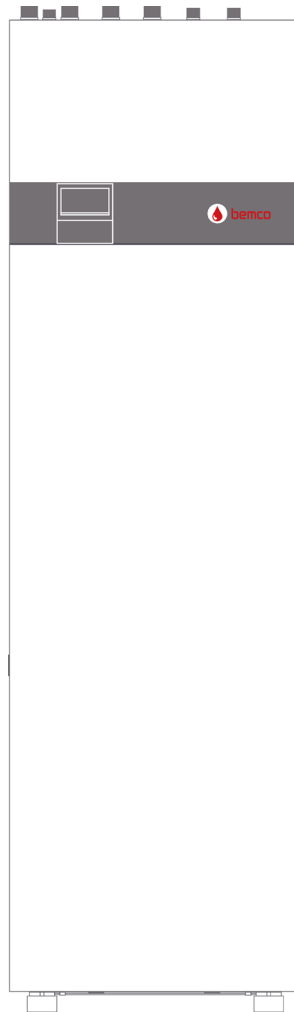


INSTALLATION & USER MANUAL

ALL IN ONE



Models :

BEAIO2250, BEAIO2250H



Please read this manual before using this product and keep it properly for reference.
It is essential to follow all instructions and recommendations provided in the user manual.
Any non-compliance with these instructions will void the warranty and BEMCO disclaims any responsibility for failures or damages resulting from incorrect or non-compliant use.

WARNING :

ALL IN ONE BEAIO20050 : only compatible with our **ECOPURE M R32** heat pumps **up to 12kW**.

ALL IN ONE BEAIO20050H : only compatible with our **ECOPURE MP R290** heat pumps **up to 12kW**.



BEMCO reserves the right to change product specifications, technical information and installation diagrams without notice. All information contained in this manual may not be copied or used without permission from BEMCO. BEMCO cannot be held responsible if technical information and diagrams are considered exemplary by third parties.

Content

1. Quick Start Notes for the installer.....	3
2. The advantages of the ALL IN ONE.....	4
3. Diagram of structure and connections.....	4
4. Specifications.....	5
5. Front panel opening.....	6
6. How to enable the ALL IN ONE.....	6
7. Water quality.....	7
8. Notes.....	8
9. Installation diagram.....	9
10. Wiring diagram.....	10

1. Quick Start Notes for the installer

1. Enable Bi-Block Mode (ALL IN ONE)

- **Steps :**
Menu → Installer Level (code: 1212) → Connections → Bi-Block Mode → Enable
- **Purpose :** Ensures proper communication between outdoor unit and the ALL IN ONE.

2. Disable TH8 Sensor on Outdoor Hydraulic PCB

- **Action :** Physically unplug the TH8 sensor (pre-installed water tank temperature sensor) from the outdoor unit's hydraulic PCB.
- **Reason :** TH8 is non-functional in Bi-Block Mode and may cause conflicts.

3. Initial Power-On: E60 Error Code

- **Expected Behavior :** Display may show E60 (indoor/outdoor communication error) after first-time installation.
- **Resolution :** Wait **3 minutes** for automatic resolution. Do NOT intervene unless error persists beyond this period.

4. ALL IN ONE Tank Parameter Settings

- **Wired Controller Configuration :**
Installer Level (code: 1212) → System Parameter → HEATING MODE SET
 - Set **04 HD** (Outdoor Backup Heater)
 - Set **06 I-BUF.HEATER** (Buffer Tank Electric Heater)
- **Critical Note :**
 - Do NOT activate both 04 HD and 06 I-BUF.HEATER simultaneously.
 - System prioritizes 04 HD (Backup Heater) if both are enabled.

Key Notes & Warnings

- 1. Outdoor Wire Controller :**
 - Do NOT connect to the outdoor unit. Keep as a spare part.
 - If connected, it will permanently display "Loading" in Bi-Block Mode.
- 2. Power Wiring (L-A / L-B) :**
 - Ensure correct phase sequence. Reversing L-A and L-B will cause indoor controller malfunction.

Verify all steps above before finalizing installation.

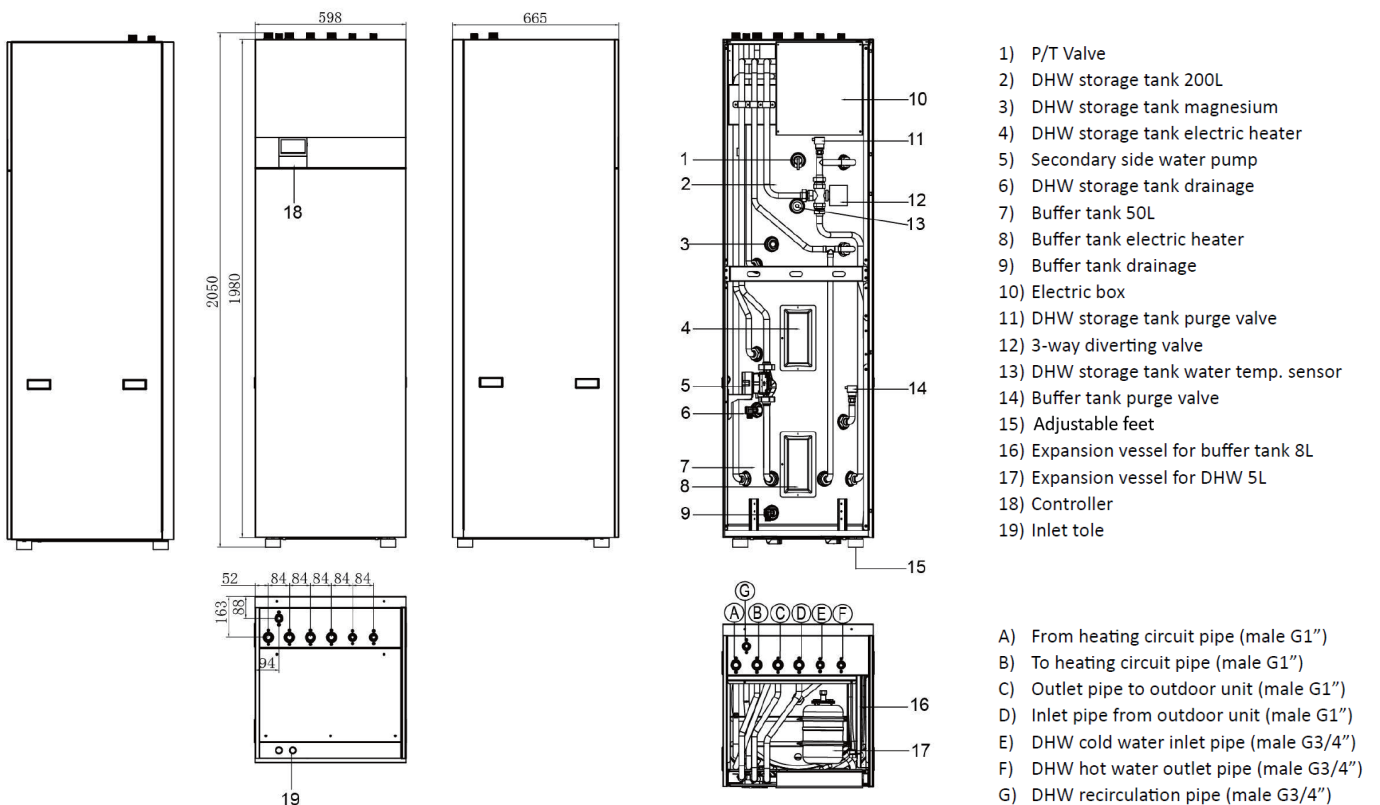
Failure to follow these instructions may result in operational faults or unnecessary service calls.

2. The advantages of the ALL IN ONE

1. The ALL IN ONE integrates the function of DHW and heating (refrigeration) through buffer tank with excellent thermal insulation performance, compact structure, convenient installation and construction which saves a lot of installation costs and space.
2. The internal material of the DHW water tank is 2205 stainless steel with excellent overall corrosion resistance.
3. The ALL IN ONE adopts advanced welding technology effectively improving weld quality and tensile strength and extending tank life.

3. Diagram of structure and connections

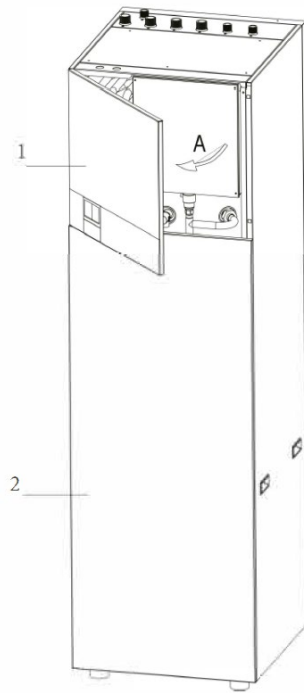
BEAIO20050/ BEAIO20050H



4. Specifications

Model		BEAIO20050	BEAIO20050H
Power supply	V,HZ,Ph	220-240~,50,1	
DHW tank	Rated volume (L)	170	
	Diameter (mm)	ø 470	
	Material of tank	INOX 2205	
	Inner tank thickness (mm)	1.5	
	Magnesium anode (mm)	22*300	
	Electric heating power (kW)	1.6	
	Max water temperature (°C)	75	
	Expansion vessel (L)	5	
	Max water operating pressure (Bar)	8	
	T/P Valve (°C/Bar)	99/7	
Coil	Material of coil	INOX 316	
	Coil (Diameter/Thickness/Length) (mm)	ø22*1.0*37500	
	Heat exchanger (m ²)	2.6	
	Max water operating pressure (Bar)	10	
Buffer tank	Rated volume (L)	50	
	Diameter (mm)	470	
	Material of tank	INOX 2205	
	Electric heating power (kW)	1.6	
	Secondary circulating pump	Yes	
	Expansion vessel (L)	8	
Others	Max water operating pressure (Bar)	8	
	Outside tank color	White	
	Foaming material	PU Foam	
	Contra panel	Yes	
	Purge valve	Yes	
	3-way diverting valve	Yes	
	Outdoor unit connection ports	G1 "	
	Space heating/cooling connection port	G1 "	
	Buffer tank drainage port	G1/2 "	
	DHW inlet	G3/4 "	
	DHW outlet	G3/4 "	
	DHW tank drainage port	G1/2 "	
	Net dimensions (mm)	598*665*2050	
	Net weight (kg)	182	
	Packing dimensions (mm)	685*750*2185	
Gross weight (kg)	204		

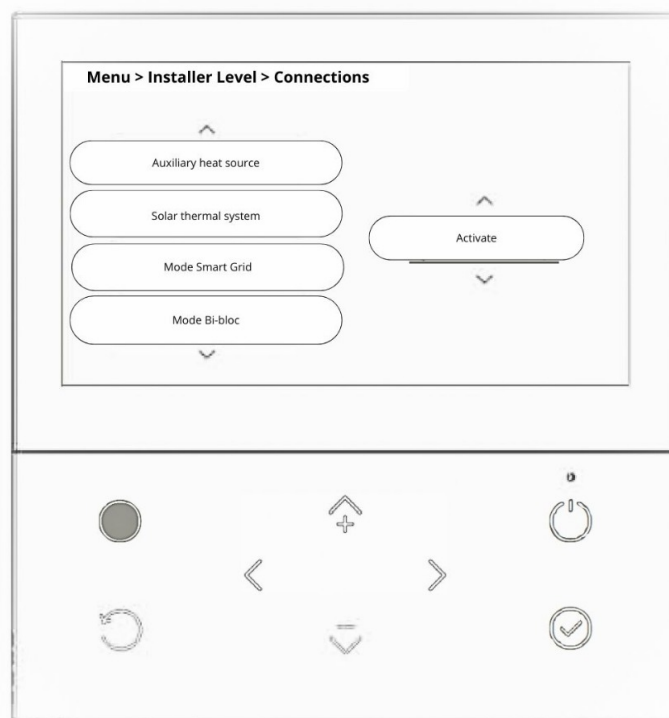
5. Front panel opening



As shown in the picture, the front panel is divided into two parts, which are hinged for opening and closing. The front panel can be opened along the direction A in the diagram.

6. How to enable the ALL IN ONE

Go to "Menu>Installer Level(PW 1212)>Connections", and then to set "Mode Bi-bloc" to "Activate" to enable the ALL IN ONE.



7. Water quality

The water quality must comply with the EU Council Directive 98/83/EC. The water quality should be checked before the tank is installed, to find out if there may be problems with corrosion or limescale. No antifreeze additives may be added to the domestic hot water circuit. For longer heat exchanger life, high water quality with low CaCO₃ levels must be ensured.

Water quality parameters	Interval
Chlorine ions (ppm)	X < 250
Sulfate (ppm)	X < 250
Calcium carbonate (ppm)	X < 250
PH	7-9
Conductivity (mS/m)	200-650
Total hardness (ppm)	60-150

8. Notes

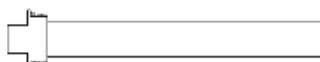
1. The ALL IN ONE must be installed on the ground, which must be able to support the total weight of the product filled with water.
2. There must be sufficient space for maintenance and inspection around the ALL IN ONE and the electrical control box and safety valve must face the easiest direction for maintenance.
3. Connecting lines to outdoor units should be as short as possible to reduce heat loss.
4. To ensure the best operating conditions for the unit, we recommend checking the wiring and water condition of the unit every 3 months during the working seasons, to check if the system is running out of water or if the interior is dirty.
5. Clean the filter regularly to maintain good water quality. Lack of water and dirty water affect the safety and efficiency of the system.
6. During the cold season, the appliance must not be switched off, otherwise the water in the tank may freeze and damage the All IN ONE.
7. If water consumption is sufficient, we recommend setting the water temperature to 40-45 degrees, which reduces heat loss from the water tank, saves energy and reduces scale build-up.
8. The first inspection of the hot water tank anode magnesium rod should ideally be carried out within the first 3 to 6 months of use, and the subsequent inspection interval is determined by the actual consumption of the magnesium rod (generally once every 6 to 12 months).
9. Note: (Magnesium anode)
Magnesium (Mg) anodes, also known as sacrificial anodes, can prevent eddy currents generated in the water tank from causing corrosion processes. In fact, compared to the lining material of the water tank, magnesium is a weakly charged metal, so that it first attracts the negative charge formed when heated with water, thus consuming itself, so that the anode sacrifices itself by corroding itself rather than corroding the water tank.

The ALL IN ONE has two anodes, one installed in the living water tank (upper part) and the other in the buffer tank (lower part).

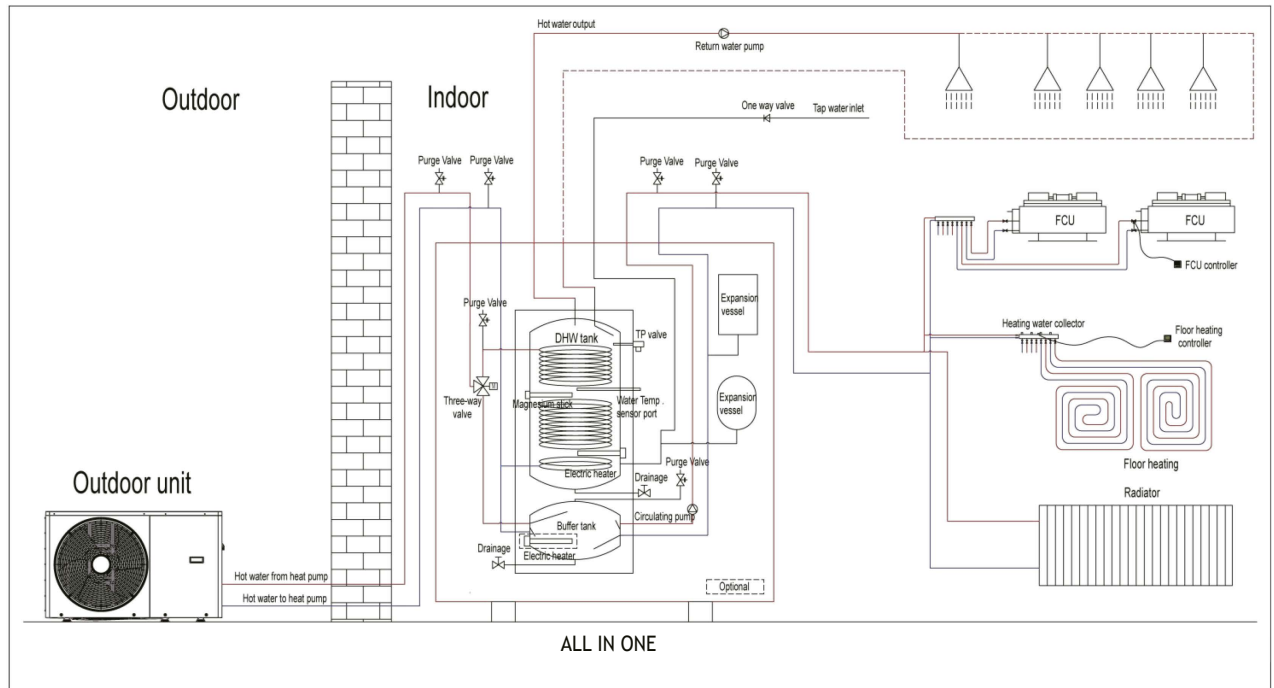
The integrity of the magnesium anode should be checked at least every six months (preferably every three months) and the operation should be carried out by competent professionals.

Before inspection :

1. Switch off power supply.
2. Turn off cold water supply, empty water tank, continue emptying water tank.
3. Unscrew the magnesium rod and check for corrosion; if the corrosion exceeds 2/3 of the magnesium rod surface, the rod must be replaced; if the corrosion is less, it can continue to be used.

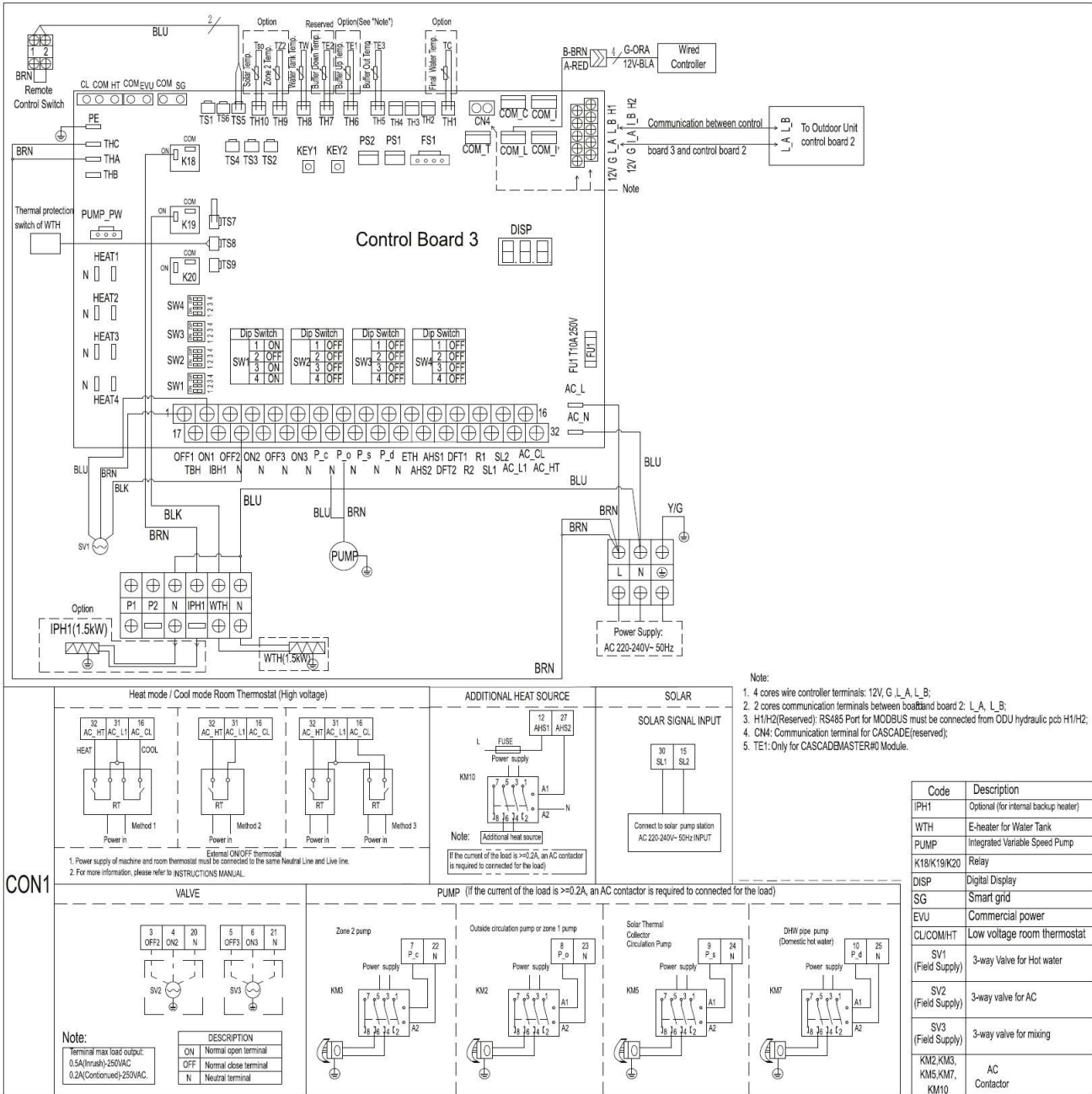


9. Installation diagram



10. Wiring diagram

BEAIO20050 / BEAIO20050H



- Note:
- 4 cores wire controller terminals: 12V, G, L, A, L, B;
 - 2 cores communication terminals between board and board 2: L, A, L, B;
 - H1/H2(Reserved): RS485 Port for MODBUS must be connected from ODU hydraulic pcb H1/H2;
 - CN4: Communication terminal for CASCADE(reserved);
 - TE1: Only for CASCADMASTER#0 Module.

Code	Description
IPH1	Optional (for internal backup heater)
WTH	E-heater for Water Tank
PUMP	Integrated Variable Speed Pump
K18/K19/K20	Relay
DISP	Digital Display
SG	Smart grid
EVU	Commercial power
CL/COM/HT	Low voltage room thermostat
SV1 (Field Supply)	3-way Valve for Hot water
SV2 (Field Supply)	3-way valve for AC
SV3 (Field Supply)	3-way valve for mixing
KM2, KM3, KM5, KM7, KM10	AC Contactor

CON1

