OCHSNER
WÄRMEPUMPEN

Operating and Installation Instructions

AIR 80 C13A (OLWP 65 plus)
AIR 80 C22A

Air/Water Heat Pump
for heating, cooling and hot water

TRANSLATION OF THE ORIGINAL MANUAL

Contents

1 Notes on the documentation

Please read your heat pump's operating instructions carefully from front to back. The information in this document will help you to operate the heat pump correctly. This manual is to be stored in the vicinity of the heat pump and must be easily accessible. The precautionary pointers below will be used in this document.

WARNING
Pointers which, if not heeded, can mean danger to life and limb, and can also lead to material damage. These pointers must be heeded without fail.

ATTENTION
Pointer which, if not heeded, can lead to an appliance malfunction and to material damage (to system components, building, ...). These pointers must be heeded without fail.

NOTE
Tips which are intended to aid the job in hand, or mean additional information for the user.

ATTENTION
Pointers for work on electrical equipment. These pointers must be heeded without fail.
Attention - danger to life and limb!

2 Safety instructions

Read this manual carefully before you begin to commission/adjust the heat pump!

Converting or altering the appliance is not allowed. Work on the appliance (repairs, alterations) may only be carried out by the manufacturer or by a specialist authorised by the manufacturer.

All circuit breakers in the heating system are to be turned off before any work is carried out on the terminal strips or electrical connections (wiring).

The control, auxiliary modules, terminal strips and wiring of the control can also be supplied with line voltage by external switching (safety thermostats, etc.), even if the control is not connected or is receiving no power.

The **commissioning** as well as the **servicing** of the appliances may only be carried out by personnel which are authorised by OCHSNER.

The installation of the appliances and their **electrical wiring** may only be carried out by a specialist according to local regulations and codes of practice.

Protective functions for the heat pump can be activated by the control. However, as the control is not certified as a safety appliance, the protection against failure or damage to the heat pump must be adapted to the local instructions (for instance, by additional external switching of the safety appliances used).

WARNING
The appliance may not be used as a step or platform. Do not climb on the appliance or place any loads on it.

3 Description of the appliance

3.1 Function

The heat pump converts low temperature heat (e.g. heat from the outside air) into heat of higher temperatures (heating water).

The heat pump extracts from ambient
- ground
- ground water
- air

the stored solar energy and returns this, plus drive energy (electricity for the compressor) in the form of heat to the heating and hot water circuits.

The system consists of separate circuits, which are coupled by means of a heat exchanger.

- Heat source system → extraction of heat from the environment
- Heat pump → refrigerant circuit.
- Heat use circuit → emission of heat to the heating system.

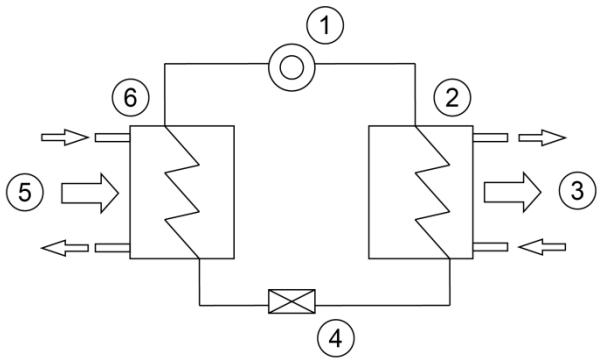


Fig. 1: Schematic diagram of the refrigerant circuit

1) Scroll-compressor
2) Condenser
3) Heating
4) Expansion valve
5) Environmental energy
6) Evaporator

The **refrigerant circuit** consists of:

- **finned heat exchanger** as evaporator
- **compressor,** mounted on a noise and vibration dampening thick metal plate
- **plate heat exchanger** as condenser
- dryer, refrigerant sump, expansion valve, safety equipment
- Chlorine-free, non-inflammable **safety refrigerant** and biodegradable special oil for the compressor.

3.2 Heat pump AIR 80 C13A and AIR 80 C22A

The heat pumps of the AIR 80 C13A (OLWP 65 plus) and AIR 80 C22A are split appliances, whereby the machine unit is installed indoors and the corresponding evaporator outdoors in the free air.

The machine unit is suitable for **indoor installation only** and is not suited for outdoors.

The heat extraction (heat source system) normally takes place from the ambient air via a finned tube evaporator. The AIR 80 C13A and AIR 80 C22A heat pumps operate at low temperatures in bivalent-parallel operation. The heat pump can, however, be combined at any time with a further heat generator.

3.3 Construction

3.3.1 Compressor

The fully hermetic SCROLL compressors are specially designed for heat pump use, i.e. for the highest loading. Various important constructive measures protect the compressor, both under normal operative conditions as well as overloading. The compressors used by OCHSNER have the highest performance and are the most durable. The SCROLL compressors have only a few moving parts and have no dynamic suction or pressure valves. Furthermore, they are distinguished by a very low vibration and noise level.

3.3.2 Housing

A profile frame, corrosion protected and with elegant cladding plates. The complete cladding is fitted with noise-dampening mats.

3.3.3 Evaporator

Consists of copper tubing in an Aluminium fin package. This is suitable for outside installation. The intake air must **not** be subjected to aggressive material (Ammoniac, Sulphur, Chlorine etc.)!

3.3.4 Liquid separator with sump

The liquid separator protects the compressor from liquid hammering, especially when the refrigerant circuit is reversed. Due to the large-sized liquid sump, an optimum supercooling and thus an optimum performance is achieved, even at differing air temperatures (summer operation/cooling, winter operation/heating, hot water and de-icing).

3.3.5 Condenser

The heat exchangers are made of stainless steel. Their special construction allows high stability. The plate heat exchanger is insulated all round against condensate and heat loss. The quality of the water in the heating system must be ensured by means of testing to VDI 2035 resp. ÖNORM H 9195-1 both before commissioning as well as during operation. The results are to be documented in the system log.

4 Installation

4.1 Delivery

The heat pump is delivered on a one-way palette and packed in foil (ARA Licence No. 7910). See Chapter 12 for the removal of the inside unit from the one-way palette.

Report any transport damage immediately on receiving the heat pump! Transport damage that is reported belatedly cannot be recognised as a claim!

4.2 Transport

The heat pump is to be stored and transported packaged up. Careful transport at an angle up to 45° is permitted over short distances. Ambient temperatures from –20°C to +45°C are permitted both for transport and storage. The standard packaging offers no weather or seawater protection.

Transport damage can only be recognised if this is made known to the driver of the delivery vehicle during, or immediately after unloading.

4.3 Tilting dimension of the inside unit

The tilting dimension of the heat pump is 209cm:

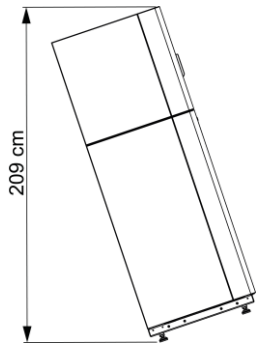


Fig. 2: Titling dimension of the heat pump

4.4 Installation of the inside unit

The heat pumps AIR 80 C13A and AIR 80 C22A can be installed in any room, provided they are dry, not endangered by frost and noise optimised.

Ensure the maximum room temperature does not exceed 30°C.

Installation must take place on an even, horizontal surface. The place of installation must conform to the static requirements of the heat pump (pressure stress due to point loading of the feet).

OCHSNER cannot assume any warranty for sinking due to a foundation that was sized too small!

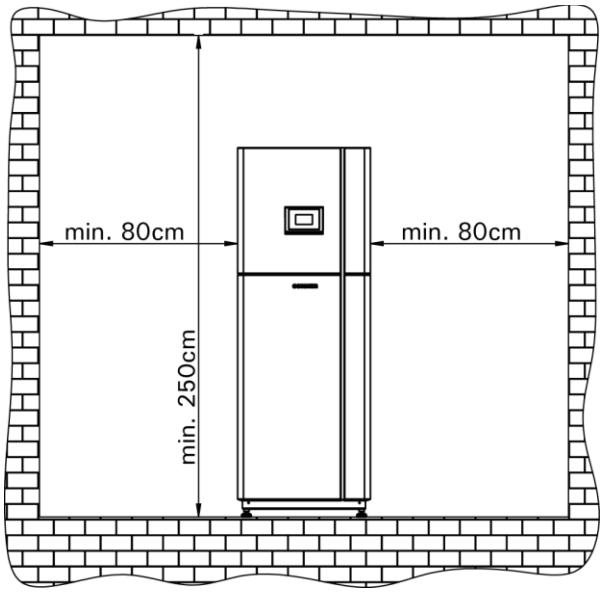


Fig. 3: Minimum clearance to the sides.

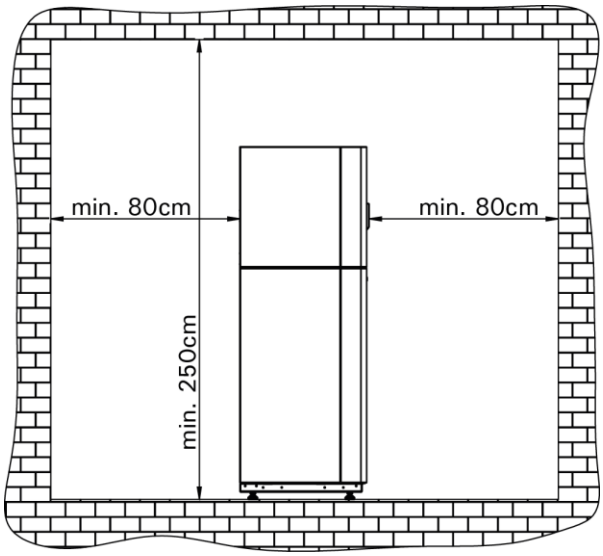


Fig. 4: Minimum clearances to front and rear.

Placement of the unit should be such that servicing and maintenance are possible. The overlap must be ca. 250 cm.

The heat pump must be acoustically de-coupled from the floor. Reverberant rooms can lead to increased noise perception. A possible transfer of noise to adjacent rooms cannot be ruled out and should be considered when planning the system.

The higher the heating capacity of the heat pump, the greater the noise emission from the heat pump's compressor.

4.5 Installing the free-air system

The installation of the split outside unit (evaporator) is only permitted in free air and must be carried out in such a way that the air flow is unhindered on all sides. The following installation instructions are valid for the **three-fold split evaporator VHS 80** with the AIR 80 C13A and **both double split evaporators VHS-M 80** with AIR 80 C22A.

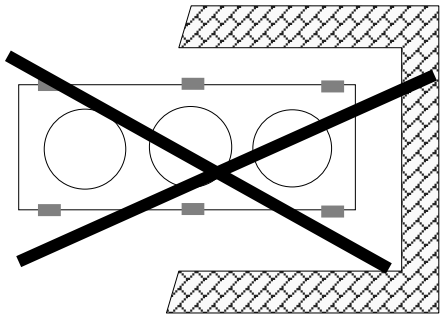


Fig. 5: Installation variant not permitted

The minimum clearance to walls must be adhered to (Fig. 6)

- **Clearance to wall (long side):**
  10cm or more than 100cm
- **Lateral clearance of the short sides to wall:**
  100cm
- **Clearance between two evaporators:**
  100cm on all sides

NOTE
The connecting side for the evaporator pipework must be accessible without danger throughout the year.

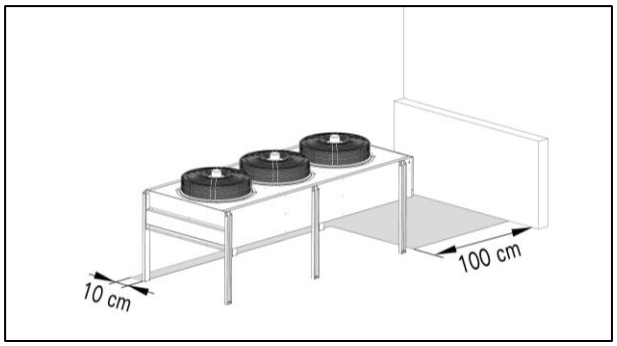


Fig. 6: Minimum clearances to wall for VHS 80

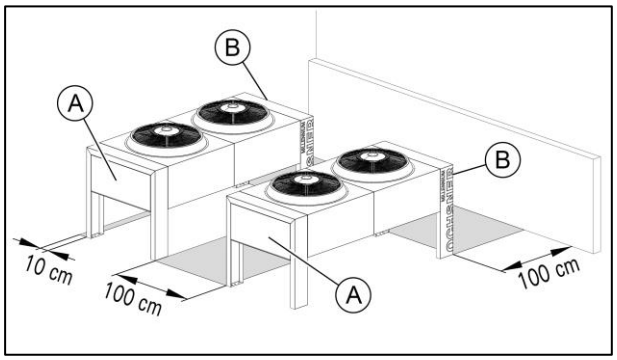


Fig. 7: Minimum clearances to wall for two VHS-M 80, installation variant 1

A) Connecting side (Liquid/suction gas pipework, electrical connection)
B) Expansion valve position

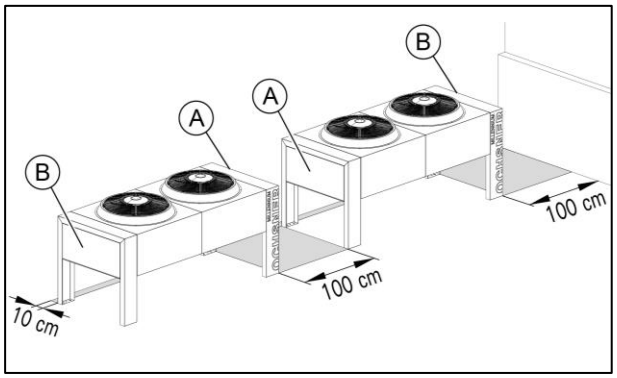


Fig. 8: Minimum clearances to wall for two VHS-M 80, installation variant 2

A) Connecting side (Liquid/suction gas pipework, electrical connection)
B) Expansion valve position

The clearance from the lower edge of the evaporator and the roof/ceiling must be greater than 3m.

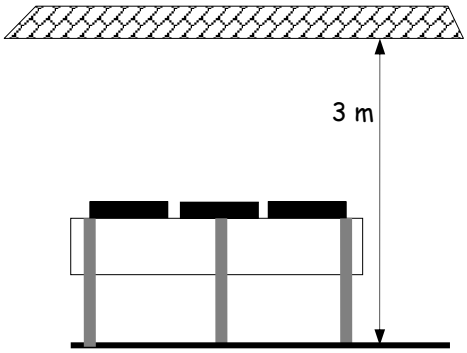


Fig. 9: Minimum clearance to ceiling (VHS 80, VHS-M 80)

4.5.1 Important installation instructions

The higher the heating capacity of the heat pump, the greater the noise emission from the heat pump's compressor and the evaporator.

- Avoid installing on reverberant floors
- Installation between two walls can lead to increased noise levels
- Avoid installing the evaporator near bedrooms
- Plants and vegetation can reduce sound emissions.
- The sound intensity level in a closed room depends on room size and acoustics.
- When installing the split evaporator, ensure that it is accessible all year round (special provisions must be made for roof installation).

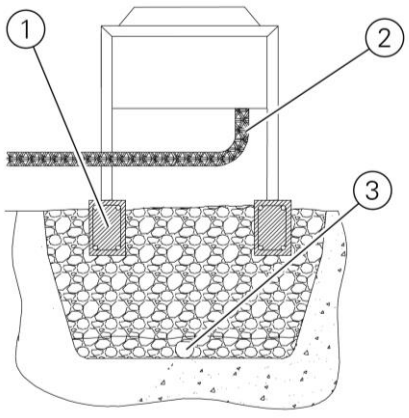


Fig. 10: Installation with gravel bed and drainage pipe

1) Concrete foundation
2) Non-buried connecting pipework
3) Drainage pipe in gravel bed below frost level

A frost-free drain is to be constructed to drain off any condense water. Normally, a condensate sump or a gravel bed with drainage pipework is to be constructed under the evaporator.

CAUTION: Slipping hazard
If drainage for condensation is inadquate, ice can build up in winter in the area around the outdoor unit.

- Ensure drainage for condensation is sufficient even at low temperatures.
- Ensure that no ice is formed, especially around walking surfaces and entrances around the outdoor unit.

Warning danger of slipping!
Observe the regional laws concerning safety at work are to be observed when working on flat roofs.

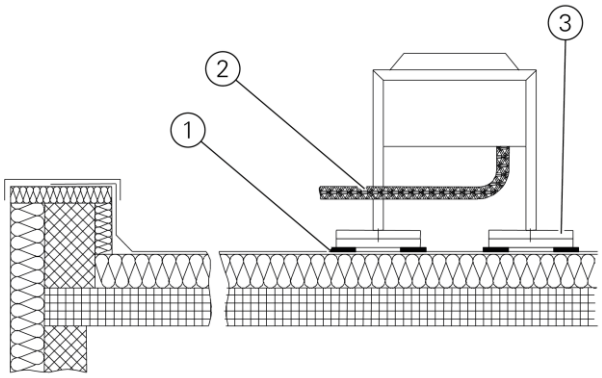


Fig. 11: Installation on a flat roof

1) Vibration dampening plates
2) Non-buried connecting pipework
3) per evaporator, 2 pieces washed concrete slabs, connected by flexible adhesive, evaporator fixed to slabs

4.6 Heating system connection

The installation of the appliances may only be carried out by a specialist according to local regulations and codes of practice.

All heat pump connections are to be mounted in a flexible fashion. Avoid vibration transmission bridges when installing pipework. The pipework sizing as well as the choice of circulation pump is dependent on the relevant heating system.

Observe the following sizing fundamentals:

The flow rate in the pipe-network must not exceed 0.8 m/s. (noise/resistance)**.** In order to ensure a comfortable and disturbance-free operation, a temperature difference of 5K between the heating system flow and return is to be maintained.

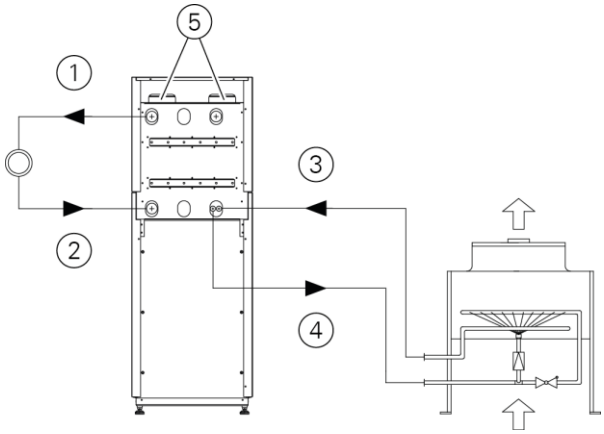


Fig. 12: Hydraulic and electrical connections to the heat pump (schematic)

1) Heat use system: Flow 2" (Heating/cooling)
2) Heat use system: Flow 2" (Heating/cooling)
3) Heat source system: Input
4) Heat source system Output
5) Electrical connections

When sizing the heat system circulation pumps (buffer charge pump, hot water charge pump), the internal pressure differential in the plate heat exchanger is to be taken into account (see 9 Technical data)!

For air/water heat pumps, a suitably sized decoupling tank (heat pump separation tank resp. buffer tank) is mandatory in order to provide the necessary de-icing energy. A bleeder valve (manual bleeding) must be fitted at the highest point in the pipework system. Non-compliance can lead to the danger of the heat pump not achieving the catalogue specified performance and being switched off by means of a safety switching. → Error report (see OTE Operating Instructions)

It should be ensured that **no foreign bodies** (dust, dirt etc.) can enter into the pipework Before filling the system with prepared water, the complete system is to be flushed through according to the Standards (VDI 2035 resp. ÖNORM 5195-1). A sieve can be installed in the return pipework to the heat pump in order to collect any dirt. Make sure that the **dirt collector** is easy to clean for maintenance purposes. A clogged sieve affects the heat transfer considerably and can lead to a switch off via the high-pressure safety switch!

The heating system pipework is to be sized according to the technical data of the heat pump. **Valves and thermometers** are to be fitted to the flow and return pipework so that the water flow and the running condition of the heat pump can be monitored at all times. A **drain pipe** is to be installed at the lowest point in the pipework so that the system can be drained.

4.6.1 Flow rate measurement

NOTE
The flow rate meter is part of the heat pump and **must be installed by the system installer** according to the OCHSNER installation guidelines. **No guarantee and warranty claims** can be granted in the event of malfunctions for systems that are operated without a flow meter.

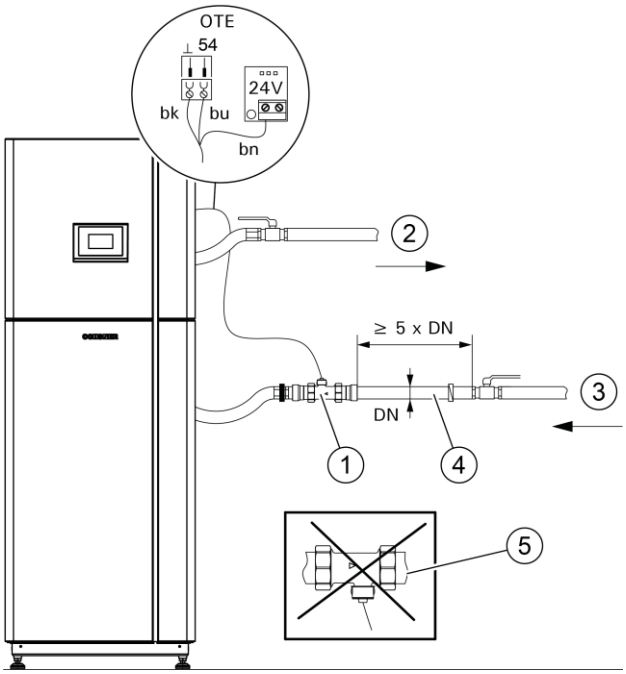


Fig. 13: Installing the flow sensor

1) Flow sensor
2) Heat use system flow
3) Heat use system return
4) Straight pipe (min. 5 x pipe diameter)
5) Flow sensor installing position not permitted

The flow rates are monitored by the flow meter. A safety switch off of the heat pump takes place if the flow rate is too low (see 7.4 malfunction remedy).

4.6.2 Cooling version

All cooling system components (pipework, fittings) must be insulated against condensed water using suitable insulation material. This is to be taken into consideration even more for flow pipework from the heat pump to the buffer tank. In cooling, as well as in de-icing operation, ensure that there is a sufficient sizing of the hydraulic safety equipment, especially that the pressure maintenance system is matched to the operational requirements with corresponding primary pressure.

The primary pressure of the diaphragm pressure vessel as it is supplied must not be used without checking, but must be calibrated for the corresponding system. Depending on the system height, the diaphragm vessel primary pressure and the filling pressure of the heating system must be determined and calibrated.

4.7 Nominal flow rates in heating system

The nominal flow rates in the heating system are to be ensured. Deviating flow rates can lead to a heat pump safety switch off. OCHSNER accepts no liability for this!

4.8 Heat source connection (WQA)

4.8.1 Wall ducting

The ducting through outside walls is to be constructed using lined feed pipes. The ducting should be laid with a **gentle slope (min. 2%) down slightly toward the outside!**

The wall ducting must be sealed by the system installer with suitable sealing compound in order to avoid water entering the brickwork / living areas.

NOTE
The wall ducting is **not** part of OCHSNER's scope of supply. Responsibility for any damage which may be caused by incorrect sealing will not be accepted by OCHSNER.

Only thus can it be guaranteed that any condense/rain water can be correctly led away vie the house drainage, and that no moisture permeates the wall brickwork. It is also of great importance that the "lined conduit" outside the building should be bevelled from top to bottom and surrounded by gravel. This will ensure that no water enters the building in the event of heavy rainfall.

4.8.2 Installation of non-buried connecting pipework

Preparations for the system installer:

- Professionally prepared wall conduits
- Construct evaporator foundation
- Fix evaporator to foundation
- Connect up the evaporator electrically

Work to be carried out by OCHSNER customer service:

Once the evaporator installation has been completed, the OCHSNER customer service engineers will install the connections between the inside unit and the evaporator.

If the connecting pipework is not buried, the refrigerant pipework has to be insulated accordingly with insulation that is UV-resistant and protects against moisture. If the pipework is to be laid horizontally, the refrigerant pipework must be suitably supported.

Walking or driving on the free-spanning connection pipework is to be avoided at all costs!

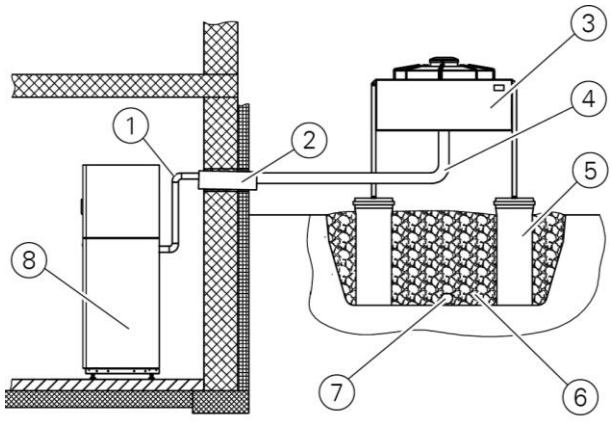


Fig. 14: Installing a non-buried connecting pipework, using an AIR 80 C13A with a VHS 80 as an example.

1) Connecting pipework insulated against the conduit
2) Insulated against the wall
3) Evaporator
4) Connecting pipework (insulated with UV protection)
5) Point foundation (6 in all), KG pipe 315
6) Gravel bed
7) Drainage pipe
8) Heat pump

4.8.3 Installation of buried connecting pipework

When using buried connecting pipework, an **installation shaft** must be constructed at the connecting point of the refrigerant and the evaporator for the Models AIR 80 C13A and AIR 80 C22A.

The diameter of the shaft must be a minimum of 1.5m and its height must be a minimum of 1.2 m (2 rings and a cone). If the collection shaft that is sized too small, OCHSNER customer service will not commission the system (safety at work)!

All brazing points on the copper connection pipework must be accessible for servicing all-year-round (F-gas regulation).

Preparations for the system installer:

- Correct construction of the wall conduit through the cellar wall for the lined conduit (min. D=200 mm).
- Dig out a channel between the cellar wall and the installation shaft (max. 4m clearance due to 5m copper pipework length)
- Construct installation shaft
- Construct evaporator foundation
- Fix evaporator to foundation
- Lay lined conduit sloping towards the installation shaft

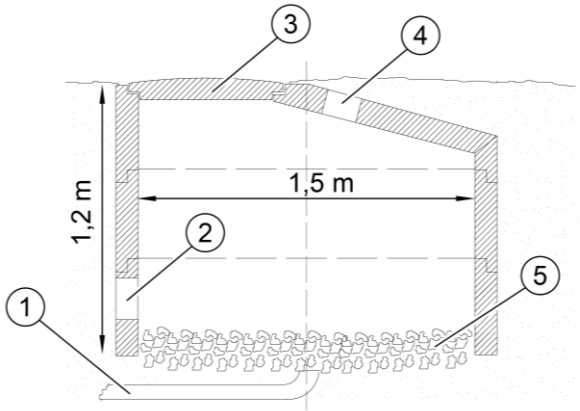


Fig. 15: Installation shaft

1) Drainage
2) Lined conduit
3) Cover (D=800mm)
4) Connection pipework
5) Gravel

It is essential with the heat pump AIR 80 C22A that the liquid and suction gas pipework is symmetrically distributed to both evaporators (see Section 4.8.4). An appropriate arrangement of the evaporator connections to the installation shaft is therefore essential for ground-based connection pipework.

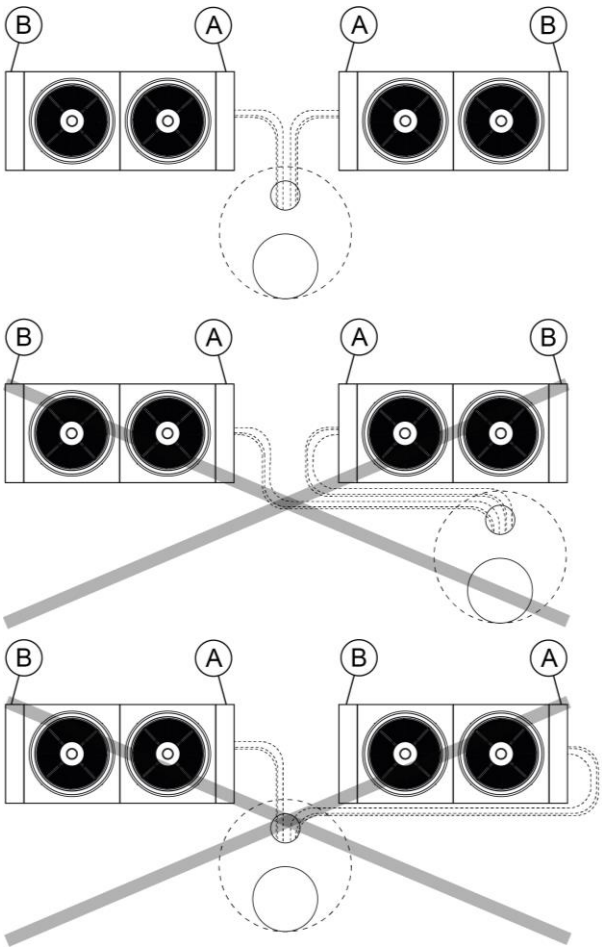


Fig. 16: Symmetrical arrangement of buried connection pipework with the installation shaft with AIR 80 C22A.

A) Connecting side (Liquid/suction gas pipework, electrical connection)
B) Expansion valve position

Work to be carried out by OCHSNER customer service:

- Soldering the copper pipework knee
- Solder a vertical copper pipe to the copper knee
- Complete the connection with the evaporator
- Fit the insulation

Once all the work on the connections has been completed and the pipework has been seal tested by means of a pressure test, the channel with the lined conduit can be filled with suitable bulk material.

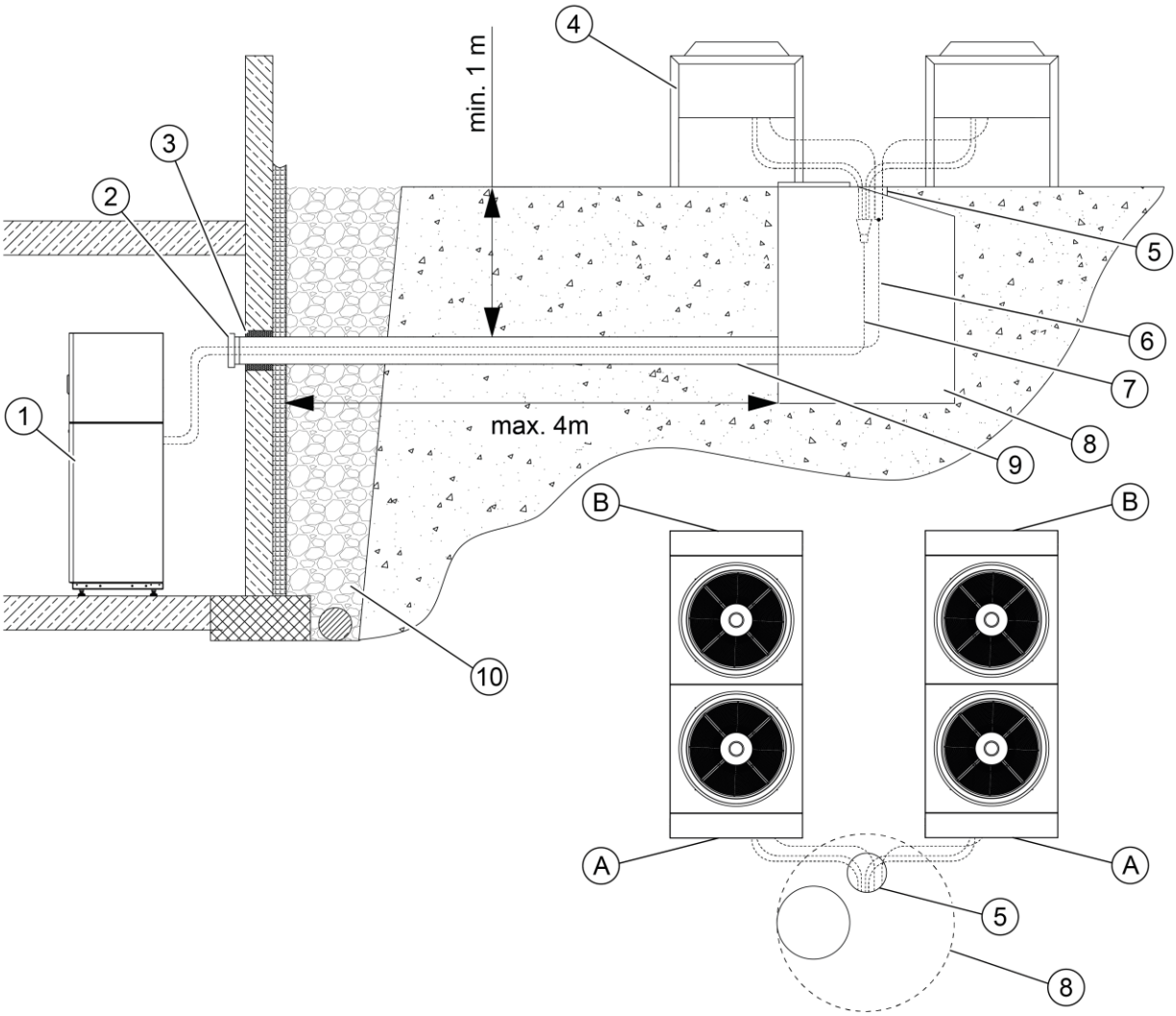


Fig. 17: Schematic diagram of buried connection pipework with the installation shaft with AIR 80 C22A.
Top: Cross section; bottom: Evaporator and installation shaft, plan view

1) Heat pump
2) Sealing cap
3) Sealing (if any ground water pressure or in flood endangered areas, a proper seal is mandatory!)
4) Evaporator
5) Connection pipework to shaft
6) Liquid pipework (insulated)
7) Suction gas pipework with Venturi distributor (insulated)
8) Installation shaft
9) Lined conduit, D=200mm, min. 2% gradient to outside
10) gravel

A) Connecting side (Liquid/suction gas pipework, electrical connection)
B) Expansion valve position

4.8.4 Symmetric connecting pipework AIR 80 C22A

The liquid pipework to the two VHS-M 80 evaporators is to be distributed symmetrically (Fig. 18)

- 1 x liquid pipework upstream of the distribution: **Cu, 22x1mm**
- 2 x liquid pipework downstream of the distribution: **Cu, 16x1mm**
- Pipework lengths downstream of the distribution (s1=s2): **max. 3m**
- Difference in pipework lengths between s1 and s2: **max. 0,5m**

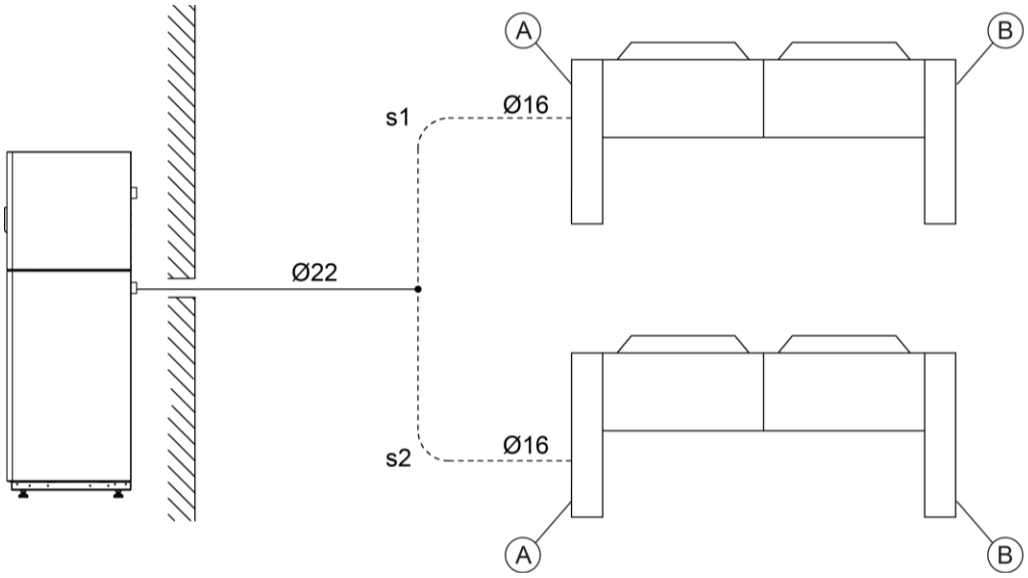


Fig. 18: Distribution of the liquid pipework for two VHS-M 80 evaporators

A) Connecting side (Liquid/suction gas pipework, electrical connection)
B) Expansion valve position

The suction gas pipework is also to be distributed symmetrically (Fig. 19):

- 1 x suction gas pipework upstream of the distribution: **Cu, 42x2mm**
- 4 x suction gas pipework downstream of the distribution: **Cu, 22x1mm**
- Pipework lengths downstream of the distribution (s1=s2=s3=s4): **max. 3m**
- Difference in pipework lengths between s1, s2, s3 and s4: **max. 0,5m**

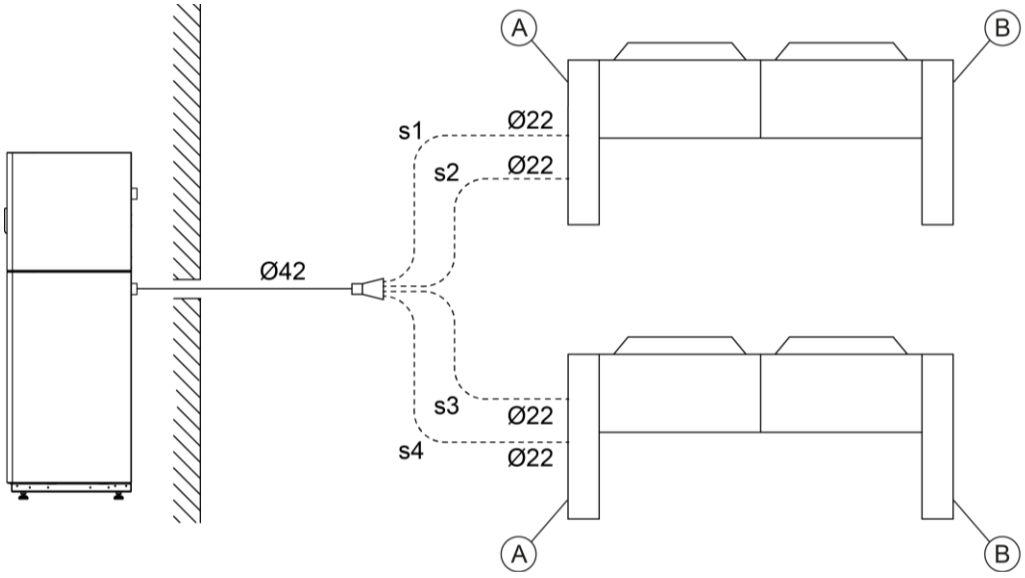


Fig. 19: Distribution of the suction gas pipework with a Venturi distributor for two VHS-M 80 evaporators

A) Connecting side (liquid/suction gas pipework, electrical connection)
B) Expansion valve position

4.8.5 Sizing the connection pipework

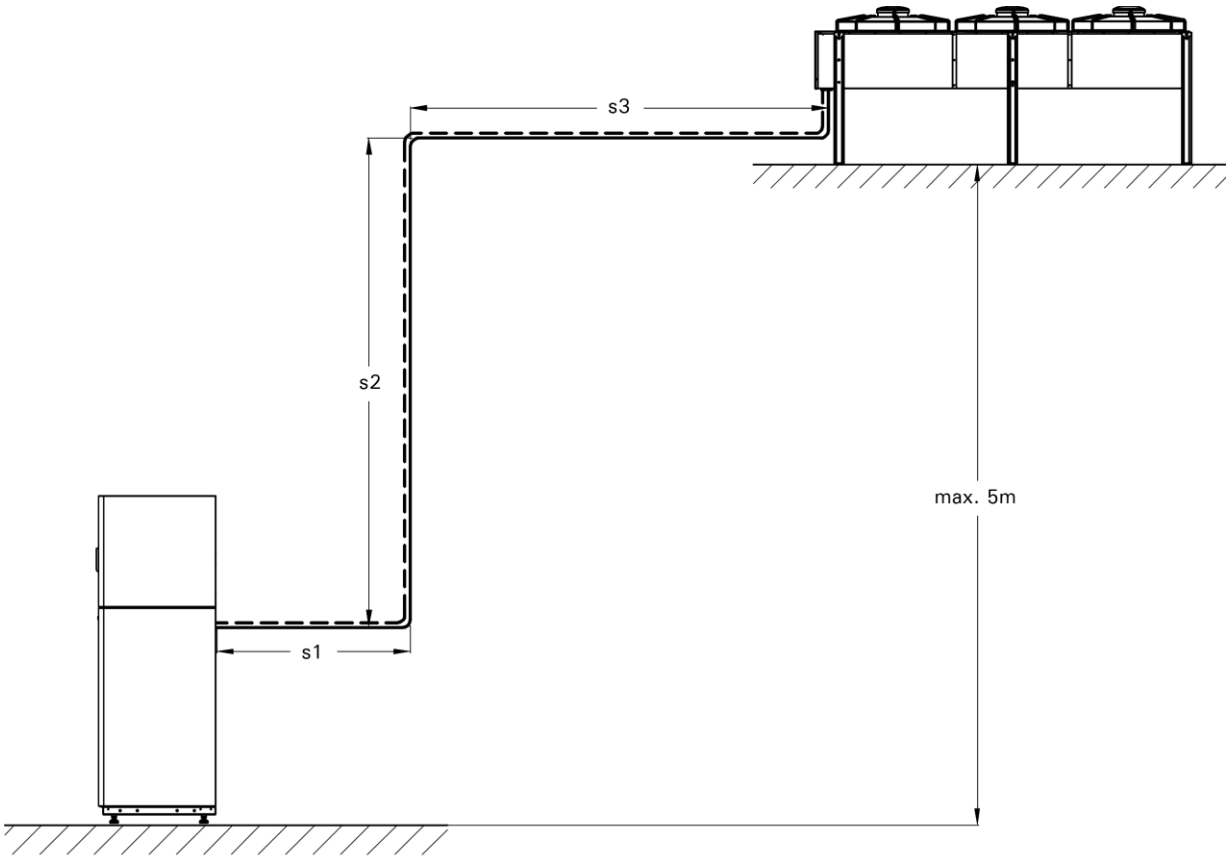


Fig. 20: Pipework lengths and max. height difference between the heat pump and the evaporator: Case 1

Valid for AIR 80 C13A and AIR 80 C22A

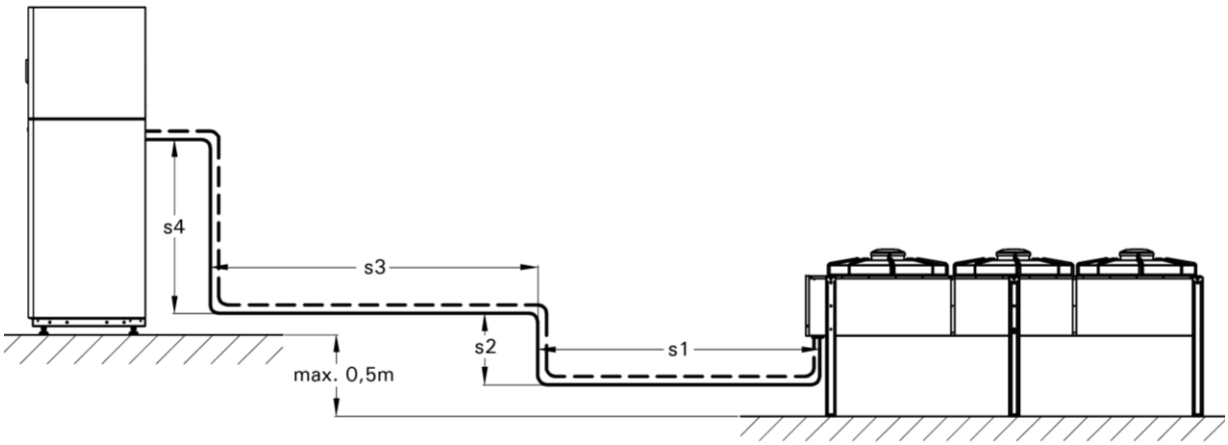


Fig. 21: Pipework lengths and max. height difference between the heat pump and the evaporator: Case 2

Valid for AIR 80 C13A and AIR 80 C22A

Sizing the connecting pipework in Case 1 (Fig. 20) and in Case 2 (Fig. 21):

- The sum of the partial lengths (s1+s2+s3+....) **must not exceed a total length of 16m**!
- Fluid pipework: Cu, 22x1mm:
- Suction gas pipework: Cu, 42x2mm
- Max. number of bends: 8 (to be manufactured on bending equipment, at 42mm is 90°-solder fitting to be used)
- Bending (22mm raw copper) radii of 1 m are deemed to be straight!

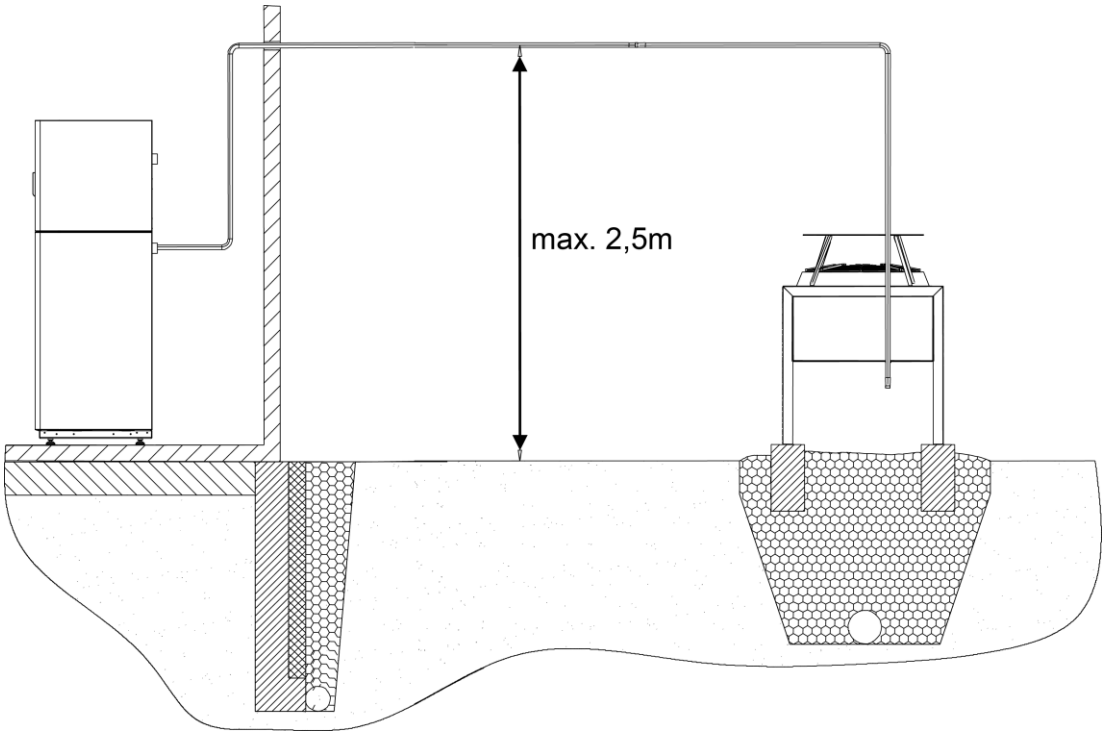


Fig. 22: Max. connecting pipework head of 2.5 mm

Valid for AIR 80 C13A and AIR 80 C22A

4.8.6 Refrigerant pipework

The refrigerant pipework must always be located on the side of the heat pump (left or right). A rear connection should only take place in exceptional circumstances as the connection work is clearly made more difficult.

4.8.7 Seal test

The seal test is carried out and logged by the OCHSNER customer service engineers during commissioning.

4.8.8 Insulation

All refrigerant pipework is to be protected by the installer against condense water by means of a workmanlike insulating material. The heat insulation must be additionally UV protected in outside areas.

Insulation laid in the ground must be made of closed-pore material. The insulation properties of the material will otherwise be affected.

4.9 Electrical connection

The regulations of the responsible energy utility and the relevant EN-standards are to be strictly adhered to.

ATTENTION
Before wiring up the unit make sure that the heating system carries no line voltage.

DANGER of electrocution
Install all electrical connections according to national and local Standards

Connecting work may only be carried out by a certified specialist according to this instruction!

The values indicated for fuse protection are given solely for reference. The correct sizing of the safety measures is the sole responsibility of the electrician connecting the heat pump. The choice of cable size is to be made by the electrician taking into account the ratings and cable lengths.

4.9.1 Power supply to the heat pump

The stated voltage must be the same as the house circuit voltage. Observe the specifications on the rating label!

The approval of the specific utility must be sought before connecting the appliance

The circuit breaker for the main power supply circuit 230V and the main circuit (3 v 400VAC) is to be a circuit breaker that switches off **all poles** in the event of a malfunction. Main and control supply cables are to be run separately. The control supply circuit (230VAC) is to be protected by a C13A circuit breaker and the main circuit by a C80A circuit breaker. The supply cable must be protected against overload and short circuiting.

ATTENTION
This appliance contains frequency converters (e.g. EC circulation pumps). Leakage currents may arise in normal operation. In the event of faults, these components may cause DC fault currents. An incorrectly selected RCD may trip during normal operation or, in the event of a fault, may not trip at all or only trip after a delay.

- Make sure that the power supply for this appliance is separate from the domestic installation.
- Install a type B, AC/DC-sensitive RCD.

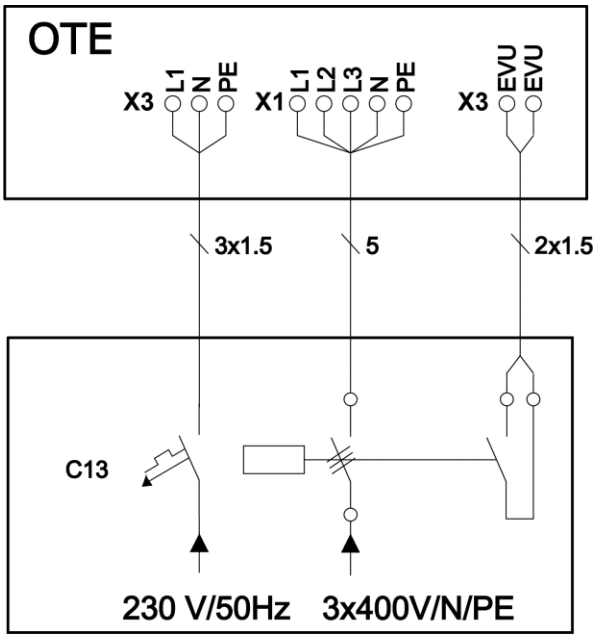


Fig. 23: Electrical connection to the heat pump

Should the minimum clearances of 20cm between sensor wiring and 230V/400V not be able to be adhered to, sheathed wiring is to be used.

OCHNSER provides no guarantee in cases of system damage occurring due to incorrectly sized safety devices!

All three-phase drives (compressor, pumps, fans) must be connected to a CLOCKWISE field of rotation. A short-term operation in the wrong field of rotation will lead to compressor damage. OCHSNER accepts no liability for this.

The leakage current protective measures and the earth connection necessary for the system are to be inspected by a qualified electrician before commissioning. **The compressor motor is not protected by a circuit breaker in the main supply circuit**. The switching equipment used to switch off all poles of the power supplies to the system must conform to the safety requirements of **EN 60204-1, Section 5 and 13.4.5** as well as international **IEC 60947** standards.

When servicing the system, all power supplied to the heat pump are to be switched off and the safety measures according to EN 50110-1 adhered to. Should the safety requirements or precautions not be adhered to, this could lead to serious bodily injuries or death.

4.9.2 Cable cross sections

Conventional wiring is to be used for sensors and actuators. The following guidelines are to be observed:

Position	Minimum cross section
Supply cable 230VAC: Connecting cables are always to be sized according to on-site conditions	1.5 mm²
Control cable 230VAC: (pumps, valve motors)	1.0 mm²
Sensor cables: (outside sensors, etc.) must always be run separately (min. 20 cm) from 230V/400V cables. If separation is not possible, sheathed cables are to be used. Sheathing is to be connected to PE on the heat pump. The maximum cable length must not exceed 50 m.	1.0 mm²
Bus cables: Must always be run as sheathed cabling (e.g.: eBus from OTE control to room remote controls, auxiliary modules or bus connections for cascading, etc.) The sheathing is to be earthed. OCHSNER recommends the following conventional cables: Y(ST)Y) 2x2x0.8 Attention: Always used a twisted core pair!	0.8 mm²
Pulse cables for the stepping motor of an electronic expansion valve are to be sheathed. OCHSNER recommends ÖLFLEX® CLASSIC 100 CY	1.0 mm²

Table 1: Wiring cross sections

4.9.3 Evaporator wiring

The drives and the sensors on the evaporator are supplied from the inside unit. For this, the following cables are necessary from the inside unit to the evaporator.

Motors/Sensors	Cable
230V power supply to fan	3 x 1.5 mm²
Fan alarm	2 x 1.5 mm²
De-icing sensors TQA, TQE	4 x 1 mm²
Electronic expansion valve	4 x 1 mm²
S2 sensor for electronic expansion valve	2 x 1 mm²

Table 2: List of cables for evaporator (values in mm²)

All cables/wiring must be suitable for laying in free air and also UV protected. Should operation in star-delta switching be necessary, the operating currents and especially the settings on the motor protection relay are to be taking into consideration.

An E-rod as function protection is to be supplied via a separate all-pole switching circuit breaker (at best with an additional own leakage current switch).

If an AIR 80 heat pump is installed, the fans of the VHS 80 evaporator must be wired on site (see Chapter 9.15)

4.9.4 Sensor wiring

NOTE
Should the minimum clearances between sensor wiring and 230V/400V given in Table 1 not be able to be adhered to, sheathed wiring is to be used.

OCHSNER accepts no liability for defects on controls which are the result of incorrect laying/wiring (induction/electric emission, etc.).

Do not place line voltage on the sensor terminals! The control will otherwise be destroyed.

De-icing sensor (TQA, TQE) with AIR 80 C13A:
Two de-icing sensors are to be installed in the fin package of the evaporator (see Chapter 9.9). A 4-pole cable is to be run from the inside unit to the evaporator. The sensors are then fixed together with the 4-pole cable in a moisture-protected terminal box (not supplied) (see Chapter 9.15).

De-icing sensor (TQA, TQE) with AIR 80 C22A:
With the AIR 80 C22A, the de-icing sensors are factory-fitted in both evaporators (VHS-M 80). A TQE-de-icing sensor and a TQA-de-icing sensor are needed for the control (see Chapter 11).

External temperature sensor (TA):
The outside sensor (**TA**) is to be mounted at ca. 2.5 m height on the outside wall of the building (north-west side). It is to be ensured that the outside sensor is not directly affected by sun's radiation or by wind, as this will adversely affect the control behaviour.

NOTE
Do not fix the sensor housing to the evaporator housing or in the exhaust air flow.

Buffer sensors (TPO, TPM)
A minimum of 2 immersion sensors are to be installed in the sleeves in the buffer tank. 2 buffer sensors are to be used:

- Top buffer sensor **(TPO)**
- Middle buffer sensor **(TPM)**

The heat pump is switched on with TPO and switched off with TPM.

Hot water sensor TB
The hot water sensor **(TB)** is packed in the heat pump on delivery. The sensor should be placed in the bottom third of the tank, maximum in the middle. OCHSNER hot water tanks are fitted with corresponding sleeves for the installation.

NOTE
In order to measure the temperature correctly, the hot water sensor must reach past the insulation into the interior of the tank.

Mixer sensor TMK
If a mixing circuit is installed in addition to the direct heating circuit, a mixing valve sensor must also be installed. The mixing valve sensor (**TMK**) is supplied as a contact sensor with band clamp and conductive paste. The mixer sensor is to be mounted directly upstream of the mixing circuit pump onto (metallic) pipework material with good thermal conductivity.

4.9.5 Pumps, drives 230VAC

Pumps, (heating circuit pumps, hot water charge pumps) as well as drives (mixing valves, etc.) are connected directly to the control.

A test-run may only be undertaken on a fully-prepared system that is ready for commissioning! (Hydraulics connected, clockwise rotary field ensured)

4.10 Smart-Grid

Special instructions for the Smart-Grid function are available on request.

4.11 Utility signal contact

In the case of tariff switching (interrupted power supply) the heat pump will be temporarily switched off by the utility.

ATTENTION!
230VAC control voltage is present on the utility contact.

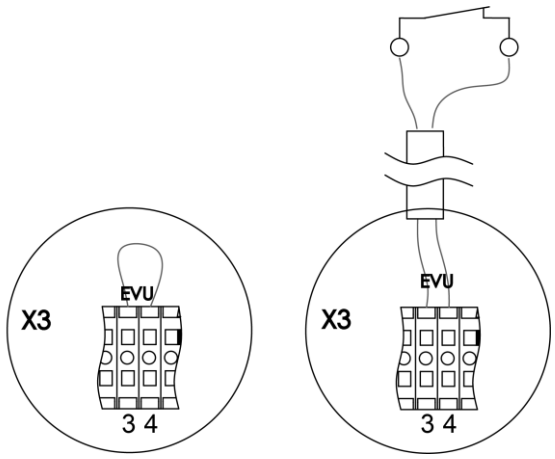


Fig. 24: Utility signal contact

Remove the bridge on terminal X3 and connect the cable to the utility contact. If the EVU contact is interrupted, the compressor and also, if applicable; the auxiliary heater switch off.

4.12 Tariff without interruption

In the case of tariff switching without interrupted power supply the heat pump will be temporarily switched off by the utility. The control input EVU on the inside unit is to be used for this. (Terminal block X3) To activate the function, remove the bridge and connect the cable.

4.13 Switching off via tariff relay:

For switching by means of a tariff relay (sealed by the Utility on site) the power supply to the heat pump compressor is switched off. In this case, the EVU input is to be switched without fail via an auxiliary contact on the tariff relay (NC contact).

4.14 Off-peak tariff

If the tariff switching takes place in the meter (Off-peak Tariff), the EVU contact must not be activated.

5 Commissioning

5.1 Before you switch on

The heat pump has no separate main switch. In emergencies, the system **must** be switched off by means of the specified circuit breakers. The circuit breakers **must** be so reachable as to ensure a switching off at any time.

ATTENTION - danger to life and limb!
The initial switching on of the electrical systems may only take place in the presence of a suitably trained and certified electrician.

Switch the power supply to the system ON (or OFF) only when:

- Nobody can be endangered
- All heat pump installation work is complete
- All wiring is completely connected
- The voltages correspond to the documentation
- The hydraulic system is filled with water and
- the system has been completely bled

The power supply to the compressor may not be switched on before the refrigerant circuit and the hydraulics have been filled with the appropriate medium.

Once all the above conditions have been met, the control voltage 230VAC can be switched on in order to check the individual functions.

Check carefully all sensors and their values for plausibility and all hydraulic outlets for correct function.

Operating the heat pump with no, or too little refrigerant leads to damage to the appliance. Operating the circulation pumps with no water in the system leads to destruction of the pump.

Commissioning must be carried out by OCHSNER Customer Service or a service partner authorised by OCHSNER. The OCHSNER commissioning instructions are to be observed. Operating the system without a correct commissioning will lead to a forfeiture of the guarantee and warranty rights.

5.2 Check list for commissioning

Adhere to the following sequence:

1) Check heating system circuit: System-pressure, expansion vessel function, bleeding valves, quantity adjustment. The system installer is to ensure that, at the start of commissioning, the system temperature/ buffer temperature does not exceed 30°C.
2) Check the flow rates! The flow rate is measured by means of the flow rate sensors and can be read off on the control display (see Chapter 9.14)
3) Check whether all non-return valves are open
4) Check power supplies and circuit breakers
5) Check the refrigerant circuit
6) Check the electrical connections to the system components, including all required safety equipment, according to the wiring diagram.
7) Switch on 3-phase supply to the heat pump.
8) Control 3-phase supply and right-hand rotary field
9) Switch on control voltage supply
10) Configure the system by means of the commissioning assistant
11) Store the sensor configuration
12) Relay test on the output terminals
13) Adjust the system according to user requirements and document these
14) Hand over system to operator

5.3 Required on-site personnel:

Electrician, installer and future system supervisor **must** be present for the system orientation during commissioning.

5.4 For the system installer

The OCHSNER Customer Service engineer/ Customer Service partner will execute the user-specific settings according to the specifications in the system data sheet. Should the system installer not be present during commissioning, or if there is no fully completed system data sheet present, the system will be commissioned using the control's factory settings.

1) OCHSNER accepts no liability for possible malfunctioning (heating curve too low, bivalent point too high, etc.). Any claims resulting from this will be invoiced to the system installer.
2) In order to run the system economically, it is absolutely necessary that the system be balanced hydraulically and that the control settings are coordinated to the system requirements.
3) Other necessary work performed, such as bleeding the system, electrical wiring, additional instruction etc., that do not fall within the realm of the OCHSNER firm's duties will be invoiced separately

5.5 Commissioning OCHSNER

Commissioning requests are to be made to OCHSNER Customer Service. A date for commissioning can only be made when the completed and signed commissioning form is handed in.

Please make appointments for fixed commissioning dates at least 2 weeks in advance.
To undergo the commissioning process, the following work should be complete:

- The heating and hot-water systems must be completely installed, filled, bled, and hydraulically adjusted.
- The electric connection from the main circuit 3x400V/50Hz and control voltage 230V/50Hz and other electrical installations on the building site must be completed. Confirmation of proper field rotation, no provisional modifications!

Work that needs to be carried out by OCHSNER:

- Laying and connecting the refrigerant pipework
- Seal of the refrigerator pipework
- Evacuation of the refrigerant pipework
- Insulating the refrigerant pipework (only in the internal area of the system)
- Filling the system with the correct refrigerant quantity
- Calibrating the safety equipment
- Controlling the switching sequence
- Preparation of a commissioning report
- Basic control settings (according to system installer)
- Introduction and explanation of the system to the operator (assuming present at commissioning, otherwise by system partner or, at extra charge, at another date).

6 System operation

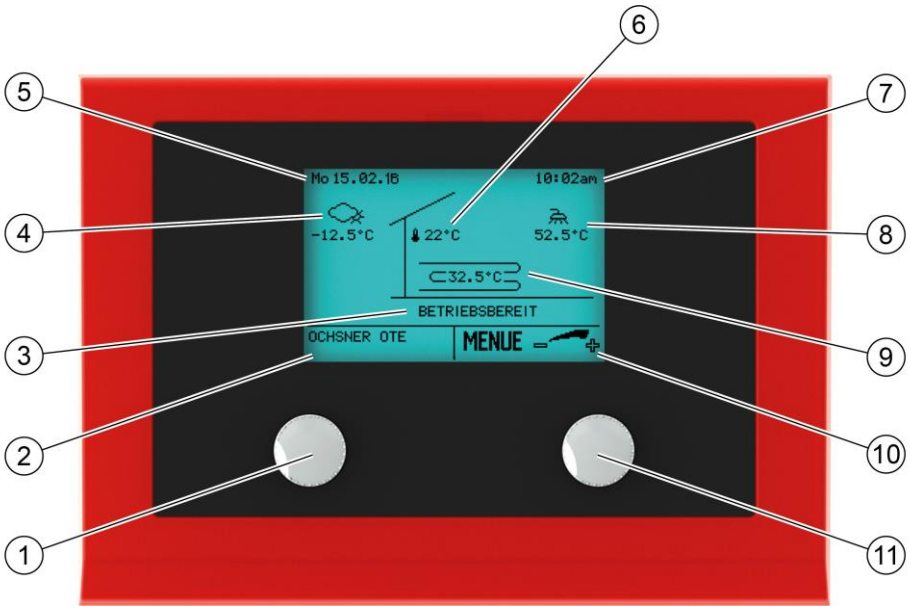


Fig. 25: Basic control panel

1) Button A
   Press: One step back (ESC)
2) Button A function or malfunction display
3) Operational condition
4) Outside temperature
5) Date
6) Room temperature
7) Time of day
8) Hot water temperature
9) System temperature
10) Button B function
11) Button B
    Press: Confirm (ENTER)
    Turn: Menu selection or setting change

The heat pump operation takes place by means of the basic operating panel. This is easily accessible in a plastic housing mounted on the heat pump. The user has 2 knobs and an illuminated display at his disposal.

By pressing the right-hand button B, the main menu is called up, in which the heating system is shown. Each heat user (heating circuits, hot-water circuits) and each heat generator (heat pump, electric auxiliary heater, furnace, etc.) has its own menu and sub-menu.

Return one step back (ESC) by pressing button A.

A room terminal with Touch Display is also available if desired. Further instructions for the control operation can be found in the current OTE operation instructions which are supplied with each heat pump.

The heat pump has no separate main switch. In emergencies, the system **must** be switched off by means of the specified circuit breakers. The circuit breakers **must** be so reachable as to ensure a switching off at any time.

6.1 Safety functions

Following safety features are implemented from both Hard- and Software:

- Electronic control and safety devices for the compressor
- High pressure pressostat
- **Delayed start** in order to avoid the compressor pulsing
- Frost protection function
- Start-up- and run-down times of the fans

6.2 Running costs

NOTE
In order to achieve an optimum heat pump operation, the lowest possible heating system flow temperatures are to be aimed at. An **increase of the room temperature by 1°C** means a 5-7% increase in energy consumption.

During the first heating season, higher running costs can generally be expected, depending on the residual moisture in the building - up to 50%. An active screed floor drying out program additionally increases the running costs.

6.2.1 Flow temperatures

In order to achieve an optimum heat pump operation, the lowest possible heating system flow temperatures (and hot water temperatures) are to be aimed at. The max. system temperature is to be limited to 60°C for the AIR 80 C13A (OLWP 65 plus) and AIR 80 C22A.

6.2.2 Ventilation

Intermittent intensive ventilation according to own requirements should be carried out, especially during the heating period. Intermittent intensive ventilation is much more energy-efficient and thus more economical. Continuous ventilation should be avoided on principle.

6.2.3 Set-back program heating

It is **not recommended** from an energy-efficiency point of view to have a **set-back** of the heat system flow temperature by means of a timer program when using a low-temperature heating system (e.g. underfloor heating), especially with air/water heat pumps, as the system is very slow to react and it can be that, at the end of the set back phase, the extra system performance needed will cause the 2nd heat generator (furnace, E-rod) to switch in. This can cause undesired extra energy loading and thus higher operating costs.

7 Service work

The heat pump operates essentially maintenance-free. It must, however, be ensured that:

- the evaporator is free of snow
- the evaporator fan is free of leaves, twigs or other foreign bodies
- the condensation can drain off
- the heating circuit contains enough water

Interrupt the electricity supply to the inside and outside units of your heat pump for service work.

NOTE

Ensure that your heat pump's refrigerant circuit is tested for sealing (according to EU decree No. 517/2014).

- Make sure the refrigerant circuits brazing points are accessible all year round.
- Document the results of the seal testing in the system's test protocol.

We recommend an inspection and, if necessary servicing the heat pump once per year. We would like to point out that statutory provisions call for a regular inspection of the heating system by the system supervisor.

The refrigerants used in OCHSNER heat pump are non-flammable, non-toxic and ozone neutral. Heat pumps are, however, refrigeration appliances and thus are subject to the F-gasses regulation (EG-517/2014). OCHSNER service department will be happy to help you when carrying out servicing and repair work, especially ac-cording to the F-Gas regulation. Further information can be found at www.ochsner.com.

We recommend that the water pressure in the heating system be monitored by the system operator and adjusted if the pressure is too high or too low.

We recommend that the diaphragm pressure vessel's primary pressure be set according to the pressure head of the system.

We recommend that the flow rates in the heating system, as if necessary in the heat source system be monitored with the flow rate meters specified by OCHSNER.

If exceptional refilling work is to be carried out (e.g. reconstruction work or after burst piping), an up-to-date water test report is to be made and, if necessary, using this report, to carry out a refilling of the heating system.

7.1 Cleaning and care

Inside unit

The inside unit is to be cleaned using normal household cleaning agents (water, weak soap solutions).

Do not use aggressive cleansers!

Outside unit

Rough tooling may not be used to clean dirt that may accumulate between the fins of the evaporator. The fin package can be cleaned with compressed air (max. 8 bar) against the normal air flow direction. We recommend calling the customer service or the system partner if the unit is very dirty.

Ensure that no ice is formed, especially around walking surfaces and entrances around the outdoor unit.

7.2 Customer Service

Should defects occur in your appliance, in spite of the high-quality components used and the diligence shown during production, please in-form the customer service with **information on the serial number and the heat pump model** under the following telephone numbers:

Customer Service Austria:
Tel.: +43 (0) 504245 – 499
E-Mail: kundendienst@ochsner.at

Customer Service Germany:
Tel.: +49 (0) 69 256694 - 495
E-Mail: kundendienst@ochsner.de

Customer Service Switzerland:
Tel.: +41 (0) 58 32041 - 99
E-Mail: kundendienst@ochsner.com

The serial number and the heat pump model are to be found on the rating label. The rating label is on the outer rear panel of the heat pump.

7.3 Service Contract

OCHSNER offers a wide range of service contracts. Further information can be found at www.ochsner.com.

The advantages of a service contract

- Through the annual inspection, the statutory regulations of the F-Gas directive are fulfilled.
- Correctly carried out servicing not only saves energy, it also protects the environment.
- Furthermore, the correct care of the heating system is a necessary prerequisite in order to safeguard the operational life of the heat pump for many years.
- This gives the system user increased protection against malfunctioning

Further information to customer service and to the scope of the service contracts can be found at www.ochsner.com.

7.4 Trouble shooting

NOTE
Only instructed persons are allowed to correct failures and to change the settings. The controller basic adjustment takes place in the context of commissioning via the specialist! The operator/system engineer is responsible for possible corrections and program settings!

Further error reports can be found in the control operating instructions.

7.4.1 Error report table

Code	No. Logfile	Error description	Possible cause/ remedy
115		Er 01: Hot water sensor defect	Replace sensor
116		Er 10: Outside sensor defect	Replace sensor
117		Er 14: Mixer sensor defect	Replace sensor
124		Er 20: TWR sensor defect	Replace sensor
120		Er 22: Switch-off sensors TWR/TPM defect	Replace sensor
136		Er 23: TPV sensor defect	Replace sensor
118		Er 24: Buffer sensor defect	Replace sensor
114		Er 29: TWV sensor defect	Replace sensor
11	11	Er 30: Phase monitor	Monitoring via start-up current limiter KS01 (display of type of alarm via blink sequence of the red LED)
134		Er 32: THG sensor defect	Replace sensor
138		Er 33: High pressure sensor defect	Check sensor
137		Er 34: Low pressure sensor defect	Check sensor
5	5	Er 36: High pressure	Insufficient heat distribution, circulation pump defect, valve closed / air in the system, check the hydraulics
18	18	Er 37: Low pressure	Insufficient heat source, insufficient refrigerant, expansion valve, check the refrigerant circuit (OCHSNER)
16	16	Er 38: Hot gas	Expansion vessel, insufficient refrigerant, set value too high, check the refrigerant circuit (OCHSNER)
10	10	Er 39: Motor protection compressor	Overload, heat source temperature too high, Check: Compressor in cooling circuit (OCHSNER)
8	8	Er 42: Frost protection in heat use system	Insufficient heat distribution, circulation pump defect, valve closed / air in the system, check the buffer pump or the hydraulics
		Er 46: TSG sensor defect	Replace sensor
9	9	Er 47: De-icing malfunction	Insufficient de-icing energy, evaporator/sensor, check the refrigerant circuit (OCHSNER)
129	129	Er 48: TQE sensor defect	Replace sensor
130	130	Er 49: TQA sensor defect	Replace sensor
12	12	Er 50: Expansion valve	Check the function of the EEV (OCHSNER)
3	3	Er 58: Motor protection heat source	Overload, check motor protection, wiring to motor/fan, check TK
143	143	Er 59: Sensor breakage TWV + TWR	Check sensor
144	144	Er 60: Sensor breakage TQA + TQE	Check sensor
42	42	Er 71: Bus malfunction, room remote control	Check eBus wiring
30	30	Er 80: Address WEZ 1	Check addressing
31	31	Er 81: Address WEZ 2	Check addressing
32	32	Er 82: Address WEZ 3	Check addressing
33	33	Er 83: Address WEZ 4	Check addressing
34	34	Er 84: Address WEZ 5	Check addressing
35	35	Er 85: Address WEZ 6	Check addressing
36	36	Er 86: Address WEZ 7	Check addressing
37	37	Er 87: Address WEZ 8	Check addressing
20	20	Er 91: Flow rate in heat use system	Water pressure too low, circulation pump defect, valve closed/air in system, check hydraulics
21	21	Er 90: Overheating	Check the refrigerant circuit (OCHSNER)
98	98	Er 98: Electrical heating rod is only heat generator!	Check setting of heat pump operation selection

Table 3: Error report table

8 Decommissioning and disposal

8.1 Disposal of transport packaging

The heat pump's transport packaging consists of recyclable raw materials. Packaging should thus be sorted and recycled. The disposal of the transport packaging is undertaken by the specialist company that installed the equipment.

8.2 Decommissioning

All live connections are to be disconnected from the power supply by a specialist before decommissioning.

Appliances which contain refrigerant and/or brine fluid may only be decommissioned by an authorised specialist firm (cooling/air-conditioning/heating). The refrigerant resp. brine fluid is to be evacuated/removed correctly by the specialist firm and recycled rsp. disposed of.

8.3 Disposal of the appliance

The disposal of the decommissioned heat pump should be carried out according to regional environmental regulations and standards at regional waste collection points.

The heat pump may not be disposed of in household waste!

9 Technical data

9.1 Performance data AIR 80 C13A (OLWP 65 plus)

APPLIANCE DATA:		
Dimensions HxWxD	[mm]	1900x680x680
Hydraulic connections	[inch]	2“
Weight	[kg]	305
Housing colour		tiger white 29/11289 grey RAL 7016

PERFORMANCE DATA HEATING OPERATION:		
Norm point A10/W35		
Heating capacity	kW	83.00
Total power consumption / Operating current	[kW]/[A]	18.90 / 34.10
COP EN14511/EN255		4.40 / 4.70
Operating point A7/W35		
Heating capacity	kW	75.60
Total power consumption / Operating current	[kW]/[A]	18.90 / 33.30
COP EN14511/EN255		4.00 / 4.20
Norm point A2/W35		
Heating capacity	kW	65.10
Total power consumption / Operating current	[kW]/[A]	18.10 / 32.00
COP EN14511/EN255		3.60 / 4.00
Norm point A-7/W35		
Heating capacity	kW	47.30
Total power consumption / Operating current	[kW]/[A]	16.30 / 30.10
COP EN14511/EN255		2.90 / 3.10
Operating point A-10/W35		
Heating capacity	kW	41.40
Total power consumption / Operating current	[kW]/[A]	15.90 / 29.00
COP EN14511/EN255		2.60 / 2.80
Operating point A2/W50		
Heating capacity	kW	57.30
Total power consumption / Operating current	[kW]/[A]	20.90 / 38.20
COP EN14511/EN255		2.70 / 2.90
Operating point A2/W60		
Heating capacity	kW	54.20
Total power consumption / Operating current	[kW]/[A]	23.60 / 43.80
COP EN14511/EN255		2.30 / 2.30

PERFORMANCE DATA COOLING OPERATION:		
Operating point A30/W18		
Cooling capacity	kW	66.80
Total power consumption / Operating current	[kW]/[A]	20.90 / 33.60
EER 3.3		3.20
Operating point A30/W7		
Cooling capacity	kW	61.70
Total power consumption / Operating current	[kW]/[A]	20.60 / 33.50
EER 3.3		3.00

TECHNICAL DATA:		
Phases/Nominal Voltage/Frequency	[~]/[V]/[Hz]	3/400/50
cos φ		0.81
Fuse Protection (Break Characteristic "C")	[A]	80
Max. operating current	[A]	73.3
Max. start-up current / max. with soft-start	[A]	248.00 / 124.00
Sound power level/Sound pressure level (at 1m)	[dBA]	60.00 / 52.00

CONDENSER:		
Construction		Plate heat exchanger
Material		Stainless steel 1.4301
Quantity	[piece]	1
Max. operating pressure refrigerant	[bar]	45
Max. operating pressure heat carrier	[bar]	10
Heat carrier temperature differential	[K]	5
Range of application	[°C]	65
Heat carrier		Water
testing pressure	[bar]	59
Heat carrier flow volume	[m³/h]	13.00
Internal pressure differential	[mbar]	312
Flow meter VMT factory fitted	external	VMT 50 x 2" IT kvs 40
Circulation pump heat system	external	Stratos 65/1-12
Residual head I Heat system external incl. VMT	[mbar]	618

REFRIGERANT CIRCUIT:		
Number of refrigerant circuits	[piece]	1
Refrigerant		R410A
De-icing technology		Hot gas/reversible system
Refrigerant quantity	[kg]	28.5

COMPRESSOR:		
Construction		Fully hermetic / Scroll
Quantity	[piece]	1
Power stages		1
Rotational speed	[RpM]	2900
Voltage/Frequency	[V]/[Hz]	400 / 50

FAN:		
Construction		Axial EC
Quantity	[piece]	3
Voltage/Frequency	[V]/[Hz]	230 / 50
Power consumption [kW]	[W]	1 x 1800
Max. operating current	[A]	1 x 9.30

EVAPORATOR:		
Type		VHS 80
Dimensions HxWxD	[mm]	1149 x 2965 x 1288
Construction		Finned tube
Quantity	[piece]	1
Mass	[kg]	348
Material finned package		Copper/Aluminium
Material housing		Stainless steel / powder coated grey RAL 7016
Max. operating pressure refrigerant	[bar]	45
Relative humidity	[%]	80
Heat carrier temperature differential	[K]	5.00
Air flow	[m³/h]	26000
Range of use min./max.	[°C]	-22 / +40
Sound pressure level/Sound power level	[dBA]	50.0 / 78.0

Table 4: Performance data AIR 80 C13A All performance data to EN 14511 - ΔT 5K (EN255 - ΔT 10K); Performance data with a construction tolerance of ± 10%

9.2 Performance data AIR 80 C22A

APPLIANCE DATA:		
Dimensions HxWxD	[mm]	1900x680x680
Hydraulic connections	[inch]	2“
Weight	[kg]	305
Housing colour		tiger white 29/11289 grey RAL 7016

PERFORMANCE DATA HEATING OPERATION:		
Norm point A10/W35		
Heating capacity	kW	83.00
Total power consumption / Operating current	[kW]/[A]	18.90 / 34.10
COP EN14511/EN255		4.40 / 4.70
Operating point A7/W35		
Heating capacity	kW	75.60
Total power consumption / Operating current	[kW]/[A]	18.90 / 33.30
COP EN14511/EN255		4.00 / 4.20
Norm point A2/W35		
Heating capacity	kW	65.10
Total power consumption / Operating current	[kW]/[A]	18.10 / 32.00
COP EN14511/EN255		3.60 / 4.00
Norm point A-7/W35		
Heating capacity	kW	47.30
Total power consumption / Operating current	[kW]/[A]	16.30 / 30.10
COP EN14511/EN255		2.90 / 3.10
Operating point A-10/W35		
Heating capacity	kW	41.40
Total power consumption / Operating current	[kW]/[A]	15.90 / 29.00
COP EN14511/EN255		2.60 / 2.80
Operating point A2/W50		
Heating capacity	kW	57.30
Total power consumption / Operating current	[kW]/[A]	20.90 / 38.20
COP EN14511/EN255		2.70 / 2.90
Operating point A2/W60		
Heating capacity	kW	54.20
Total power consumption / Operating current	[kW]/[A]	23.60 / 43.80
COP EN14511/EN255		2.30 / 2.30

PERFORMANCE DATA COOLING OPERATION:		
Operating point A30/W18		
Cooling capacity	kW	66.80
Total power consumption / Operating current	[kW]/[A]	20.90 / 33.60
EER 3.3		3.20
Operating point A30/W7		
Cooling capacity	kW	61.70
Total power consumption / Operating current	[kW]/[A]	20.60 / 33.50
EER 3.3		3.00

TECHNICAL DATA:		
Phases/Nominal Voltage/Frequency	[~]/[V]/[Hz]	3/400/50
cos φ		0.81
Fuse Protection (Break Characteristic "C")	[A]	80
Max. operating current	[A]	69.6
Max. start-up current / max. with soft-start	[A]	248.00 / 124.00
Sound power level/Sound pressure level (at 1m)	[dBA]	60.00 / 52.00

CONDENSER:		
Construction		Plate heat exchanger
Material		Stainless steel 1.4301
Quantity	[piece]	1
Max. operating pressure refrigerant	[bar]	45
Max. operating pressure heat carrier	[bar]	10
Heat carrier temperature differential	[K]	5
Range of application	[°C]	65
Heat carrier		Water
testing pressure	[bar]	59
Heat carrier flow volume	[m³/h]	13.00
Internal pressure differential	[mbar]	312
Flow meter VMT factory fitted	external	VMT 50 x 2" IT kvs 40
Circulation pump heat system	external	Stratos 65/1-12
Residual head I Heat system external incl. VMT	[mbar]	618

REFRIGERANT CIRCUIT:		
Number of refrigerant circuits	[piece]	1
Refrigerant		R410A
De-icing technology		Hot gas/reversible system
Refrigerant quantity	[kg]	28.5

COMPRESSOR:		
Construction		Fully hermetic / Scroll
Quantity	[piece]	1
Power stages		1
Rotational speed	[RpM]	2900
Voltage/Frequency	[V]/[Hz]	400 / 50

FAN:		
Construction		Axial EC
Quantity	[piece]	2x2
Voltage/Frequency	[V]/[Hz]	230 / 50
Power consumption [kW]	[W]	2 x 430
Max. operating current	[A]	2 x 2.80

EVAPORATOR:		
Type		VHS-M 80 comprising 2 pieces.
Dimensions HxWxD	[mm]	2x1080 x 2220 x 960
Construction		Finned tube
Quantity	[piece]	2
Mass	[kg]	2X180
Material finned package		Copper/Aluminium
Material housing		Stainless steel / powder coated grey RAL 7016
Max. operating pressure refrigerant	[bar]	45
Relative humidity	[%]	80
Heat carrier temperature differential	[K]	5.00
Air flow	[m³/h]	19600
Range of use min./max.	[°C]	-22 / +40
Sound pressure level/Sound power level	[dBA]	36.0 / 64.0

Table 5: Performance data AIR 80 C22A All performance data to EN 14511 - ΔT 5K (EN255 - ΔT 10K); Performance data with a construction tolerance of ± 10%

9.3 Energy consumption data

OCHSNER **AIR 80 C13A**			PRODUCT FICHE **ErP**	
LOW-TEMPERATURE			**35 °C**	
A+		**COLDER**	**AVERAGE**	**WARMER**
ηs		133	**140**	167
Energy consumption	[kWh]	37207	**35111**	19247
P rated	[kW]	51	**61**	61
SCOP	[kW]	3,41	**3,58**	4,25
MEDIUM-TEMPERATURE			**55 °C**	
A+		**COLDER**	**AVERAGE**	**WARMER**
ηs		106	**113**	136
Energy consumption	[kWh]	62205	**48818**	21450
P rated	[kW]	69	**68**	56
SCOP	[kW]	2,73	**2,93**	3,47
		indoors		outdoors
Sound power level	[dBA]	60,0		78,0
Class of temperature control with room remote control	**VII**	Contribution [%]		3,5
Class of temperature control without room remote control	**III**	Contribution [%]		1,5

Table 6: ErP-Product data AIR 80 C13A

OCHSNER **AIR 80 C22A**			PRODUCT FICHE **ErP**	
LOW-TEMPERATURE			**35 °C**	
A+		**COLDER**	**AVERAGE**	**WARMER**
ηs		133	**140**	167
Energy consumption	[kWh]	37207	**35111**	19247
P rated	[kW]	51	**61**	61
SCOP	[kW]	3,41	**3,58**	4,25
MEDIUM-TEMPERATURE			**55 °C**	
A+		**COLDER**	**AVERAGE**	**WARMER**
ηs		106	**113**	136
Energy consumption	[kWh]	62205	**48818**	21450
P rated	[kW]	69	**68**	56
SCOP	[kW]	2,73	**2,93**	3,47
		indoors		outdoors
Sound power level	[dBA]	60,0		64,0
Class of temperature control with room remote control	**VII**	Contribution [%]		3,5
Class of temperature control without room remote control	**III**	Contribution [%]		1,5

Table 7: ErP-Product data AIR 80 C22A

9.4 Heat pump dimensions

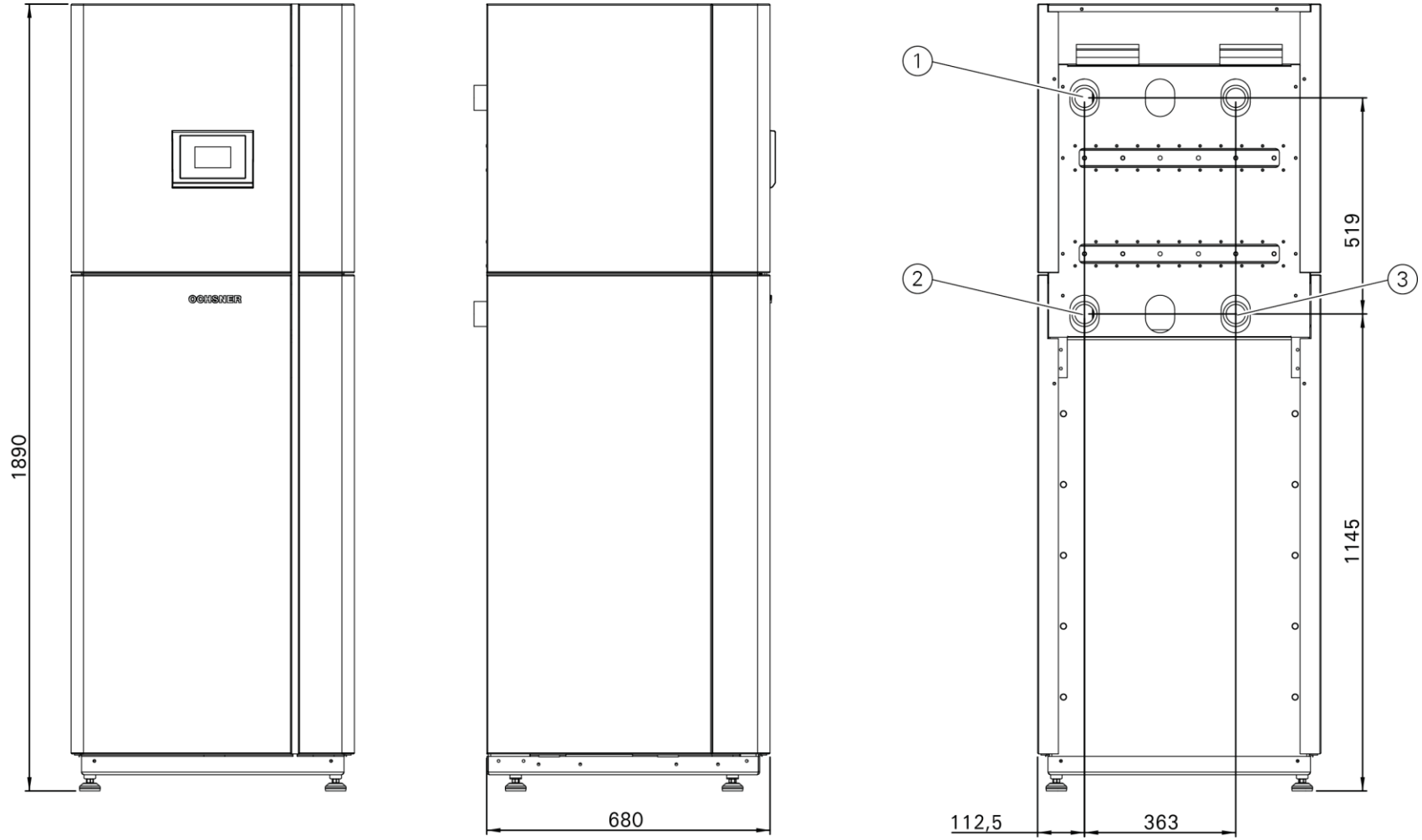


Fig. 26: Inside unit dimensions: Heat pump AIR 80 C13A and AIR 80 C22A (in mm)

1) Heat use system: Flow 2" (Heating/cooling)
2) Heat use system: Return 2" (Heating/cooling)
3) Heat source system Input and output

9.5 Dimensions of evaporator VHS 80

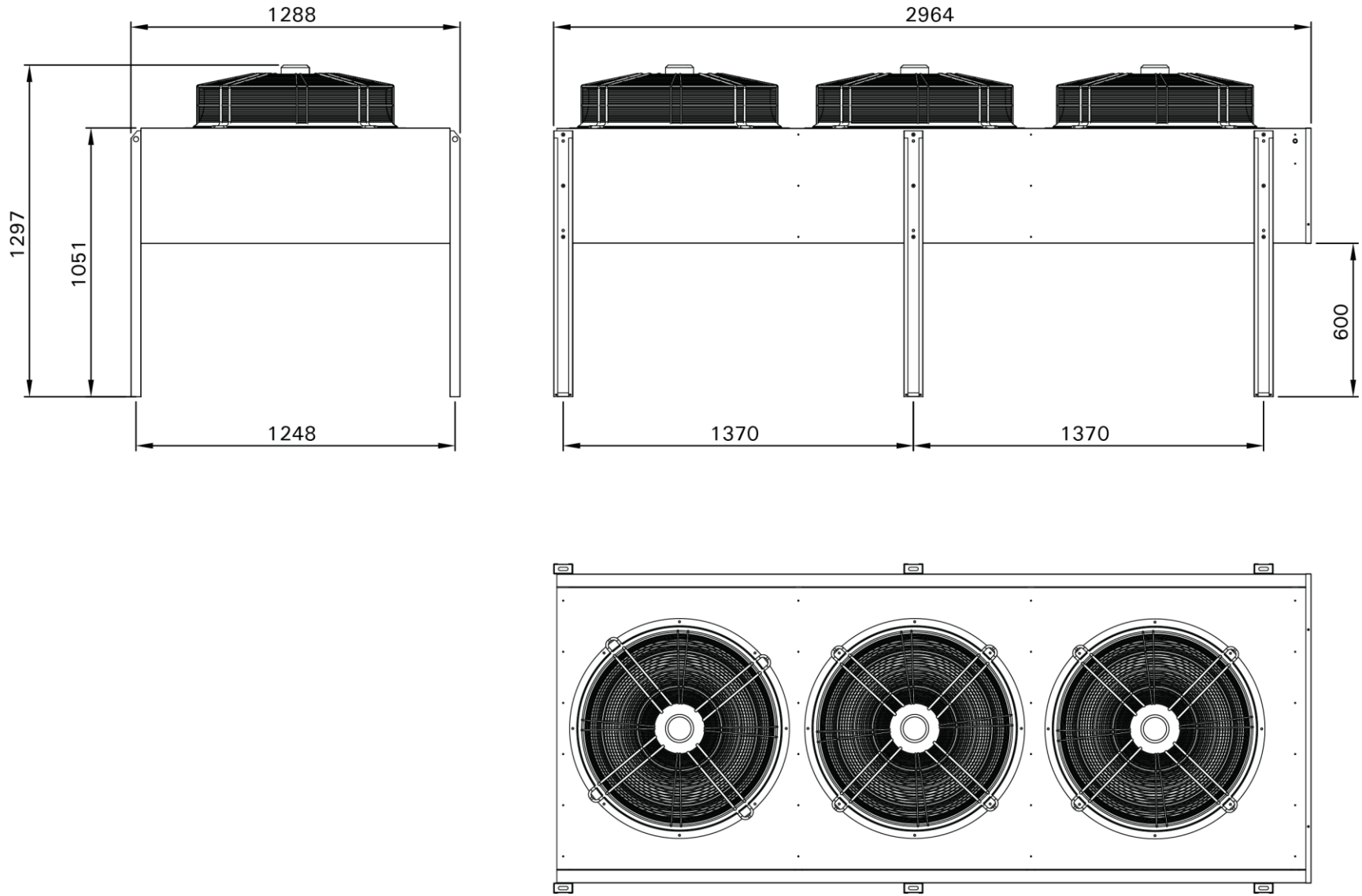


Fig. 27: Evaporator dimensions: Heat pump VHS 80 with AIR 80 C13A (in mm)

9.6 Dimensions of evaporator VHS-M 80

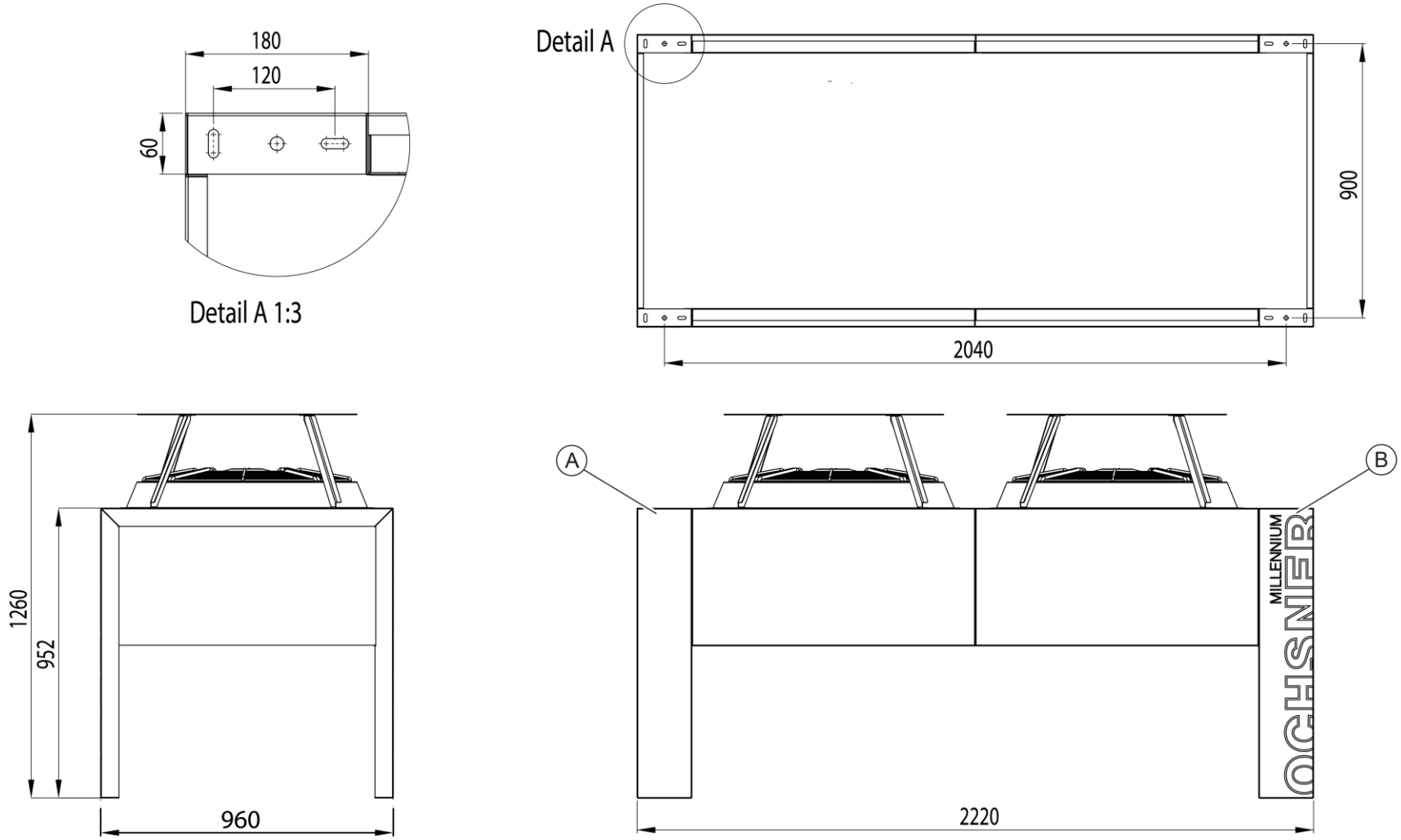


Fig. 28: Evaporator dimensions: Heat pump VHS-M 80 with AIR 80 C22A

Roof for Split-evaporator available as option (values in mm)
A) Connecting side (Liquid/suction gas pipework, electrical connection)
B) Expansion valve position

9.7 Foundation for VHS 80 (AIR 80 C13A)

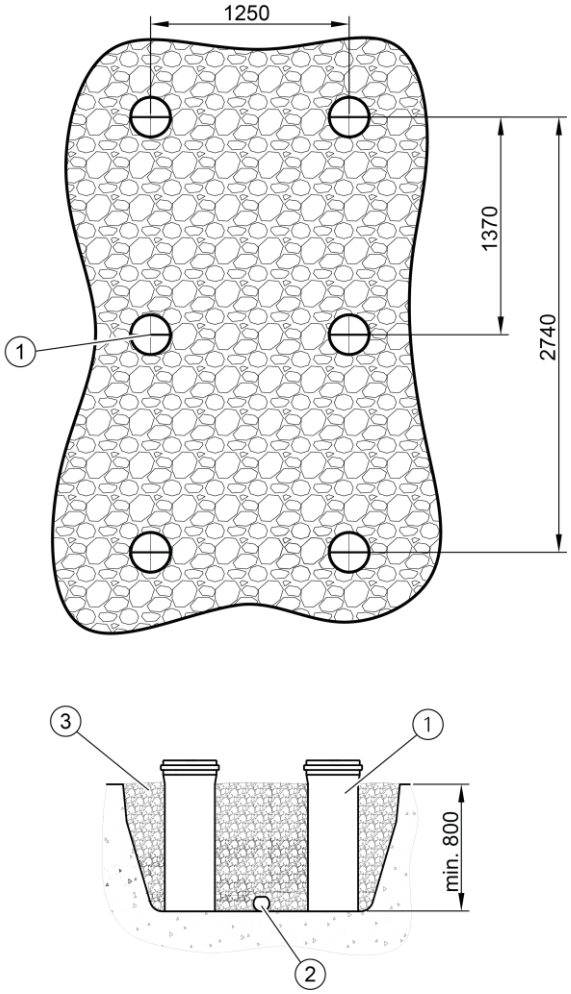


Fig. 29: Point foundation for VHS 80 evaporator (in mm)

1) Point foundation using drainage pipes (KG-pipes)
2) Gravel
3) Drainage pipe

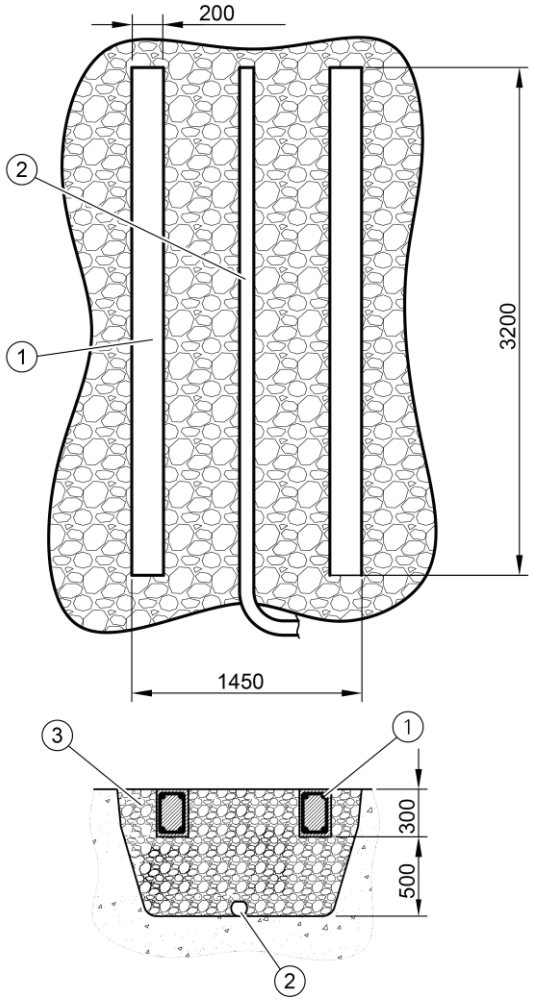


Fig. 30: Strip foundation for VHS 80 evaporator (in mm)

1) Strip foundation
2) Gravel
3) Drainage pipe

9.8 Foundation for VHS-M 80 (AIR 80 C22A)

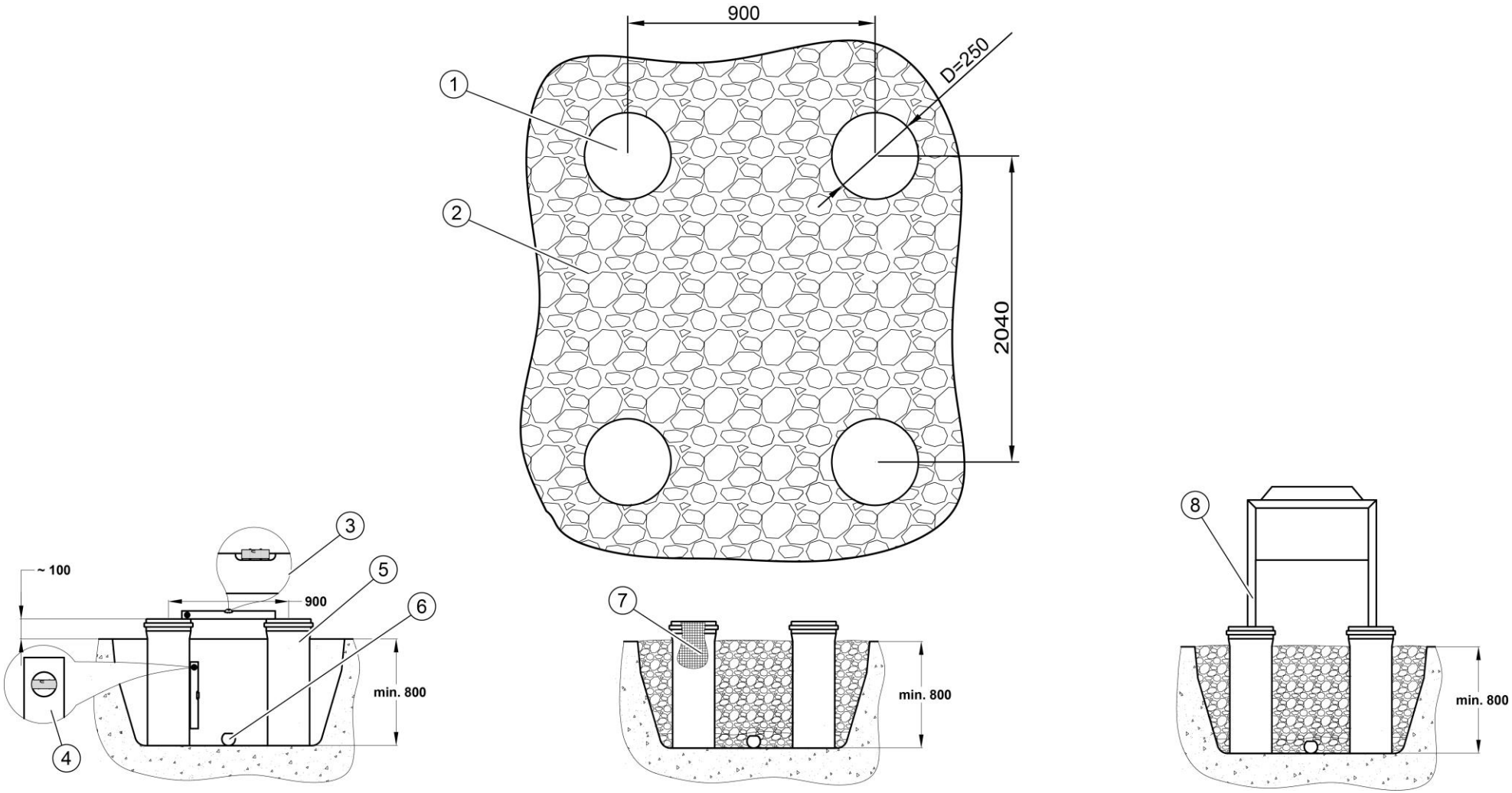


Fig. 31: Point foundation for VHS-M 80 evaporator (in mm)

1) Point foundation
2) gravel
3) Draw up drainage pipe (KG-pipe) system plans
4) Set KG pipes vertical
5) KG pipes (D=315mm)
6) Drainage pipe below frost level
7) Fill KG pipes with concrete
8) Mount evaporator on foundation

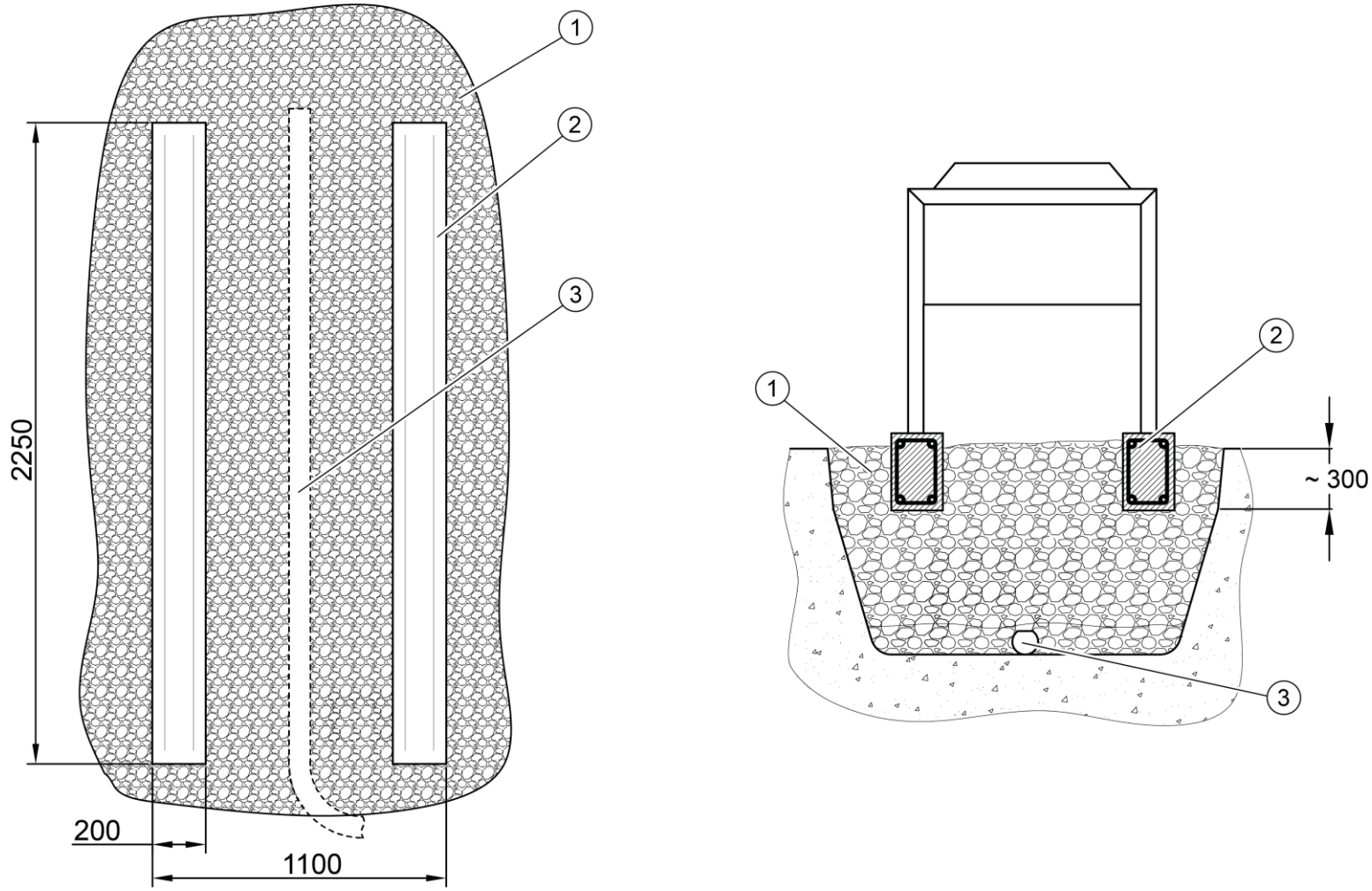


Fig. 32: Strip foundation for VHS-M 80 evaporator (in mm)

1) Gravel
2) Strip foundation
3) Drainage pipe below frost depth

9.9 Fitting the de-icing sensors to the VHS 80

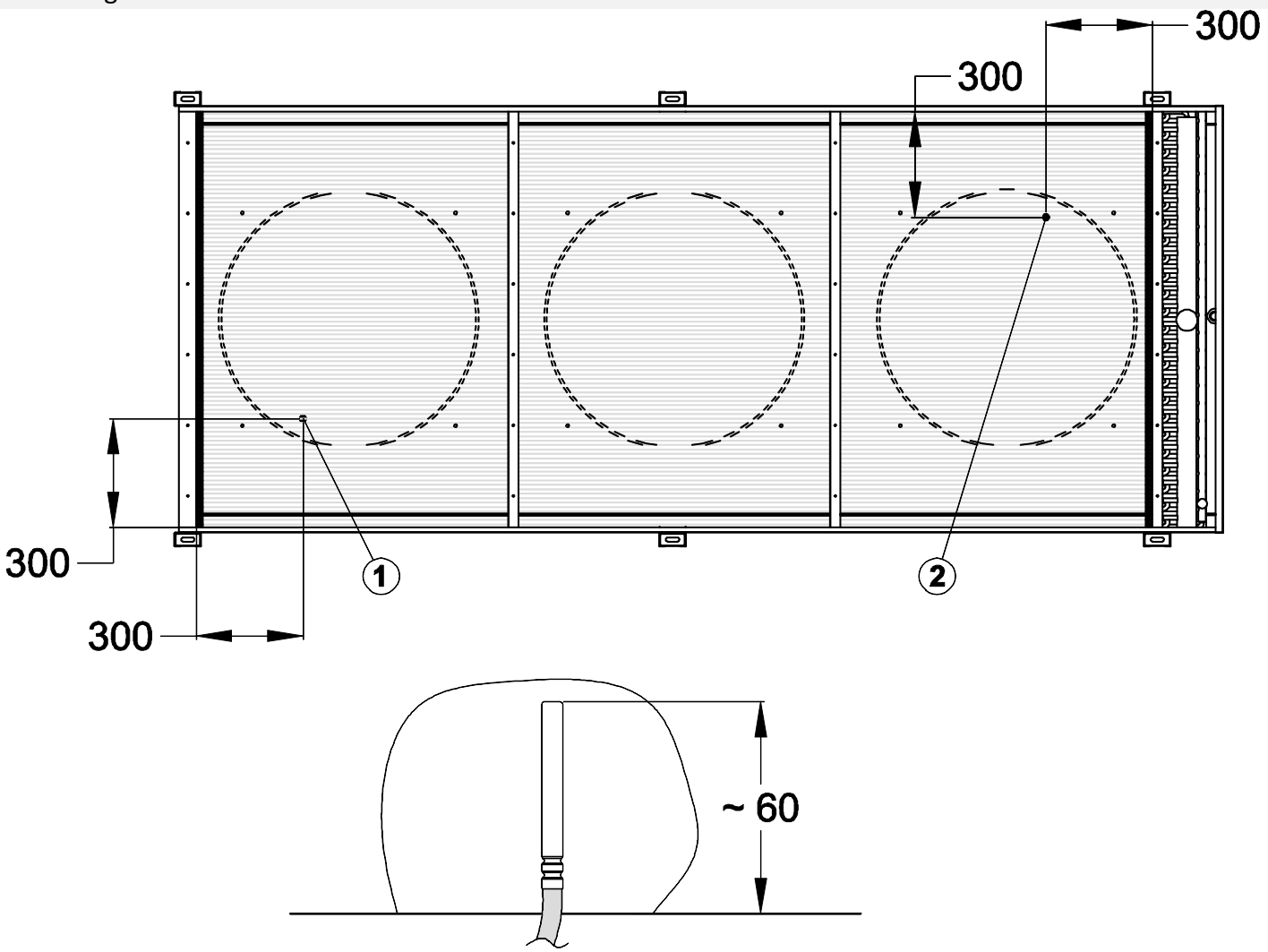


Fig. 33: Fitting de-icing sensors TQE and TQA

The de-icing sensors (1) TQE and (2) TQA are fitted to the underside of the evaporator between the fins. The insertion depth is ca. 60 mm.

9.10 Performance curves

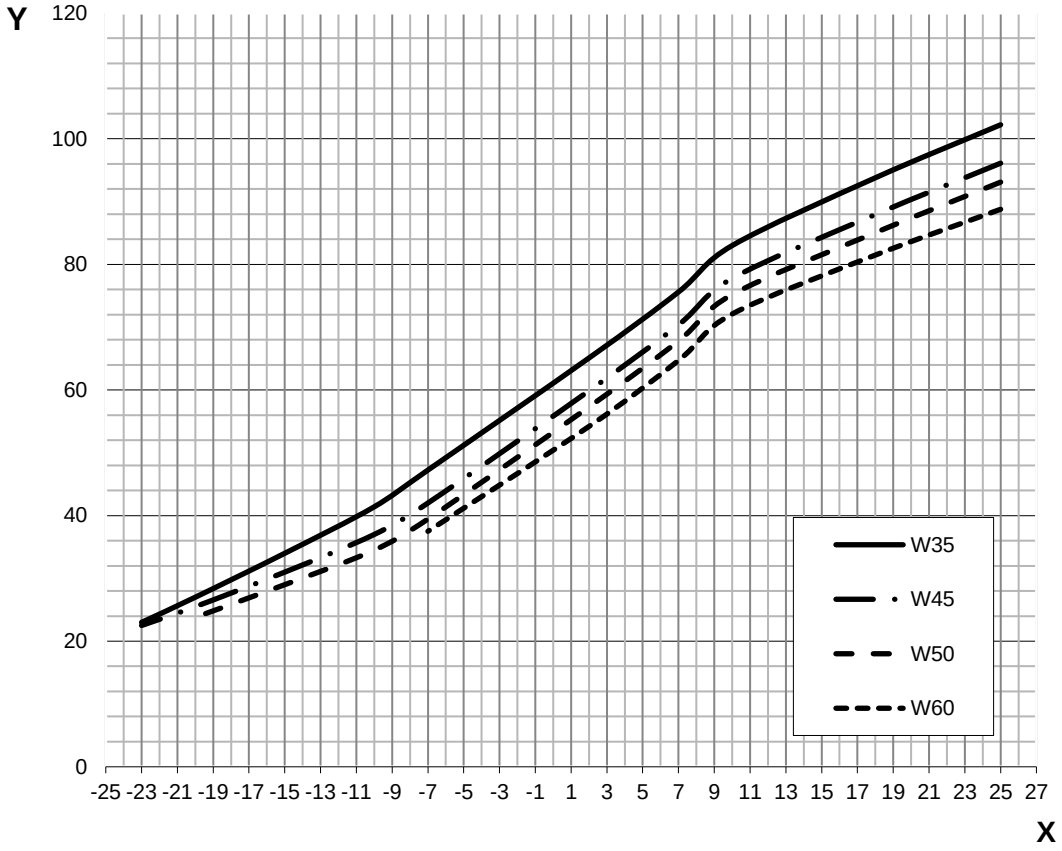


Fig. 34: Heating rating AIR 80 C13A and AIR 80 C22A

X) Air temperature [°C]
Y) Heating rating* [kW]
*Component construction tolerance, performance tolerance ±10%

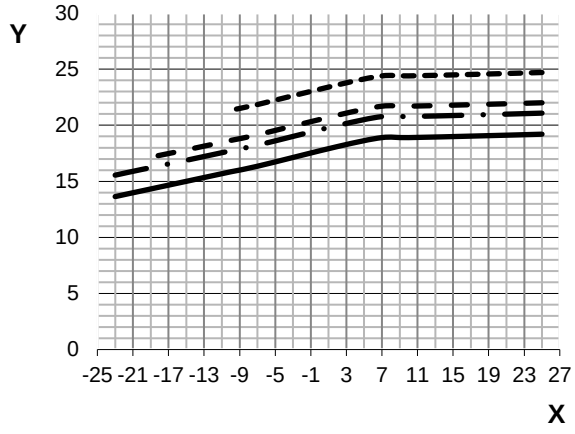


Fig. 35: Heating rating AIR 80 C13A and AIR 80 C22A

X) Air temperature [°C]
Y) Heating rating* [kW]
*Component construction tolerance, performance tolerance ±10%

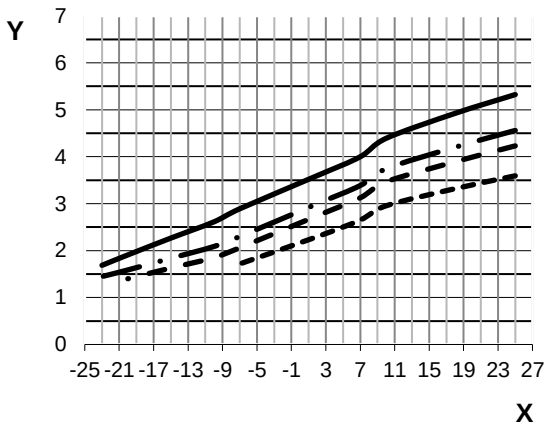


Fig. 36: COP AIR 80 C13A and AIR 80 C22A

X) Air temperature [°C]
Y) Heating rating* [kW]
*Component construction tolerance, performance tolerance ±10%

9.11 Limits of the heat pump deployment

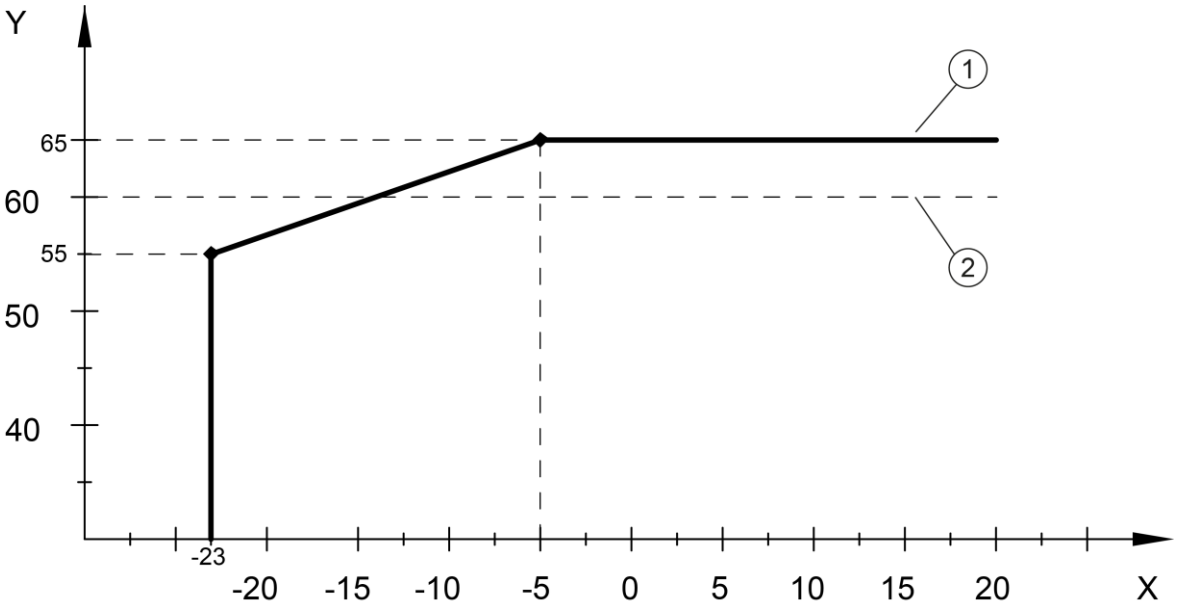


Fig. 37: Limits of deployment for AIR 80 C13A and AIR 80 C22A

X) Outside temperature [°C]
Y) Flow temperature [°C]
1) Flow temperature-heat pump limit of deployment
2) Maximum sizing-flow temperature (60°C)

9.12 Flow rates

Heat pump for heating	**Article-No.**	**Flow rate in heat use system**		**Internal pressure differential, heat pump plate heat exchanger (condenser)**	
		[m³/h]	[l/min]	[mbar]	[mWS]
Stratos Para 65/ 1-12	922462	13.0		100	1.02

Table 8: Heat use pump flow rates for AIR 80 C13A and AIR 80 C22A

9.13 Pump characteristics Stratos Para

Stratos Para 65/ 1-12

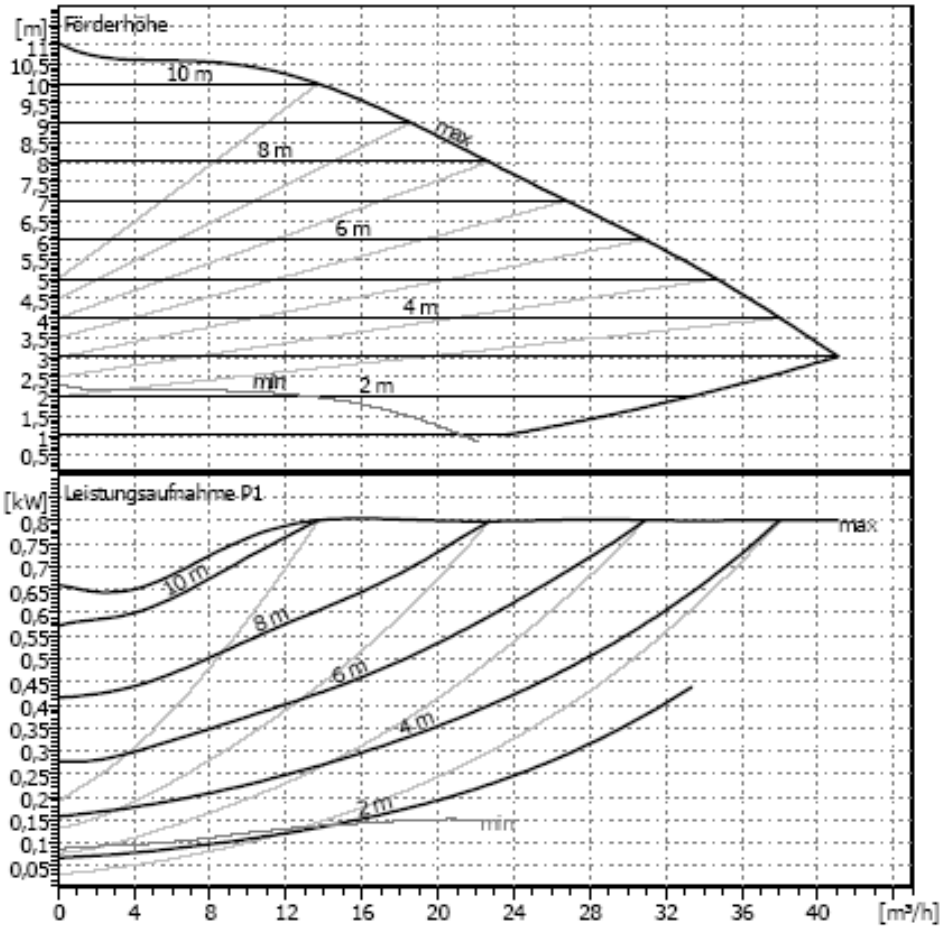


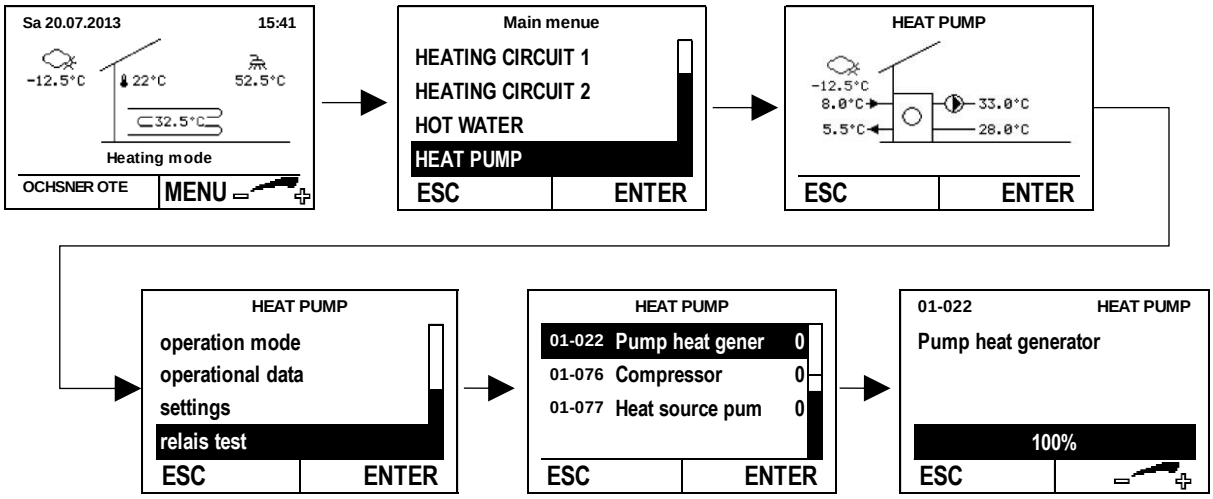
Fig. 38: Pump characteristic curve Stratos Para 65/ 1-12

9.14 Setting the flow rate

The nominal flow rate (see Table 9) is to be ensured in all types of operation /hot water charging, heating, cooling via a separate buffer tank etc.). The flow rates are measured by the installed flow meter and displayed on the OTE control. The flow rate is adjusted by means of the adjustment screw on the circulation pump supplied. For a hydraulic regulation corresponding to the standards, especially with combined heating rsp. heating/cooling operation with hot water heating, appropriate pipe-run regulating valves are to be fitted and the system calibrated as required.

Procedure:

1) Switch on the buffer charge pump (heat generator pump) via the relay test.



2) The **measured flow rate** is displayed, this must correspond to the nominal flow.

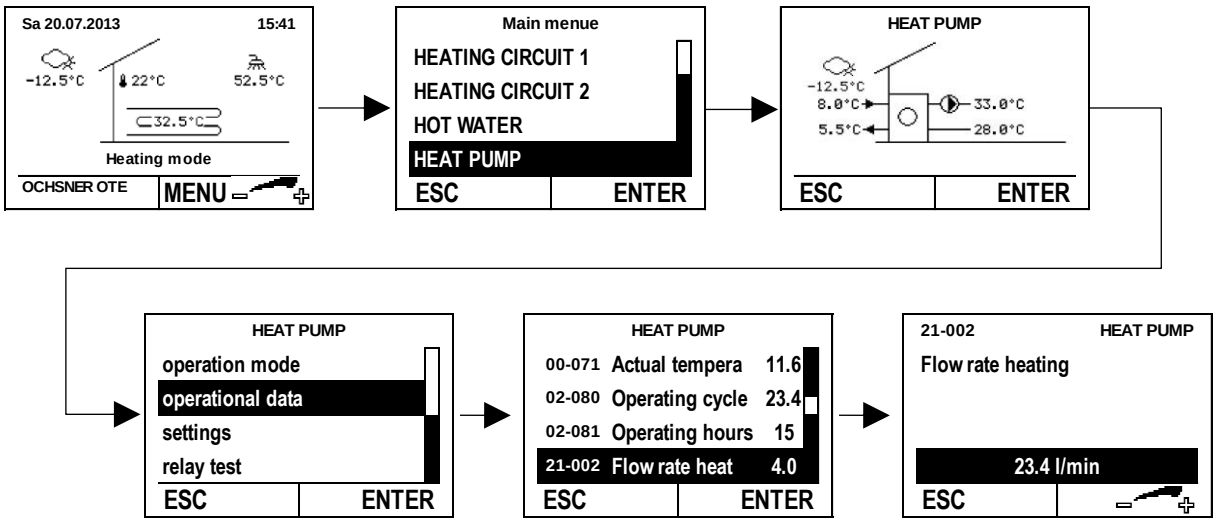


Fig. 39: Reading flow rate

		AIR 80 C13A (OLWP 65 plus), AIR 80 C22A
Flow rate sensor	Type	DN 50 kvs 40
Delta-p for nominal flow rate	mbar	100.0
Nominal flow rate	m³/h	13.0
Nominal flow rate	l/min	216.7
Minimum flow rate	l/min	108.0

Table 9: Heat use system nominal flow rate

9.15 Wiring diagram AIR 80 C13A

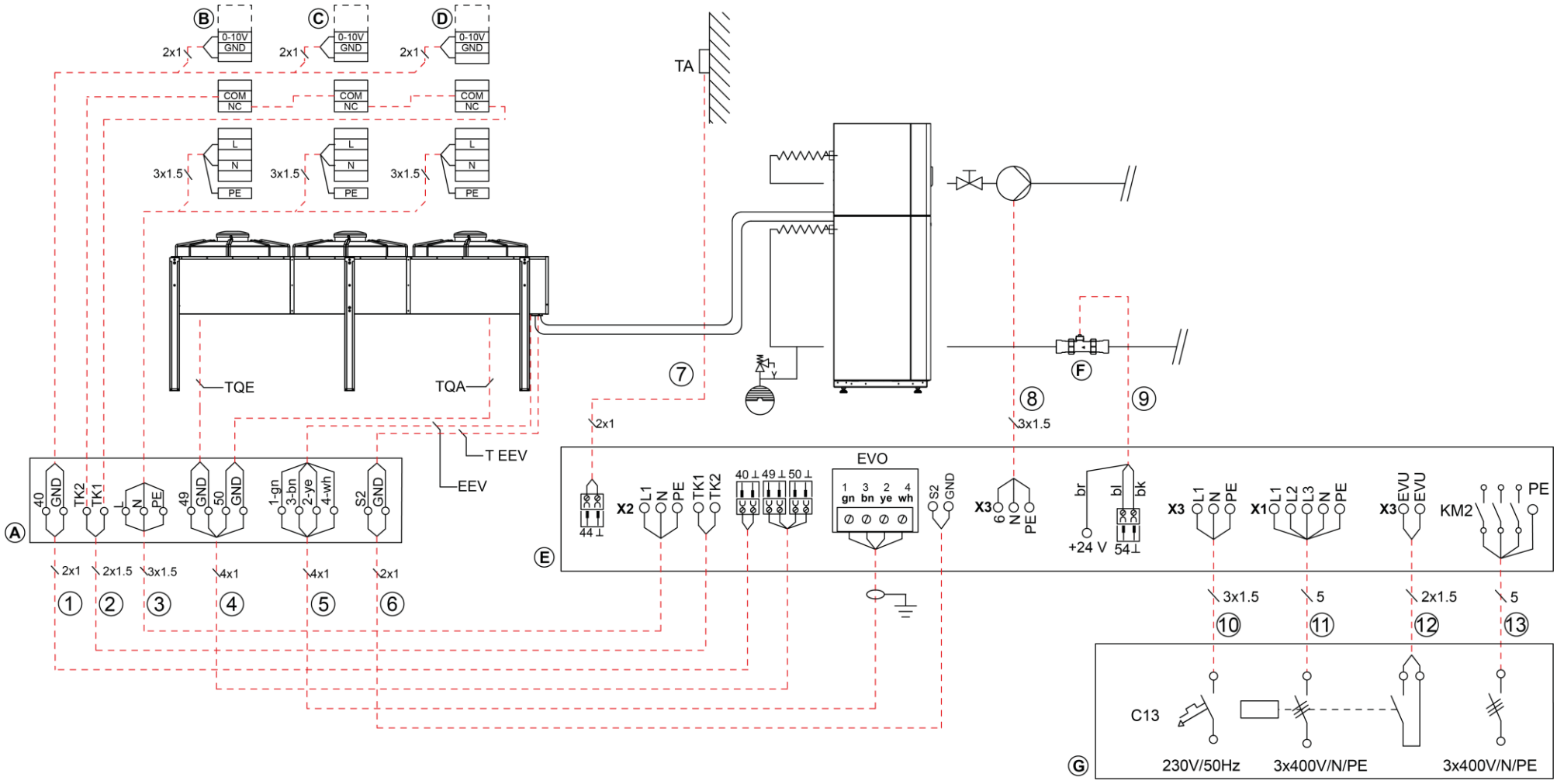


Fig. 40: Wiring diagram AIR 80 C13A

A) Evaporator terminal box (not supplied), IP67
B) Terminal block Fan 1
C) Terminal box Fan 2
D) Terminal box Fan 3
E) OTE control (heat pump)
F) Flow rate sensor
G) Dwelling distribution
1) Fan speed
2) Fan not running report K2
3) Voltage supply 230V fans
4) Supply cable to de-icing sensors TQE and TQA
5) Step motor from EVO
6) Suction gas sensor S2
7) Outside temperature
8) Supply cable heat generator pump
9) Supply cable to flow rate sensor
10) Voltage supply OTE 230V
11) Voltage supply to heat pump 400V
12) Control cable Utility switch-off
13) Voltage supply to auxiliary heater

9.16 Wiring diagram AIR 80 C22A

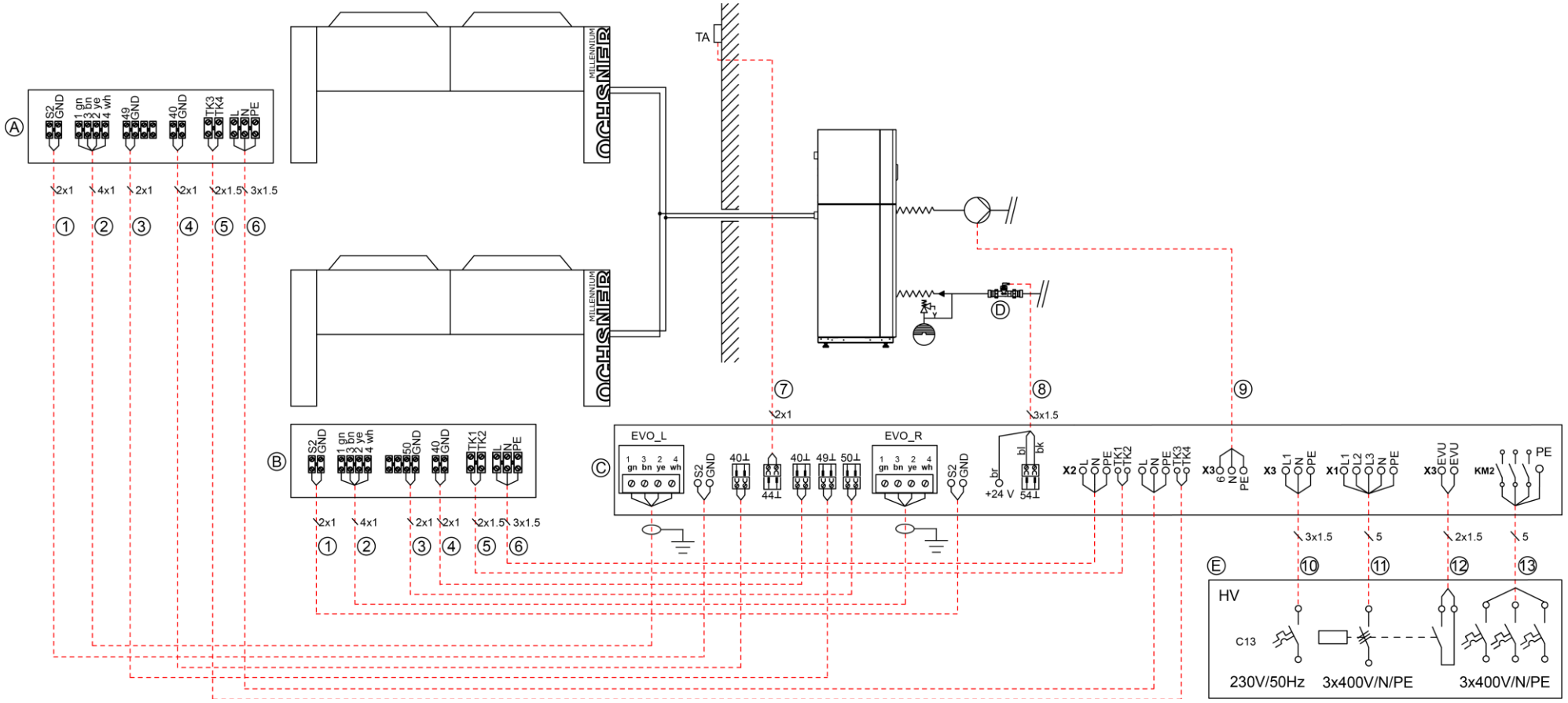


Fig. 41: Wiring diagram AIR 80 C22A

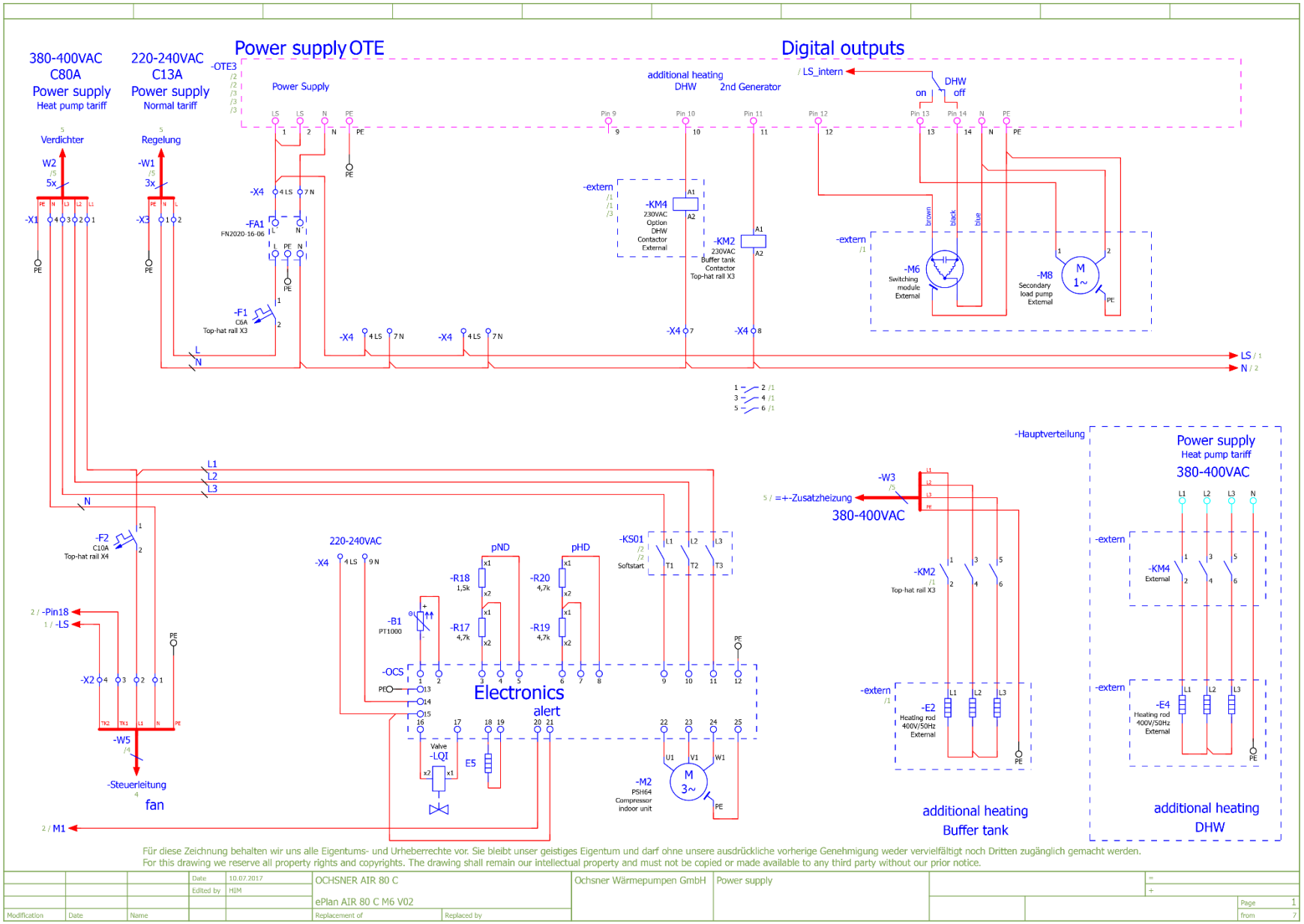
A) Terminal box VHS-M 80 right
A) Terminal box VHS-M 80 left
C) OTE control (heat pump)
D) Flow rate sensor
E) House distribution

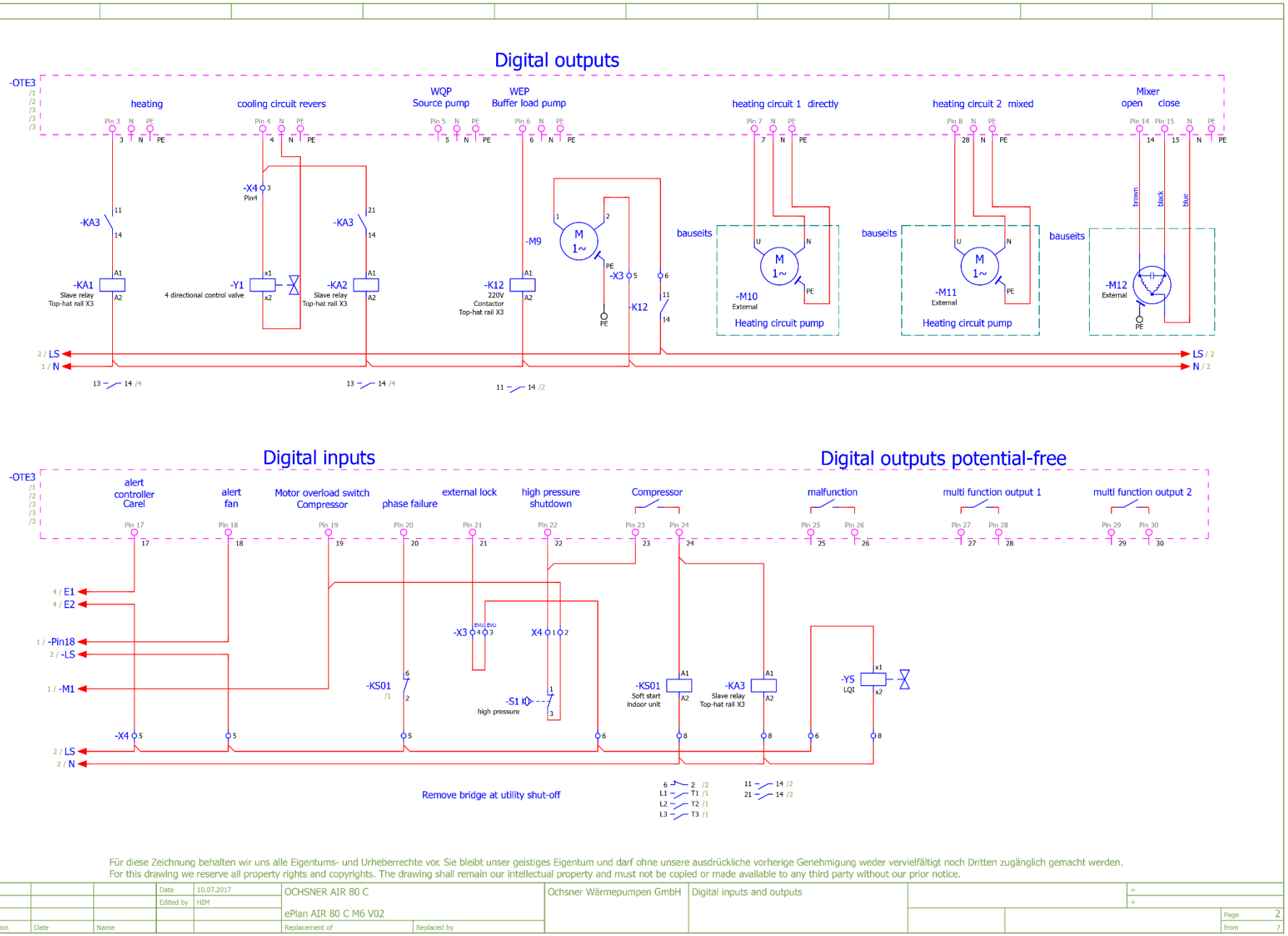
1) Suction gas sensor S2
2) Step motor from EVO_L and EVO R
3) Supply cable to de-icing sensors TQE and TQA
4) Fan speed
5) Fan not running report K2

6) Voltage supply to fan 230V
7) outside temperature
8) Supply cable to flow rate sensor
9) Supply cable heat generator pump
10) Voltage supply OTE 230V

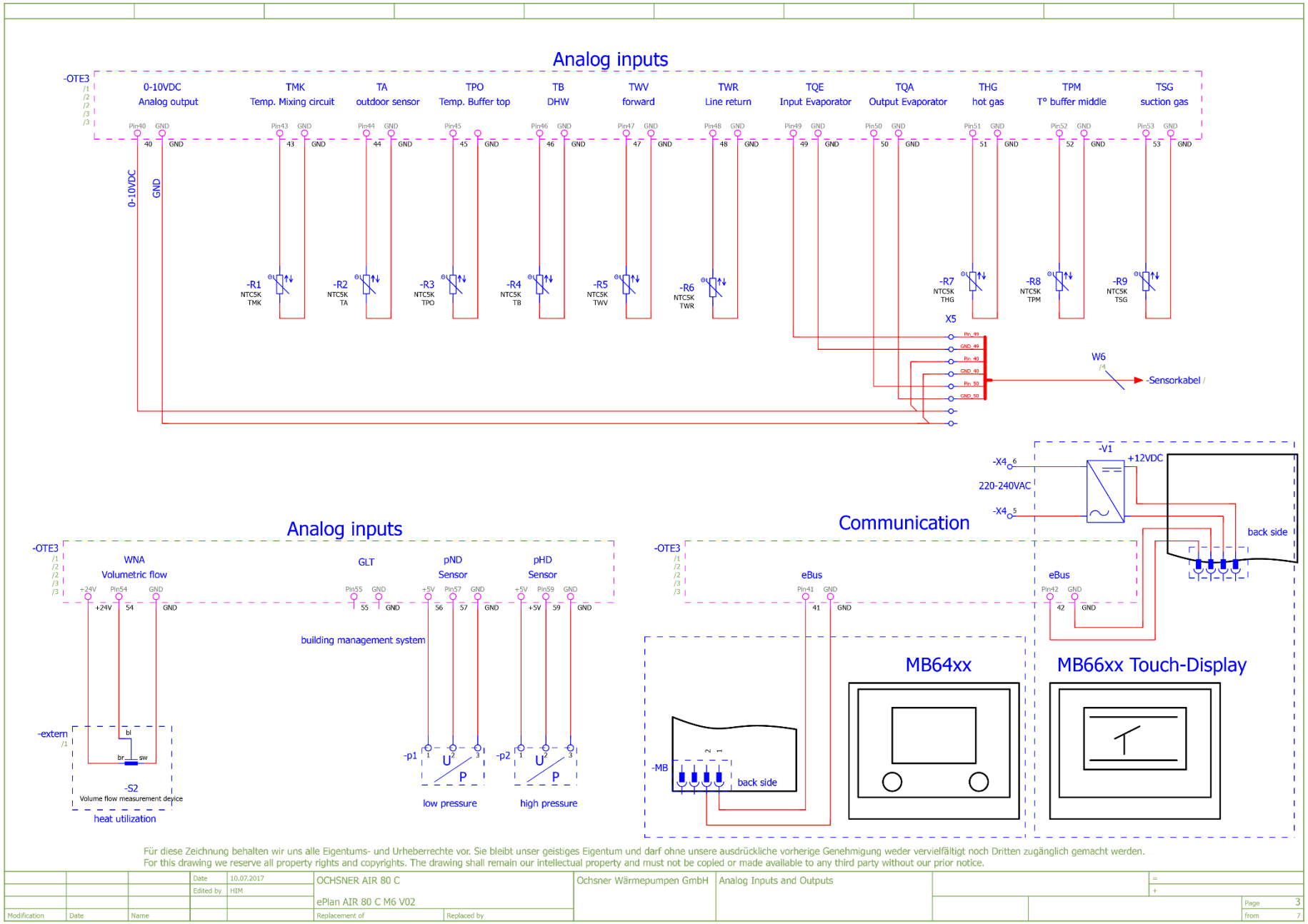
11) Voltage supply to heat pump 400V
12) Control cable Utility switch-off
13) Voltage supply to auxiliary heater

10 Electrical circuit diagrams AIR 80 C13A





Date	10.07.2017	OCHSNER AIR 80 C	Ochsner Wärmepumpen GmbH	Digital inputs and outputs
Edited by	HIM	ePlan AIR 80 C M6 V02		
Modification / Date / Name		Replacement of / Replaced by		Page 2 from 7


Analog inputs
-OTE3
0-10VDC
Analog output
TMK
Temp. Mixing circuit
TA
outdoor sensor
TPO
Temp. Buffer top
TB
DHW
TWV
forward
TWR
Line return
TQE
Input Evaporator
TQA
Output Evaporator
THG
hot gas
TPM
T° buffer middle
TSG
suction gas
-R1 NTC5K TMK
-R2 NTC5K TA
-R3 NTC5K TPO
-R4 NTC5K TB
-R5 NTC5K TWV
-R6 NTC5K TWR
-R7 NTC5K THG
-R8 NTC5K TPM
-R9 NTC5K TSG
X5
W6
-Sensorkabel
Analog inputs
WNA
Volumetric flow
-extern
-S2
Volume flow measurement device
heat utilization
GLT
building management system
pND
Sensor
pHD
Sensor
-p1
-p2
low pressure
high pressure
Communication
eBus
-V1
+12VDC
220-240VAC
back side
MB64xx
MB66xx Touch-Display
-MB
back side
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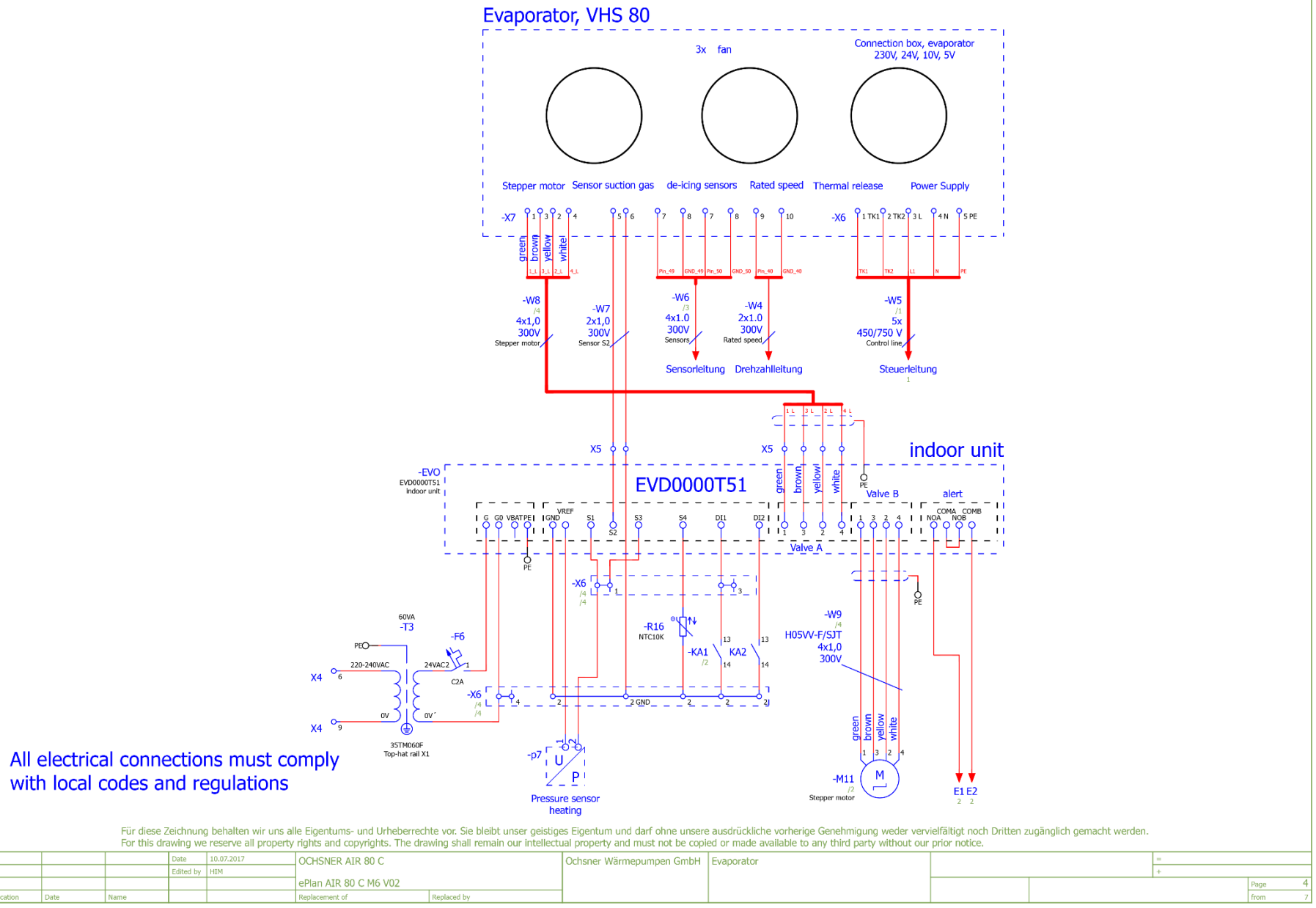
Ochsner Wärmepumpen GmbH
Analog Inputs and Outputs
Page 3
from 7



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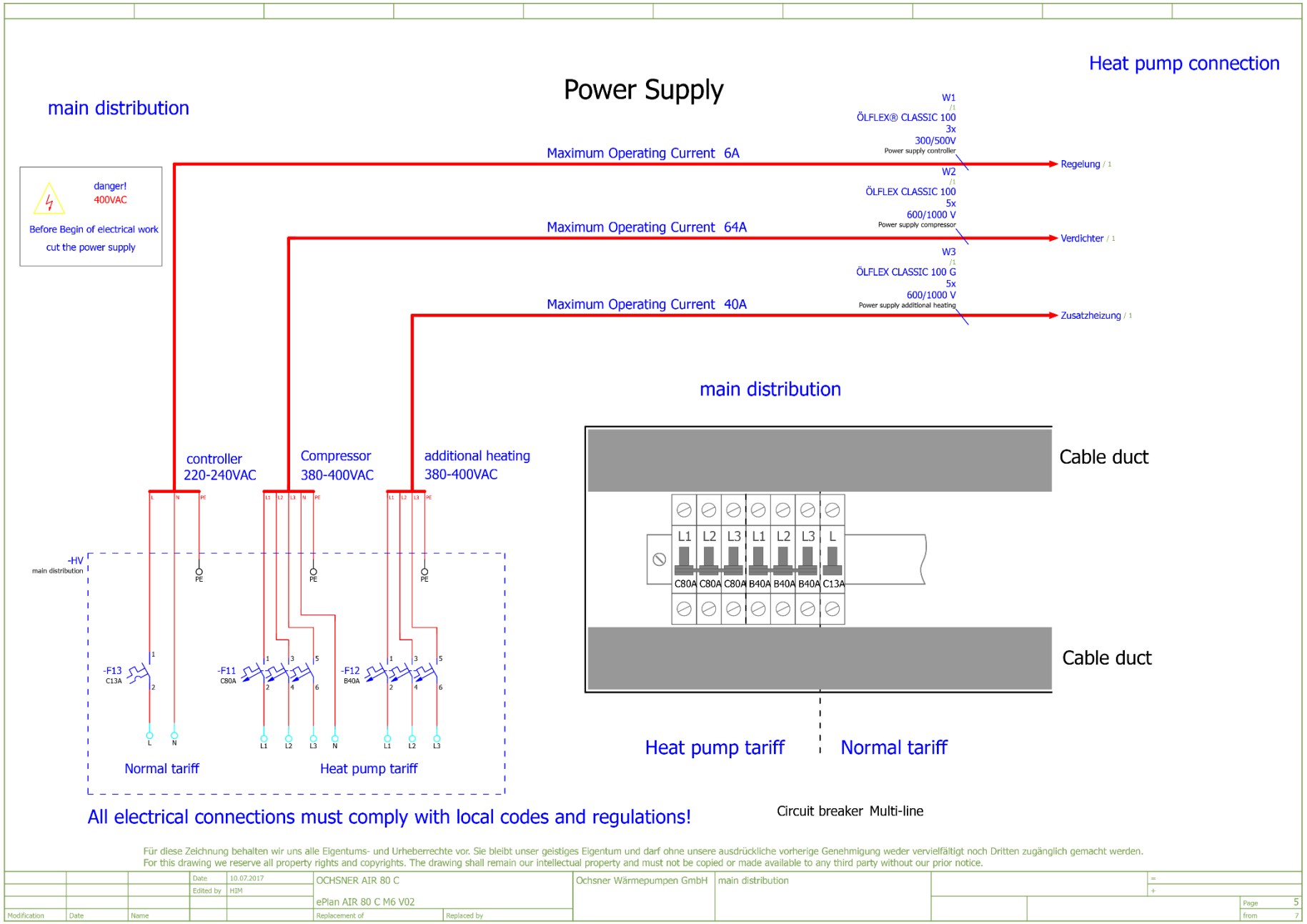
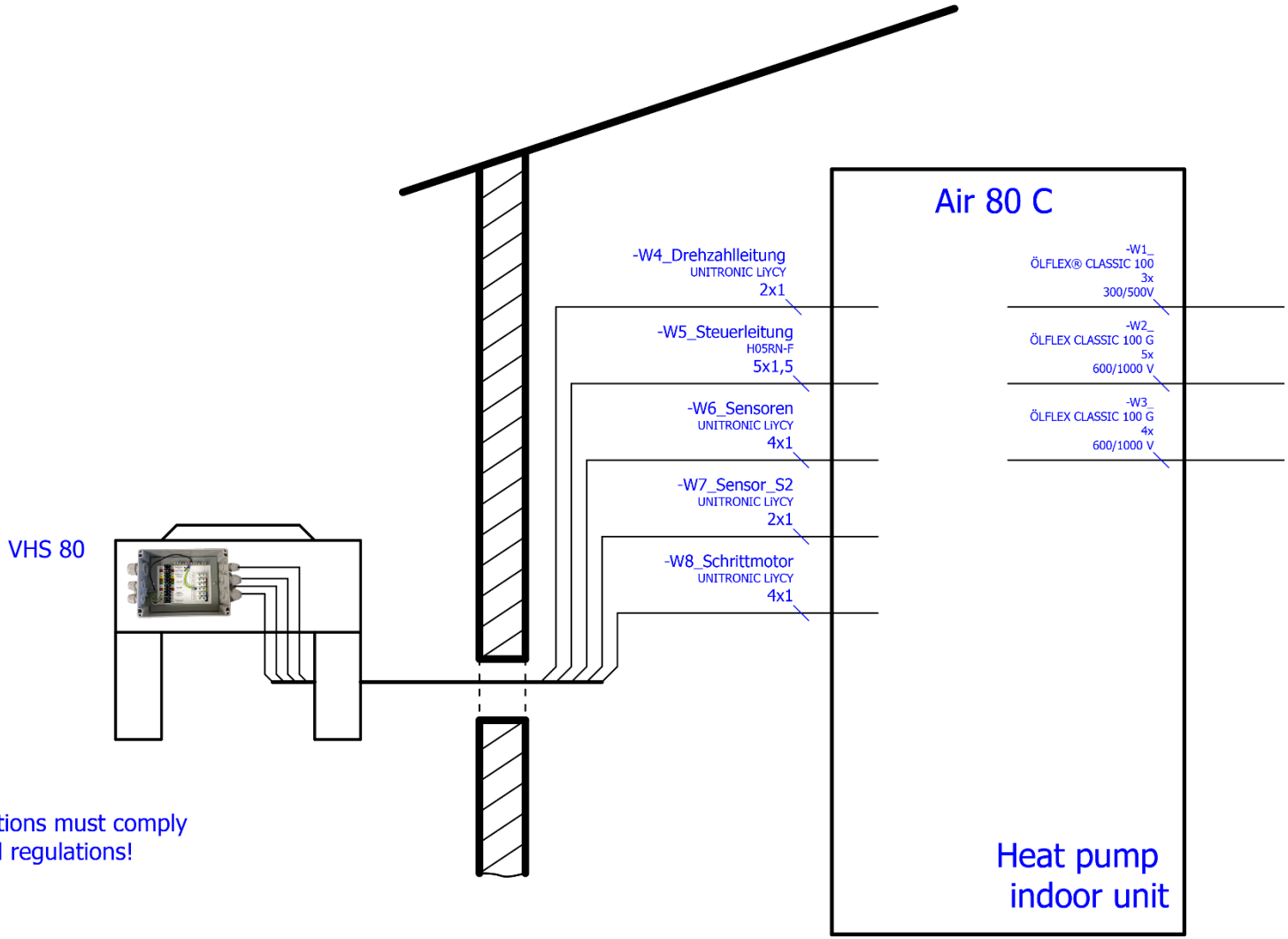
			Edited by	HIM	ePlan AIR 80 C M6 V02			from 7
Modification	Date	Name			Replacement of	Replaced by		



			Date	10.07.2017	OCHSNER AIR 80 C		Ochsner Wärmepumpen GmbH	main distribution		=	
			Edited by	HIM						+	
					ePlan AIR 80 C M6 V02					Page	5
Modification	Date	Name			Replacement of	Replaced by				from	7

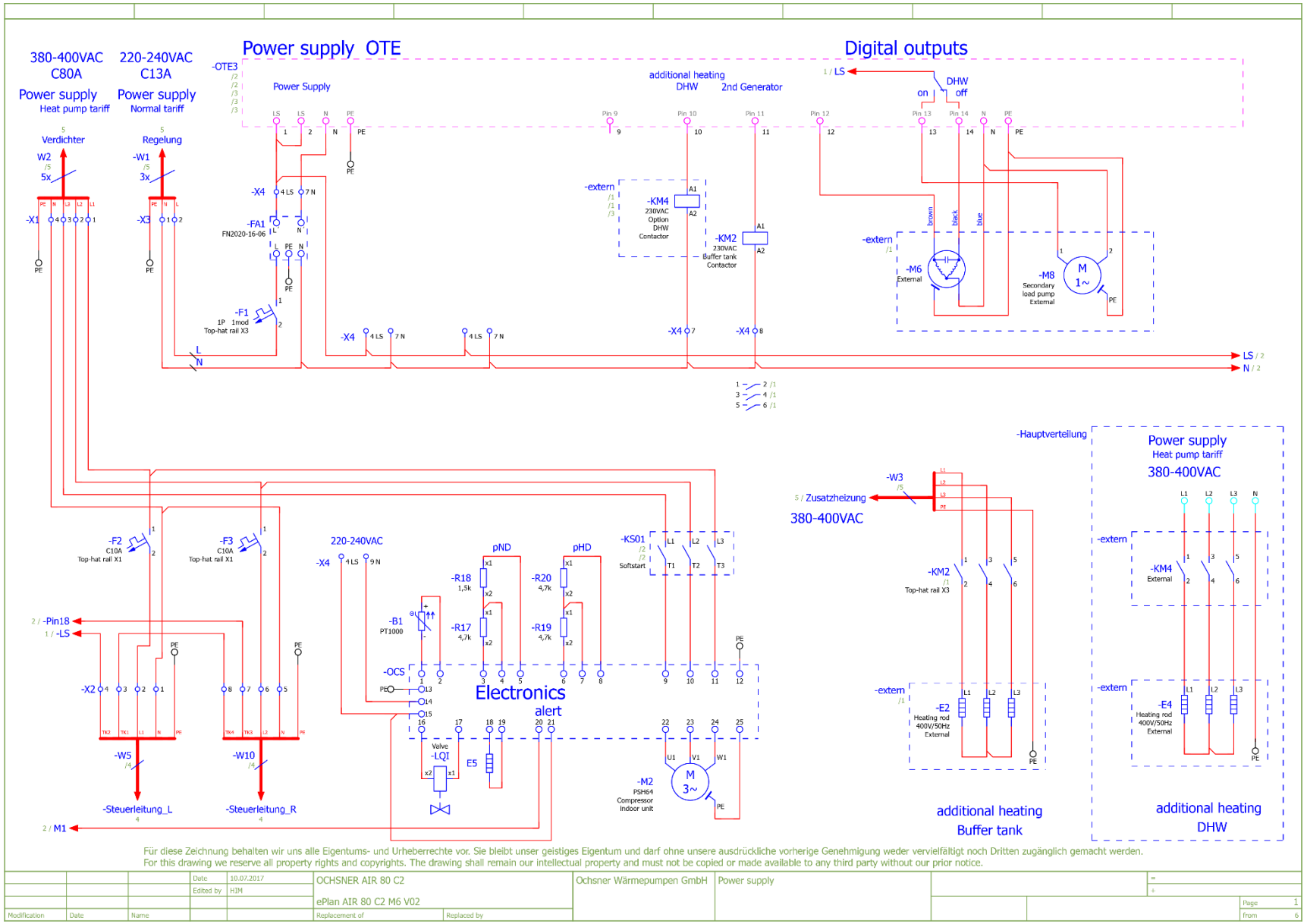
Cable-connection diagram

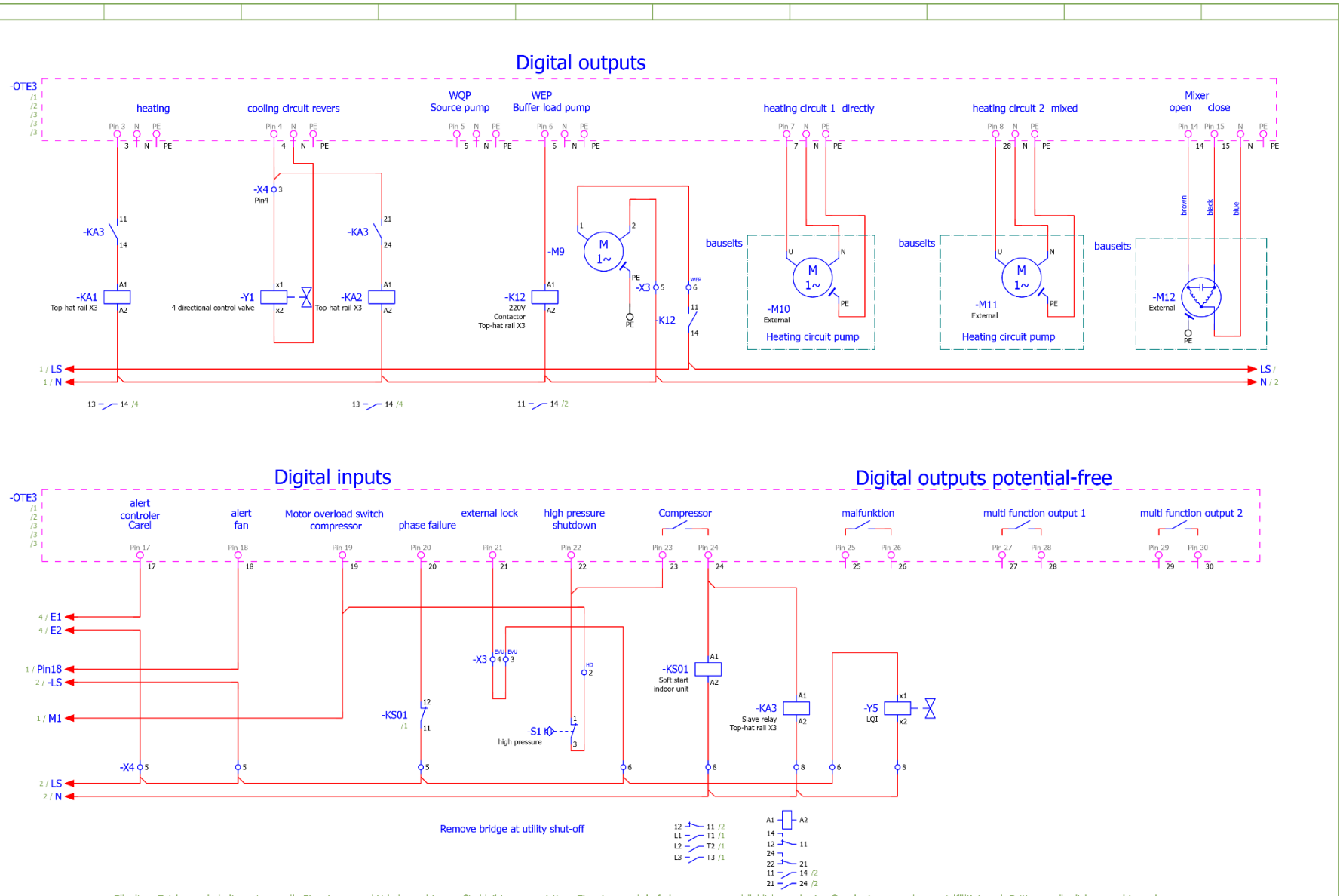


All electrical connections must comply with local codes and regulations!

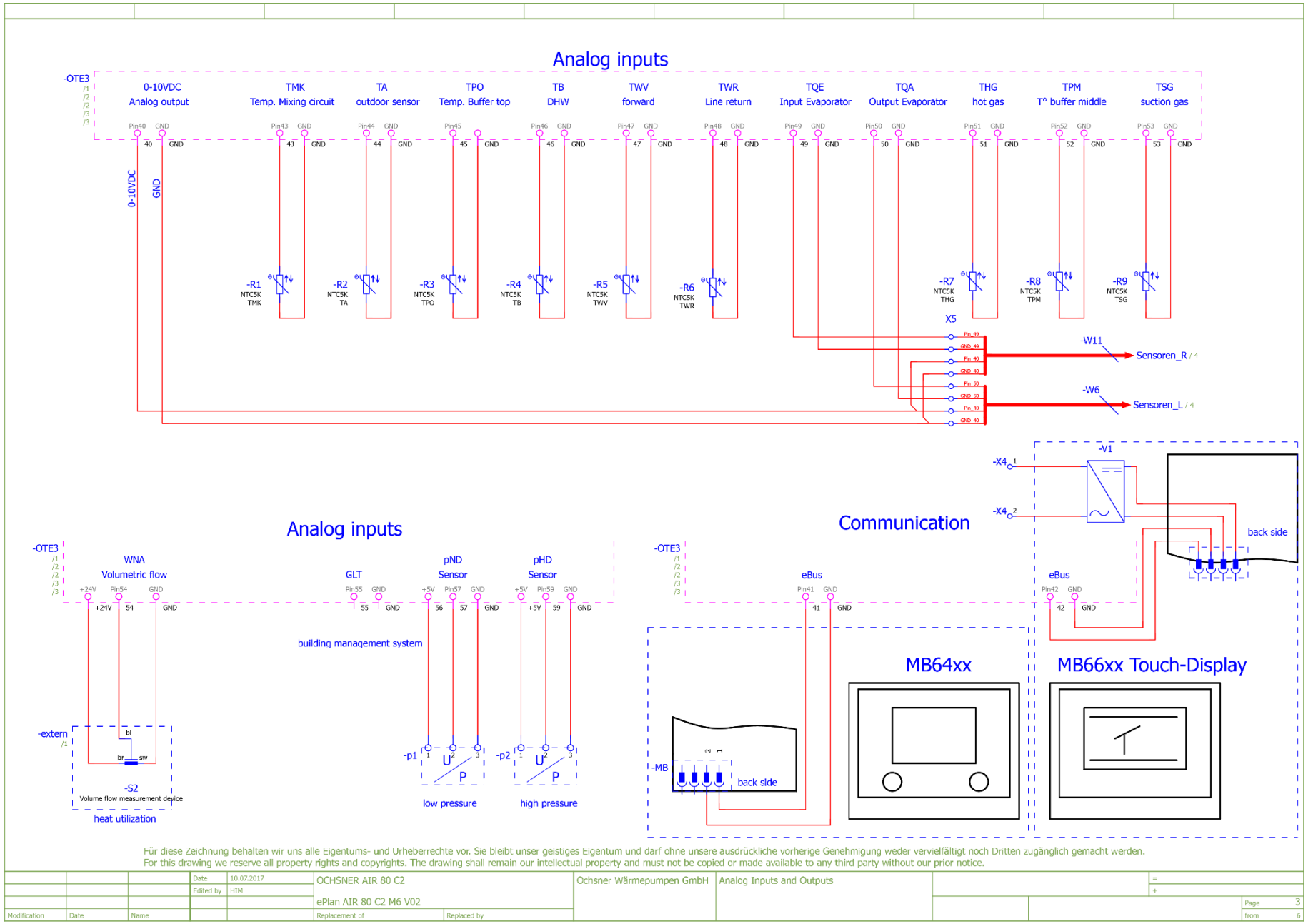
			Date	10.07.2017	OCHSNER AIR 80 C		Ochsner Wärmepumpen GmbH	Overview	=
			Edited by	HIM	ePlan AIR 80 C M6 V02				+
Modification	Date	Name			Replacement of	Replaced by			Page 6 from 7

11 Electrical circuit diagrams AIR 80 C22A

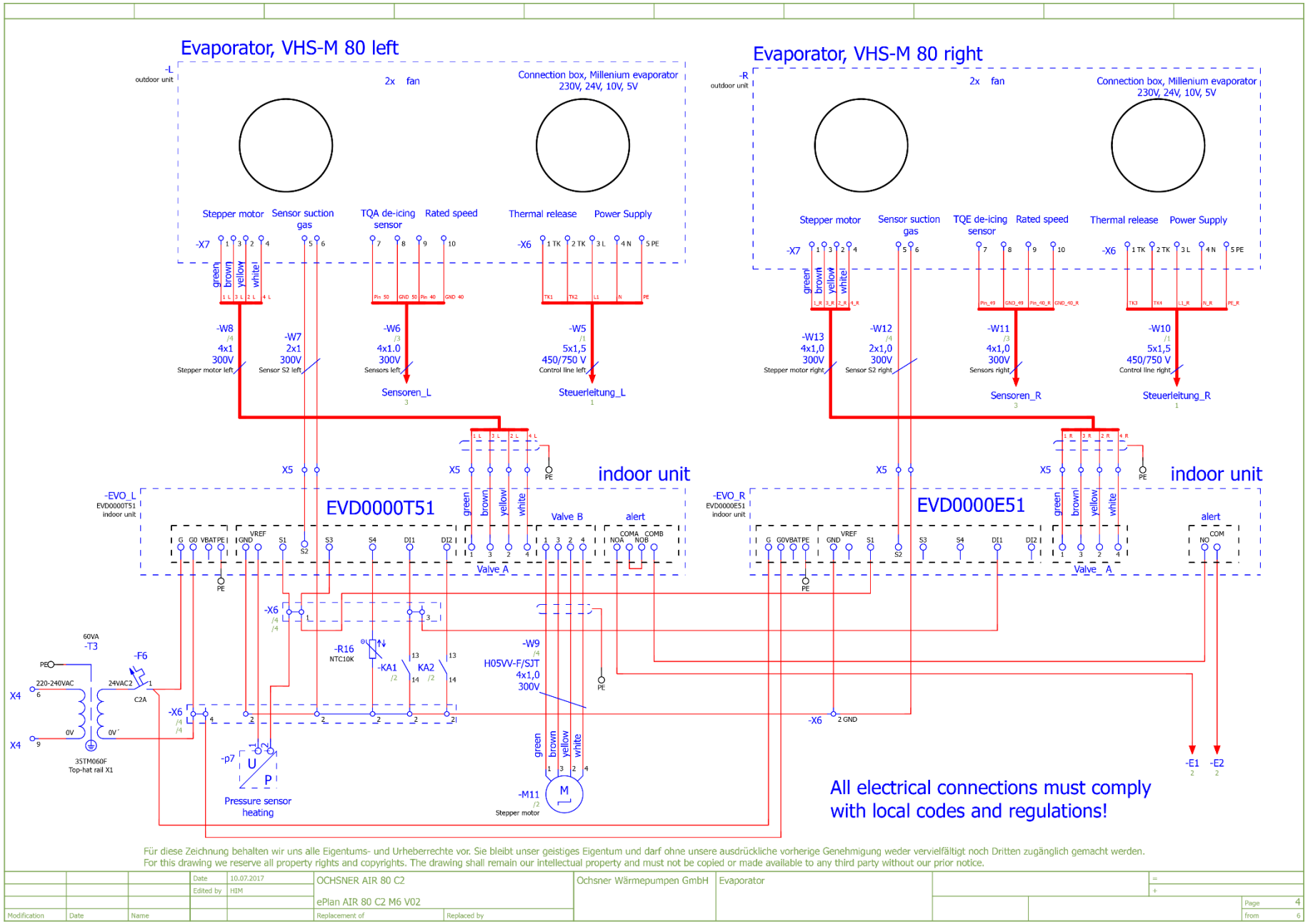


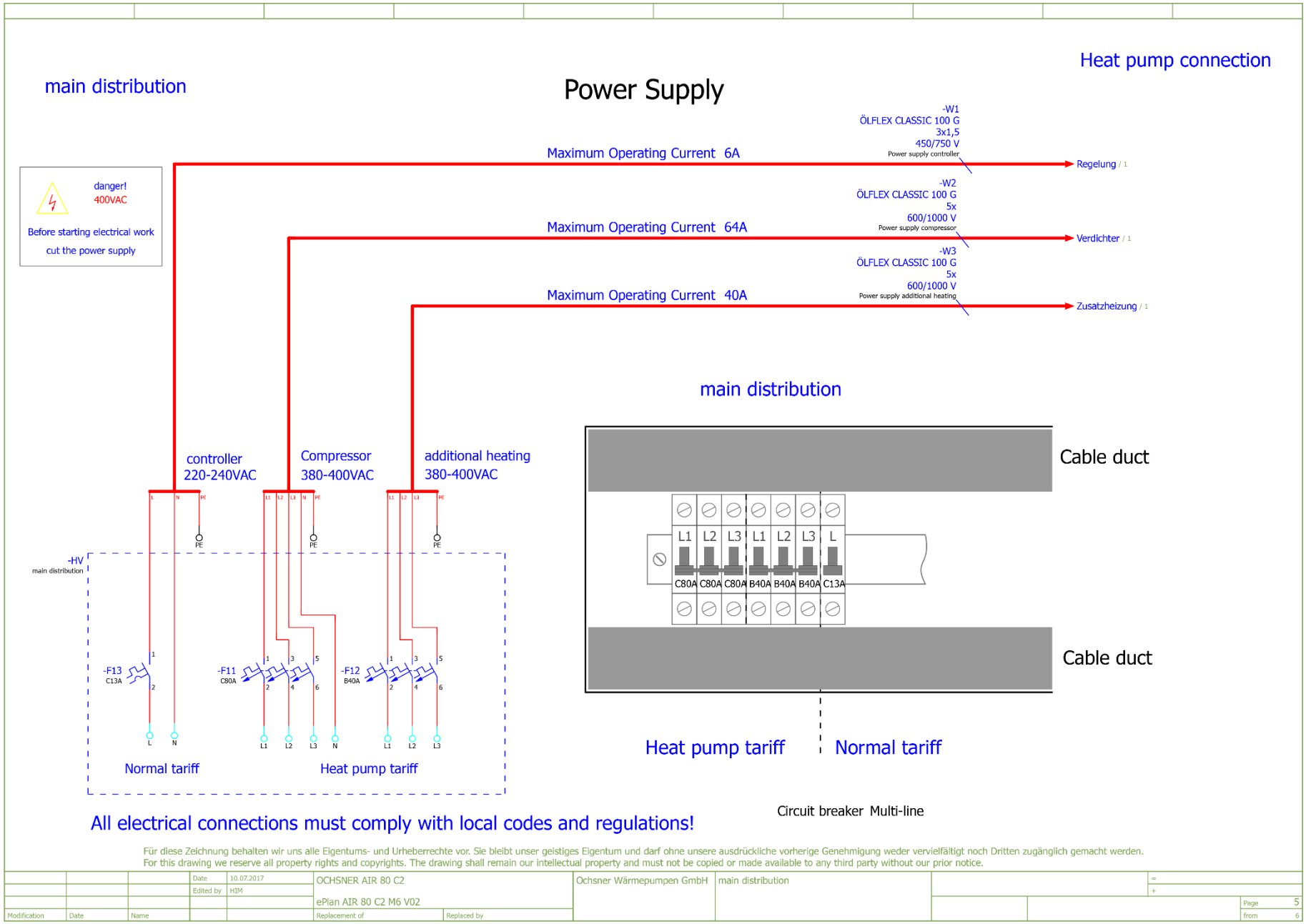


Date	11.07.2017	OCHSNER AIR 80 C2	Ochsner Wärmepumpen GmbH	Digital inputs and outputs
Edited by	HIM	ePlan AIR 80 C2 M6 V02		
Modification / Date / Name		Replacement of / Replaced by		Page 2 from 6



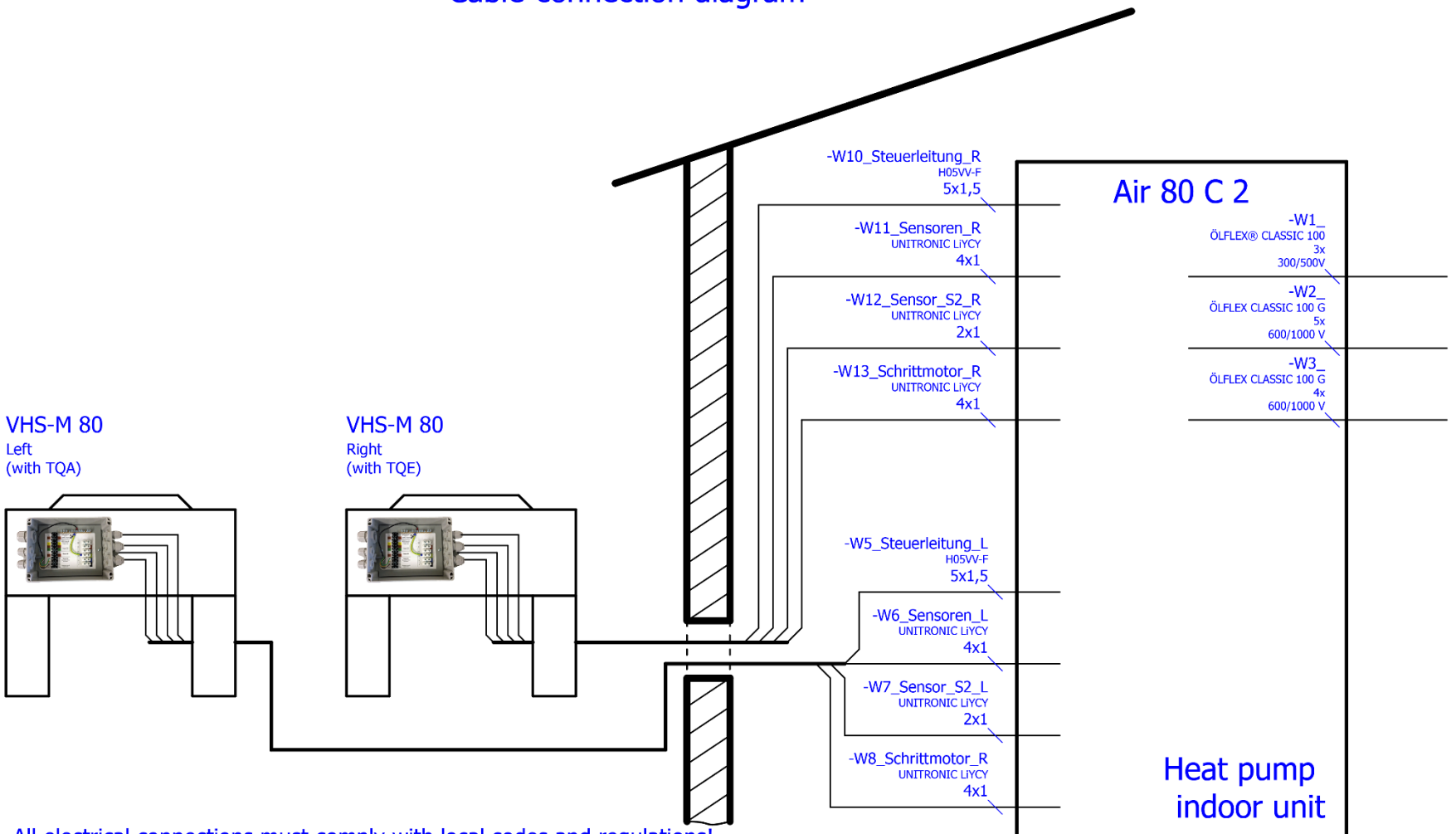
			Date	10.07.2017	OCHSNER AIR 80 C2	Ochsner Wärmepumpen GmbH	Analog Inputs and Outputs	
			Edited by	HIM	ePlan AIR 80 C2 M6 V02			
Modification	Date	Name			Replacement of	Replaced by		Page 3 from 6


Evaporator, VHS-M 80 left
-L
outdoor unit
2x fan
Connection box, Millenium evaporator
230V, 24V, 10V, 5V
Stepper motor
Sensor suction gas
TQA de-icing sensor
Rated speed
Thermal release
Power Supply
-X7
-X6
green
brown
yellow
white
-W8
4x1
300V
Stepper motor left
-W7
2x1
300V
Sensor S2 left
-W6
4x1.0
300V
Sensors left
Sensoren_L
-W5
5x1,5
450/750 V
Control line left
Steuerleitung_L
Evaporator, VHS-M 80 right
-R
outdoor unit
2x fan
Connection box, Millenium evaporator
230V, 24V, 10V, 5V
Stepper motor
Sensor suction gas
TQE de-icing sensor
Rated speed
Thermal release
Power Supply
-W13
4x1,0
300V
Stepper motor right
-W12
2x1,0
300V
Sensor S2 right
-W11
4x1,0
300V
Sensors right
Sensoren_R
-W10
5x1,5
450/750 V
Control line right
Steuerleitung_R
indoor unit
-EVO_L
EVD0000T51
indoor unit
EVD0000T51
Valve B
alert
Valve A
-EVO_R
EVD0000E51
indoor unit
EVD0000E51
alert
Valve A
-T3
60VA
-F6
C2A
220-240VAC
24VAC2
X4
0V
0V´
35TM060F
Top-hat rail X1
-R16
NTC10K
-KA1
KA2
-W9
H05VV-F/SJT
4x1,0
300V
-p7
Pressure sensor heating
-M11
Stepper motor
-E1
-E2
All electrical connections must comply with local codes and regulations!
Für diese Zeichnung behalten wir uns alle Eigentums- und Urheberrechte vor. Sie bleibt unser geistiges Eigentum und darf ohne unsere ausdrückliche vorherige Genehmigung weder vervielfältigt noch Dritten zugänglich gemacht werden.
For this drawing we reserve all property rights and copyrights. The drawing shall remain our intellectual property and must not be copied or made available to any third party without our prior notice.
Date 10.07.2017
Edited by HIM
OCHSNER AIR 80 C2
ePlan AIR 80 C2 M6 V02
Ochsner Wärmepumpen GmbH
Evaporator
Modification
Date
Name
Replacement of
Replaced by
Page 4
from 6



			Date	10.07.2017	OCHSNER AIR 80 C2		Ochsner Wärmepumpen GmbH	main distribution	=
			Edited by	HIM	ePlan AIR 80 C2 M6 V02				+
Modification	Date	Name			Replacement of	Replaced by			Page 5 from 6

Cable-connection diagram



All electrical connections must comply with local codes and regulations!

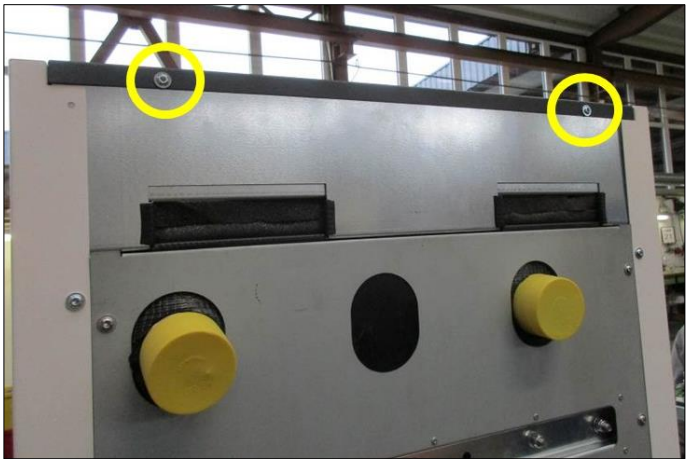
			Date	10.07.2017	OCHSNER AIR 80 C2		Ochsner Wärmepumpen GmbH	Overview	=	
			Edited by	HIM					+	
					ePlan AIR 80 C2 M6 V02				Page	6
Modification	Date	Name			Replacement of	Replaced by			from	6

12 Inside unit - preparation for installation

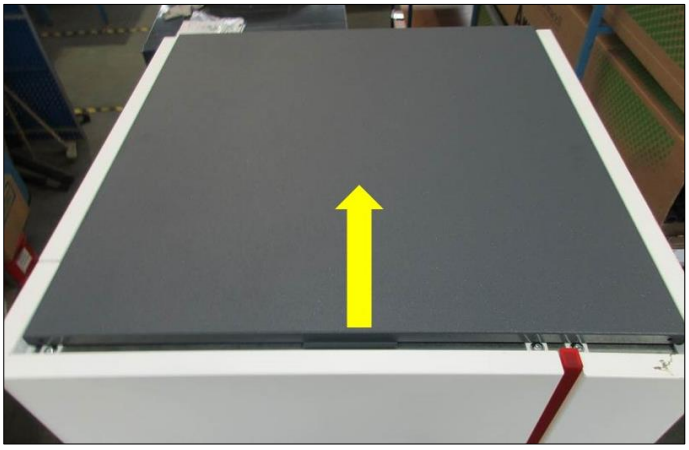
Fig. 42: Heat pump transport on wooden palettes

12.1 Disassembling the top cover

- Remove the 2 screws on the rear side (internal hexagonal 4mm)

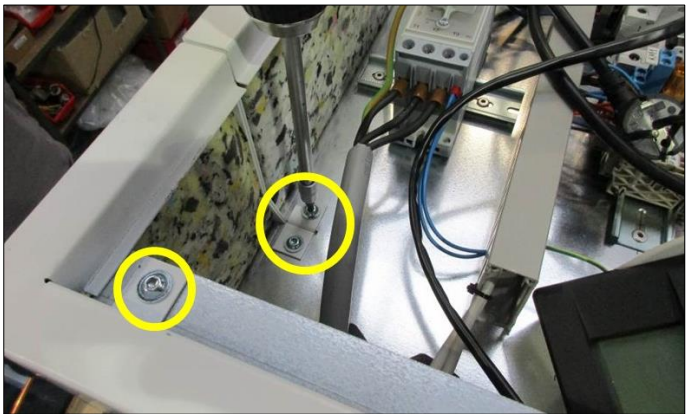


- Push the upper cover back a bit
- Lift the upper cover up and away,

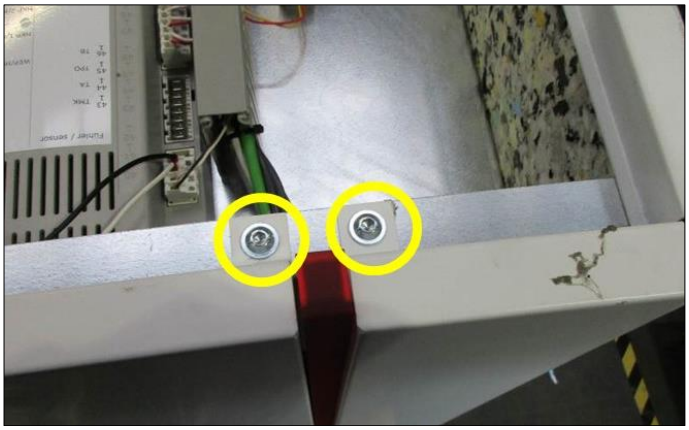


12.2 Disassembling the top cladding

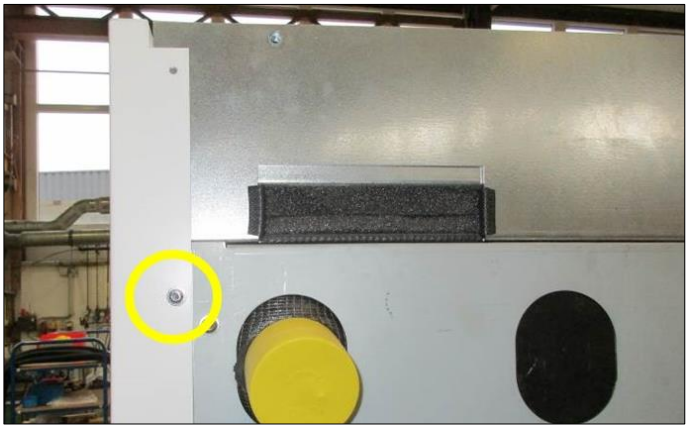
- Remove the 3 screws in the control panel (internal hexagonal 4 mm)



- Remove the 2 screws on the rear side (internal hexagonal 4mm)

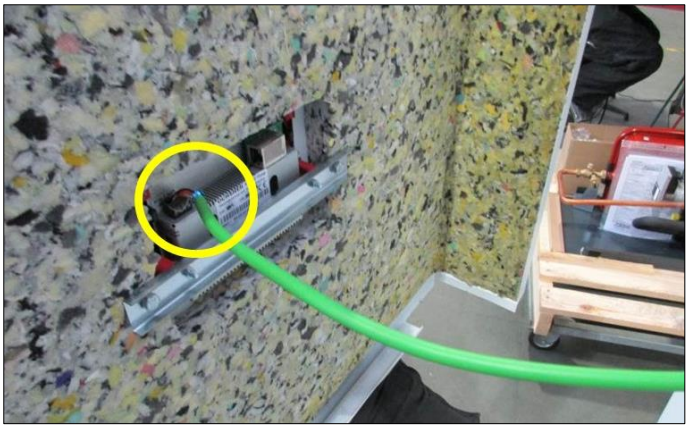


- Remove 1 screw for the right-hand upper cladding component on the rear (internal hexagonal 4mm)
- Remove the cladding component



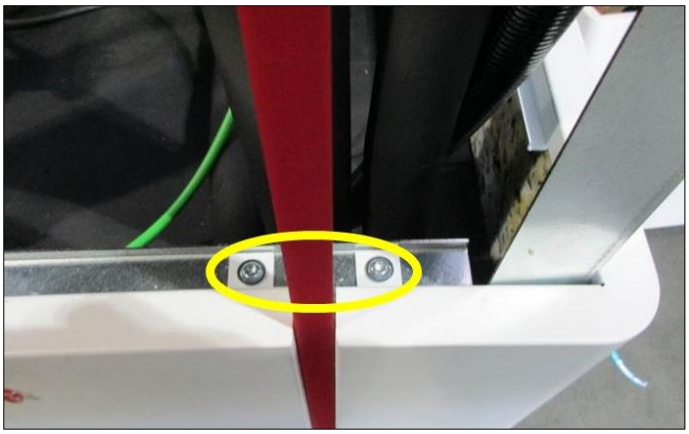
- Remove 1 screw for the right-hand upper cladding component on the rear (internal hexagonal 4mm)
- Remove the cladding component

- Carefully remove the front cladding
- **Attention! Mind the cable between the control panel and the operational unit**

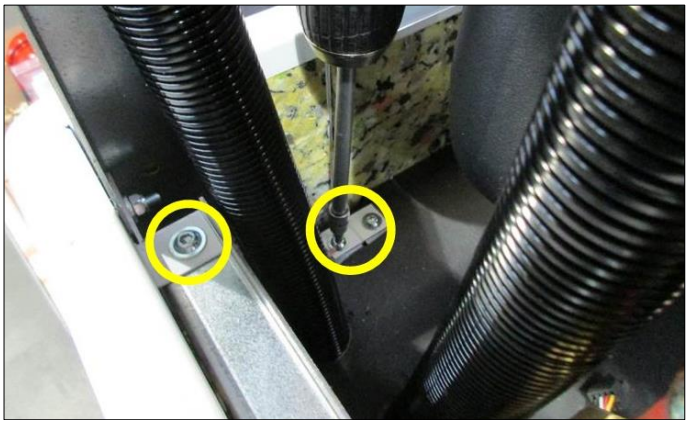


12.3 Disassembling the bottom cladding

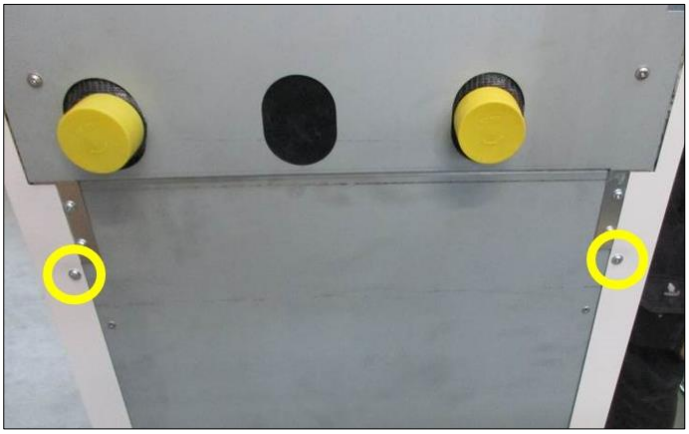
- Remove the 2 screws on the front side (internal hexagonal 4mm)



- Remove the 3 screws on the left front side (internal hexagonal 4mm)

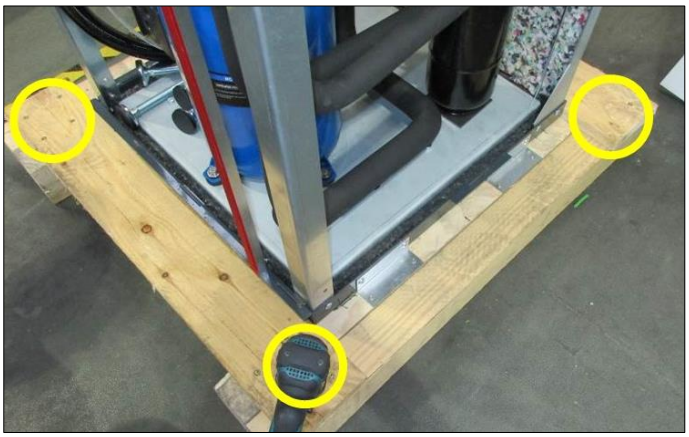


- Remove the 2 screws on the rear side (internal hexagonal 4mm)
- Remove the bottom cladding



12.4 Disassembling the wooden palette

- Remove the 16 (4x4) screws (Torx T25) on the corners of the palette.



- Remove the single pieces of wood

- Lift the heat pump with a palette truck

- Remove the 8 (4x2) screws on the side metal brackets (counter pressure with open-end wrench)

- Remove both wooden side pieces

12.5 Mounting the adjustable feet

- Fix the adjustable feet (OCHSNER Art. Nr. 916431) to the base of the heat pump with M 16 screw nuts.

- **Attention! Avoid damaging the thread on the adjustable feet!** As soon as the heat pump is standing on its feet, the height difference between the single feet must not be too large (max. 5 threads difference).

13 Declaration of Conformity

DE	EU-KONFORMITÄTSERKLÄRUNG	ES	DECLARACIÓN DE CONFORMIDAD DE LA UE
EN	EU DECLARATION OF CONFORMITY	PT	DECLARAÇÃO DE CONFORMIDADE CE
FR	DÉCLARATION DE CONFORMITÉ UE	NL	EU-CONFORMITEITSVERKLARING
PL	DEKLARACJA ZGODNOŚCI UE	CS	PROHLÁŠENÍ O SHODĚ EU
IT	DICHIARAZIONE DI CONFORMITÀ UE		

DE	Produktmodell/Produkt:		D-A	CH	EXP	UK		D-A	CH	EXP	UK
EN	Product model / product:	AIR BASIC 416 C12A G1-1	285615	285615	285615	-	AIR 7 C11A	287010	287010	287010	-
FR	ModèleModèle / Produit :	AIR BASIC 416 C12A T200	285935	285935	285937	-	AIR 11 C11A	287020	287020	287020	-
PL	Model produktu/produkt:	AIR BASIC 618 C12B G1-1	-	-	285620	285620	AIR 23 C12A	287040	287040	287040	-
IT	Modello/prodotto:	AIR BASIC 618 C12B T201	-	-	-	286610	AIR 29 C12A	287050	287050	287050	-
ES	Modelo de producto/producto:	AIR 18 C11A	287030	287030	287030	-	AIR 41 C12A	287060	287060	287060	-
PT	Modelo de produto/produto:	AIR 11 C11B	-	-	287022	-	AIR 80 C13A	288600	288600	288600	-
NL	Productmodel/product:	AIR 18 C11B	-	-	287032	-	AIR 80 C22A	288610	288610	288610	-
CS	Model výrobku/výrobek:	AIR BASIC 618 C12B T200	-	-	285942	-	GMLW 9 PLUS VX	-	-	-	284547
		GMLW 25 PLUS	-	-	-	284699	GMLW 35 PLUS	-	-	-	284749

DE	Name und Anschrift des Herstellers oder seines Bevollmächtigten:	OCHSNER Wärmepumpen GmbH Krackowizerstraße 4 A 4020 Linz Werk A-3350 Haag
EN	Name and address of manufacturer or its authorised representative:	
FR	Nom et adresse du fabricant ou de son représentant :	
PL	Nazwa i adres producenta lub pełnomocnika:	
IT	Nome e indirizzo del produttore o del suo rappresentante legale:	
ES	Nombre y dirección del fabricante o de su representante autorizado:	
PT	Nome e endereço do fabricante ou do seu mandatário:	
NL	Naam en adres van de fabrikant of zijn gevolmachtigde:	
CS	Název a adresa výrobce nebo jeho zplnomocněného zástupce:	

DE	Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller.
EN	This declaration of conformity is issued under the sole responsibility of the manufacturer.
FR	La présente déclaration de conformité est établie sous la seule responsabilité du fabricant.
PL	Wyłączną odpowiedzialność za wystawienie niniejszej deklaracji zgodności ponosi producent.
IT	Il produttore si assume la responsabilità esclusiva dell'emissione della presente dichiarazione di conformità.
ES	El fabricante es el único responsable de la elaboración de esta declaración de conformidad.
PT	A presente declaração de conformidade é emitida sob a exclusiva responsabilidade do fabricante.
NL	De fabrikant is als enige verantwoordelijk voor het opstellen van deze conformiteitsverklaring.
CS	Odpovědnost za vystavení tohoto prohlášení o shodě nese výlučně výrobce.

DE	Gegenstand der Erklärung:	Luft-Wasser–Wärmepumpe	AIR BASIC 416 C12A G1-1	AIR 7 C11A
EN	Object of the declaration:	Air/water heat pump	AIR BASIC 416 C12A T200	AIR 11 C11A
FR	Objet de la déclaration :	Pompe à chaleur air/eau	AIR BASIC 618 C12B G1-1	AIR 23 C12A
PL	Przedmiot deklaracji:	Pompa ciepła typu powietrze-woda	AIR BASIC 618 C12B T201	AIR 29 C12A
IT	Oggetto della dichiarazione:	Pompa di calore–aria/acqua	AIR 18 C11A	AIR 41 C12A
ES	Objeto de la declaración:	Bomba de calor de aire/agua	AIR 11 C11B	AIR 80 C13A
PT	Objeto da declaração:	Bomba de calor ar/água	AIR 18 C11B	AIR 80 C22A
NL	Voorwerp van de verklaring:	Lucht-water-warmtepomp	AIR BASIC 618 C12B T200	GMLW 9 PLUS VX
CS	Předmět prohlášení:	Tepelné čerpadlo vzduch-voda	GMLW 25 PLUS	GMLW 35 PLUS

DE	Der oben beschriebene Gegenstand der Erklärung erfüllt die einschlägigen Harmonisierungsrechtsvorschriften der Union.
EN	The object of the declaration described above is in conformity with the relevant harmonisation legislation of the European Union.
FR	L'objet de la déclaration décrit ci-dessus est conforme à la législation d'harmonisation en vigueur de la communauté européenne.
PL	Opisany powyżej produkt objęty deklaracją spełnia obowiązujące przepisy harmonizacyjne Unii Europejskiej.
IT	L'oggetto della dichiarazione sopra specificato è conforme ai requisiti delle normative di armonizzazione applicabili dell'Unione.
ES	El objeto de la declaración descrita anteriormente se ajusta a la legislación de armonización pertinente de la Unión.
PT	O objeto da declaração acima citado preenche os requisitos constantes da legislação correspondente da União em matéria de harmonização.
NL	Het bovengenoemde voorwerp van de verklaring voldoet aan de geldende voorschriften van het harmonisatierecht van de Unie.
CS	Výše popsaný předmět prohlášení splňuje příslušné harmonizační právní předpisy Unie.

Machinery (MD) Directive 2006/42/EC	Regulation (EU) Fluorinated Greenhouse Gases 517/2014
Electromagnetic Compatibility (EMC) Directive 2014/30/EU	Regulation (EU) Ecodesign Requirements 813/2013
Energy-related Products Directive (ErP) 2009/125/EC	Delegated Regulation (EU) 811/2013 (energy efficiency labelling)
Pressure equipment (PED) Directive 2014/68/EU	Regulation (EU) 2017/1369 (energy consumption labelling)
Restriction of Hazardous Substances (RoHS) Directive 2011/65/EU	

DE	Angabe der einschlägigen harmonisierten Normen, die zugrunde gelegt wurden, oder Angabe der anderen technischen Spezifikationen, in Bezug auf die die Konformität erklärt wird:
EN	References to the relevant harmonised standards used or references to the other technical specifications in relation to which conformity is declared:
FR	Indication des normes harmonisées en vigueur ou indication d'autres spécifications techniques servant de référence à la présente déclaration de conformité :
PL	Wskazanie odnośnych zastosowanych norm zharmonizowanych lub innych specyfikacji technicznych, w odniesieniu do których deklarowana jest zgodność:
IT	Indicazione delle normative di armonizzazione applicabili sulle quali si è basato il prodotto, o indicazione delle altre specifiche tecniche in riferimento alle quali si dichiara la conformità:
ES	Indicación de las normas armonizadas pertinentes utilizadas o de las demás especificaciones técnicas con respecto a las cuales se declara la conformidad:
PT	Indicação da legislação de harmonização pertinente que serviu de base ou indicação das outras especificações técnicas em relação às quais é declarada a conformidade:
NL	Vermelding van de geldende, geharmoniseerde normen die daaraan ten grondslag liggen, of vermelding van de andere technische specificaties op basis waarvan de conformiteit verklaard wordt:
CS	Uvedení příslušných harmonizovaných norem použitých jako základ nebo uvedení jiných technických specifikací, s ohledem na které je vystaveno prohlášení o shodě:

EN 378-1: 2018-07	EN 61000-3-11: 2017-04	EN ISO 12100: 2013-10
EN 378-2: 2018-07	EN 61000-3-12: 2012-07	
EN 14825: 2016-09	EN 61000-6-2:2006-05+AC:2011-08	
EN 12102: 2018-01	EN 61000-6-3:2011-10	
	EN 60204-1: 2009-12	

DE	Zusatzangaben:	Diese Erklärung beinhaltet keine Zusicherung von Eigenschaften. Bitte beachten Sie die Sicherheitshinweise in der mitgelieferten Produktdokumentation. Bei einer nicht mit uns abgestimmten Änderung des (der) Gerät(e)s verliert diese Erklärung Ihre Gültigkeit.
EN	Additional information:	This declaration contains no warranties of any product characteristics. Please observe the safety information in the product documentation supplied. Any modification to the appliance(s) that has not been approved by us effectively voids this statement.
FR	Indications supplémentaires :	La présente déclaration n'apporte aucune garantie quant aux propriétés. Veuillez tenir compte des consignes de sécurité fournies dans la documentation du produit. En cas de modification du ou des appareils sans notre accord préalable, la présente déclaration perd sa validité.
PL	Informacje dodatkowe:	Niniejsza deklaracja nie stanowi przyrzeczenia właściwości. Należy przestrzegać wskazówek dotyczących bezpieczeństwa podanych w dołączonej dokumentacji produktu. W przypadku zmiany wprowadzonej w urządzeniu (urządzeniach) nieuzgodnionej z nami niniejsza deklaracja traci ważność.
IT	Dati aggiuntivi:	La presente dichiarazione non comporta alcuna garanzia di caratteristiche. Si prega di attenersi alle avvertenze di sicurezza indicate nella documentazione fornita con il prodotto. Questa dichiarazione perde di validità in caso di modifiche del(i) dispositivo(i) apportate senza la nostra approvazione.
ES	Información adicional:	Esta declaración no incluye ninguna garantía de propiedades. Tenga en cuenta las instrucciones de seguridad de la documentación del producto suministrada. En caso de que se produzca un cambio en los aparatos no acordado con nosotros, esta declaración perderá su validez.
PT	Indicações complementares:	A presente declaração não contém qualquer garantia de características. Queira levar em conta as indicações de segurança contidas na documentação do produtofornecida com o conjunto. No caso de uma alteração do(s) aparelho(s) que não tenha sido efetuada em coordenação com os nossos serviços, a presente declaração perderá a sua validade.
NL	Aanvullende gegevens:	Deze verklaring bevat geen verzekering van eigenschappen. Neem de veiligheidsaanwijzingen in de meegeleverde productdocumentatie in acht. Deze verklaring is niet meer geldig bij een verandering van het (de) appara(a)t(en) die niet met ons overlegd is.
CS	Doplňující údaje:	Toto prohlášení neslouží jako záruka vlastností. Dodržujte bezpečnostní pokyny v dodané dokumentaci k výrobku. Provedením jakékoliv úpravy přístroje/ přístrojů bez předchozí konzultace s námi pozbývá toto prohlášení platnosti.

DE	Unterzeichnet für und im Namen von:	**OCHSNER Wärmepumpen GmbH**	DE	Ort und Datum der Ausstellung:	**Haag, 12.06.2019**
EN	Signed for and on behalf of:		EN	Place and date of issue:	
FR	Signé pour et au nom de :		FR	Lieu et date de l'implantation :	
PL	Podpisano w imieniu i na rzecz:		PL	miejscowość i data wystawienia:	
IT	Firma per e per conto di:		IT	Luogo e data di emissione:	
ES	Firmado por y en nombre de:		ES	Lugar y fecha de elaboración:	
PT	Assinado para e em nome de:		PT	Local e data da emissão:	
NL	Ondertekend voor en in naam van:		NL	Plaats en datum van opmaak:	
CS	Podepsán/a za a jménem:		CS	Místo a datum vystavení:	

DE	Name, Funktion, Unterschrift:	**Karl Ochsner**	**Clemens Birklbauer**
EN	Name, position, signature:	**CEO - Chief Executive Officer**	**CTO – Chief Technology Officer**
FR	Nom, fonction, signature :		
PL	Imię i nazwisko, stanowisko, podpis:		
IT	Nome, funzione, firma:		
ES	Nombre, función, firma:		
PT	Nome, função, assinatura:		
NL	Naam, functie, handtekening:		
CS	Jméno, funkce, podpis:		

14 ERP-Data

Model:	AIR 80 C13A
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
Temperature application:	medium
Climate conditions:	average

Item	Symbol	Value	Unit
Rated heat output (*)	Praded	68	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T_j			
T_j = -7 °C	Pdh	54.9	kW
T_j = +2 °C	Pdh	58.7	kW
T_j = +7 °C	Pdh	72.4	kW
T_j = +12 °C	Pdh	84.4	kW
T_j = bivalent temperature	Pdh	55.3	kW
T_j = operation limit temperature	Pdh	54.9	kW
For air-to-water heat pumps: T_j = -15 °C (if TOL < - 20 °C)	Pdh	56.3	kW
Bivalent temperature	T_{biv}	-5	°C
Power input „compressor off"		0	W
Power consumption in modes other than active mode			
Off mode	P_{OFF}	20	kW
Thermostat-off mode	P_{TO}	20	kW
Standby mode	P_{SB}	20	kW
Crankcase heater mode	P_{CK}	0	kW
Other items			
Capacity control	fixed		
Sound power level indoors	L_{WA}	60	dB
Sound power level outdoors	L_{WA}	78	dB
Annual energy consumption	Q_{HE}	48818	kWh
For heat pump combination heater:			
Declared load profile			
Daily electricity consumption	Q_{elec}		kWh

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	113	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T_j			
T_j = -7 °C	COPd	2.20	
T_j = +2 °C	COPd	2.79	
T_j = +7 °C	COPd	3.45	
T_j = +12 °C	COPd	4.33	
T_j = bivalent temperature	COPd	2.33	
T_j = operation limit temperature	COPd	2.03	
For air-to-water heat pumps:For air-to-water heat pumps: T_j = -15 °C (if TOL < - 20 °C)	COPd	1.81	
For air-to-water heat pumps: Operation limit temperature	TOL	-15	°C
Heating water operating limit temperature	WTOL	65	°C
Supplementary heater			
Rated heat output (*)	Psup	13.61	kW
Type of energy input	electricity		
For air-to-water heat pumps: Rated air flow rate, outdoors	—	26000	m^3/h
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	—	—	m^3/h
Water heating energy efficiency	η_{wh}		%
Daily fuel consumption	Q_{fuel}		kWh

Contact details:	OCHSNER Wärmepumpen GmbH, Ochsner-Straße 1, A-3350 Haag

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

Model:	AIR 80 C22A
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
Temperature application:	medium
Climate conditions:	average

Item	Symbol	Value	Unit
Rated heat output (*)	Praded	68	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T_j			
T_j = -7 °C	Pdh	54.9	kW
T_j = +2 °C	Pdh	58.7	kW
T_j = +7 °C	Pdh	72.4	kW
T_j = +12 °C	Pdh	84.4	kW
T_j = bivalent temperature	Pdh	55.3	kW
T_j = operation limit temperature	Pdh	54.9	kW
For air-to-water heat pumps: T_j = -15 °C (if TOL < - 20 °C)	Pdh	56.3	kW
Bivalent temperature	T_{biv}	-5	°C
Power input „compressor off“		0	W
Power consumption in modes other than active mode			
Off mode	P_{OFF}	20	kW
Thermostat-off mode	P_{TO}	20	kW
Standby mode	P_{SB}	20	kW
Crankcase heater mode	P_{CK}	0	kW
Other items			
Capacity control	fixed		
Sound power level indoors	L_{WA}	60	dB
Sound power level outdoors	L_{WA}	64	dB
Annual energy consumption	Q_{HE}	48818	kWh
For heat pump combination heater:			
Declared load profile	—		
Daily electricity consumption	Q_{elec}	—	kWh

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	113	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T_j			
T_j = -7 °C	COPd	2.20	
T_j = +2 °C	COPd	2.79	
T_j = +7 °C	COPd	3.45	
T_j = +12 °C	COPd	4.33	
T_j = bivalent temperature	COPd	2.33	
T_j = operation limit temperature	COPd	2.03	
For air-to-water heat pumps:For air-to-water heat pumps: T_j = -15 °C (if TOL < - 20 °C)	COPd	1.81	
For air-to-water heat pumps: Operation limit temperature	TOL	-15	°C
Heating water operating limit temperature	WTOL	65	°C
Supplementary heater			
Rated heat output (*)	Psup	13.61	kW
Type of energy input	electricity		
For air-to-water heat pumps: Rated air flow rate, outdoors	—	19600	m^3/h
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	—	—	m^3/h
Water heating energy efficiency	η_{wh}	—	%
Daily fuel consumption	Q_{fuel}	—	kWh

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

15 Directory of Illustrations

16 Directory of Tables

We reserve the right to change technical data without notice!

This instruction describes appliances which are not always in the scope of supply in series. Therefore deviations to your heat pump are quite possible.

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Address .....

.....

Tel.: .....

Service engineer:

.....

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