DAIKIN

altherma

OPERATION MANUAL

Unit for air to water heat pump system

EBHQ006BBV3
EBHQ008BBV3

CONTENTS

READ THIS MANUAL ATTENTIVELY BEFORE STARTING UP THE UNIT. DO NOT THROW IT AWAY. KEEP IT IN YOUR FILES FOR FUTURE REFERENCE.

The English text is the original instruction. Other languages are translations of the original instructions.

This appliance is not intended for use by persons, including children, with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
Children should be supervised to ensure that they do not play with the appliance.

WARNING

Before operating the unit, make sure the installation has been carried out correctly by a professional Daikin dealer.

If you feel unsure about operation, contact your Daikin dealer for advice and information.

1. DEFINITIONS

1.1. Meaning of warnings and symbols

Warnings in this manual are classified according to their severity and probability of occurrence.

DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

NOTICE

Indicates situations that may result in equipment or property-damage accidents only.

INFORMATION

This symbol identifies useful tips or additional information.

Some types of danger are represented by special symbols:

Electric current.

Danger of burning and scalding.

1.2. Meaning of used terms

Installation manual:

Instruction manual specified for a certain product or application, explaining how to install, configure and maintain it.

Operation manual:

Instruction manual specified for a certain product or application, explaining how to operate it.

Maintenance instructions:

Instruction manual specified for a certain product or application, which explains (if relevant) how to install, configure, operate and/or maintain the product or application.

Dealer:

Sales distributor for products as per the subject of this manual.

Installer:

Technical skilled person who is qualified to install products as per the subject of this manual.

User:

Person who is owner of the product and/or operates the product.

Service company:

Qualified company which can perform or coordinate the required service to the unit.

Applicable legislation:

All international, European, national and local directives, laws, regulations and/or codes which are relevant and applicable for a certain product or domain.

Accessories:

Equipment which is delivered with the unit and which needs to be installed according to instructions in the documentation.

Optional equipment:

Equipment which can optionally be combined to the products as per the subject of this manual.

Field supply:

Equipment which needs to be installed according to instructions in this manual, but which are not supplied by Daikin.

2. General Safety precautions

The precautions listed here are divided into the following four types. They all cover very important topics, so be sure to follow them carefully.

DANGER: ELECTRICAL SHOCK

Switch off all power supply before removing the switch box service panel or before making any connections or touching electrical parts.

Do not touch any switch with wet fingers. Touching a switch with wet fingers can cause electrical shock. Before touching electrical parts, turn off all applicable power supply.

To avoid electric shock, be sure to disconnect the power supply 1 minute or more before servicing the electrical parts. Even after 1 minute, always measure the voltage at the terminals of main circuit capacitors or electrical parts and, before touching, be sure that those voltages are 50 V DC or less.

When service panels are removed, live parts can easily be touched by accident. Never leave the unit unattended during installation or servicing when the service panel is removed.

DANGER: DO NOT TOUCH PIPING AND INTERNAL PARTS

Do not touch the refrigerant piping, water piping or internal parts during and immediately after operation. The piping and internal parts may be hot or cold depending on the working condition of the unit.

Your hand may suffer burns or frostbite if you touch the piping or internal parts. To avoid injury, give the piping and internal parts time to return to normal temperature or, if you must touch them, be sure to wear protective gloves.

WARNING

- Never directly touch any accidental leaking refrigerant. This could result in severe wounds caused by frostbite.
- Do not touch the refrigerant pipes during and immediately after operation as the refrigerant pipes may be hot or cold, depending on the condition of the refrigerant flowing through the refrigerant piping, compressor, and other refrigerant cycle parts. Your hands may suffer burns or frostbite if you touch the refrigerant pipes. To avoid injury, give the pipes time to return to normal temperature or, if you must touch them, be sure to wear proper gloves.

CAUTION

Do not rinse the unit. This may cause electric shocks or fire.

3. Introduction

3.1. This manual

This manual describes how to start up and switch off the unit, set parameters and configure the schedule timer by means of the controller, maintain the unit and solve operational problems.

CAUTION

For "Checks before initial start-up" and "Initial start-up" procedures refer to the installation manual of this unit.

3.2. This unit

These units are used for both heating and cooling applications. The units can be combined with Daikin fan coil units, floor heating applications, low temperature radiators, domestic hot water tank (option) and solar kit (option).

Heating/cooling units and heating only units

The monoblock unit range consists of two main versions: a heating/cooling (uses EKCBX indoor unit) version and a heating only (uses EKCBH indoor unit) version.

Both versions are delivered optionally with a separate backup heater for additional heating capacity during cold outdoor temperatures. The backup heater also serves as a backup in case of malfunctioning of the unit and for freeze protection of the outside water piping during winter time.

- **Datacable** (obligatory option)

  The EKCOMCAB1 thermistor interconnection cable must be connected to allow communication between the indoor unit and outdoor unit.
- **Domestic hot water tank** (option)

  An optional EKHW* domestic hot water tank with integrated 3 kW electrical booster heater can be connected to the indoor unit. The domestic hot water tank is available in three sizes: 150, 200 and 300 litre. Refer to the domestic hot water tank installation manual for further details.
- **Solar kit for domestic hot water tank** (option)

  For information concerning the EKSOLHW solar kit, refer to the installation manual of that kit.
- **Digital I/O PCB kit** (option)

  An optional EKRP1HB digital I/O PCB can be connected to the indoor unit and allows:
  - remote alarm output
  - heating/cooling ON/OFF output
  - bivalent operation (permission signal for the auxiliary boiler)

  Refer to the operation manual of the indoor unit and to the installation manual of the digital I/O PCB for more information.

  Refer to the wiring diagram or connection diagram for connecting this PCB to the unit.
- **Bottom plate heater EKBPHT** (refer to the installation manual) (option)
- **Remote thermostat kit** (option)

  An optional room thermostat EKRTW, EKRTWA, or EKRTR can be connected to the indoor unit. Refer to the installation manual of the room thermostat for more information.

To obtain more information concerning these option kits, please refer to dedicated installation manuals of the kits.

4. Operating the unit

4.1. Introduction

The heat pump system is designed to provide you a comfortable indoor climate for many years at low energy consumption.

To get the most comfort with the lowest energy consumption out of your system, it is very important to observe the items listed below.

Defining possible schedule timer actions for each day and filling out the form at the very end of this manual can help you minimize the energy consumption. Ask your installer for support if required.

- Make sure the heat pump system works at the lowest possible hot water temperature required to heat your house.

  To optimize this, make sure the weather dependent set point is used and configured to match the installation environment. Refer to the chapter "Field settings" in the EKCB indoor unit operation manual.
- It is advised to install a room thermostat connected to the indoor unit. This will prevent excessive space heating and will stop the unit and the circulation pump when the room temperature is above the thermostat set point.
- Next recommendations only apply to installations with an optional domestic hot water tank.
  - Make sure the domestic hot water is only heated up to the domestic hot water temperature you require.
    Start with a low domestic hot water temperature set point (e.g. 45°C), and only increase if you feel that the domestic hot water supply temperature is not sufficient.
  - Make sure the domestic water heating by booster heater only start 1 to 2 hours before you expect domestic hot water usage.
    In case you only need a lot of domestic hot water in the evening or in the morning, only allow domestic water heating by booster heater during early morning and early evening. Also keep hours with low electricity cost tariffs in mind.
    To do this, program both the domestic water heating and booster heating schedule timer. Refer to Programming in chapter "Programming and consulting the schedule timer" in the EKCB indoor unit installation manual.

4.2. Operating the unit

Operating the unit comes down to operating the digital controller.

For operating the unit and detailed description of the field settings, refer to the EKCB indoor unit operation manual.

5. Maintenance

5.1. Important information regarding the refrigerant used

This product contains fluorinated greenhouse gases covered by the Kyoto Protocol.

Refrigerant type: R410A
GWP(1) value: 1975

(1) GWP = global warming potential

Periodical inspections for refrigerant leaks may be required depending on European or local legislation. Please contact your local dealer for more information.

5.2. Maintenance activities

DANGER

- Do not touch water pipes during and immediately after operation as the pipes may be hot. Your hand may suffer burns. To avoid injury, give the piping time to return to normal temperature or be sure to wear proper gloves.
- Do not touch any switch with wet fingers. Touching a switch with wet fingers can cause electrical shock.

WARNING

Do not touch the refrigerant pipes during and immediately after operation as the refrigerant pipes may be hot or cold, depending on the condition of the refrigerant flowing through the refrigerant piping, compressor, and other refrigerant cycle parts. Your hands may suffer burns or frostbite if you touch the refrigerant pipes. To avoid injury, give the pipes time to return to normal temperature or, if you must touch them, be sure to wear proper gloves.

In order to ensure optimal availability of the unit, a number of checks and inspections on the unit and the field wiring have to be carried out at regular intervals, preferably yearly. This maintenance must be carried out by your local Daikin technician (see installation manual).

The only maintenance which may be required by the operator is:

- keeping the remote controller clean by means of a soft damp cloth,
- checking if the water pressure indicated on the manometer is above 1 bar.

Only for the optional domestic hot water tank:

- A check for correct operation of the pressure relief valve installed on your domestic hot water tank, has to be carried out at least every 6 months: it is important that the lever on the valve is actuated to prevent accumulation of mineral deposits that may impair valve operation and to confirm that the valve and discharge pipe are not blocked. The lever should be operated slowly and smoothly to avoid a sudden rush of hot water from the discharge pipe.
  Failure to operate the relief valve actuating lever may result in the water heater exploding.
- Continuous leakage of water from the discharge pipe may indicate a problem with the water heater.
- If a discharge pipe is connected to the pressure relief device it must be installed in a continuously downward direction and in a frost-free environment. It must be left open to the atmosphere.

CAUTION

If the supply cord is damaged, it must be replaced by the manufacturer, its agent or similar qualified persons in order to avoid hazards.

5.3. Standstill

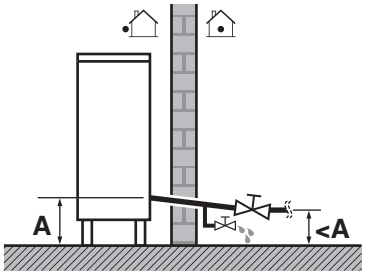
CAUTION

During longer periods of standstill, e.g. during summer with a heating only application or during longer periods when there is no need of an operating unit, it is very important NOT TO SWITCH OFF THE POWER SUPPLY towards the unit.

Switching off the power supply stops the automatic repetitive movement of the motor in order to prevent it from getting jammed.

CAUTION

If no glycol is in the system in case of a power supply failure or pump operating failure, drain the system (as suggested in the figure below).



When water is at standstill inside the system, freezing up is very likely to happen and damaging the system in the process.

6. TROUBLESHOOTING

The guidelines below might help to solve your problem. If you cannot solve the problem, consult your installer.

POSSIBLE CAUSES	CORRECTIVE ACTIONS
No readings on the remote controller (blank display)	• Check if the mains power is still connected to your installation. • The benefit kWh rate power supply is active (see installation manual).
One of the error codes appears	Consult your local dealer. Refer to the installation manual for a detailed list of error codes.
The schedule timer does work but the programmed actions are executed at the wrong time (e.g. 1 hour too late or too early)	Check if the clock and the day of the week are set correctly, correct if necessary.
The schedule timer is programmed but does not work.	In case the ⏲⊗ icon is not displayed, push the ⏲⊗ button to enable the schedule timer.
Capacity shortage	Consult your local dealer.

7. DISPOSAL REQUIREMENTS

Dismantling of the unit, treatment of the refrigerant, of oil and of other parts must be done in accordance with relevant local and national legislation.

Your product is marked with this symbol. This means that electrical and electronic products shall not be mixed with unsorted household waste.

Do not try to dismantle the system yourself: the dismantling of the system, treatment of the refrigerant, of oil and other parts must be done by a qualified installer in accordance with relevant local and national legislation.

Units must be treated at a specialized treatment facility for re-use, recycling and recovery. By ensuring this product is disposed off correctly, you will help to prevent potential negative consequences for the environment and human health. Please contact the installer or local authority for more information.

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