

EN

—  
**KRONOTERM** 1976  
HEAT PUMPS

INSTALLATION

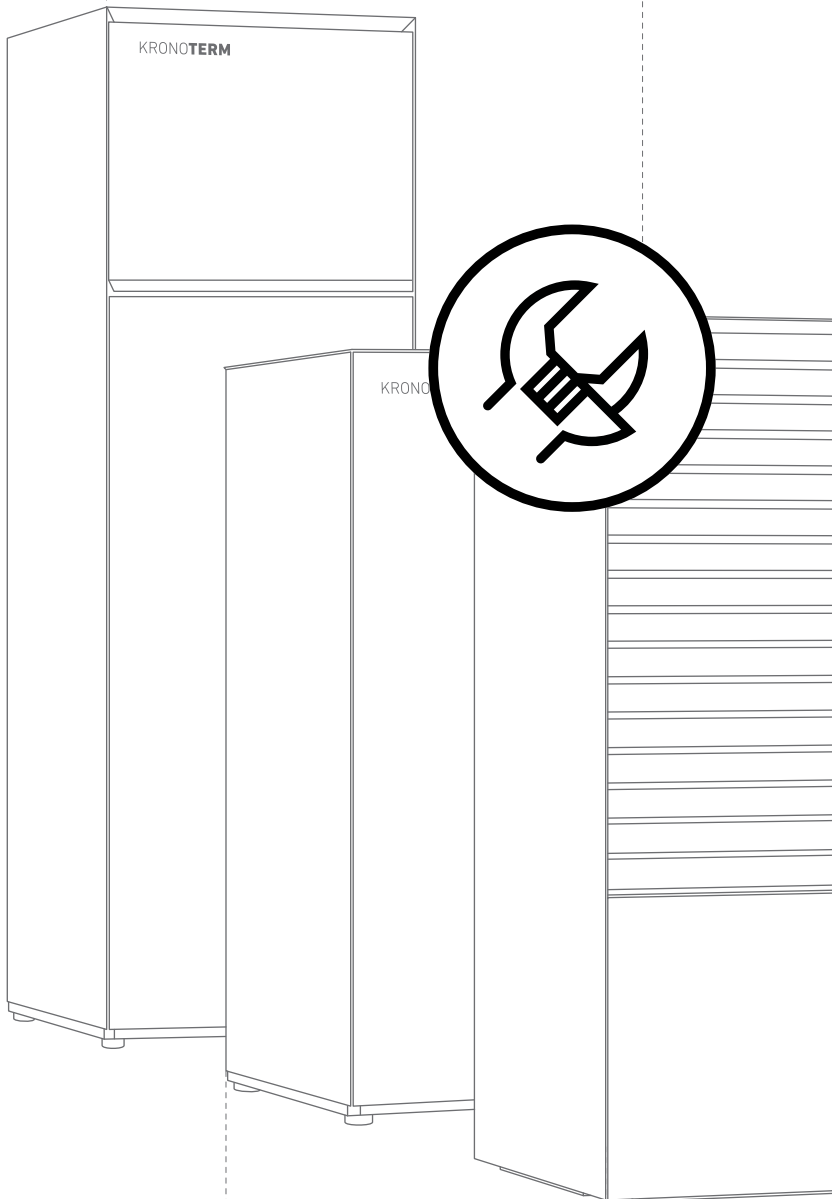
—  
**INSTALLATION  
INSTRUCTIONS**

*Technician*

—  
**HYDRO S2**

*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.

17-21-31-10071-00\_Installation instructions\_Hydro S2\_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

**Read these instructions thoroughly before beginning installation.**

**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 is 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.**

**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.**

### 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.

This appliance is intended for internal installation

#### 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.

Ensure that the wall has appropriate load bearing capacity for the appliance's weight. Use screws that are 8 mm in diameter. Choose the right insert based on the type of wall construction and in consultation with a construction expert.

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



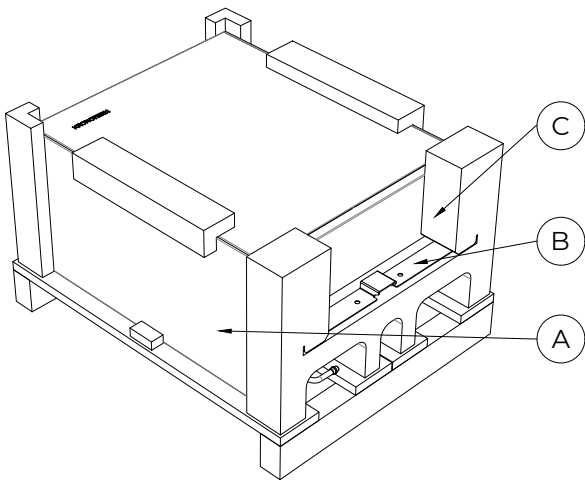
Separate packaging according to its material.



Remove the appliance in accordance with valid legislation on electronic waste.

## 1.5. INCLUDED PARTS FOR INDOOR UNIT HYDRO S2

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



**Figure 1: Included parts for indoor unit**

A	Indoor unit Hydro S2
B	Wall mount
C	Additional equipment: <ul style="list-style-type: none"> <li>- Temperature sensor PT1000 Z-J IP65</li> <li>- temperature sensor PT 1000 (3x),</li> <li>- Shorting jumper</li> </ul>

### 1.5.1. 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


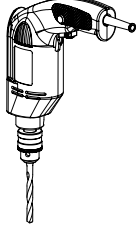
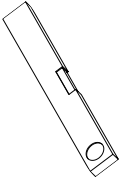

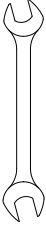

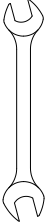
For the place of installation, necessary distances, and proper site of installation, look in the instructions for preparing the ADAPT or VERSI heat pump.

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		Fastening screw and insert Wall insert 4x
	#17 wrench		5/4" gasket 4x
	#13 wrench		

See page 7 for instructions on installing the Hydro S2 indoor unit and Hydro wall mount.

See page 9 for instructions on installing the **Hydro S2 indoor unit and Hydro A2 wall mount**.

See page 12 for instructions on installing the **Hydro S2 indoor unit and Hydro P2 wall mount**.

## 2.1. INSTALLING THE HYDRO S2 INDOOR UNIT

### 2.1.1. REQUIRED CLEARANCE

Choose a location for the indoor unit's installation.

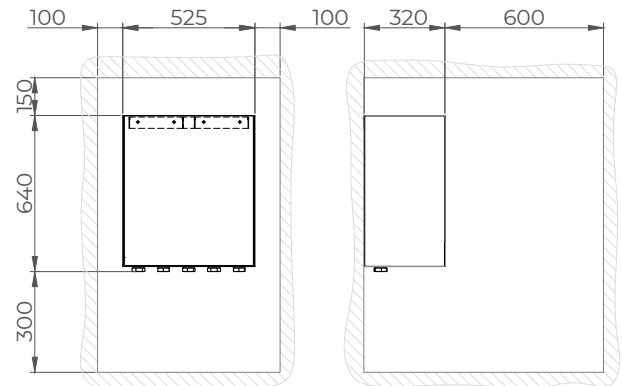


Figure 2: Required clearance

### 2.1.2. INSTALLING THE WALL MOUNT

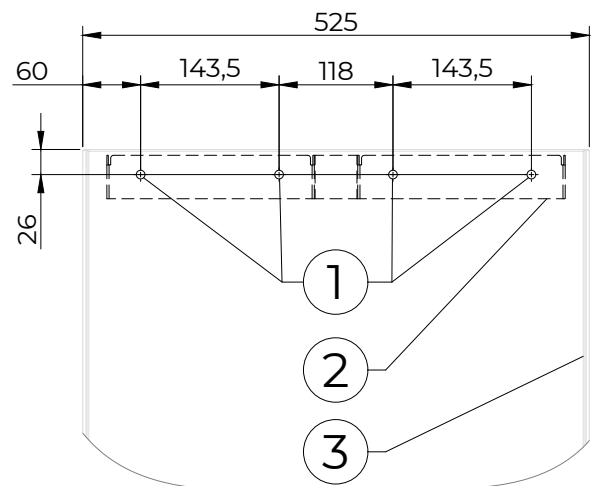
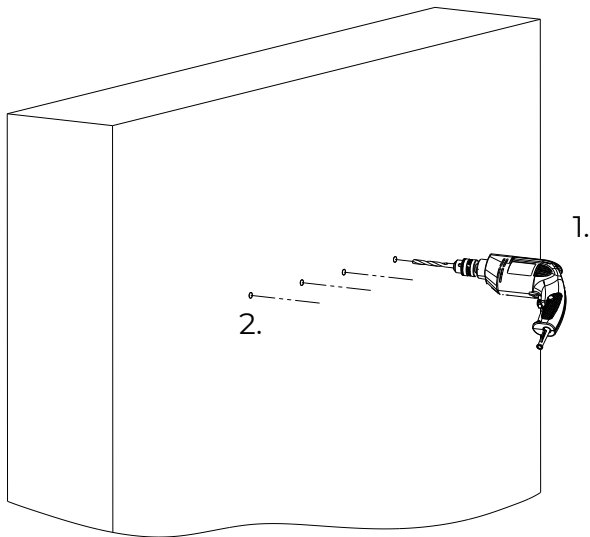


Figure 3: Marking the spot for the hole in the wall

1	Position of the holes for Ø 8 screws
2	Position of the Hydro S2 wall mount
3	Position of the indoor unit

Mark on the wall the position of the holes for the mount.



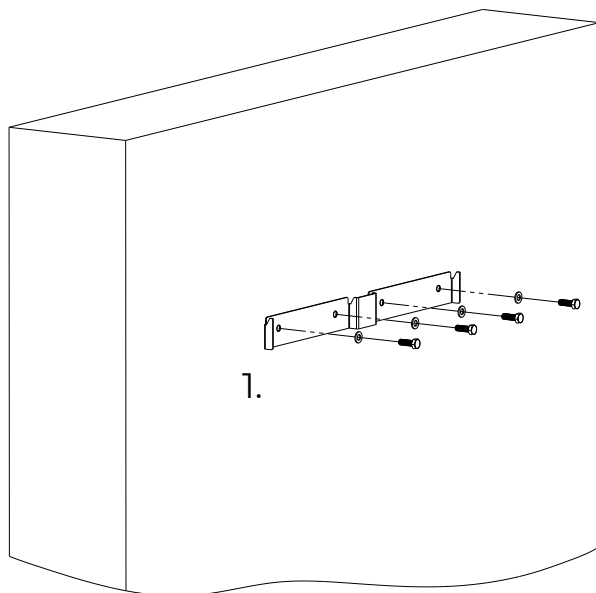
**Figure 4: Drilling holes into the wall**

1. Drill a hole for the appropriate wall inserts  $\text{Ø}8$  screws.
2. Insert the wall inserts into the holes.



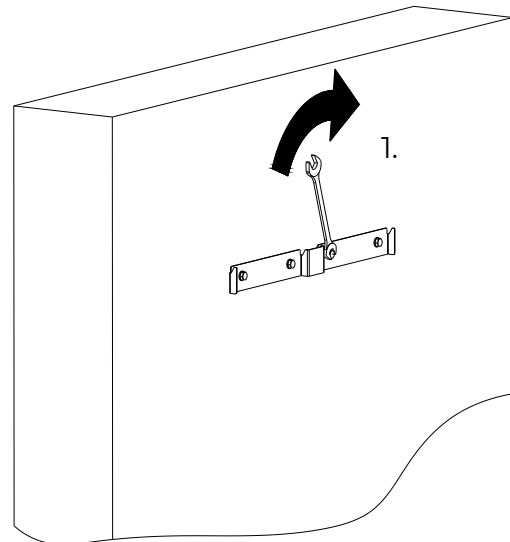
### CAUTION

Choose the right insert based on the type of wall construction and in consultation with a construction expert.



**Figure 5: Positioning the mount on the wall**

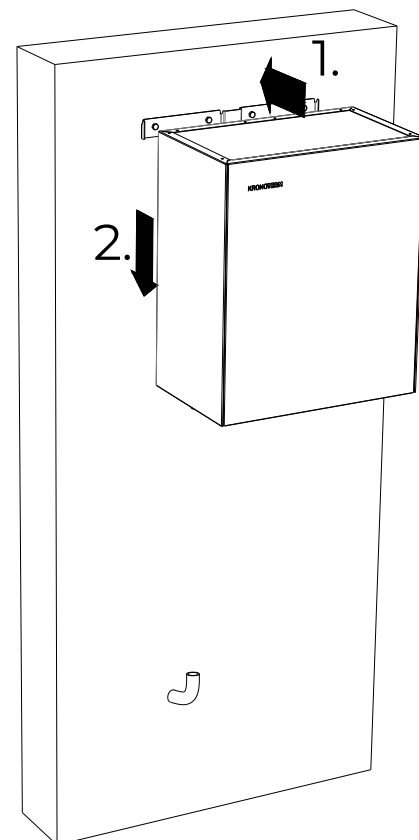
1. Affix the mount to the wall with  $\text{Ø}8$  screws and appropriate inserts.



**Figure 6: Affixing the mount on the wall**

1. Screw in the screws and affix the mount on the wall.

### 2.1.3. MOUNTING THE INDOOR UNIT



**Figure 7: Affixing the indoor unit to the mount**

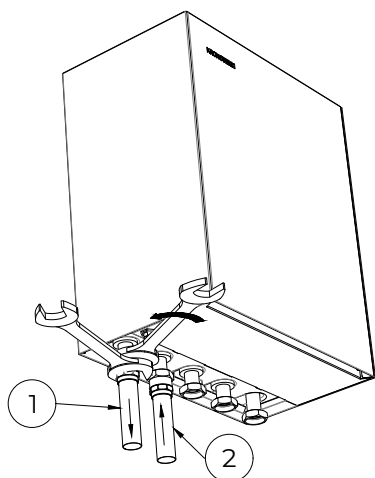
1. Hang the unit on the mount.
2. Pull the appliance down and install it upright.



## 2.1.4. ATTACHING THE PIPES TO THE OUTDOOR UNIT

### WARNING

Thoroughly clean the heating system before attaching the pipes.



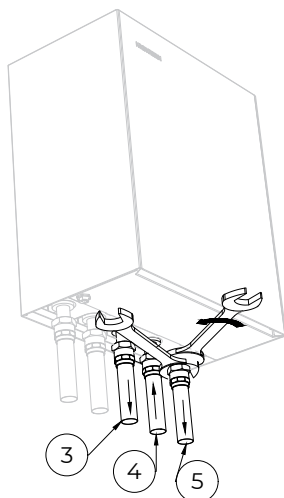
**Figure 8: Attaching the pipe to connect to the outdoor unit**

1	Outlet* – G5/4" IT
2	Inlet* – G5/4" IT

\*Flat seal screw

Use a counter wrench to affix the connecting pipes (Figure 8).

## 2.1.5. CONNECTING THE PIPES TO THE DHW SYSTEM AND HEATING SYSTEM



**Figure 9: Connecting the heating system's pipes**

3	Heating DHW* – supply pipe – G 5/4" IT
4	Heating/cooling/heating DHW* – return pipe – G5/4" IT
5	Heating/cooling* – supply pipe – G1" IT

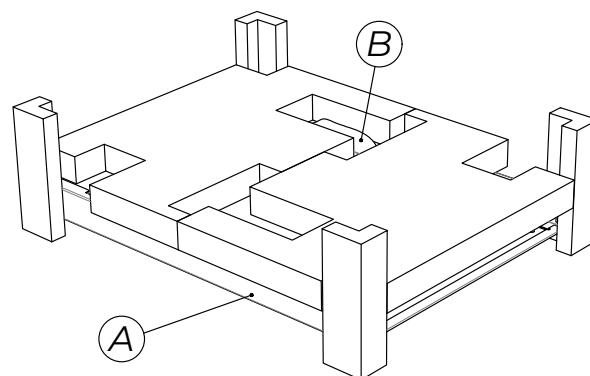
\*Flat seal screw

Use a counter wrench to affix the connecting pipes (Figure 9).

## 2.2. INSTALLING THE HYDRO S2 INDOOR UNIT AND HYDRO A2 WALL MOUNT

### 2.2.1. INCLUDED PARTS FOR THE HYDRO A2 WALL MOUNT

You received the following components upon delivery of the Hydro A2 wall mount:



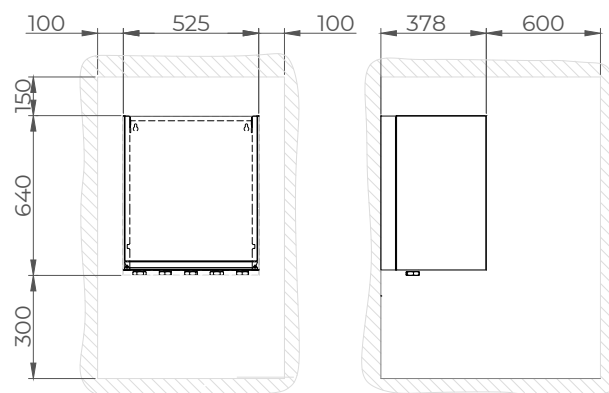
**Figure 10: Included parts for the Hydro A2 wall mount**

A Hydro A2 wall mount

B Baggie with accessories:  
- screw M8x16 (2x)  
- nut M8 (2x)

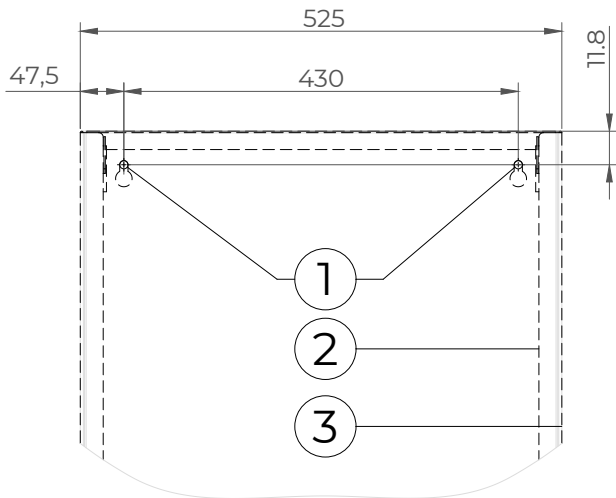
### 2.2.2. REQUIRED CLEARANCE

Choose a location for the indoor unit's installation.



**Figure 11: Required clearance**

### 2.2.3. INSTALLING THE HYDRO A MOUNT

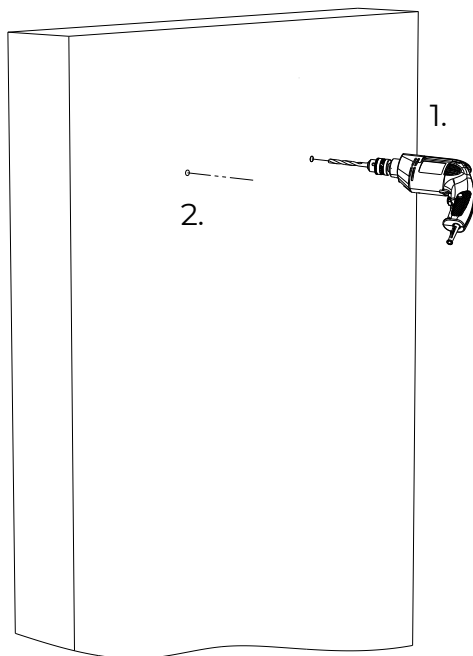


**Figure 12: Marking the spot for the hole in the wall**

1	Position of the $\varnothing 8$ holes
2	Position of the Hydro A2 wall mount
3	Position of the indoor unit

Mark on the wall the position of the holes for the mount (Figure 12).

Make sure the level shows no deviation.

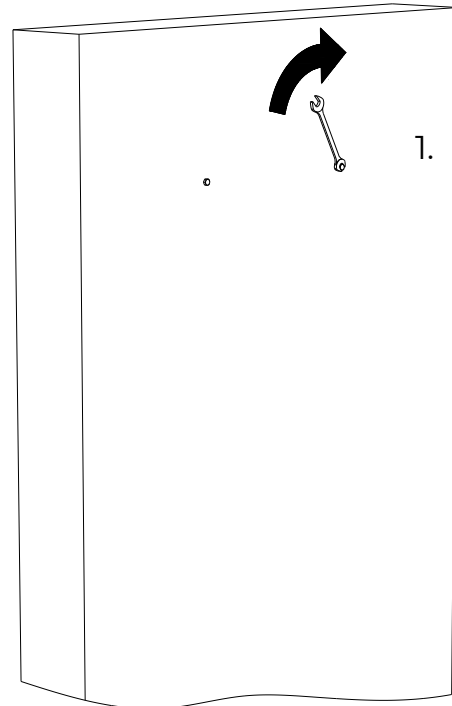


**Figure 13: Drilling holes into the wall**

1. Drill a hole for the appropriate wall inserts for  $\varnothing 8$  screws.
2. Insert the wall inserts into the holes.

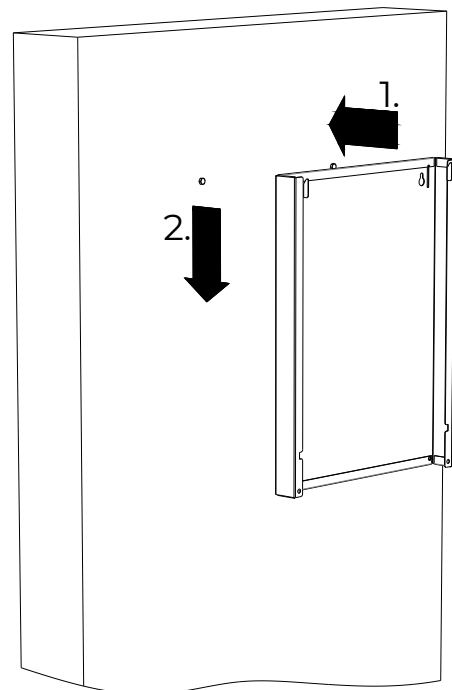
**⚠ CAUTION**

Choose the right insert based on the type of wall construction and in consultation with a construction expert.



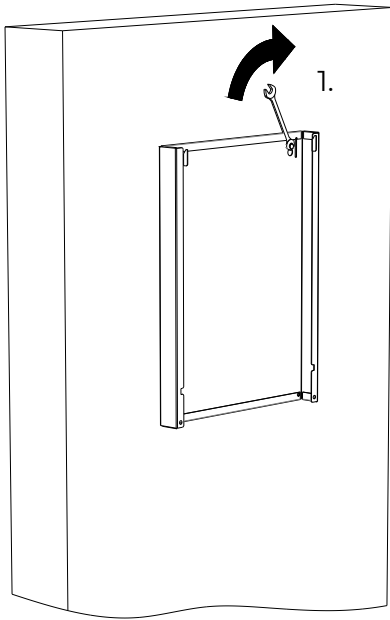
**Figure 14: Loose screwing**

1. Screw in the screws finger-tight



**Figure 15: Installing the Hydro A mount**

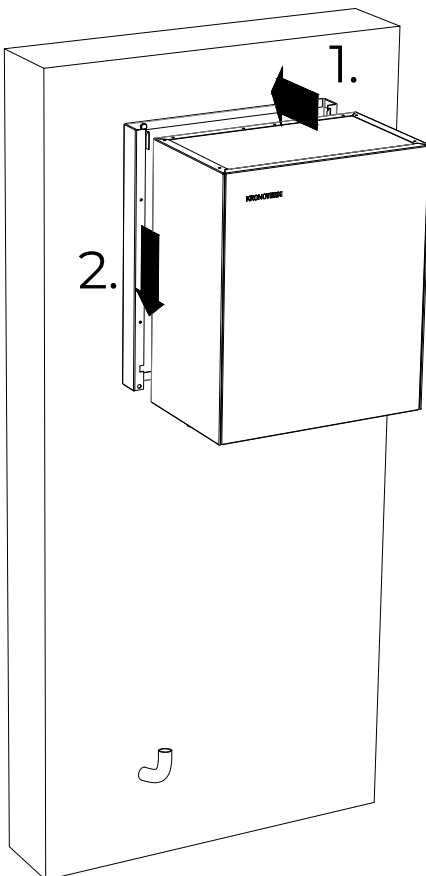
1. Hang the mount on the screws in the wall.
2. Pull it down and install it upright.



**Figure 16: Affixing the mount**

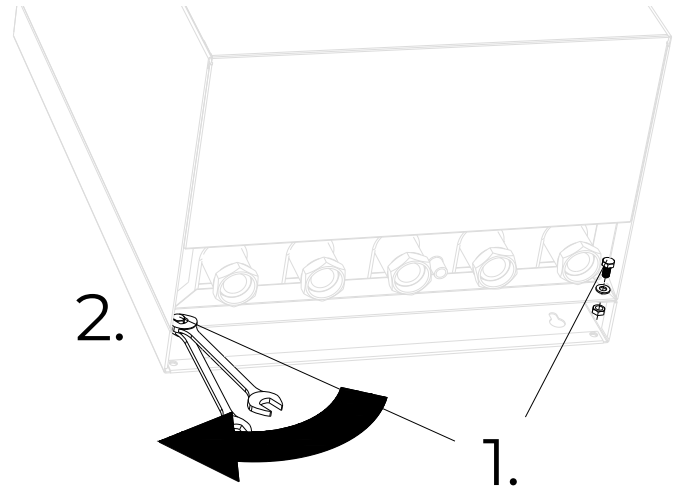
1. Finish screwing in the screws.

#### 2.2.4. MOUNTING THE INDOOR UNIT



**Figure 17: Placing the indoor unit on the mount**

1. Attach the indoor unit to the Hydro A2 wall mount.
2. Pull the appliance down and install it upright.



**Figure 18: Connecting the indoor unit to the mount**

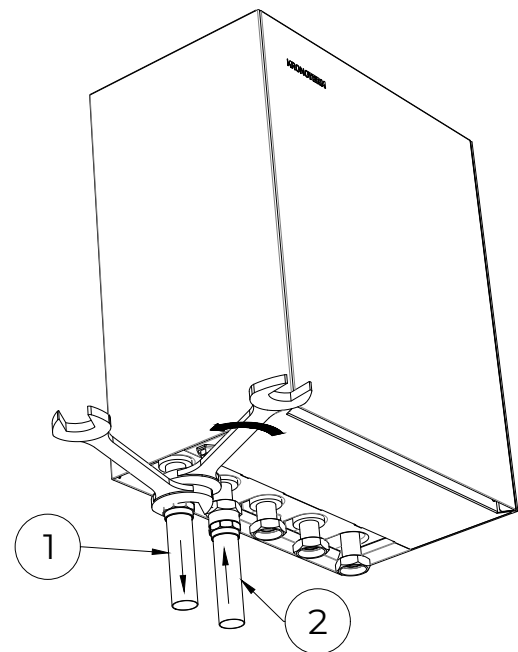
1. Insert the included M8 screws into the holes shown, along with the washers and the nuts.
2. Screw in the screws.

#### 2.2.5. ATTACHING THE PIPE TO THE OUTDOOR UNIT



### WARNING

Thoroughly clean the heating system before attaching the pipes.



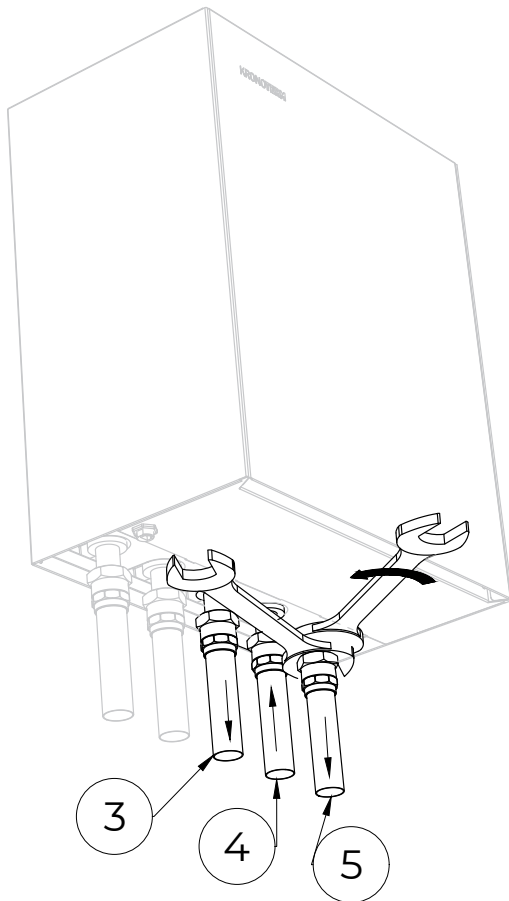
**Figure 19: Attaching the pipe to connect to the outdoor unit**

1	Outlet* – G5/4" IT
2	Inlet* – G5/4" IT

\*Flat seal screw

Use a counter wrench to affix the connecting cables (Figure 19).

## 2.2.6. CONNECTING THE PIPES TO THE DHW SYSTEM AND HEATING SYSTEM



**Figure 20: Priklop cevi na sistem**

3	Heating DHW* – supply pipe – G 5/4" IT
4	Heating/cooling/heating DHW* – return pipe – G5/4" IT
5	Heating/cooling* – supply pipe – G1" IT

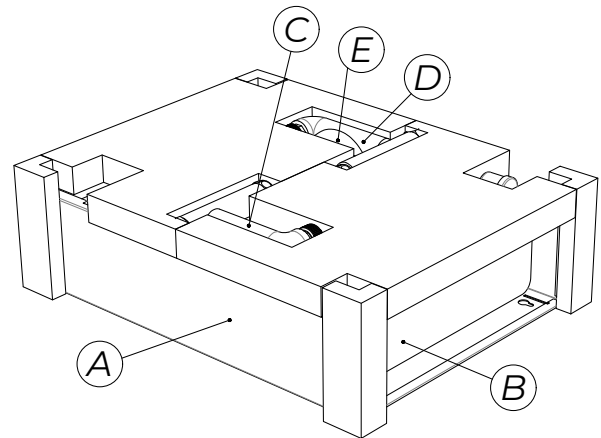
\*Flat seal screw

Use a counter wrench to affix the connecting pipes (Figure 20).

## 2.3. INSTALLING THE HYDRO S2 INDOOR UNIT AND HYDRO P2 WALL MOUNT

### 2.3.1. INCLUDED PARTS FOR THE HYDRO P2 WALL MOUNT

You received the following (extra) components upon delivery of the Hydro P wall mount:

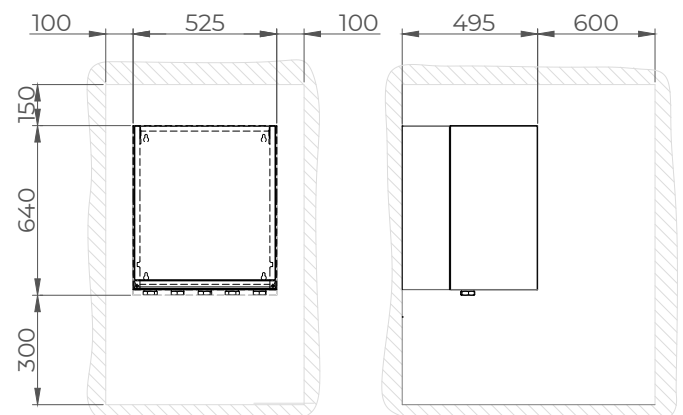


**Figure 21: Included parts for the Hydro P2 wall mount**

A	Mount
B	Hydro P2
C	Connector mount set Hydro P – 1
D	Connector mount set Hydro P – 2
E	Baggie with accessories: <ul style="list-style-type: none"> <li>- screw M8x16 (2x)</li> <li>- nut M8 (2x)</li> <li>- washer (2x)</li> </ul>

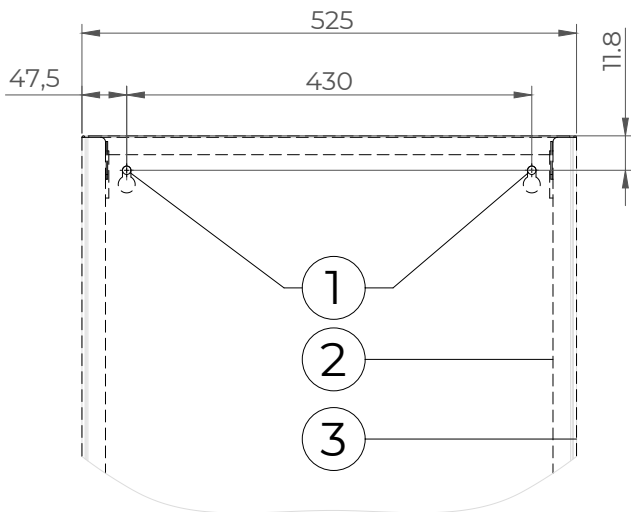
### 2.3.2. REQUIRED CLEARANCE

Choose a location for the indoor unit's installation.



**Figure 22: Required clearance**

### 2.3.3. INSTALLING THE HYDRO P MOUNT

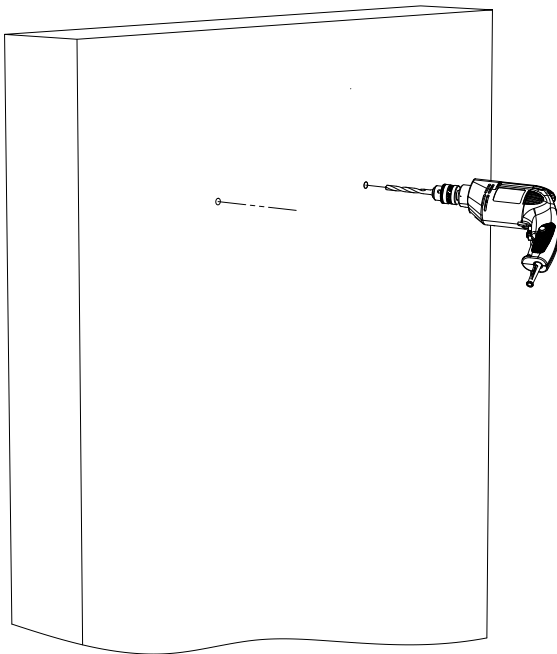


**Figure 23: Marking the spot for the hole in the wall**

1	Position of the Ø8 holes
2	Mount position
3	Position of the indoor unit

Mark on the wall the position of the holes for the mount (Figure 23).

Make sure the level shows no deviation.

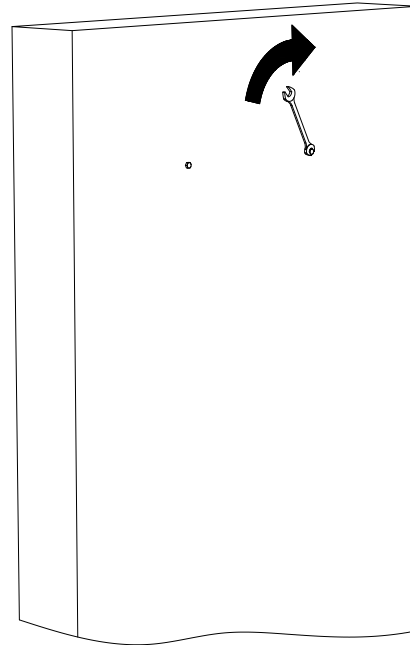


**Figure 24: Drilling holes into the wall**

1. Drill a hole for the appropriate wall inserts for Ø8 screws.
2. Insert the wall inserts into the holes.

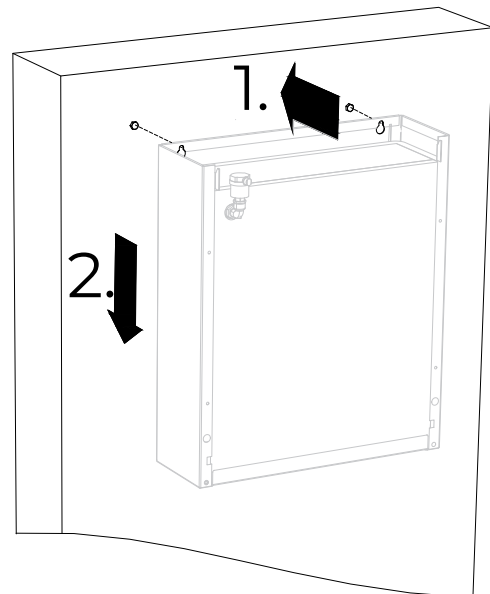
**⚠ CAUTION**

Choose the right insert based on the type of wall construction and in consultation with a construction expert.



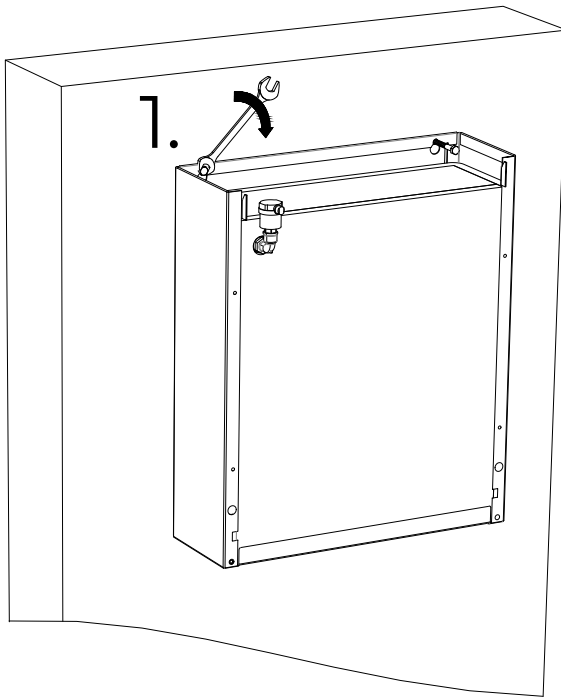
**Figure 25: Loose screwing**

1. Screw in the screws finger-tight



**Figure 26: Installing the mount**

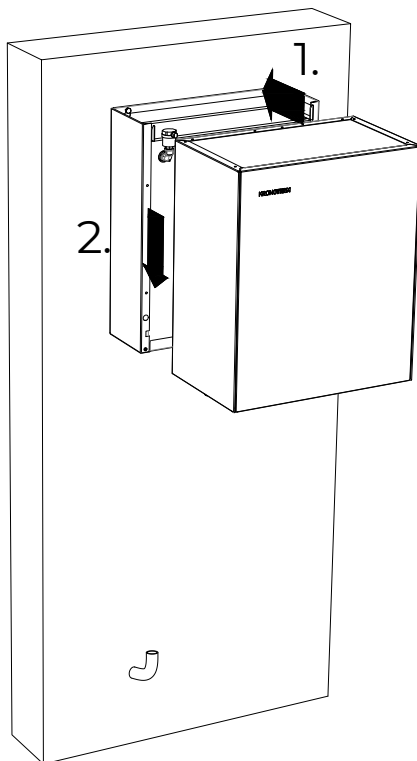
1. Hang the mount on the screws in the wall.
2. Pull it down and install it upright.



**Figure 27: Affixing the mount**

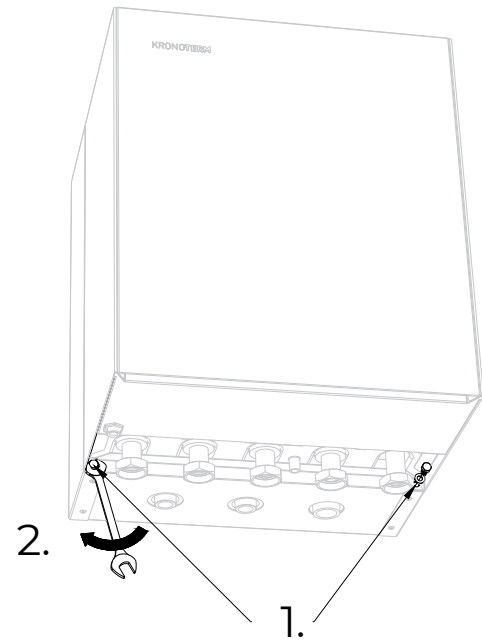
1. Screw in the screws.

#### 2.3.4. MOUNTING THE INDOOR UNIT



**Figure 28: Placing the indoor unit on the mount**

1. Attach the indoor unit to the Hydro P2 wall mount.
2. Pull the appliance down and install it upright.



**Figure 29: Connecting the indoor unit to the mount**

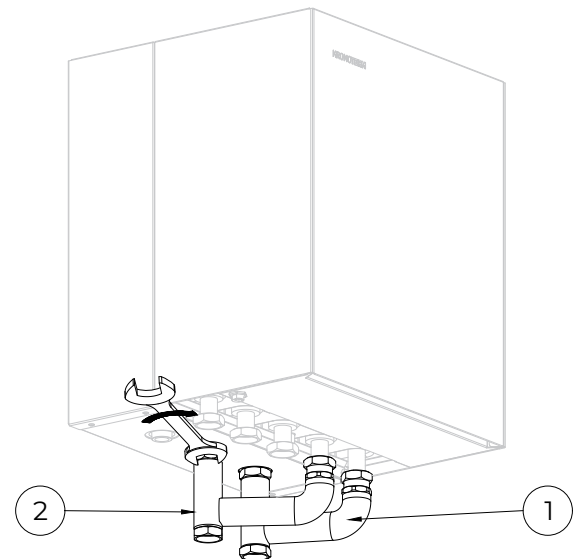
1. Insert the included M8 screws into the holes shown, along with the washers and the nuts.
2. Screw in the screws.

#### 2.3.5. CONNECTING THE PIPES TO THE BUFFER TANK



### WARNING

Thoroughly clean the heating system before attaching the pipes.

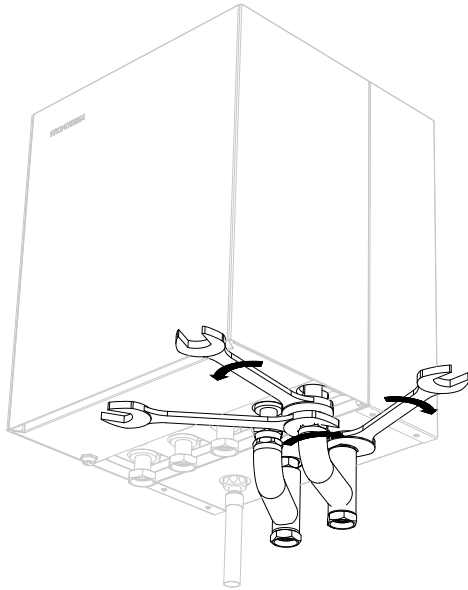


**Figure 30: Connecting the pipe sets to the buffer tank**

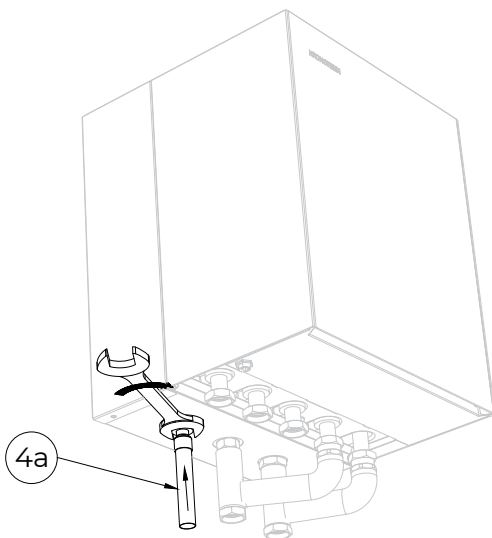
- |   |                                  |
|---|----------------------------------|
| 1 | Connector mount set Hydro P2 – 1 |
| 2 | Connector mount set Hydro P2 – 2 |

Attach the included pipe set.

### 2.3.6. CONNECTING THE PIPES TO THE HEATING SYSTEM



**Figure 31: Connecting the pipe sets to the buffer tank**  
Use a counter wrench to affix the hose sets to the indoor unit (Figure 31).

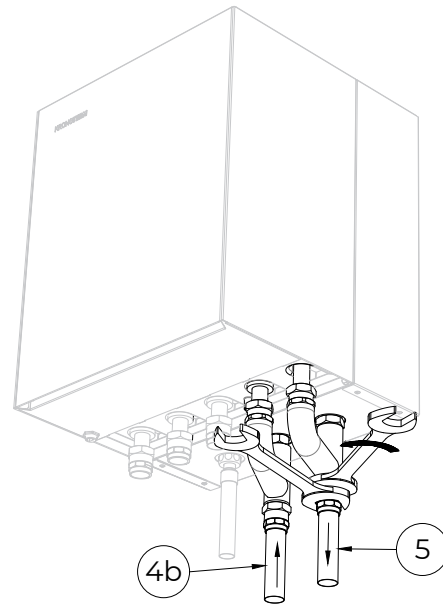


**Figure 32: Connecting the return pipe to the buffer tank**

4a	Heating/cooling* – return pipe – G1"
----	--------------------------------------

\*Flat seal screw

Attach the return pipe to the heating system. (Figure 32).



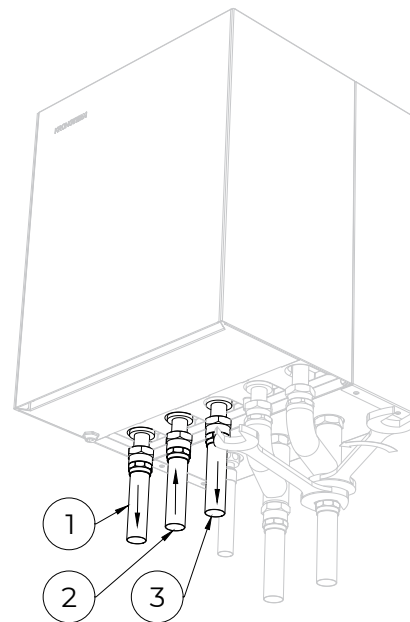
**Figure 33: Connecting the pipe to the heating system – supply pipe and heating DHW – return pipe**

4b	Heating DHW* – return pipe – G5/4" IT
5	Heating/cooling* – supply pipe – G1" IT

\*Flat seal screw

Use a counter wrench to affix the connecting pipes (Figure 33).

### 2.3.7. ATTACHING THE PIPE TO THE OUTDOOR UNIT



**Figure 34: Attaching the pipe to connect to the outdoor unit and for heating DHW – supply pipe**

1	Outlet* – G5/4" IT
2	Inlet* – G5/4" IT
3	Heating DHW* – supply pipe – G 5/4" IT

\*Flat seal screw

Use a counter wrench to affix the connecting cables (Figure 34).

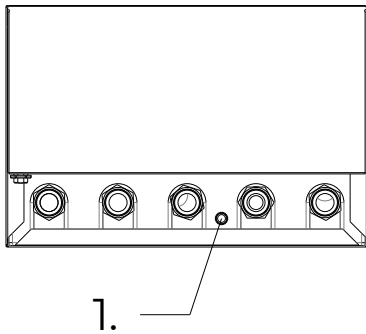
**WARNING**

If you do not connect the DHW reservoir to the indoor unit, you must shut connections 3 and 4 with caps.

**CAUTION**

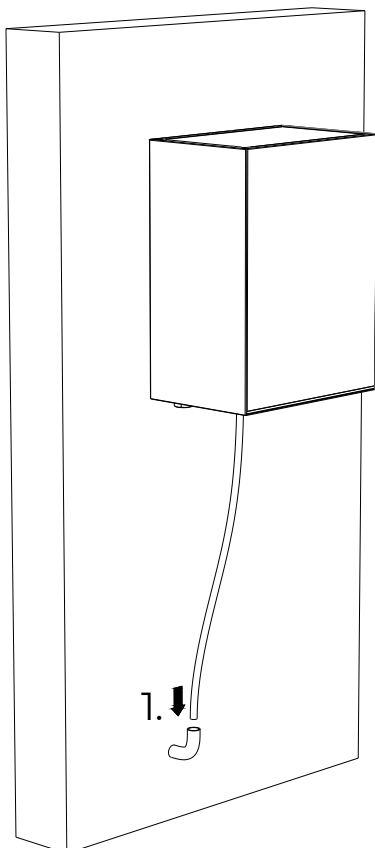
The condensation drain must have a trap, otherwise the appliance could be damaged.

## 2.4. ATTACHING THE PIPE FOR THE CONDENSATE DRAIN



**Figure 35: Attaching the hose for the condensate drain to the appliance (bottom view)**

1. Splice the  $\varnothing 16$  flexible pipe for condensate with the connector and secure it with a hose clamp.



**Figure 36: Attaching the hose for the condensate drain**

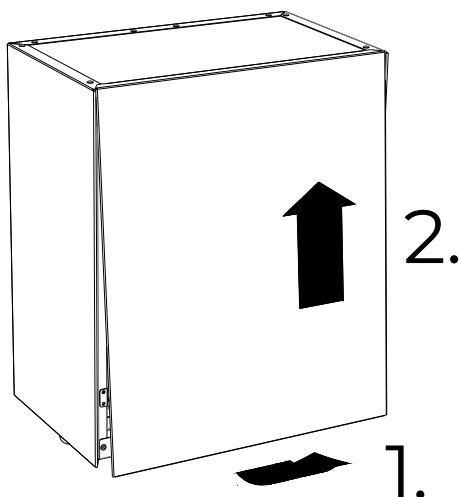
1. Thread the hose for the condensate drain through the  $\varnothing 50$  drain. The drain must have a trap!



### 3 TURNING ON THE ELECTRICITY

#### 3.1. PREPARATION

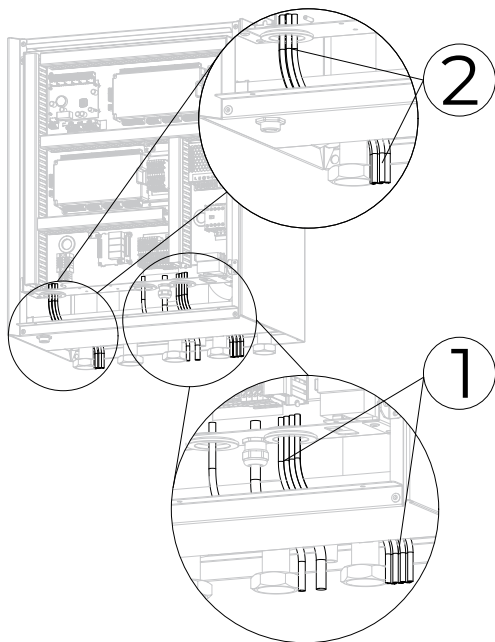
##### 3.1.1. REMOVING THE FRONT SIDE PANEL



**Figure 37: Removing the front side panel**

1. Lift the front side panel and pull it toward you.
2. Lift it.

##### 3.1.2. CABLE WIRING



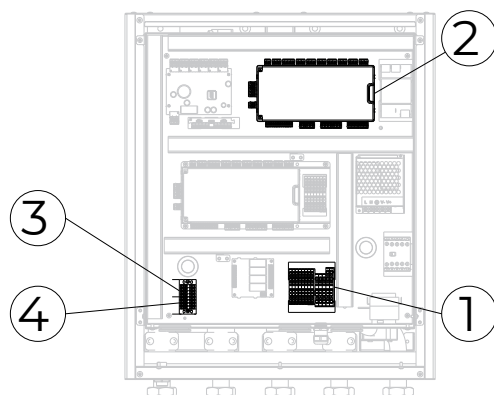
**Figure 38: Cable wiring**

1	Wiring the power cable and control cable ( $\geq 230$ V).
2	Wiring the communications and signal cable ( $\leq 48$ 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 39: Connection spots**

1	Connecting terminals L1, L2, L3, N, PE
2	KSM regulator
3	Connecting terminal KT-1/KT-2A
4	Terminals for the communication cable for the Adapt outdoor unit

#### 3.3. CONNECTING THE INDOOR UNIT TO POWER SUPPLY

##### CAUTION

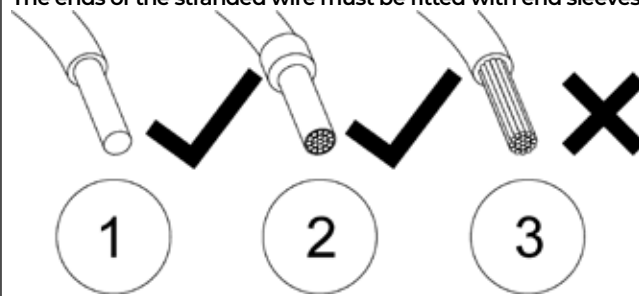
Connect the appliance to the grid using a H05VV power cable (or similar) with an appropriate conductor cross-section.

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 [mm <sup>2</sup> ] 1*
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

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.

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

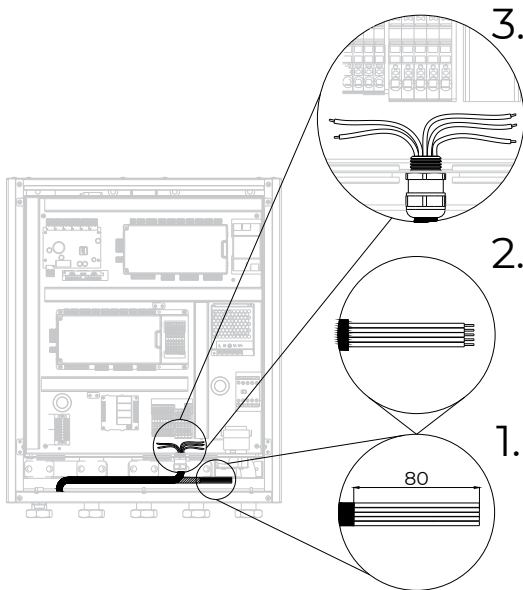


Figure 40: Wiring the power cables to the indoor unit's electrical box

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 40).

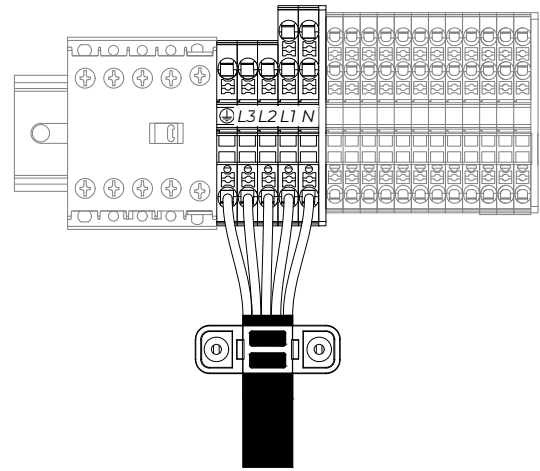


Figure 41: Connecting the three-phase power cable to the terminals

Connect the power cable to the terminals L1, L2, L3, N, and PE (Figure 41).

Table 2: Dimension of the cable and fuses

Connecting additional heater 1	Fuse [A]	Cabel [mm <sup>2</sup> ] 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 CONNECTION – 1N ~ 230 V / 50 HZ

If you have single-phase power, you can max. enable 2 kW or 4 kW electric heater in the indoor unit.

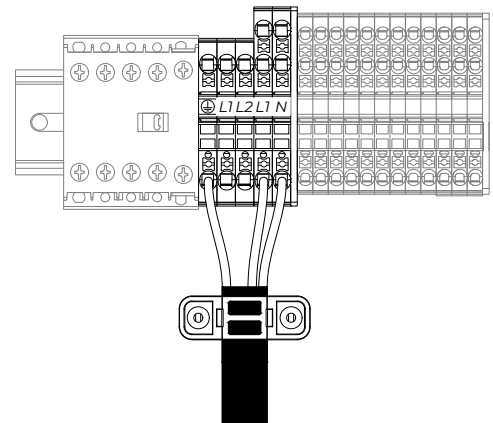
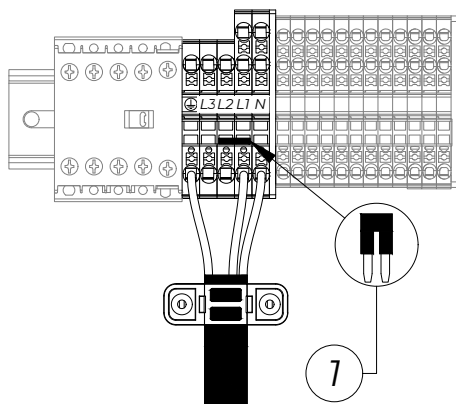


Figure 42: Connecting the single-phase power cable to the terminals for a 2 kW electric heating appliance.

Connect the power cable to the terminals L1, N, and PE (Figure 42).



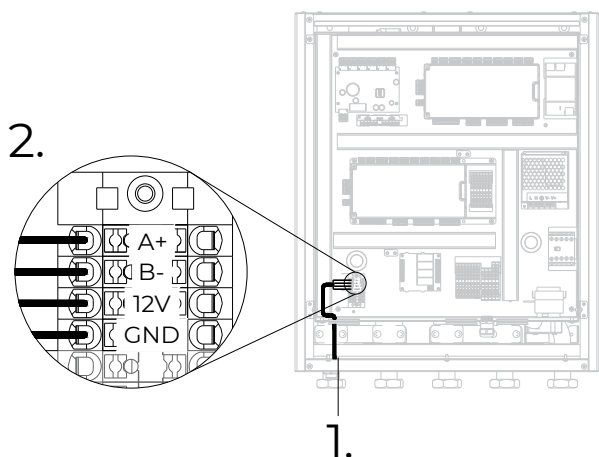
**Figure 43: Connecting the single-phase power cable to the terminals for a 4 kW electric heating appliance.**  
Connect the power cable to the terminals L1, N, and PE, and place a shorting jumper on terminals L1 and L2 (1) (Figure 43).

*Table 3: Dimensions of the cables and fuses*

Connecting additional heater 1	Fuse [A]	Cabel [mm <sup>2</sup> ]*
1F (2 kW)	1 x C16	3 x 2,5
1F (4 kW)	1 x C20	3 x 4

\* 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

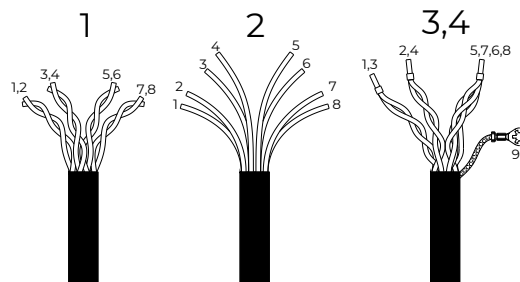


**Figure 44: Connecting the communication cables of the controller and the thermostats KT-2A/KT-1.**

1. Thread the UTP cable (or 4 x 0.5 mm<sup>2</sup>) through the gland on the left side of the electrical box (Figure 44).
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:

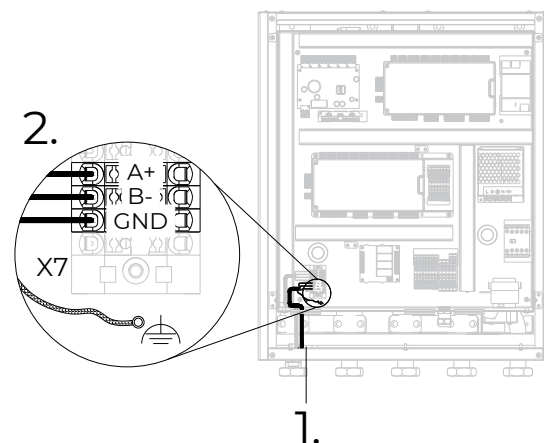


**Figure 45: Preparation of FTP cable**

1. Remove the outer jacket from the communication cable.
2. Unbraid the wire.
3. Braid the wires together as shown in Figure 45, 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 46: Connecting the communication cable of the outdoor unit**

1. Wire the communication cable (Figure 45) to the electrical box through the cable channel on the left side (Figure 46: Connecting the communication cable of the outdoor unit)
  - 2.1 Connect wires 1 and 3 (Figure 45) to terminal A+ (Figure 46).
  - 2.2 Connect wires 2 and 4 (Figure 45) to terminal B- (Figure 46).
  - 2.3 Connect wires 5, 6, 7, and 8 (Figure 45) to terminal GND (Figure 46).
  - 2.4 Ground shield 9 (Figure 45) of the cable (Figure 46).

### 3.6. CONNECTING THE SIGNALING COMPONENTS

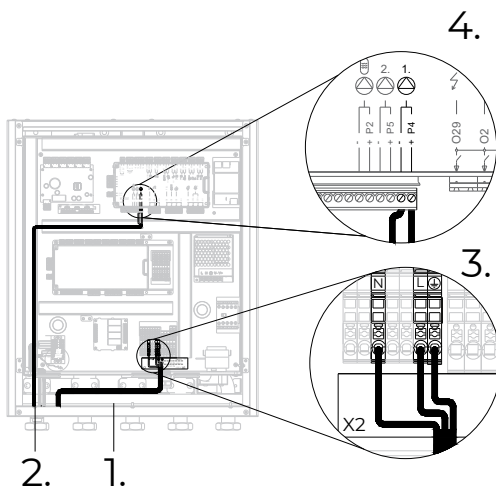
The number of controlling components (circulation pumps, mixing valves, temperature sensors, etc.) depends on the heating/cooling system and the manner in which it was wired. To connect the control components, use a 0.75 mm<sup>2</sup> cable.

#### 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.



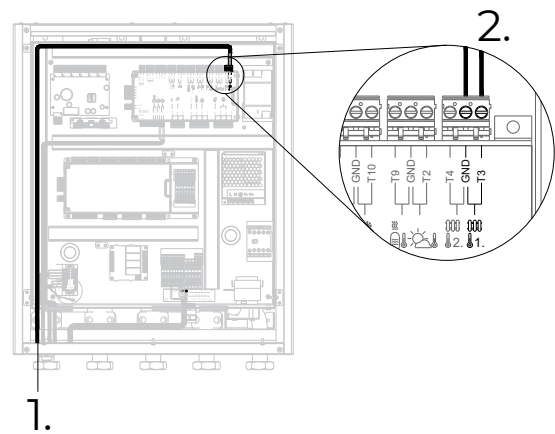
**Figure 47: Connecting cables of the circulation pump for heating/cooling loop 1**

1. Thread the circulation pump's power cable through the cable gland on the right side to the terminals (Figure 47).
2. Thread the circulation pump's PWM cable through the cable channel on the left side to the terminals (Figure 47).
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 the circulation pumps with the PWM2 (Solar) control signal for the heating loops.

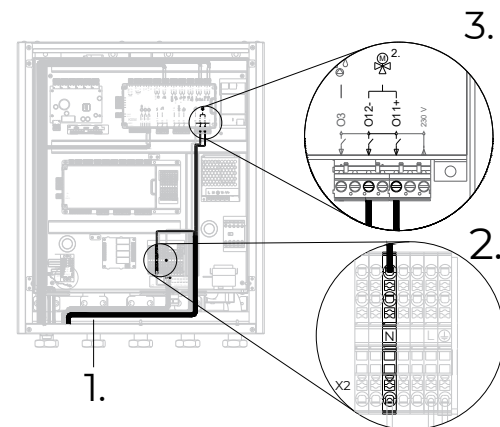
#### 3.6.2. CONNECTING THE TEMPERATURE SENSOR OF HEATING/COOLING LOOP 1



**Figure 48: Connecting the temperature sensor of heating/cooling loop 1**

1. Thread the sensor cable through the cable channel on the left side to the terminals (Figure 48).
2. Connect the sensor cable to the terminals T3 and GND.

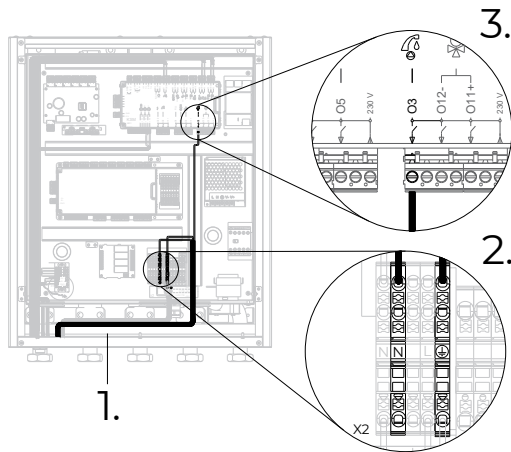
#### 3.6.3. CONNECTING THE MIXING VALVE OF HEATING/COOLING LOOP 1



**Figure 49: Connecting the cable of the mixing valve of the 1. heating/cooling loop**

1. Thread the mixing valve cable through the cable channel on the right side to the terminals (Figure 49).
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-.

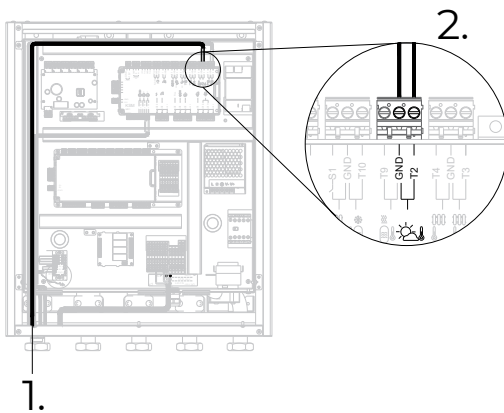
### 3.6.4. CONNECTING THE CIRCULATION PUMP TO CIRCULATE DHW



**Figure 50: 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 50).
2. Connect the ends of the power cable to terminals N and PE.
3. Connect cable L of the circulation pump to terminal O3.

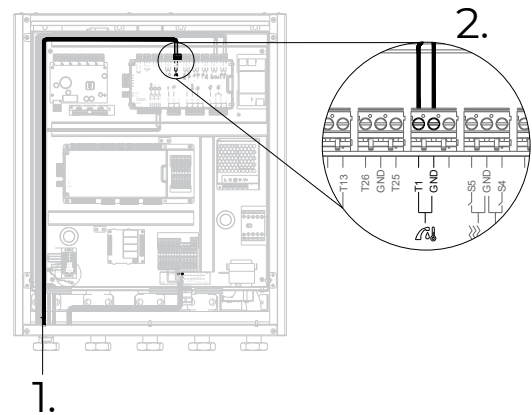
### 3.6.5. CONNECTING THE TEMPERATURE SENSOR FOR AMBIENT OUTDOOR TEMPERATURE



**Figure 51: Connecting the cable of the temperature sensor for ambient outdoor temperature**

1. Thread the sensor cable through the cable channel on the left side to the terminals (Figure 51).
2. Connect the sensor cable to the terminals T2 and GND.

### 3.6.6. CONNECTING THE TEMPERATURE SENSOR FOR THE DHW TANK



**Figure 52: Connecting the cable of the Temperature sensor for the temperature of the warm DHW tank**

1. Thread the sensor cable through the cable channel on the left side to the terminals (Figure 52).
2. Connect the sensor cable to the terminals T1 and GND.

### 3.6.7. 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 3.6 herein (heating loop, buffer tank, etc.). In doing so choose the right connections of the KSM regulator (Figure 53).

## 4 TECHNICAL CHARACTERISTICS

### 4.1. CONNECTIONS OF THE KSM REGULATOR

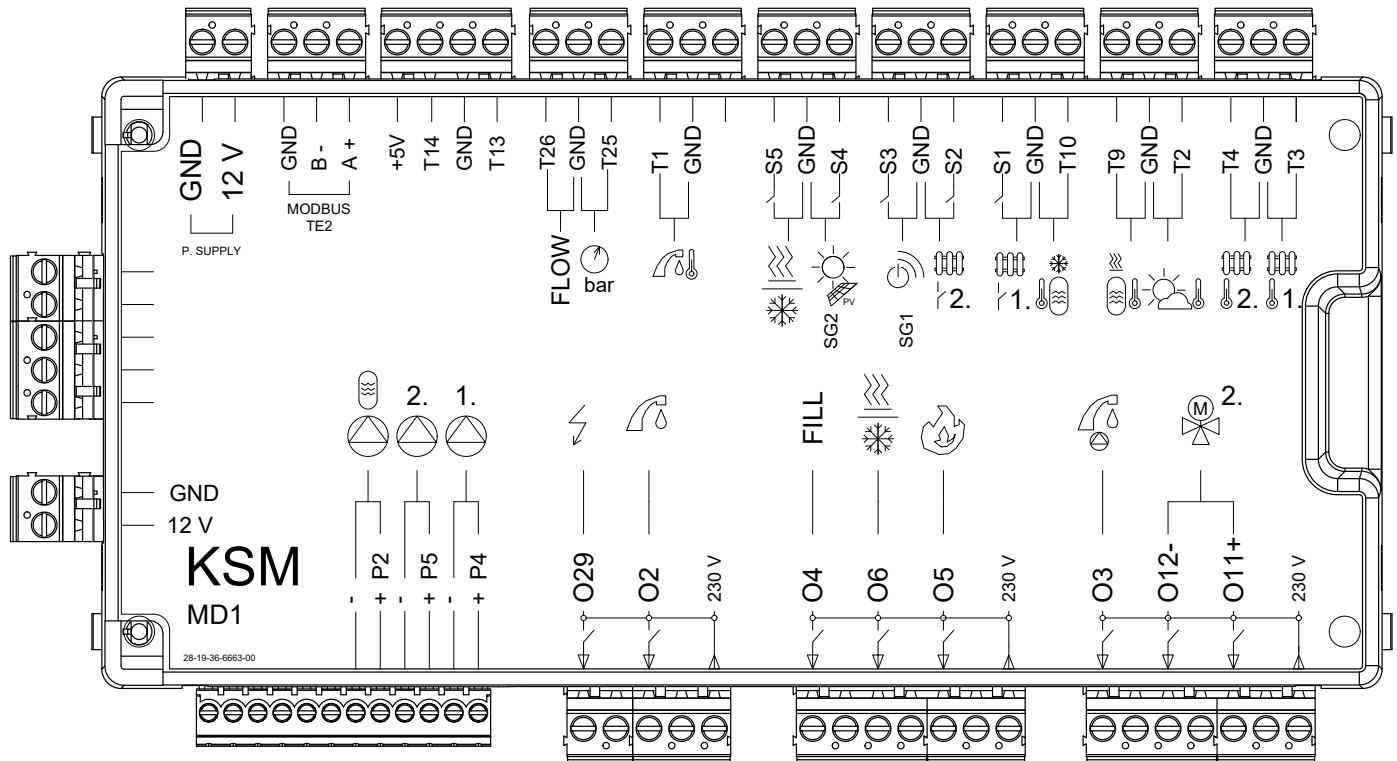


Figure 53: Regulator KSM

Label	Description	Label	Description
T 1	Temperature – DHW tank	O 6	Output – cooling
T 2	Temperature – outdoor	O 11+	Output – mixing valve loop 2 +
T 3	Temperature – loop 1	O 12-	Output – mixing valve loop 2 –
T 4	Temperature – loop 2	O 29	Output – additional source 1
T 9	Temperature – buffer tank 1	P 2	PWM2 heat sink pump
T 10	Temperature – buffer tank 2	P 4	PWM2 pump loop 1
T 13	Temperature – supply pipe (after the electrical heater)	P 5	PWM2 pump loop 2
T 14	Temperature – return pipe (indoor unit)	GND	Grounding
T 25	Pressure – heating system		
T 26	Flow – 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)		
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		

## 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.

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