

# **TOSHIBA**

## *Carrier*

FILE NO. SVM-24060

# SERVICE MANUAL

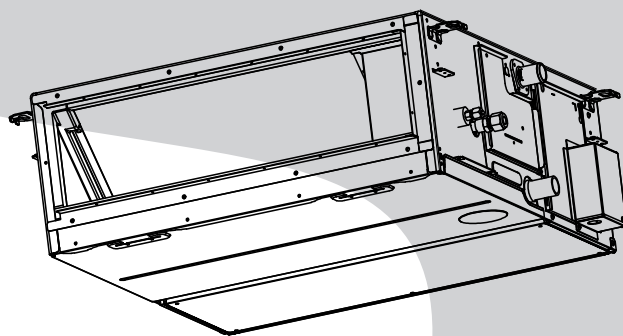
# AIR-CONDITIONER

## MULTI TYPE

### INDOOR UNIT

< Concealed Duct Standard Type >

MMD-UB0071BHP-UL  
MMD-UB0091BHP-UL  
MMD-UB0121BHP-UL  
MMD-UB0151BHP-UL  
MMD-UB0181BHP-UL  
MMD-UB0211BHP-UL  
MMD-UB0241BHP-UL  
MMD-UB0301BHP-UL  
MMD-UB0361BHP-UL  
MMD-UB0421BHP-UL  
MMD-UB0481BHP-UL  
MMD-UB0541BHP-UL



**R454B**



February, 2025



# CONTENTS

|  |            |
|--|------------|
| <b>PRECAUTIONS FOR SAFETY .....</b>  | <b>6</b>   |
| <b>1. SPECIFICATIONS .....</b>   | <b>13</b>  |
| <b>2. AIR DUCTING WORK.....</b>  | <b>17</b>  |
| <b>3. DIMENSIONAL DRAWING.....</b>   | <b>19</b>  |
| <b>4. WIRING DIAGRAMS .....</b>  | <b>21</b>  |
| <b>5. PARTS RATING .....</b>   | <b>22</b>  |
| <b>6. REFRIGERANT CYCLE DIAGRAM .....</b>  | <b>23</b>  |
| <b>7. CONTROL OUTLINE .....</b>  | <b>24</b>  |
| <b>8. COMMUNICATION TYPE, MODEL NAMES AND THE MAXIMUM NUMBER OF<br/>CONNECTABLE UNITS .....</b>  | <b>32</b>  |
| <b>9. APPLIED CONTROL AND FUNCTIONS<br/>(INCLUDING CIRCUIT CONFIGURATION) .....</b>  | <b>33</b>  |
| 9-1. Indoor controller block diagram .....   | 33         |
| 9-1-1. In Case of Connection of Wired Remote Controller .....  | 33         |
| 9-1-2. In Case of Connection of Wireless Remote Controller .....   | 34         |
| 9-1-3. Connection of Both Wired Remote Controller and Wireless Remote<br>Controller .....  | 35         |
| 9-2. Indoor Print Circuit Board .....  | 36         |
| 9-3. Optional connector specifications of indoor P.C. board .....  | 37         |
| 9-4. Functions at test run .....   | 38         |
| 9-5. Test operation of indoor unit .....   | 39         |
| <b>10. APPLIED CONTROL .....</b>   | <b>40</b>  |
| 10-1. Setup of Selecting Function in Indoor Unit .....   | 40         |
| 10-2. Applied Control in Indoor Unit .....   | 45         |
| <b>11. TROUBLESHOOTING .....</b>   | <b>57</b>  |
| 11-1. Overview .....   | 57         |
| 11-2. Troubleshooting method .....   | 58         |
| 11-3. Troubleshooting by check Display on Remote Controller.....   | 64         |
| 11-4. Check codes displayed on remote controller and SMMS outdoor unit<br>(7-segment display on I/F board) and locations to be checked ..... | 68         |
| 11-5. Diagnostic Procedure for Each Check Code (Indoor Unit) .....   | 84         |
| 11-6. Sensor characteristics .....   | 98         |
| <b>12. REPLACEMENT OF SERVICE P.C. BOARD .....</b>   | <b>99</b>  |
| <b>13. DETACHMENTS .....</b>   | <b>103</b> |
| <b>14. EXPLODED VIEWS AND PARTS LIST .....</b>   | <b>110</b> |



## SAFETY CAUTION

Please read carefully through these instructions that contain important information and ensure that you understand them.

### Generic Denomination: Air Conditioner

#### Definition of Qualified Installer or Qualified Service Person

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.

| Agent                    | Qualifications and knowledge which the agent must have  |
|--------------------------|---|
| Qualified installer      | <ul style="list-style-type: none"><li>• The qualified installer is a person who installs, maintains, relocates and removes the air conditioners. He or she has been trained to install, maintain, relocate and remove the air conditioners 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.</li><li>• 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 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.</li><li>• 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 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.</li><li>• The qualified installer who is allowed to work at heights has been trained in matters relating to working at heights with the air conditioners 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.</li></ul>  |
| Qualified service person | <ul style="list-style-type: none"><li>• The qualified service person is a person who installs, repairs, maintains, relocates and removes the air conditioners. He or she has been trained to install, repair, maintain, relocate and remove the air conditioners 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.</li><li>• 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 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.</li><li>• 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 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.</li><li>• 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 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.</li></ul> |



## 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.

| Work undertaken                                | Protective gear worn  |
|--|---|
| All types of work                              | Protective gloves<br>'Safety' working clothing  |
| Electrical-related work                        | Gloves to provide protection for electricians and from heat<br>Insulating shoes<br>Clothing to provide protection from electric shock |
| Work done at heights<br>(19.7"(50 cm) or more) | Helmets for use in industry   |
| Transportation of heavy objects                | Shoes with additional protective toe cap  |
| Repair of outdoor unit                         | Gloves to provide protection for electricians and from heat   |

The important contents concerned to the safety are described on the product itself and on this Service Manual.




Please read this Service Manual after understanding the described items thoroughly in the following contents (Indications / Illustrated marks), and keep them.

### [Explanation of indications]

| Indication   | Explanation   |
|--|---|
|  <b>DANGER</b>  | Indicates contents assumed that an imminent danger causing a death or serious injury of the repair engineers and the third parties when an incorrect work has been executed.  |
|  <b>WARNING</b> | Indicates possibilities assumed that a danger causing a death or serious injury of the repair engineers, the third parties, and the users due to troubles of the product after work when an incorrect work has been executed. |
|  <b>CAUTION</b> | Indicates contents assumed that an injury or property damage (*) may be caused on the repair engineers, the third parties, and the users due to troubles of the product after work when an incorrect work has been executed.  |





\* Property damage: Enlarged damage concerned to property, furniture, and domestic animal / pet







### [Explanation of illustrated marks]

| Indication  | Explanation  |
|---|--|
|  | Indicates prohibited items (Forbidden items to do)<br>The sentences near an illustrated mark describe the concrete prohibited contents.                  |
|  | Indicates mandatory items (Compulsory items to do)<br>The sentences near an illustrated mark describe the concrete mandatory contents.                   |
|  | Indicates cautions (Including danger / warning)<br>The sentences or illustration near or in an illustrated mark describe the concrete cautious contents. |



## ■ Warning indications on the Air Conditioner Unit

|   |   |
|---|---|
|  <div> R454B<br/> Refrigerant<br/> Safety Group<br/> <b>A2L</b> </div> | <b>WARNING</b><br>(Risk of fire)<br>This mark is for R454B refrigerant only. Refrigerant type is written on nameplate of outdoor unit.<br>In case that refrigerant type is R454B, this unit uses a flammable refrigerant.<br>If refrigerant leaks and comes in contact with fire or heating part, it will create harmful gas and there is risk of fire. |
|    | Read the OWNER'S MANUAL carefully before operation.   |
|    | Service personnel are required to carefully read the OWNER'S MANUAL and INSTALLATION MANUAL before operation.   |
|    | Further information is available in the OWNER'S MANUAL, INSTALLATION MANUAL, and the like.  |





| Warning indication  | Description  |
|---|--|
|  <div> <b>WARNING</b><br/> <b>ELECTRICAL SHOCK HAZARD</b><br/> Disconnect all remote electric power supplies before servicing. </div>          | <b>WARNING</b><br><b>ELECTRICAL SHOCK HAZARD</b><br>Disconnect all remote electric power supplies before servicing.  |
|  <div> <b>WARNING</b><br/> Moving parts.<br/> Do not operate unit with grille removed.<br/> Stop the unit before the servicing. </div>       | <b>WARNING</b><br>Moving parts.<br>Do not operate unit with grille removed.<br>Stop the unit before the servicing.   |
|  <div> <b>CAUTION</b><br/> High temperature parts.<br/> You might get burned when removing this panel. </div>                                | <b>CAUTION</b><br>High temperature parts.<br>You might get burned when removing this panel.  |
|  <div> <b>CAUTION</b><br/> Do not touch the aluminium fins of the unit.<br/> Doing so may result in injury. </div>                           | <b>CAUTION</b><br>Do not touch the aluminium fins of the unit.<br>Doing so may result in injury.   |
|  <div> <b>CAUTION</b><br/> <b>BURST HAZARD</b><br/> Open the service valves before the operation, otherwise there might be the burst. </div> | <b>CAUTION</b><br><b>BURST HAZARD</b><br>Open the service valves before the operation, to avoid unnecessary pressure built up which could lead to explosion. |
|  <div> <b>CAUTION</b><br/> <b>Do not climb onto the fan guard.</b><br/> Doing so may result in injury. </div>                                | <b>CAUTION</b><br><b>Do not climb onto the fan guard.</b><br>Doing so may result in injury.  |



# PRECAUTIONS FOR SAFETY



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

## DANGER







|   |   |
|---|---|
| <br>Turn off<br>braeaker       | Before carrying out the installation, maintenance, repair or removal work, be sure to set the circuit breaker for both the indoor and outdoor units to the OFF position. Otherwise, electric shocks may result.   |
|   | Before opening the electrical box cover 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 or qualified service person is allowed to remove the intake grille of the indoor unit or service panel of the outdoor unit and do the work required.   |
|   | Before starting to repair the outdoor unit fan or fan guard, be absolutely sure to set the circuit breaker to the OFF position, and place a "Work in progress" sign on the circuit breaker.   |
|   | When cleaning the filter or other parts of the indoor 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.  |
|   | When you have noticed that some kind of trouble (such as when an error display has appeared, there is a smell of burning, abnormal sounds are heard, 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. Take steps to ensure that the power will not be turned on (by marking "out of service" near the circuit breaker, for instance) until qualified service person arrives. Continuing to use the air conditioner in the trouble status may cause mechanical problems to escalate or result in electric shocks or other failure. |
| <br>Electric<br>shock hazard | When you access inside of the service panel to repair electric parts, wait for about five minutes after turning off the breaker. Do not start repairing immediately. Otherwise you may get electric shock by touching terminals of high-voltage capacitors. Natural discharge of the capacitor takes about five minutes.  |
|   | When checking the electric parts, removing the cover of the electric parts box of Indoor Unit and/or service panel of Outdoor Unit inevitably to determine the failure, use gloves to provide protection for electricians, insulating shoes, clothing to provide protection from electric shock and insulating tools. Be careful not to touch the live part. Electric shock may result. Only "Qualified service person" is allowed to do this work.   |
| <br>Prohibition              | Place a "Work in progress" sign near the circuit breaker while the installation, maintenance, repair or removal work is being carried out.<br>There is a danger of electric shocks if the circuit breaker is set to ON by mistake.  |
|   | When checking the electric parts, removing the cover of the electric parts box of Indoor Unit and/or front panel of Outdoor Unit inevitably to determine the failure, put a sign "Do not enter" around the site before the work. Failure to do this may result in third person getting electric shock.  |
|   | Before operating the air conditioner after having completed the work, check that the electrical parts box cover of the indoor unit and service panel of the outdoor unit are closed, and set the circuit breaker to the ON position.<br>You may receive an electric shock if the power is turned on without first conducting these checks.  |
| <br>Stay on<br>protection    | If, in the course of carrying out repairs, it becomes absolutely necessary to check out the electrical parts with the electrical parts box cover of one or more of the indoor units and the service panel of the outdoor unit removed in order to find out exactly where the trouble lies, wear insulated heat-resistant gloves, insulated boots and insulated work overalls, and take care to avoid touching any live parts. You may receive an electric shock if you fail to heed this warning. Only qualified service person is allowed to do this kind of work.   |










## WARNING

|   |  |
|---|--|
| <br>General              | Before starting to repair the air conditioner, read carefully through the Service Manual, and repair the air conditioner by following its instructions.  |
|   | Only qualified service person is allowed to repair the air conditioner.<br>Repair of the air conditioner by unqualified person may give rise to a fire, electric shocks, injury, water leaks and / or other problems.  |
|   | Do not use any refrigerant different from the one specified for complement or replacement.<br>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.  |
|   | Only a qualified installer or qualified service person is allowed to carry out the electrical work of the air conditioner.<br>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. |
|   | When the air conditioner is to be transported, installed, maintained, repaired or removed, wear protective gloves and 'safety' work clothing.  |
|   | 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 this protective gear may result in electric shocks.             |
|   | 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.   |
|   | 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.  |
|   | Only a qualified installer or qualified service person is allowed to undertake work at heights using a stand of (19.7"(50 cm)) or more or to remove the intake grille of the indoor unit to undertake work.  |
|   | When working at heights, use a ladder which complies with the ISO 14122 standard, and follow the procedure in the ladder's instructions.<br>Also wear a helmet for use in industry as protective gear to undertake 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.                 |
|   | When executing address setting, test run, or troubleshooting through the checking window on the electric parts box, put on insulated gloves to provide protection from electric shock. Otherwise you may receive an electric shock.  |
|   | Do not touch the aluminum fin of the outdoor unit.<br>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.   |
|   | Do not climb onto or place objects on top of the outdoor unit.<br>You may fall or the objects may fall off of the outdoor unit and result in injury.   |
|   | Use forklift to carry in the air conditioner units and use winch or hoist at installation of them.   |
|   | When transporting the air conditioner, wear shoes with protective toe caps, protective gloves and other protective clothing.   |
|   | When transporting the air conditioner, do not take hold of the bands around the packing carton.<br>You may injure yourself if the bands should break.  |
| <br>Check earth wires. | Be sure that a heavy unit (22lbs(10 kg) or heavier) such as a compressor is carried by two persons.  |
|   | This air conditioner has passed the pressure test as specified in UL 60335-2-40 Annex EE.  |
|   | Before troubleshooting or repair work, check the earth wire is connected to the earth terminals of the main unit, otherwise an electric shock is caused when a leak occurs. If the earth wire is not correctly connected, contact an electric engineer for rework.   |
|   | After completing the repair or relocation work, check that the ground wires are connected properly.  |
|   | Be sure to connect earth wire. (Grounding work) Incomplete grounding causes an electric shock. Do not connect ground wires to gas pipes, water pipes, and lightning rods or ground wires for telephone wires.  |





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| <br>Prohibition of modification.                 | Do not modify the products. Do not also disassemble or modify the parts.<br>It may cause a fire, electric shock or injury.   |
| <br>Use specified parts.                         | When any of the electrical parts are to be replaced, ensure that the replacement parts satisfy the specifications given in the Service Manual (or use the parts contained on the parts list in the Service Manual).<br>Use of any parts which do not satisfy the required specifications may give rise to electric shocks, smoking and / or a fire.  |
| <br>Do not bring a child close to the equipment. | If, in the course of carrying out repairs, it becomes absolutely necessary to check out the electrical parts with the electrical parts box cover of one or more of the indoor units and the service panel of the outdoor unit removed in order to find out exactly where the trouble lies, put a sign in place so that no-one will approach the work location before proceeding with the work. Third-party individuals may enter the work site and receive electric shocks if this warning is not heeded.  |
| <br>Insulating measures                          | Connect the cut-off lead wires with crimp contact, etc., put the closed end side upward and then apply a watercut method, otherwise a leak or production of fire is caused at the users' side.   |
| <br>No fire                                     | When performing repairs using a gas burner, replace the refrigerant with nitrogen gas because the oil that coats the pipes may otherwise burn.<br>When repairing the refrigerating cycle, take the following measures.<br>1) Be attentive to fire around the cycle. When using a gas stove, etc., be sure to put out fire before work; otherwise the oil mixed with refrigerant gas may catch fire.<br>2) Do not use a welder in the closed room. When using it without ventilation, carbon monoxide poisoning may be caused.<br>3) Do not bring inflammables close to the refrigerant cycle, otherwise fire of the welder may catch the inflammables.                           |
| <br>Refrigerant                                | The refrigerant used by this air conditioner is the R454B  |
|   | Check the used refrigerant name and use tools and materials of the parts which match with it.<br>For the products which use R454B refrigerant, the refrigerant name is indicated at a position on the outdoor unit where is easy to see.   |
|   | Do not use any refrigerant different from the one specified for complement or replacement.<br>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.  |
|   | For an air conditioner which uses R454B, never use other refrigerant than R454B. For an air conditioner which uses other refrigerant (R22, etc.), never use R454B.<br>If different types of refrigerant are mixed, abnormal high pressure generates in the refrigerating cycle and an injury due to breakage may be caused.  |
|   | 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 refrigerating cycle.<br>Failure to purge the air completely may cause the air conditioner to malfunction.   |
|   | Do not charge refrigerant additionally. If charging refrigerant additionally when refrigerant gas leaks, the refrigerant composition in the refrigerating cycle changes resulted in change of air conditioner characteristics or refrigerant over the specified standard amount is charged and an abnormal high pressure is applied to the inside of the refrigerating cycle resulted in cause of breakage or injury.<br>Therefore if the refrigerant gas leaks, recover the refrigerant in the air conditioner, execute vacuuming, and then newly recharge the specified amount of liquid refrigerant.<br>In this time, never charge the refrigerant over the specified amount. |
|   | When recharging the refrigerant in the refrigerating cycle, do not mix the refrigerant or air other than R454B into the specified refrigerant. If air or others is mixed with the refrigerant, abnormal high pressure generates in the refrigerating cycle resulted in cause of injury due to breakage.  |
|   | After installation work, check the refrigerant gas does not leak. If the refrigerant gas leaks in the room, poisonous gas generates when gas touches to fire such as fan heater, stove or cooking stove though the refrigerant gas itself is innocuous.<br>Never recover the refrigerant into the outdoor unit. When the equipment is moved or repaired, be sure to recover the refrigerant with recovering device.<br>The refrigerant cannot be recovered in the outdoor unit; otherwise a serious accident such as breakage or injury is caused.   |



|   |  |
|---|--|
| <br>Assembly / Wiring                                | <p>After repair work, surely assemble the disassembled parts, and connect and lead the removed wires as before. Perform the work so that the cabinet or panel does not catch the inner wires.</p> <p>If incorrect assembly or incorrect wire connection was done, a disaster such as a leak or fire is caused at user's side.</p>  |
| <br>Insulator check                                  | <p>After the work has finished, be sure to use an insulation tester set (500 V Megger) to check the resistance is 1 MΩ or more between the charge section and the non-charge metal section (Earth position).</p> <p>If the resistance value is low, a disaster such as a leak or electric shock is caused at user's side.</p>  |
| <br>Ventilation                                      | <p>When the refrigerant gas leaks during work, execute ventilation.</p> <p>If the refrigerant gas touches to a fire, poisonous gas generates. A case of leakage of the refrigerant and the closed room full with gas is dangerous because a shortage of oxygen occurs. Be sure to execute ventilation.</p> <p>If refrigerant gas has leaked during the installation work, ventilate the room immediately.</p> <p>If the leaked refrigerant gas comes in contact with fire, noxious gas may generate.</p> <p>After installation work, check the refrigerant gas does not leak. If the refrigerant gas leaks in the room, poisonous gas generates when gas touches to fire such as fan heater, stove or cooking stove though the refrigerant gas itself is innocuous.</p>  |
| <br>Compulsion                                       | <p>When the refrigerant gas leaks, find up the leaked position and repair it surely.</p> <p>If the leaked position cannot be found up and the repair work is interrupted, pump-down and tighten the service valve, otherwise the refrigerant gas may leak into the room.</p> <p>The poisonous gas generates when gas touches to fire such as fan heater, stove or cooking stove though the refrigerant gas itself is innocuous.</p> <p>When installing equipment which includes a large amount of charged refrigerant such as a multi air conditioner in a sub-room, it is necessary that the density does not the limit even if the refrigerant leaks.</p> <p>If the refrigerant leaks and exceeds the limit density, an accident of shortage of oxygen is caused.</p> <p>Tighten the flare nut with a torque wrench in the specified manner.</p> <p>Excessive tighten of the flare nut may cause a crack in the flare nut after a long period, which may result in refrigerant leakage.</p> <p>Nitrogen gas must be used for the airtight test.</p> <p>The charge hose must be connected in such a way that it is not slack.</p> <p>For the installation / moving / reinstallation work, follow to the Installation Manual.</p> <p>If an incorrect installation is done, a trouble of the refrigerating cycle, water leak, electric shock or fire is caused.</p> |
| <br>Check after repair                             | <p>Once the repair work has been completed, check for refrigerant leaks, and check the insulation resistance and water drainage.</p> <p>Then perform a trial run to check that the air conditioner is running properly.</p> <p>After repair work has finished, check there is no trouble. If check is not executed, a fire, electric shock or injury may be caused. For a check, turn off the power breaker.</p> <p>After repair work (installation of front panel and cabinet) has finished, execute a test run to check there is no generation of smoke or abnormal sound.</p> <p>If check is not executed, a fire or an electric shock is caused. Before test run, install the front panel and cabinet.</p> <p>Be sure to fix the screws back which have been removed for installation or other purposes.</p>   |
| <br>Do not operate the unit with the valve closed. | <p>Check the following matters before a test run after repairing piping.</p> <ul style="list-style-type: none"> <li>• Connect the pipes surely and there is no leak of refrigerant.</li> <li>• The valve is opened.</li> </ul> <p>Running the compressor under condition that the valve closes causes an abnormal high pressure resulted in damage of the parts of the compressor and etc. and moreover if there is leak of refrigerant at connecting section of pipes, the air is sucked and causes further abnormal high pressure resulted in burst or injury.</p>   |
| <br>Check after reinstallation                     | <p>Only a qualified installer or qualified service person 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.</p> <p>Check the following items after reinstallation.</p> <ol style="list-style-type: none"> <li>1) The earth wire is correctly connected.</li> <li>2) The power cord is not caught in the product.</li> <li>3) There is no inclination or unsteadiness and the installation is stable.</li> </ol> <p>If check is not executed, a fire, an electric shock or an injury is caused.</p> <p>When carrying out the pump-down work shut down the compressor before disconnecting the refrigerant pipe.</p> <p>Disconnecting the refrigerant pipe with the service valve left open and the compressor still operating will cause air, etc. to be sucked in, raising the pressure inside the refrigeration cycle to an abnormally high level, and possibly resulting in reputing, injury, etc.</p>   |



|  |   |
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| <br>Cooling check | <p>When the service panel of the outdoor unit is to be opened in order for the compressor or the area around this part to be repaired immediately after the air conditioner has been shut down, set the circuit breaker to the OFF position, and then wait at least 10 minutes before opening the service panel. If you fail to heed this warning, you will run the risk of burning yourself because the compressor pipes and other parts will be very hot to the touch. In addition, before proceeding with the repair work, wear the kind of insulated heat-resistant gloves designed to protect electricians.</p>  |
|  | <p>Take care not to get burned by compressor pipes or other parts when checking the cooling cycle while running the unit as they get heated while running. Be sure to put on gloves providing protection for heat.</p>  |
| <br>Installation | <p>When the service panel of the outdoor unit is to be opened in order for the fan motor, reactor, inverter or the areas around these parts to be repaired immediately after the air conditioner has been shut down, set the circuit breaker to the OFF position, and then wait at least 10 minutes before opening the service panel. If you fail to heed this warning, you will run the risk of burning yourself because the fan motor, reactor, inverter heat sink and other parts will be very hot to the touch. In addition, before proceeding with the repair work, wear the kind of insulated heat-resistant gloves designed to protect electricians.</p> |
|  | <p>Only a qualified installer or service person is allowed to do installation work. Inappropriate installation may result in water leakage, electric shock or fire.</p>   |
|  | <p>Before starting to install the air conditioner, read carefully through the Installation Manual, and follow its instructions to install the air conditioner.</p>  |
|  | <p>Be sure to use the company-specified products for the separately purchased parts. Use of non-specified products may result in fire, electric shock, water leakage or other failure. Have the installation performed by a qualified installer.</p>  |
|  | <p>Do not supply power from the power terminal block equipped on the outdoor unit to another outdoor unit. Capacity overflow may occur on the terminal block and may result in fire.</p>  |
|  | <p>Do not install the air conditioner in a location that may be subject to a risk of exposure to a combustible gas. If a combustible gas leaks and becomes concentrated around the unit, a fire may occur.</p>  |
|  | <p>Install the indoor unit at least 8'2" (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.</p>  |
|  | <p>Install a circuit breaker that meets the specifications in the installation manual and the stipulations in the local regulations and laws.</p>   |
|  | <p>Install the circuit breaker where it can be easily accessed by the qualified service person.</p>   |
|  | <p>If you install the unit in a small room, take appropriate measures to prevent the refrigerant from exceeding the limit concentration even if it leaks. Consult the dealer from whom you purchased the air conditioner when you implement the measures. Accumulation of highly concentrated refrigerant may cause an oxygen deficiency accident.</p>  |
|  | <p>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.</p>   |

### Explanations given to user

If you have discovered that 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 to have the repairs done. Do not set the circuit breaker to the ON position until the repairs are completed.

### Relocation

- Only a qualified installer or qualified service person 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, etc. to be sucked in, raising the pressure inside the refrigeration cycle to an abnormally high level, and possibly resulting in reputing, injury, etc.



## • Refrigerant (R454B)

This air conditioner adopts HFC type refrigerant (R454B) which does not deplete the ozone layer.

### 1. Safety Caution Concerned to Refrigerant

The pressure of R454B is high 1.6 times of that of the former refrigerant (R22).

Accompanied with change of refrigerant, the refrigerating oil has been also changed.

Therefore, be sure that water, dust, the former refrigerant or the former refrigerating oil is not mixed into the refrigerating cycle of the air conditioner with refrigerant during installation work or service work.

If an incorrect work or incorrect service is performed, there is a possibility to cause a serious accident. Use the tools and materials exclusive to R454B to purpose a safe work.

### 2. Cautions on Installation/Service

- 1) Do not mix the other refrigerant or refrigerating oil.

For the tools exclusive to R454B, shapes of all the joints including the service port differ from those of the former refrigerant in order to prevent mixture of them.

- 2) As the use pressure of the refrigerant is high, use material thickness of the pipe and tools which are specified for R454B.

- 3) In the installation time, use clean pipe materials and work with great attention so that water and others do not mix in because pipes are affected by impurities such as water, oxide scales, oil, etc.

Use the clean pipes.

Be sure to brazing with flowing nitrogen gas. (Never use gas other than nitrogen gas.)

- 4) For the earth protection, use a vacuum pump for air purge.

- 5) R454B refrigerant is azeotropic mixture type refrigerant.

Therefore use liquid type to charge the refrigerant. (If using gas for charging, composition of the refrigerant changes and then characteristics of the air conditioner change.)

### 3. Pipe Materials

For the refrigerant pipes, copper pipe and joints are mainly used.

It is necessary to select the most appropriate pipes to conform to the standard.

Use clean material in which impurities adhere inside of pipe or joint to a minimum.

#### 1) Copper pipe

##### <Piping>

The pipe thickness, flare finishing size, flare nut and others differ according to a refrigerant type.

When using a long copper pipe for R454B, it is recommended to select "Copper or copper-base pipe without seam" and one with bonded oil amount 0.0001/lbs 32'10" (40mg/10m) or less.

Also do not use crushed, deformed, discolored (especially inside) pipes. (Impurities cause clogging of expansion valves and capillary tubes.)

##### <Flare nut>

Use the flare nuts which are attached to the air conditioner unit.

#### 2) Joint

The flare joint and socket joint are used for joints of the copper pipe.

The joints are rarely used for installation of the air conditioner. However clear impurities when using them.



## 4. Tools

### 1. Required Tools for R454B

Mixing of different types of oil may cause a trouble such as generation of sludge, clogging of capillary, etc. Accordingly, the tools to be used are classified into the following three types.

- 1) Tools exclusive for R454B (Those which cannot be used for conventional refrigerant (R22))
- 2) Tools exclusive for R454B, but can be also used for conventional refrigerant (R22)
- 3) Tools commonly used for R454B and for conventional refrigerant (R22)

The table below shows the tools exclusive for R454B and their interchangeability.

- 4) Joint preparation are recommend to double-flare fitting accordance to ASHRAE15 requirements.

#### Tools exclusive for R454B (The following tools for R454B are required.)

Tools whose specifications are changed for R454B and their interchangeability

| No. | Used tool   | Usage  | R454B<br>air conditioner installation      |  | Conventional air<br>conditioner installation  |
|-----|---|--|--|--|---|
|     |   |  | Existence of<br>new equipment<br>for R454B | Whether conventional<br>equipment<br>can be used | Whether conventional<br>equipment can be used |
| ①   | Flare tool  | Pipe flaring                                       | Yes  | *(Note)  | Yes   |
| ②   | Copper pipe gauge<br>for adjusting<br>projection margin | Flaring by conventional<br>flare tool              | Yes  | *(Note)  | *(Note)                                       |
| ③   | Torque wrench   | Tightening of flare nut                            | Yes  | No   | No  |
| ④   | Gauge manifold  | Evacuating, refrigerant<br>charge, run check, etc. | Yes  | No   | No  |
| ⑤   | Charge hose   |  |  |  |   |
| ⑥   | Vacuum pump adapter                                     | Vacuum evacuating                                  | Yes  | No   | Yes   |
| ⑦   | Electronic balance for<br>refrigerant charging          | Refrigerant charge                                 | Yes  | Yes  | Yes   |
| ⑧   | Leakage detector  | Gas leakage check                                  | Yes  | No   | Yes   |

**(Note)** When flaring is carried out for R454B using the conventional flare tools, adjustment of projection margin is necessary. For this adjustment, a copper pipe gauge, etc. are necessary.

#### General tools (Conventional tools can be used.)

In addition to the above exclusive tools, the following equipments which serve also for R22 are necessary as the general tools.

- |  |  |
|--|--|
| 1) Vacuum pump. Use vacuum pump by<br>attaching vacuum pump adapter. | 7) Screwdriver (+, -)                  |
| 2) Torque wrench   | 8) Spanner or Monkey wrench            |
| 3) Pipe cutter   | 9) Hole core drill                     |
| 4) Reamer  | 10) Hexagon wrench (Opposite side 4mm) |
| 5) Pipe bender   | 11) Tape measure                       |
| 6) Level vial  | 12) Metal saw                          |

Also prepare the following equipments for other installation method and run check.

- |                |  |
|----------------|--|
| 1) Clamp meter | 3) Insulation resistance tester (Megger) |
| 2) Thermometer | 4) Electroscopic                         |



# 1. SPECIFICATIONS

## Concealed Duct type

| Model name                 |                                  |             | MMD-UB0071BHP-UL             | MMD-UB0091BHP-UL |
|----------------------------|----------------------------------|-------------|------------------------------|------------------|
| Cooling Capacity (KBtu/h)  |                                  |             | 7.50                         | 9.50             |
| Heating Capacity (KBtu/h)  |                                  |             | 8.50                         | 10.5             |
| Electrical characteristics | Power supply                     |             | 1Ph. 208/230V ~ 60Hz         |                  |
|                            | Running current (A)              |             | 0.45                         | 0.58             |
|                            | Power consumption (kW)           |             | 0.070                        | 0.090            |
|                            | Starting current (A)             |             | 0.65                         | 0.78             |
| Appearance                 | Main unit                        |             | Zinc hot dipping steel plate |                  |
|                            | Ceiling panel                    | Model name  | -                            |                  |
|                            |                                  | Panel Color | -                            |                  |
| Outer dimension            | Main unit                        | Height (in) | 10.9                         |                  |
|                            |                                  | Width (in)  | 27.6                         |                  |
|                            |                                  | Depth (in)  | 29.6                         |                  |
|                            | Ceiling panel                    | Height (in) | -                            |                  |
|                            |                                  | Width (in)  | -                            |                  |
|                            |                                  | Depth (in)  | -                            |                  |
| Total weight               | Main unit (lbs)                  |             | 56                           |                  |
|                            | Ceiling panel (lbs)              |             | -                            |                  |
| Heat exchanger             |                                  |             | Finned tube                  |                  |
| Fan unit                   | Fan                              |             | Centrifugal (Multi Balde)    |                  |
|                            | Standard air flow                | H/M/L (cfm) | 320/265/210                  | 395/330/265      |
|                            | Motor (W)                        |             | 150                          | 150              |
|                            | External static pressure (in WG) |             | 0.4                          | 0.4              |
| Air filter                 |                                  |             | Standard filter attached     |                  |
| Controller                 |                                  |             | -                            | -                |
| Sound pressure level       |                                  | H/M/L (dB)  | 39/34/30                     | 41/36/32         |
| Sound power level          |                                  | H/M/L (dB)  | 54/49/45                     | 56/51/47         |
| Connecting pipe            | Gas side (in)                    |             | 3/8                          |                  |
|                            | Liquid (in)                      |             | 1/4                          |                  |
|                            | Drain port (in)                  |             | Outside Dia. 1-1/4           |                  |

**Note 1 :** The cooling capacities and electrical characteristics are measured under the conditions specified by JIS B 8615 based on the reference piping.  
The reference piping consists of 16'5"(5m) of main piping and 8'2"(2.5m) of branch piping connected with 0 m height.

**Note 2 :** The sound level are measured in an anechoic chamber in accordance with JIS B 8616.  
Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

**Note :** Rated conditions Cooling: Indoor air temperature 80°F DB/67°F WB, Outdoor air temperature 95°F DB  
Heating: Indoor air temperature 70°F DB, Outdoor air temperature 47°F DB/43°F WB



## Concealed Duct type

|                            |                                  |             |                              |                  |                  |                  |
|----------------------------|----------------------------------|-------------|------------------------------|------------------|------------------|------------------|
| Model name                 |                                  |             | MMD-UB0121BHP-UL             | MMD-UB0151BHP-UL | MMD-UB0181BHP-UL | MMD-UB0211BHP-UL |
| Cooling Capacity (KBtu/h)  |                                  |             | 12.0                         | 15.4             | 18.0             | 21.0             |
| Heating Capacity (KBtu/h)  |                                  |             | 13.5                         | 17.0             | 20.0             | 24.0             |
| Electrical characteristics | Power supply                     |             | 1Ph. 208/230V ~ 60Hz         |                  |                  |                  |
|                            | Running current (A)              |             | 0.83                         | 0.83             | 0.90             | 1.25             |
|                            | Power consumption (kW)           |             | 0.130                        | 0.130            | 0.140            | 0.210            |
|                            | Starting current (A)             |             | 1.23                         | 1.23             | 1.30             | 2.05             |
| Appearance                 | Main unit                        |             | Zinc hot dipping steel plate |                  |                  |                  |
|                            | Ceiling panel                    | Model name  | -                            |                  |                  |                  |
|                            |                                  | Panel Color | -                            |                  |                  |                  |
| Outer dimension            | Main unit                        | Height (in) | 10.9                         |                  |                  | 10.9             |
|                            |                                  | Width (in)  | 39.4                         |                  |                  | 55.2             |
|                            |                                  | Depth (in)  | 29.6                         |                  |                  | 29.6             |
|                            | Ceiling panel                    | Height (in) | -                            |                  |                  | -                |
|                            |                                  | Width (in)  | -                            |                  |                  | -                |
|                            |                                  | Depth (in)  | -                            |                  |                  | -                |
| Total weight               | Main unit (lbs)                  |             | 73                           |                  |                  | 93               |
|                            | Ceiling panel (lbs)              |             | -                            |                  |                  | -                |
| Heat exchanger             |                                  |             | Finned tube                  |                  |                  |                  |
| Fan unit                   | Fan                              |             | Centrifugal (Multi Balde)    |                  |                  |                  |
|                            | Standard air flow                | H/M/L (cfm) | 590/490/395                  | 590/490/395      | 625/490/395      | 705/585/510      |
|                            | Motor (W)                        |             | 150                          | 150              | 150              | 250              |
|                            | External static pressure (in WG) |             | 0.4                          | 0.4              | 0.4              | 0.6              |
| Air filter                 |                                  |             | Standard filter attached     |                  |                  |                  |
| Controller                 |                                  |             | -                            | -                | -                | -                |
| Sound pressure level       | H/M/L (dB)                       |             | 44/41/35                     | 44/41/35         | 45/41/35         | 44/34/30         |
| Sound power level          | H/M/L (dB)                       |             | 59/56/40                     | 59/56/50         | 60/56/50         | 59/49/45         |
| Connecting pipe            | Gas side (in)                    |             | 3/8                          | 5/8              |                  | 5/8              |
|                            | Liquid (in)                      |             | 1/4                          | 3/8              |                  | 3/8              |
|                            | Drain port (in)                  |             | Outside Dia. 1-1/4           |                  |                  |                  |

**Note 1 :** The cooling capacities and electrical characteristics are measured under the conditions specified by JIS B 8615 based on the reference piping.

The reference piping consists of 16'5"(5m) of main piping and 8'2"(2.5m) of branch piping connected with 0 m height.

**Note 2 :** The sound level are measured in an anechoic chamber in accordance with JIS B 8616.

Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

**Note :** Rated conditions Cooling: Indoor air temperature 80°F DB/67°F WB, Outdoor air temperature 95°F DB  
Heating: Indoor air temperature 70°F DB, Outdoor air temperature 47°F DB/43°F WB



### Concealed Duct type

|                            |                                  |             |                              |                  |                  |
|----------------------------|----------------------------------|-------------|------------------------------|------------------|------------------|
| Model name                 |                                  |             | MMD-UB0241BHP-UL             | MMD-UB0301BHP-UL | MMD-UB0361BHP-UL |
| Cooling Capacity (KBtu/h)  |                                  |             | 24.0                         | 30.0             | 36.0             |
| Heating Capacity (KBtu/h)  |                                  |             | 27.0                         | 34.0             | 40.0             |
| Electrical characteristics | Power supply                     |             | 1Ph. 208/230V ~ 60Hz         |                  |                  |
|                            | Running current (A)              |             | 1.25                         | 1.31             | 1.97             |
|                            | Power consumption (kW)           |             | 0.210                        | 0.220            | 0.330            |
|                            | Starting current (A)             |             | 2.05                         | 2.11             | 2.77             |
| Appearance                 | Main unit                        |             | Zinc hot dipping steel plate |                  |                  |
|                            | Ceiling panel                    | Model name  | -                            |                  |                  |
|                            |                                  | Panel Color | -                            |                  |                  |
| Outer dimension            | Main unit                        | Height (in) | 10.9                         |                  |                  |
|                            |                                  | Width (in)  | 55.2                         |                  |                  |
|                            |                                  | Depth (in)  | 29.6                         |                  |                  |
|                            | Ceiling panel                    | Height (in) | -                            |                  |                  |
|                            |                                  | Width (in)  | -                            |                  |                  |
|                            |                                  | Depth (in)  | -                            |                  |                  |
| Total weight               | Main unit (lbs)                  |             | 93                           |                  |                  |
|                            | Ceiling panel (lbs)              |             | -                            |                  |                  |
| Heat exchanger             |                                  |             | Finned tube                  |                  |                  |
| Fan unit                   | Fan                              |             | Centrifugal (Multi Balde)    |                  |                  |
|                            | Standard air flow                | H/M/L (cfm) | 705/585/510                  | 740/655/545      | 1130/955/810     |
|                            | Motor (W)                        |             | 250                          | 250              | 250              |
|                            | External static pressure (in WG) |             | 0.6                          | 0.6              | 0.6              |
| Air filter                 |                                  |             | Standard filter attached     |                  |                  |
| Controller                 |                                  |             | -                            | -                | -                |
| Sound pressure level       |                                  | H/M/L (dB)  | 44/34/30                     | 45/35/31         | 46/41/37         |
| Sound power level          |                                  | H/M/L (dB)  | 59/49/45                     | 60/50/46         | 61/56/52         |
| Connecting pipe            | Gas side (in)                    |             | 5/8                          |                  |                  |
|                            | Liquid (in)                      |             | 3/8                          |                  |                  |
|                            | Drain port (in)                  |             | Outside Dia. 1-1/4           |                  |                  |

**Note 1** : The cooling capacities and electrical characteristics are measured under the conditions specified by JIS B 8615 based on the reference piping.  
The reference piping consists of 16'5"(5m) of main piping and 8'2"(2.5m) of branch piping connected with 0 m height.

**Note 2** : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.  
Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

**Note** : Rated conditions Cooling: Indoor air temperature 80°F DB/67°F WB, Outdoor air temperature 95°F DB  
Heating: Indoor air temperature 70°F DB, Outdoor air temperature 47°F DB/43°F WB



**Concealed Duct type**

| Model name                 |                                  |             | MMD-UB0421BHP-UL             | MMD-UB0481BHP-UL | MMD-UB0541BHP-UL |
|----------------------------|----------------------------------|-------------|------------------------------|------------------|------------------|
| Cooling Capacity (KBtu/h)  |                                  |             | 42.0                         | 48.0             | 54.0             |
| Heating Capacity (KBtu/h)  |                                  |             | 47.5                         | 54.0             | 60.0             |
| Electrical characteristics | Power supply                     |             | 1Ph. 208/230V ~ 60Hz         |                  |                  |
|                            | Running current (A)              |             | 1.97                         | 2.03             | 2.03             |
|                            | Power consumption (kW)           |             | 0.330                        | 0.340            | 0.340            |
|                            | Starting current (A)             |             | 2.77                         | 2.83             | 2.83             |
| Appearance                 | Main unit                        |             | Zinc hot dipping steel plate |                  |                  |
|                            | Ceiling panel                    | Model name  | -                            |                  |                  |
|                            |                                  | Panel Color | -                            |                  |                  |
| Outer dimension            | Main unit                        | Height (in) | 10.9                         |                  |                  |
|                            |                                  | Width (in)  | 55.2                         |                  |                  |
|                            |                                  | Depth (in)  | 29.6                         |                  |                  |
|                            | Ceiling panel                    | Height (in) | -                            |                  |                  |
|                            |                                  | Width (in)  | -                            |                  |                  |
|                            |                                  |             |                              |                  |                  |
|                            |                                  | Depth (in)  | -                            |                  |                  |
| Total weight               | Main unit (lbs)                  |             | 93                           |                  |                  |
|                            | Ceiling panel (lbs)              |             | -                            |                  |                  |
| Heat exchanger             |                                  |             | Finned tube                  |                  |                  |
| Fan unit                   | Fan                              |             | Centrifugal (Multi Balde)    |                  |                  |
|                            | Standard air flow                | H/M/L (cfm) | 1130/955/810                 | 1175/1025/885    | 1175/1025/885    |
|                            | Motor (W)                        |             | 250                          | 250              | 250              |
|                            | External static pressure (in WG) |             | 0.6                          | 0.6              | 0.6              |
| Air filter                 |                                  |             | Standard filter attached     |                  |                  |
| Controller                 |                                  |             | -                            | -                | -                |
| Sound pressure level       |                                  | H/M/L (dB)  | 46/41/37                     | 47/42/38         | 47/42/38         |
| Sound power level          |                                  | H/M/L (dB)  | 61/56/52                     | 62/57/53         | 62/57/53         |
| Connecting pipe            | Gas side (in)                    |             | 5/8                          |                  |                  |
|                            | Liquid (in)                      |             | 3/8                          |                  |                  |
|                            | Drain port (in)                  |             | Outside Dia. 1-1/4           |                  |                  |

**Note 1 :** The cooling capacities and electrical characteristics are measured under the conditions specified by JIS B 8615 based on the reference piping.

The reference piping consists of 16'5"(5m) of main piping and 8'2"(2.5m) of branch piping connected with 0 m height.

**Note 2 :** The sound level are measured in an anechoic chamber in accordance with JIS B 8616.

Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

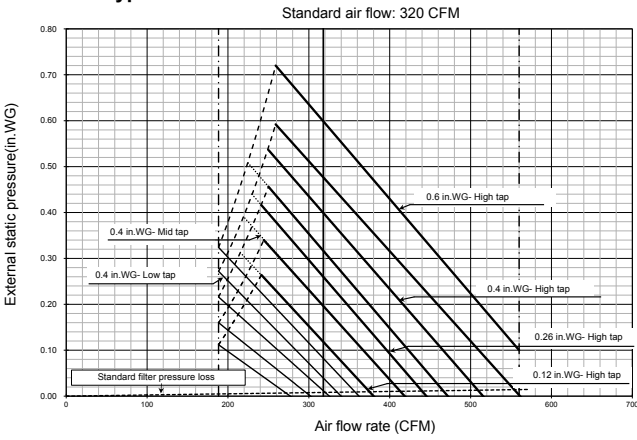
**Note :** Rated conditions Cooling: Indoor air temperature 80°F DB/67°F WB, Outdoor air temperature 95°F DB  
Heating: Indoor air temperature 70°F DB, Outdoor air temperature 47°F DB/43°F WB



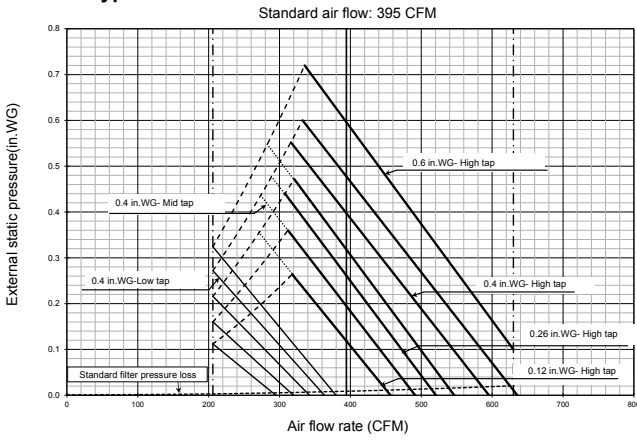
# 2. AIR DUCTING WORK

## Static pressure characteristics

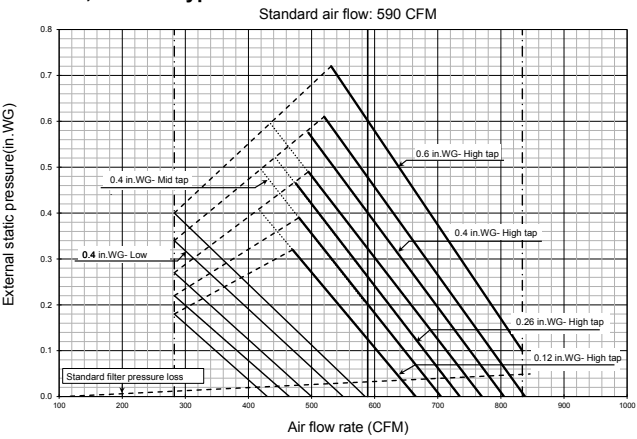
UB0071 type



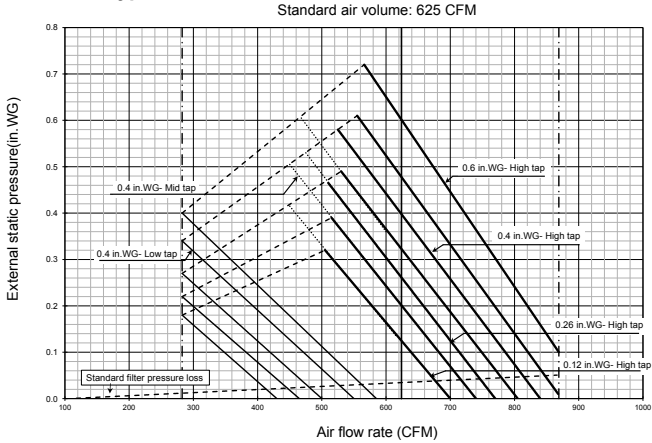
UB0091type



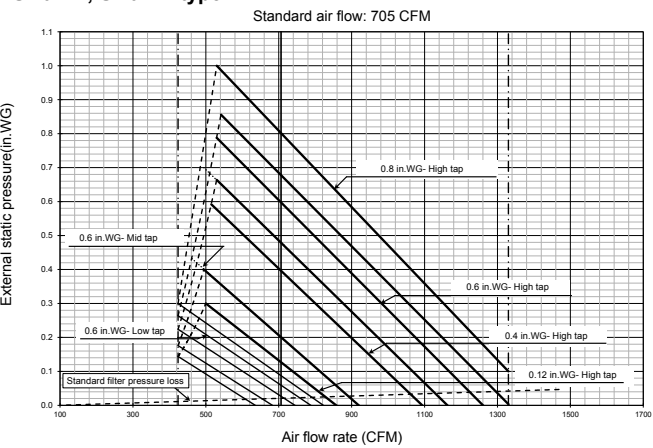
UB0121, UB0151 type



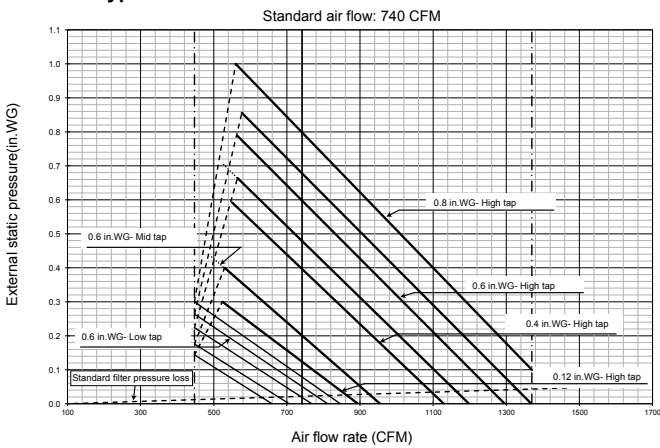
UB0181 type



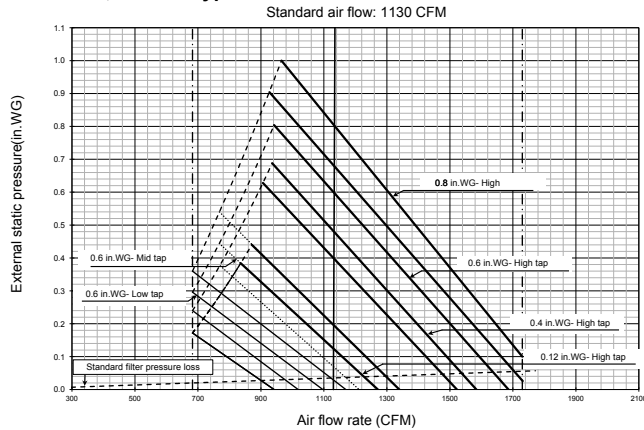
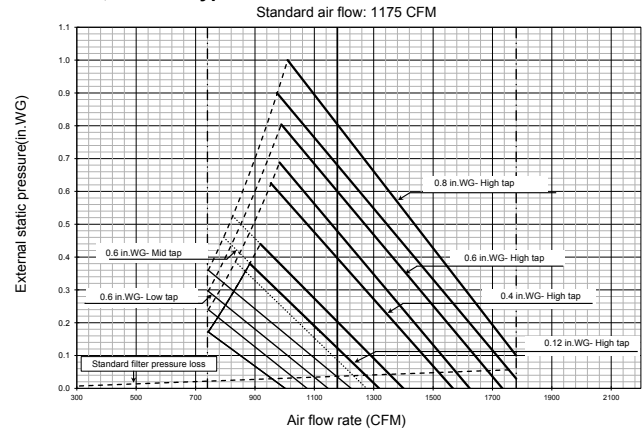
UB0211, UB0241 type



UB0301 type





**UB0361, UB0421 type****UB0481, UB0541 type**

The concealed duct unit has 7 steps of static pressure (MMD-UB0071 ~ 0181BHP-UL is 0.12 – 0.6 in. WG, MMD-UB0211 ~ 0541BHP-UL is 0.12 – 0.8 in. WG) adjustment to meet the installation site requirements / conditions.

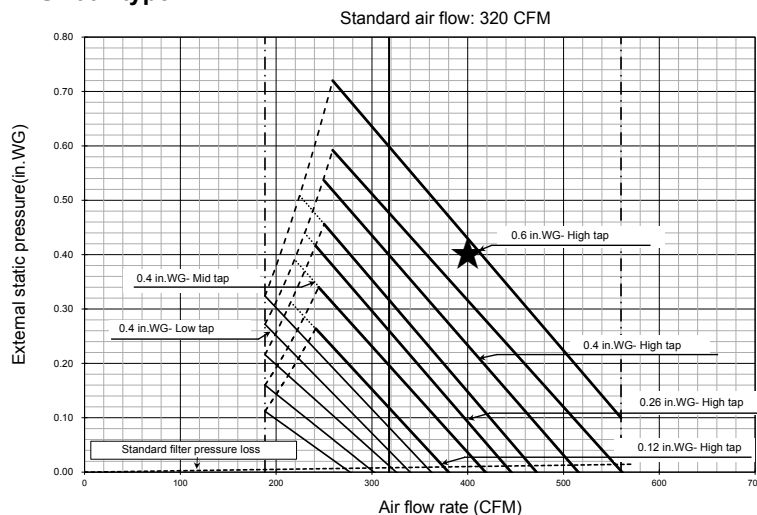
With these steps there are different speed fan taps associated to select correct air flow.

For meeting the site requirement / conditions, make sure the external static pressure and air flow are determined. Plot the external static pressure and air flow on the below graph to determine the right speed fan step setting.

For example : Job site requirement is to deliver 400 CFM at 0.4 in. WG external static pressure. Using the below graph, external static pressure on vertical axis and air flow on horizontal axis, the star mark indicates the job site requirement.

The star mark is below 0.6 in. WG high speed fan tap line, which means the unit needs to be set to 0.6 in. WG external static pressure with high speed fan tap.

Please follow the process described in application controls of this manual for set up external static pressure.

**UB007 type****NOTE**

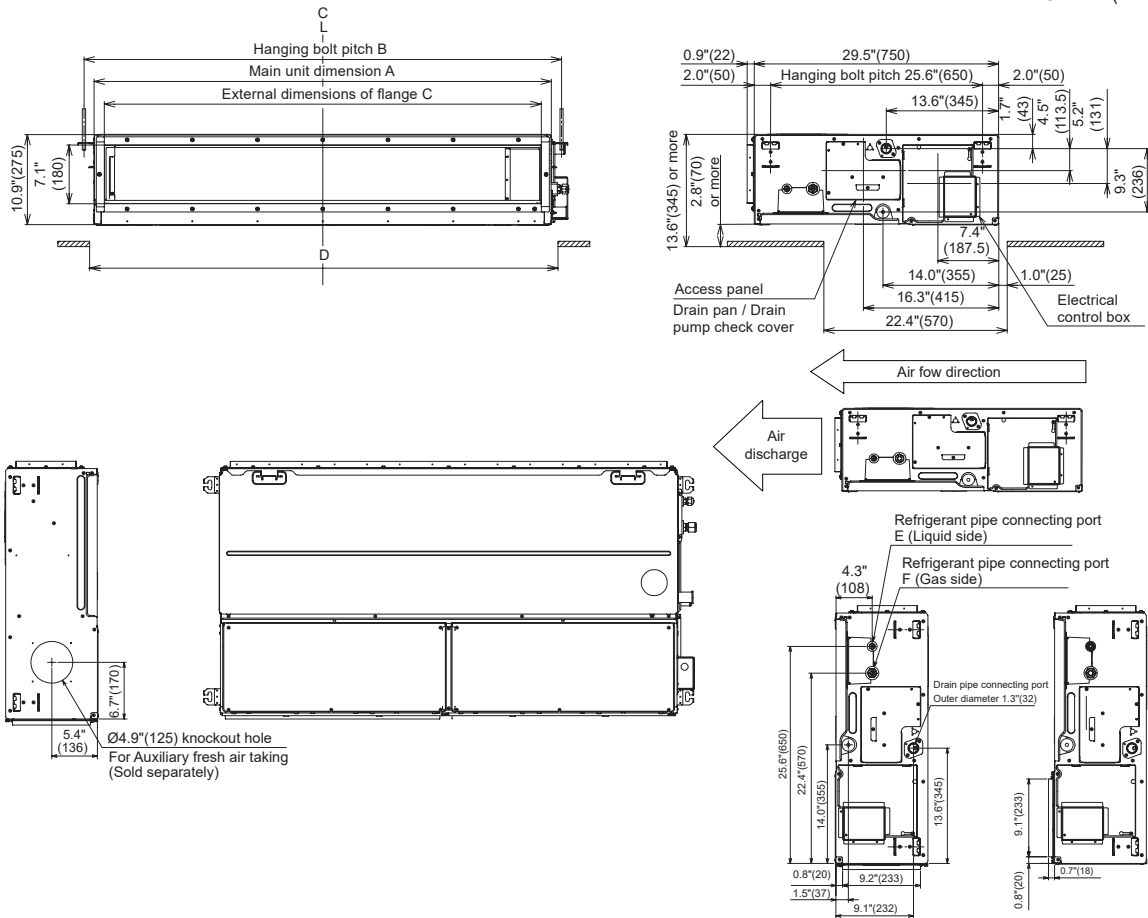
Supply air CFM will follow the solid line fan curve shown in the above graph if there is any change in the external static pressure.

Supply air volume for medium and low fan speed tap is also set by remote controller. It will follow the dotted line fan curve in the graph.



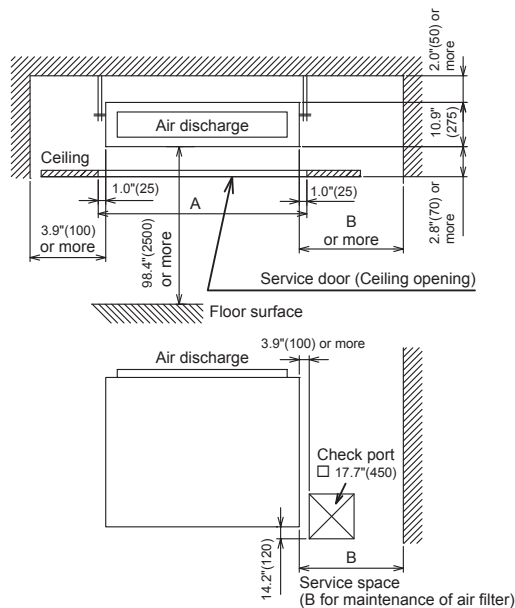
### 3. DIMENSIONAL DRAWING

Unit : in (mm)

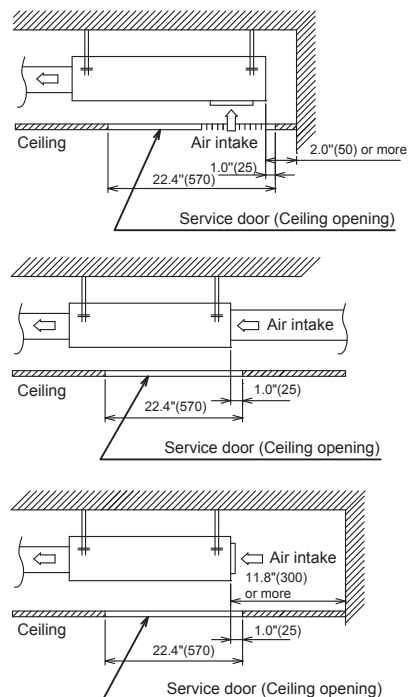


#### ▼ Dimension in inches (mm)

| Model MMD-UB****BHP-UL | A            | B            | C            | D            | E            | F             |
|------------------------|--------------|--------------|--------------|--------------|--------------|---------------|
| 0071~0091              | 27.6" (700)  | 30.1" (765)  | 25.2" (640)  | 29.5" (750)  | Ø 1/4" (6.4) | Ø 1/2" (12.7) |
| 0121                   | 39.4" (1000) | 41.9" (1065) | 37.0" (940)  | 41.3" (1050) | Ø 1/4" (6.4) | Ø 1/2" (12.7) |
| 0151~0181              | 39.4" (1000) | 41.9" (1065) | 37.0" (940)  | 41.3" (1050) | Ø 3/8" (9.5) | Ø 5/8" (15.9) |
| 0211~0541              | 55.1" (1400) | 57.7" (1465) | 52.8" (1340) | 57.1" (1450) | Ø 3/8" (9.5) | Ø 5/8" (15.9) |



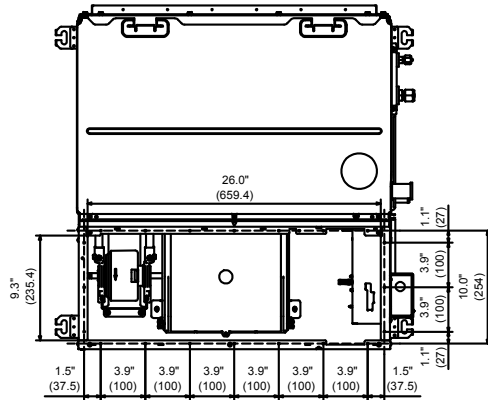
| Model MMD-UB****BHP-UL | A            | B           |
|------------------------|--------------|-------------|
| 0071~0091              | 29.5" (750)  | 27.6" (700) |
| 0121~0181              | 41.3" (1050) | 19.7" (500) |
| 0211~0541              | 57.1" (1450) | 27.6" (700) |



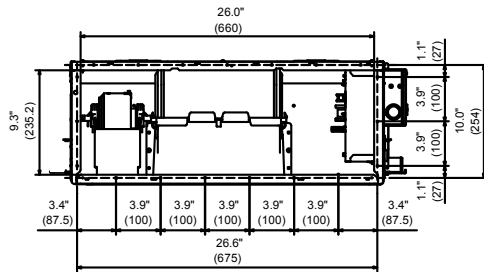


**UB0071, UB0091**

**<Bottom air intake>**

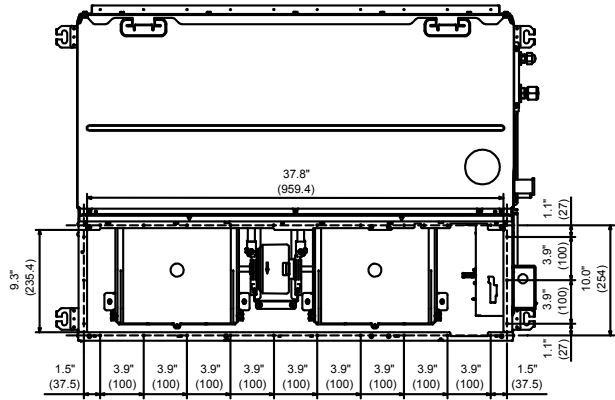


**<Rear air intake>**

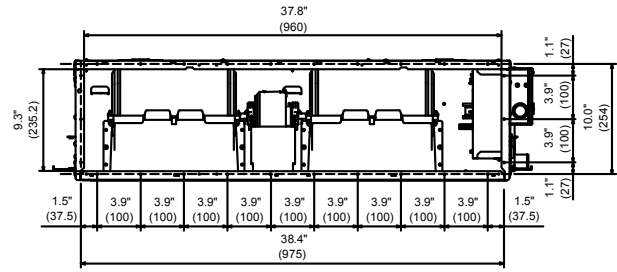


**UB0121, UB0151, UB0181**

**<Bottom air intake>**



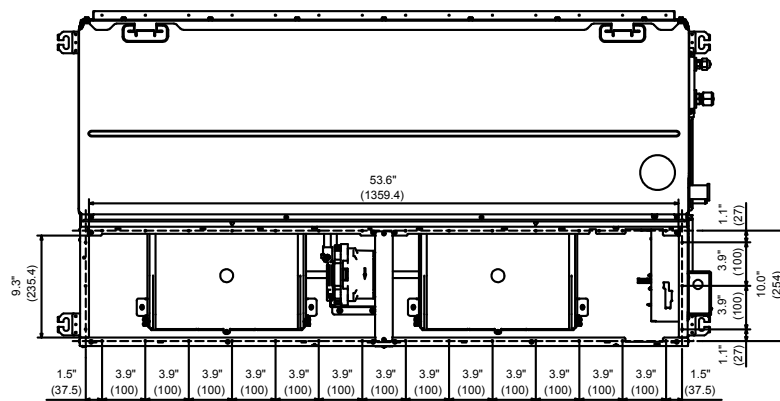
**<Rear air intake>**



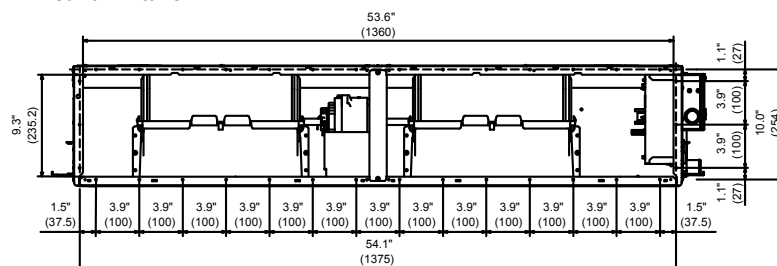
**UB0211, UB0241, UB0301, UB0361**

**UB0421, UB0481, UB0541**

**<Bottom air intake>**

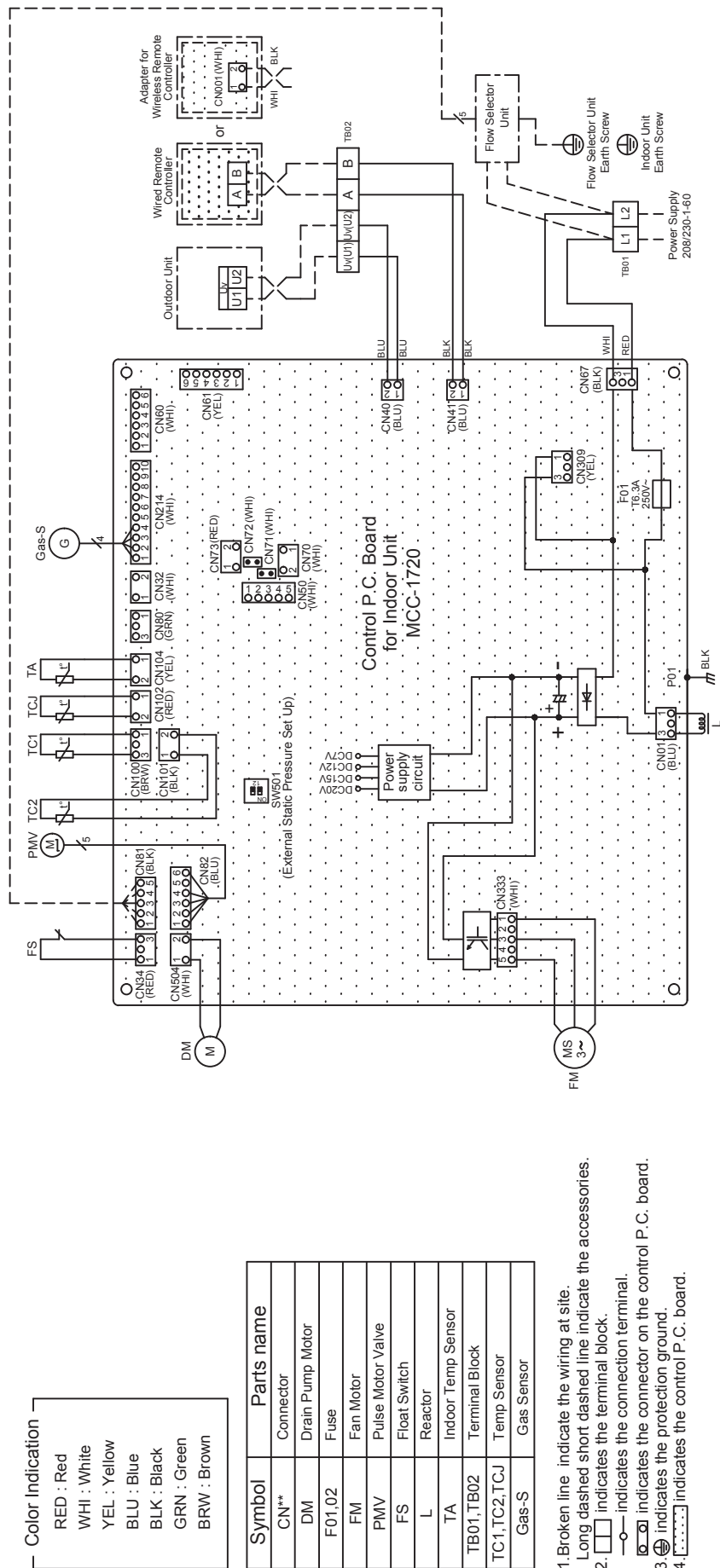


**<Rear air intake>**





## 4. WIRING DIAGRAMS





## 5. PARTS RATING

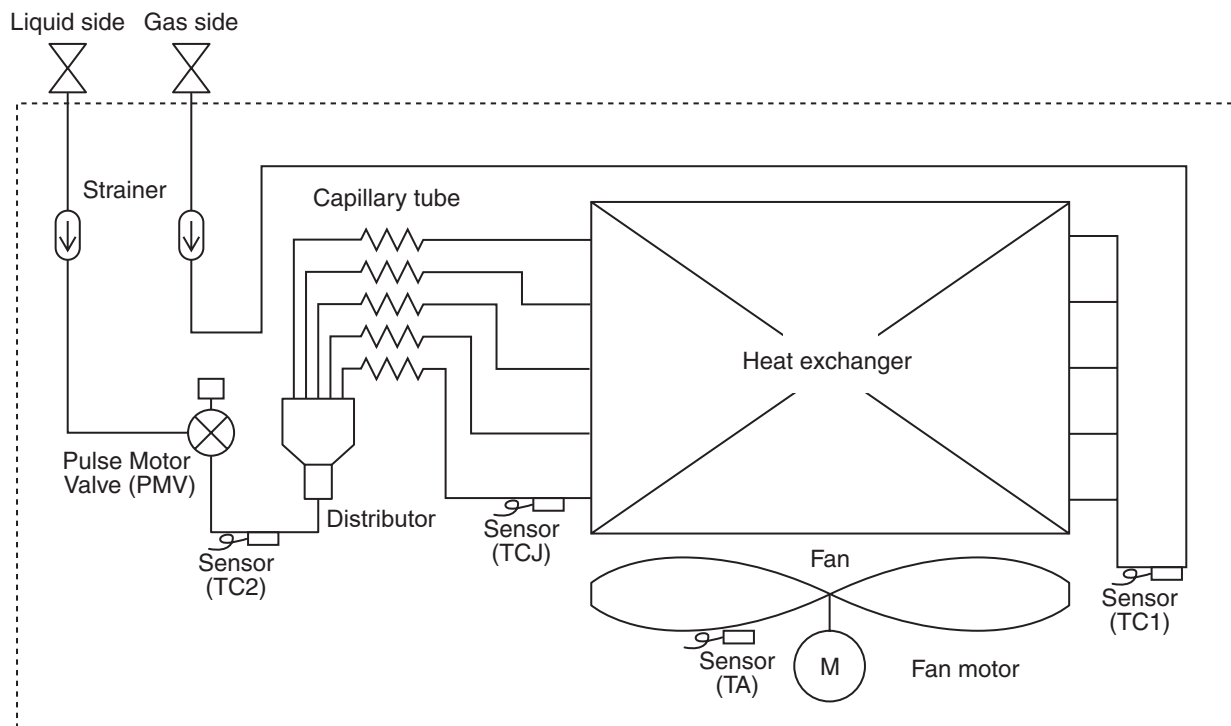
| Model             | MMD-UB | 0071BHP-UL                  | 0091BHP-UL | 0121BHP-UL    | 0151BHP-UL    | 0181BHP-UL |
|-------------------|--------|-----------------------------|------------|---------------|---------------|------------|
| Fan motor         |        | WDF-340W150AA1              |            | WDF-340W150AA |               |            |
| Drain pump motor  |        | PMD-08D12TF-2               |            |               |               |            |
| Float switch      |        | FS-1A-31-3                  |            |               |               |            |
| Pulse motor valve |        | PAM-B25YGTF-2               |            |               | PAM-B40YGTF-1 |            |
| TA sensor         |        | 12.9" (328 mm)              |            |               |               |            |
| TC1 sensor        |        | Ø0.16"(4mm), 39.4" (1000mm) |            |               |               |            |
| TC2 sensor        |        | Ø0.24"(6mm), 39.4" (1000mm) |            |               |               |            |
| TCJ sensor        |        | Ø0.24"(6mm), 39.4" (1000mm) |            |               |               |            |

| Model             | MMD-UB | 0211BHP-UL                  | 0241BHP-UL | 0301BHP-UL | 0361BHP-UL    | 0421BHP-UL | 0481BHP-UL | 0541BHP-UL |
|-------------------|--------|-----------------------------|------------|------------|---------------|------------|------------|------------|
| Fan motor         |        | LDF-340W250A                |            |            |               |            |            |            |
| Drain pump motor  |        | PMD-08D12TF-2               |            |            |               |            |            |            |
| Float switch      |        | FS-1A-31-3                  |            |            |               |            |            |            |
| Pulse motor valve |        | PAM-B40YGTF-1               |            |            | PAM-B60YGTF-1 |            |            |            |
| TA sensor         |        | 12.9" (328 mm)              |            |            |               |            |            |            |
| TC1 sensor        |        | Ø0.16"(4mm), 39.4" (1000mm) |            |            |               |            |            |            |
| TC2 sensor        |        | Ø0.24"(6mm), 39.4" (1000mm) |            |            |               |            |            |            |
| TCJ sensor        |        | Ø0.24"(6mm), 39.4" (1000mm) |            |            |               |            |            |            |



## 6. REFRIGERANT CYCLE DIAGRAM

### Indoor unit



### Explanation of functional parts in indoor unit

| Functional part name |       | Functional outline  |
|----------------------|-------|---|
| Pulse Motor Valve    | PMV   | (Connector CN82 (6P): Blue)<br>1) Controls super heat in cooling operation<br>2) Controls under cool in heating operation<br>3) Recovers refrigerant oil in cooling operation<br>4) Recovers refrigerant oil in heating operation |
| Temp. Sensor         | 1.TA  | (Connector CN104 (2P): Yellow)<br>1) Detects indoor suction temperature   |
|                      | 2.TC1 | (Connector CN100 (3P): Brown)<br>1) Controls PMV super heat in cooling operation  |
|                      | 3.TC2 | (Connector CN101 (2P): Black)<br>1) Controls PMV under cool in heating operation  |
|                      | 4.TCJ | (Connector CN102 (2P): Red)<br>1) Controls PMV super heat in cooling operation  |




## 7. CONTROL OUTLINE

### ■ Indoor unit

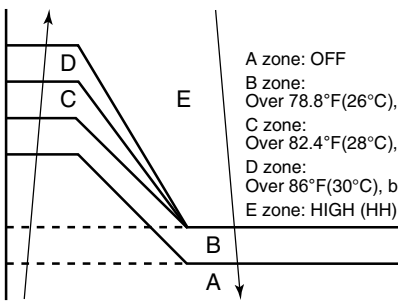
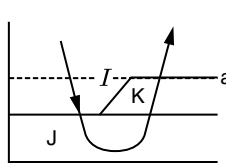
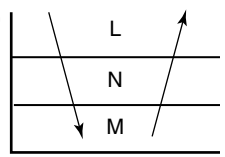
#### Control specifications

| NO.   | Item                       | Specification outline   | Remarks   |                    |      |                          |                          |                          |               |                          |                          |                  |      |                   |   |   |                                |                 |                   |                   |                    |            |          |   |   |             |   |   |
|---|----------------------------|---|---|--------------------|------|--------------------------|--------------------------|--------------------------|---------------|--------------------------|--------------------------|------------------|------|-------------------|---|---|--------------------------------|-----------------|-------------------|-------------------|--------------------|------------|----------|---|---|-------------|---|---|
| 1   | Upon power supply reset    | <div>1. Identification of outdoor unit<br/>When the power supply is reset, the outdoor unit is identified, and control is redirected according to the identification result.</div> <div>2. Indoor fan speed and air flow direction control availability settings<br/>Settings such as indoor fan speed and air flow direction control availability are replaced on the basis of EEPROM data.</div> <div>3. If power supply reset is performed in the wake of a fault, the check code is cleared.<br/>If the abnormality persists after the Start / Stop button on the remote controller is pressed to resume operation, the check code is redisplayed on the remote controller.</div>   |   |                    |      |                          |                          |                          |               |                          |                          |                  |      |                   |   |   |                                |                 |                   |                   |                    |            |          |   |   |             |   |   |
| 2   | Operation selection        | <div>1. The operation mode changes in response to an operation selection command issued via the remote controller.</div> <table><tr><th>Remote controller command</th><th>Control outline</th></tr><tr><td>STOP</td><td>Air conditioner shutdown</td></tr><tr><td>FAN</td><td>Fan operation</td></tr><tr><td>COOL</td><td>Cooling operation</td></tr><tr><td>DRY</td><td>Drying operation</td></tr><tr><td>HEAT</td><td>Heating operation</td></tr></table>   | Remote controller command                       | Control outline    | STOP | Air conditioner shutdown | FAN                      | Fan operation            | COOL          | Cooling operation        | DRY                      | Drying operation | HEAT | Heating operation | Ts: Temperature setting<br>Ta: Room temperature |   |                                |                 |                   |                   |                    |            |          |   |   |             |   |   |
| Remote controller command                     | Control outline            |   |   |                    |      |                          |                          |                          |               |                          |                          |                  |      |                   |   |   |                                |                 |                   |                   |                    |            |          |   |   |             |   |   |
| STOP  | Air conditioner shutdown   |   |   |                    |      |                          |                          |                          |               |                          |                          |                  |      |                   |   |   |                                |                 |                   |                   |                    |            |          |   |   |             |   |   |
| FAN   | Fan operation              |   |   |                    |      |                          |                          |                          |               |                          |                          |                  |      |                   |   |   |                                |                 |                   |                   |                    |            |          |   |   |             |   |   |
| COOL  | Cooling operation          |   |   |                    |      |                          |                          |                          |               |                          |                          |                  |      |                   |   |   |                                |                 |                   |                   |                    |            |          |   |   |             |   |   |
| DRY   | Drying operation           |   |   |                    |      |                          |                          |                          |               |                          |                          |                  |      |                   |   |   |                                |                 |                   |                   |                    |            |          |   |   |             |   |   |
| HEAT  | Heating operation          |   |   |                    |      |                          |                          |                          |               |                          |                          |                  |      |                   |   |   |                                |                 |                   |                   |                    |            |          |   |   |             |   |   |
| 3   | Room temp. control         | <div>1. Adjustment range - remote controller temperature setting (°F[°C])</div> <table><tr><td></td><td>COOL</td><td>HEAT</td></tr><tr><td>Wired type</td><td>64°F[18°C] to 84°F[29°C]</td><td>64°F[18°C] to 84°F[29°C]</td></tr><tr><td>Wireless type</td><td>63°F[17°C] to 86°F[30°C]</td><td>63°F[17°C] to 86°F[30°C]</td></tr></table> <div>2. In heating operation, the temperature setting may be fine-tuned via the DN code "06".</div> <table><tr><td>SET DATA</td><td>0</td><td>2</td><td>4</td><td>6</td></tr><tr><td>Temperature setting adjustment</td><td>+0 °F<br/>[+0°C]</td><td>+3.6 °F<br/>[+2°C]</td><td>+7.2 °F<br/>[+4°C]</td><td>+10.8 °F<br/>[+6°C]</td></tr></table> <div>Factory default</div> <table><tr><td>Model type</td><td>SET DATA</td></tr><tr><td>Floor standing (standard, concealed, cabinet)</td><td>0</td></tr><tr><td>Other model</td><td>2</td></tr></table> |   | COOL               | HEAT | Wired type               | 64°F[18°C] to 84°F[29°C] | 64°F[18°C] to 84°F[29°C] | Wireless type | 63°F[17°C] to 86°F[30°C] | 63°F[17°C] to 86°F[30°C] | SET DATA         | 0    | 2                 | 4   | 6 | Temperature setting adjustment | +0 °F<br>[+0°C] | +3.6 °F<br>[+2°C] | +7.2 °F<br>[+4°C] | +10.8 °F<br>[+6°C] | Model type | SET DATA | Floor standing (standard, concealed, cabinet) | 0 | Other model | 2 | Shift in heating suction temperature (not applicable to remote controller thermo operation) |
|   | COOL                       | HEAT  |   |                    |      |                          |                          |                          |               |                          |                          |                  |      |                   |   |   |                                |                 |                   |                   |                    |            |          |   |   |             |   |   |
| Wired type                                    | 64°F[18°C] to 84°F[29°C]   | 64°F[18°C] to 84°F[29°C]  |   |                    |      |                          |                          |                          |               |                          |                          |                  |      |                   |   |   |                                |                 |                   |                   |                    |            |          |   |   |             |   |   |
| Wireless type                                 | 63°F[17°C] to 86°F[30°C]   | 63°F[17°C] to 86°F[30°C]  |   |                    |      |                          |                          |                          |               |                          |                          |                  |      |                   |   |   |                                |                 |                   |                   |                    |            |          |   |   |             |   |   |
| SET DATA                                      | 0                          | 2   | 4   | 6                  |      |                          |                          |                          |               |                          |                          |                  |      |                   |   |   |                                |                 |                   |                   |                    |            |          |   |   |             |   |   |
| Temperature setting adjustment                | +0 °F<br>[+0°C]            | +3.6 °F<br>[+2°C]   | +7.2 °F<br>[+4°C]                               | +10.8 °F<br>[+6°C] |      |                          |                          |                          |               |                          |                          |                  |      |                   |   |   |                                |                 |                   |                   |                    |            |          |   |   |             |   |   |
| Model type                                    | SET DATA                   |   |   |                    |      |                          |                          |                          |               |                          |                          |                  |      |                   |   |   |                                |                 |                   |                   |                    |            |          |   |   |             |   |   |
| Floor standing (standard, concealed, cabinet) | 0                          |   |   |                    |      |                          |                          |                          |               |                          |                          |                  |      |                   |   |   |                                |                 |                   |                   |                    |            |          |   |   |             |   |   |
| Other model                                   | 2                          |   |   |                    |      |                          |                          |                          |               |                          |                          |                  |      |                   |   |   |                                |                 |                   |                   |                    |            |          |   |   |             |   |   |
| 4   | Automatic capacity control | <div>1. The outdoor unit determines the operational capacities of indoor units according to the difference between Ta and Ts.</div> <div><div><div>Ta(°F) Ta(°C)</div><div>+3.6 +2</div><div>+1.8 +1</div><div>Ts Ts</div><div>-1.8 -1</div></div><div>Cooling</div><div><div>SD</div><div>SB</div><div>S9</div><div>S7</div><div>S5</div><div>S3 S0</div></div></div> <div><div>Ta(°F) Ta(°C)</div><div>+1.8 +1</div><div>TS TS</div><div>-1.8 -1</div><div>-3.6 -2</div></div> <div>Heating</div> <div><div>S3 S0</div><div>S5</div><div>S7</div><div>S9</div><div>SB</div><div>SD</div><div>SF</div></div>   | Ts: Temperature setting<br>Ta: Room temperature |                    |      |                          |                          |                          |               |                          |                          |                  |      |                   |   |   |                                |                 |                   |                   |                    |            |          |   |   |             |   |   |




| NO.         | Item              | Specification outline   | Remarks |         |      |       |      |      |    |   |      |      |      |   |      |      |         |   |      |      |        |   |      |      |         |   |      |      |       |   |     |     |       |   |      |      |        |   |         |         |      |       |             |             |        |   |         |         |        |   |             |             |        |   |  |  |         |   |             |             |    |   |             |             |      |   |             |             |  |   |  |
|-------------|-------------------|---|---------|---------|------|-------|------|------|----|---|------|------|------|---|------|------|---------|---|------|------|--------|---|------|------|---------|---|------|------|-------|---|-----|-----|-------|---|------|------|--------|---|---------|---------|------|-------|-------------|-------------|--------|---|---------|---------|--------|---|-------------|-------------|--------|---|--|--|---------|---|-------------|-------------|----|---|-------------|-------------|------|---|-------------|-------------|--|---|--|
| 5           | Fan speed control | <p>1. The fan operates in one of the four speed modes of "HIGH (HH)", "MED (H)", "LOW (L)" and "AUTO" on the basis of a command issued via the remote controller. (Concealed duct high static pressure type: HH only)</p> <p>2. In AUTO fan speed mode, the air speed changes according to the difference between Ta and Ts.</p> <p><b>&lt;Cooling&gt;</b></p> <p><b>&lt;COOL&gt;</b></p> <table border="1"> <thead> <tr> <th>Ta (°F)</th> <th>Ta (°C)</th> <th>Mode</th> <th>Label</th> </tr> </thead> <tbody> <tr> <td>+5.4</td> <td>+3.0</td> <td>HH</td> <td>A</td> </tr> <tr> <td>+4.5</td> <td>+2.5</td> <td>&lt;HH&gt;</td> <td>B</td> </tr> <tr> <td>+3.6</td> <td>+2.0</td> <td>H+ &lt;HH&gt;</td> <td>C</td> </tr> <tr> <td>+2.7</td> <td>+1.5</td> <td>H &lt;HH&gt;</td> <td>D</td> </tr> <tr> <td>+1.8</td> <td>+1.0</td> <td>L+ &lt;H+&gt;</td> <td>E</td> </tr> <tr> <td>+0.9</td> <td>+0.5</td> <td>L &lt;H&gt;</td> <td>F</td> </tr> <tr> <td>Tsc</td> <td>Tsc</td> <td>L &lt;H&gt;</td> <td>F</td> </tr> <tr> <td>-0.9</td> <td>-0.5</td> <td>L &lt;L+&gt;</td> <td>G</td> </tr> </tbody> </table> <ul style="list-style-type: none"> <li>Control is identical in remote controller thermo and body thermo operation.<br/>Speed modes shown in &lt; &gt; apply to cooling operation under AUTO air conditioner operation mode.</li> <li>In AUTO fan speed mode, the fan speed remains the same for 3 minutes each time a speed change occurs.<br/>However, a speed change command issued via the remote controller can override this, and the fan speed changes accordingly.</li> <li>At the beginning of cooling operation, a higher speed (steeper downward temperature gradient) is chosen.</li> <li>As long as the temperature difference remains on a boundary line, the fan speed stays the same.</li> </ul> <p><b>&lt;Heating&gt;</b></p> <table border="1"> <thead> <tr> <th>Ta (°F)</th> <th>Ta (°C)</th> <th>Mode</th> <th>Label</th> </tr> </thead> <tbody> <tr> <td>(-0.9) -1.8</td> <td>(-0.5) -1.0</td> <td>L &lt;L+&gt;</td> <td>E</td> </tr> <tr> <td>(0) Tsh</td> <td>(0) Tsh</td> <td>L+ &lt;H&gt;</td> <td>E</td> </tr> <tr> <td>(+0.9) +1.8</td> <td>(+0.5) +1.0</td> <td>H &lt;H+&gt;</td> <td>D</td> </tr> <tr> <td></td> <td></td> <td>H+ &lt;HH&gt;</td> <td>D</td> </tr> <tr> <td>(+1.8) +3.6</td> <td>(+1.0) +2.0</td> <td>HH</td> <td>C</td> </tr> <tr> <td>(+2.7) +5.4</td> <td>(+1.5) +3.0</td> <td>&lt;HH&gt;</td> <td>B</td> </tr> <tr> <td>(+3.6) +7.2</td> <td>(+2.0) +4.0</td> <td></td> <td>A</td> </tr> </tbody> </table> <p>&lt; &gt; : Indicate automatic heating.<br/> Body thermostat works.<br/> Remote controller thermostat works.</p> <p>Figures inside ( ) applies to remote controller thermo operation.<br/> Figures outside ( ) applies to body thermo operation.<br/> Speed modes shown in &lt; &gt; apply to heating operation under AUTO air conditioner operation mode.</p> <ul style="list-style-type: none"> <li>In AUTO fan speed mode, the fan speed remains the same for 1 minute each time a speed change occurs.<br/>However, a speed change command issued via the remote controller can override this, and the fan speed changes accordingly.</li> <li>At the beginning of heating operation, a higher speed (steeper upward temperature gradient) is chosen.</li> <li>As long as the temperature difference remains on a boundary line, the fan speed stays the same.</li> <li>When TC2 ≥ 60 °C, the fan speed is raised by one step.</li> </ul> <p>3. If the air conditioner goes thermo OFF during heating operation, the fan speed drops down to LL (breeze).</p> | Ta (°F) | Ta (°C) | Mode | Label | +5.4 | +3.0 | HH | A | +4.5 | +2.5 | <HH> | B | +3.6 | +2.0 | H+ <HH> | C | +2.7 | +1.5 | H <HH> | D | +1.8 | +1.0 | L+ <H+> | E | +0.9 | +0.5 | L <H> | F | Tsc | Tsc | L <H> | F | -0.9 | -0.5 | L <L+> | G | Ta (°F) | Ta (°C) | Mode | Label | (-0.9) -1.8 | (-0.5) -1.0 | L <L+> | E | (0) Tsh | (0) Tsh | L+ <H> | E | (+0.9) +1.8 | (+0.5) +1.0 | H <H+> | D |  |  | H+ <HH> | D | (+1.8) +3.6 | (+1.0) +2.0 | HH | C | (+2.7) +5.4 | (+1.5) +3.0 | <HH> | B | (+3.6) +7.2 | (+2.0) +4.0 |  | A | <p>HH &gt; H+ &gt; H &gt; L+ &gt; L &gt; UL or LL</p> <p>DN code "32"<br/> "0000": Body thermo<br/> "0001": Remote controller thermo</p> <p>TC2: Indoor heat exchanger sensor temperature</p> <p>"HEATING STANDBY"  displayed</p> |
| Ta (°F)     | Ta (°C)           | Mode  | Label   |         |      |       |      |      |    |   |      |      |      |   |      |      |         |   |      |      |        |   |      |      |         |   |      |      |       |   |     |     |       |   |      |      |        |   |         |         |      |       |             |             |        |   |         |         |        |   |             |             |        |   |  |  |         |   |             |             |    |   |             |             |      |   |             |             |  |   |  |
| +5.4        | +3.0              | HH  | A       |         |      |       |      |      |    |   |      |      |      |   |      |      |         |   |      |      |        |   |      |      |         |   |      |      |       |   |     |     |       |   |      |      |        |   |         |         |      |       |             |             |        |   |         |         |        |   |             |             |        |   |  |  |         |   |             |             |    |   |             |             |      |   |             |             |  |   |  |
| +4.5        | +2.5              | <HH>  | B       |         |      |       |      |      |    |   |      |      |      |   |      |      |         |   |      |      |        |   |      |      |         |   |      |      |       |   |     |     |       |   |      |      |        |   |         |         |      |       |             |             |        |   |         |         |        |   |             |             |        |   |  |  |         |   |             |             |    |   |             |             |      |   |             |             |  |   |  |
| +3.6        | +2.0              | H+ <HH>   | C       |         |      |       |      |      |    |   |      |      |      |   |      |      |         |   |      |      |        |   |      |      |         |   |      |      |       |   |     |     |       |   |      |      |        |   |         |         |      |       |             |             |        |   |         |         |        |   |             |             |        |   |  |  |         |   |             |             |    |   |             |             |      |   |             |             |  |   |  |
| +2.7        | +1.5              | H <HH>  | D       |         |      |       |      |      |    |   |      |      |      |   |      |      |         |   |      |      |        |   |      |      |         |   |      |      |       |   |     |     |       |   |      |      |        |   |         |         |      |       |             |             |        |   |         |         |        |   |             |             |        |   |  |  |         |   |             |             |    |   |             |             |      |   |             |             |  |   |  |
| +1.8        | +1.0              | L+ <H+>   | E       |         |      |       |      |      |    |   |      |      |      |   |      |      |         |   |      |      |        |   |      |      |         |   |      |      |       |   |     |     |       |   |      |      |        |   |         |         |      |       |             |             |        |   |         |         |        |   |             |             |        |   |  |  |         |   |             |             |    |   |             |             |      |   |             |             |  |   |  |
| +0.9        | +0.5              | L <H>   | F       |         |      |       |      |      |    |   |      |      |      |   |      |      |         |   |      |      |        |   |      |      |         |   |      |      |       |   |     |     |       |   |      |      |        |   |         |         |      |       |             |             |        |   |         |         |        |   |             |             |        |   |  |  |         |   |             |             |    |   |             |             |      |   |             |             |  |   |  |
| Tsc         | Tsc               | L <H>   | F       |         |      |       |      |      |    |   |      |      |      |   |      |      |         |   |      |      |        |   |      |      |         |   |      |      |       |   |     |     |       |   |      |      |        |   |         |         |      |       |             |             |        |   |         |         |        |   |             |             |        |   |  |  |         |   |             |             |    |   |             |             |      |   |             |             |  |   |  |
| -0.9        | -0.5              | L <L+>  | G       |         |      |       |      |      |    |   |      |      |      |   |      |      |         |   |      |      |        |   |      |      |         |   |      |      |       |   |     |     |       |   |      |      |        |   |         |         |      |       |             |             |        |   |         |         |        |   |             |             |        |   |  |  |         |   |             |             |    |   |             |             |      |   |             |             |  |   |  |
| Ta (°F)     | Ta (°C)           | Mode  | Label   |         |      |       |      |      |    |   |      |      |      |   |      |      |         |   |      |      |        |   |      |      |         |   |      |      |       |   |     |     |       |   |      |      |        |   |         |         |      |       |             |             |        |   |         |         |        |   |             |             |        |   |  |  |         |   |             |             |    |   |             |             |      |   |             |             |  |   |  |
| (-0.9) -1.8 | (-0.5) -1.0       | L <L+>  | E       |         |      |       |      |      |    |   |      |      |      |   |      |      |         |   |      |      |        |   |      |      |         |   |      |      |       |   |     |     |       |   |      |      |        |   |         |         |      |       |             |             |        |   |         |         |        |   |             |             |        |   |  |  |         |   |             |             |    |   |             |             |      |   |             |             |  |   |  |
| (0) Tsh     | (0) Tsh           | L+ <H>  | E       |         |      |       |      |      |    |   |      |      |      |   |      |      |         |   |      |      |        |   |      |      |         |   |      |      |       |   |     |     |       |   |      |      |        |   |         |         |      |       |             |             |        |   |         |         |        |   |             |             |        |   |  |  |         |   |             |             |    |   |             |             |      |   |             |             |  |   |  |
| (+0.9) +1.8 | (+0.5) +1.0       | H <H+>  | D       |         |      |       |      |      |    |   |      |      |      |   |      |      |         |   |      |      |        |   |      |      |         |   |      |      |       |   |     |     |       |   |      |      |        |   |         |         |      |       |             |             |        |   |         |         |        |   |             |             |        |   |  |  |         |   |             |             |    |   |             |             |      |   |             |             |  |   |  |
|             |                   | H+ <HH>   | D       |         |      |       |      |      |    |   |      |      |      |   |      |      |         |   |      |      |        |   |      |      |         |   |      |      |       |   |     |     |       |   |      |      |        |   |         |         |      |       |             |             |        |   |         |         |        |   |             |             |        |   |  |  |         |   |             |             |    |   |             |             |      |   |             |             |  |   |  |
| (+1.8) +3.6 | (+1.0) +2.0       | HH  | C       |         |      |       |      |      |    |   |      |      |      |   |      |      |         |   |      |      |        |   |      |      |         |   |      |      |       |   |     |     |       |   |      |      |        |   |         |         |      |       |             |             |        |   |         |         |        |   |             |             |        |   |  |  |         |   |             |             |    |   |             |             |      |   |             |             |  |   |  |
| (+2.7) +5.4 | (+1.5) +3.0       | <HH>  | B       |         |      |       |      |      |    |   |      |      |      |   |      |      |         |   |      |      |        |   |      |      |         |   |      |      |       |   |     |     |       |   |      |      |        |   |         |         |      |       |             |             |        |   |         |         |        |   |             |             |        |   |  |  |         |   |             |             |    |   |             |             |      |   |             |             |  |   |  |
| (+3.6) +7.2 | (+2.0) +4.0       |   | A       |         |      |       |      |      |    |   |      |      |      |   |      |      |         |   |      |      |        |   |      |      |         |   |      |      |       |   |     |     |       |   |      |      |        |   |         |         |      |       |             |             |        |   |         |         |        |   |             |             |        |   |  |  |         |   |             |             |    |   |             |             |      |   |             |             |  |   |  |










| NO. | Item  | Specification outline   | Remarks   |     |          |    |                       |             |    |           |              |  |          |    |           |    |                |   |
|-----|---|---|---|-----|----------|----|-----------------------|-------------|----|-----------|--------------|--|----------|----|-----------|----|----------------|---|
| 6   | Cold air discharge prevention control         | <p>1. In heating operation, the upper limit of the fan tap is set according to the lower of whichever is the higher between TC2 sensor and TCJ sensor temperatures, on the one hand, and TC1 sensor temperature, on the other.</p> <ul style="list-style-type: none"><li>If the fan continuously operates in zone B for 6 minutes, it automatically moves into zone C.</li><li>During defrosting, the control point is shifted by +6 °C.</li></ul> <div><div><div>(°F) (°C)</div><div><div>89.6 32</div><div>86 30</div><div>82.4 28</div><div>78.8 26</div><div>68 20</div><div>33.8 16</div></div><div></div><div><div>A zone: OFF</div><div>B zone: Over 78.8°F(26°C), below 82.4°F(28°C), ULTRA LOW (LL)</div><div>C zone: Over 82.4°F(28°C), below 86°F(30°C), LOW (L)</div><div>D zone: Over 86°F(30°C), below 89.6°F(32°C), MED (H)</div><div>E zone: HIGH (HH)</div></div></div></div> <td><p>TCJ: Indoor heat exchanger sensor temperature</p><ul style="list-style-type: none"><li>In zones D and E, priority is given to the remote controller fan speed setting.</li><li>In zone A, “HEATING STANDBY” is displayed.</li></ul></td>   | <p>TCJ: Indoor heat exchanger sensor temperature</p> <ul style="list-style-type: none"><li>In zones D and E, priority is given to the remote controller fan speed setting.</li><li>In zone A, “HEATING STANDBY” is displayed.</li></ul> |     |          |    |                       |             |    |           |              |  |          |    |           |    |                |   |
| 7   | Freeze prevention control (low temp. release) | <p>1. During cooling, the air conditioner is operated in the manner described below according to the temperature readings of the TC1, TC2 and TCJ sensors.</p> <ul style="list-style-type: none"><li>If zone J operation is detected for 5 minutes, the air conditioner is forced into thermo OFF.</li><li>In zone K, the timer is put on pause, with the current timer count retained.</li><li>If zone I operation is detected, the timer count is cleared, and the air conditioner returns to normal operation.</li><li>If continuous zone J operation forces the air conditioner into thermo OFF, the indoor fan is operated in breeze mode until it moves into zone I. The control is terminated under the following conditions:</li></ul> <p>Termination conditions</p> <div><div>1) TC1 ≥ 53.6°F(12°C) and TC2 ≥ 53.6°F(12°C) and TCJ ≥ 53.6°F(12°C)</div><div>2) 20 minutes passed after stop.</div></div> <div><div><div>(°F) (°C)</div><div><div>P1</div><div>Q1</div></div><div></div></div><table><thead><tr><th></th><th>TC1</th><th>TC2, TCJ</th></tr></thead><tbody><tr><td>P1</td><td>50°F(10°C)(41°F)(5°C)</td><td>14°F(-10°C)</td></tr><tr><td>Q1</td><td>32°F(0°C)</td><td>6.8°F(-14°C)</td></tr></tbody></table><p>2. During cooling, the air conditioner is operated in the manner described below according to the temperature readings of the TC2 and TCJ sensors.</p><ul style="list-style-type: none"><li>If zone M operation is detected for 45 minutes, the air conditioner is forced into thermo OFF.</li><li>In zone N, the timer is put on pause, with the current timer count retained.</li><li>When the air conditioner goes back into zone M, timer count is resumed from the retained value.</li></ul><div><div><div>(°C)</div><div><div>P2</div><div>Q2</div></div><div></div></div><table><thead><tr><th></th><th>TC2, TCJ</th></tr></thead><tbody><tr><td>P2</td><td>41°F(5°C)</td></tr><tr><td>Q2</td><td>28.4°F(-2.0°C)</td></tr></tbody></table><ul style="list-style-type: none"><li>If zone L operation is detected, the timer count is cleared, and the air conditioner returns to normal operation.</li></ul><p>Reset conditions</p><div><div>1) TC1 ≥ 53.6°F(12°C) and TC2 ≥ 53.6°F(12°C) and TCJ ≥ 53.6°F(12°C)</div><div>2) 20 minutes passed after stop.</div></div></div></div> |   | TC1 | TC2, TCJ | P1 | 50°F(10°C)(41°F)(5°C) | 14°F(-10°C) | Q1 | 32°F(0°C) | 6.8°F(-14°C) |  | TC2, TCJ | P2 | 41°F(5°C) | Q2 | 28.4°F(-2.0°C) | <p>TC1: Indoor heat exchanger sensor temperature</p> <p>* With models without TC2, TC2 is not part of the control parameters.</p> |
|     | TC1   | TC2, TCJ  |   |     |          |    |                       |             |    |           |              |  |          |    |           |    |                |   |
| P1  | 50°F(10°C)(41°F)(5°C)                         | 14°F(-10°C)   |   |     |          |    |                       |             |    |           |              |  |          |    |           |    |                |   |
| Q1  | 32°F(0°C)                                     | 6.8°F(-14°C)  |   |     |          |    |                       |             |    |           |              |  |          |    |           |    |                |   |
|     | TC2, TCJ                                      |   |   |     |          |    |                       |             |    |           |              |  |          |    |           |    |                |   |
| P2  | 41°F(5°C)                                     |   |   |     |          |    |                       |             |    |           |              |  |          |    |           |    |                |   |
| Q2  | 28.4°F(-2.0°C)                                |   |   |     |          |    |                       |             |    |           |              |  |          |    |           |    |                |   |



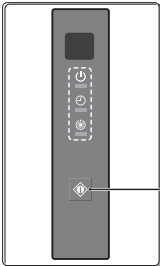


| NO. | Item  | Specification outline  | Remarks  |
|-----|---|--|--|
| 8   | Cooling oil (refrigerant) recovery control        | <p>While the outdoor unit is recovering cooling oil (refrigerant), the indoor units perform the following control tasks:</p> <p>[common for operational (cooling thermo ON / thermo OFF / FAN), as well as nonoperational indoor units]</p> <ol style="list-style-type: none"> <li>1) Open the indoor PMV to a certain degree.</li> <li>2) Engage in recovery control for a specified period of time and return to normal cooling operation at the end of this period upon terminating the control.</li> <li>3) Operate the drain pump throughout the recovery control period and for about 1 minute after it.</li> </ol>  | <ul style="list-style-type: none"> <li>• Recovery operation normally takes place roughly every 2 hours.</li> <li>• The opening position of the indoor PMV depending on the type and capacity of the indoor unit.</li> </ul>  |
| 9   | Heating refrigerant (oil) recovery control        | <p>While the outdoor unit is recovering heating refrigerant (oil), the indoor units perform the following control tasks:</p> <ol style="list-style-type: none"> <li>1) Open the indoor PMV to a certain degree.</li> <li>2) Control the indoor fan according to the operation mode.</li> </ol> <p>[Indoor units operating in heating thermo ON / OFF state]<br/>Let the indoor fan continue operating, but turn it off if the temperature of the indoor heat exchanger drops.</p> <p>[Indoor units operating in FAN mode]<br/>Turn off the indoor fan and display “HEATING STANDBY  ” on the remote controller.</p> <p>[Non-operational indoor units]<br/>Keep the indoor fan turned off.</p> <ol style="list-style-type: none"> <li>3) Terminate the recovery operation depending on the TC2 temperature reading.<br/>The timing of termination is determined by each indoor unit.</li> <li>4) Operate the indoor fan and drain pump for about 1 minute after the termination of the recovery operation. (Applicable to compact 4-way cassette type and 1- way cassette type)</li> </ol> | <ul style="list-style-type: none"> <li>• Recovery operation normally takes place roughly every hour.</li> <li>• The opening position of the indoor PMV depending on the type and capacity of the indoor unit.</li> </ul>   |
| 10  | Defrosting control                                | <p>While the outdoor unit is engaged in defrosting control, the indoor units perform the following control tasks:</p> <ol style="list-style-type: none"> <li>1) Open the indoor PMV to a certain degree.</li> <li>2) Control the indoor fan according to the operation mode.</li> </ol> <p>[Indoor units operating in heating thermo ON / OFF state]<br/>Let the indoor fan continue operating for a while, but turn it off as the temperature of the indoor heat exchanger drops.</p> <p>[Indoor units operating in FAN mode]<br/>Let the indoor fan continue operating.</p> <p>[Non-operational indoor units]<br/>Keep the indoor fan turned off.</p> <ol style="list-style-type: none"> <li>3) As defrosting control comes to an end, it gives way to heating refrigerant (oil) recovery control.<br/>(For control details, see “9. Heating refrigerant (oil) recovery control” above.)</li> </ol>  | <ul style="list-style-type: none"> <li>• For defrosting commencement conditions, see 5 Control Outline “10. Defrosting control (reverse defrosting method)” in SMMS-i Outdoor Unit Service Manual A10-005 above.</li> <li>• The opening position of the indoor PMV depending on the type and capacity of the indoor unit.</li> </ul> |
| 11  | Short intermittent operation compensation control | <ol style="list-style-type: none"> <li>1. For 5 minutes after startup, the system is forced to continue operating even if it reaches the thermo OFF region.</li> <li>2. However, priority is given to cooling / heating selection, operation standby, and protective control, so that there is no overriding of thermo OFF in these cases.</li> </ol>  |  |
| 12  | Drain pump control                                | <ol style="list-style-type: none"> <li>1. During cooling (including DRY operation), the drain pump is operated at all times.</li> <li>2. If the float switch is activated while the drain pump is in operation, the drain pump continues operating, with the relevant check code displayed.</li> <li>3. If the float switch is activated while the drain pump is turned off, thermo OFF is forced on the air conditioner, with the drain pump put into operation. If the float switch continues to be activated for about 5 minutes, the drain pump is turned off, with the relevant check code displayed.</li> </ol>  | Check code [P10]   |
| 13  | Elimination of residual heat                      | <ol style="list-style-type: none"> <li>1. When the air conditioner is turned off after engaging in heating operation, the indoor fan is operated for about 30 seconds in “breeze” mode.</li> </ol>   |  |

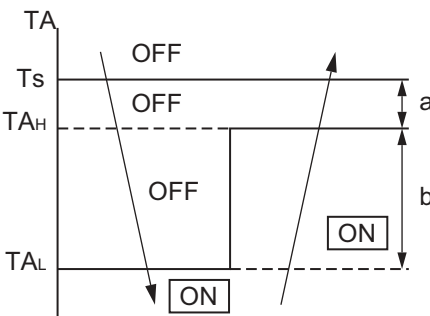
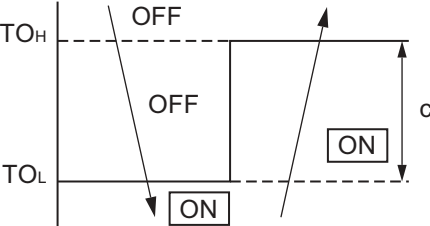
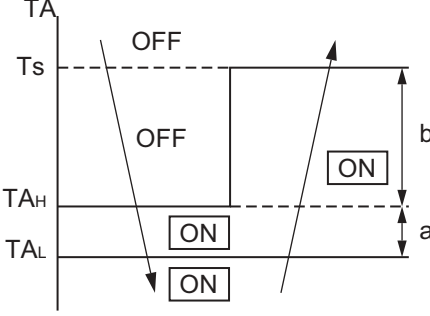


| NO.                                   | Item  | Specification outline  | Remarks  |                          |   |                            |   |  |  |                     |                        |                          |               |                     |                   |                            |            |   |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |  |
|---------------------------------------|---|--|--|--------------------------|---|----------------------------|---|--|--|---------------------|------------------------|--------------------------|---------------|---------------------|-------------------|----------------------------|------------|---|---|---|---|---|---|---|-----------|---|---|---|---|---|---|-----------|---|---|---|---|---|---|-----------|---|---|---|---|---|---|-----------|---|---|---|---|---|---|--|
| 14                                    | Filter sign display (not applicable to wireless type)<br>*Provided in the separately mounted type, TCB-AX21E. | <div>1. The indoor fan's cumulative hours of operation are counted, and when these exceed the prescribed value (2500H), a filter replacement signal is sent to the remote controller to display a filter sign on it.</div> <div>2. When a filter reset signal is received from the remote controller, the timer measuring cumulative hours is cleared. If the prescribed hours have been exceeded, the hours count is reset, with the sign on the remote controller display erased.</div> <div><table><tr><td>Filter service life</td><td>2500H</td></tr></table></div>  | Filter service life  | 2500H                    | "FILTER  " displayed |                            |   |  |  |                     |                        |                          |               |                     |                   |                            |            |   |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |  |
| Filter service life                   | 2500H   |  |  |                          |   |                            |   |  |  |                     |                        |                          |               |                     |                   |                            |            |   |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |  |
| 15                                    | Operation standby<br>Heating standby  | <div>&lt;Operation standby&gt; ..... Displayed on remote controller</div> <div>1. When any of the DN codes listed below is displayed<ul style="list-style-type: none"><li>• "P05" - Detection of an open phase in the power supply wiring</li><li>• "P10" - Detection of indoor flooding in at least one indoor unit</li><li>• "L30" - Detection of an interlock alarm in at least one indoor unit</li></ul></div> <div>2. Forced thermo OFF<ul style="list-style-type: none"><li>• "COOL / DRY" operation is unavailable because at least one indoor unit is operating in "HEAT" mode.</li><li>• "HEAT" operation is unavailable because at least one indoor unit is operating in "COOL / DRY" mode under priority cooling setting (bit 1 of SW11 on outdoor I/ F P.C. board ON).</li></ul></div> <div>3. All indoor units not able to engage in any of the above operations stand by in thermo OFF state.</div> <div>4. The indoor fan has been turned off because the system is engaged in a heat refrigerant (oil) recovery operation.</div> <div>&lt;Heating standby&gt; ..... Displayed on remote controller</div> <div>1. Normal thermo OFF<ul style="list-style-type: none"><li>• During heating, the indoor unit goes thermo OFF as the heating temperature setting is reached.</li></ul></div> <div>2. During heating, the fan rotates at a breeze speed (UL or lower) or remains stationary to prevent cold air from being discharged (including defrosting operation).</div> <div>3. Forced thermo OFF<ul style="list-style-type: none"><li>• "HEAT" operation is unavailable because at least one indoor unit is operating in "COOL / DRY" mode under priority cooling setting (bit 1 of SW11 on outdoor I/ F P.C. board ON).</li></ul></div> | <div>• "OPERATION STANDBY  " displayed<br/>No display provided on wireless remote controller</div> <div>• "HEATING STANDBY  " displayed</div> |                          |   |                            |   |  |  |                     |                        |                          |               |                     |                   |                            |            |   |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |  |
| 16                                    | Selection of central control mode   | <div>1. The range of operations that can be performed via an indoor unit remote controller can be determined through the setting of the central controller.</div> <div>2. Setting details</div> <div>TCC-Link central control</div> <div><table><tr><th rowspan="2">Operation via TCCLink central control</th><th colspan="6">Operation on RBC-AMT32UL</th><th rowspan="2">RBC-AMT32UL display</th></tr><tr><th>Start / stop selection</th><th>Operation mode selection</th><th>Timer setting</th><th>Temperature setting</th><th>Fan speed setting</th><th>Air flow direction setting</th></tr><tr><td>Individual</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td rowspan="5">"CENTRAL CONTROL IN PROGRESS" </td></tr><tr><td>Central 1</td><td>×</td><td>○</td><td>×</td><td>○</td><td>○</td><td>○</td></tr><tr><td>Central 2</td><td>×</td><td>×</td><td>×</td><td>×</td><td>○</td><td>○</td></tr><tr><td>Central 3</td><td>○</td><td>×</td><td>○</td><td>×</td><td>○</td><td>○</td></tr><tr><td>Central 4</td><td>○</td><td>×</td><td>○</td><td>○</td><td>○</td><td>○</td></tr></table><div>(○ : Accessible    × : Inaccessible)</div></div>  | Operation via TCCLink central control  | Operation on RBC-AMT32UL |   |                            |   |  |  | RBC-AMT32UL display | Start / stop selection | Operation mode selection | Timer setting | Temperature setting | Fan speed setting | Air flow direction setting | Individual | ○ | ○ | ○ | ○ | ○ | ○ | "CENTRAL CONTROL IN PROGRESS"  | Central 1 | × | ○ | × | ○ | ○ | ○ | Central 2 | × | × | × | × | ○ | ○ | Central 3 | ○ | × | ○ | × | ○ | ○ | Central 4 | ○ | × | ○ | ○ | ○ | ○ | <div>• In the case of a wired remote controller, "CENTRAL CONTROL IN PROGRESS  " is displayed (lit up) while in central control mode.</div> <div>• The display blinks when a control function inaccessible to a remote controller is chosen.</div> <div>• A wireless remote controller has the same set of control functions, although there is no display. When a control operation is performed via a wireless remote controller while in central control mode, a peep sound alert (5 times) is provided.</div> |
| Operation via TCCLink central control | Operation on RBC-AMT32UL  |  |  |                          |   |                            | RBC-AMT32UL display   |  |  |                     |                        |                          |               |                     |                   |                            |            |   |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |  |
|                                       | Start / stop selection  | Operation mode selection   | Timer setting  | Temperature setting      | Fan speed setting   | Air flow direction setting |   |  |  |                     |                        |                          |               |                     |                   |                            |            |   |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |  |
| Individual                            | ○   | ○  | ○  | ○                        | ○   | ○                          | "CENTRAL CONTROL IN PROGRESS"  |  |  |                     |                        |                          |               |                     |                   |                            |            |   |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |  |
| Central 1                             | ×   | ○  | ×  | ○                        | ○   | ○                          |   |  |  |                     |                        |                          |               |                     |                   |                            |            |   |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |  |
| Central 2                             | ×   | ×  | ×  | ×                        | ○   | ○                          |   |  |  |                     |                        |                          |               |                     |                   |                            |            |   |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |  |
| Central 3                             | ○   | ×  | ○  | ×                        | ○   | ○                          |   |  |  |                     |                        |                          |               |                     |                   |                            |            |   |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |  |
| Central 4                             | ○   | ×  | ○  | ○                        | ○   | ○                          |   |  |  |                     |                        |                          |               |                     |                   |                            |            |   |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |           |   |   |   |   |   |   |  |



| NO. | Item                                 | Specification outline  | Remarks   |
|-----|--------------------------------------|--|---|
| 17  | DC motor                             | <p>1) When the fan operation has started, positioning of the stator and the rotor are performed.<br/>(Moves slightly with tap sound)</p> <p>2) The motor operates according to the command from the indoor controller.</p> <p><b>Notes)</b></p> <ul style="list-style-type: none"> <li>• When the fan rotates while the air conditioner stops due to entering of outside air, etc, the air conditioner may operate while the fan motor stops.</li> <li>• When a fan lock is found, the air conditioner stops, and an error is displayed.</li> <li>• If static pressure of the used duct does not match with the setup value of static pressure, which was decided in the static pressure setting code No. [5D], the air conditioner may stop or an error code may be displayed.</li> </ul>   | Check code "P12"  |
| 18  | Power saving mode                    | <p>(In the case of RBC-AMT***)</p> <ol style="list-style-type: none"> <li>1. Push the  button on the remote controller</li> <li>2. The "  " segment lights up on the wired remote controller display.</li> <li>3. The requirement capacity ratio is limited to approximately 75 %.</li> <li>4. If the power saving operation is enabled, the settings are retained when the operation is stopped, when the mode is changed, or when the power is reset. The power saving operation will be enabled the next time the operation starts.</li> </ol>  | The power saving operation cannot be set by the wireless remote controller or wired remote controller of AMT31E or older. |
| 19  | Frequency fixed operation (Test run) | <p><b>&lt;In case of wired remote controller&gt;</b></p> <ol style="list-style-type: none"> <li>1) When pushing [CHK] button for 4 seconds or more, [TEST] is displayed on the display screen and the mode enters in Test run mode.</li> <li>2) Push [ON/OFF] button.</li> <li>3) Using [MODE] button, set the mode to [COOL] or [HEAT]. <ul style="list-style-type: none"> <li>• Do not use other mode than [COOL]/[HEAT] mode.</li> <li>• During test run operation, the temperature cannot be adjusted.</li> <li>• An error is detected as usual.</li> <li>• A frequency fixed operation is performed.</li> </ul> </li> <li>4) After the test run, push [ON/OFF] button to stop the operation.<br/>(Display in the display part is same as the procedure in Item 1.)</li> <li>5) Push [CHK] button to clear the test run mode.<br/>([TEST] display in the display part disappears and the status returns to the normal stop status.)</li> </ol> <p><b>&lt;In case of wireless remote controller&gt;</b></p> <ol style="list-style-type: none"> <li>1) When TEMPORARY button is pushed for 10 seconds or more, "Pi!" sound is heard and the operation changes to test run. After approx. 3 minutes, a cooling operation starts forcibly.<br/>Check cool air starts blowing. If the operation does not start, check wiring again.</li> <li>2) To stop a test operation, push TEMPORARY button once again (Approx. 1 second).<br/>Check wiring / piping of the indoor and outdoor units in test run.</li> </ol> <div style="text-align: center;">  <p>TEMPORARY button</p> </div> | Command frequency is approximately [S7]   |



| No. | Item              | Outline of specifications  | Remarks   |
|-----|-------------------|--|---|
| 20  | Secondary heating | <p>Secondary heating can be used while heating operations are performed.</p> <p>&lt;Control Outline (Normal Mode)&gt;</p> <ol style="list-style-type: none"> <li>1) If the difference between the indoor temperature and the outdoor temperature is large while the air conditioner is operating, turn ON the secondary heating.</li> <li>2) This function is valid when the CODE No. (DN) [DC] is set to "0001" (32.9°F(0.5°C)) to "0010" (41°F(5.0°C)) using the wired remote controller, and the output to the external heating source will turn ON if the room temperature satisfies the condition.</li> <li>3) The output will always stay ON while defrosting operations are being performed.</li> </ol>  <p>The diagram shows a temperature axis with points TA, Ts, TA<sub>H</sub>, and TA<sub>L</sub>. A horizontal line at Ts represents the set temperature. A dashed line at TA<sub>H</sub> is 'a' units below Ts. Another dashed line at TA<sub>L</sub> is 'b' units below TA<sub>H</sub>. The output is OFF when the room temperature is above TA<sub>H</sub> and ON when it falls below TA<sub>L</sub>. The output remains ON until it rises above TA<sub>H</sub>.</p> <ol style="list-style-type: none"> <li>4) The output can be turned on by the outdoor temperature when CODE No. (DN) [C7] is set to "0001" (33.8°F(1°C)) to "0010" (50°F(10°C)) using the wired remote controller.</li> </ol>  <p>The diagram shows a temperature axis with points TO<sub>H</sub> and TO<sub>L</sub>. The output is OFF when the outdoor temperature is above TO<sub>H</sub> and ON when it falls below TO<sub>L</sub>. The output remains ON until it rises above TO<sub>H</sub>. The distance between TO<sub>H</sub> and TO<sub>L</sub> is labeled 'c'.</p> <p>&lt;Control Outline (Flip Mode)&gt;</p> <ol style="list-style-type: none"> <li>1) If the difference between the room temperature and the set temperature is large while using secondary heating, run the air conditioner.</li> <li>2) This function is valid when the CODE No. (DN) [C5] is set to "0001" (Flip mode) or the CODE No. (DN) [C7] is set to "0001" (33.8°F(1°C)) to "0010" (50°F(10°C)) using the wired remote controller, and when the output is switched ON when the room temperature satisfies the conditions.</li> </ol> <p>* The outdoor temperature determination is invalid whilst this control is performed.</p>  <p>The diagram shows a temperature axis with points TA, Ts, TA<sub>H</sub>, and TA<sub>L</sub>. A dashed line at Ts is 'b' units above TA<sub>H</sub>. A dashed line at TA<sub>L</sub> is 'a' units below TA<sub>H</sub>. The output is OFF when the room temperature is above TA<sub>H</sub> and ON when it falls below TA<sub>L</sub>. The output remains ON until it rises above TA<sub>H</sub>.</p> | <p>TA<sub>H</sub>: Temp.set air high<br/>(= Ts - a )<br/>TA<sub>L</sub>: Temp.set air low<br/>(= TA<sub>H</sub> - b )</p> <p>TO<sub>H</sub>: Temp.set out high<br/>TO<sub>L</sub>: Temp.set out low<br/>(= TO<sub>H</sub> - c )</p> |



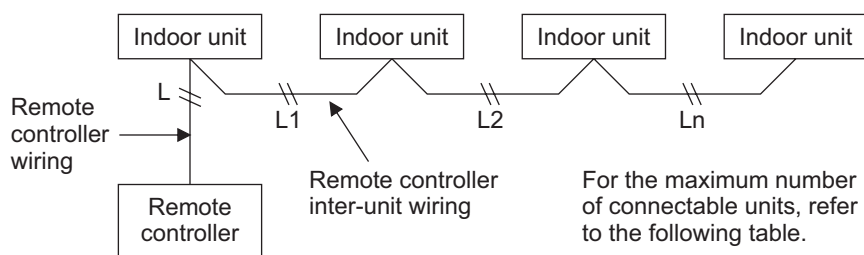
| No.   | Item   | Outline of specifications  | Remarks  |  |   |                     |  |                    |   |   |   |   |   |  |
|---|--|--|--|--|---|---------------------|--|--------------------|---|---|---|---|---|--|
| 20  | Secondary heating<br>(Continued)   | <table><tr><td rowspan="3">DN [C5]</td><td>Data</td><td>Secondary heating mode</td></tr><tr><td>0000</td><td>Normal mode (Factory default)</td></tr><tr><td>0001</td><td>Flip mode</td></tr></table>   | DN [C5]  | Data   | Secondary heating mode  | 0000                | Normal mode (Factory default)  | 0001               | Flip mode                               |   |   |   |   |  |
|   |  | DN [C5]  |  | Data   | Secondary heating mode  |                     |  |                    |   |   |   |   |   |  |
|   |  |  |  | 0000   | Normal mode (Factory default)   |                     |  |                    |   |   |   |   |   |  |
|   |  |  | 0001   | Flip mode  |   |                     |  |                    |   |   |   |   |   |  |
|   |  | <table><tr><td rowspan="2">DN [C6]</td><td>Data</td><td>TO<sub>H</sub>: Set temp. out (high) [°F(°C)]</td></tr><tr><td>-0015<br/>to<br/>0015</td><td>"-0015": 5°F(-15°C) to "0015": 59°F(15°C)<br/>"0000": 32°F(0°C) (Factory default)</td></tr></table>                 | DN [C6]  | Data   | TO <sub>H</sub> : Set temp. out (high) [°F(°C)]                                       | -0015<br>to<br>0015 | "-0015": 5°F(-15°C) to "0015": 59°F(15°C)<br>"0000": 32°F(0°C) (Factory default) |                    |   |   |   |   |   |  |
|   |  | DN [C6]  |  | Data   | TO <sub>H</sub> : Set temp. out (high) [°F(°C)]                                       |                     |  |                    |   |   |   |   |   |  |
|   |  |  | -0015<br>to<br>0015  | "-0015": 5°F(-15°C) to "0015": 59°F(15°C)<br>"0000": 32°F(0°C) (Factory default) |   |                     |  |                    |   |   |   |   |   |  |
|   |  | <table><tr><td rowspan="3">DN [C7]</td><td>Data</td><td>c : TO<sub>H</sub> - TO<sub>L</sub> [°F(°C)]</td></tr><tr><td>0000</td><td>Unavailable (Factory default)</td></tr><tr><td>0001<br/>to<br/>0010</td><td>0001: 33.8°F(1°C) to "0010": 50°F(10°C)</td></tr></table> | DN [C7]  | Data   | c : TO <sub>H</sub> - TO <sub>L</sub> [°F(°C)]  | 0000                | Unavailable (Factory default)  | 0001<br>to<br>0010 | 0001: 33.8°F(1°C) to "0010": 50°F(10°C) |   |   |   |   |  |
|   |  | DN [C7]  |  | Data   | c : TO <sub>H</sub> - TO <sub>L</sub> [°F(°C)]  |                     |  |                    |   |   |   |   |   |  |
|   |  |  |  | 0000   | Unavailable (Factory default)   |                     |  |                    |   |   |   |   |   |  |
| 0001<br>to<br>0010  | 0001: 33.8°F(1°C) to "0010": 50°F(10°C)                                  |  |  |  |   |                     |  |                    |   |   |   |   |   |  |
| <table><tr><td rowspan="2">DN [DB]</td><td>Data</td><td>b : TA<sub>H</sub> - TA<sub>L</sub> [°F(°C)]</td></tr><tr><td>0001<br/>to<br/>0010</td><td>"0001": 32.9°F(0.5°C) to "0010": 41°F(5.0°C)<br/>"0006": 37.4°F(3°C) (Factory default)</td></tr></table>   | DN [DB]  | Data   | b : TA <sub>H</sub> - TA <sub>L</sub> [°F(°C)]   | 0001<br>to<br>0010   | "0001": 32.9°F(0.5°C) to "0010": 41°F(5.0°C)<br>"0006": 37.4°F(3°C) (Factory default) |                     |  |                    |   |   |   |   |   |  |
| DN [DB]   |  | Data   | b : TA <sub>H</sub> - TA <sub>L</sub> [°F(°C)]   |  |   |                     |  |                    |   |   |   |   |   |  |
|   | 0001<br>to<br>0010   | "0001": 32.9°F(0.5°C) to "0010": 41°F(5.0°C)<br>"0006": 37.4°F(3°C) (Factory default)  |  |  |   |                     |  |                    |   |   |   |   |   |  |
| <table><tr><td rowspan="3">DN [DC]</td><td>Data</td><td>a : Ts - TA<sub>H</sub> (Normal mode)[°F(°C)]<br/>TA<sub>L</sub> - Ts (Flip mode)[°F(°C)]</td></tr><tr><td>0000</td><td>Unavailable (Factory default)</td></tr><tr><td>0001<br/>to<br/>0010</td><td>0001: 33.8°F(1°C) to "0010": 50°F(10°C)</td></tr></table>   | DN [DC]  | Data   | a : Ts - TA <sub>H</sub> (Normal mode)[°F(°C)]<br>TA <sub>L</sub> - Ts (Flip mode)[°F(°C)] | 0000   | Unavailable (Factory default)   | 0001<br>to<br>0010  | 0001: 33.8°F(1°C) to "0010": 50°F(10°C)  |                    |   |   |   |   |   |  |
| DN [DC]   |  | Data   | a : Ts - TA <sub>H</sub> (Normal mode)[°F(°C)]<br>TA <sub>L</sub> - Ts (Flip mode)[°F(°C)] |  |   |                     |  |                    |   |   |   |   |   |  |
|   |  | 0000   | Unavailable (Factory default)  |  |   |                     |  |                    |   |   |   |   |   |  |
|   | 0001<br>to<br>0010   | 0001: 33.8°F(1°C) to "0010": 50°F(10°C)  |  |  |   |                     |  |                    |   |   |   |   |   |  |
| <p>&lt;Wiring&gt;</p> <p>1) Use ① - ④ pin (Cooling output, DC 12 V) of CN60 on indoor P.C. board for output.</p> <p>Relay (DC12V, procured locally)<br/>Corresponds to the relay up to one that the rated current of the operation coil is approx. 75mA</p> <div><div><div>CN60<br/>Option<br/>output<br/>(6P WHI)</div><table><tr><td>1</td><td>1</td></tr><tr><td>2</td><td>2</td></tr><tr><td>3</td><td>3</td></tr><tr><td>4</td><td>4</td></tr><tr><td>5</td><td>5</td></tr><tr><td>6</td><td>6</td></tr></table><div>Indoor control<br/>P.C. board</div></div><div><div>Connect to<br/>secondary<br/>heating unit</div></div></div> <p><b>Note)</b> Determine the cable length between the indoor control P.C.board and the relay within 2m.</p> |  | 1  | 1  | 2  | 2   | 3                   | 3  | 4                  | 4                                       | 5 | 5 | 6 | 6 |  |
| 1   | 1  |  |  |  |   |                     |  |                    |   |   |   |   |   |  |
| 2   | 2  |  |  |  |   |                     |  |                    |   |   |   |   |   |  |
| 3   | 3  |  |  |  |   |                     |  |                    |   |   |   |   |   |  |
| 4   | 4  |  |  |  |   |                     |  |                    |   |   |   |   |   |  |
| 5   | 5  |  |  |  |   |                     |  |                    |   |   |   |   |   |  |
| 6   | 6  |  |  |  |   |                     |  |                    |   |   |   |   |   |  |
| <p>* The output state can be checked from “Monitor function” on the wired remote controller. The manual for the remote controller for operation methods of “Monitor function”.</p> <table><tr><td>Monitor<br/>CODE No.<br/>E5</td><td>Secondary heating output<br/>- - - -: Unavailabl<br/>0000: OFF<br/>0001: ON</td></tr></table>   |  | Monitor<br>CODE No.<br>E5  | Secondary heating output<br>- - - -: Unavailabl<br>0000: OFF<br>0001: ON                   |  |   |                     |  |                    |   |   |   |   |   |  |
| Monitor<br>CODE No.<br>E5   | Secondary heating output<br>- - - -: Unavailabl<br>0000: OFF<br>0001: ON |  |  |  |   |                     |  |                    |   |   |   |   |   |  |



## 8. COMMUNICATION TYPE, MODEL NAMES AND THE MAXIMUM NUMBER OF CONNECTABLE UNITS

If TU2C-Link (U series) is combined with TCC-Link (other than U series), the wiring specifications and the maximum number of connectable indoor units during group control operation will be changed.

- (1) For wiring specifications, carry out the installation, maintenance, or repair according to the attached Installation Manual.
- (2) For a communication type combination and the max. number of connectable indoor units, refer to the following table.
  - Only when all outdoor unit, indoor unit and remote control are a U series, communication method is TU2C-LINK, and the maximum number of connectable units will be 16.



**The combination of unit type and the number of the maximum connection of a communication method**

|  | Unit type |          |          |          |          |          |          |   |
|--|-----------|----------|----------|----------|----------|----------|----------|---|
|  | U series  | U series | U series | U series | *        | *        | *        | * |
| Outdoor unit                           | U series  | U series | U series | U series | *        | *        | *        | * |
| Indoor unit                            | U series  | U series | *        | *        | U series | U series | *        | * |
| Remote controller<br>Remote sensor     | U series  | *        | U series | *        | U series | *        | U series | * |
| Communication type                     | TU2C-Link | TCC-Link |          |          |          |          |          |   |
| Maximum number<br>of connectable units | 16        | 8        |          |          |          |          |          |   |

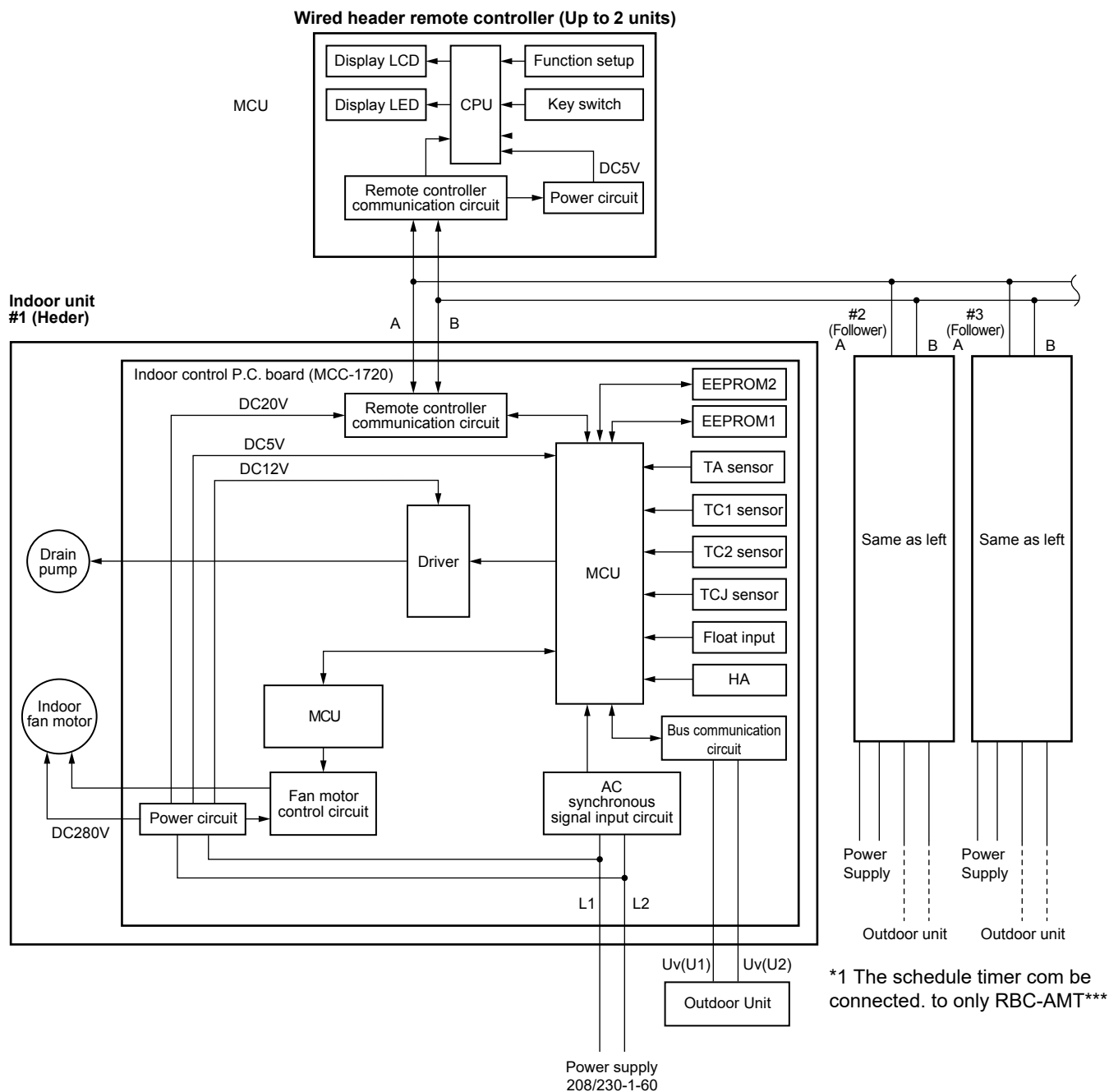
\* Other than U series



## 9. APPLIED CONTROL AND FUNCTIONS (INCLUDING CIRCUIT CONFIGURATION)

### 9-1. Indoor Controller Block Diagram (MCC-1720)

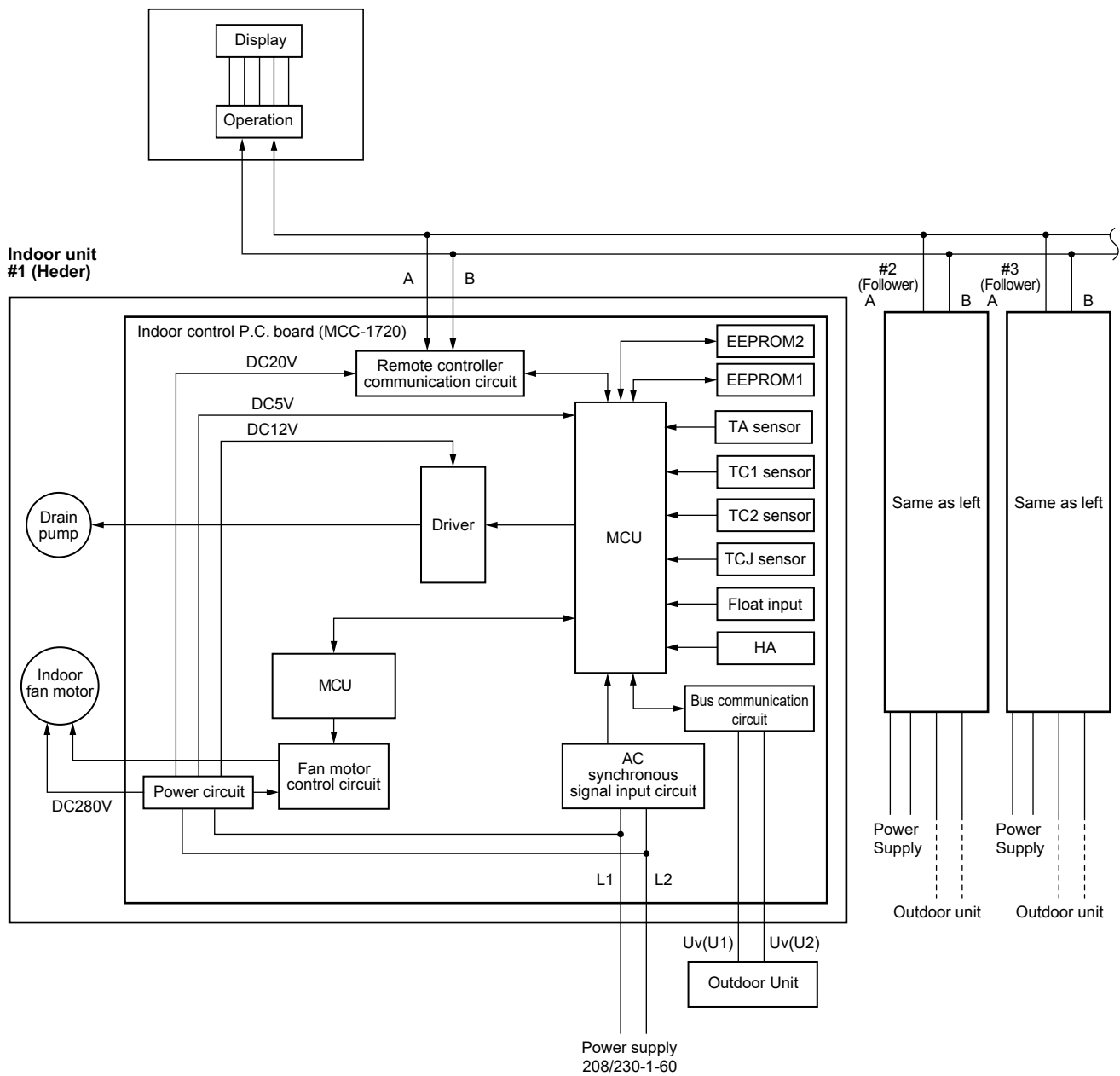
#### 9-1-1. In case of connection of wired remote controller.



Max. 16 units are connectable.



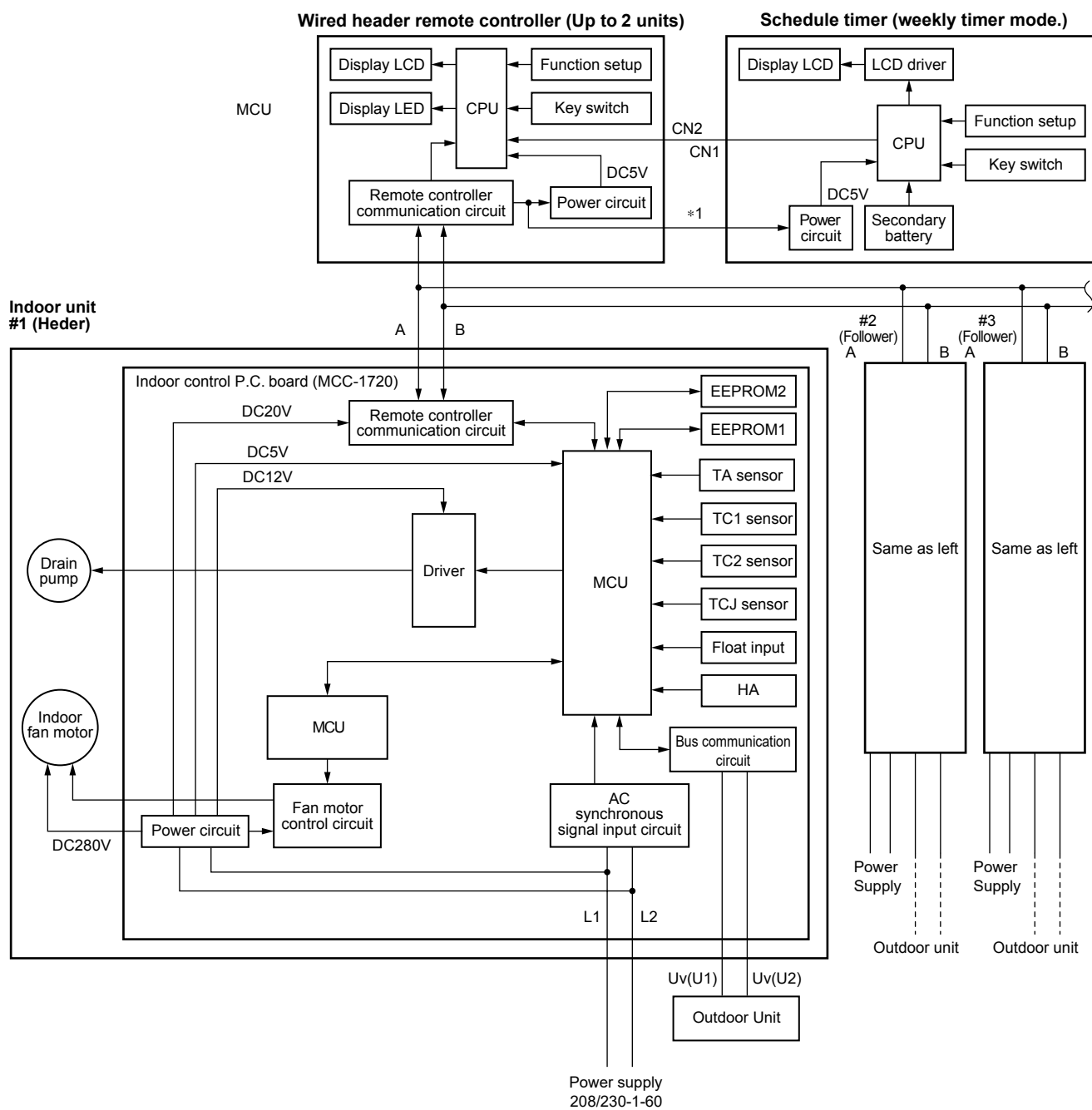
### 9-1-2. In case of connection of wireless remote controller.



Max. 16 units are connectable.



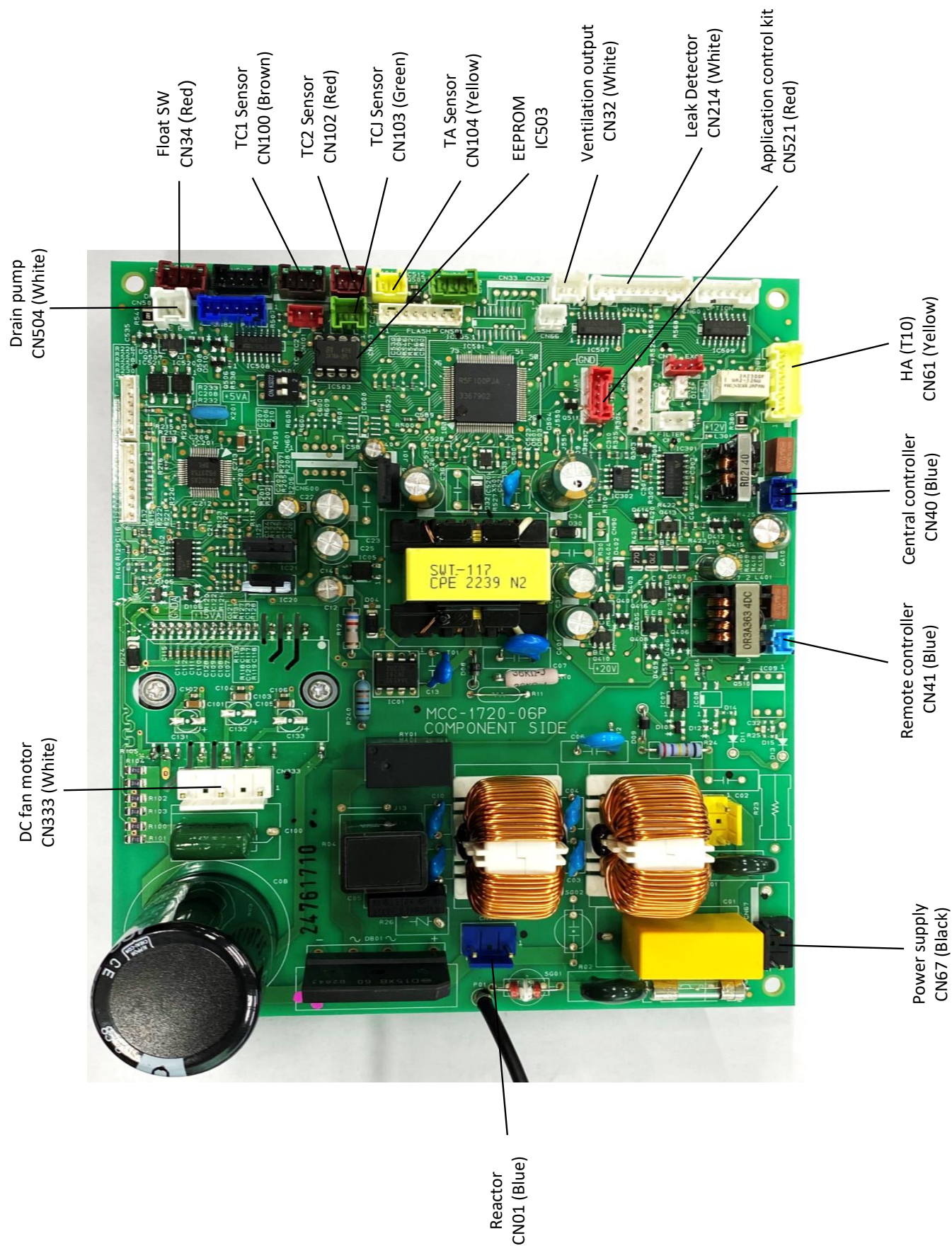
### 9-1-3. In case of connection of wired remote controller and Wireless remote controller.



Max. 16 units are connectable.



9-2. Indoor Print Circuit Board  
MCC-1720





### 9-3. Optional connector specifications of indoor P.C. board

| Function                        | Connector No. | Pin No. | Specification                           | Remarks   |
|---------------------------------|---------------|---------|---|---|
| Fan output                      | CN32          | 1<br>2  | DC12 V<br>Output                        | Factory default setting: ON when indoor unit in operation and OFF when indoor unit at rest<br>* Fan can be operated on its own by pressing FAN button on remote controller (DN = 31)          |
| HA                              | CN61          | 1       | Start / stop input                      | Start / stop input for HA (J01: In place / Removed = Pulse input (factory default) / Step input)  |
|                                 |               | 2       | 0 V (COM)                               |   |
|                                 |               | 3       | Remote controller disabling input       | Enables / disables start / stop control via remote controller   |
|                                 |               | 4       | In-operation output                     | ON during operation (HA answerback signal)  |
|                                 |               | 5       | DC12 V (COM)                            |   |
|                                 |               | 6       | Alarm output                            | ON while alarm ON   |
| Optional output                 | CN60          | 1       | DC12 V (COM)                            |   |
|                                 |               | 2       | Defrosting output                       | ON while outdoor unit defrosted   |
|                                 |               | 3       | Thermostat ON output                    | ON while real thermostat ON (compressor ON)   |
|                                 |               | 4       | Cooling output                          | ON while air conditioner in cooling or related operation (COOL, DRY or cooling under AUTO mode)   |
|                                 |               | 5       | Heating output                          | ON while air conditioner in heating operation (HEAT or heating under AUTO mode)   |
|                                 |               | 6       | Fan output                              | ON while indoor fan ON (air cleaner in use or via interlock wiring)   |
| External error input            | CN80          | 1       | DC12 V (COM)                            | Generates test code L30 and automatically shuts down air conditioner (only if condition persists for 1 minute)  |
|                                 |               | 2       | DC12 V (COM)                            |   |
|                                 |               | 3       | External error input                    |   |
| CHK<br>Operation check          | CN71          | 1       | Check mode input                        | Used for indoor operation check (prescribed operational status output, such as indoor fan "H" or drain pump ON, to be generated without communication with outdoor unit or remote controller) |
|                                 |               | 2       | 0 V                                     |   |
| DISP<br>Display mode            | CN72          | 1       | Display mode input                      | Product display mode - Communication just between indoor unit and remote controller enabled (upon turning on of power) Timer short-circuited out (always)                                     |
|                                 |               | 2       | 0 V                                     |   |
| EXCT<br>Demand                  | CN73          | 1       | Demand input                            | Imposes thermostat OFF on indoor unit   |
|                                 |               | 2       | 0 V                                     |   |
| Input for float SW              | CN34          | 1       | DC12V                                   | Normal when between ① - ③ short-circuits, but abnormal when open-circuits. (check code "P10" appears)   |
|                                 |               | 2       | NC                                      |   |
|                                 |               | 3       | Float SW input                          |   |
| Output for Flow selector unit   | CN81          | 1       | DC12V                                   |   |
|                                 |               | 2       | EP valve output (Open collector)        |   |
|                                 |               | 3       | Balance valve output (Open collector)   |   |
|                                 |               | 4       | Suction valve output (Open collector)   |   |
|                                 |               | 5       | Discharge valve output (Open collector) |   |
| Output power supply for option  | CN309         | 1       | AC230V                                  | This can be used as power supply for option devices.  |
|                                 |               | 3       | AC230V                                  |   |
| Connection for option P.C.board | CN521         | 1       | DC12V                                   | Connected Application control kit (TCB-PCUC2E)  |
|                                 |               | 2       | DC5V                                    |   |
|                                 |               | 3       | Send                                    |   |
|                                 |               | 4       | Receive                                 |   |
|                                 |               | 5       | 0V                                      |   |



## 9-4. Functions at test run

### ■ Cooling/Heating test run check

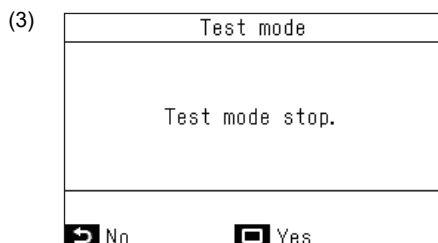
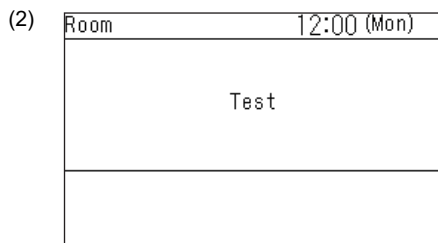
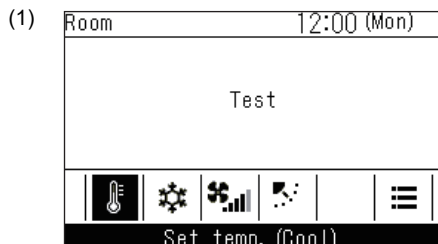
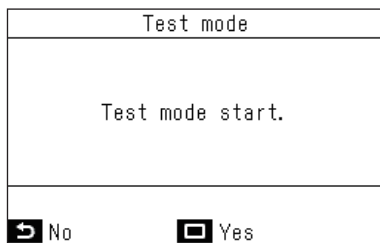
The test run for cooling/heating can be performed from either indoor remote controller or outdoor interface P.C. board.

#### 1. Start/Finish operation of test run

##### ⊙ Test run from indoor remote controller

- └ Wired remote controller: Refer to the below item of “Test run” of the wired remote controller.
- └ Wireless remote controller: Refer to the next page item of “Test run” of the wireless remote controller.

#### <RBC-AWSU52-UL>



**1** In the “Field setting menu” screen, press [ ] and [ ] to select “Test mode”, and then press [ Set/Fix]

→ Test mode is set, and returns to the “Field setting menu” screen. Press the [ Return] button 2 times, to open screen (2).

**2** Press [ ON/OFF ON/OFF]

- Operation starts, and in test mode screen (1) opens. (While stopped, it is screen (2))
- Test mode is done while the operating mode is set to “Cool” or “Heat”.
- The temperature cannot be set in test mode.
- Check codes are displayed in the normal way.

**3** After completing test mode, in the “Field setting menu” screen, press [ ] and [ ] to select “Test mode”, and then press [ Set/Fix]

- Screen (3) appears.
- Press [ Set/Fix] to end test mode and do normal operation.

**Note)** The test run returns to the normal operation after 60 minutes.



## 9-5. Test operation of indoor unit

### ▼ Check function for operation of indoor unit (Functions at indoor unit side)

This function is provided to check the operation of the indoor unit singly without communication with the remote controller or the outdoor unit. This function can be used regardless of operation or stop of the system. However, if using this function for a long time, a trouble of the equipment may be caused. Limit using this function within several minutes.

#### [How to operate]

- 1) Short-circuit CHK pin (CN71 on the indoor P.C. board).  
The operation mode differs according to the indoor unit status in that time.  
Normal time: Both float SW and fan motor are normal.  
Abnormal time: Either one of float SW or fan motor is abnormal.
- 2) Restricted to the normal time, if short-circuiting DISP pin (CN72 on the indoor P.C. board) in addition to short-circuit of CHK pin (CN71 on the indoor P.C. board), the minimum opening degree (30 pls) can be set to the indoor PMV only.  
When open DISP pin, the maximum opening degree (1500 pls) can be obtained again.

#### [How to clear]

Open CHK pin. While the system is operating, it stops once but automatically returns to operation after several minutes.

|                | Short-circuit of CHK pin       |                              |                              |
|----------------|--------------------------------|------------------------------|------------------------------|
|                | Normal time                    |                              | Abnormal time                |
|                | DISP pin open                  | DISP pin short circuit       |                              |
| Fan motor      | (H)                            | (H)                          | Stop                         |
| Indoor PMV (*) | Max. opening degree (1500 pls) | Min. opening degree (30 pls) | Min. opening degree (30 pls) |
| Louver         | All ignored                    | All ignored                  | All ignored                  |
| Drain pump     | ON                             | ON                           | ON                           |
| Communication  | All ignored                    | All ignored                  | All ignored                  |
| P.C. board LED | Lights                         | Lights                       | Flashes                      |

- To exchange the indoor PMV coil, set the indoor PMV to Max. opening degree.
- For the detailed positions of CHK pin (CN71 on indoor P.C. board) and DISP pin (CN72 on indoor P.C. board), refer to the indoor P.C. board.

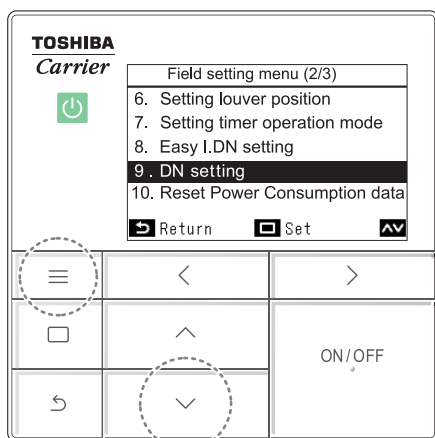


## 10. APPLIED CONTROL

### 10-1. Setup of Selecting Function in Indoor Unit

(Be Sure to Execute Setup by a Wired Remote Controller)

<RBC-AWSU52-UL>



| Field setting menu (2/3)         |
|----------------------------------|
| 6. Setting louver position       |
| 7. Setting timer operation mode  |
| 8. Easy I.DN setting             |
| 9. DN setting                    |
| 10. Reset Power Consumption data |

- 1 Press [ Menu] to open the “Menu”
- 2 Press and hold [ Menu] and [ ] at the same time to open “Field setting menu”  
→ Press and hold 4 seconds.

- 1 In the “Field setting menu” screen, press [ ] and [ ] to select “DN setting”, and then press [ Set/Fix]
- 2 Press [ ] and [ ] to select “Indoor unit” or “Outdoor unit”, and then press [ Set/Fix]  
→ If “Indoor unit” was selected, the fans and louvers of the indoor units operate.

When doing group connections:

→ The fans and louvers of the selected indoor units operate.

- 3 Press [ ] to black highlight the item code (DN), and then press [ ] and [ ] to set the item code
- 4 Press [ ] to black highlight the data, and then press [ ] and [ ] to set the data
- 5 After finishing setting the data of the item code (DN), press [ Set/Fix]  
→ “Continue?” is displayed.
- 6 To set the data of other item codes (DN), press [ Set/Fix]  
To not do other settings, press [ Return]  
→ The changes are fixed, and the “Field setting menu” screen returns.  
→ “ ” appears while data is changing.

When doing group connections:

→ Press [ Return] to open the unit selection screen.  
In the unit selection screen, press [ Return] to briefly display “ ”, and then return to the “Field setting menu” screen.

#### NOTE

For details on item codes and data to be set, refer to the Installation Manual and Service manual of the indoor unit and outdoor unit.



## Indoor unit function Code No. (DN Code) table

(includes functions needed to perform applied control on site)

| DN        | Item  | Description   | At shipment                            |
|-----------|---|---|--|
| <b>01</b> | Filter display delay timer  | 0000: None                      0001: 150H<br>0002: 2500H                      0003: 5000H<br>0004: 10000H  | Depending on model type                |
| <b>02</b> | Dirty state of filter   | 0000: Standard<br>0001: High degree of dirt (Half of standard time)   | 0000: Standard                         |
| <b>03</b> | Central control address   | 0001: No.1 unit to 0064: No.64 unit ... TCC-LINK<br>0001: No.1 unit to 0128: No.128 unit ... TU2C-LINK<br>00Un: Unfixed (When using U series remote controller)<br>0099: Unfixed (Other than U series remote controller)  | 00Un/0099: Unfixed *1                  |
| <b>04</b> | Specific indoor unit priority   | 0000: No priority                      0001: Priority   | 0000: No priority                      |
| <b>06</b> | Heating temp. shift   | 0000: 0°F(0°C)                      0001: +1.8°F(+1°C)<br>0002: +3.6°F(+2°C) to                      0010: +18°F(+10°C)<br>(Up to +6 recommended)   | Depending on model type                |
| <b>0b</b> | Demand control (CN73 / CN4)   | 0000: Demand input                      0001: O2 sensor input<br>0002: Card input setup.3                      0003: Fire alarm input<br>0004: Card input setup.4                      (Normal open)<br>0005: Fire alarm input                      0006: Notice cord (202)<br>(Normal close)                      0008: Card input setup.1<br>0007: Card input setup.5<br>0009: Card input setup.2 | 0000: Demand input                     |
| <b>0d</b> | Existence of [AUTO] mode  | 0000: Provided<br>0001: Not provided<br>(Automatic selection from connected outdoor unit)   | 0001: Not provided                     |
| <b>0F</b> | Cooling only  | 0000: Heat pump<br>0001: Cooling only (No display of [AUTO] [HEAT])   | 0000: Heat pump                        |
| <b>10</b> | Type  | Refer to <b>Type DN code "10" list</b>  | Depending on model type                |
| <b>11</b> | Indoor unit capacity  | 0000: Unfixed                      0001 to 0034<br>Refer to Indoor Unit Capacity DN code "11" list  | According to capacity type             |
| <b>12</b> | Line address  | 0001: No.1 unit to 0064: No.30 unit ... TCC-LINK<br>0001: No.1 unit to 0128: No.128 unit ... TU2C-LINK<br>00Un: Unfixed (When using U series remote controller)<br>0099: Unfixed (Other than U series remote controller)  | 00Un/0099: Unfixed *1                  |
| <b>13</b> | Indoor unit address   | 0001: No.1 unit to 0064: No.64 unit ... TCC-LINK<br>0001: No.1 unit to 0128: No.128 unit ... TU2C-LINK<br>00Un: Unfixed (When using U series remote controller)<br>0099: Unfixed (Other than U series remote controller)  | 00Un/0099: Unfixed *1                  |
| <b>14</b> | Group address   | 0000: Individual                      0001: Header unit of group<br>0002: Follower unit of group<br>00Un: Unfixed (When using U series remote controller)<br>0099: Unfixed (Other than U series remote controller)  | 00Un/0099: Unfixed *1                  |
| <b>19</b> | Louver type (Air direction adjustment)                                  | 0000: No louver                      0001: Swing only<br>0004: (4-way Air Discharge Cassette type, etc.)  | Depending on model type                |
| <b>1E</b> | Temp difference of [AUTO] mode selection<br>COOL → HEAT,<br>HEAT → COOL | 0000: 0°F(0°C) to 0010: 18°F(10°C) (Ts ± 9.0°F(5°C))<br>Ts:Remote controller setup temp.  | 0003: 5.4°F(3°C)<br>(Ts ±2.7°F(1.5°C)) |
| <b>28</b> | Automatic restart of power failure                                      | 0000: None                      0001: Restart   | 0001: Restart                          |
| <b>2A</b> | Selection of option/Trouble input (TCB-PCUC2E: CN3)                     | 0000: Filter input                      0001: Alarm input<br>0002: None                      (Air washer, etc.)   | 0002: None                             |
| <b>2E</b> | HA terminal (CN61) select   | 0000: Usual                      0001: Card input setup.1 (3)<br>0002: Fire alarm input                      0003: Card input setup.2 (4)<br>(arbiter contact)<br>0004: Notice cord (201)                      0005: Card input setup.5   | 0000: Usual (HA terminal)              |
| <b>31</b> | Ventilating fan control   | 0000: Unavailable                      0001: Available  | 0000: Unavailable                      |
| <b>32</b> | TA sensor selection   | 0000: Body TA sensor                      0001: Remote controller sensor  | 0000: Body TA sensor                   |



| DN        | Item  | Description  |  | At shipment   |
|-----------|---|--|--|---|
| <b>33</b> | Temperature unit select   | 0000: °C   | 0001: °F                                       | 0001: °F  |
| <b>5d</b> | External static pressure<br>High-ceiling adjustment<br>(Air flow selection) | Refer to next page.  |  | Depending on model<br>type                            |
| <b>60</b> | Timer setting<br>(wired remote controller)                                  | 0000: Available<br>(can be performed)  | 0001: Unavailable<br>(cannot be performed)     | 0000: Available                                       |
| <b>77</b> | Dual set point  | 0000: Unavailable  | 0002: Available                                | 0000: Unavailable                                     |
| <b>79</b> | Alarm output setup of the<br>header unit                                    | 0000: Not including the state<br>of following unit   | 0001: Including the state of<br>following unit | 0000: Not including the<br>state of following<br>unit |
| <b>7A</b> | Change unit 0.9°F(0.5°C)<br>or 1.8°F(1°C) on remote                         | 0000: 1.8°F(1°C)   | 0001: 0.9°F(0.5°C)                             | 0001: 0.9°F(0.5°C)                                    |
| <b>b3</b> | Soft cooling  | 0000: Unavailable  | 0001: Available                                | 0001: Available                                       |
| <b>b5</b> | Occupancy sensor/<br>Wireless Remote controller<br>Provided / None          | 0000: None<br>0002: Wireless remote controller provided  | 0001: Occupancy sensor<br>provided             | 0000: None  |
| <b>b6</b> | Occupancy sensor<br>Enable / Invalid<br>(Absence time judgment<br>time)     | 0000: Invalid<br>0002: 60min.<br>0005: 150min.   | 0001: 30min.<br>0004: 120min.                  | 0002: Enable<br>(60 min.)                             |
| <b>b7</b> | Occupancy sensor<br>operation at absent time                                | 0000: Stand by   | 0001: operation stop                           | 0000: Stand by  |
| <b>d0</b> | Whether the power<br>saving mode can be set<br>by the remote controller     | 0000: Invalid  | 0001: Valid                                    | 0001: Valid   |
| <b>E0</b> | Destination   | 0000: Domestic   | 0001: North America                            | 0001: North America                                   |
| <b>E6</b> | Wireless remote<br>controller A-B selection                                 | 0000: A  | 0001: B  | 0000: A   |
| <b>F6</b> | Presence of Application<br>control kit<br>(TCB-PCUC2E)                      | 0000: None   | 0001: Exist                                    | 0000: None  |
| <b>FC</b> | Communication protocol *2   | 0000: TCC-LINK   | 0003: TU2C-LINK                                | 0000: TCC-LINK  |
| <b>Fd</b> | Priority operation mode<br>(FS unit)  | 0000: Heating  | 0001: Cooling                                  | 0000: Heating   |
| <b>FE</b> | FS unit address   | 0001: No.1 unit to 0064: No.64 unit ... TCC-LINK<br>0001: No.1 unit to 0128: No.128 unit ... TU2C-LINK<br>00Un: Unfixed (When using U series remote controller)<br>0099: Unfixed (Other than U series remote controller) |  | 00Un/0099: Unfixed *1                                 |



| DN         | Item   | Description   | At shipment                     |
|------------|--|---|---------------------------------|
| <b>180</b> | Notice code number 01                              | 0000: None<br>0001 ~ 0255 : Notice code<br>0129 : Notice code (201)<br>0130 : Notice code (202)<br>(0001 ~ 0255 : TU2C-LINK only)         | 0000: None                      |
| <b>181</b> | Notice code number 02                              |   | 0000: None                      |
| <b>182</b> | Notice code number 03                              |   | 0000: None                      |
| <b>183</b> | Notice code number 04                              |   | 0000: None                      |
| <b>184</b> | Notice code number 05                              |   | 0000: None                      |
| <b>185</b> | Notice code number 06                              |   | 0000: None                      |
| <b>186</b> | Notice code number 07                              |   | 0000: None                      |
| <b>187</b> | Notice code number 08                              |   | 0000: None                      |
| <b>188</b> | Notice code number 09                              |   | 0000: None                      |
| <b>189</b> | Notice code number 10                              |   | 0000: None                      |
| <b>191</b> | Secondary Heat / Ventilation output port switching | 0000: Ventilation output      0001: Secondary heating output  | 0000 : Ventilation output       |
| <b>1FB</b> | Central device control state                       | 0000: No central device control (Remote controller use is possible)<br>0001: Central device control (Remote controller use is impossible) | 0000: No central device control |
| <b>1FC</b> | Indoor Unit terminating resistance                 | 0000: OFF      0001: ON   | 0000: OFF                       |

\*1 Display order of “00Un”and “0099” varies depending on remote controller models or communication types.

For Central control address (DN [03]), Indoor unit address (DN [13]), FS unit address (DN [FE])

| Remote controller   | Communication type | Display order                  |
|---------------------|--------------------|--------------------------------|
| U series            | TU2C-LINK          | ... ⇔ 0128 ⇔ 00Un ⇔ 0001 ⇔ ... |
|                     | TCC-LINK           | ... ⇔ 0064 ⇔ 00Un ⇔ 0001 ⇔ ... |
| Other than U series | TCC-LINK           | ... ⇔ 0064 ⇔ 0099 ⇔ 0001 ⇔ ... |

For Line address (DN [12])

| Remote controller   | Communication type | Display order                  |
|---------------------|--------------------|--------------------------------|
| U series            | TU2C-LINK          | ... ⇔ 0128 ⇔ 00Un ⇔ 0001 ⇔ ... |
|                     | TCC-LINK           | ... ⇔ 0030 ⇔ 00Un ⇔ 0001 ⇔ ... |
| Other than U series | TCC-LINK           | ... ⇔ 0030 ⇔ 0099 ⇔ 0001 ⇔ ... |

For Group address (DN [14])

| Remote controller   | Communication type | Display order                  |
|---------------------|--------------------|--------------------------------|
| U series            | TU2C-LINK          | ... ⇔ 0002 ⇔ 00Un ⇔ 0000 ⇔ ... |
|                     | TCC-LINK           | ... ⇔ 0002 ⇔ 0099 ⇔ 0000 ⇔ ... |
| Other than U series | TCC-LINK           | ... ⇔ 0002 ⇔ 0099 ⇔ 0000 ⇔ ... |

\*2 Communication protocol can be automatically switched with the setup in the outdoor unit during installation.



**Type**  
**DN code "10"**

| Value  | Type                    | Model            |
|--------|-------------------------|------------------|
| 0001*1 | 4 Way Cassette          | MMU-UB****HP-UL  |
| 0004   | Concealed Duct Standard | MMD-UB****BHP-UL |

\*1 Default value stored in EEPROM mounted on service P.C. board

**Indoor Unit Capacity**  
**DN code "11"**

| Value | Capacity |
|-------|----------|
| 0000* | Invalid  |
| 0001  | 007 type |
| 0003  | 009 type |
| 0005  | 012 type |
| 0007  | 015 type |
| 0009  | 018 type |
| 0010  | 021 type |
| 0011  | 024 type |
| 0013  | 030 type |
| 0015  | 036 type |
| 0016  | 042 type |
| 0017  | 048 type |
| 0018  | 054 type |

**External Static Pressure**  
**DN code "5D"**

Concealed Duct Standard type

(For UB007 to 018 models)

| Value                    | 0000              | 0001       | 0002       | 0003       | 0004      | 0005       | 0006       |
|--------------------------|-------------------|------------|------------|------------|-----------|------------|------------|
| External static pressure | 0.40 in.WG        | 0.20 in.WG | 0.26 in.WG | 0.12 in.WG | 0.32in.WG | 0.48 in.WG | 0.60 in.WG |
|                          | (Factory default) | -          | -          | -          | -         | -          | -          |

(For UB021 to 054 models)

| Value                    | 0000              | 0001       | 0002       | 0003       | 0004      | 0005       | 0006       |
|--------------------------|-------------------|------------|------------|------------|-----------|------------|------------|
| External static pressure | 0.60 in.WG        | 0.20 in.WG | 0.40 in.WG | 0.12 in.WG | 0.48in.WG | 0.68 in.WG | 0.80 in.WG |
|                          | (Factory default) | -          | -          | -          | -         | -          | -          |



## 10-2. Applied Control in Indoor Unit

### ■ Remote location ON/OFF control box (TCB-IFCB-4UL)

#### [Wiring and setup]

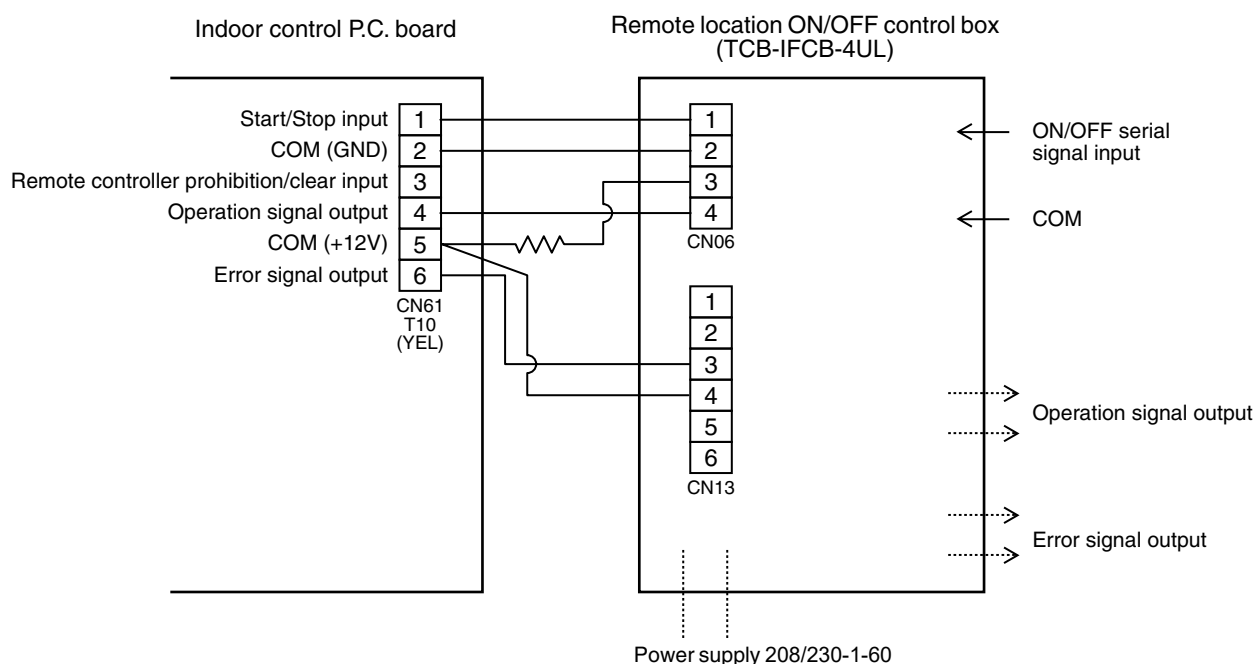
- Use the exclusive connector for connection with the indoor control P.C. board.
- In a group control, the system can operate when connecting with any indoor unit (Control P.C. board) in the group. However when taking out the operation/error signal from the other unit, it is necessary to take out from each unit individually.

#### 1. Control items

- 1) Start/Stop input signal : Operation start/stop in unit
- 2) Operation signal : Output during normal operation
- 3) Error signal : Output during alarm  
(Serial communication error or indoor/outdoor protective device) operation

#### 2. Wiring diagram using remote control interface (TCB-IFCB-4UL)

Input IFCB-4UL : No voltage ON/OFF serial signal  
Output No voltage contact for operation, error display  
Contact capacity: Below Max. AC240V 0.5A





## ■ Ventilating fan control from remote controller

### [Function]

- The start / stop operation can be operated from the wired remote controller when air to air heat exchanger or ventilating fan is installed in the system.
- The fan can be operated even if the indoor unit is not operating.
- Use a fan which can receive the no-voltage normally-open contact as an outside input signal.
- In a group control, the units are collectively operated and they cannot be individually operated.

### 1. Operation

Handle a wired remote controller in the following procedure.

- \* Use the wired remote controller during stop of the system.
- \* Be sure to set up the wired remote controller to the header unit. (Same in group control)
- \* In a group control, if the wired remote controller is set up to the header unit, both header and follower units are simultaneously operable.

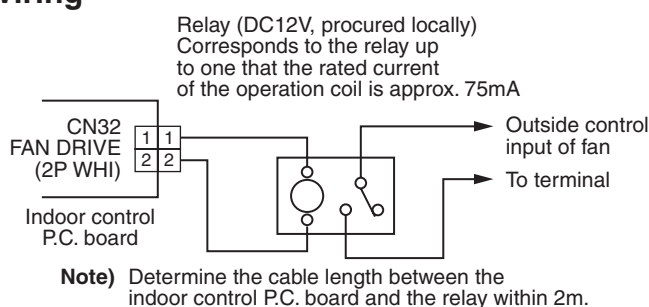
<RBC-AWSU52-UL>

- 1 Press [ Menu] to open the “Menu”
- 2 Press and hold [ Menu] and [ ] at the same time to open “Field setting menu”  
→ Press and hold 4 seconds.
- 3 In the “Field setting menu” screen, press [ ] and [ ] to select “DN setting”, and then press [ Set/Fix]
- 4 Press [ ] and [ ] to select “Indoor unit” or “Outdoor unit”, and then press [ Set/Fix]  
→ If “Indoor unit” was selected, the fans and louvers of the indoor units operate.  
When doing group connections:  
→ The fans and louvers of the selected indoor units operate.
- 5 Press [ ] to black highlight the item code (DN), and then press [ ] and [ ] to set the item code No. 31.
- 6 Press [ ] to black highlight the data, and then press [ ] and [ ] to set the data (At shipment : 0000).

| SET DATA | Handling of operation of air to air heat exchanger or ventilating fan |
|----------|---|
| 0000     | Unavailable (At shipment)   |
| 0001     | Available   |

- 7 After finishing setting the data of the item code (DN), press [ Set/Fix]  
→ “Continue?” is displayed.
- 8 To set the data of other item codes (DN), press [ Set/Fix] To not do other settings, press [ Return]  
→ The changes are fixed, and the “Field setting menu” screen returns.  
→ “ ” appears while data is changing.  
When doing group connections:  
→ Press [ Return] to open the unit selection screen.  
In the unit selection screen, press [ Return] to briefly display “ ”, and then return to the “Field setting menu” screen.

### 2. Wiring





## ■ Auto-off feature control

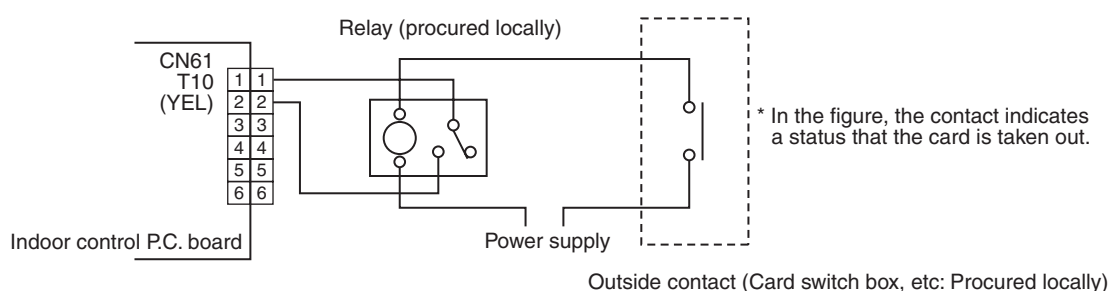
### [Function]

- This function controls the indoor units individually. It is used when the start operation from outside is unnecessary but the stop operation is necessary.
- A card switch box or card lock helps protect customers from forgetting to turn off the indoor unit. (not including the following Card Input 3)
- It is connected with connector on the indoor control P.C. board, and switched with the Code No. and jumper wire setup for use.

### [Setup method]

#### (1) Wiring

Connecting to the CN61 connector



**NOTE)** Determine the cable length between the indoor control P.C. board and the relay within 3m.

#### (2) Code (DN) setup

Set Code (DN) according to set indoor unit function DN code.

| Connector | Jumper wire (J01)                  | Code No. (DN) | Set data               | Function                   |
|-----------|------------------------------------|---------------|------------------------|----------------------------|
| CN61      | Short-circuit<br>(Factory default) | 002E          | 0000 (Factory default) | "HA normal setup" (pulse)  |
|           |                                    |               | 0001                   | "Card Input 1" setup       |
|           |                                    |               | 0003                   | "Card Input 2" setup       |
|           |                                    |               | 0005                   | "Card Input 5" setup       |
|           | Open-circuit (cut)                 |               | 0000 (Factory default) | "HA normal setup" (Static) |
|           |                                    |               | 0001                   | "Card Input 3" setup       |
|           |                                    |               | 0003                   | "Card Input 4" setup       |



## [Control items]

| Function     | External contact terminal   |   |
|--------------|---|---|
|              | Close (Status that card is inserted)  | Open (Status that card is taken out)  |
| Card Input 1 | Manual prohibition release (Manual operation)   | Manual prohibition (Operation stop)   |
| Card Input 2 | Manual prohibition release (Automatic operation)  | Manual prohibition (Operation stop)   |
| Card Input 3 | Operation status continues (Do nothing)   | Operation status continues and setting temperature changes (COOL/DRY: 84.2°F(29°C), HEAT: 64.4°F(18°C))   |
| Card Input 4 | Manual prohibition release (The status returns to operating condition before removing the card.)  | Manual prohibition (Operation stop)   |
| Card Input 5 | 1) To change a setting temperature by changing data at DN code No. 172 to 174.<br>2) The operation mode can be set by changing data (0000, 0001, 0002) at DN code No. 16b.<br>0000: operation mode is the same at the current mode. (factory setting default)<br>0001: operation mode returns to the previous mode when card was inserted. (in case of the previous mode is off operation, the operation mode is also off.)<br>0002: operation mode starts at the same previous mode when the card was inserted. (the operation mode is on operation even the previous mode is off operation.)<br>See contents below for DN settings and detailed operations. | 1) To change a setting temperature, fan speed and wind direction by changing data at DN code No. 16C to 171.<br>2) The operation mode can be set by changing data (0000, 0001) at DN code No. 16A.<br>0000: operation mode is the same at the current mode. (factory setting default)<br>0001: operation automatically starts.<br>See contents below for DN settings and detailed operations. |

\* For the card switch box that does not involve contact operation described above, convert signals with a relay including a normally-closed contact.

## [Card input setup.5 Code (DN)]

| DN  | Item                                      | Description  | At shipment         |
|-----|---|--|---------------------|
| 16C | Open mode Set temp. (Cool, Dry)           | -0015 : 5°F(-15°C) to 0060 : 140°F(60°C)   | 0027 : 80.6°F(27°C) |
| 16d | Open mode Set temp. (Heat)                | -0015 : 5°F(-15°C) to 0060 : 140°F(60°C)   | 0020 : 68°F(20°C)   |
| 16E | Open mode Set temp. (Auto)                | -0015 : 5°F(-15°C) to 0060 : 140°F(60°C)   | 0024 : 75.2°F(24°C) |
| 16F | Open mode Fan speed (All operation mode)  | 0000 : No change 0001 : HH 0002 : H 0003 : L   | 0000 : No change    |
| 170 | Open mode Wind direction (Cool, Dry, Fan) | 0000 : No change 0001 : F1 0002 : F2 0003 : F3   | 0000 : No change    |
| 171 | Open mode Wind direction (Heat)           | 0000 : No change 0001 : F1 0002 : F2 0003 : F3<br>0004 : F4 0005 : F5                            | 0000 : No change    |
| 16A | Open mode Operation                       | 0000 : No change 0001 : Run operation  | 0000 : No change    |
| 172 | Close mode Set temp. (Cool, Dry)          | -0015 : 5°F(-15°C) to 0060 : 140°F(60°C)   | 0024 : 75.2°F(24°C) |
| 173 | Close mode Set temp. (Heat)               | -0015 : 5°F(-15°C) to 0060 : 140°F(60°C)   | 0024 : 75.2°F(24°C) |
| 174 | Close mode Set temp. (Heat)               | -0015 : 5°F(-15°C) to 0060 : 140°F(60°C)   | 0024 : 75.2°F(24°C) |
| 16b | Close mode Operation                      | 0000 : No change<br>0001 : Card ON mode operation<br>0002 : Run operation (Card ON mode setting) | 0000 : No change    |



**[The example of Card Input 5 setting]**

| Case. | Code No. (DN) setting |               |               |               |               |               |               |               |               | External contact terminal   |   |
|-------|-----------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---|---|
|       | [16A]<br>data         | [16b]<br>data | [16C]<br>data | [16d]<br>data | [16F]<br>data | [170]<br>data | [171]<br>data | [172]<br>data | [173]<br>data | Close (Status that card is inserted)  | Open (Status that card is taken n out)  |
| (1)   | 0000                  | 0000          | 0027          | 0020          | 0000          | 0000          | 0000          | 0024          | 0024          | <ul style="list-style-type: none"> <li>The operation mode continues running at the same as the current mode.</li> <li>The setting temperature of cooling/dry and heating mode is changed to 75.2°F(24°C) and 75.2°F(24°C) respectively due to change in code No. 172, 173.</li> </ul>   | <ul style="list-style-type: none"> <li>The operation mode continues running at the same as the current mode.</li> <li>The setting temperature of cooling/dry and heating mode is changed to 80.6°F(27°C) and 68°F(20°C) respectively due to change in code No. 16C, 16d.</li> </ul>   |
| (2)*  | 0000                  | 0001          | 0027          | 0020          | 0003          | 0001          | 0001          | 0024          | 0024          | <ul style="list-style-type: none"> <li>The operation mode is running at the same mode as the last time when the card was inserted due to change in code no. 16b.</li> <li>* The operation mode will be off if the mode at the last time was in off operation. Also, the fan speed will the same as the last time when the card is inserted.</li> <li>The setting temperature of cooling/dry and heating mode is changed to 75.2°F(24°C) and 75.2°F(24°C) respectively due to change in code No. 172, 173.</li> </ul>  | <ul style="list-style-type: none"> <li>The operation mode continues running at the same as the current mode.</li> <li>The setting temperature of cooling/dry and heating mode is changed to 80.6°F(27°C) and 68°F(20°C) respectively due to change in code no. 172, 173.</li> <li>The fan speed for all operation modes is changed due to change in code no.16F.</li> <li>The wind direction of Cooling/dry/fan and heating mode are changed due to change in code No. 170, 171 respectively.</li> </ul>  |
| (3)*  | 0000                  | 0002          | 0027          | 0020          | 0003          | 0001          | 0001          | 0024          | 0024          | <ul style="list-style-type: none"> <li>The operation mode is running at the same mode as the last time when the card was inserted. Also, the operation mode will be on even the mode was in off operation at the last time due to change in code no. 16B.</li> <li>* The fan speed will the same as the last time when the card is inserted.</li> <li>The setting temperature of cooling/dry and heating mode is changed to 75.2°F(24°C) and 75.2°F(24°C) respectively due to change in code No. 172, 173.</li> </ul> | Same operation as case (2)  |
| (4)   | 0001                  | 0000          | 0027          | 0020          | 0003          | 0001          | 0001          | 0024          | 0024          | <ul style="list-style-type: none"> <li>The operation mode continues running at the same as the current mode.</li> <li>The setting temperature of cooling/dry and heating mode is changed to 75.2°F(24°C) and 75.2°F(24°C) respectively due to change in code No. 172, 173.</li> </ul>   | <ul style="list-style-type: none"> <li>Due to change in code no. 16A, the operation mode will be as below.</li> <li>When the operation is ON, the operation mode will continue running at the same as the current mode.</li> <li>When the operation is OFF, the air conditioner will turn on automatically.</li> <li>The setting temperature of cooling/dry and heating mode is changed to 80.6°F(27°C) and 68°F(20°C) respectively due to change in code No. 172, 173.</li> <li>The fan speed for all operation modes is changed due to change in code no.16F.</li> <li>The wind direction of Cooling/dry/fan and heating mode are changed due to change in code No. 170, 171 respectively.</li> </ul> |

\* The history operation mode is only recorded when the card is inserted even if the operation mode is changed when the card is taken out, there is no related to the history operation mode.



## ■ Notice code signal

Notice code is a function dedicated to TU2C-Link communication.

See service manual for u series outdoor unit for details of Notice code.

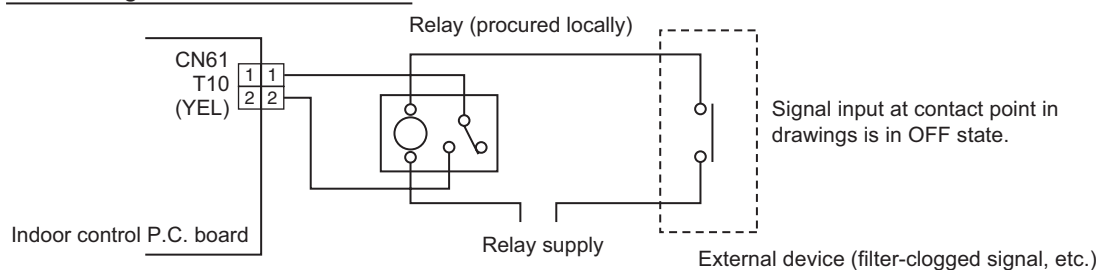
### [Function]

- Notice Code is issued if there is signal input to connector of outdoor unit P.C. board. This can be used in cases such as when confirming state of outdoor unit (filter clogging, etc.) by air conditioner system.
- Used by switching functions with settings of Code No. (DN Code).
- Notice Code is continuously issued while input signal is ON.

### [Setup method]

#### (1) Wiring

##### Connecting to the CN61 connector



**Note)** Determine the cable length between the indoor control P.C. board and the relay within 3m.

#### (2) Code (DN) setup and Notice code

Set Code (DN) according to set indoor unit function DN code.

| Connector | Code No. (DN) | Set data | Notice code |
|-----------|---------------|----------|-------------|
| CN61      | 002E          | 0004     | 201         |

\* Setting of Code No. (DN Code) is necessary to display Notice code mark at remote controller.

Set data corresponding to Notice code to be used to one of Code No. 180 to 189, in accordance with following table.  
In case where data other than 0000 is already set, set to other Code No. (DN Code).

| Code No. (DN) | Set data | Notice code           |
|---------------|----------|-----------------------|
| 0180          | 0000     | OFF (Factory default) |
| to            | 0129     | 201                   |
| 0189          | 0130     | 202                   |

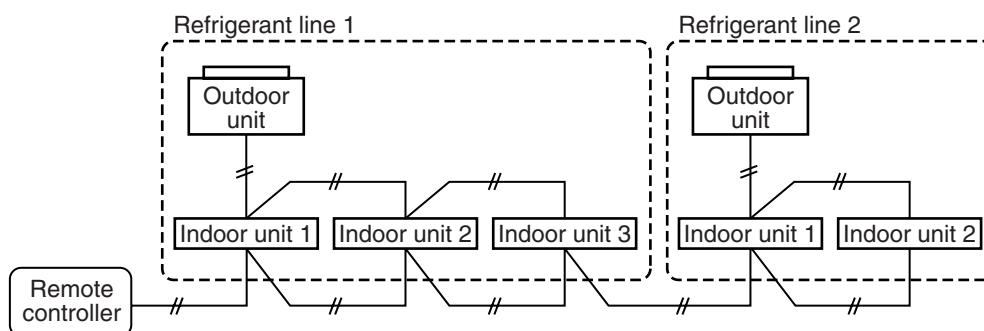
\* It may take up to ten minutes to be displayed on remote controller after Notice code is issued.



## ■ Manual address setting using the remote controller

Procedure when setting indoor units' addresses first under the condition that indoor wiring has been completed and outdoor wiring has not been started (manual setting using the remote controller)

### ▼ Wiring example of 2 refrigerant lines

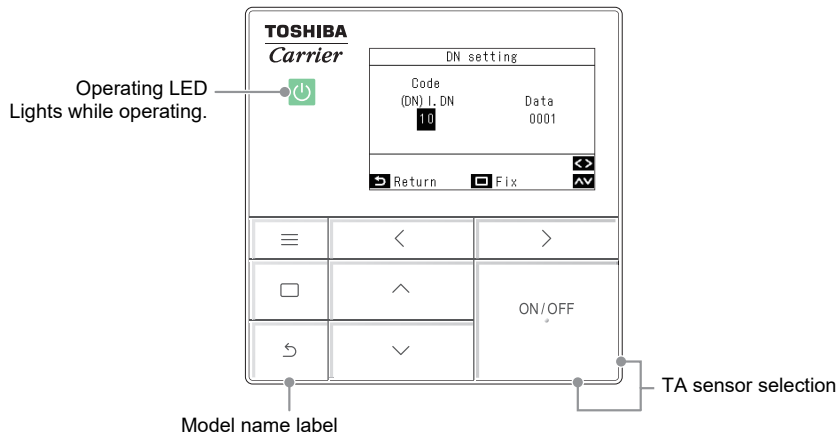


|                       |                  |                    |                    |  |                    |                    |
|-----------------------|------------------|--------------------|--------------------|--|--------------------|--------------------|
| Line (system) address | 1                | 1                  | 1                  |  | 2                  | 2                  |
| Indoor unit address   | 1                | 2                  | 3                  |  | 1                  | 2                  |
| Group address         | 1<br>Header unit | 2<br>Follower unit | 2<br>Follower unit |  | 2<br>Follower unit | 2<br>Follower unit |

**In the example above, disconnect the remote controller connections between the indoor units and connect a wired remote controller to the target unit directly before address setting.**



## <RBC-AWSU52-UL>



Pair the indoor unit to set and the remote controller one-to-one.  
Turn on the power.


- 1** Press [ Menu] to open the “Menu”
- 2** Press and hold [ Menu] and [ Set/Fix] at the same time to open “Field setting menu”  
→ Press and hold 4 seconds.
- 3** In the “Field setting menu” screen, press [ Up] and [ Set/Fix] to select “DN setting”, and then press [ Set/Fix]
- 4** Press [ Up] and [ Set/Fix] to select “Indoor unit” or “Outdoor unit”, and then press [ Set/Fix]  
→ If “Indoor unit” was selected, the fans and louvers of the indoor units operate.  
When doing group connections:  
→ The fans and louvers of the selected indoor units operate.

### <Line (system) address>




- 5** Press [ Left] to black highlight the item code (DN), and then press [ Up] and [ Set/Fix] to set the item code No. to 12.
- 6** Press [ Right] to black highlight the data, and then press [ Up] and [ Set/Fix] to set the data system address.  
(Match the address with the address on the interface P.C.board of the header outdoor unit in the same refrigerant line.)
- 7** After finishing setting the data of the item code (DN), press [ Set/Fix]  
→ “Continue?” is displayed.



### <Indoor unit address>

- 8 Press [ < ] to black highlight the item code (DN), and then press [ < ] and [ > ] to set the item code No. to 13.
- 9 Press [ > ] to black highlight the data, and then press [ < ] and [ > ] to set the data indoor unit address.
- 10 After finishing setting the data of the item code (DN), press [  Set/Fix]  
→“Continue?” is displayed.

### <Group address>



- 11 Press [ < ] to black highlight the item code (DN), and then press [ < ] and [ > ] to set the item code No. to 14.
- 12 Press [ > ] to black highlight the data, and then press [ < ] and [ > ] to set the data indoor unit address.  
a group address. If the indoor unit is individual, set the address to 0000; header unit, 0001; follower unit, 0002.  
Individual : 0000  
Header unit : 0001 } In case of group control  
Follower unit : 0002
- 13 After finishing setting the data of the item code (DN), press [  Set/Fix]  
→“Continue?” is displayed.
- 14 To set the data of other item codes (DN), press [  Set/Fix] To not do other settings, press [  Return]

→ The changes are fixed, and the “Field setting menu” screen returns.

→ “” appears while data is changing.

When doing group connections:

→ Press [  Return] to open the unit selection screen.

In the unit selection screen, press [  Return] to briefly display “”, and then return to the “Field setting menu” screen.

## NOTE

### <In the case of combining with outdoor units of Super Modular Multi System u series (SMMS-u)>

- Turn ON DIP switch 1 of SW100 on the header outdoor unit interface P.C. board the lowest system address number.
- After finishing all the settings above, set the address of the central control devices. (For the setting of the central control address, refer to the installation manual of the central control devices.)

### <In the case of combining with outdoor units other than Super Modular Multi System u series (SMMS-u)>

- Set a system address for the header outdoor unit of each line with SW13 and 14 of their interface P.C. boards.
- Turn off dip switch 2 of SW30 on the interface P.C. boards of all the header outdoor units connected to the same central control, except the unit that has the lowest address. (For unifying the termination of the wiring for the central control of indoor and outdoor units)
- Connect the relay connectors between the [U1, U2] and [U3, U4] terminals on the header outdoor unit of each refrigerate line.
- After finishing all the settings above, set the address of the central control devices. (For the setting of the central control address, refer to the installation manuals of the central control devices.)



## ◆ To find an indoor unit's position from its address







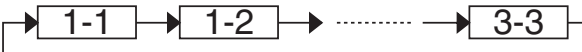



Procedure to know the position of indoor unit body by address while indoor unit No. is known.

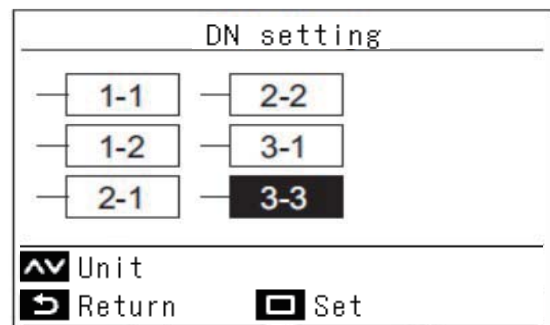
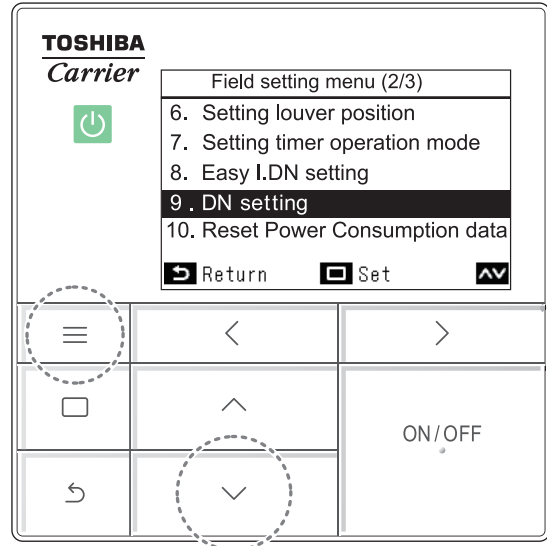
- Confirm each indoor unit address while indoor unit is stopped. (Be sure to stop air conditioner.)

<RBC-AWSU52-UL>

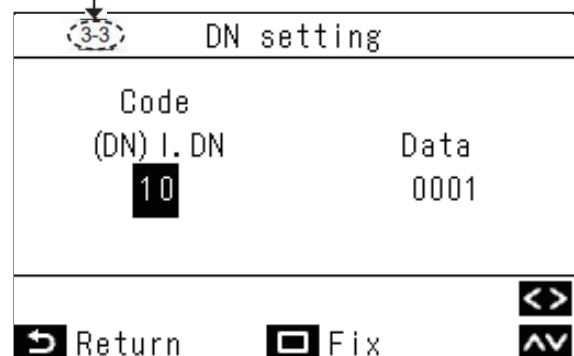
### [Procedure]

The position of indoor unit body by address

- 1 Push the [  MENU] button to display the menu screen.
- 2 Push and hold the [  MENU] button and the [  ] button at the same time to display the "Field setting menu".  
→ Push and hold the buttons for more than 4 seconds.
- 3 Push the [  ] / [  ] button to select "7. DN setting" on the "Field setting menu" screen, then push the "[  ] Set"
- 4 Push the unit to confirm the address of indoor unit.  
→ The selected unit changes as follows each time the button is pushed:  

- 5 Push the [  Set/Fix]  
→ The setting display for the selected unit appears.  
→ When the group control is used, the fan and louver of the selected indoor unit operate.
- 6 Push the [  MENU] button to set the other Code(DN) and Data. After "Continue?" is displayed on the screen, push the [  Return ] to finish the setting operation. "⌚ Setting" appears on the screen for a while, then the screen returns to the "Field setting menu" screen.



Address is displayed here.





## ◆ Check code clearing function

### How to clear the check code using the wired remote controller

#### <RBC-AW5U52-UL>

Displays the last 10 check codes, and at which unit and when they occurred.

| Field setting menu(1/3)   |     |
|---------------------------|-----|
| 1. Test mode              |     |
| 2. Register service info. |     |
| 3. Alarm history          |     |
| 4. Address                |     |
| 5. Monitor function       |     |
| Return                    | Set |

- 1 In the “Field setting menu” screen, press [ ] and [ ] to select “Alarm history”, and then press [ Set/Fix]

| Alarm history |      |      |            |       |
|---------------|------|------|------------|-------|
|               | Unit | Code | Date       | Time  |
| 1.            | 1-3  | E04  | 06/01/2022 | 01:56 |
| 2.            | -    | -    | -          | -     |
| 3.            | -    | -    | -          | -     |
| 4.            | -    | -    | -          | -     |
| Reset         |      |      |            |       |
| Return        |      |      |            |       |

#### NOTE

- The check code history data shows a history of 10 occurrences. If the occurrences exceed 10, the oldest data is deleted.
- If the same check code occurs repeatedly, the date of the first occurrence is displayed.

### Deleting check code history

| Alarm history         |     |
|-----------------------|-----|
| Reset all alarm data. |     |
| No                    | Yes |

- 1 Press [ Menu] while the “Alarm history” screen is displayed  
→ “Reset all alarm data.” is displayed.
- 2 Press [ Set/Fix]

#### REQUIREMENT



If you are using 2 remote controllers, delete the history at each remote controller.








## ▼ Monitoring function of wired remote controller

### <RBC-AWSU52-UL>

Displays the codes and data indicating the operating condition and temperature of each sensor on the indoor units, outdoor units, and remote controllers.

| Monitor function   |      |
|--|------|
| Code   | Data |
| 00   | 0024 |
|  Return  |      |

**1** In the “Field setting menu” screen, press [  ] and [  ] to select “Monitor function”, and then press [  Set/Fix]

→ Press [  ] and [  ] to change the item code and then check the data.

→ In a group connection, after a selection in the unit selection screen, move to the “Monitor function” screen.

**2** Press [  Return]

→ Return to the “Field setting menu” screen.

## ◆ Indoor service monitor list

|                    | Code No. | Data name   | Display format | Unit   | Remote controller display example |
|--------------------|----------|---|----------------|--------|-----------------------------------|
| Indoor unit data * | 00       | Room temperature (Use to control)                         | ×1             | °F(°C) |                                   |
|                    | 01       | Room temperature (Remote controller)                      | ×1             | °F(°C) |                                   |
|                    | 02       | Indoor suction air temperature (TA)                       | ×1             | °F(°C) |                                   |
|                    | 03       | Indoor coil temperature (TCJ)                             | ×1             | °F(°C) |                                   |
|                    | 04       | Indoor coil temperature (TC2)                             | ×1             | °F(°C) |                                   |
|                    | 05       | Indoor coil temperature (TC1)                             | ×1             | °F(°C) |                                   |
|                    | 06       | Indoor discharge air temperature (TF) **                  | ×1             | °F(°C) |                                   |
|                    | 07       | Indoor fan motor number of revolutions**                  | ×1             | rpm    | [0600] = 600rpm                   |
|                    | 08       | Indoor PMV opening  | ×1/10          | pls    | [0150]=1500pls                    |
|                    | F3       | Filter sign time  | ×1             | h      | [2500] = 2500h                    |
|                    | F9       | Suction temperature of air to air heat exchanger (TSA) ** | ×1             | °F(°C) | [0024] = 75.2°F(24°C)             |
|                    | FA       | Outside air temperature (TOA) **                          | ×1             | °F(°C) |                                   |

\* When the units are connected to a group, data of the header indoor unit only can be displayed.

\*\* There is also a model which cannot be displayed.

- Refer to the service manual of an outdoor unit for "outdoor service monitor list".



# 11. TROUBLESHOOTING

## 11-1. Overview

### (1) Before engaging in troubleshooting

#### (a) Applicable models

All Super Modular Multi System (SMMS-\*) models.

(Indoor units: MM\*-UP\*\*\*, Outdoor units: MMY-M\*P\*\*\*)

#### (b) Tools and measuring devices required

- Screwdrivers (Philips, flat head), spanners, long-nose pliers, nipper, pin to push reset switch, etc.
- Multimeter, thermometer, pressure gauge, etc.

#### (c) Things to check prior to troubleshooting (behaviors listed below are normal)

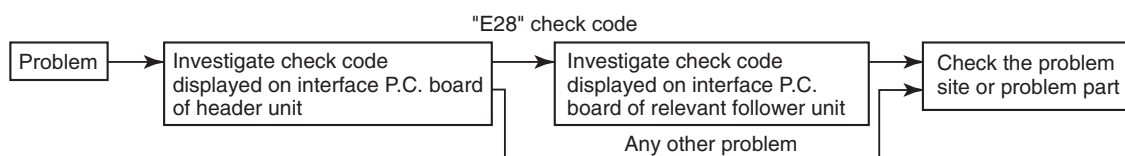
| NO. | Behavior   | Possible cause  |
|-----|--|---|
| 1   | A compressor would not start   | <ul style="list-style-type: none"><li>• The air conditioner is being controlled by the 3-minute protective function.</li><li>• It is in standby status though the room temperature has reached the setup temperature.</li><li>• It is being operated in timer mode or fan mode.</li><li>• It is being in initial communication.</li></ul> |
| 2   | An indoor fan would not start  | <ul style="list-style-type: none"><li>• The air conditioner is being controlled by the cool air discharge preventive function in "heating"?</li></ul>   |
| 3   | An outdoor fan would not start or would change speed for no reason                     | <ul style="list-style-type: none"><li>• The air conditioner is being operated in "cooling" under the low outside air temperature.</li><li>• It is being operated in defrost operation.</li></ul>  |
| 4   | An indoor fan would not stop   | <ul style="list-style-type: none"><li>• The air conditioner is being controlled by function of residual heat elimination being performed as part of the air conditioner shutdown process after heating operation.</li></ul>   |
| 5   | The air conditioner would not respond to a start/stop command from a remote controller | <ul style="list-style-type: none"><li>• The air conditioner is being operated under external or remote controller.</li></ul>  |

## CAUTION

The cooling performance may be declining considerably when total operating capacity of cooling indoor units is less than 4 HP while ambient temperature is below.

### (2) Troubleshooting procedure

When a problem occurs, proceed with troubleshooting in accordance with the procedure shown below.



## NOTE

Rather than a product trouble (see the List of Check Codes below), the problem could have been caused by a microprocessor malfunction attributable to a poor quality of the power source or an external noise. Check for possible noise sources, and shield the remote controller wiring and signal wires as necessary.



## 11-2. Troubleshooting method

The remote controllers (main remote controller and central control device) and the interface P.C. board of an outdoor unit are provided with an a 7-segment display (outdoor interface P.C. board) to display operational status. Using this self-diagnosis feature, the trouble site / trouble part may be identified in the event of a trouble by following the method described below.

The list below summarizes check codes detected by various devices. Analyze the check code according to where it is displayed and work out the nature of the trouble in consultation with the list.

- When investigating a trouble on the basis of a display provided on the indoor remote controller or central control device - See the “central control device or main remote controller display” section of the list.
- When investigating a trouble on the basis of a display provided on an outdoor unit - See the “Outdoor 7-segment display” section of the list.
- When investigating a trouble on the basis of a wireless remote controller-controlled indoor unit - See the “Indicator light block” section of the list.

### List of check codes (indoor unit)










































































(Check code detected by indoor unit)

IPDU: Compressor / Fan inverter P.C. board

○: Lighting, ⊙: Flashing, ●: Goes off













ALT.: Flashing is alternately when there are two flashing LED

SIM: Simultaneous flashing when there are two flashing LED





| Check code                |                           |                           | Display of receiving unit  |  |  |  | Typical trouble on site   | Description of check code   |
|---------------------------|---------------------------|---------------------------|--|--|--|--|---|---|
| Remote controller display | Outdoor 7-segment display |                           | Indicator light block  |  |  |  |   |   |
|                           |                           | Sub-code                  | Operation<br> | Timer<br> | Ready<br> | Flash<br> |   |   |
| E03                       | —                         | —                         |               |           |           |  | Indoor-remote controller periodic communication check code                  | Communication from remote controller or network adaptor has been lost (so has central control communication). |
| E04                       | —                         | —                         |               |           |           |  | Indoor-outdoor periodic communication check code                            | Signals are not being received from outdoor unit.   |
| E08                       | E08                       | Duplicated indoor address |             |         |         |  | Duplicated indoor address   | Indoor unit detects address identical to its own.   |
| E10                       | —                         | —                         |             |         |         |  | Communication trouble between indoor unit MCU                               | Communication trouble between main MCU and the motor microcomputer MCU  |
| E11                       | —                         | —                         |             |         |         |  | Communication check code between Application control kit and indoor unit    | Communication check code between Application control kit and indoor unit P.C. board                           |
| E18                       | —                         | —                         |             |         |         |  | Check cod in periodic communication between indoor header and follower unit | Periodic communication between indoor header and follower units cannot be maintained.                         |
| F01                       | —                         | —                         |             |         |         | ALT  | Indoor heat exchanger temperature sensor (TCJ) check code                   | Heat exchanger temperature sensor (TCJ) has been open / short-circuit.  |
| F02                       | —                         | —                         |             |         |         | ALT  | Indoor heat exchanger temperature sensor (TC2) check code                   | Heat exchanger temperature sensor (TC2) has been open / short-circuit.  |
| F03                       | —                         | —                         |             |         |         | ALT  | Indoor heat exchanger temperature sensor (TC1) check code                   | Heat exchanger temperature sensor (TC1) has been open / short-circuit.  |
| F10                       | —                         | —                         |             |         |         | ALT  | Ambient temperature sensor (TA) check code                                  | Ambient temperature sensor (TA) has been open / short-circuit.  |
| F11                       | —                         | —                         |             |         |         | ALT  | Discharge temperature sensor (TF) check code                                | Discharge temperature sensor (TF) has been open / short-circuit.  |
| F29                       | —                         | —                         |             |         |         | SIM  | P.C. board or other indoor check code                                       | Indoor EEPROM is abnormal (some other trouble may be detected).   |
| F30                       | —                         | —                         |             |         |         | ALT  | Occupancy sensor trouble  | Occupancy sensor trouble has been detected.   |
| L03                       | —                         | —                         |             |         |         | SIM  | Duplicated indoor group header unit   | There is more than one header unit in group.  |
| L07                       | —                         | —                         |             |         |         | SIM  | Connection of group control cable to a single indoor unit                   | There is at least one a single indoor unit to which group control cable is connected.                         |
| L08                       | L08                       | —                         |             |         |         | SIM  | Indoor group address not set  | Address setting has not been performed for one or more indoor units (also detected at outdoor unit end).      |
| L09                       | —                         | —                         |             |         |         | SIM  | Indoor capacity not set   | Capacity setting has not been performed for indoor unit.  |
| L20                       | —                         | —                         |             |         |         | SIM  | Duplicated central control address  | There is duplication in central control address setting.  |
| L30                       | L30                       | Detected indoor unit No.  |             |         |         | SIM  | Indoor external check code input (interlock)                                | Unit shutdown has been caused by external check code input (CN80).  |
| P01                       | —                         | —                         |             |         |         | ALT  | Indoor AC fan check code  | Indoor AC fan check code is detected (activation of fan motor thermal relay).                                 |
| P10                       | P10                       | Detected indoor unit No.  |             |         |         | ALT  | Indoor overflow check code  | Float switch has been activated.  |
| P12                       | —                         | —                         |             |         |         | ALT  | Indoor DC fan check code  | • Indoor DC fan check code (e.g. overcurrent or lock-up) is detected.   |
| P31                       | —                         | —                         |             |         |         | ALT  | Other indoor unit check code  | Follower unit cannot be operated due to header unit alarm (E03 / L03 / L07 / L08).                            |



(Check code detected by remote controller)

| Check code     |                           |          | Display of receiving unit  |  |  |       | Typical trouble site   | Description of trouble   |
|----------------|---------------------------|----------|--|--|--|-------|--|--|
| Remote control | Outdoor 7-segment display |          | Indicator light block  |  |  |       |  |  |
|                |                           | Sub-code | Operation<br> | Timer<br> | Ready<br> | Flash |  |  |
| E01            | —                         | —        |               |           |           |       | No master remote control, failure remote control communication (reception) | Signals cannot be received from indoor unit; master remote control has not been set (including two remote control).  |
| E02            | —                         | —        |               |           |           |       | Failure remote control communication (transmission)                        | Signals cannot be transmitted to indoor unit.  |
| E09            | —                         | —        |               |           |           |       | Duplicated master remote control   | Both remote controls have been set as master remote control in two remote control (alarm and shutdown for header unit and continued operation for follower unit) |

(Check code detected by central control device)

| Check code      |                           |          | Display of receiving unit  |  |  |  | Typical trouble site                                       | Description of trouble  |
|-----------------|---------------------------|----------|--|--|--|--|--|---|
| Central control | Outdoor 7-segment display |          | Indicator light block  |  |  |  |  |   |
|                 |                           | Sub-code | Operation<br> | Timer<br> | Ready<br> | Flash<br> |  |   |
| C05             | —                         | —        | No indication (when main remote control also in use)   |  |  |  | Failure central control communication (transmission)       | Central control device is unable to transmit signal due to duplication of central control device  |
| C06             | —                         | —        |  |  |  |  | Failure central control communication (reception)          | Central control device is unable to receive signal.   |
| C12             | —                         | —        | —  |  |  |  | Bracket alarm for general-purpose device control interface | Device connected to general-purpose device control interface is trouble.  |
| P30<br>(L20)    | —                         | —        | (L20 is displayed.)  |  |  |  | Communication Link   | <ul style="list-style-type: none"><li>• Duplication addresses of indoor units in central control device</li><li>• With the combination of air conditioning system, the indoor unit may detect the check code of L20</li></ul> |

**Note:** The same trouble, e.g. a communication trouble, may result in the display of different check codes depending on the device that detects it. Moreover, check codes detected by the main remote controller / central control device do not necessarily have a direct impact on air conditioner operation.

## Flow selector unit (FS unit) Relation

(Check code detected by indoor unit)

| Check code          |                           |          | Display of receiving unit |            |             |       | Typical trouble site  | Description of trouble   |
|---------------------|---------------------------|----------|---------------------------|------------|-------------|-------|---|--|
| Main remote control | Outdoor 7-segment display |          | Indicator light block     |            |             |       |   |  |
|                     |                           | Sub-code | Operation<br>⏰            | Timer<br>⌚ | Ready<br>⚙️ | Flash |   |  |
| E17                 | —                         | —        | ⊙                         | ●          | ●           |       | Communication trouble between indoor unit (s) and FS unit (s) | There is no communication from FS unit(s)                                      |
| J03                 | —                         | —        | ●                         | ⊙          | ⊙           |       | Duplicated FS units   | More than one FS units have been set up in one refrigerant line.               |
| J10                 | —                         | —        | ●                         | ⊙          | ⊙           |       | FS unit overflow trouble                                      | FS unit has been shutdown in one refrigerant line due to detection of overflow |
| J11                 | —                         | —        | ●                         | ⊙          | ⊙           |       | FS unit temperature sensor (TCS) trouble                      | FS unit temperature sensor (TCS) has been open/short-circuited.                |
| L12                 | L12                       | —        | ⊙                         | ○          | ⊙           |       | FS unit(s) system trouble                                     | FS unit(s) outside the application setting                                     |



## List of Check Codes (Outdoor Unit)

(Check code detected by outdoor interface - typical examples)

If "HELLO" is displayed on the outdoor 7-segment for 1 minute or more, turn off the power supply once and then turn on the power supply again after passage of 30 seconds or more. When the same symptom appears, it is considered there is a possibility of I/F board trouble.









































































○ : Lighting, ◎ : Flashing, ● : Goes off

ALT.: Flashing is alternately when there are two flashing LED








































SIM: Simultaneous flashing when there are two flashing LED

| Check code                |   |   | Display of receiving unit |                |            |            | Typical problem site  | Description of problem  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
|---------------------------|---|---|---------------------------|----------------|------------|------------|---|---|--|------------|--|-----------|--|------------|--|-----------|--|---|---|---|---|---|---|---|---|----|---|--|--|----|---|--|---|----|---|--|--|----|---|---|---|----|---|---|--|----|---|---|---|----|--|--|---|----|--|--|---|----|---|--|---|----|---|--|---|----|--|---|---|----|--|---|---|----|---|---|---|----|---|---|---|----|--|--|---|--|--|--|--|-----|---|---|---|--|---|--|
| Outdoor 7-segment display |   | Central control or main remote controller display | Indicator light block     |                |            |            |   |   |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
|                           | Sub-code  |   |                           | Operation<br>⏻ | Timer<br>⌚ | Ready<br>⦿ | Flash   |   |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
| E06                       | Number of indoor units from which signal is received normally   | E06   | ●                         | ●              | ◎          |            | Signal lack of indoor unit  | Indoor unit initially communicating normally fails to return signal (reduction in number of indoor units connected).  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
| E07                       | —   | (E04)   | ●                         | ●              | ◎          |            | Indoor-outdoor communication circuit trouble                                  | Signal cannot be transmitted to indoor units (→ indoor units left without communication from outdoor unit).   |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
| E08                       | Duplicated indoor address   | (E08)   | ◎                         | ●              | ●          |            | Duplicated indoor address   | More than one indoor unit are assigned same address (also detected at indoor unit end).   |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
| E12                       | 01: Indoor-outdoor communication<br>02: Outdoor-outdoor communication   | E12   | ◎                         | ●              | ●          |            | Automatic address starting trouble  | <ul style="list-style-type: none"><li>Indoor automatic address setting is started while automatic address setting for equipment in other refrigerant line is in progress.</li><li>Outdoor automatic address setting is started while automatic address setting for indoor units is in progress.</li></ul> |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
| E15                       | —   | E15   | ●                         | ●              | ◎          |            | Indoor unit not found during automatic address setting                        | Indoor unit fails to communicate while automatic address setting for indoor units is in progress.   |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
| E16                       | 00: Capacity over<br>01: Number of units connected  | E16   | ●                         | ●              | ◎          |            | Too many indoor units connected/capacity over                                 | Combined capacity of indoor units is too large. The maximum combined of indoor units shown in the specification table.  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
| E19                       | 00: No header unit<br>02: Two or more header units  | E19   | ●                         | ●              | ◎          |            | Trouble in number of outdoor header units                                     | There is no or more than one outdoor header unit in one refrigerant line.   |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
| E20                       | 01: Connection of outdoor unit from other refrigerant line<br>02: Connection of indoor unit from other refrigerant line   | E20   | ●                         | ●              | ◎          |            | Connection to other refrigerant line found during automatic address setting   | Indoor unit from other refrigerant line is detected while indoor automatic address setting is in progress.  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
| E23                       | —   | E23   | ●                         | ●              | ◎          |            | Outdoor-outdoor communication transmission trouble                            | Signal cannot be transmitted to other outdoor units.  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
| E25                       | —   | E25   | ●                         | ●              | ◎          |            | Duplicated follower outdoor address   | There is duplication in outdoor addresses set manually.   |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
| E26                       | Address of outdoor unit from which signal is not received normally  | E26   | ●                         | ●              | ◎          |            | Signal lack of outdoor unit   | Follower outdoor unit initially communicating normally fails to do so (reduction in number of follower outdoor units connected).  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
| E28                       | Detected outdoor unit No.   | E28   | ●                         | ●              | ◎          |            | Outdoor follower unit trouble   | Outdoor header unit detects trouble relating to follower outdoor unit (detail displayed on follower outdoor unit).  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
| E31                       | <table><tr><th colspan="4">P.C.board</th><th colspan="4">P.C.board</th></tr><tr><th colspan="2">Compressor</th><th colspan="2">Fan Motor</th><th colspan="2">Compressor</th><th colspan="2">Fan Motor</th></tr><tr><th>1</th><th>2</th><th>1</th><th>2</th><th>1</th><th>2</th><th>1</th><th>2</th></tr><tr><td>01</td><td>○</td><td></td><td></td><td>11</td><td>○</td><td></td><td>○</td></tr><tr><td>02</td><td>○</td><td></td><td></td><td>12</td><td>○</td><td>○</td><td>○</td></tr><tr><td>03</td><td>○</td><td>○</td><td></td><td>13</td><td>○</td><td>○</td><td>○</td></tr><tr><td>08</td><td></td><td></td><td>○</td><td>18</td><td></td><td></td><td>○</td></tr><tr><td>09</td><td>○</td><td></td><td>○</td><td>19</td><td>○</td><td></td><td>○</td></tr><tr><td>0A</td><td></td><td>○</td><td>○</td><td>1A</td><td></td><td>○</td><td>○</td></tr><tr><td>0B</td><td>○</td><td>○</td><td>○</td><td>1B</td><td>○</td><td>○</td><td>○</td></tr><tr><td>10</td><td></td><td></td><td>○</td><td></td><td></td><td></td><td></td></tr></table> <p>Circle (○): Trouble P.C. board</p> <p>80 : Communication trouble between MCU and Sub MCU</p> | P.C.board   |                           |                |            | P.C.board  |   |   |  | Compressor |  | Fan Motor |  | Compressor |  | Fan Motor |  | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 01 | ○ |  |  | 11 | ○ |  | ○ | 02 | ○ |  |  | 12 | ○ | ○ | ○ | 03 | ○ | ○ |  | 13 | ○ | ○ | ○ | 08 |  |  | ○ | 18 |  |  | ○ | 09 | ○ |  | ○ | 19 | ○ |  | ○ | 0A |  | ○ | ○ | 1A |  | ○ | ○ | 0B | ○ | ○ | ○ | 1B | ○ | ○ | ○ | 10 |  |  | ○ |  |  |  |  | E31 | ● | ● | ◎ |  | P.C. board communication trouble<br><br>Sub MCU communication trouble | There is no communication between P.C. boards in inverter box. |
| P.C.board                 |   |   |                           | P.C.board      |            |            |   |   |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
| Compressor                |   | Fan Motor   |                           | Compressor     |            | Fan Motor  |   |   |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
| 1                         | 2   | 1   | 2                         | 1              | 2          | 1          | 2   |   |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
| 01                        | ○   |   |                           | 11             | ○          |            | ○   |   |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
| 02                        | ○   |   |                           | 12             | ○          | ○          | ○   |   |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
| 03                        | ○   | ○   |                           | 13             | ○          | ○          | ○   |   |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
| 08                        |   |   | ○                         | 18             |            |            | ○   |   |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
| 09                        | ○   |   | ○                         | 19             | ○          |            | ○   |   |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
| 0A                        |   | ○   | ○                         | 1A             |            | ○          | ○   |   |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
| 0B                        | ○   | ○   | ○                         | 1B             | ○          | ○          | ○   |   |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
| 10                        |   |   | ○                         |                |            |            |   |   |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
| F04                       | —   | F04   | ◎                         | ◎              | ○          | ALT        | Outdoor discharge temperature sensor (TD1) trouble                            | Outdoor discharge temperature sensor (TD1) has been open/short-circuited.   |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
| F05                       | —   | F05   | ◎                         | ◎              | ○          | ALT        | Outdoor discharge temperature sensor (TD2) trouble                            | Outdoor discharge temperature sensor (TD2) has been open/short-circuited.   |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
| F06                       | 01: TE1 sensor<br>02: TE2 sensor<br>03: TE3 sensor  | F06   | ◎                         | ◎              | ○          | ALT        | Outdoor heat exchanger liquid side temperature sensor (TE1, TE2, TE3) trouble | Outdoor heat exchanger liquid side temperature sensors (TE1, TE2, TE3) have been open/short-circuited.  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
| F07                       | 01: TL1 sensor<br>02: TL2 sensor<br>03: TL3 sensor  | F07   | ◎                         | ◎              | ○          | ALT        | Outdoor liquid temperature sensor (TL1,TL2,TL3) trouble                       | Outdoor liquid temperature sensor (TL1,TL2,TL3) has been open/short-circuited.  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
| F08                       | —   | F08   | ◎                         | ◎              | ○          | ALT        | Outdoor outside air temperature sensor (TO) trouble                           | Outdoor air temperature sensor (TO) has been open/short-circuited.  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |
| F09                       | 01: TG1 sensor<br>02: TG2 sensor<br>03: TG3 sensor  | F09   | ◎                         | ◎              | ○          | ALT        | Outdoor heat exchanger gas side temperature sensor (TG1, TG2, TG3) trouble    | Outdoor heat exchanger gas side temperature sensors (TG1, TG2, TG3) have been open/short-circuited.   |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |   |  |  |    |   |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |   |  |  |  |  |     |   |   |   |  |   |  |



| Check code                |   |   | Display of receiving unit  |  |  |       | Typical problem site  | Description of problem   |
|---------------------------|---|---|--|--|--|-------|---|--|
| Outdoor 7-segment display |   | Central control or main remote controller display | Indicator light block  |  |  |       |   |  |
|                           | Sub-code  |   | Operation<br> | Timer<br> | Ready<br> | Flash |   |  |
| F12                       | 01: TS1 sensor<br>03: TS3 sensor  | F12   |               |           |           | ALT   | Outdoor suction temperature sensor (TS1,TS3) trouble  | Outdoor suction temperature sensor (TS1,TS3) has been open/short-circuited.  |
| F15                       | —   | F15   |               |           |           | ALT   | Outdoor temperature sensor (TE1,TL1) wiring trouble   | Wiring trouble in outdoor temperature sensors (TE1,TL1) has been detected.   |
| F16                       | —   | F16   |               |           |           | ALT   | Outdoor pressure sensor (Pd, Ps) wiring trouble   | Wiring trouble in outdoor pressure sensors (Pd, Ps) has been detected.   |
| F23                       | —   | F23   |               |           |           | ALT   | Low pressure sensor (Ps) trouble  | Output voltage of low pressure sensor (Ps) is zero.  |
| F24                       | —   | F24   |               |           |           | ALT   | High pressure sensor (Pd) trouble   | Output voltage of high pressure sensor (Pd) is zero or provides abnormal readings when compressors have been turned off.                               |
| F31                       | —   | F31   |               |           |           | SIM   | Outdoor EEPROM trouble  | Outdoor EEPROM is failure (alarm and shutdown for header unit and continued operation for follower unit)   |
| J29                       | Detected indoor unit address<br>* Not displayed depending on the outdoor DN code (O.DN) setting | J29   |               |           |           | SIM   | Leak Detector Trouble   | <ul style="list-style-type: none"><li>There is no communication from Leak Detector</li><li>A Malfunction signal received from Leak Detector.</li></ul> |
| J30                       | Detected indoor unit address<br>*Not displayed depending on the DN code (I.DN) setting          | J30   |               |           |           | SIM   | Refrigerant leak detection  | Leak Detector detects refrigerant leak   |
| J31                       | —   | J31   |               |           |           | SIM   | Refrigerant leak detection sensor exceeding its life of the product                           | Energization time of the Leak Detector has reached its useful life.  |
| H05                       | —   | H05   |              |          |          |       | Outdoor discharge temperature sensor (TD1) wiring trouble                                     | Wiring/installation trouble or detachment of outdoor discharge temperature sensor (TD1) has been detected.   |
| H06                       | —   | H06   |             |         |         |       | Activation of low-pressure protection   | Low pressure (Ps) sensor detects abnormally low operating pressure.  |
| H07                       | —   | H07   |             |         |         |       | Low oil level protection  | Temperature sensor for oil level detection (TK1,TK2) detects abnormally low oil level.   |
| H08                       | 01: TK1 sensor trouble<br>02: TK2 sensor trouble  | H08   |             |         |         |       | Trouble in temperature sensor for oil level detection (TK1,TK2)                               | Temperature sensor for oil level detection (TK1,TK2) has been open/short-circuited.  |
| H15                       | —   | H15   |             |         |         |       | Outdoor discharge temperature sensor (TD2) wiring trouble                                     | Wiring/installation trouble or detachment of outdoor discharge temperature sensor (TD2) has been detected.   |
| H16                       | 01: TK1 oil circuit trouble<br>02: TK2 oil circuit trouble                                      | H16   |             |         |         |       | Oil level detection circuit trouble   | No temperature change is detected by temperature sensor for oil level detection (TK1,TK2) despite compressor having been started.                      |
| L04                       | —   | L04   |             |         |         | SIM   | Duplicated outdoor refrigerant line address   | Identical refrigerant line address has been assigned to outdoor units belonging to different refrigerant piping systems.                               |
| L06                       | Number of priority indoor units (check code L05 or L06 depending on individual unit)            | L05   |             |         |         | SIM   | Duplicated priority indoor unit (as displayed on priority indoor unit)                        | More than one indoor unit have been set up as priority indoor unit.  |
|                           |   | L06   |             |         |         | SIM   | Duplicated priority indoor unit (as displayed on indoor unit other than priority indoor unit) | More than one indoor unit have been set up as priority indoor unit.  |
| L08                       | —   | (L08)   |             |         |         | SIM   | Indoor group address not set  | Address setting have not been performed for one or more indoor units (also detected at indoor end).  |
| L10                       | —   | L10   |             |         |         | SIM   | Outdoor capacity not set  | Outdoor unit capacity has not been set (after P.C. board replacement).   |
| L17                       | —   | L17   |             |         |         | SIM   | Outdoor model incompatibility trouble   | Old model outdoor unit has been connected.   |
| L23                       | —   | L23   |             |         |         | SIM   | SW setting mistake  |  |
| L28                       | —   | L28   |             |         |         | SIM   | Too many outdoor units connected  | More than five outdoor units have been connected.  |






| Check code                |  |   |           | Display of receiving unit                         |  |   |  | Typical problem site  | Description of problem   |       |  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |  |   |  |    |  |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |  |   |  |  |  |     |   |     |                                  |  |
|---------------------------|--|---|-----------|---|--|---|--|---|--|-------|--|--|------------|--|-----------|--|------------|--|-----------|--|---|---|---|---|---|---|---|---|----|---|--|--|----|---|--|---|----|--|---|--|----|--|---|---|----|---|---|--|----|---|---|---|----|--|--|---|----|--|--|---|----|---|--|---|----|---|--|---|----|--|---|---|----|--|---|---|----|---|---|---|----|---|---|---|----|--|--|--|---|--|--|--|-----|---|-----|----------------------------------|--|
| Outdoor 7-segment display |  |   |           | Central control or main remote controller display | Indicator light block  |   |  |   |  |       |  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |  |   |  |    |  |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |  |   |  |  |  |     |   |     |                                  |  |
|                           | Sub-code   |   |           |   | Operation<br> | Timer<br>  | Ready<br> |   |  | Flash |  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |  |   |  |    |  |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |  |   |  |  |  |     |   |     |                                  |  |
| L29                       | <table><tr><th colspan="4">P.C.board</th><th colspan="4">P.C.board</th></tr><tr><th colspan="2">Compressor</th><th colspan="2">Fan Motor</th><th colspan="2">Compressor</th><th colspan="2">Fan Motor</th></tr><tr><th>1</th><th>2</th><th>1</th><th>2</th><th>1</th><th>2</th><th>1</th><th>2</th></tr><tr><td>01</td><td>○</td><td></td><td></td><td>11</td><td>○</td><td></td><td>○</td></tr><tr><td>02</td><td></td><td>○</td><td></td><td>12</td><td></td><td>○</td><td>○</td></tr><tr><td>03</td><td>○</td><td>○</td><td></td><td>13</td><td>○</td><td>○</td><td>○</td></tr><tr><td>08</td><td></td><td></td><td>○</td><td>18</td><td></td><td></td><td>○</td></tr><tr><td>09</td><td>○</td><td></td><td>○</td><td>19</td><td>○</td><td></td><td>○</td></tr><tr><td>0A</td><td></td><td>○</td><td>○</td><td>1A</td><td></td><td>○</td><td>○</td></tr><tr><td>0B</td><td>○</td><td>○</td><td>○</td><td>1B</td><td>○</td><td>○</td><td>○</td></tr><tr><td>10</td><td></td><td></td><td></td><td>○</td><td></td><td></td><td></td></tr></table> <p>Circle (○): Trouble P.C. board</p> |   |           |   | P.C.board  |   |  |   | P.C.board  |       |  |  | Compressor |  | Fan Motor |  | Compressor |  | Fan Motor |  | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 01 | ○ |  |  | 11 | ○ |  | ○ | 02 |  | ○ |  | 12 |  | ○ | ○ | 03 | ○ | ○ |  | 13 | ○ | ○ | ○ | 08 |  |  | ○ | 18 |  |  | ○ | 09 | ○ |  | ○ | 19 | ○ |  | ○ | 0A |  | ○ | ○ | 1A |  | ○ | ○ | 0B | ○ | ○ | ○ | 1B | ○ | ○ | ○ | 10 |  |  |  | ○ |  |  |  | L29 |    | SIM | Trouble in number of P.C. boards | There are insufficient number of P.C. board in inverter box. |
|                           | P.C.board  |   |           |   | P.C.board  |   |  |   |  |       |  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |  |   |  |    |  |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |  |   |  |  |  |     |   |     |                                  |  |
|                           | Compressor   |   | Fan Motor |   | Compressor   |   | Fan Motor  |   |  |       |  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |  |   |  |    |  |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |  |   |  |  |  |     |   |     |                                  |  |
|                           | 1  | 2 | 1         | 2   | 1  | 2   | 1  | 2   |  |       |  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |  |   |  |    |  |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |  |   |  |  |  |     |   |     |                                  |  |
|                           | 01   | ○ |           |   | 11   | ○   |  | ○   |  |       |  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |  |   |  |    |  |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |  |   |  |  |  |     |   |     |                                  |  |
|                           | 02   |   | ○         |   | 12   |   | ○  | ○   |  |       |  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |  |   |  |    |  |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |  |   |  |  |  |     |   |     |                                  |  |
|                           | 03   | ○ | ○         |   | 13   | ○   | ○  | ○   |  |       |  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |  |   |  |    |  |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |  |   |  |  |  |     |   |     |                                  |  |
|                           | 08   |   |           | ○   | 18   |   |  | ○   |  |       |  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |  |   |  |    |  |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |  |   |  |  |  |     |   |     |                                  |  |
|                           | 09   | ○ |           | ○   | 19   | ○   |  | ○   |  |       |  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |  |   |  |    |  |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |  |   |  |  |  |     |   |     |                                  |  |
|                           | 0A   |   | ○         | ○   | 1A   |   | ○  | ○   |  |       |  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |  |   |  |    |  |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |  |   |  |  |  |     |   |     |                                  |  |
| 0B                        | ○  | ○ | ○         | 1B  | ○  | ○   | ○  |   |  |       |  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |  |   |  |    |  |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |  |   |  |  |  |     |   |     |                                  |  |
| 10                        |  |   |           | ○   |  |   |  |   |  |       |  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |  |   |  |    |  |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |  |   |  |  |  |     |   |     |                                  |  |
| L30                       | Detected indoor unit No.   |   |           |   | (L30)  |          | SIM  | Indoor external trouble input (interlock)                                       | Indoor unit has been shut down for external trouble input in one refrigerant line (detected by indoor unit).             |       |  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |  |   |  |    |  |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |  |   |  |  |  |     |   |     |                                  |  |
| P03                       | —  |   |           |   | P03  |          | ALT  | Outdoor discharge (TD1) temperature trouble                                     | Outdoor discharge temperature sensor (TD1) has detected abnormally high temperature.                                     |       |  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |  |   |  |    |  |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |  |   |  |  |  |     |   |     |                                  |  |
| P05                       | 00: Power detection trouble<br>01: Open phase<br>02: Power supply miswiring  |   |           |   | P05  |          | ALT  | Power detection trouble /Open phase detection /Power supply miswiring detection | Open phase is detected when power is turned on. Inverter DC voltage is too high (overvoltage) or too low (undervoltage). |       |  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |  |   |  |    |  |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |  |   |  |  |  |     |   |     |                                  |  |
| P07                       | 1 : Compressor 1 heat sink trouble<br>2 : Compressor 2 heat sink trouble   |   |           |   | P07  |          | ALT  | Heat sink overheating trouble   | Temperature sensor built into IPM (TH) detects overheating.  |       |  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |  |   |  |    |  |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |  |   |  |  |  |     |   |     |                                  |  |
|                           | 04: Heat sink dew condensation   |   |           |   |  |   |  | Heat sink dew condensation trouble  | Outdoor liquid temperature sensor (TL2) has detected abnormally low temperature.   |       |  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |  |   |  |    |  |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |  |   |  |  |  |     |   |     |                                  |  |
| P10                       | Indoor unit No. detected   |   |           |   | (P10)  |          | ALT  | Indoor unit overflow  | Indoor unit has been shutdown in one refrigerant line due to detection of overflow (detected by indoor unit).            |       |  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |  |   |  |    |  |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |  |   |  |  |  |     |   |     |                                  |  |
| P11                       | —  |   |           |   | P11  |          | ALT  | Outdoor heat exchanger freeze trouble   | Remaining frost on outdoor heat exchanger has been detected repeatedly.  |       |  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |  |   |  |    |  |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |  |   |  |  |  |     |   |     |                                  |  |
| P13                       | —  |   |           |   | P13  |    | ALT  | Outdoor liquid backflow detection trouble                                       | State of refrigerant cycle circuit indicates liquid backflow operation.  |       |  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |  |   |  |    |  |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |  |   |  |  |  |     |   |     |                                  |  |
| P15                       | 01: TS condition<br>02: TD condition   |   |           |   | P15  |    | ALT  | Gas leak detection  | Outdoor suction temperature sensor (TS1) detects sustained and repeated high temperatures that exceed standard value.    |       |  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |  |   |  |    |  |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |  |   |  |  |  |     |   |     |                                  |  |
| P17                       | —  |   |           |   | P17  |    | ALT  | Outdoor discharge (TD2) temperature trouble                                     | Outdoor discharge temperature sensor (TD2) detects abnormally high temperature.  |       |  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |  |   |  |    |  |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |  |   |  |  |  |     |   |     |                                  |  |
| P19                       | Outdoor unit No. detected  |   |           |   | P19  |    | ALT  | 4-way valve reversing trouble   | Abnormality in refrigerating cycle is detected during heating operation.   |       |  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |  |   |  |    |  |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |  |   |  |  |  |     |   |     |                                  |  |
| P20                       | —  |   |           |   | P20  |    | ALT  | Activation of high-pressure protection  | High pressure (Pd) sensor detects high pressure that exceeds standard value.   |       |  |  |            |  |           |  |            |  |           |  |   |   |   |   |   |   |   |   |    |   |  |  |    |   |  |   |    |  |   |  |    |  |   |   |    |   |   |  |    |   |   |   |    |  |  |   |    |  |  |   |    |   |  |   |    |   |  |   |    |  |   |   |    |  |   |   |    |   |   |   |    |   |   |   |    |  |  |  |   |  |  |  |     |   |     |                                  |  |

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(Check code detected by Inverter of Compressor featuring in outdoor unit - typical examples)

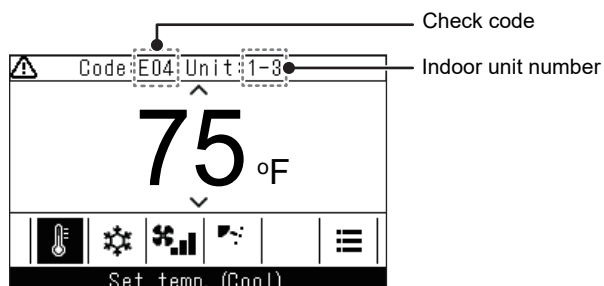
| Check code                |  | Central control or main remote controller display | Display of receiving unit  |  |  |       | Typical problem site                                     | Description of problem  |
|---------------------------|--|---|--|--|--|-------|--|---|
| Outdoor 7-segment display |  |   | Indicator light block  |  |  |       |  |   |
|                           | Sub-code                                       |   | Operation<br> | Timer<br> | Ready<br> | Flash |  |   |
| F13                       | 1*: Compressor 1<br>2*: Compressor 2           | F13   | ⊙  | ⊙  | ○  | ALT   | Trouble in temperature sensor built into indoor IPM (TH) | Temperature sensor built into indoor IPM (TH) has been open/short-circuited.                                  |
| H01                       | 1*: Compressor 1<br>2*: Compressor 2           | H01   | ●  | ⊙  | ●  |       | Compressor breakdown                                     | Inverter current (Idc) detection circuit detects overcurrent.   |
| H02                       | 1*: Compressor 1<br>2*: Compressor 2           | H02   | ●  | ⊙  | ●  |       | Compressor trouble (lockup)                              | Compressor lockup is detected   |
| H03                       | 1*: Compressor 1<br>2*: Compressor 2           | H03   | ●  | ⊙  | ●  |       | Current detection circuit trouble                        | Abnormal current is detected while inverter compressor is turned off.   |
| P04                       | 01: Compressor 1<br>02: Compressor 2           | P04   | ⊙  | ●  | ⊙  | ALT   | Activation of high-pressure SW                           | High-pressure SW is activated.  |
| P05                       | 01: Compressor 1 side<br>02: Compressor 2 side | P05   | ⊙  | ●  | ⊙  | ALT   | Compressor Vdc trouble                                   | Inverter DC voltage is too high (overvoltage) or too low (undervoltage).                                      |
| P07                       | 01: Compressor 1 side<br>02: Compressor 2 side | P07   | ⊙  | ●  | ⊙  | ALT   | Heat sink overheat trouble                               | Temperature sensor built into IPM (TH) detects overheating.   |
| P11                       | —  | P11   | ●  | ⊙  | ⊙  | ALT   | Outdoor heat exchanger freeze trouble                    | Remaining frost on outdoor heat exchanger has been detected repeatedly.                                       |
| P22                       | 1*: Fan P.C. board 1<br>2*: Fan P.C. board 2   | P22   | ⊙  | ●  | ⊙  | ALT   | Outdoor fan P.C. board trouble                           | Outdoor fan P.C. board detects trouble.   |
| P26                       | 1*: Compressor 1<br>2*: Compressor 2           | P26   | ⊙  | ●  | ⊙  | ALT   | Activation of IPM, compressor short-circuit protection   | Short-circuit protection for compressor motor driver circuit components is activated (momentary overcurrent). |
| P29                       | 1*: Compressor 1<br>2*: Compressor 2           | P29   | ⊙  | ●  | ⊙  | ALT   | Compressor position detection circuit trouble            | Compressor motor position detection trouble is detected.  |

Note: The above check codes are examples only, and different check codes may be displayed depending on the outdoor unit configuration



## 11-3. Troubleshooting by check Display on Remote Controller

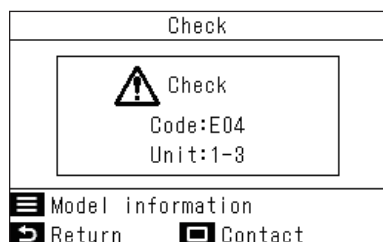
### <RBC-AWSU52-UL>



When an error occurs in the air conditioner, the check code and the indoor unit number flash on the display of the remote controller.

\* The check code is only displayed during the operation.

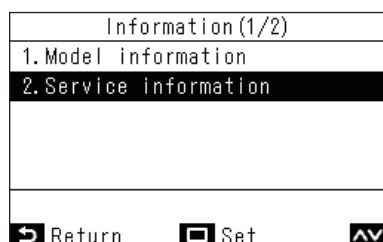
When the check code and indoor unit number are displayed, pressing [ Return] opens the "Check" screen.



In the "Check" screen, press [ Set/Fix] to show the contacts.  
Press [ Menu] to display "Model information".

## ■ Contact information for repairs

You can look for contact information for repairs.



**1** In the "Information" screen, press [ ] and [ ] to select "Service information", and then press [ Set/Fix]



## Using indoor unit indicators (receiving unit light block) (wireless type)

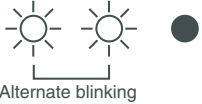
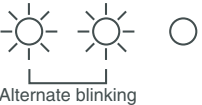
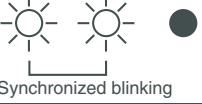

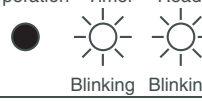


To identify the check code, check the 7-segment display on the header unit. To check for check codes not displayed on the 7-segment display, consult the “List of Check Codes (Indoor Unit)” in “10-2. Troubleshooting method”.

● : Goes off ○ : Lighting ☼ : Blinking (0.5 seconds)


| Light block  | Check code | Cause of trouble  |                |   |
|--|------------|---|----------------|---|
| Operation<br>●<br>Timer<br>●<br>Ready<br>●<br>All lights out     | —          | Power turned off or trouble in wiring between receiving and indoor units                                  |                |   |
| Operation<br>☼<br>Blinking<br>Timer<br>●<br>Ready<br>●           | E01        | Trouble reception   | Receiving unit | Trouble or poor contact in wiring between receiving unit and indoor units |
|  | E02        | Trouble transmission  |                |   |
|  | E03        | Loss of communication   |                |   |
|  | E08        | Duplicated indoor unit No. (address)  |                | Setting trouble   |
|  | E09        | Duplicated master remote controller   |                |   |
|  | E10        | Communication trouble between indoor unit MCU   |                |   |
|  | E11        | Communication trouble between Application control kit and indoor unit P.C. board                          |                |   |
|  | E12        | Automatic address starting trouble  |                |   |
|  | E18        | Trouble or poor contact in wiring between indoor units, indoor power turned off                           |                |   |
| Operation<br>●<br>Timer<br>●<br>Ready<br>☼<br>Blinking           | E04        | Trouble or poor contact in wiring between indoor and outdoor units (loss of indoor-outdoor communication) |                |   |
|  | E06        | Trouble reception in indoor-outdoor communication (dropping out of indoor unit)                           |                |   |
|  | E07        | Trouble transmission in indoor-outdoor communication  |                |   |
|  | E15        | Indoor unit not found during automatic address setting  |                |   |
|  | E16        | Too many indoor units connected / overloading   |                |   |
|  | E19        | Trouble in number of outdoor header units   |                |   |
|  | E20        | Detection of refrigerant piping communication trouble during automatic address setting                    |                |   |
|  | E23        | Trouble transmission in outdoor-outdoor communication   |                |   |
|  | E25        | Duplicated follower outdoor address   |                |   |
|  | E26        | Trouble reception in outdoor-outdoor communication, dropping out of outdoor unit                          |                |   |
|  | E28        | Outdoor follower unit trouble   |                |   |
|  | E31        | P.C. board communication trouble  |                |   |
| Operation<br>●<br>Timer<br>☼<br>Ready<br>☼<br>Alternate blinking | P01        | Indoor AC fan trouble   |                |   |
|  | P10        | Indoor overflow trouble   |                |   |
|  | P11        | Outdoor heat exchanger freezing trouble   |                |   |
|  | P12        | Indoor DC fan trouble   |                |   |
|  | P13        | Outdoor liquid backflow detection trouble   |                |   |
| Operation<br>☼<br>Alternate blinking<br>Timer<br>●<br>Ready<br>☼ | P03        | Outdoor discharge (TD1) temperature trouble   |                |   |
|  | P04        | Activation of outdoor high-pressure SW  |                |   |
|  | P05        | Open phase / power failure<br>Inverter DC voltage (Vdc) trouble<br>MG-CTT trouble                         |                |   |
|  | P07        | Outdoor heat sink overheating trouble - Poor cooling of electrical component (IGBT) of outdoor unit       |                |   |
|  | P15        | Gas leak detection - insufficient refrigerant charging  |                |   |
|  | P17        | Outdoor discharge (TD2) temperature trouble   |                |   |
|  | P18        | Outdoor discharge (TD3) temperature trouble   |                |   |
|  | P19        | Outdoor 4-way valve reversing trouble   |                |   |
|  | P20        | Activation of high-pressure protection  |                |   |
|  | P22        | Outdoor fan P.C. board trouble  |                |   |
|  | P26        | Outdoor IPM, Compressor short-circuit trouble   |                |   |
|  | P29        | Compressor position detection circuit trouble   |                |   |
|  | P31        | Shutdown of other indoor unit in group due to trouble (group follower unit trouble)                       |                |   |

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| Light block   | Check code  | Cause of trouble  |   |                            |  |
|---|---|---|---|----------------------------|--|
| <div>Operation    Timer    Ready</div> <div></div>   | F01   | Indoor unit temperature sensor trouble  |   |                            |  |
|   | F02   |   |   |                            |  |
|   | F03   |   |   |                            |  |
|   | F10   |   |   |                            |  |
|   | F11   |   |   |                            |  |
| <div>Operation    Timer    Ready</div> <div></div>   | F04   | Outdoor unit temperature sensor trouble   |   |                            |  |
|   | F05   |   |   |                            |  |
|   | F06   |   |   |                            |  |
|   | F07   |   |   |                            |  |
|   | F08   |   |   |                            |  |
|   | F09   |   |   |                            |  |
|   | F12   |   |   |                            |  |
|   | F13   |   |   |                            |  |
|   | F15   | Outdoor unit pressure sensor trouble  |   |                            |  |
|   | F16   |   |   |                            |  |
|   | F22   | Outdoor unit pressure sensor trouble  |   |                            |  |
|   | F23   |   |   |                            |  |
|   | F24   |   |   |                            |  |
|   | F30   |   |   |                            |  |
|   | F31   |   |   |                            |  |
| <div>Operation    Timer    Ready</div> <div></div>  | F29   | Failure in indoor EEPROM  |   |                            |  |
|   | <div>Operation    Timer    Ready</div> <div></div> | H01   | Outdoor unit compressor related trouble     |                            |  |
| H02   |   |   |   |                            |  |
| H03   |   |   |   |                            |  |
| H04   |   | Protective shutdown of outdoor unit   |   |                            |  |
| H05   |   |   |   |                            |  |
| H06   |   | Protective shutdown of outdoor unit   |   |                            |  |
| H07   |   |   |   |                            |  |
| H08   |   | Protective shutdown of outdoor unit   |   |                            |  |
| F14   |   |   |   |                            |  |
| H15   |   |   |   |                            |  |
| H16   |   |   |   |                            |  |
| H25   |   |   |   |                            |  |
| <div>Operation    Timer    Ready</div> <div></div> | J29   |   |   | Leak Detector trouble      |  |
|   | J30   |   |   | Refrigerant leak detection |  |
|   | J31   | Refrigerant leak detection sensor has reached product life                                    |   |                            |  |
|   | <div>Operation    Timer    Ready</div> <div></div> | L02   | Model mismatched of indoor and outdoor unit |                            |  |
| L03   |   | Duplicated indoor group header unit   |   |                            |  |
| L05   |   | Duplicated priority indoor unit (as displayed on priority indoor unit)                        |   |                            |  |
| L06   |   | Duplicated priority indoor unit (as displayed on indoor unit other than priority indoor unit) |   |                            |  |
| L07   |   | Connection of group control cable to a single indoor unit                                     |   |                            |  |
| L08   |   | Indoor group address not set  |   |                            |  |
| L09   |   | Indoor capacity not set   |   |                            |  |
| <div>Operation    Timer    Ready</div> <div></div> |   | L04   | Duplicated outdoor refrigerant line address |                            |  |
|   | L10   | Outdoor capacity not set  |   |                            |  |
|   | L17   | Outdoor model incompatibility trouble   |   |                            |  |
|   | L18   | Flow selector units trouble   |   |                            |  |
|   | L20   | Duplicated central control address  |   |                            |  |
|   | L28   | Too many outdoor units connected  |   |                            |  |
|   | L29   | Trouble in number of P.C. boards  |   |                            |  |
|   | L30   | Indoor external interlock trouble (External abnormal input)                                   |   |                            |  |






| Light block   | Check code | Cause of trouble         |
|---|------------|--------------------------|
| Operation   Timer   Ready<br><br>Synchronized blinking | F30        | Occupancy sensor trouble |
|   | F31        | Outdoor EEPROM trouble   |

### Other (indications not involving check code)

| Light block   | Check code | Cause of trouble  |
|---|------------|---|
| Operation   Timer   Ready<br><br>Synchronized blinking | –          | Test run in progress  |
| Operation   Timer   Ready<br><br>Alternate blinking    | –          | Setting incompatibility<br>(automatic cooling / heating setting for model incapable of it and heating setting for cooling-only model) |

### Flow selector unit (FS unit) Relation

| Light block   | Check code | Cause of trouble  |
|---|------------|---|
| Operation   Timer   Ready<br><br>Blinking              | E17        | Communication trouble between indoor unit(s) and FS unit(s)           |
| Operation   Timer   Ready<br><br>Synchronized blinking | L12        | FS unit(s) system trouble   |
|   | L24        | FS unit(s) setting trouble  |
| Operation   Timer   Ready<br><br>Blinking   Blinking   | J01        | Communication trouble between indoor unit(s) and FS unit (or SV unit) |
|   | J02        | Communication trouble between control boards in FS unit               |
|   | J03        | Duplicated FS units   |
|   | J10        | FS unit overflow trouble  |
|   | J11        | FS unit temperature sensor(TCS) trouble                               |



## 11-4. Check Codes Displayed on Remote Controller and SMMS series Outdoor Unit (7-Segment Display on I/F Board) and Locations to Be Checked)

For other types of outdoor units, refer to their own service manuals.

| Main remote controller | Check code                |  | Location of detection | Description  | System status                    | Check code detection condition(s)  | Check items (locations)   |
|------------------------|---------------------------|--|-----------------------|--|----------------------------------|--|---|
|                        | Outdoor 7-segment display |  |                       |  |                                  |  |   |
|                        | Check code                | Sub-code   |                       |  |                                  |  |   |
| E01                    | —                         | —  | Remote controller     | Indoor-remote controller communication trouble (detected at remote controller end) | Stop of corresponding unit       | Communication between indoor P.C. board and remote controller is disrupted.  | <ul style="list-style-type: none"> <li>• Check remote controller inter-unit tie cable (A/B).</li> <li>• Check for broken wire or connector bad contact.</li> <li>• Check indoor power supply.</li> <li>• Check for failure in indoor P.C. board.</li> <li>• Check remote controller address settings (when two remote controllers are in use).</li> <li>• Check remote controller P.C. board.</li> </ul>  |
| E02                    | —                         | —  | Remote controller     | Remote controller transmission trouble   | Stop of corresponding unit       | Signal cannot be transmitted from remote controller to indoor unit.  | <ul style="list-style-type: none"> <li>• Check internal transmission circuit of remote controller.</li> <li>--- Replace remote controller as necessary.</li> </ul>  |
| E04                    | —                         | —  | Indoor unit           | Indoor-outdoor communication circuit trouble (detected at indoor end)              | Stop of corresponding unit       | Indoor unit is not receiving signal from outdoor unit.   | <ul style="list-style-type: none"> <li>• Check order in which power was turned on for indoor and outdoor units.</li> <li>• Check indoor address setting.</li> <li>• Check indoor-outdoor tie cable.</li> <li>• Check outdoor terminator resistor setting (SW100, Bit 2).</li> </ul>   |
| E04                    | E06                       | No. of indoor units from which signal is received normally | I/F                   | Dropping out of indoor unit  | All stop                         | <b>Condition 1</b><br>All indoor unit initially communicating normally fails to return signal for specified length of time.<br><br><b>Condition 2</b><br>Outdoor I / F board SW103, Bit4 : OFF (Factory default) | <ul style="list-style-type: none"> <li>• Check power supply to indoor unit. (Is power turned on?)</li> <li>• Check connection of indoor-outdoor communication cable.</li> <li>• Check connection of communication connectors on indoor P.C. board.</li> <li>• Check connection of communication connectors on outdoor P.C. board.</li> <li>• Check for failure in indoor P.C. board.</li> <li>• Check for failure in outdoor P.C. board (I/F).</li> </ul> |
|                        | —                         | —  | Indoor unit           | Indoor-outdoor communication circuit trouble                                       | Only specified indoor units stop | <b>Condition 1</b><br>Indoor unit initially communicating normally fails to return signal for specified length of time.  | <ul style="list-style-type: none"> <li>• Check power supply to indoor unit. (Is power turned on?)</li> <li>• Check indoor-outdoor power-on sequence.</li> <li>• Check indoor address setting</li> <li>• Check wiring of Indoor-outdoor communication wires</li> <li>• Check outdoor terminator resistor setting (SW100, Bit 2).</li> </ul>  |



| Main remote controller | Check code |   | Location of detection | Description  | System status              | Check code detection condition(s)  | Check items (locations)  |
|------------------------|------------|---|-----------------------|--|----------------------------|--|--|
|                        | Check code | Sub-code  |                       |  |                            |  |  |
| E04/E06                | E06        | No. of indoor units from which signal is received normally            | Indoor unit           | Indoor-outdoor communication circuit trouble (E04)                     | All stop                   | <p><b>Condition 1</b><br/>One indoor unit or more initially communicating normally fails to return signal for specified length of time.</p> <p><b>Condition 2</b><br/>Outdoor I / F board<br/>SW103, Bit4 : ON<br/>(To switch the check code detection condition.)</p>  <p>SW103<br/>ON<br/>1 2 3 4</p> <p>Display on main remote controller.<br/>Indoor units unavailable for indoor / outdoor communication. : E04<br/>Indoor units available for indoor / outdoor communication. : E06</p> | <ul style="list-style-type: none"> <li>• Check power supply to indoor unit. (Is power turned on?)</li> <li>• Check indoor-outdoor power-on sequence.</li> <li>• Check indoor address setting</li> <li>• Check wiring of Indoor-outdoor communication wires</li> <li>• Check outdoor terminator resistor setting (SW100, Bit 2).</li> </ul> |
|                        |            |   | I/F                   | Dropping out of indoor unit (E06)                                      |                            |  |  |
| —                      | E07        | —   | I/F                   | Indoor-outdoor communication circuit trouble (detected at outdoor end) | All stop                   | Signal cannot be transmitted from outdoor to indoor units for 30 seconds continuously.   | <ul style="list-style-type: none"> <li>• Check outdoor terminator resistor setting (SW100, Bit 2).</li> <li>• Check connection of indoor-outdoor communication circuit.</li> </ul>   |
| E08                    | E08        | Duplicated indoor address   | Indoor unit<br>I/F    | Duplicated indoor address  | All stop                   | More than one indoor unit are assigned same address.   | <ul style="list-style-type: none"> <li>• Check indoor addresses.</li> <li>• Check for any change made to remote controller connection (group/individual) since indoor address setting.</li> </ul>  |
| E09                    | —          | —   | Remote controller     | Duplicated master remote controller                                    | Stop of corresponding unit | In two remote controller configuration (including wireless), both controllers are set up as master. (Header indoor unit is shut down with alarm, while follower indoor units continue operating.)  | <ul style="list-style-type: none"> <li>• Check remote controller settings.</li> <li>• Check remote controller P.C. boards.</li> </ul>  |
| E10                    | —          | —   | Indoor unit           | Indoor inter-MCU communication trouble                                 | Stop of corresponding unit | Communication cannot be established/maintained upon turning on of power or during communication.   | <ul style="list-style-type: none"> <li>• Check for failure in indoor P.C. board</li> </ul>   |
| E12                    | E12        | 01: Indoor-outdoor communication<br>02: Outdoor-outdoor communication | I/F                   | Automatic address starting trouble                                     | All stop                   | <ul style="list-style-type: none"> <li>• Indoor automatic address setting is started while automatic address setting for equipment in other refrigerant line is in progress.</li> <li>• Outdoor automatic address setting is started while automatic address setting for indoor units is in progress.</li> </ul>   | <ul style="list-style-type: none"> <li>• Perform automatic address setting again after disconnecting communication cable to that refrigerant line.</li> </ul>  |
| E15                    | E15        | —   | I/F                   | Indoor unit not found during automatic address setting                 | All stop                   | Indoor unit cannot be detected after indoor automatic address setting is started.  | <ul style="list-style-type: none"> <li>• Check connection of indoor-outdoor communication line.</li> <li>• Check for trouble in indoor power supply system.</li> <li>• Check for noise from other devices.</li> <li>• Check for power failure.</li> <li>• Check for failure in indoor P.C. board.</li> </ul>                               |



| Main remote controller | Check code                |   | Location of detection | Description   | System status              | Check code detection condition(s)  | Check items (locations)   |
|------------------------|---------------------------|---|-----------------------|---|----------------------------|--|---|
|                        | Outdoor 7-segment display |   |                       |   |                            |  |   |
|                        | Check code                | Sub-code  |                       |   |                            |  |   |
| E16                    | E16                       | 00: Capacity over<br>01-: No. of units connected  | I/F                   | Too many indoor units connected                                   | All stop                   | <ul style="list-style-type: none"> <li>Combined capacity of indoor units is too large.</li> </ul> <p><b>Note:</b><br/>If this code comes up after backup setting for outdoor unit failure is performed, perform "No capacity over detected" setting.</p> <p>&lt;"No capacity over detected" setting method&gt;<br/>Turn on SW103 / Bit 3 on I/F P.C. board of outdoor header unit.</p> <p>For Cooling Only model, this check code is not displayed even if it exceeds the combined capacity of indoor units.</p> <ul style="list-style-type: none"> <li>More than 128 indoor units are connected.</li> </ul> | <ul style="list-style-type: none"> <li>Check capacities of indoor units connected.</li> <li>Check combined HP capacities of indoor units.</li> <li>Check HP capacity settings of outdoor units.</li> <li>Check No. of indoor units connected.</li> <li>Check for failure in outdoor P.C. board (I/F).</li> </ul>  |
| E18                    | —                         | —   | Indoor unit           | Trouble in communication between indoor header and follower units | Stop of corresponding unit | Periodic communication between indoor header and follower units cannot be maintained.  | <ul style="list-style-type: none"> <li>Check remote controller wiring.</li> <li>Check indoor power supply wiring.</li> <li>Check P.C. boards of indoor units.</li> </ul>  |
| E19                    | E19                       | 00: No header unit<br>02: Two or more header units  | I/F                   | Trouble in number of outdoor header units                         | All stop                   | <ul style="list-style-type: none"> <li>There are more than one outdoor header units in one line.</li> <li>There is no outdoor header unit in one line.</li> </ul>  | <p>Outdoor header unit is outdoor unit to which indoor-outdoor tie cable (U1,U2) is connected.</p> <ul style="list-style-type: none"> <li>Check connection of indoor-outdoor communication line.</li> <li>Check for failure in outdoor P.C. board (I/F).</li> </ul>   |
| E20                    | E20                       | 01: Connection of outdoor unit from other line<br>02: Connection of indoor unit from other line | I/F                   | Connection to other line found during automatic address setting   | All stop                   | Equipment from other line is found to have been connected when indoor automatic address setting is in progress.  | Disconnect inter-line tie cable in accordance with automatic address setting method explained in "Address setting" section.   |
| E23                    | E23                       | —   | I/F                   | Outdooroutdoor communication transmission trouble                 | All stop                   | Signal cannot be transmitted to other outdoor units for at least 30 seconds continuously.  | <ul style="list-style-type: none"> <li>Check power supply to outdoor units. (Is power turned on?)</li> <li>Check connection of tie cables between outdoor units for bad contact or broken wire.</li> <li>Check communication connectors on outdoor P.C. boards.</li> <li>Check for failure in outdoor P.C. board (I/F).</li> <li>Check termination resistance setting for communication between outdoor units.</li> </ul> |
| E25                    | E25                       | —   | I/F                   | Duplicated follower outdoor address                               | All stop                   | There is duplication in outdoor addresses set manually.  | <b>Note:</b><br><b>Do not set outdoor addresses manually.</b>   |
| E26                    | E26                       | Address of outdoor unit from which signal is not received normally                              | I/F                   | Signal lack of outdoor unit                                       | All stop                   | Outdoor unit initially communicating normally fails to return signal for specified length of time.   | <ul style="list-style-type: none"> <li>Backup setting is being used for outdoor units.</li> <li>Check power supply to outdoor unit. (Is power turned on?)</li> <li>Check connection of tie cables between outdoor units for bad contact or broken wire.</li> <li>Check communication connectors on outdoor P.C. boards.</li> <li>Check for failure in outdoor P.C. board (I/F).</li> </ul>                                |



| Check code             |                           |  | Location of detection | Description                                   | System status              | Check code detection condition(s)                                     | Check items (locations)   |  |           |  |  |   |   |   |   |    |   |  |  |  |    |  |   |  |  |    |   |   |  |  |    |  |  |   |  |    |   |  |   |  |    |  |   |   |  |    |   |   |   |  |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |     |                                  |          |  |  |
|------------------------|---------------------------|--|-----------------------|---|----------------------------|---|---|--|-----------|--|--|---|---|---|---|----|---|--|--|--|----|--|---|--|--|----|---|---|--|--|----|--|--|---|--|----|---|--|---|--|----|--|---|---|--|----|---|---|---|--|----|--|--|--|---|----|---|--|--|---|----|--|---|--|---|----|---|---|--|---|----|--|--|--|---|----|---|--|--|---|----|--|---|--|---|----|---|---|--|---|-----|----------------------------------|----------|--|--|
| Main remote controller | Outdoor 7-segment display |  |                       |   |                            |   |   |  |           |  |  |   |   |   |   |    |   |  |  |  |    |  |   |  |  |    |   |   |  |  |    |  |  |   |  |    |   |  |   |  |    |  |   |   |  |    |   |   |   |  |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |     |                                  |          |  |  |
|                        | Check code                | Sub-code   |                       |   |                            |   |   |  |           |  |  |   |   |   |   |    |   |  |  |  |    |  |   |  |  |    |   |   |  |  |    |  |  |   |  |    |   |  |   |  |    |  |   |   |  |    |   |   |   |  |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |     |                                  |          |  |  |
| E28                    | E28                       | Detected outdoor unit No.  | I/F                   | Outdoor follower unit trouble                 | All stop                   | Outdoor header unit receives trouble code from outdoor follower unit. | <ul style="list-style-type: none"><li>• Check check code displayed on outdoor follower unit.</li></ul> <Convenient functions><br>If SW04 is pressed and held for at least 1 second while [E28] is displayed on the 7-segment display of outdoor header unit, the fan of the outdoor unit that has been shut down due to an trouble comes on.<br>If SW04 and SW05 are pressed simultaneously, the fans of normal outdoor units come on.<br>To stop the fan or fans, press SW05 on its own. |  |           |  |  |   |   |   |   |    |   |  |  |  |    |  |   |  |  |    |   |   |  |  |    |  |  |   |  |    |   |  |   |  |    |  |   |   |  |    |   |   |   |  |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |     |                                  |          |  |  |
| E31                    | E31                       | <table><tr><th colspan="4">P.C.board</th></tr><tr><th colspan="2">Compressor</th><th colspan="2">Fan Motor</th></tr><tr><th></th><th>1</th><th>2</th><th>1</th><th>2</th></tr><tr><td>01</td><td>○</td><td></td><td></td><td></td></tr><tr><td>02</td><td></td><td>○</td><td></td><td></td></tr><tr><td>03</td><td>○</td><td>○</td><td></td><td></td></tr><tr><td>08</td><td></td><td></td><td>○</td><td></td></tr><tr><td>09</td><td>○</td><td></td><td>○</td><td></td></tr><tr><td>0A</td><td></td><td>○</td><td>○</td><td></td></tr><tr><td>0B</td><td>○</td><td>○</td><td>○</td><td></td></tr><tr><td>10</td><td></td><td></td><td></td><td>○</td></tr><tr><td>11</td><td>○</td><td></td><td></td><td>○</td></tr><tr><td>12</td><td></td><td>○</td><td></td><td>○</td></tr><tr><td>13</td><td>○</td><td>○</td><td></td><td>○</td></tr><tr><td>18</td><td></td><td></td><td></td><td>○</td></tr><tr><td>19</td><td>○</td><td></td><td></td><td>○</td></tr><tr><td>1A</td><td></td><td>○</td><td></td><td>○</td></tr><tr><td>1B</td><td>○</td><td>○</td><td></td><td>○</td></tr></table> <p>Circle (○):<br/>Trouble<br/>P.C. board</p> | P.C.board             |   |                            |   | Compressor  |  | Fan Motor |  |  | 1 | 2 | 1 | 2 | 01 | ○ |  |  |  | 02 |  | ○ |  |  | 03 | ○ | ○ |  |  | 08 |  |  | ○ |  | 09 | ○ |  | ○ |  | 0A |  | ○ | ○ |  | 0B | ○ | ○ | ○ |  | 10 |  |  |  | ○ | 11 | ○ |  |  | ○ | 12 |  | ○ |  | ○ | 13 | ○ | ○ |  | ○ | 18 |  |  |  | ○ | 19 | ○ |  |  | ○ | 1A |  | ○ |  | ○ | 1B | ○ | ○ |  | ○ | I/F | P.C. board communication trouble | All stop | Communication is disrupted between P.C. board in inverter box. | <ul style="list-style-type: none"><li>• Check wiring and connectors involved in communication between P.C. board I/F P.C. board for bad contact or broken wire.</li><li>• Check for failure in outdoor P.C. board (I/F, comp. P.C. board or Fan P.C. board).</li><li>• Check for external noise.</li></ul> |
|                        |                           | P.C.board  |                       |   |                            |   |   |  |           |  |  |   |   |   |   |    |   |  |  |  |    |  |   |  |  |    |   |   |  |  |    |  |  |   |  |    |   |  |   |  |    |  |   |   |  |    |   |   |   |  |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |     |                                  |          |  |  |
| Compressor             |                           | Fan Motor  |                       |   |                            |   |   |  |           |  |  |   |   |   |   |    |   |  |  |  |    |  |   |  |  |    |   |   |  |  |    |  |  |   |  |    |   |  |   |  |    |  |   |   |  |    |   |   |   |  |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |     |                                  |          |  |  |
|                        | 1                         | 2  | 1                     | 2   |                            |   |   |  |           |  |  |   |   |   |   |    |   |  |  |  |    |  |   |  |  |    |   |   |  |  |    |  |  |   |  |    |   |  |   |  |    |  |   |   |  |    |   |   |   |  |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |     |                                  |          |  |  |
| 01                     | ○                         |  |                       |   |                            |   |   |  |           |  |  |   |   |   |   |    |   |  |  |  |    |  |   |  |  |    |   |   |  |  |    |  |  |   |  |    |   |  |   |  |    |  |   |   |  |    |   |   |   |  |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |     |                                  |          |  |  |
| 02                     |                           | ○  |                       |   |                            |   |   |  |           |  |  |   |   |   |   |    |   |  |  |  |    |  |   |  |  |    |   |   |  |  |    |  |  |   |  |    |   |  |   |  |    |  |   |   |  |    |   |   |   |  |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |     |                                  |          |  |  |
| 03                     | ○                         | ○  |                       |   |                            |   |   |  |           |  |  |   |   |   |   |    |   |  |  |  |    |  |   |  |  |    |   |   |  |  |    |  |  |   |  |    |   |  |   |  |    |  |   |   |  |    |   |   |   |  |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |     |                                  |          |  |  |
| 08                     |                           |  | ○                     |   |                            |   |   |  |           |  |  |   |   |   |   |    |   |  |  |  |    |  |   |  |  |    |   |   |  |  |    |  |  |   |  |    |   |  |   |  |    |  |   |   |  |    |   |   |   |  |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |     |                                  |          |  |  |
| 09                     | ○                         |  | ○                     |   |                            |   |   |  |           |  |  |   |   |   |   |    |   |  |  |  |    |  |   |  |  |    |   |   |  |  |    |  |  |   |  |    |   |  |   |  |    |  |   |   |  |    |   |   |   |  |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |     |                                  |          |  |  |
| 0A                     |                           | ○  | ○                     |   |                            |   |   |  |           |  |  |   |   |   |   |    |   |  |  |  |    |  |   |  |  |    |   |   |  |  |    |  |  |   |  |    |   |  |   |  |    |  |   |   |  |    |   |   |   |  |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |     |                                  |          |  |  |
| 0B                     | ○                         | ○  | ○                     |   |                            |   |   |  |           |  |  |   |   |   |   |    |   |  |  |  |    |  |   |  |  |    |   |   |  |  |    |  |  |   |  |    |   |  |   |  |    |  |   |   |  |    |   |   |   |  |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |     |                                  |          |  |  |
| 10                     |                           |  |                       | ○   |                            |   |   |  |           |  |  |   |   |   |   |    |   |  |  |  |    |  |   |  |  |    |   |   |  |  |    |  |  |   |  |    |   |  |   |  |    |  |   |   |  |    |   |   |   |  |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |     |                                  |          |  |  |
| 11                     | ○                         |  |                       | ○   |                            |   |   |  |           |  |  |   |   |   |   |    |   |  |  |  |    |  |   |  |  |    |   |   |  |  |    |  |  |   |  |    |   |  |   |  |    |  |   |   |  |    |   |   |   |  |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |     |                                  |          |  |  |
| 12                     |                           | ○  |                       | ○   |                            |   |   |  |           |  |  |   |   |   |   |    |   |  |  |  |    |  |   |  |  |    |   |   |  |  |    |  |  |   |  |    |   |  |   |  |    |  |   |   |  |    |   |   |   |  |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |     |                                  |          |  |  |
| 13                     | ○                         | ○  |                       | ○   |                            |   |   |  |           |  |  |   |   |   |   |    |   |  |  |  |    |  |   |  |  |    |   |   |  |  |    |  |  |   |  |    |   |  |   |  |    |  |   |   |  |    |   |   |   |  |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |     |                                  |          |  |  |
| 18                     |                           |  |                       | ○   |                            |   |   |  |           |  |  |   |   |   |   |    |   |  |  |  |    |  |   |  |  |    |   |   |  |  |    |  |  |   |  |    |   |  |   |  |    |  |   |   |  |    |   |   |   |  |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |     |                                  |          |  |  |
| 19                     | ○                         |  |                       | ○   |                            |   |   |  |           |  |  |   |   |   |   |    |   |  |  |  |    |  |   |  |  |    |   |   |  |  |    |  |  |   |  |    |   |  |   |  |    |  |   |   |  |    |   |   |   |  |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |     |                                  |          |  |  |
| 1A                     |                           | ○  |                       | ○   |                            |   |   |  |           |  |  |   |   |   |   |    |   |  |  |  |    |  |   |  |  |    |   |   |  |  |    |  |  |   |  |    |   |  |   |  |    |  |   |   |  |    |   |   |   |  |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |     |                                  |          |  |  |
| 1B                     | ○                         | ○  |                       | ○   |                            |   |   |  |           |  |  |   |   |   |   |    |   |  |  |  |    |  |   |  |  |    |   |   |  |  |    |  |  |   |  |    |   |  |   |  |    |  |   |   |  |    |   |   |   |  |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |     |                                  |          |  |  |
|                        |                           | 80   |                       | Communication trouble between MCU and Sub MCU | All stop                   | Communication between MCU and Sub MCU stopped.                        | <ul style="list-style-type: none"><li>• Operation of power supply reset (OFF for 60 seconds or more)</li><li>• Outdoor I/F PC board trouble check</li></ul>   |  |           |  |  |   |   |   |   |    |   |  |  |  |    |  |   |  |  |    |   |   |  |  |    |  |  |   |  |    |   |  |   |  |    |  |   |   |  |    |   |   |   |  |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |     |                                  |          |  |  |
| F01                    | —                         | —  | Indoor unit           | Indoor TCJ sensor trouble                     | Stop of corresponding unit | Sensor resistance is infinity or zero (open/short circuit).           | <ul style="list-style-type: none"><li>• Check connection of TCJ sensor connector and wiring.</li><li>• Check resistance characteristics of TCJ sensor.</li><li>• Check for failure in indoor P.C. board.</li></ul>  |  |           |  |  |   |   |   |   |    |   |  |  |  |    |  |   |  |  |    |   |   |  |  |    |  |  |   |  |    |   |  |   |  |    |  |   |   |  |    |   |   |   |  |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |     |                                  |          |  |  |
| F02                    | —                         | —  | Indoor unit           | Indoor TC2 sensor trouble                     | Stop of corresponding unit | Sensor resistance is infinity or zero (open/short circuit).           | <ul style="list-style-type: none"><li>• Check connection of TC2 sensor connector and wiring.</li><li>• Check resistance characteristics of TC2 sensor.</li><li>• Check for failure in indoor P.C. board.</li></ul>  |  |           |  |  |   |   |   |   |    |   |  |  |  |    |  |   |  |  |    |   |   |  |  |    |  |  |   |  |    |   |  |   |  |    |  |   |   |  |    |   |   |   |  |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |     |                                  |          |  |  |
| F03                    | —                         | —  | Indoor unit           | Indoor TC1 sensor trouble                     | Stop of corresponding unit | Sensor resistance is infinity or zero (open/short circuit).           | <ul style="list-style-type: none"><li>• Check connection of TC1 sensor connector and wiring.</li><li>• Check resistance characteristics of TC1 sensor.</li><li>• Check for failure in indoor P.C. board.</li></ul>  |  |           |  |  |   |   |   |   |    |   |  |  |  |    |  |   |  |  |    |   |   |  |  |    |  |  |   |  |    |   |  |   |  |    |  |   |   |  |    |   |   |   |  |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |     |                                  |          |  |  |
| F04                    | F04                       | —  | I/F                   | TD1 sensor trouble                            | All stop                   | Sensor resistance is infinity or zero (open/short circuit).           | <ul style="list-style-type: none"><li>• Check connection of TD1 sensor connector.</li><li>• Check resistance characteristics of TD1 sensor.</li><li>• Check for failure in outdoor P.C. board (I/F).</li></ul>  |  |           |  |  |   |   |   |   |    |   |  |  |  |    |  |   |  |  |    |   |   |  |  |    |  |  |   |  |    |   |  |   |  |    |  |   |   |  |    |   |   |   |  |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |    |  |  |  |   |    |   |  |  |   |    |  |   |  |   |    |   |   |  |   |     |                                  |          |  |  |



| Main remote controller | Check code                |  | Location of detection | Description  | System status              | Check code detection condition(s)  | Check items (locations)  |
|------------------------|---------------------------|--|-----------------------|--|----------------------------|--|--|
|                        | Outdoor 7-segment display |  |                       |  |                            |  |  |
|                        | Check code                | Sub-code   |                       |  |                            |  |  |
| F05                    | F05                       | —  | I/F                   | TD2 sensor trouble                                   | All stop                   | Sensor resistance is infinity or zero (open/short circuit).  | <ul style="list-style-type: none"><li>• Check connection of TD2 sensor connector.</li><li>• Check resistance characteristics of TD2 sensor.</li><li>• Check for failure in outdoor P.C. board (I/F).</li></ul>                   |
| F06                    | F06                       | 01: TE1 sensor trouble<br>02: TE2 sensor trouble<br>03: TE3 sensor trouble | I/F                   | TE1/TE2/TE3 sensor trouble                           | All stop                   | Sensor resistance is infinity or zero (open/short circuit).  | <ul style="list-style-type: none"><li>• Check connection of TE1/TE2/TE3 sensor connectors.</li><li>• Check resistance characteristics of TE1/TE2/TE3 sensors.</li><li>• Check for failure in outdoor P.C. board (I/F).</li></ul> |
| F07                    | F07                       | 01: TL1 sensor trouble<br>02: TL2 sensor trouble<br>03: TL3 sensor trouble | I/F                   | TL1/TL2/TL3 sensor trouble                           | All stop                   | Sensor resistance is infinity or zero (open/short circuit).  | <ul style="list-style-type: none"><li>• Check connection of TL1/TL2/TL3 sensor connector.</li><li>• Check resistance characteristics of TL1/TL2/TL3 sensor.</li><li>• Check for failure in outdoor P.C. board (I/F).</li></ul>   |
| F08                    | F08                       | —  | I/F                   | TO sensor trouble                                    | All stop                   | Sensor resistance is infinity or zero (open/short circuit).  | <ul style="list-style-type: none"><li>• Check connection of TO sensor connector.</li><li>• Check resistance characteristics of TO sensor.</li><li>• Check for failure in outdoor P.C. board (I/F).</li></ul>                     |
| F09                    | F09                       | 01: TG1 sensor trouble<br>02: TG2 sensor trouble<br>03: TG3 sensor trouble | I/F                   | TG1/TG2/TG3 sensor trouble                           | All stop                   | Sensor resistance is infinity or zero (open/short circuit).  | <ul style="list-style-type: none"><li>• Check connection of TG1/TG2/TG3 sensor connectors.</li><li>• Check resistance characteristics of TG1/TG2/TG3 sensors.</li><li>• Check for failure in outdoor P.C. board (I/F).</li></ul> |
| F10                    | —                         | —  | Indoor unit           | Indoor TA sensor trouble                             | Stop of corresponding unit | Sensor resistance is infinity or zero (open/short circuit).  | <ul style="list-style-type: none"><li>• Check connection of TA sensor connector and wiring.</li><li>• Check resistance characteristics of TA sensor.</li><li>• Check for failure in indoor P.C. board.</li></ul>                 |
| F11                    | —                         | —  | Indoor unit           | Indoor TF sensor trouble                             | Stop of corresponding unit | Sensor resistance is infinity or zero (open/short circuit).  | <ul style="list-style-type: none"><li>• Check connection of TF sensor connector and wiring.</li><li>• Check resistance characteristics of TF sensor.</li><li>• Check for failure in indoor P.C. board.</li></ul>                 |
| F12                    | F12                       | 01: TS1 sensor trouble<br>03: TS3 sensor trouble                           | I/F                   | TS1/TS3 sensor trouble                               | All stop                   | Sensor resistance is infinity or zero (open/short circuit).  | <ul style="list-style-type: none"><li>• Check connection of TS1/TS3 sensor connector</li><li>• Check resistance characteristics of TS1/TS3 sensor.</li><li>• Check for failure in indoor P.C. board.</li></ul>                   |
| F13                    | F13                       | 1*: Compressor 1 side<br>2*: Compressor 2 side                             | Compressor P.C. board | TH sensor trouble                                    | All stop                   | Sensor resistance is infinity or zero (open/short circuit).  | <ul style="list-style-type: none"><li>• Failure in IPM built-in temperature sensor → Replace Compressor P.C. board.</li></ul>  |
| F15                    | F15                       | —  | I/F                   | Outdoor temperature sensor wiring trouble (TE1, TL1) | All stop                   | During compressor operation in HEAT mode, TL1 continuously provides temperature reading higher than indicated by TL1 by at least specified margin for 3 minutes or more. | <ul style="list-style-type: none"><li>• Check installation of TE1 and TL1 sensors.</li><li>• Check resistance characteristics of TE1 and TL1 sensors.</li><li>• Check for outdoor P.C. board (I/F) trouble</li></ul>             |



| Main remote controller | Check code                |          | Location of detection | Description  | System status  | Check code detection condition(s)  | Check items (locations)   |
|------------------------|---------------------------|----------|-----------------------|--|--|--|---|
|                        | Outdoor 7-segment display |          |                       |  |  |  |   |
|                        | Check code                | Sub-code |                       |  |  |  |   |
| F16                    | F16                       | —        | I/F                   | Outdoor pressure sensor wiring trouble (Pd, Ps)                    | All stop   | Readings of high-pressure Pd sensor and low-pressure Ps sensor are switched. Output voltages of both sensors are zero. | <ul style="list-style-type: none"> <li>• Check connection of high-pressure Pd sensor connector.</li> <li>• Check connection of low-pressure Ps sensor connector.</li> <li>• Check for failure in pressure sensors Pd and Ps.</li> <li>• Check for trouble in outdoor P.C. board (I/F).</li> <li>• Check for compressor poor compression.</li> </ul>   |
| F23                    | F23                       | —        | I/F                   | Ps sensor trouble  | All stop   | Output voltage of Ps sensor is zero.   | <ul style="list-style-type: none"> <li>• Check for connection trouble involving Ps sensor and Pd sensor connectors.</li> <li>• Check connection of Ps sensor connector.</li> <li>• Check for failure in Ps sensor.</li> <li>• Check for compressor poor compression.</li> <li>• Check for failure in 4-way valve.</li> <li>• Check for failure in outdoor P.C. board (I/F).</li> <li>• Check for failure in SV4 circuit.</li> </ul> |
| F24                    | F24                       | —        | I/F                   | Pd sensor trouble  | All stop   | Output voltage of Pd sensor is zero (sensor open-circuited). Pd > 4.15MPa despite compressor having been turned off.   | <ul style="list-style-type: none"> <li>• Check connection of Pd sensor connector.</li> <li>• Check for failure in Pd sensor.</li> <li>• Check for failure in outdoor P.C. board (I/F).</li> </ul>   |
| F29                    | —                         | —        | Indoor unit           | Other indoor trouble   | Stop of corresponding unit   | Indoor P.C. board does not operate normally.   | <ul style="list-style-type: none"> <li>• Check for failure in indoor P.C. board (failure EEPROM)</li> </ul>   |
| F31                    | F31                       | —        | I/F                   | Outdoor EEPROM trouble   | All stop *1  | Outdoor P.C. board (I/F) does not operate normally.  | <ul style="list-style-type: none"> <li>• Check power supply voltage.</li> <li>• Check power supply noise.</li> <li>• Check for failure in outdoor P.C. board (I/F).</li> </ul>  |
| J01                    | —                         | —        | FS unit               | Communication trouble between indoor unit(s) and FS unit           | Stop of corresponding unit(s) (Indoor unit(s) connected to the same FS unit)   | FS unit not receiving signal from indoor unit(s)   | <ul style="list-style-type: none"> <li>• Check wiring between FS unit and indoor unit(s).</li> <li>• Check FS unit port address setting of indoor unit.</li> <li>• Check FS unit port combining branches setting of indoor unit.</li> </ul>   |
| J02                    | —                         | —        | Indoor unit           | Communication trouble between control boards in Flow Selector unit | Stop of corresponding unit(s) (Indoor units (s) connected to the same FS unit) | There is no communication from P.C. board after No.2 of FS unit Multi-port type.                                       | <ul style="list-style-type: none"> <li>• Check connector connection of FS unit for PC board communication.</li> <li>• Check for PC board defects in FS unit.</li> <li>• Check FS unit control number setting (SW01 of FS unit, Bit 1 to 4).</li> </ul>  |
| J03                    | —                         | —        | Indoor unit           | Duplicated FS units  | Stop of corresponding unit(s)  | Multiple FS unit (or SV units) are installed in one indoor unit.   | <ul style="list-style-type: none"> <li>• Check indoor unit(s) - FS unit(s) cable</li> </ul>   |

\*1 Total shutdown in case of header unit  
Continued operation in case of follower unit



| Main remote controller | Check code                |  | Location of detection                  | Description   | System status   | Check code detection condition(s)   | Check items (locations)   |
|------------------------|---------------------------|--|--|---|---|---|---|
|                        | Outdoor 7-segment display |  |  |   |   |   |   |
|                        | Check code                | Sub-code                                       |  |   |   |   |   |
| J29                    | J29                       | Detected indoor unit address                   | Indoor unit or Leak Detector Interface | Leak Detector Trouble   | When DN code 06B = 0001 or 0002 are set<br>• All stop   | • There is no communication from Leak Detector.<br>• A Malfunction signal received from Leak Detector.            | • Check Malfunction LED of Leak Detector.<br>• Check disconnection and connectors of Leak Detector.<br>• Check PC board defects of Leak Detector.<br>• Check PC board defects of indoor unit or Leak Detector Interface.  |
|                        | —                         | —  |  |   | • Continued operation<br>• All stop (detected when power is turned on)                                    |   |   |
| J30                    | J30                       | Detected indoor unit address                   | Indoor unit or Leak Detector Interface | Refrigerant leak detection  | All stop (Safety measures setting of indoor unit is "Pump-down operation" or "Leak Detector only")        | Leak Detector detects refrigerant leak  | • Check refrigerant detection status of Leak Detector.<br>• Check refrigerant leaks from indoor unit or Flow Selector / Shut-off Valve unit.<br>• Check for false detection.  |
|                        | —                         | —  | Indoor unit                            |   | Stop of corresponding unit(s) (Safety measures setting of indoor unit is "Individual shut-off operation") |   |   |
| J31                    | —                         | —  | Indoor unit or Leak Detector Interface | Refrigerant leak detection sensor exceeding its life of the product | Continued operation   | The energization time of refrigerant sensor has reached 10 years.   | • Check Malfunction LED of Leak Detector.<br>• Check refrigerant sensor of Leak Detector.   |
| H01                    | H01                       | 1*: Compressor 1 side<br>2*: Compressor 2 side | Compressor P.C. board                  | Compressor breakdown  | All stop  | Inverter current detection circuit detects overcurrent and shuts system down.                                     | • Check power supply voltage. (AC380V-415V ± 10%).<br>• Check for failure in compressor.<br>• Check for possible cause of abnormal overloading.<br>• Check for failure in outdoor P.C. board (Compressor).  |
| H02                    | H02                       | 1*: Compressor 1 side<br>2*: Compressor 2 side | Compressor P.C. board                  | Compressor trouble (lockup) MG-CTT trouble                          | All stop  | Overcurrent is detected several seconds after startup of inverter compressor.                                     | • Check for failure in compressor.<br>• Check power supply voltage. (AC380V-415V ± 10%).<br>• Check compressor system wiring, particularly for open phase.<br>• Check connection of connectors/terminals on compressor P.C. board.<br>• Check conductivity of case heater. (Check for refrigerant problem inside compressor.)<br>• Check for failure in outdoor P.C. board (Compressor).<br>• Check outdoor MG-CTT. |
| H03                    | H03                       | 1*: Compressor 1 side<br>2*: Compressor 2 side | Compressor P.C. board                  | Current detection circuit trouble                                   | All stop  | Current flow of at least specified magnitude is detected despite inverter compressor having been shut turned off. | • Check current detection circuit wiring.<br>• Check failure in outdoor P.C. board (Compressor).  |

\*1 Total shutdown in case of header unit  
Continued operation in case of follower unit



| Main remote controller | Check code                |  | Location of detection | Description   | System status | Check code detection condition(s)  | Check items (locations)  |
|------------------------|---------------------------|--|-----------------------|---|---------------|--|--|
|                        | Outdoor 7-segment display |  |                       |   |               |  |  |
|                        | Check code                | Sub-code   |                       |   |               |  |  |
| H05                    | H05                       | —  | I/F                   | TD1 sensor miswiring (incomplete insertion)           | All stop      | Discharge temperature of compressor 1 (TD1) does not increase despite compressor being in operation. | <ul style="list-style-type: none"> <li>• Check installation of TD1 sensor.</li> <li>• Check connection of TD1 sensor connector and wiring.</li> <li>• Check resistance characteristics of TD1 sensor.</li> <li>• Check for failure in outdoor P.C. board (I/F).</li> </ul>   |
| H06                    | H06                       | —  | I/F                   | Activation of low-pressure protection                 | All stop      | Low-pressure Ps sensor detects operating pressure lower than 0.02MPa.                                | <ul style="list-style-type: none"> <li>• Check service valves to confirm full opening (both gas and liquid sides).</li> <li>• Check outdoor PMVs for clogging (PMV1, 2, 3).</li> <li>• Check for failure in SV4 circuits.</li> <li>• Check for failure in low-pressure Ps sensor.</li> <li>• Check indoor filter for clogging.</li> <li>• Check valve opening status of indoor PMV.</li> <li>• Check refrigerant piping for clogging.</li> <li>• Check operation of outdoor fan (during heating).</li> <li>• Check for insufficiency in refrigerant quantity.</li> </ul> |
| H07                    | H07                       | —  | I/F                   | Low oil level protection                              | All stop      | Operating compressor detects continuous state of low oil level for about 2 hours.                    | <p>&lt;All outdoor units in corresponding line to be checked&gt;</p> <ul style="list-style-type: none"> <li>• Check connection and installation of TK1 and TK2 sensors.</li> <li>• Check resistance characteristics of TK1 and TK2 sensors.</li> <li>• Check for gas or oil leak in same line.</li> <li>• Check for refrigerant problem inside compressor casing.</li> <li>• Check SV3D, SV3F valves for failure.</li> <li>• Check oil return circuit of oil separator for clogging.</li> <li>• Check oil equalizing circuit for clogging.</li> </ul>                    |
| H08                    | H08                       | 01: TK1 sensor trouble<br>02: TK2 sensor trouble | I/F                   | Trouble in temperature sensor for oil level detection | All stop      | Sensor resistance is infinity or zero (open/short circuit).  | <ul style="list-style-type: none"> <li>• Check connection of TK1 sensor connector.</li> <li>• Check resistance characteristics of TK1 sensor.</li> <li>• Check for failure in outdoor P.C. board (I/F).</li> </ul>   |
|                        |                           |  |                       |   | All stop      | Sensor resistance is infinity or zero (open/short circuit).  | <ul style="list-style-type: none"> <li>• Check connection of TK2 sensor connector.</li> <li>• Check resistance characteristics of TK2 sensor.</li> <li>• Check for failure in outdoor P.C. board (I/F).</li> </ul>   |
| H15                    | H15                       | —  | I/F                   | TD2 sensor miswiring (incomplete insertion)           | All stop      | Discharge temperature of (TD2) does not increase despite compressor 2 being in operation.            | <ul style="list-style-type: none"> <li>• Check installation of TD2 sensor.</li> <li>• Check connection of TD2 sensor connector and wiring.</li> <li>• Check resistance characteristics of TD2 sensor.</li> <li>• Check for failure in outdoor P.C. board (I/F).</li> </ul>   |



| Main remote controller | Check code                |  | Location of detection | Description   | System status              | Check code detection condition(s)   | Check items (locations)   |
|------------------------|---------------------------|--|-----------------------|---|----------------------------|---|---|
|                        | Outdoor 7-segment display |  |                       |   |                            |   |   |
|                        | Check code                | Sub-code   |                       |   |                            |   |   |
| H16                    | H16                       | 01: TK1 oil circuit trouble<br>02: TK2 oil circuit trouble | I/F                   | Oil level detection circuit trouble   | All stop                   | No temperature change is detected by TK1 despite compressor 1 having been started.                                | <ul style="list-style-type: none"><li>• Check for disconnection of TK1 sensor.</li><li>• Check resistance characteristics of TK1 sensor.</li><li>• Check for connection trouble involving TK1 and TK2 sensors</li><li>• Check for clogging in oil equalizing circuit capillary</li><li>• Check for refrigerant entrapment inside compressor.</li></ul>  |
|                        |                           |  |                       |   |                            | No temperature change is detected by TK2 despite compressor 2 having been started.                                | <ul style="list-style-type: none"><li>• Check for disconnection of TK2 sensor.</li><li>• Check resistance characteristics of TK2 sensor.</li><li>• Check for connection trouble involving TK1 and TK2 sensors</li><li>• Check SV3F valve malfunction.</li><li>• Check for clogging in oil equalizing circuit capillary.</li><li>• Check for refrigerant entrapment inside compressor.</li></ul> |
| H17                    | H17                       | 1*: Compressor 1 side<br>2*: Compressor 2 side             | Compressor P.C. board | Compressor trouble (Step-out)   | All stop                   | Judged that the synchronization could not be taken.   | <ul style="list-style-type: none"><li>• Check power supply voltage. (AC380V-415V ± 10%).</li><li>• Check for failure in compressor.</li><li>• Check for possible cause of abnormal overloading.</li><li>• Check for failure in outdoor P.C. board (compressor).</li></ul>   |
| L02                    | L02                       | —  | Indoor unit           | Outdoor units model disagreement trouble  | Stop of corresponding unit | In case of different outdoor unit (Not corresponded to Air to Air Heat Exchanger type)                            | <ul style="list-style-type: none"><li>• Check outdoor unit model. (Check whether the outdoor unit corresponds to Air to Air Heat Exchanger type or not.)</li></ul>  |
| L03                    | —                         | —  | Indoor unit           | Duplicated indoor header unit   | Stop of corresponding unit | There are more than one header units in group.  | <ul style="list-style-type: none"><li>• Check indoor addresses.</li><li>• Check for any change made to remote controller connection (group/ individual) since indoor address setting.</li></ul>   |
| L04                    | L04                       | —  | I/F                   | Duplicated outdoor line address   | All stop                   | There is duplication in line address setting for outdoor units belonging to different refrigerant piping systems. | <ul style="list-style-type: none"><li>• Check line addresses.</li></ul>   |
| L05                    | —                         | —  | I/F                   | Duplicated priority indoor unit (as displayed on priority indoor unit)                        | All stop                   | More than one indoor units have been set up as priority indoor unit.  | <ul style="list-style-type: none"><li>• Check display on priority indoor unit.</li></ul>  |
| L06                    | L06                       | No. of priority indoor units                               | I/F                   | Duplicated priority indoor unit (as displayed on indoor unit other than priority indoor unit) | All stop                   | More than one indoor units have been set up as priority indoor unit.  | <ul style="list-style-type: none"><li>• Check displays on priority indoor unit and outdoor unit.</li></ul>  |
| L07                    | —                         | —  | Indoor unit           | Connection of group control cable to standalone indoor unit                                   | Stop of corresponding unit | There is at least one standalone indoor unit to which group control cable is connected.                           | <ul style="list-style-type: none"><li>• Check indoor addresses.</li></ul>   |
| L08                    | L08                       | —  | Indoor unit           | Indoor group / addresses not set  | Stop of corresponding unit | Address setting has not been performed for indoor units.  | <ul style="list-style-type: none"><li>• Check indoor addresses.</li></ul> <p><b>Note:</b><br/><b>This code is displayed when power is turned on for the first time after installation.</b></p>  |
| L09                    | —                         | —  | Indoor unit           | Indoor capacity not set   | Stop of corresponding unit | Capacity setting has not been performed for indoor unit.  | Set indoor capacity. (DN = 11)  |



| Check code             |                           |   | Location of detection       | Description   | System status              | Check code detection condition(s)                                       | Check items (locations)   |  |           |  |   |   |   |   |    |   |  |  |    |  |   |  |    |   |   |  |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |     |                              |          |   |  |
|------------------------|---------------------------|---|-----------------------------|---|----------------------------|---|---|--|-----------|--|---|---|---|---|----|---|--|--|----|--|---|--|----|---|---|--|----|--|--|---|----|---|--|---|----|--|---|---|----|---|---|---|----|--|--|---|----|---|--|---|----|--|---|---|----|---|---|---|----|--|--|---|----|---|--|---|----|--|---|---|----|---|---|---|-----|------------------------------|----------|---|--|
| Main remote controller | Outdoor 7-segment display |   |                             |   |                            |   |   |  |           |  |   |   |   |   |    |   |  |  |    |  |   |  |    |   |   |  |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |     |                              |          |   |  |
|                        | Check code                | Sub-code  |                             |   |                            |   |   |  |           |  |   |   |   |   |    |   |  |  |    |  |   |  |    |   |   |  |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |     |                              |          |   |  |
| L10                    | L10                       | —   | I/F                         | Outdoor capacity not set                            | All stop                   | Initial setting of I/F P.C. board has not been implemented.             | • Check model setting of P.C. board for servicing outdoor I/F P.C. board.   |  |           |  |   |   |   |   |    |   |  |  |    |  |   |  |    |   |   |  |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |     |                              |          |   |  |
| L20                    | —                         | —   | Network adaptor Indoor unit | Duplicated central control address                  | All stop                   | There is duplication in central control address setting.                | • Check central control addresses.  |  |           |  |   |   |   |   |    |   |  |  |    |  |   |  |    |   |   |  |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |     |                              |          |   |  |
| L23                    | —                         | —   | I/F                         | SW setting mistake                                  | All stop                   | Outdoor P.C. board (I/F) does not operate normally.                     | • Check switch setting of outdoor P.C. board (I/F).   |  |           |  |   |   |   |   |    |   |  |  |    |  |   |  |    |   |   |  |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |     |                              |          |   |  |
| L28                    | L28                       | —   | I/F                         | Too many outdoor units connected                    | All stop                   | There are more than 5 outdoor units.                                    | • Check No. of outdoor units connected (Only up to 5 units per system allowed).<br>• Check communication lines between outdoor units.<br>• Check for failure in outdoor P.C. board (I/F).   |  |           |  |   |   |   |   |    |   |  |  |    |  |   |  |    |   |   |  |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |     |                              |          |   |  |
| L29                    | L29                       | <table><tr><th colspan="4">P.C. board</th></tr><tr><th colspan="2">Compressor</th><th colspan="2">Fan Motor</th></tr><tr><th>1</th><th>2</th><th>1</th><th>2</th></tr><tr><td>01</td><td>○</td><td></td><td></td></tr><tr><td>02</td><td></td><td>○</td><td></td></tr><tr><td>03</td><td>○</td><td>○</td><td></td></tr><tr><td>08</td><td></td><td></td><td>○</td></tr><tr><td>09</td><td>○</td><td></td><td>○</td></tr><tr><td>0A</td><td></td><td>○</td><td>○</td></tr><tr><td>0B</td><td>○</td><td>○</td><td>○</td></tr><tr><td>10</td><td></td><td></td><td>○</td></tr><tr><td>11</td><td>○</td><td></td><td>○</td></tr><tr><td>12</td><td></td><td>○</td><td>○</td></tr><tr><td>13</td><td>○</td><td>○</td><td>○</td></tr><tr><td>18</td><td></td><td></td><td>○</td></tr><tr><td>19</td><td>○</td><td></td><td>○</td></tr><tr><td>1A</td><td></td><td>○</td><td>○</td></tr><tr><td>1B</td><td>○</td><td>○</td><td>○</td></tr></table> <p>Circle (○):<br/>Trouble<br/>P.C. board</p> | P.C. board                  |   |                            |   | Compressor  |  | Fan Motor |  | 1 | 2 | 1 | 2 | 01 | ○ |  |  | 02 |  | ○ |  | 03 | ○ | ○ |  | 08 |  |  | ○ | 09 | ○ |  | ○ | 0A |  | ○ | ○ | 0B | ○ | ○ | ○ | 10 |  |  | ○ | 11 | ○ |  | ○ | 12 |  | ○ | ○ | 13 | ○ | ○ | ○ | 18 |  |  | ○ | 19 | ○ |  | ○ | 1A |  | ○ | ○ | 1B | ○ | ○ | ○ | I/F | Trouble in No. of P.C. board | All stop | Insufficient number of P.C. board are detected when power is turned on. | • Check model setting of P.C. board for servicing outdoor I/F P.C. board.<br>• Check connection of UART communication connector.<br>• Check compressor P.C. board, fan P.C. board, and I/F P.C. board for failure. |
| P.C. board             |                           |   |                             |   |                            |   |   |  |           |  |   |   |   |   |    |   |  |  |    |  |   |  |    |   |   |  |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |     |                              |          |   |  |
| Compressor             |                           | Fan Motor   |                             |   |                            |   |   |  |           |  |   |   |   |   |    |   |  |  |    |  |   |  |    |   |   |  |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |     |                              |          |   |  |
| 1                      | 2                         | 1   | 2                           |   |                            |   |   |  |           |  |   |   |   |   |    |   |  |  |    |  |   |  |    |   |   |  |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |     |                              |          |   |  |
| 01                     | ○                         |   |                             |   |                            |   |   |  |           |  |   |   |   |   |    |   |  |  |    |  |   |  |    |   |   |  |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |     |                              |          |   |  |
| 02                     |                           | ○   |                             |   |                            |   |   |  |           |  |   |   |   |   |    |   |  |  |    |  |   |  |    |   |   |  |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |     |                              |          |   |  |
| 03                     | ○                         | ○   |                             |   |                            |   |   |  |           |  |   |   |   |   |    |   |  |  |    |  |   |  |    |   |   |  |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |     |                              |          |   |  |
| 08                     |                           |   | ○                           |   |                            |   |   |  |           |  |   |   |   |   |    |   |  |  |    |  |   |  |    |   |   |  |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |     |                              |          |   |  |
| 09                     | ○                         |   | ○                           |   |                            |   |   |  |           |  |   |   |   |   |    |   |  |  |    |  |   |  |    |   |   |  |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |     |                              |          |   |  |
| 0A                     |                           | ○   | ○                           |   |                            |   |   |  |           |  |   |   |   |   |    |   |  |  |    |  |   |  |    |   |   |  |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |     |                              |          |   |  |
| 0B                     | ○                         | ○   | ○                           |   |                            |   |   |  |           |  |   |   |   |   |    |   |  |  |    |  |   |  |    |   |   |  |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |     |                              |          |   |  |
| 10                     |                           |   | ○                           |   |                            |   |   |  |           |  |   |   |   |   |    |   |  |  |    |  |   |  |    |   |   |  |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |     |                              |          |   |  |
| 11                     | ○                         |   | ○                           |   |                            |   |   |  |           |  |   |   |   |   |    |   |  |  |    |  |   |  |    |   |   |  |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |     |                              |          |   |  |
| 12                     |                           | ○   | ○                           |   |                            |   |   |  |           |  |   |   |   |   |    |   |  |  |    |  |   |  |    |   |   |  |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |     |                              |          |   |  |
| 13                     | ○                         | ○   | ○                           |   |                            |   |   |  |           |  |   |   |   |   |    |   |  |  |    |  |   |  |    |   |   |  |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |     |                              |          |   |  |
| 18                     |                           |   | ○                           |   |                            |   |   |  |           |  |   |   |   |   |    |   |  |  |    |  |   |  |    |   |   |  |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |     |                              |          |   |  |
| 19                     | ○                         |   | ○                           |   |                            |   |   |  |           |  |   |   |   |   |    |   |  |  |    |  |   |  |    |   |   |  |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |     |                              |          |   |  |
| 1A                     |                           | ○   | ○                           |   |                            |   |   |  |           |  |   |   |   |   |    |   |  |  |    |  |   |  |    |   |   |  |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |     |                              |          |   |  |
| 1B                     | ○                         | ○   | ○                           |   |                            |   |   |  |           |  |   |   |   |   |    |   |  |  |    |  |   |  |    |   |   |  |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |     |                              |          |   |  |
| L30                    | L30                       | Detected indoor address   | Indoor unit                 | Indoor external interlock (External abnormal input) | Stop of corresponding unit | • Indoor unit has been shut down due to external abnormal input signal. | <b>When external device is connected:</b><br>1) Check for trouble in external device.<br>2) Check for trouble in indoor P.C. board.<br><b>When external device is not connected:</b><br>1) Check for trouble in indoor P.C. board.  |  |           |  |   |   |   |   |    |   |  |  |    |  |   |  |    |   |   |  |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |     |                              |          |   |  |
| —                      | L31                       | —   | I/F                         | Extended IC trouble                                 | Continued operation        | There is part failure in P.C. board (I/F).                              | Check outdoor P.C. board (I/F).   |  |           |  |   |   |   |   |    |   |  |  |    |  |   |  |    |   |   |  |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |     |                              |          |   |  |
| P01                    | —                         | —   | Indoor unit                 | Indoor fan motor trouble                            | Stop of corresponding unit |   | • Check the lock of fan motor (AC fan).<br>• Check wiring.  |  |           |  |   |   |   |   |    |   |  |  |    |  |   |  |    |   |   |  |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |     |                              |          |   |  |
| P03                    | P03                       | —   | I/F                         | Discharge temperature TD1 trouble                   | All stop                   | Discharge temperature (TD1) exceeds 115 °C.                             | • Check outdoor service valves (gas side, liquid side) to confirm full opening.<br>• Check outdoor PMVs (PMV1, 2, 3, 4) for clogging.<br>• Check resistance characteristics of TD1 sensor.<br>• Check for insufficiency in refrigerant quantity.<br>• Check for failure in 4-way valve.<br>• Check for leakage of SV4 circuit.<br>• Check SV4 circuit (wiring or installation trouble in SV41 or SV42). |  |           |  |   |   |   |   |    |   |  |  |    |  |   |  |    |   |   |  |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |    |  |  |   |    |   |  |   |    |  |   |   |    |   |   |   |     |                              |          |   |  |



| Main remote controller | Check code                |  | Location of detection | Description   | System status | Check code detection condition(s)  | Check items (locations)  |
|------------------------|---------------------------|--|-----------------------|---|---------------|--|--|
|                        | Outdoor 7-segment display |  |                       |   |               |  |  |
|                        | Check code                | Sub-code   |                       |   |               |  |  |
| P04                    | P04                       | 1*: Compressor 1 side<br>2*: Compressor 2 side   | I/F                   | Activation of high-pressure SW  | All stop      | High-pressure SW is activated.   | <ul style="list-style-type: none"><li>• Check connection of high-pressure SW connector.</li><li>• Check for failure in Pd pressure sensor.</li><li>• Check outdoor service valves (gas side, liquid side) to confirm full opening.</li><li>• Check for failure in outdoor fan.</li><li>• Check for failure in outdoor fan motor.</li><li>• Check outdoor PMVs (PMV1, 2, 3) for clogging.</li><li>• Check indoor/outdoor heat exchangers for clogging.</li><li>• Check for short-circuiting of outdoor suction/discharge air flows.</li><li>• Check for failure in outdoor P.C. board (I/F).</li><li>• Check for trouble in indoor fan system (possible cause of air flow reduction).</li><li>• Check opening status of indoor PMV.</li><li>• Check indoor-outdoor communication line for wiring trouble.</li><li>• Check for failure operation of check valve in discharge pipe convergent section.</li><li>• Check gas balancing SV4 valve circuit.</li><li>• Check for refrigerant overcharging.</li></ul> |
| P05                    | P05                       | 00: Power detection trouble<br>01: Open phase<br>02: Power supply miswiring                                | I/F                   | Power detection trouble / Open phase detection / Power supply miswiring | All stop      | <ul style="list-style-type: none"><li>• Open phase is detected when power is turned on.</li><li>• Inverter DC voltage is too high (overvoltage) or too low (undervoltage).</li></ul> | <ul style="list-style-type: none"><li>• Check for failure in outdoor P.C. board (I/F).</li><li>• Check wiring of outdoor power supply.</li><li>• Check power supply voltage.</li></ul>   |
|                        |                           | 1*: Compressor 1 side<br>2*: Compressor 2 side   | Compressor P.C. board | Compressor Vdc trouble  |               |  |  |
| P07                    | P07                       | 1*: Compressor 1 side<br>2*: Compressor 2 side   | Compressor P.C. board | Heat sink overheating trouble   | All stop      | Temperature sensor built into IPM (TH) is overheated.  | <ul style="list-style-type: none"><li>• Check outdoor fan system trouble.</li><li>• Check IPM and heat sink for thermal performance for failure installation. (e.g. mounting screws and thermal conductivity)</li><li>• Check for failure in Compressor P.C. board. (failure IPM built-in temperature sensor (TH))</li></ul>   |
|                        |                           | 01: Compressor 1 heat sink trouble<br>02: Compressor 2 heat sink trouble<br>04: Heat sink dew condensation | I/F                   | Heat sink overheating trouble<br>Heat sink dew condensation trouble     | All stop      | Condensation detection on heat sink has occurred four times or more in operation. Temperature sensor built into IPM (TH) is overheated.  | <ul style="list-style-type: none"><li>• Check outdoor fan system trouble.</li><li>• Check IPM and heat sink for thermal performance for troubled installation. (e. g. mounting screws and thermal conductivity)</li><li>• Check for failure in compressor P.C. board. (failure IPM built-in temperature sensor (TH))</li><li>• Check shortage of refrigerant.</li><li>• Check outdoor service valves.</li><li>• Check connection of TL2 sensor.</li><li>• Check resistance characteristics of TL2 sensor.</li><li>• Check resistance characteristics of TO sensor.</li><li>• Check malfunctions of Pd and Ps sensors.</li><li>• Check outdoor I/F P.C. board malfunction.</li><li>• Check PMV2 and PMV3</li></ul>  |



| Main remote controller | Check code                |                         | Location of detection | Description                               | System status              | Check code detection condition(s)   | Check items (locations)  |
|------------------------|---------------------------|-------------------------|-----------------------|---|----------------------------|---|--|
|                        | Outdoor 7-segment display |                         |                       |   |                            |   |  |
|                        | Check code                | Sub-code                |                       |   |                            |   |  |
| P10                    | P10                       | Detected indoor address | Indoor unit           | Indoor overflow trouble                   | All stop                   | <ul style="list-style-type: none"><li>• Float switch operates.</li><li>• Float switch circuit is open-circuited or disconnected at connector.</li></ul>   | <ul style="list-style-type: none"><li>• Check float switch connector.</li><li>• Check operation of drain pump.</li><li>• Check drain pump circuit.</li><li>• Check drain pipe for clogging.</li><li>• Check for failure in indoor P.C. board.</li></ul>  |
| P11                    | —                         | —                       | I/F                   | Outdoor heat exchanger freeze trouble     | All stop                   | <ul style="list-style-type: none"><li>• Outdoor heat exchanger remaining frost detection has occurred eight times or more due to abnormal frost formation in heating operation.</li></ul>   | <ul style="list-style-type: none"><li>• Check shortage of refrigerant.</li><li>• Check connection of TE1, TE2 and TE3 sensors.</li><li>• Check resistance characteristics of TE1, TE2, and TE3 sensors.</li><li>• Check disconnection of TS1 sensor.</li><li>• Check resistance characteristics of TS1 sensor.</li><li>• Check outdoor I/F P.C. board malfunction.</li><li>• Check operation of 4 way valve.</li><li>• Check operation of outdoor PMV (1, 2, 3).</li><li>• Check short circuit from outlet air to inlet air.</li></ul> |
| P12                    | —                         | —                       | Indoor unit           | Indoor fan motor trouble                  | Stop of corresponding unit | <ul style="list-style-type: none"><li>• Motor speed measurements continuously deviate from target value.</li><li>• Overcurrent protection is activated.</li></ul>   | <ul style="list-style-type: none"><li>• Check connection of fan connector and wiring.</li><li>• Check for failure in fan motor.</li><li>• Check for failure in indoor P.C. board.</li><li>• Check impact of outside air treatment (OA).</li></ul>  |
| P13                    | P13                       | —                       | I/F                   | Outdoor liquid backflow detection trouble | All stop                   | <p>&lt;During cooling operation&gt;<br/>When system is in cooling operation, high pressure is detected in the unit that has been turned off.</p> <p>&lt;During heating operation&gt;<br/>When system is in heating operation, low pressure is detected to be high in unit that has been turned off.</p> | <ul style="list-style-type: none"><li>• Check full-close operation of outdoor PMV (1, 2, 3, 4).</li><li>• Check for failure in Pd or Ps sensor.</li><li>• Check failure in outdoor P.C. board (I/F).</li><li>• Check capillary of oil separator oil return circuit for clogging.</li><li>• Check for leakage of check valve in discharge pipe</li></ul>  |
| P15                    | P15                       | 01: TS condition        | I/F                   | Gas leak detection (TS1 condition)        | All stop                   | Protective shutdown due to sustained suction temperature at or above judgment criterion for at least 10 minutes is repeated four times or more.<br><TS trouble judgment criterion><br>In cooling operation: 60 °C<br>In heating operation: 40 °C  | <ul style="list-style-type: none"><li>• Check for insufficiency in refrigerant quantity.</li><li>• Check outdoor service valves (gas side, liquid side) to confirm full opening.</li><li>• Check PMVs (PMV1, 2, 3, 4) for clogging.</li><li>• Check resistance characteristics of TS1 sensor.</li><li>• Check for failure in 4-way valve.</li><li>• Check SV4 circuit for leakage</li></ul>  |
|                        |                           | 02: TD condition        | I/F                   | Gas leak detection (TD condition)         | All stop                   | Protective shutdown due to sustained discharge temperature (TD1 or TD2) at or above 108 °C for at least 10 minutes is repeated four times or more.  | <ul style="list-style-type: none"><li>• Check for insufficiency in refrigerant quantity.</li><li>• Check PMVs (PMV 1, 2, 3, 4) for clogging.</li><li>• Check resistance characteristics of TD1 and TD2 sensors.</li><li>• Check indoor filter for clogging.</li><li>• Check piping for clogging.</li><li>• Check SV4 circuit (for leakage or coil installation trouble).</li></ul>   |



| Main remote controller | Check code                |                           | Location of detection | Description                            | System status | Check code detection condition(s)   | Check items (locations)  |
|------------------------|---------------------------|---------------------------|-----------------------|--|---------------|---|--|
|                        | Outdoor 7-segment display |                           |                       |  |               |   |  |
|                        | Check code                | Sub-code                  |                       |  |               |   |  |
| P17                    | P17                       | —                         | I/F                   | Discharge temperature TD2 trouble      | All stop      | Discharge temperature (TD2) exceeds 115 °C.   | <ul style="list-style-type: none"><li>• Check outdoor service valves (gas side, liquid side) to confirm full opening.</li><li>• Check outdoor PMVs (PMV1, 2, 3, 4) for clogging.</li><li>• Check resistance characteristics of TD2 sensor.</li><li>• Check for failure in 4-way valve.</li><li>• Check SV4 circuit for leakage.</li><li>• Check SV4 circuit (for wiring or installation trouble involving SV41 and SV42).</li></ul>  |
| P19                    | P19                       | Detected outdoor unit No. | I/F                   | 4-way valve reversing trouble          | All stop      | Abnormal refrigerating cycle data is collected during heating operation.  | <ul style="list-style-type: none"><li>• Check for failure in main body of 4-way valve.</li><li>• Check for coil failure in 4-way valve and loose connection of its connector.</li><li>• Check resistance characteristics of TS1 and TE1,TE2 sensors.</li><li>• Check output voltage characteristics of Pd and Ps pressure sensors.</li><li>• Check for wiring trouble involving TE1 and TL1 sensors.</li></ul>   |
| P20                    | P20                       | —                         | I/F                   | Activation of high-pressure protection | All stop      | <During cooling operation><br>Pd sensor detects pressure equal to or greater than 3.85 MPa.<br><During heating operation><br>Pd sensor detects pressure equal to or greater than 3.6 MPa. | <ul style="list-style-type: none"><li>• Check for failure in Pd pressure sensor.</li><li>• Check service valves (gas side, liquid side) to confirm full opening.</li><li>• Check for failure in outdoor fan.</li><li>• Check for failure in outdoor fan motor.</li><li>• Check outdoor PMV (PMV1, 2, 3, 4) for clogging.</li><li>• Check indoor/outdoor heat exchangers for clogging.</li><li>• Check for short-circuiting of outdoor suction/discharge air flows.</li><li>• Check for failure in outdoor P.C. board (I/F).</li><li>• Check for failure in indoor fan system (possible cause of air flow reduction).</li><li>• Check opening status of indoor PMV.</li><li>• Check indoor-outdoor communication line for wiring trouble.</li><li>• Check for trouble operation of check valve in discharge pipe convergent section.</li><li>• Check gas balancing SV4 valve circuit.</li><li>• Check for refrigerant overcharging.</li></ul> |



| Check code             |                           |  | Location of detection | Description  | System status              | Check code detection condition(s)  | Check items (locations)  |
|------------------------|---------------------------|--|-----------------------|--|----------------------------|--|--|
| Main remote controller | Outdoor 7-segment display |  |                       |  |                            |  |  |
|                        | Check code                | Sub-code                                       |                       |  |                            |  |  |
| P22                    | P22                       | 1*: Fan P.C. board 1<br>2*: Fan P.C. board 2   | Fan INV. P.C. board   | Outdoor fan P.C. board trouble                     | All stop                   | Protected operation of Fan inverter P.C. board   | <ul style="list-style-type: none"><li>• Check fan motor.</li><li>• Check for failure in fan P.C. board.</li><li>• Check connection of fan motor connector.</li><li>• Check power voltage of the main power supply.</li></ul>                       |
| P26                    | P26                       | 1*: Compressor 1 side<br>2*: Compressor 2 side | Compressor P.C. board | IPM, Compressor shortcircuit protection trouble    | All stop                   | Overcurrent is momentarily detected during startup of compressor.                          | <ul style="list-style-type: none"><li>• Check connector connection and wiring on compressor P.C. board.</li><li>• Check for failure in compressor (layer shortcircuit).</li><li>• Check for failure in outdoor P.C. board ( Compressor).</li></ul> |
| P29                    | P29                       | 1*: Compressor 1 side<br>2*: Compressor 2 side | Compressor P.C. board | Compressor position detection circuit trouble      | All stop                   | Position detection is not going on normally.   | <ul style="list-style-type: none"><li>• Check wiring and connector connection.</li><li>• Check for compressor layer short-circuit.</li><li>• Check for failure in compressor P.C. board.</li></ul>   |
| P31                    | —                         | —  | Indoor unit           | Other indoor trouble (group follower unit trouble) | Stop of corresponding unit | There is trouble in other indoor unit in group, resulting in detection of E07/L07/L03/L08. | <ul style="list-style-type: none"><li>• Check indoor P.C. board.</li></ul>   |



## Check codes Displayed on by Central Control Device

| Main remote controller | Check code   |          | Location of detection      | Description   | System status              | Check code detection condition(s)   | Check items (locations)   |
|------------------------|--|----------|----------------------------|---|----------------------------|---|---|
|                        | Outdoor 7-segment display                            |          |                            |   |                            |   |   |
|                        | Check code   | Sub-code |                            |   |                            |   |   |
| E03                    | —  | —        | Indoor unit                | Indoor-remote controller communication trouble (detected at indoor end) | Stop of corresponding unit | There is no communication from remote controller (including wireless) or network adaptor.                       | • Check remote controller and network adaptor wiring.   |
| C05                    | —  |          | Central control device     | Central control device transmission trouble                             | Continued operation        | Central control device is unable to transmit signal.  | <ul style="list-style-type: none"> <li>• Check for failure in central control device.</li> <li>• Check for failure in central control communication line.</li> <li>• Check termination resistance setting.</li> </ul>   |
| C06                    | —  |          | Central control device     | Central control device reception trouble                                | Continued operation        | Central control device is unable to receive signal.   | <ul style="list-style-type: none"> <li>• Check for failure in central control device.</li> <li>• Check for failure in central control communication line.</li> <li>• Check terminator resistor setting.</li> <li>• Check power supply for devices at other end of central control communication line.</li> <li>• Check failure in P.C. boards of devices at other end of central control communication line.</li> </ul> |
| C12                    | —  |          | General-purpose device I/F | Batch alarm for general-purpose device control interface                | Continued operation        | Trouble signal is input to control interface for general-purpose devices.                                       | • Check trouble input.  |
| P30                    | Differs according to nature of alarm-causing trouble |          | Central control device     | Group control follower unit trouble                                     | Continued operation        | Trouble occurs in follower unit under group control. ([P30] is displayed on central control remote controller.) | • Check check code of unit that has generated alarm.  |
|                        | (L20 displayed.)                                     |          |                            | Duplicated central control address                                      | Continued operation        | There is duplication in central control addresses.  | • Check address settings.   |



### ▼ Points to Note When Servicing Compressor

(1) When checking the outputs of inverters, remove the wiring from all the compressors.

### ▼ How to Check Inverter Output

- (1) Turn off the power supply.
- (2) Remove compressor leads from the compressor P.C. board.  
(The model with two compressor should remove the wiring for two sets (6 leads).)
- (3) Turn on the power supply and start cooling or heating operation.
- (4) Check the output voltage across each pair of inverter-side. If the result is unsatisfactory according to the judgment criteria given in the table below, replace the compressor P.C. board.

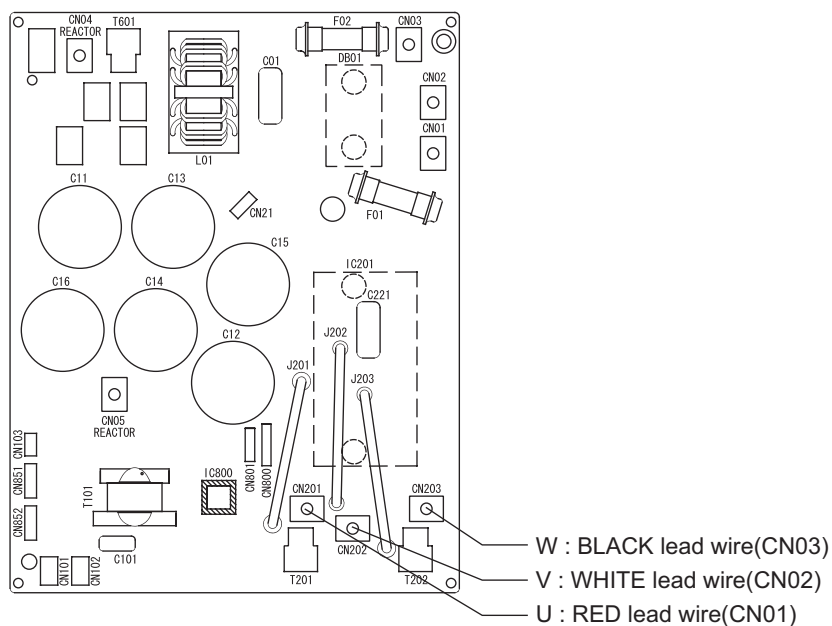
| No. | Measured leads | Criterion |
|-----|----------------|-----------|
| 1   | CN201 - CN202  | 380~580V  |
| 2   | CN202 - CN203  | 380~580V  |
| 3   | CN203 - CN201  | 380~580V  |

### ▼ How to Check Resistance of Compressor Winding

- (1) Turn off the power supply.
- (2) Remove compressor leads from the compressor P.C. board. (Be sure to remove all the leads.)
- (3) With each compressor, check the phase-to-phase winding resistances and winding-to-outdoor cabinet resistance using a multimeter.
  - Earth trouble?  
→ It is normal if the winding-to-outdoor cabinet resistance is 10M $\Omega$  or more.
  - Inter-winding short circuit?  
→ It is normal if the phase-to-phase resistances are in the 0.1-1.0 $\Omega$  range. (Use a digital multimeter.)

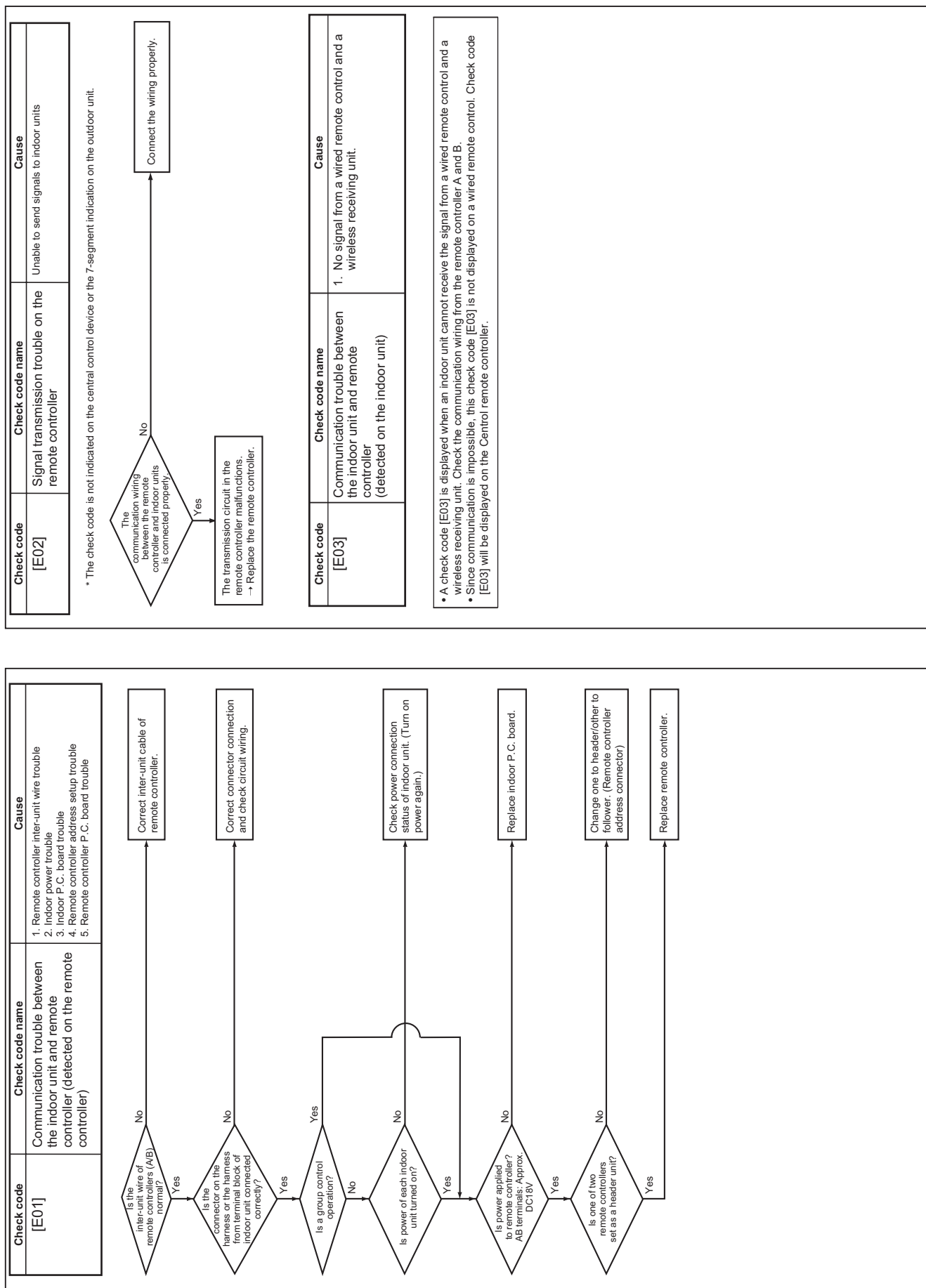
### ▼ How to Check Outdoor Fan Motor

- (1) Turn off the power supply.
- (2) Remove fan motor leads from the fan P.C. board for the outdoor fan.
- (3) Rotate the fan by hand. If the fan does not turn, the fan motor is faulty (locked up). Replace the fan motor.  
If the fan turns, measure the phase-to-phase winding resistances using a multimeter. It is normal if the measurements are in the 8.1-9.9 range. (Use a digital multimeter.)

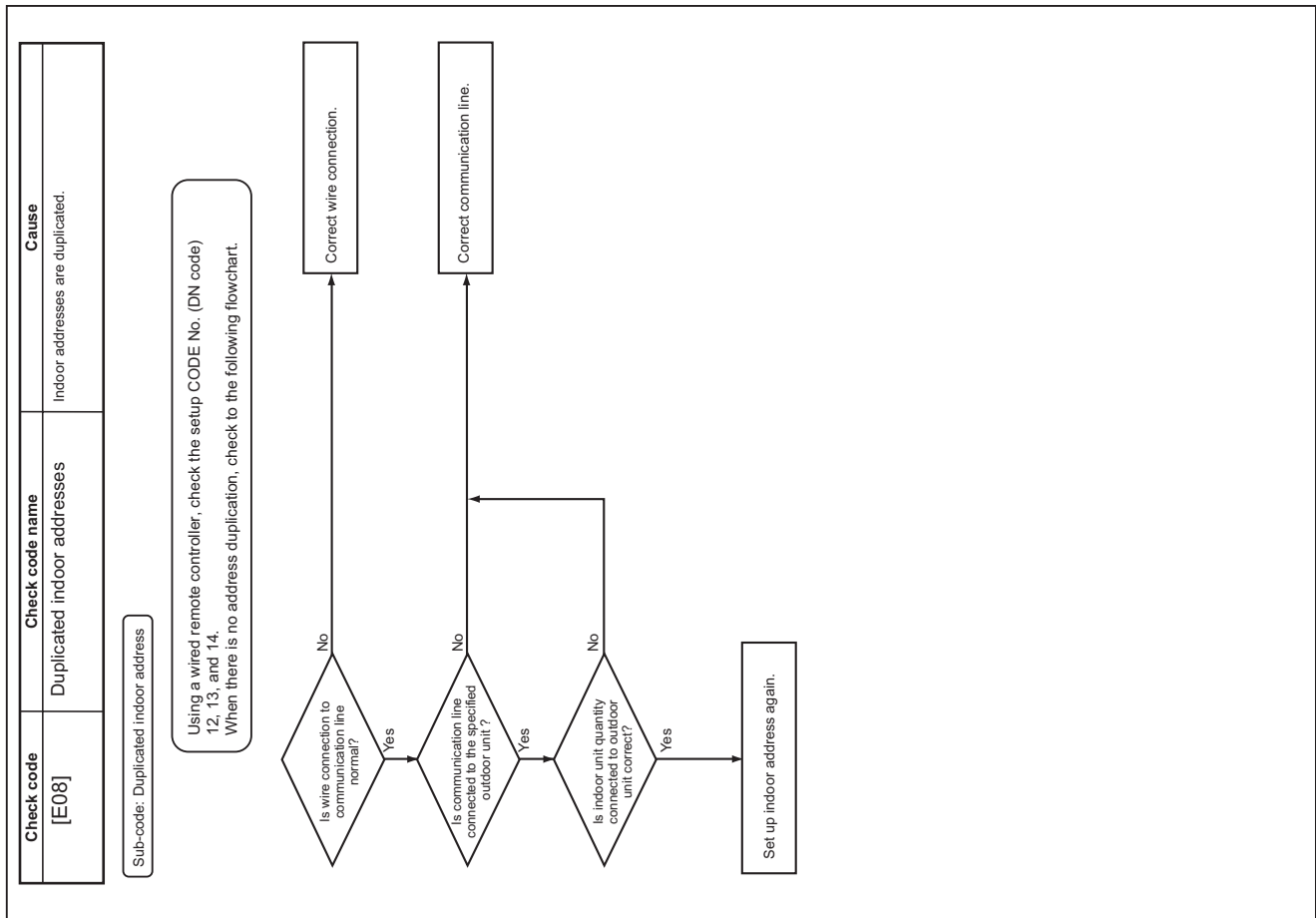
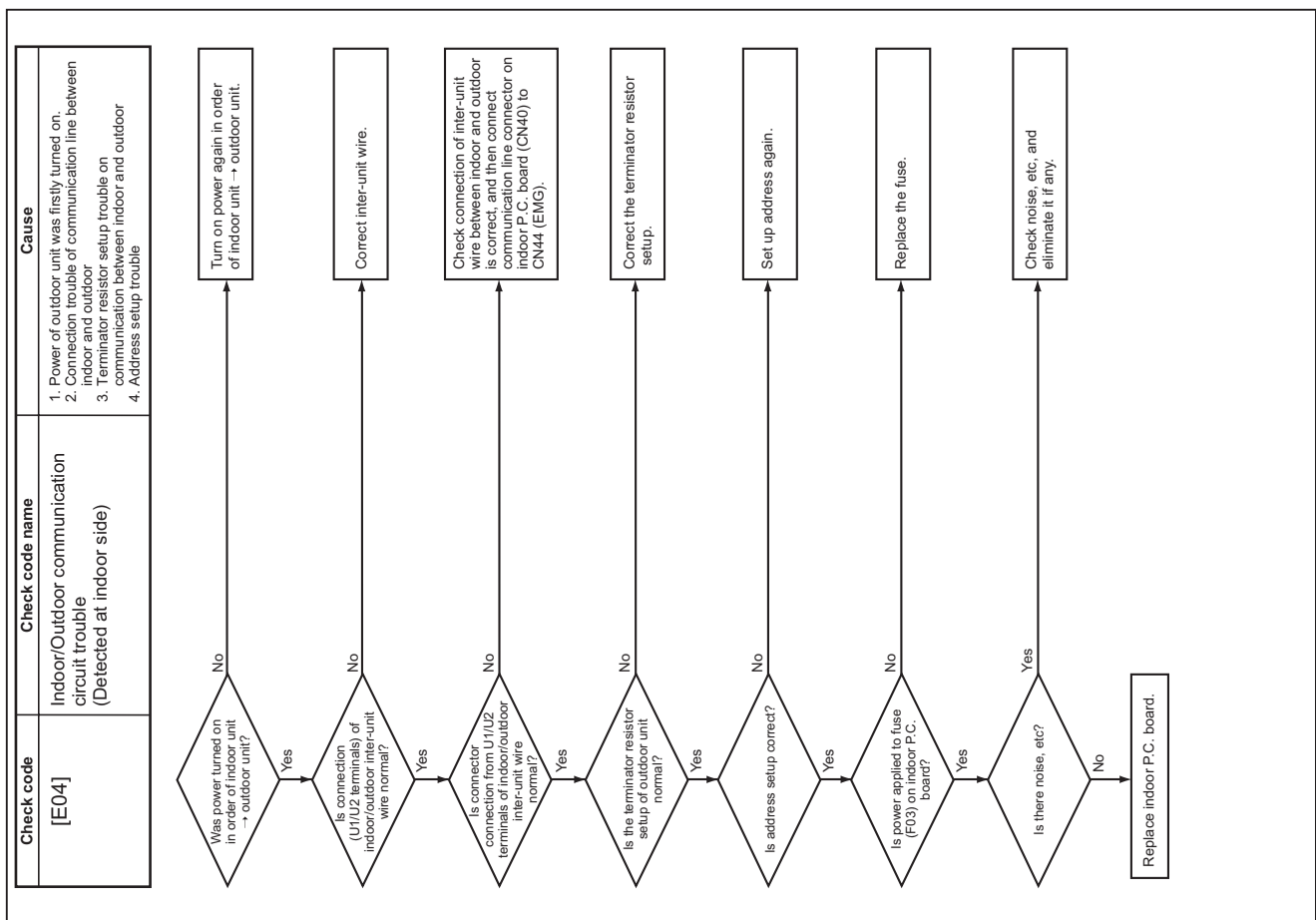




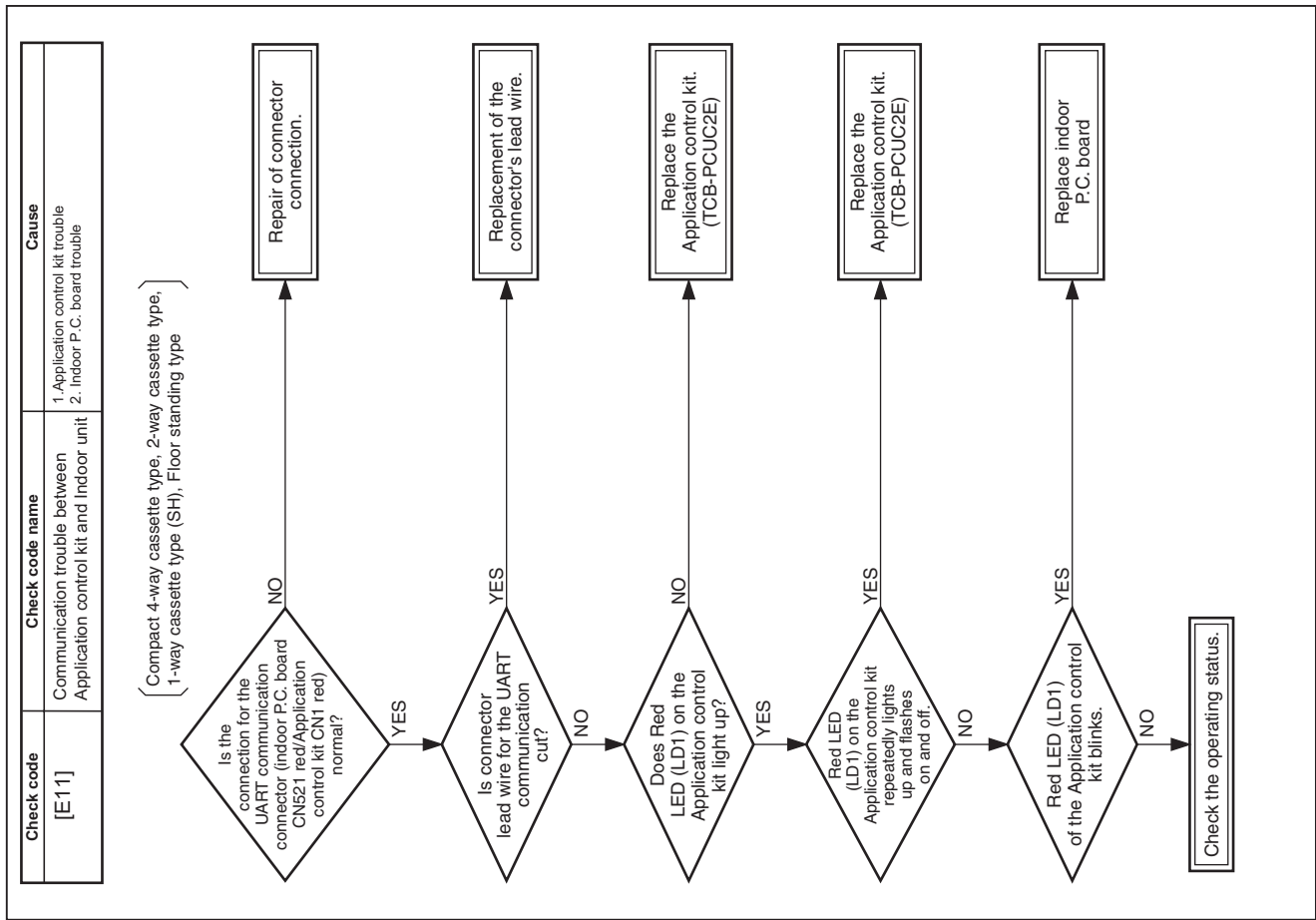
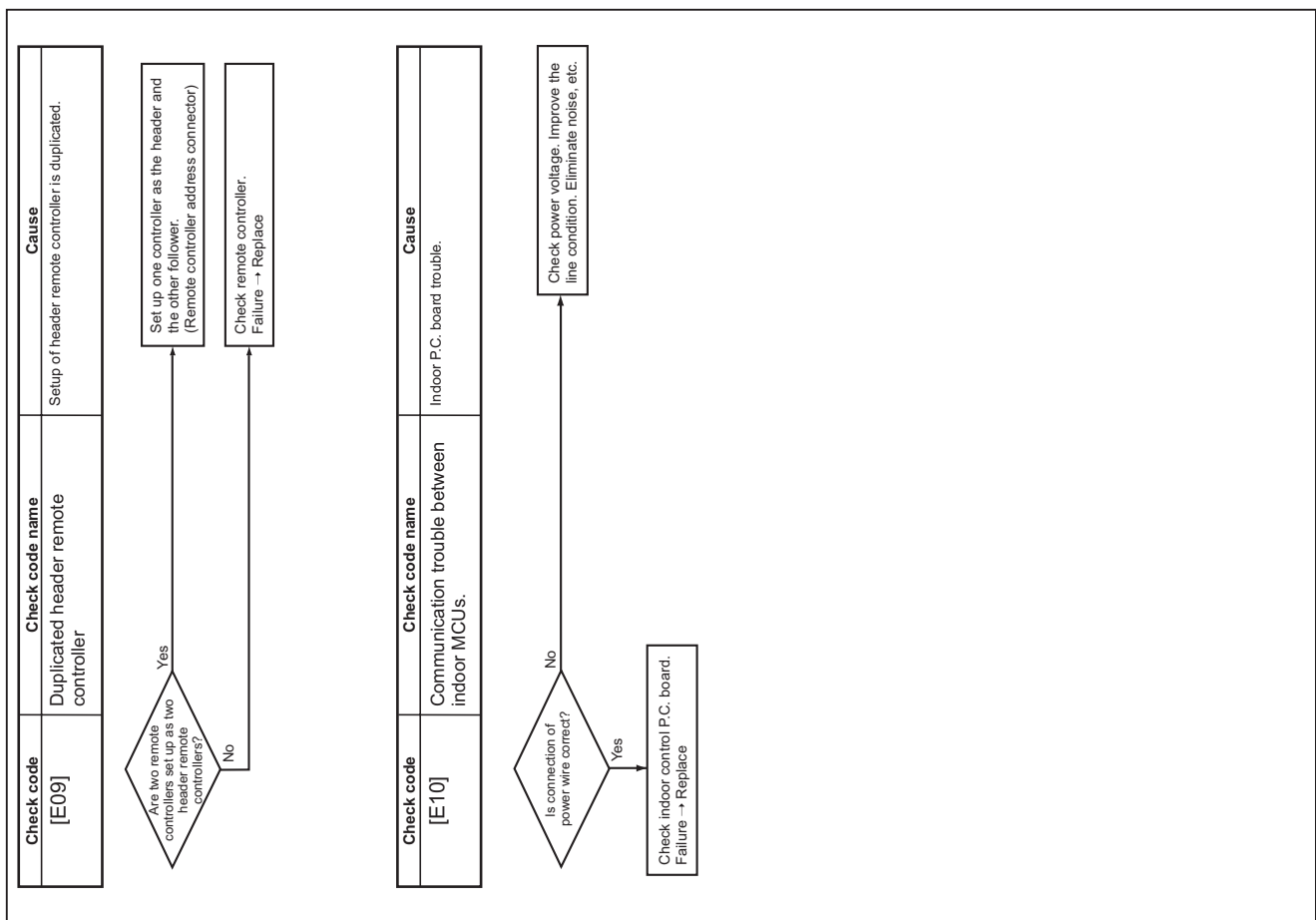
11-5. Diagnostic Procedure for Each Check Code (Indoor Unit)



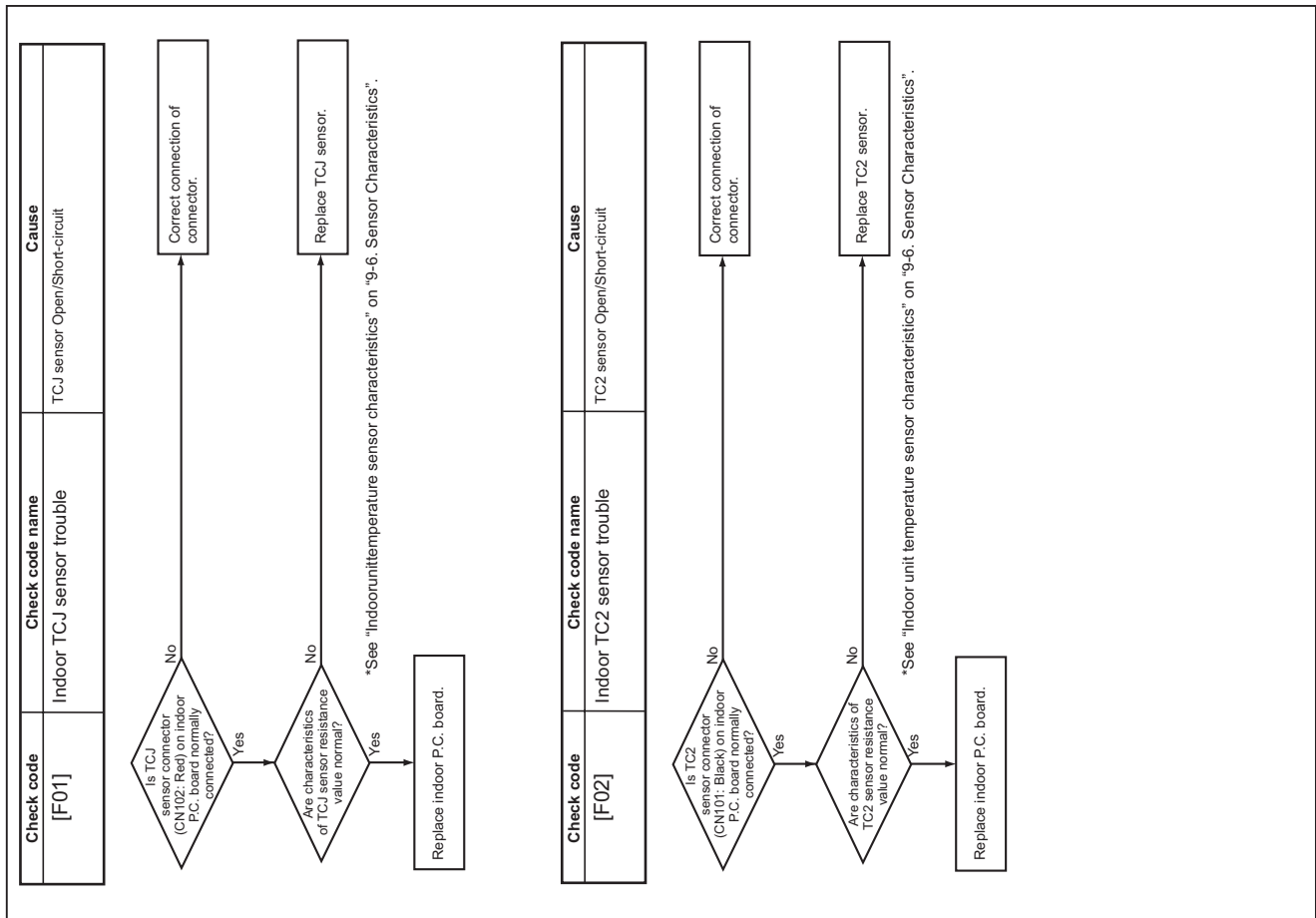
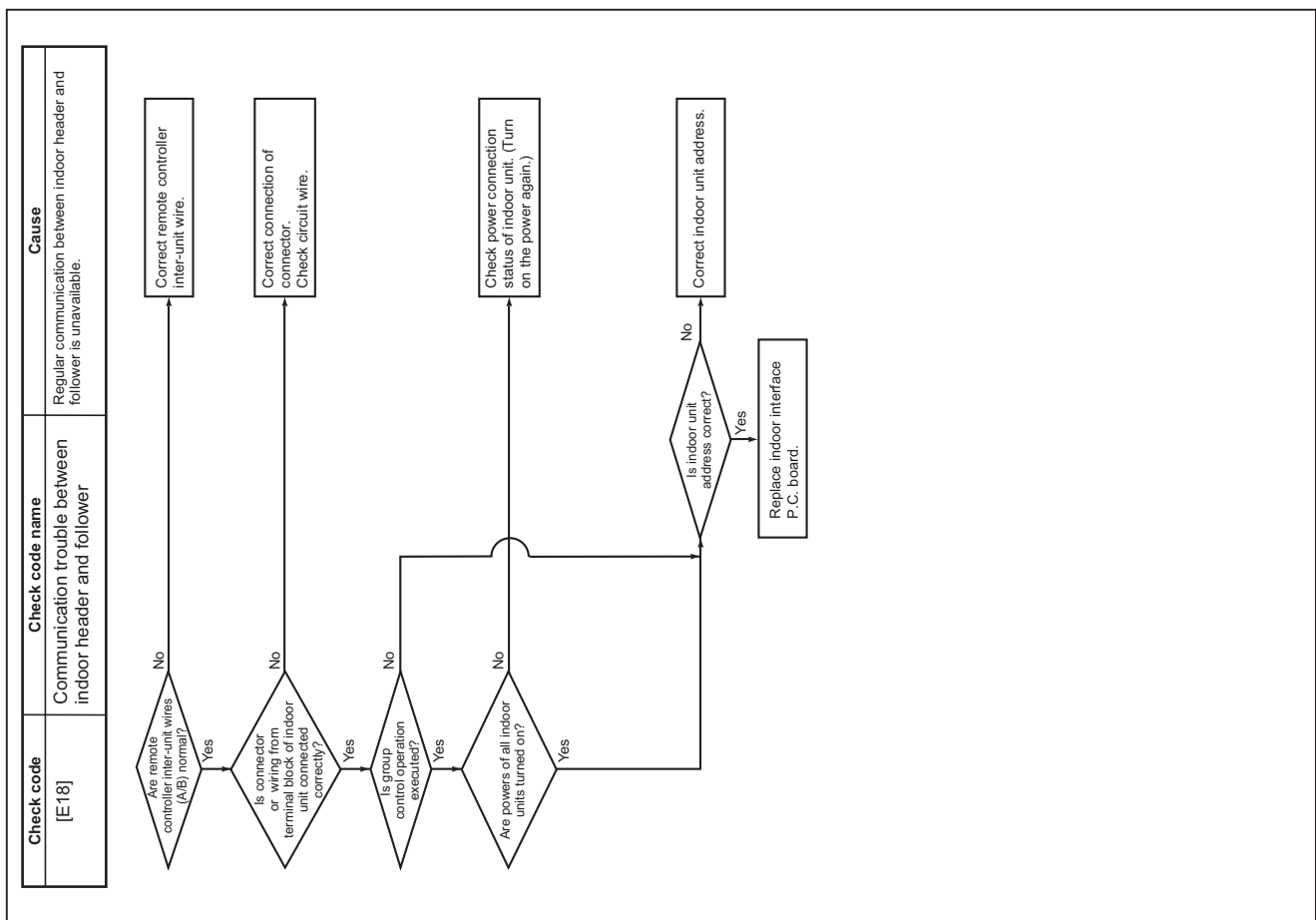




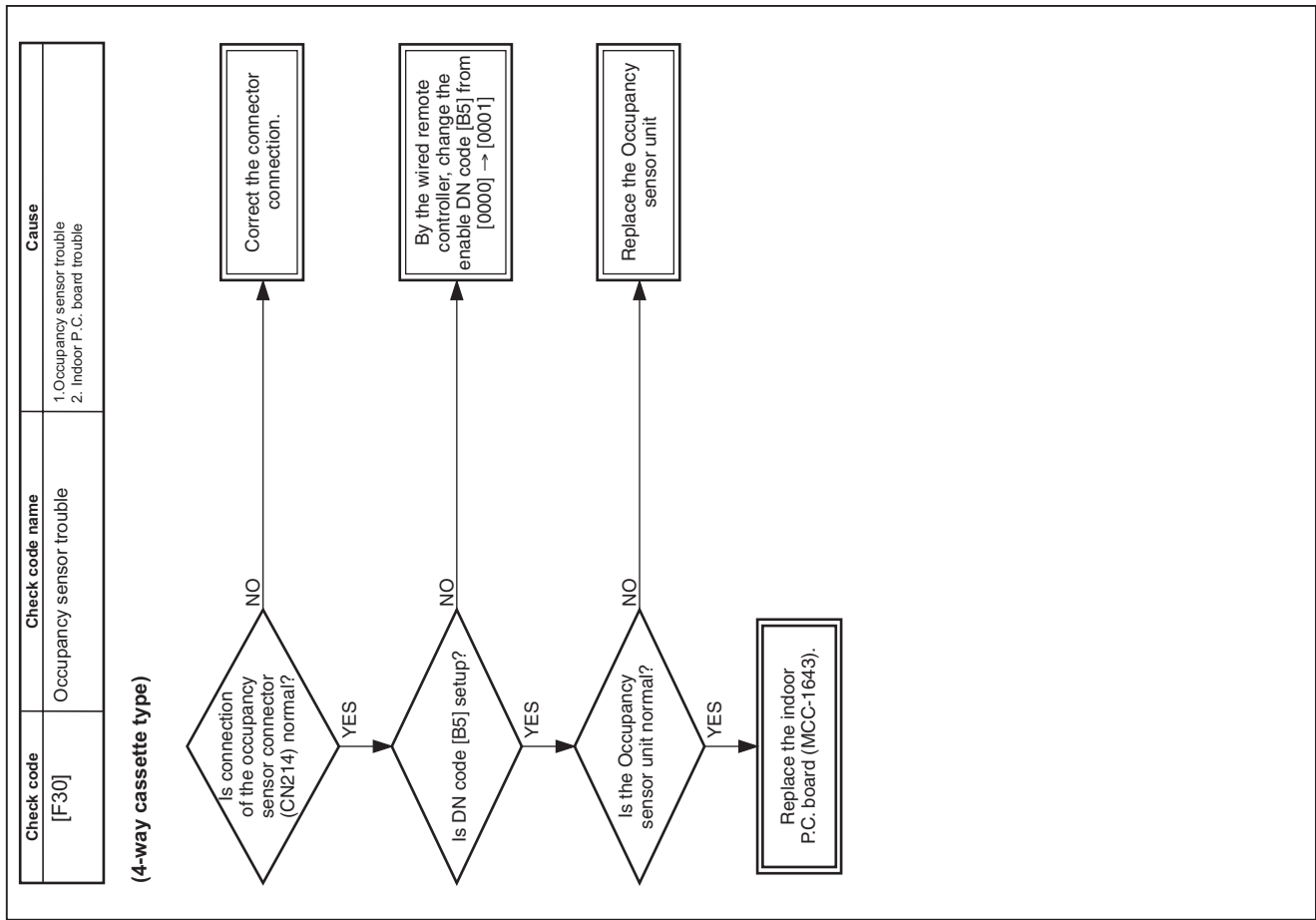
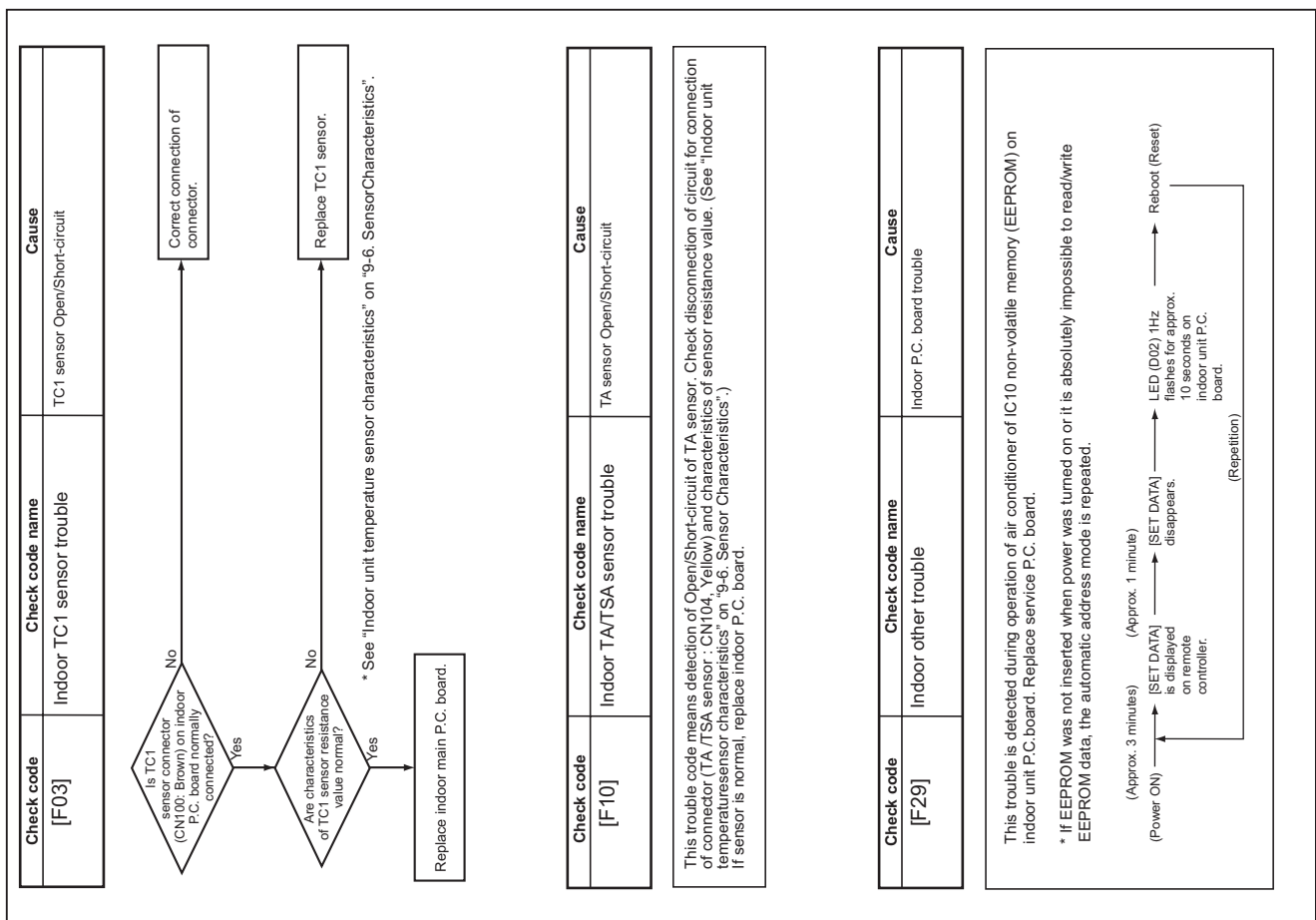




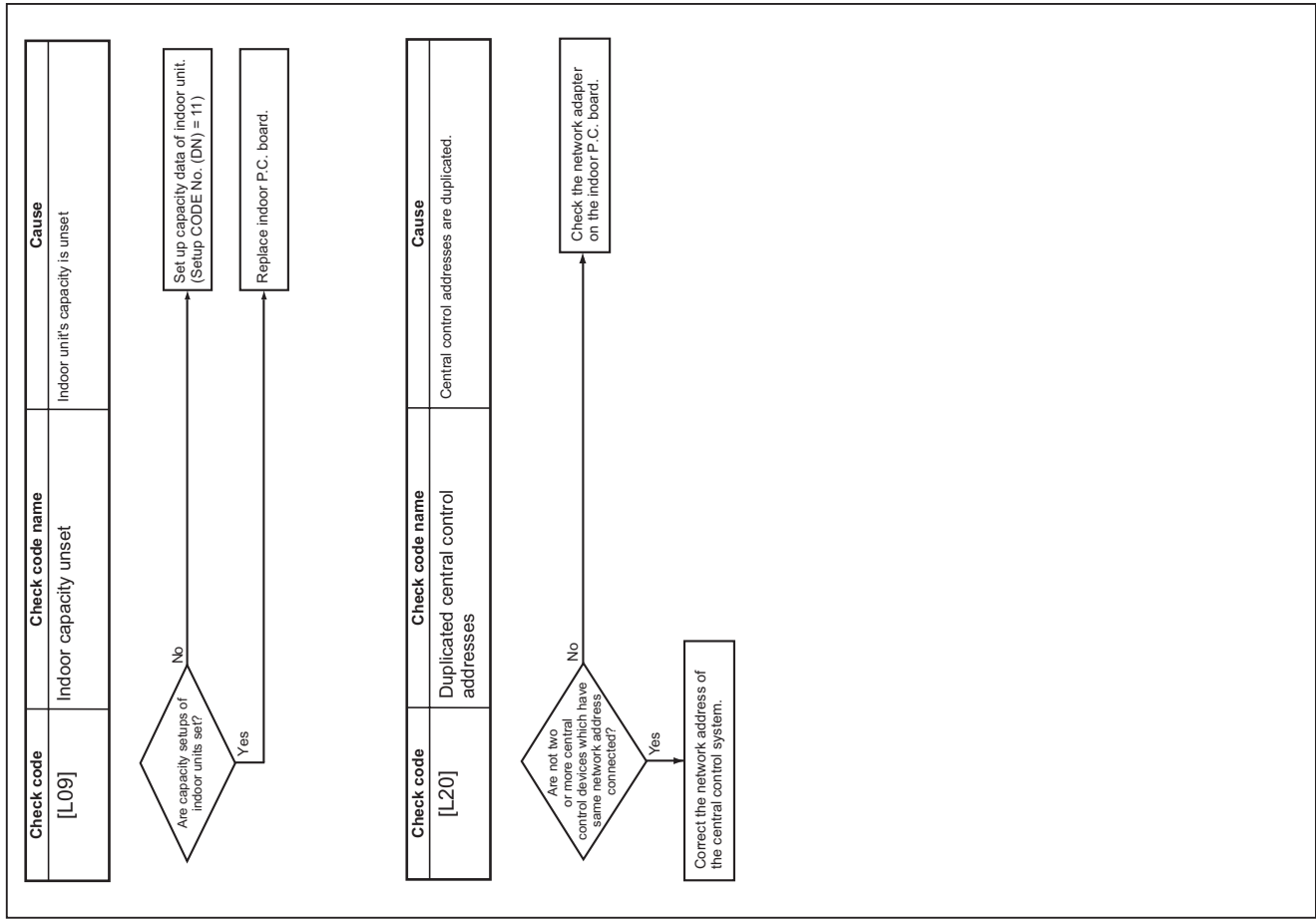
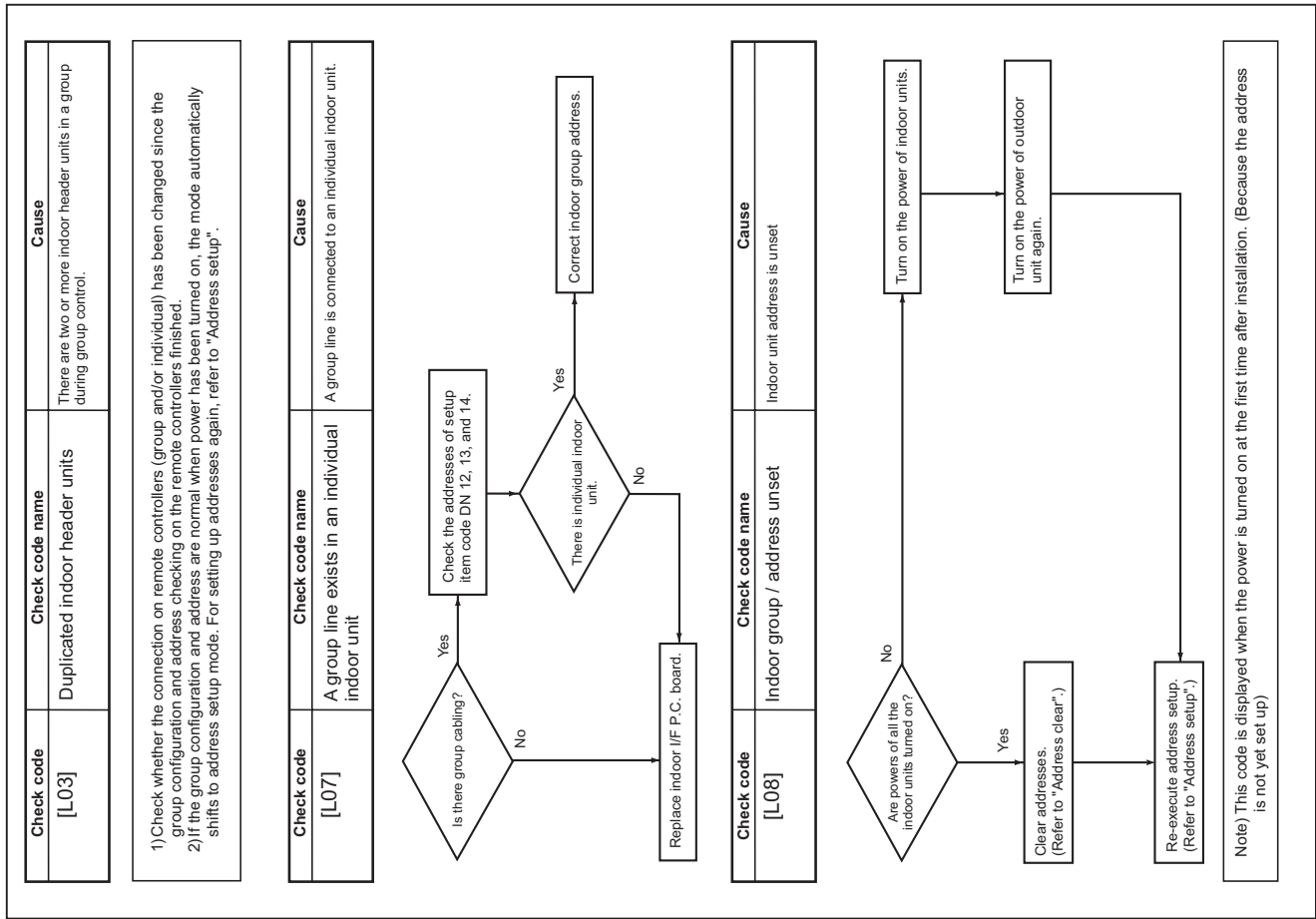




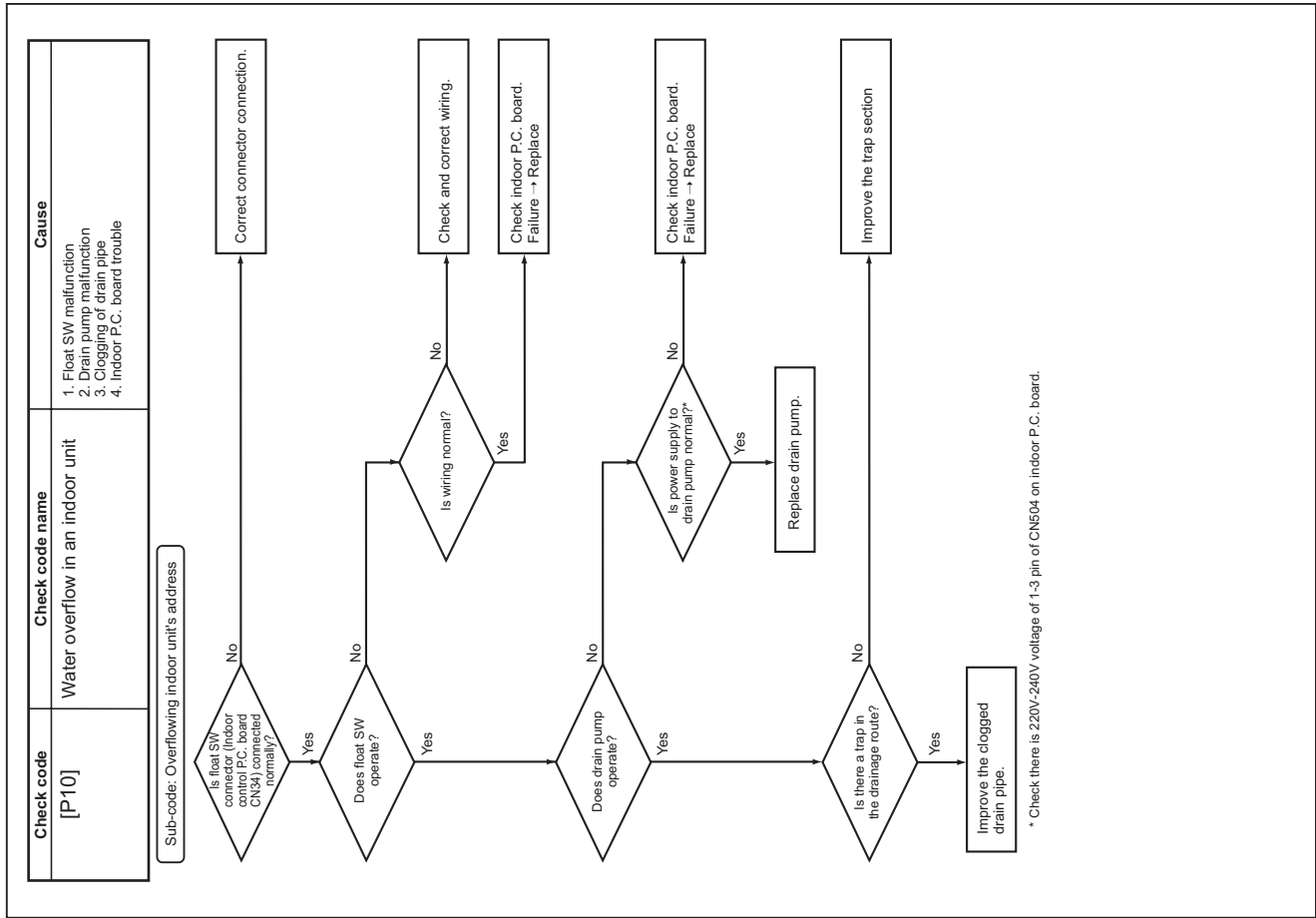
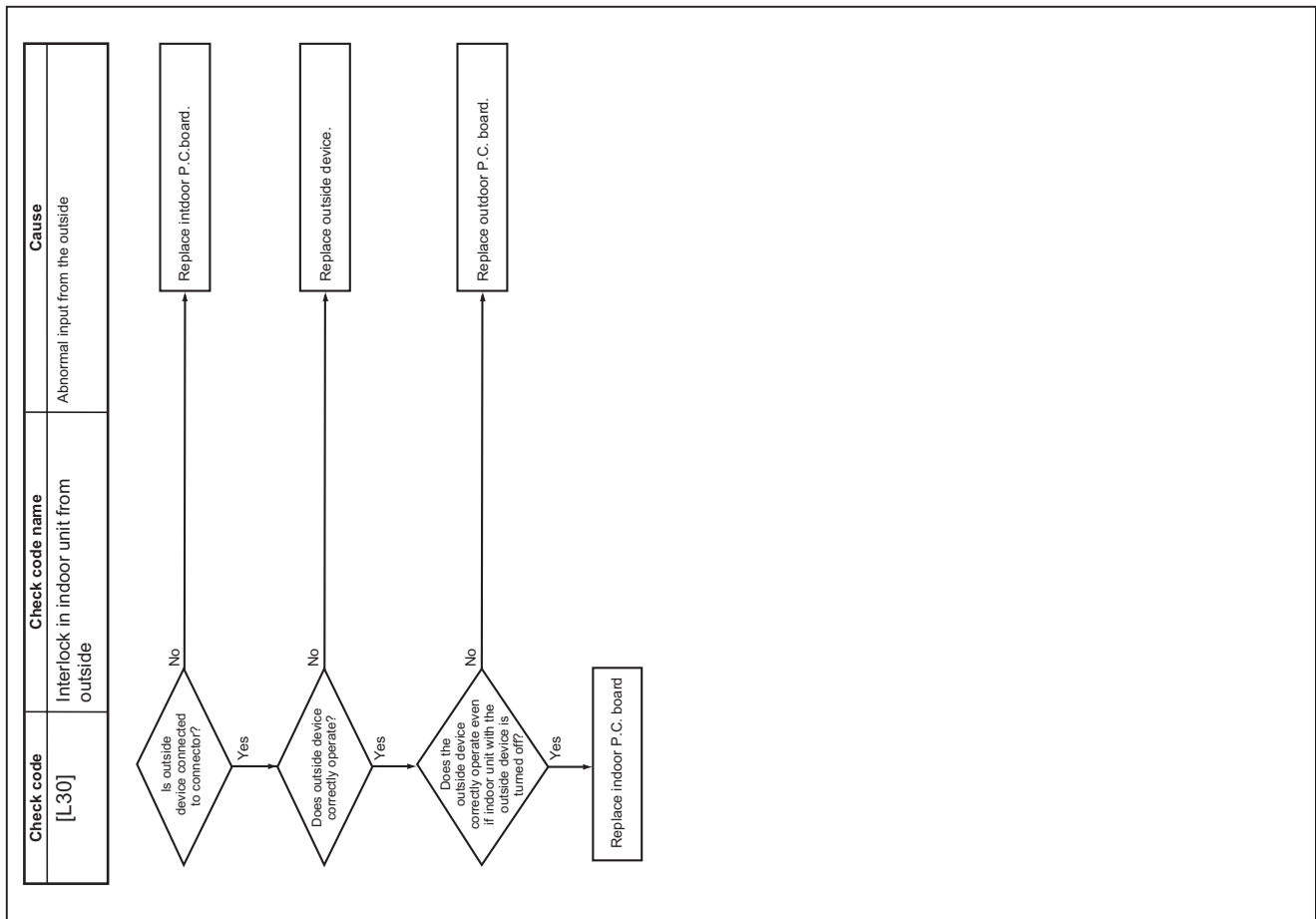




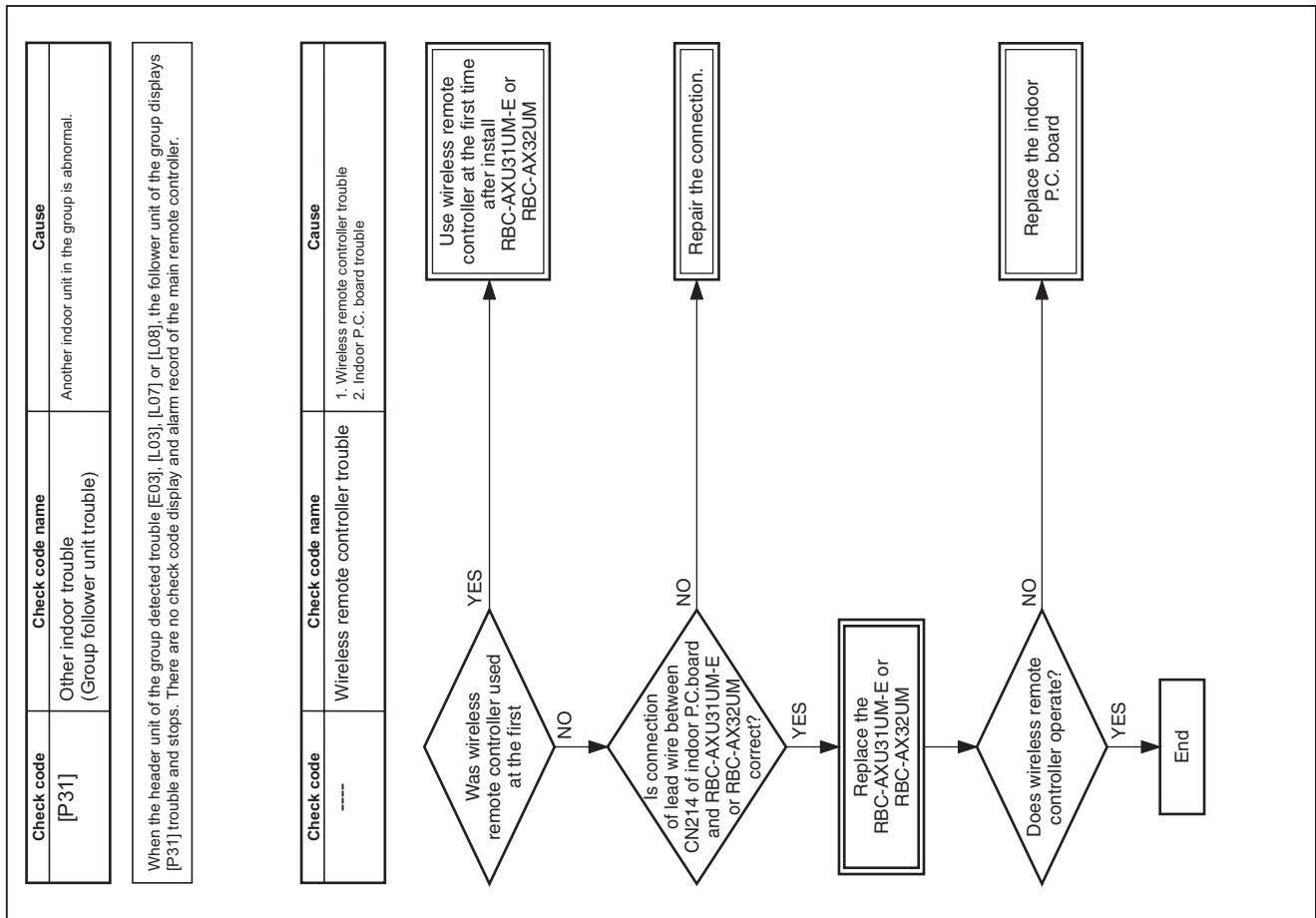
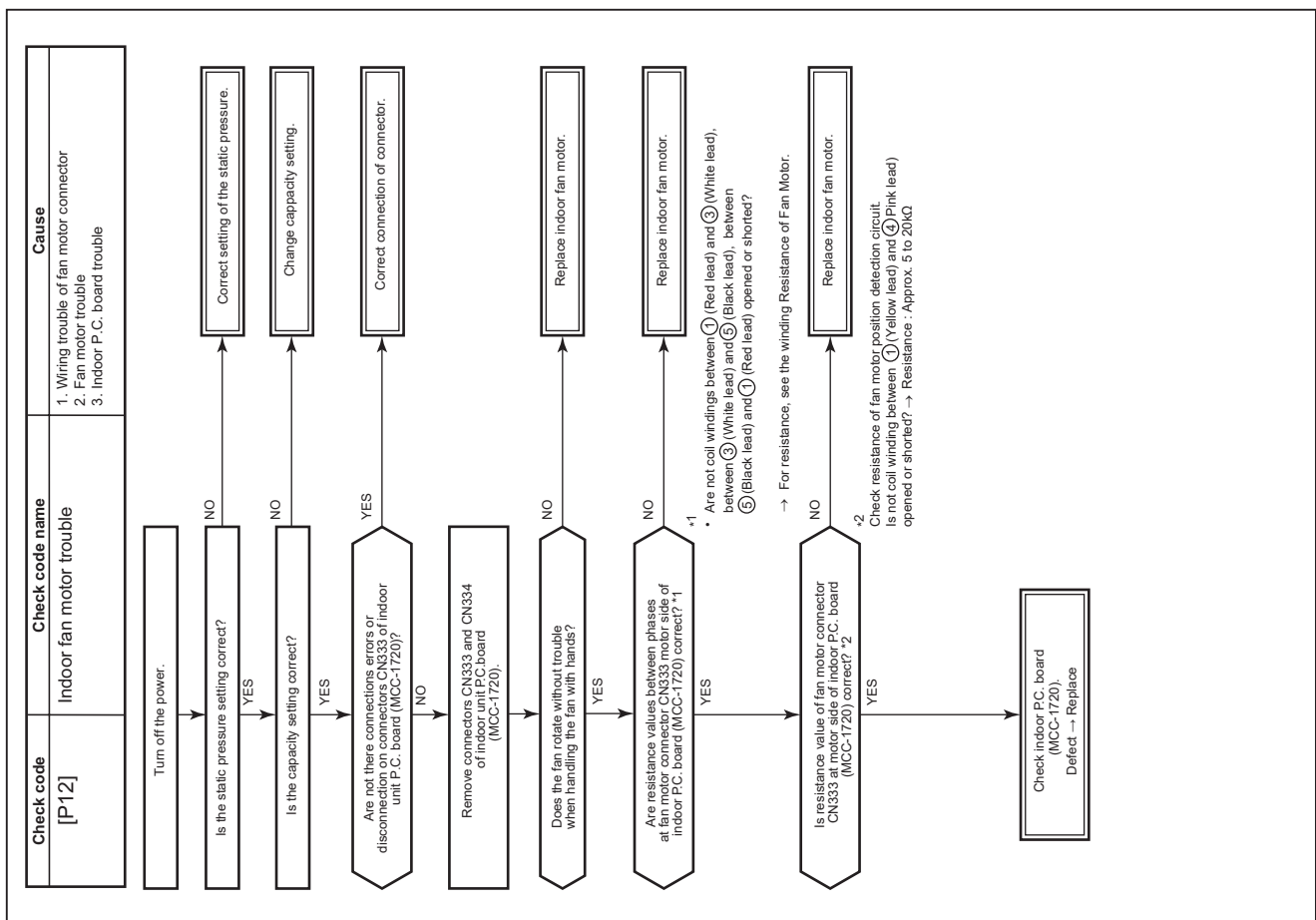




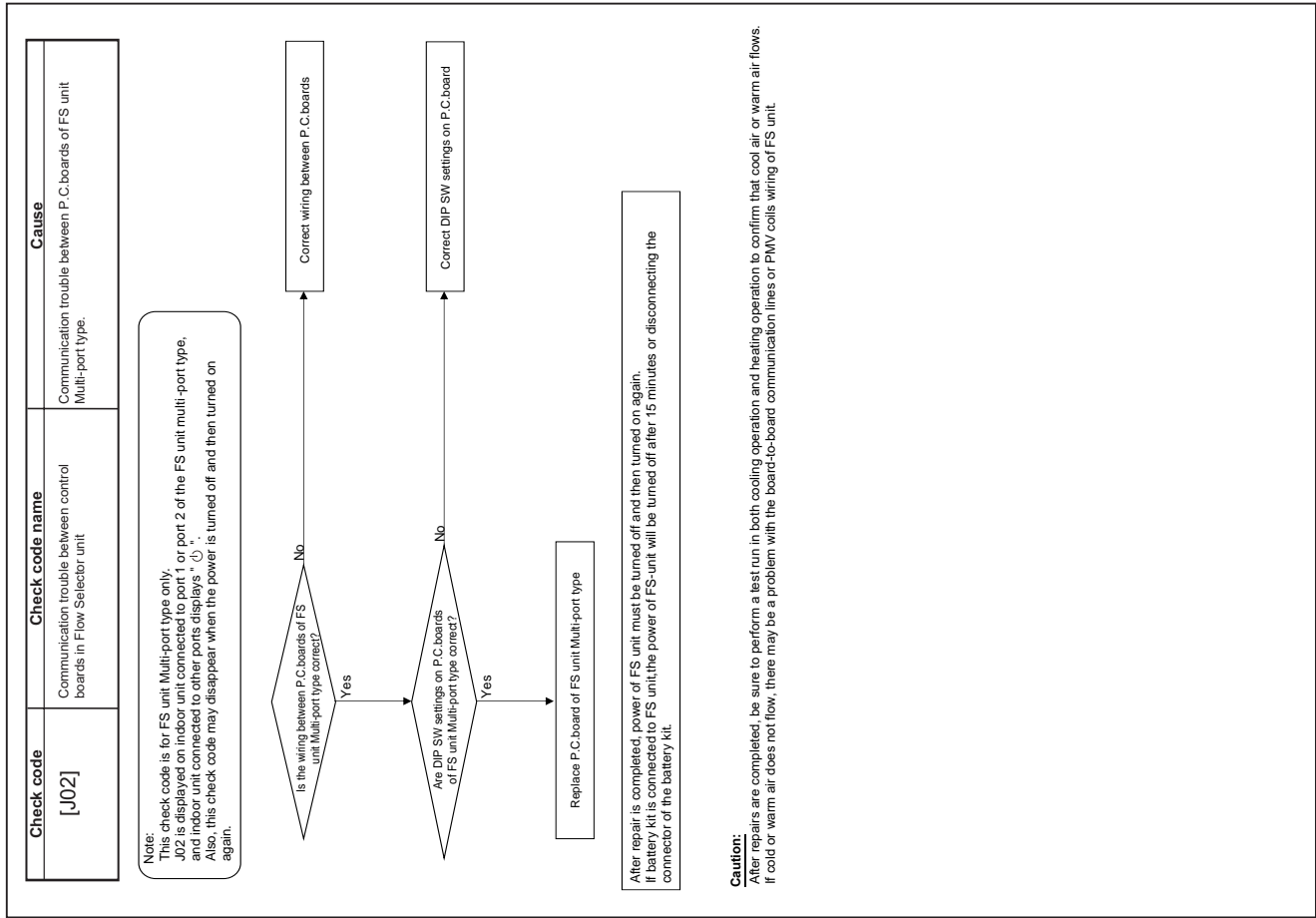
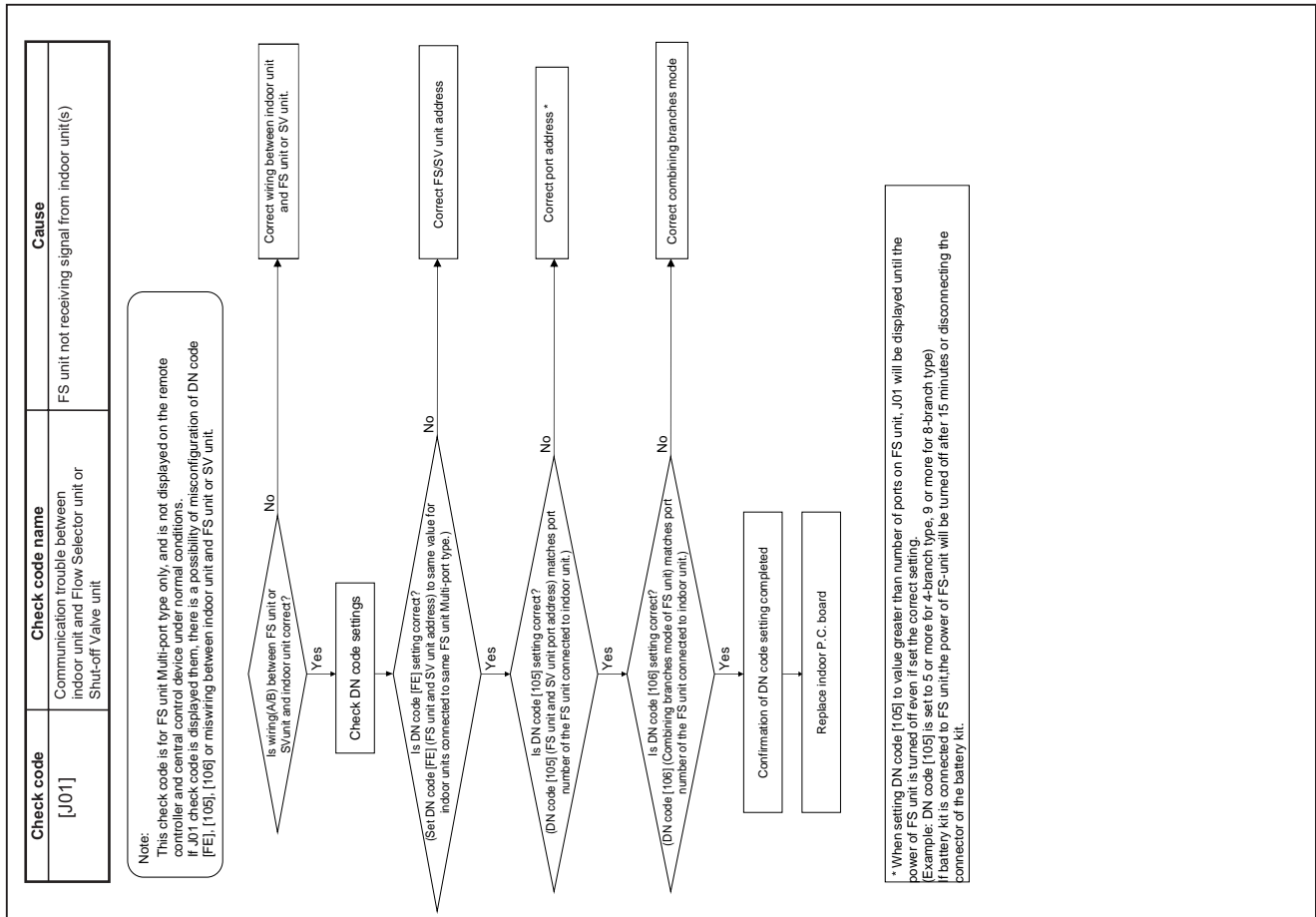




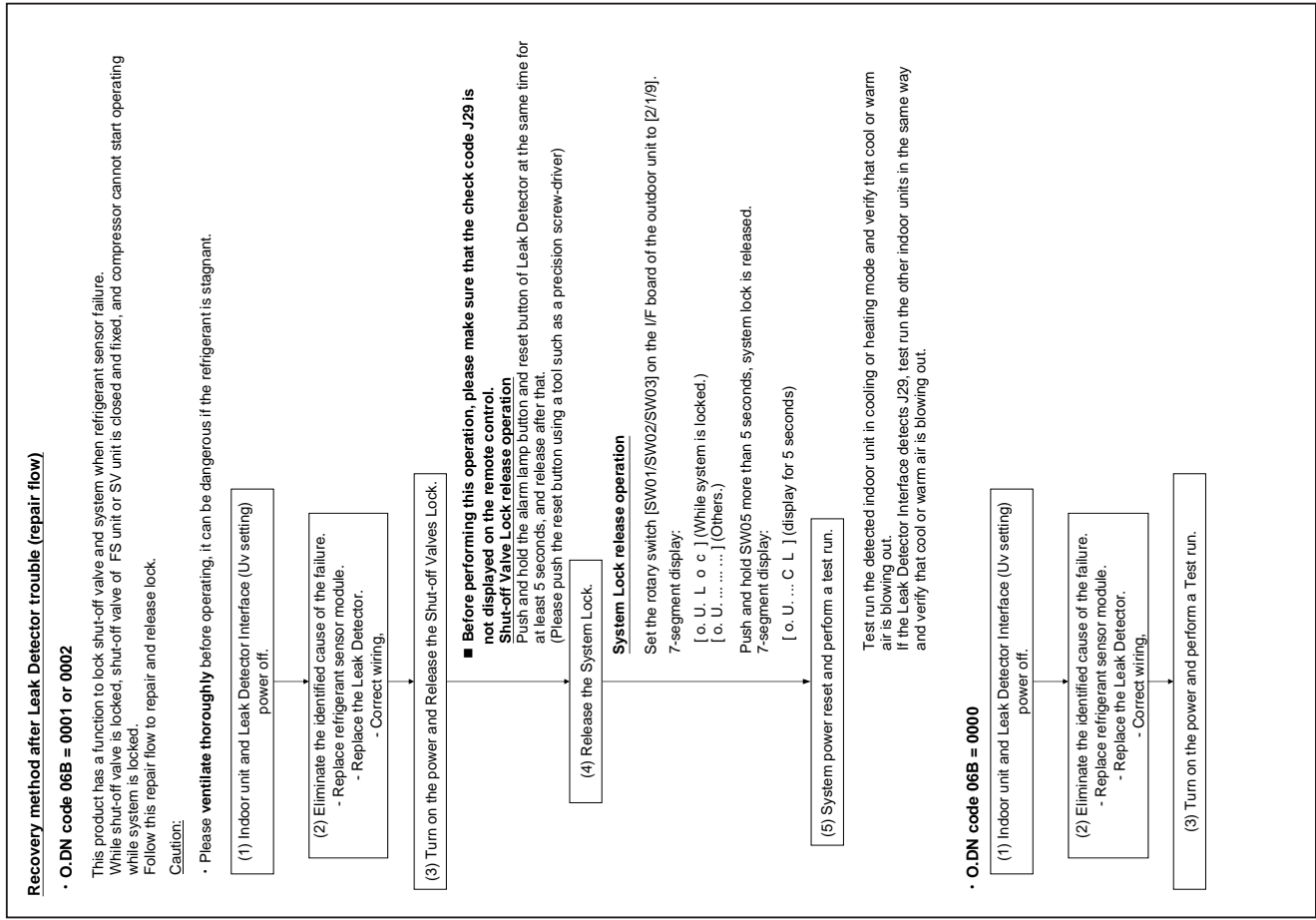
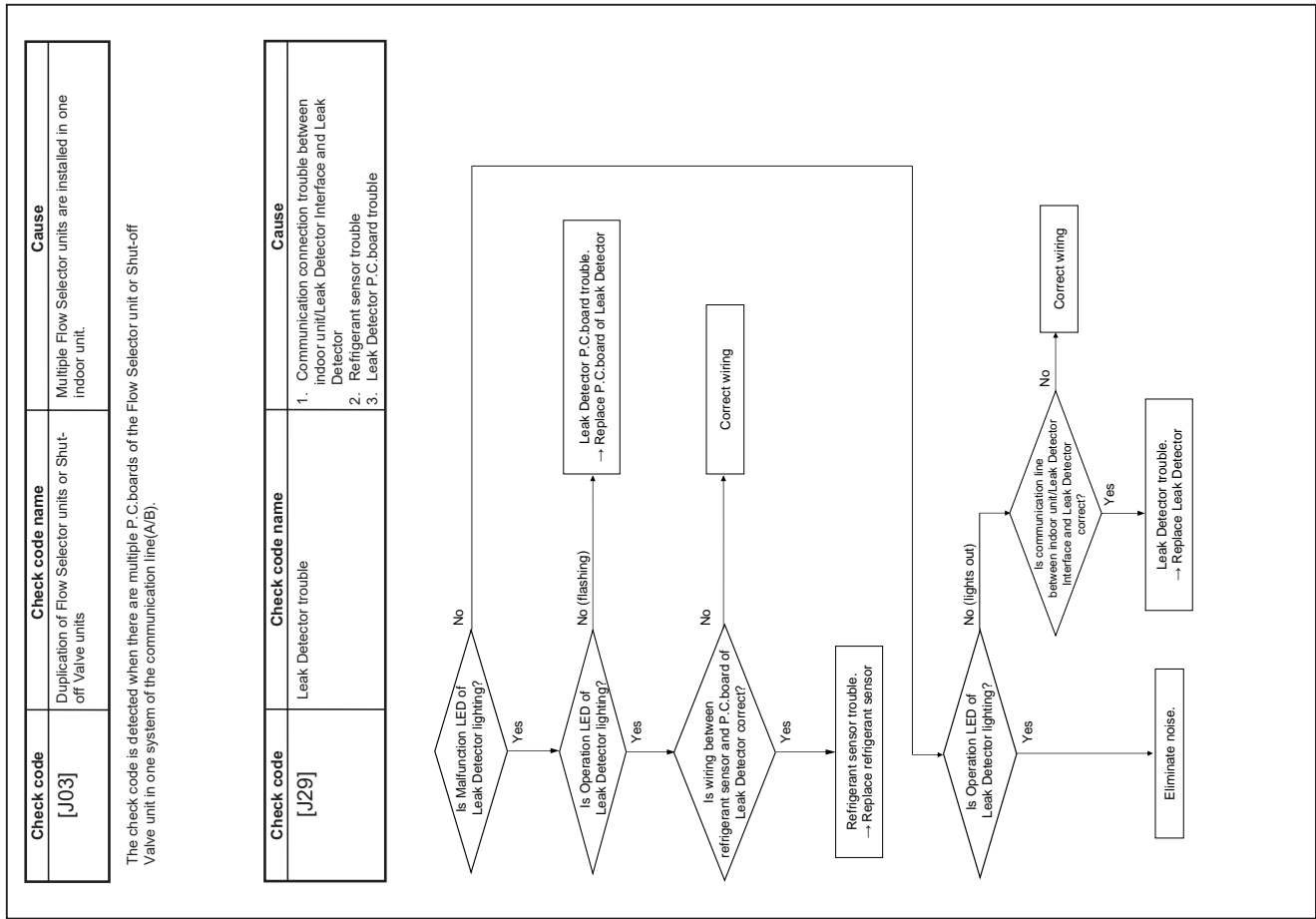




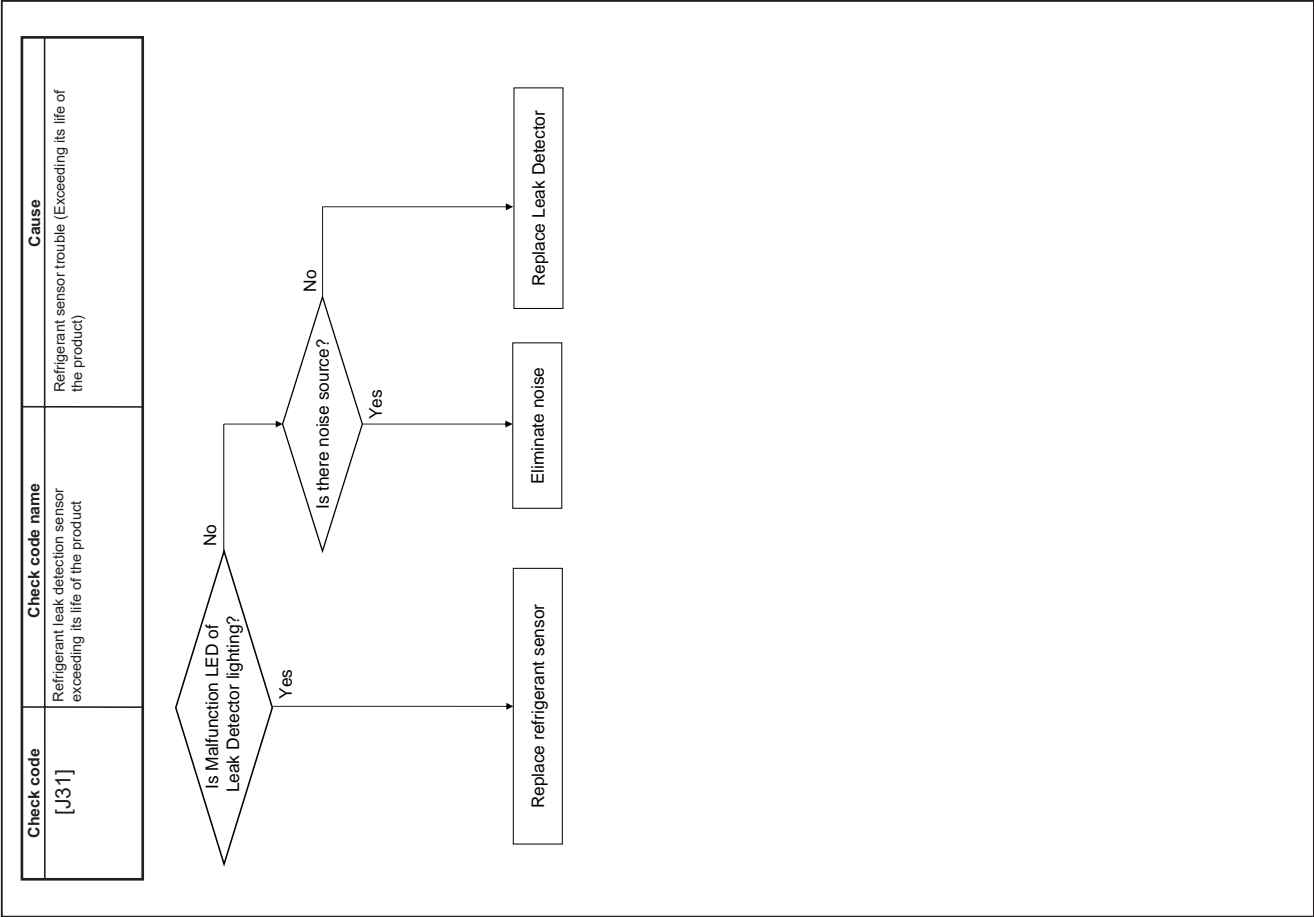








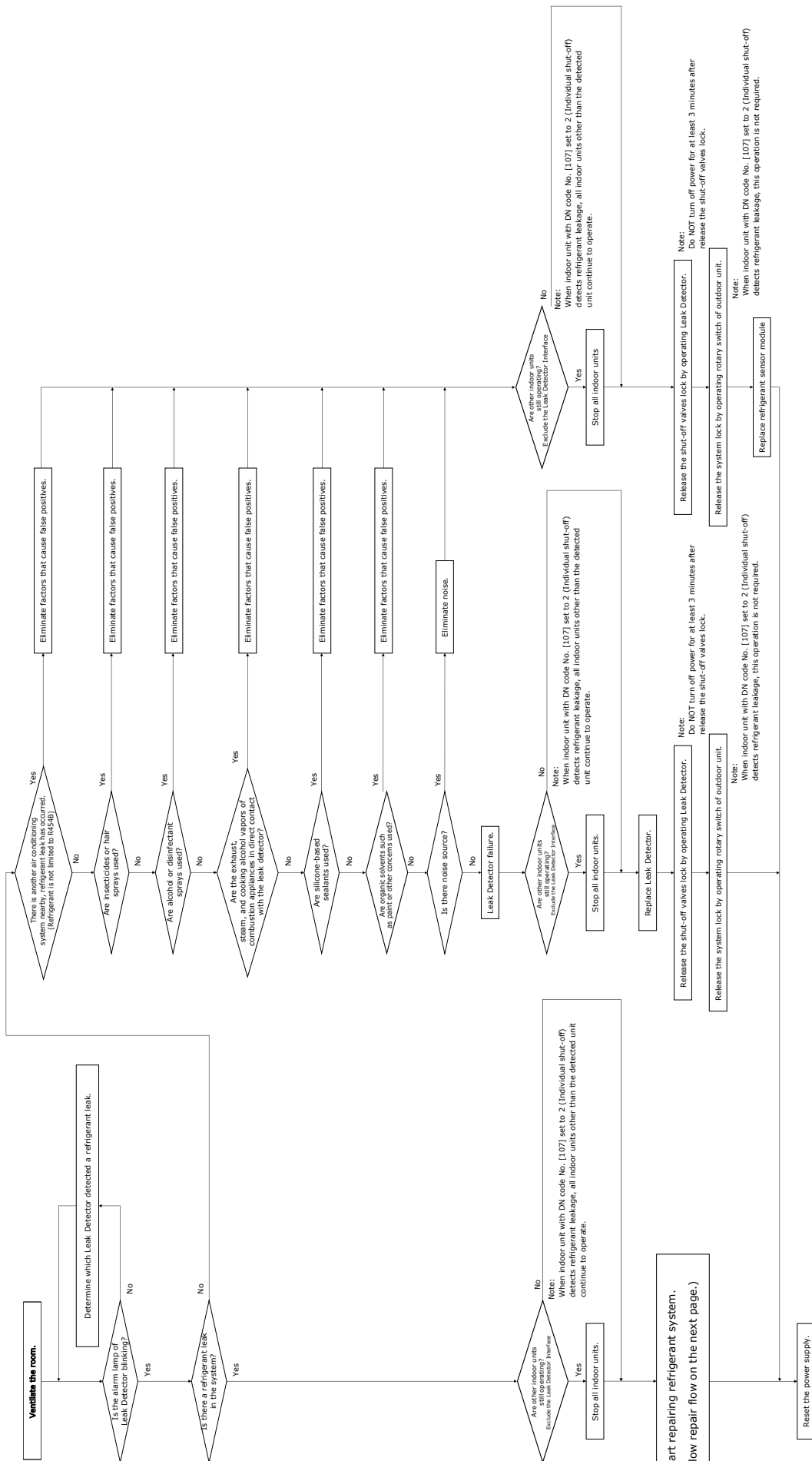






| Check code | Check code name            | Cause                         |
|------------|----------------------------|-------------------------------|
| [J30]      | Refrigerant leak detection | 1. Refrigerant leak detection |

**Caution:**  
Do NOT turn off power until the diagnosis is complete excluding when replacing the leak detector.





### Recovery method after refrigerant leakage detection (repair flow)

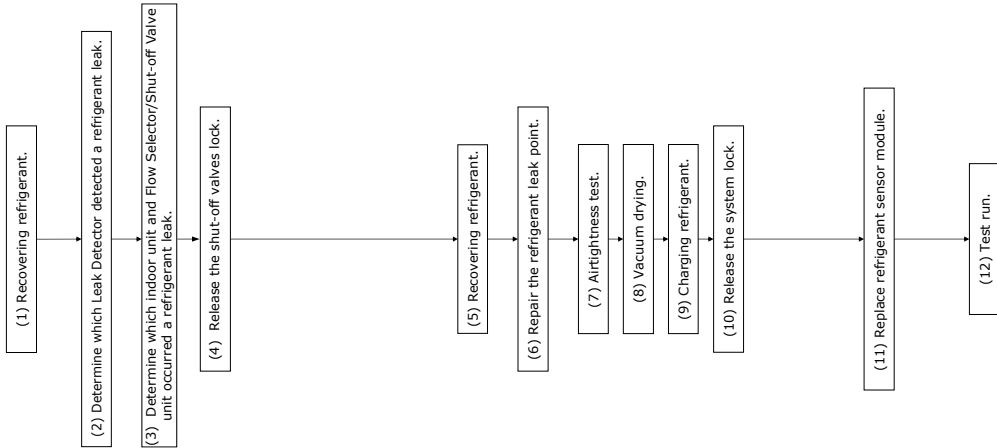
This product has a function to lock shut-off valve and system when refrigerant leakage is detected. While shut-off valve is locked, shut-off valve of FS unit or SV unit is closed and fixed, and compressor cannot start operating while system is locked. Follow this repair flow to repair and release lock.

#### Caution:

- Please **ventilate thoroughly** before operating, it can be dangerous if the refrigerant is stagnant.

#### Note:

- Start repairing with the system power turned ON.
- Check DN code No. [107] setting. (Leak Detector sounds again, and please stop it again refer to "8-11. System operation when the Leak Detector detects refrigerant leak.")
- Clarify the installation location of the Leak Detector through the Leak Detector Interface and Flow Selector/Shut-off Valve unit.



- (1) Recovering refrigerant.  
Refrigerant should be collected before release the shut-off valves lock described below.  
The refrigerant may leak again from the part where the refrigerant leaked, which may become dangerous.
- (2) Determine which Leak Detector detected a refrigerant leak.  
When Leak Detector detects a refrigerant leak, alarm lamp is blinking. (1 Hz)
- (3) Determine which indoor unit and Flow Selector/Shut-off Valve unit occurred a refrigerant leak.
- (4) Release the shut-off valves lock by operating Leak Detector. \*

#### With sufficient ventilation, release the shut-off valves lock.

Push and hold the alarm lamp button and reset button of Leak Detector at the same time for at least 5 seconds, and release after that. (Please push the reset button using a tool such as a precision screwdriver)

The following actions are performed:

- Leak Detector makes a sound of "beep, beep, beep, beeeeeep"
  - The shut-off valves that was locked will be released. (All shut-off valves lock in the system will be released within 3 minutes. **Do NOT turn off power until operation is completed.**)
- After release the shut-off valves lock, reset system power. When DN code [107] set to 1 or 3, the shut-off valve will not open until power is reset.

When a system power reset, Malfunction LED of Leak Detector will turn ON and Notice code is displayed on remote controller.

#### Caution:

After release the shut-off valves lock, refrigerant remaining downstream side of the shut-off valves may flow from leakage point. (Especially, when DN code [107] set to 3, some refrigerant remains.)  
When refrigerant leakage continues, close the shut-off valve connected to leak point. (Close PMV-L, PMV-S, and PMV-D).  
Refer to "7-7-7. Pulse Motor Valve (PMV) Forced Open/Close Function in FS unit and shut-off valve unit" for how to operate the shut-off valves.

- \* Perform this release operation even if the system is only connected to the indoor unit with the indoor unit DN code No. [107] set to 3 "Leak Detector only".
- \* The release operation should be performed on all Leak Detectors that detected refrigerant leakage.
- \* Perform this release operation on the Leak Detector connected to the Leak Detector Interface.

- (5) Recovering refrigerant. (Again)  
After release the shut-off valves lock, check refrigerant pressure. If pressure is rising, recover refrigerant again.
- (6) Repair the refrigerant leak point.  
Turn OFF system power and repair leakage point, or replace indoor unit. After repair is completed, turn ON system power.

(7) Airtightness test.

(8) Vacuum drying.

(9) Charging refrigerant

(10) Release the system lock.

Be sure to perform this operation after release the shut-off valves lock.  
Set the rotary switch [SW01/SW02/SW03] on the I/F board of the outdoor unit to [2/1/9].  
7-segment display: [ o. U. L o c ] (While system is locked.)

[ o. U. ... .. ] (Others.)

Push and hold SW05 more than 5 seconds, system lock is released.

7-segment display: [ o. U. ... C L ] (display for 5 seconds)

(11) Replace refrigerant sensor module in Leak Detector.

After a sufficient amount of ventilation, replace the refrigerant sensor module.

Refrigerant sensor will become unusable once it has been exposed to refrigerant. (Not limited to R454B)

If more than one Leak Detector detects a refrigerant leak, replace refrigerant sensor module of all detected

Leak Detectors.

After replacing refrigerant sensor module, confirm that Malfunction LED is turned off and Notice code is cleared.

(12) After completing all the work, system power reset and start test run.



Remarks: How to manual system lock.

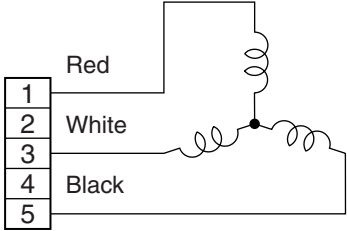
This product has a function to manual system lock.

Set the rotary switch [SW01/SW02/SW03] on the I/F board of the outdoor unit to [2/1/9].

Push and hold SW04 more than 5 seconds, system is locked.

To release manual system lock, push and hold SW05 more than 5 seconds.



| Part name  | Checking procedure   |          |                  |           |                       |             |                       |           |                       |          |                  |           |                       |             |                       |           |                       |
|--|--|----------|------------------|-----------|-----------------------|-------------|-----------------------|-----------|-----------------------|----------|------------------|-----------|-----------------------|-------------|-----------------------|-----------|-----------------------|
| Concealed Duct type Fan motor<br><br>WDF-340W150AA1<br>MMD-UB0071BHP-UL<br>UB0091BHP-UL<br><br>WDF-340W150AA<br>MMD-UB0121BHP-UL<br>UB0151BHP-UL<br>UB0181BHP-UL<br><br>LDF-340W250A<br>MMD-UB0211BHP-UL<br>UB0241BHP-UL<br>UB0301BHP-UL<br>UB0361BHP-UL<br>UB0421BHP-UL<br>UB0481BHP-UL<br>UB0541BHP-UL | <p>Measure the resistance value of each winding by using the tester.</p> <p>Fan motor inside wiring diagram</p>  <p>WDF-340W150AA, AA1</p> <table> <tr> <th>Position</th><th>Resistance value</th></tr> <tr> <td>Black–Red</td><td><math>14.8 \pm 1.5 \Omega</math></td></tr> <tr> <td>Black–White</td><td><math>14.8 \pm 1.5 \Omega</math></td></tr> <tr> <td>Red–White</td><td><math>14.8 \pm 1.5 \Omega</math></td></tr> </table> <p>LDF-340W250A</p> <table> <tr> <th>Position</th><th>Resistance value</th></tr> <tr> <td>Black–Red</td><td><math>12.4 \pm 1.2 \Omega</math></td></tr> <tr> <td>Black–White</td><td><math>12.4 \pm 1.2 \Omega</math></td></tr> <tr> <td>Red–White</td><td><math>12.4 \pm 1.2 \Omega</math></td></tr> </table> <p>Under 20 °C</p> | Position | Resistance value | Black–Red | $14.8 \pm 1.5 \Omega$ | Black–White | $14.8 \pm 1.5 \Omega$ | Red–White | $14.8 \pm 1.5 \Omega$ | Position | Resistance value | Black–Red | $12.4 \pm 1.2 \Omega$ | Black–White | $12.4 \pm 1.2 \Omega$ | Red–White | $12.4 \pm 1.2 \Omega$ |
| Position   | Resistance value   |          |                  |           |                       |             |                       |           |                       |          |                  |           |                       |             |                       |           |                       |
| Black–Red  | $14.8 \pm 1.5 \Omega$  |          |                  |           |                       |             |                       |           |                       |          |                  |           |                       |             |                       |           |                       |
| Black–White  | $14.8 \pm 1.5 \Omega$  |          |                  |           |                       |             |                       |           |                       |          |                  |           |                       |             |                       |           |                       |
| Red–White  | $14.8 \pm 1.5 \Omega$  |          |                  |           |                       |             |                       |           |                       |          |                  |           |                       |             |                       |           |                       |
| Position   | Resistance value   |          |                  |           |                       |             |                       |           |                       |          |                  |           |                       |             |                       |           |                       |
| Black–Red  | $12.4 \pm 1.2 \Omega$  |          |                  |           |                       |             |                       |           |                       |          |                  |           |                       |             |                       |           |                       |
| Black–White  | $12.4 \pm 1.2 \Omega$  |          |                  |           |                       |             |                       |           |                       |          |                  |           |                       |             |                       |           |                       |
| Red–White  | $12.4 \pm 1.2 \Omega$  |          |                  |           |                       |             |                       |           |                       |          |                  |           |                       |             |                       |           |                       |

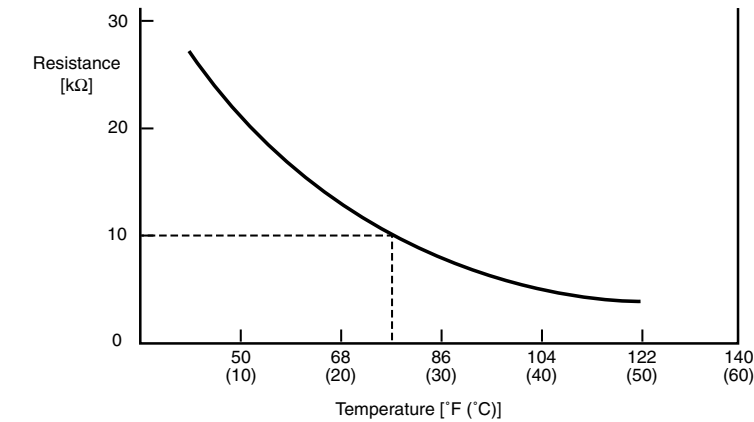


# 11-6. Sensor characteristics

## Indoor unit

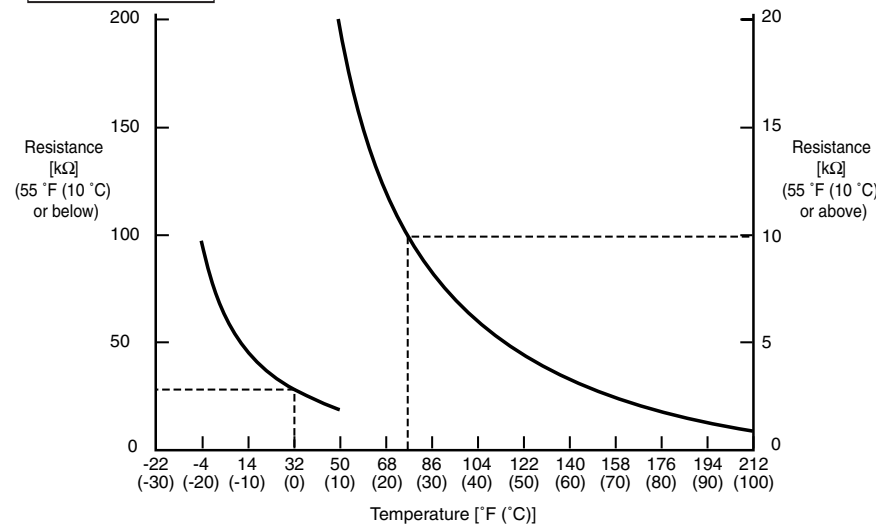
### ▼ Temperature sensor characteristics

Indoor TA sensor



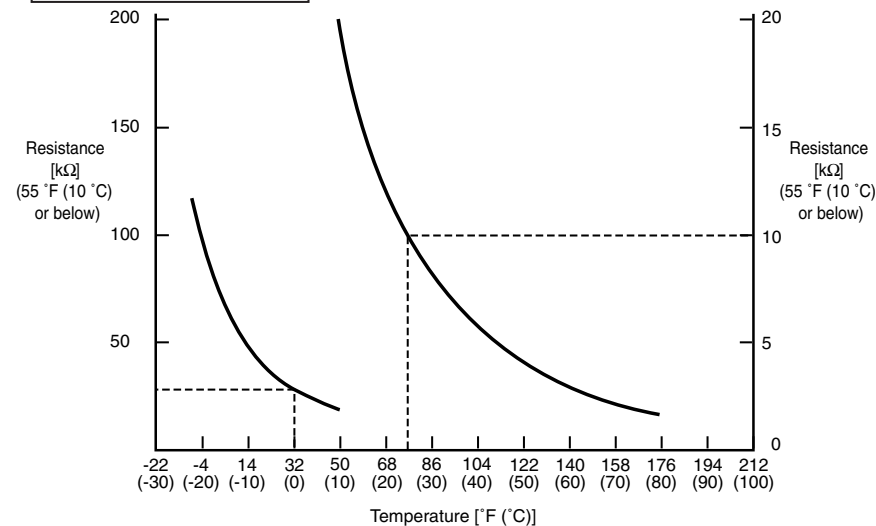
| Temperature<br>[°F (°C)] | Resistance<br>[kΩ] |
|--------------------------|--------------------|
| 32 (0)                   | 33.9               |
| 41 (5)                   | 26.1               |
| 50 (10)                  | 20.3               |
| 59 (15)                  | 15.9               |
| 68 (20)                  | 12.6               |
| 77 (25)                  | 10.0               |
| 86 (30)                  | 8.0                |
| 95 (35)                  | 6.4                |
| 104 (40)                 | 5.2                |
| 113 (45)                 | 4.2                |
| 122 (50)                 | 3.5                |
| 131 (55)                 | 2.8                |
| 140 (60)                 | 2.4                |

Indoor TC1 sensor



| Temperature<br>[°F (°C)] | Resistance<br>[kΩ] |
|--------------------------|--------------------|
| -4 (-20)                 | 99.9               |
| 5 (-15)                  | 74.1               |
| 14 (-10)                 | 55.6               |
| 23 (-5)                  | 42.2               |
| 32 (0)                   | 32.8               |
| 41 (5)                   | 25.4               |
| 50 (10)                  | 19.8               |
| 59 (15)                  | 15.6               |
| 68 (20)                  | 12.4               |
| 77 (25)                  | 10.0               |
| 86 (30)                  | 8.1                |
| 95 (35)                  | 6.5                |
| 104 (40)                 | 5.3                |
| 113 (45)                 | 4.4                |
| 122 (50)                 | 3.6                |
| 131 (55)                 | 3.0                |
| 140 (60)                 | 2.5                |
| 149 (65)                 | 2.1                |
| 158 (70)                 | 1.8                |
| 167 (75)                 | 1.5                |
| 176 (80)                 | 1.3                |
| 185 (85)                 | 1.1                |
| 194 (90)                 | 1.0                |
| 203 (95)                 | 0.8                |
| 212 (100)                | 0.7                |

Indoor TC2 and TCJ sensors



| Temperature<br>[°F (°C)] | Resistance<br>[kΩ] |
|--------------------------|--------------------|
| -4 (-20)                 | 115.2              |
| 5 (-15)                  | 84.2               |
| 14 (-10)                 | 62.3               |
| 23 (-5)                  | 46.6               |
| 32 (0)                   | 35.2               |
| 41 (5)                   | 26.9               |
| 50 (10)                  | 20.7               |
| 59 (15)                  | 16.1               |
| 68 (20)                  | 12.6               |
| 77 (25)                  | 10.0               |
| 86 (30)                  | 8.0                |
| 95 (35)                  | 6.4                |
| 104 (40)                 | 5.2                |
| 113 (45)                 | 4.2                |
| 122 (50)                 | 3.5                |
| 131 (55)                 | 2.8                |
| 140 (60)                 | 2.4                |
| 149 (65)                 | 2.0                |
| 158 (70)                 | 1.6                |
| 167 (75)                 | 1.4                |
| 176 (80)                 | 1.2                |



## 12. REPLACEMENT OF SERVICE P.C. BOARD

### Replacement of P.C. Board for Indoor Unit Servicing

<Models>

|                      |
|----------------------|
| MMD-UB***1BHP Series |
|----------------------|

<Note : when replacing the P.C. board for indoor unit servicing>

The nonvolatile memory (hereafter called EEPROM, IC503) on the indoor unit P.C. board before replacement includes the model specific type information and capacity codes as the factory-set value and the important setting data which have been automatically or manually set when the indoor unit is installed, such as system/indoor/group addresses, high ceiling select setting, etc. When replacing the P.C. board for indoor unit servicing, follow the procedures below.

After replacement completes, confirm whether the settings are correct by checking the indoor unit No., Group header unit/follower unit settings and perform the cooling cycle confirmation through the trial operation.

<Replacement procedures>

#### ■ Case 1

Before replacement, the indoor unit can be turned on and the setting data can be read out by wired remote control operation.

EEPROM data read out [1]



Replacement of P.C. board for Indoor unit servicing and power on [2]



Writing the read out EEPROM data [3]



Power reset(for all indoor units connected to the remote control when the group operation control is performed.)

#### ■ Case 2

The EEPROM before replacement is defective and the setting data cannot be read out.

Writing the setting data to EEPROM, such as high ceiling installation setting and optional connection setting, etc., based on the customer information. [3]





Power reset (for all indoor units connected to the remote control when the group operation control is performed.)


#### [1] Setting data read out from EEPROM

The setting data modified on the site, other than factory-set value, stored in the EEPROM shall be read out.


Step 1 Push [  Menu] to open the "Menu"

Step 2 Push and hold [  Menu] and [  ] at the same time to open "Field setting menu".  
(Push and hold 4 seconds.)




Step 3 Push [  ] and [  ] to select " DN setting", and then push [  Set / Fix].

Step 4 Select "Indoor unit", and the push [  Set / Fix].



Step 5 For group operation, all connected room in the system are displayed.

Select the unit whose EEPROM contents you want to read and push [  Set / Fix].

⇒ The fan of the selected indoor unit operates and the flap swings.

1. Push [  ] to black highlight the code (DN), and then push [  ] and [  ] to set the code No. to 1.

(This is the setting for the filter sign lighting time.) at this time, be sure to write down the setting data displayed.

2. Change the CODE No. (DN) by pushing  /  buttons.

Similarly, be sure to write down the setting data displayed.

3. Repeat the step 2 to set the other setting in the same way and write down the setting data in the manual that comes with the P.C board.



CODE No.required at least

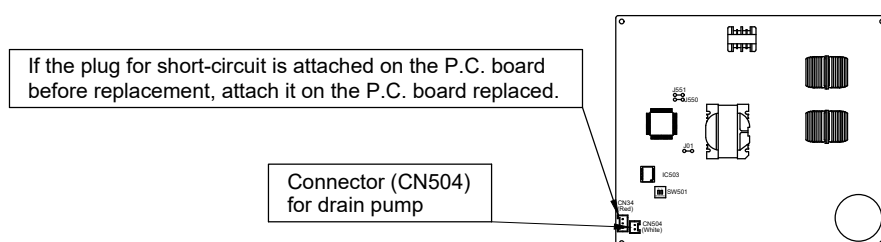
| DN  | Contents                           |
|-----|------------------------------------|
| 10  | Type                               |
| 11  | Indoor unit capacity               |
| 12  | System address                     |
| 13  | Indoor unit address                |
| 14  | Group address                      |
| FC  | Communication protocol             |
| 1FC | Indoor Unit terminating resistance |

1. The CODE No. for the Indoor unit type and Indoor unit capacity are required to set the rotation number setting of the fan.
2. If the system/indoor/group addresses are different from those before replacement, the auto-address setting mode starts and the manual resetting may be required again.  
(when the multiple units group operation including twin system.)

## [2] P.C. Board for indoor unit servicing replacement procedures

Step 1 Replace the P.C. board to the P.C. board for indoor unit servicing.

At this time, perform the same setting of the jumper wire(J01, J550, J551) setting(cut),switch SW501 (short-circuit) connector CN34 as the setting of the P.C. board before replacement.



Step 2 It is necessary to set Indoor unit to be exchanged : Remote controller = 1:1

Based upon the system configuration, turn on power of the indoor unit with one of the following items.

1) Single (Individual) operation

Turn on power of the indoor units and proceed to [3].

2) Group operation

A) In case that power of the exchanged indoor unit only can be turned on

Turn on power of the exchanged indoor unit only and proceed to [3].

B) In case that power of the indoor units cannot be turned on individually (Case 1)

a) Remove temporarily the group wire connected to the terminal blocks A and B of the exchanged indoor unit.

b) After connecting the remote controller wire only to the removed terminal block, turn on power of the indoor units and proceed to [3].

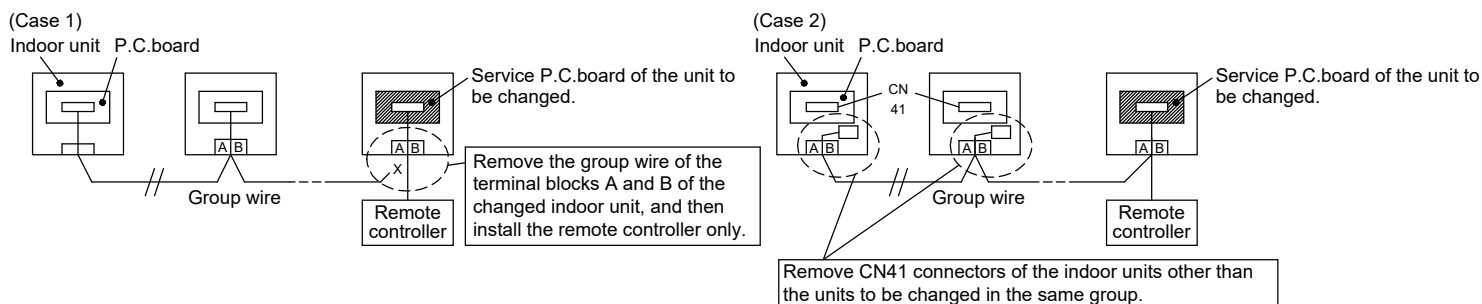
When the above methods cannot be used, follow to the two cases below.

C) In case that power of the indoor units cannot be turned in individually (Case 2)

a) Remove all CN41 connectors of the indoor units in the same group except those of the exchanged indoor unit.

b) Turn on power of the indoor units and proceed to [3].































After [3] operation has finished, be sure to return the temporarily removed group wire or CN41 connector to the original connection.

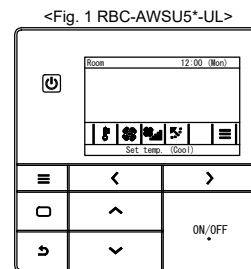




### [3] Writing the setting data to EEPROM

(The settings stored in the EEPROM of the P.C. board for indoor unit servicing are the factory-set values.)

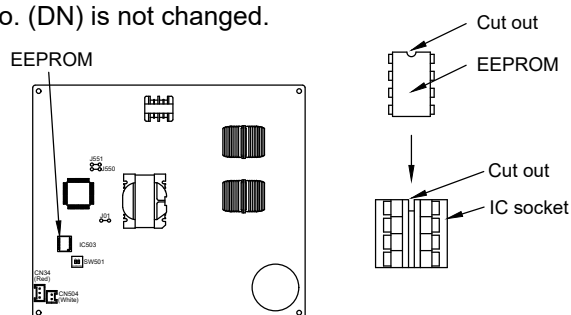
- Step 1 Push [  Menu] to open the "Menu"
- Step 2 Push and hold [  Menu] and [  ] at the same time to open "Field setting menu".  
(Push and hold 4 seconds.)
- Step 3 Push [  ] and [  ] to select " DN setting", and then push [  Set / Fix].
- Step 4 Select "Indoor unit", and the push [  Set / Fix].
- Step 5 For group operation, all connected room in the system are displayed.  
Select the unit whose EEPROM contents you want to read and push [  Set / Fix].  
⇒ The fan of the selected indoor unit operates and the flap swings.
- Step 6 Push [  ] to black highlight the code (DN), and then push [  ] and [  ] to set the code  
(Set the indoor unit type and capacity)  
The factory-set values shall be written to the EEPROM by changing the type and capacity.
1. Set the CODE No. (DN) to 10 (without change)
  2. Push [  ] to black highlight the data, and the push [  ] and [  ] to set the type.  
(Refer to Type DN code "10".)
  3. After finishing setting the data of the code (DN), push [  Set / Fix]  
⇒ "Continues ?" is displayed.
  4. To set the data of other codes (DN), push [  Set / Fix]
  5. Push [  ] to black highlight the code (DN), and then push [  ] and [  ] to set the code No. to 11.
  6. Push [  ] to black highlight the data, and then push [  ] and [  ] to set the capacity.  
(Refer to indoor unit capacity DN code "11" on page 4.)
  7. After finishing setting the data of the code (DN), push [  Set / Fix]  
⇒ "Continues ?" is displayed.
  8. Push [  Return ]  
When doing group connections :  
⇒ Push [  Return ] to open the unit selection screen. In the unit selection screen, push [  Return ] to briefly display "  ", and then return to the "Field setting menu" screen.
- Step 7 Write the on-site setting data to the EEPROM, such as address setting etc. Perform the steps 1 and 4 above again.
- Step 8 Push [  ] to black highlight the code (DN), and then push [  ] and [  ] to set the code No. to 1.  
(This is the setting for the filter sign lighting time.)
- Step 9 Check the setting data displayed at this time with the setting data put down in [1].
1. If the data is different, push [  ] to highlight the data in black and write, push [  ] and [  ] to change the data to what you wrote down, and push [  Set / Fix].
  2. If the data is the same, proceed to next step.
- Step 10 Push [  ] to black highlight the code (DN), and then push [  ] and [  ] to set the code.  
As described above, check the setting data and modify to the data put down in [1].
- Step 11 Repeat the steps 8 and 9.
- Step 12 After the setting completes, push [  Return ]  
When doing group connections :  
⇒ Push [  Return ] to open the unit selection screen. In the unit selection screen, push [  Return ] to briefly display "  ", and then return to the "Field setting menu" screen.
- Even after modifying the data wrongly and pushing [  Set / Fix] it is possible to return to the data before modification by pushing [  Return ] if the CODE No. (DN) is not changed.



<Fig.2 EEPROM layout diagram>

The EEPROM (IC503) is attached to the IC socket. When detaching the EEPROM, use a tweezers, etc. Be sure to attach the EEPROM by fitting its direction as shown in the figure.

\* Do not bend the IC lead when replacing.



<Fig.2>



**Table 1. Setting data(CODE No. table(example))**

| DN  | Item  | Setting data           | Factory-set value          |
|-----|---|------------------------|----------------------------|
| 01  | Filter display delay timer                                      |                        | 0002 : 2500H               |
| 02  | Dirty state of filter   |                        | 0000 : Standard            |
| 03  | Central control address   |                        | 00Un/0099 : Unfixed        |
| 04  | Specific indoor unit priority                                   |                        | 0000 : No priority         |
| 06  | Heating suction temperature shift                               |                        | 0002 : +2°C                |
| 0D  | Automatic mode  |                        | 0001 : No automatic        |
| 0F  | Cooling only  |                        | 0000 : Heat pump           |
| 10  | Type  |                        | Depending on model type    |
| 11  | Indoor unit capacity  |                        | According to capacity type |
| 12  | Line address  |                        | 00Un/0099 : Unfixed        |
| 13  | Indoor unit address   |                        | 00Un/0099 : Unfixed        |
| 14  | Group address   |                        | 00Un/0099 : Unfixed        |
| 19  | Flap type (Wind direction adjustment)                           |                        | Depending on Type          |
| 1E  | Temperature range of cooling/heating automatic SW control point |                        | 0003 : 3 deg (Ts±1.5)      |
| 28  | Automatic restart of power failure                              | 0001 : Enable          | 0000 : None                |
| 2A  | Selection of option / Trouble input (TCB-PCUC2E: CN3)           |                        | 0002 : None                |
| 2B  | Thermo output SW  |                        | 0000 : Thermo ON           |
| 2E  | HA terminal (CN61) select                                       |                        | 0000 : Usual (HA terminal) |
| 31  | Ventilating fan control   |                        | 0000 : Unavailable         |
| 32  | Sensor SW   |                        | 0000 : Body sensor         |
| 33  | Temperature unit select   | 0001 : Fahrenheit (°F) | 0000 : Centigrade (°C)     |
| 5D  | High ceiling setting  |                        | 0000 : Default setting     |
| 60  | Timer setting (wired remote controller)                         |                        | 0000 : Available           |
| 7A  | Change unit 0.5°C or 1.0°C on remote                            | 0001 : 1°C             | 0000 : 0.5°C               |
| D0  | Remote controller operation save function                       |                        | 0001 : Enable              |
| E0  | Region  | 0001 : North America   | 0000 : Domestic            |
| F6  | Presence of Application control kit (TCB-PCUC2E)                |                        | 0000 : None                |
| FC  | Communication protocol  |                        | 0000 : TCC-LINK            |
| FE  | FS unit adress  |                        | 00Un/0099 : Unfixed        |
| 1Fb | Remote controller operation                                     |                        | 0000 : Operation possible  |
| 1FC | Indoor Unit terminating resistance                              |                        | 0000 : OFF                 |

**Table 2. Type : CODE No.10**

| Setting data       | Type                              | Type name abb.   |
|--------------------|-----------------------------------|------------------|
| 0001 <sup>*1</sup> | 4-way Air Discharge Cassette Type | MMU-UB***1HP-UL  |
| 0004               | Concealed Duct Type               | MMD-UB***1BHP-UL |
| 0006               | High static Duct Type             | MMD-UB***1HP-UL  |

\*1 EEPROM initial value on the P.C. board for indoor unit servicing.

\*2  **CAUTION**

For the above model. Set the CODE no. to **"E0"** the setting data "0000" (initial) to "0001"

**Table 3. Indoor unit capacity : CODE No.11**

| Setup data         | Model    |
|--------------------|----------|
| 0000 <sup>*1</sup> | Invalid  |
| 0001               | 007 type |
| 0003               | 009 type |
| 0005               | 012 type |
| 0007               | 015 type |
| 0009               | 018 type |
| 0010               | 021 type |
| 0011               | 024 type |
| 0013               | 030 type |
| 0015               | 036 type |
| 0016               | 042 type |
| 0017               | 048 type |
| 0018               | 054 type |



## 13. DETACHMENTS

### WARNING

Be sure to stop operation of the air conditioner before work and then turn off switch of the breaker.

### CAUTION

Be sure to put on gloves during working time; otherwise an injury will be caused by a part, etc.

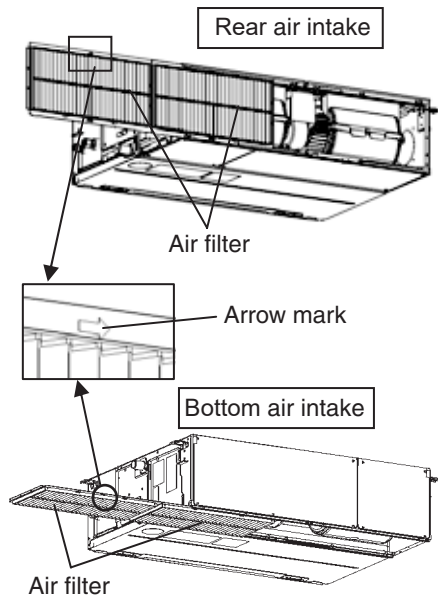
### NOTE

In a section, Detachments, the models are expressed as follows for convenience.

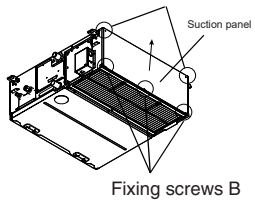
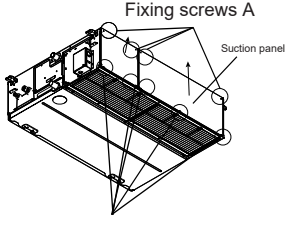
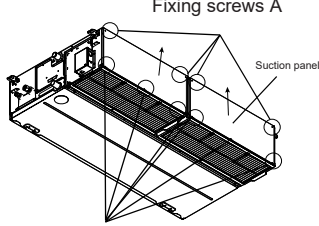
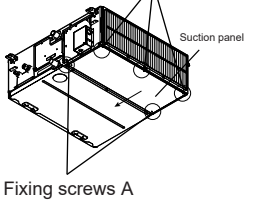
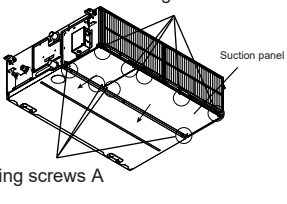
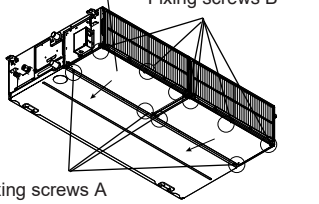
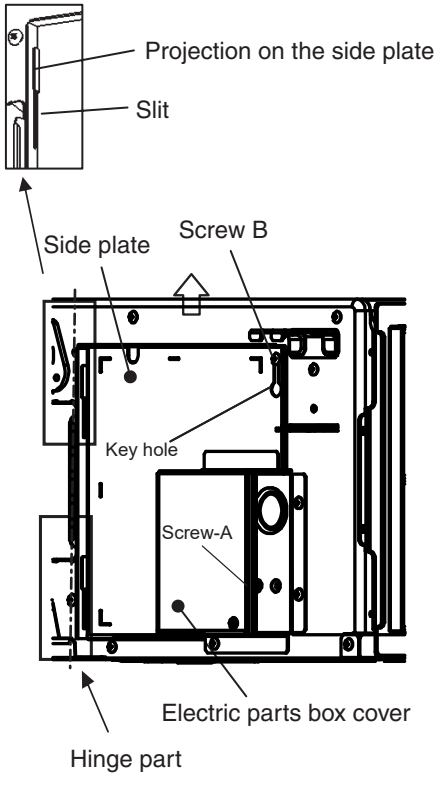
UB0071 : MMD-UB0071BHP-UL to MMD-UB0091BHP-UL

UB0121 : MMD-UB0121BHP-UL to MMD-UB0181BHP-UL

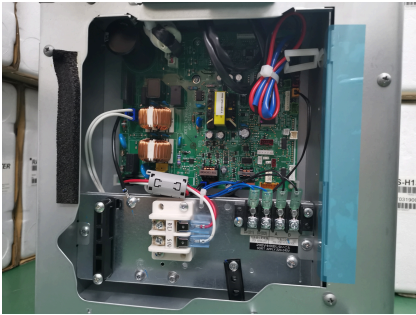
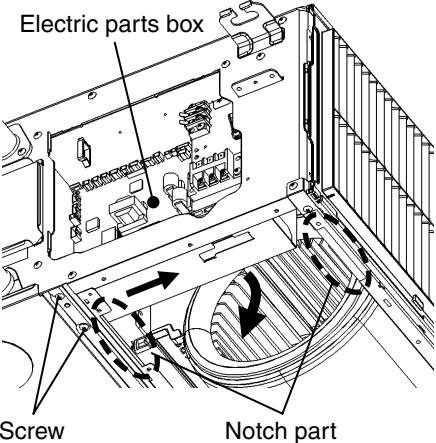
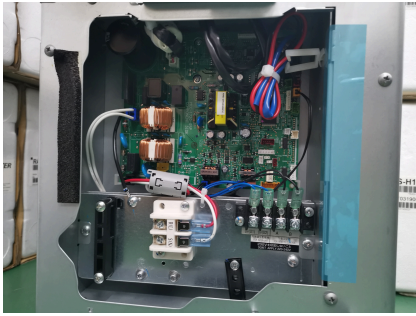
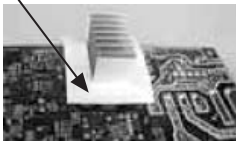
UB0211 : MMD-UB0211BHP-UL to MMD-UB0541BHP-UL

| No. | Part name  | Procedure  | Remarks   |
|-----|------------|--|---|
| ①   | Air filter | <b>1. Detachment</b><br>1) Slide the filter toward the opposite side of the arrow mark and then pull out the filter.<br>(In the case that two filters are provided, pull out the first filter, then the second filter will be pulled out connected with the first filter.)<br><br><b>2. Attachment</b><br>1) Insert the filter in the filter rail toward the arrow mark, slide it until the filter stops and then fix it.<br>(In the case that two filters are provided, insert the second filter in the same direction after inserting the first filter.) |  <p>Rear air intake</p> <p>Air filter</p> <p>Arrow mark</p> <p>Bottom air intake</p> <p>Air filter</p> |

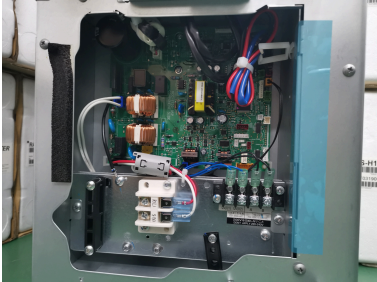
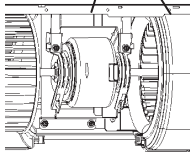
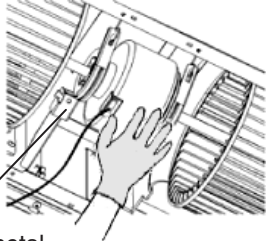
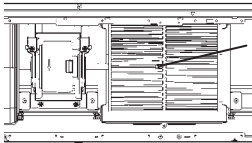
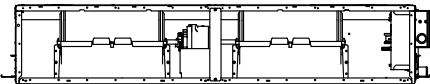
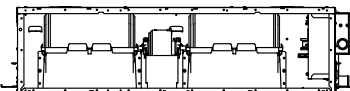
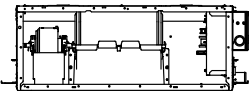



| No.   | Part name                | Procedure  | Remarks   |
|---|--------------------------|--|---|
| ②   | Suction panel            | <p><b>1. Detachment</b></p> <ol style="list-style-type: none"> <li>1) Remove the fixing screws A which fix the suction panel. Loosen the fixing screws B.</li> <li>2) Slide the suction panel to the arrow side and then remove the panel.</li> </ol> <p><b>2. Attachment</b></p> <ol style="list-style-type: none"> <li>1) Hook the suction panel to the fixing screws B and tighten screws.</li> <li>2) Attach the removed screws A to the original positions.</li> </ol>  |   |
| <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>Under air intake</p> <p><b>UB0071 Type</b></p>  <p>Fixing screws A</p> <p>Fixing screws B</p> </div> <div style="text-align: center;"> <p>Suction panel</p> <p><b>UB0121 Type</b></p>  <p>Fixing screws A</p> <p>Fixing screws B</p> </div> <div style="text-align: center;"> <p>Suction panel</p> <p><b>UB0211 Type</b></p>  <p>Fixing screws A</p> <p>Fixing screws B</p> </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-start; margin-top: 20px;"> <div style="text-align: center;"> <p><b>Back air intake</b></p>  <p>Fixing screws B</p> <p>Fixing screws A</p> </div> <div style="text-align: center;">  <p>Fixing screws B</p> <p>Fixing screws A</p> </div> <div style="text-align: center;">  <p>Fixing screws B</p> <p>Fixing screws A</p> </div> </div> |                          |  |   |
| ③   | Electric parts box cover | <p><b>1. Detachment</b></p> <ol style="list-style-type: none"> <li>1) Remove the screw A of the electric parts box cover to loosen screw B.</li> <li>2) As shown in the right figure, when sliding it toward arrow direction and pulling to this side, the electric parts cover opens using the hinge part as a shaft.</li> <li>3) Take off the slit of the electric parts box cover from the projection of the side plate and then remove the cover.</li> </ol> <p><b>2. Attachment</b></p> <ol style="list-style-type: none"> <li>1) Hook the slit of the electric parts box cover to the projection of the side plate, close the cover, enter screw B in the Key hole and then slide it.</li> <li>2) Fix the electric parts box cover by tightening with screws A and B.</li> </ol> |  <p>Projection on the side plate</p> <p>Slit</p> <p>Side plate</p> <p>Screw B</p> <p>Key hole</p> <p>Screw-A</p> <p>Electric parts box cover</p> <p>Hinge part</p> |

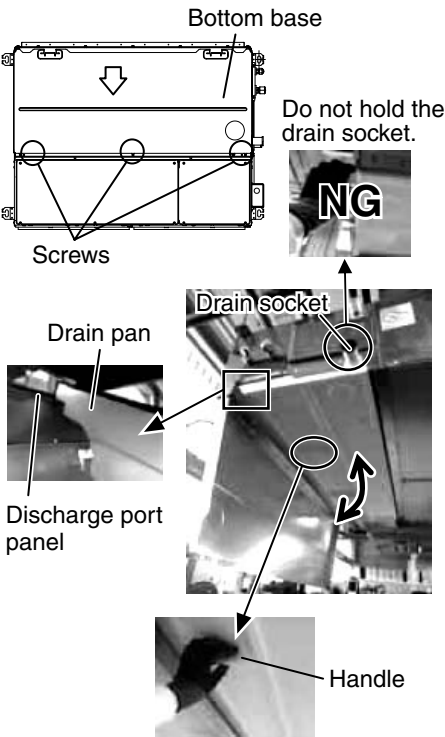
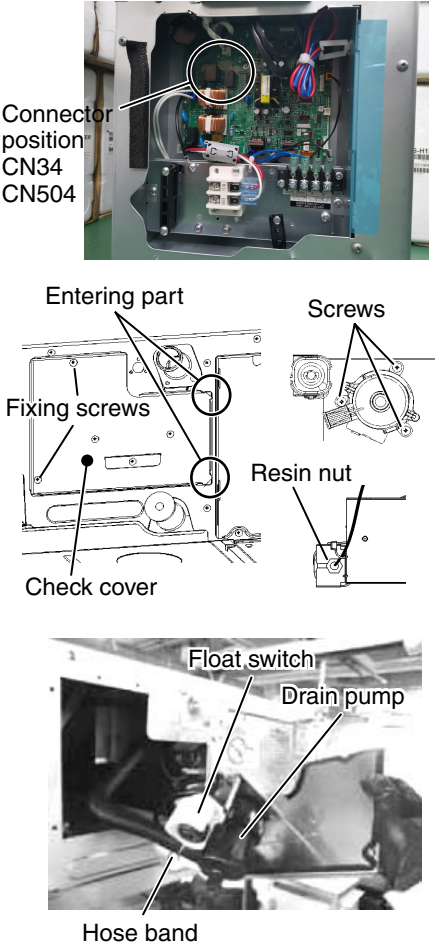


| No. | Part name          | Procedure  | Remarks  |
|-----|--------------------|--|--|
| ④   | Electric parts box | <p><b>1. Detachment</b></p> <ol style="list-style-type: none"> <li>1) Perform works of 1 of ①.<br/>(In case of under air intake)<br/>Perform works of 1 of ②.<br/>(In case of back air intake)<br/>Perform works of 1 of ③.</li> <li>2) Remove the indoor/outdoor connecting wire and remote controller wire from each terminal block.</li> <li>3) Remove the connectors which connected from the control P.C. board to other parts.</li> </ol> <p><b>NOTE</b></p> <hr/> <p>First unlock the housing and then remove the connectors.</p> <hr/> <p>CN34 : Float switch (3P, Red)<br/> CN41 : Remote controller terminal block (3P, Blue)<br/> (Screw part of terminal block, 2P.)<br/> CN504 : Drain pump (2P, White)<br/> CN67 : Power supply terminal block (5P: Black)<br/> (Screw part of terminal block, 3P.)<br/> CN100 : TC1 sensor (3P: Brown)<br/> CN101 : TC2 sensor (2P: Black)<br/> CN102 : TCJ sensor (2P, Red)<br/> CN104 : Room temperature (2P, Yellow)</p> <ol style="list-style-type: none"> <li>4) Remove screws. (Ø4 x 10, 2 pcs.)</li> <li>5) Slide the electric parts box toward the arrow mark and then remove the box from the bottom side of the main unit.</li> </ol> <p><b>2. Attachment</b></p> <ol style="list-style-type: none"> <li>1) Attach the electric parts box and then perform wiring as original.</li> </ol> <p><b>Notes 1</b></p> <hr/> <p>Check there is no missing or contact failure on the connectors.</p> <hr/> <p><b>Notes 2</b></p> <hr/> <p>Be sure to perform wiring as original.</p> <hr/> <ol style="list-style-type: none"> <li>2) Attach air filter, suction panel, and electric parts box as original.</li> </ol> |     |
| ⑤   | Control P.C. board | <p><b>1. Detachment</b></p> <ol style="list-style-type: none"> <li>1) Perform work of 1 of ④.<br/>(In the works of 1 of ④, removal of the control P.C. board is available even if you do not perform works after 4)).</li> <li>2) Unlock the card edge spacers (5 positions) in the electric parts box to remove the control P.C. board.</li> </ol> <p><b>2. Attachment</b></p> <ol style="list-style-type: none"> <li>1) Mount control P.C. board in the electric parts box as original.</li> <li>2) Attach the electric parts box as original.</li> <li>3) Be sure to perform wiring as original in the electric parts box.</li> </ol> <p><b>NOTE</b></p> <hr/> <p>Check there is no missing or contact failure on the connectors.</p> <hr/> <ol style="list-style-type: none"> <li>4) Attach each air filter, suction panel or electric parts box cover as original.</li> </ol>   |  <p><b>⚠ CAUTION</b><br/> When replacing PC. board, check no-mex paper is attached.</p>  |

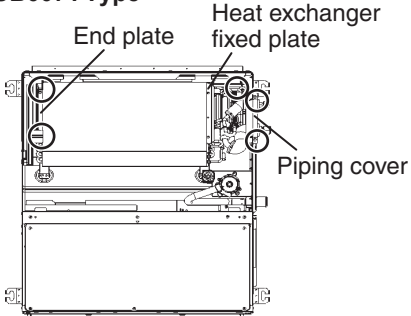
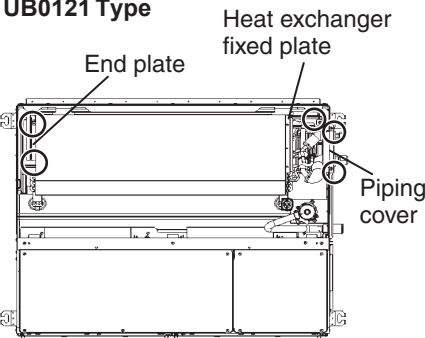
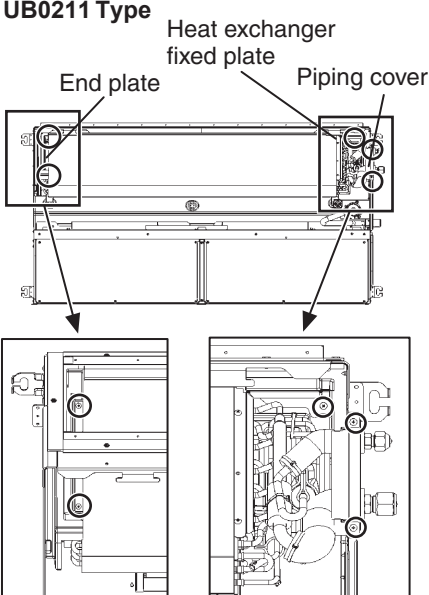


| No. | Part name                      | Procedure  | Remarks  |
|-----|--------------------------------|--|--|
| ⑥   | Fan motor,<br>Fan,<br>Fan case | <p><b>1. Detachment</b></p> <ol style="list-style-type: none"> <li>1) Perform works until opening of the electric parts box cover in works of 1 of ④.</li> <li>2) Remove connectors for fan motor wiring from control P.C. board.<br/>CN333 : Motor power supply (5P: White)<br/>CN334 : Motor control (5P: White)</li> <li>3) Open the fan case (under) and remove it while pressing claws of the fan case (under). (There are both sides of the case)</li> <li>4) Remove the fixing screws (Ø5 x 10, 2 pcs.) of the fixing plate (2 pcs.) at the side of the fan motor.<br/>(The fan motor becomes temporal hanging status by fixing plate.)</li> <li>5) While supporting the fan motor by hands, remove the fixing plate from the motor base to remove the fan motor.</li> <li>6) Loosen the hexagonal screw hole of the fan and then pull out the fan from the shaft.<br/>(Hexagon wrench : 3mm)</li> </ol> <p><b>2. Attachment</b></p> <ol style="list-style-type: none"> <li>1) Insert the fan in the shaft while adjusting to match the hexagonal screw hole to the groove of the shaft.</li> <li>2) Perform screwing the fan motor with the fixing plate (Ø5 x 10, 2 pcs.)</li> </ol> <p><b>NOTE</b></p> <p>Match the fan motor with turning direction of the fan and fix so that the UP0071 type fan motor wirings are at refrigerant piping side and UP0211 type is at opposite side of refrigerant piping.</p> <p>3) While positioning so that the fan is at the center of the fan case (upper), fix the fan with hexagonal screw.</p> <p><b>NOTE</b></p> <p>Be sure to use a torque wrench for fixing and tighten with 4.9N•m or more.</p> <ol style="list-style-type: none"> <li>4) Attach the fan case (under) as original and check the fan turns smoothly without coming to contact with the fan case.</li> <li>5) Connect the fan motor wirings as before, close and fix the electric parts box cover.<br/>Be sure to perform wirings as original in the electric parts box.</li> <li>6) Attach air filter and suction panel as original position.</li> </ol> |  <p>Fixing screw</p>   <p>Fixing sheet metal</p>  <p>Screw with hexagonal hole</p> <p><b>UB0211 Type</b></p>  <p><b>UB0121 Type</b></p>  <p><b>UB0071 Type</b></p>  <p>Refrigerant piping side</p>  <p><b>⚠ CAUTION</b><br/>When replacing the fan motor, be sure to exchange the clamp filter with the fan motor lead wire.</p> |

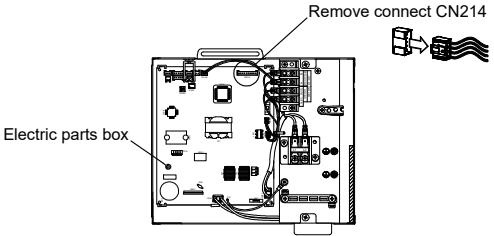
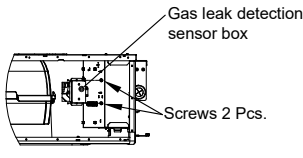
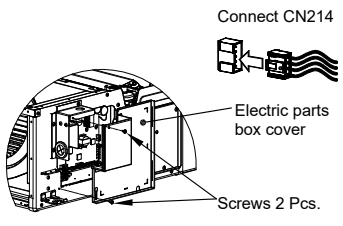
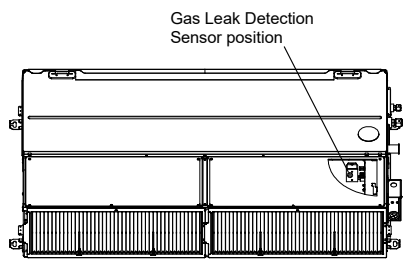
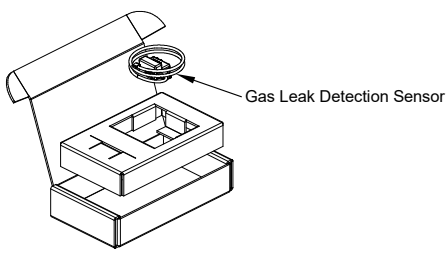


| No. | Part name                  | Procedure  | Remarks  |
|-----|----------------------------|--|--|
| ⑦   | Drain pan                  | <p><b>1. Detachment</b></p> <p>1) Remove the drain cap and then extract the drain water accumulated in the drain pan.</p> <p><b>NOTE</b></p> <p>When removing the drain cap, be sure to receive drain water using a bucket, etc.</p> <p>2) Loosen screws which fix the bottom base. (3 positions)<br/>(For UP0211 models, remove 2 screws at the center.)</p> <p>3) As shown in the right figure, when sliding it toward arrow direction, the electric parts cover the bottom base opens using the hinge part as a shaft.</p> <p>4) Hold handle of the drain pan and then pull off slowly.</p> <p><b>⚠ CAUTION</b></p> <p>When removing the drain pan, do not hold the drain socket. (Water leakage may be caused.)</p> <p><b>2. Attachment</b></p> <p>1) First hook the thin side of the drain pan to the discharge panel and then push in the thick side.</p> <p>2) Close the bottom base and fix it with screws.</p>  |  <p>Bottom base</p> <p>Do not hold the drain socket.</p> <p>NG</p> <p>Screws</p> <p>Drain pan</p> <p>Discharge port panel</p> <p>Drain socket</p> <p>Handle</p>                                    |
| ⑧   | Drain pump<br>Float switch | <p><b>1. Detachment</b></p> <p>1) Perform works until opening of the electric parts box cover in works of 1 of ④.</p> <p>2) Remove the connectors which connect to float switch of the drain pump from the control P.C. board.<br/>CN34 : Float switch (3P, Red)<br/>CN504 : Drain pump (2P, White)</p> <p>3) Remove the fixing screws (2 positions) of the check cover and then take out the check cover. (To the check cover, the drain pump and float switch are attached.)</p> <p>4) Pick up the hose band, shift from the pump connecting part, remove the drain hose and then remove the check cover.</p> <p>5) Remove screws which fix the drain pump assembly and then remove the drain pump assembly. (Ø4 x 10, 3 pcs.)</p> <p>6) Remove the resin nut switch and then remove the float switch from the fixing plate.</p> <p><b>2. Attachment</b></p> <p>1) Using the removed screws, fix the drain pump assembly as original.</p> <p>2) Using the removed resin nut, fix the float switch as original.</p> <p>3) Connect the drain hose as original and then attach the hose band.</p> <p>4) Connect the drain pump and the float switch wiring as original and close the electric parts box cover for fixing.<br/>Be sure to perform wiring in the electric parts box as original.</p> <p>5) Enter the corners (2 positions) of the check cover in the entering part and then fix it using fixing screws (2 positions).</p> |  <p>Connector position<br/>CN34<br/>CN504</p> <p>Entering part</p> <p>Screws</p> <p>Fixing screws</p> <p>Resin nut</p> <p>Check cover</p> <p>Float switch</p> <p>Drain pump</p> <p>Hose band</p> |



| No. | Part name      | Procedure  | Remarks  |
|-----|----------------|--|--|
| ⑨   | Heat exchanger | <p><b>1. Detachment</b></p> <ol style="list-style-type: none"> <li>1) Recover the refrigerant gas and then remove the refrigerant pipe of the indoor unit.</li> <li>2) Perform works of 1 of ⑧.</li> <li>3) Pull out TC sensor and TCJ sensor wirings from the holder.</li> <li>4) Remove the screws (Ø4 x 8, 2 pcs.) and then remove the piping cover.</li> <li>5) Remove screws (Ø4 x 8, 1pc.) of the heat exchanger fixed plate.</li> <li>6) While holding the heat exchanger, remove the fixed screws (Ø4 x 8, 2 pcs.) of the end plate and then take out the heat exchanger slowly.</li> </ol> <p><b>2. Attachment</b></p> <ol style="list-style-type: none"> <li>1) Set the heat exchanger at the original position and fix it as before, using screws which removed the end plate, heat exchanger fixed plate and piping cover.</li> <li>2) Enter TC sensor and TCJ sensor wirings in the holder and then perform wirings as original.</li> <li>3) Attach the drain pan and the bottom base as original.</li> </ol> | <p>○ : Screw position</p> <p><b>UB0071 Type</b></p>  <p><b>UB0121 Type</b></p>  <p><b>UB0211 Type</b></p>  |



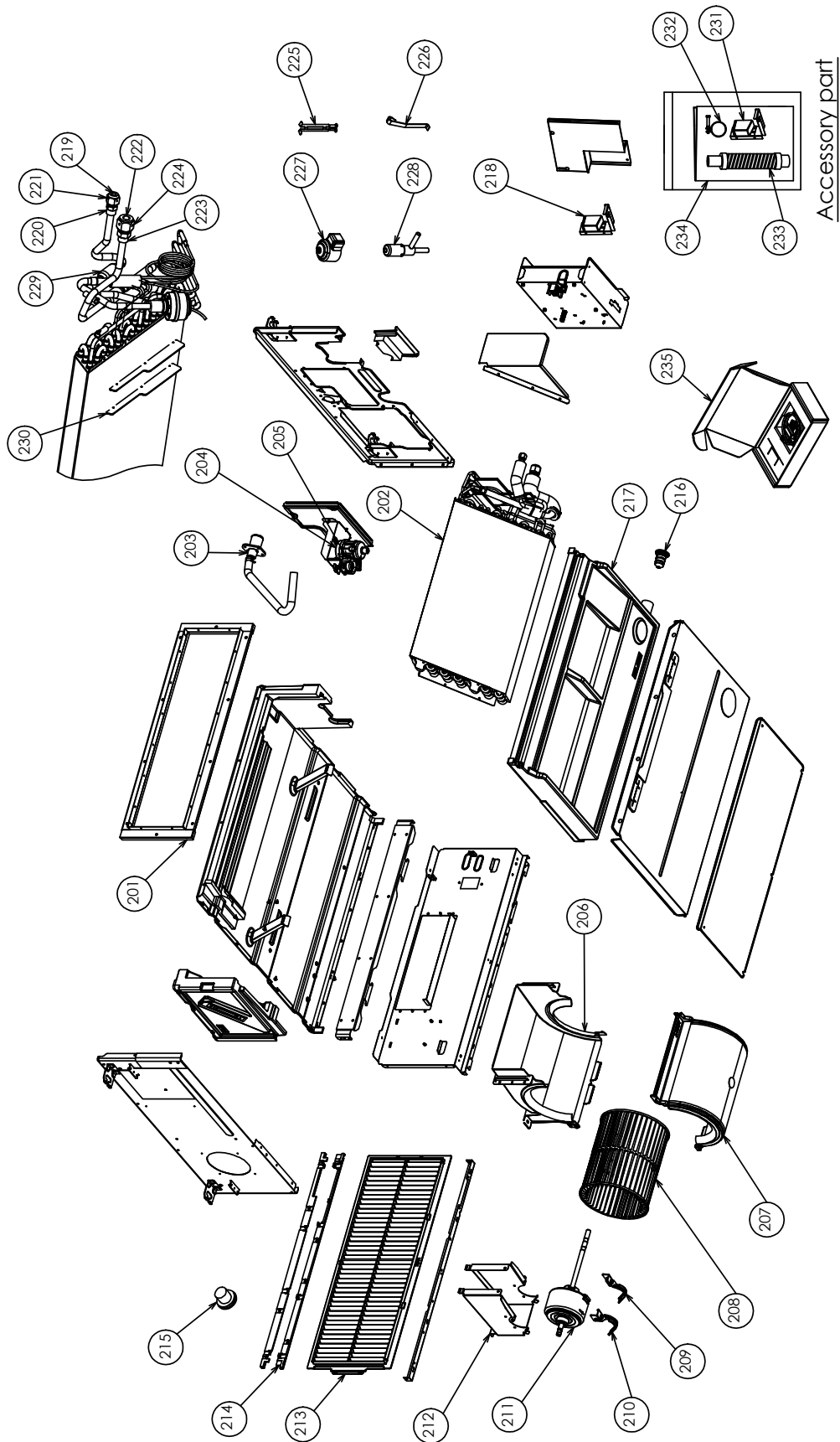
| No. | Part name          | Procedure  | Remarks   |
|-----|--------------------|--|---|
| ⑩   | Gas Leak Detection | <p><b>1. Detachment</b></p> <p>1) Perform works until opening of the electric parts box cover in works of item 1 of ④</p> <p>2) Remove the connectors which connect to gas leak detection sensor the control P.C. board<br/>CN214 : gas leak detection sensor (4P : White)</p>  <p>Remove connect CN214</p> <p>Electric parts box</p> <p>3) Remove the fixing screws (2 positions) of gas leak detection sensor box</p>  <p>Gas leak detection sensor box</p> <p>Screws 2 Pcs.</p> <p><b>2. Attachment</b></p> <p>1) Open gas leak detection sensor accessory.</p> <p>2) Insert the gas leak detection sensor into unit and fix it by the screw.</p> <p>3) Connect the gas leak detection sensor box wiring as original and close the electric parts box cover for fixing.</p>  <p>Connect CN214</p> <p>Electric parts box cover</p> <p>Screws 2 Pcs.</p> | <p><u>Installation position (Inside Indoor Unit)</u></p>  <p>Gas Leak Detection Sensor position</p> <p><u>How to install Gas Leak Detection Sensor</u></p> <p>⚠ Caution : Turn off power supply before installation.</p> <p><u>Gas Leak Detection Sensor Accessory</u></p>  <p>Gas Leak Detection Sensor</p> |



## 14. EXPLODED VIEWS AND PARTS LIST

### 14-1. Concealed duct type

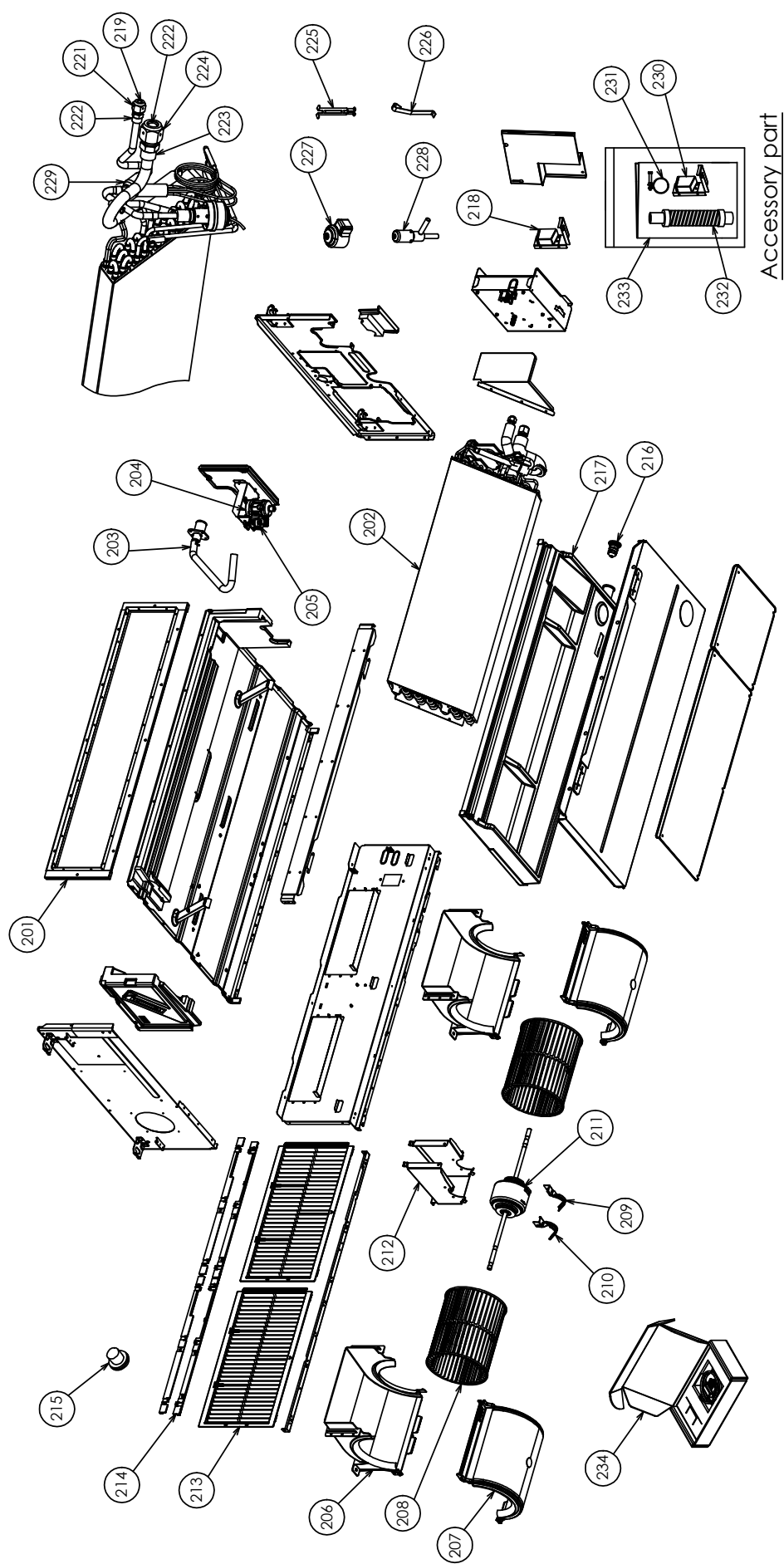
MMD-UB0071BHP-UL, MMD-UB0091BHP-UL





| Location No. | Part No. | Description               | Model name<br>MMD-UB |            |
|--------------|----------|---------------------------|----------------------|------------|
|              |          |                           | 0071BHP-UL           | 0091BHP-UL |
| 201          | 43T39356 | FLANGE                    | 1                    | 1          |
| 202          | 43T44802 | REFRIGERATION CYCLE ASSY  | 1                    | 1          |
| 203          | 43T70319 | ASM-HOSE-DRAIN            | 1                    | 1          |
| 204          | 43T77303 | PUMP ASSY                 | 1                    | 1          |
| 205          | 43T51312 | SWITCH, FLOAT             | 1                    | 1          |
| 206          | 43T22337 | CASE, FAN, UPPER          | 1                    | 1          |
| 207          | 43T22335 | CASE, FAN, LOWER          | 1                    | 1          |
| 208          | 43T20340 | FAN, MULTI BLADE          | 1                    | 1          |
| 209          | 43T39416 | BAND-MOTOR-L              | 1                    | 1          |
| 210          | 43T39415 | BAND-MOTOR-R              | 1                    | 1          |
| 211          | 43T21556 | FAN-MOTOR(WDF-340W150AA1) | 1                    | 1          |
| 212          | 43T39417 | BASE-MOTOR                | 1                    | 1          |
| 213          | 43T80340 | AIR FILTER                | 1                    | 1          |
| 214          | 43T82329 | RAIL, FILTER ASSY         | 1                    | 1          |
| 215          | 43T82323 | FILTER, STOPPER           | 1                    | 1          |
| 216          | 43T79321 | CAP, DRAIN                | 1                    | 1          |
| 217          | 43T72317 | PAN ASSY, DRAIN           | 1                    | 1          |
| 218          | 43T62395 | CONDUIT ASSEMBLY          | 1                    | 1          |
| 219          | 43T49405 | PLASTIC BONNET 6.35DIA    | 1                    | 1          |
| 220          | 43T82363 | SOCKET                    | 1                    | 1          |
| 221          | 43T97320 | NUT, FLARE, 1/4 IN        | 1                    | 1          |
| 222          | 43T49406 | PLASTIC BONNET 9.52DIA    | 1                    | 1          |
| 223          | 43T82364 | SOCKET                    | 1                    | 1          |
| 224          | 43T97321 | NUT, FLARE, 3/8 IN        | 1                    | 1          |
| 225          | 43T19321 | FIX-P-SENSOR              | 1                    | 1          |
| 226          | 43T19333 | HOLDER, SENSOR            | 2                    | 2          |
| 227          | 43T46515 | COIL, PMV                 | 1                    | 1          |
| 228          | 43T46568 | BODY, PMV                 | 1                    | 1          |
| 229          | 43T47386 | STRAINER                  | 1                    | 1          |
| 230          | 43T39352 | PLATE,WIND                | 2                    | 2          |
| 231          | 43T62400 | CONDUIT MOUNT             | 1                    | 1          |
| 232          | 43T83311 | BAND, HOSE                | 1                    | 1          |
| 233          | 43T70315 | HOSE, DRAIN               | 1                    | 1          |
| 234          | 43T85965 | INSTALLATION MANUAL       | 1                    | 1          |
| 235          | 43T63423 | PACKING SENSOR ASSEMBLY   | 1                    | 1          |

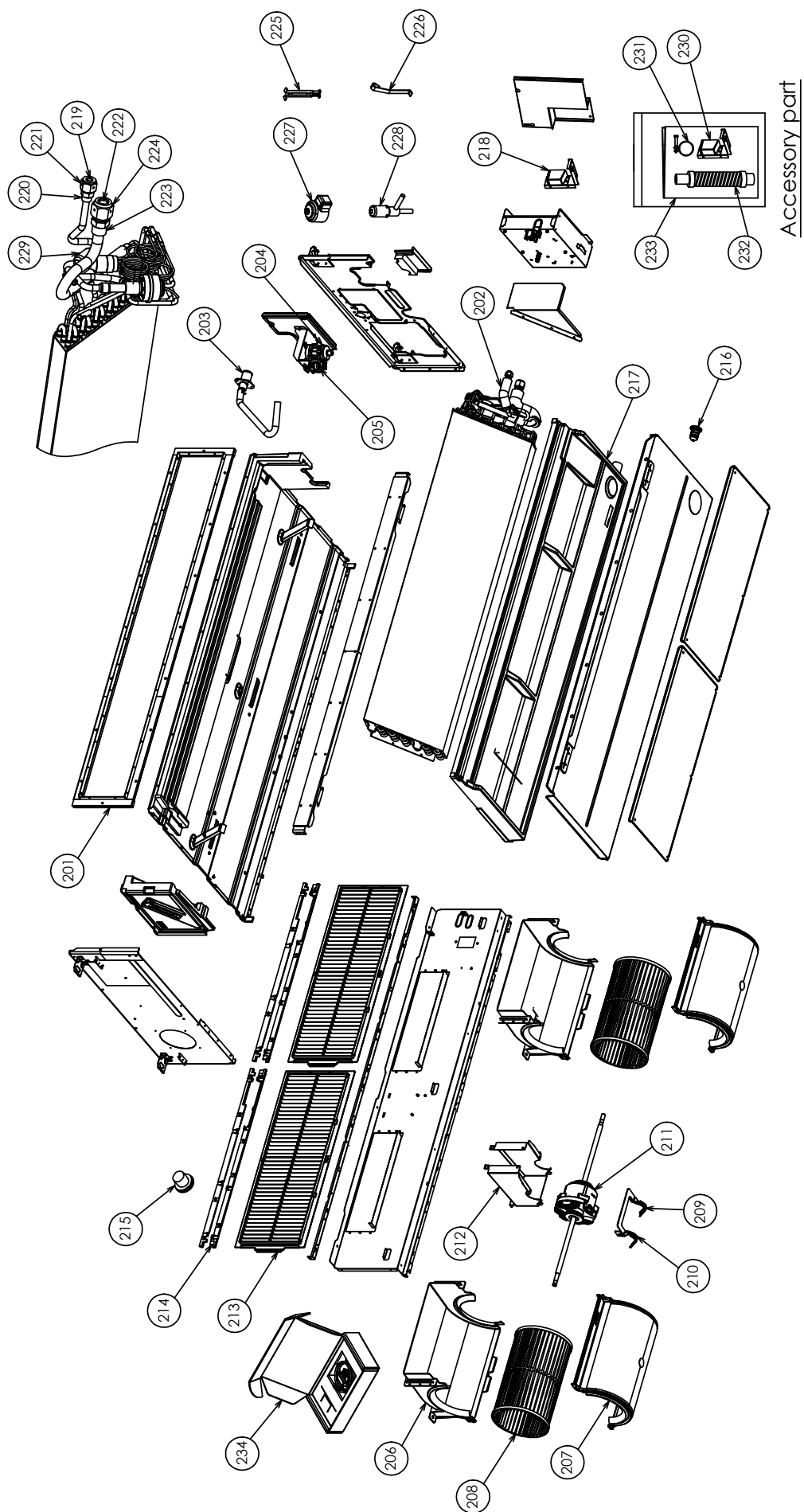






| Location No. | Part No. | Description              | Model name<br>MMD-UB |            |            |
|--------------|----------|--------------------------|----------------------|------------|------------|
|              |          |                          | 0121BHP-UL           | 0151BHP-UL | 0181BHP-UL |
| 201          | 43T39357 | FLANGE                   | 1                    | 1          | 1          |
| 202          | 43T44804 | REFRIGERANT CYCLE ASSY   | -                    | 1          | 1          |
| 202          | 43T44894 | REFRIGERANT CYCLE ASSY   | 1                    | -          | -          |
| 203          | 43T70319 | ASM-HOSE-DRAIN           | 1                    | 1          | 1          |
| 204          | 43T77303 | PUMP ASSY                | 1                    | 1          | 1          |
| 205          | 43T51312 | SWITCH, FLOAT            | 1                    | 1          | 1          |
| 206          | 43T22337 | CASE, FAN, UPPER         | 1                    | 1          | 1          |
| 207          | 43T22335 | CASE, FAN, LOWER         | 1                    | 1          | 1          |
| 208          | 43T20340 | FAN, MULTI BLADE         | 1                    | 1          | 1          |
| 209          | 43T39416 | BAND-MOTOR-L             | 1                    | 1          | 1          |
| 210          | 43T39415 | BAND-MOTOR-R             | 1                    | 1          | 1          |
| 211          | 43T21555 | FAN-MOTOR(WDF-340W150AA) | 1                    | 1          | 1          |
| 212          | 43T39417 | BASE-MOTOR               | 1                    | 1          | 1          |
| 213          | 43T80341 | AIR FILTER               | 1                    | 1          | 1          |
| 214          | 43T82330 | RAIL, FILTER ASSY        | 1                    | 1          | 1          |
| 215          | 43T82323 | FILTER, STOPPER          | 1                    | 1          | 1          |
| 216          | 43T79321 | CAP, DRAIN               | 1                    | 1          | 1          |
| 217          | 43T72318 | PAN ASSY, DRAIN          | 1                    | 1          | 1          |
| 218          | 43T62395 | CONDUIT ASSEMBLY         | 1                    | 1          | 1          |
| 219          | 43T49405 | PLASTIC BONNET 6.35DIA   | 1                    | -          | -          |
| 219          | 43T49406 | PLASTIC BONNET 9.52DIA   | -                    | 1          | 1          |
| 220          | 43T82336 | SOCKET                   | 1                    | -          | -          |
| 220          | 43T82337 | SOCKET                   | -                    | 1          | 1          |
| 221          | 43T97320 | NUT, FLARE, 1/4 IN       | 1                    | -          | -          |
| 221          | 43T97321 | NUT, FLARE, 3/8 IN       | -                    | 1          | 1          |
| 222          | 43T49406 | PLASTIC BONNET 9.52DIA   | 1                    | -          | -          |
| 222          | 43T49412 | PLASTIC BONNET 15.88DIA  | -                    | 1          | 1          |
| 223          | 43T82339 | SOCKET                   | -                    | 1          | 1          |
| 223          | 43T82347 | SOCKET                   | 1                    | -          | -          |
| 224          | 43T97321 | NUT, FLARE, 3/8 IN       | 1                    | -          | -          |
| 224          | 43T97323 | NUT, FLARE, 5/8 IN       | -                    | 1          | 1          |
| 225          | 43T19321 | FIX-P-SENSOR             | 1                    | 1          | 1          |
| 226          | 43T19333 | HOLDER, SENSOR           | 2                    | 2          | 2          |
| 227          | 43T46515 | COIL, PMV                | 1                    | 1          | 1          |
| 228          | 43T46517 | BODY, PMV                | -                    | 1          | 1          |
| 228          | 43T46568 | BODY, PMV                | 1                    | -          | -          |
| 229          | 43T47386 | STRAINER                 | 1                    | 1          | 1          |
| 230          | 43T62400 | CONDUIT MOUNT            | 1                    | 1          | 1          |
| 231          | 43T83311 | BAND, HOSE               | 1                    | 1          | 1          |
| 232          | 43T70315 | HOSE, DRAIN              | 1                    | 1          | 1          |
| 233          | 43T85965 | INSTALLATION MANUAL      | 1                    | 1          | 1          |
| 234          | 43T63423 | PACKING SENSOR ASSEMBLY  | 1                    | 1          | 1          |

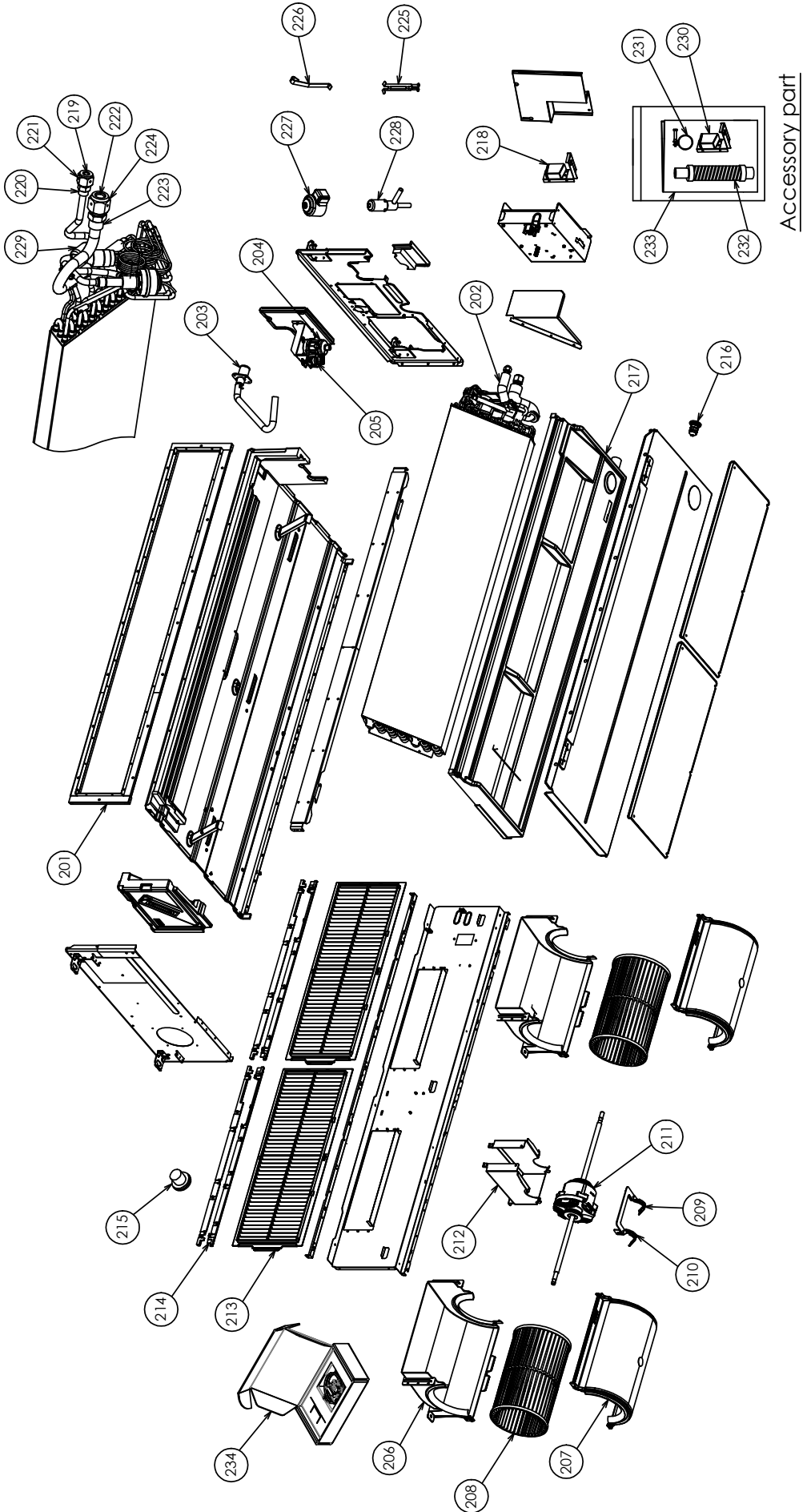






| Location No. | Part No. | Description              | Model name<br>MMD-UB |            |            |
|--------------|----------|--------------------------|----------------------|------------|------------|
|              |          |                          | 0211BHP-UL           | 0241BHP-UL | 0301BHP-UL |
| 201          | 43T39358 | FLANGE                   | 1                    | 1          | 1          |
| 202          | 43T44895 | REFRIGERANT CYCLE ASSY   | 1                    | 1          | 1          |
| 203          | 43T70319 | ASM-HOSE-DRAIN           | 1                    | 1          | 1          |
| 204          | 43T77303 | PUMP ASSY                | 1                    | 1          | 1          |
| 205          | 43T51312 | SWITCH, FLOAT            | 1                    | 1          | 1          |
| 206          | 43T22338 | CASE, FAN, UPPER         | 2                    | 2          | 2          |
| 207          | 43T22336 | CASE, FAN, LOWER         | 2                    | 2          | 2          |
| 208          | 43T20339 | FAN, MULTI BLADE         | 2                    | 2          | 2          |
| 209          | 43T39416 | BAND-MOTOR-L             | 1                    | 1          | 1          |
| 210          | 43T39415 | BAND-MOTOR-R             | 1                    | 1          | 1          |
| 211          | 43T21549 | FAN-MOTOR (LDF-340W250A) | 1                    | 1          | 1          |
| 212          | 43T39418 | BASE-MOTOR               | 1                    | 1          | 1          |
| 213          | 43T80340 | AIR FILTER               | 2                    | 2          | 2          |
| 214          | 43T82331 | RAIL, FILTER ASSY        | 1                    | 1          | 1          |
| 215          | 43T82323 | FILTER, STOPPER          | 1                    | 1          | 1          |
| 216          | 43T79321 | CAP, DRAIN               | 1                    | 1          | 1          |
| 217          | 43T72319 | PAN ASSY, DRAIN          | 1                    | 1          | 1          |
| 218          | 43T62395 | CONDUIT ASSEMBLY         | 1                    | 1          | 1          |
| 219          | 43T49406 | PLASTIC BONNET 9.52DIA   | 1                    | 1          | 1          |
| 220          | 43T82337 | SOCKET                   | 1                    | 1          | 1          |
| 221          | 43T97321 | NUT, FLARE, 3/8 IN       | 1                    | 1          | 1          |
| 222          | 43T49412 | PLASTIC BONNET 15.88DIA  | 1                    | 1          | 1          |
| 223          | 43T82339 | SOCKET                   | 1                    | 1          | 1          |
| 224          | 43T97323 | NUT, FLARE, 5/8 IN       | 1                    | 1          | 1          |
| 225          | 43T19321 | FIX-P-SENSOR             | 1                    | 1          | 1          |
| 226          | 43T19333 | HOLDER, SENSOR           | 2                    | 2          | 2          |
| 227          | 43T46515 | COIL, PMV                | 1                    | 1          | 1          |
| 228          | 43T46517 | BODY, PMV                | 1                    | 1          | 1          |
| 229          | 43T47386 | STRAINER                 | 1                    | 1          | 1          |
| 230          | 43T62400 | CONDUIT MOUNT            | 1                    | 1          | 1          |
| 231          | 43T83311 | BAND, HOSE               | 1                    | 1          | 1          |
| 232          | 43T70315 | HOSE, DRAIN              | 1                    | 1          | 1          |
| 233          | 43T85965 | INSTALLATION MANUAL      | 1                    | 1          | 1          |
| 234          | 43T63423 | PACKING SENSOR ASSEMBLY  | 1                    | 1          | 1          |



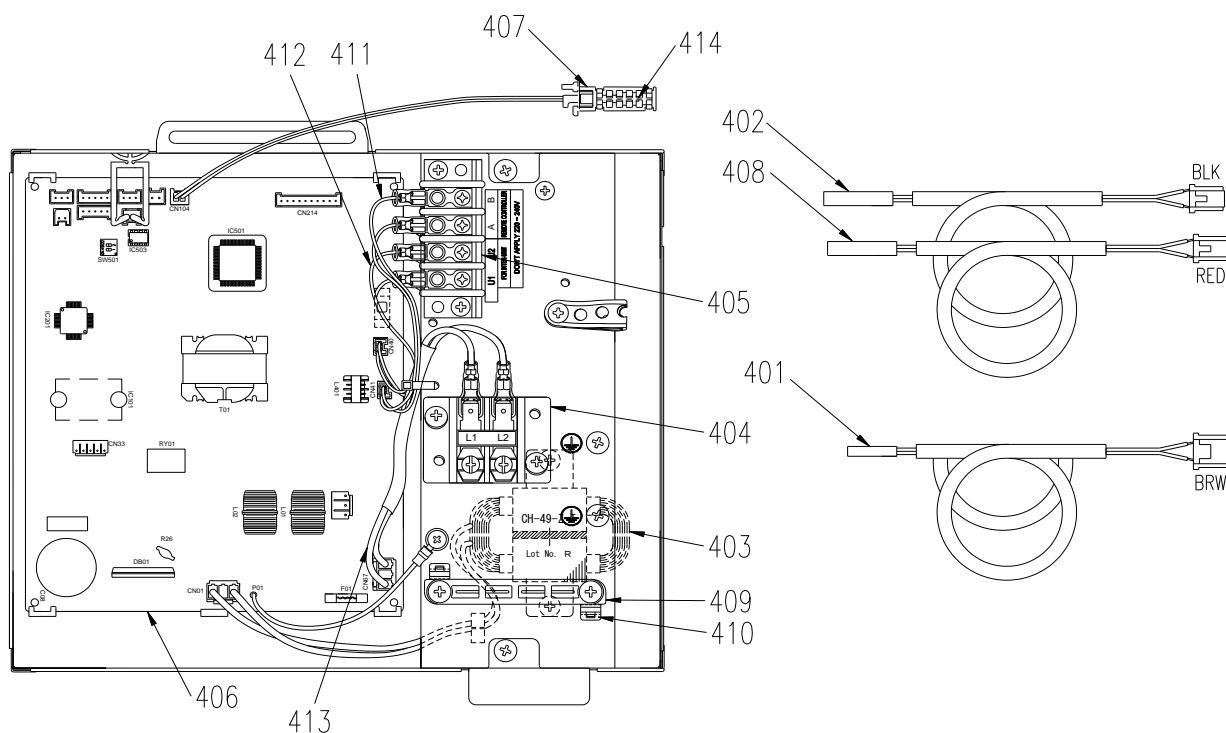




| Location No. | Part No. | Description              | Model name<br>MMD-UB |            |            |            |
|--------------|----------|--------------------------|----------------------|------------|------------|------------|
|              |          |                          | 0361BHP-UL           | 0421BHP-UL | 0481BHP-UL | 0541BHP-UL |
| 201          | 43T39358 | FLANGE                   | 1                    | 1          | 1          | 1          |
| 202          | 43T44805 | REFRIGERATION CYCLE ASSY | 1                    | 1          | 1          | 1          |
| 203          | 43T70319 | ASM-HOSE-DRAIN           | 1                    | 1          | 1          | 1          |
| 204          | 43T77303 | PUMP ASSY                | 1                    | 1          | 1          | 1          |
| 205          | 43T51312 | SWITCH, FLOAT            | 1                    | 1          | 1          | 1          |
| 206          | 43T22338 | CASE, FAN, UPPER         | 2                    | 2          | 2          | 2          |
| 207          | 43T22336 | CASE, FAN, LOWER         | 2                    | 2          | 2          | 2          |
| 208          | 43T20339 | FAN, MULTI BLADE         | 2                    | 2          | 2          | 2          |
| 209          | 43T39416 | BAND-MOTOR-L             | 1                    | 1          | 1          | 1          |
| 210          | 43T39415 | BAND-MOTOR-R             | 1                    | 1          | 1          | 1          |
| 211          | 43T21549 | FAN-MOTOR (LDF-340W250A) | 1                    | 1          | 1          | 1          |
| 212          | 43T39418 | BASE-MOTOR               | 1                    | 1          | 1          | 1          |
| 213          | 43T80340 | AIR FILTER               | 2                    | 2          | 2          | 2          |
| 214          | 43T82331 | RAIL, FILTER ASSY        | 1                    | 1          | 1          | 1          |
| 215          | 43T82323 | FILTER, STOPPER          | 1                    | 1          | 1          | 1          |
| 216          | 43T79321 | CAP, DRAIN               | 1                    | 1          | 1          | 1          |
| 217          | 43T72319 | PAN ASSY, DRAIN          | 1                    | 1          | 1          | 1          |
| 218          | 43T62395 | CONDUIT ASSEMBLY         | 1                    | 1          | 1          | 1          |
| 219          | 43T49406 | PLASTIC BONNET 9.52DIA   | 1                    | 1          | 1          | 1          |
| 220          | 43T82337 | SOCKET                   | 1                    | 1          | 1          | 1          |
| 221          | 43T97321 | NUT, FLARE, 3/8 IN       | 1                    | 1          | 1          | 1          |
| 222          | 43T49412 | PLASTIC BONNET 15.88DIA  | 1                    | 1          | 1          | 1          |
| 223          | 43T82339 | SOCKET                   | 1                    | 1          | 1          | 1          |
| 224          | 43T97323 | NUT, FLARE, 5/8 IN       | 1                    | 1          | 1          | 1          |
| 225          | 43T19321 | FIX-P-SENSOR             | 1                    | 1          | 1          | 1          |
| 226          | 43T19333 | HOLDER, SENSOR           | 2                    | 2          | 2          | 2          |
| 227          | 43T46515 | COIL, PMV                | 1                    | 1          | 1          | 1          |
| 228          | 43T46513 | BODY, PMV                | 1                    | 1          | 1          | 1          |
| 229          | 43T47386 | STRAINER                 | 1                    | 1          | 1          | 1          |
| 230          | 43T62400 | CONDUIT MOUNT            | 1                    | 1          | 1          | 1          |
| 231          | 43T83311 | BAND, HOSE               | 1                    | 1          | 1          | 1          |
| 232          | 43T70315 | HOSE, DRAIN              | 1                    | 1          | 1          | 1          |
| 233          | 43T85965 | INSTALLATION MANUAL      | 1                    | 1          | 1          | 1          |
| 234          | 43T63423 | PACKING SENSOR ASSEMBLY  | 1                    | 1          | 1          | 1          |



## 14-2. Electric Parts



| Location No. | Part No. | Description              | Model name<br>MMD-UB |            |            |            |            |            |
|--------------|----------|--------------------------|----------------------|------------|------------|------------|------------|------------|
|              |          |                          | 0071BHP-UL           | 0091BHP-UL | 0121BHP-UL | 0151BHP-UL | 0181BHP-UL | 0211BHP-UL |
| 401          | 43T50411 | TC-SENSOR                | 1                    | 1          | 1          | 1          | 1          | 1          |
| 402          | 43T50387 | TC-SENSOR (TC2)          | 1                    | 1          | 1          | 1          | 1          | 1          |
| 403          | 43T58320 | REACTOR                  | 1                    | 1          | 1          | 1          | 1          | 1          |
| 404          | 43T60435 | SERV-TERMINAL            | 1                    | 1          | 1          | 1          | 1          | 1          |
| 405          | 43T60362 | TERMINAL                 | 1                    | 1          | 1          | 1          | 1          | 1          |
| 406          | 43TNV645 | PC BOARD ASSY (MCC-1720) | 1                    | 1          | 1          | 1          | 1          | 1          |
| 407          | 43T50351 | HOLDER-TA                | 1                    | 1          | 1          | 1          | 1          | 1          |
| 408          | 43T50386 | TCJ SENSOR (RED)         | 1                    | 1          | 1          | 1          | 1          | 1          |
| 409          | 43T63348 | CLAMP, DOWN              | 1                    | 1          | 1          | 1          | 1          | 1          |
| 410          | 43T63349 | CLAMP, UP                | 1                    | 1          | 1          | 1          | 1          | 1          |
| 411          | 43T60542 | ASM-HOUSING(BUS)         | 1                    | 1          | 1          | 1          | 1          | 1          |
| 412          | 43T60524 | ASM-HOUSING(REM)         | 1                    | 1          | 1          | 1          | 1          | 1          |
| 413          | 43T60549 | ASM-HOUSING(PW)          | 1                    | 1          | 1          | 1          | 1          | 1          |
| 414          | 43T50389 | TA-SENSOR                | 1                    | 1          | 1          | 1          | 1          | 1          |

| Location No. | Part No. | Description              | Model name<br>MMD-UB |            |            |            |            |            |
|--------------|----------|--------------------------|----------------------|------------|------------|------------|------------|------------|
|              |          |                          | 0241BHP-UL           | 0301BHP-UL | 0361BHP-UL | 0421BHP-UL | 0481BHP-UL | 0541BHP-UL |
| 401          | 43T50411 | TC-SENSOR                | 1                    | 1          | 1          | 1          | 1          | 1          |
| 402          | 43T50387 | TC-SENSOR (TC2)          | 1                    | 1          | 1          | 1          | 1          | 1          |
| 403          | 43T58320 | REACTOR                  | 1                    | 1          | 1          | 1          | 1          | 1          |
| 404          | 43T60435 | SERV-TERMINAL            | 1                    | 1          | 1          | 1          | 1          | 1          |
| 405          | 43T60362 | TERMINAL                 | 1                    | 1          | 1          | 1          | 1          | 1          |
| 406          | 43TNV645 | PC BOARD ASSY (MCC-1720) | 1                    | 1          | 1          | 1          | 1          | 1          |
| 407          | 43T50351 | HOLDER-TA                | 1                    | 1          | 1          | 1          | 1          | 1          |
| 408          | 43T50386 | TCJ SENSOR (RED)         | 1                    | 1          | 1          | 1          | 1          | 1          |
| 409          | 43T63348 | CLAMP, DOWN              | 1                    | 1          | 1          | 1          | 1          | 1          |
| 410          | 43T63349 | CLAMP, UP                | 1                    | 1          | 1          | 1          | 1          | 1          |
| 411          | 43T60542 | ASM-HOUSING(BUS)         | 1                    | 1          | 1          | 1          | 1          | 1          |
| 412          | 43T60524 | ASM-HOUSING(REM)         | 1                    | 1          | 1          | 1          | 1          | 1          |
| 413          | 43T60549 | ASM-HOUSING(PW)          | 1                    | 1          | 1          | 1          | 1          | 1          |
| 414          | 43T50389 | TA-SENSOR                | 1                    | 1          | 1          | 1          | 1          | 1          |



# WARNINGS ON REFRIGERANT LEAKAGE

## Important

### Check of Concentration Limit

The room in which the air conditioner is to be installed requires a design that in the event of refrigerant gas leaking out, its concentration will not exceed a set limit.

The refrigerant R454B which is used in the air conditioner is safe, without the toxicity or combustibility of ammonia, and is not restricted by laws to be imposed which protect the ozone layer. However, since it contains more than air, it poses the risk of suffocation if its concentration should rise excessively. Suffocation from leakage of R454B is almost non-existent. With the recent increase in the number of high concentration buildings, however, the installation of multi air conditioner systems is on the increase because of the need for effective use of floor space, individual control, energy conservation by curtailing heat and carrying power etc.

Most importantly, the multi air conditioner system is able to replenish a large amount of refrigerant compared with conventional individual air conditioners. If a single unit of the multi conditioner system is to be installed in a small room, select a suitable model and installation procedure so that if the refrigerant accidentally leaks out, its concentration does not reach the limit (and in the event of an emergency, measures can be made before injury can occur).

In a room where the concentration may exceed the limit, create an opening with adjacent rooms, or install mechanical ventilation combined with a gas leak detection device.

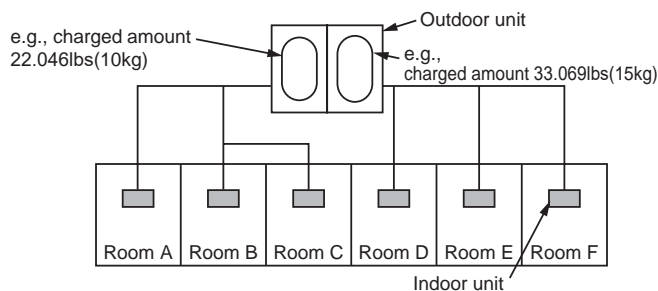
The concentration is as given below.

$$\frac{\text{Total amount of refrigerant (lbs/ft(kg))}}{\text{Min. volume of the indoor unit installed room (ft}^3\text{(m}^3\text{))}} \leq \text{Concentration limit (lbs/ft}^3\text{(kg/m}^3\text{))}$$

Refrigerant Concentration limit shall be in accordance with local regulation.

### NOTE 1 :

If there are 2 or more refrigerating systems in a single refrigerating device, the amounts of refrigerant should be as charged in each independent device.



For the amount of charge in this example:

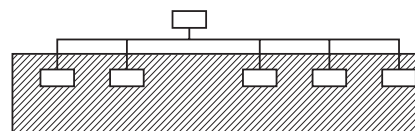
The possible amount of leaked refrigerant gas in rooms A, B and C is 22.046lbs (10kg).

The possible amount of leaked refrigerant gas in rooms D, E and F is 33.069lbs (15kg).

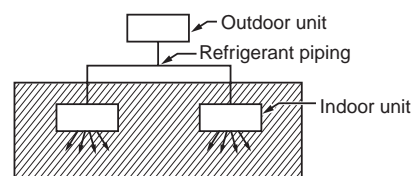
### NOTE 2 :

The standards for minimum room volume are as follows.

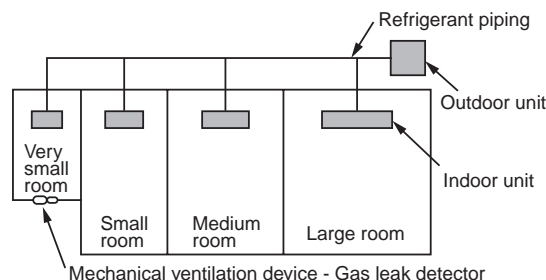
- 1) No partition (shaded portion)



- 2) When there is an effective opening with the adjacent room for ventilation of leaking refrigerant gas (opening without a door, or an opening 0.15% or larger than the respective floor spaces at the top or bottom of the door).



- 3) If an indoor unit is installed in each partitioned room and the refrigerant piping is interconnected, the smallest room of course becomes the object. But when a mechanical ventilation is installed interlocked with a gas leakage detector in the smallest room where the density limit is exceeded, the volume of the next smallest room becomes the object.





# **CARRIER AIR CONDITIONING (THAILAND) CO., LTD.**

144/9 MOO 5, BANGKADI INDUSTRIAL PARK, TIVANON ROAD, TAMBOL BANGKADI,  
AMPHUR MUANGPATHUMTHANI, PATHUMTHANI 12000, THAILAND