TOSHIBA
Leading innovation

AIR CONDITIONER (SPLIT TYPE)
Installation Manual

Indoor Unit
Model name:

Ceiling Type
RAV-SM567CTP-E
RAV-SM807CTP-E
RAV-SM1107CTP-E
RAV-SM1407CTP-E
RAV-SM1607CTP-E

For commercial use
Original instruction

Please read this Installation Manual carefully before installing the Air Conditioner.
• This Manual describes the installation method of the indoor unit.
• For installation of the outdoor unit, follow the Installation Manual attached to the outdoor unit.

ADOPTION OF NEW REFRIGERANT

This Air Conditioner uses R410A an environmentally friendly refrigerant.
Thank you for purchasing this Toshiba air conditioner.

Please read carefully through these instructions that contain important information which complies with the 'Machinery' Directive (Directive 2006/42/EC), and ensure that you understand them. After completing the installation work, hand over this Installation Manual as well as the Owner’s Manual provided to the user, and ask the user to keep them in a safe place for future reference.

**Definition of Qualified Installer or Qualified Service Person**

**Generic Denomination:** Air Conditioner

The air conditioner must be installed, maintained, repaired and removed by a qualified installer or qualified service person. When any of these jobs is to be done, ask a qualified installer or qualified service person to do them for you. A qualified installer or qualified service person is an agent who has the qualifications and knowledge described in the table below.

<table>
<thead>
<tr>
<th>Agent</th>
<th>Qualifications and knowledge which the agent must have</th>
</tr>
</thead>
</table>
| Qualified installer | • The qualified installer is a person who installs, maintains, relocates and removes the air conditioners made by Toshiba Carrier Corporation. He or she has been trained to install, maintain, relocate and remove the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such operations by an individual or individuals who have been trained in these operations and is thus thoroughly acquainted with the knowledge related to these operations.
  
  • The qualified installer who is allowed to do the electrical work involved in installation, relocation and removal has the qualifications pertaining to this electrical work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to electrical work on the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work.
  
  • The qualified installer who is allowed to do the refrigerant handling and piping work involved in installation, relocation and removal has the qualifications pertaining to this refrigerant handling and piping work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to refrigerant handling and piping work on the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work.
  
  • The qualified installer who is allowed to work at heights has been trained in matters relating to working at heights with the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work. |
| Qualified service person | • The qualified service person is a person who installs, repairs, maintains, relocates and removes the air conditioners made by Toshiba Carrier Corporation. He or she has been trained to install, repair, maintain, relocate and remove the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such operations by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to these operations.
  
  • The qualified service person who is allowed to do the electrical work involved in installation, repair, relocation and removal has the qualifications pertaining to this electrical work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to electrical work on the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work.
  
  • The qualified service person who is allowed to do the refrigerant handling and piping work involved in installation, repair, relocation and removal has the qualifications pertaining to this refrigerant handling and piping work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to refrigerant handling and piping work on the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work.
  
  • The qualified service person who is allowed to work at heights has been trained in matters relating to working at heights with the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work. |

**Definition of Protective Gear**

When the air conditioner is to be transported, installed, maintained, repaired or removed, wear protective gloves and ‘safety’ work clothing.

In addition to such normal protective gear, wear the protective gear described below when undertaking the special work detailed in the table below.

Failure to wear the proper protective gear is dangerous because you will be more susceptible to injury, burns, electric shocks and other injuries.

<table>
<thead>
<tr>
<th>Work undertaken</th>
<th>Protective gear worn</th>
</tr>
</thead>
<tbody>
<tr>
<td>All types of work</td>
<td>Protective gloves</td>
</tr>
<tr>
<td>Electrical-related work</td>
<td>Gloves to provide protection for electricians</td>
</tr>
<tr>
<td>Transportation of heavy objects</td>
<td>Clothing to provide protection from electric shock</td>
</tr>
<tr>
<td>Work done at heights (30 cm or more)</td>
<td>Helmets for use in industry</td>
</tr>
<tr>
<td>Repair of outdoor unit</td>
<td>Gloves to provide protection for electricians</td>
</tr>
</tbody>
</table>

**Definition of Protective Gear**

**Work undertaken**

- All types of work
- Electrical-related work
- Transportation of heavy objects
- Work done at heights (30 cm or more)
- Repair of outdoor unit

**Protective gear worn**

- Protective gloves
- Gloves to provide protection for electricians
- Clothing to provide protection from electric shock
- Helmets for use in industry
- Gloves to provide protection for electricians
Warning indications on the air conditioner unit

<table>
<thead>
<tr>
<th>Warning Indication</th>
<th>Description</th>
</tr>
</thead>
</table>
| **WARNING** | ELECTRICAL SHOCK HAZARD  
Disconnect all remote electric power supplies before servicing. |
| **WARNING** | Moving parts.  
Do not operate unit with grille removed.  
Stop the unit before servicing. |
| **CAUTION** | High temperature parts.  
You might get burned when removing this panel. |
| **CAUTION** | Do not touch the aluminum fins of the unit.  
Doing so may result in injury. |
| **CAUTION** | BURST HAZARD  
Open the service valves before the operation, otherwise there might be the burst. |

Precautions for safety

The manufacturer shall not assume any liability for the damage caused by not observing the description of this manual.

**WARNING**

General
- Before starting to install the air conditioner, read through the Installation Manual carefully, and follow its instructions to install the air conditioner.
- Only a qualified installer (*1) or qualified service person (*1) is allowed to do installation work. Inappropriate installation may result in water leakage, electric shock or fire.
- Do not use any refrigerant different from the one specified for complement or replacement. Otherwise, abnormally high pressure may be generated in the refrigeration cycle, which may result in a failure or explosion of the product or an injury to your body.
- Before opening the intake grille of the indoor unit or service panel of the outdoor unit, set the circuit breaker to the OFF position. Failure to set the circuit breaker to the OFF position may result in electric shocks through contact with the interior parts. Only a qualified installer (*1) or qualified service person (*1) is allowed to remove the intake grille of the indoor unit or service panel of the outdoor unit and do the work required.
- Before carrying out the installation, maintenance, repair or removal work, set the circuit breaker to the OFF position. Otherwise, electric shocks may result.
- Place a “Work in progress” sign near the circuit breaker while the installation, maintenance, repair or removal work is being carried out. There is a danger of electric shocks if the circuit breaker is set to ON by mistake.
- Only a qualified installer (*1) or qualified service person (*1) is allowed to undertake work at heights using a stand of 50 cm or more or to remove the intake grille of the indoor unit to undertake work.
- Wear protective gloves and safety work clothing during installation, servicing and removal.
- Do not touch the aluminium fin of the unit. You may injure yourself if you do so. If the fin must be touched for some reason, first put on protective gloves and safety work clothing, and then proceed.
- Before opening the intake grille, set the circuit breaker to the OFF position. Failure to set the circuit breaker to the OFF position may result in injury through contact with the rotation parts. Only a qualified installer (*1) or qualified service person (*1) is allowed to remove the intake grille and do the work required.
- When work is performed at heights, use a ladder which complies with the ISO 14122 standard, and follow the procedure in the ladder’s instructions. Also wear a helmet for use in industry as protective gear to undertake the work.
- Before cleaning the filter or other parts of the outdoor unit, set the circuit breaker to OFF without fail, and place a “Work in progress” sign near the circuit breaker before proceeding with the work.
- Before working at heights, put a sign in place so that no-one will approach the work location, before proceeding with the work. Parts and other objects may fall from above, possibly injuring a person below. While carrying out the work, wear a helmet for protection from falling objects.
- The refrigerant used by this air conditioner is the R410A.
- The air conditioner must be transported in stable condition. If any part of the product is broken, contact the dealer.
- When the air conditioner must be transported by hand, carry it by two or more people.
- Do not move or repair any unit by yourself. There is high voltage inside the unit. You may get electric shock when removing the cover and main unit.
- To transport the air conditioner, wear shoes with additional protective toe caps.
- To transport the air conditioner, do not take hold of the bands around the packing carton. You may injure yourself if the bands should break.

Selection of installation location
- When the air conditioner is installed in a small room, provide appropriate measures to ensure that the concentration of refrigerant leakage occur in the room does not exceed the critical level.
- Do not install in a location where flammable gas leaks are possible. If the gas leak and accumulate around the unit, it may ignite and cause a fire.
- Install the indoor unit at least 2.5 m above the floor level since otherwise the users may injure themselves or receive electric shocks if they poke their fingers or other objects into the indoor unit while the air conditioner is running.
- Do not place any combustion appliance in a place where it is directly exposed to the wind of air conditioner, otherwise it may cause imperfect combustion.
Installation

- When the indoor unit is to be suspended, the designated hanging bolts (M10 or W3/8) and nuts (M10 or W3/8) must be used.
- Install the air conditioner securely in a location where the base can sustain the weight adequately. If the strength is not enough, the unit may fall down resulting in injury.
- Follow the instructions in the Installation Manual to install the air conditioner. Failure to follow these instructions may cause the product to fall down or topple over or give rise to noise, vibration, water leakage or other troubles.
- Carry out the specified installation work to guard against the possibility of high winds and earthquake. If the air conditioner is not installed appropriately, a unit may topple over or fall down, causing an accident.
- If refrigerant gas has leaked during the installation work, ventilate the room immediately. If the leaked refrigerant gas comes in contact with fire, noxious gas may generate.
- Use forklift to carry in the air conditioner units and use winch or hoist at installation of them.

Refrigerant piping

- Install the refrigerant pipe securely during the installation work before operating the air conditioner. If the compressor is operated with the valve open and without refrigerant pipe, the compressor sucks air and the refrigeration cycles is over pressurized, which may cause a injury.
- Tighten the flare nut with a torque wrench in the specified manner. Excessive tighten of the flare nut may cause a crack in the flare nut after a long period, which may result in refrigerant leakage.
- After the installation work, confirm that refrigerant gas does not leak. If refrigerant gas leaks into the room and flows near a fire source, such as a cooking range, noxious gas may generate.
- When the air conditioner has been installed or relocated, follow the instructions in the Installation Manual and purge the air completely so that no gases other than the refrigerant will be mixed in the refrigeration cycle. Failure to purge the air completely may cause the air conditioner to malfunction.
- Nitrogen gas must be used for the airtight test.
- The charge hose must be connected in such a way that it is not slack.

Electrical wiring

- Only a qualified installer (*1) or qualified service person (*1) is allowed to carry out the electrical work of the air conditioner. Under no circumstances must this work be done by an unqualified individual since failure to carry out the work properly may result in electric shocks and/or electrical leaks.
- To connect the electrical wires, repair the electrical parts or undertake other electrical jobs, wear gloves to provide protection for electricians, insulating shoes and clothing to provide protection from electric shocks. Failure to wear protective gear may result in electric shocks.
- Nitrogen gas must be used for the airtight test.
- Use wiring that meets the specifications in the Installation Manual and the stipulations in the local regulations and laws. Use of wiring which does not meet the specifications may give rise to electric shocks, electrical leakage, smoking and/or a fire.
- Connect earth wire. (Grounding work)
- Incomplete grounding causes an electric shock.
- Do not connect earth wires to gas pipes, water pipes, and lightning conductor or telephone earth wires.
- After completing the repair or relocation work, check that the earth wires are connected properly.
- Install a circuit breaker that meets the specifications in the installation manual and the stipulations in the local regulations and laws.
- Install the circuit breaker where it can be easily accessed by the agent.
- When installing the circuit breaker outdoors, install one which is designed to be used outdoors.
- Under no circumstances the power wire must not be extended. Connection trouble in the places where the wire is extended may give rise to smoking and/or a fire.
- Electrical wiring work shall be conducted according to law and regulation in the community and installation manual. Failure to do so may result in electrocution or short circuit.

Test run

- Before operating the air conditioner after having completed the work, check that the electrical control box cover of the indoor unit and service panel of the outdoor unit are closed, and set the circuit breaker to the ON position. You may receive an electric shock if the power is turned on without first conducting these checks.
- If there is any kind of trouble (such as an error display has appeared, smell of burning, abnormal sounds, the air conditioner fails to cool or heat or water is leaking) has occurred in the air conditioner, do not touch the air conditioner yourself but set the circuit breaker to the OFF position, and contact a qualified service person (*1) to have the repairs done. Do not set the circuit breaker to the ON position until the repairs are completed.
- After the installation work, follow the Owner’s Manual to explain to the customer how to use and maintain the unit.

Relocation

- Only a qualified installer (*1) or qualified service person (*1) is allowed to relocate the air conditioner. It is dangerous for the air conditioner to be relocated by an unqualified individual since a fire, electric shocks, injury, water leakage, noise and/or vibration may result.
- When carrying out the pump-down work shut down the compressor before disconnecting the refrigerant pipe. Disconnecting the refrigerant pipe with the service valve left open and the compressor still operating will cause air or other gas to be sucked in, raising the pressure inside the refrigeration cycle to an abnormally high level, and possibly resulting in rupture, injury or other trouble.

Explanations given to user

- Upon completion of the installation work, tell the user where the circuit breaker is located. If the user does not know where the circuit breaker is, he or she will not be able to turn it off in the event that trouble has occurred in the air conditioner.
- If the fan grille is damaged, do not approach the outdoor unit but set the circuit breaker to the OFF position, and contact a qualified service person (*1) to have the repairs done. Do not set the circuit breaker to the ON position until the repairs are completed.
- Always check that the unit is not operated with the valve open and without refrigerant pipe, the compressor sucks air and the refrigeration cycles is over pressurized, which may cause a injury.
- Check that refrigerant gas does not leak. If refrigerant gas leaks into the room and flows near a fire source, such as a cooking range, noxious gas may generate.

CAUTION

New refrigerant air conditioner installation

- This air conditioner adopts the new HFC refrigerant (R410A) which does not destroy ozone layer.
- The characteristics of R410A refrigerant are: easy to absorb water, oxidizing membrane or oil, and its pressure is approx. 1.6 times higher than that of refrigerant R22. Accompanied with the new refrigerant, refrigerating oil has also been changed. Therefore, do not let water, dust, former refrigerant, or refrigerating oil enter the refrigeration cycle during installation work.
- To prevent changing an incorrect refrigerant and refrigerating oil, the sizes of connecting sections of charging port of the main unit and installation tools are changed from those for the conventional refrigerant.
- Accordingly the exclusive tools are required for the new refrigerant (R410A).
- For connecting pipes, use new and clean piping designed for R410A, and please care so that water or dust does not enter.

To disconnect the appliance from main power supply.

- This appliance must be connected to the main power supply by means of a switch with a contact separation of at least 3 mm.

The installation fuse (all types can be used) must be used for the power supply line of this conditioner.

(*1) Refer to the “Definition of Qualified Installer or Qualified Service Person.”
### 2 Accessory parts

<table>
<thead>
<tr>
<th>Part name</th>
<th>Qty</th>
<th>Shape</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installation Manual</td>
<td>1</td>
<td>This manual</td>
<td>(Hand over to customers) (For other languages that do not appear in this Installation Manual, please refer to the enclosed CD-R.)</td>
</tr>
<tr>
<td>Owner's Manual</td>
<td>1</td>
<td></td>
<td>(Hand over to customers) (For other languages that do not appear in this Owner's Manual, please refer to the enclosed CD-R.)</td>
</tr>
<tr>
<td>Heat insulating pipe</td>
<td>2</td>
<td></td>
<td>For heat insulation of pipe connecting section</td>
</tr>
<tr>
<td>Installation pattern</td>
<td>1</td>
<td></td>
<td>Drawing-out port of hanging bolt pipe</td>
</tr>
<tr>
<td>Washer</td>
<td>4</td>
<td>M10 x Ø25</td>
<td>For holding down unit</td>
</tr>
<tr>
<td>Hose band</td>
<td>2</td>
<td></td>
<td>For connecting drain pipe</td>
</tr>
<tr>
<td>Drain hose</td>
<td>1</td>
<td></td>
<td>For connecting drain pipe</td>
</tr>
<tr>
<td>Bushing</td>
<td>1</td>
<td></td>
<td>For protection of edge at power taking-in port</td>
</tr>
<tr>
<td>Heat insulator</td>
<td>1</td>
<td></td>
<td>For heat insulation of drain hose (101 x 190 x 190)</td>
</tr>
<tr>
<td>Heat insulator of top plate</td>
<td>1</td>
<td></td>
<td>For upper pipe hole of indoor unit (61 x 120 x 160)</td>
</tr>
<tr>
<td>Banding band</td>
<td>6</td>
<td></td>
<td>For heat insulation of pipe connecting section (n=4) and drain hose heat insulator (n=2).</td>
</tr>
</tbody>
</table>

### 3 Selection of installation place

#### Avoid installing in the following places.

Select a location for the indoor unit where the cool or warm air will circulate evenly.

Avoid installation in the following kinds of locations:

- **Saline area (coastal area).**
- **Locations with acidic or alkaline atmospheres** (such as areas with hot springs, factories where chemicals or pharmaceuticals are made and places where the exhaust air from combustion appliances will be sucked into the unit). Doing so may cause the heat exchanger (its aluminum fins and copper pipes) and other parts to become corroded.
- **Places where iron or other metal dust is present.** If iron or other metal dust adheres to or collects on the interior of the air conditioner, it may spontaneously combust and start a fire.
- **Locations with atmospheres with mist of cutting oil or other types of machine oil.** Doing so may cause the heat exchanger to become corroded, mists caused by the blockage of the heat exchanger to be generated, the plastic parts to be damaged, the heat insulators to peel off, and other such problems to result.
- **Locations where vapors from food oils are formed** (such as kitchens where food oils are used). Blocked filters may cause the air conditioner’s performance to deteriorate, condensation to form, the plastic parts to be damaged, and other such problems to result.
- **Locations near obstructions such as ventilation openings or lighting fixtures where the flow of the blown air will be disrupted** (a disruption of the air flow may cause the air conditioner’s performance to deteriorate or the unit to shut down).
- **Locations where an in-house power generator is used for the power supply.** The power line frequency and voltage may fluctuate, and the air conditioner may not work properly as a result.
- **On truck cranes, ships or other moving conveyances.**
- **The air conditioner must not be used for special applications** (such as for storing food, plants, precision instruments or art works). (The quality of the items stored may be degraded.)
- **Locations where high frequencies are generated** (by inverter equipment, in-house power generators, medical equipment or communication equipment). (Malfunctioning or control trouble in the air conditioner or noise may adversely affect the equipment’s operation.)
- **Locations where there is anything under the unit installed that would be compromised by wetness.** (If the drain has become blocked or when the humidity is over 80 %, condensation from the indoor unit will drip, possibly causing damage to anything underneath.)
- **In the case of the wireless type of system, rooms with the inverter type of fluorescent lighting or locations exposed to direct sunlight.** (The signals from the wireless remote controller may not be sensed.)
- **Locations where organic solvents are being used.**
- **The air conditioner cannot be used for liquefied carbonic acid cooling or in chemical plants.**
- **Location near doors or windows where the air conditioner may come into contact with high-temperature, high-humidity outdoor air.** (Condensation may occur as a result.)
- **Locations where special sprays are used frequently.**
Install space

(Unit: mm)

Reserve sufficient space required for installation or service work.

Ceiling height

If height of ceiling exceeds 3.5 m, hot air becomes difficult to reach the floor surface, and then the change of setup of high ceiling is necessary.

For the change method of high ceiling, refer to the application control, "Installing indoor unit on high ceiling" in this Manual.

Height list of ceiling possible to be installed

<table>
<thead>
<tr>
<th>Model RAV-</th>
<th>Possible installed ceiling height</th>
<th>SET DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>SM56, SM80</td>
<td>Up to 4.0 m</td>
<td>0000</td>
</tr>
<tr>
<td>SM110, SM140, SM160</td>
<td>Up to 4.3 m</td>
<td>0003</td>
</tr>
</tbody>
</table>

The lighting time of the filter sign (notification of filter cleaning) on the remote controller can be changed according to installation conditions.

When it is difficult to obtain satisfactory heating due to location place of the indoor unit or the structure of the room, the detection temperature of heating can be raised.

For change the setup time, refer to the application control, "Filter sign setting" and "To secure better effect of heating" in this Manual.

In case of wireless type

Decide the position which remote controller is operated and the installation place.

And then refer to the Installation Manual of the wireless remote controller kit sold separately.

(The signal of the wireless type remote controller can be received within approx. 8 m. This distance is a criterion and varies a little according to capacity of the battery)

- To prevent malfunction, select a place where is not affected by a fluorescent lamp or direct sunlight.
- Two wireless-type indoor units can be set in a room.

External dimensions

(Unit: mm)

<table>
<thead>
<tr>
<th>Model RAV-</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>SM56</td>
<td>952</td>
<td>906</td>
<td>Ø6.4</td>
<td>Ø12.7</td>
</tr>
<tr>
<td>SM80</td>
<td>1299</td>
<td>1222</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SM110, SM140, SM160</td>
<td>1588</td>
<td>1540</td>
<td>Ø9.5</td>
<td>Ø15.9</td>
</tr>
</tbody>
</table>

4 Installation

CAUTION

Strictly comply with the following rules to prevent damage of the indoor units and human injury.

- Do not put a heavy article on the indoor unit or let a person get on it. (Even units are packaged)
- Carry the indoor unit as it is packaged if possible. If carrying the indoor unit unpacked, use buffering cloth or other material to not damage the unit.
- Carry the package by two or more persons, and do not bundle it with plastic band at positions other than specified.
- To install vibration isolation material to hanging bolts, confirm that it does not increase the unit vibration.
Installation of hanging bolt

- Consider the piping/wiring after the unit is hung to determine the location of the indoor unit installation and orientation.
- After the location of the indoor unit installation has been determined, install hanging bolts.
- For the dimensions of the hanging bolt pitches, refer to the external view and installation pattern.

Procure hanging bolts washer and nuts for installing the indoor unit (these are not supplied).

<table>
<thead>
<tr>
<th>Hanging bolt</th>
<th>M10 or W3/8</th>
<th>4 pieces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nut</td>
<td>M10 or W3/8</td>
<td>8 pieces</td>
</tr>
</tbody>
</table>

- To fasten the hanging bracket from above and below, twelve pieces of nuts are required.

How to use attached installation pattern

Using the pattern, positioning of the hanging bolt and pipe hole can be performed. The installation pattern is printed on the packing carton. Cut it off the carton.

* As an error to some degree may generate on the pattern size due to temperature and humidity, be sure to confirm the size.

Hole for drawing out pipe from top face
(Bottom View)

Additional hole required when Drain-Up Kit is used (Ø100)
Pipe hole on top face (Ø100)
Back side of chassis

Hole for drawing out pipe from back side
(Front View)

Backside cover
Pipe hole on back side (Ø100)

Installation of remote controller (Sold separately)

For installation of the remote controller, follow the Installation Manual attached with the remote controller.
- Pull out the remote controller cord together with the refrigerant pipe or drain pipe.
- Pass the remote controller cord through upper side of the refrigerant pipe and drain pipe.
- Do not leave the remote controller at a place exposed to the direct sunlight and near a stove.
- Operate the remote controller, confirm that the indoor unit receives a signal surely, and then install it. (Wireless type)
- Keep 1 m or more from the devices such as television, stereo. (Disturbance of image or noise may generate.) (Wireless type)

Before installation

1 Removal of air intake grille
   1) Remove the screws of air intake grille fixing knob on a side of each filter.
   2) Slide the air intake grille fixing knobs (two positions) toward the arrow direction (OPEN), and then open the air intake grille.
   3) With the air intake grille open, hold the hinge from above and below with one hand and take out the air intake grille with the other hand while gently pushing it. (There are two air intake grilles.)

2 Removal of side panel
   After removing the side panel fixing screws (1 each at right and left), slide the side panel forward and then remove it.

CAUTION

Cushions are inserted between the side panel and hanging hook for transportation. (In the two places shown above) Remove them before installation.
**Draw-out direction of pipe / wire**

Decide installation place of the unit and draw-out direction of pipe and wire.

**Pipe knockout hole**

In case of taking pipe from the rear side

* Cut off the groove section with a plastic cutter.

In case of taking pipe from upper side

* Cut off the attached heat insulator of the top plate to pipe shape, and then seal the knockout hole.

**Knockout hole of power wire take-in port**

Open the power wire take-in port (Knockout hole) shown in the "External dimensions" and then mount the attached bushing.

**Installation of indoor unit**

◆ Preparation before holding down main unit

* Confirm the presence of the ceiling material beforehand because the fixing method of hanging metal when the ceiling material is set differs from that when the ceiling material is not set.

**There is ceiling material**

1. Attach washer and nuts to the hanging bolt.

2. Hang the unit to the hanging bolt as shown in the figure below.

3. As shown in the figure below, fix the ceiling material securely with the double nuts.

**Holding down of main unit**

1. Attach washer and nuts to the hanging bolt.

2. Hang the unit to the hanging bolt as shown in the figure below.

3. As shown in the figure below, fix the ceiling material securely with the double nuts.
Attaching the hanging bracket first

1. Remove the screws fastening hanging bracket onto the indoor unit.

2. Loosen the bolts fastening hanging bracket onto the indoor unit and remove the hanging bracket.

3. Adjust the length of the two bolts for fastening the hanging bracket, as shown below.

4. Fasten the hanging bracket with the hanging bolts and ensure that the bracket is level from front to back and from side to side.

5. Attach the indoor unit onto the hanging bracket and fasten it tight with the bolts and screws.

CAUTION

- The ceiling is not always level. Use the level gauge to measure the level of the ceiling in the width and depth directions. Adjust the bolts for the hanging brackets so that the level error will be within 5 mm.
- Do not lower the air discharge side and the side opposite to the selected drain pipe withdraw.

5 Drain piping

CAUTION

Following the Installation Manual, perform the drain piping work so that water is properly drained. Apply a heat insulation so as not to cause a dew condensation.

- Provide the indoor drain piping with proper heat insulation.
- Provide the area where the pipe connects to the indoor unit with proper heat insulation. Improper heat insulation will cause condensation to form.
- The drain pipe must be sloping downward (at an angle of 1/100 or more), and do not run the pipe up and down (arched shape) or allow it to form traps. Doing so may cause abnormal sounds.
- Restrict the length of the traversing drain pipe to 20 meters or less. For a long pipe, provide support brackets at intervals of 1.5 to 2 meters to prevent flapping.
- Install the collective piping as shown in the following figure.
- Do not provide any air vents. Otherwise, the drain water will spout, causing water to leak.
- Do not allow any force to be applied to the connection area with the drain pipe.
- A hard PVC pipe cannot be connected to the drain pipe connecting port of the indoor unit. Be absolutely sure to use the flexible hose provided for the connections with the drain pipe connecting port.
- Adhesive agents cannot be used for the drain pipe connecting port (hard socket) of the indoor unit. Be absolutely sure to secure the pipe using the hose bands provided. Use of an adhesive agent may damage the drain pipe connecting port or cause water to leak.

Pipe material, size and insulator

The following materials for piping work and insulating process are procured locally.

<table>
<thead>
<tr>
<th>Pipe material</th>
<th>Insulator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hard vinyl chloride pipe VP20 (Nominal outer diameter: Ø25 mm)</td>
<td>Foamed polyethylene foam, thickness: 10 mm or more</td>
</tr>
</tbody>
</table>
### Connection of drain hose

- Insert the attached drain hose into the drain pipe connecting port on the drain pan up to the end.
- Fit the attached hose band to the end of the pipe connecting port, and then tighten it securely.

**REQUIREMENT**

- Fix the drain hose with the attached hose band, and set the tightening position upward.
- As the draining is the natural water draining, arrange the pipe outside of the unit on the down slope.
- If piping is performed as shown in the figure, drain cannot be discharged.

#### NO GOOD

- Drain pipe
- Refrigerant pipe

**Diagram:**

- Fit the attached hose band to the end of the hose, lay down the knob, and then tighten hose band.
- Confirm that soft hose is pushed in up to the end of the drain pan.

### Connecting drain pipe

Connect the hard vinyl chloride pipe (locally procured) to the mounted drain hose which was attached.

**Diagram:**

- Drain pan
- Attached drain hose

#### In case of taking pipe from the left side

In case of taking pipe from the left side, exchange the plug from left to right. Push in the plug of which end is not sharp up to the end.

### Drain up

When a down-gradient cannot be secured for the drain pipe, drain-up piping is possible.

- The height of the drain pipe must be 600 mm or less from the underside of the indoor unit.
- When Drain Pump Kit (sold separately) is installed, drain pipe and refrigerant pipe can only be connected from upper direction.

**Diagram:**

- Drain pan
- Plug

### Heat insulating process

- Using the attached drain hose heat insulator, lap the connecting section and the drain hose without clearance, and then tighten with two banding bands so that heat insulator does not open.
- Covering the attached drain hose heat insulator, lap the heat insulator (locally procured) to the drain pipe without clearance.

**Diagram:**

- Lap the attached heat insulation so that the one end is put on the other end at the upper side.
- Fasten the banding bands in such a manner as to not squeeze the attached insulating material excessively.

**Diagram:**

- Attached hose band
- Heat insulator (locally procured)
- Drain pipe
- Refrigerant pipe
6 Refrigerant piping

- **CAUTION**

When the refrigerant pipe is long, provide support brackets at intervals of 2.5 m to 3 m to clamp the refrigerant pipe. Otherwise, abnormal sound may be generated. Use the flare nut attached with the indoor unit or R410A flare nut.

- **Take out direction of refrigerant pipe**

  - The refrigerant pipe connecting sections are located as shown below. (Pipes can be taken out from one of the three directions.)
  - Make a pipe knockout hole, referring to the section “Pipe knockout hole”.

- **Permissible piping length and height difference**

  They vary depending on the outdoor unit. For details, refer to the Installation Manual attached to the outdoor unit.

- **Pipe size**

<table>
<thead>
<tr>
<th>Model RAV-</th>
<th>Pipe size (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SM56</td>
<td></td>
</tr>
<tr>
<td>SM56 - SM160</td>
<td></td>
</tr>
<tr>
<td>Gas side</td>
<td>Liquid side</td>
</tr>
<tr>
<td>Ø12.7</td>
<td>Ø6.4</td>
</tr>
<tr>
<td>Ø15.9</td>
<td>Ø9.5</td>
</tr>
</tbody>
</table>

**Connecting refrigerant piping**

- **Flaring**
  1. Cut the pipe with a pipe cutter. Remove burrs completely. (Remaining burrs may cause gas leakage.)
  2. Insert a flare nut into the pipe, and flare the pipe. Use the flare nut provided with the indoor unit or the one used for the R410A refrigerant. A new flare tool manufactured for use with the R410A refrigerant is recommended, but the conventional tool can still be used if the projection margin of the copper pipe is adjusted to be as shown in the following table.

<table>
<thead>
<tr>
<th>Projection margin in flaring: B (Unit: mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outer dia. of copper pipe</td>
</tr>
<tr>
<td>6.4, 9.5</td>
</tr>
<tr>
<td>12.7, 15.9</td>
</tr>
</tbody>
</table>

- **Flaring diameter size: A (Unit: mm)**

<table>
<thead>
<tr>
<th>Outer dia. of copper pipe</th>
<th>A -0.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.4</td>
<td>9.1</td>
</tr>
<tr>
<td>9.5</td>
<td>13.2</td>
</tr>
<tr>
<td>12.7</td>
<td>16.6</td>
</tr>
<tr>
<td>15.9</td>
<td>19.7</td>
</tr>
</tbody>
</table>

- **Evacuation**

  Perform vacuuming from the charge port of valve of the outdoor unit by using a vacuum pump. For details, follow to the Installation Manual attached to the outdoor unit.
  - Do not use the refrigerant sealed in the outdoor unit for evacuation.

- **Refrigerant amount to be added**

  For addition of the refrigerant, add refrigerant “R410A” referring to the attached Installation Manual of outdoor unit. Use a scale to charge the refrigerant of specified amount.

- **Pipe size**

<table>
<thead>
<tr>
<th>Outer dia. of connecting pipe (mm)</th>
<th>Tightening torque (N•m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.4</td>
<td>14 to 18 (1.4 to 1.8 kgf•m)</td>
</tr>
<tr>
<td>9.5</td>
<td>24 to 42 (2.4 to 4.2 kgf•m)</td>
</tr>
<tr>
<td>12.7</td>
<td>49 to 61 (4.9 to 6.1 kgf•m)</td>
</tr>
<tr>
<td>15.9</td>
<td>63 to 77 (6.3 to 7.7 kgf•m)</td>
</tr>
</tbody>
</table>

- **Gas leak check**

  Check with a leak detector or soap water whether gas leaks or not, from the pipe connecting section or cap of the valve.

  - Use a leak detector manufactured exclusively for HFC refrigerant (R410A, R134a).

- **Work using double spanner**

  - When Drain Pump Kit (sold separately) is installed, a refrigerant pipe can only be taken out from upper direction.

- **Open the valve fully**

  Open the valve of the outdoor unit fully. A 4 mm-hexagonal wrench is required for opening the valve.
  For details, refer to the Installation Manual attached to the outdoor unit.

- **CAUTION**

  Tightening with an excessive torque may crack the nut depending on installation conditions.

- **Incorrect connections may cause not only a gas leak, but also a trouble of the refrigeration cycle.**

- **In case of flaring for R410A with the conventional flare tool, pull it out approx. 0.5 mm more than that for R22 to adjust to the specified flare size. The copper pipe gauge is useful for adjusting projection margin size.**

- **The sealed gas was sealed at the atmospheric pressure so when the flare nut is removed, there will be no “whooshing” sound: This is normal and is not indicative of trouble.**

- **Use two wrenches to connect the indoor unit pipe.**

- **Work using double spanner**

- **Open the valve fully**

  Open the valve of the outdoor unit fully. A 4 mm-hexagonal wrench is required for opening the valve.
  For details, refer to the Installation Manual attached to the outdoor unit.

- **Gas leak check**

  Check with a leak detector or soap water whether gas leaks or not, from the pipe connecting section or cap of the valve.

- ** REQUIREMENT**

  Use a leak detector manufactured exclusively for HFC refrigerant (R410A, R134a).
Heat insulation process
Apply heat insulation for the pipes separately at liquid side and gas side.
• For the heat insulation to the pipes at gas side, use the material with heat-resisting temperature 120 °C or higher.
• To use the attached heat insulation pipe, apply the heat insulation to the pipe connecting section of the indoor unit securely without gap.

REQUIREMENT
• Apply the heat insulation to the pipe connecting section of the indoor unit securely up to the root without exposure of the pipe. (The pipe exposed to the outside causes water leak.)
• Wrap heat insulator with its slits facing up (ceiling side).

WARNING
• Use the specified wires for wiring connect the terminals. Securely fix them to prevent external forces applied to the terminals from affecting the terminals. Incomplete connection or fixation may cause a fire or other trouble.
• Connect earth wire. (grounding work)
Incomplete grounding cause an electric shock.
Do not connect earth wires to gas pipes, water pipes, lightning conductor or telephone earth wires.
• Appliance shall be installed in accordance with national wiring regulations.
Capacity shortage of power circuit or incomplete installation may cause an electric shock or a fire.

CAUTION
• Do not connect 220 – 240 V power to the terminal blocks ( , ) for control wiring.
Otherwise, the system will fail.
• Do not damage or scratch the conductive core and inner insulator of power and system interconnection wires when peeling them.
• Perform the electric wiring so that it does not come to contact with the high-temperature part of the pipe.
The coating may melt resulting in an accident.
• Do not turn on the power of the indoor unit until vacuuming of the refrigerant pipes completes.

System interconnection wires specifications
• For power supply specifications, follow the Installation Manual of outdoor unit. The power of the indoor unit is supplied from the outdoor unit.
System interconnection wires
<table>
<thead>
<tr>
<th>Number of wire</th>
<th>Wire size</th>
<th>Up to</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 x 1.5 mm² or more</td>
<td>HO7 RN-F or 60245 IEC 66</td>
<td>70 m</td>
</tr>
</tbody>
</table>

Remote controller wiring

<table>
<thead>
<tr>
<th>Remote controller wiring, remote controller inter-unit wiring</th>
<th>Wire size: 2 x 0.5 to 2.0 mm²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total wire length of remote controller wiring and remote controller inter-unit wiring = L + L1 + L2 + … + Ln</td>
<td>In case of wired type only</td>
</tr>
<tr>
<td>In case of wireless type included</td>
<td>Up to 500 m</td>
</tr>
<tr>
<td>Total wire length of remote controller inter-unit wiring = L1 + L2 + … + Ln</td>
<td>Up to 200 m</td>
</tr>
</tbody>
</table>

CAUTION
The remote controller wire and system interconnection wires cannot be parallel to contact each other and cannot be stored in the same conduits. If doing so, a trouble may be caused on the control system due to noise or other factor.
Wiring between indoor unit and outdoor unit

- Figure below shows the wiring connections between the indoor and outdoor units and between the indoor units and remote controller. The wires indicated by the broken lines or dot-and-dash lines are provided at the locally.
- Refer to the both indoor and outdoor unit wiring diagrams.

Wiring diagram

**Single system**

- Remote controller
- Remote controller wiring
- Power supply

**Simultaneous twin system**

- Remote controller
- Remote controller wiring
- Indoor side
- System interconnection wires
- Outdoor side

**Simultaneous triple and double twin system**

- Remote controller
- Remote controller wiring
- Power supply

* Use 2-core shield wire (MVVS 0.5 to 2.0 mm² or more) for the remote controller wiring in the simultaneous twin, simultaneous triple and simultaneous double twin systems to prevent noise problems. Connect both ends of the shield wire to earth leads.

**Wire connection**

**REQUIREMENT**

- Connect the wires matching the terminal numbers. Incorrect connection causes a trouble.
- Pass the wires through the bushing of wire connection holes of the indoor unit.
- Keep a margin (Approx. 100 mm) on a wire to hang down the electrical control box at servicing.
- The low-voltage circuit is provided for the remote controller. (Do not connect the high-voltage circuit)

1. Loosen the cover mounting screws (2 positions) of the electrical control box, and then remove the cover.
2. Connect the system interconnection wires and the remote controller wire to the terminal block of the electrical control box.
3. Tighten screws of the terminal block securely, and fix the wires with code clamp attached to the electrical control box. (Do not apply tension to the connecting section of the terminal block.)
4. Mount the cover of the electrical control box so that it does not pinch the wires.

**Connecting the system interconnection wire**

*Single connection*

- Terminal block of power supply
- Earth screw
- Remote controller terminal block
- System interconnection wires
- Clamp base
- Cord clamp
Remote controller wiring

Strip off approx. 9 mm the wire to be connected.

Wiring diagram

Requirements
- When you use this air conditioner for the first time, it takes approx. 5 minutes until the remote controller becomes available after power-on. This is normal.
- When power is turned on for the first time after installation, it takes approx. 5 minutes until the remote controller becomes available.

<When power is turned on for the second (or later) time>
It takes approx. 1 minute until the remote controller becomes available.

Basic procedure for changing settings

1. Push and hold \( \text{POWER} \) button and “TEMP.” button simultaneously for at least 4 seconds. After a while, the display flashes as shown in the figure. Confirm that the CODE No. is [01].

- Normal settings were made when the indoor unit was shipped from factory. Change the indoor unit settings as required.
- Use the wired remote controller to change the settings.

* The settings cannot be changed using the wireless remote controller, sub-remote controller, or remote-controller-less system (for central remote controller only). Therefore, install the wired remote controller to change the settings.

Error messages

Power on “SETTING” flashes
“SETTING” goes out
Remote controller is available
Approx. 5 minutes

Power on “SETTING” flashes
“SETTING” goes out
Remote controller is available
Approx. 1 minute

<Multi-indoor-unit connection>

See the figure on the left for connecting wires to the terminal block.

A
B

Terminal block

Remote controller unit

Remote controller wire (Locally procured)

Remote controller wire

Run the remote controller wire through the cord clamp.

Applicable controls

CAUTION
Set only the CODE No. shown in the following table: Do NOT set any other CODE No. If a CODE No. not listed is set, it may not be possible to operate the air conditioner or other trouble with the product may result.

* The displays appearing during the setting process differ from the ones for previous remote controllers (AMT31E). (There are more CODE No.)

1. Push and hold \( \text{POWER} \) button and “TEMP.” button simultaneously for at least 4 seconds. After a while, the display flashes as shown in the figure. Confirm that the CODE No. is [01].

- If the CODE No. is not [01], push \( \text{POWER} \) button to clear the display content, and repeat the procedure from the beginning. (No operation of the remote controller is accepted for a while after \( \text{POWER} \) button is pushed.) (While air conditioners are operated under the group control, “ALL” is displayed first. When \( \text{POWER} \) is pushed, the indoor unit number displayed following “ALL” is the header unit.)

* Display content varies with the indoor unit model.)
Each time \( \text{button} \) is pushed, indoor unit numbers in the control group change cyclically. Select the indoor unit to change settings for.

The fan of the selected unit runs and the louvers start swinging. The indoor unit for change settings can be confirmed.

Specify CODE No. [ ] with “TEMP.” / buttons.

Select SET DATA [ ] with “TIME” / buttons.

Push \( \text{button} \). When the display changes from flashing to lit, the setup is completed.

To change settings of another indoor unit, repeat from Procedure 2.

To change other settings of the selected indoor unit, repeat from Procedure 3.

For the CODE No. in Procedure 3, specify [05].

For the CODE No. in Procedure 4, select the SET DATA of ceiling height to be set up from the following table.

<table>
<thead>
<tr>
<th>Model RAV</th>
<th>SM55, SM50</th>
<th>SM110, SM140, SM160</th>
<th>SET DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>Up to 3.5 m</td>
<td>Up to 3.5 m</td>
<td>0000</td>
</tr>
<tr>
<td>High ceiling (1)</td>
<td>Up to 4.0 m</td>
<td>Up to 4.3 m</td>
<td>0003</td>
</tr>
</tbody>
</table>

Follow to the basic operation procedure (1 \( \rightarrow \) 2 \( \rightarrow \) 3 \( \rightarrow \) 4 \( \rightarrow \) 5 \( \rightarrow \) 6).

- CODE No. in Procedure specifies [5d].
- For the CODE No. in Procedure 3, specify [05].
- For the CODE No. in Procedure 4, select the SET DATA of ceiling height to be set up from the table on the below.

Remote controller-less setting

Change the high-ceiling setting with the DIP switch on the indoor unit P.C. board.

- Once the setting is changed, setting to 0001 is possible, however setting to 0000 requires a setting data change to 0000 using the wired remote controller (separately sold) with the normal switch settings for.

To secure better effect of heating

When it is difficult to obtain satisfactory heating due to installation place of the indoor unit or structure of the room, the detection temperature of heating can be raised. Also use a circulator or other device to circulate heat air near the ceiling.

Adjust the power save setting by pushing \( \text{button} \). The fan of the selected unit runs.

<table>
<thead>
<tr>
<th>UNIT No.</th>
<th>UNIT No.</th>
<th>UNIT No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1</td>
<td>1-2</td>
<td>1-3</td>
</tr>
<tr>
<td>1-4</td>
<td>1-5</td>
<td>1-6</td>
</tr>
</tbody>
</table>

The fan of the selected unit runs.

Adjust the power save setting by pushing \( \text{button} \). Each push of the button changes the power level by 1 % within the range from 100 % to 50 %.

* The factory default is 75 %.
* The power level might not drop to the setpoint, depending on the operating conditions.
* All indoor units with the same group address must be set with the same power level.

Push \( \text{button} \) to determine the settings.

To secure better effect of heating

When it is difficult to obtain satisfactory heating due to installation place of the indoor unit or structure of the room, the detection temperature of heating can be raised. Also use a circulator or other device to circulate heat air near the ceiling.

Adjust the power save setting by pushing \( \text{button} \). Each push of the button changes the power level by 1 % within the range from 100 % to 50 %.

* The factory default is 75 %.
* The power level might not drop to the setpoint, depending on the operating conditions.
* All indoor units with the same group address must be set with the same power level.

Push \( \text{button} \) to complete the setting.
Remote controller switch monitoring function
This function is available to call the service monitor mode from the remote controller during a test run to acquire temperatures of sensors of the remote controller, indoor unit, and outdoor unit.

1. Push and buttons simultaneously for at least 4 seconds to call the service monitor mode.
   The service monitor indicator lights up and the header indoor unit number is displayed first. CODE No. is also displayed.
2. Pushing TEMP. buttons, select the number of sensor (CODE No.) to be monitored.
   (See the following table.)
3. Pushing (left side of the button), select an indoor unit to be monitored. The sensor temperatures of indoor units and their outdoor unit in the control group are displayed.
4. Push button to return to the normal display.

Group control
Simultaneous twin, triple or double twin system
A combination with an outdoor unit allows simultaneous ON / OFF operation of the indoor units. The following system patterns are available.
- Two indoor units for the twin system
- Three indoor units for the triple system
- Four indoor units for the double-twin system

**Twin system**
- Outdoor unit
- indoor unit
- indoor unit
- Remote controller
- Finish of address setup by power-ON

**Triple system**
- Outdoor unit
- Indoor unit
- Indoor unit
- indoor unit
- Remote controller
- Finish of address setup by power-ON

**Double twin**
- Outdoor unit
- indoor unit
- indoor unit
- indoor unit
- indoor unit
- Remote controller
- Finish of address setup by power-ON

- For wiring procedure and wiring method, follow to the “Electrical connection” in this manual.
- When the power supply has been turned on, the automatic address setup starts and which indicates that address is being set up flashes on the display part. During setup of automatic address, the remote controller operation is not accepted.

Required time up to the finish of automatic addressing is approx. 5 minutes.

### Indoor unit data

<table>
<thead>
<tr>
<th>CODE No.</th>
<th>Data name</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Room temperature (remote controller)</td>
</tr>
<tr>
<td>02</td>
<td>Indoor unit intake air temperature (TA)</td>
</tr>
<tr>
<td>03</td>
<td>Indoor unit heat exchanger (coil) temperature (TCj)</td>
</tr>
<tr>
<td>04</td>
<td>Indoor unit heat exchanger (coil) temperature (TC)</td>
</tr>
<tr>
<td></td>
<td>Indoor unit fan cumulative operating hours (x1 h)</td>
</tr>
</tbody>
</table>

### Outdoor unit data

<table>
<thead>
<tr>
<th>CODE No.</th>
<th>Data name</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>Outdoor unit heat exchanger (coil) temperature (TE)</td>
</tr>
<tr>
<td>61</td>
<td>Outside air temperature (TO)</td>
</tr>
<tr>
<td>62</td>
<td>Compressor discharge temperature (TD)</td>
</tr>
<tr>
<td>63</td>
<td>Compressor suction temperature (TS)</td>
</tr>
<tr>
<td>64</td>
<td>Heat sink temperature (THS)</td>
</tr>
<tr>
<td>65</td>
<td>Operating current (x1/10)</td>
</tr>
<tr>
<td>F1</td>
<td>Compressor cumulative operating hours (x100 h)</td>
</tr>
</tbody>
</table>
Group control for system of multiple units
One remote controller can control maximum 8 indoor units as a group.

Group control in single system

For wiring procedure and wiring method of the individual line (identical refrigerant line) system, follow to "Electrical connection".

Wiring between lines is performed in the following procedure.
Connect the terminal block (A/B) of the indoor unit connected with a remote controller to the terminal blocks (A/B) of the indoor units of other indoor units by wiring the inter-unit wire of the remote controller.

When the power supply has been turned on, the automatic address setup starts and which indicates that address is being set up flashes on the display part in about 3 minutes. During setup of automatic address, the remote controller operation is not accepted.

Required time up to the finish of automatic addressing is approx. 5 minutes.

NOTE
In some cases, it is necessary to change the address manually after setup of the automatic address according to the system configuration of the group control.

The follow mentioned system configuration is a case when complex systems in which systems of the simultaneous twin and simultaneous triple unit is controlled as a group by a remote controller.

(Example) Group control for complex system

The above address is set by the automatic addressing when the power is turned on. However, line addresses and indoor addresses are set randomly. For this reason, change the setting to match line addresses with indoor addresses.

[Procedure example]

Manual address setup procedure
While the operation stops, change the setup.
(Stop the operation of the unit.)

1. Push \( \text{+} \) \( \text{+} \) \( \text{+} \) buttons simultaneously for 4 seconds or more. After a while, the display part flashes as shown below. Check the displayed CODE No. is \([10]\).

   - When the CODE No. is other than \([10]\), push \( \text{-} \) button to erase the display and repeat procedure from the first step. (After pushing \( \text{-} \) button, operation of the remote controller is not accepted for approx. 1 minute.)
   - For a group control, No. of the firstly displayed indoor unit becomes the header unit.

2. Every time \( \text{TIME} \) \( \text{TIME} \) \( \text{TIME} \) button is pushed, the indoor UNIT No. in the group control is displayed in order. Select the indoor unit of which setup is changed.

   In this time, the position of the indoor unit of which setup is changed can be confirmed because fan of the selected indoor unit operate.
If there is another indoor unit to be changed, push \( \text{button}\) (In this case, procedure from setup was changed. Push \( \text{button}\) clears the contents of which setup, specify CODE No. \[ \text{to select the indoor UNIT No. before change of setup has finished, push } \text{button}\) to change the setup. When the above setup has finished, push \( \text{button}\) is repeated.)

After check of the changed contents, push \( \text{button}\). (Setup is determined.)

Push \( \text{button}\) simultaneously for 4 seconds or more. After a while, the display part flashes and the display appears as shown below. Therefore repeat procedure of the setup change.

Set DATA \[ \text{TIME} \] changes from flashing to lighting. In this time, the setup finishes when the display disappears and the status becomes the usual stop status. (When \( \text{button}\) is pushed the operation from the remote controller is not accepted for approx. 1 minute.)

In the group control, every time \( \text{button}\) is pushed, the indoor UNIT No. in the group control is displayed in order.

After confirmation, push \( \text{button}\) to return the mode to the usual mode. When \( \text{button}\) is pushed, the display disappears and the status becomes the usual stop status. (When \( \text{button}\) is pushed the operation from the remote controller is not accepted for approx. 1 minute.)

Push \( + \) \( + \) \( \text{button}\). After a while, the display part flashes and the display appears as shown below. Therefore repeat procedure of the setup change.

8 °C Operation setting (More than 4 series of DI/SDI series)

Pre-heating operation can be set for cold regions where room temperature drops to below zero.

Push \( + \) \( + \) \( + \) \( \text{button}\) simultaneously for 4 seconds or more when the air conditioner is not working. After a while, the display part flashes as shown below. Check the Displayed CODE No. is \[ \text{]}. For the group control, the indoor UNIT No. is displayed as \[ \{ \text{model No. of indoor unit} \} \] and fans of all the indoor units in the group control operate.

* If the operation from the remote controller is not accepted for approx. 1 minute, push \( \text{button}\) to erase the display and repeat procedure from the first step. (After pushing \( \text{button}\), operation of the remote controller is not accepted for approx. 1 minute.)

In this time, the position of the indoor unit can be confirmed because only fan of the selected indoor unit operate.

For a group control, No. of the firstly displayed indoor unit becomes the header unit.

For a group control, indoor unit becomes the header unit.

In this time, the position of the indoor unit of which setup is changed can be confirmed because fan of the selected indoor unit operate.

Select SET DATA \[ \text{TIME} \] \( \text{button}\). (Stop operation of the set.)

Every time \( \text{button}\) is pushed, the indoor UNIT No. in the group control is displayed in order.

Select SET DATA \[ \text{TIME} \] \( \text{button}\). (Factory default)

Push \( \text{button}\). In this time, the setup finishes when the display changes from flashing to lighting.

Push \( \text{button}\). (Setup is determined.) When \( \text{button}\) is pushed, the display disappears and the status becomes the usual stop status. (When \( \text{button}\) is pushed the operation from the remote controller is not accepted for approx. 1 minute.)
9 Test run

Before test run

- Before turning on the power supply, carry out the following procedure.
  1) By using 500 V-megger, check that resistance of 1 MΩ or more exists between the terminal block 1 to 3 and the earth (grounding).
     If resistance of less than 1 MΩ is detected, do not run the unit.
  2) Check the valve of the outdoor unit being opened fully.

- To protect the compressor at activation time, leave power-ON for 12 hours or more before operating.

Execute a test run

Operate the unit with the wired remote controller as usual.
For the procedure of the operation, refer to the attached Owner’s Manual.
A forced test run can be executed in the following procedure even if the operation stops by thermostat-OFF.
In order to prevent a serial operation, the forced test run is released after 60 minutes have passed and returns to the usual operation.

**CAUTION**

Do not use the forced test run for cases other than the test run because it applies an excessive load to the devices.

1. Push **button** for 4 seconds or more. **[TEST]** is displayed on the display part and the selection of mode in the test mode is permitted.
2. Push **button**.
3. Select the operation mode with **button**, [Cool] or [Heat].
   - Do not run the air conditioner in a mode other than [Cool] or [Heat].
   - The temperature controlling function does not work during test run.
   - The detection of error is performed as usual.
4. After the test run, push **button** to stop a test run.
   (Display part is same as procedure 1.)
5. Push **button** to cancel (release from) the test run mode.
   ([TEST] disappears on the display and the status returns to a normal.)

**Wired remote controller**

**NOTE**

- Be sure to operate the unit, following the instruction manual.
- Do not run the air conditioner in forced cooling mode for a long time since it overloads the air conditioner.
- Forced heating is not available for trial runs. To perform a test run, set the unit to heating mode with the remote controller. The unit might not operate in heating mode, however, depending on temperature conditions.

1. Hold down the **TEST** button for over 10 seconds. With a beep sound, the unit is set to the forced cooling mode. In approximately three minutes, it is forced to start in cooling mode. Determine that cool air comes out of the unit. If the unit won’t start, check the wiring.
2. Push the **TEST** button again (for about one second) to stop a trial run.

   The upper and lower wind direction changing blades close, and the unit stops operation.

**Wireless remote controller**

**NOTE**

- Be sure to operate the unit, following the instruction manual.
- Do not run the air conditioner in forced cooling mode for a long time since it overloads the air conditioner.
- Forced heating is not available for trial runs. To perform a test run, set the unit to heating mode with the remote controller. The unit might not operate in heating mode, however, depending on temperature conditions.

1. Push the **ON/OFF** button on the remote controller to determine that it works properly.
2. Pushing the **TEST** button once (for about one second) causes the unit to enter auto operation mode. Hold down the **TEST** button for over 10 seconds to begin forced cooling.
3. Even if you select cooling with a remote controller, the unit does not always perform cooling operation, depending on temperature conditions. Check the wiring and piping of the indoor and outdoor units in forced cooling mode.

Checking remote transmission

1. Push the **ON/OFF** button on the remote controller to determine that it works properly.
2. Pushing the **TEST** button once (for about one second) causes the unit to enter auto operation mode. Hold down the **TEST** button for over 10 seconds to begin forced cooling.
3. Even if you select cooling with a remote controller, the unit does not always perform cooling operation, depending on temperature conditions. Check the wiring and piping of the indoor and outdoor units in forced cooling mode.

**TEMPORARY button**

1. Push the **ON/OFF** button on the remote controller to determine that it works properly.
2. Pushing the **TEST** button once (for about one second) causes the unit to enter auto operation mode. Hold down the **TEST** button for over 10 seconds to begin forced cooling.
3. Even if you select cooling with a remote controller, the unit does not always perform cooling operation, depending on temperature conditions. Check the wiring and piping of the indoor and outdoor units in forced cooling mode.
10 Maintenance

<Daily maintenance>

Cleaning of air filter

• If is displayed on the remote controller, maintain the air filter.

1 Push the button to stop the operation, then turn off the circuit breaker.

2 Open the air intake grille.
   • Remove the screws of air intake grille fixing knob on a side of each filter.
   • Slide the air intake grille fixing knobs (two positions) toward the arrow direction (OPEN), and then open the air intake grille.

3 Take out air filter.
   • Push the handle of the air filter, and remove the hook of the air intake grille. Pull out the air filter toward you.

4 Cleaning with water or vacuum cleaner.
   • If dust is heavy, wash it with tepid water including neutral detergent or water.
   • After cleaning with water, dry it completely in the shade.

5 Mount the air filter.

6 Close the air intake grille.
   • Close the air intake grille, and then fix it securely when sliding knob closed side (CLOSE).
   • Fix the screws of air intake grille fixing knob on a side of each filter.

7 Turn on the circuit breaker, then push the button on the remote controller to start the operation.

8 After cleaning, push . display disappears.

CAUTION

• Do not start the air conditioner while leaving air filter removed.
• Push the filter reset button. indication will be turned off.

Periodic Maintenance

• For environmental conservation, it is strongly recommended that the indoor and outdoor units of the air conditioner in use be cleaned and maintained regularly to ensure efficient operation of the air conditioner.

   When the air conditioner is operated for a long time, periodic maintenance (once a year) is recommended. Furthermore, regularly check the outdoor unit for rust and scratches, and remove them or apply rustproof treatment, if necessary.

As a general rule, when an indoor unit is operated for 8 hours or more daily, clean the indoor unit and outdoor unit at least once every 3 months. Ask a professional for this cleaning / maintenance work.

Such maintenance can extend the life of the product through it involves the owner’s expense.

Failure to clean the indoor and outdoor units regularly will result in poor performance, freezing, water leakage, and even compressor failure.

Inspection before maintenance

Following inspection must be carried out by a qualified installer or qualified service person.

<table>
<thead>
<tr>
<th>Parts</th>
<th>Unit</th>
<th>Check (visual / auditory)</th>
<th>Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat exchanger</td>
<td>Indoor / outdoor</td>
<td>Dust / dirt clogging, scratches</td>
<td>Wash the heat exchanger when it is clogged.</td>
</tr>
<tr>
<td>Fan motor</td>
<td>Indoor / outdoor</td>
<td>Sound</td>
<td>Take appropriate measures when abnormal sound is generated.</td>
</tr>
<tr>
<td>Filter</td>
<td>Indoor</td>
<td>Dust / dirt, breakage</td>
<td>Wash the filter with water when it is contaminated.</td>
</tr>
<tr>
<td>Fan</td>
<td>Indoor</td>
<td>• Vibration, balance</td>
<td>Replace the fan when vibration or balance is terrible.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Dust / dirt, appearance</td>
<td>Brush or wash the fan when it is contaminated.</td>
</tr>
<tr>
<td>Air intake / discharge grilles</td>
<td>Indoor / outdoor</td>
<td>Dust / dirt, scratches</td>
<td>Fix or replace them when they are deformed or damaged.</td>
</tr>
<tr>
<td>Drain pan</td>
<td>Indoor</td>
<td>Dust / dirt clogging, drain contamination</td>
<td>Clean the drain pan and check the downward slope for smooth drainage.</td>
</tr>
<tr>
<td>Ornamental panel, louvres</td>
<td>Indoor</td>
<td>Dust / dirt, scratches</td>
<td>Wash them when they are contaminated or apply repair coating.</td>
</tr>
<tr>
<td>Exterior</td>
<td>Outdoor</td>
<td>• Rust, peeling of insulator</td>
<td>Apply repair coating.</td>
</tr>
</tbody>
</table>
11 Troubleshooting

■ Confirmation and check

When an error occurred in the air conditioner, an error code and indoor UNIT No. appear on the display part of the remote controller.

The error code is only displayed during the operation.

If the display disappears, operate the air conditioner according to the following “Confirmation of error log” for confirmation.

1 When [ ] and [ ] buttons are pushed simultaneously for 4 seconds or more, the following display appears.

If [ ] is displayed, the mode enters in the error log mode.

• [01: Order of error log] is displayed in CODE No.
• [Error code] is displayed in CHECK.
• [Indoor unit address in which an error occurred] is displayed in Unit No.

2 Every pushing of [ ] button used to set temperature, the error log stored in memory is displayed in order.

The numbers in CODE No. indicate CODE No. (oldest) → [04] → [03] → [02] → [01].

**REQUIREMENT**

Do not push [ ] button because all the error log of the indoor unit will be deleted.

3 After confirmation, push [ ] button to return to the usual display.

![Error code]

Indoor UNIT No. in which an error occurred

### Confirmation of error log

When an error occurred on the air conditioner, the error log can be confirmed with the following procedure.

(The error log is stored in memory up to 4 errors.)

The log can be confirmed from both operating status and stop status.

#### Check codes and parts to be checked

<table>
<thead>
<tr>
<th>Error Code</th>
<th>Indoor Unit Address</th>
<th>Error Code</th>
<th>Indication</th>
<th>Operation Timer Status</th>
<th>Main Defective Parts</th>
<th>Judging Device</th>
<th>Parts to be checked / error description</th>
<th>Air Conditioner Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td></td>
<td>No header remote controller</td>
<td>No signal can be received from the indoor unit.</td>
<td>*</td>
<td></td>
<td>Incorrect remote controller setting --- The header remote controller has not been set (including two remote controllers).</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>02</td>
<td></td>
<td>Remote controller transmission error</td>
<td>No signal can be sent to the indoor unit.</td>
<td>*</td>
<td></td>
<td>Incorrect remote controller setting --- The header remote controller has not been set (including two remote controllers).</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>03</td>
<td></td>
<td>Indoor unit-remote controller transmission error</td>
<td>REMOTE controller, network adapter, indoor P.C. board --- No data is received from the remote controller or network adapter.</td>
<td>Auto-reset</td>
<td></td>
<td>Incorrect remote controller setting --- The header remote controller has not been set (including two remote controllers).</td>
<td>Auto-reset</td>
<td></td>
</tr>
<tr>
<td>04</td>
<td></td>
<td>Indoor unit-outdoor unit serial communication error</td>
<td>Indoor Communication error between indoor P.C. board and optional parts</td>
<td>Auto-reset</td>
<td></td>
<td>Incorrect remote controller setting --- The header remote controller has not been set (including two remote controllers).</td>
<td>Auto-reset</td>
<td></td>
</tr>
<tr>
<td>05</td>
<td></td>
<td>Duplicated indoor addresses</td>
<td>Indoor Indoor address setting error --- The same address as the self addresses was detected.</td>
<td>Auto-reset</td>
<td></td>
<td>Incorrect remote controller setting --- The header remote controller has not been set (including two remote controllers).</td>
<td>Auto-reset</td>
<td></td>
</tr>
<tr>
<td>06</td>
<td></td>
<td>Remote controller transmission error</td>
<td>Indoor Communication error between indoor P.C. board and optional parts</td>
<td>Auto-reset</td>
<td></td>
<td>Incorrect remote controller setting --- The header remote controller has not been set (including two remote controllers).</td>
<td>Auto-reset</td>
<td></td>
</tr>
<tr>
<td>07</td>
<td></td>
<td>Indoor-unit optional parts communication error</td>
<td>Indoor Indoor Communication error between indoor P.C. board and optional parts</td>
<td>Auto-reset</td>
<td></td>
<td>Incorrect remote controller setting --- The header remote controller has not been set (including two remote controllers).</td>
<td>Auto-reset</td>
<td></td>
</tr>
<tr>
<td>08</td>
<td></td>
<td>Indoor header remote controllers</td>
<td>Indoor Communication error between indoor P.C. board and optional parts</td>
<td>Auto-reset</td>
<td></td>
<td>Incorrect remote controller setting --- The header remote controller has not been set (including two remote controllers).</td>
<td>Auto-reset</td>
<td></td>
</tr>
<tr>
<td>09</td>
<td></td>
<td>Indoor Communication error</td>
<td>Indoor Communication error between indoor P.C. board and optional parts</td>
<td>Auto-reset</td>
<td></td>
<td>Incorrect remote controller setting --- The header remote controller has not been set (including two remote controllers).</td>
<td>Auto-reset</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>Heat exchanger sensor (TC) error</td>
<td>Indoor Communication error between indoor P.C. board and optional parts</td>
<td>Auto-reset</td>
<td></td>
<td>Incorrect remote controller setting --- The header remote controller has not been set (including two remote controllers).</td>
<td>Auto-reset</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td>Heat exchanger sensor (TC) error</td>
<td>Indoor Communication error between indoor P.C. board and optional parts</td>
<td>Auto-reset</td>
<td></td>
<td>Incorrect remote controller setting --- The header remote controller has not been set (including two remote controllers).</td>
<td>Auto-reset</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td>Heat exchanger sensor (TC) error</td>
<td>Indoor Communication error between indoor P.C. board and optional parts</td>
<td>Auto-reset</td>
<td></td>
<td>Incorrect remote controller setting --- The header remote controller has not been set (including two remote controllers).</td>
<td>Auto-reset</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td>Heat exchanger sensor (TC) error</td>
<td>Indoor Communication error between indoor P.C. board and optional parts</td>
<td>Auto-reset</td>
<td></td>
<td>Incorrect remote controller setting --- The header remote controller has not been set (including two remote controllers).</td>
<td>Auto-reset</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td>Heat exchanger sensor (TC) error</td>
<td>Indoor Communication error between indoor P.C. board and optional parts</td>
<td>Auto-reset</td>
<td></td>
<td>Incorrect remote controller setting --- The header remote controller has not been set (including two remote controllers).</td>
<td>Auto-reset</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>Heat exchanger sensor (TC) error</td>
<td>Indoor Communication error between indoor P.C. board and optional parts</td>
<td>Auto-reset</td>
<td></td>
<td>Incorrect remote controller setting --- The header remote controller has not been set (including two remote controllers).</td>
<td>Auto-reset</td>
<td></td>
</tr>
</tbody>
</table>

---

F01 ALT Indoor unit heat exchanger sensor (TC) error Indoor Heat exchanger sensor (TC), indoor P.C. board --- Out-of-range or short-circuit or the heat exchanger sensor (TC) was detected. Auto-reset

F02 ALT Indoor unit heat exchanger sensor (TC) error Indoor Heat exchanger sensor (TC), indoor P.C. board --- Out-of-range or short-circuit or the heat exchanger sensor (TC) was detected. Auto-reset

F03 ALT Outdoor unit discharge temp. sensor (TD) error Outdoor Outdoor temp. sensor (TD), outdoor P.C. board --- Out-of-range in short-circuit of the discharge temp. sensor was detected. Auto-reset

F04 ALT Outdoor unit discharge temp. sensor (TD) error Outdoor Outdoor temp. sensor (TD), outdoor P.C. board --- Out-of-range in short-circuit of the discharge temp. sensor was detected. Auto-reset

F05 ALT Outdoor unit outside air temp. sensor error Outdoor Outdoor temp. sensor (TD), outdoor P.C. board --- Out-of-range in short-circuit of the outdoor temp. sensor was detected. Auto-reset

F06 ALT Outdoor unit outside air temp. sensor error Outdoor Outdoor temp. sensor (TD), outdoor P.C. board --- Out-of-range in short-circuit of the discharge temp. sensor was detected. Auto-reset

F07 ALT Outdoor unit outside air temp. sensor error Outdoor Outdoor temp. sensor (TD), outdoor P.C. board --- Out-of-range in short-circuit of the discharge temp. sensor was detected. Auto-reset

F08 ALT Outdoor unit outside air temp. sensor error Outdoor Outdoor temp. sensor (TD), outdoor P.C. board --- Out-of-range in short-circuit of the discharge temp. sensor was detected. Auto-reset

F09 ALT Indoor unit room temp. sensor (TA) error Indoor Room temp. sensor (TA), indoor P.C. board --- Out-of-range or short-circuit of the room temp. sensor (TA) was detected. Auto-reset

F10 ALT Indoor unit room temp. sensor (TA) error Indoor Room temp. sensor (TA), indoor P.C. board --- Out-of-range or short-circuit of the room temp. sensor (TA) was detected. Auto-reset

F11 ALT TS (1) sensor error Outdoor TS (1) sensor may be displaced, disconnected or short-circuit. Auto-reset

F12 ALT TS (1) sensor error Outdoor TS (1) sensor may be displaced, disconnected or short-circuit. Auto-reset

F13 ALT Heat sink sensor error Outdoor Abnormal abnormal temperature was detected by the temp. sensor of the IGBT heat sink. Auto-reset

F14 ALT Outdoor temp. sensor error Outdoor Outdoor temp. sensor (TD), outdoor P.C. board --- Out-of-range in short-circuit of the discharge temp. sensor was detected. Auto-reset

F15 ALT Outdoor temp. sensor error Outdoor Outdoor temp. sensor (TD), outdoor P.C. board --- Out-of-range in short-circuit of the discharge temp. sensor was detected. Auto-reset
<table>
<thead>
<tr>
<th>Wireless remote controller display</th>
<th>Main defective parts</th>
<th>Parts to be checked / error description</th>
<th>Air conditioner status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indication</td>
<td>Operation Timer</td>
<td>Ready GR</td>
<td>GR CR</td>
</tr>
<tr>
<td>F29</td>
<td>Indoor unit, other P.C. board error</td>
<td>Indoor P.C. board — EEPROM error</td>
<td>Auto-reset</td>
</tr>
<tr>
<td>F31</td>
<td>Outdoor unit P.C. board</td>
<td>Outdoor P.C. board — In the case of EEPROM error</td>
<td>Entire stop</td>
</tr>
<tr>
<td>H01</td>
<td>Outdoor unit compressor break down</td>
<td>Current-detected circuit, power voltage — Minimum frequency was reached or the current releasing control or short-circuit current ( Idc ) after directed excitation was detected</td>
<td>Entire stop</td>
</tr>
<tr>
<td>H02</td>
<td>Outdoor unit compressor lock</td>
<td>Compressor circuit — Compressor lock was detected</td>
<td>Entire stop</td>
</tr>
<tr>
<td>H03</td>
<td>Outdoor unit current detect circuit error</td>
<td>Current-detected circuit, outdoor unit P.C. board — Abnormal current was detected in AC-CT or a phase loss was detected</td>
<td>Entire stop</td>
</tr>
<tr>
<td>H04</td>
<td>Case Thermostat operation (1)</td>
<td>Malfunction of the case thermostat</td>
<td>Entire stop</td>
</tr>
<tr>
<td>H05</td>
<td>Outdoor unit low-pressure system error</td>
<td>Current, high-pressure switch circuit, outdoor P.C. board — PD pressure sensor error was detected or low-pressure protective operation was activated</td>
<td>Entire stop</td>
</tr>
<tr>
<td>L03</td>
<td>Duplicated header indoor units</td>
<td>Indoor address setting error — There are two or more header units in the group</td>
<td>Entire stop</td>
</tr>
<tr>
<td>L07</td>
<td>Group line individual indoor unit</td>
<td>Indoor address setting error — There is at least one group-connected indoor unit among individual indoor units</td>
<td>Entire stop</td>
</tr>
<tr>
<td>L08</td>
<td>Indoor group address not set</td>
<td>Indoor address setting error — Indoor address group has not been set</td>
<td>Entire stop</td>
</tr>
<tr>
<td>L09</td>
<td>Indoor unit capacity not set</td>
<td>Indoor unit capacity has not been set</td>
<td>Entire stop</td>
</tr>
<tr>
<td>L10</td>
<td>Outdoor unit P.C. board</td>
<td>In the case of outdoor P.C. board jumper wire ( for service ) setting error</td>
<td>Entire stop</td>
</tr>
<tr>
<td>L11</td>
<td>Outdoor unit heat exchanger sensor when heating</td>
<td>Power supply phase sequence, outdoor unit P.C. board — Abnormal phase sequence of the 3-phase power supply</td>
<td>Entire stop</td>
</tr>
<tr>
<td>L12</td>
<td>Network selector central control</td>
<td>Address setting, central control remote controller, network adapter — Duplication of address in central control communication</td>
<td>Auto-reset</td>
</tr>
<tr>
<td>L29</td>
<td>Other outdoor unit error</td>
<td>Other outdoor unit error</td>
<td>Entire stop</td>
</tr>
<tr>
<td>L30</td>
<td>Abnormal external input into indoor unit (connection)</td>
<td>1) Communication error between IPUO MCU and CDB MCU</td>
<td>Entire stop</td>
</tr>
<tr>
<td>L31</td>
<td>Phase sequence error, etc.</td>
<td>2) Abnormal temperature was detected by the heat sink temp. sensor in IGBT</td>
<td>Entire stop</td>
</tr>
<tr>
<td>P03</td>
<td>Outdoor unit discharge temp. error</td>
<td>Power supply phase sequence, outdoor unit P.C. board — Abnormal phase sequence of the 3-phase power supply</td>
<td>Entire stop</td>
</tr>
<tr>
<td>P04</td>
<td>Outdoor unit high-pressure system error</td>
<td>High-pressure switch — The IOL was activated or an error was detected in the high-pressure releasing control using the TE</td>
<td>Entire stop</td>
</tr>
<tr>
<td>P05</td>
<td>Open phase detected</td>
<td>The power wire may be connected incorrectly. Check open phase and voltages of the power supply</td>
<td>Entire stop</td>
</tr>
<tr>
<td>P07</td>
<td>Heat sink overheat</td>
<td>Abnormal temperature was detected by the temp. sensor of the IGBT heat sink</td>
<td>Entire stop</td>
</tr>
<tr>
<td>P10</td>
<td>Indoor unit water level detected</td>
<td>Drainage is out of order or the float switch circuit, indoor P.C. board — Drainage is out of order or the float switch was activated</td>
<td>Entire stop</td>
</tr>
<tr>
<td>P12</td>
<td>The fan error of the indoor unit</td>
<td>Indoor fan motor, indoor P.C. board — Abnormal operation ( over current or lock, etc. ) is detected</td>
<td>Entire stop</td>
</tr>
</tbody>
</table>

**Wired remote controller display**

- **Operation Timer Ready**
- **GR CR Fal ing**

**Main defective parts**

- **Parts to be checked / error description**

**Air conditioner status**

- **Auto-reset**
- **Entire stop**
- **Reset**
- **Auto**
- **Off**