

EN

—
KRONOTERM 1976
HEAT PUMPS

INSTALLATION

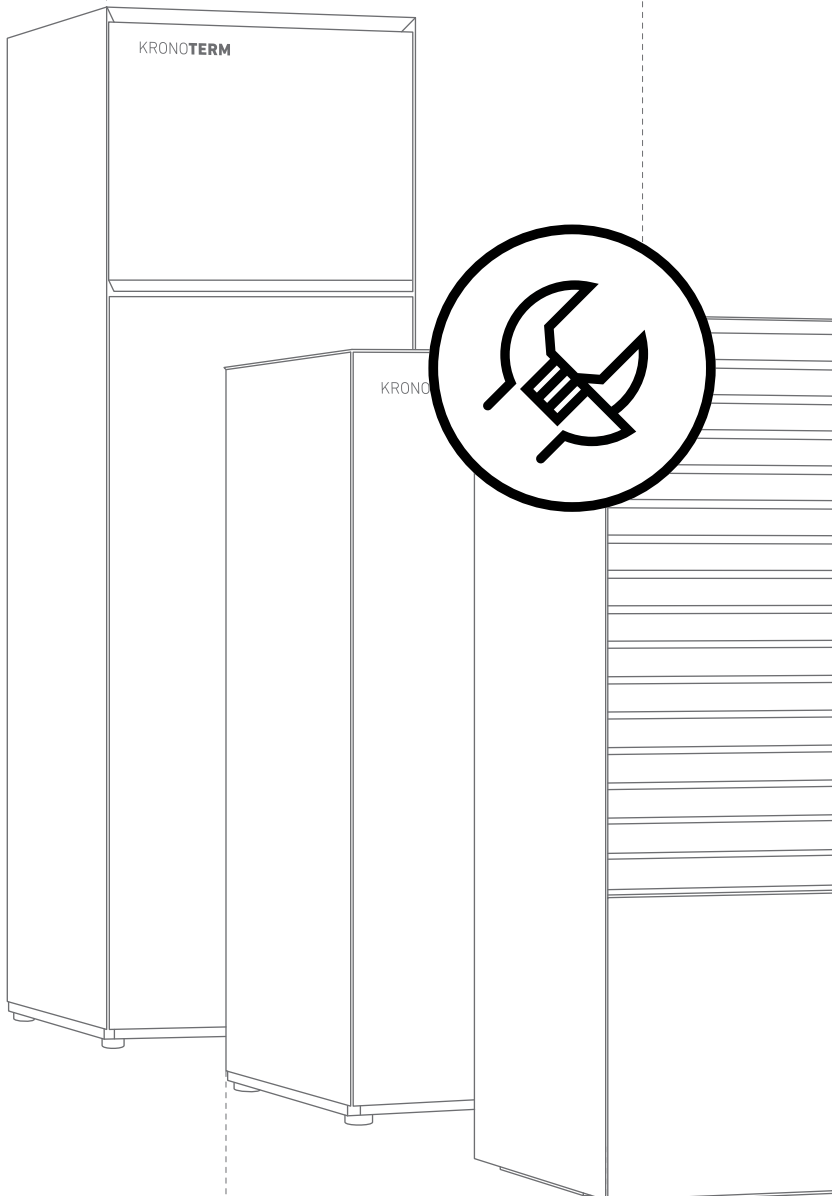
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**INSTALLATION
INSTRUCTIONS**

Technician

—
HYDRO C2

Indoor unit

System ADAPT, VERSI





THE KRONOTERM INSTRUCTION SYSTEM

This document is a part of the KRONOTERM instruction system, which follows our products' lifecycle from design phase to service support.

17-21-25-10070-00_Installation instructions_Hydro C2_EN

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1 IMPORTANT INFORMATION

These instructions describe the appliance installation and maintenance process. Only properly qualified individuals may install or maintain Kronoterm appliances. Read the instructions thoroughly before installation, as the instructions contain extensive information on the appliance's purpose and functionalities, as well as on how it is to be handled.

- **AFTER INSTALLATION THESE INSTRUCTIONS MUST BE GIVEN TO THE END USER.**
- **IF THE PRODUCT IS EVER GIVEN TO A THIRD PARTY, THESE INSTRUCTIONS MUST ALSO BE GIVEN TO SAID THIRD PARTY.**

1.1. SYMBOLS



These symbols indicate risks for the user or the appliance itself.

DANGER: A risk that could lead to grave bodily harm.

WARNING: A risk that could lead to bodily harm.

CAUTION: A risk that could damage or destroy the appliance.



This symbol indicates important information.

NOTE: Declaration on important information about the appliance and the manufacturer's requirements.

1.2. GENERAL WARNINGS

Improper handling of the device can lead to it being damaged and can cause harm to person or property. Symbols in these instructions emphasize important information on mitigating risks.

NOTE

Before beginning installation, read these instructions thoroughly.

Any processing or replacement of the appliance's original integral parts will void the manufacturer's warranty for the appliance's safety and proper function. The manufacturer is not responsible for the consequences of negligent or improper appliance use. The manufacturer is not responsible for any claim for compensation in the event of appliance or other damage resulting from not adhering to the instructions herein.

NOTE

The warranty is voided if the appliance is installed differently from the manner prescribed herein.

Excessive pressure in the heating system can cause water to leak from the safety valve. Ensure that the safety valve's drainage pipe is clear and installed in a place that will never freeze.

Provide for the appliance's regular maintenance on the part of a qualified service technician.

Require that the installation technician explain how the appliance works and how to use it.

Keep these instructions in a dry place in the appliance's vicinity.

CAUTION

Once per year inspect the safety valve and expansion vessel to ensure they work properly.

1.3. SAFETY WARNINGS AND INSTRUCTIONS



DANGER

Do not clean the appliance or interfere with it while it is in operation.

Only a qualified electrician can connect the appliance's power cable and the other parts of the heating system. Unplug the appliance when connecting parts of the heating system.

Disregarding the instructions and good practice when connecting the appliance can lead to severe injury or death.



CAUTION

Only authorized service technicians may service and maintain the appliance.

Call the service technician that installed your appliance in the event of a disruption to the appliance's operation.

Do not place other objects on the appliance.



CAUTION

The appliance must be connected to a power source of appropriate quality (SIST EN 50160). The actual power supply must not fluctuate more than $\pm 10\%$ of the rated voltage. You can get information on power supply from your electric utility company.



WARNING

This appliance is not to be played with.

The appliance may only be used by people who have learned about its safe operation and who understand the potential dangers of operating such an appliance.

Children over 8 years of age and persons with reduced physical or mental capabilities and/or lacking experience and knowledge may only use this set under the supervision of a qualified individual.

Electrical installation must be conducted by a qualified expert, and must be conducted in accordance with current national regulations on electrical installation and in accordance with the manufacturer's instructions.

Ensure that the appliance's operation never threatens anyone's safety. Prevent children and unqualified persons from accessing the appliance.

Connect the appliance to the electricity grid in accordance with relevant standards and regulations. Connect the appliance to the grid via the circuit breaker installed in the wiring, according to valid national regulations. Use the circuit breaker, which interrupts contacts under the conditions outlined in surge category III – with minimal contact distance of 3 mm.

A damaged power cable must be replaced with a cable provided by the manufacturer or authorized representative.

Inspect the building's electrical wiring in accordance with valid legislation on the requirements of low-voltage wiring.

1.4. DISPOSING OF PACKAGING AND THE APPLIANCE ITSELF



Embalažo ločite po materialih in jo odložite v ustrezne zabojnike.



Napravo odstranite skladno z veljavno zakonodajo o odpadni električni in elektronski opremi.

1.5. INCLUDED PARTS

Upon delivery of the indoor unit you will receive the following components:

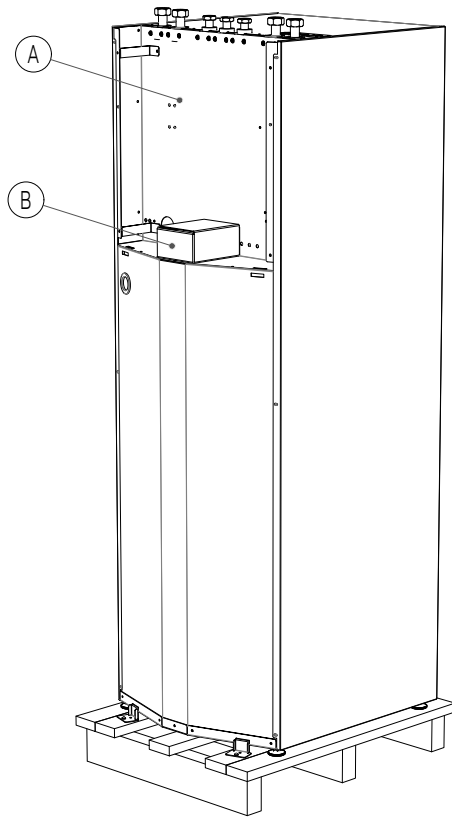


Figure 1: Included parts for indoor unit

A	Indoor unit Hydro C2
B	Additional equipment: <ul style="list-style-type: none"> - Temperature sensor PT1000 Z-J IP65 - Temperature sensor PT1000 (2x) - Shorting jumper

1.6. TRANSPORT AND WAREHOUSING



CAUTION

Use the transport aids to move the package and the appliance.

Transport and store the appliance in a dry place at a temperature from 4 to 45 °C (or 50 °C for up to 24 hours).

Do not place any objects collectively weighing more than 10 kg on the appliance during transport.

2 INSTALLATION

i NOTE


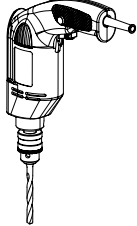
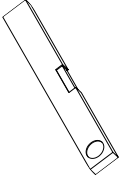







For the place of installation, necessary distances, and proper site of installation, look in the instructions for preparing the ADAPT or VERSI heat pump.

Ensure that the installation location is accessible to hand-held transport equipment (e.g. hand trucks, dollies) for installation, maintenance, and servicing.

Refer to good practice and to occupational safety and health regulations when installing, maintaining, or servicing this appliance.

The appliance's installation location must be dry and within the temperature range of +10 °C and +40 °C.

You will need the following tools and equipment during installation:

	TX20 screwdriver		Drill
	Level		1" gasket 4 x
	#17 wrench		Gumijasta tesnila 5/4"
	#13 wrench		3/4" gasket 3 x
	#30 wrench for pipe connections		#36 wrench for pipe connections

2.1. INSTALLING THE INDOOR UNIT

2.1.1. REQUIRED CLEARANCE

Choose a location for the indoor unit's installation.

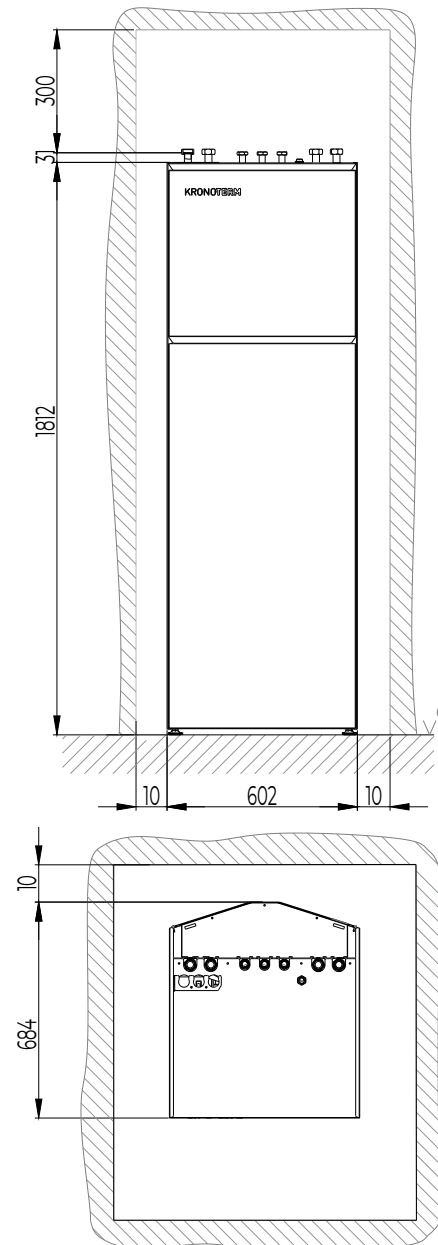


Figure 2: Required clearance

2.1.2. LEVELLING

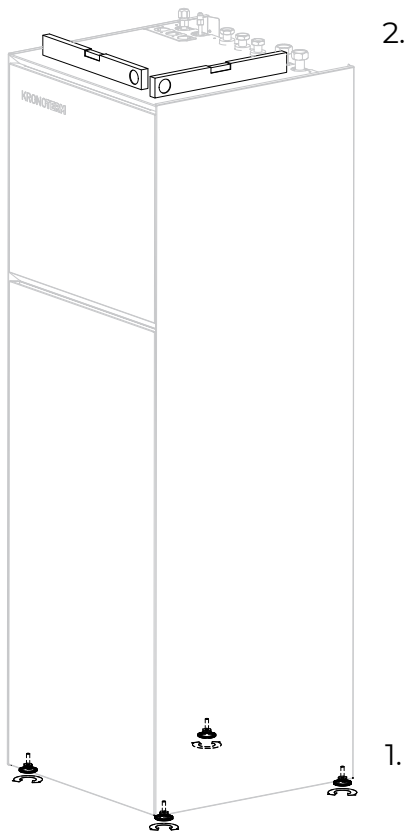


Figure 3: Setting the feet

1. Adjust the feet to level out the appliance.
2. Use a level

2.2. CONNECTING THE HOSES

i WARNING

Before attaching the hose to the indoor unit make sure to clean it thoroughly and remove any pollutants.

2.2.1. ATTACHING THE HOSE FOR THE CONDENSATE DRAIN

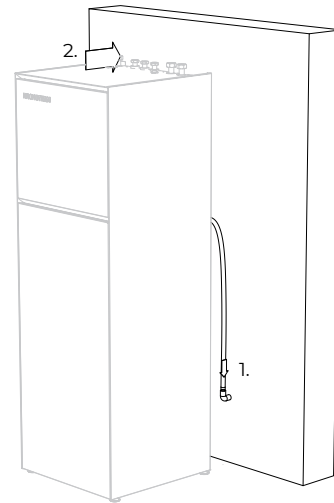


Figure 4: Attaching the hose for the condensate drain

1. Thread the hose for the condensate drain through the $\varnothing 50$ drain.
2. Install the appliance upright.



CAUTION

The condensation drain must have a trap, otherwise the appliance could be damaged.

2.2.2. ATTACHING THE HOSE TO THE OUTDOOR UNIT

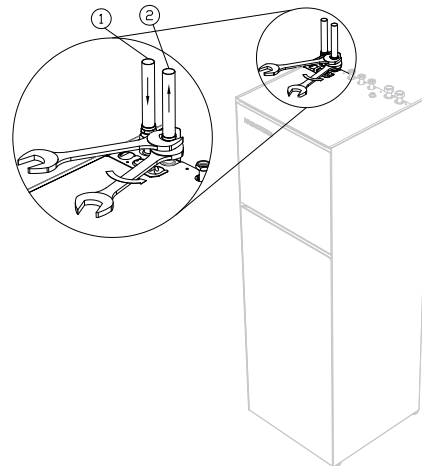


Figure 5: Attaching the hose to connect to the outdoor unit

- | | |
|---|-------------------|
| 1 | Inlet* – G1" IT* |
| 2 | Outlet* – G1" IT* |

*Flat seal screw

Attach the pipe fittings. Use a counter wrench. (Figure 5).

2.2.3. CONNECTING THE HOSE TO THE HEATING SYSTEM

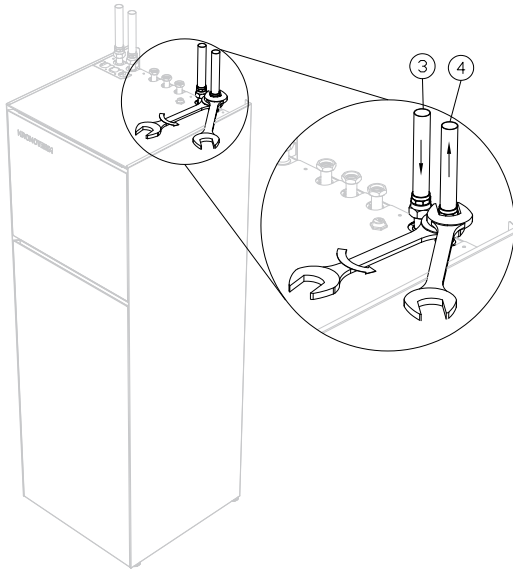


Figure 6: Connecting the heating system's hose

3	Heating/cooling – return pipe* – G1" IT
4	Heating/cooling – supply pipe* – G1" IT

*Flat seal screw

Attach the pipe fittings. Use a counter wrench.(Figure 6).

2.2.4. CONNECTING THE HOSE TO THE PLUMBING SYSTEM

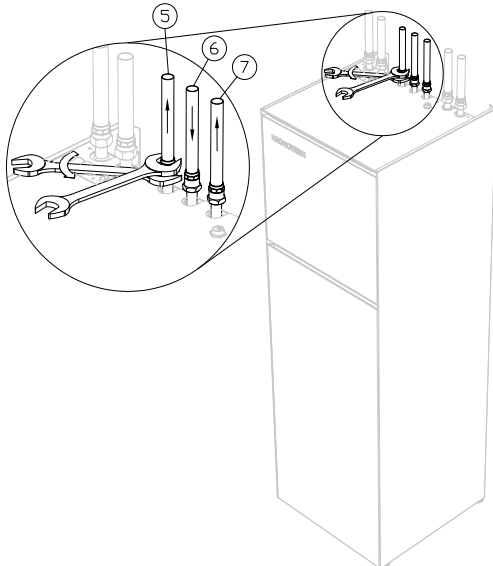


Figure 7: Connecting the tap water hose

5	Warm tap water* – G3/4" IT
6	Cold tap water* – G3/4" IT
7	Circulation* – G3/4" IT

*Flat seal screw

Attach the pipe fittings. Use a counter wrench Figure 7).

3 TURNING ON THE ELECTRICITY

3.1. PREPARATION

3.1.1. REMOVING THE SIDE PANELS

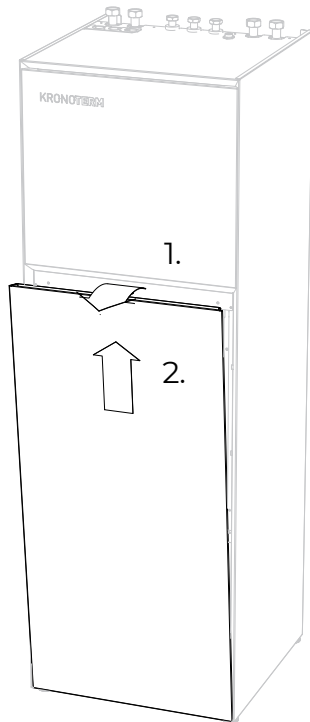


Figure 8: Removing the front, lower side panel

1. Pull the panel towards you.
2. Lift it.

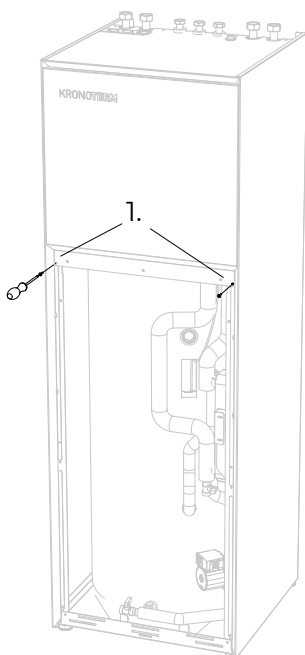


Figure 9: Removing the screws on the front side panel

1. Unscrew the screws

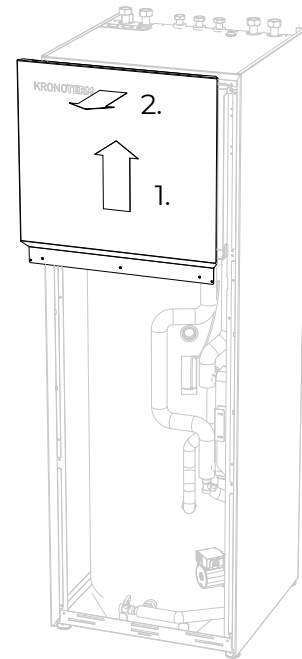


Figure 10: Unscrewing the two screws on the front, upper side panel. Removing the front upper side panel.

1. Lift the side panel.
2. Pull it towards you.

3.1.2. CABLE WIRING

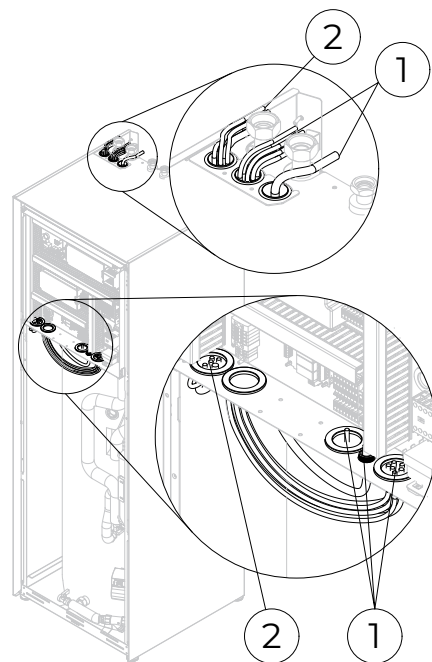


Figure 11: Cable wiring

- | | |
|---|--|
| 1 | Wiring the power cable and control cable (≥ 230 V). |
| 2 | Wiring the communications and signal cable (≤ 48 V). |

Thread the cables through their appropriate glands in the appliance.

3.2. WHERE TO CONNECT THE ELECTRIC ELEMENTS

Electrical system elements connect to the terminals in electrical box.

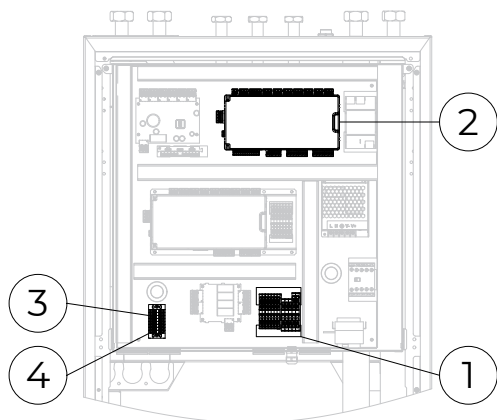


Figure 12: Connection spots

1	Connecting terminals L1, L2, L3, N, PE
2	KSM regulator
3	Connecting terminal KT-1/KT-2A
4	Terminal for communication cable

3.3. CONNECTING THE INDOOR UNIT TO POWER SUPPLY

CAUTION

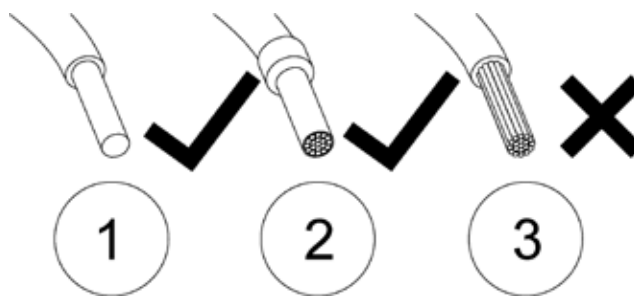
Connect the appliance to the grid using a H05VV power cable (or similar) with an appropriate conductor cross-section.

The electrical technician determines the cross-section of the conductor according to the method of installation, the appliance's distance from the main electrical box, and the appliance's rated power.

The total electrical output of the outdoor, non-integrated components of the heating system (pumps, valves, etc.) activated and powered by the appliance must not exceed 500 W. Otherwise, power these components with a separate electrical supply, and only connect control signals to the appliance.

Connect the communication cable between the indoor and outdoor units separately from the power cable.

The ends of the stranded wire must be fitted with end sleeves.



1	Solid wire
2	Stranded wire with end sleeve
3	Stranded wire

DANGER

Before turning the appliance on, one of the manufacturer's authorized technicians must inspect the electrical connection to ensure the appliance's proper and efficient operation.

UNAUTHORIZED PERSONS ARE STRICTLY PROHIBITED FROM TAMPERING WITH THE ELECTRICAL WIRING.

Connect the appliance to the power supply, which is protected by a FID type A switch.

Table 1: Dimensions of the cables and fuses

Connecting additional heater 1	Fuse [A]	Cabel [mm2]**
1F (2 kW)	1 x C16	3 x 2,5
1F (4 kW)	1 x C20	3 x 4
3F (6 kW)	3 x C16	5 x 2,5

** Make sure you choose the right installation method according to the type of the cable. The electrical technician must always determine or verify the power cable dimensions

3.3.1. THREE-PHASE CONNECTION 3N ~ 400 V / 50 HZ

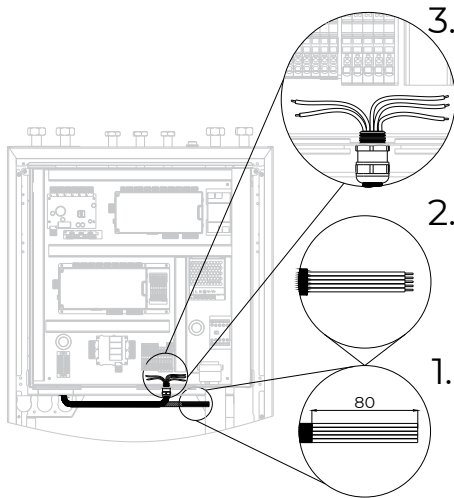


Figure 13: Wiring the power cable to the indoor unit's electrical box

1. Remove the protective sleeve from the power cable in a length of 80 mm.
2. Process the stranded wires appropriately.
3. Wire the power cable to the electrical box through the threaded gland and attach it, so as to unburden the power cable (Figure 13).

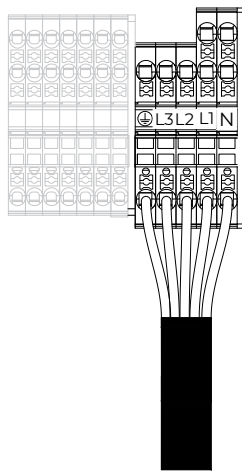


Figure 14: Connecting the three-phase power cable to the terminals

Connect the power cable to the terminals L1, L2, L3, N, and PE (Figure 14).

Table 2: Dimension of the cable and fuses

Connecting additional heater 1	Fuse [A]	Cabel [mm2] 1*
3F (6 kW)	3 x C16	5 x 2,5

1* Make sure you choose the right installation method according to the type of the cable. The electrical technician must always determine or verify the power cable dimensions.

3.3.2. SINGLE-PHASE POWER – 1N ~ 230 V/50 HZ

If you have single-phase power, you can connect a 2 kW (Figure 15) or 4 kW (Figure 16) electric heater in the indoor unit.

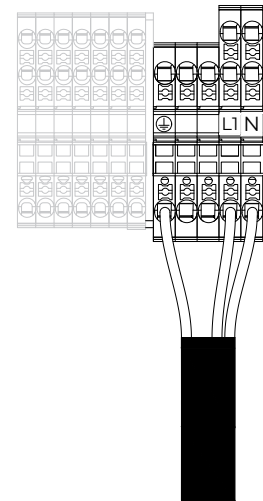


Figure 15: Connecting the single-phase power cable to the terminals for a 2 kW electric heating appliance.

Connect the power cable to the terminals L1, N, and PE (Figure 15).

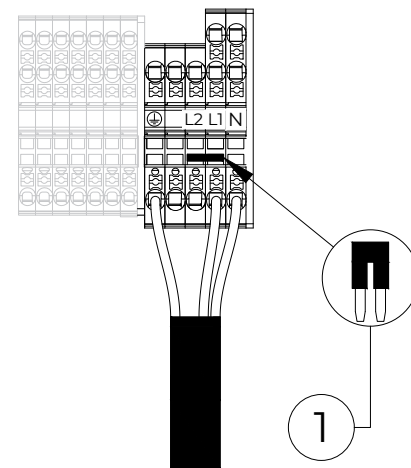


Figure 16: Connecting the single-phase power cable to the terminals for a 4 kW electric heating appliance.

Connect the power cable to the terminals L1, N, and PE, and place a shorting jumper (1) on terminals L1 and L2 (Figure 16).

Table 3: Dimensions of the cables and fuses

Connecting additional heater 1	Fuse [A]	Cabel [mm2] 1*
1F (2 kW)	1 x C16	3 x 2,5
1F (4 kW)	1 x C20	3 x 4

1* Make sure you choose the right installation method according to the type of the cable. The electrical technician must always determine or verify the power cable dimensions.

3.4. CONNECTING THE CONTROLLER AND THE THERMOSTATS

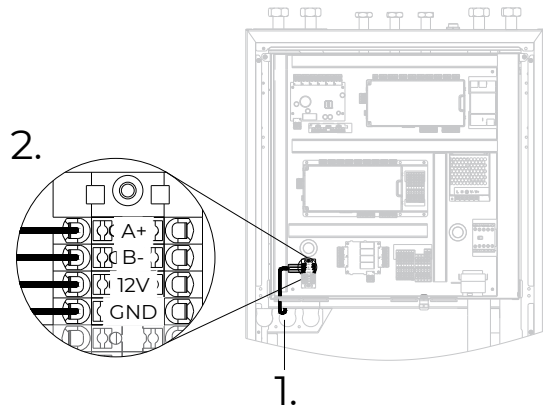


Figure 17: Connecting the communication cables of the controller and the thermostats KT-2A / KT-1

1. Thread the UTP cable (or 4 x 0.5 mm²) through the gland on the left side of the electrical box (Figure 17).
2. Attach the UTP cable ends to the terminals A+, B-, 12V, and GND.

3.5. CONNECTING THE COMMUNICATION CABLE TO THE OUTDOOR UNIT

Ready the communication cable (FTP 5e) for connection between the indoor unit and outdoor unit as follows:

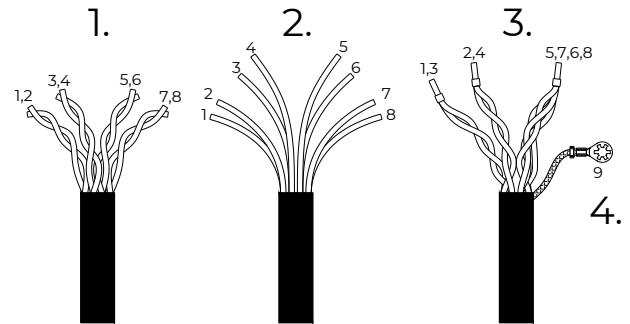


Figure 18: Ready the FTP cable

1. Remove the cable's outer jacket from the communication cable.
2. Unbraid the wire.
3. Braid the wires together as shown in Figure 18, insert them into end sleeves, and crimp them.
4. Press the eye terminal onto the communication cable shield (9).

⚠ CAUTION

Do the above procedure for both ends of the communication cable.

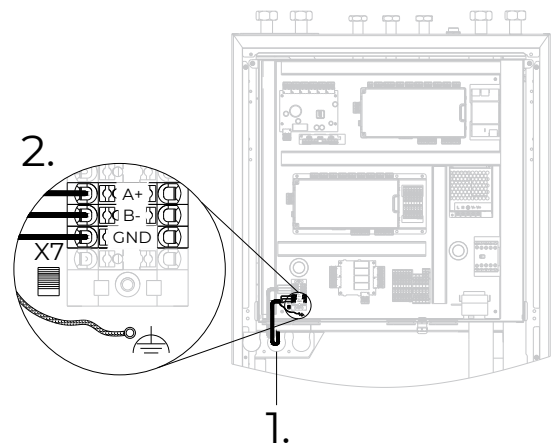


Figure 19: Connecting the communication cable of the outdoor unit

1. Wire the communication cable (Figure 18) to the electrical box through the cable channel on the left side (Figure 19).
- 2.1 Connect wires 1 and 3 (Figure 18) to terminal A+ (Figure 19).
- 2.2 Connect wires 2 and 4 (Figure 18) to terminal B- (Figure 19).
- 2.3 Connect wires 5, 6, 7, and 8 (Figure 18) to terminal GND (Figure 19).
- 2.4 Ground (Figure 19) the cable braid 9 (Figure 18).

3.6. CONNECTING THE CONTROLLING COMPONENTS

The number of controlling components (circulation pumps, mixing valves, temperature sensors, etc.) depends on the heating/cooling system and the manner in which it was wired. To connect the control components, use a 0.75 mm² cable.

3.6.1. CONNECTING THE CIRCULATION PUMP OF HEATING/COOLING LOOP 1

i NOTE

To connect the circulation pumps of the heating/cooling loops with no PWM signal, you must install an additional PWM-R module in the indoor unit.

The PWM-R module is available as additional equipment.

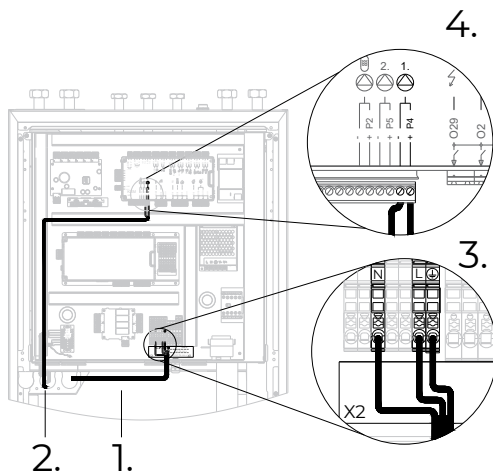


Figure 20: Connecting cables of the circulation pump for heating/cooling loop 1

1. Thread the circulation pump's power cable through the cable gland on the right side to the terminals (Figure 20).
2. Thread the circulation pump's PWM cable through the cable channel on the left side to the terminals (Figure 20).
3. Connect the ends of the power cable to terminals N, L, and PE.
4. Connect the ends of the PWM cable to terminals P4+ and P4-.

⚠ CAUTION

Use circulation pumps with PWM 2 signal for the circulation pump of the heating loops (Solar).

3.6.2. CONNECTING THE TEMPERATURE SENSOR OF HEATING/COOLING LOOP 1

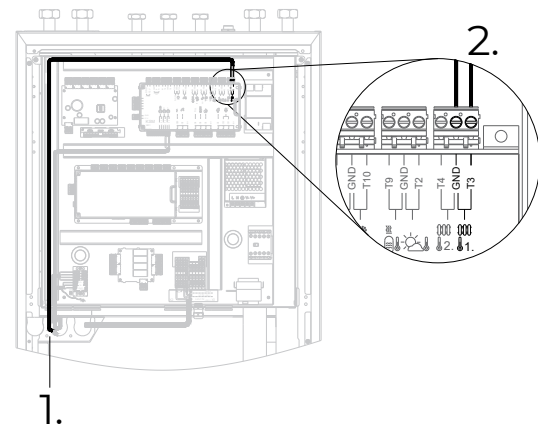


Figure 21: Connecting the cable of the mixing valve of heating/cooling loop 1

1. Thread the sensor cable through the cable channel on the left side to the terminals (Figure 21).
2. Connect the sensor cable to the terminals T3 and GND.

3.6.3. CONNECTING THE MIXING VALVE OF HEATING/COOLING LOOP 1

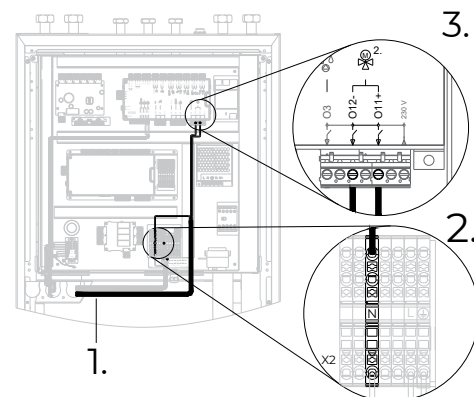


Figure 22: Connecting the cable of the mixing valve of heating/cooling loop 2

1. Thread the mixing valve cable through the cable channel on the right side to the terminals (Image 22).
2. Connect the cable end to terminal N.
3. Connect the cable for opening the valve to terminal O11+. Connect the cable for opening the valve to terminal O12-.

3.6.4. CONNECTING THE CIRCULATION PUMP TO CIRCULATE DHW TO CIRCULATE DHW

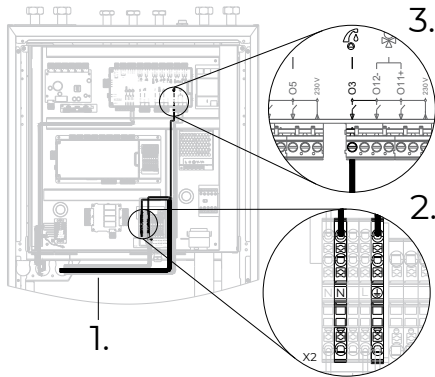


Figure 23: Connecting the power cable of the circulation pump to circulate DHW

1. Thread the power cable of the circulation pump for circulating DHW to the electrical box through the cable channel on the right side (Figure 23).
2. Connect the ends of the power cable to terminals N and PE.
3. Connect cable L of the circulation pump to terminal O3.

3.6.5. CONNECTING THE TEMPERATURE SENSOR FOR AMBIENT OUTDOOR TEMPERATURE

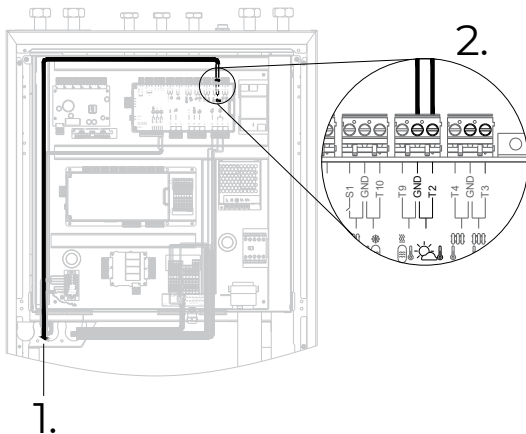


Figure 24: Priklop kabla tipala zunanje temperature zraka

1. Thread the sensor cable through the cable channel on the left side to the terminals (Figure 24).
2. Connect the sensor cable to the terminals T2 and GND.

3.6.6. CONNECTING THE REST OF THE SIGNALING COMPONENTS

Connect the other electrical elements to the electrical box analogously, just like for the elements described in chapter REF_Ref75781507 \n \h 3.6 herein (heating loop, buffer tank, etc.). In doing so choose the right terminals on the KSM regulator (Figure 25).

4 TECHNICAL CHARACTERISTICS

4.1. TERMINALS OF THE KSM REGULATOR

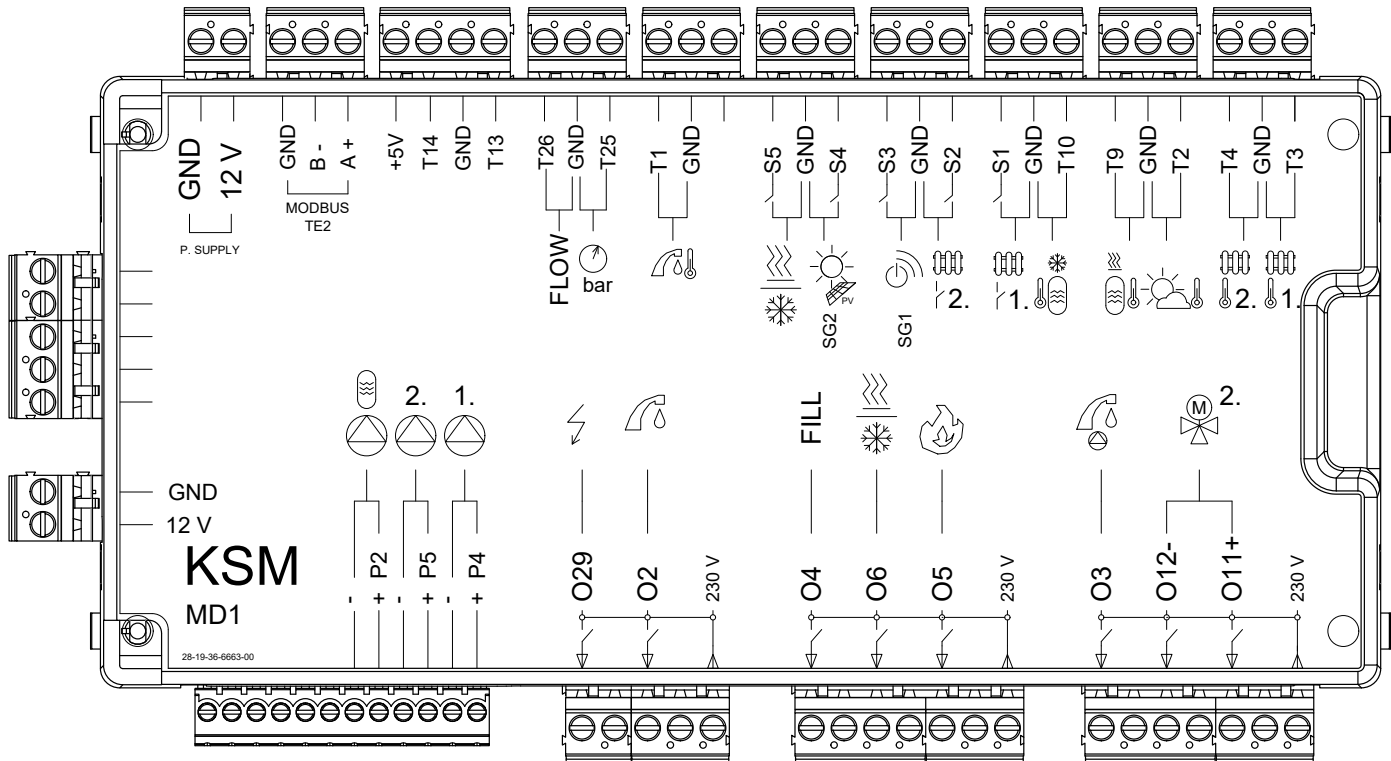


Figure 25: KSM regulator

Label	Description
T 1	Temperature – DHW tank
T 2	Temperature – outdoor
T 3	Temperature – loop 1
T 4	Temperature – loop 2
T 9	Temperature – buffer tank 1
T 10	Temperature – buffer tank 2
T 13	Temperature – supply pipe (after the electrical heater)
T 14	Temperature – return pipe (indoor unit)
T 25	Pressure of heating system
T 26	Flow of heating water
S 1	Input – thermostat loop 1
S 2	Input – thermostat loop 2
S 3	Input – SG1 (remote deactivation)
S 4	Input – SG2 (PV signal)

Label	Description
S 5	Input – cooling activation
O 2	Output – DHW pump
O 3	Output – DHW pump circulation
O 4	Output – filling the heating system
O 5	Output – additional source 2
O 6	Output – cooling
O 11+	Output – mixing valve loop 2 +
O 12-	Output – mixing valve loop 2 –
O 29	Output – additional source 1
P 2	PWM2 heat sink pump
P 4	PWM2 pump loop 1
P 5	PWM2 pump loop 2
GND	Grounding

5 MAINTENANCE



CAUTION

The wiring and other hardware must be inspected visually once per year. If any faults or malfunctions are found, contact an authorized technician.

Order a service inspection from an authorized technician once per year.

Use a soft rag and mild soap to clean the appliance.

If the magnetic filter and water cleaner get clogged, the appliance can malfunction.



NOTE

Check the pressure of the medium in the heating system once per year.

Kronoterm d.o.o.
Trnava 5e, 3303 Gomilsko, SLO
T +386 3 703 16 20
www.kronoterm.com
info@kronoterm.com