INSTALLATION MANUAL
HEAT PUMP HEIKO THERMAL

THERMAL 6
THERMAL 9
THERMAL 12
THERMAL 15
THERMAL 19

- The device is granted a 5-year warranty only if commissioned by an Authorised Service Centre and registered in the guarantor's system. The cost of service commissioning according to the current APS rates fixed by the general distributor of Refsystem devices.
- Please read this manual carefully before commencing installation.
- This device is filled with R32 refrigerant.
- The device contains fluorinated greenhouse gases.
- Keep this manual for future reference.

Table of Contents

Before Use

Air-to-water heat pump
DC inverter

Safety Precautions

Cautions:
Do not accelerate the defrosting process or clean the device in a manner other than recommended by the manufacturer. The device shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater.).
Do not pierce or burn.
Note:the refrigerant contained in the device may be odourless.
Servicing shall be performed only as recommended by the manufacturer.
The appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation. All procedures that affect the safety of the installation shall only be carried out by competent persons.
The device contains fluorinated greenhouse gases.
It is forbidden to release the refrigerant into the atmosphere! All the products are in conformity with the following European regulations: Low Voltage Directive, Electromagnetic Compatibility Directive

General information:

1. Transport of equipment containing flammable refrigerants
In compliance with the transport regulations

2. Marking of equipment using signs
In compliance with local regulations

3. Disposal of equipment using flammable refrigerants
In compliance with national regulations

4. Storage of equipment/devices
The equipment shall be stored in accordance with the manufacturer's instructions.

5. Storage of packed (unsold and brand new) equipment
Storage packaging design shall ensure protection against refrigerant leakage in the case of mechanical damage of the device inside the packaging. The maximum number of pieces of equipment permitted to be stacked shall be determined by local regulations.

6. Information on servicing

1) Work area inspection
Prior to beginning work with systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimised. For maintenance or repair of the refrigerant installation, the following precautions shall be complied with prior to conducting such works.

Before Use

2) Work procedure

Work shall be undertaken under a controlled procedure so as to minimise the risk of a flammable gas or vapour being present while the work is being performed.

3) General work area

All maintenance and other personnel working in the device vicinity shall be instructed on the nature of work being carried out. Work in confined spaces shall be avoided. The work area around shall be sectioned off. Ensure that the conditions within the work area have been made safe by control of flammable material.

4) Checking for presence of the refrigerant

The area shall be inspected with an appropriate refrigerant detector prior to and during work. This lets the technical personnel know whether the atmosphere in their work place is not toxic or flammable. Tightness detectors should enable the detection of the type of refrigerant present in the installation. They must be intrinsically safe providing the appropriate level of protection, and non-sparking.

5) Presence of fire extinguisher

If hot work is to be performed, appropriate fire extinguishing equipment must be available. Have a dry powder or CO2 fire extinguisher adjacent to the charging area.

6) No ignition sources

No person carrying out work in relation to a refrigeration system which involves exposing any pipe work that contains or has contained flammable refrigerant shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion. All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which flammable refrigerant can possibly be released to the surrounding space. Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks.“No Smoking” signs shall be displayed.

7) Ventilated area

Ensure that the area is in the open or that it is adequately ventilated before opening the refrigerant circuit or conducting any hot work. Ventilation shall continue until the completion of work. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

8) Checks to the refrigeration equipment

Where electrical components are being changed, they shall be fit for the purpose and to the correct specification. At all times the manufacturer's maintenance and service guidelines shall be followed. If in doubt consult the manufacturer’s technical department for assistance. The following controls should be applied to installations containing flammable refrigerants:

The charge size is in accordance with the room size within which the refrigerant containing parts are installed; The ventilation machinery and outlets are operating adequately and are not obstructed; If an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant; Marking to the equipment continues to be visible and legible. Markings and signs that are damaged or illegible shall be replaced with new ones; Refrigeration pipe or components shall be installed in a places where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being corroded in this manner.

9) Checks to electrical devices

Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used. This fact shall be reported to the owner of the equipment. Initial safety checks shall determine that: Capacitors are discharged: this shall be done in a safe manner to avoid the possibility of sparking; There are no live electrical components and wiring exposed while charging, recovering or purging the system; .That there is continuity of earth bonding.

7. Repairs to sealed components

1) During repairs of sealed components, all electrical supplies shall be disconnected from the equipment being worked upon prior to any removal of sealed covers, etc. If it is absolutely necessary to have an electrical supply to equipment during servicing, then a permanently operating form of leak detection shall be located at the most critical point to warn of a potentially hazardous situation.

2) Particular attention shall be paid to the following to ensure that by working on electrical components, the casing is not altered in such a way that the level of protection is affected. This shall include damage to cables, excessive number of connections, terminals not made to original specification, damage to seals, incorrect fitting of cable glands, etc.
Ensure that all electrical devices are connected and mounted securely.
Ensure that seals or sealing materials have not degraded to such an extent that they no longer serve the purpose of preventing the ingress of flammable atmosphere. Replacement parts shall be in accordance with the manufacturer's specifications.

CAUTION:

The use of silicon sealant may inhibit the effectiveness of some types of leak detection equipment. Intrinsically safe components do not have to be isolated prior to working on them.

8. Repair to intrinsically safe components

Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use. Intrinsically safe components are the only types that can be worked on while live in the presence of a flammable atmosphere. The test apparatus shall be at the correct rating.

Replace components only with parts specified by the manufacturer. Other parts may result in the ignition of refrigerant in the atmosphere from a leak.

9. Wiring

Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects. The check shall also take into account the effects of ageing or continual vibration from sources such as compressors or fans.

10. Detection of flammable refrigerants

Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) shall not be used.

11. Leak detection methods

The following leak detection methods are deemed acceptable for systems containing flammable refrigerants:

Electronic leak detectors shall be used to detect flammable refrigerants, but the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.) Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used. Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed and the appropriate percentage of gas is confirmed (max. 25%).

Leak detection fluids are suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work.

If a leak is suspected, all naked flames shall be removed/ extinguished.

If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak. Oxygen free nitrogen (OFN) shall then be purged through the system both before and during the brazing process.

12. Removal and evacuation

When breaking into the refrigerant circuit to make repairs - or for any other purpose -conventional procedures shall be used. However, it is important that best practice is followed since flammability is a consideration. The following procedure shall be adhered to:

- remove refrigerant from the circuit;
- purge the circuit with inert gas;
- evacuate the circuit;
- purge again with inert gas;
- open the circuit by cutting or brazing.

The refrigerant charge shall be recovered into the correct recovery cylinders. The system shall be “flushed” with OFN to render the unit safe. This process may need to be repeated for several times. Compressed air or oxygen shall not be used for this task.

Flushing shall be achieved by breaking the vacuum in the system with OFN and continuing to fill until the working pressure is achieved, then venting to atmosphere. Finally, the system shall be vacuumised. This process shall be repeated until no refrigerant is within the system. When the final OFN charge is used, the system shall be vented down to atmospheric pressure to enable work to take place. This operation is absolutely vital if brazing operations on the pipe-work are to take place. Ensure that the outlet for the vacuum pump is not close to any ignition sources and there is ventilation available.

13. The procedure of refrigerant charging

In addition to conventional charging procedures, the following requirements shall be followed.

Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimise the amount of refrigerant contained in them.

Cylinders shall be kept upright.

Ensure that the refrigeration system is earthed completely before commencing the refrigerant charge. Label the system with the appropriate F-gas label upon completion.

Extreme care shall be taken not to overfill the refrigeration system. Prior to recharging the system it shall be pressure tested with OFN. The system shall be leak tested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.

14. Decommissioning

Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its detail. It is recommended good practice that all refrigerants are recovered safely.

Prior to the task being carried out, oil and refrigerant samples shall be taken in case analysis is required prior to re-use of reclaimed refrigerant. It is essential that electrical power is available before the task is commenced.

a) Become familiar with the equipment and its operation..

b) Isolate the system from the electrical supply.

c) Before attempting the procedure, ensure that::

- Mechanical handling equipment is available, if required, for handling refrigerant cylinders;
- All personal protective equipment is available and being used correctly;
- The installation emptying process is supervised at all times by a competent person;
- Recovery equipment and cylinders conform to the appropriate standards.

d) Pump down the refrigerant system, if possible.

e) If vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.

f) Make sure that cylinder is situated on the scales before recovery takes place.

g) Start the recovery machine / system and operate it in accordance with the manufacturer's instructions.

h) The cylinder must not be filled with excessive amount of refrigerant (maximum 80% of liquefied refrigerant volume).

i) Do not exceed the maximum working pressure of the cylinder, even temporarily.

j) When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.

k) Recovered refrigerant shall not be charged into another refrigeration system unless it has been cleaned and checked.

15. Labelling

Equipment shall be labelled stating that it has been de-commissioned and emptied of refrigerant. The label shall be dated and signed. Ensure that there are labels on the equipment stating the equipment contains flammable refrigerant.

16. Refrigerant recovery

When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely.

When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that enough cylinders for holding the total system refrigerant are available. All cylinders to be used shall be attested for the recovered refrigerant and labelled for the refrigerant
used in the installation stating its type.

The cylinders shall be equipped with safety and cut-off valves. Check that the valves are fully functional. Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.

The recovery equipment shall be in good working order and include the instructions for use. The equipment shall be suitable for the recovery of flammable refrigerants. In addition, a set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak-free disconnect couplings. Check that they are in good technical condition. Before using the recovery machine, check that it is in satisfactory working order, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of a refrigerant release. Consult manufacturer if in doubt.

The recovered refrigerant shall be returned to the refrigerant supplier in the correct recovery cylinder, and the relevant Waste Transfer Note attached. Do not mix refrigerants in recovery units and especially not in cylinders.

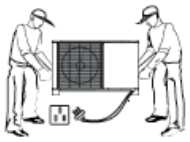
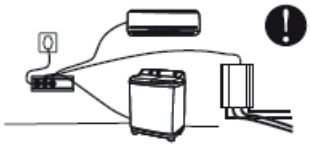
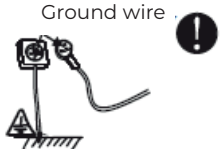
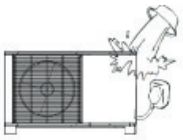
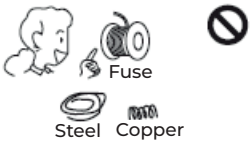
If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant. The evacuation process shall be carried out prior to returning the compressor to the suppliers. Only electric heating to the compressor body shall be employed to accelerate this process. Oil drainage from the system shall be carried out safely.

Before Use

1.1 Safety Cautions

The following symbols are very important. Please be sure to understand their mea
which concerns the product and your personal safety.

Warning Caution Prohibition

		
The installation, dismantlement and maintenance of the unit must be performed by qualified personnel. It is forbidden to make any changes to the product design, otherwise there is a risk of injury or product damage.	Make sure the power supply to the heat pump unit is off before any operations are done on the unit. When the power cord gets loose or is damaged, always get a qualified person to fix it.	Be sure to read this manual before use
		
Before taking shower, please always add a mixture valve before water tap and set it to proper temperature.	A properly adapted socket must be used, otherwise it may not work properly.	The power supply to the unit must be grounded.
	This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge under the supervision of adult guardians trained in safe operation of the device and understanding the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.	
		
Do not touch the ventilation grille when the ventilator's engine is on.	Do not touch the power plug with wet hands. Never pull out the plug by pulling the power cable.	Water or any kind of liquid must not be poured onto the product, or it may cause product malfunction.
		
When the power cord gets loose or is damaged, always get a qualified person to fix it.	Please select the correct fuse or breaker as per recommended. Steel wire or copper wire cannot be used as substitutes for fuse or breaker, or it may cause product damage.	Please note that there is a risk of finger injury by the heat exchanger ribs.

Before Use

<table>
<tr>
<td> 
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<td>  </td>
<td>Main Power Cable
 
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<tr>
<td>It is mandatory to use a suitable circuit breaker for the heat pump and make sure the power supply to the heater corresponds to the specifications. Otherwise the unit might be damaged.</td>
<td>Disposal of scrap batteries — please discard the batteries as sorted municipal waste at the accessible collection point.</td>
<td>Installation of a residual current device (RCD) having a rated residual operating current not exceeding 30 mA is advisable.</td>
</tr>
<tr>
<td colspan="3">1. It is recommended to fill the system with clean water
2. If you use tap water for filling, soften it and install a filter.
Note: after filling the pressure in water system should be 1.5-2 bar.</td>
</tr>
<tr>
<td>  </td>
<td colspan="2">This marking indicates that, in the EU, the product must not be disposed of with communal waste. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return the used device, use the waste retrieval and collection system or contact the distributor the product was purchased from. They can collect the purchased product. They can transfer the product for environmentally safe recycling.</td>
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Warranty terms

1. Warranty period

1.1. Refsystem sp. z o.o. based in Grudziądz, 86-300 Grudziądz, at ul. Metalowców 5, entered into the Register of Entrepreneurs of the National Court Register kept by the District Court for the capital city of Warsaw, XIII Commercial and Registration Department of the National Court Register, under the KRS number 0000211103, REGON 011009277, VAT ID 5220003919, (hereinafter referred to as "Guarantor") grants a guarantee to consumers within the meaning of Art. 22(1) of the Civil Code for hidden material or construction defects of a part or the entire heat pump that prevent its use as intended, provided that the requirements set out in chapter 3, section 3.1 are met;

1.2. The warranty period for the heat pump starts from the day of the first start-up at the place of permanent installation, but not later than 6 months from the date of purchase and is 60 months in the case of a complete heat pump delivered by the Guarantor, provided that the requirements set out in chapter 3 are met;

1.3. During the warranty period, the Guarantor undertakes to remove the physical defect by repairing or delivering a defect-free item. The Guarantor or his Authorised Service Partner decides on the method of performance of the warranty service; the specification of the possible methods can be found on the following website: https://heiko.pl/kontakt/

1.4. If the requirements specified in chapter 3 are not met, the warranty shall expire after one year from the sale date.

2. Warranty coverage

2.1. The first start-up must be performed by an Authorised Service Partner appropriately authorized by the Guarantor, subject to sections. 2.6 and 2.7. The first start-up is payable according to the current rates of the Authorised Service Partner;

2.2. Warranty repairs of devices weighing more than 10 kg shall be performed at the place of installation of the heat pump within 14 working days from the date of reporting the defect to the Authorised Service Partner. In other cases (weight below 10 kg), the Authorised Service Partner shall decide whether it is necessary to carry out the warranty repair outside the place of installation of the devices;

2.3. The warranty covers any defects of the device caused by defective parts or manufacturing defects;

2.4. Only companies with the APS (Authorized Service Partner) status are authorized to perform warranty repairs and technical inspections; the list of these companies can be found on the following website: www.heiko.pl,;

2.5. The obligations of the Guarantor are taken over by APS, which was the last to perform warranty repairs;

2.6. This warranty shall be respected by the Guarantor after the following assumptions are met:

a) the first start-up takes place under the supervision of an Authorised Service Partner appropriately authorized by the Guarantor and is confirmed in writing by the User;

b) the original purchase invoice is presented;

c) the User confirms with a legible signature that the first start-up has been performed;
d) the Authorised Service Partner reports the activation of the heat pump in the pump registration system on the Guarantor's website;
e) the User accepts these Heat Pump Warranty Terms and Conditions when reporting commissioning on the "Commissioning Confirmation" form. They consent to the processing of personal data - in particular the e-mail address or telephone number provided - in order to provide warranty and post-warranty service of the heat pump;
f) the direct supplier of the heat pump does not provide a warranty on its own terms.

2.7. The Authorised Service Partner has the right to refuse to perform the first start-up of the heat pump in the case of: improperly performed or unfinished installation or failure to pay the amount due for the device on time. In such cases the system faults shall be recorded in the Commissioning Report, and a repeated paid start-up may only take place after they have been removed.

2.8. The condition for maintaining the guarantee for a period of 60 months is the performance of technical inspections by APS in accordance with the provisions of Chapter 3;

2.9. The rights and obligations arising from the warranty apply only to the User, who is the legal owner of the heat pump, or the User indicated by the entity financing the purchase of the heat pump, if the latter remains its owner;

2.10. The Guarantor reserves the right not to grant or to limit the warrantyin the case of compromised devices;

2.11. Authorised Service Partner may refuse a free repair if:
a) non-conformity is found between the information in the documents and the equipment sold;
b) seals have been tampered with;
c) the provisions included of the Warranty Card are not followed;
d) modifications of the heat pump implemented by a third party

2.12. If replacement parts need to be imported from abroad, the repair period shall be extended by the time necessary to import the spare parts.

2.13. A notification of defects found shall include:
a) data of the reporting entity;
b) Warranty Card number;
c) device serial number;
d) description of the defect;
e) confirmation of the completion of regular technical inspections;
f) address of device installation site.

2.14. The repair of the device or replacement of parts, regardless of the scope of the repair or replacement, shall not cause the warranty period to start anew upon the repair or delivery of the spare parts. The warranty period shall be extended by the device repair period. It shall not apply if the Customer fails to pick up the repaired equipment from the ASP despite having been notified of the completion of the repair.
If the Customer fails to pick up the repaired equipment for more than 8 weeks from the notification of the completion of the repair, the ASP reserves the right to dispose of the equipment.

Warranty terms

3. Warranty technical inspection

3.1. A pre-requisite to the validity of the warranty is the cyclical completion of paid technical inspections of the devices, at least once per year within the warranty period, by the ASP, confirmed with an appropriate entry in the Warranty Card;

3.2. The technical inspections shall be carried out on request. In order for an inspection to be performed the Customer shall notify the Authorised Service Partner;

3.3. If justified by the operating conditions of the device, the ASP, in agreement with the Customer, shall schedule additional obligatory warranty inspections, which shall be pre-requisite to the exercise of the rights arising from this warranty. If no agreement is reached, the decision of the ASP shall be final.

4. Guarantor's disclaimer

4.1. The warranty does not cover:

a) damage to the electrical or electronic system if the device has been connected to a voltage source other than the standard electrical network, e.g. power generator, UPS, etc. damage resulting from the lack of protection of the electrical and hydraulic system;

b) damage resulting from improper execution of the electrical installation;

c) damage resulting from improper execution of the hydraulic system (inconsistent with the guidelines for the design and implementation of systems with heat pumps);

d) damage when the heating system does not guarantee protection against exceeding the maximum operating parameters of the heat pump;

e) damage caused by improper operation: inconsistent with the Operating Manual or long-term operation in extreme parameters of the operating range or operation in critical conditions;

f) faults in the heat pump operation resulting from improper selection of heating system components;

g) faults caused by incorrect parameters of liquids flowing through heat pump exchangers. The recommended water hardness is 2-6 dH;

h) errors resulting from arbitrary automation adjustments at the service level reserved for Authorised Service Partners only;

i) devices that have been installed, stored or used inconsistently with the instructions, generally accepted safety requirements or technical rules;

j) devices in which the factory seals have been arbitrarily removed, components repaired, modifications made on one's own or the device equipped with non-factory elements;

k) damage caused by lack of or improper maintenance (e.g. periodic inspections by persons or companies not authorizes by the Guarantor)

Warranty terms

l) any defects and damage caused by Force Majeure events (e.g. flooding, corrosion, electrical system overvoltage, lightning),

m) any activities and replacement parts listed in the operating manual and included in the normal operation of the appliance (filter cleaning and replacement, remote controller battery replacement).

4.2. The warranty shall not cover any claims of the Customer based on the technical specifications of the device, provided that they meet the information provided by the manufacturer;

4.3. Any decision of the ASP on the legitimacy of a claim shall be final;

4.4. The user covers the following costs, not covered by the warranty, according to the price list of an Authorised Service Partner:

a) all costs associated with the assembly of the device supplied as standard in parts

b) the cost of installing and connecting the heat pump at the place of its operation;

c) costs of the first start-up of the heat pump, as well as possible subsequent visits, if the first start-up is impossible;

d) costs of periodic inspections, maintenance and consumables; e) costs of cleaning the hydraulic system and possible rinsing of heat exchangers;

f) the total cost of repair and travel in the event of an unjustified complaint;

g) travel costs according to the current price list of the Authorised Service Partner in the event of failure to make the device available despite the agreed repair date.

4.5. The warranty service of the device will be performed only if the heat pump is registered and the User's personal data is provided in the heat pump registration system on the Guarantor's website. If the User does not agree to enter data into the heat pump registration system, the warranty for the device is limited to 24 months from the date of purchase of the device.

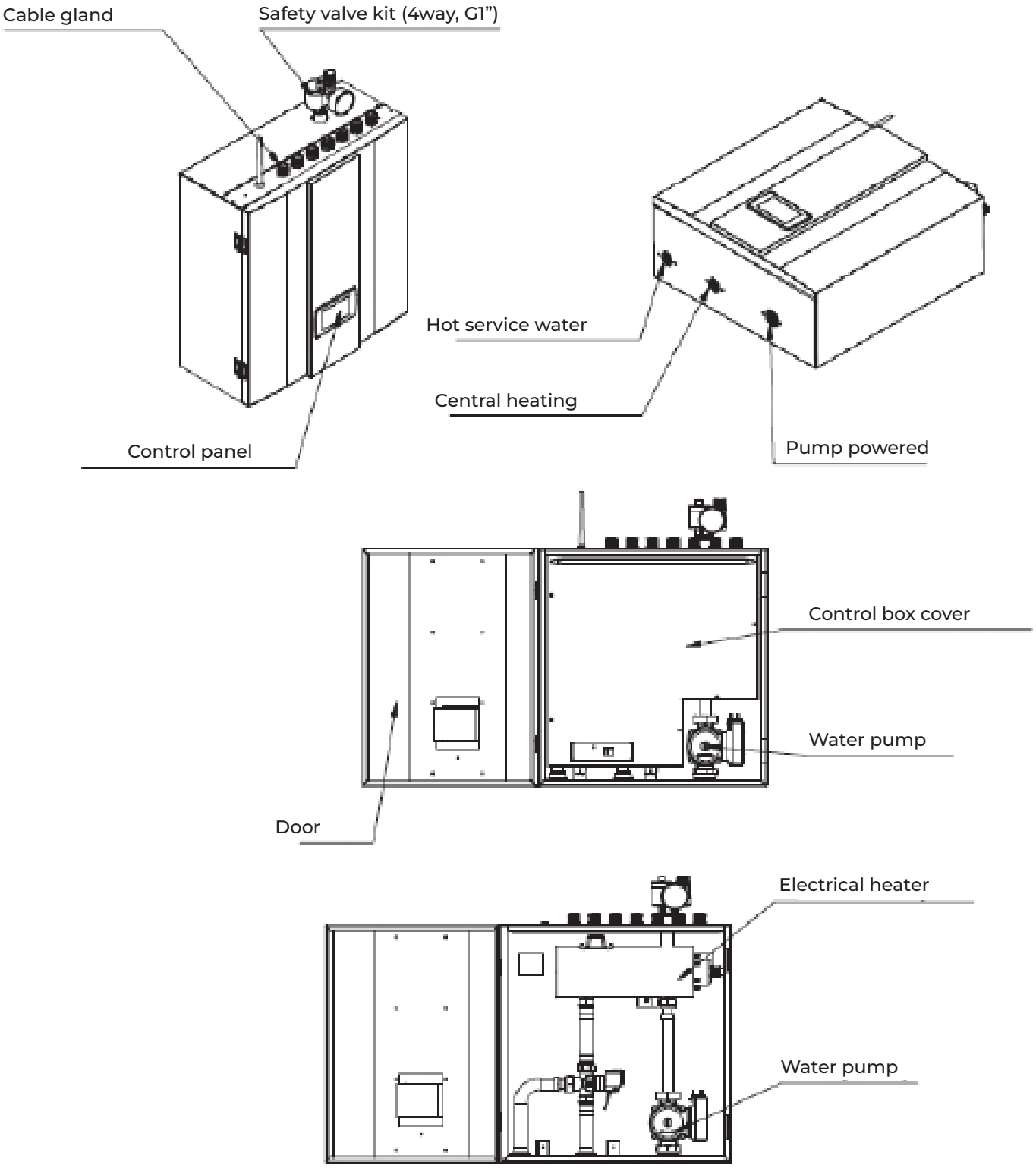
4.6. The warranty does not exclude, limit or suspend the User's rights under the provisions on the direct Seller's warranty for defects in the sold item. Any warranty disputes arising, or likely to arise, between the Guarantor and a User who is not a Consumer within the meaning of applicable law, shall be submitted to the court having jurisdiction over the registered office of Refsystem sp. z o.o. Other warranty conditions are regulated in particular by the provisions of the Civil Code and the Act of May 30, 2014 on consumer rights (Journal Laws of 2018, item 1025 as amended).

IMPORTANT! THE MANUFACTURER RESERVES THE RIGHT TO ALTER THE WARRANTY TERMS WITHOUT PRIOR NOTICE.
THE CURRENT WARRANTY TERMS ARE AVAILABLE ON THE WEBPAGE: **www.heiko.pl**

Main Components

1. Indoor unit

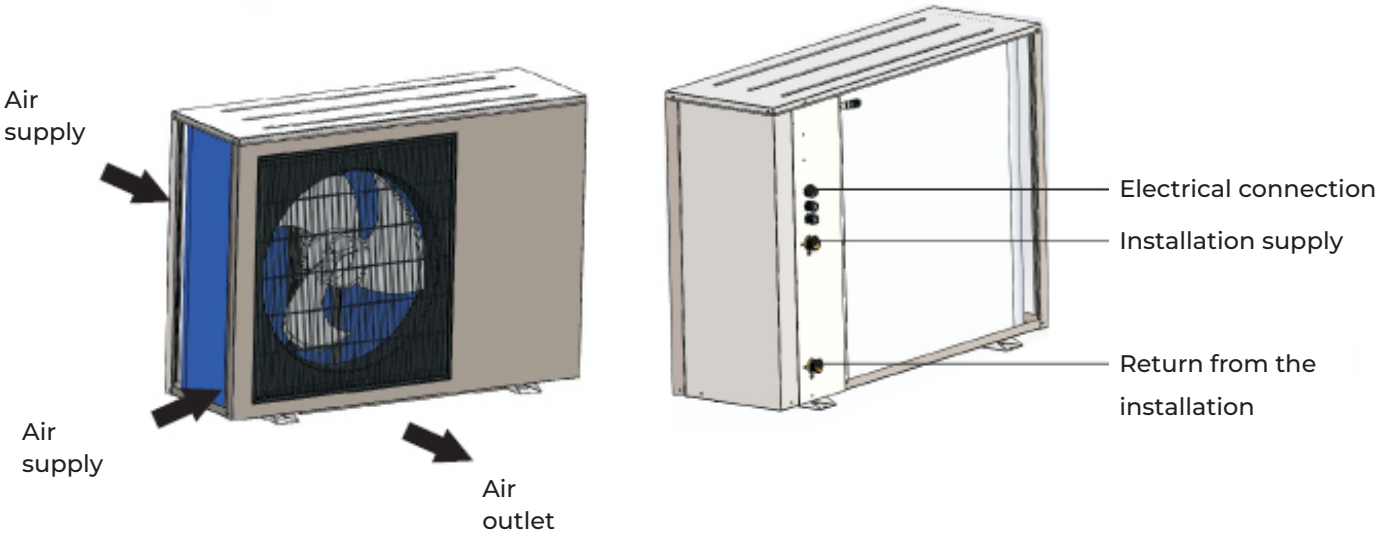
THERMAL 6/9/12/15/19



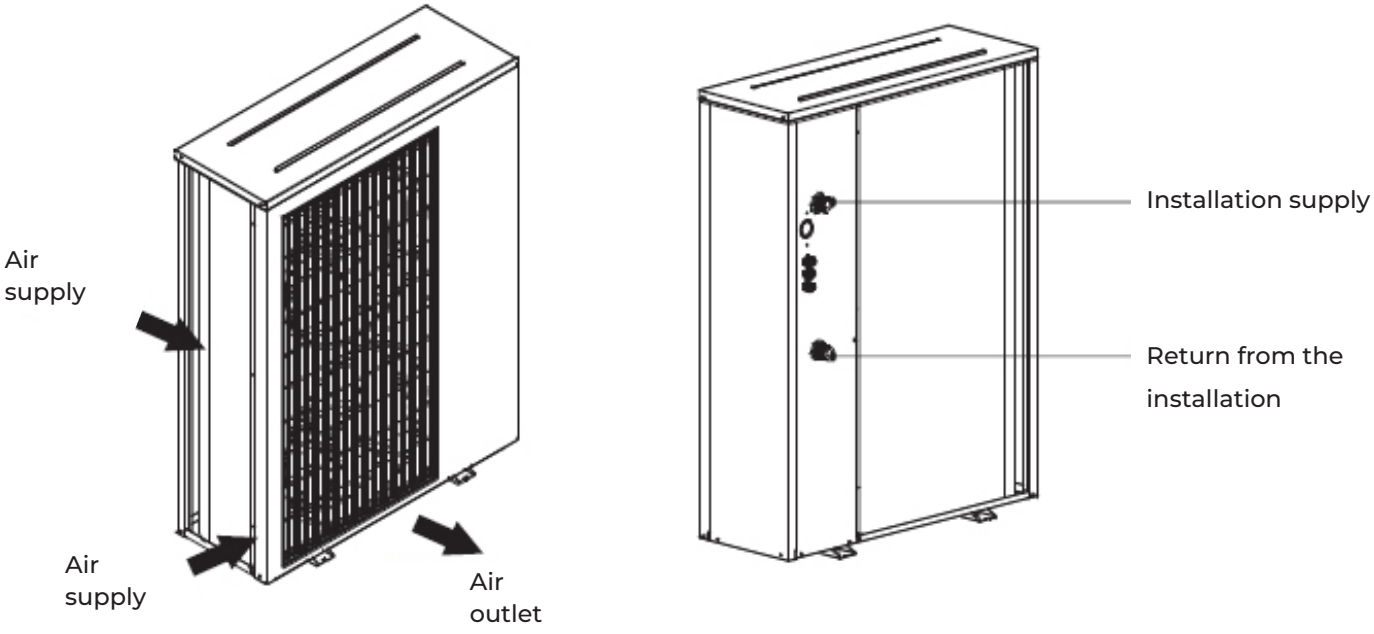
Main Components

2. Outdoor Unit

THERMAL 6/9/12



THERMAL 15/19



THERMAL 6
GWP 675: 0.61 tonne CO2 equivalent, refrigerant/amount: R32/0.9kg
THERMAL 9
GWP 675: 0.95 tonne CO2 equivalent, refrigerant/amount: R32/1.4kg.
THERMAL 12
GWP 675: 1.22 tonne CO2 equivalent, refrigerant/amount: R32/1.8kg.
THERMAL 15
GWP 675: 1.72 tonne CO2 equivalent, refrigerant/amount: R32/2.55kg.
THERMAL 19
GWP 675: 1.76 tonne CO2 equivalent, refrigerant/amount: R32/2.6kg.

Data sheet

Model			Thermal 6	Thermal 9	Thermal 12	Thermal 15	Thermal 19
Seasonal space heating energy efficiency rating, temperate climate	LWT=35°C		A+++	A+++	A+++	A+++	A+++
	LWT=55°C		A++	A++	A++	A++	A++
Rated heat capacity, including all auxiliary heating units, temperate climate (-10°C)	LWT=35°C	kW	4	6	8	12	16
	LWT=55°C		4	6	7	11	15
Seasonal space heating energy efficiency, temperate climate	LWT=35°C	%	186.7	186	185.5	196.8	190.5
	LWT=55°C		133.2	130.4	129.3	130.2	130.11
Annual energy consumption, temperate climate	LWT=35°C	KHh	1827	2826	3225	4829	6953
	LWT=55°C		2809	3728	3997	7602	7750
Indoor sound power level		dB(A)	44	44	44	44	44
Outdoor sound power level		dB(A)	52	53	52	59	61
Special precautions			Before installing, read the installation and service manuals.				
Energy Efficiency			N/A				
Rated thermal power, including all auxiliary heating units, cold climate	LWT=35°C	kW	3	5	7	10.8	15.1
	LWT=55°C	kW	3	5	6	10.6	14.3
Rated thermal power, including all auxiliary heating units, warm climate	LWT=35°C	kW	6	8	10	13.8	18.2
	LWT=55°C	kW	6	7	8	13.1	16.1
Seasonal space heating energy efficiency, cold climate	LWT=35°C	%	155	153	156	160	156
	LWT=55°C	%	117	105	110	115	110
Seasonal space heating energy efficiency, warm climate	LWT=35°C	%	189	192	194	196	194
	LWT=55°C	%	147	143	142	143	140
Annual energy consumption as final energy amount, cold climate	LWT=35°C	kWh	2071	3149	4020	7020	8825
	LWT=55°C	kWh	3089	4100	4112	7910	9930
Annual energy consumption as final amount, warm climate	LWT=35°C	kW	1710	3094	3480	6243	8105
	LWT=55°C	kW	2250	3510	3560	6913	8590
Heat pump power supply		V/Ph/Hz	220-240/1/50	220-240/1/50	220-240/1/50	380-420/5/50	380-420/5/50
Electric heater power supply		V	230	400	400	400	400
Heating (LWT=35°C) (Outside temperature 2°C, 85% RH, EWT30°C,LWT 35°C)	Efficiency	kW	6.1	7.8	10.1	13.8	18.5
	COP		3.8	3.87	3.9	4	4.47

Data sheet

Heating (LWT = 35°C) (Outdoor temperature 7°C, 85% RH, EWT 47°C, LWT 55°C)	Efficiency	kW	6.5	9.2	11.6	15.5	18.5
	COP		4.61	4.38	4.3	5	4.47
Cooling (LWT = 18°C) (Outdoor temperature 35°C, EWT 23°C, LWT 18°C)	Efficiency	kW	7.45	9.5	9.8	18.6	22.5
	EER		4.05	4.23	3.9	4	7.35
Cooling (LWT = 7°C) (Outdoor temperature 35°C, EWT 12°C, LWT 7°C)	Efficiency	kW	7.45	9.5	9.8	13.1	15.8
	EER		4.05	4.23	3.9	3	2.94
Overcurrent protection of the I.U.		B	25	25	25	25	25
Indoor unit power supply (no. of conductors x size)		mm2	3x2.5 YKY	3x2.5 YKY	3x4 YKY	3x2.5 YKY	3x2.5 YKY
Overcurrent protection of the O.U.		B	With I.U.	With I.U.	With I.U.	25 (3L)	25 (3L)
Outdoor unit power supply (no. of conductors x size)		mm2	3x2.5 YKY	3x2.5 YKY	3x4 YKY	5x4 YKY	5x4 YKY
Indoor unit dimensions (WxHxD)	net/gross	mm	570x550x260/ 620x600/310	570x550x260/ 620x600/310	570x550x260/ 620x600/310	570x550x260/ 620x600/310	570x550x260/ 620x600/310
Outdoor unit dimensions (WxHxD)	net/gross	mm	1010x370x700/ 1060x420x750	1165x370x845/ 1200x420x900	1165x370x845/ 1200x420x900	1085 x 390 x 1450 / 1185x400x1550	1085 x 390 x 1450 / 1185x400x1550
Weight, net/gross	Indoor unit	kg	25/51	25/31	25/31	25/31	25/31
Weight, net/gross	Outdoor Unit	kg	65/76	78/90	85/94	130/140	140/150
Compressor	Type		Twin, rotary - 1				
Sensors			TC (CH system temp.), TW (HUW temp.), TV1 (1st circuit temp.),TV2 (2nd circuit temp.), TR (room temp.)				
Integrated electric heater		kW	3	6	6	6	6
Compressor manufacturer			Mitsubishi	Mitsubishi	Mitsubishi	Mitsubishi	Mitsubishi
Refrigerant	Type / amount of gas	kg	R32/0.9	R32/1.4	R32/1.8	R32/2.55	R32/2.6
Heat exchanger			Plate heat exchanger				
Recommended operating range	Refrigera-tion	°C	0-50	0-50	0-50	0-50	0-50
	Heating	°C	-25 - 45	-25 - 45	-25-45	-25 - 45	-25 - 45
	HUW	°C	-25 - 55	-25-55	-25-55	-25 - 55	-25 - 55
Water-side connection	Type	Inch	1	1	1	5/4	5/4
Water pump	Max. delivery head	m	7.5	7.5	7.5	7.5	7.5
Water outlet temperature range	Refrigera-tion	°C	7-25	7-25	7-25	7-25	7-25
	Heating	°C	20-55	20-55	20-55	20-55	20-55
	DHW (tank)	°C	25-55	25-55	25-55	25-55	25-55

Capacity tables

HEATING EFFICIENCY TABLE FOR HEIKO THERMAL 6					
Outdoor temperature (°C)	Water outlet temperature (°C)	Compressor Speed (Hz)	Heating capacity (W)	Input power	COP
DB12/WB10	55.0	79 Hz	6329	2125	3.0
		67 Hz	5394	1779	3.0
		55 Hz	4367	1464	3.0
		43 Hz	3206	1159	2.8
	35.0	79 Hz	7274	1390	5.2
		67 Hz	6119	1154	5.3
		55 Hz	5021	933	5.4
		43 Hz	4002	725	5.5
DB7/WB6	55.0	90 Hz	5698	2193	2.6
		79 Hz	5573	2095	2.7
		67 Hz	4566	1759	2.6
		55 Hz	3605	1449	2.5
		43 Hz	2373	1141	2.1
	35.0	90 Hz	7454	1652	4.5
		79 Hz	6492	1391	4.7
		67 Hz	5558	1170	4.8
		55 Hz	4475	942	4.8
		43 Hz	3455	738	4.7
DB2/WB1	55.0	82 Hz	4723	2128	2.2
		79 Hz	4742	2043	2.3
		67 Hz	3874	1711	2.3
		55 Hz	3057	1407	2.2
		43 Hz	2109	1110	19
	35.0	82 Hz	6131	1613	3.8
		79 Hz	5536	1378	4.0
		67 Hz	4592	1166	3.9
		55 Hz	3870	957	4.0
		43 Hz	2868	740	3.9

Capacity tables

DB-7°C/WB-8°C	55.0	84 Hz	3690	2086	1.8
		79 Hz	3439	1919	1.8
		67 Hz	2868	1618	1.8
		55 Hz	2155	1329	1.6
		43 Hz	1590	1050	1.5
	35.0	90 Hz	4748	1564	3.0
		79 Hz	3980	1331	3.0
		67 Hz	3409	1136	3.0
		55 Hz	2696	935	2.9
		43 Hz	2001	736	2.7
DB-15°C/WB-16°C	55.0	88 Hz	2815	2059	1.4
		79 Hz	2459	1788	1.4
		67 Hz	1960	1511	1.3
		55 Hz	1427	1270	1.1
		43 Hz	792	994	0.8
	35.0	90 Hz	3559	1472	2.4
		79 Hz	3049	1267	2.4
		67 Hz	2529	1087	2.3
		55 Hz	1914	889	2.2
		43 Hz	1406	713	2.0

Capacity tables

HEATING EFFICIENCY TABLE HEIKO THERMAL 9					
Outdoor temperature (°C)	Water outlet temperature (°C)	Compressor Speed (Hz)	Heating capacity (W)	Input power	COP
DB12/WB10	55.0	79 Hz	7963.46	2631.90	3.03
		67 Hz	6737.90	2172.06	3.10
		55 Hz	5413.72	1788.57	3.03
		43 Hz	4042.20	1407.23	2.87
	35.0	79 Hz	8855.88	1717.38	5.16
		67 Hz	7708.95	1400.16	5.51
		55 Hz	6340.91	1123.12	5.65
		43 Hz	4731.31	873.70	5.42
DB7/WB6	55.0	90 Hz	7916.58	3092.68	2.56
		79 Hz	7051.42	2613.22	2.70
		67 Hz	5856.01	2168.13	2.70
		55 Hz	4796.62	1771.05	2.71
		43 Hz	3504.84	1387.83	2.53
	35.0	90 Hz	9217.13	2055.86	4.48
		79 Hz	8067.10	1725.17	4.68
		67 Hz	6925.64	1422.89	4.87
		55 Hz	5649.24	1157.02	4.88
		43 Hz	4301.29	885.10	4.86
DB2/WB1	55.0	90 Hz	6850.77	3010.99	2.28
		79 Hz	5915.42	2555.26	2.31
		67 Hz	4931.50	2117.41	2.33
		55 Hz	3821.85	1735.61	2.20
		43 Hz	2872.45	1362.31	2.11
	35.0	90 Hz	7878.12	2035.87	3.87
		79 Hz	7012.32	1726.90	4.06
		67 Hz	5929.54	1421.97	4.17
		55 Hz	4830.94	1165.21	4.15
		43 Hz	3549.77	899.81	3.95

Capacity tables

DB-7°C/WB-8°C	55.0	90 Hz	4883.38	2827.14	1.73
		79 Hz	4158.34	2404.62	1.73
		67 Hz	3431.02	2002.47	1.71
		55 Hz	2662.99	1623.19	1.64
		43 Hz	1758.57	1268.39	1.39
	35.0	90 Hz	5714.85	1923.30	2.97
		79 Hz	4951.20	1643.02	3.01
		67 Hz	4202.66	1386.78	3.03
		55 Hz	3366.63	1138.24	2.96
		43 Hz	2515.87	887.99	2.83
DB-15°C/WB-16°C	55.0	90 Hz	3632.02	2607.25	1.39
		79 Hz	2913.45	2216.46	1.31
		67 Hz	2358.94	1840.20	1.28
		55 Hz	1740.00	1495.29	1.16
		43 Hz	1070.35	1166.53	0.92
	35.0	90 Hz	4400.39	1836.24	2.40
		79 Hz	3756.19	1570.99	2.39
		67 Hz	3037.94	1300.64	2.34
		55 Hz	2325.43	1076.09	2.16
		43 Hz	1662.50	839.95	1.98

Capacity tables

HEATING EFFICIENCY TABLE HEIKO THERMAL12					
Outdoor temperature (°C)	Output water temperature(°C)	Compressor Speed (Hz)	Heating capacity (W)	Input power	COP
DB12/WB10	55.0	79 Hz	9671	3459	2.8
		67 Hz	8191	2787	2.9
		55 Hz	6728	2249	3.0
		43 Hz	4848	1756	2.8
	35.0	79 Hz	11097	2245	4.9
		67 Hz	9534	1813	5.3
		55 Hz	7976	1442	5.5
		43 Hz	6316	1106	5.7
DB7/WB6	55.0	90 Hz	9866	3751	2.6
		79 Hz	8719	3403	2.6
		67 Hz	7218	2753	2.6
		55 Hz	5825	2245	2.6
		43 Hz	3771	1760	2.1
	35.0	90 Hz	11671	2683	4.3
		79 Hz	10134	2226	4.6
		67 Hz	8662	1824	4.7
		55 Hz	7171	1461	4.9
		43 Hz	5476	1107	4.9
DB2/WB1	55.0	90 Hz	8622	3777	2.3
		79 Hz	7510	3315	2.3
		67 Hz	6123	2711	2.3
		55 Hz	4959	2187	2.3
		43 Hz	3581	1706	2.1
	35.0	90 Hz	10170	2615	3.9
		79 Hz	8934	2241	4.0
		67 Hz	7384	1842	4.0
		55 Hz	5964	1467	4.1
		43 Hz	4683	1132	4.1

Capacity tables

DB-7°C/WB-8°C	55.0	90 Hz	6519	3755	1.7
		79 Hz	5380	3129	1.7
		67 Hz	4432	2554	1.7
		55 Hz	3479	2047	1.7
	35.0	90 Hz	7647	2469	3.1
		79 Hz	6741	2123	3.2
		67 Hz	5472	1741	3.1
		55 Hz	4418	1420	3.1
		43 Hz	3202	1122	2.9
DB-15°C/WB-16°C	55.0	90 Hz	4854	3487	1.4
		79 Hz	3879	2850	1.4
		67 Hz	3223	2397	1.3
	35.0	90 Hz	5927	2328	2.5
		79 Hz	4862	1992	2.4
		67 Hz	4165	1749	2.4
		55 Hz	3162	1408	2.2

Capacity tables

HEATING EFFICIENCY TABLE HEIKO THERMAL15					
Outdoor temperature (°C)	Output water temperature (°C)	Compressor Speed (Hz)	Heating capacity (W)	Input power	COP
DB12/WB10	55.0	66 Hz	12550	4129.11	3
		55 Hz	10519	3445.57	3
		49 Hz	9555	3062	3
		36 Hz	6380	2245.41	3
	35.0	66 Hz	15327	2706	6
		55 Hz	12706	2196	6
		49 Hz	11328	1928	6
		36 Hz	8456	1380	6
DB7/WB6	55.0	76 Hz	12916	4804	3
		66 Hz	11063	4100	3
		55 Hz	9396	3429	3
		49 Hz	8388	3066	3
		36 Hz	5317	2249	2
	35.0	76 Hz	15516	3297	5
		66 Hz	13661	2801	5
		55 Hz	11548	2251	5
		49 Hz	10224	1975	5
		36 Hz	7345	1538	5
DB2/WB1	55.0	76 Hz	11552	4819	2
		66 Hz	9600	4133	2
		55 Hz	8202	3373	2
		49 Hz	6987	3047	2
		36 Hz	4450	2193	2
	35.0	76 Hz	13829	3271	4
		66 Hz	11914	2778	4
		55 Hz	10155	2280	4
		49 Hz	8942	2001	4
		36 Hz	6276	1436	4

Capacity tables

DB-7°C/WB-8°C	55.0	76 Hz	8367	4537	2
		66 Hz	6985	3868	2
		55 Hz	5587	3247	2
		49 Hz	4799	2833	2
		36 Hz	3238	2097	2
	35.0	76 Hz	10570	3150	3
		66 Hz	8981	2730	3
		55 Hz	7375	2288	3
		49 Hz	6479	2047	3
		36 Hz	4477	1498	3
DB-15°C/WB-16°C	55.0	76 Hz	6233	4253	1
		66 Hz	5360	3690	1
		55 Hz	4009	3022	1
		49 Hz	3396	2687	1
		36 Hz	2065	2062	1
	35.0	76 Hz	8026	3022	3
		66 Hz	6752	2602	3
		55 Hz	5448	2147	3
		49 Hz	4791	1910	3
		36 Hz	3385	1493	2

Capacity tables

HEATING EFFICIENCY TABLE HEIKO THERMAL19					
Outdoor temperature (°C)	Water outlet temperature (°C)	Compressor Speed (Hz)	Heating capacity (W)	Input power	COP
DB12/WB10	55.0	66 Hz	16502	5185	3.18
		55 Hz	13680	4283	3.19
		49 Hz	12350	3812	3.24
		36 Hz	8887	2809	3.16
	35.0	66 Hz	18404	3471	5.30
		55 Hz	15514	2831	5.48
		49 Hz	13826	2480	5.57
		36 Hz	10101	1750	5.77
DB7/WB6	55.0	76 Hz	17677	5956	2.97
		66 Hz	14913	5119	2.91
		55 Hz	12408	4284	2.90
		49 Hz	11260	3839	2.93
		36 Hz	7601	2781	2.73
	35.0	76 Hz	18526	4142	4.47
		66 Hz	16485	3542	4.65
		55 Hz	13952	2950	4.73
		49 Hz	12481	2595	4.81
		36 Hz	9193	1834	5.01
DB2/WB1	55.0	66 Hz	13041	5005	2.61
		55 Hz	10969	4184	2.62
		49 Hz	9519	3769	2.53
		36 Hz	6794	2753	2.47
	35.0	76 Hz	16216.3	4062.59	3.99
		66 Hz	14490.65	3473.53	4.17
		55 Hz	12097.25	2842.51	4.26
		49 Hz	10769.51	2536.68	4.25
		36 Hz	7759.24	1816.36	4.27

Capacity tables

DB-7°C/WB-8°C	55.0	76 Hz	10683	5462	1.96
		66 Hz	9177	4653	1.97
		55 Hz	7476	3916	1.91
		49 Hz	6641	3499	1.90
		36 Hz	4491	2577	1.74
	35.0	76 Hz	12572	3947	3.19
		66 Hz	10887	3363	3.24
		55 Hz	9112	2800	3.25
		49 Hz	8128	2491	3.26
		36 Hz	5759	1800	3.20
DB-15°C/WB-16°C	55.0	76 Hz	8505	5173	1.64
		66 Hz	7049	4457	1.58
		55 Hz	5517	3722	1.48
		49 Hz	4890	3338	1.46
		36 Hz	3099	2408	1.29
	35.0	76 Hz	9730	3715	2.62
		66 Hz	8286	3169	2.61
		55 Hz	6724	2672	2.52
		49 Hz	5920	2368	2.50"
		36 Hz	4088	1733	2.36

Capacity tables

HEATING EFFICIENCY TABLE HEIKO THERMAL6					
Outdoor temperature (°C)	Output water temperature (°C)	Compressor Speed (Hz)	Cooling capacity (W)	Input power	COP
DB35/WB24	18.0	74 Hz	7412	1806	4.1
		66 Hz	6728	1536	4.4
		61 Hz	6226	1374	4.5
DB35/WB24	7.0	74 Hz	4256	1687	2.5
		61 Hz	3585	1308	2.7

HEATING EFFICIENCY TABLE HEIKO THERMAL9					
Outdoor temperature (°C)	Water outlet temperature (°C)	Compressor Speed (Hz)	Cooling capacity (W)	Input power	COP
DB35/WB24	7.0	80 Hz	6953.08	2324.11	2.99
		78 Hz	6833.82	2214.56	3.09
		74 Hz	6396.36	2039.98	3.14
		66 Hz	5457.10	1768.42	3.09
DB35/WB24	18.0	74 Hz	9484.71	2200.34	4.31
		66 Hz	8483.92	1859.13	4.56

HEATING EFFICIENCY TABLE HEIKO THERMAL12					
Outdoor temperature (°C)	Output water temperature (°C)	Compressor Speed (Hz)	Heating capacity (W)	Input power	COP
DB24.5/WB20	7.0	74 Hz	8641	2189	3.9
		67 Hz	7795	1836	4.2
		61 Hz	7290	1642	4.4
DB35/WB24	7.0	69 Hz	6560	2444	2.7
		66 Hz	6117	2281	2.7
		61 Hz	5448	2033	2.7
		56 Hz	5335	1652	3.2
		51 Hz	4985	1358	3.7
DB35/WB24	18.0	68 Hz	9845	2510	3.9

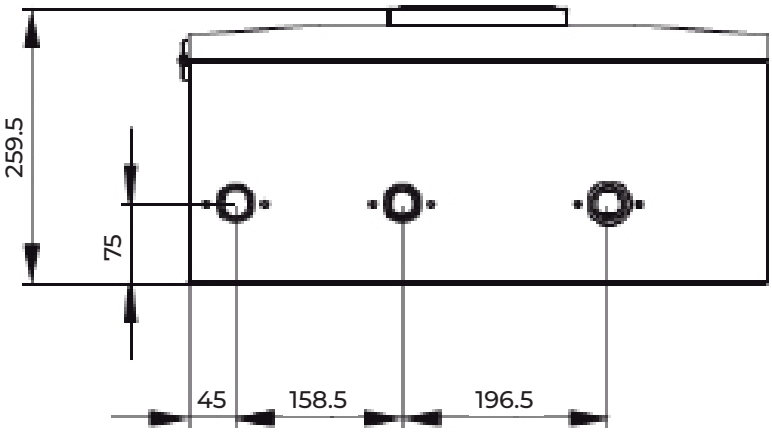
Capacity tables

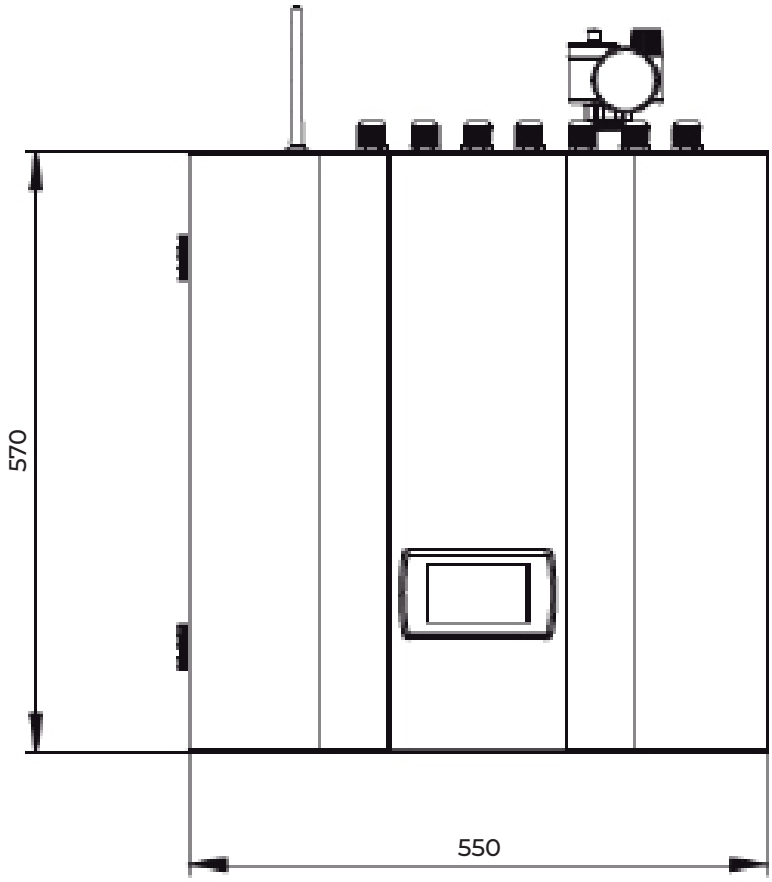
HEATING EFFICIENCY TABLE HEIKO THERMAL15					
Outdoor temperature (°C)	Output water temperature(°C)	Compressor Speed (Hz)	Heating capacity (W)	Input power	COP
DB40/WB26	7.0	76 Hz	11591	4611	3
		49 Hz	13902	1767	8
		43 Hz	12224	1544	8
		36 Hz	10220	1117	9
		30 Hz	8406	875	10
DB35/WB24	7.0	76 Hz	13086	4231	3
		72 Hz	12418	3910	3
		66 Hz	11165	3457	3
		61 Hz	10307	3121	3
	18.0	76 Hz	18568	4917	4
		52 Hz	12769	2764	5
		30 Hz	7229	1334	5
		76 Hz	13002	4390	3
		52 Hz	8685	2643	3
		30 Hz	4462	2592	3

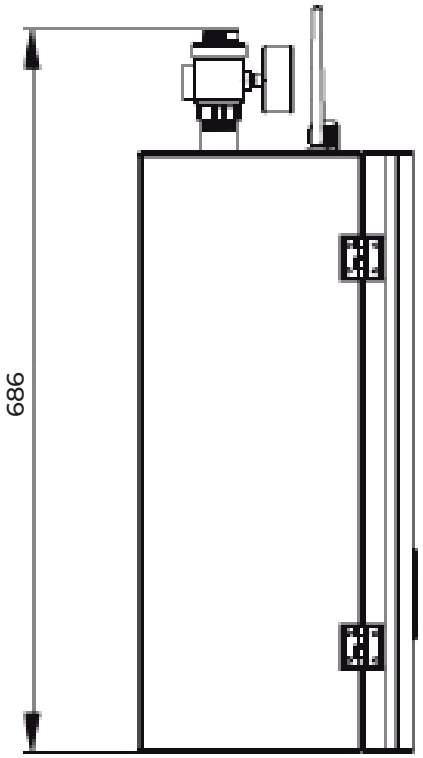
Outdoor temperature (°C)	Output water temperature (°C)	Compressor Speed (Hz)	Heating capacity (W)	Input power	COP
DB40/WB26	18.0	76 Hz	19380	6269	3.09
		72 Hz	18595	5840	3.18
		66 Hz	17260	5137	3.36
		61 Hz	16047	4623	3.47
DB35/WB24	7.0	76 Hz	15806	5382	2.94
		72 Hz	14787	4991	2.96
		66 Hz	13347	4405	3.03
		61 Hz	12304	3966	3.10
DB25/WB20	18.0	49 Hz	16481	2374	6.94
		43 Hz	14501	1952	7.43
		36 Hz	12133	1520	7.98

Unit dimensions

1. Indoor unit HEIKO THERMAL 6/9/12/15/19

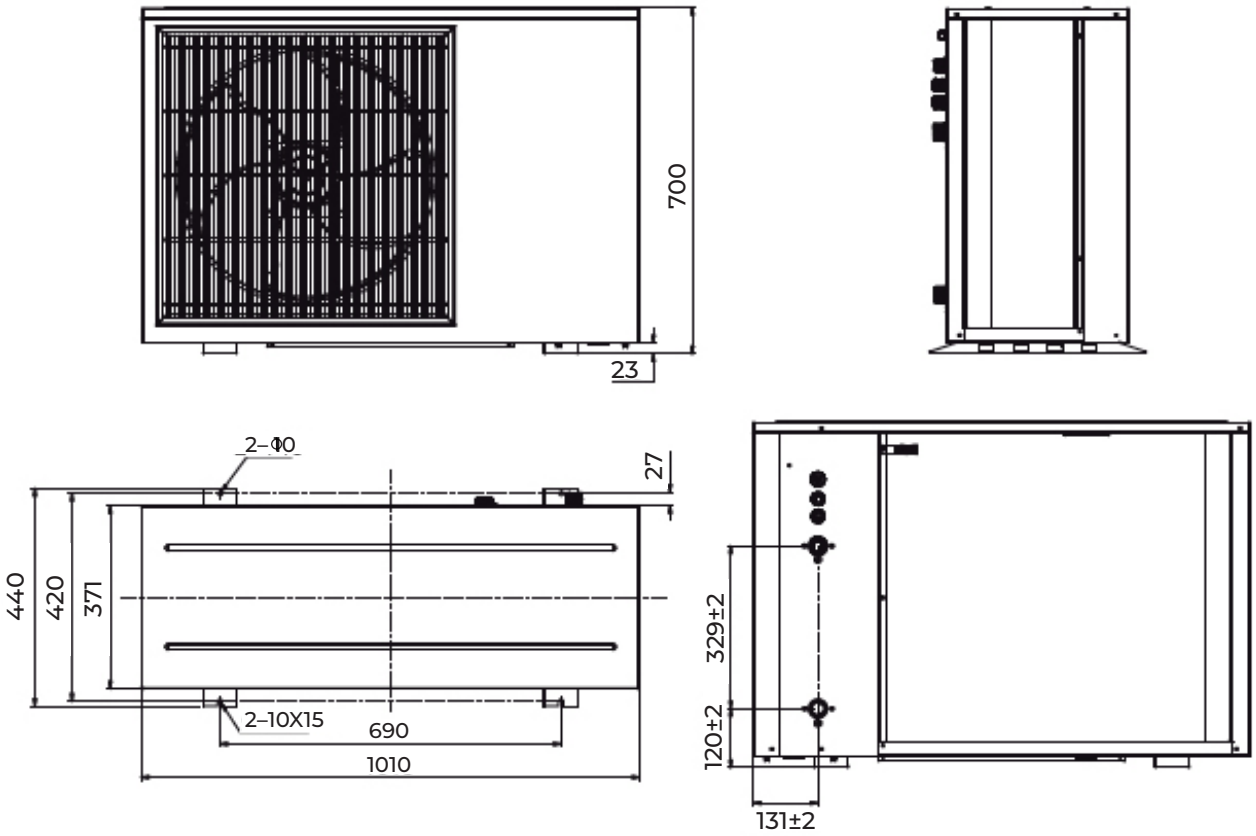




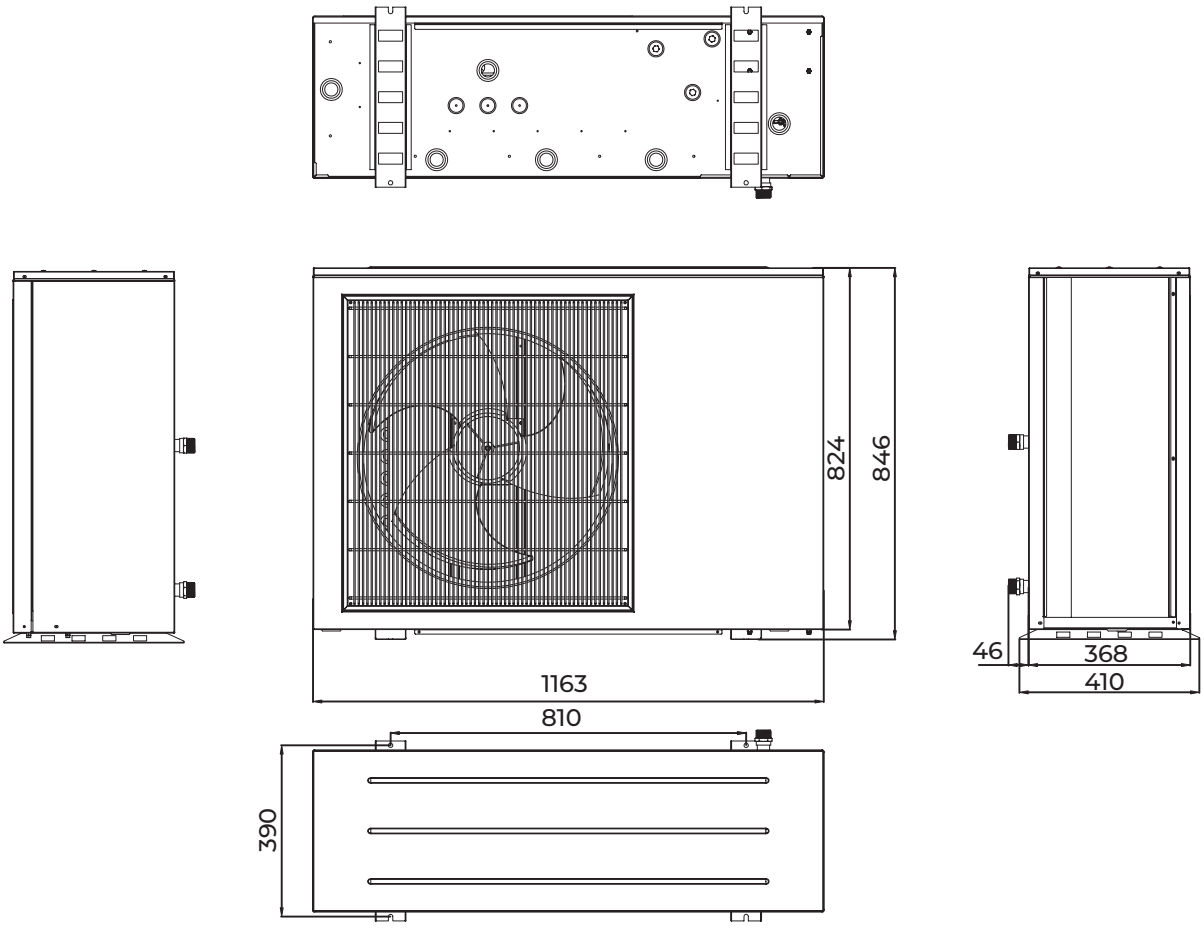


Unit dimensions

2. Outdoor unit HEIKO THERMAL 6

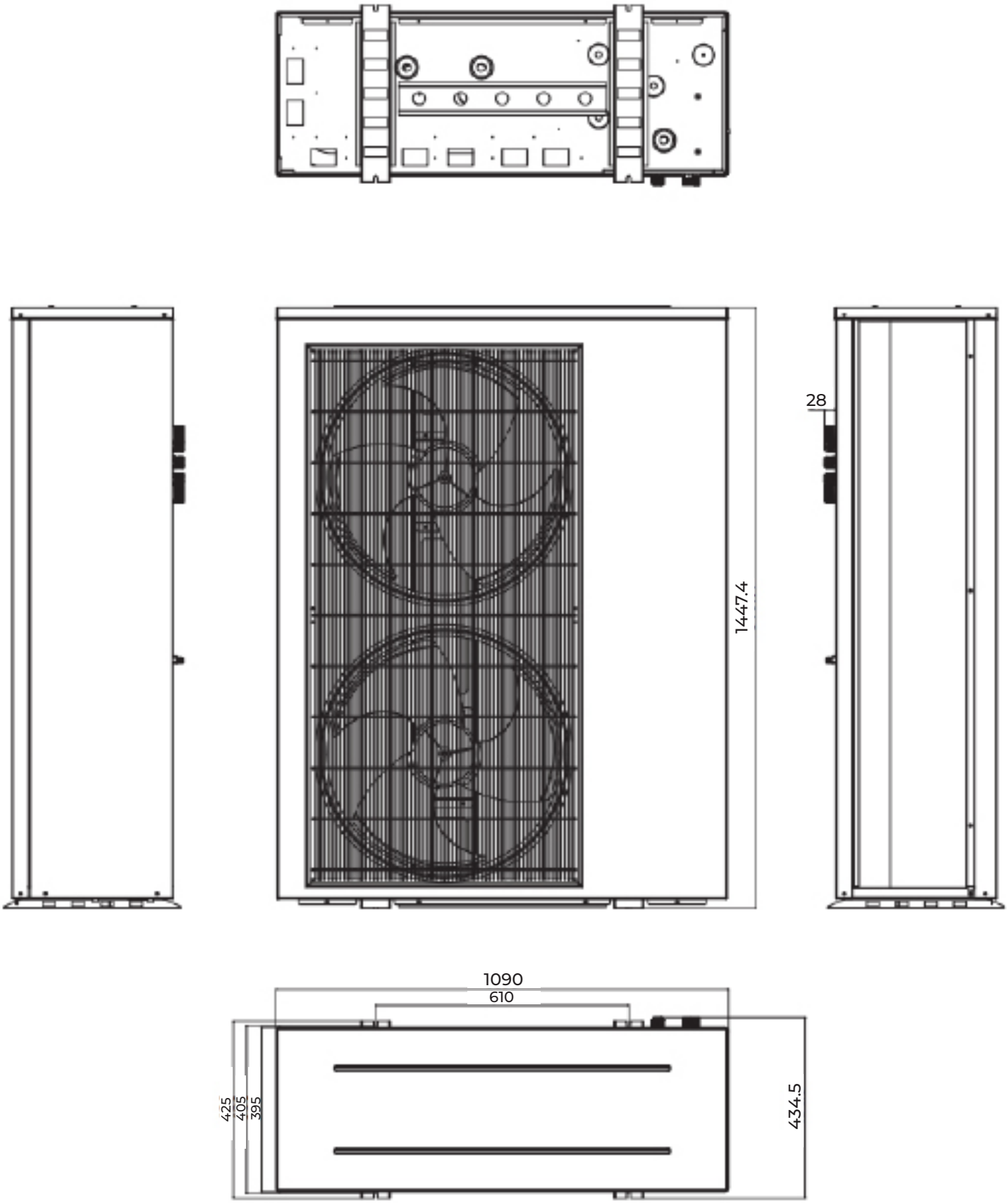


3. Outdoor unit HEIKO THERMAL 9/12



Unit dimensions

4. Outdoor unit HEIKO THERMAL 15/19



Power supply

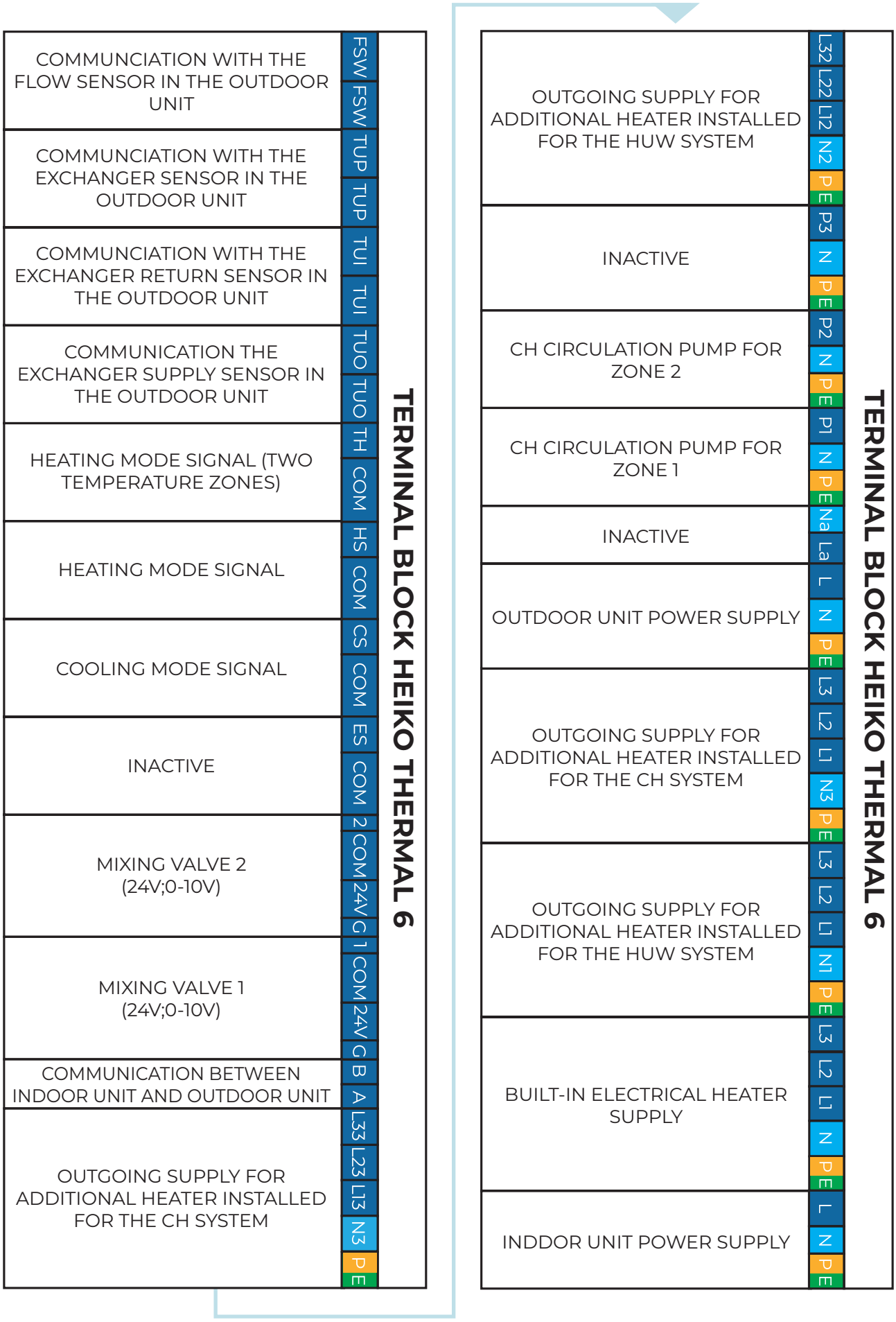
Model:	Heat pump power supply V/Ph/Hz	Overcurrent protection of the unit	Indoor unit power supply (no. of conductors x size)	Overcurrent protection of the outdoor unit	Outdoor unit power supply (no. of conductors x size)
THERMAL6	220-240/1/50	B20	3x2.5mm2 YKY	With I.U.	3x2.5 mm2 YKY
THERMAL9	220-240/1/50	B25	3x2.5 mm2 YKY	With I.U.	3x2.5 mm2 YKY
THERMAL12	220-240/1/50	B25	3x4 mm2 YKY	With I.U.	3x4 mm2 YKY
THERMAL15	380-420/3/50	B25	3x2.5 mm2 YKY	B32 (3L)	5x4 mm2 YKY
THERMAL19	380-420/3/50	B25	3x2.5 mm2 YKY	B32 (3L)	5x4 mm2 YKY

Model:	Heater power supply	Heater power supply (no. of conductors x size)	Heater overcurrent protection	Integrated heater
THERMAL6	230 V	3x2.5 mm2 YKY	B20	3 kW
THERMAL9	400 V	5x2.5 mm2 YKY	B25 (3L)	6 kW
THERMAL12	400 V	5x2.5 mm2 YKY	B25 (3L)	6 kW
THERMAL15	400 V	5x2.5 mm2 YKY	B25 (3L)	6 kW
THERMAL19	400 V	5x2.5 mm2 YKY	B25 (3L)	6 kW

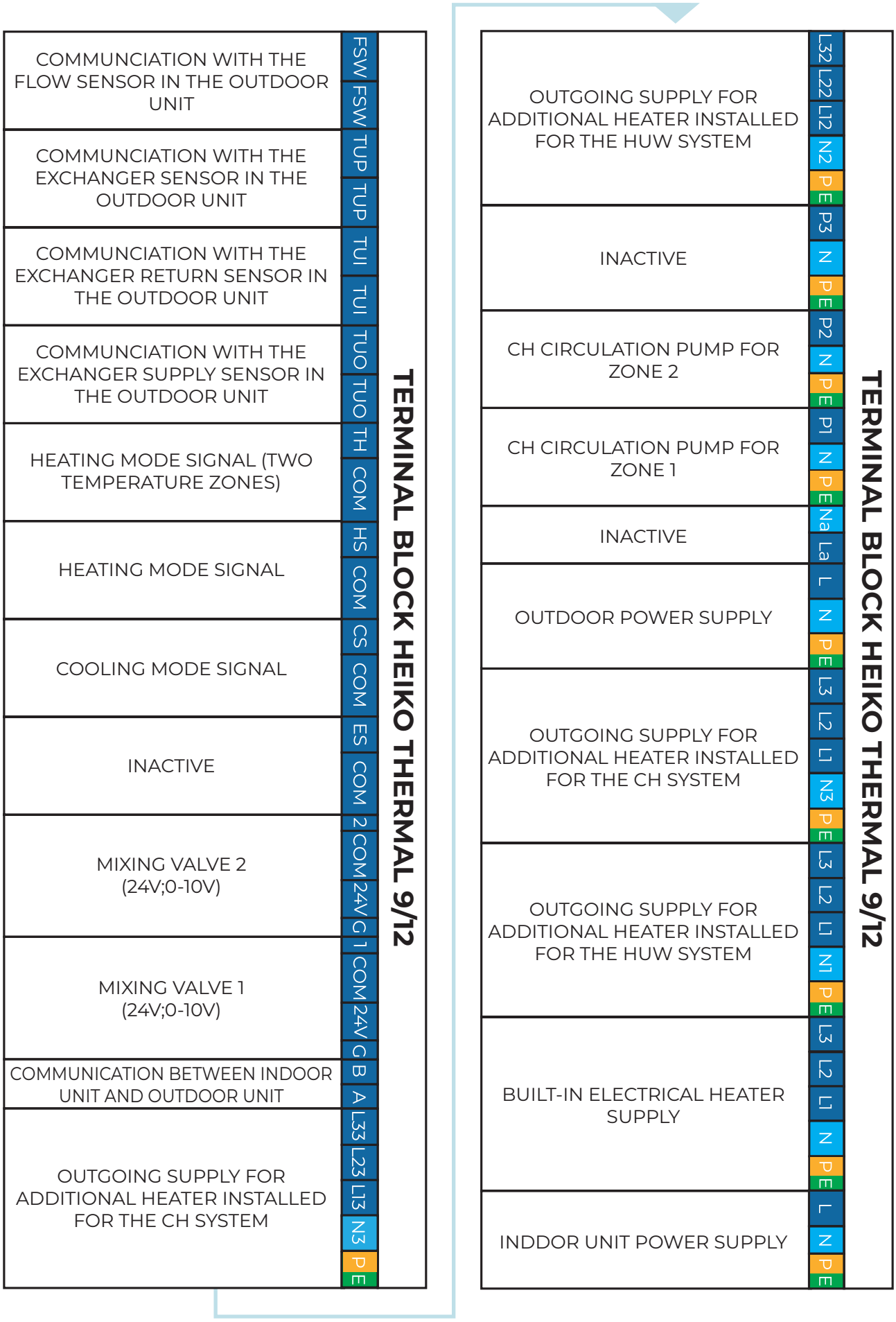
Power distribution room

	HEIKO THERMAL 6	HEIKO THERMAL 9	HEIKO THERMAL 12	HEIKO THERMAL 15	HEIKO THERMAL 19
Residual current protection (only if not already present in the installation)	✓	✗	✗	✗	✗
Residual current protection - 3-phase (only if not already present in the installation)	✗	✓	✓	✓	✓
Voltage regulator (only in buildings with PV installation)	✓	✗	✗	✗	✗
Voltage regulator (only in buildings with PV installation) - 3-phase	✗	✓	✓	✓	✓
Surge arrester (B+C) 1-phase (only if not already present in the installation)	✓	✗	✗	✗	✗
Surge arrester (B+C) 3-phase (only if not already present in the installation)	✗	✓	✓	✓	✓
Optionally: 1-phase submeter	✓	✗	✗	✗	✗
Optionally: 3-phase submeter	✗	✓	✓	✓	✓
Outdoor unit power supply	B20 1-PHASE 3x2.5 mm^2 YKY	B25 1-PHASE 3x2.5 mm^2 YKY	B251-PHASE 3x4 mm^2 YKY	B251-PHASE 3x4 mm^2 YKY	B20 1-PHASE 3x2.5 mm^2 YKY
	✗	✗	✗	B25 3-PHASE 5x4 mm^2 YKY	B25 3-PHASE 5x4 mm^2 YKY
Electrical heater power supply	B25 1-PHASE 3x2.5 mm^2 YKY	B25 3-PHASE 5x2,5 mm^2 YKY	B25 3-PHASE 5x2,5 mm^2 YKY	B25 3-PHASE 5x2,5 mm^2 YKY	B25 3-PHASE 5x2,5 mm^2 YKY

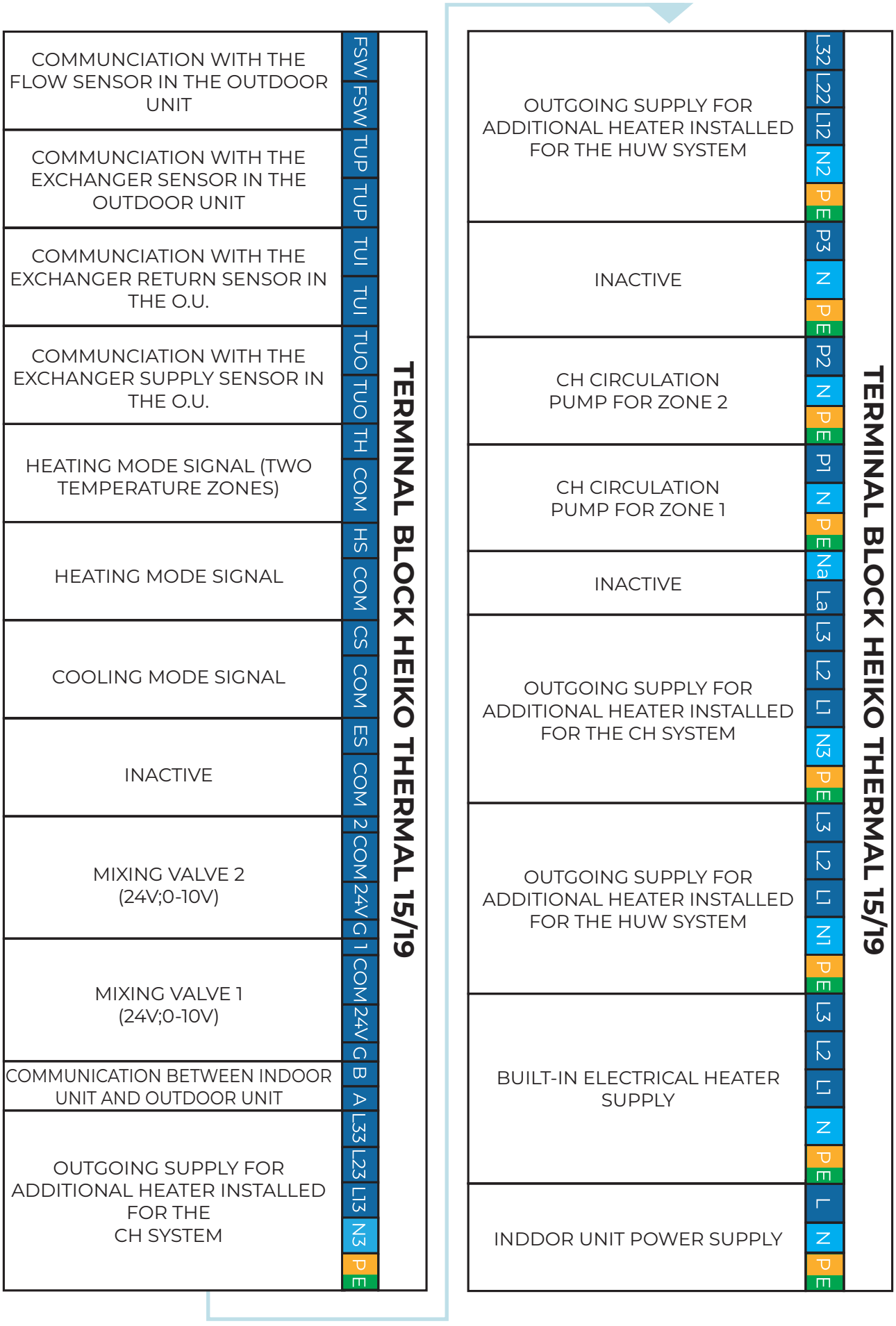
Terminal blocks for indoor units



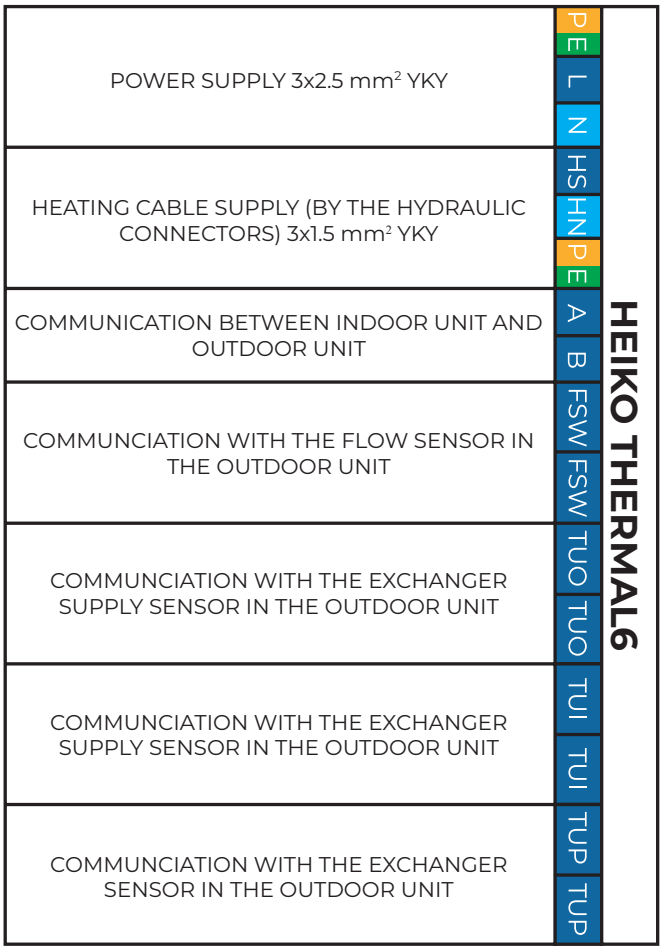
Terminal blocks for indoor units

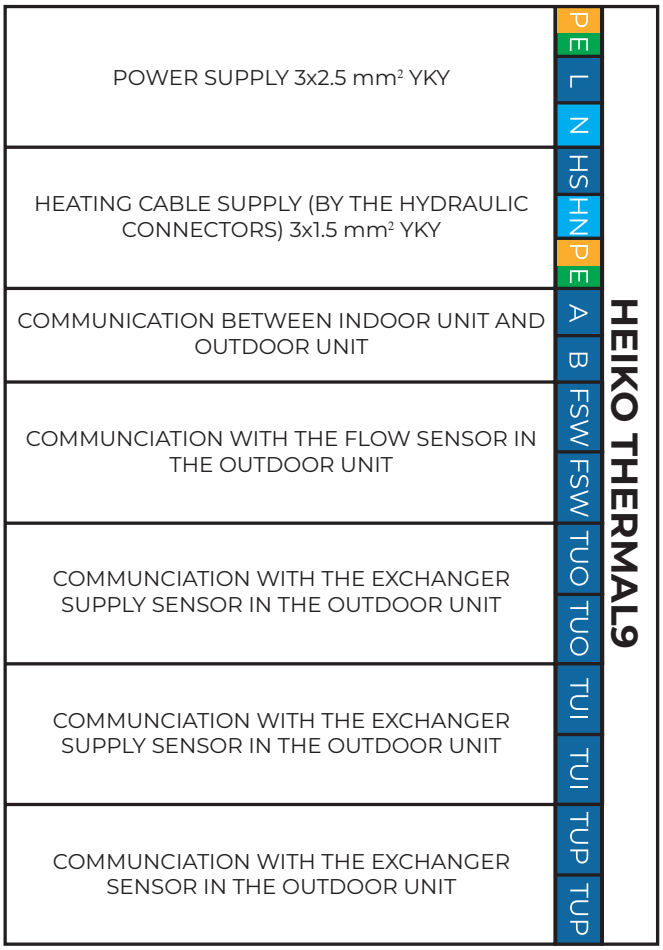


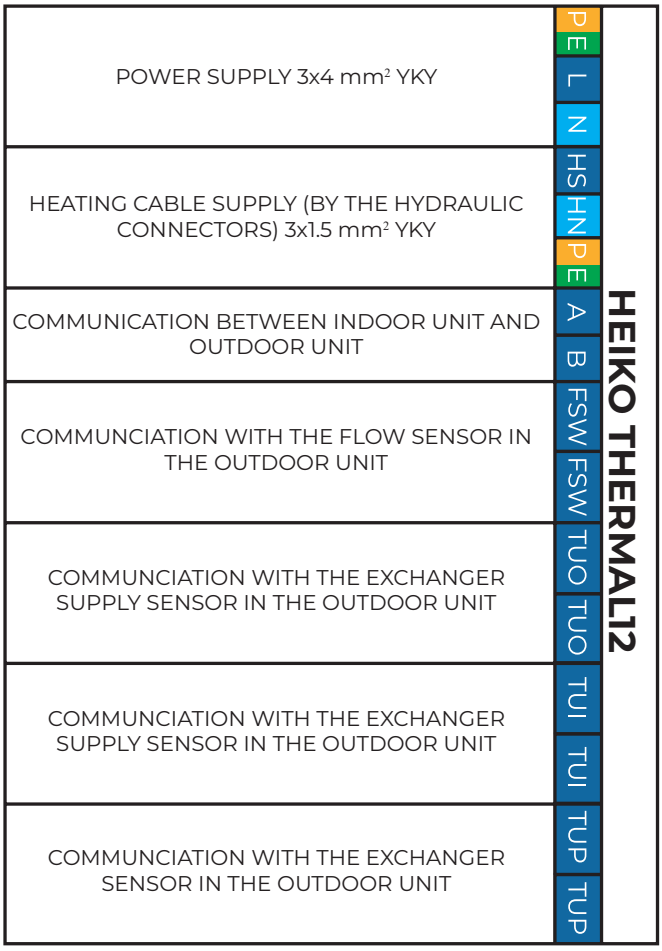
Terminal blocks for indoor units



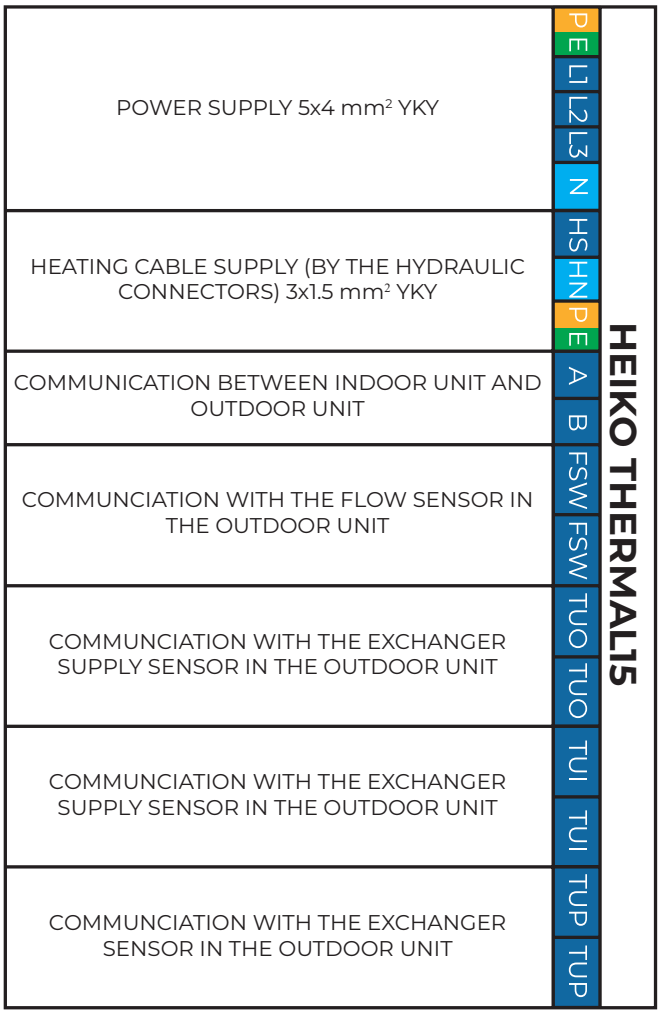
Terminal blocks for outdoor units

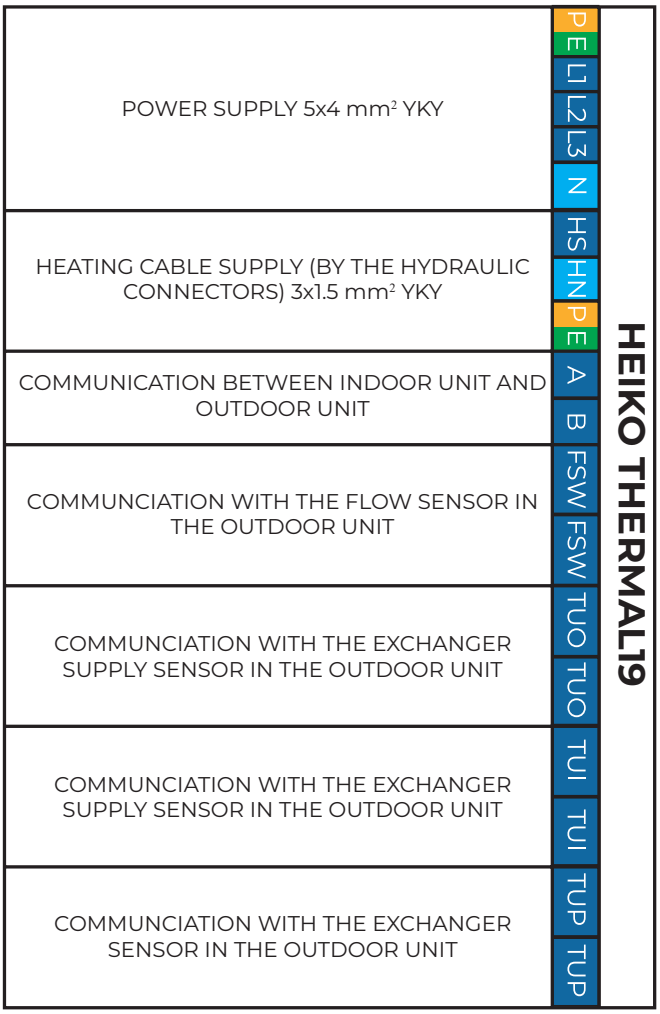






Terminal blocks for outdoor units





Installation elements required by the warranty

1. Anti-freeze protection - due to the monoblock heat pump characteristics, the device must be protected against freezing of the heating medium (water) in the installation. The means of protection permissible by the warranty are: - the use of two anti-freeze valves - follow the manufacturer's instructions. The method of assembly must comply with the requirements of the manufacturer and the guarantor of the device. **Important!** The anti-freeze valves cannot be mounted directly one on top of the other. A distance of at least 10 cm should be maintained so as to reduce the risk of flooding the lower valve when the protection is activated. - the use of a mixture of water and glycol - use a concentration protecting the installation down to -25°C (max 30%)". The acceptable types of glycol are: ethylene glycol or propylene glycol. Important! If glycol is used in the installation that includes heating utility water, non-toxic glycol, safe for possible human consumption, shall be used.

2. Filters - the task of the filters is to protect the heat pump's hydraulic system against the ingress of dirt, which could result in damage to the device or one of its components. The types of filters required under the warranty are: - mesh filter - its task is to pre-filter the water returning from the systems. It must be installed on the return path to the heat pump, including all circuits served by the heat pump. - magnetic filter - its task is the target filtration of water, along with the removal of metallic impurities. It must be installed, along the mesh filter, on the return path to the heat pump, including all circuits served by the heat pump.
3. Air separator - the task of the air separator is to remove air bubbles from the heat pump installation. The air separator shall be used in the supply pipeline, preferably upstream of the three-way valve separating the circulation.
4. Pipe diameter - the pipe diameters shall be applied in accordance with the technical documentation. Particular attention should be paid to the internal diameter of the pipelines - this is a key value for the heat pump and will be verified by the Authorized Service Partner.

The required pipeline diameters:

Model:	Duct size	Inner diameter	PP	steel	copper
THERMAL6	1'	25.4	32	28	28
THERMAL9	1'	25.4	40	28	28
THERMAL12	1'	25.4	40	28	28
THERMAL15	5/4'	31.3	50	35	35
THERMAL19	5/4'	31.3	50	35	35

Caution! Pipe diameters shall not be reduced. Reducing the minimum internal diameter will result in warranty invalidation and incorrect operation of the device.

Installation elements required by the warranty

5. The required area of the HUW tank coil: Caution! For systems with a low-temperature heat pump, such as the Heiko THERMAL, tanks intended for low-temperature heat pumps shall always be used. The table below shows the minimum coil area values for each unit.

Model	Minimum coil area
THERMAL6	1.2 m^2
THERMAL9	1.8 m^2
THERMAL12	2.4 m^2
THERMAL15	3 m^2
THERMAL19	3.8 m^2

6. Descaling of the installation - descaling of the installation in the case of modernized buildings is a prerequisite for obtaining a warranty. In the case of existing buildings, especially those with an open-system heating device, low water quality combined with continuous air access results in scaling and soiling of the installation. In such a situation, the effect will be a reduction in the efficiency of the heating elements, as well as diameter reduction and flow restriction. To increase efficiency and ensure proper conditions for heat pump operation, always descale the system before installing the heat pump.

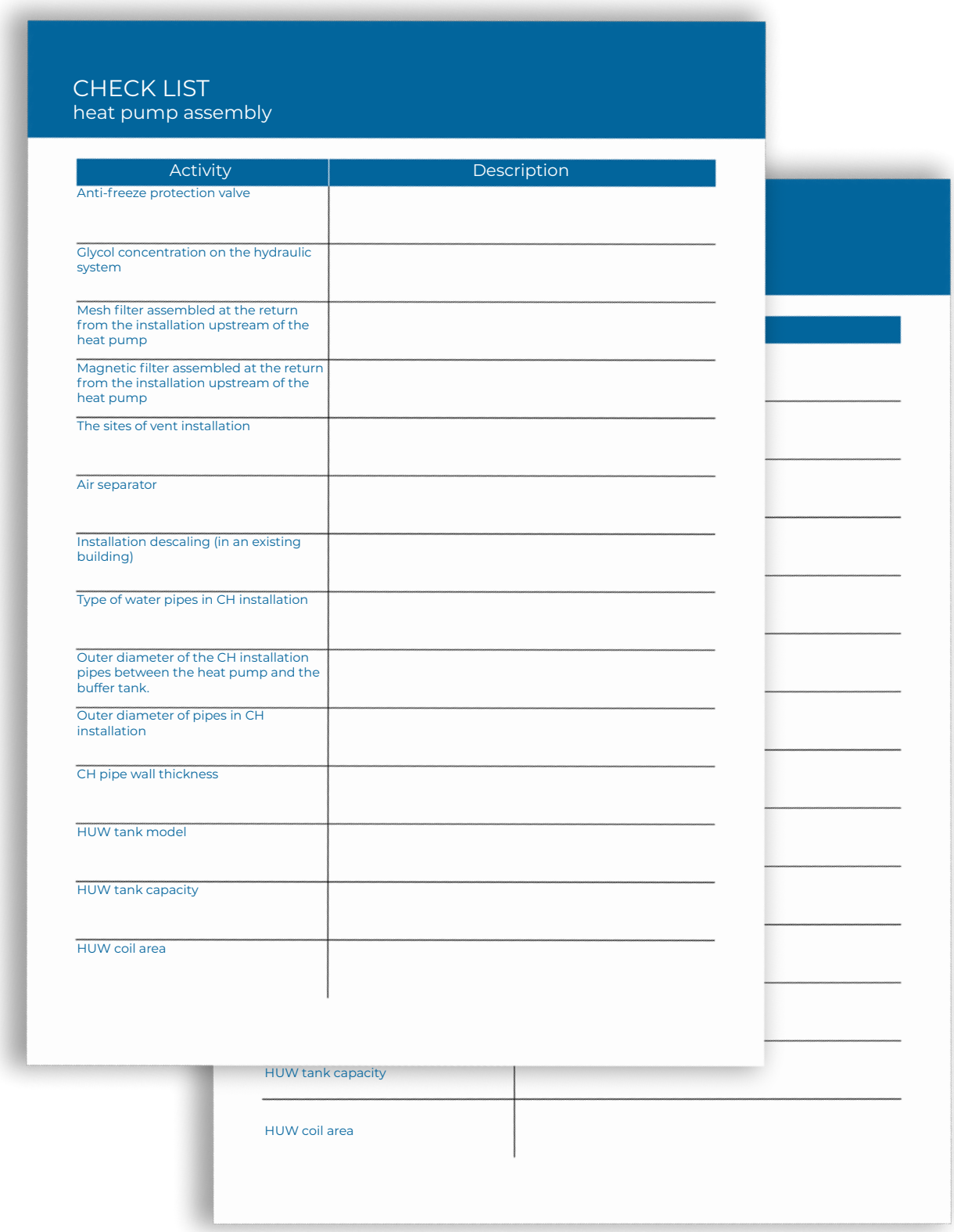
7. Buffer - buffer should be used in mixed, radiator and underfloor heating systems equipped with control actuators. In combination with the heat pump, it fulfils two primary functions: - provision of heat storage for defrosting - in order to perform the defrosting process properly, without affecting the user's comfort, the heat pump uses the heat accumulated in the central heating system (buffer). If the required amount of heat is not obtained, the heat pump will use the heat stored in the hot water tank. - ensuring the appropriate water supply - in order for the heat pump to achieve nominal operating parameters, it is necessary to ensure the appropriate water supply. In the case of installations with a small capacity, or controlled installations (which may temporarily exclude part or all of the installation from use), a minimum water supply, unrestricted by the closure, should be ensured. The table below indicates the minimum amounts of water in the system:

Model:	Minimum water supply
THERMAL6	90 l
THERMAL9	135 l
THERMAL12	180 l
THERMAL15	225 l
THERMAL19	285 l

8. Water quality - Recommended water hardness is 2-6 dH - the appropriate quality of water used in the installation will allow for its proper operation and protection of the device's accessories against damage resulting from poor quality of the liquid in the installation.

Installation elements required by the warranty

The current warranty card can be found on the following web page: https://heiko.pl/do-pobrania/
Check list for Heiko heat pumps:



CHECK LIST
heat pump assembly

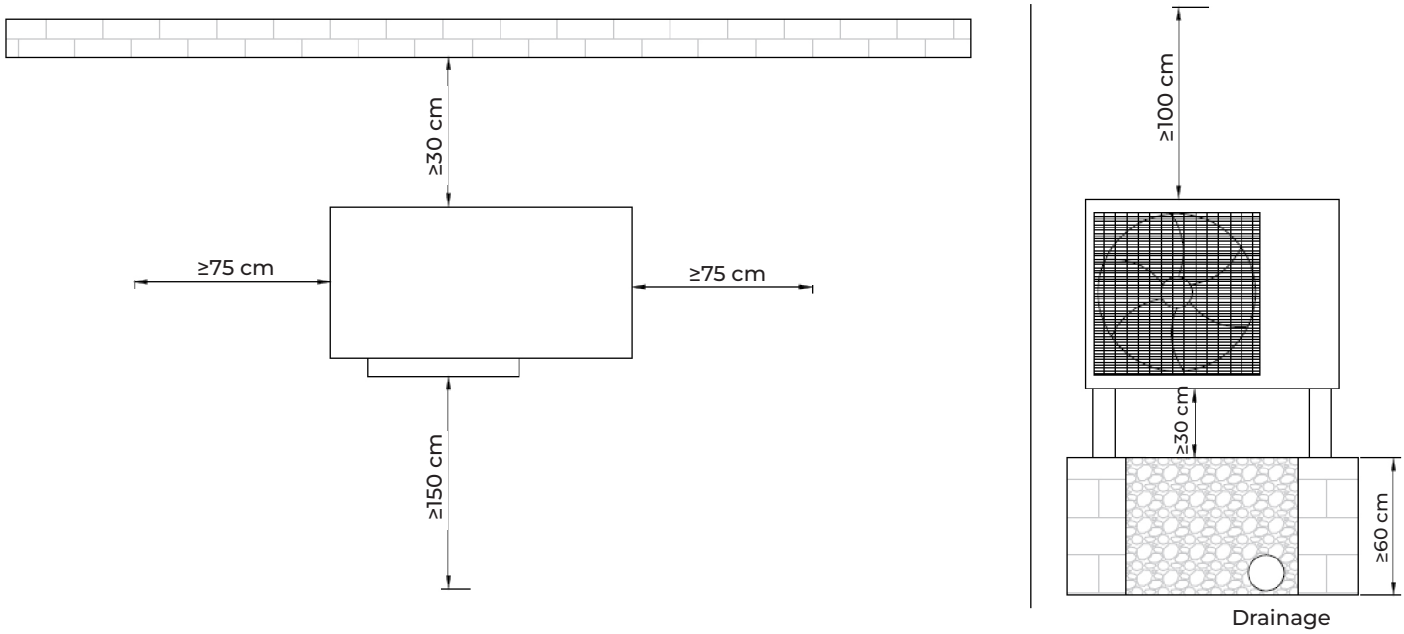
Activity	Description
Anti-freeze protection valve	
Glycol concentration on the hydraulic system	
Mesh filter assembled at the return from the installation upstream of the heat pump	
Magnetic filter assembled at the return from the installation upstream of the heat pump	
The sites of vent installation	
Air separator	
Installation descaling (in an existing building)	
Type of water pipes in CH installation	
Outer diameter of the CH installation pipes between the heat pump and the buffer tank.	
Outer diameter of pipes in CH installation	
CH pipe wall thickness	
HUW tank model	
HUW tank capacity	
HUW coil area	

Installation requirements

Minimum mounting distances - Distance of the device from walls or elements that restrict airflow - keep as much distance as possible from surrounding elements to ensure free airflow. The minimum distances shall be in accordance with the diagram below:

Proper fitting of the outdoor unit

The values given are the minimum values that allow for safe and correct operation of the device



Installation diagrams

Heat pump installation depends on individual building conditions. The following diagrams are for illustrative purposes only and serve as a suggestion for assembling the required elements. In addition, the diagrams contain information on "good assembly practice", i.e. elements that are not required from the warranty perspective, but can be a significant help in the operation and servicing of the device.

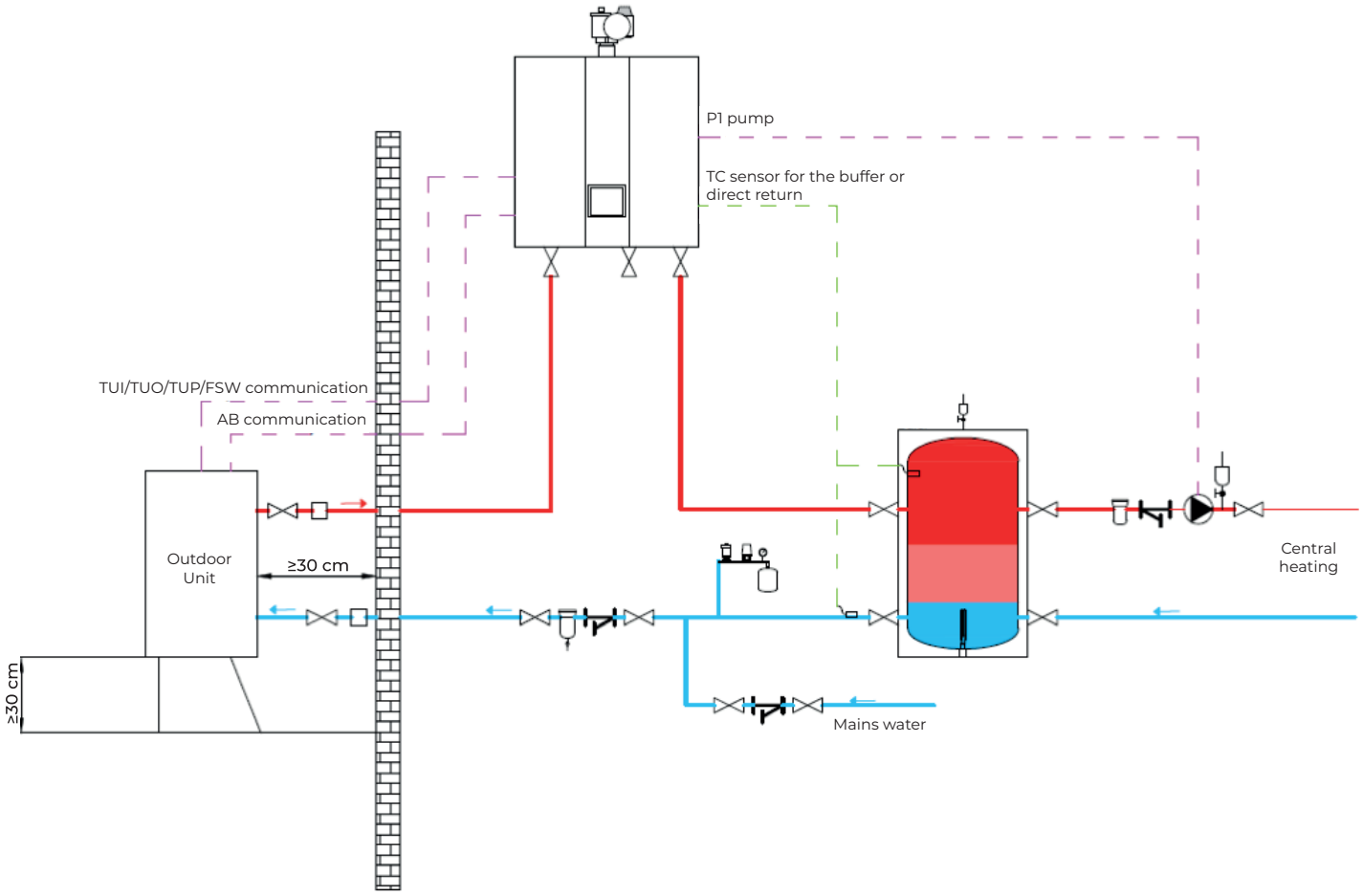
Description of the included sensors;

TC sensor	Central heating system water temperature sensor Permissible installation sites: - return from buffer, - buffer, - return from central heating (CAUTION! Only of the circulation pumps downstream of the buffer are controlled from the heat pump)
TW sensor	Utility water tank water temperature sensor
TR sensor	Room temperature sensor
TV1 sensor	Zone 1 temperature sensor. Permissible installation site: - temperature circuit 1
TV2 sensor	Zone 2 temperature sensor. Permissible installation site: - temperature circuit 2, upstream of the mixing valve, so that the heat pump can correctly control valve opening.

Installation diagrams

1. Heiko THERMAL heat pump with CH system only:

Diagram
THERMAL 6/9/12/15/19 kW with CH
(for radiator system or controlled underfloor heating)



	ball valve		safety group with expansion tank
	air separator		safety valve kit
	magnetic filter		circulation pump
	mesh filter		air bleeding
	anti-freeze valve		mixing valve
	temperature sensor		

Additional information

Buffer capacity = pump power in kW x 15 litres

The installation requires 2 anti-freeze valves (they must not be fitted in one line) or 30% solution of water + propylene glycol or ethylene glycol (-25°C)

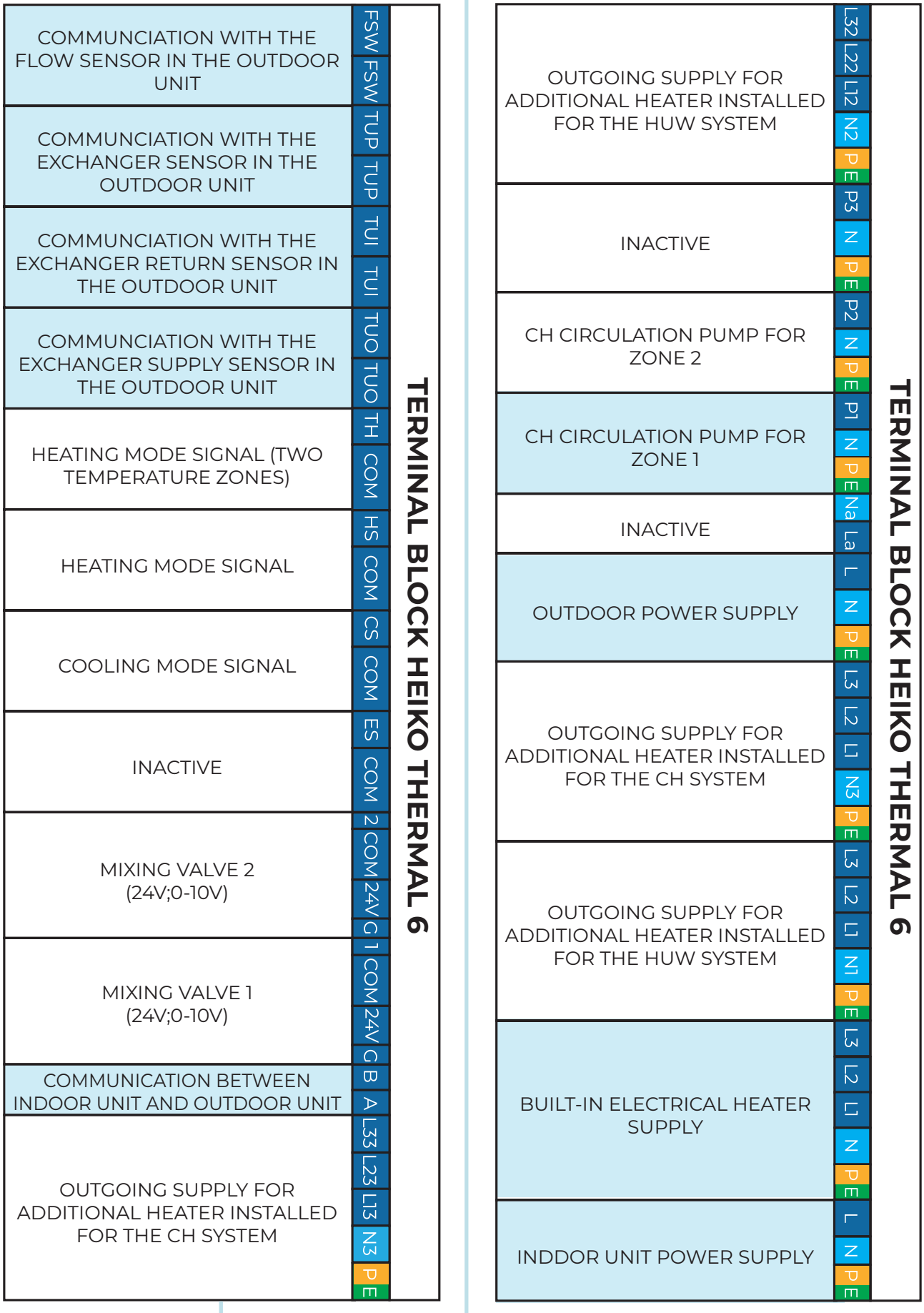
A buffer heater is not required, it is optional.

Heating cables by the hydraulic spigots supplied with HL/HN/PE.

Heating cable thermostat by the supply connections in the indoor unit.

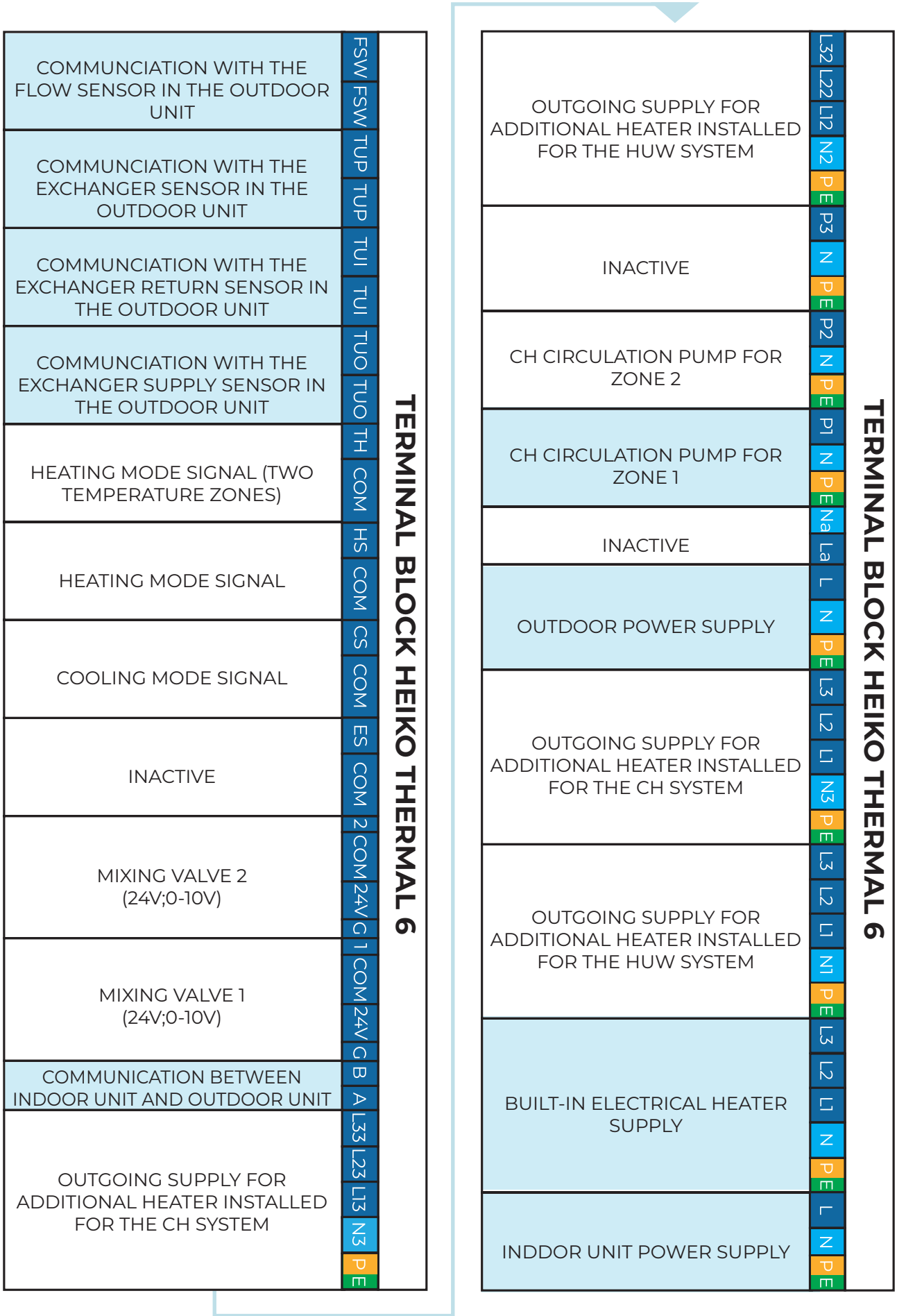
Installation diagrams

Electrical connection for diagram 1:



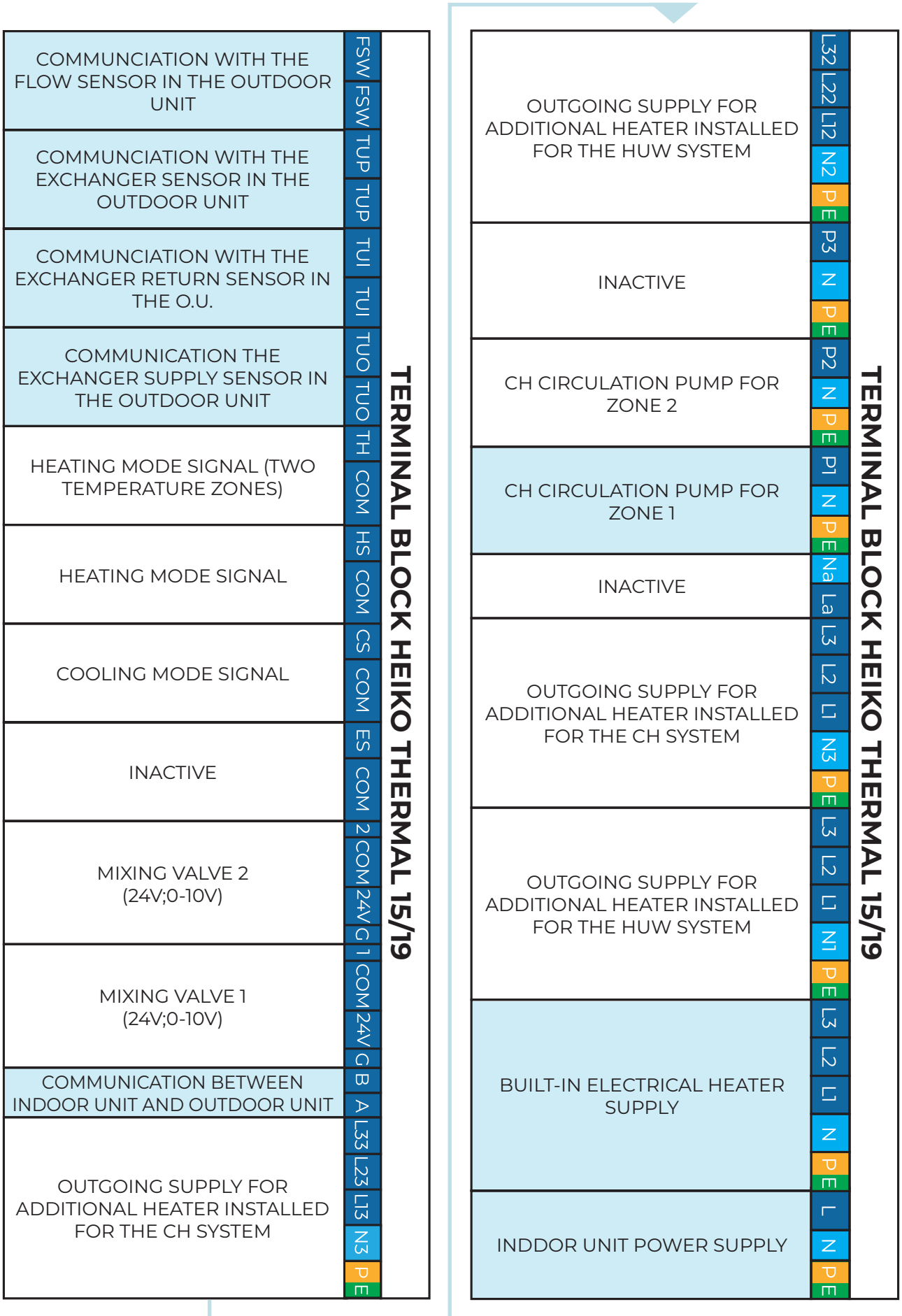
The required electrical connections for the above diagram are marked with blue colour.

Installation diagrams



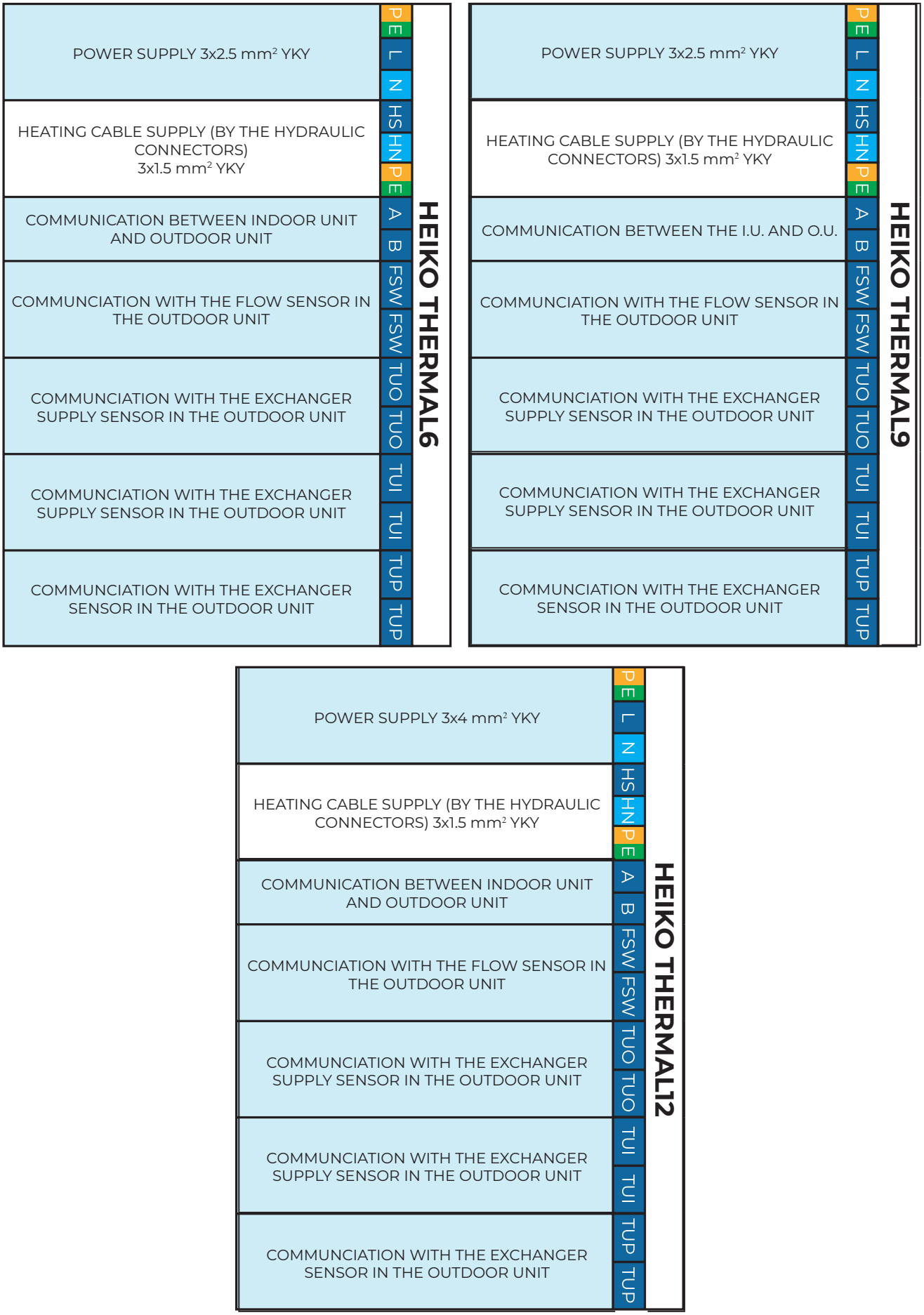
The required electrical connections for the above diagram are marked with blue colour.

Installation diagrams



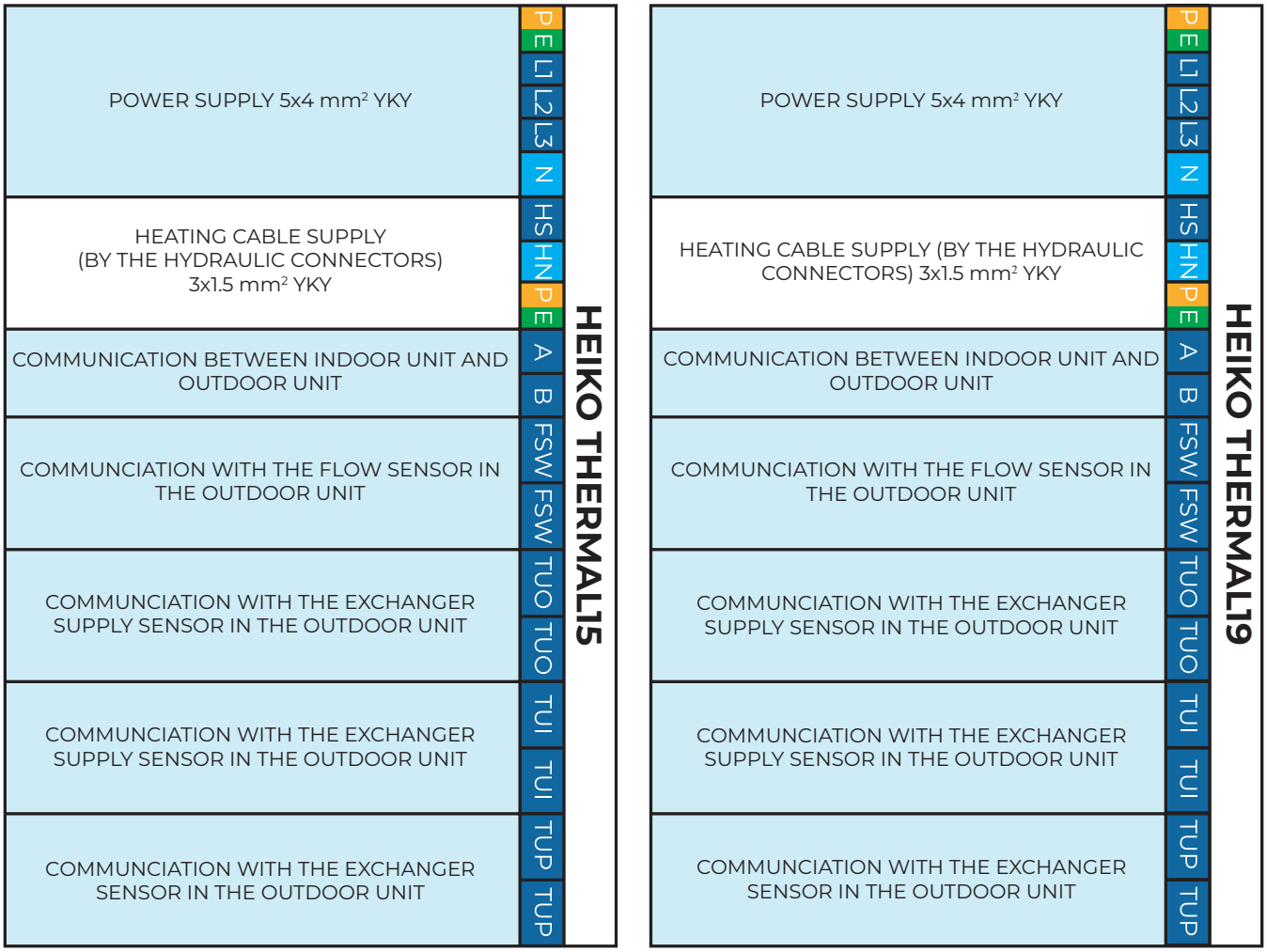
The required electrical connections for the above diagram are marked with blue colour.

Installation diagrams



The required electrical connections for the above diagram are marked with blue colour.

Installation diagrams



The required electrical connections for the above diagram are marked with blue colour.

Installation diagrams

Controller settings required for diagram 1:

Heating/cooling

page 1/6

line 1 “Compressor stop hysteresis when heating or cooling”: specify the maximum temperature of overheating in the central heating system until the compressor is fully stopped →

line 2 “Compressor stop hysteresis when heating or cooling” define the temperature drop value at which the device restarts in central heating mode →

line 3 “Compressor speed reduction when heating or cooling” specify the temperature difference at which the heat pump will reduce the compressor speed until it reaches the set temperature→

line 5 “Enable the heating curve?” enable this option if the heating curve will be used →

page 3/6

lines 1, 2, 3, 4, 5 determine the temperatures set in the CH system for outdoor temperatures on page 2 (by default: 1= -25°C; 2= -15°C; 3= -5°C; 4= 5°C; 5= 10°C →

page 4/6

line 1 “Influence of indoor temperature on heating curve correction” enable this option if the option of controlling the heat pump with a room temperature sensor will be used →

line 2 is responsible for setting the room temperature for heating → **line 4** “Setting a constant supply temperature for heating” only adjust the temperature here if the heating curve and the room temperature sensor are not used →

page 5

line 1 “High temperature limitation”, define the maximum water temperature parameter in the system for central heating

Installation diagrams

Operating modes

page 1/2

line 1 “Hot utility water heating”, this option should be enabled as there is no HUW tank in the system →

line 2 “Heating circuit”, this option should be enabled in order to activate CH →

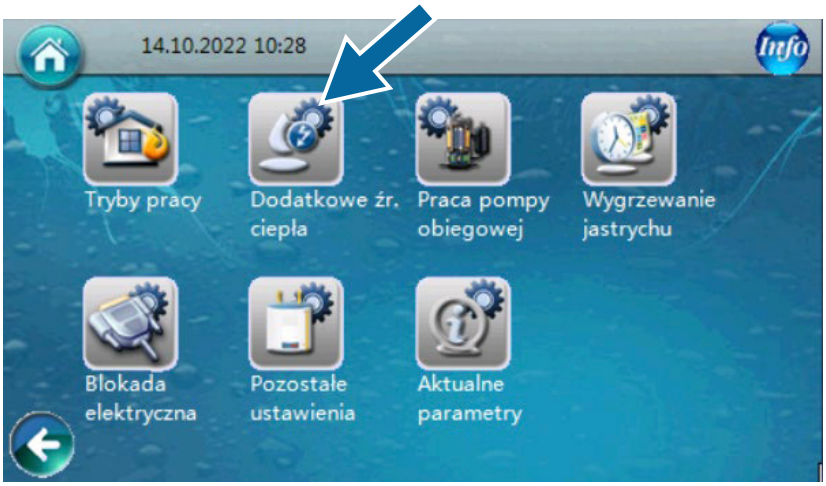
line 3 “Cooling circuit”, this option should be enabled if the pump is to be used for cooling →

line 4 “Basic operating modes”, this option should be enabled only if the heating pump is to be controlled on the basis of room temperature →

page 2/2

line 1 “Cooling to heating switch signal”, select “Outdoor temperature” to determine the moment of CH activation depending on the outdoor temperature set in lines 3 and 4

Additional heat source



page 1/2

line 5 "Correlation between the set temperature and the time to start the additional heat source", specify the time (in seconds) within which the heat pump will heat the water in the system by 1°C. If the pump exceeds this time, it will start the additional heat source, in this case the heaters

Installation diagrams

Circulation pump operation

page 1/4

line 4 „P0 pump operating time", select the time within which, during heat pomp stop, the in-built circulation pump will be working to correctly check the actual temperature in the system →

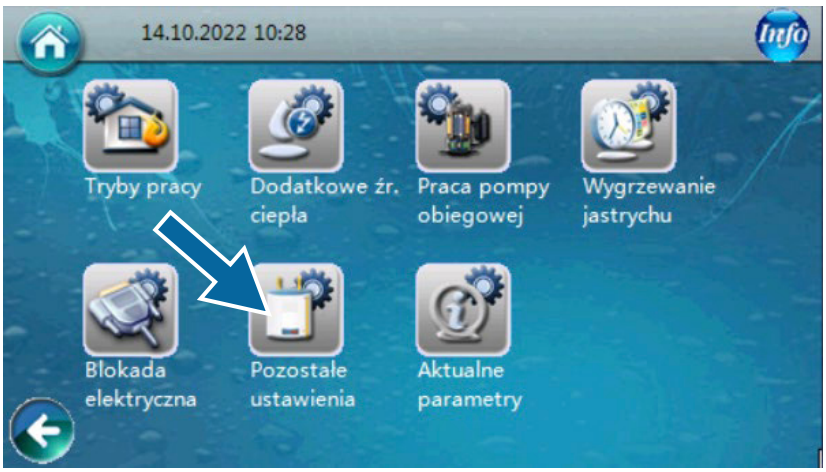
line 5 „CH water buffer", select this option in the above system, thus informing the device that it is working with the buffer

page 2/4

line 1 „P1 pump heating operation", select this option for the above system, thus informing the device that it is controlling an additional circulation pump →

line 4 „P2 pump heating operation", leave this option unchecked for the above system.

Other settings



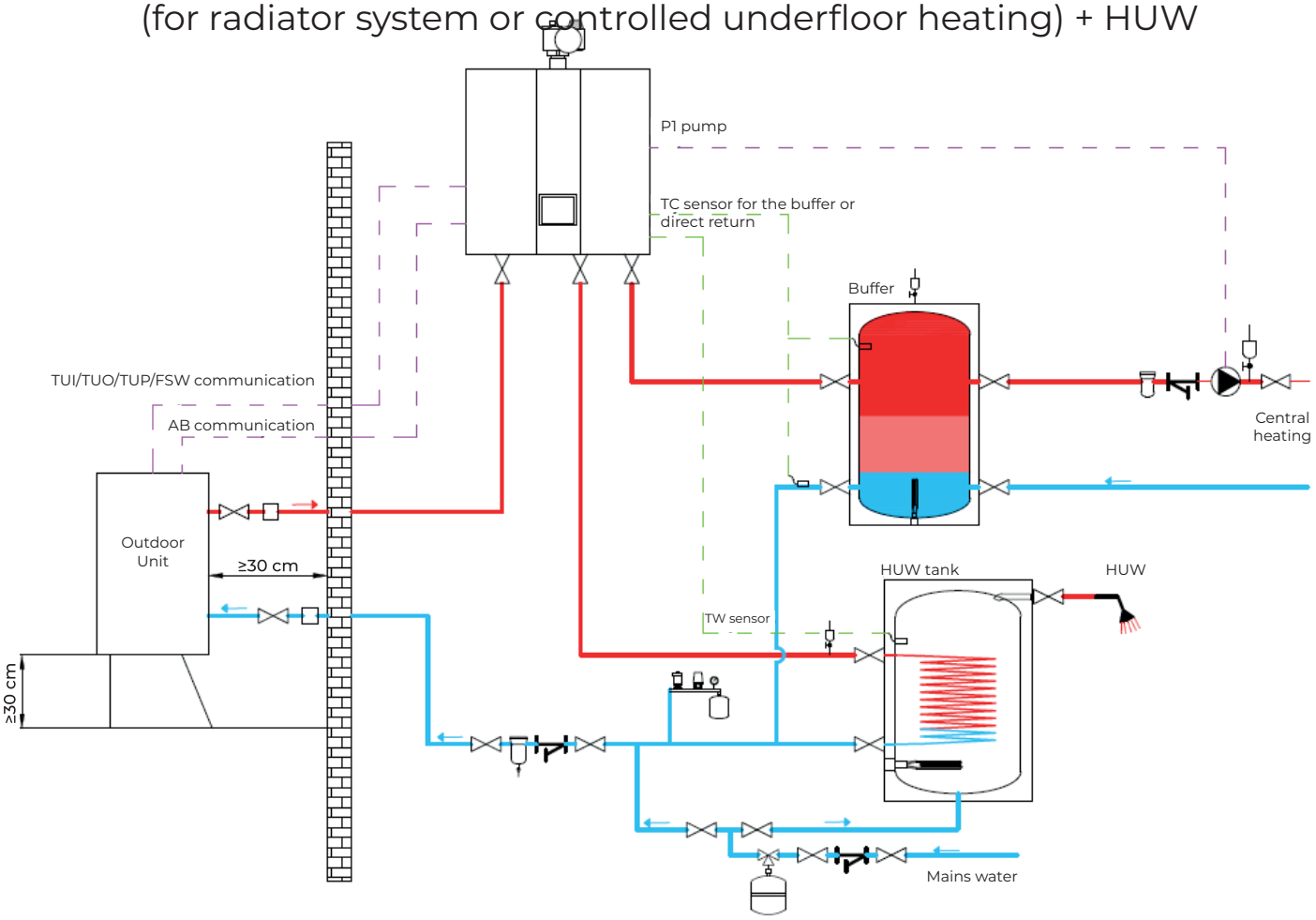
page 4/6

Perform the procedure of connecting the heat pump with the WiFi module. The procedure is described in detail in the WiFi module connection manual on the web page www.heiko.pl

Installation diagrams

2. Heiko THERMAL heat pump with CH and HUW systems:

Diagram
THERMAL 6/9/12/15/19 kW with CH
(for radiator system or controlled underfloor heating) + HUW



Additional information

Buffer capacity = pump power in kW x 15 litres

The installation requires 2 anti-freeze valves (they must not be fitted in one line) or 30% solution of water + propylene glycol (-25C°)

A buffer heater is not required, it is optional.

Heating cables by the hydraulic spigots supplied with HL/HN/PE.

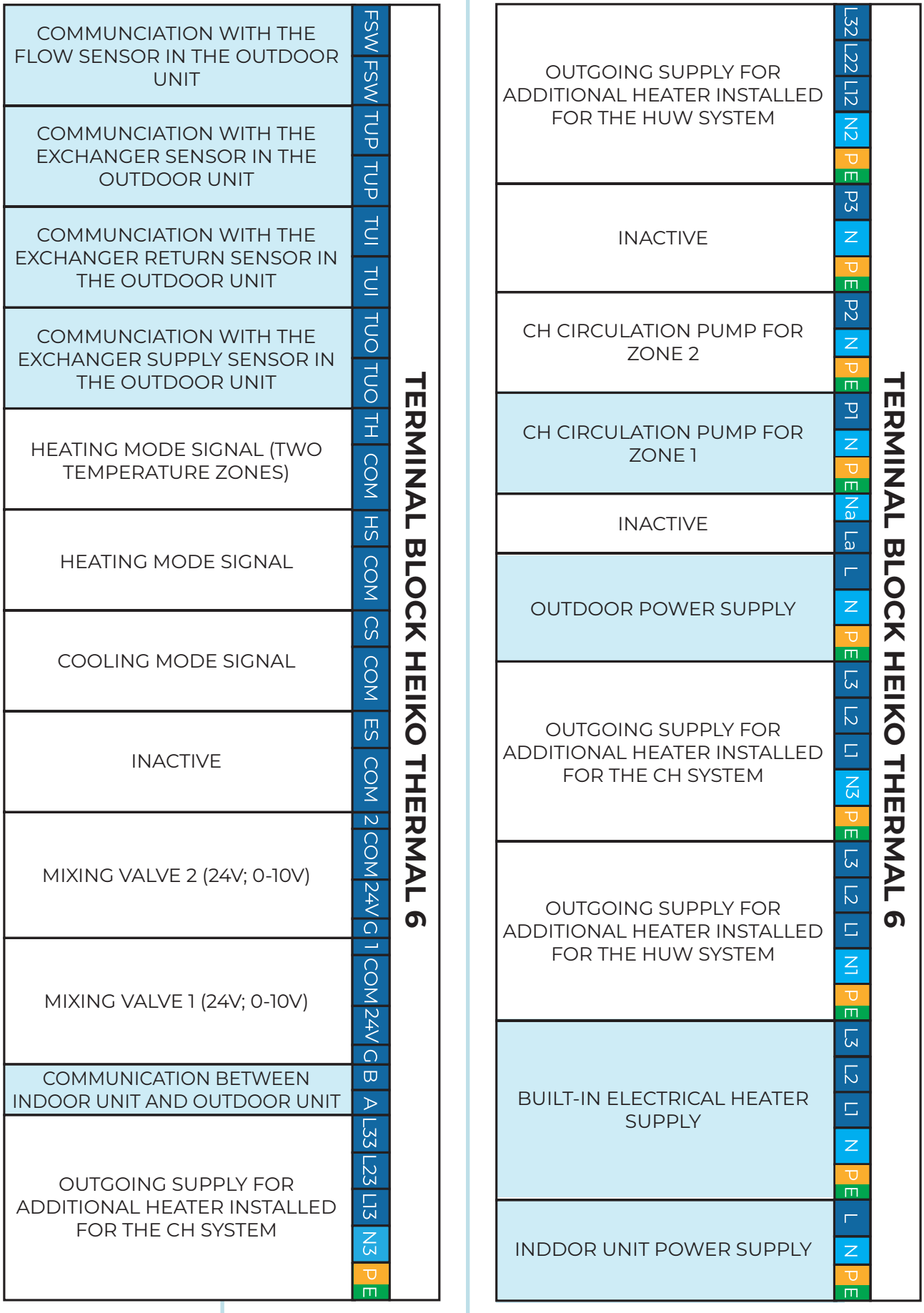
Heating cable thermostat by the supply connections in the indoor unit.

HUW tank with two coils (for 0.2 m²/kW heat pump). HUW tank capacity - 50 litres x number of people.

	ball valve		safety group with expansion tank
	air separator		safety valve kit
	magnetic filter		circulation pump
	mesh filter		air bleeding
	anti-freeze valve		mixing valve
	temperature sensor		membrane vessel

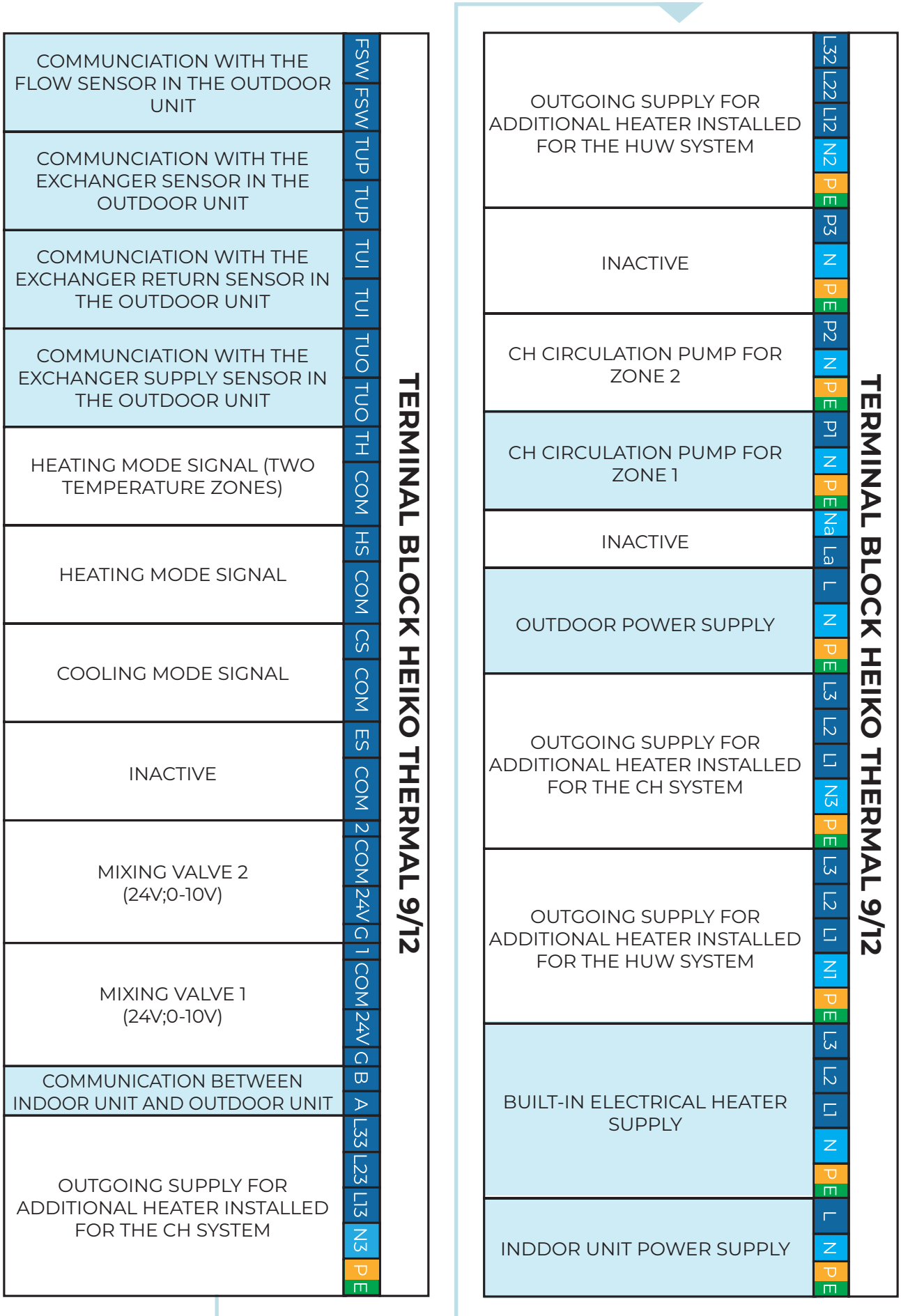
Installation diagrams

Electrical connection for diagram 2:



The required electrical connections for the above diagram are marked with blue colour.

Installation diagrams



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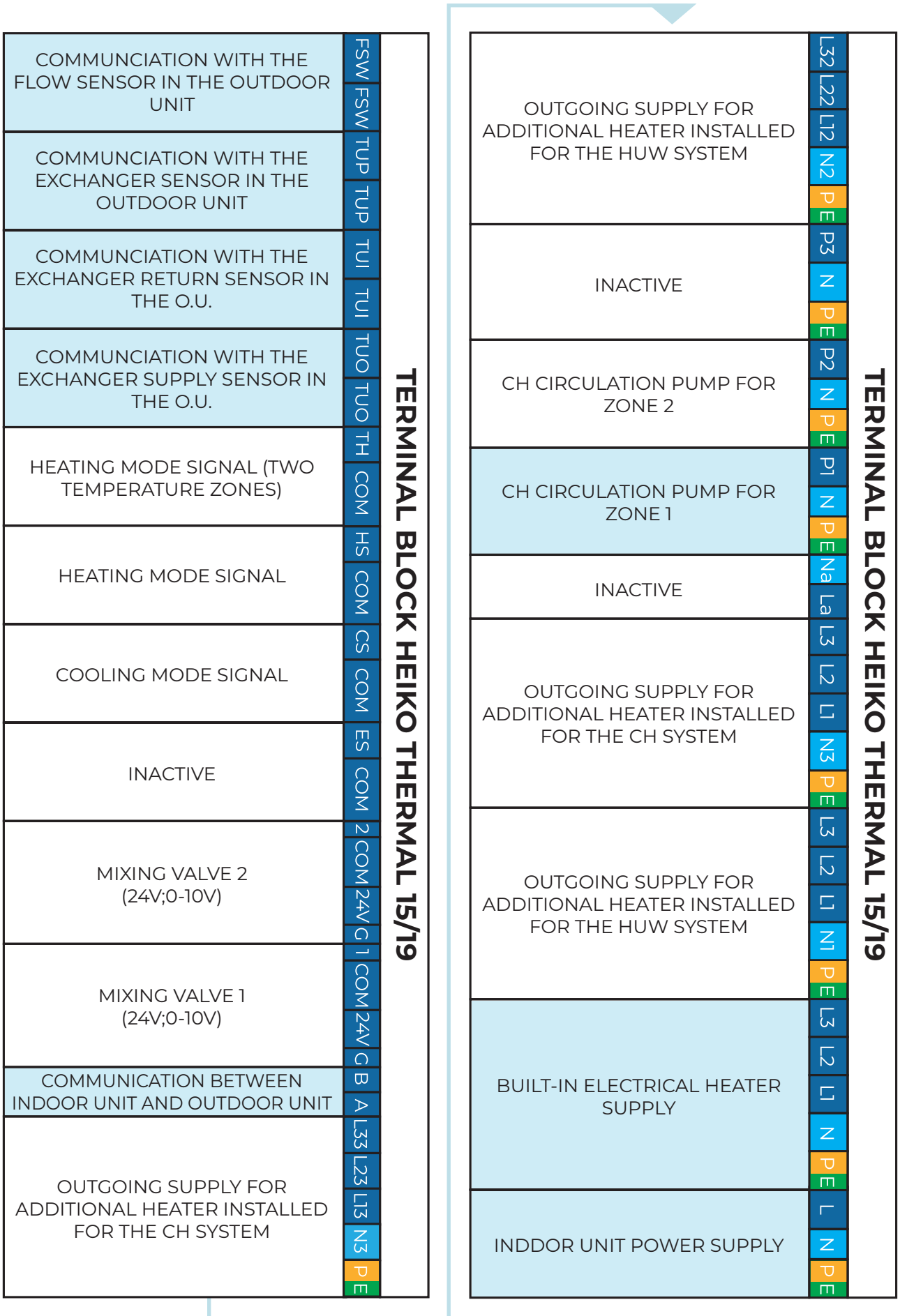
Installation diagrams



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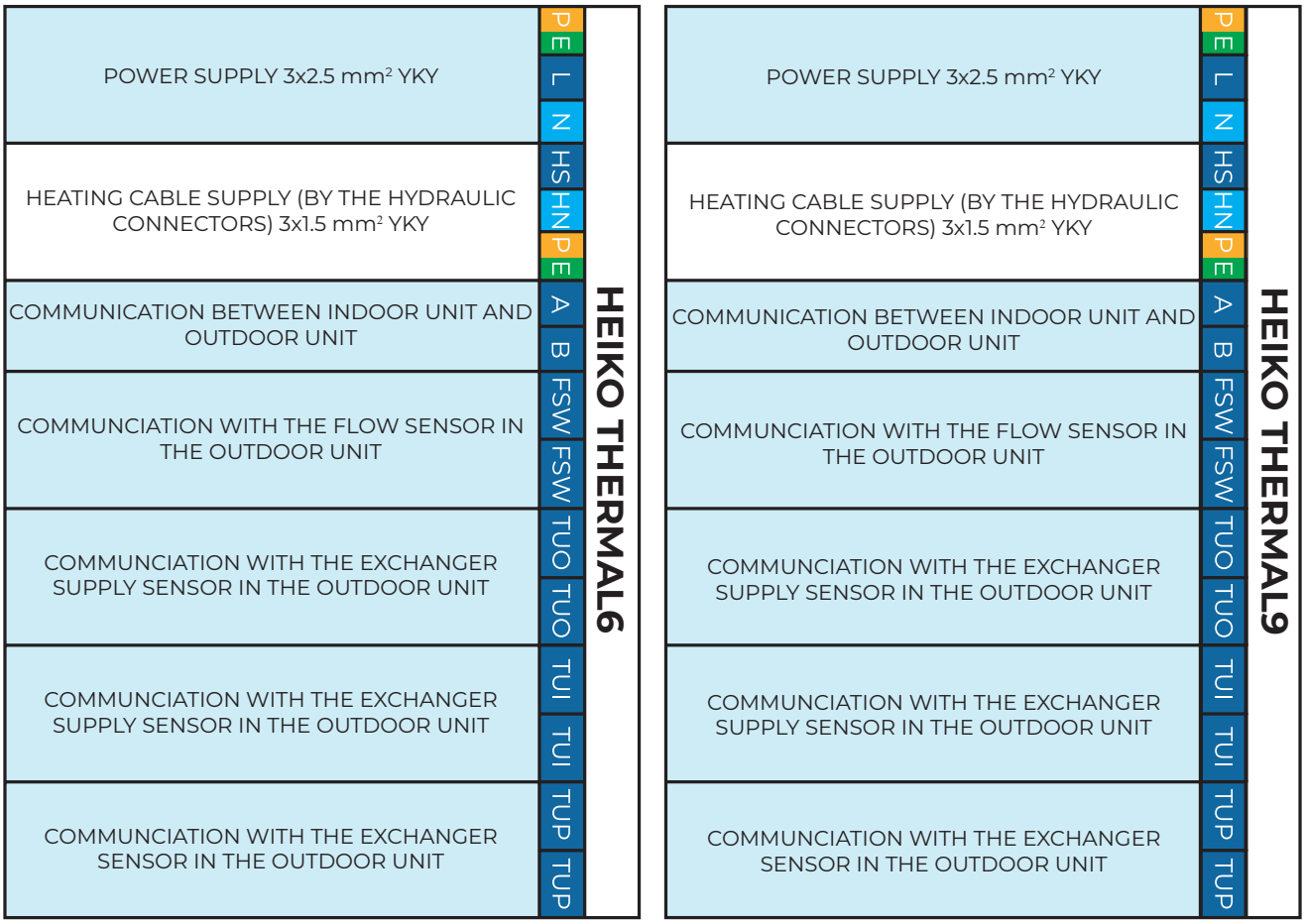
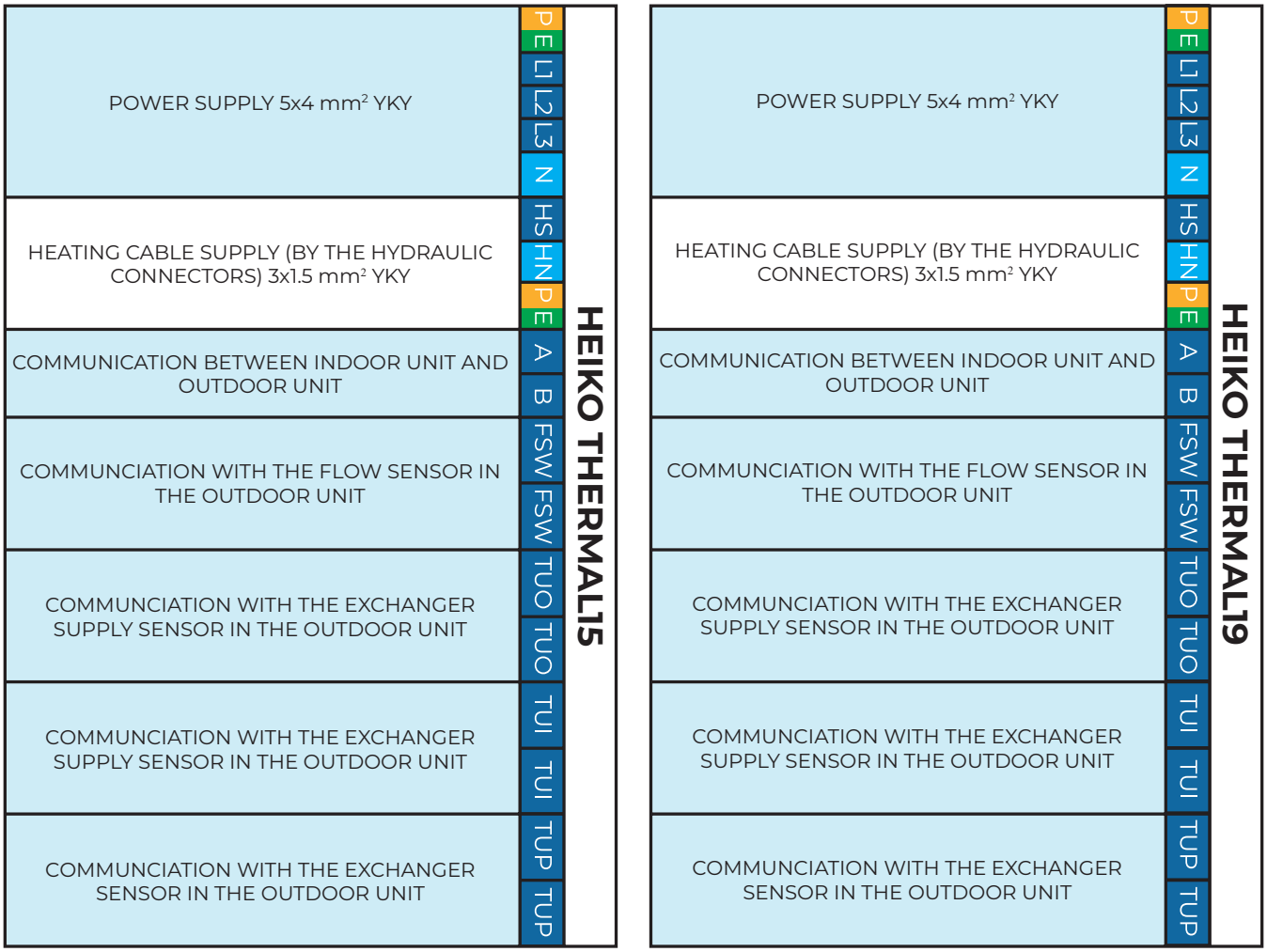
Installation diagrams



The required electrical connections for the above diagram are marked with blue colour.

Installation diagrams



The required electrical connections for the above diagram are marked with blue colour.

Installation diagrams

Controller settings required for diagram 2:

Heating/cooling

page 1/6

line 1 “Compressor stop hysteresis when heating or cooling”: specify the maximum temperature of overheating in the central heating system until the compressor is fully stopped →

line 2 “Compressor stop hysteresis when heating or cooling” define the temperature drop value at which the device restarts in central heating mode →

line 3 “Compressor speed reduction when heating or cooling” specify the temperature difference at which the heat pump will reduce the compressor speed until it reaches the set temperature→

line 5 “Enable the heating curve?” enable this option if the heating curve will be used →

page 3/6

lines 1, 2, 3, 4, 5 determine the temperatures set in the CH system for outdoor temperatures on page 2 (by default: 1= -25°C; 2= -15°C; 3= -5°C; 4= 5°C; 5= 10°C →

page 4/6

line 1 “Influence of indoor temperature on heating curve correction” enable this option if the option of controlling the heat pump with a room temperature sensor will be used →

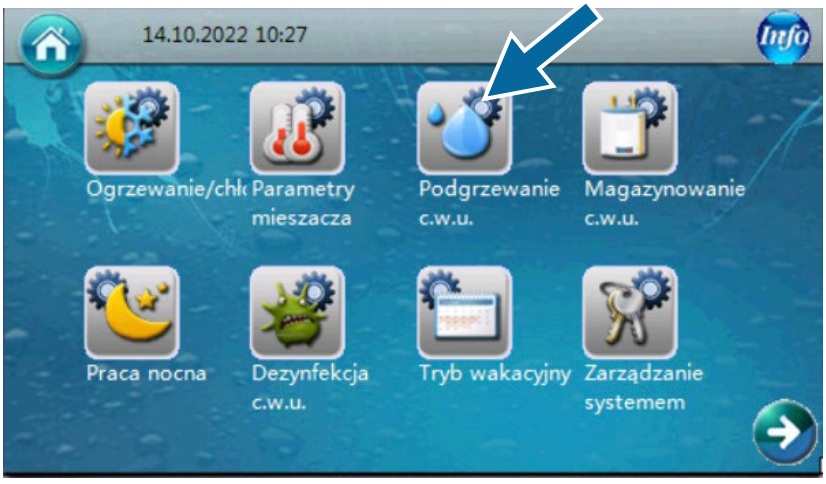
line 2 is responsible for setting the room temperature for heating → **line 4** “Setting a constant supply temperature for heating” only adjust the temperature here if the heating curve and the room temperature sensor are not used →

page 5

line 1 “High temperature limitation”, define the maximum water temperature parameter in the system for central heating

Installation diagrams

HUW heating



page 1/3

line 1 "Setting the HUW heating temperature", define the temperature to which the utility water is to be heated

line 2 "Setting the HUW heating temperature hysteresis", define the value of hysteresis, i.e. the value of temperature decrease below which the pump will restart heating of the water in the hot utility water tank

Operating modes

page 1/2

line 1 „Hot utility water heating", enable this option →

line 2 "Heating circuit", this option should be enabled in order to activate CH →

line 3 "Cooling circuit", this option should be enabled if the pump is to be used for cooling →

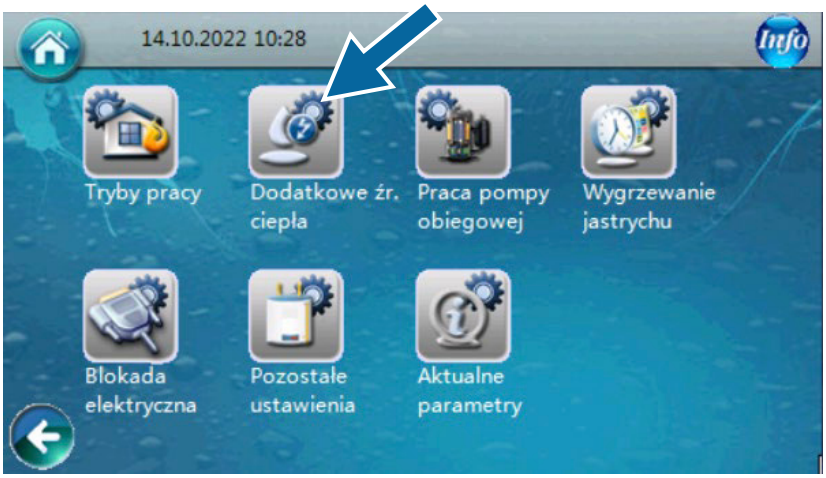
line 4 "Basic operating modes", this option should be enabled only if the heating pump is to be controlled on the basis of room temperature →

page 2/2

line 1 "Cooling to heating switch signal", select "Outdoor temperature" to determine the moment of CH activation depending on the outdoor temperature set in lines 3 and 4

Installation diagrams

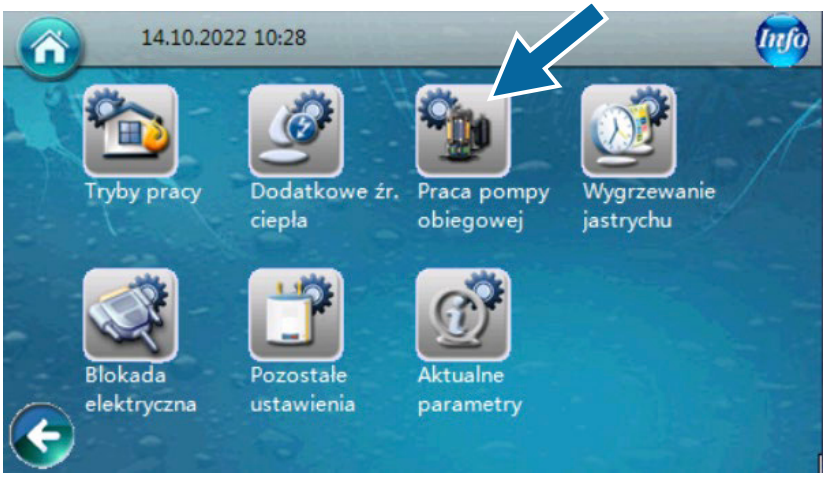
Additional heat source



page 1/2

line 5 "Correlation between the set temperature and the time to start the additional heat source", specify the time in seconds within which the heat pump will heat the water in the system by 1°C. If the pump exceeds this time, it will start the additional heat source, in this case the heaters

Circulation pump operation



page 1/4

line 4 „P0 pump operating time", select the time within which, during heat pomp stop, the in-built circulation pump will be working to correctly check the actual temperature in the system →

line 5 „CH water buffer", select this option in the above system, thus informing the device that it is working with the buffer

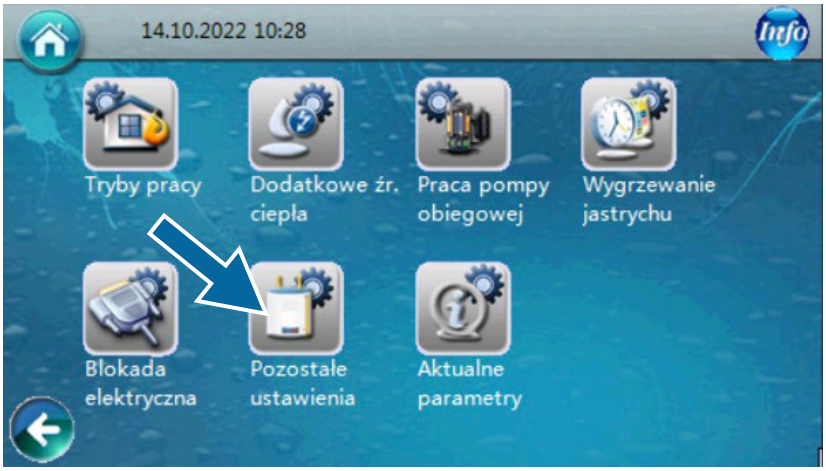
page 2/4

line 1 „P1 pump heating operation", select this option for the above system, thus informing the device that it is controlling an additional circulation pump →

line 4 „P2 pump heating operation", leave this option unchecked for the above system.

Installation diagrams

Other settings



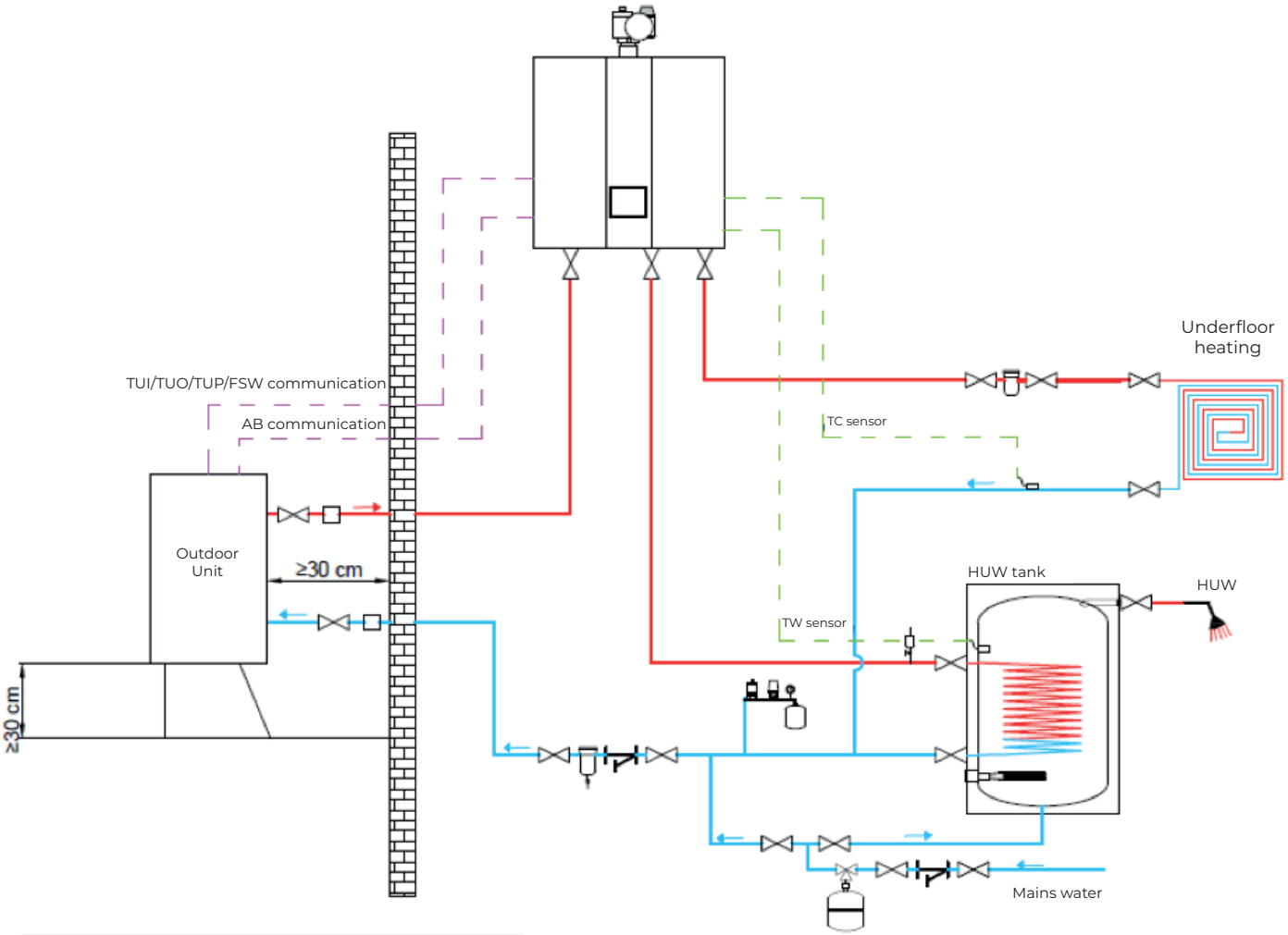
page 4/6

Perform the procedure of connecting the heat pump with the WiFi module. The procedure is described in detail in the WiFi module connection manual on the web page www.heiko.pl

Installation diagrams

3. Heiko THERMAL heat pump with HUW system only and underfloor heating without controller)

Diagram
THERMAL 6/9/12/15/19 kW with underfloor heating
(uncontrolled) + HUW



Additional information

Buffer capacity = pump power in kW x 15 litres

The installation requires 2 anti-freeze valves (they must not be fitted in one line) or 30% solution of water + propylene glycol (-25°C)

A buffer heater is not required, it is optional.

Heating cables by the hydraulic spigots supplied with HL/HN/PE.

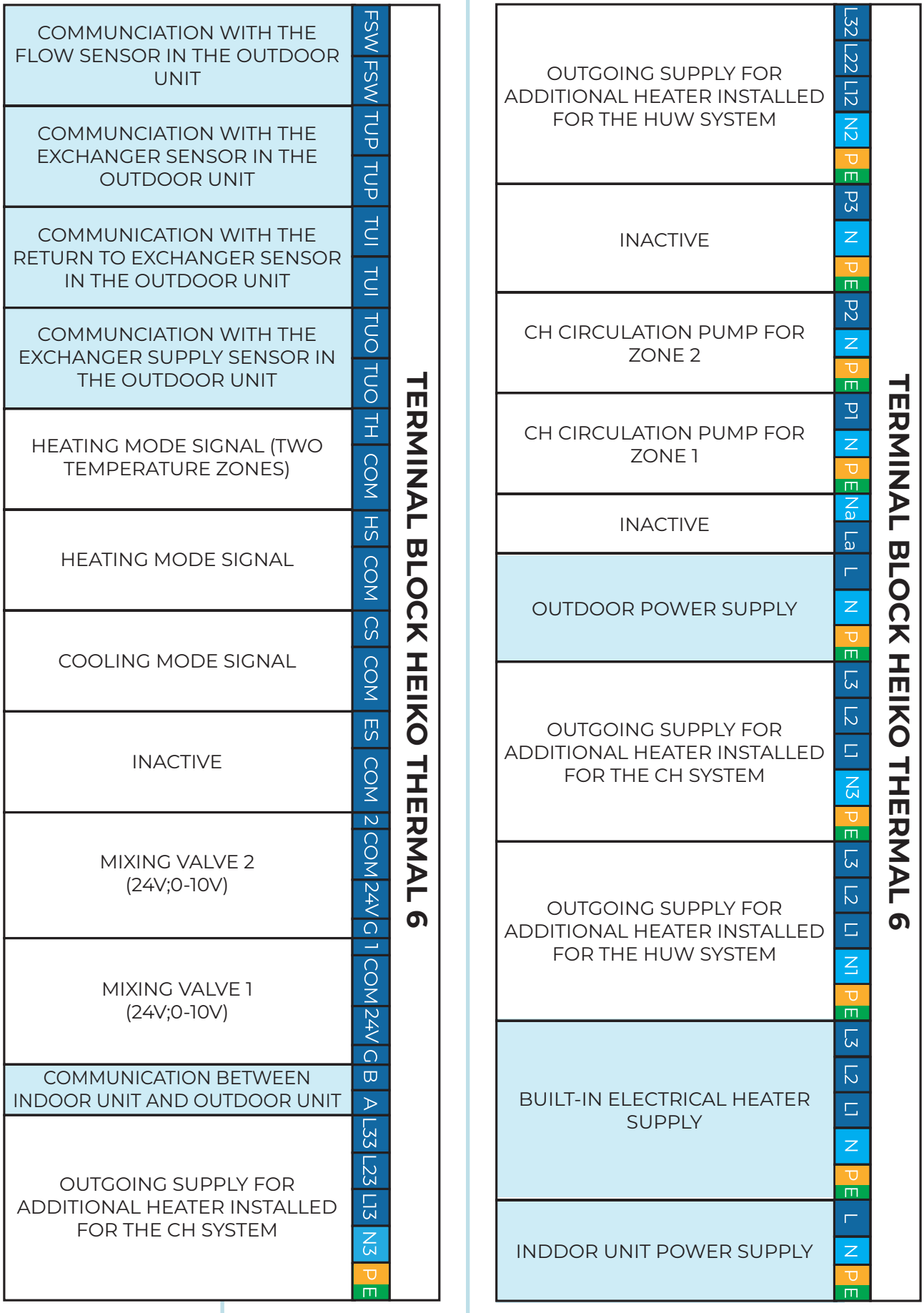
Heating cable thermostat by the supply connections in the indoor unit.

HUW tank with two coils (for 0.2 m²/kW heat pump). HUW tank capacity - 50 litres x number of people

	ball valve		safety group with expansion tank
	air separator		safety valve kit
	magnetic filter		circulation pump
	mesh filter		air bleeding
	anti-freeze valve		mixing valve
	temperature sensor		membrane vessel

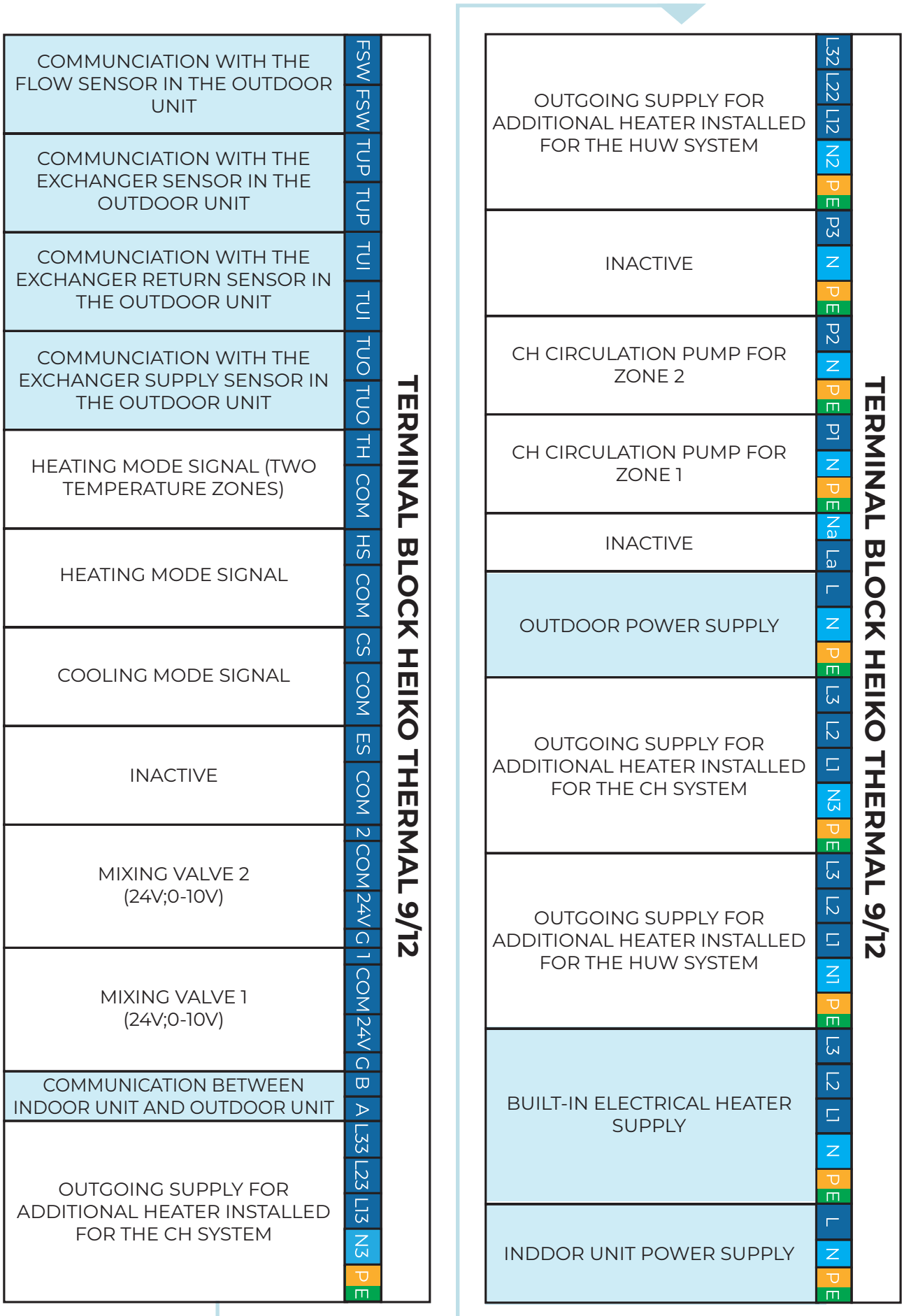
Installation diagrams

Electrical connection for diagram 3:



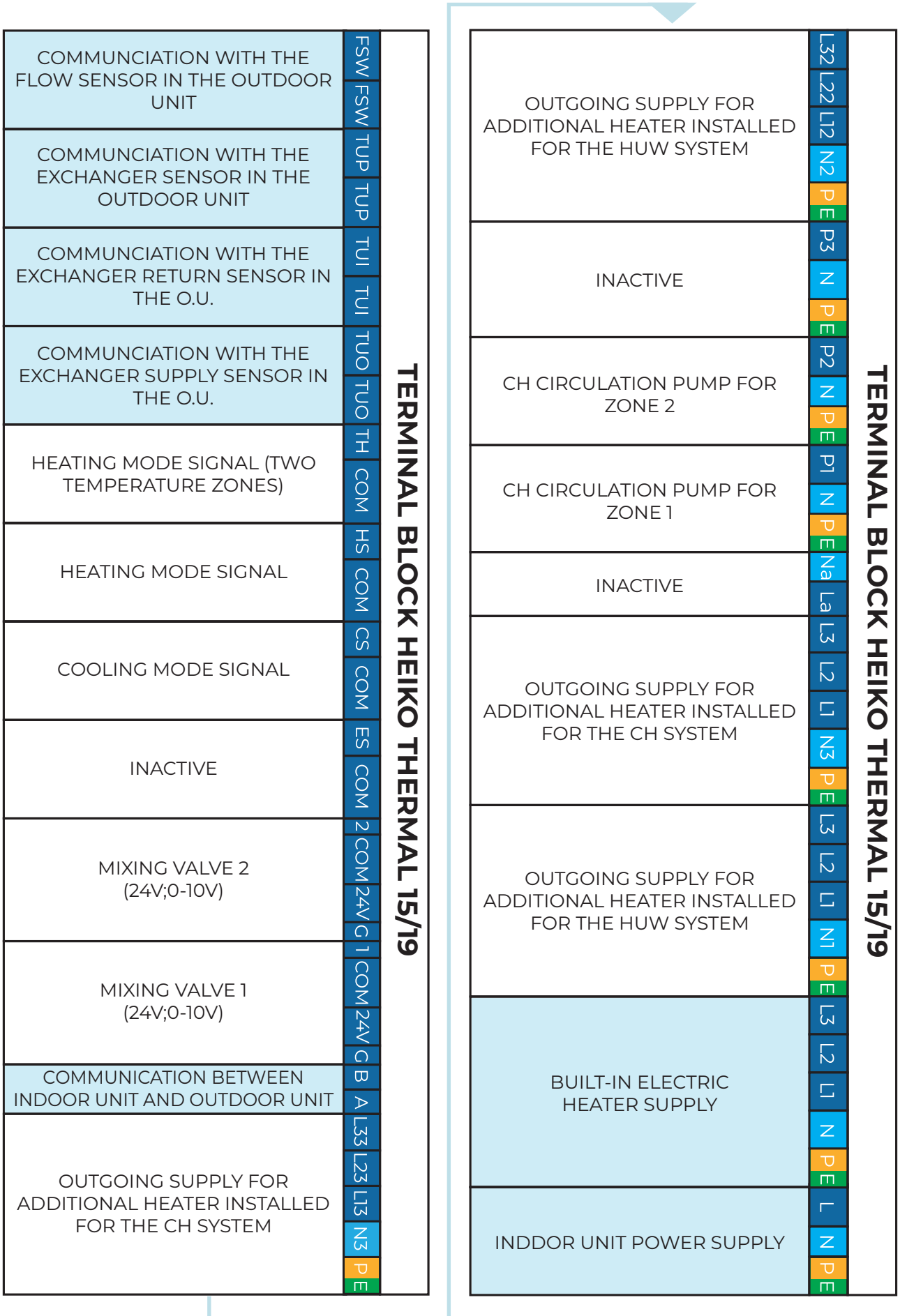
The required electrical connections for the above diagram are marked with blue colour.

Installation diagrams



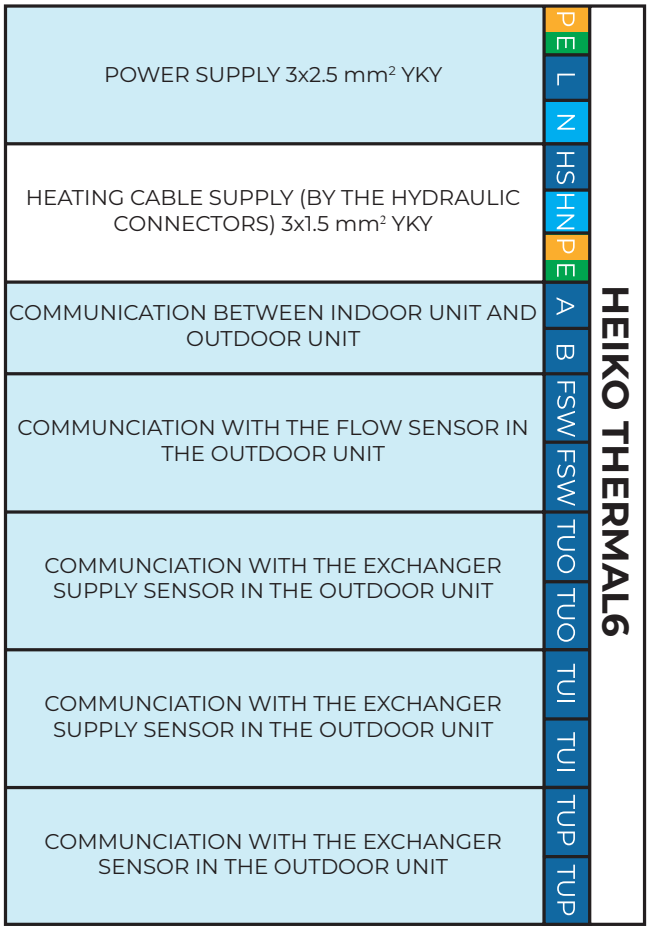
The required electrical connections for the above diagram are marked with blue colour.

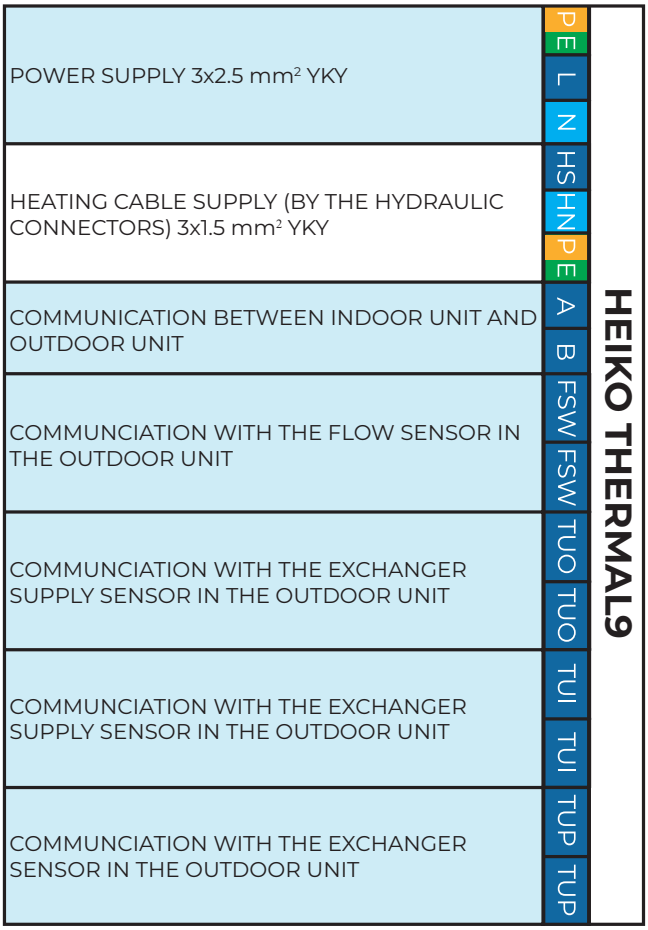
Installation diagrams

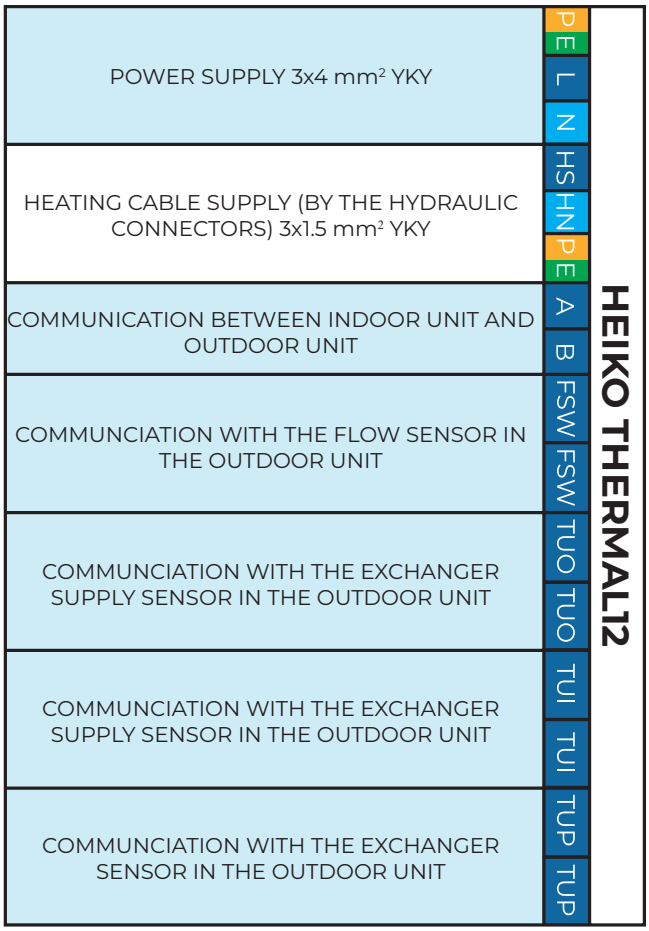


The required electrical connections for the above diagram are marked with blue colour.

Installation diagrams

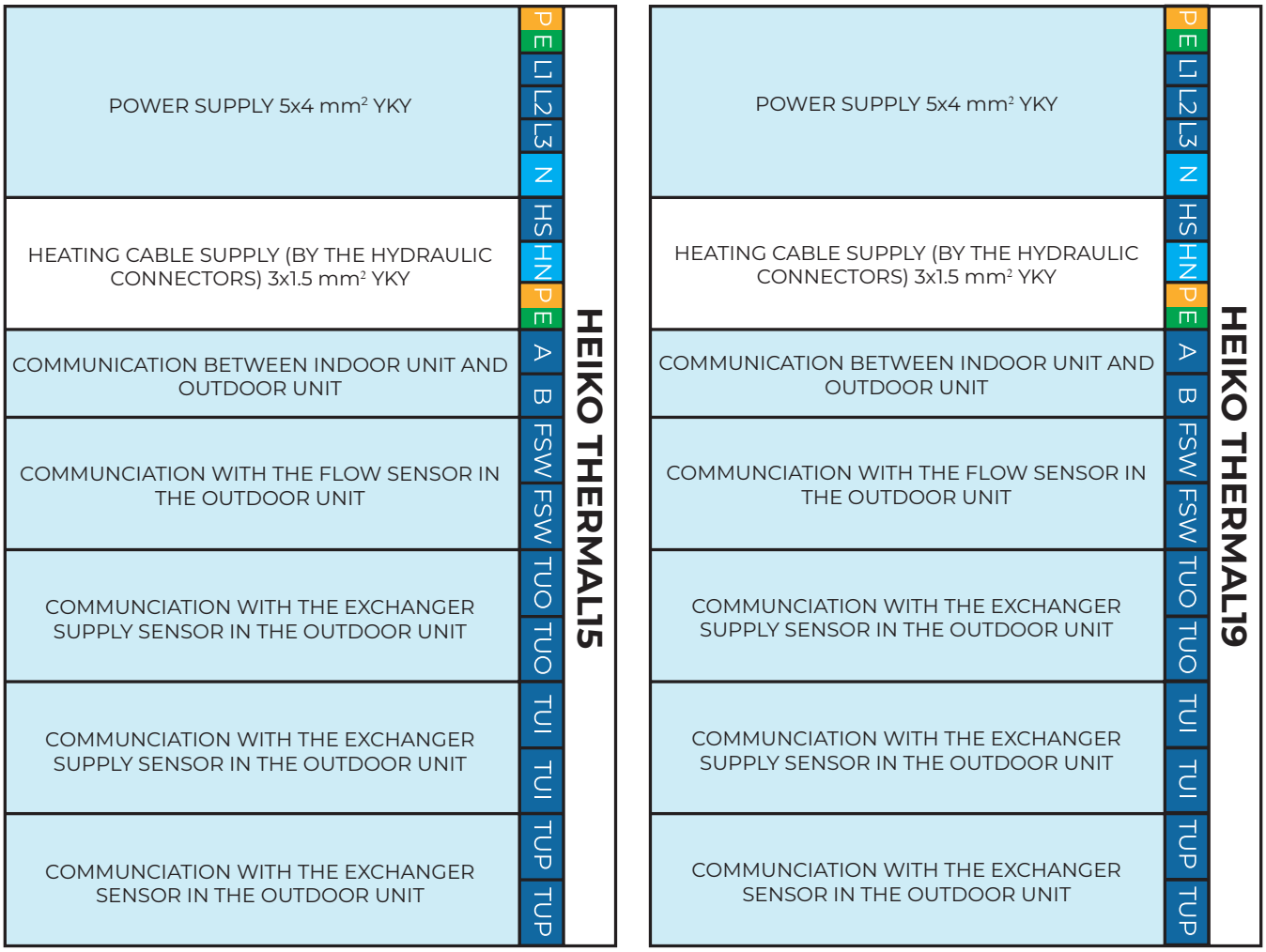






The required electrical connections for the above diagram are marked with blue colour.

Installation diagrams



The required electrical connections for the above diagram are marked with blue colour.

Installation diagrams

Controller settings required for diagram 3:

Heating/cooling

page 1/6

line 1 “Compressor stop hysteresis when heating or cooling”: specify the maximum temperature of overheating in the central heating system until the compressor is fully stopped →

line 2 “Compressor stop hysteresis when heating or cooling” define the temperature drop value at which the device restarts in central heating mode →

line 3 “Compressor speed reduction when heating or cooling” specify the temperature difference at which the heat pump will reduce the compressor speed until it reaches the set temperature→

line 5 “Enable the heating curve?” enable this option if the heating curve will be used →

page 3/6

lines 1, 2, 3, 4, 5 determine the temperatures set in the CH system for outdoor temperatures on page 2 (by default: 1= -25°C; 2= -15°C; 3= -5°C; 4= 5°C; 5= 10°C →

page 4/6

line 1 “Influence of indoor temperature on heating curve correction” enable this option if the option of controlling the heat pump with a room temperature sensor will be used →

line 2 is responsible for setting the room temperature for heating → **line 4** “Setting a constant supply temperature for heating” only adjust the temperature here if the heating curve and the room temperature sensor are not used →

page 5

line 1 “High temperature limitation”, define the maximum water temperature parameter in the system for central heating

Installation diagrams

HUW heating

page 1/3

line 1 "Setting the HUW heating temperature", define the temperature to which the utility water is to be heated

line 2 "Setting the HUW heating temperature hysteresis", define the value of hysteresis, i.e. the value of temperature decrease below which the pump will restart heating of the water in the hot utility water tank.

Operating modes

page 1/2

line 1 „Hot utility water heating", enable this option →

line 2 "Heating circuit", this option should be enabled in order to activate CH →

line 3 "Cooling circuit", this option should be enabled if the pump is to be used for cooling →

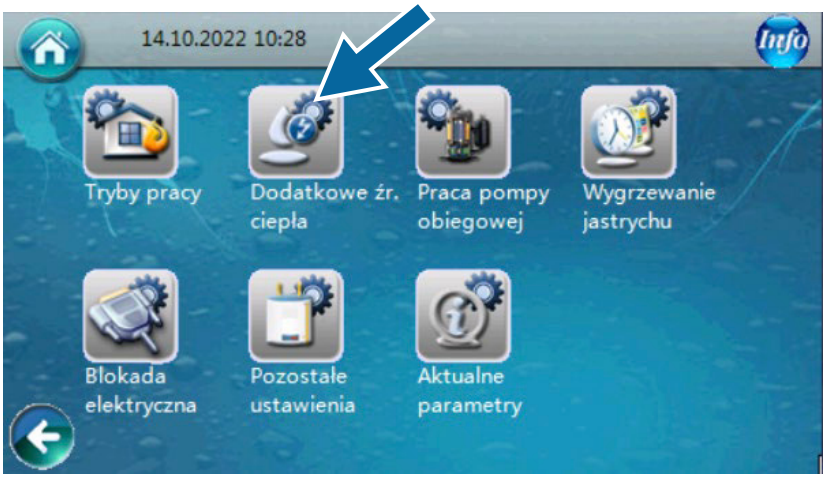
line 4 "Basic operating modes", this option should be enabled only if the heating pump is to be controlled on the basis of room temperature →

page 2/2

line 1 "Cooling to heating switch signal", select "Outdoor temperature" to determine the moment of CH activation depending on the outdoor temperature set in lines 3 and 4

Installation diagrams

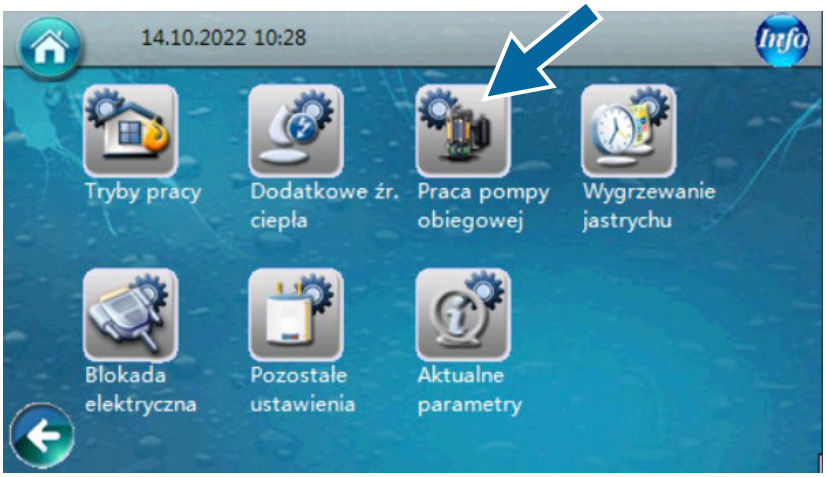
Additional heat source



page 1/2

line 5 "Correlation between the set temperature and the time to start the additional heat source", specify the time (in seconds) within which the heat pump will heat the water in the system by 1°C. If the pump exceeds this time, it will start the additional heat source, in this case the heaters

Circulation pump operation



page 1/4

line 4 „P0 pump operating time", select the time within which, during heat pomp stop, the in-built circulation pump will be working to correctly check the actual temperature in the system →

line 5 „CH buffer tank", in the above system, this option should be left unchecked.

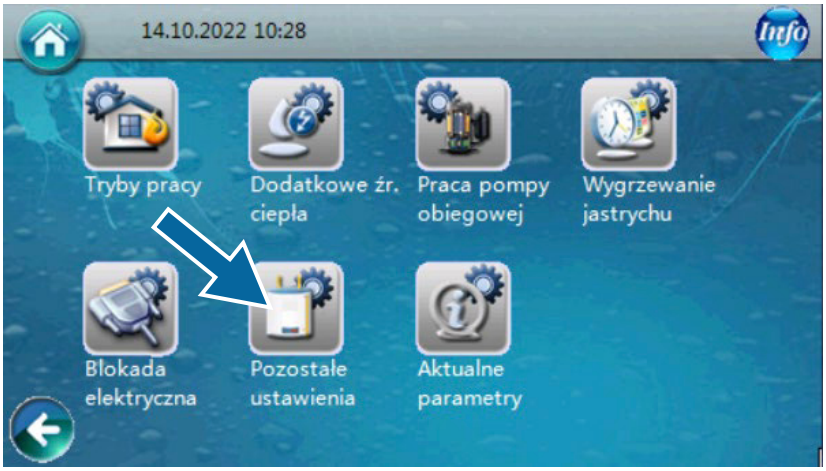
page 2/4

line 1 „P1 pump heating operation", leave this option unchecked for the above system.

line 4 „P2 pump heating operation", leave this option unchecked for the above system.

Installation diagrams

Other settings



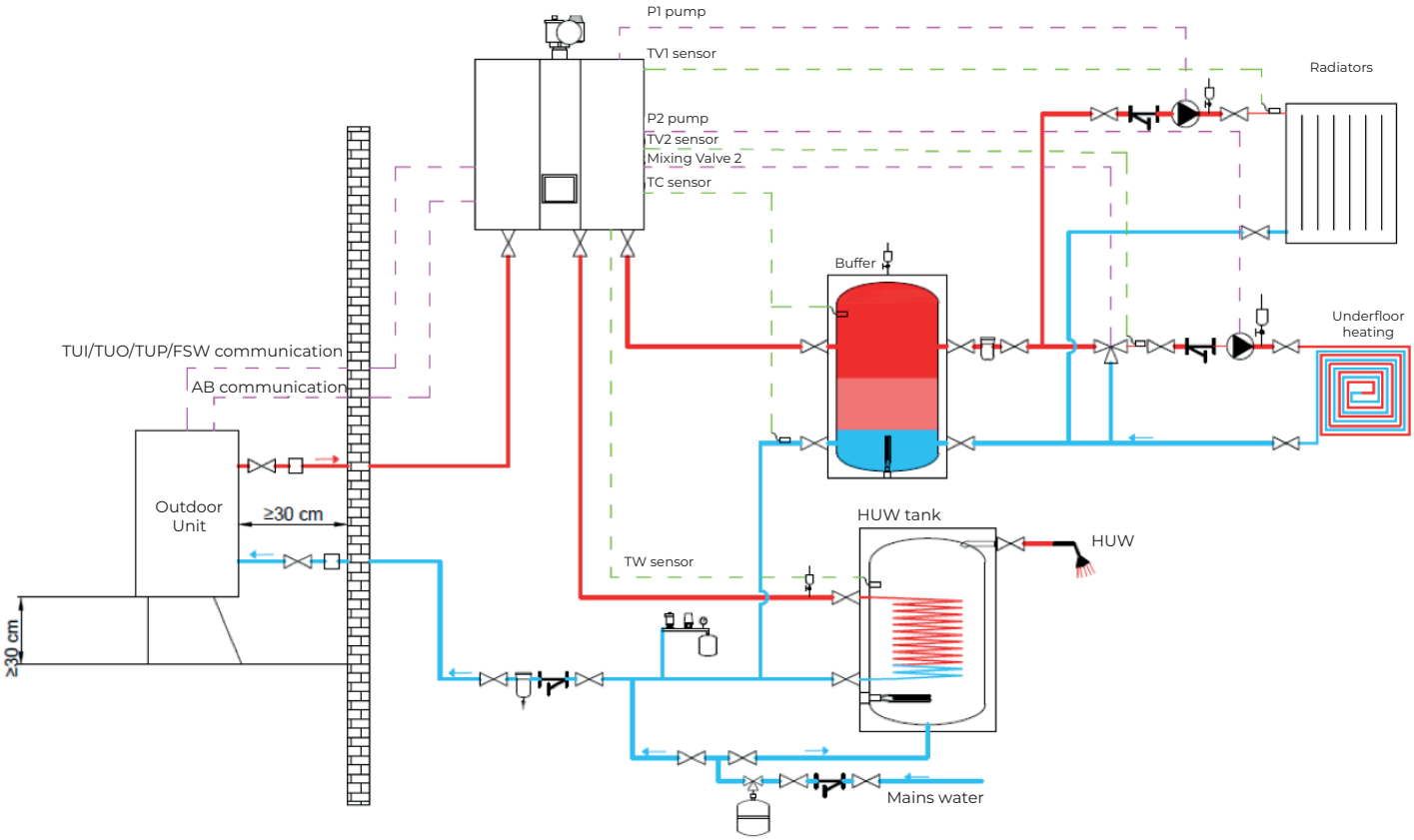
page 4/6

Perform the procedure of connecting the heat pump with the WiFi module. The procedure is described in detail in the WiFi module connection manual on the web page www.heiko.pl

Installation diagrams

4. Heiko THERMAL heat pump with mixed heating and HUW system.

Diagram
THERMAL 6/9/12/15/19 kW with mixed heating and HUW system



Additional information

Buffer capacity = pump power in kW x 15 litres

The installation requires 2 anti-freeze valves (they must not be fitted in one line) or 30% solution of water + propylene glycol (-25°C)

A buffer heater is not required, it is optional.

Heating cables by the hydraulic spigots supplied with HU/HN/PE.

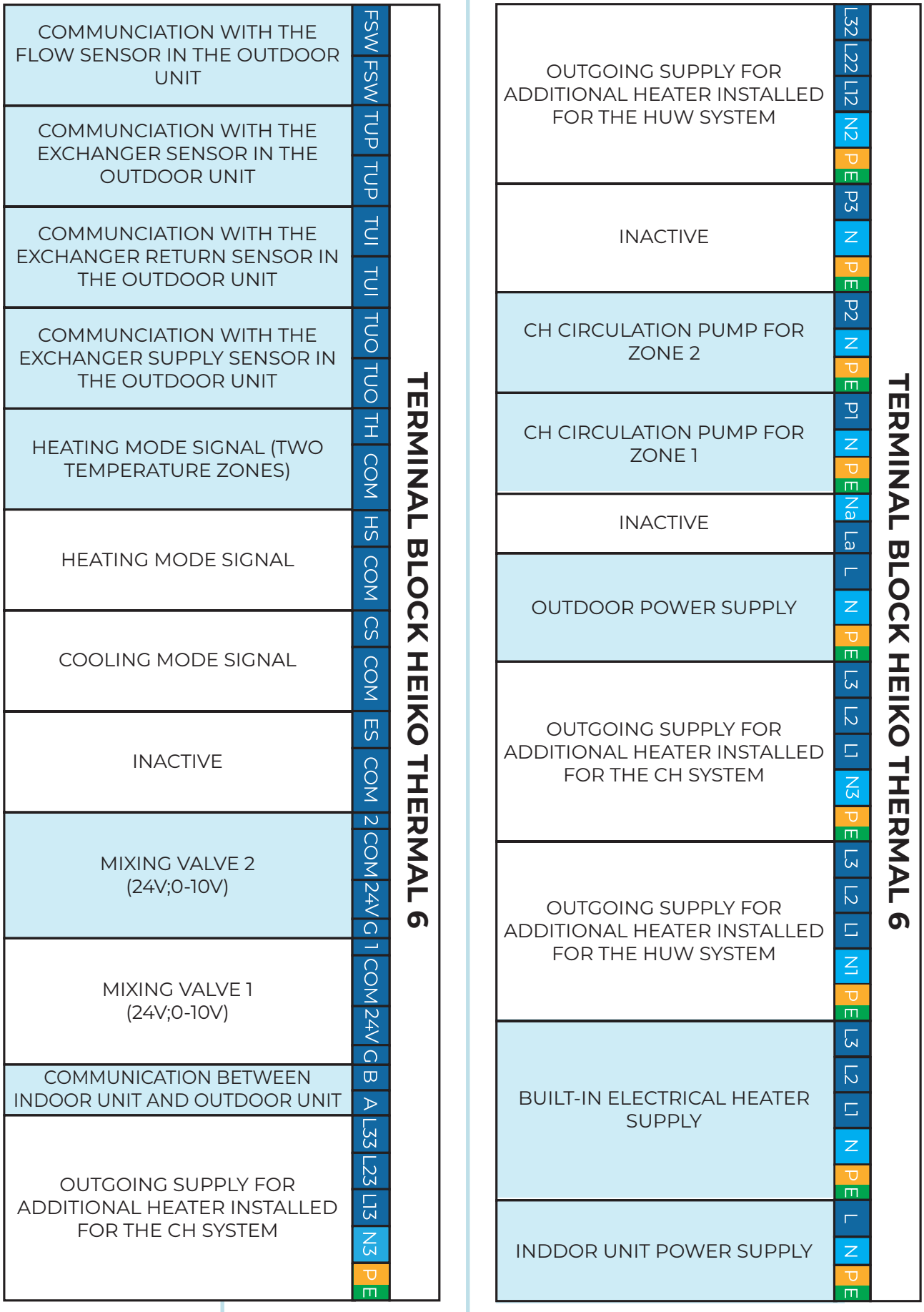
Heating cable thermostat by the supply connections in the indoor unit.

HUW tank with two coils (for 0.2 m²/kW heat pump). HUW tank capacity - 50 litres x number of people

	ball valve		safety group with expansion tank
	air separator		safety valve kit
	magnetic filter		circulation pump
	mesh filter		air bleeding
	anti-freeze valve		mixing valve
	temperature sensor		membrane vessel

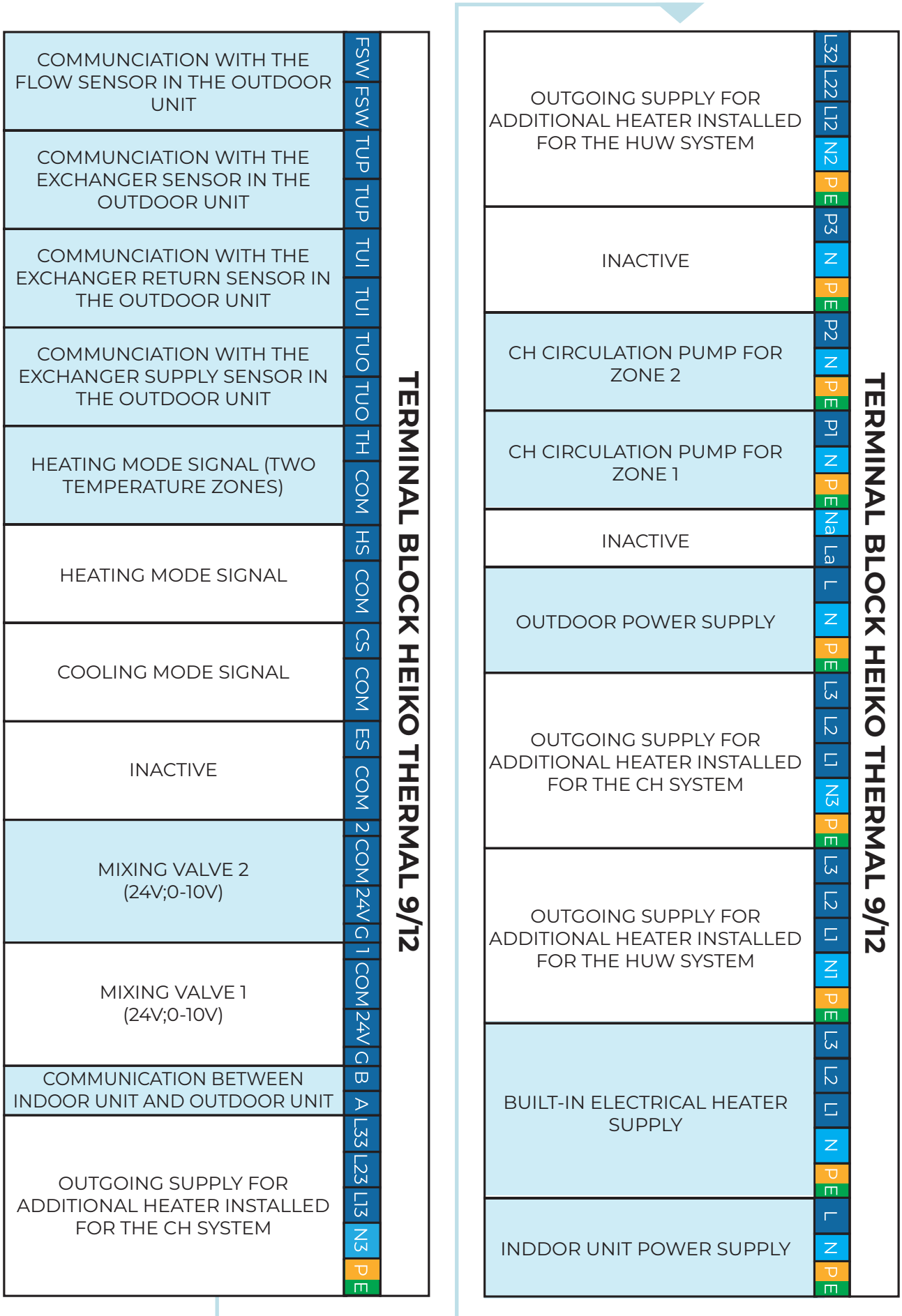
Installation diagrams

Electrical connection for diagram 4:



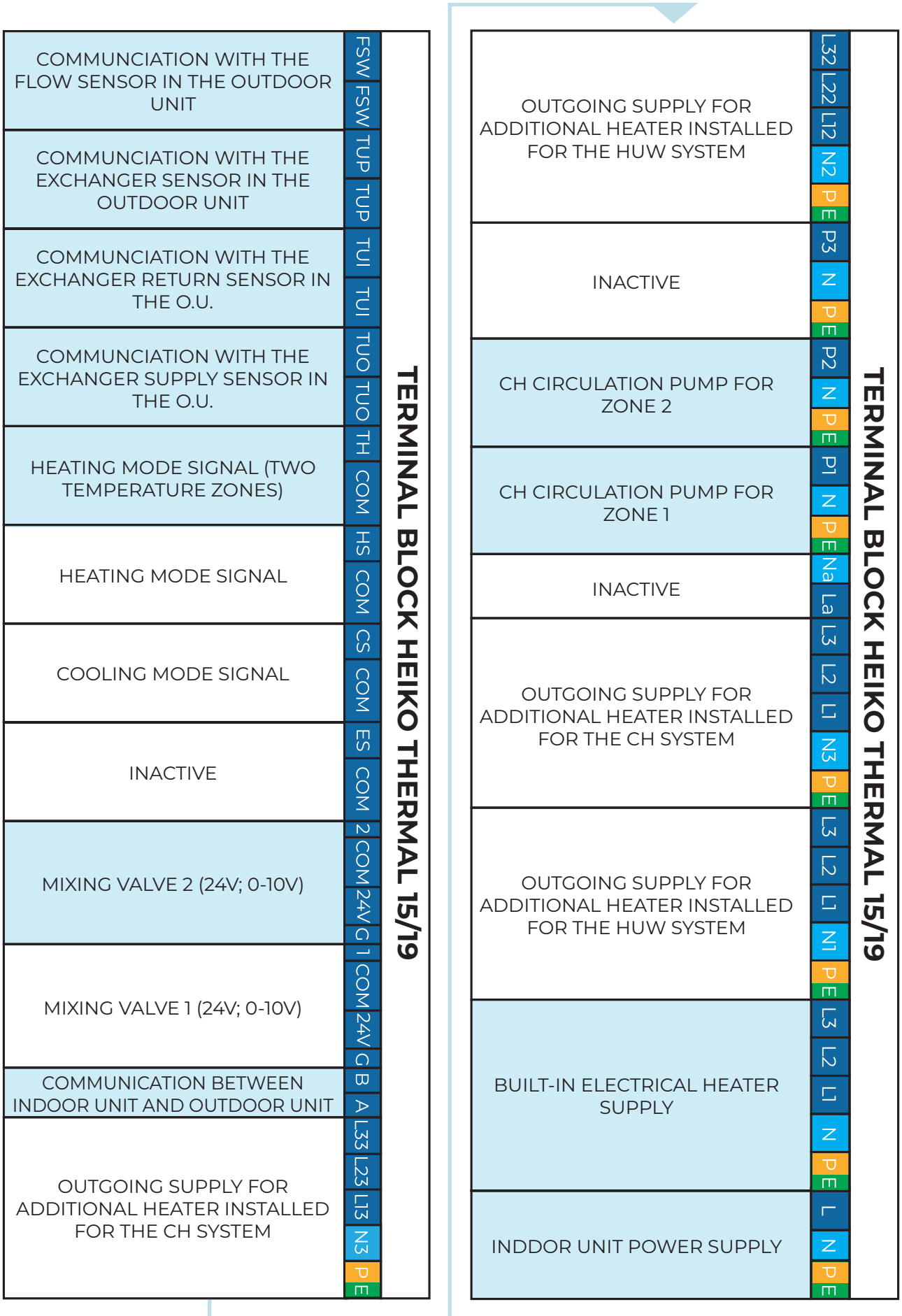
The required electrical connections for the above diagram are marked with blue colour.

Installation diagrams



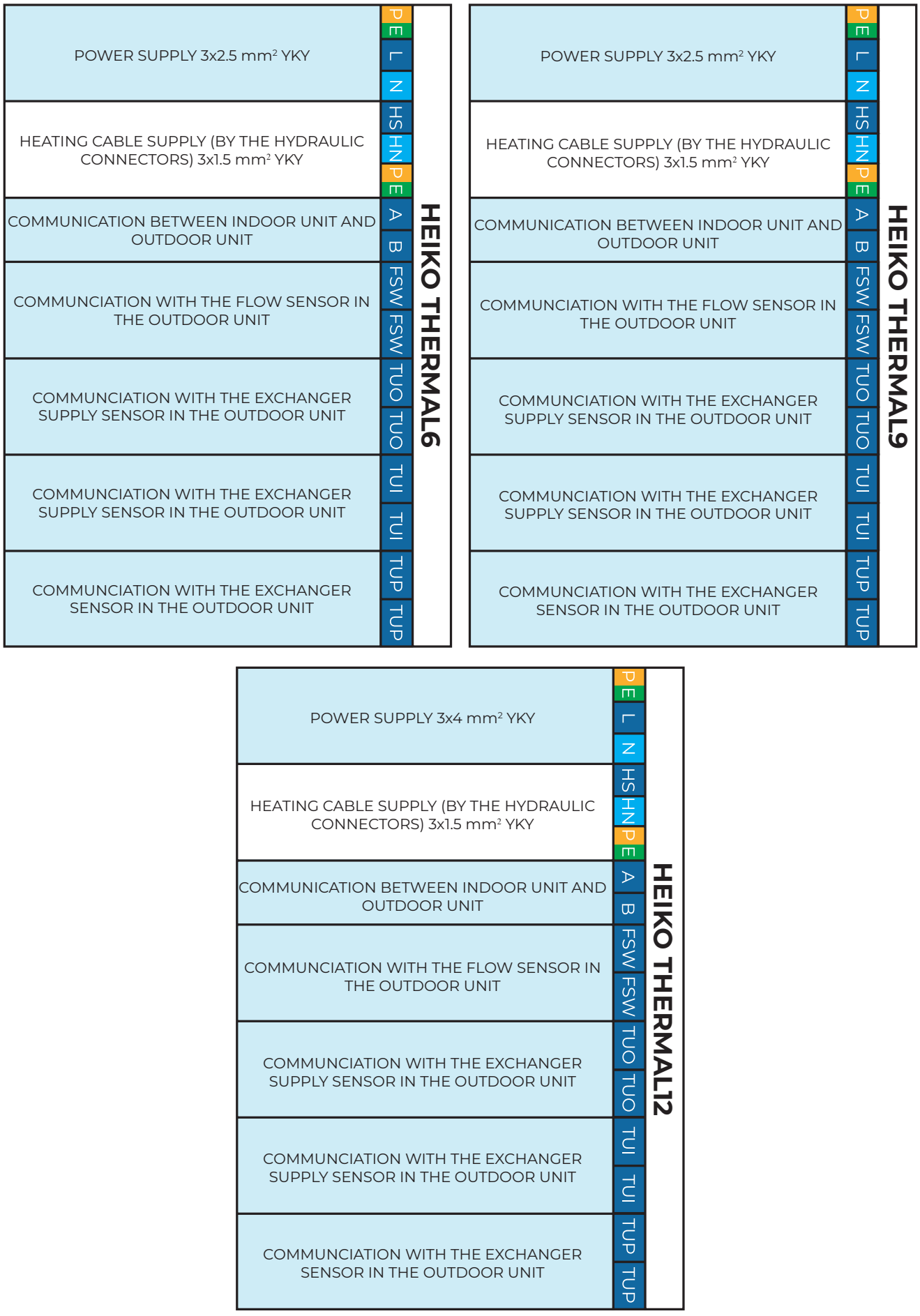
The required electrical connections for the above diagram are marked with blue colour.

Installation diagrams



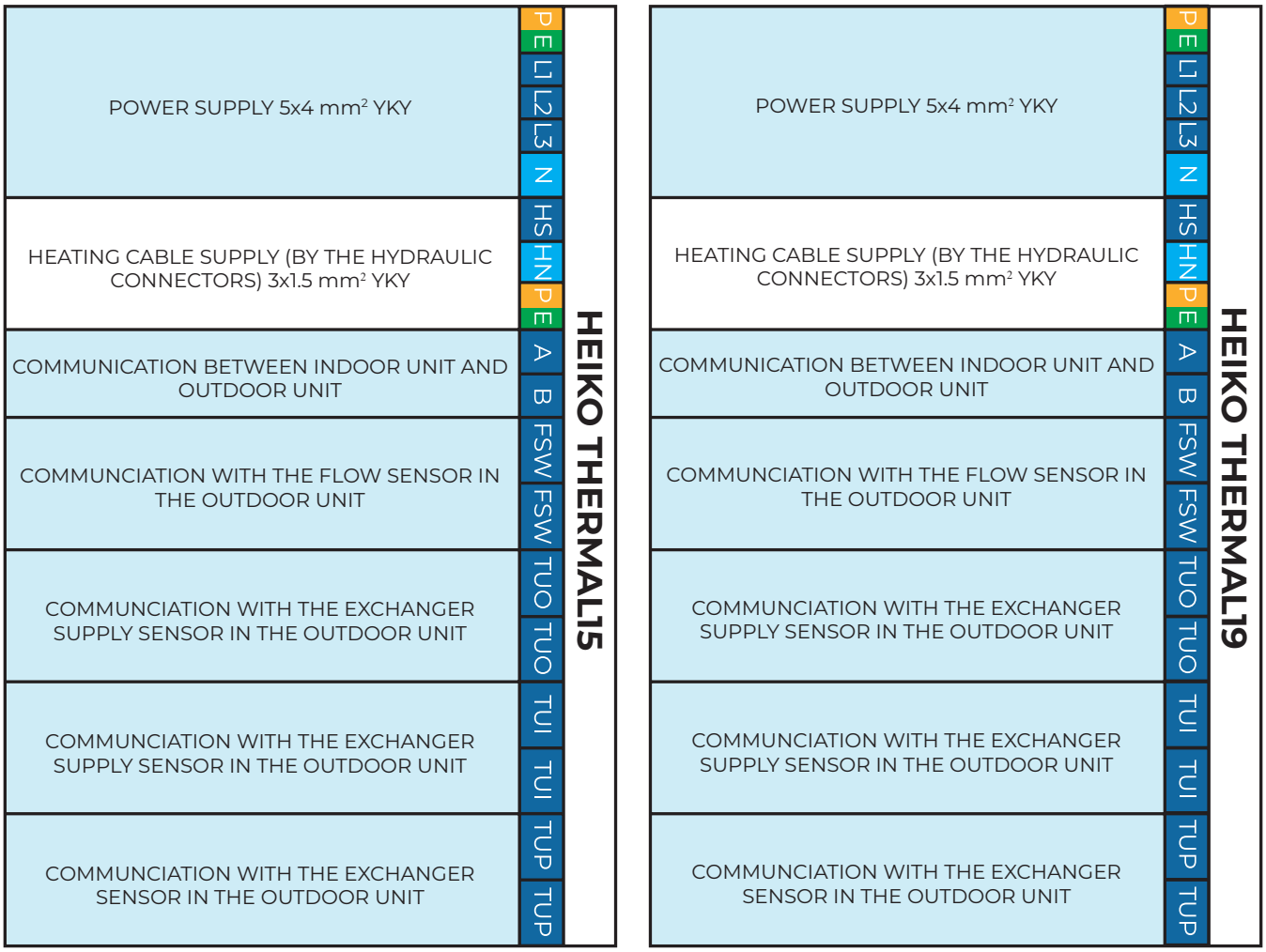
The required electrical connections for the above diagram are marked with blue colour.

Installation diagrams



The required electrical connections for the above diagram are marked with blue colour.

Installation diagrams



The required electrical connections for the above diagram are marked with blue colour.

Installation diagrams

Controller settings required for diagram 4:

Heating/cooling

page 1/6

line 1 “Compressor stop hysteresis when heating or cooling”: specify the maximum temperature of overheating in the central heating system until the compressor is fully stopped →

line 2 “Compressor stop hysteresis when heating or cooling” define the temperature drop value at which the device restarts in central heating mode →

line 3 “Compressor speed reduction when heating or cooling” specify the temperature difference at which the heat pump will reduce the compressor speed until it reaches the set temperature→

line 5 “Enable the heating curve?” enable this option if the heating curve will be used →

page 3/6

lines 1, 2, 3, 4, 5 determine the temperatures set in the CH system for outdoor temperatures on page 2 (by default: 1= -25°C; 2= -15°C; 3= -5°C; 4= 5°C; 5= 10°C →

page 4/6

line 1 “Influence of indoor temperature on heating curve correction” enable this option if the option of controlling the heat pump with a room temperature sensor will be used →

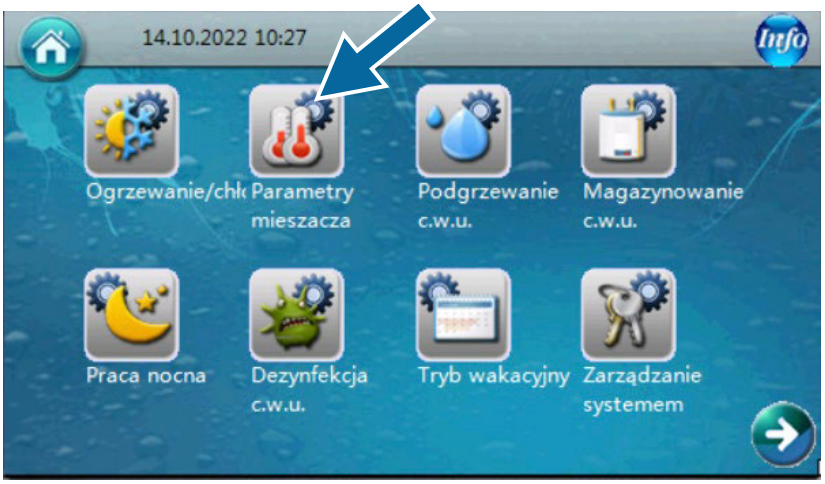
line 2 is responsible for setting the room temperature for heating → **line 4** “Setting a constant supply temperature for heating” only adjust the temperature here if the heating curve and the room temperature sensor are not used →

page 5

line 1 “High temperature limitation”, define the maximum water temperature parameter in the system for central heating.

Installation diagrams

Mixer parameters



page 1/4

line 1 „Enable the second heating/cooling circuit?”, enable this option so that the heat pump used two temperature zones

IMPORTANT! IN THE CASE OF USING TWO TEMPERATURE ZONES, SHORT CIRCUIT THE COM|TH CONTACTS ON THE TERMINAL BLOCK

line 3 “Setting permanent heating supply temperature of heating the circuit featuring a mixer”, adjust temperature here only if heating curve and room temperature sensor are not used →

line 4 “Mixing valve 2”, enable this option for the pump to use the mixing valve 2 →

line 5 “Enable the heating curve for the second circuit featuring a mixer?”, enable this option for the circuit 2 temperature control to be based on the heating curve.

page 2/4

lines 1, 2, 3, 4, 5 determine the temperatures set in the CH system for outdoor temperatures on page 2 in the “Heating/cooling” tab (by default: 1= -25°C; 2= -15°C; 3= -5°C; 4= 5°C; 5= 10°C →

page 3/4

line 1 “Limiting the maximum temperature in the circuit featuring a mixer”, define the maximum temperature value in the circuit featuring a mixer, i.e. second temperature zone, in the above example of an underfloor heating system.

Installation diagrams

HUW heating

page 1/3

line 1 "Setting the HUW heating temperature", define the temperature to which the utility water is to be heated.

line 2 "Setting the HUW heating temperature hysteresis", define the value of hysteresis, i.e. the value of temperature decrease below which the pump will restart heating of the water in the hot utility water tank.

Operating modes

page 1/2

line 1 „Hot utility water heating", enable this option →

line 2 "Heating circuit", this option should be enabled in order to activate CH →

line 3 "Cooling circuit", this option should be enabled if the pump is to be used for cooling →

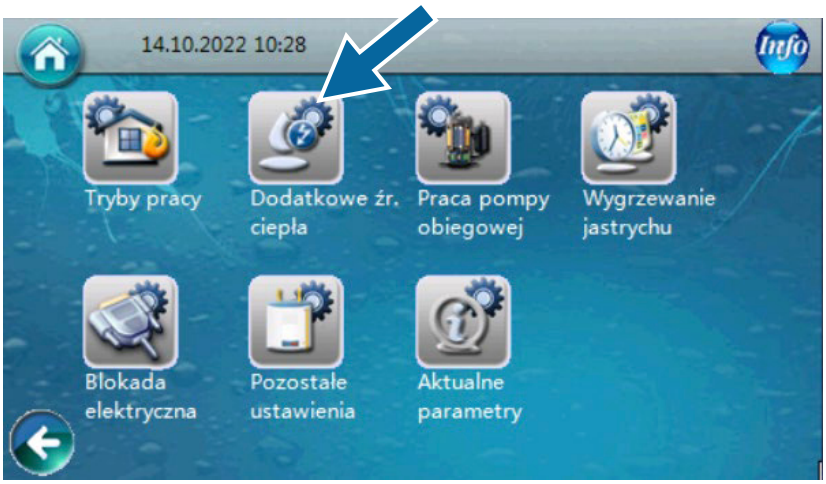
line 4 "Basic operating modes", this option should be enabled only if the heating pump is to be controlled on the basis of room temperature →

page 2/2

line 1 "Cooling to heating switch signal", select "Outdoor temperature" to determine the moment of CH activation depending on the outdoor temperature set in lines 3 and 4.

Installation diagrams

Additional heat source



page 1/2

line 5 "Correlation between the set temperature and the time to start the additional heat source", specify the time (in seconds) within which the heat pump will heat the water in the system by 1°C. If the pump exceeds this time, it will start the additional heat source, in this case the heaters

Circulation pump operation

page 1/4

line 4 „P0 pump operating time", select the time within which, during heat pomp stop, the in-built circulation pump will be working to correctly check the actual temperature in the system →

line 5 „CH water buffer", select this option in the above system, thus informing the device that it is working with the buffer.

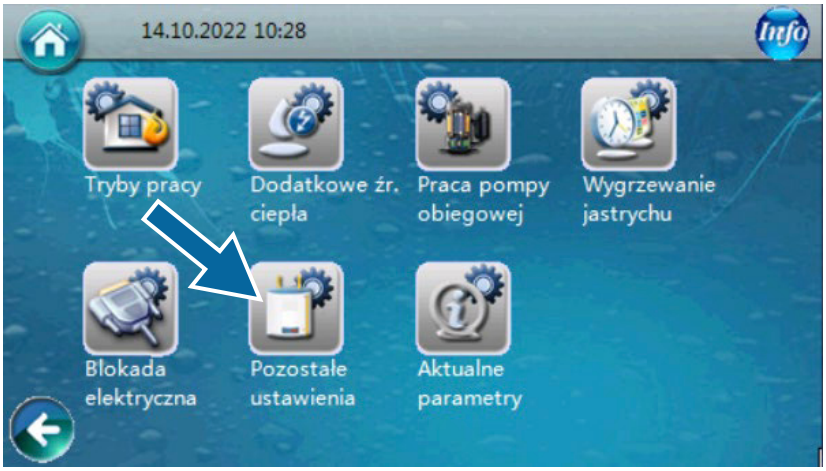
page 2/4

line 1 „P1 pump heating operation", enable this option for the above system for the Zone 1 circulation pump to be controlled by the heat pump.

line 4 „P2 pump heating operation", enable this option for the above system for the Zone 1 circulation pump to be controlled by the heat pump.

Installation diagrams

Other settings



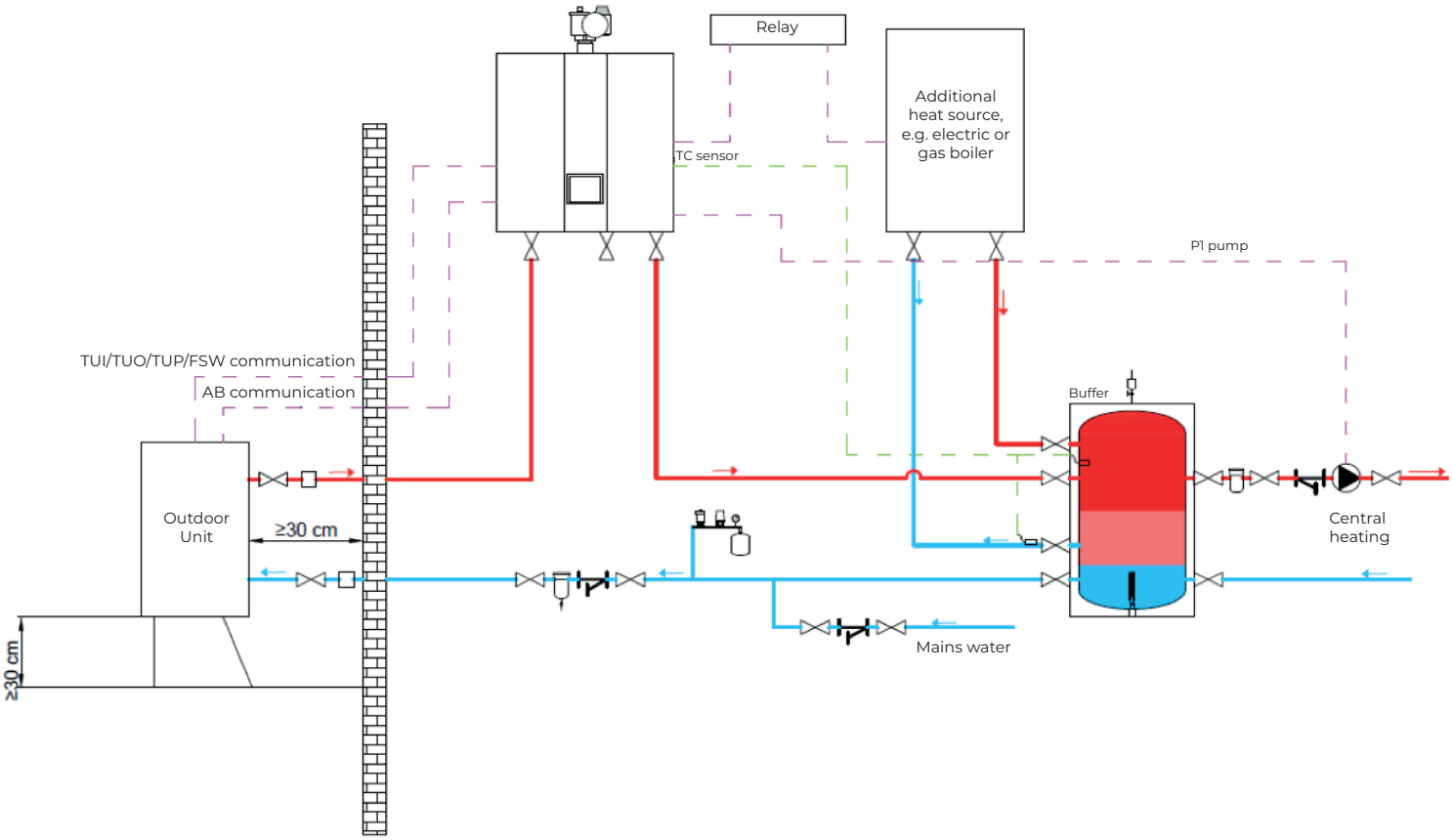
page 4/6

Perform the procedure of connecting the heat pump with the WiFi module. The procedure is described in detail in the WiFi module connection manual on the web page www.heiko.pl

Installation diagrams

5. Heiko THERMAL heat pump with CH system only and additional heat source:

Diagram
THERMAL 6/9/12/15/19 kW with CH + additional heat source



Additional information:

Buffer capacity = pump power in kW x 15 litres

The installation requires 2 anti-freeze valves (they must not be fitted in one line) or 30% solution of water + propylene glycol or ethylene glycol (-25°C)

A buffer heater is not required, it is optional.

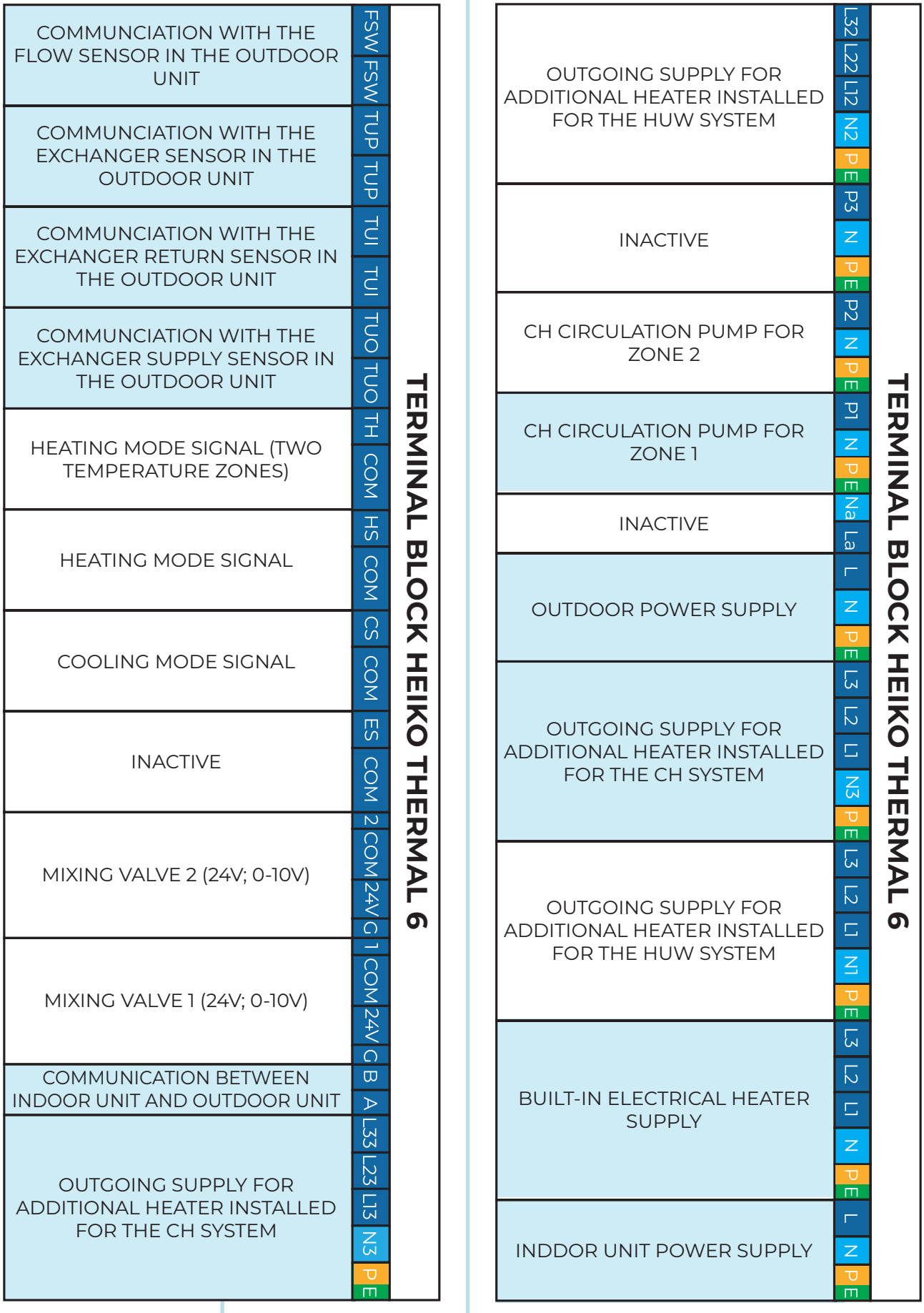
Heating cables by the hydraulic spigots supplied with HL/HN/PE.

Heating cable thermostat by the supply connections in the indoor unit.

	ball valve		safety group with expansion tank
	air separator		safety valve kit
	magnetic filter		circulation pump
	mesh filter		air bleeding
	anti-freeze valve		mixing valve
	temperature sensor		

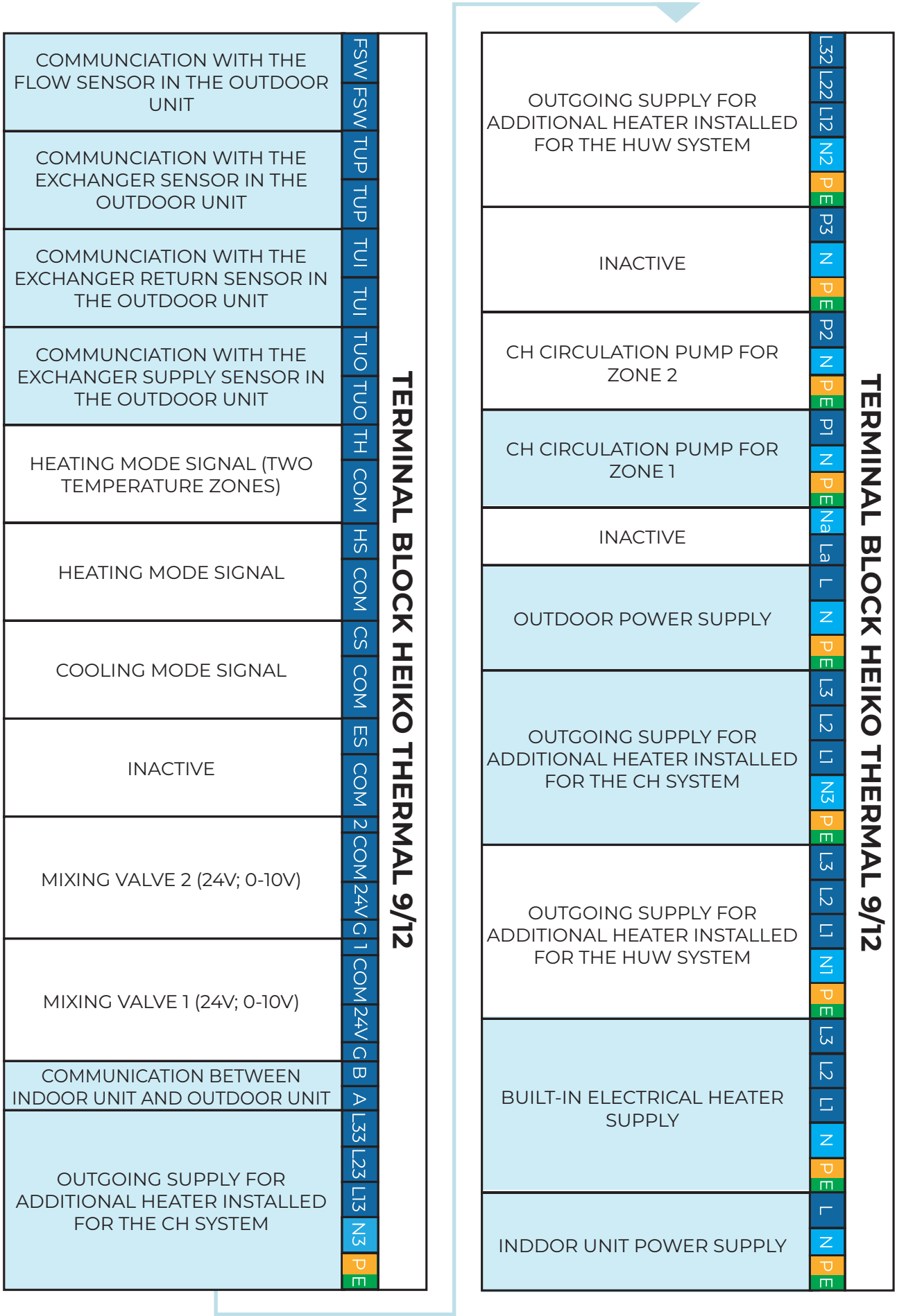
Installation diagrams

Electrical connection for diagram 5:



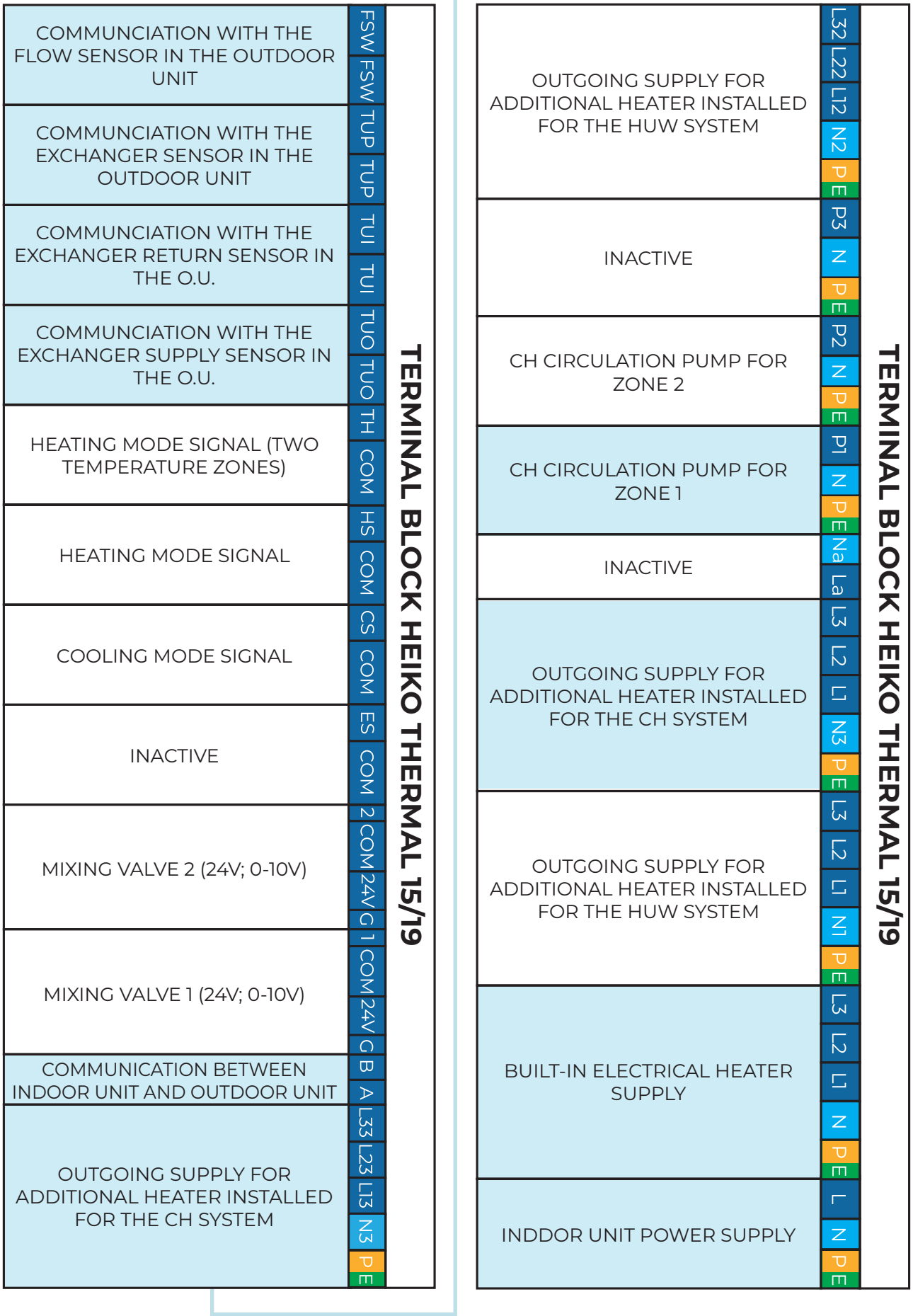
The required electrical connections for the above diagram are marked with blue colour.

Installation diagrams



The required electrical connections for the above diagram are marked with blue colour.

Installation diagrams



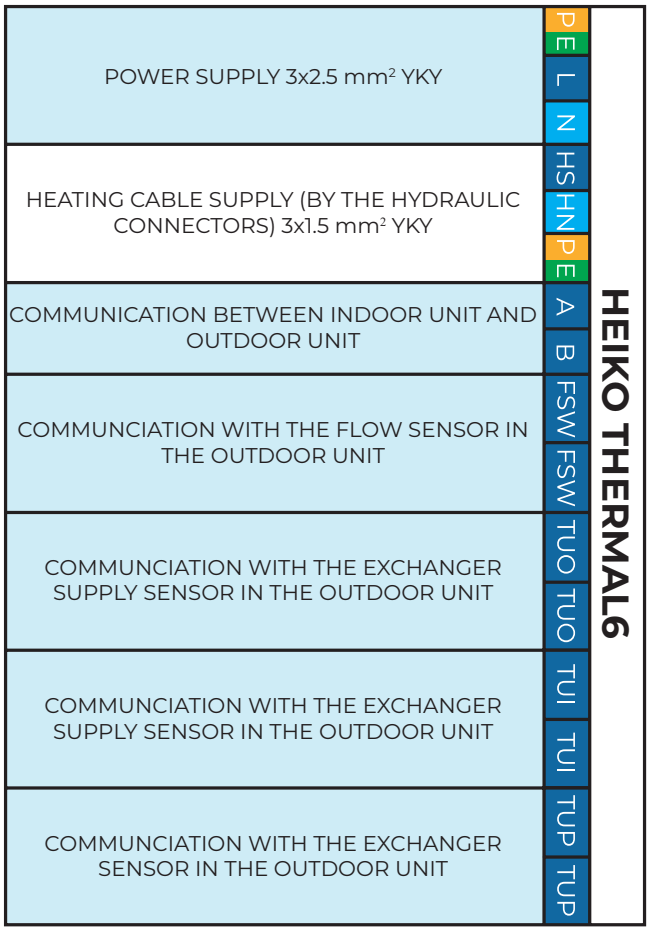
The required electrical connections for the above diagram are marked with blue colour.

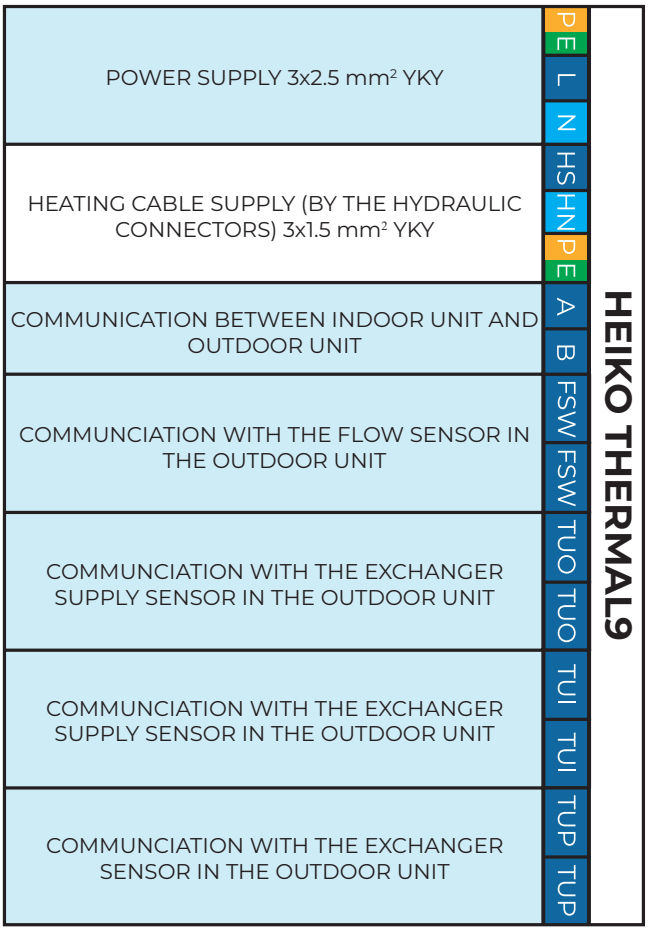
Installation diagrams

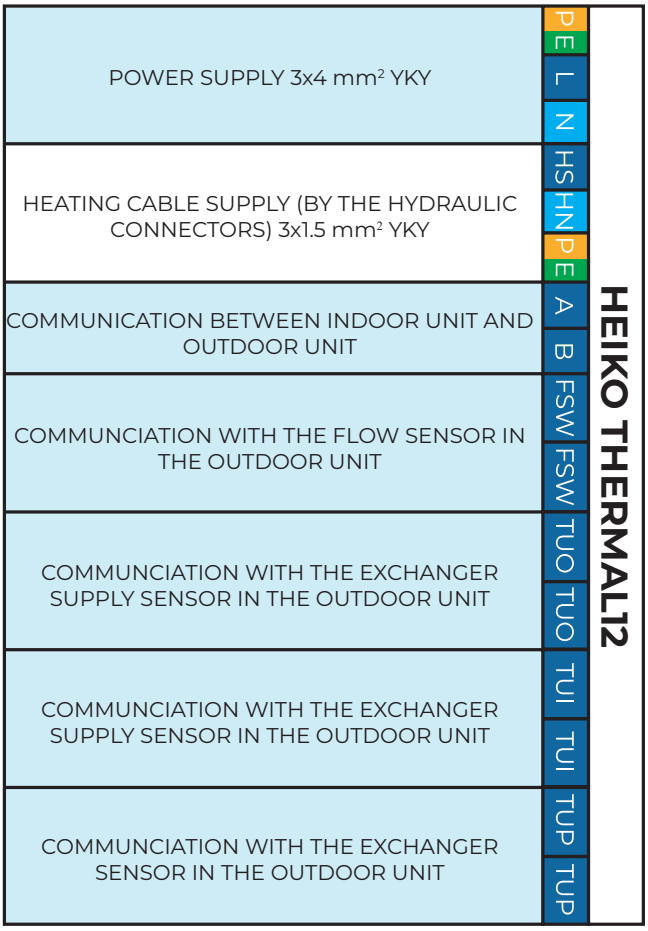
Important issues regarding the connection of an additional heat source:

- The additional heat source must always be connected on a circuit independent of the heat pump, i.e. in such a way that the flow generated by the additional heat source's circulation pump does not affect the flow generated by the built-in heat pump circulation pump. This will avoid the flow error.
- The additional heat source is controlled by a contactor, i.e. power is supplied with a 3 or 5-wire cable to the connectors described as "INPUT POWER SUPPLY FOR THE ADDITIONALLY INSTALLED HEATER FOR THE CH SYSTEM", and then the signal itself coming out of the connectors described as "OUTGOING POWER SUPPLY FOR THE ADDITIONALLY INSTALLED HEATER FOR THE CH SYSTEM" is connected through a relay to an additional heat source. If the additional heat source is an additional heater installed in the buffer tank, the relay can be omitted, while the wire cross-sections and heater protection should be selected in accordance with the requirements of the heater.

Installation diagrams

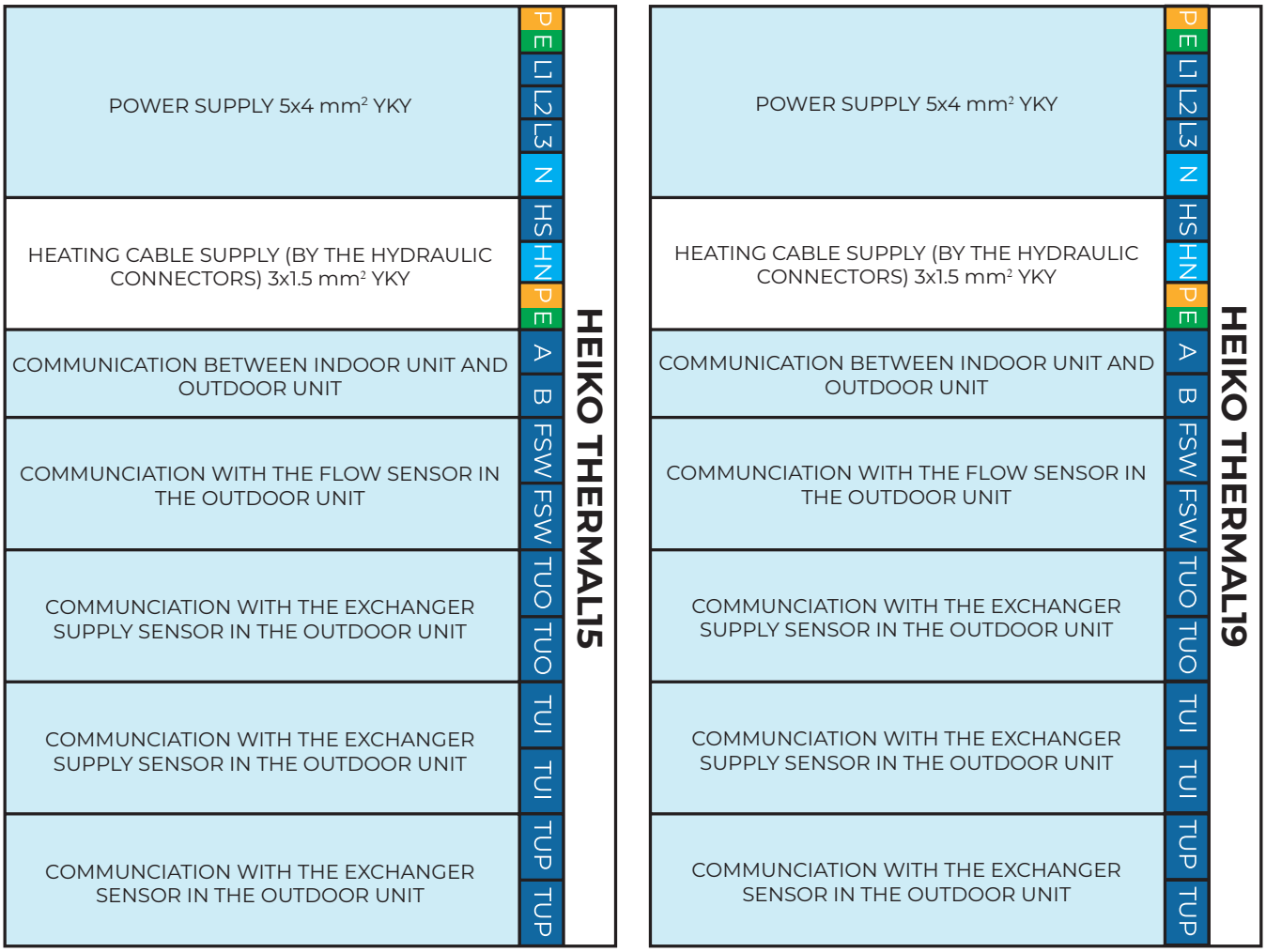






The required electrical connections for the above diagram are marked with blue colour.

Installation diagrams



The required electrical connections for the above diagram are marked with blue colour.

Installation diagrams

Controller settings required for diagram 5:

Heating/cooling

page 1/6

line 1 “Compressor stop hysteresis when heating or cooling”: specify the maximum temperature of overheating in the central heating system until the compressor is fully stopped →

line 2 “Compressor stop hysteresis when heating or cooling” define the temperature drop value at which the device restarts in central heating mode →

line 3 “Compressor speed reduction when heating or cooling” specify the temperature difference at which the heat pump will reduce the compressor speed until it reaches the set temperature→

line 5 “Enable the heating curve?” enable this option if the heating curve will be used →

page 3/6

lines 1, 2, 3, 4, 5 determine the temperatures set in the CH system for outdoor temperatures on page 2 (by default: 1= -25°C; 2= -15°C; 3= -5°C; 4= 5°C; 5= 10°C) →

page 4/6

line 1 “Influence of indoor temperature on heating curve correction” enable this option if the option of controlling the heat pump with a room temperature sensor will be used →

line 2 is responsible for setting the room temperature for heating → **line 4** “Setting a constant supply temperature for heating” only adjust the temperature here if the heating curve and the room temperature sensor are not used →

page 5

line 1 “High temperature limitation”, define the maximum water temperature parameter in the system for central heating.

Installation diagrams

Operating modes

page 1/2

line 1 „Hot utility water heating", disable this option →

line 2 "Heating circuit", this option should be enabled in order to activate CH →

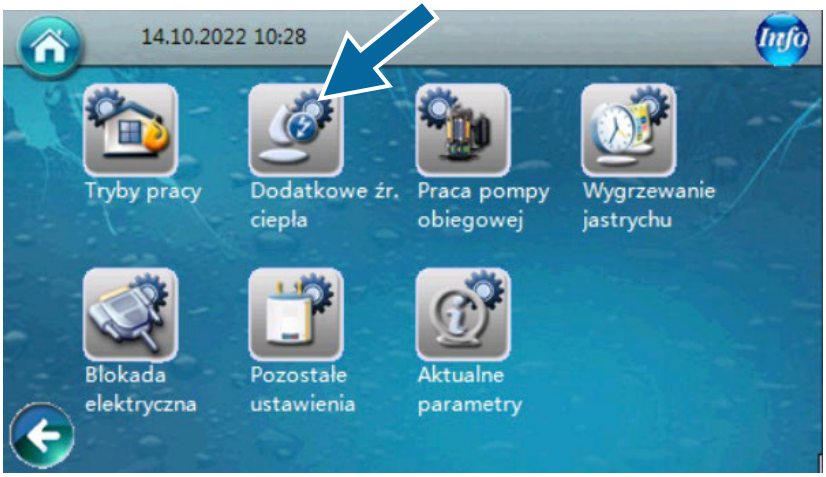
line 3 "Cooling circuit", this option should be enabled if the pump is to be used for cooling →

line 4 "Basic operating modes", this option should be enabled only if the heating pump is to be controlled on the basis of room temperature →

page 2/2

line 1 "Cooling to heating switch signal", select "Outdoor temperature" to determine the moment of CH activation depending on the outdoor temperature set in lines 3 and 4.

Additional heat source



page 1/2

line 1 „Enable additional heat source when heating?", check this option →

Installation diagrams

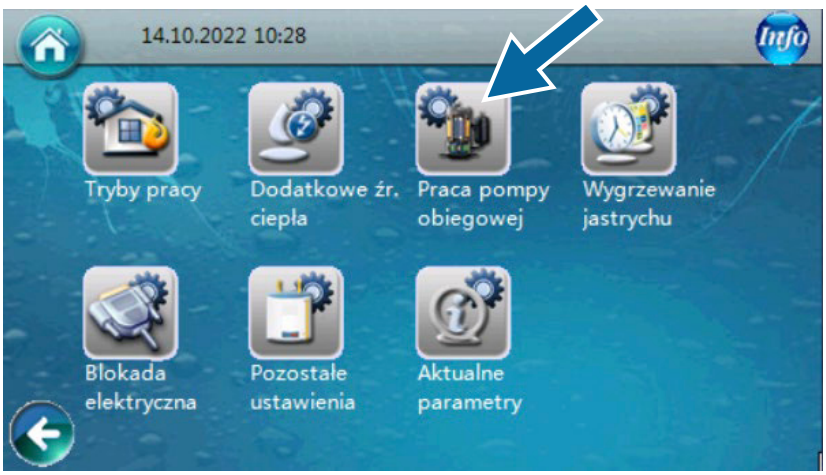
page 1/2

line 2 „Priority for the additional heat source in the buffer when supporting the CH" -> the priority should be defined depending on the order in which the additional heat source is used in relation to the built-in electric heater, i.e.:

- Lower for the AH internal heater - Priority in which the third stage of the heat source supporting the central heating will be an additional heat source in the installation, e.g. a gas heater; activated after turning on two electric heater sections. That is, 1st stage electric heater → 2nd stage electric heater → additional heat source
- Higher for the AH internal heater - Priority in which the second stage of the heat source supporting the central heating will be an additional heat source in the installation, e.g. a gas heater; activated after turning on the first electrical heater section. That is, 1st stage electric heater → additional heat source → 2nd stage electric heater

line 5 "Correlation between the set temperature and the time to start the additional heat source", specify the time in seconds within which the heat pump will heat the water in the system by 1°C. If the pump exceeds this time, it will start the additional heat source, in this case the heaters

Circulation pump operation



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line 4 „P0 pump operating time", select the time within which, during heat pomp stop, the in-built circulation pump will be working to correctly check the actual temperature in the system →

line 5 „CH water buffer", select this option in the above system, thus informing the device that it is working with the buffer.

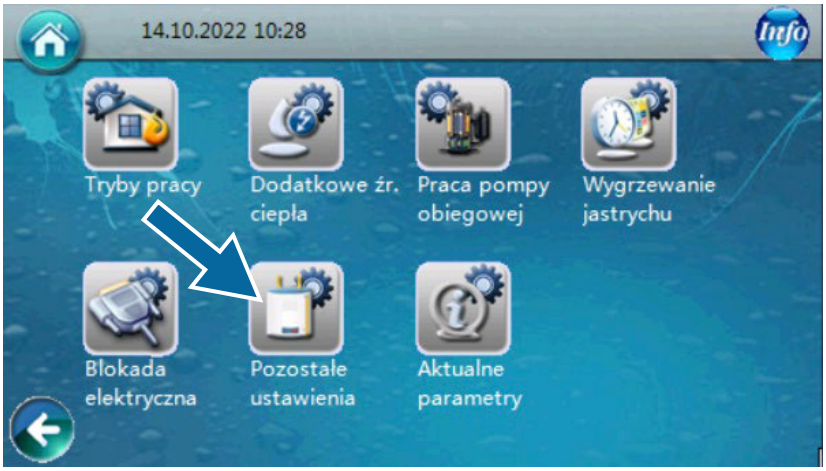
page 2/4

line 1 „P1 pump heating operation", enable this option for the above system for the Zone 1 circulation pump to be controlled by the heat pump.

line 4 „P2 pump heating operation", leave this option unchecked for the above system.

Installation diagrams

Other settings



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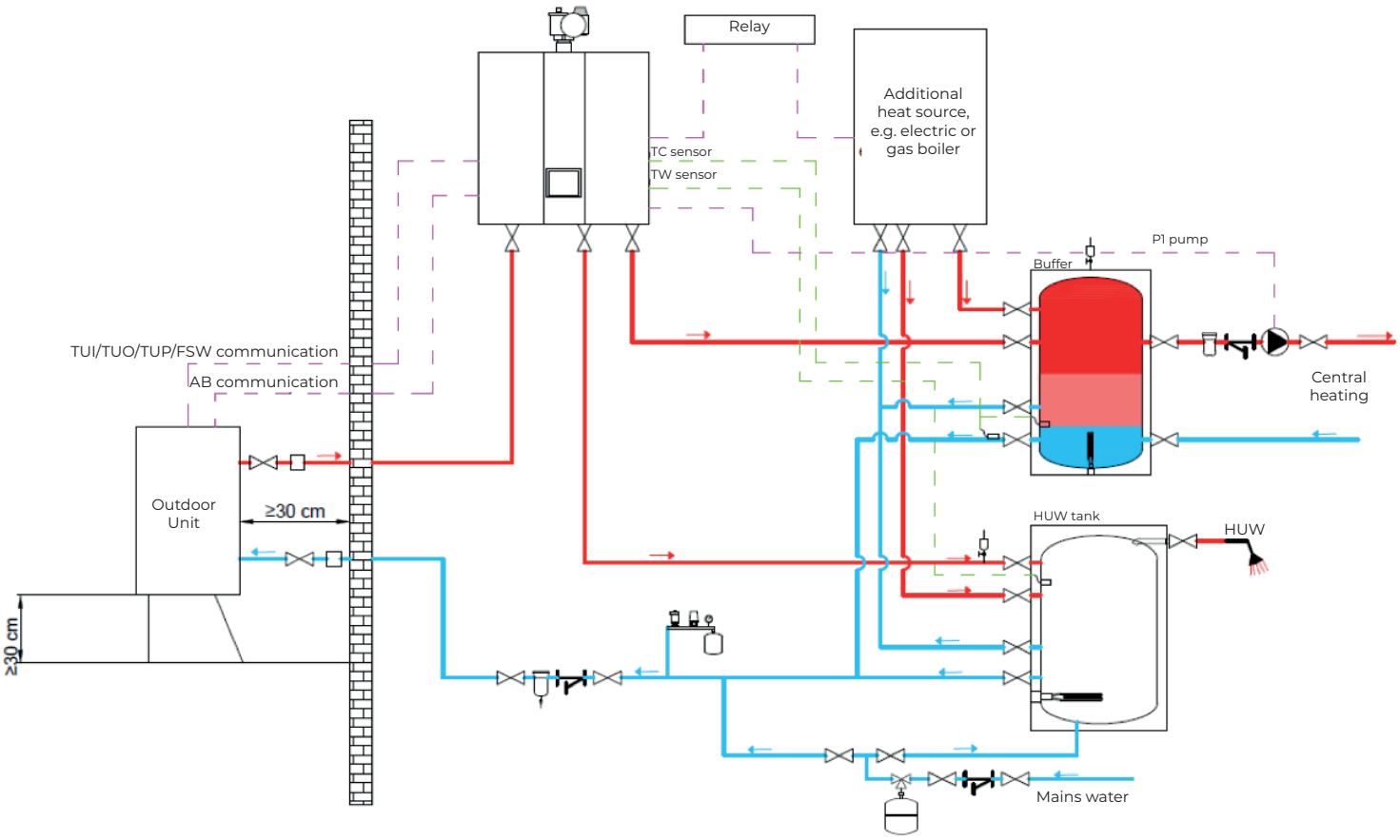
Perform the procedure of connecting the heat pump with the WiFi module. The procedure is described in detail in the WiFi module connection manual on the web page www.heiko.pl

Installation diagrams

6. Heiko THERMAL heat pump with CH + HUW and additional heat source.

Diagram
THERMAL 6/9/12/15/19 kW with CH + HUW + additional heat source



Additional information:

Buffer capacity = pump power in kW x 15 litres

The installation requires 2 anti-freeze valves (they must not be fitted in one line) or 30% solution of water + propylene glycol (-25°C)

Heaters in the HUW tank and buffer are not required/ They are optional.

HUW tank with two coils (for 0.2 m^2/kW heat pump). HUW tank capacity - 50 litres x number of people

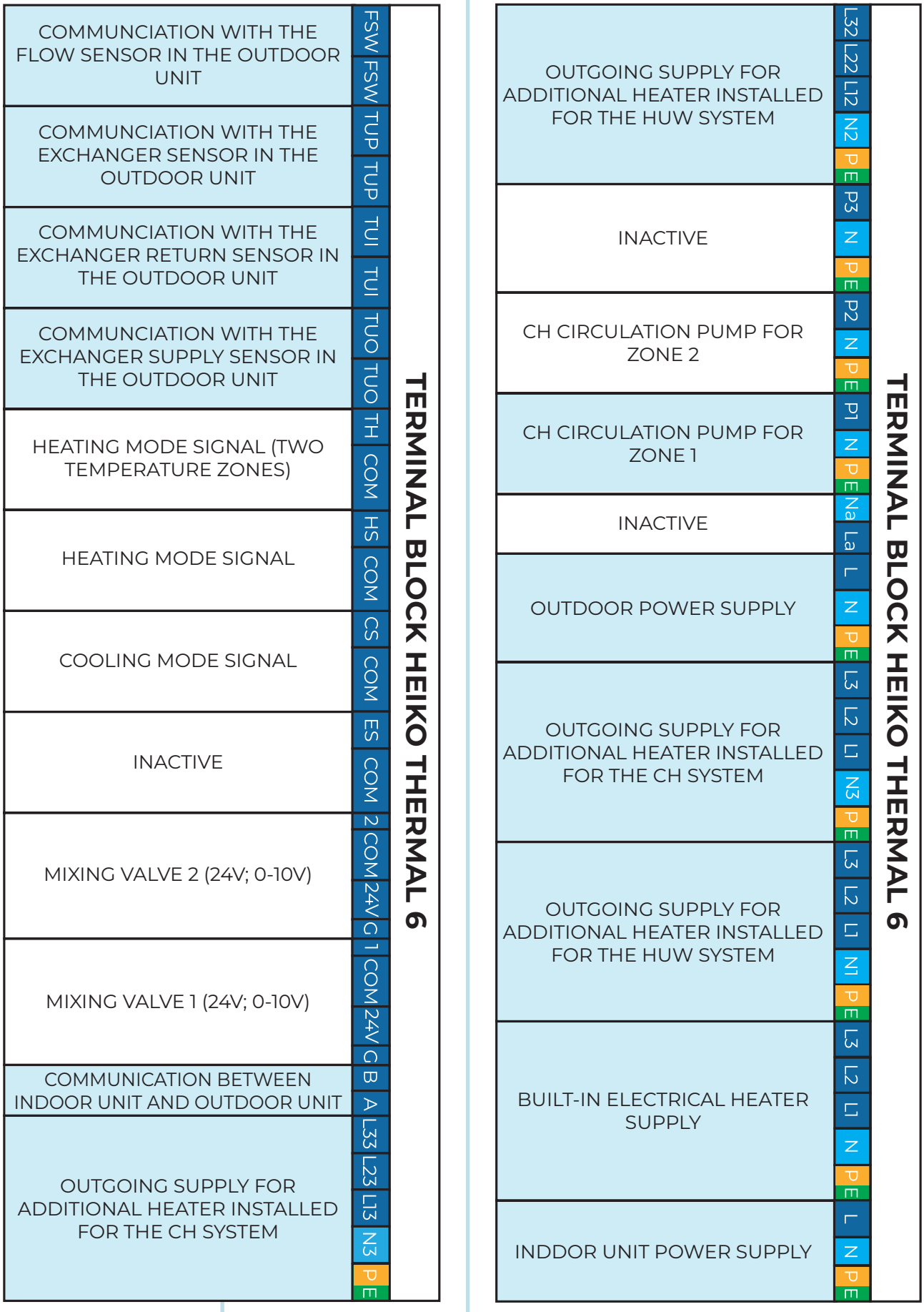
Heating cables by the hydraulic spigots supplied with HL/HN/PE.

Heating cable thermostat by the supply connections in the indoor unit.

	ball valve		safety group with expansion tank
	air separator		safety valve kit
	magnetic filter		circulation pump
	mesh filter		air bleeding
	anti-freeze valve		mixing valve
	temperature sensor		membrane vessel

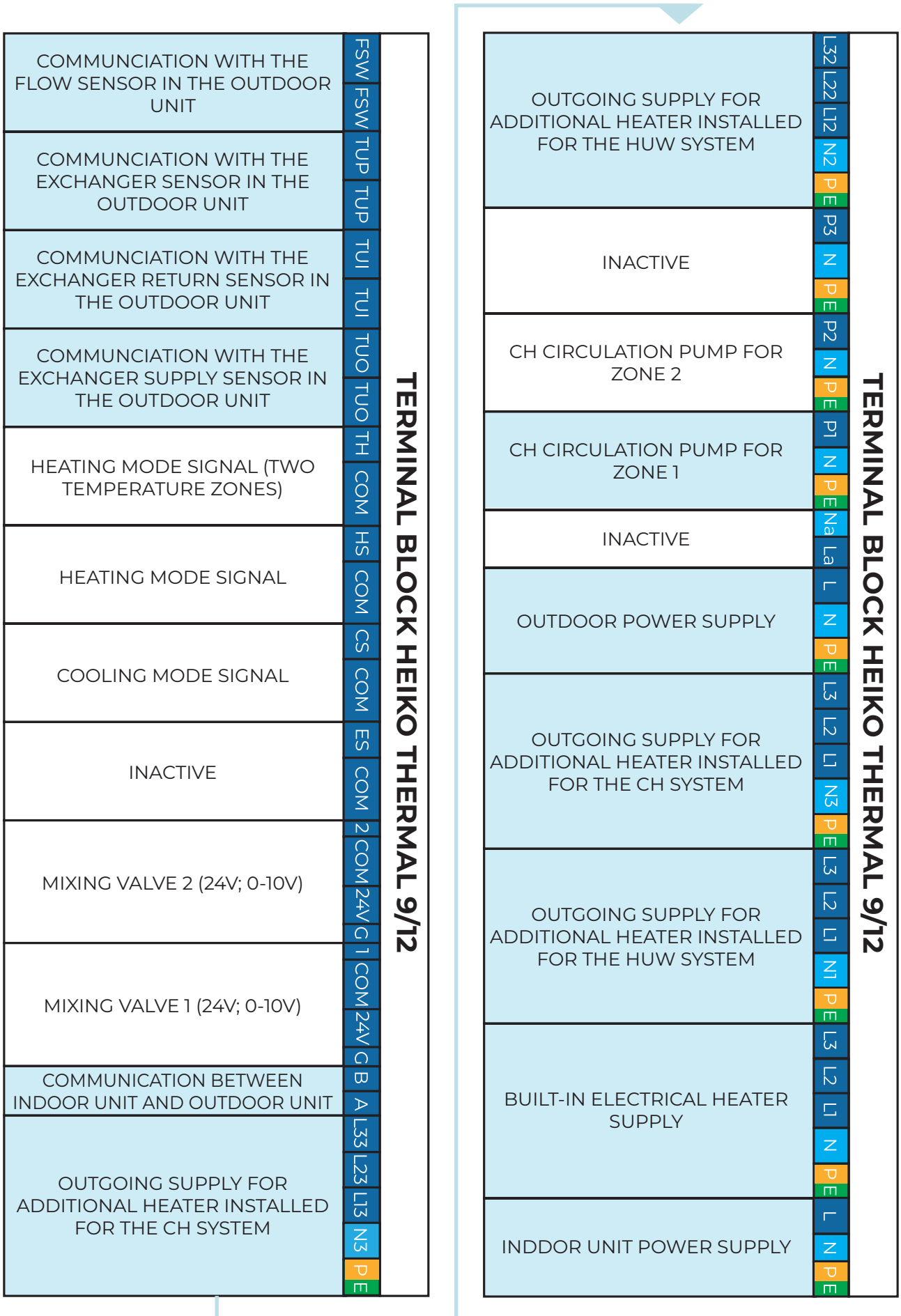
Installation diagrams

Electrical connection for diagram 6:



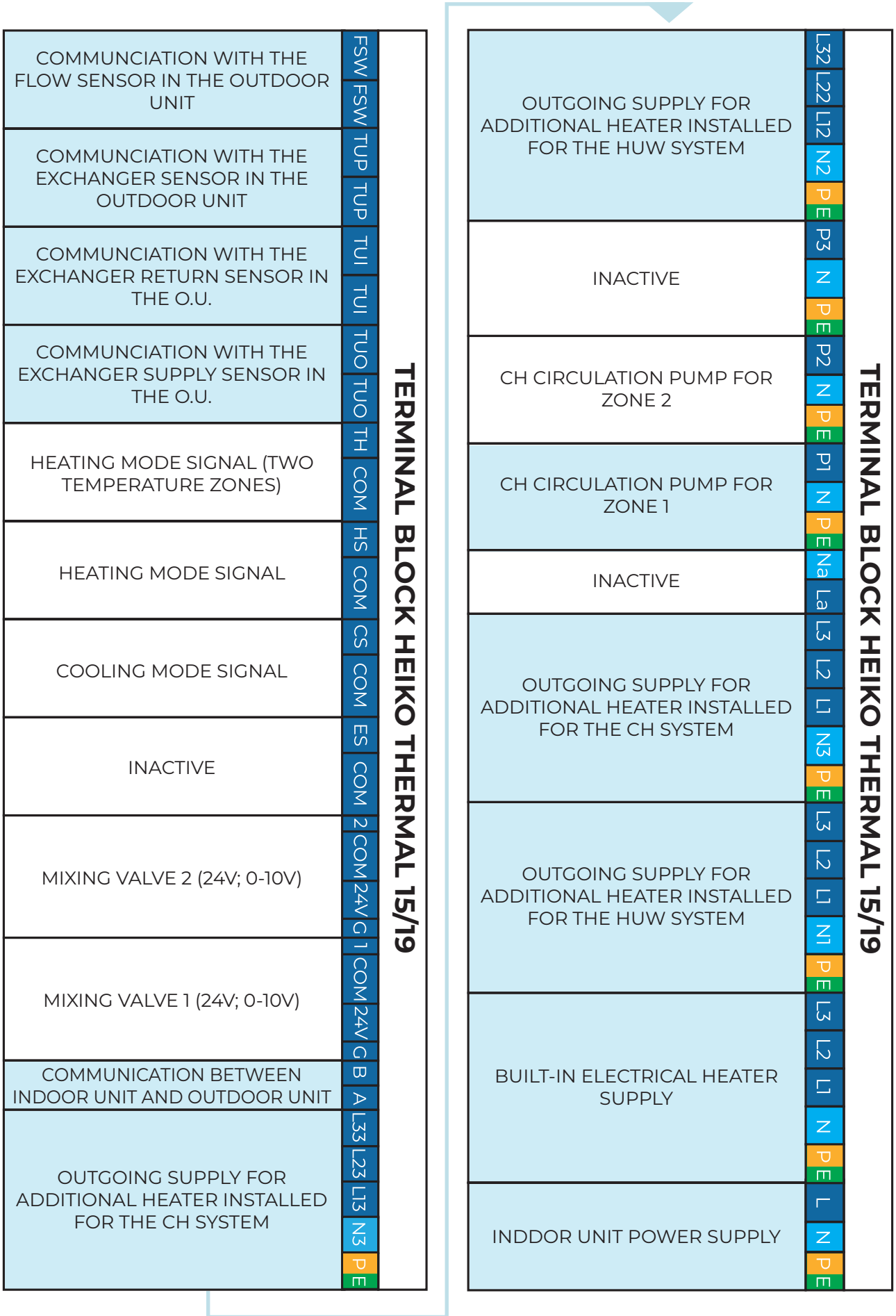
The required electrical connections for the above diagram are marked with blue colour.

Installation diagrams



The required electrical connections for the above diagram are marked with blue colour.

Installation diagrams



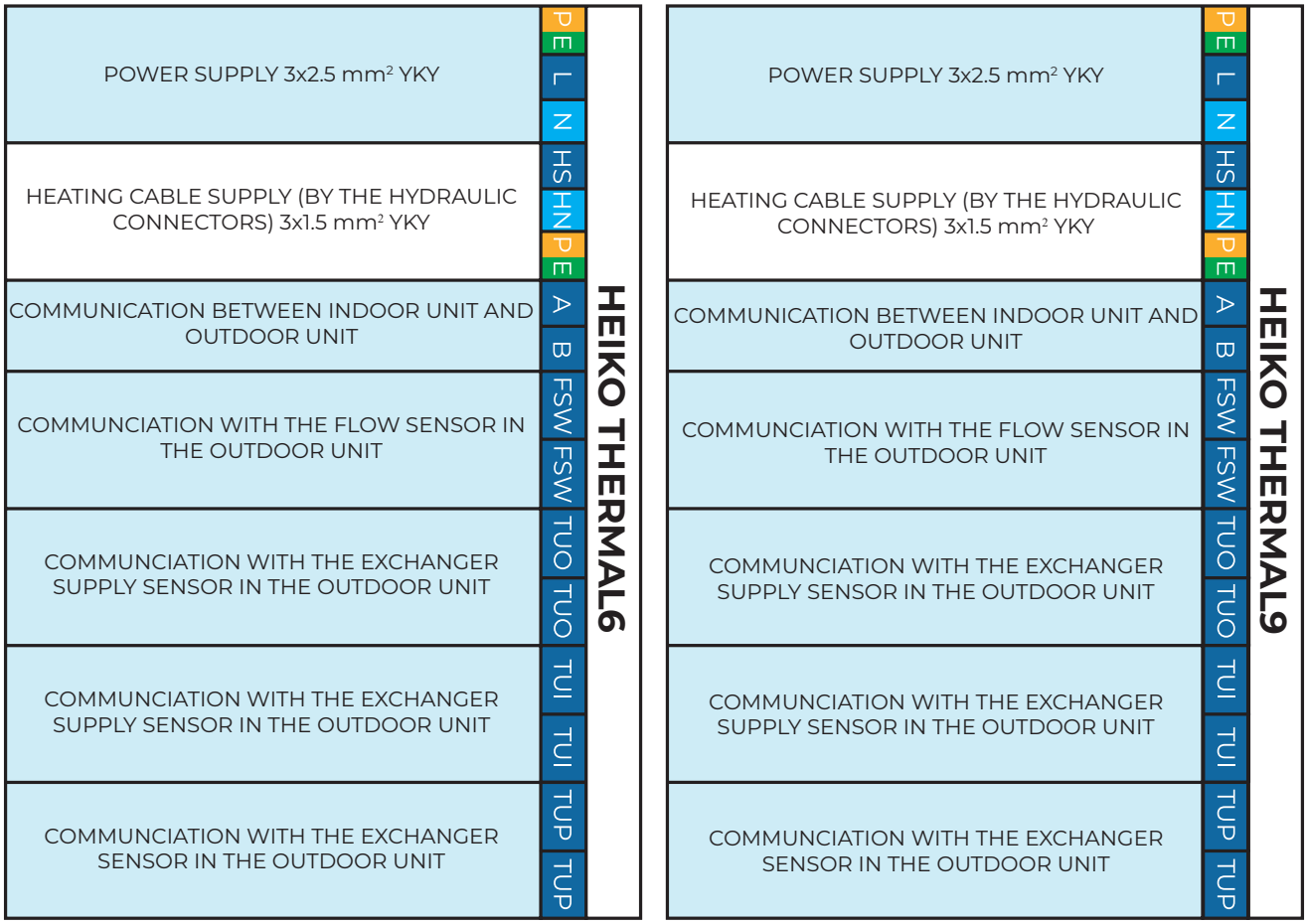
The required electrical connections for the above diagram are marked with blue colour.

Installation diagrams

Important issues regarding the connection of an additional heat source:

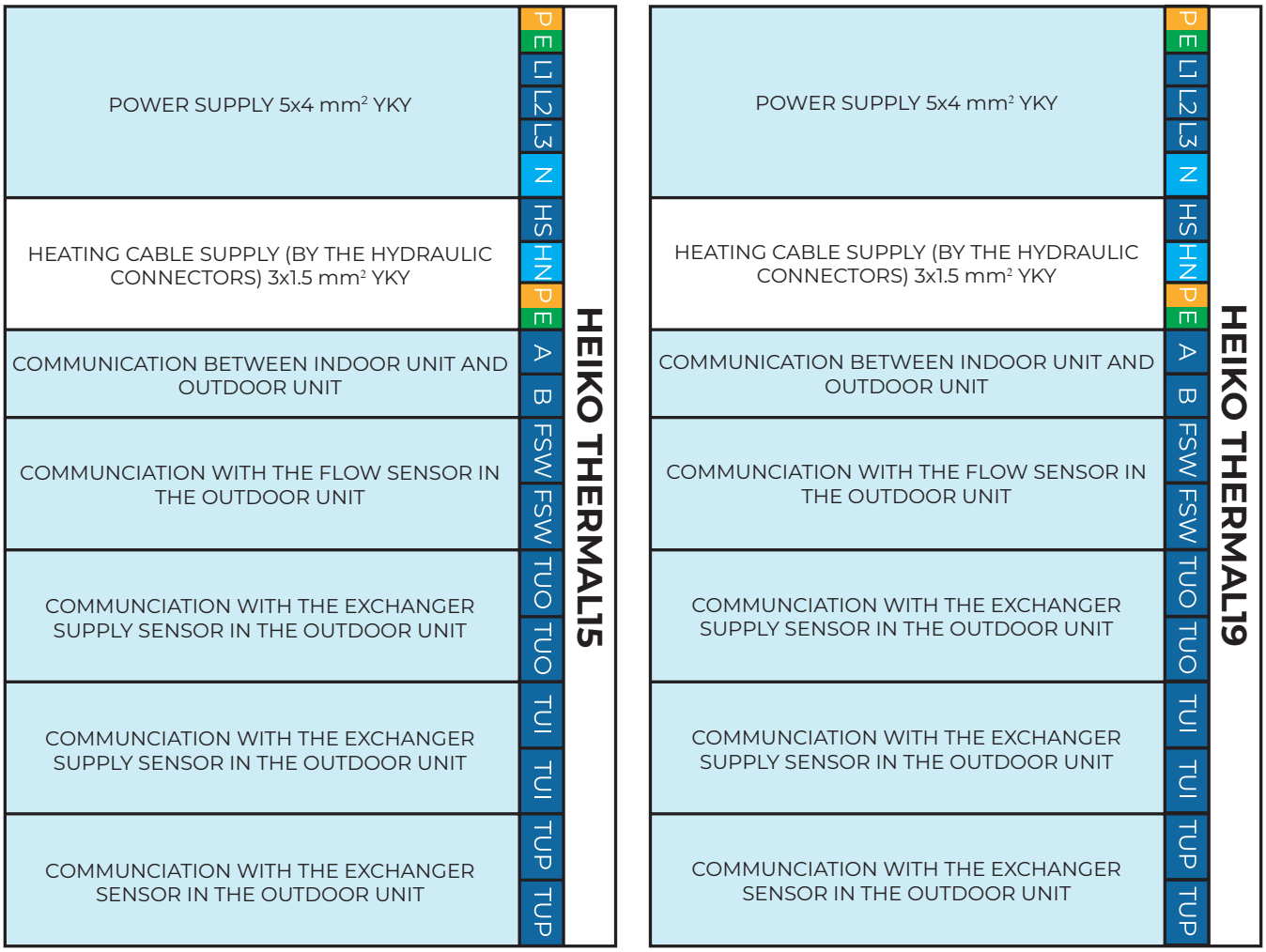
- The additional heat source for CH must always be connected on a circuit independent of the heat pump, i.e. in such a way that the flow generated by the additional heat source's circulation pump does not affect the flow generated by the built-in heat pump circulation pump. This will avoid the flow error.
- The additional heat source for CH controlled by a contactor, i.e. power is supplied with a 3 or 5-wire cable to the connectors described as "INPUT POWER SUPPLY FOR THE ADDITIONALLY INSTALLED HEATER FOR THE CH SYSTEM", and then the signal itself coming out of the connectors described as "OUTGOING POWER SUPPLY FOR THE ADDITIONALLY INSTALLED HEATER FOR THE CH SYSTEM" is connected through a relay to an additional heat source. If the additional heat source is an additional heater installed in the buffer tank, the relay can be omitted, while the wire cross-sections and heater protection should be selected in accordance with the requirements of the heater.
- The additional heat source for HUW must always be connected on a circuit independent of the heat pump, i.e. in such a way that the flow generated by the additional heat source's circulation pump does not affect the flow generated by the built-in heat pump circulation pump. This will avoid the flow error. In the case of HUW tanks, use the mounting hole for a heater or another coil.
- The additional heat source for HUW controlled by a contactor, i.e. power is supplied with a 3 or 5-wire cable to the connectors described as "INPUT POWER SUPPLY FOR THE ADDITIONALLY INSTALLED HEATER FOR THE HUW SYSTEM", and then the signal itself coming out of the connectors described as "OUTGOING POWER SUPPLY FOR THE ADDITIONALLY INSTALLED HEATER FOR THE HUW SYSTEM" is connected through a relay to an additional heat source. If the additional heat source is an additional heater installed in the buffer tank, the relay can be omitted, while the wire cross-sections and heater protection should be selected in accordance with the requirements of the heater.

Installation diagrams



The required electrical connections for the above diagram are marked with blue colour.

Installation diagrams



The required electrical connections for the above diagram are marked with blue colour.

Installation diagrams

Controller settings required for diagram 6:

Heating/cooling

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line 1 “Compressor stop hysteresis when heating or cooling”: specify the maximum temperature of overheating in the central heating system until the compressor is fully stopped →

line 2 “Compressor stop hysteresis when heating or cooling” define the temperature drop value at which the device restarts in central heating mode →

line 3 “Compressor speed reduction when heating or cooling” specify the temperature difference at which the heat pump will reduce the compressor speed until it reaches the set temperature→

line 5 “Enable the heating curve?” enable this option if the heating curve will be used →

page 3/6

lines 1, 2, 3, 4, 5 determine the temperatures set in the CH system for outdoor temperatures on page 2 (by default: 1= -25°C; 2= -15°C; 3= -5°C; 4= 5°C; 5= 10°C) →

page 4/6

line 1 “Influence of indoor temperature on heating curve correction” enable this option if the option of controlling the heat pump with a room temperature sensor will be used →

line 2 is responsible for setting the room temperature for heating → **line 4** “Setting a constant supply temperature for heating” only adjust the temperature here if the heating curve and the room temperature sensor are not used →

page 5

line 1 “High temperature limitation”, define the maximum water temperature parameter in the system for central heating.

Installation diagrams

HUW heating

page 1/3

line 1 "Setting the HUW heating temperature", define the temperature to which the utility water is to be heated.

line 2 "Setting the HUW heating temperature hysteresis", define the value of hysteresis, i.e. the value of temperature decrease below which the pump will restart heating of the water in the hot utility water tank.

Operating modes

page 1/2

line 1 „Hot utility water heating", disable this option →

line 2 "Heating circuit", this option should be enabled in order to activate CH →

line 3 "Cooling circuit", this option should be enabled if the pump is to be used for cooling →

line 4 "Basic operating modes", this option should be enabled only if the heating pump is to be controlled on the basis of room temperature →

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line 1 "Cooling to heating switch signal", select "Outdoor temperature" to determine the moment of CH activation depending on the outdoor temperature set in lines 3 and 4.

Installation diagrams

Additional heat source

page 1/2

line 1 „Enable additional heat source when heating?", check this option →

line 2 „Priority for the additional heat source in the buffer when supporting the CH" → the priority should be defined depending on the order in which the additional heat source is used in relation to the built-in electric heater, i.e.:

- Lower for the AH internal heater - Priority in which the third stage of the heat source supporting the central heating will be an additional heat source in the installation, e.g. a gas heater; activated after turning on two electric heater sections. That is, 1st stage electric heater → 2nd stage electric heater → additional heat source
- Higher for the AH internal heater - Priority in which the second stage of the heat source supporting the central heating will be an additional heat source in the installation, e.g. a gas heater; activated after turning on the first electrical heater section. That is, 1st stage electric heater → additional heat source → 2nd stage electric heater.

line 3 „Enable additional heat source for utility water heating?", check this option →

line 5 "Correlation between the set temperature and the time to start the additional heat source", specify the time in seconds within which the heat pump will heat the water in the system by 1°C. If the pump exceeds this time, it will start the additional heat source, in this case the heaters

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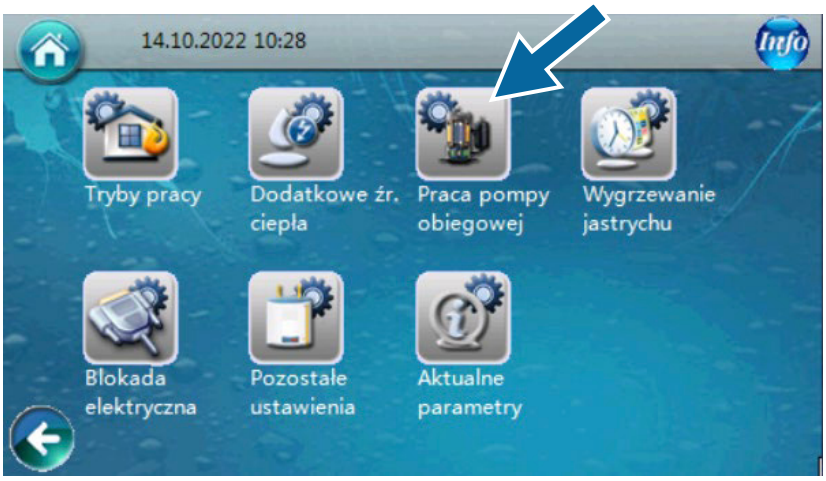
line 1 "The time to start the additional heat source (heater)", specify the time in seconds within which the heat pump will heat the water in the system by 1°C. If the pump exceeds this time, it will start the additional heat source

Installation diagrams

Circulation pump operation



page 1/4

line 4 „P0 pump operating time", select the time within which, during heat pomp stop, the in-built circulation pump will be working to correctly check the actual temperature in the system →

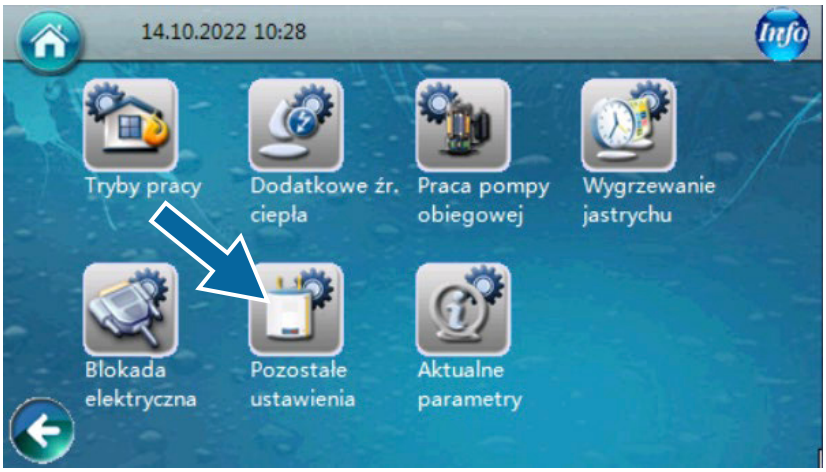
line 5 „CH water buffer", select this option in the above system, thus informing the device that it is working with the buffer.

page 2/4

line 1 „P1 pump heating operation", enable this option for the above system for the Zone 1 circulation pump to be controlled by the heat pump.

line 4 „P2 pump heating operation", leave this option unchecked for the above system.

Other settings



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Perform the procedure of connecting the heat pump with the WiFi module. The procedure is described in detail in the WiFi module connection manual on the web page www.heiko.pl

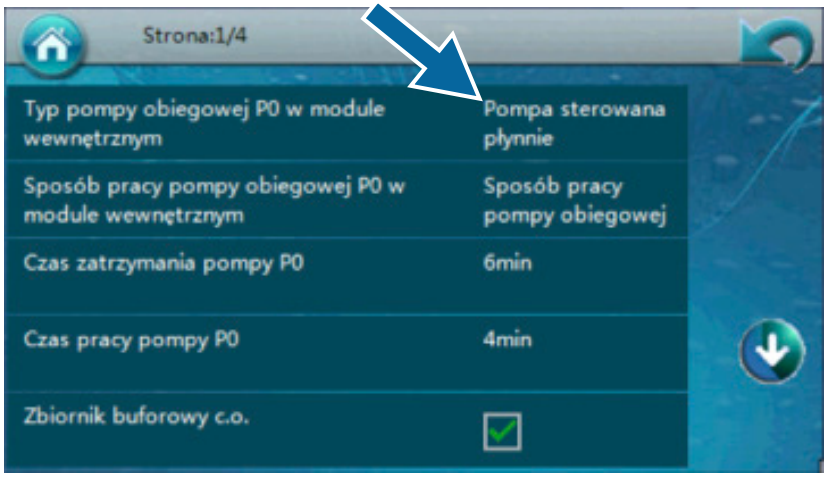
Emergency activation of electric heater.

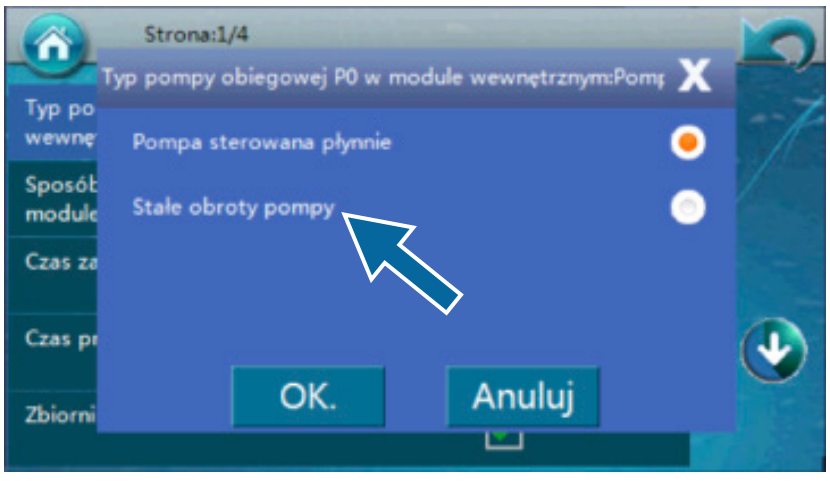
In the case of device malfunction, the option of emergency electrical heater activation may be used. In such case, both the electrical heater and
the circulation pump of the central heating system are activated. In case of emergency operation of the electric heater, the three-way valve built into the device is not controlled. In emergency mode, the heat pump only heats the central heating circuit. In such a situation, utility water heating can be carried out, for example, by an additional heater installed in the HUW tank.

Caution! The emergency electric heater must not be operated unless the system is filled with water.

1. Press the “up arrow” and hold for 3 seconds to turn the electric heater ON/OFF. When the heater is turned OFF, it shows "- - -".
2. When the heater is turned ON, press the “down arrow” and hold for 3 seconds to display the set temperature. After release, this set temperature blinks on the display.
3. When set temperature is blinking, press the “up arrow” or “down arrow” to increase or decrease the set temperature of electric heater.

Important! In order for the emergency electrical heater to operate correctly, the circulation pump must be set to constant speed.





Error codes

Error code:	Description:
P01	Main line current protection
P02	Compressor phase current protection
P03	IPM module protection
P04	Compressor oil return protection
P05	Pressure switch protection
P06	Compressor speed decrease due to too high/low pressure
P07	Compressor preheating
P08	Pressure side overheating protection
P09	Outdoor unit evaporator coil temperature sensor protection
P10	Too high/low AC voltage protection
P11	Compressor shut down due to too high/low ambient temperature
P12	Compressor speed limit due to too high/low ambient temperature
P13	Compressor speed limit due to too high/low ambient temperature
P14	Compressor speed down due to abnormal low pressure detected by condensing pressure sensor
F01	Ambient temperature sensor error (Ta)
F02	Outdoor generator evaporator temperature sensor error (Tp)
F03	Pressure side temperature sensor error (Td)
F04	Suction side temperature sensor error (Ts)
F05	Evaporating pressure sensor error (Pd)
F06	Condensing pressure sensor error (Ps)
F07	High/low pressure switch error
F09	DC fan error
F10	DC fans error
F11	System evaporating pressure too low (Pd)
F12	System condensing pressure too high (Ps)
F13	Room temperature sensor error (Tr)
F14	Utility water temperature sensor error (Tw)
F15	Cooling/heating water temperature sensor error (Tc)
F16	Utility water outlet temperature sensor error (Tuo)
F17	Utility water inlet temperature sensor error (Tui)

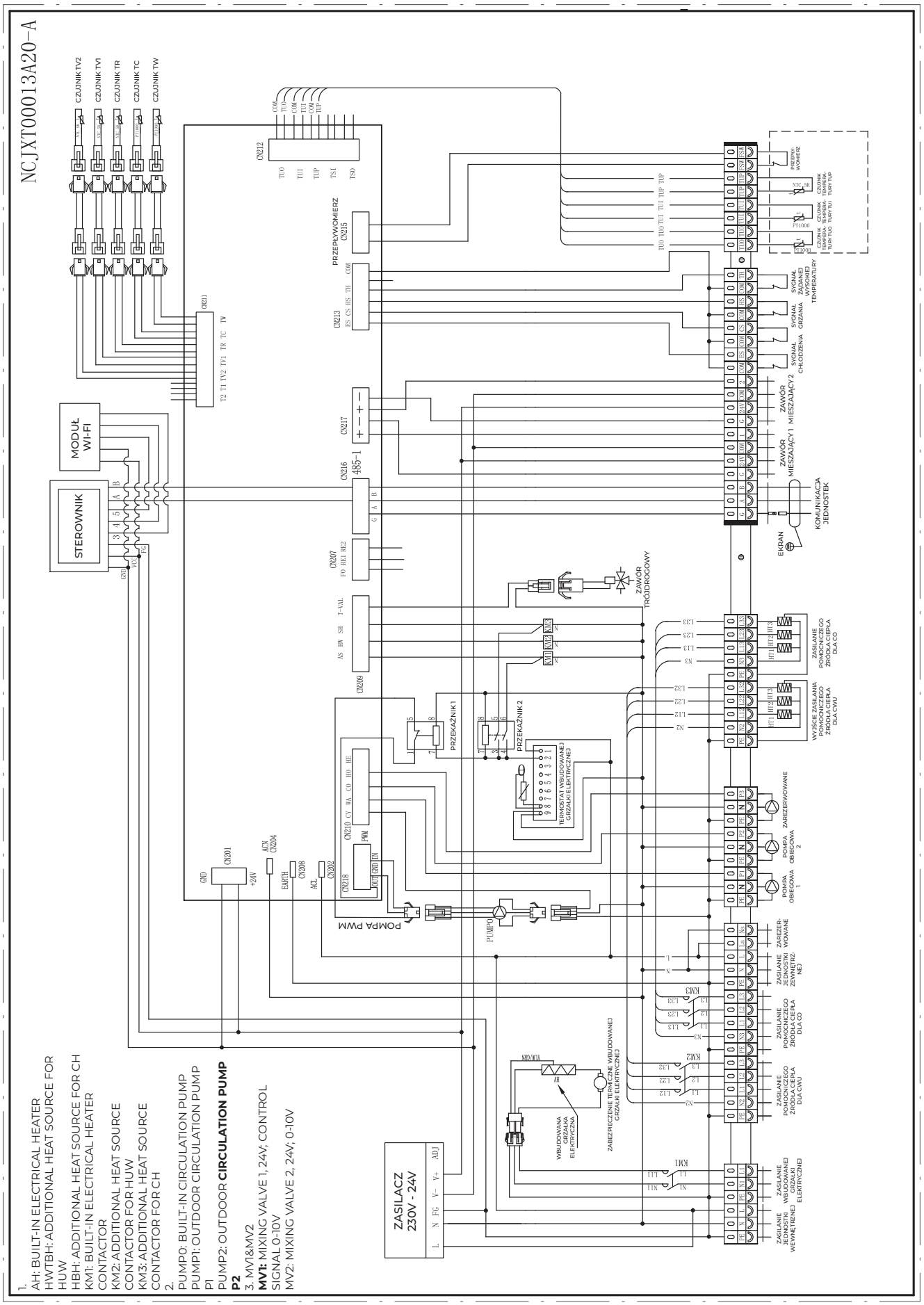
Error codes

F18	Indoor unit coil temperature sensor error (Tup)
F21	Mixing valve temperature sensor error (TV1)
F22	Mixing valve temperature sensor error (TV2)
F25	Communication failure between the control panel , and indoor or outdoor unit PCB.
F27	Indoor unit EEPROM memory error
F28	No PWM feedback
F29	Mixing valve 1 error
F30	Mixing valve 2 error
S01	Indoor unit anti-freeze protection error in cooling mode
S02	Water flow rate too small
S03	Water flow switch error
S04	Communication failure
S05	Serial port connection error
S06	Protection against too low outlet water temperature in cooling mode
S07	Protection against too high outlet water temperature in heating/utility water heating mode
S08	Defrosting Failure
S09	Protection against too low outlet water temperature in heating/utility water heating mode
S10	Water flow rate too low
S11	Indoor unit anti-freeze protection error in cooling mode
E01	Communication failure between the control panel , and indoor or outdoor unit PCB.
E02	Error of communication between outdoor unit PCB and PCB module
E03	Compressor phase current error (open/short circuit)
E04	Compressor phase current overload (over current)
E05	Compressor driver failure
E06	Module VDC over high/low voltage failure
E07	AC current failure
E08	EEPROM error

Caution! In the event of an error, please contact the Authorized Service Partner that commissioned the device, or search for the Authorized Service Partner on the website: https://heiko.pl/sprzedaz-i-serwis/
Any service activities performed by persons who do not have the required authorizations will result in the loss of the warranty!

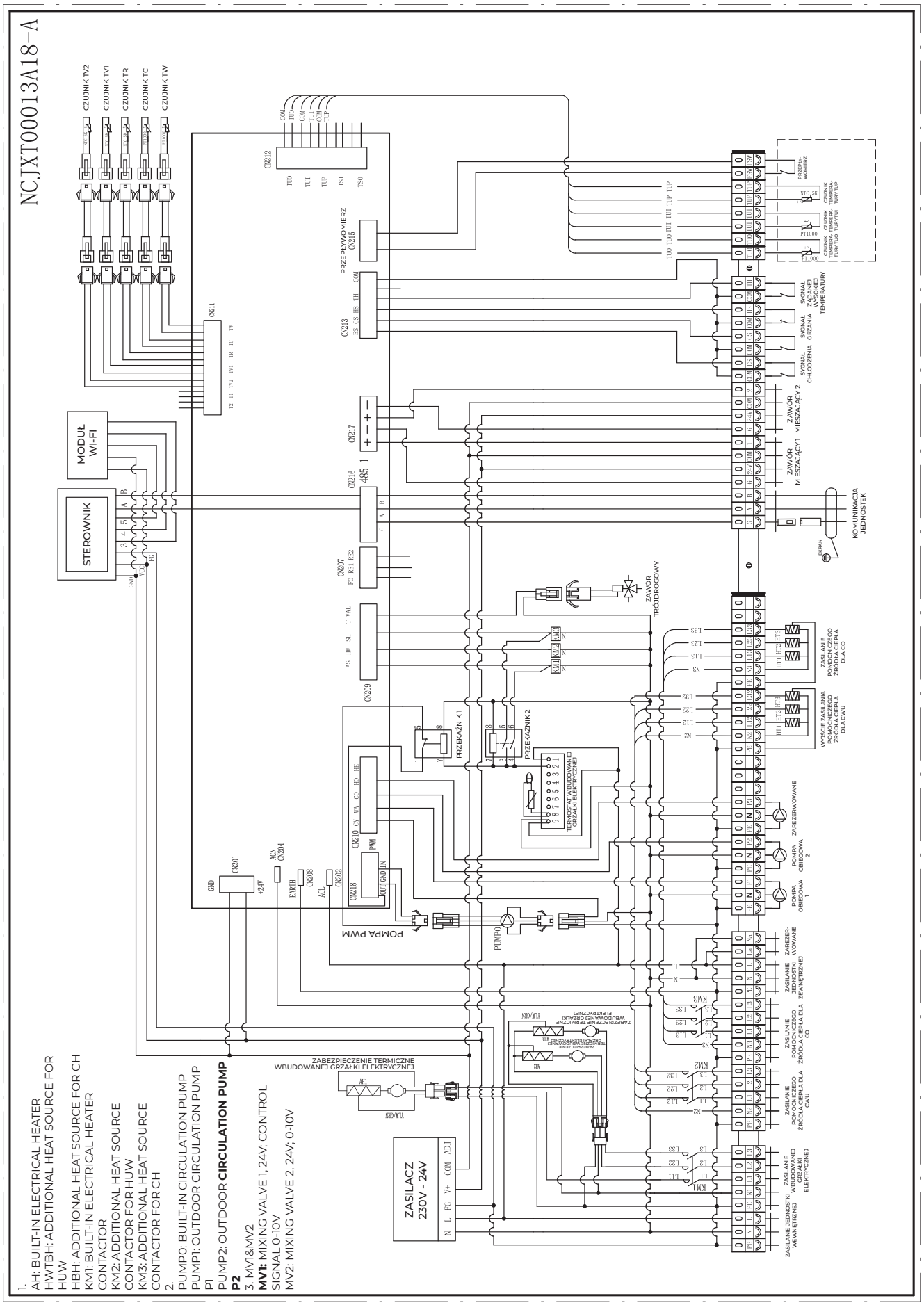
Electrical diagrams

Electrical diagram for THERMAL 6 indoor unit



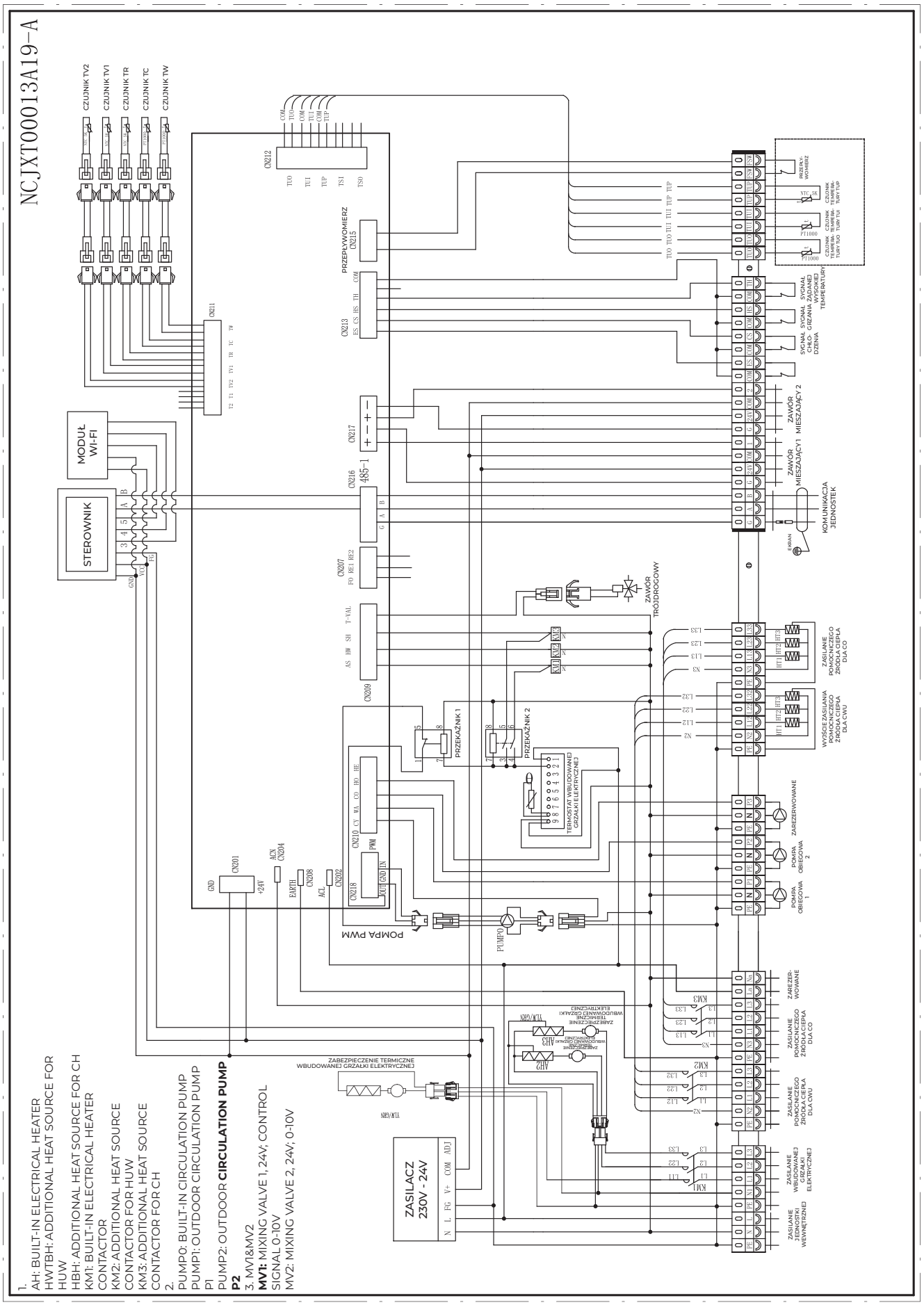
Electrical diagrams

Electrical diagram for THERMAL 9/12 indoor unit



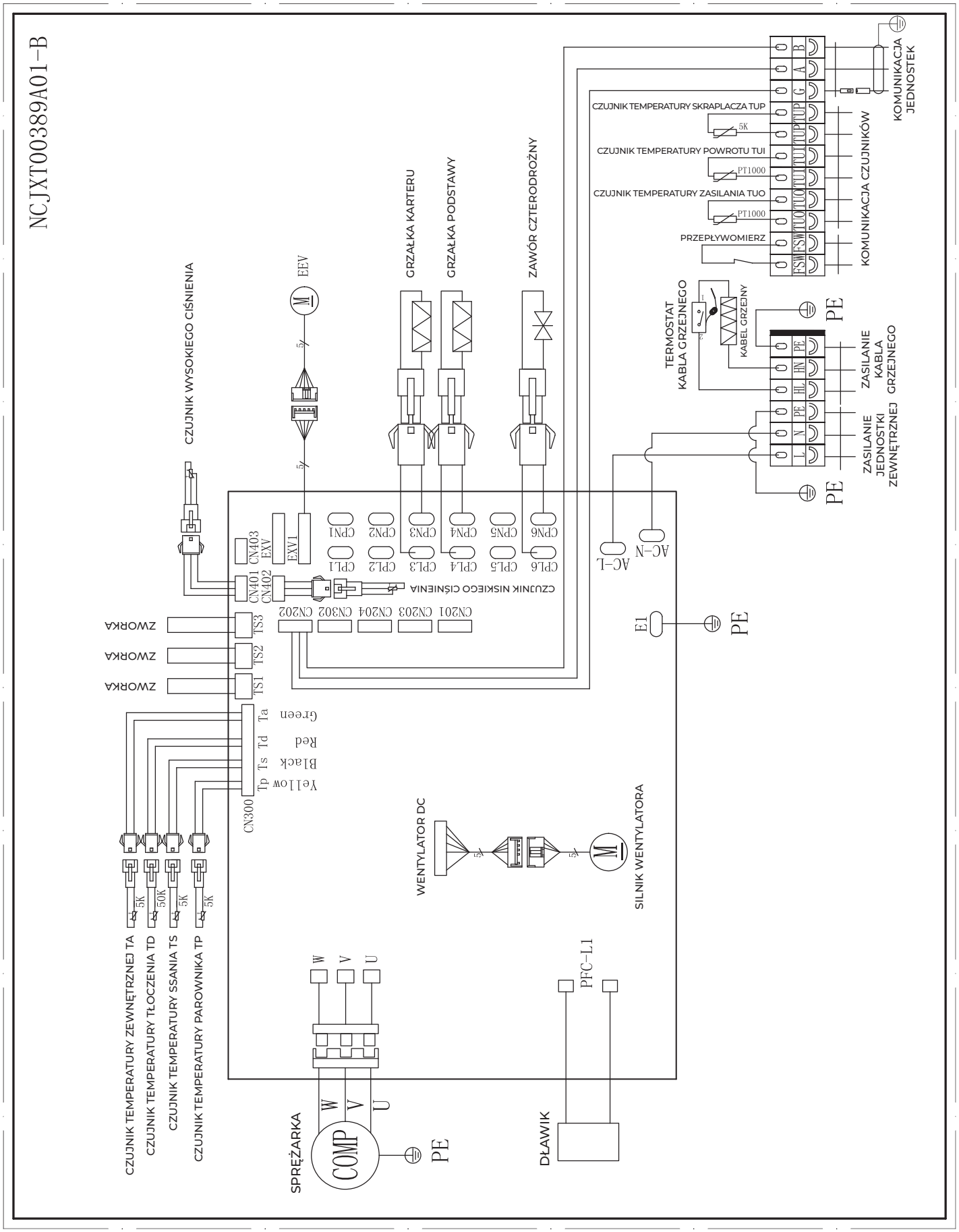
Electrical diagrams

Electrical diagram for THERMAL 15/19 indoor unit



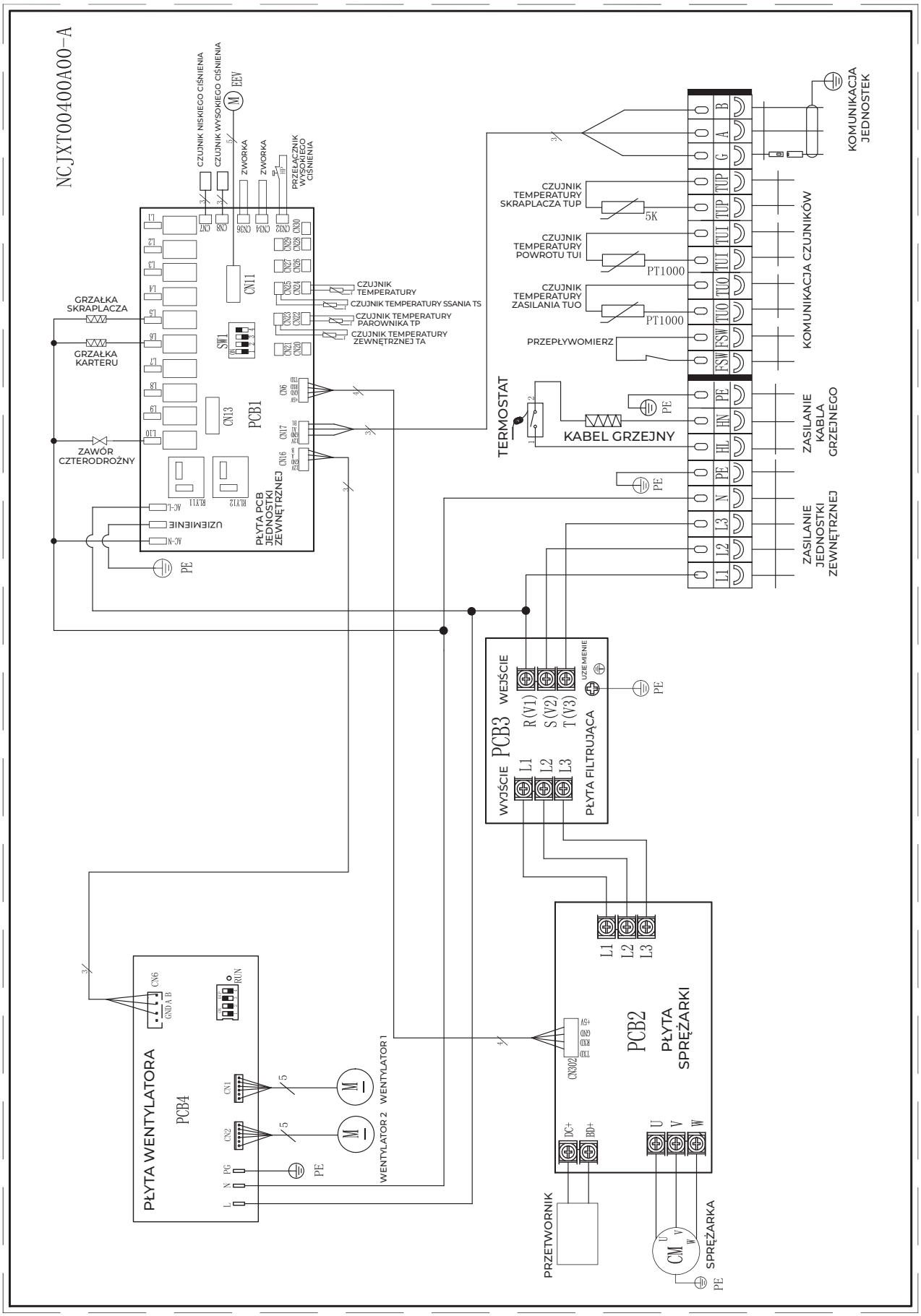
Electrical diagrams

Electrical diagram for THERMAL 6/9/12 outdoor unit



Electrical diagrams

Electrical diagram for THERMAL 15/19 outdoor unit



Thank you for choosing our high quality product. Please read this manual carefully and observe the recommendations included in it to avoid hazardous situations.

Specifications are subject to change with product improvements without prior notice. Please refer to the specification sticker on the unit for upgraded specifications.

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