KODSAN

HEAT
INTERFACE
UNITS

INSTALLATION OPERATION
&
MAINTENANCE INSTRUCTIONS

2021
Ver. 1.0

CONTENTS

When replacing any part on this appliance, use only spare parts that you can be assured conform to the safety and performance specification that we require. Do not use reconditioned or copy parts that have not been clearly authorised by Ideal.
For the very latest copy of literature for specification and maintenance practices visit our website www.kodsan.com where you can download the relevant information in PDF format.

1. General Information

- Contains instructions and information on safe and correct installation and commissioning of the HIU
- Must be available to all users throughout the entire service life of the HIU
- Is intended for trained personnel who are familiar with the applicable standards and provisions and, in particular, with the relevant safety concepts and the operation and maintenance of the HIU
- Pictures and material lists show all-full components of HIU It may vary according to product type and application (underfloor or radiator heating).
- The operator is responsible for ensuring adherence to the local laws and regulations (e.g. accident prevention regulations, etc.).
- Incorrect operation or operating the HIU contrary to the specifications shall void all rights to any warranty claim.
- Under no circumstances, these values or any other values specified in this manual should not be exceeded.
- The HIU should be easily accessible in case of an emergency.
- Please check the HIU for completeness to make sure that it has not been damaged during transport.

Warning of electric shock.

The installation, commissioning, and repairs of the electrical connections of the HIU must be performed by qualified and authorized personnel only.

- Installation should be made by following the instructions provided by the manufacturer and in accordance with regulations. In case of danger and accidents, if possible and not risky, interrupt power supply and separate the heating system from other energy sources and seek help from qualified and authorized personnel immediately.
- Possible modifications or alterations to the HIU and its electrical components are only permitted with written permission of the manufacturer. Violation to this may void the warranty and the manufacturer is not liable for damage resulting from misuse of the system.

Risk of fatal or serious injury.

When operational, the HIU is connected to mains voltage. Do not touch electrical components with wet or damp body parts. Do not pull on electrical lines. Do not touch live parts. The system should be electrically disconnected for repairs. All repairs must be performed by qualified and authorized personnel only.

- The power supply to the HIU must be disconnected prior to maintenance, cleaning and repair work.

2. Installation and commissioning

Risk of death from electric shock.

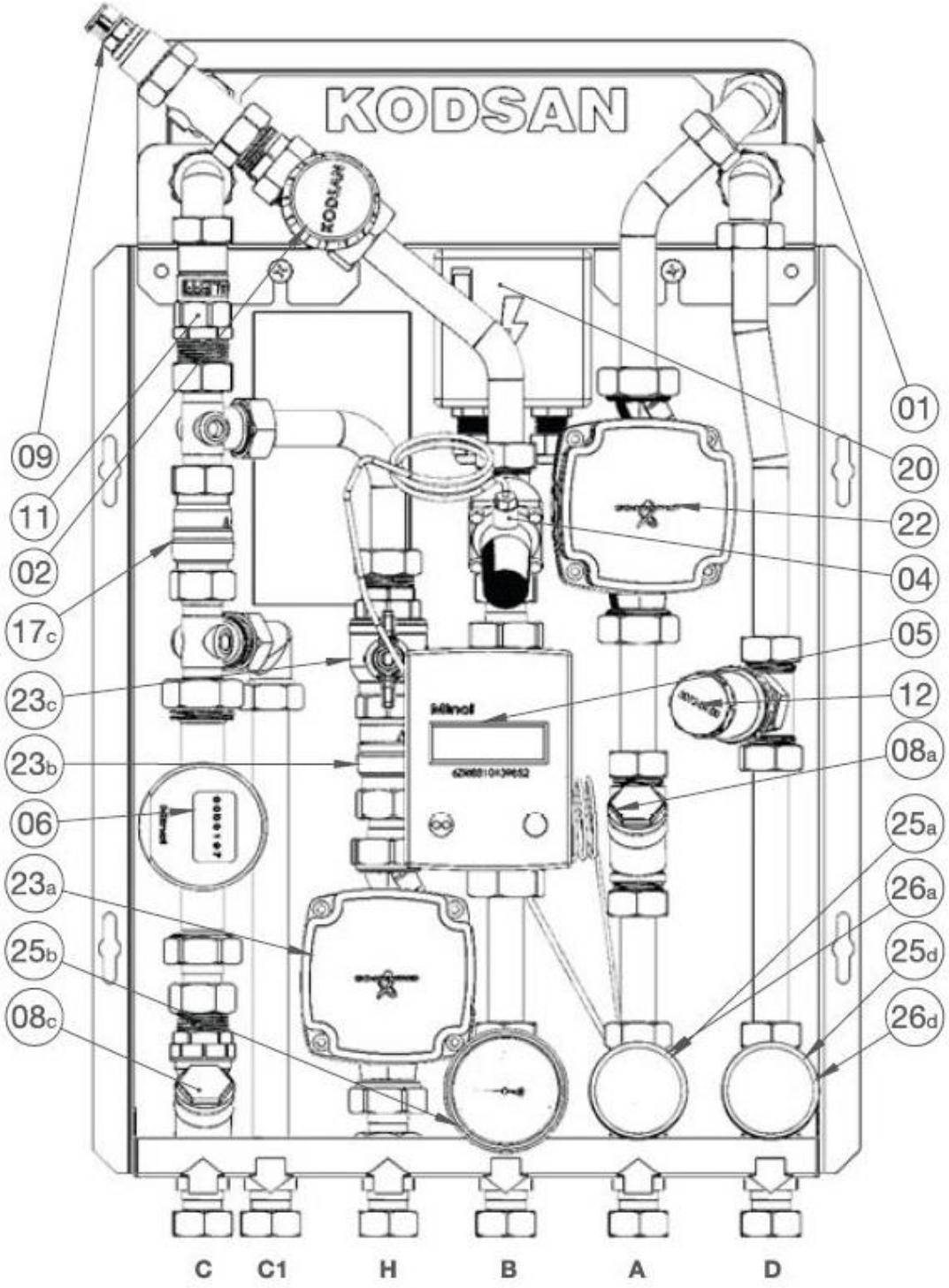
- Work on parts carrying live voltage must only be carried out by trained electricians.
- Disconnect the power supply of the system and secure it against being switched back on before carrying out any installation, maintenance, cleaning or repair work.

Important safety information

- Pay attention to the following before making electrical connections.
- The HIU must be powered by 230 V AC and grounded.
- The HIU must have an electrical connection that can be cutted during repair.

- Before water is added to the system, make sure all the screw connections are tight, if necessary, loosened screw connections should be tightened.
- The system should be installed in a frost-free room.
- The temperature and humidity should not exceed 50 °C and 60% respectively.
- Do not use unauthorized components or replacement parts which may limit the function, safety and warranty of the product.
- Leave required space around the HUI for installation and maintenance.
- The wall must be capable of bearing the weight of the HIU filled with water permanently
- Mounting orientation affects whether HUI components operate suitably. The assembly must be done in the direction specified by the manufacturer. If you want to mount in a different direction, contact your supplier.
- For wall-mounted products, there are connection holes on the HUI case. Mount with the help of the mounting plate supplied by the supplier or based on the dimensions given.
- Unused connections and shut-off valves must be capped with a plug. Where the plugs needs to be removed, this should only be done by an authorized service technician.
- Pressure shocks may occur if the stop valve is opened quickly.
- Always open the stop valve slowly and in a controlled way.
- Hard water causes limescale deposits in the HIU and diminishes the performance.
- Measure the water hardness in the supply system.
- Install a water softening unit from a degree of hardness of 4° Fr.
- When connecting the HIU to the drinking water pipeline the acknowledged rules of technology must be taken into account.
- The installation sequence must be observed to prevent electrochemical corrosion of galvanized lines and fittings.
- The valves are pre-installed at the factory but must be checked for leaks during commissioning (hydraulic pressure test).
- Recommendation: Install stranier into the cold water inlet.

3. Component List and Dimensions



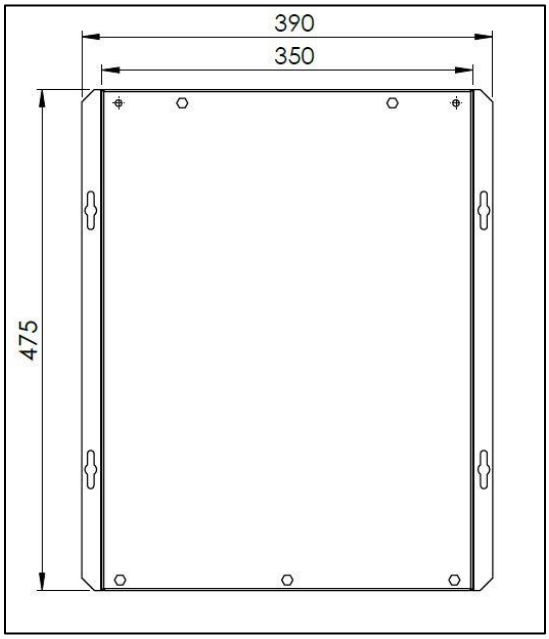
Component List

No	List
1	Heat Exchanger (DHW)
2	2-Way Modulating Valve
4	Differential pressure regulation valve
5	Heat meter
6	Cold Water Flow Meter
8	Strainer
9	Air vent
11	Flow Limiter
12	Water Hammer Arrestor

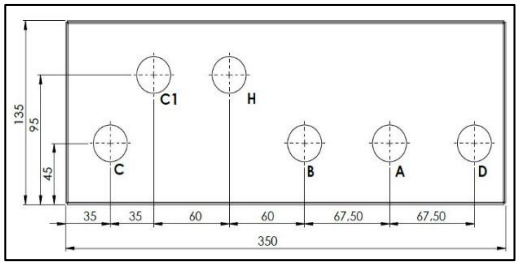
No	List
17	Non-Return Valve
20	Cable Terminal Box
22	Circulation Pump
23	Re-Circulation Pump
25	Temparature Gauge
26	Pressure Gauge

Dimensions

CASE

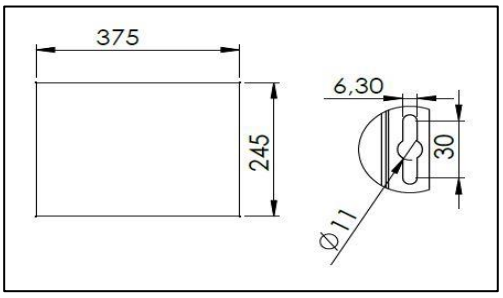


CONNECTION

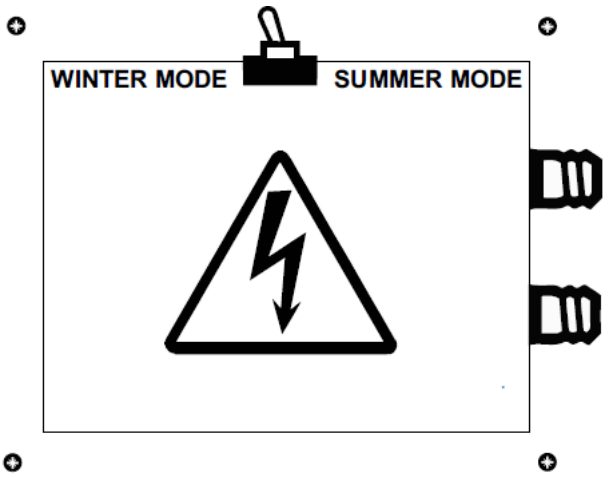


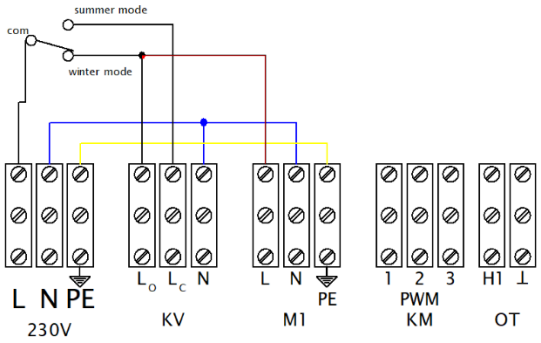
C Cold Water Mains
C1 Domestic Cold Water
H Re-Circulation
B District Heating Return
A District Heating Supply
D Domestic Hot Water

WALL CONNECTION



4. Electrical Wiring Diagram





KV Zone Control Valve
M1 Radiator Circ.Pump
KM Radiator Circ.Pump Auto Control(optional)
H1 Room Thermostat(optional)

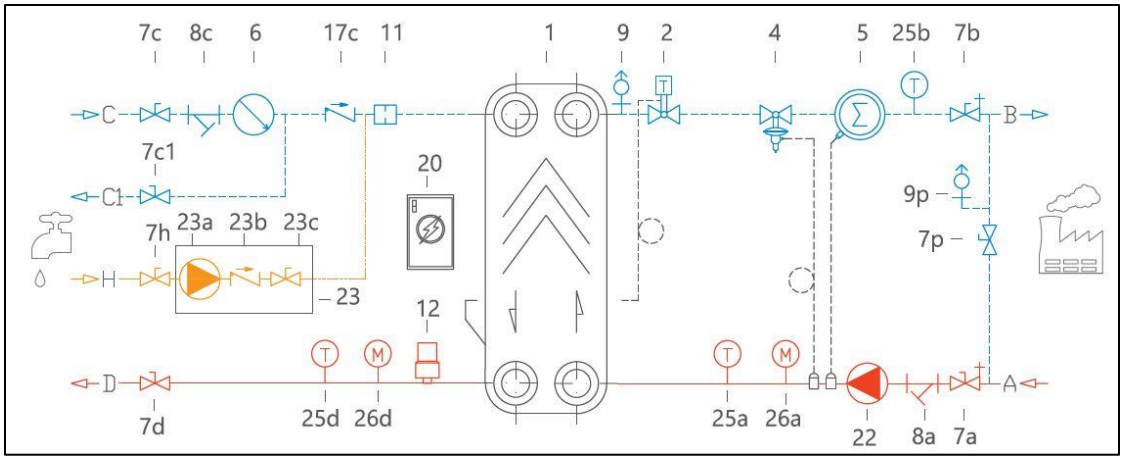
Risk of death from electric shock.

- Work on parts carrying live voltage must only be carried out by trained electricians.
- Disconnect the power supply of the system and secure it against being switched back on before carrying out any installation, maintenance, cleaning or repair work.

5. Symbols

Two-Way Motorized Valve	Ball Valve	Pressure Gauge	Drain Valve	Air Separator	Solar Panel
Three-Way Motorized Valve	Strainer	Thermometer	Shut Off Valve	Dirt Separator	Heat Pump
Three-Way Modulating Motorized Valve	Check Valve	Safety Thermostat	Pressure Relief Valve	Membrane Expansion Tank	Heat Exchanger
Three-Way Thermostatic Valve	Pressure Release Valve	Pump	Air Relief Cock	Underfloor Heating	Combi
Thermostatic Check Valve	Bypass Valve	Twin-Head Pump	Radiator or Underfloor Heating System	Radiator	Usage Area

6. Hydraulic Diagram



OTHER	
Heating System	: Two Pipe Flow
Mounting	: Wall Mounted
Plate Heat Exch.	: Stainless Steel, Copper Brazed
Pipework	: Stainless Steel

PRIMARY CIRCUIT	
Nominal Heat Capacity	: 7,3 – 72,9 kW
Min-Max Hot Water Flow Rate	: 96-1086 l/h
Min-Max Flow Temperature	: 50-90℃
Nominal Pressure	: PN10
Min. Req. Differential Pressure	:35 kPa

SECONDER CIRCUIT	
Maximum Flow Rate	: 1800 l/h
Nominal DHW Circuit Temp.	: 50-90℃
Nominal Pressure	: PN10

7. Installation

Follow these steps for the commissioning of the unit. In case of leaks or other abnormalities, please refer to the troubleshooting section further on in this manual.

All screw fittings must be checked and tightened if necessary prior to installation and commissioning.

a. Turn off all the taps in the house.
b. Connect the electric main (20) to the cable terminal box according to the diagram on the back of the cover.
c. All electric cables must pass through 3 plastic connectors located top of the case. Make sure that the cables are not squeezed and do not obstruct the cover when it is closed.
d. Slowly increase the water pressure in the unit by using the ball valve (16) and check whether leak occurs.
e. Turn the electric main switch to the on position.
f. Slowly open the space heating flow valve (N6) and check whether leak occurs.
g. Slowly open the space heating return valve (N5) and check whether leak occurs.
h. Slowly open the District Heating flow valve (N1).
i. Vent the air from district heating system (9). Start at the lowest and end at the highest points
j. Slowly open the District Heating return valve (N2).
k. Check heat flow to district heating system.
l. Slowly open the hot water tap. Check during this step continuously that the LED indicator of the zone control valve (15) is lit.
m. Open the tap completely once and allow all the air is out of the pipe and remain open for 5 minutes.
n. Close the tap.

The differential pressure regulation valve(s) on the HIU are in the adjusted position by the manufacturer. In cases where it will be adjusted to a different pressure value, the manufacturer should be contacted and the change should be made by authorized personnel.

Outside temperature sensors should be installed in such a way that they are not exposed to direct sunlight. It should not be placed close to doors, windows or ventilation outlets. The external sensor must be connected to the station, to the terminal block under electronic control

Severe scalding possible!

Do not reach into the hot water when emptying the HIU.

Ensure that the HIU has cooled down before carrying out maintenance, cleaning and repair work.

Install a suitable scalding protection device at every tapping point (for example, safety shut-off valve or thermostat mixer tap).

Sound

NOTE: It is normal that the HIU makes noise when hot water or heating are active. Also, the electronic valves will make a light (buzzing) noise during movement.

8. Maintenance

Only perform maintenance work on the HIU if the voltage supply is been disconnected.

Severe scalding possible.

Do not reach into the hot water when emptying the HIU.

Ensure that the HIU has cooled down before carrying out maintenance, cleaning and repair work.

Do not touch the tubings/pipings or components during operation.

Wear heat-resistant safety gloves if it is necessary to carry out work on hot components.

When repairing the unit or replacing parts, be sure to observe the specified installation positions and flow directions of the parts being replaced.

Annual maintenance intervals

1. General visual inspection

Check the station for leaks, annual maintenance intervals, if necessary.

Check the station for leaks and retighten sealing connections or replace seals, as required.

2. Functional checks

Check that settings and operating and performance parameters are set correctly.

Check flow noise during operation

3. Dirt trap Cleaning

Check and clean the dirt trap.

4. Plate heat exchanger Change

Check the plate heat exchanger for limescale deposits and clean if necessary.

5. Actions following maintenance work

Check that all screw fittings that were unscrewed have been retightened and retighten if necessary.

Remove all tools, materials and other equipment used from the working area.

Restore the power supply.

Slowly pressurize the HIU and vent it.

Readjust the system settings if required.

6. Replacement of wear parts

Please note that the HIU contains parts that, for technical reasons, are subject to wear depending on the intensity of use, even if the specified care and maintenance have been observed.

This especially applies to mechanical parts and parts that come into contact with water and steam, such as hoses, seals, valves, etc.

By their nature, defects caused by wear do not constitute a fault and are therefore not covered by the warranty or any guarantee. Nevertheless, these defects and malfunctions must be remedied only by trained specialist personnel.

After all processes are completed, slowly pressurize the HIU, fill and vent it.

9. Troubleshooting

General Troubleshooting

In case of operational malfunctions, the following key features should be checked before troubleshooting.
The HIU must be connected to electricity.
The strainer /filter in the District Heating flow pipe must be clean.
District Heating flow temperature should be required temperature.
HIU's differential pressure must be equal to or higher than the normal (local) differential pressure in the District Heating circuit; If in doubt, ask the District Heating facility officer.

Troubles hooting- DHW

Check the pressure gauge in the system and District Heating Circuit.

Problem	Possible Reason	Solution
Domestic hot water flows very less or does not flow at all.	Clogged filter in the flow(supply) or return line	Clean the filter(s).
	Defective or set too low DHW circulation pump	Check the circulating pump.
	Defective or clogged non-return valve	Clean or replace the non-return valve.
	No electricity	Check the electricity.
	Incorrect setting in automatic controls	See the attached instructions for the electronic controller to set the DHW electronic controller.
	Calcification in plate heat exchanger	Clean or replace the plate heat exchanger.
	Defective motorized valve	Check (use manual function) or replace the motorized valve.
	Defective temperature sensors	Check or replace the temperature sensor.
	Defective controller	Check or replace the controller.
Temperature at the tap too high; DHW tap load too high.	2-way modulating valve (thermostatic mixing valve) set too high	Check or replace the 2-way modulating valve (thermostatic mixing valve).
The temperature drops when the tap is opened.	Calcification in plate heat exchanger	Clean or replace the plate heat exchanger.
	Higher domestic hot water flow than the HIU was designed for	Decrease the DHW flow rate.
2-way modulating valve (thermostatic mixing valve) does not turn off.	Too low temperature difference between district heating flow and DHW set point	Lower the setpoint temperature or increase the district heating flow temperature.