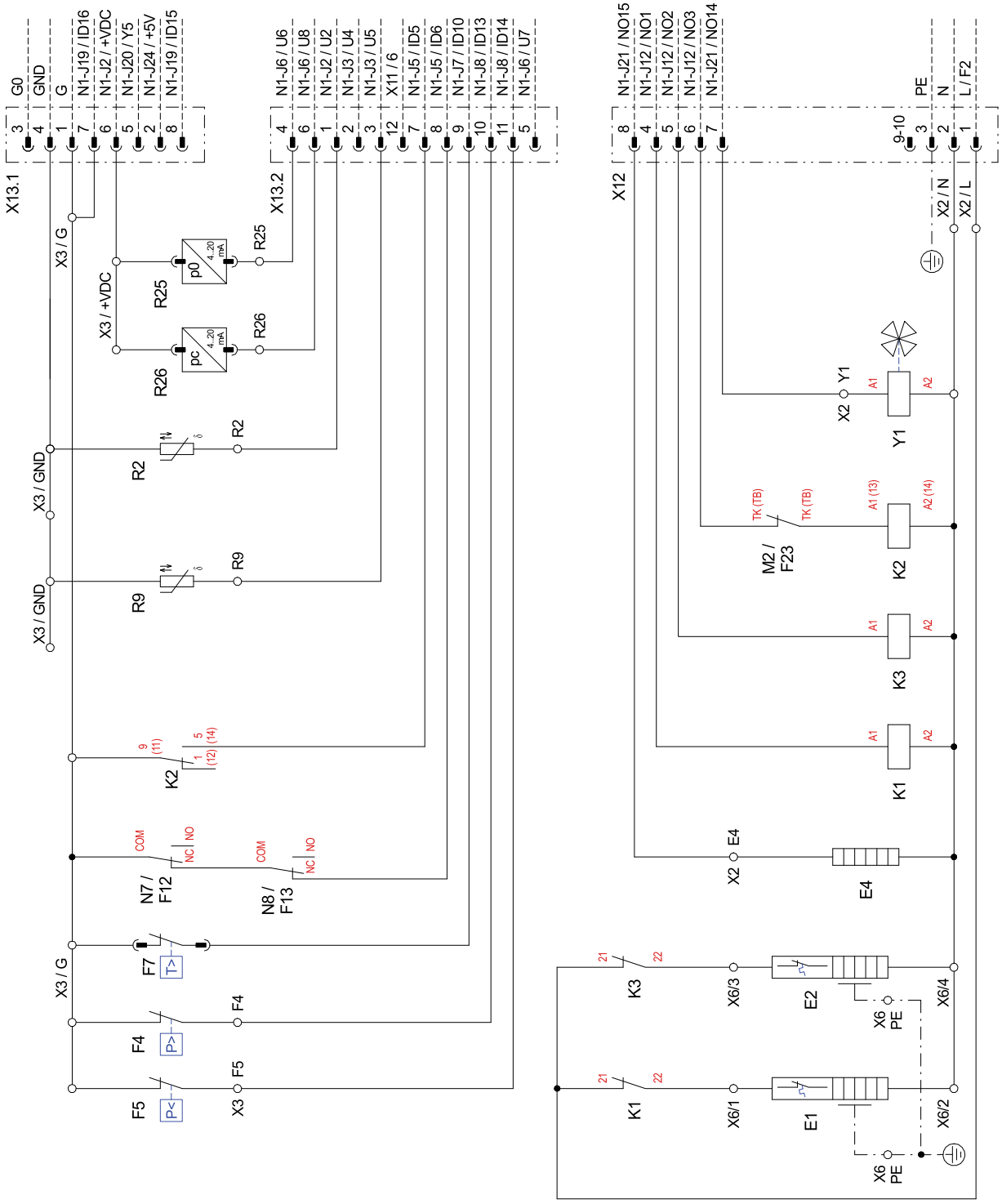
2.3 Einsatzgrenzendiagramm / Operating limits diagram / Diagramme des seuils d'utilisation



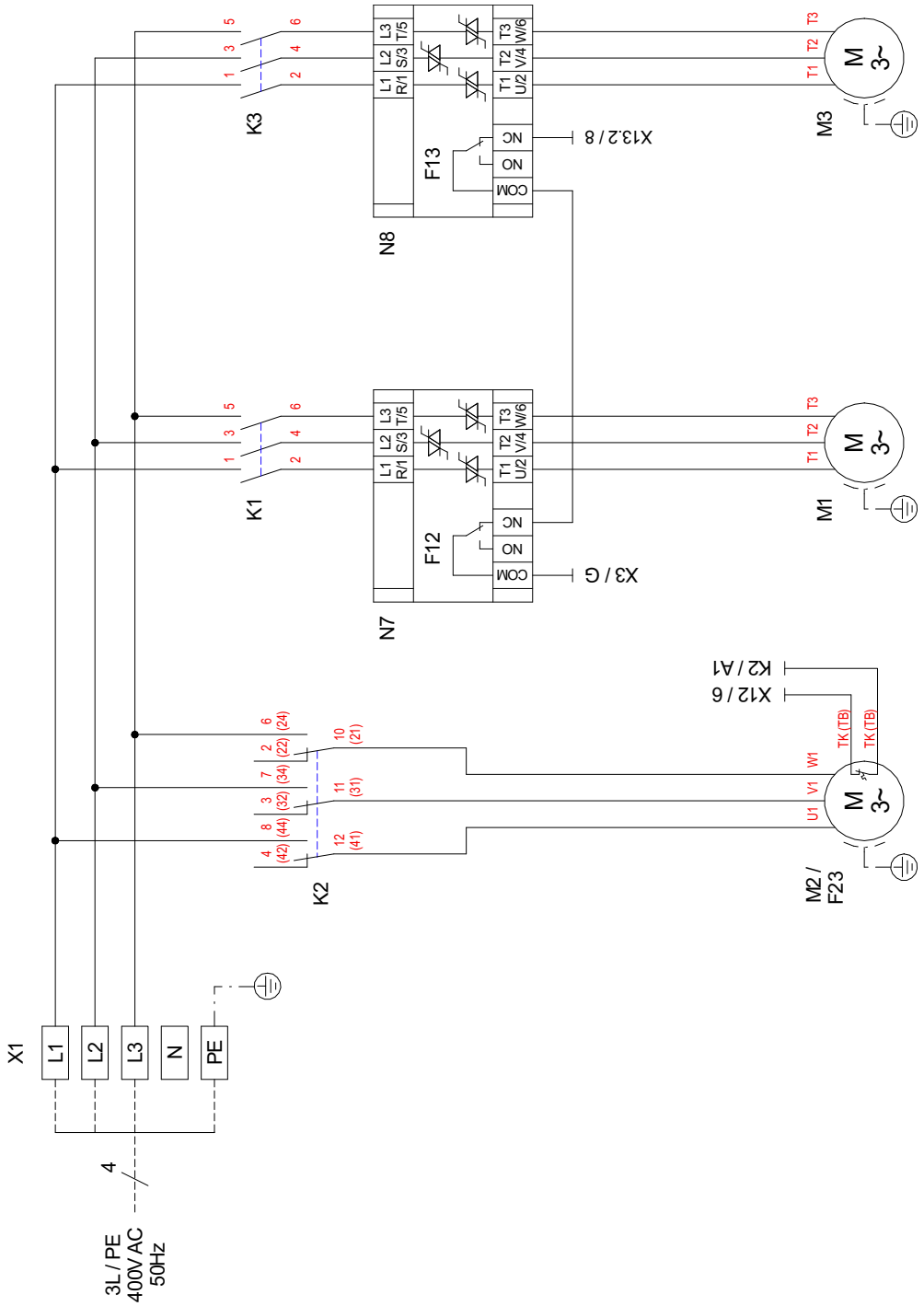
*Bei Luft/Wasser-Wärmepumpen stellt die minimale Heizwassertemperatur die Mindest-Rücklauftemperatur dar
*For air-to-water heat pumps the minimum heating water temperature is the minimum return temperature
*Sur les pompes à chaleur air / eau, la température minimale d'eau de chauffage correspond à la température retour minimale

3 Stromlaufpläne / Circuit Diagrams / Schémas électriques

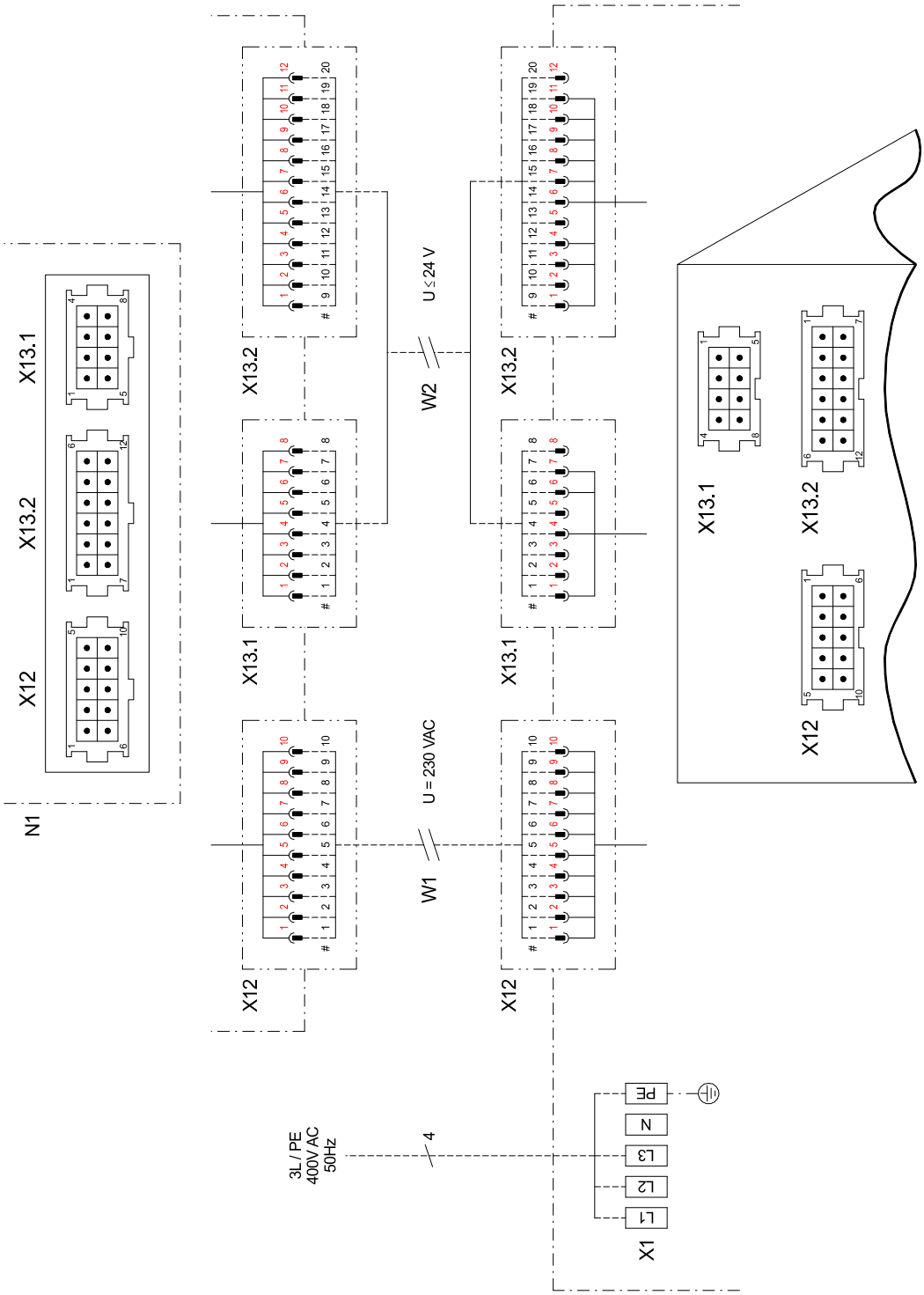
3.1 Steuerung / Control / Commande



3.2 Last / Load / Charge



3.3 Anschlussplan / Circuit Diagram / Schéma électrique

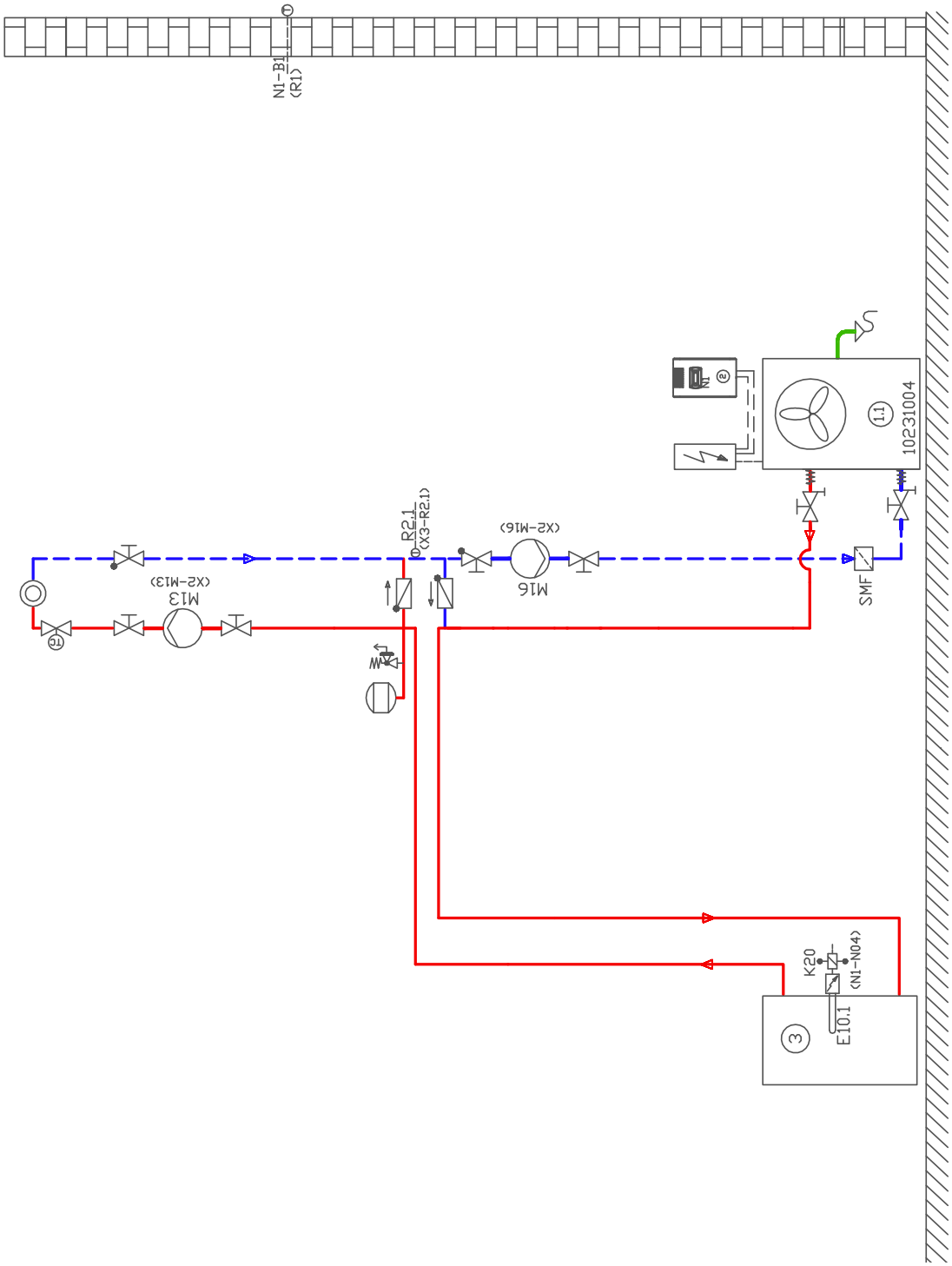


3.4 Legende / Legend / Légende

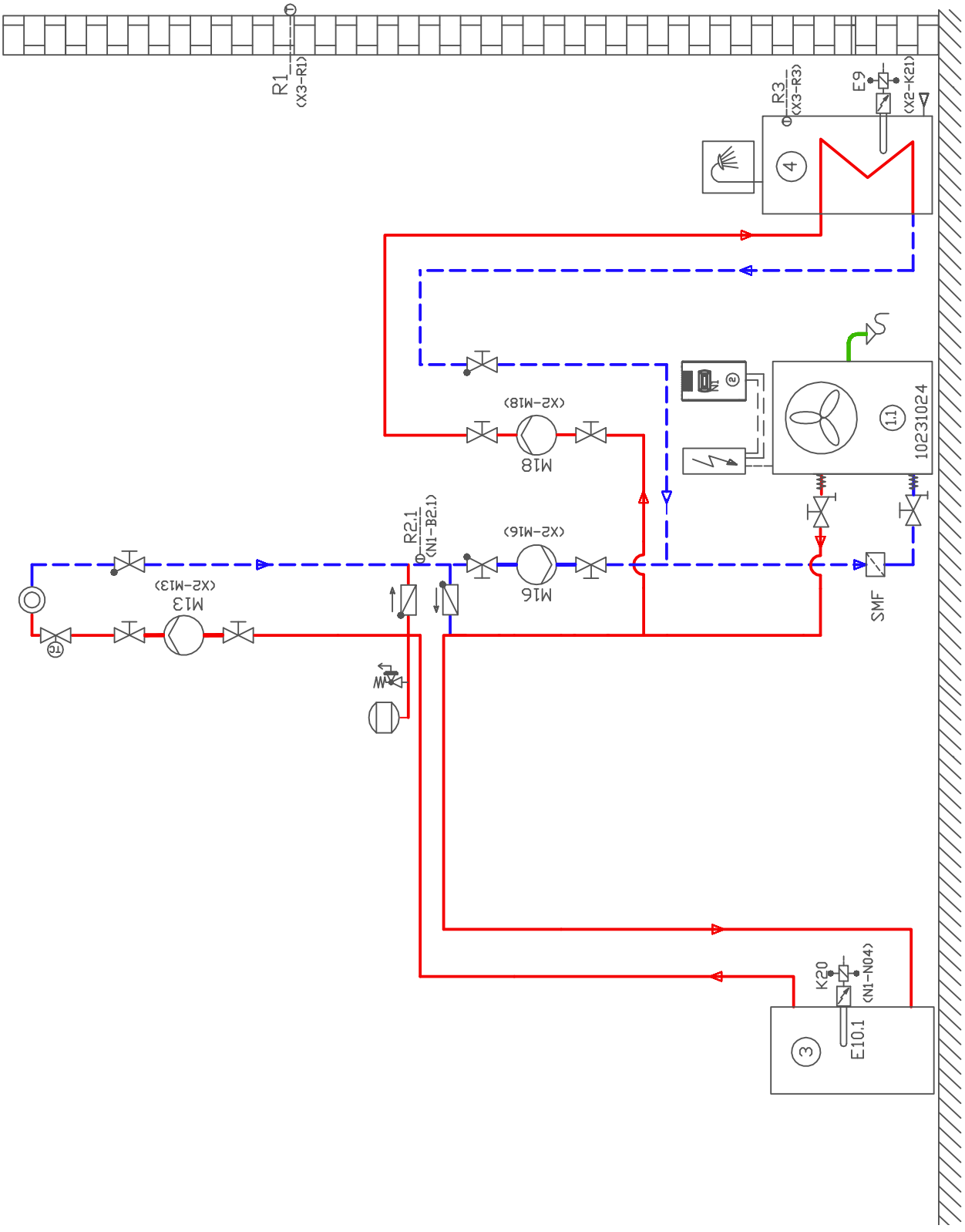
E1	Ölsumpfheizung Verdichter 1	Oil sump heater for compressor 1	Chauffage à carter d'huile compresseur 1
E2	Ölsumpfheizung Verdichter 2	Oil sump heater for compressor 2	Chauffage à carter d'huile compresseur 2
E4	Düsenringheizung Ventilator	Nozzle ring heater for ventilator	Chauffage à couronne perforée ventilateur
F4	Hochdruckpressostat	High pressure switch	Pressostat haute pression
F5	Niederdruckpressostat	Low pressure switch	Pressostat basse pression
F7	Thermostat Heißgasüberwachung	Thermostat for hot gas monitoring	Thermostat surveillance gaz de chauffage
F12	Störung N7	Fault N7	Défaut N7
F13	Störung N8	Fault N8	Défaut N8
F23	Störung Ventilator	Ventilator fault	Défaut ventilateur
K1	Schütz Verdichter 1	Contactor compressor 1	Contacteur compresseur 1
K2	Lastrelais Ventilator	Load relay for fan	Relais de charge ventilateur
K3	Schütz Verdichter 2	Contactor compressor 2	Contacteur compresseur 2
M1	Verdichter 1	Compressor 1	Compresseur 1
M2	Ventilator	Ventilator	Ventilateur
M3	Verdichter 2	Compressor 2	Compresseur 2
N1	Wärmepumpenmanager	Heat pump manager	Gestionnaire de pompe à chaleur
N7	Sanftanlaufsteuerung Verdichter 1	Soft start control for compressor 1	Commande de démarrage progressif compresseur 1
N8	Sanftanlaufsteuerung Verdichter 2	Soft start control for compressor 2	Commande de démarrage progressif compresseur 2
R2	Rücklauffühler	Return flow sensor	Sonde sur circuit de retour
R9	Vorlauffühler	Flow sensor	Sonde du circuit aller
R25	Drucksensor Kältekreis - Niederdruck (p0)	Pressure sensor for refrigerating circuit - low pressure (p0)	Capteur de pression circuit réfrigérant - basse pression (p0)
R26	Drucksensor Kältekreis - Hochdruck (pc)	Pressure sensor for refrigerating circuit - high pressure (pc)	Capteur de pression circuit réfrigérant - haute pression (pc)
W1	Verbindungsleitung Wärmepumpe - Manager 230V	Connecting cable, heat pump - Manager 230 V	Câble de raccordement gestionnaire de pompe à chaleur 230 V
W2	Verbindungsleitung Wärmepumpe - Manager <25V	Connecting cable, heat pump - Manager <25 V	Câble de raccordement gestionnaire de pompe à chaleur <25 V
X1	Klemmenleiste: Lasteinspeisung	Terminal strip: Incoming supply	Bornier : alimentation de charge
X2	Klemmenleiste: interne Verdrahtung = 230 V	Terminal strip: internal wiring = 230 V	Bornier : câblage interne = 230 V
X3	Klemmenleiste: interne Verdrahtung < 25 V	Terminal strip: internal wiring < 25 V	Bornier : câblage interne < 25 V
X6	Klemmenleiste: Ölsumpfheizung	Terminal strip: oil sump heater	Bornier : chauffage à carter d'huile
X12	Stecker Verbindungsleitung Wärmepumpe - Manager = 230 V	Connecting cable plug heat pump - Manager = 230 V	Connecteur câble de raccordement gestionnaire de pompe à chaleur = 230 V
X13.1	Stecker Verbindungsleitung Wärmepumpe - Manager < 25 V	Connecting cable plug heat pump - Manager < 25 V	Connecteur câble de raccordement gestionnaire de pompe à chaleur < 25 V
X13.2	Stecker Verbindungsleitung Wärmepumpe - Manager < 25 V	Connecting cable plug heat pump - Manager < 25 V	Connecteur câble de raccordement gestionnaire de pompe à chaleur < 25 V
Y1	4-Wege-Umschaltventil	Four-way reversing valve	Vanne d'inversion 4 voies
#	Adernummer	Core number	Numéro du fil
_____	werkseitig verdrahtet	Wired ready for use	Câblé en usine
_ _ _ _	bauseits nach Bedarf anzuschliessen	To be connected by the customer as required	à raccorder par le client si besoin

4 Hydraulische Einbindungsschemen / Hydraulic integration Diagram / Schémas d'intégration hydrauliques

4.1 Monoenergetische Anlage mit doppelt differenzdrucklosem Verteiler / Mono energy system and dual differential pressureless manifold / Installation mono-énergétique et distributeur double sans pression différentielle



4.2 Monoenergetische Anlage mit einem Heizkreis und Warmwasserbereitung / Mono energy system with one heating circuit and domestic hot water preparation / Installation mono-énergétique avec un circuit de chauffage et production d'eau chaude sanitaire



4.3 Legende / Legend / Légende

	Absperrventil	Shutoff valve	Vanne d’arrêt
	Überstromventil	Overflow valve	Soupape différentielle
	Sicherheitsventilkombination	Safety valve combination	Jeu de vannes de sécurité
	Schmutzfänger	Dirt trap	Filtre
	Umwälzpumpe	Circulating pump	Circulateur
	Ausdehnungsgefäß	Expansion vessel	Vase d’expansion
	Raumtemperaturgesteuertes Ventil	Room temperature-controlled valve	Vanne commandée par température ambiante
	Absperrventil mit Rückschlagventil	Shutoff valve with check valve	Vanne d’arrêt avec clapet anti-retour
	Absperrventil mit Entwässerung	Shutoff valve with drainage	Vanne d’arrêt avec vidange
	Wärmeverbraucher	Heat consumer	Consommateur de chaleur
	Temperaturfühler	Temperature sensor	Sonde de température
	Flexibler Anschlussschlauch	Flexible connection hose	Tuyau de raccordement flexible
	Rückschlagklappe	Check valve	Clapet anti-retour
	Dreiwegemischer	Three-way mixer	Mélangeur 3 voies

1.1	Luft/Wasser-Wärmepumpe	Air-to-water heat pump	Pompe à chaleur air/eau
2	Wärmepumpenmanager	Heat pump manager	Gestionnaire de pompe à chaleur
3	Reihen-Pufferspeicher	Buffer tank connected in series	Ballon tampon en série
4	Warmwasserspeicher	Hot water cylinder	Ballon d’eau chaude sanitaire
E9	Flanschheizung Warmwasser	Hot water flange heater	Cartouche chauffante eau chaude sanitaire
E10.1	Tauchheizkörper	Immersion heater	Résistance immergée
K20	Schütz 2. Wärmeerzeuger	Contactor for HG2	Contacteur du 2ème générateur de chaleur
K21	Schütz Flanschheizung	Contactor for flange heater	Contacteur cartouche chauffante
M13	Heizungsumwälzpumpe Hauptkreis	Heat circulating pump for main circuit	Circulateur de chauffage circuit principal
M15	Heizungsumwälzpumpe 2. Heizkreis	Heat circulating pump for heating circuit 2	Circulateur de chauffage 2ème circuit de chauffage
M16	Zusatzumwälzpumpe	Auxiliary circulating pump	Circulateur supplémentaire
M18	Warmwasserladepumpe	Hot water loading pump	Pompe de charge eau chaude sanitaire
M22	Mischer 2. Heizkreis	Mixer for heating circuit 2	Mélangeur 2ème circuit de chauffage
N1	Wärmepumpenmanager	Heat pump manager	Gestionnaire de pompe à chaleur
R1	Außenwandfühler	External wall sensor	Sonde sur mur extérieur
R2.1	Zusatzrücklauffühler	Additional return flow sensor	Sonde supplémentaire sur circuit de retour
R3	Warmwasserfühler	Hot water sensor	Sonde sur circuit d’eau chaude sanitaire
R5	Temperaturfühler 2. Heizkreis	Temperature sensor for heating circuit 2	Sonde de température 2ème circuit de chauffage

5 Konformitätserklärung / Declaration of Conformity / Déclaration de conformité

Die aktuelle CE-Konformitätserklärung finden sie als Download unter:
You can find and download the current CE conformity declaration at:
Vous pouvez télécharger la déclaration de conformité CE actuelle sous :

https://glendimplex.de/la25tu-2

https://glendimplex.de/la40tu-2

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Sous réserve d’erreurs et modifications.

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