Use this manual together with the user’s manuals for the heat pump unit and other optional equipment. This installation manual describes the installation methods and precautions related to the remote control.

1. Safety precautions

- Please read this manual carefully before the installation work to install the unit properly. Every one of the following instructions is important to be observed strictly.

  **WARNING**

  - The appliance shall be installed in accordance with national wiring regulations.
  - Ask a professional contractor to carry out the installation work according to the installation manual.
  - Improper installation work may result in electric shocks, fire or break-down.
  - Shut off the main power before starting electrical work. Otherwise, it could result in electric shocks, break-down or malfunction.
  - Do not install the unit in inappropriate environment or where in fire, flammable gas could generate, flow in, accumulate or leak. This unit should not be used in places where the air contains dense oil mist, steam, organic solvent vapor, corrosive gases (such as ammonium, sulfuric compounds, and acid), or places where acidic or alkaline solutions or special sprays, etc. are used. Doing so may cause electric shocks, break-down, smoke or fire due to corrosion or deterioration of the units performance.
  - Do not install the unit where water vapor is generated excessively or condensation occurs. It could cause electric shocks, fire or break-down.
  - Use the specified cables for wiring, and connect them securely with care to protect electronic parts from external force. Improper connections or fixing could cause heat generation, fire, etc.
  - Seal the inlet hole for remote control cable with putty. If moisture, water, insect, etc. enters through the hole, it could cause electric shocks, fire or break-down.
  - When installing the unit at a hospital, telecommunication facility, etc., take measures to suppress noises. The influences transmitted from the remote control to medical or communication equipment could disrupt medical activities, video broadcasting or cause noise interference.

- The pictograms used in the text have following meanings.

  - [ ] Never do.
  - [ ] Shall be supervised not to play with appliance.

2. Accessories & parts prepared at site

<table>
<thead>
<tr>
<th>Item name</th>
<th>Qty</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch box</td>
<td>1pc</td>
<td>For 1 piece or 2 pieces</td>
</tr>
<tr>
<td>Thin steel conduit tube (JIS C8330)</td>
<td>As required</td>
<td></td>
</tr>
<tr>
<td>Lock nut, bushing (JIS C8330)</td>
<td>As required</td>
<td></td>
</tr>
<tr>
<td>Cable cover</td>
<td>As required</td>
<td></td>
</tr>
<tr>
<td>Putty</td>
<td>Suitable</td>
<td></td>
</tr>
<tr>
<td>Molly anchor</td>
<td>As required</td>
<td></td>
</tr>
<tr>
<td>R/C cable (0.3mm² x 2-core)</td>
<td>As required</td>
<td></td>
</tr>
</tbody>
</table>

- The max size for the wires used in the R/C case is 0.5mm². Therefore when the cable length is longer than 100m, connect the wires from R/C to larger size ones near the outside of R/C. When wires are connected, take measure to prevent water, etc from entering inside of connected part.

3. Installation place

- Installing method: [With using a switch box]
  [Installed directly on a wall]
- Wiring direction: [Backward]
  [Upper center] or [Upper left]
- Cautions for selecting installation place:
  - (1) Installation surface must be flat and sufficiently strong. R/C case must not be deformed.

- [Upper center] or [Upper left] or [Backward]

- Wiring: 30mm

- Secure minimum spaces for disassembling the case. Top face/R-L side face ≥50mm Bottom face ≥120mm. If using L-shaped screw-driver, 50mm or more is available.

Request

- Do not install the R/C at a place where it is exposed to direct sunlight or surrounding air in which temperature exceeds 40ºC or drops below 0ºC. It could cause discoloration, deformation, malfunction or break-down.

- The appliance is not to be used by children or persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction.

- Children shall be supervised not to play with appliance.

[Image of installation diagram with dimensions and notes]
4. Installation and wiring work

Dimensions (View from front side)

- To remove the upper case from the bottom case of R/C:
  - Insert the tip of a flat-head screwdriver or the like in the recess at the lower part of R/C and twist it lightly to remove.
- Take care to protect the removed upper case from moisture or dust.

1. Connect the wires from X and Y terminals of R/C to X and Y terminals of heat pump unit.
   - There is no polarity of R/C wiring (X and Y).

2. Embed the switch box and the R/C wires beforehand.
   - Seal the inlet hole for the R/C wiring with putty.

3. When wires are passed through the bottom case, fix the bottom case on the switch box at 2 places.

4. Fixing hole

5. When fixing the bottom case diagonally at 2 places, cut out the thin wall part of the case.

6. Fix wires such that they will run around the terminal screws on the upper case of R/C.

7. Install the upper case with care not to pinch wires of R/C.

In case of embedding wiring

- When the wiring is retrieved backward:
  - Cut out the thin wall parts of the cases for the hole size to fit to the wire size.

- If the hole is cut too large, moisture, dust or insects may enter.
  - Seal gaps with putty or the like.

- When taking the wiring out from the upper center, open a hole before separating the upper and bottom cases. This will reduce risk of damaging the PCB and facilitate subsequent work.

- When taking the wiring out from the upper left, take care not to damage the PCB and not to leave any chips inside.
5. Main/Sub setting when more than one remote controls are used.

Up to two units of R/C can be used at the maximum for one heat pump unit or one group. Operation range is different depending on the main or sub R/C.

<table>
<thead>
<tr>
<th>R/C function</th>
<th>Main</th>
<th>Sub</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run/Pause</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Setting of hot water temp</td>
<td>☐</td>
<td>-</td>
</tr>
<tr>
<td>Setting of hot water amount</td>
<td>☐</td>
<td>-</td>
</tr>
<tr>
<td>Hot water amount</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Heating ON/OFF</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Heating Set temp</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Schedule setting</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Operation to fill up</td>
<td>☐</td>
<td>-</td>
</tr>
<tr>
<td>Test run</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Error history display</td>
<td>☐</td>
<td>-</td>
</tr>
<tr>
<td>R/C function setting</td>
<td>☐</td>
<td>-</td>
</tr>
</tbody>
</table>

Note: Initializing of password

Administrator password (for daily setting items) and service password (for installation, test run and maintenance) are used.

- Default setting of Administrator password is "0000". This setting can be changed (Refer to the Instruction Manual).

  - If the administrator password is forgotten, it can be initialized by pressing [Schedule setting] switch and [Operation to fill up] switch on the administrator password input screen simultaneously for 5 seconds.

- Service password is "9999", which cannot be changed.

  - When inputting the administrator password, the service password is also acceptable.

Note: Test run

When starting operation of the heat pump unit for the first time, [Water pump test run] and [Primary setting of operation] shall be done in advance. Regarding the way for test run, please refer to the item [7. installation setting and test run] in this manual.

6. Power supply and initial setting

Set the main and sub R/C according to the display at the power on

1. If the main and sub are not set yet, [Select Main/sub set input] screen is displayed. (Screen ②)

   - When tapping the [Main] or [Sub] button, the initial setting starts.
   - If wrong button is tapped by mistake, it is available to change the setting after completion of the initial setting.
   - If using 2 sets of R/C, if the first one is set for the main, the other is set for the sub automatically.

Caution

If only one set of R/C, tap [Main] button in the state of initial setting, it will keep on waiting till either one of the buttons is selected.

If two sets of R/Cs are used, when either one of them is tapped, the setting starts.

3. If the screen is not tapped for 15 seconds, [Yes] (Continue) is selected and default settings.

   - [Yes]: Continue
   - [No]: Change

   - If the screen is not tapped for 15 seconds or more, [Yes] (Continue) is selected and the display changes to the screen ②.

Caution

① date setting and ② time setting are necessary also for the sub R/C.

Set these for both the main and the sub R/C.

③ The mode of operation at the power on is [Pause]. (In Pause, the operation to top up does not start)
7. Installation settings and Test run

**TOP screen** ⇒ **Menu** ⇒ **Installation setting**

Service password is "9999".

**Installation settings**

- Set with [A] [V] buttons.
- Tap Set to save.

**Installation date**

Set the contact for the customer to ask servicing.

**Company information**

Enter the phone No. of the contact up to 13x 1-byte letters.
- Tap Set to save.

Move to the screen of a selected menu.

**Test run**

- Primary setting of operation
- Water pump test run
- After end of primary operation

After feeding water, please start [Water pump test run] and purge air.

After end of [Water pump test run], please start [Primary setting of operation]. Please refer to next page for detail.

---

Test run procedure

1. Please prepare for the test run according to instruction described on the installation manual of the heat pump unit.
2. Tap the [Start] button on the [Water pump test run] screen of item 7 [Installation settings and Test run].
   - [Water pump test run] can be implemented with the Dip SW of the heat pump unit as well. Please refer to the installation manual of the heat pump unit for detail.
3. Return to the TOP screen. When the [Water pump test run] starts, the message of "In water pump check operation" is displayed. Please purge air, and then open the drain valve and relief valve for the cylinder and check the water drain off continuously.
4. After the end of the [Water pump test run], please stop the water pump.

---

**In water pump check operation**

- In primary operation
- After end of primary operation

After finishing the cleaning of strainers, please check no leakage in the system and purge air again.

---

Caution

- Because of the risk for the heat pump unit to have failure, after the completion of the [Water pump test run] and [Primary setting of operation], please start operation to top up.
- After the completion of the [Primary setting of operation], it does not start operation to top up, because the heat pump unit is pausing.

---

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8. User environment (Simplified setting for operation pattern)

This heat pump unit is operated to top up hot water according to the target hot water amount set at each time zone. By selecting the operation pattern for the typical business type which is similar to your actual usage pattern of hot water, you can set the operation pattern easily.

**Setting method**

1. [TOP screen] ➔ [Menu] ➔ [Administrator password (Service password "9999") ➔ [Admin settings] ➔ [User environment]

And then select the business model, and tap Yes on the [User Environment acknowledge] screen.

**Setting method (2)**

To edit the operation pattern set by [User environment], please edit it by following procedure. Push the Schedule setting switch on the panel ➔ [Setting of weekly operation pattern].

Target water level for the business model

<table>
<thead>
<tr>
<th>Time</th>
<th>Default</th>
<th>Care home/ hospital</th>
<th>Canteen / cafeteria</th>
<th>Hotel</th>
<th>Business hotel</th>
<th>Sports Club / gym</th>
<th>Sports Club / gym</th>
<th>HW temp (common)</th>
</tr>
</thead>
<tbody>
<tr>
<td>22:00</td>
<td>100%</td>
<td>60%</td>
<td>60%</td>
<td>60%</td>
<td>40%</td>
<td>40%</td>
<td>40%</td>
<td>40%</td>
</tr>
<tr>
<td>0:00</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>4:00</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>8:00</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>12:00</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>16:00</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>20:00</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

By selecting the business type whose operation pattern is similar to yours, the operation pattern can be set easily.

9. R/C function settings

[TOP screen] ➔ [Menu] ➔ [R/C function settings]

- **Service password input**
  - The service password is "9999". (Unable to change)

- **External input**
  - When several heat pump units are connected, if power failure occurs during operation, the range to apply the external input can be set. [Valid]: It returns to the state before power failure, soon after power recovery. [Individual]: This is applied only to the HP unit that received the input signal. [All units]: This is applied to all HP units connected in the system.

- **Auto-restart**
  - When the heat pump unit is connected, with this function, the range to apply the external input can be set.
  - [Valid]: It returns to the state before power failure, soon after power recovery.
  - [Invalid]: It pauses after power recovery.

Factory default: [Valid]

**Information**

What is the Auto-restart? This is the function to restart the unit automatically under the same operating state as that before power failure, when power is recovered, by memorizing the operating state before power failure. In case that the setting of [Auto-restart] is [Valid], even though the power failure occurs, the unit can restart automatically after power recovery.
10. Service & Maintenance

When tapping Yes, the following data is transferred to the heat pump unit selected:
- Hot water set temp
- Cumulative operation hours of compressor
- Cumulative operation hours of water pump
- HP 7seg P01, P78, P79 data
- CW FV1 compensation value
- Upper limit of HW temp

When tapping Yes, all HP Units connected are stopped. With this, anti-freezing operation cannot work.

If leaving the hot water supply system for long period, be sure to drain off.

When tapping Yes, the setting of the heat pump unit connected is saved. If several heat pump units are connected, the unit to be sent the saved data can be selected.

The remote controller can save the cumulative operation hours of the components for water and refrigerant circuit memorized in the heat pump unit as backup. If the PCB of the heat pump unit has malfunction, the data saved in R/C can be written in the new PCB of the heat pump unit with the [Transfer the saved data] function.

The service password is “9999”. (Unable to change)

When 8 or more units are connected, the 8th and the subsequent units are displayed on the next page.

If next service date is entered, messages are displayed at the every Run/Pause of operation on the service month. If the Cancel button is tapped, messages are not displayed.

The microcomputer of the heat pump unit connected is reset. (Like a state of recovery after power fail)

[CPU reset]

[Restore default settings] The settings of the R/C and the HP unit connected are restored to the factory settings.

[Touch panel calibration] Adjust the position if the display and the touch position are unmatched.