

# **TOSHIBA**

AIR CONDITIONER (MULTI TYPE)

# SERVICE MANUAL

**Indoor unit**

**<Compact 4-way cassette type>**

**MMU-UP0051MHP-E(TR)**

**MMU-UP0071MHP-E(TR)**

**MMU-UP0091MHP-E(TR)**

**MMU-UP0121MHP-E(TR)**

**MMU-UP0151MHP-E(TR)**

**MMU-UP0181MHP-E(TR)**

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## <Information>

These air conditioner has adopted a refrigerant HFC (R32 or R410A) which does not destroy the ozone layer. When combining with an outdoor unit of R32 refrigerant, it is legally necessary to connect a refrigerant leak detection system. For details, refer to the service manual of the outdoor unit to be connected.

## Original instruction

Please read carefully through these instructions that contain important information which complies with the "Machinery Directive" (Directive 2006/42/EC), and ensure that you understand them.

## 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.

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 (*1)	<ul style="list-style-type: none"><li>• The qualified installer is a person who installs, maintains, relocates and removes the air conditioners made by Toshiba Carrier Corporation. He or she has been trained to install, maintain, relocate and remove the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such operations by an individual or individuals who have been trained 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 made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work.</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 made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work.</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 made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work.</li></ul>
Qualified service person (*1)	<ul style="list-style-type: none"><li>• The qualified service person is a person who installs, repairs, maintains, relocates and removes the air conditioners made by Toshiba Carrier Corporation. He or she has been trained to install, repair, maintain, relocate and remove the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such operations by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to these operations.</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 made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work.</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 made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work.</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 made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work.</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 'Safety' working clothing
Electrical-related work	Gloves to provide protection for electricians Insulating shoes Clothing to provide protection from electric shock
Work done at heights (50 cm or more)	Helmets for use in industry
Transportation of heavy objects	Shoes with additional protective toecap
Repair of outdoor unit	Gloves to provide protection for electricians




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) The sentences near an illustrated mark describe the concrete prohibited contents.
	Indicates mandatory items (Compulsory items to do) The sentences near an illustrated mark describe the concrete mandatory contents.
	Indicates cautions (Including danger / warning) The sentences or illustration near or in an illustrated mark describe the concrete cautious contents.

## Warning Indications on the Air Conditioner Unit

### [Confirmation of warning label on the main unit]

Confirm that labels are indicated on the specified positions





If removing the label during parts replace, stick it as the original.

Warning indication	Description
<div data-bbox="172 427 300 645">  </div> <div data-bbox="309 427 660 645"> <p><b>WARNING</b></p> <p><b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.</p> </div>	<p><b>WARNING</b></p> <p><b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.</p>
<div data-bbox="172 712 300 929">  </div> <div data-bbox="309 712 660 929"> <p><b>WARNING</b></p> <p>Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.</p> </div>	<p><b>WARNING</b></p> <p>Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.</p>
<div data-bbox="172 996 300 1214">  </div> <div data-bbox="309 996 660 1214"> <p><b>CAUTION</b></p> <p>High temperature parts. You might get burned when removing this panel.</p> </div>	<p><b>CAUTION</b></p> <p>High temperature parts. You might get burned when removing this panel.</p>
<div data-bbox="172 1281 300 1498">  </div> <div data-bbox="309 1281 660 1498"> <p><b>CAUTION</b></p> <p>Do not touch the aluminum fins of the unit. Doing so may result in injury.</p> </div>	<p><b>CAUTION</b></p> <p>Do not touch the aluminium fins of the unit. Doing so may result in injury.</p>
<div data-bbox="172 1565 300 1783">  </div> <div data-bbox="309 1565 660 1783"> <p><b>CAUTION</b></p> <p><b>BURST HAZARD</b> Open the service valves before the operation, otherwise there might be the burst.</p> </div>	<p><b>CAUTION</b></p> <p><b>BURST HAZARD</b> Open the service valves before the operation, otherwise there might be the burst.</p>

# PRECAUTIONS FOR SAFETY




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

## DANGER







 Turn off breaker	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 intake grille of the indoor unit or service panel of the outdoor unit, set the circuit breaker to the OFF position. Failure to set the circuit breaker to the OFF position may result in electric shocks through contact with the interior parts. Only a qualified installer (*1) or qualified service person (*1) is allowed to remove the intake grille of the indoor unit or service panel of the outdoor unit and do the work required.
	Before opening the electric box cover set the circuit breaker to the OFF position. Failure to set the circuit breaker to the OFF position may result in injury through contact with the rotation parts. Only a qualified installer (*1) or qualified service person (*1) is allowed to remove the electric box cover 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 a check code 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.
 Electric shock hazard	When you access inside of the electric cover 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.
 Prohibition	Place a "Work in progress" sign near the circuit breaker while the installation, maintenance, repair or removal work is being carried out. There is a danger of electric shocks if the circuit breaker is set to ON by mistake.
	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. You may receive an electric shock if the power is turned on without first conducting these checks.
 Stay on 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 (*1) is allowed to do this kind of work.








(\*1) Refer to the "Definition of Qualified Installer or Qualified Service Person"

## **WARNIG**



 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 (*1) is allowed to repair the air conditioner. 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. 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 (*1) or qualified service person (*1) is allowed to carry out the electrical work of the air conditioner. Under no circumstances must this work be done by an unqualified individual since failure to carry out the work properly may result in electric shocks and / or electrical leaks.
	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 (*1) or qualified service person (*1) is allowed to undertake work at heights using a stand of 50 cm or more or to remove the intake grille of the indoor unit to undertake work.
	When working at heights, use a ladder which complies with the ISO 14122 standard, and follow the procedure in the ladder's instructions. Also wear a helmet for use in industry as protective gear to undertake the work.
	Before 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 unit. You may injure yourself if you do so. If the fin must be touched for some reason, first put on protective gloves and safety work clothing, and then proceed.
	Do not climb onto or place objects on top of the outdoor unit. You may fall or the objects may fall off the outdoor unit and result in injury.
	Use forklift truck to carry in the air conditioner units and use winch or hoist at installation of them.
 Check earth wires.	When transporting the air conditioner, wear shoes with protective toe caps, protective gloves and other protective clothing.
	When transporting the air conditioner, do not hold the bands around the packing carton. You may injure yourself if the bands should break.
	Be sure that a heavy unit (10 kg or heavier) such as a compressor is carried by four persons.
 Check earth wires.	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.
	Connect earth wire. (Grounding work) Incomplete grounding causes an electric shock. Do not connect earth wires to gas pipes, water pipes, and lightning rods or ground wires for telephone wires.

(\*1) Refer to the "Definition of Qualified Installer or Qualified Service Person"

 Prohibition of modification.	Do not modify the products. Do not also disassemble or modify the parts. It may cause a fire, electric shock or injury.
 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). Use of any parts which do not satisfy the required specifications may give rise to electric shocks, smoking and / or a fire.
 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.
 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.
 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. When repairing the refrigerating cycle, take the following measures. 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. 2) Do not use a welder in the closed room. When using it without ventilation, carbon monoxide poisoning may be caused. 3) Do not bring inflammables close to the refrigerant cycle, otherwise fire of the welder may catch the inflammables.
 Refrigerant	The refrigerant used by this air conditioner is the R32 or R410A. Check the used refrigerant name and use tools and materials of the parts which match with it. The refrigerant name is indicated at a position on the outdoor unit where is easy to see. To prevent miss charging, the route of the service port is changed from one of the former R22. Do not use any refrigerant different from the one specified for complement or replacement. Otherwise, abnormally high pressure may be generated in the refrigeration cycle, which may result in a failure or explosion of the product or an injury to your body. Never use refrigerants other than those indicated on the outdoor unit (R32 or R410A). For an air conditioner which uses other refrigerant (R22, etc.), never use R32 or R410A. 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. 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. 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. In this time, never charge the refrigerant over the specified amount. When recharging the refrigerant, do not mix air and any refrigerant other than 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. Never recover the refrigerant into the outdoor unit. When the equipment is moved or repaired, be sure to recover the refrigerant with recovering device. The refrigerant cannot be recovered in the outdoor unit; otherwise a serious accident such as breakage or injury is caused.

 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>
 Insulator check	<p>After the work has finished, be sure to use an insulation tester set (500VMΩ) 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>
 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>
 Compulsion	<p>When the refrigerant gas leaks, find out the leaked position and repair it surely.</p> <p>If the leaked position cannot be found out and the repair work is interrupted, reclaim 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 in a sub-room, it is necessary that the concentration does not the limit even if the refrigerant leaks.</p> <p>If the refrigerant leaks and exceeds the limit concentration, 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>
 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>
 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>
 Check after reinstallation	<p>Only a qualified installer (*1) or qualified service person (*1) is allowed to relocate the air conditioner. It is dangerous for the air conditioner to be relocated by an unqualified individual since a fire, electric shocks, injury, water leakage, noise and / or vibration may result.</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 reclaim 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 rupture, injury, etc.</p>

(\*1) Refer to the "Definition of Qualified Installer or Qualified Service Person"

 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.</p> <p>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>
 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.</p> <p>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.</p> <p>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 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 agent.</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 (\*1) or qualified service person (\*1) is allowed to relocate the air conditioner. It is dangerous for the air conditioner to be relocated by an unqualified individual since a fire, electric shocks, injury, water leakage, noise and / or vibration may result.
- When carrying out the reclaim 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 rupture, injury, etc.

(\*1) Refer to the "Definition of Qualified Installer or Qualified Service Person"





## Precautions for using R32 refrigerant

The basic installation work procedures are the same as conventional refrigerant (R410A, R22) models.

However, Please read through this manual after understanding the contents below;

These safety cautions describe important matters concerning safety to prevent injury to users or other people and damages to property. Please read through this manual after understanding the contents below (meanings of indications), and be sure to follow the description;

### Meanings of symbols displayed on the unit

	<b>WARNING</b> (Risk of fire)	This mark is for R32 refrigerant only. Refrigerant type is written on nameplate of outdoor unit.  uses a flammable refrigerant. 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

- Models that use refrigerant R32 and R410A have a different charging port thread diameter to prevent erroneous charging with refrigerant R22 and for safety.
- Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
- The appliance shall be stored in a room without continuously operating ignition sources. (For example: open flames, an operating gas appliance or an operating electric heater.)
- Do not pierce or burn.
- Be aware that refrigerants may not contain an odor.
- The manufacturer may provide other suitable examples or may provide additional information about the refrigerant odor.

### CAUTION

When a flammable refrigerant is used, all appliances shall be charged with refrigerant at the manufacturing location or charged on site as recommended by the manufacturer.

A part of an appliance that is charged on site, which requires brazing or welding in the installation shall not be shipped with a flammable refrigerant charge. Joints made in the installation between parts of the refrigerating system, with at least one part charged, shall be made in accordance with the following.

- A brazed, welded, or mechanical connection shall be made before opening the valves to permit refrigerant to flow between the refrigerating system parts. A vacuum valve shall be provided to evacuate the interconnecting pipe and/or any uncharged refrigerating system part.

- Mechanical connectors used indoors shall comply with ISO 14903.

When mechanical connectors are reused indoors, sealing parts shall be renewed. When flared joints are reused indoors, the flare part shall be re-fabricated.

- Refrigerant tubing shall be protected or enclosed to avoid damage.

Flexible refrigerant connectors (such as connecting lines between the indoor and outdoor unit) that may be displaced during normal operations shall be protected against mechanical damage.

#### General (Installation space / area)

- The installation of pipe-work shall be kept to a minimum.
- Pipe-work shall be protected from physical damage.
- The compliance with national gas regulations shall be observed.
- The mechanical connections shall be accessible for maintenance purposes.
- In cases that require mechanical ventilation, ventilation openings shall be kept clear of obstruction.
- When disposing of the product is used, be based on national regulations with properly processed.

- The servicing shall be performed only as recommended by the manufacturer.
- Where the appliance using flammable refrigerants is installed, Be aware that;
  - The appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation.
  - The appliance shall be stored in a room without continuously operating open flames (for example an operating gas appliance) and ignition sources (for example an operating electric heater).
  - The appliance shall be stored so as to prevent mechanical damage from occurring.
- Equipment piping in the occupied space shall be installed in such a way to protect against accidental damage in operation and service.
- Precautions shall be taken to avoid excessive vibration or pulsation to refrigerating piping.
- Protection devices, piping and fittings shall be protected as far as possible against adverse environmental effects, for example, the danger of water collecting and freezing in relief pipes or the accumulation of dirt and debris.
- Provision shall be made for expansion and contraction of long runs of piping.
- Piping in refrigerating systems shall be so designed and installed to minimize the likelihood hydraulic shock damaging the system.
- Solenoid valves shall be correctly positioned in the piping to avoid hydraulic shock.
- Solenoid valves shall not block in liquid refrigerant unless adequate relief is provided to the refrigerant system low pressure side.
- Steel pipes and components shall be protected against corrosion with a rustproof coating before applying any insulation.
- Flexible pipe elements shall be protected against mechanical damage, excessive stress by torsion, or other forces. They should be checked for mechanical damage annually.
- The indoor equipment and pipes shall be securely mounted and guarded such that accidental rupture of equipment cannot occur from such events as moving furniture or reconstruction activities.
- Where safety shut off valves are specified, the minimum room area may be determined based on the maximum amount of refrigerant that can be leaked as determined in Installation Manual.
- Where safety shut off valves are specified, the location of the valve in the refrigerating system relative to the occupied spaces shall be as described in Installation Manual.
- Field-made refrigerant joints indoors shall be tightness tested. The test method shall have a sensitivity of 5 grams per year of refrigerant or better under a pressure of at least 0.25 times the maximum allowable pressure. No leak shall be detected.
- The total refrigerant charge in the system cannot exceed the requirements for minimum floor area of the smallest room that is served. For minimum floor area requirements for indoor units, see the Installation and Owner's Manual of the outdoor unit.
- When connecting to an outdoor unit of R32 refrigerant and using a Leak Detector, always turn on the power of the indoor unit after installation except during service in order to detect refrigerant leakage and take safety measures.

#### **Unventilated area**

- The appliance shall be stored so as to prevent mechanical damage from occurring.

#### **Information on servicing**

##### **1. Check to the area**

- Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimized. For repair to the refrigerating system, the precautions in item 2 to 6 shall be complied with prior to conducting work on the system.

##### **2. Work procedure**

- Work shall be undertaken under a controlled procedure so as to minimize the risk of a flammable gas or vapour being present while the work is being performed.
- When connecting to an outdoor unit of R32 refrigerant and using a Leak Detector, the fan may automatically operate even if the air conditioner is stopped when a refrigerant leak is detected. Be careful not to get injured by the fan.

##### **3. General work area**

- All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out.
- Work in confined spaces shall be avoided.
- The area around the workspace shall be sectioned off.
- Ensure that the conditions within the area have been made safe by control of flammable material.

##### **4. Checking for presence of refrigerant**

- The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially flammable atmospheres.
- Ensure that the leak detection equipment being used is suitable for use with all applicable refrigerants, i.e. non sparking, adequately sealed or intrinsically safe.

##### **5. Presence of fire extinguisher**

- If any hot work is to be conducted on the refrigeration equipment or any associated parts, appropriate fire extinguishing equipment shall be available on hand.
- Have a dry powder or CO2 fire extinguisher adjacent to the charging area.

## **6.No ignition sources**

- No person carrying out work in relation to a refrigeration system which involves exposing any pipe work shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion.
- All possible ignition sources including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which refrigerant can possibly be released to the surrounding space.
- Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks. "No Smoking" signs shall be displayed.

## **7.Ventilated area**

- Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work.
- A degree of ventilation shall continue during the period that the work is carried out.
- The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

## **8.Checks to the refrigeration equipment**

- Where electrical components are being changed, installer shall be fit for the purpose and to the correct specification.
- At all times the manufacturer's maintenance and service guidelines shall be followed. If in doubt consult the manufacturer's technical department for assistance.
- The following checks shall be applied to installations using flammable refrigerants.
  - The charge size is in accordance with the room size within which the refrigerant containing parts are installed.
  - The ventilation machinery and outlets are operating adequately and are not obstructed.
  - If an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant.
  - Marking to the equipment continues to be visible and legible.
- Markings and signs that are illegible shall be corrected.
- Refrigeration pipe or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.

## **9.Checks to electrical devices**

- Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures.
- If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with.
- If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used.

This shall be reported to the owner of the equipment so all parties are advised.
- Initial safety checks shall include;
  - That capacitors are discharged to avoid possibility of sparking.
  - That there no live electrical components and wiring are exposed while charging, recovering or purging the system.
  - That there is continuity of earth bonding.

## **10.Repairs to sealed components**

- During repairs to sealed components, all electrical supplies shall be disconnected from the equipment being worked upon prior to any removal of sealed covers, etc.
- If it is absolutely necessary to have an electrical supply to equipment during servicing, then a permanently operating form of leak detection shall be located at the most critical point to warn of a potentially hazardous situation.
- Particular attention shall be paid to the following to ensure that by working on electrical components, the casing is not altered in such a way that the level of protection is affected.
- This shall include damage to cables, excessive number of connections, terminals not made to original specification, damage to seals, incorrect fitting of glands, etc.
- Ensure that apparatus is mounted securely.
- Ensure that seals or sealing materials have not degraded to the point that they no longer serve the purpose of preventing the ingress of flammable atmospheres.
- Replacement parts shall be in accordance with the manufacturer's specifications.

### **NOTE**

The use of silicon sealant may inhibit the effectiveness of some types of leak detection equipment. Intrinsically safe components do not have to be isolated prior to working on them.

## **11.Repair to intrinsically safe components**

- Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use.
- Intrinsically safe components are the only types that can be worked on while live in the presence of a flammable atmosphere.
- The test apparatus shall be at the correct rating.
- Replace components only with parts specified by the manufacturer.
- Other parts may result in the ignition of refrigerant in the atmosphere from a leak.

## **12.Cabling**

- Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects.
- Check shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.

## **13.Detection of flammable refrigerants**

- Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks.
- A halide torch (or any other detector using a naked flame) shall not be used.
- Electronic Leak Detectorss may be used to detect refrigerant leaks but, in the case of flammable refrigerants, the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.)
- Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used.
- Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed, and the appropriate percentage of gas (25% maximum) is confirmed.
- Leak detection fluids are also suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode containing chlorine.
- If a leak is suspected, all naked flames shall be removed/ extinguished.
- If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak.

## **14.Leak detection methods**

- Electronic Leak Detectorss shall be used to detect flammable refrigerants leak, but the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.)
- Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used.
- Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed and the appropriate percentage of gas (25% maximum) is confirmed.
- Leak detection fluids are suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipework.
- If a leak is suspected, all naked flames shall be removed / extinguished.
- If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak.
- Oxygen free nitrogen (OFN) shall then be purged through the system both before and during the brazing process.

## **15.Removal and evacuation**

- When breaking into the refrigerant circuit to make repairs or for any other purpose, Conventional procedures shall be used. However, it is important that best practice is followed since flammability is a consideration.  
The following procedure shall be adhered to:
  - remove refrigerant;
  - purge the circuit with inert gas;
  - evacuate;
  - purge again with inert gas;
  - open the circuit by cutting or brazing;
- The refrigerant charge shall be recovered into the correct recovery cylinders.
- The system shall be "Flushed" with OFN to render the unit safe.
- This process may need to be repeated several times.
- Compressed air or oxygen shall not be used for purging refrigerant systems.
- Flushing shall be achieved by breaking the vacuum in the system with OFN and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum.
- This process shall be repeated until no refrigerant is within the system.
- When the final OFN charge is used, the system shall be vented down to atmospheric pressure to enable work to take place.
- This operation is absolutely vital if brazing operations on the pipework are to take place.
- Ensure that the outlet for the vacuum pump is not close to any ignition sources and that ventilation available.

## **16.Charging procedures**

- In addition to conventional charging procedures, the following requirements shall be followed.
  - Ensure that contamination of different refrigerants does not occur when using charging equipment.
  - Hoses or lines shall be as short as possible to minimize the amount of refrigerant contained in them.
  - Cylinders shall be kept upright.
  - Ensure that the refrigeration system is earthed prior to charging the system with refrigerant.
  - Label the system when charging is complete (if not already).
  - Extreme care shall be taken not to overfill the refrigeration system.
- Prior to recharging the system, it shall be pressure-tested with the appropriate purging gas.
- The system shall be leak tested on completion of charging but prior to commissioning.
- A follow up leak test shall be carried out prior to leaving the site.

## **17.Decommissioning**

- Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its details.
- It is recommended good practice that all refrigerants are recovered safely.
- Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required to reuse of reclaimed refrigerant.
- It is essential that electrical power is available before the task is commenced.
  - a ) Become familiar with the equipment and its operation.
  - b ) Isolate system electrically.
  - c ) Before attempting the procedure ensure that:
    - Mechanical handling equipment is available, if required, for handling refrigerant cylinders;
    - All personal protective equipment is available and being used correctly;
    - The recovery process is supervised at all times by a competent person;
    - Recovery equipment and cylinders conform to the appropriate standards.
  - d ) Pump down refrigerant system, if possible.
  - e ) If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
  - f ) Make sure that cylinder is situated on the scales before recovery takes place.
  - g ) Start the recovery machine and operate in accordance with manufacturer's instructions.
  - h ) Do not overfill cylinders. (No more than 80% volume liquid charge.)
  - i ) Do not exceed the maximum working pressure of the cylinder, even temporarily.
  - j ) When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.
  - k ) Recovered refrigerant shall not be charged into another refrigeration system unless it has been cleaned and checked.

## **18.Labelling**

- Equipment shall be labelled stating that it has been decommissioned and emptied of refrigerant.
- The label shall be dated and signed.
- Ensure that there are labels on the equipment stating the equipment contains flammable refrigerant.

## **19.Recovery**

- When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely.
  - When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed.
  - Ensure that the correct number of cylinders for holding the total system charge are available.
  - All cylinders to be used are designated for the recovered refrigerant and labelled for that refrigerant (i.e. special cylinders for the recovery of refrigerant).
  - Cylinders shall be complete with pressure-relief valve and associated shut-off valves in good working order.
  - Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.
  - The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of all appropriated refrigerants.
  - In addition, a set of calibrated weighing scales shall be available and in good working order.
  - Hoses shall be complete with leak-free disconnect couplings and in good condition.
  - Before using the recovery machine, check that it is in satisfactory working order, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of a refrigerant release.
  - Consult manufacturer if in doubt.
  - The recovered refrigerant shall be returned to the refrigerant supplier in the correct recovery cylinder, and the relevant waste transfer note arranged.
  - Do not mix refrigerants in recovery units and especially not in cylinders.
  - If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant.
  - The evacuation process shall be carried out prior to returning the compressor to the suppliers.
  - Only electric heating to the compressor body shall be employed to accelerate this process.
  - When oil is drained from a system, it shall be carried out safely.
-

# Declaration of Conformity

Manufacturer: Toshiba Carrier (Thailand) Co.,Ltd.  
144 / 9 Moo 5, Bangkadi Industrial Park, Tivanon Road, Tambol Bangkadi,  
Amphur Muang, Pathumthani 12000, Thailand

TCF holder: TOSHIBA CARRIER UK LTD.  
Porsham Close Belliver Industrial Estate Roborough Plymouth Devon  
PL6 7DB United Kingdom

Hereby declares that the machinery described below:

Generic Denomination: Air Conditioner

Model / type: MMU-UP0051MHP-E  
MMU-UP0071MHP-E  
MMU-UP0091MHP-E  
MMU-UP0121MHP-E  
MMU-UP0151MHP-E  
MMU-UP0181MHP-E

Commercial name: Super Modular Multi System Air Conditioner  
Super Heat Recovery Multi System Air Conditioner  
Mini-Super Modular Multi System Air Conditioner (MiNi-SMMS series)

Complies with the provisions of the Supply of Machinery (Safety) Regulations 2008

Name: Kazunari Watanabe  
Position: GM, Quality Assurance Dept.  
Date: 12 October, 2023  
Place Issued: Thailand

## NOTE

This declaration becomes invalid if technical or operational modifications are introduced without the manufacturer's consent.

# Declaration of Conformity

Manufacturer: Toshiba Carrier (Thailand) Co.,Ltd.  
144 / 9 Moo 5, Bangkadi Industrial Park, Tivanon Road, Tambol Bangkadi,  
Amphur Muang, Pathumthani 12000, Thailand

TCF holder: TOSHIBA CARRIER EUROPE S.A.S  
Route de Thil 01120 Montluel FRANCE

Hereby declares that the machinery described below:

Generic Denomination: Air Conditioner

Model / type: MMU-UP0051MHP-E(TR)  
MMU-UP0071MHP-E(TR)  
MMU-UP0091MHP-E(TR)  
MMU-UP0121MHP-E(TR)  
MMU-UP0151MHP-E(TR)  
MMU-UP0181MHP-E(TR)

Commercial name: Super Modular Multi System Air Conditioner  
Super Heat Recovery Multi System Air Conditioner  
Mini-Super Modular Multi System Air Conditioner (MiNi-SMMS series)

Complies with the provisions of the Machinery Directive (Directive 2006/42/EC) and the regulations transposing into national law

Name: Kazunari Watanabe  
Position: GM, Quality Assurance Dept.  
Date: 12 October, 2023  
Place Issued: Thailand

## NOTE

This declaration becomes invalid if technical or operational modifications are introduced without the manufacturer's consent.

# 1. SPECIFICATIONS



## Indoor unit : Compact 4-way cassette type

R32 or R410A

Model name			MMU-UP0051MHP-E(TR)	MMU-UP0071MHP-E(TR)	MMU-UP0091MHP-E(TR)	MMU-UP0121MHP-E(TR)
Cooling Capacity		(*1) (kW)	1.7	2.2	2.8	3.6
Heating Capacity		(*1) (kW)	1.9	2.5	3.2	4.0
Electrical characteristics	Power supply		1 Ph., 220-240V, 50 Hz / 208-230V, 60 Hz			
	Running current		(A)	0.20/0.19	0.21/0.20	0.21/0.21
	Power consumption		(kW)	0.015/0.015	0.016/0.016	0.17/0.17
	Starting current		(A)	0.24/0.23	0.25/0.24	0.25/0.25
Appearance	Main unit		Zinc hot dipping steel plate * Heat-insulating material attached to only upper plate			
	Ceiling panel	Model name	RBC-UM21P-E / RBC-UM21PB-E			
		Panel Color	13Gran White / Black			
Outer dimension	Main unit	Height (*3)	(mm)	244		
		Width	(mm)	575		
		Depth (*4)	(mm)	575		
	Ceiling panel	Height (*3)	(mm)	58		
		Width	(mm)	620		
		Depth	(mm)	620		
Total weight	Main unit		(kg)	16		
	Ceiling panel		(kg)	3		
Heat exchanger			Finned tube			
Fan unit	Fan		Turbo fan			
	Standard air flow	H ( M+ / M / L+ / L ) (m³/hr)	430 ( 400 / 370 / 340 / 300 )	450 ( 420 / 380 / 340 / 300 )	470 ( 430 / 390 / 350 / 300 )	470 ( 440 / 410 / 380 / 340 )
	Motor		(W)	60		
Air filter			Standard filter attached (Long life filter)			
Drain tube size (Outsize diameter)			32mm (VP25)			
Controller			Remote control			
Sound pressure level		H ( M+ / M / L+ / L ) (dBA)	31 ( 30 / 28 / 27 / 26 )	32 ( 31 / 29 / 27 / 26 )	33 ( 32 / 30 / 28 / 26 )	33 ( 32 / 30 / 28 / 27 )
Sound power level		H ( M+ / M / L+ / L ) (dBA)	46 ( 45 / 43 / 42 / 41 )	47 ( 46 / 44 / 42 / 41 )	48 ( 47 / 45 / 43 / 41 )	48 ( 47 / 45 / 43 / 42 )
Connecting pipe	Gas side		(mm)	9.52		
	Liquid		(mm)	6.35		

### Note

- (\*1) Cooling / Heating capacity is based on single connection operation with standard piping length under Japanese industrial standard B8615 Condition 1.
- (\*2) Remote controller and ceiling panel are sold separately.
- (\*3) Height from the ceiling.
- (\*4) Depth doesn't include the electric parts box.

Model name				MMU-UP0151MHP-E(TR)		MMU-UP0181MHP-E(TR)	
Cooling Capacity			(*1)	(kW)	4.5		5.6
Heating Capacity			(*1)	(kW)	5.0		6.3
Electrical characteristics	Power supply			1 Ph., 220-240V, 50 Hz / 208-230V, 60 Hz			
	Running current			(A)	0.27/0.27		0.40/0.39
	Power consumption			(kW)	0.024/0.024		0.040/0.040
	Starting current			(A)	0.33/0.33		0.49/0.47
Appearance	Main unit			Zinc hot dipping steel plate * Heat-insulating material attached to only upper plate			
	Ceiling panel	Model name		RBC-UM21P-E / RBC-UM21PB-E			
		(*2)	Panel Color		13Gran White / Black		
Outer dimension	Main unit	Height (*3)	(mm)	244			
		Width	(mm)	575			
		Depth (*4)	(mm)	575			
	Ceiling panel	Height (*3)	(mm)	58			
		Width	(mm)	620			
		Depth	(mm)	620			
Total weight	Main unit		(kg)	16			
	Ceiling panel		(kg)	3			
Heat exchanger				Finned tube			
Fan unit	Fan			Turbo fan			
	Standard air flow H ( M+ / M / L+ / L )		(m³/hr)	590 ( 540 / 490 / 440 / 395 )		760 ( 700 / 630 / 560 / 490 )	
	Motor		(W)	60			
Air filter				Standard filter attached (Long life filter)			
Drain tube size (Outsize diameter)				32mm (VP25)			
Controller				Remote control			
Sound pressure level		H ( M+ / M / L+ / L )		(dBA)	37 ( 35 / 33 / 32 / 29 )		43 ( 41 / 38 / 36 / 33 )
Sound power level		H ( M+ / M / L+ / L )		(dBA)	52 ( 50 / 48 / 47 / 44 )		58 ( 56 / 53 / 51 / 48 )
Connecting pipe		Gas side		(mm)	12.70		
		Liquid		(mm)	6.35		

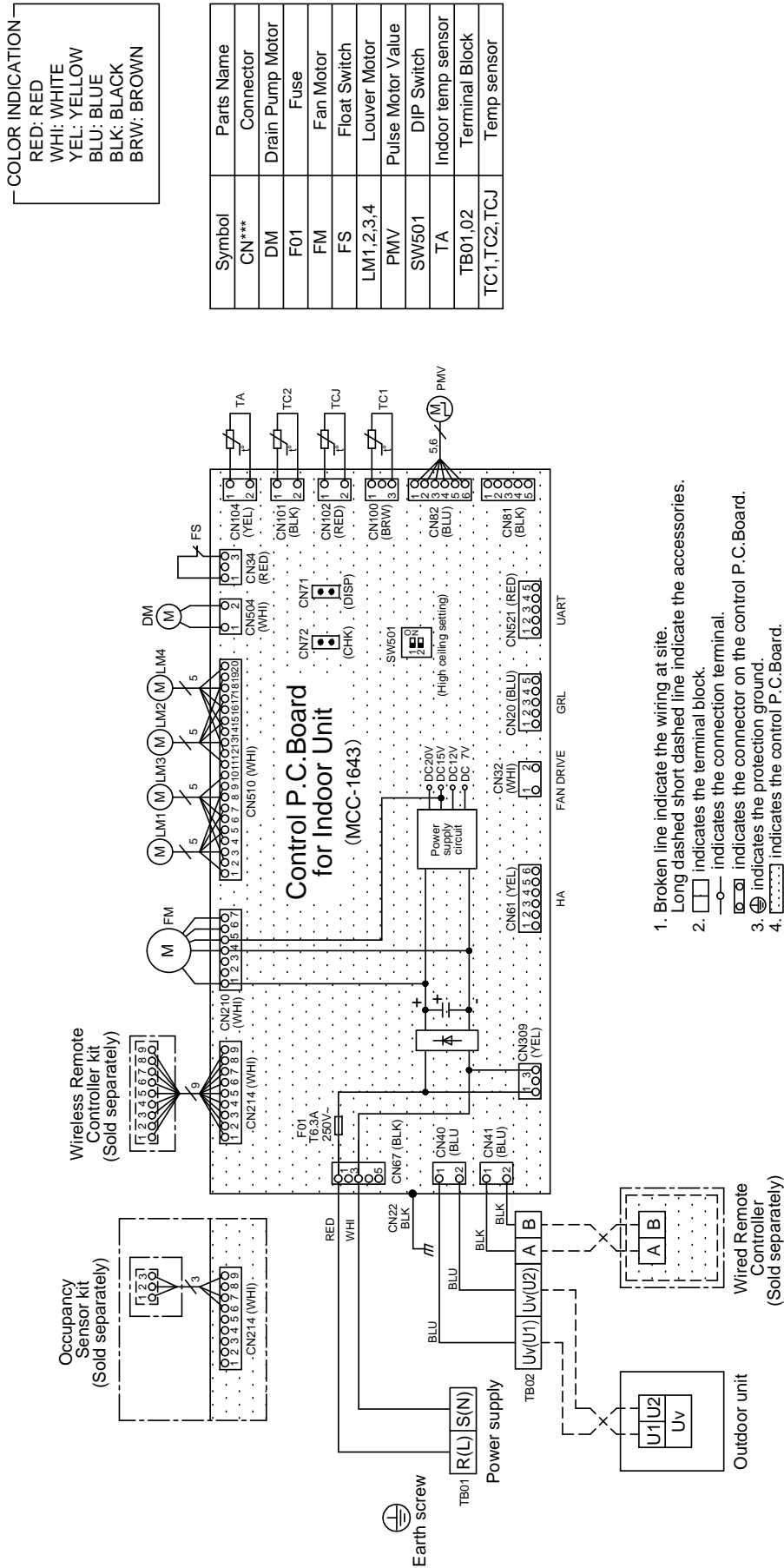
#### Note

- (\*1) Cooling / Heating capacity is based on single conection operation with standard piping length under japanese industrial snadard B8615 Condition 1.
- (\*2) Remode controller and ceiling panal are sold separately.
- (\*3) Height from the ceiling.
- (\*4) Depth doesn't including the elctric parts box.



# 3. WIRING DIAGRAMS

## Compact 4-way cassette type



## 4. PARTS RATING

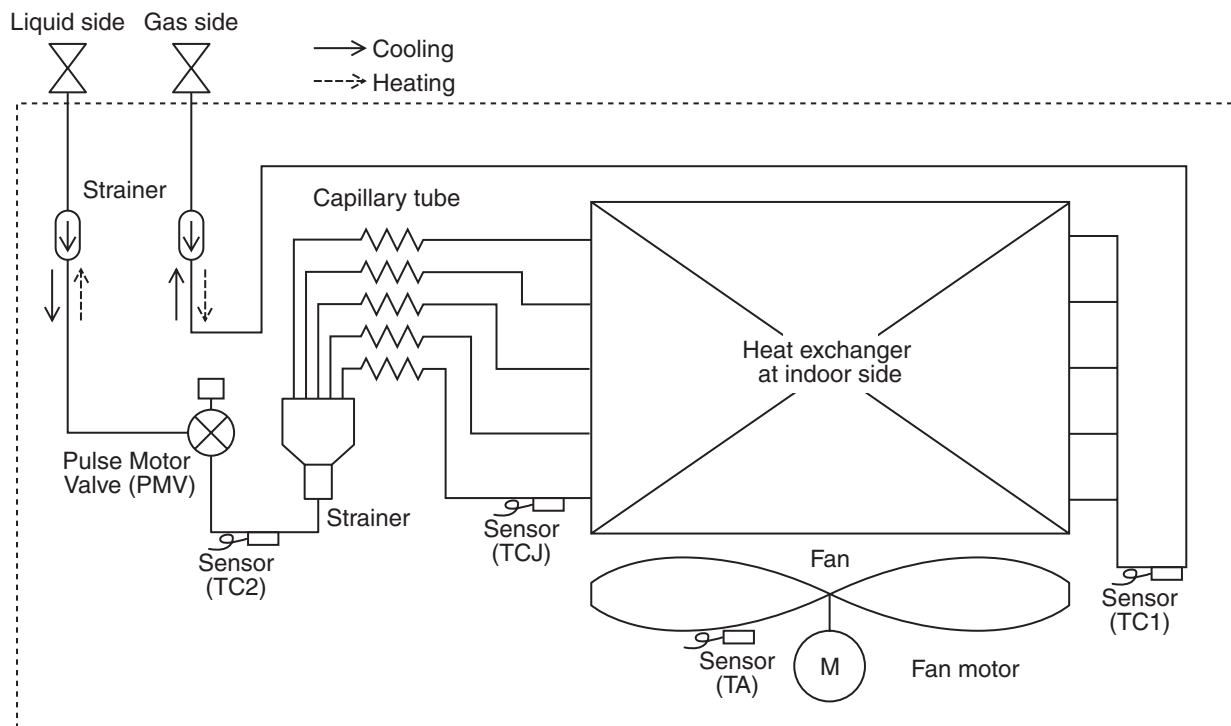
Indoor unit

Compact 4-way cassette type

Model	MMU-UP***MHP-E(TR)	005	007	009	012	015	018
Fan motor		LDF-340-60AA1					
Drain pump motor		PMD-08D12TF-2					
Float switch		FS-1A-31-3					
Pulse motor valve		PAM-B25YGTF-2				PAM-B40YGTF-1	
P.C.board		MCC-1643					
TA sensor		Lead wire length: 818 mm Vinyl tube					
TC1 sensor		Dia.4 size lead wire length: 500 mm Vinyl tube					
TC2 sensor		Dia.6 size lead wire length: 550 mm Vinyl tube (Black)					
TCJ sensor		Dia.6 size lead wire length: 500 mm Vinyl tube (Red)					

## 5. REFRIGERANT CYCLE DIAGRAM

### Indoor unit

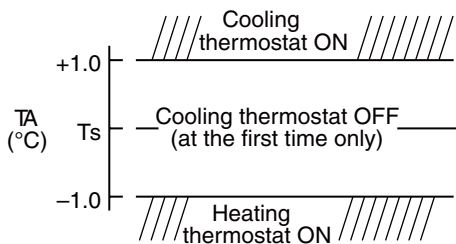
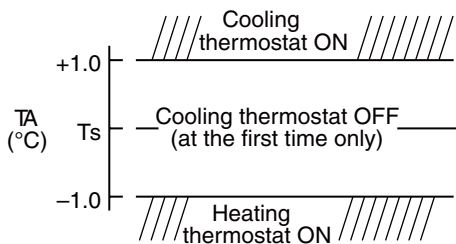
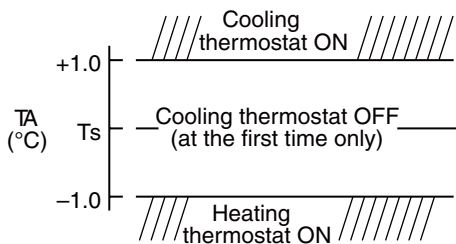


### Explanation of functional parts in indoor unit

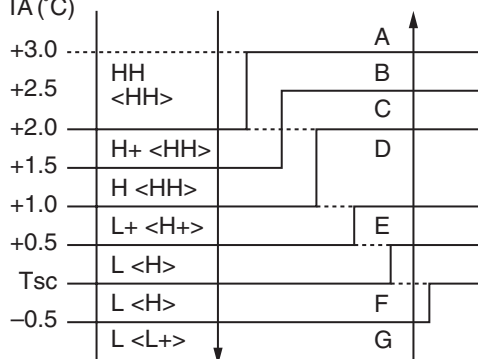
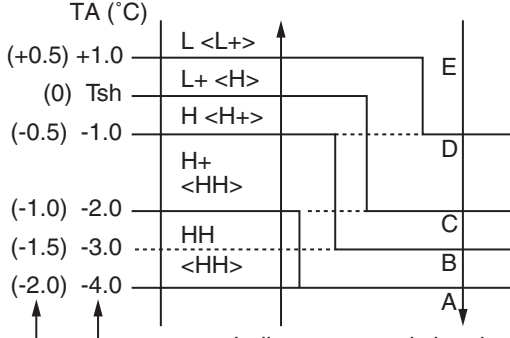
Functional part name		Functional outline
Pulse Motor Valve	PMV	(Connector CN82 (6P): Blue) 1) Controls superheat in cooling operation 2) Controls subcool in heating operation 3) Recovers refrigerant oil in cooling operation 4) Recovers refrigerant oil in heating operation
Temp. Sensor	TA	(Connector CN104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

## 6. CONTROL OUTLINE

### Control Specifications

No.	Item	Outline of specifications	Remarks														
1	When power supply is reset	<div>1) Distinction of outdoor unit When the power supply is reset, the outdoors are distinguished and the control is selected according to the distinguished result.</div> <div>2) Setting of indoor fan speed and existence of air direction adjustment Based on EEPROM data, select setting of the indoor fan speed and the existence of air direction adjustment.</div> <div>3) If resetting the power supply during occurrence of a trouble, the check code is once cleared. After ON/OFF button of the remote controller was pushed and the operation was resumed, if the abnormal status continues, the check code is again displayed on the remote controller.</div>															
2	Operation mode selection	<div>1) Based on the operation mode selecting command from the remote controller, the operation mode is selected.</div> <table><thead><tr><th>Remote controller command</th><th>Control outline</th></tr></thead><tbody><tr><td>STOP</td><td>Operation stops.</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>Dry operation</td></tr><tr><td>HEAT</td><td>Heating operation</td></tr><tr><td>AUTO Heat recovery system outdoor unit type</td><td><div>• TA and Ts automatically select COOL/HEAT operation mode for operation.</div><div>• The operation is performed as shown in the following figure according to TA value at the first time only. (In the range of <math>T_s - 1 &lt; TA &lt; T_s + 1</math>, Cooling thermostat OFF (Fan) / Setup air volume operation continues.)</div><div></div><div>* Heat recovery system outdoor unit type can select automatic mode. While a wireless remote controller is used, the mode is notified by “Pi Pi” (two times) receiving sound and the alternate flashing of [TIMER ☺] and [READY ☼]. To clear the alternate flashing, change the mode on the wireless remote controller.</div></td></tr></tbody></table>	Remote controller command	Control outline	STOP	Operation stops.	FAN	Fan operation	COOL	Cooling operation	DRY	Dry operation	HEAT	Heating operation	AUTO Heat recovery system outdoor unit type	<div>• TA and Ts automatically select COOL/HEAT operation mode for operation.</div> <div>• The operation is performed as shown in the following figure according to TA value at the first time only. (In the range of <math>T_s - 1 &lt; TA &lt; T_s + 1</math>, Cooling thermostat OFF (Fan) / Setup air volume operation continues.)</div> <div></div> <div>* Heat recovery system outdoor unit type can select automatic mode. While a wireless remote controller is used, the mode is notified by “Pi Pi” (two times) receiving sound and the alternate flashing of [TIMER ☺] and [READY ☼]. To clear the alternate flashing, change the mode on the wireless remote controller.</div>	TA: Room temp. Ts: Setup temp.
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3	Room temp. control	<div>1) Adjustment range: Remote controller setup temperature (°C)</div> <table><thead><tr><th></th><th>COOL/DRY</th><th>HEAT</th><th>AUTO*</th></tr></thead><tbody><tr><td>Wired type</td><td>18 to 29</td><td>18 to 29</td><td>18 to 29</td></tr><tr><td>Wireless type</td><td>17 to 30</td><td>17 to 30</td><td>17 to 30</td></tr></tbody></table>		COOL/DRY	HEAT	AUTO*	Wired type	18 to 29	18 to 29	18 to 29	Wireless type	17 to 30	17 to 30	17 to 30	* Heat recovery system only		
	COOL/DRY	HEAT	AUTO*														
Wired type	18 to 29	18 to 29	18 to 29														
Wireless type	17 to 30	17 to 30	17 to 30														





No.	Item	Outline of specifications	Remarks																
3	Room temp. control (Continued)	<div>2) By setting the CODE No. 06, the setup temperature in heating operation can be compensated.</div> <table><tr><td>Setup data</td><td>0</td><td>2</td><td>4</td><td>6</td></tr><tr><td>Setup temp. compensation</td><td>+0°C</td><td>+2°C</td><td>+4°C</td><td>+6°C</td></tr></table> <div>The initial factory default value</div> <table><tr><td>Model</td><td>Set data</td></tr><tr><td>Floor standing cabinet, Floor standing concealed, Floor standing</td><td>0</td></tr><tr><td>Other models</td><td>2</td></tr></table>	Setup data	0	2	4	6	Setup temp. compensation	+0°C	+2°C	+4°C	+6°C	Model	Set data	Floor standing cabinet, Floor standing concealed, Floor standing	0	Other models	2	<div>Return air temperature shift of heating operation</div> <div>Except while sensor of the remote controller is controlled (Code No. [32], "0001")</div>
Setup data	0	2	4	6															
Setup temp. compensation	+0°C	+2°C	+4°C	+6°C															
Model	Set data																		
Floor standing cabinet, Floor standing concealed, Floor standing	0																		
Other models	2																		
4	Automatic capacity control	<div>1) Based on the difference between TA and Ts, the operation capacity is determined by the outdoor unit.</div> <div><div><div>TA (°C)</div><div><div>COOL</div><div></div></div></div><div><div>TA (°C)</div><div><div>HEAT</div><div></div></div></div></div> <div>Ts: Setup temp. TA: Room temp.</div>																	
5	Automatic cooling/heating control	<div>1) The judgment of selecting COOL/HEAT is carried out as shown below. When TA exceeds Tsh by 1.5 for 10 minutes, the operation is thermostat OFF then, the heating operation (thermostat OFF) is changed to cooling operation.</div> <div><div><div>TA (°C)</div><div><div>Cooling</div><div></div></div></div><div>Description in the parentheses shows an example of cooling ON/OFF. When TA is less than Tsh by 1.5 for 10 minutes, the operation is thermostat OFF then, the cooling operation(thermostat OFF) is changed to heating operation.</div><div>2) For the automatic capacity control after judgment of cooling/heating, refer to item No.4.</div><div>3) For temperature compensation of room temp. control in automatic heating, refer to item No.3.</div></div>	<div>* Heat recovery system only</div> <div>Tsc: Setup temp. in cooling operation</div> <div>Tsh: Setup temp. in heating operation + temp. compensation of room temp. control</div>																




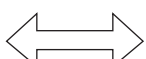




No.	Item	Outline of specifications	Remarks
6	Fan speed selection	<p>1) By the command from remote control, fan speed is changed. ((HH), (H+), (H), (L+), (L) or [AUTO])</p> <p>2) When the fan speed mode [AUTO] is selected, the fan speed varies by the difference between TA and Ts.</p> <p><b>&lt;COOL&gt;</b></p>  <p style="text-align: center;">&lt; &gt; : Indicate automatic cooling.</p> <ul style="list-style-type: none"> <li>• Fan speed mode [AUTO] in case when remote controller sensor works is equal to that in case when indoor unit sensor works.</li> <li>• If the fan speed has been changed once, it is not changed for 3 minutes. However when the air volume is changed, the fan speed changes.</li> <li>• When cooling operation has started, select a downward slope for the fan speed, that is, the high position.</li> <li>• If the temperature is just on the difference boundary, the fan speed is not changed.</li> </ul> <p><b>&lt;HEAT&gt;</b></p>  <p style="text-align: center;">&lt; &gt; : Indicate automatic heating.</p> <p style="text-align: center;">     Indoor unit sensor works.      Remote controller sensor works.   </p> <p>( ) : indicate the value when the remote controller sensor is worked.</p> <ul style="list-style-type: none"> <li>• If the fan speed has been changed once, it is not changed for 1 minute. However when the fan speed changed, the fan speed changes.</li> <li>• When heating operation has started, select an upward slope for the fan speed, that is, the high position.</li> <li>• If the temperature is at the difference boundary, the fan speed is not changed.</li> <li>• If TC2 <math>\geq 60^{\circ}\text{C}</math>, the fan speed increases by 1 step.</li> </ul>	<p>HH &gt; H+ &gt; H &gt; L+ &gt; L &gt; UL</p> <p>Depends on fan speed mode selection at the remote controller. (H+) and (L+) cannot be selected.</p> <p>For Floor Standing Concealed Type, or Floor Standing Cabinet Type, (HH), (H), (L) or [AUTO] can be selected regardless of remote controller models.</p> <p>Code No. [32]  0000: Indoor unit sensor (Main unit)  0001: Remote controller sensor</p> <p>TC2: Temperature of indoor heat exchanger sensor</p>



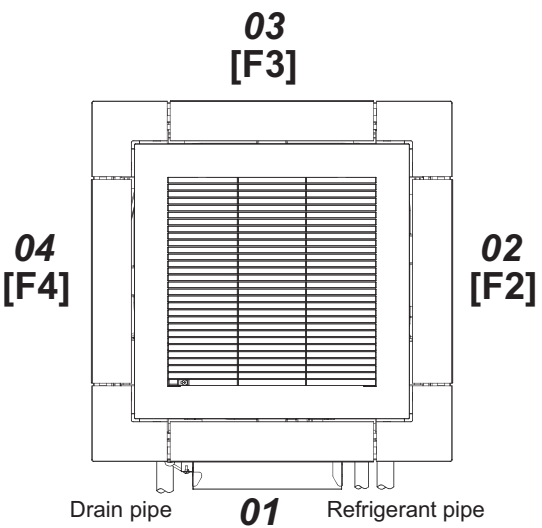

No.	Item	Outline of specifications	Remarks																																																																																																																							
6	Fan speed selection (Continued):	<p><b>Compact 4-way (only UP015, 018)</b> (Fan speed selection of UP012 or less for Compact 4-way are only Standard.)</p> <table><tr><th>CODE No. [5d]</th><th colspan="2">Factory default</th><th colspan="2">Type 1</th><th colspan="2">Type 3</th></tr><tr><th></th><th colspan="2">0000</th><th colspan="2">0001</th><th colspan="2">0003</th></tr><tr><th>SW501 (1)/(2)</th><th colspan="2">OFF/OFF</th><th colspan="2">ON/OFF</th><th colspan="2">OFF/ON</th></tr><tr><th>Tap</th><th>COOL</th><th>HEAT</th><th>COOL</th><th>HEAT</th><th>COOL</th><th>HEAT</th></tr><tr><td>F1</td><td></td><td></td><td></td><td></td><td>HH</td><td>HH</td></tr><tr><td>F2</td><td></td><td></td><td>HH</td><td>HH</td><td></td><td></td></tr><tr><td>F3</td><td></td><td></td><td></td><td>H+</td><td>H+, H</td><td>H+, H</td></tr><tr><td>F4</td><td></td><td></td><td>H+</td><td></td><td></td><td></td></tr><tr><td>F5</td><td></td><td>HH</td><td></td><td>H</td><td></td><td></td></tr><tr><td>F6</td><td>HH</td><td></td><td>H</td><td></td><td>L+</td><td>L+</td></tr><tr><td>F7</td><td>H+</td><td>H+</td><td></td><td></td><td>L</td><td>L</td></tr><tr><td>F8</td><td></td><td>H</td><td></td><td>L+</td><td></td><td></td></tr><tr><td>F9</td><td>H</td><td></td><td>L+</td><td>L</td><td></td><td></td></tr><tr><td>FA</td><td></td><td>L+</td><td>L</td><td></td><td></td><td></td></tr><tr><td>FB</td><td>L+</td><td>L</td><td></td><td></td><td></td><td></td></tr><tr><td>FC</td><td>L</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>FD</td><td>LL</td><td>LL</td><td>LL</td><td>LL</td><td>LL</td><td>LL</td></tr></table>	CODE No. [5d]	Factory default		Type 1		Type 3			0000		0001		0003		SW501 (1)/(2)	OFF/OFF		ON/OFF		OFF/ON		Tap	COOL	HEAT	COOL	HEAT	COOL	HEAT	F1					HH	HH	F2			HH	HH			F3				H+	H+, H	H+, H	F4			H+				F5		HH		H			F6	HH		H		L+	L+	F7	H+	H+			L	L	F8		H		L+			F9	H		L+	L			FA		L+	L				FB	L+	L					FC	L						FD	LL	LL	LL	LL	LL	LL	Setting of height ceiling mode at CODE No. [5D] or at SW501 on P.C. board.
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		<p>3) In heating operation, the mode changes to [LL] if thermostat is turned off.</p> <p>4) When the optional R32 Refrigerant Leak Detector is connected and a leak of R32 Refrigerant is detected, the fan may operate at speed [HH]. For details, refer to item No. 26 "Leak detector control".</p>																																																																																																																								



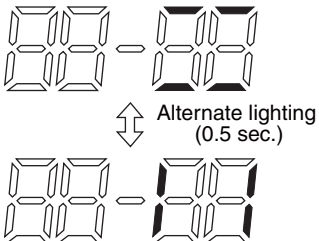
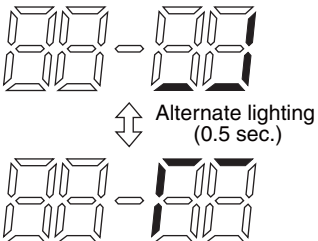

No.	Item	Outline of specifications	Remarks
7	Prevention of cold air discharge	<div>1. In heating operation, the lowest temperature between TC1 sensor and the highest temperature between TC2 and TCJ sensor is set as the upper bound of the fan speed mode control.</div> <div><div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><d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No.	Item	Outline of specifications	Remarks
9	Refrigerant (Oil) recovery control in cooling operation	Indoor units during stop/thermostat OFF or FAN operation perform following controls when a refrigerant (compressor oil) recovery signal is received from outdoor unit at the cooling operation, (1) Opening the indoor unit PMV at constant valve opening. (For a maximum of about 4 minutes) (2) Operating the drain pump for about one minute, during recovery control and after the control finished. Also, indoor unit fan or louvers may operate depending on the indoor unit type.	Control is performed per two hours or when the outdoor unit determines its need.(It varies depending on the indoor units connected.)
10	Refrigerant (Oil) recovery control in heating operation	Indoor units during stop/thermostat OFF or FAN operation perform following controls when a refrigerant (compressor oil) recovery signal is received from outdoor unit at the heating operation, (1) Opening the indoor unit PMV at constant valve opening. (For a maximum of about 20 minutes) (2) TC2 temperature is detected to close its PMV. Also, the fan, louvers, drain pump may operate for about one minute after recovery control finished depending on indoor unit types, until the number of recovery control reaches the predetermined number. NOTE The PMV, indoor fan, or louvers may operate through the outdoor unit instruction. For its detail, refer to the outdoor unit service guide.	Indoor unit during cooling thermostat OFF or FAN operation stops the indoor fan and displays "Operation standby ☺".  Control is performed per one hour or when the outdoor unit determines its need.(It varies depending on the indoor units connected.)
11	Compensation control for short intermittent operation	1) For 3 minutes after start of operation, the operation is forcibly continued even if the unit enters in Thermostat-OFF condition. 2) However the thermostat is OFF giving prior to COOL/HEAT selection, READY ⚙ for operation and protective control.	Usually the priority is given to 5 minutes at outdoor controller side.
12	Drain pump control	1) Drain pump operates while in cooling operation. (including DRY operation) 2) While the drain pump is operating, if the float switch is operated, the outdoor unit will stop operating but the drain pump will keep continuously operating. After that, the check code is issued. 3) When the drain pump stops operating, if the float switch is operated, the outdoor unit will stop and the drain pump will start operating. After the float switch is being operating for roughly 5 minutes, the check code will be issued.	Check Code [P10] • A model with a drain pump : Compact 4-way 2-way cassette 1-way cassette (SH) 4-way cassette
13	Elimination of retained heat	1) When the unit stopped from [HEAT] operation, the indoor fan operates with [L] for approx. 30 seconds.	
14	HA control	1) ON/OFF operation is available by input of HA signal from the remote site when connecting to remote controller or the remote ON/OFF interface. 2) The HA terminal is ON/OFF depending on HA control output. 3) The I/O specifications of HA is in accordance with JEMA standard.	When using HA terminal (CN61) for the remote ON/OFF, a connector sold separately is necessary. In case of group operation, use the connector to connect HA terminal to either master or follower indoor unit.

No.	Item	Outline of specifications	Remarks								
15	Alarm output setup	<p>The alarm output from the indoor P.C. board is output in each indoor unit during group control, but it can be set so as to be output in the header unit and follower units. Following the table below, register the setting data in DN Code "79".</p> <table><tr><th>DN</th><th>Alarm output of the header indoor unit</th><th>Setting data</th></tr><tr><td rowspan="2">79</td><td>Not including the state of follower units</td><td>0000 (Factory default)</td></tr><tr><td>Including the state of follower units</td><td>0001</td></tr></table>	DN	Alarm output of the header indoor unit	Setting data	79	Not including the state of follower units	0000 (Factory default)	Including the state of follower units	0001	<p>Connector CN61 (Optional connector specifications of indoor P.C. board)</p> <p>Be sure to change the setting data while operation stops.</p>
DN	Alarm output of the header indoor unit	Setting data									
79	Not including the state of follower units	0000 (Factory default)									
	Including the state of follower units	0001									
16	Display of filter sign [  ] (Not provided to the wireless type)	<p>1) The filter sign is displayed with LC by sending the filter-reset signal to the remote controller when the specified time (150H/2500H) elapsed as a result of integration of the operation time of the indoor fan.</p> <p>2) The integrated timer is cleared when the filter-reset signal is received from the remote controller. In this time, if the specified time elapsed, the counted time is reset and the liquid crystal display is deleted.</p> <table><tr><th>Filter service life</th><th>2500H</th><th>150H</th></tr><tr><td>Type</td><td>Compact 4-way cassette type 1-way cassette type (SH) 2-way cassette type 4-way cassette</td><td>Floor standing type Floor standing concealed type Floor standing cabinet type</td></tr></table>	Filter service life	2500H	150H	Type	Compact 4-way cassette type 1-way cassette type (SH) 2-way cassette type 4-way cassette	Floor standing type Floor standing concealed type Floor standing cabinet type	<p>[  FILTER] goes on. The filter sign is not displayed in</p>		
Filter service life	2500H	150H									
Type	Compact 4-way cassette type 1-way cassette type (SH) 2-way cassette type 4-way cassette	Floor standing type Floor standing concealed type Floor standing cabinet type									
17	Display of [READY] [HEAT READY]	<p>&lt; <b>READY</b> &gt; Displayed on the remote controller * This may not be displayed depending on the connected outdoor unit.</p> <p>1) When the following check codes are indicated.</p> <ul style="list-style-type: none"><li>• There is an indoor unit that detected the indoor overflow [P10].</li><li>• There is an indoor unit that detected the interlock alarm [L30].</li></ul> <p>2) When the operation mode of indoor unit is temporarily restricted. (At this time, the indoor unit stands by in forced thermostat-off state.)</p> <ul style="list-style-type: none"><li>• [COOL/DRY] operation is unavailable because the other indoor unit operates with [HEAT] mode.</li><li>• [HEAT] operation is unavailable because COOL priority (SW11-bit1 of the Outdoor I/F P.C. board is ON) is set and the other indoor unit operates with [COOL/DRY] mode.</li><li>• When the operation mode of the outdoor unit is restricted by an optional board for outdoor units, central controller etc.</li></ul> <p>3) The indoor fan stops because the system performs [Recovery operation for heating refrigerant (Oil)].</p> <p>&lt; <b>HEAT READY</b> &gt; Displayed on the remote controller The indoor fan stops in order to prevent discharge of cool air when heating operation started or during heating operation. (including the defrost operation during thermostat-OFF)</p>	<p>• &lt; <b>READY</b>  &gt; display No display for wireless type remote controller</p> <p>• &lt; <b>HEAT READY</b>  &gt; display</p>								

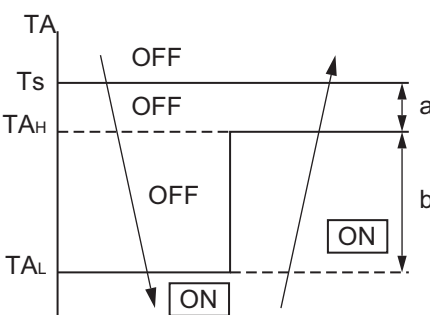
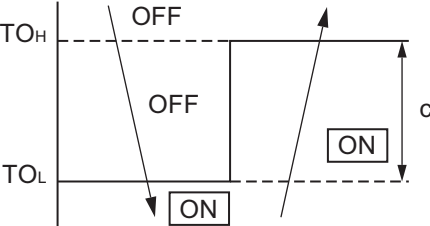
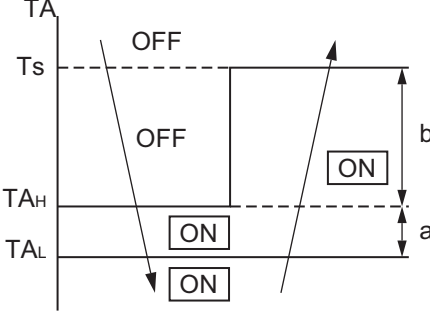
No.	Item	Outline of specifications	Remarks																																																
18	Selection of central control mode	<div>1) Selection of the contents that can be operated by the remote controller at the indoor unit side is possible according to setting at the central controller side.</div> <div>2) Setting contents</div> <table><thead><tr><th rowspan="2">Operation from central controller</th><th colspan="6">Operation on remote controller</th></tr><tr><th>ON/OFF setting</th><th>Operation selection</th><th>Timer setting</th><th>Temp. setting</th><th>Fan speed setting</th><th>Air direction setting</th></tr></thead><tbody><tr><td>Individual</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</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></tbody></table> <div>(○: Operation possible    ×: Operation impossible)</div>	Operation from central controller	Operation on remote controller						ON/OFF setting	Operation selection	Timer setting	Temp. setting	Fan speed setting	Air direction setting	Individual	○	○	○	○	○	○	[Central 1]	×	○	×	○	○	○	[Central 2]	×	×	×	×	○	○	[Central 3]	○	×	○	×	○	○	[Central 4]	○	×	○	○	○	○	
Operation from central controller	Operation on remote controller																																																		
	ON/OFF setting	Operation selection	Timer setting	Temp. setting	Fan speed setting	Air direction setting																																													
Individual	○	○	○	○	○	○																																													
[Central 1]	×	○	×	○	○	○																																													
[Central 2]	×	×	×	×	○	○																																													
[Central 3]	○	×	○	×	○	○																																													
[Central 4]	○	×	○	○	○	○																																													
19	Louver control	<div>1) Louver position setup</div> <div><div>• When the louver position is changed, the position moves necessarily to downward discharge position once to return to the set position.</div><div>• The louver position can be set up in the following operation range.</div><div><div>In cooling/dry operation</div><div></div><div>In heating/fan operation</div><div></div></div><div><div>• In group twin/triple operation, the louver positions can be set up collectively or individually.</div><div>In case that HEAT refrigerant recovery control was performed in STOP status, the louver position becomes horizontal when the operation is resumed.</div></div></div> <div>2) Swing setup</div> <div>Compact 4-way, 2-way cassette, 1-way cassette (SH), 4-way cassette :</div> <div><div>• [SWING] is displayed and the following display is repeated.</div><div><div>In all operations</div><div><div></div><div></div><div></div><div>(Repeats)</div></div><div>• In group operation, the louver positions can be set up collectively or individually.</div></div><div>Floor standing :</div><div><div>• [SWING] is displayed and the following display is repeated.</div><div><div>In all operations</div><div></div></div><div><div>• As for Floor standing, the vertical louver operates to a horizontal direction.</div><div>(Perform vertical wind direction adjustment manually)</div><div>• In group operation, the louver positions can be set up collectively or individually.</div></div></div><div>3) When the unit stopped or the warning was output, the louver is automatically set to full closed position.</div><div>4) When PRE-HEAT  (Heating ready) is displayed (Heating operation started or defrost operation is performed), heating thermostat is off or self-cleaning is performed, the louver is automatically set to horizontal discharge position.</div><div>* The louver which air direction is individually set or the locked louver closes fully when the unit stops and the louver is automatically set to horizontal discharge position when PRE-HEAT  (Heating ready) is displayed, heating thermostat is off.</div></div>	Subject model : Compact 4-way																																																

No.	Item	Outline of specifications	Remarks
19	Louver control (Continued)	<p><b>&lt;&lt;Individual air direction setup&gt;&gt;</b></p> <ul style="list-style-type: none"> <li>Pushing  Louver select button enables every discharge port to set up the air direction. (In the case of RBC-AMTU3*) The louver numbers that are displayed on the display part correspond to those in the following figure.</li> <li>In case of no input (key operation) for approx. 5 seconds during setting of individual air direction (during displaying of louver No. on the remote controller screen), the remote controller screen returns to the normal display screen.</li> <li>For the air direction illustration during normal operation, the air direction of the least No. among the louvers which are block-set is displayed.</li> <li>While individual air direction is being set, the remote controller operation (Illustration of air direction) and operation of the real machine are linked.</li> <li>When selecting a case,  Louver select button is not pushed or louver No. is not displayed, the air directions of all the louvers are collectively set up.</li> </ul> <div style="text-align: center;">  <p><b>01 [F1]</b> Drain pipe      Refrigerant pipe</p> <p><b>Compact 4-way cassette type</b></p> </div>	<p>Subject model : Compact 4-way</p> <p>Setup from the remote controller without  button is unavailable.</p>

No.	Item	Outline of specifications	Remarks												
19	Louver control (Continued)	<p>&lt;&lt;Selection of Swing mode&gt;&gt;</p> <ul style="list-style-type: none"><li>For the Swing mode, the following three types of modes are selectable and settable by keeping Swing/Direction  button pushed for 4 seconds or more on the remote controller. (In the case of RBC-AMTU3*) Swing mode can be selected by Code No.(DN) setup [F0] (In the case of RBC-ASCU11-*).</li></ul> <p>1) Standard (4 pieces: same phase) swing → Data: [0001 (At shipment)] When Swing operation is selected, four louvers align at the horizontal discharge position and then start the Swing operation at the same time.</p> <p>2) Dual swing → Data: [0002] When operation is selected, the louvers of louver No. [01] and [03] move to the horizontal discharge position, the louvers of louver No. [02] and [04] move to the downward discharge position and then start the Swing operation at the same time.</p> <p>3) Cycle swing → Data: [0003] When operation is selected, the louver No. [01] moves to the horizontal discharge position, [03] to the downward discharge position, [02] and [04] to the middle position and then start the Swing operation at the same time.</p> <ul style="list-style-type: none"><li>In case of selecting the Swing mode, “Dual swing” or “Cycle swing”, the following numerals is displayed at the center of the remote controller screen for approx. 3 seconds when  button was pushed to select [SWING]. (No display for the standard swing) (In the case of RBC-AMTU3*)</li></ul> <div><div><p><b>Dual swing</b></p></div><div><p><b>Cycle swing</b></p></div></div> <p>&lt;&lt;Louver lock (Louver fix)&gt;&gt;</p> <ul style="list-style-type: none"><li>For the air direction setup for each discharge port, the louver position can be locked during the normal operation.</li><li>An arbitrary air direction of an arbitrary louver can be registered and set by keeping  button pushed for 4 seconds or more on the remote controller. (In the case of RBC-AMTU3*) Louver lock can be selected by Code No.(DN) setup [F1], [F2], [F3] or [F4]. (In the case of RBC-ASCU11-*)</li><li>The louver lock can be set by registering the setup data to Code No.(DN) [F1] to [F4] according to the following table.</li></ul> <table><tr><th>Code No.(DN)</th><th>Objective louver No.</th><th>Setup data</th></tr><tr><td>F1</td><td>01</td><td rowspan="4">0000: Release (At shipment) 0001: Horizontal discharge position ~ 0005: Downward discharge position</td></tr><tr><td>F2</td><td>02</td></tr><tr><td>F3</td><td>03</td></tr><tr><td>F4</td><td>04</td></tr></table>	Code No.(DN)	Objective louver No.	Setup data	F1	01	0000: Release (At shipment) 0001: Horizontal discharge position ~ 0005: Downward discharge position	F2	02	F3	03	F4	04	<p>Subject model : Compact 4-way</p>  
Code No.(DN)	Objective louver No.	Setup data													
F1	01	0000: Release (At shipment) 0001: Horizontal discharge position ~ 0005: Downward discharge position													
F2	02														
F3	03														
F4	04														

No.	Item	Outline of specifications	Remarks														
19	Louver control (Continued)	<div><div><div><div></div><div>Control which ignores lock</div></div><div><div></div><div>Objective louver No.</div></div></div><table><tr><td>①</td><td>Operation stop</td><td>Full-close position</td></tr><tr><td>②</td><td>When heating operation started</td><td>Horizontal discharge position</td></tr><tr><td>③</td><td>Heating thermostat OFF</td><td>Horizontal discharge position</td></tr><tr><td>④</td><td>During defrost operation</td><td>Horizontal discharge position</td></tr><tr><td>⑤</td><td>Initialize operation</td><td>Full-close position</td></tr></table></div> <div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div><div></div><div></div></div><div><div></div><div></div></div></div></div> <div><div><div></div><div></div></div><div><div></div><div></div></div></div> <div><div><div></div><div></div></div><div><div></div><div></div></div></div> <div><div><div></div><div></div></div><div><div></div><div></div></div></div> 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①	Operation stop	Full-close position															
②	When heating operation started	Horizontal discharge position															
③	Heating thermostat OFF	Horizontal discharge position															
④	During defrost operation	Horizontal discharge position															
⑤	Initialize operation	Full-close position															

No.	Item	Outline of specifications	Remarks												
22	Occupancy sensor	<div>1) During the Occupancy sensor operation (DN code: [B5] [0001] and [B6] [0002 to 0005]), when there is no people in the Occupancy sensor range, it is automatically switched to the operation for the absence.</div> <div>2) The Occupancy sensor operation can change by [DN code : B6] as follows, and operates according to the operation at absent time, if time or absence of the setting contents continues. However time counting starts after the room temperature is stabilized. (after for 30 minutes operation)</div> <div><div>DN [B6]</div><table><tr><th>Data</th><th>Setting contents</th></tr><tr><td>0000</td><td>Invalid</td></tr><tr><td>0001 to 0005</td><td>30 minutes to 150 minutes (30 minutes each)</td></tr></table></div> <div>3) The operation at absent time can be changed by [DN code : B7].</div> <div><div>DN [B7]</div><table><tr><th>Data</th><th>Operation at absent time</th></tr><tr><td>0000</td><td>Circulator</td></tr><tr><td>0001</td><td>Operation stop</td></tr></table></div> <div>4) If the operation at absent time stops during group operation, or absence is fixed in each system, the operation starts circular operation once, and then the operation stops when absence was determined on all group.</div> <div>* DN [06] and DN [B7] can be set on the "Occupancy sensor" menu of the wired remote controller RBC - AMSU5*.</div>	Data	Setting contents	0000	Invalid	0001 to 0005	30 minutes to 150 minutes (30 minutes each)	Data	Operation at absent time	0000	Circulator	0001	Operation stop	The Occupancy sensor can be set up by wired remote controller RBC-AMSU5*
Data	Setting contents														
0000	Invalid														
0001 to 0005	30 minutes to 150 minutes (30 minutes each)														
Data	Operation at absent time														
0000	Circulator														
0001	Operation stop														
23	Soft cooling	<div>* Wired remote controller : RBC-AMSU5* is required.</div> <div>1) Sensation of draft can be suppressed by controlling performance and correcting the louver angle during cooling operation.</div> <div>2) However, it may not cool well because the operation will be performed with the cooling capacity suppressed.</div> <div>3) Perform operations from the remote controller menu to use soft cooling.</div>													
24	Dual set point (AUTO mode)	<div>1) The temperature for heating operations and cooling operations can be set separately in AUTO mode when dual set point is valid.</div> <div>2) The compressor will turn off (thermostat-OFF) when reaching the set temperature for heating operations and cooling operations.</div> <div>3) Set CODE No. (DN) [77] to enable Dual set point.</div> <div><div>DN [77]</div><table><tr><th>Data</th><th>Dual set point</th></tr><tr><td>0000</td><td>Unavailable (Factory default)</td></tr><tr><td>0002</td><td>Available</td></tr></table></div>	Data	Dual set point	0000	Unavailable (Factory default)	0002	Available	This function cannot be used with remote controllers that are not RBC-AMSU5*.						
Data	Dual set point														
0000	Unavailable (Factory default)														
0002	Available														

No.	Item	Outline of specifications	Remarks
25	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" (0.5°C) to "0010" (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 scale with points TA, Ts, TA<sub>H</sub>, and TA<sub>L</sub>. A horizontal line at Ts is labeled 'OFF'. A horizontal line at TA<sub>H</sub> is labeled 'OFF'. A horizontal line at TA<sub>L</sub> is labeled 'ON'. A vertical line at TA<sub>H</sub> is labeled 'OFF'. A vertical line at TA<sub>L</sub> is labeled 'ON'. A diagonal line from TA<sub>H</sub> to TA<sub>L</sub> is labeled 'OFF'. A diagonal line from TA<sub>L</sub> to TA<sub>H</sub> is labeled 'ON'. The distance between TA<sub>H</sub> and TA<sub>L</sub> is labeled 'a'. The distance between TA<sub>H</sub> and TA<sub>L</sub> is labeled 'b'.</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" (1°C) to "0010" (10°C) using the wired remote controller.</li> </ol>  <p>The diagram shows a temperature scale with points TO<sub>H</sub> and TO<sub>L</sub>. A horizontal line at TO<sub>H</sub> is labeled 'OFF'. A horizontal line at TO<sub>L</sub> is labeled 'ON'. A vertical line at TO<sub>H</sub> is labeled 'OFF'. A vertical line at TO<sub>L</sub> is labeled 'ON'. A diagonal line from TO<sub>H</sub> to TO<sub>L</sub> is labeled 'OFF'. A diagonal line from TO<sub>L</sub> to TO<sub>H</sub> is labeled 'ON'. 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" (1°C) to "0010" (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 scale with points TA, Ts, TA<sub>H</sub>, and TA<sub>L</sub>. A horizontal line at Ts is labeled 'OFF'. A horizontal line at TA<sub>H</sub> is labeled 'OFF'. A horizontal line at TA<sub>L</sub> is labeled 'ON'. A vertical line at TA<sub>H</sub> is labeled 'ON'. A vertical line at TA<sub>L</sub> is labeled 'ON'. A diagonal line from TA<sub>H</sub> to TA<sub>L</sub> is labeled 'OFF'. A diagonal line from TA<sub>L</sub> to TA<sub>H</sub> is labeled 'ON'. The distance between TA<sub>H</sub> and TA<sub>L</sub> is labeled 'a'. The distance between TA<sub>H</sub> and TA<sub>L</sub> is labeled 'b'.</p>	<p>TA<sub>H</sub>: Temp.set air high (= Ts - a ) TA<sub>L</sub>: Temp.set air low (= TA<sub>H</sub> - b )</p> <p>TO<sub>H</sub>: Temp.set out high TO<sub>L</sub>: Temp.set out low (= TO<sub>H</sub> - c )</p>

No.	Item	Outline of specifications	Remarks																												
25	Secondary heating (Continued)	<div><div>DN [C5]<table><tr><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></div><div>DN [C6]<table><tr><td>Data</td><td>TO<sub>H</sub>: Set temp. out (high) [°C]</td></tr><tr><td>-0015 to 0015</td><td>"-0015": -15°C to "0015": 15°C "0000": 0°C (Factory default)</td></tr></table></div><div>DN [C7]<table><tr><td>Data</td><td>c : TO<sub>H</sub> - TO<sub>L</sub> [°C]</td></tr><tr><td>0000</td><td>Unavailable (Factory default)</td></tr><tr><td>0001 to 0010</td><td>0001: 1°C to "0010": 10°C</td></tr></table></div><div>DN [DB]<table><tr><td>Data</td><td>b : TA<sub>H</sub> - TA<sub>L</sub> [°C]</td></tr><tr><td>0001 to 0010</td><td>"0001": 0.5°C to "0010": 5.0°C "0006": 3°C (Factory default)</td></tr></table></div><div>DN [DC]<table><tr><td>Data</td><td>a : Ts - TA<sub>H</sub> (Normal mode)[°C] TA<sub>L</sub> - Ts (Flip mode)[°C]</td></tr><tr><td>0000</td><td>Unavailable (Factory default)</td></tr><tr><td>0001 to 0010</td><td>0001: 1°C to "0010": 10°C</td></tr></table></div><div>&lt;Wiring&gt; 1) Use ① - ④ pin (Cooling output, DC 12 V) of CN60 on indoor P.C. board for output. <div><div>Relay (DC12V, procured locally) Corresponds to the relay up to one that the rated current of the operation coil is approx. 75mA</div><div><div><div>CN60 Option output (6P WHI)</div><div><div>11</div><div>22</div><div>33</div><div>44</div><div>55</div><div>66</div></div><div><div>Indoor control P.C. board</div><div><div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div></div><div><div>Connect to secondary heating unit</div></div></div></div><div>Note) Determine the cable length between the indoor control P.C. board and the relay within 2m.</div></div><div>2) If there is no CN60 on the P.C. board (MCC-1643 model), install separately-sold Application control kit (TCB-PCUC2E), and use "OUT1 to OUT3" of the Signal output terminal block (TB1). At this time, select "1" (Cool dry output) for "SW1 to SW3". Following the installation manual of the Application control kit for detailed contents relating to wiring.</div><div>* The output state can be checked from "Monitor function" on the wired remote controller. See page 73 or the manual for the remote controller for operation methods of "Monitor function".</div><div><table><tr><td>Monitor CODE No. E5</td><td>Secondary heating output - - - : Unavailable 0000: OFF 0001: ON</td></tr></table></div></div></div></div></div>	Data	Secondary heating mode	0000	Normal mode (Factory default)	0001	Flip mode	Data	TO <sub>H</sub> : Set temp. out (high) [°C]	-0015 to 0015	"-0015": -15°C to "0015": 15°C "0000": 0°C (Factory default)	Data	c : TO <sub>H</sub> - TO <sub>L</sub> [°C]	0000	Unavailable (Factory default)	0001 to 0010	0001: 1°C to "0010": 10°C	Data	b : TA <sub>H</sub> - TA <sub>L</sub> [°C]	0001 to 0010	"0001": 0.5°C to "0010": 5.0°C "0006": 3°C (Factory default)	Data	a : Ts - TA <sub>H</sub> (Normal mode)[°C] TA <sub>L</sub> - Ts (Flip mode)[°C]	0000	Unavailable (Factory default)	0001 to 0010	0001: 1°C to "0010": 10°C	Monitor CODE No. E5	Secondary heating output - - - : Unavailable 0000: OFF 0001: ON	
Data	Secondary heating mode																														
0000	Normal mode (Factory default)																														
0001	Flip mode																														
Data	TO <sub>H</sub> : Set temp. out (high) [°C]																														
-0015 to 0015	"-0015": -15°C to "0015": 15°C "0000": 0°C (Factory default)																														
Data	c : TO <sub>H</sub> - TO <sub>L</sub> [°C]																														
0000	Unavailable (Factory default)																														
0001 to 0010	0001: 1°C to "0010": 10°C																														
Data	b : TA <sub>H</sub> - TA <sub>L</sub> [°C]																														
0001 to 0010	"0001": 0.5°C to "0010": 5.0°C "0006": 3°C (Factory default)																														
Data	a : Ts - TA <sub>H</sub> (Normal mode)[°C] TA <sub>L</sub> - Ts (Flip mode)[°C]																														
0000	Unavailable (Factory default)																														
0001 to 0010	0001: 1°C to "0010": 10°C																														
Monitor CODE No. E5	Secondary heating output - - - : Unavailable 0000: OFF 0001: ON																														

No.	Item	Outline of specifications	Remarks															
26	R32 refrigerant Safety measures setting	<ul style="list-style-type: none"><li>When connecting to an outdoor unit that uses R32 refrigerant, the following settings must be made according to the safety system used.<ul style="list-style-type: none"><li>* Floor standing type (Including concealed type and cabinet type) cannot be connected to outdoor units that use R32 refrigerant.</li></ul></li><li>Set the CODE No.(DN)[107] for each indoor unit. For details of each item, refer to the Install Manual and Service Manual of the outdoor unit.</li></ul> <table><tr><td>DN[107]</td><td>Data</td><td>Safety measures</td></tr><tr><td></td><td>0000</td><td>No safety measures</td></tr><tr><td></td><td>0001</td><td>Pump-down operation (Factory default)</td></tr><tr><td></td><td>0002</td><td>Individual shut-off operation</td></tr><tr><td></td><td>0003</td><td>Leak Detector only</td></tr></table> <ul style="list-style-type: none"><li>* When using the optional R32 refrigerant Leak Detector, select a data other than "0000".</li></ul>	DN[107]	Data	Safety measures		0000	No safety measures		0001	Pump-down operation (Factory default)		0002	Individual shut-off operation		0003	Leak Detector only	Indoor unit type usable with R32 refrigerant: Compact 4-way
DN[107]	Data	Safety measures																
	0000	No safety measures																
	0001	Pump-down operation (Factory default)																
	0002	Individual shut-off operation																
	0003	Leak Detector only																
27	R32 refrigerant Leak Detector control	<p><b>Refrigerant detection control</b></p> <ol style="list-style-type: none"><li>When the optional R32 refrigerant Leak Detector is connected and safety measures are set (Item No. 26), the indoor unit controls to detect refrigerant leakage.</li><li>When the indoor unit receives the refrigerant leak detection signal, check code J30 (Refrigerant leak detection) is displayed on the remote controller.</li><li>When refrigerant leakage is detected, ventilation output (CN32) is turned ON. Refer to "8-3. Indoor Print Circuit Board" for details on ventilation output (CN32).</li><li>When DN[107] (R32 Safety measures) is "0001" or "0003" and DN[108] (Circulation flow operation mode) is "0000", the fan of the indoor unit is operated to prevent refrigerant from stagnating in the room (Fan speed is HH, louver position is middle). In this case, the fan continues to operate even if the operation is stopped by the remote controller.</li><li>When the indoor unit receives a refrigerant leak clear signal from the Leak Detector, it stops ventilation output and fan operation.</li></ol> <p><b>Refrigerant sensor maintenance control</b></p> <ul style="list-style-type: none"><li>* Operation is possible under the following conditions.</li></ul> <ol style="list-style-type: none"><li>When the signal of refrigerant sensor trouble is received or the signal from the Leak Detector is interrupted, the indoor unit displays check code J29 (Leak Detector trouble) on the wired remote controller.</li><li>When the energized time of the Leak Detector is near the end of its service life, the indoor unit outputs the notification code No. 204 (Leak Detector life advance display) and displays the icon of the notification code on the wired remote controller.</li><li>When the energized time of the Leak Detector reaches the end of its service life, the indoor unit displays check code J31 (Refrigerant leak detection sensor exceeding its life of the product) on the wired remote controller.</li></ol>	Indoor unit type usable with R32 refrigerant: Compact 4-way															
28	Battery kit Lifetime Notification	When the indoor unit detects that the battery kit connected to the Flow Selector unit or shutoff valve has reached the end of its service life, it outputs notification code No. 203 (Flow Selector unit battery dead) and displays a notification code icon on the wired remote controller.	R32 refrigerant systems only															

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

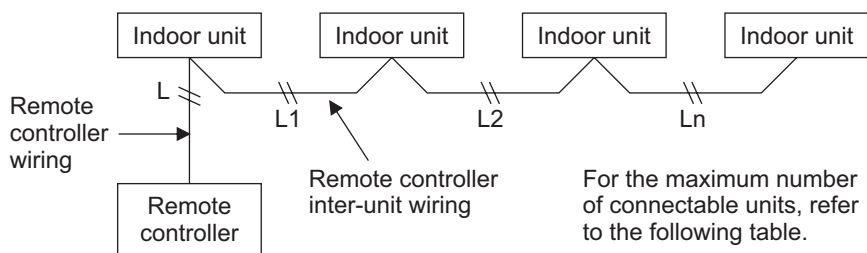
7-1. This air conditioning (U series) has new communication specifications, and TU2C-LINK (U series) and TCC-LINK (other than U series) differ in a communication type. For the communication type and the model names such as each unit or remote controllers, refer to the following table.

Communication type	TU2C-LINK (U series and future models)	TCC-LINK (Other than U series)
Outdoor unit	MMY-M <sup>U</sup> P***, MMY-S <sup>U</sup> G***, MCY-M <sup>U</sup> G*** ↑                      ↑                      ↑ This letter indicates U series model.	Other than U series MMY-MAP***, MMY-MAP*** MCY-MHP***
Indoor unit	MM <sup>U</sup> -AP*** ↑ This letter indicates U series model.	Other than U series MM <sup>U</sup> -AP***
Wired remote controller	RBC-A** <sup>U</sup> *** ↑ This letter indicates U series model.	Other than U series
Wireless remote controller kit & receiver unit	RBC-AX <sup>U</sup> *** ↑ This letter indicates U series model.	Other than U series
Remote sensor	TCB-TC** <sup>U</sup> *** ↑ This letter indicates U series model.	Other than U series

U series outdoor unit : SMMS-u, SMMS∞, SHRM-A, MiNi-SMMS  
Other than U series outdoor unit : SMMS-i, SMMS-e, SHRM-e, SMMS-7 etc.

7-2. 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

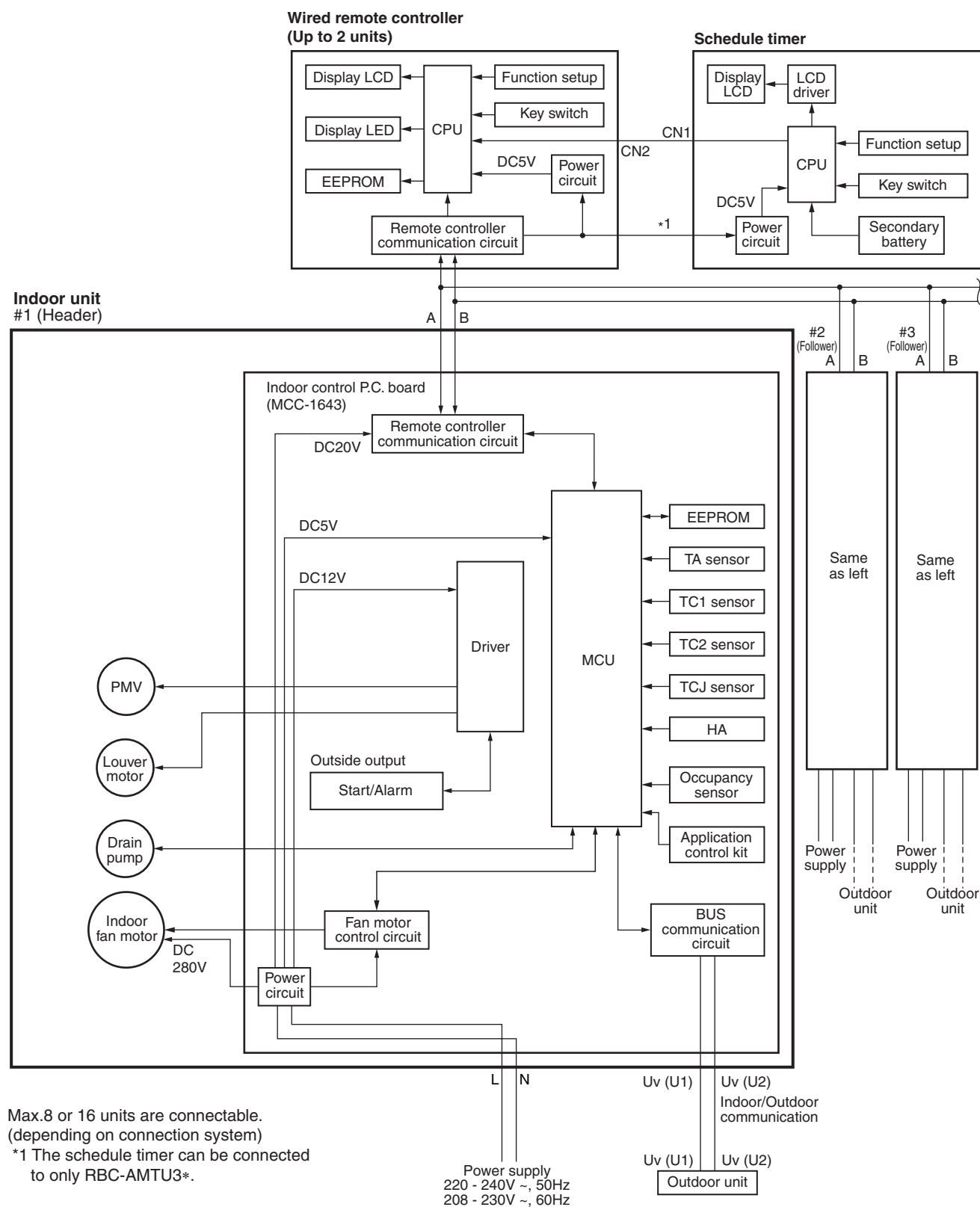
	Unit type							
Outdoor unit	U series	U series	U series	U series	*	*	*	*
Indoor unit	U series	U series	*	*	U series	U series	*	*
Remote controller Remote sensor	U series	*	U series	*	U series	*	U series	*
Communication type	TU2C-LINK	TCC-LINK						
Maximum number of connectable units	16	8						

\* Other than U series

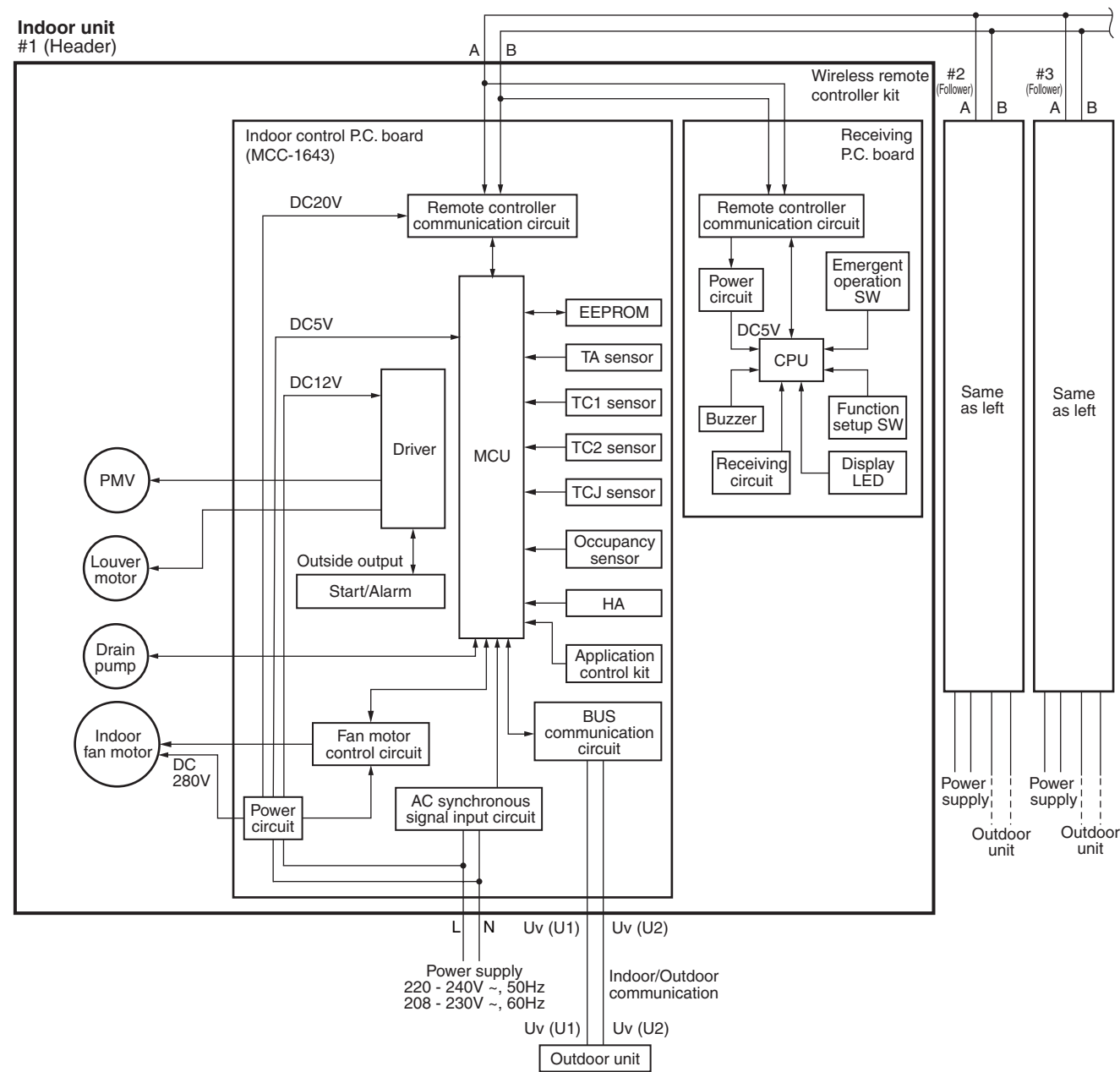
## 8. APPLIED CONTROL AND FUNCTIONS (INCLUDING CIRCUIT CONFIGURATION)

### 8-1. Indoor controller block diagram (MCC-1643)

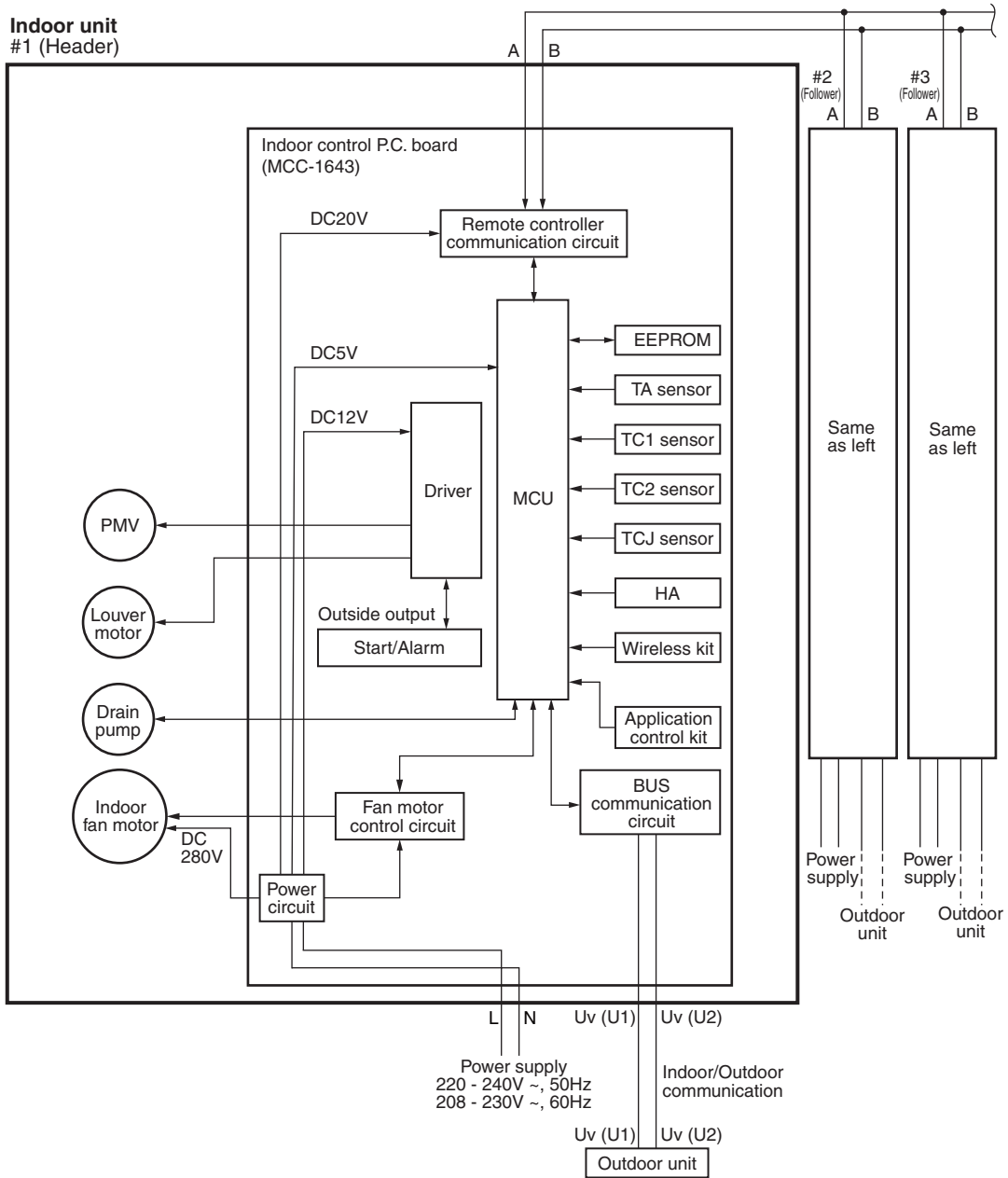
#### 8-1-1. In case of connection of wired remote controller



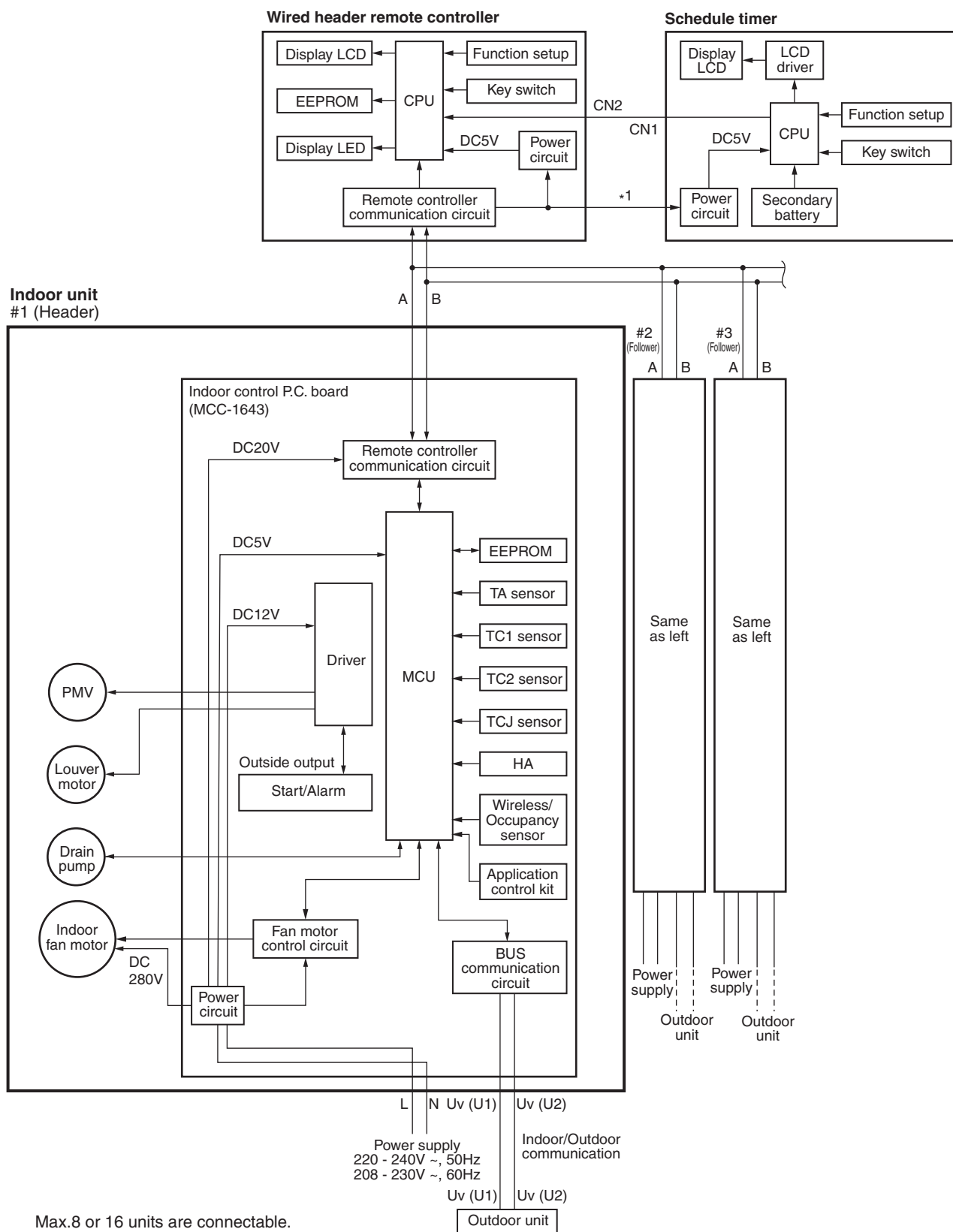
8-1-2. In case of connection of wireless remote controller



**Indoor unit  
#1 (Header)**

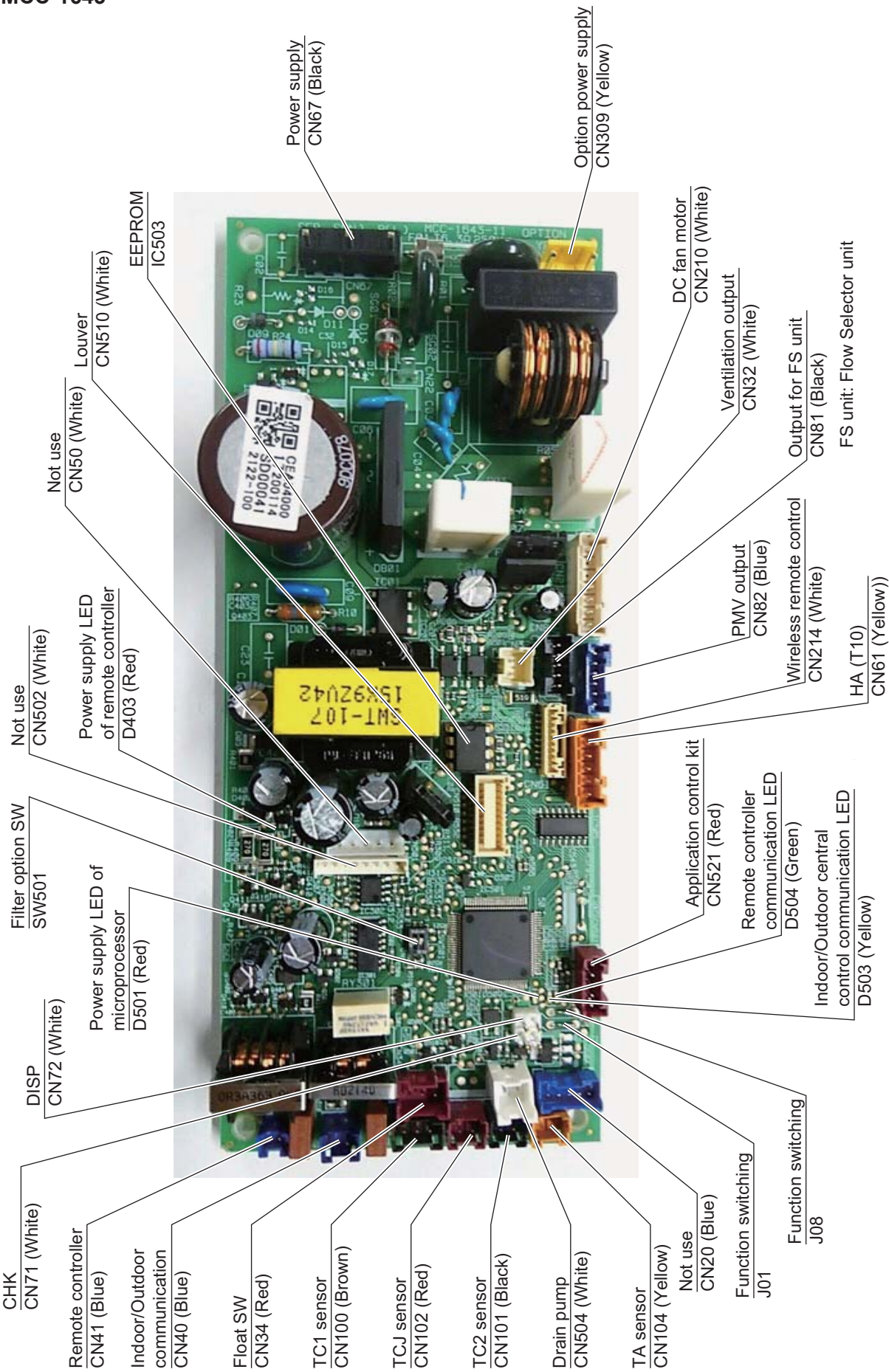


### 8-1-3. Connection of both wired remote controller and wireless remote controller



# 8-2. Indoor Print Circuit Board

MCC-1643



### Optional connector specifications of indoor P.C. board (MCC-1643)

Connector No.	Color	Function	Pin No.	Specifications	Remarks
CN32	White	Ventilation output	①	DC12V	Setting at shipment: Interlock of ON by indoor unit operation, with OFF by stop operation * The single operation setting by FAN button on the remote controller is performed on the remote controller (DN=31).
			②	Output (Open collector)	
CN34	Red	Input for float SW	①	DC12V NC	Normal when between ①-③ short-circuits, but abnormal when open-circuits. (check code "P10" appears)
			②		
			③	Float SW input	
CN61	Yellow	HA	①	ON/OFF input	HA ON/OFF input (J01: YES/NO=Pulse (At shipment from factory) /Static input selection)
			②	0V (COM)	
			③	Remote controller prohibited input	Permission/Prohibition of remote controller operation stop is performed by input.
			④	Operation output (Open collector)	
			⑤	DC12V (COM)	Operation ON (Answer back of HA)
			⑥	Warning output (Open collector)	
CN71	White	CHK Operation check	①	Check mode input 0V	Warning output ON
			②		
CN72	White	DISP Exhibition mode	①	DISP mode input 0V	This check is used to check indoor operation. (Performs operation of indoor fan "H", Louver horizontal and Drain pump ON without communication with outdoor and remote controller)
			②		
CN81	Black	Output for Flow selector unit	①	DC12V EP valve output (Open collector) Balance valve output (Open collector) Suction valve output (Open collector) Discharge valve output (Open collector)	Communication is available by indoor unit and remote controller only (When the power is turned on). Shortening time of timer (Always)
			②		
			③		
			④		
			⑤		
CN309	Yellow	Output power supply for option	① ③	AC230V AC230V	This can be used as power supply for option devices.
CN521	Red	Connection for option P.C.board	①	DC12V DC5V Send Receive 0V	Connected Application control kit (TCB-PCUC2E)
			②		
			③		
			④		
			⑤		

● : Use in standard, ○ : Available, △ : Use by connecting parts sold separately, x : Unavailable

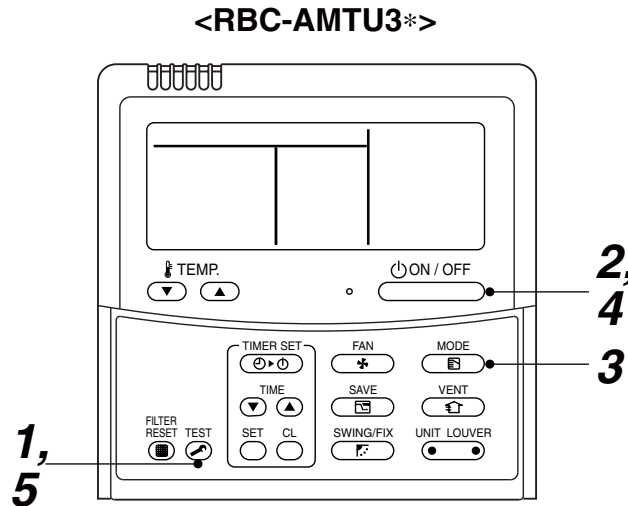
\* To use the functions operated by CN60, CN80, CN70 and CN73, which are provided for other P.C.board, use the Application control kit (TCB-PCUC2E) sold separately.

## 8-3. Test run of indoor unit

### ■ 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. Refer to the Installation Manual and Service Manual of outdoor unit for the procedure of the test run from an outdoor interface P.C. board.

#### ◆ In case of wired remote controller



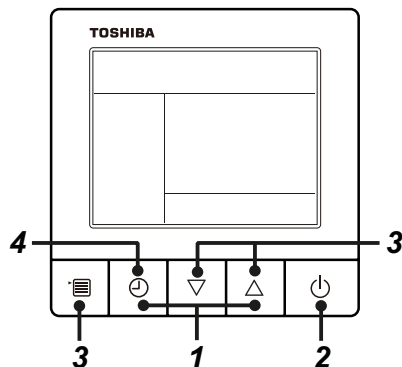
Procedure	Operation contents	
<b>1</b>	Push [TEST] button for 4 seconds or more. [TEST] is displayed at the display part and the mode enters in TEST mode.	
<b>2</b>	Push [ON/OFF] button.	
<b>3</b>	Change the mode from [COOL] to [HEAT] using [MODE] button. <ul style="list-style-type: none"> <li>• Do not use [MODE] button for other mode except [COOL]/[HEAT] modes.</li> <li>• The temperature cannot be adjusted during test run.</li> <li>• The trouble detection is performed as usual.</li> </ul>	
<b>4</b>	After test run, push [ON/OFF] button to stop the operation. (Display on the display part is same to that in Procedure <b>1</b> .)	
<b>5</b>	Push [TEST] button to clear the TEST mode. ([TEST] display in the display part disappears and status becomes the normal stop status.)	


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

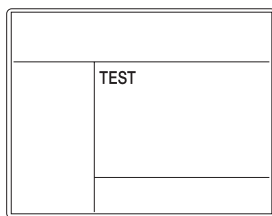
<RBC-ASCU11-\*>

**Be sure to stop the air conditioner before making settings.**

(Change the setup while the air conditioner is not working.)



- 1** Push and hold OFF timer button and [  ] setting button simultaneously for 10 seconds or more. [TEST] is displayed on the display part and the test run is permitted.



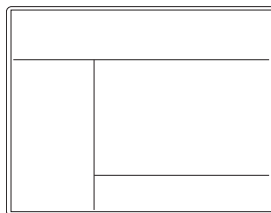
- 2** Push ON/OFF button.

- 3** Push menu button to select the operation mode. Select [  Cool] or [  Heat] with [  ] [  ] setting button.

- Do not run the air conditioner in a mode other than [Cool] or [Heat].
- The temperature setting function does not work during test run.
- The check code is displayed as usual.




- 4** After the test run, push OFF timer button to stop a test run.

([TEST] disappears on the display and the air conditioner enters the normal stop mode.)



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

## ◆ In case of wireless remote controller

- 1** Turn on the power of the air conditioner.  
When power is turned on for the first time after installation, it takes approx. 5 minutes until the remote controller becomes available. In the case of subsequent power-on, it takes approx. 1 minute until the remote controller becomes available.  
Execute a test run after the predetermined time has passed.
- 2** Push “ON/OFF” button on the remote controller, select [  Cool ] or [  Heat ] with “MODE” button, and then select [  HIGH ] with “FAN” button.

**3**

Cooling test run	Heating test run
Set the temperature to 17 °C with the temp. setup buttons.	Set the temperature to 30 °C with the temp. setup buttons.

**4**

Cooling test run	Heating test run
After confirming a signal receiving sound “beep” immediately set the temperature to 18 °C with the temp. setup buttons.	After confirming a signal receiving sound “beep” immediately set the temperature to 29 °C with the temp. setup buttons.

**5**

Cooling test run	Heating test run
After confirming a signal receiving sound “beep” immediately set the temperature to 17 °C with the temp. setup buttons.	After confirming a signal receiving sound “beep” immediately set the temperature to 30 °C with the temp. setup buttons.

- 6** Repeat procedures **4 → 5 → 4 → 5**.  
Indicators “Operation” (green), “Timer” (green), and “Ready” (orange) in the wireless receiver section flash in approx. 10 seconds, and the air conditioner starts operation. If any of these indicators does not flash, repeat procedures 2 to 5.
- 7** Upon completion of the test run, push “ON/OFF” button to stop operation.

<Overview of test run operations using the wireless remote controller>

### ▼ Cooling test run:

ON/OFF → 17 °C → 18 °C → 17 °C → 18 °C → 17 °C → 18 °C → 17 °C → (test run) → ON/OFF

### ▼ Heating test run:

ON/OFF → 30 °C → 29 °C → 30 °C → 29 °C → 30 °C → 29 °C → 30 °C → (test run) → ON/OFF

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

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

This function is provided to check the operation of the indoor unit individually without connecting to the remote controller or the outdoor unit. This function can be used regardless of the ON/OFF operation. However, it is recommended to avoid using this function for a long time, otherwise the trouble of the equipment may occur.

### [How to operate]

- 1) Short-circuit CHK pin (CN71 on the indoor P.C. board).  
The operation mode may differ according to the indoor unit status at 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) During the normal time, the minimum opening degree (30pls) of the indoor PMV can be set only when both CHK pin (CN71) and DISP pin (CN72) on the indoor P.C board are short-circuited. If the short-circuit at DISP pin (CN72) is opened, the indoor PMV will be at the maximum opening degree (1500pls).  
When open DISP pin, the maximum opening degree (1500 pls) can be obtained again.
  - 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.

### [How to clear]

Open CHK pin. If the system is on operation, it will temporarily stop then automatically restart after a while.

\* The actual indoor PMV opening degree may differ from the described values due to adjustment depending on PMV types.

	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	Vertical	Vertical	Immediate stop
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.









## 8-4. Method to set indoor unit function DN code

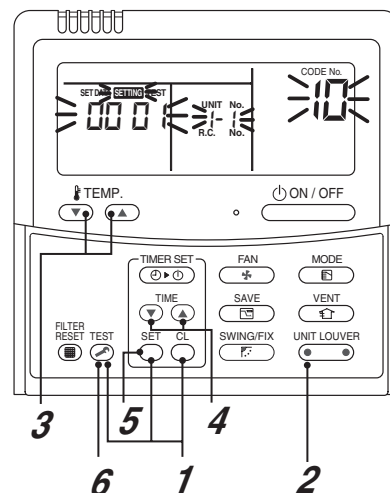
(When performing this task, be sure to use a wired remote controller.)

### ◆ Procedure

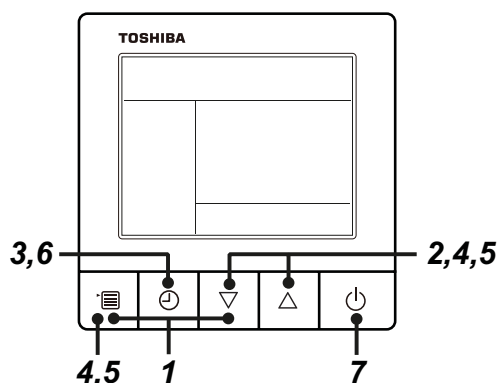
Be sure to stop the air conditioner before making settings


<RBC-AMTU3\*>

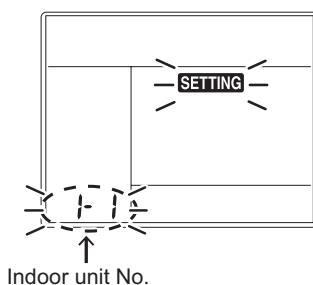
- 1** Push the  +  +  buttons simultaneously and hold for at least 4 seconds.  
The unit No. displayed first is the address of the header indoor unit in group control.  
Then the fan and louver of the selected indoor unit move.
- 2** Each time the  button (left side of the button) is pressed, one of the indoor unit Nos. under group control is displayed in turn. Then the fan and louver of the selected indoor unit move.
- 3** Use the  button to select the CODE No. (DN code) of the desired function.
- 4** Use the  button to select the desired SET DATA associated with the selected function.
- 5** Push the  button. (The display changes from flashing to steady.)
  - To change the selected indoor unit, go back to step 2.
  - To change the selected function, go back to step 3.
- 6** When the  button is pushed, the system returns to normal off state.



<RBC-ASCU11-\*>

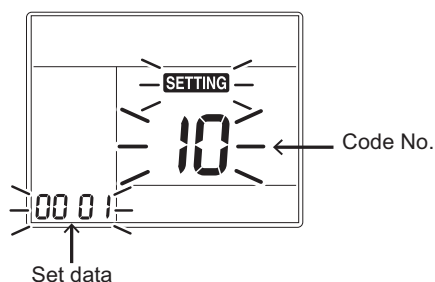


- 1** Push and hold menu button and [  ] setting button simultaneously for 10 seconds or more.
  - After a while, the display flashes as shown in the figure. "ALL" is displayed as indoor unit numbers during initial communication immediately after the power has been turned on.



- 2** Each time [  ] [  ] setting button is pushed, indoor unit numbers in the group control change cyclically. Select the indoor unit to change settings for.
  - The fan of the selected indoor unit runs. The indoor unit can be confirmed for which to change settings.

**3 Push OFF timer button to confirm the selected indoor unit.**



**4 Push the menu button to make Code No. [ \*\* ] flash. Change Code No. [ \*\* ] with [ ∇ ] [ △ ] setting button.**

**5 Push the menu button to make Set data [ \*\*\*\* ] flash. Change Set data [ \*\*\*\* ] with [ ∇ ] [ △ ] setting button.**

**6 Push OFF timer button to complete the set up.**

- To change other settings of the selected indoor unit, repeat from Procedure **4**.

**7 When all the settings have been completed, push ON/OFF button to finish the settings. (Return to the normal mode)**

“ **SETTING** ” flashes and then the display content disappears and the air conditioner enters the normal stop mode. (The remote controller is unavailable while “ **SETTING** ” is flashing.)

- To change settings of another indoor unit, repeat from Procedure **1**.

## 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 0002: 2500H 0004: 10000H 0001: 150H 0003: 5000H	Depending on model type
<b>02</b>	Dirty state of filter	0000: Standard 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 0001: No.1 unit to 0128: No.128 unit ... TU2C-LINK 00Un: Unfixed (When using U series remote controller) 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 °C 0002: +2 °C to 0001: +1 °C 0010: +10 °C (Up to +6 recommended)	Depending on model type
<b>0b</b>	Demand control (CN73 / CN4)	0000: Demand input 0002: Card input setup.3 0004: Card input setup.4 0005: Fire alarm input (Normal close) 0007: Card input setup.5 0009: Card input setup.2 0001: O2 sensor input 0003: Fire alarm input (Normal open) 0006: Notice code (202) 0008: Card input setup.1	0000: Demand input
<b>0d</b>	Existence of [AUTO] mode	0000: Provided 0001: Not provided (Automatic selection from connected outdoor unit)	0001: Not provided
<b>0F</b>	Cooling only	0000: Heat pump 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 0044 Refer to Indoor Unit Capacity DN code "11" list	According to capacity type
<b>12</b>	Line address	0001: No.1 unit to 0030: No.30 unit ... TCC-LINK 0001: No.1 unit to 0128: No.128 unit ... TU2C-LINK 00Un: Unfixed (When using U series remote controller) 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 0001: No.1 unit to 0128: No.128 unit ... TU2C-LINK 00Un: Unfixed (When using U series remote controller) 0099: Unfixed (Other than U series remote controller)	00Un/0099: Unfixed *1
<b>14</b>	Group address	0000: Individual 0001: Header unit of group 0002: Follower unit of group 00Un: Unfixed (When using U series remote controller) 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 0004: (4-way Air Discharge Cassette type, etc.)	Depending on model type
<b>1E</b>	Temp difference of AUTO] mode selection COOL → HEAT, HEAT → COOL	0000: 0 °C to 0010: 10 °C (Ts ± 5 °C) Ts:Remote controller setup temp.	0003: 3 °C (Ts ±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 0002: None 0001: Alarm input (Air washer, etc.)	0002: None
<b>2E</b>	HA terminal (CN61) select	0000: Usual 0002: Fire alarm input (Normal open) 0004: Notice code (201) 0001: Card input setup.1 (3) 0003: Card input setup.2 (4) 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: Indoor unit TA sensor 0001: Remote controller sensor	0000: Indoor unit TA sensor

DN	Item	Description		At shipment
<b>33</b>	Temperature unit select	0000: °C	0001: °F	0000: °C
<b>5d</b>	External static pressure High-ceiling adjustment (Air flow selection)	0000: Standard (Factory default) 0001: High ceiling 1 (UP015, 018 only) 0003: High ceiling 3 (UP015, 018 only)		0000: Standard
<b>60</b>	Timer setting (wired remote controller)	0000: Available (can be performed)	0001: Unavailable (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 header unit	0000: Not including the state of following unit	0001: Including the state of following unit	0000: Not including the state of following unit
<b>b3</b>	Soft cooling	0000: Unavailable	0001: Available	0001: Available
<b>b5</b>	Occupancy sensor/ Wireless Remote controller Provided / None	0000: None 0002: Wireless remote controller provided	0001: Occupancy sensor provided	0000: None
<b>b6</b>	Occupancy sensor Enable / Invalid (Absence time judgment time)	0000: Invalid 0002: 60min. 0005: 150min.	0001: 30min. 0004: 120min.	0002: Enable (60 min.)
<b>b7</b>	Occupancy sensor operation at absent time	0000: Stand by	0001: operation stop	0000: Stand by
<b>d0</b>	Whether the power saving mode can be set by the remote controller	0000: Invalid	0001: Valid	0001: Valid
<b>E0</b>	Destination	0000: Japan 0004: Global		0004: Global
<b>E6</b>	Wireless remote controller A-B selection	0000: A	0001: B	0000: A
<b>F0</b>	Swing mode	0000 : Out of sync swing 0002 : Dual swing	0001 : 4-way sync swing 0003 : Cycle swing	0000: Not including 4-way 0001: 4-way (Compact)
<b>F1</b>	Louver fixed position (Louver No.1)	0000 : Release 0005 : Downward discharge position	0001 : Horizontal discharge position	0000: Not fixed
<b>F2</b>	Louver fixed position (Louver No.2)	0000 : Release 0005 : Downward discharge position	0001 : Horizontal discharge position	0000: Not fixed
<b>F3</b>	Louver fixed position (Louver No.3)	0000 : Release 0005 : Downward discharge position	0001 : Horizontal discharge position	0000: Not fixed
<b>F4</b>	Louver fixed position (Louver No.4)	0000 : Release 0005 : Downward discharge position	0001 : Horizontal discharge position	0000: Not fixed
<b>F6</b>	Presence of Application control kit (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 (FS unit : Flow Selector unit)	0000: Heating	0001: Cooling	0000: Heating
<b>FE</b>	Flow Selector unit address	0001: No.1 unit to 0064: No.64 unit ... TCC-LINK 0001: No.1 unit to 0128: No.128 unit ... TU2C-LINK 00Un: Unfixed (When using U series remote controller) 0099: Unfixed (Other than U series remote controller)		00Un/0099: Unfixed *1
<b>105</b>	Flow Selector unit and Shut- off Valve unit port address	0001: Port No.1 ~	0012: Port No.12	0001: Port No. 1
<b>106</b>	Combining branches mode of Flow Selector unit	0000: NOT combining mode	0001: Combining mode	0000: NOT combining mode
<b>107</b>	Safety measures	0000: No safety measures 0002: Individual shut-off operation	0001: Pump-down operation 0003: Leak Detector only	0001: Pump-down operation
<b>108</b>	Circulation flow operation mode of the indoor unit	0000: ON	0001: OFF	0000: ON

DN	Item	Description	At shipment
180	Notice code number 01	0000: None 0001 ~ 0255 : Notice code 0129 : Notice code (201) 0130 : Notice code (202) (0001 ~ 0255 : TU2C-LINK only)	0000: None
181	Notice code number 02		0000: None
182	Notice code number 03		0000: None
183	Notice code number 04		0000: None
184	Notice code number 05		0000: None
185	Notice code number 06		0000: None
186	Notice code number 07		0000: None
187	Notice code number 08		0000: None
188	Notice code number 09		0000: None
189	Notice code number 10		0000: None
103	Remote controller	0000: Use 0001: Do not use • Indoor unit production after Jun-2021 does not need this DN setting. The serial number is 1*6*0001 or upper.	0000: Use
1FB	Central device control state	0000: No central device control (Remote controller use is possible) 0001: Central device control (Remote controller use is impossible)	0000: No central device control
1FC	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]), Flow Selector 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	
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.

**Table 1. Type: CODE No. 10**

Setting data	Type	Type name abb.
0014*	Compact 4-way Cassette Type	MMU-UP***1MHP*

\*  **CAUTION**

<Model name: MMU-UP\*\*\*1MHP\*>

For this model, please make all the following settings.

CODE No.(DN)	Setting data	Description
E0	0004	Global model
28	0001	Auto-restart

- For other CODE No., refer to “Function CODE No. (DN Code) table” on page 52.

**Table 2.  
Indoor unit capacity: CODE No. 11**

Setup data	Model
0000*1	Invalid
0041	005 Type
0001	007 Type
0003	009 Type
0005	012 Type
0007	015 Type
0009	018 Type

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

## 8-5. Applied control of indoor unit

### ■ Control system using Remote location ON/OFF control box (TCB-IFCB-4E2)

#### Wiring and setting

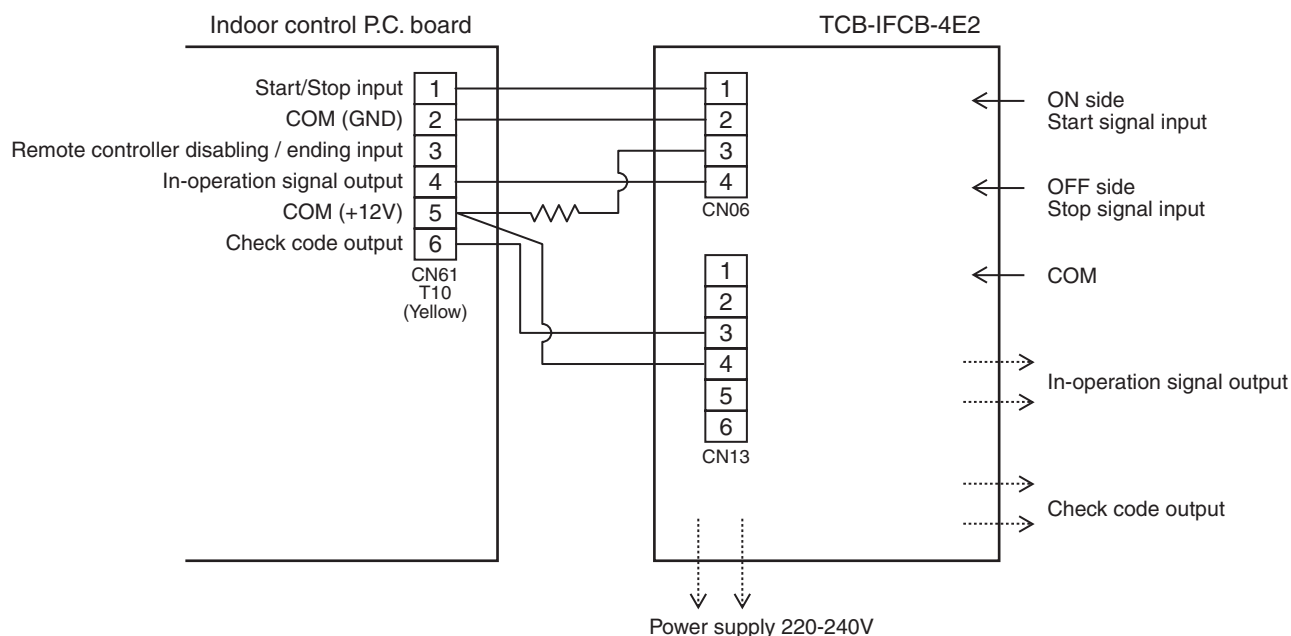
- In the case of group control, the control system functions as long as it is connected to one of the indoor units (control P.C. board) in the group. If it is desired to access the operation and trouble statuses of other units, relevant signals must be brought to it from those units individually.

#### 1. Control items

- |                               |   |
|-------------------------------|---|
| (1) Start / Stop input signal | Start / stop of unit  |
| (2) In-operation signal       | Output present while unit in normal operation   |
| (3) Check code Output         | present while alarm (e.g. serial communication trouble or operation of protective device for indoor / outdoor unit) being activated |

#### 2. Wiring diagram of control system using Remote location ON/OFF control box (TCB-IFCB-4E2)

- Input IFCB-4E2: No-voltage ON / OFF serial signal
- Output No-voltage contact (in-operation and check code indication)  
Contact capacity: Max. AC 240 V, 0.5 A



## ■ 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-AMTU3\*>

- 1 Push concurrently  +  +  buttons for 4 seconds or more.**

The unit No. displayed firstly indicates the header indoor unit address in the group control.  
In this time, the fan of the selected indoor unit turns on.

- 2 Every pushing  button (left side of the button), the indoor unit numbers in group control are displayed successively.**

In this time, the fan of the selected indoor unit only turns on.

- 3 Using the setup temp  or  button, specify the CODE No. 31.**

- 4 Using the timer time  or  button, select the SET DATA. (At shipment: 0000)**

The setup data are as follows:

SET DATA	Handling of operation of air to air heat exchanger or ventilating fan
<b>0000</b>	Unavailable (At shipment)
<b>0001</b>	Available

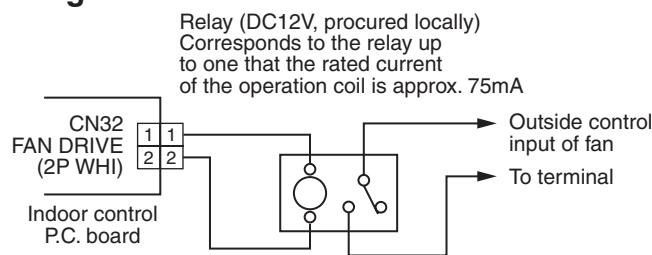
- 5 Push  button. (OK if display goes on.)**

- To change the selected indoor unit, go to the procedure 2 ).
- To change the item to be set up, go to the procedure 3 ).

- 6 Pushing  returns the status to the usual stop status.**

- \* The ventilating fan control may be unavailable depending on the remote controllers.  
(RBC-ASCU11-\* does not have this function.)

### 2. Wiring



**Note)** Determine the cable length between the indoor control P.C. board and the relay within 2m.

## ■ Auto-off feature control

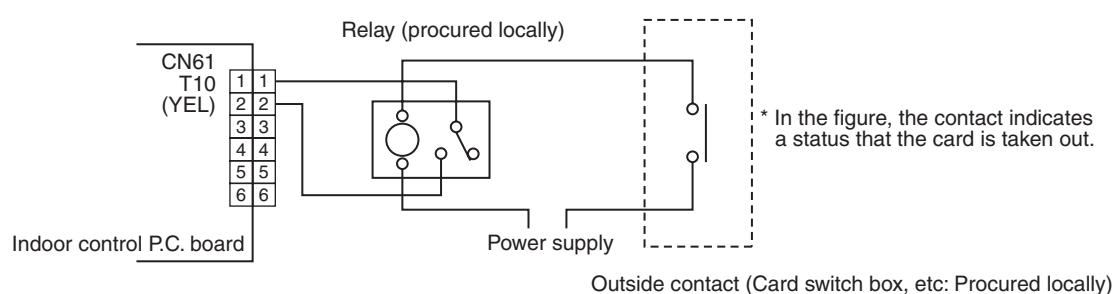
### [Function]

- 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.
- Available connectors are CN61 or CN73. For models without CN73, CN4 on the optional Application control kit (TCB-PCUC2E) can be used.
- \* Leaving-ON prevention control cannot be set with both CN61 and CN73 (CN4).  
If both of them are set, CN73 (CN4) setting automatically turns to a factory default.

### [Setup method]

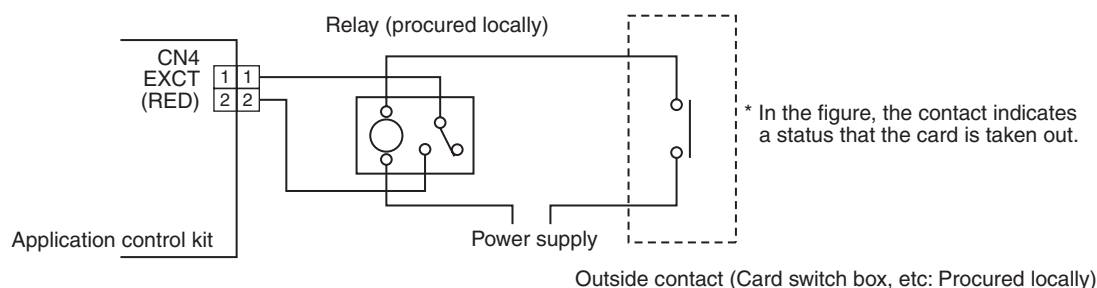
#### (1) Wiring

##### Connecting to the CN61 connector



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

##### Connecting to the Application control kit (TCB-PCUC2E, connector : CN4)



**(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 "8-4. Method to set indoor unit function DN code".

Connector	Jumper wire (J01)	Code No. (DN)	Set data	Function
CN61	Short-circuit (Factory default)	002E	0000 (Factory default)	"HA normal setup" (pulse)
			0001	"Card Input 1" setup
			0003	"Card Input 2" setup
	Open-circuit (cut)		0005	"Card Input 5" setup
			0000 (Factory default)	"HA normal setup" (Static)
			0001	"Card Input 3" setup
CN73 (CN4)	Short-circuit (Factory default) or Open-circuit (cut)	000b	0003	"Card Input 4" setup
			0000 (Factory default)	"EXCT demand" setup (Forced thermostat-OFF)
			0002	"Card Input 3" setup
			0004	"Card Input 4" setup
			0007	"Card Input 5" setup
			0008	"Card Input 1" setup
			0009	"Card Input 2" setup

\* If you set "Card Input 1 to 5" for Code No. of CN61 and CN73, Code No. 000b setup becomes unavailable and the functions of Card Input 1 to 5 in CN73 cannot be used.

## [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: 29°C, HEAT: 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. 2) The operation mode can be set by changing data (0000, 0001, 0002) at DN code No. 16b. 0000: operation mode is the same at the current mode. (factory setting default) 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.) 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.) 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. 2) The operation mode can be set by changing data (0000, 0001) at DN code No. 16A. 0000: operation mode is the same at the current mode. (factory setting default) 0001: operation automatically starts. 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 : -15°C to 0060 : 60°C	0027 : 27°C
16d	Open mode Set temp. (Heat)	-0015 : -15°C to 0060 : 60°C	0020 : 20°C
16E	Open mode Set temp. (Auto)	-0015 : -15°C to 0060 : 60°C	0024 : 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 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 : -15°C to 0060 : 60°C	0024 : 24°C
173	Close mode Set temp. (Heat)	-0015 : -15°C to 0060 : 60°C	0024 : 24°C
174	Close mode Set temp. (Auto)	-0015 : -15°C to 0060 : 60°C	0024 : 24°C
16b	Close mode Operation	0000 : No change 0001 : Card ON mode operation 0002 : Run operation (Card ON mode setting)	0000 : No change

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

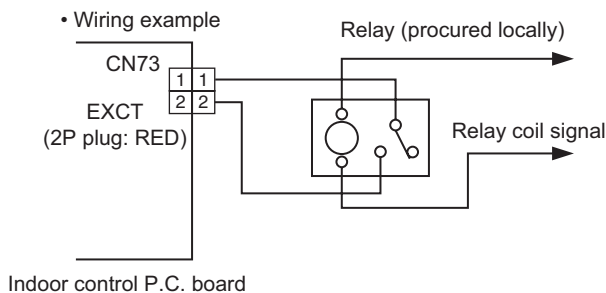
Case.	Code No. (DN) setting									External contact terminal	
	[16A] data	[16b] data	[16C] data	[16d] data	[16F] data	[170] data	[171] data	[172] data	[173] data	Close (Status that card is inserted)	Open (Status that card is taken n out)
(1)	0000	0000	0027	0020	0000	0000	0000	0024	0024	<ul style="list-style-type: 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 24°C and 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 27°C and 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 24°C and 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 27°C and 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 24°C and 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 24°C and 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 27°C and 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.

## ■ Power peak-cut from indoor unit

When the relay is turned on, a forced thermostat OFF operation starts.

- For indoor P.C. boards other than MCC-1643, the “EXCT” is input with connector CN73 on the P.C. board. MCC-1643 requires Application control kit (TCB-PCUC2E) for input of a forced thermostat OFF “EXCT”. Please refer to the manual of Application control kit for a detailed setting.



**Note)** Determine the cable length between the indoor or outdoor control P.C. board and the relay within 2 m.

## ■ 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.

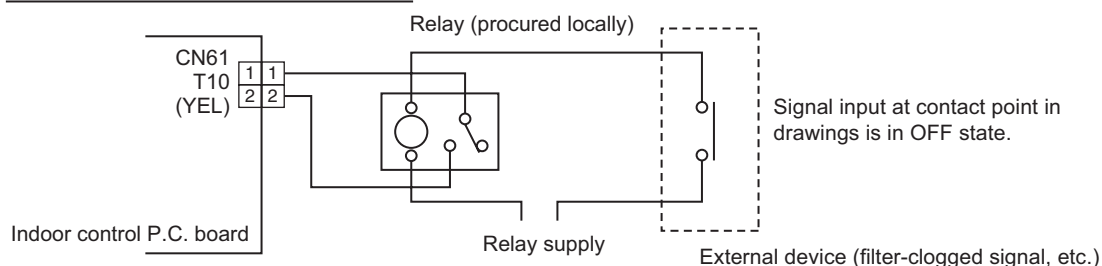
### [Function]

- 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.
- Connector that can be used is CN61 or CN73. CN4 of separately-sold "option input/output P.C. board (TCB-PCUC2E)" can be used for models that do not have CN73.
- Used by switching functions with settings of Code No. (DN Code).
- Notice Code is continuously issued while input signal is ON.

### [Setup method]

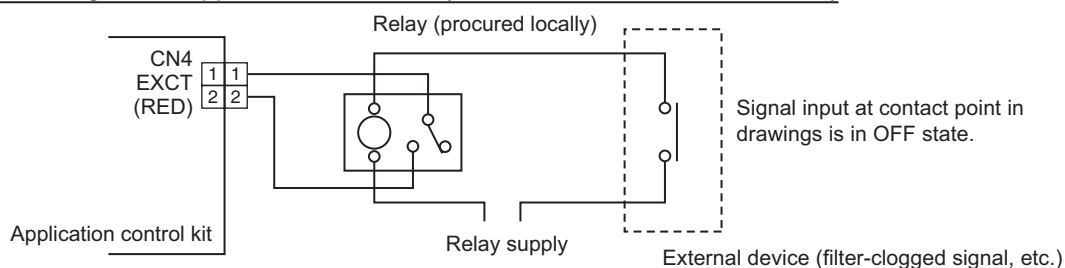
#### (1) Wiring

##### Connecting to the CN61 connector



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

##### Connecting to the Application control kit (TCB-PCUC2E, connector : CN4)



**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 "8-4. Method to set indoor unit function DN code".

Connector	Code No. (DN)	Set data	Notice code
CN61	002E	0004	201
CN73 (CN4)	000B	0006	202

\* 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).

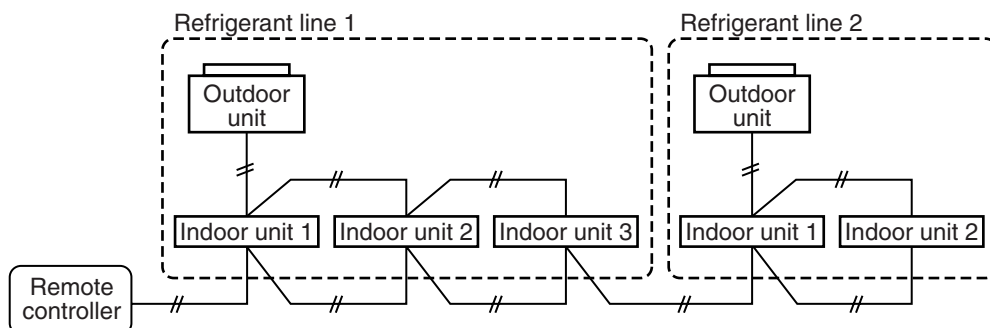
Code No. (DN)	Set data	Notice code
0180	0000	OFF (Factory default)
to	0129	201
0189	0130	202

\* 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)

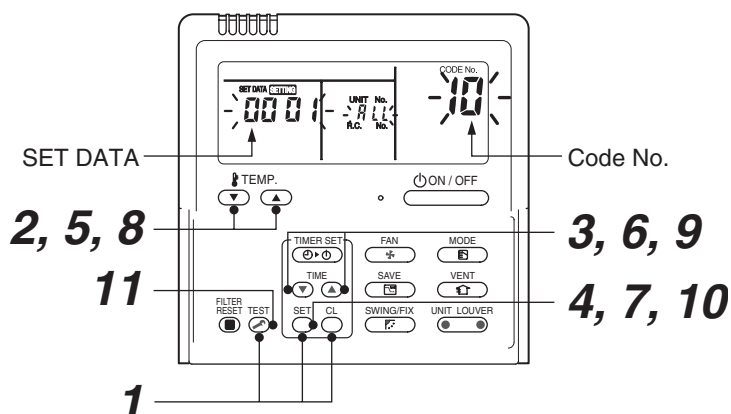
### ▼ Wiring example of 2 refrigerant lines



Line (system) address	1	1	1		2	2
Indoor unit address	1	2	3		1	2
Group address	1 Header unit	2 Follower unit	2 Follower unit		2 Follower unit	2 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-AMTU3\*>



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

Turn on the power.

- 1 Push and hold the , and buttons at the same time for more than 4 seconds.  
LCD starts flashing.

<Line (system) address>

- 2 Push the TEMP. / buttons repeatedly to set the CODE No. to 12.

- 3 Push the TIME / buttons repeatedly to set a system address.

(Match the address with the address on the interface P.C. board of the header outdoor unit in the same refrigerant line.)

- 4 Push button.

(It is OK if the display turns on.)

### <Indoor unit address>

**5** Push the TEMP.  $\nabla$  /  $\triangle$  buttons repeatedly to set the CODE No. to 13.

**6** Push the TIME  $\nabla$  /  $\triangle$  buttons repeatedly to set an indoor unit address.

**7** Push the  $\text{SET}$  button.

(It is OK if the display turns on.)

### <Group address>

**8** Push the TEMP.  $\nabla$  /  $\triangle$  buttons repeatedly to set the CODE No. to 14.

**9** Push the TIME  $\nabla$  /  $\triangle$  buttons repeatedly to set 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

Follower unit : 0002 } In case of group control

**10** Push the  $\text{SET}$  button.

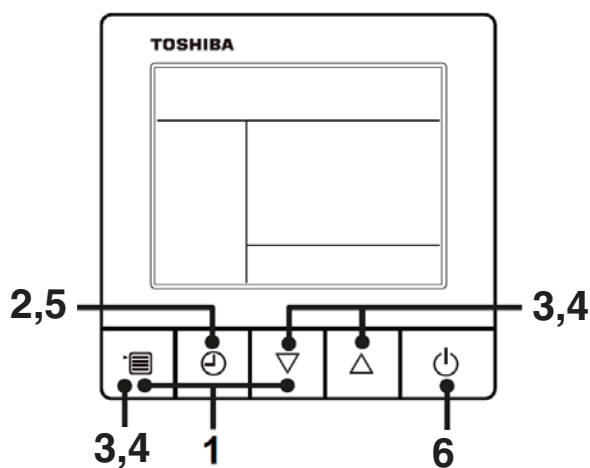
(It is OK if the display turns on.)

**11** Push the  $\text{TEST}$  button.

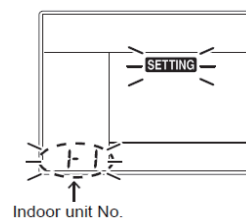
The address setting is complete.

( SETING flashes. You can control the unit after SETING has disappeared.)

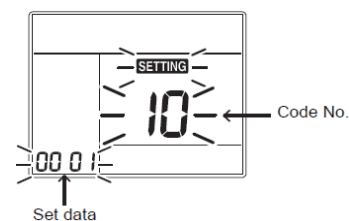
### <RBC-ASCU11-\*>



**2**



**3,4**



**1** Push and hold the [menu +  $\nabla$ ] buttons at same time for more than 10 seconds.

**2** Push the [OFF timer] button to confirm the selected indoor unit.

### <Line (system) address>

**3** Push the [menu] button until the CODE No. flashes. And using the [ $\nabla$  or  $\triangle$ ] buttons, specify the CODE No.12.

**4** Push the [menu] button until the SET DATA flashes. And using the [ $\nabla$  or  $\triangle$ ] buttons, set a system address.

**5** Push the [OFF timer] button to confirm the SET DATA.

**<Indoor unit address>**

- 3** Push the [menu] button until the CODE No. flashes. And using the [ ▽ or △ ] buttons, specify the CODE No.13.
- 4** Push the [menu] button until the SET DATA flashes. And using the [ ▽ or △ ] buttons, set an indoor unit address.
- 5** Push the [OFF timer] button to confirm the SET DATA.

**<Group address>**

- 3** Push the [menu] button until the CODE No. flashes. And using the [ ▽ or △ ] buttons, specify the CODE No.14.
- 4** Push the [menu] button until the SET DATA flashes. And using the [ ▽ or △ ] buttons, set 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	

- 5** Push the [OFF timer] button to confirm the SET DATA.
- 6** When all the settings have been completed, push the [ON/OFF] button to return to normal mode.

**NOTE**

**<In the case of combining with outdoor units of U series (SMMS-u etc.)>**

- 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 U series>**

- 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.)

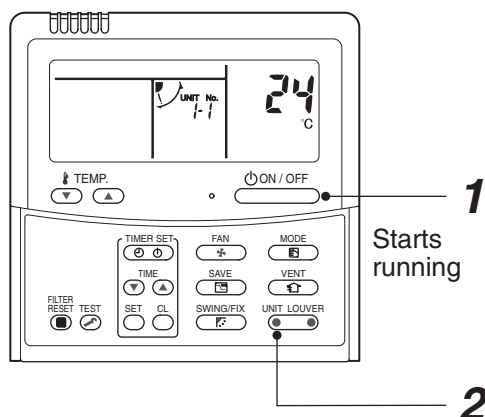
## ■ Confirming the indoor unit addresses and the position of an indoor unit using the remote controller

### ◆ Confirming the numbers and positions of indoor units

To know the indoor unit addresses though position of the indoor unit is recognized

- ▼ When the unit is individual (the indoor unit is paired with a wired remote controller one-to-one), or it is a group-controlled one.

<RBC-AMTU3\*>




(Execute it while the units are running.)

**1** Push the  button if the units stop.

**2** Push the  button (left side of the button).

A unit numbers **1-1** is indicated on the LCD (it will disappear after a few seconds). The indicated number shows the system address and indoor unit address of the unit.

When 2 or more indoor units are connected to the remote controller (group-controlled units), a number of other connected units appears each time you push the  button (left side of the button).

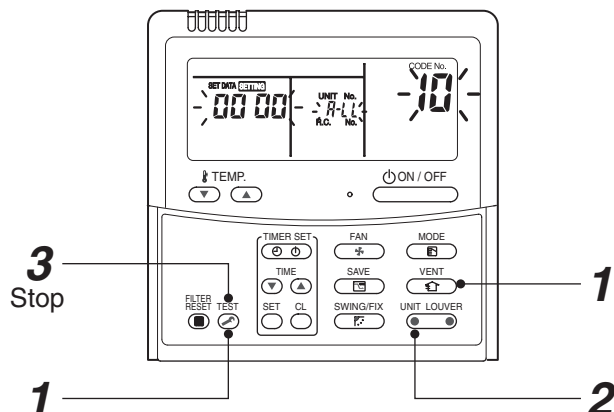
<RBC-ASCU11-\*>

There is no such function in the remote controller.

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





### ▼ When checking unit numbers controlled as a group

<RBC-AMTU3\*>

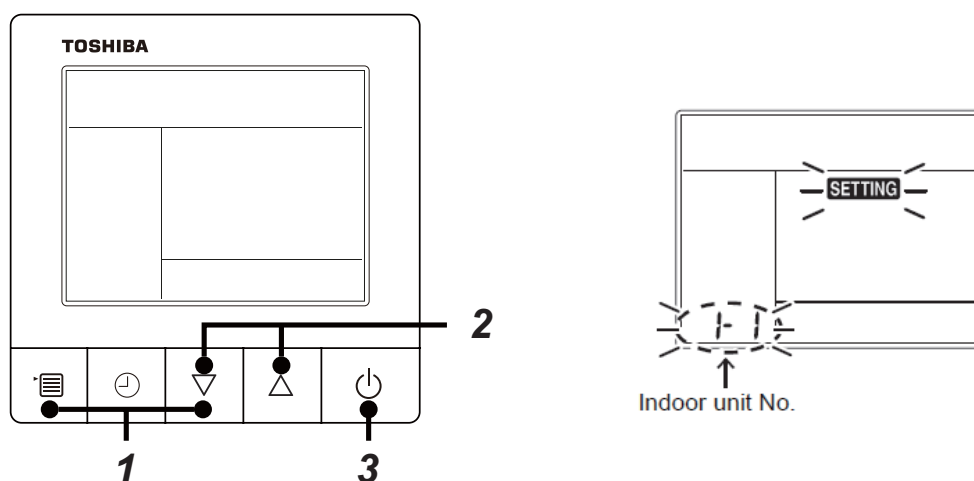





(Execute it while the units are stopped.)

The indoor unit numbers in a group are indicated one after another. The fan and louvers of the indicated units are activated.

- 1** Push and hold the  and  buttons at the same time for more than 4 seconds.
  - **ALL** appears on UNIT No. on the LCD display.
  - The fans and louvers of all the indoor units in the group are activated.
- 2** Push the  button (left side of the button). Each time you push the button, the indoor unit numbers are indicated one after another.
  - The first-indicated unit number is the address of the header unit.
  - Only the fan and louvers of the indicated indoor unit are activated.
- 3** Push the  button to finish the procedure.  
All the indoor units in the group stop.

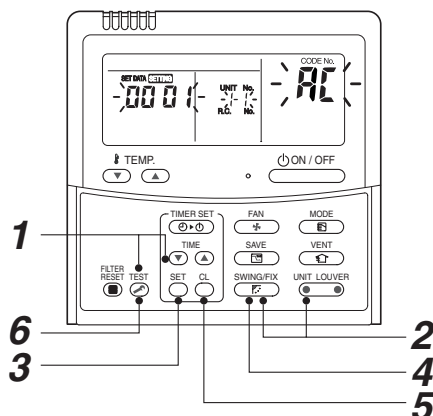
<RBC-ASCU11-\*>



- 1** Push and hold the [menu + ] buttons at same time for more than 10 seconds.  
e.g.)A unit number 1-1 is indicated on the LCD. The indicated number shows the system address and indoor unit address of the unit.
- 2** When 2 or more indoor units are connected to the remote controller (group-controlled units), a number of other connected units appears each time you push the [ or ] buttons.
- 3** Push the [ON/OFF] button, return to the normal mode.

- ▼ To check all the indoor unit addresses using an arbitrary wired remote controller.  
(When communication wirings of 2 or more refrigerant lines are interconnected for central control)

#### <RBC-AMTU3\*>



**(Execute it while the units are stopped.)**

You can check indoor unit addresses and positions of the indoor units in a single refrigerant line.  
When an outdoor unit is selected, the indoor unit numbers of the refrigerant line of the selected unit are indicated one after another and the fan and louvers of the indicated indoor units are activated.

- 1** Push and hold the **TIME** (▼) and **TEST** (⌚) buttons at the same time for more than 4 seconds.  
At first, the line 1 and CODE No. **AC** (Address Change) are indicated on the LCD display.  
(Select an outdoor unit.)
- 2** Push the **UNIT LOUVER** (◐) button (left side of the button) and **SWING/FIX** (F) buttons repeatedly to select a system address.
- 3** Push the **SET** (○) button to confirm the system address selection.
  - The address of an indoor unit connected to the selected refrigerant line is indicated on the LCD display and its fan and louvers are activated.
- 4** Push the **UNIT LOUVER** (◐) button (left side of the button). Each time you push the button, the indoor unit numbers of the selected refrigerant line are indicated one after another.
  - Only the fan and louvers of the indicated indoor unit are activated.
- ◆ **To select another system address**
- 5** Push the **CL** (○) button to return to step 2.
  - After returning to step 2, select another system address and check the indoor unit addresses of the line.
- 6** Push the **TEST** (⌚) button to finish the procedure.

#### <RBC-ASCU11-\*>

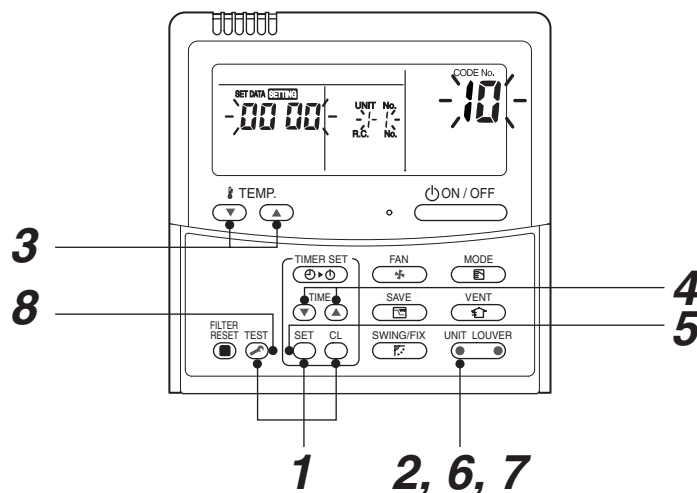
There is no such function in the remote controller.

## ◆ Changing the indoor unit address using a remote controller

To change an indoor unit address using a wired remote controller.

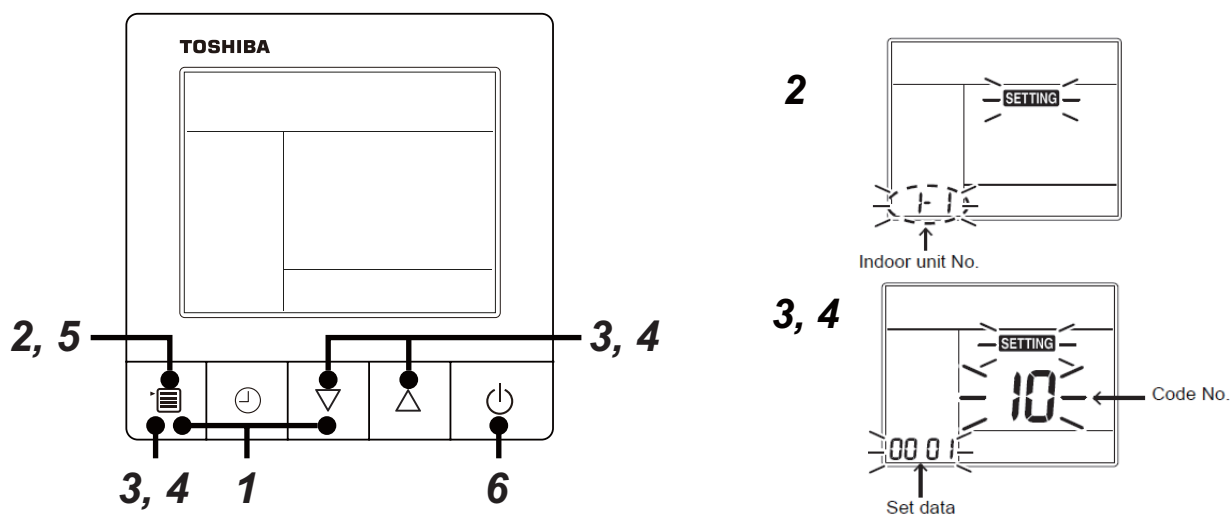
- ▼ The method to change the address of an individual indoor unit (the indoor unit is paired with a wired remote controller one-to-one), or an indoor unit in a group.  
(The method is available when the addresses have already been set automatically.)

<RBC-AMTU3\*>



(Execute it while the units are stopped.)

- 1** Push and hold the **SET**, **CL**, and **TEST** buttons at the same time for more than 4 seconds.  
(If 2 or more indoor units are controlled in a group, the first indicated UNIT No. is that of the head unit.)
- 2** Push the **UNIT LOUVER** button (left side of the button) repeatedly to select an indoor unit number to change if 2 or more units are controlled in a group. (The fan and louvers of the selected indoor unit are activated.)  
(The fan of the selected indoor unit is turned on.)
- 3** Push the **TEMP.** (down/up) buttons repeatedly to select **13** for CODE No.
- 4** Push the **TIME** (down/up) buttons repeatedly to change the value indicated in the SET DATA section to that you want.
- 5** Push the **SET** button.
- 6** Push the **UNIT LOUVER** button (left side of the button) repeatedly to select another indoor UNIT No. to change.  
Repeat steps **4** to **6** to change the indoor unit addresses so as to make each of them unique.
- 7** Push the **UNIT LOUVER** button (left side of the button) to check the changed addresses.
- 8** If the addresses have been changed correctly, push the **TEST** button to finish the procedure.



- 1** Push and hold the [menu + ▽] buttons at same time for more than 10 seconds.
- 2** Push the [OFF timer] button to confirm the selected indoor unit.
- 3** Push the [menu] button until the CODE No. flashes. And using the [▽ or △] buttons, specify the CODE No.13.
- 4** Push the [menu] button until the SET DATA flashes. And using the [▽ or △] buttons, set an indoor unit address.
- 5** Push the [OFF timer] button to confirm the SET DATA.
- 6** When all the settings have been completed, push the [ON/OFF] button, return to normal mode.

- ▼ To change all the indoor unit addresses using an arbitrary wired remote controller.  
(The method is available when the addresses have already been set automatically.)

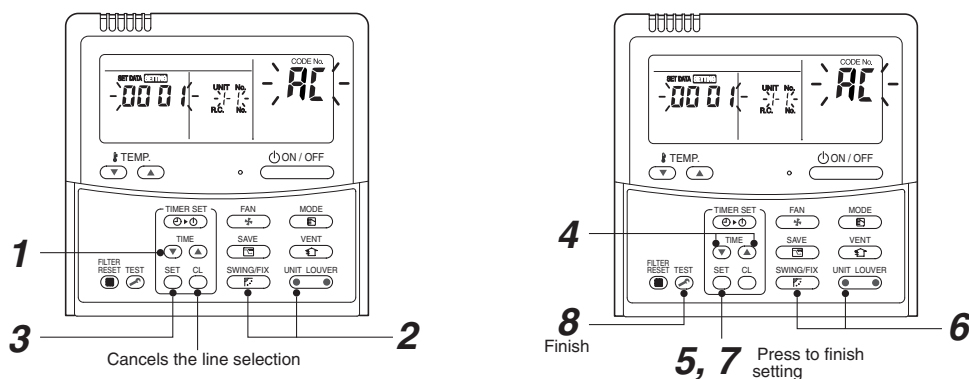
(When communication wirings of 2 or more refrigerant lines are interconnected for central control)

#### NOTE

You can change the addresses of indoor units in each refrigerant line using an arbitrary wired remote controller.

- \* Enter the address check / change mode and change the addresses.

#### <RBC-AMTU3\*>



If no number appears on UNIT No., no outdoor unit exists on the line. Push button and select another line following step 2.

(Execute it while the units are stopped.)

- 1 Push and hold the TIME  $\nabla$  /  $\blacktriangle$  buttons at the same time for more than 4 seconds.  
At first, the line 1 and CODE No. **AC** (Address Change) are indicated on the LCD display.
- 2 Push the  $\text{UNIT LOUVER}$  button (left side of the button) and the  $\text{SWING/FIX}$  buttons repeatedly to select a system address.
- 3 Push the  $\text{SET}$  button.
  - The address of one of the indoor units connected to the selected refrigerant line is indicated on the LCD display and the fan and louvers of the unit are activated.  
At first, the current indoor unit address is displayed in SET DATA.  
(No system address is indicated.)
- 4 Push the TIME  $\nabla$  /  $\blacktriangle$  buttons repeatedly to change the value of the indoor unit address in SET DATA.  
Change the value in SET DATA to that of a new address.
- 5 Push the  $\text{SET}$  button to confirm the new address on SET DATA.
- 6 Push the  $\text{UNIT LOUVER}$  button (left side of the button) repeatedly to select another address to change.  
Each time you push the button, the indoor unit numbers in a refrigerant line are indicated one after another. Only the fan and louvers of the selected indoor unit are activated.  
Repeat steps 4 to 6 to change the indoor unit addresses so as to make each of them unique.
- 7 Push the  $\text{SET}$  button.  
(All the segments on the LCD display light up.)
- 8 Push the  $\text{TEST}$  button to finish the procedure.

#### <RBC-ASCU11-\*>

There is no such function in the remote controller.





## ◆ Check code clearing function

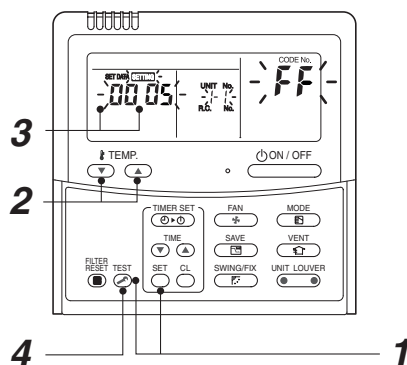
### How to clear the check code using the wired remote controller

#### <RBC-AMTU3\*>

##### ▼ Clearing a check code of the outdoor unit

Clear the currently detected outdoor unit for each refrigerant line to which the indoor unit controlled by the remote controller is connected. (The indoor unit check code is not cleared.)  
Use the service monitoring function of the remote controller.

- 1** Push and hold the , and  for 4 seconds or longer to enter the service monitoring mode.
- 2** Push the  button to set CODE No. to "FF".
- 3** The display in A of the following figure counts down as follows at 5-second intervals:  
"0005" → "0004" → "0003" → "0002" → "0001" → "0000".  
The check code is cleared when "0000" appears.  
However, the display counts down from "0005" again.
- 4** Push the  to return the display to normal.



##### ▼ Clearing a check code of the indoor unit

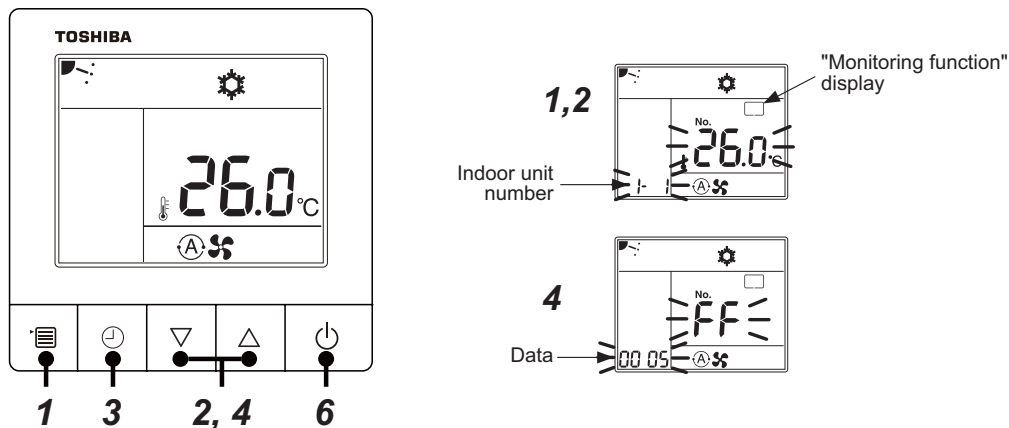
Push the  button on the remote controller.

(Only the check code of the indoor unit controlled by the remote controller will be cleared.)

<RBC-ASCU11-\*>

▼ Clearing a check code of the outdoor unit

Clear the currently detected outdoor unit for each refrigerant line to which the indoor unit controlled by the remote controller is connected. (The indoor unit check code is not cleared.)  
Use the service monitoring function of the remote controller.



- 1** Push the [menu] button for over 10 seconds.
- 2** Every pushing [▽ or △] buttons, the indoor unit numbers in group control are displayed successively.
- 3** Push the [OFF timer] button to confirm the selected indoor unit.
- 4** Every pushing [▽ or △] buttons to set CODE No. to “FF”
- 5** The display in A of the following figure counts down as follows at 5-second intervals:  
“0005” → “0004” → “0003” → “0002” → “0001” → “0000”  
The check code is cleared when “000” appears.  
However, the display counts down from “005” again.
- 6** After you have finished checking, push the [ON/OFF] button to return to normal mode.

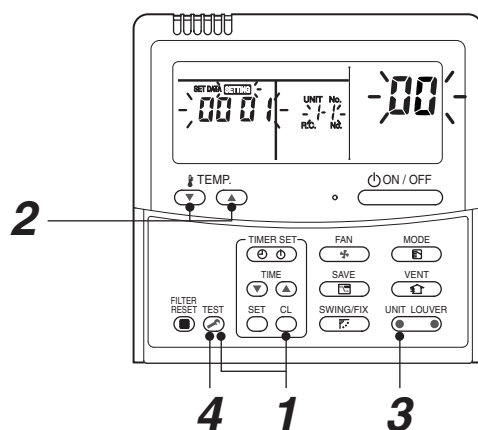
▼ Clearing a check code of the indoor unit

Push the ON / OFF button on the remote controller.

(Only the check code of the indoor unit controlled by the remote controller will be cleared.)






## ▼ Monitoring function of wired remote controller

### <RBC-AMTU3\*>

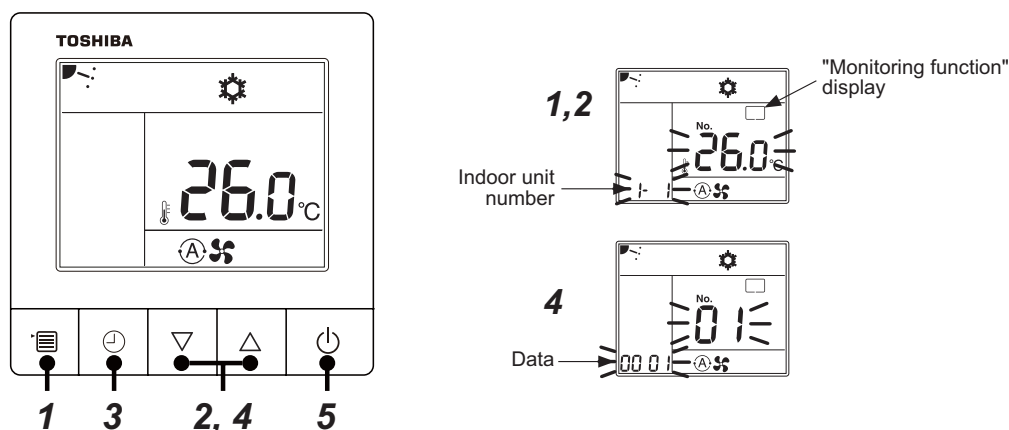






#### Content

Enter the service monitoring mode using the remote controller to check the sensor temperature or operation status of the remote controller, indoor unit, and outdoor unit.

- 1** Push and hold the  , and  for 4 seconds or longer to enter the service monitoring mode.  
The service monitor lights up. The CODE No. **00** appears at first.
- 2** Push the  button to change to CODE No. of the item to monitor. Refer to the next page for CODE No.
- 3** Push the left part of the  button (left side of the button) to change to the item to monitor. Monitor the sensor temperature or operation status of the indoor unit and outdoor unit in the refrigerant line.
- 4** Push the  button to return the display to normal.

### <RBC-ASCU11-\*>



- 1** Push the [menu] button for over 10 seconds. “Monitoring function” is displayed on a screen.
- 2** Every pushing [  or  ] buttons, the indoor unit numbers in group control are displayed successively.
- 3** Push the [OFF timer] button to confirm the selected indoor unit.
- 4** Every pushing [  or  ] buttons, CODE No. of the item is changed successively.
- 5** After you have finished checking, push the [ON/OFF] button, return to normal mode.

## ◆ 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	°C	
	01	Room temperature (Remote controller)	×1	°C	
	02	Indoor suction air temperature (TA)	×1	°C	
	03	Indoor coil temperature (TCJ)	×1	°C	
	04	Indoor coil temperature (TC2)	×1	°C	
	05	Indoor coil temperature (TC1)	×1	°C	
	06	Indoor discharge air temperature (TF) **	×1	°C	
	07	Indoor fan motor number of revolutions**	×1	rpm	[0600] = 600rpm
	08	Indoor PMV opening	×1/10	pls	[0150]=1500pls
	E5	Secondary heating output	—	—	[0000] = OFF, [0001] = ON
	F3	Filter sign time	×1	h	[2500] = 2500h
	F9	Suction temperature of air to air heat exchanger (TSA) **	×1	°C	[0024] = 24°C
	FA	Outside air temperature (TOA) **	×1	°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".

## 9. TROUBLESHOOTING

### 9-1. Overview

(1) Before engaging in troubleshooting

(a) Applicable models

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

(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)

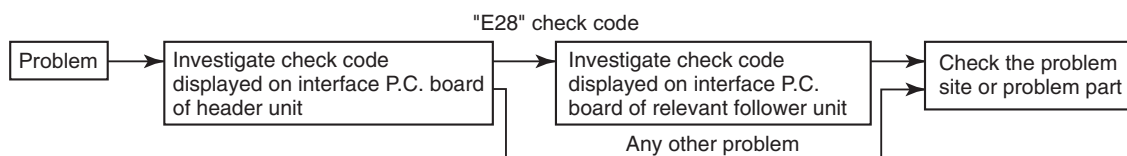
NO.	Behavior	Possible cause
1	A compressor would not start	<ul style="list-style-type: none"><li>• The air conditioner is being controlled by the 3-minute protective function.</li><li>• It is in standby status though the room temperature has reached the setup temperature.</li><li>• It is being operated 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.

## 9-2. 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 ⏻	Timer ⌚	Ready ⚙	Flash		
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
E17	—	—	⦿	●	●		Communication trouble between indoor unit(s) and Flow Selector (FS) unit(s)	There is no communication from FS unit(s).
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	There is no signal from Occupancy sensor.
J29	—	—	●	⦿	⦿	SIM	Leak Detector Trouble	• There is no communication from Leak Detector. • Received a malfunction signal from Leak Detector.
J30	J30	Detected indoor unit address * Not displayed depending on the DN code (I.DN) setting	●	⦿	⦿	SIM	Refrigerant leak detection.	Leak Detector detects refrigerant leak.
J31	—	—	●	⦿	⦿	SIM	Refrigerant leak detection sensor exceeding its life of the product	Energization time of the Leak Detector has reached its useful life.
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.
L22	—	—	⦿	○	⦿	SIM	DX-kit (heat source capacity command) non-compliant equipment in the group.	There is a DX-kit (heat source capacity command) non-compliant equipment in the group. (DDC control, TA control and TF control are mixed.)
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 check code
Remote control	Outdoor 7-segment display		Indicator light block					
		Sub-code	Operation 	Timer 	Ready 	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 check code
Central control	Outdoor 7-segment display		Indicator light block					
		Sub-code	Operation 	Timer 	Ready 	Flash 		
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 (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>
S01	—	—						Receiving trouble in central control device.

**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 or outdoor 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 	Timer 	Ready 	Flash		
E17	—	—	⊙	●	●		Communication trouble between indoor unit (s) and FS unit (s)	There is no communication from FS unit(s)
J01	—	—	●	⊙	⊙	SIM	Communication trouble between indoor unit (s) and FS unit (s)	There is no communication from indoor unit (s)
J02	—	—	●	⊙	⊙	SIM	Communication trouble between control boards in FS unit	Communication trouble between PC boards of multiport type FS unit.
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.

## 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 check code																																																																																								
Outdoor 7-segment display		Central control or main remote controller display	Indicator light block																																																																																													
	Sub-code		Operation ⏰	Timer ⌚	Ready ⚙️	Flash																																																																																										
E06	Number of indoor units from which signal is received normally	E06	●	●	⊙		Signal lack of indoor unit	<ul style="list-style-type: none"><li>Indoor unit initially communicating normally fails to return signal (reduction in number of indoor units connected).</li><li>In TU2C-LINK communication system, if the termination resistance is not set in any of the indoor units.</li><li>The number of indoor units connected is decreasing. (Detected when power is turned on)</li></ul>																																																																																								
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 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 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 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 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 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  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																																																																																									
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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 02: TE2 sensor 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.																																																																																								











































Check code			Display of receiving unit				Typical problem site	Description of check code
Outdoor 7-segment display		Central control or main remote controller display	Indicator light block					
	Sub-code		Operation 	Timer 	Ready 	Flash 		
F07	01: TL1 sensor 02: TL2 sensor 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 02: TG2 sensor 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.
F12	01: TS1 sensor 02: TS2 sensor 03: TS3 sensor 04: TS3 sensor disconnect	F12	⊙	⊙	○	ALT	<ul style="list-style-type: none"><li>Outdoor suction temperature sensor (TS1, TS2, TS3) trouble</li><li>When TS3 detects an unusual temperature during compressor operation and PMV4 operation in cooling mode</li></ul>	<ul style="list-style-type: none"><li>Outdoor suction temperature sensor (TS1,TS2, TS3) has been open/short-circuited.</li><li>When the disconnect of outdoor temperature sensor (TS3) is detected.</li></ul>
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)
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 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 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.
L02	Detected indoor unit address	L02	⊙	○	⊙	SIM	Indoor unit incompatible with A2L refrigerant	Indoor unit incompatible with TU2C-LINK is connected. • Indoor unit incompatible with R32 refrigerant is connected."
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).
L11	Detected indoor unit address	L11	⊙	○	⊙	SIM	Flow Selector unit or Shut-off Valve unit installation trouble	<ul style="list-style-type: none"><li>Outdoor unit is set to "HR", there is no connection to Flow Selector unit, and indoor unit is not set to "cooling only".</li><li>Outdoor unit is set to "HP" and the Flow Selector unit is connected.</li></ul>

Check code			Display of receiving unit				Typical problem site	Description of check code																																												
Outdoor 7-segment display		Central control or main remote controller display	Indicator light block																																																	
	Sub-code		Operation ⏻	Timer ⌚	Ready ⚙️	Flash																																														
L12	01 : Flow Selector (FS) unit (s) installation trouble"	L12	⊙	○	⊙	SIM	Flow Selector (FS) unit(s) system trouble	FS unit(s) outside the application setting																																												
L13	Detected indoor unit address	L13	⊙	○	⊙	SIM	Safety measures setting unmatched	<ul style="list-style-type: none"><li>• Safety measures CODE No. setting of indoor unit connected to same FS unit (or Shut-off Valve unit) is mismatched.</li><li>* "No safety measures required" does not apply.</li><li>* Mixture of "pump down operation" and "Only Leak Detector" is not case.</li><li>• Indoor unit is not connected to port1 of multiport type FS unit.</li><li>• The +1 port address of FS unit port with port combining branched is set.</li><li>* Next to combining branches port (No.+1 side) must not be port addressed.</li><li>• One port in an FS unit has multiple indoor unit group settings and a group across multiple ports.</li><li>• Same FS unit address is set for different FS units.</li></ul>																																												
L14	Detected indoor unit address	L14	⊙	○	⊙	SIM	Safety measures nonconformity	<ul style="list-style-type: none"><li>• Safety measures CODE No. setting of indoor unit is set other than "no safety measures required" and Leak Detector is not connected at the time of power input.</li><li>• Safety measures CODE No. setting of indoor unit is set to "pump down operation" or "individual shut-off operation" and FS unit or Shut-off Valve unit is not connected.</li><li>• Safety CODE No. setting of indoor unit connected to multiport type FS unit is set to "Individual shut off operation".</li></ul>																																												
L17	—	L17	⊙	○	⊙	SIM	Outdoor model incompatibility trouble	Outdoor unit that cannot be connected is connected.																																												
L18	Detected indoor unit address	L18	⊙	○	⊙	SIM	Cooling/heating FS unit trouble	Cooling/heating cycle trouble resulting from piping trouble is detected																																												
L23	02: Switch setting trouble of outdoor unit	L23	⊙	○	⊙	SIM	SW setting trouble	Switch setting trouble of outdoor units when HWM (Hot water module) is connected.																																												
L24	01: Duplication of FS units address L24 FS unit(s) setting trouble 02: Indoor units operation mode priority setting	L24	⊙	○	⊙	SIM	FS unit(s) setting trouble	<ul style="list-style-type: none"><li>• FS unit(s) detects address identical to its own.</li><li>• Duplicated priority indoor units operation mode.</li></ul>																																												
L28	—	L28	⊙	○	⊙	SIM	Too many outdoor units connected	More than six outdoor units have been connected.																																												
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></table> <p>Circle (○): Trouble P.C. board</p>	P.C.board				Compressor		Fan Motor		1	2	1	2	01	○			02		○		03	○	○		08			○	09	○		○	0A		○	○	0B	○	○	○	10			○	L29	⊙	○	⊙	SIM	Trouble in number of P.C. boards	There are insufficient number of P.C. board in inverter box.
P.C.board																																																				
Compressor		Fan Motor																																																		
1	2	1	2																																																	
01	○																																																			
02		○																																																		
03	○	○																																																		
08			○																																																	
09	○		○																																																	
0A		○	○																																																	
0B	○	○	○																																																	
10			○																																																	
	00	L29	⊙	○	⊙	SIM	The number of P.C. board trouble	When there is much number of an inverter P.C. board to model setting of an interface P.C. board.																																												
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.																																												
P04	01: Compressor 1 02: Compressor 2	P04	⊙	●	⊙	ALT	Activation of high-pressure SW	High-pressure SW is activated.																																												
P05	00: Power detection trouble 01: Open phase 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	00 : Compressor 1 or 2 heat sink trouble 01 : Compressor 1 heat sink trouble 02 : Compressor 2 heat sink trouble	P07	⊙	●	⊙	ALT	Heat sink overheating trouble	Temperature sensor built into IPM (TH) detects overheating.																																												
	04: Heat sink dewing						Heat sink dewing 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).																																												

FS unit: Flow Selector unit

Check code			Display of receiving unit				Typical problem site	Description of check code
Outdoor 7-segment display		Central control or main remote controller display	Indicator light block					
	Sub-code		Operation 	Timer 	Ready 	Flash		
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.
P14	01: Outdoor unit valve is close	P14	●	◎	◎	ALT	Another refrigerant cycle protection	Outdoor unit valve is forget to open during test run.
P15	01: TS condition 02: TD condition	P15	◎	●	◎	ALT	Gas leak detection	Outdoor suction temperature sensor (TS1) detects sustained and repeated high temperatures that exceed standard value.
P16	01: PMV5 02: PMV6 03: Mis installation of PMV5 and PMV6	P16	◎	●	◎	ALT	Injection circuit trouble	• Discharge temperature of either Comp 1 or Comp 2 is within the normal control range, and discharge temperature of the other is very low. • Discharge temperature of either Comp 1 or Comp 2 is very high, and discharge temperature of the other is very low.
P17	—	P17	◎	●	◎	ALT	Outdoor discharge (TD2) temperature trouble	Outdoor discharge temperature sensor (TD2) detects abnormally high temperature.
P19	0#: 4-way valves 1#: 4-way valve1 2#: 4-way valve2 * Put in outdoor unit No. in [#] mark.	P19	◎	●	◎	ALT	4-way valve reversing trouble	• Abnormality in refrigerating cycle is detected during heating operation. • Either 4WV1 or 4WV2 cannot be switched.
P20	—	P20	◎	●	◎	ALT	Activation of high-pressure protection	High pressure (Pd) sensor detects high pressure that exceeds standard value.

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

Check code			Display of receiving unit				Typical problem site	Description of check code
Outdoor 7-segment display		Central control or main remote controller display	Indicator light block					
	Sub-code		Operation 	Timer 	Ready 	Flash		
F13	1*: Compressor 1 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 2*: Compressor 2	H01					Compressor breakdown	Inverter current (Idc) detection circuit detects overcurrent.
H02	1*: Compressor 1 2*: Compressor 2	H02					Compressor trouble (lockup)	Compressor lockup is detected
H03	1*: Compressor 1 2*: Compressor 2	H03					Current detection circuit trouble	Abnormal current is detected while inverter compressor is turned off.
H17	1*: Compressor 1 2*: Compressor 2	H17					Compressor trouble (Step-out)	Compressor is in step-out condition.
H28	1*: Compressor 1 2*: Compressor 2	H28					Compressor motor winding trouble	Compressor motor winding is layer shorted.
P05	1*: Compressor 1 side 2*: Compressor 2 side	P05				ALT	Compressor Vdc trouble	Inverter DC voltage is too high (overvoltage) or too low (undervoltage).
P07	1*: Compressor 1 side 2*: 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 2*: Fan P.C. board 2	P22				ALT	Outdoor fan P.C. board trouble	Outdoor fan P.C. board detects trouble.
P25	1*: Compressor 1 2*: Compressor 2	P25				ALT	Compressor P.C. board trouble	IPM for compressor is broken. (Short-circuit etc.)
P26	1*: Compressor 1 2*: Compressor 2	P26				ALT	Compressor start up trouble	Open phase or IPM over current for compressor is detected.
P29	1*: Compressor 1 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

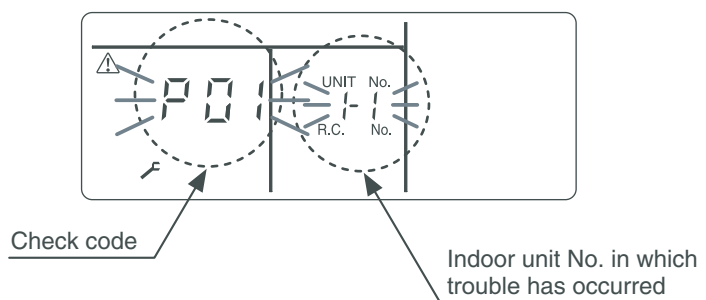
## 9-3. Troubleshooting based on information displayed on remote controller

### <RBC-AMTU3\*>

#### (1) Checking and testing

When a trouble occurs to an air conditioner, a check code and indoor unit No. are displayed on the display window of the remote controller. Check codes are only displayed while the air conditioner is in operation.

If the display has already disappeared, access check code history by following the procedure described below.



#### (2) Trouble history

The trouble history access procedure is described below (up to four check codes stored in memory).

Check code history can be accessed regardless of whether the air conditioner is in operation or shut down.

<Procedure> To be performed when system at rest

- 1** Invoke the **SERVICE CHECK** mode by pressing the **TEST** + **SET** buttons simultaneously and holding for at least **4 seconds**.

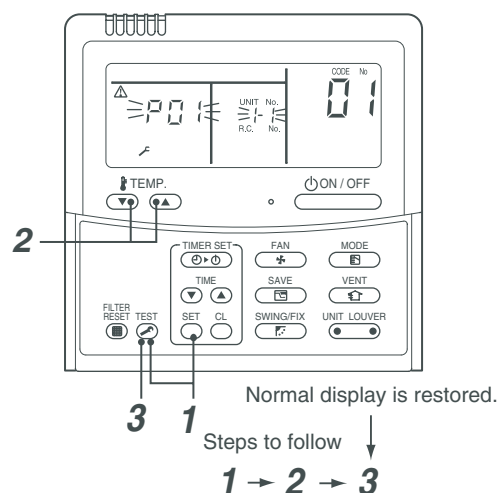
The letters "SERVICE CHECK" light up, and the check code "01" is displayed, indicating the trouble history. This is accompanied by the indoor unit No. to which the trouble history is related and a check code.

- 2** To check other trouble history items, press the **TEMP.** button to select another check code.

Check code "01" (latest) → Check code "04" (oldest)

Note: Trouble history contains four items.

- 3** When the **TEST** button is pushed, normal display is restored.



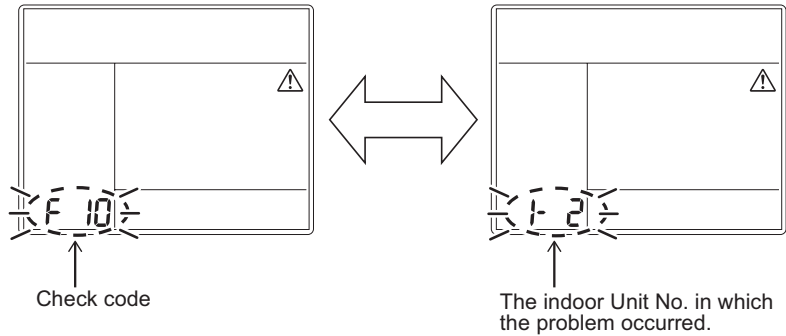
## CAUTION

Do not push the **TEST** button as it would erase the whole trouble history of the indoor unit.

<RBC-ASCU11-\*>

(1) Confirmation and check

If a problem occurs with the air conditioner, the OFF timer indicator alternately shows the check code and the indoor Unit No. in which the problem occurred.




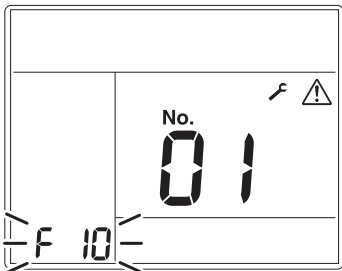

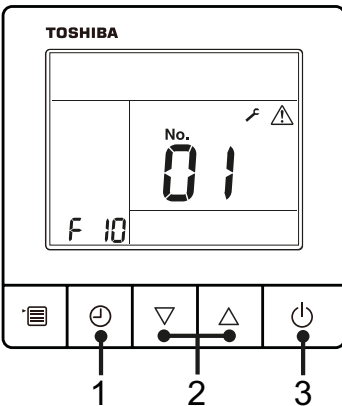
(2) Troubleshooting history and confirmation

You can check the troubleshooting history with the following procedure if a problem occurs with the air conditioner.

(The troubleshooting history records up to 4 incidents.)

You can check it during operation or when operation is stopped.

- If you check the troubleshooting history during OFF timer operation, the OFF timer will be canceled.

Procedure	Description of operation	
1	<p>Push the OFF timer button for over 10 seconds and the indicators appear as an image indicating the troubleshooting history mode has been entered. If [  Service check] is displayed, the mode enters in the troubleshooting history mode.</p> <ul style="list-style-type: none"><li>• [01: Order of troubleshooting history] appears in the temperature indicator.</li><li>• The OFF timer indicator alternately shows the [check code] and the [indoor Unit No. ] in which the problem occurred.</li></ul>	
2	<p>Each time the setting button is pushed, the recorded troubleshooting history is displayed in sequence. The troubleshooting history appears in order from [01] (newest) to [04] (oldest).</p> <p> <b>CAUTION</b></p> <p>In the troubleshooting history mode, DO NOT push the Menu button for over 10 seconds, doing so deletes the entire troubleshooting history of the indoor unit.</p>	
3	<p>After you have finished checking, push the ON/OFF button to return to the regular mode.</p> <ul style="list-style-type: none"><li>• If the air conditioner is operating, it remains operated even after the ON/OFF button has been pushed. To stop its operation, push the ON/OFF button again.</li></ul>	

How to read displayed information

<7-segment display symbols>

0 1 2 3 4 5 6 7 8 9 A b C d E F H J L P

<Corresponding alphanumerical letters>


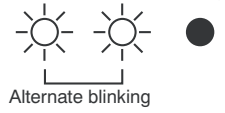
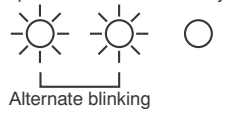
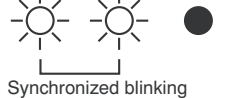
0 1 2 3 4 5 6 7 8 9 A b C d E F H J L P













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


To identify the check code, check the 7-segment display on the outdoor unit. To check for check codes not displayed on the 7-segment display, consult the “List of Check Codes (Indoor Unit)” in “9-2. Troubleshooting method”.

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



Light block	Check code	Cause of trouble		
Operation ● Timer ● Ready ● All lights out	—	Power turned off or trouble in wiring between receiving and indoor units		
Operation ☀ Blinking Timer ● Ready ●	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		
	E17	Communication trouble between indoor unit(s) and Flow Selector unit(s).		
	E18	Trouble or poor contact in wiring between indoor units, indoor power turned off		
Operation ● Timer ● Ready ☀ 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 ● Timer ☀ Ready ☀ 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		
	P14	Outdoor unit valve is closed		

Light block	Check code	Cause of trouble	
<div>Operation    Timer    Ready</div> <div></div> <div>Alternate blinking</div>	P03	Outdoor discharge (TD1) temperature trouble	
	P04	Activation of outdoor high-pressure SW	
	P05	Open phase / power failure Inverter DC voltage (Vdc) trouble 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	
	P16	Injection circuit trouble.	
	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	
	P25	Compressor P.C. board trouble.	
	P26	Compressor trouble / Wire connection trouble. Compressor leads trouble. Compressor P.C. board trouble.	
	P29	Compressor position detection circuit trouble	
	P31	Shutdown of other indoor unit in group due to trouble (group follower unit trouble)	
<div>Operation    Timer    Ready</div> <div></div> <div>Alternate blinking</div>	F01	Heat exchanger temperature sensor (TCJ) trouble	Indoor unit temperature sensor trouble
	F02	Heat exchanger temperature sensor (TC2) trouble	
	F03	Heat exchanger temperature sensor (TC1) trouble	
	F10	Ambient temperature sensor (TA/TSA) trouble	
	F11	Discharge temperature sensor (TF) trouble	
<div>Operation    Timer    Ready</div> <div></div> <div>Alternate blinking</div>	F04	Discharge temperature sensor (TD1) trouble	Outdoor unit temperature sensor trouble
	F05	Discharge temperature sensor (TD2) trouble	
	F06	Heat exchanger temperature sensor (TE1, TE2, TE3) trouble	
	F07	Liquid temperature sensor (TL1, TL2, TL3) trouble	
	F08	Outside air temperature sensor (TO) trouble	
	F09	Heat exchanger gas side temperature sensor (TG1, TG2, TG3) trouble	
	F12	Suction temperature sensor (TS1, TS2, TS3) trouble	
	F13	Heat sink sensor (TH) trouble	
	F15	Wiring trouble in heat exchanger sensor (TE1) and liquid temperature sensor (TL) Outdoor unit temperature sensor wiring / installation trouble	
	F16	Wiring trouble in outdoor high pressure sensor (Pd) and low pressure sensor (Ps) Outdoor pressure sensor wiring trouble	
	F23	Low pressure sensor (Ps) trouble	Outdoor unit pressure sensor trouble
	F24	High pressure sensor (Pd) trouble	
<div>Operation    Timer    Ready</div> <div></div> <div>Synchronized blinking</div>	F29	Trouble in indoor EEPROM	




Light block	Check code	Cause of trouble	
<div>Operation    Timer    Ready</div> <div></div> <div>Blinking</div>	H01	Compressor breakdown	
	H02	Compressor lockup	
	H03	Current detection circuit trouble	
	H05	Wiring / installation trouble or detachment of outdoor discharge temperature sensor (TD1)	
	H06	Abnormal drop in low-pressure sensor (Ps) reading	
	H07	Abnormal drop in oil level	
	H08	Trouble in temperature sensor for oil level detection circuit (TK1, TK2)	
	H15	Wiring / installation trouble or detachment of outdoor discharge temperature sensor (TD2)	
	H16	Oil level detection circuit trouble - Trouble in outdoor unit TK1, TK2 circuit	
	H17	Compressor trouble (Step-out)	
	H28	Compressor motor winding trouble.	
<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> <div>Synchronized blinking</div>	L02	Outdoor unit model mismatched trouble	
	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 stand-alone indoor unit	
	L08	Indoor group address not set	
	L09	Indoor capacity not set	
	<div>Operation    Timer    Ready</div> <div></div> <div>Synchronized blinking</div>	L04	Duplicated outdoor refrigerant line address
L10		Outdoor capacity not set	
L11		Flow Selector unit or Shut-off Valve unit installation trouble	
L12		Flow selector unit(s) system trouble.	
L13		Safety measures setting unmatched.	
L14		Safety measures nonconformity.	
L17		Outdoor model incompatibility	
L18		Cooling/heating Flow selector unit trouble.	
L20		Duplicated central control address	
L23		SW setting trouble	
L24		Flow selector unit(s) setting trouble.	
L28		Too many outdoor units connected	
L29	Trouble in number of P.C. boards		
L30	Indoor external interlock trouble		

Light block	Check code	Cause of trouble
Operation   Timer   Ready  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  Synchronized blinking	–	Test run in progress
Operation   Timer   Ready  Alternate blinking	–	Setting incompatibility (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  Blinking	E17	Communication trouble between indoor unit(s) and FS unit(s)
Operation   Timer   Ready  Synchronized blinking	L12	FS unit(s) system trouble
	L24	FS unit(s) setting trouble
Operation   Timer   Ready  Blinking   Blinking	J03	Duplicated FS units
	J10	FS unit overflow trouble
	J11	FS unit temperature sensor(TCS) trouble

## 9-4. Check Codes

(Displayed on remote controller and 7-segment display of outdoor Unit)

The contents of these check code tables differ depending on the outdoor unit to be connected. Refer to the service manual of the connected outdoor unit. (The table below is for the SMMS-u series.)

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> All indoor unit initially communicating normally fails to return signal for specified length of time.  <b>Condition 2</b> 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> 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)
	Outdoor 7-segment display						
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	<b>Condition 1</b> One indoor unit or more initially communicating normally fails to return signal for specified length of time.  <b>Condition 2</b> Outdoor I / F board SW103, Bit4 : ON (To switch the check code detection condition.)    Display on main remote controller. Indoor units unavailable for indoor / outdoor communication. :E04 Indoor units available for indoor / outdoor communication. : E06  In TU2C-LINK communication system, if the termination resistance is not set in any of the indoor units.	<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)			<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>
—	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 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 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>• Check whether the outdoor unit of other systems or the indoor unit is connected to Uv (U1/U2) line or Uc (U5/U6) line.</li><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 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> 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; Turn on SW103 / Bit 3 on I/F P.C. board of outdoor header unit. 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 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>The outdoor unit which turned on SW101 and the bit 1 of the interface P.C. board is set to Header unit.</p> <ul style="list-style-type: none"> <li>Check SW101 bit 1 of follower outdoor unit.</li> <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 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.	Check whether the outdoor unit of other systems or the indoor unit is connected to Uv (U1/U2) line or Uc (U5/U6) line.
E23	E23	—	I/F	Outdoor/outdoor 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> <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 indoor 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																																																																																														
The check code which occurred follower outdoor unit is displayed	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> 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. If SW04 and SW05 are pressed simultaneously, the fans of normal outdoor units come on. 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>O</td><td></td><td></td><td></td></tr><tr><td>02</td><td></td><td>O</td><td></td><td></td></tr><tr><td>03</td><td>O</td><td>O</td><td></td><td></td></tr><tr><td>08</td><td></td><td></td><td>O</td><td></td></tr><tr><td>09</td><td>O</td><td></td><td>O</td><td></td></tr><tr><td>0A</td><td></td><td>O</td><td>O</td><td></td></tr><tr><td>0B</td><td>O</td><td>O</td><td>O</td><td></td></tr><tr><td>10</td><td></td><td></td><td></td><td>O</td></tr><tr><td>11</td><td>O</td><td></td><td></td><td>O</td></tr><tr><td>12</td><td></td><td>O</td><td></td><td>O</td></tr><tr><td>13</td><td>O</td><td>O</td><td></td><td>O</td></tr><tr><td>18</td><td></td><td></td><td>O</td><td>O</td></tr><tr><td>19</td><td>O</td><td></td><td>O</td><td>O</td></tr><tr><td>1A</td><td></td><td>O</td><td>O</td><td>O</td></tr><tr><td>1B</td><td>O</td><td>O</td><td>O</td><td>O</td></tr></table> <p>Circle (O): Trouble P.C. board</p>	P.C. board				Compressor		Fan Motor			1	2	1	2	01	O				02		O			03	O	O			08			O		09	O		O		0A		O	O		0B	O	O	O		10				O	11	O			O	12		O		O	13	O	O		O	18			O	O	19	O		O	O	1A		O	O	O	1B	O	O	O	O	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>
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		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 02: TE2 sensor trouble 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 02: TL2 sensor trouble 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 02: TG2 sensor trouble 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 03: TS3 sensor trouble 04: TS3 sensor disconnection	I/F	TS1/TS3 sensor trouble	All stop	<ul style="list-style-type: none"> <li>• Sensor resistance is infinity or zero (open/short circuit).</li> <li>• When TS3 detects an unusual temperature during compressor operation and PMV4 operation in cooling mode.</li> </ul>	<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>• The attachment check of TS3 sensor.</li> <li>• Check for failure in indoor P.C. board.</li> </ul>
F13	F13	1*: Compressor 1 side 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>
H01	H01	1*: Compressor 1 side 2*: Compressor 2 side	Compressor P.C. board	Compressor breakdown	All stop	Inverter current detection circuit detects overcurrent and shuts system down.	<ul style="list-style-type: none"> <li>• Check power supply voltage. (AC380V ± 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>
H02	H02	1*: Compressor 1 side 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.	<ul style="list-style-type: none"> <li>• Check for failure in compressor.</li> <li>• Check power supply voltage. (AC380V ± 10%).</li> <li>• Check compressor system wiring, particularly for open phase.</li> <li>• Check connection of connectors/terminals on compressor P.C. board.</li> <li>• Check conductivity of case heater. (Check for refrigerant problem inside compressor.)</li> <li>• Check for failure in outdoor P.C. board (Compressor).</li> <li>• Check outdoor MG-CTT.</li> </ul>
H03	H03	1*: Compressor 1 side 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.	<ul style="list-style-type: none"> <li>• Check current detection circuit wiring.</li> <li>• Check failure in outdoor P.C. board (Compressor).</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					
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 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 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 2*: Compressor 2 side	Compressor P.C. board	Compressor trouble (Step-out)	All stop	Compressor is in step-out condition.	<ul style="list-style-type: none"> <li>• Check power supply voltage. (AC380V ± 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	Detected indoor unit address	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> <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)

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																																																																													
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.																																																																								
L17	L17	—	I/F	Outdoor model incompatibility trouble	All stop	Outdoor unit that cannot be connected is connected.	• Check the model name of the outdoor unit.																																																																								
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 trouble	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). • Check communication lines between outdoor units. • 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 (○): Trouble 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. • Check connection of UART communication connector. • 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		○																																																																													
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1B	○	○	○																																																																												
		00	I/F	The number of inverter P.C. boards is abnormal.	All stop	When there is much number of an inverter P.C. board to model setting of an interface P.C. board.	• Check I/F P.C. board exchange has been correctly performed as a procedure. • Check for failure in I/F P.C. board. • Check for inverter P.C. board for compressors and inverter P.C. board for fan																																																																								
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> 1) Check for trouble in external device. 2) Check for trouble in indoor P.C. board. <b>When external device is not connected:</b> 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). • 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. • Check outdoor PMVs (PMV1, 2, 3, 4) for clogging. • Check resistance characteristics of TD1 sensor. • Check for insufficiency in refrigerant quantity. • Check for failure in 4-way valve. • Check for leakage of SV4 circuit. • 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	01: Compressor 1 side 02: 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 01: Open phase 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 2*: Compressor 2 side	Compressor P.C. board	Compressor Vdc trouble			
P07	P07	1*: Compressor 1 side 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 02: Compressor 2 heat sink trouble 04: Heat sink dewing	I/F	Heat sink overheating trouble Heat sink dewing 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; 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; 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. <TS trouble judgment criterion> In cooling operation: 60 °C 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>

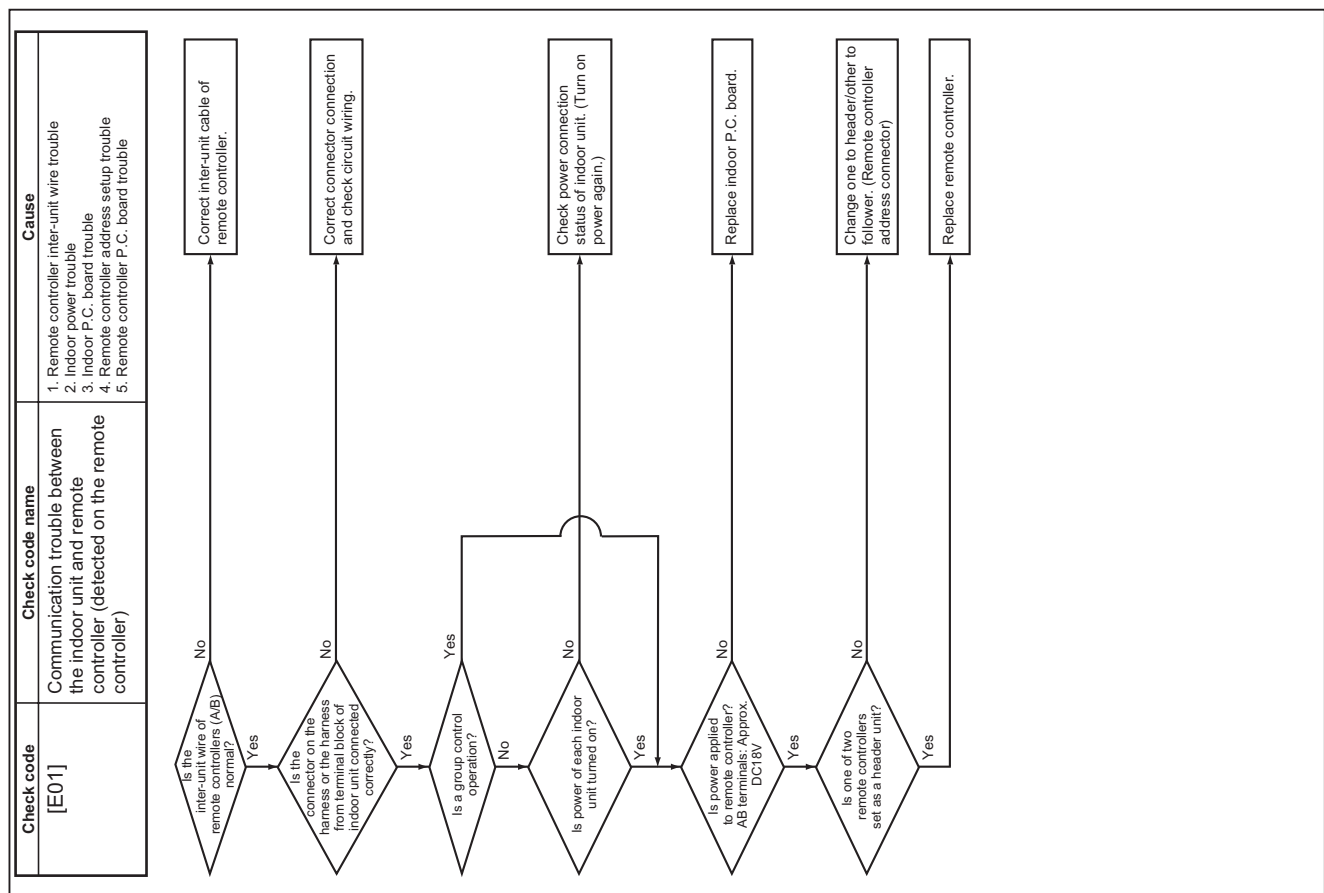
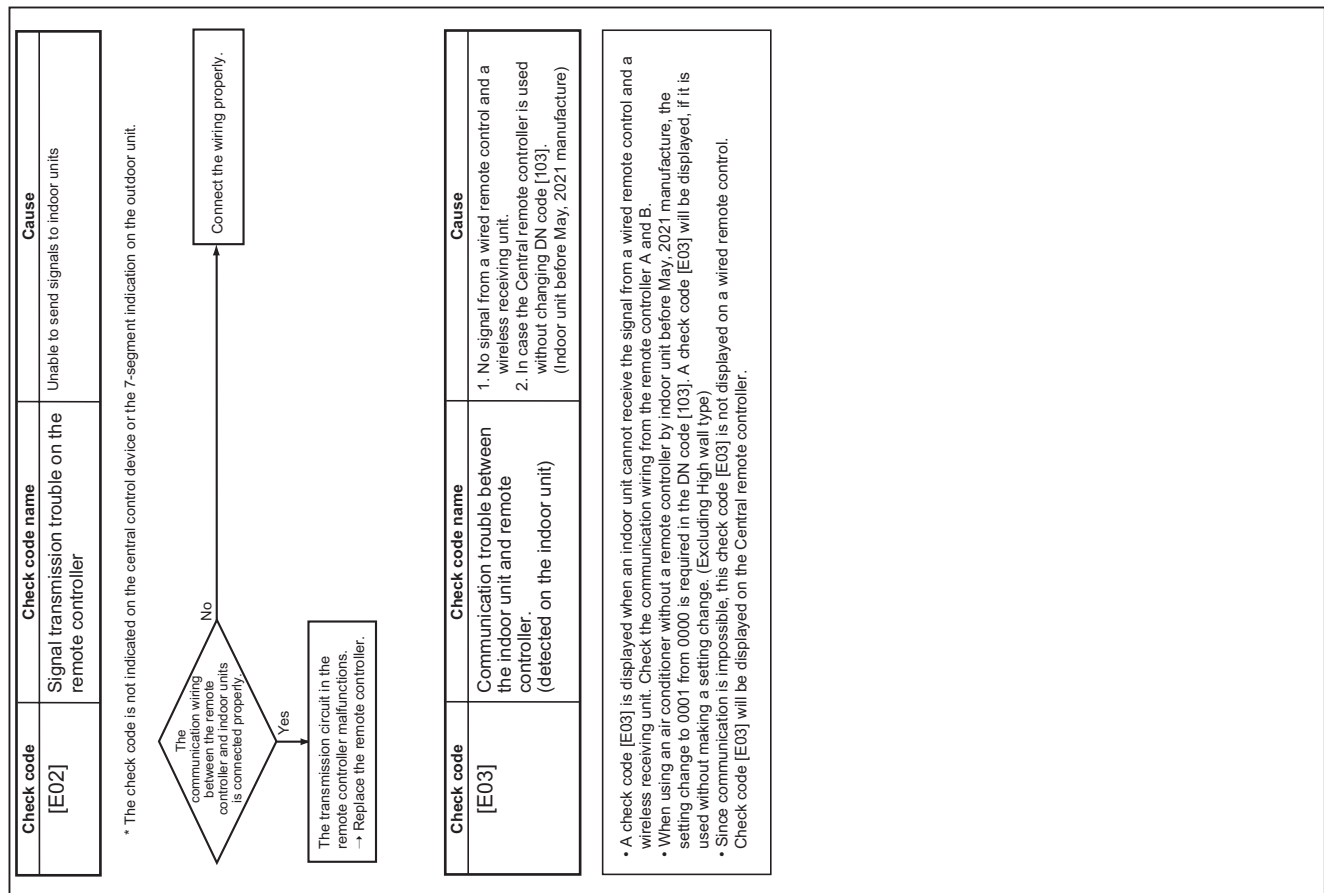
Main remote controller	Check code		Location of detection	Description	System status	Check code detection condition(s)	Check items (locations)
	Outdoor 7-segment display						
	Check code	Sub-code					
P17	P17	—	I/F	Discharge temperature TD2 trouble	All stop	Discharge temperature (TD2) exceeds 115 °C.	<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	<p>&lt;During cooling operation&gt; Pd sensor detects pressure equal to or greater than 3.85 MPa.</p> <p>&lt;During heating operation&gt; Pd sensor detects pressure equal to or greater than 3.6 MPa.</p>	<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>

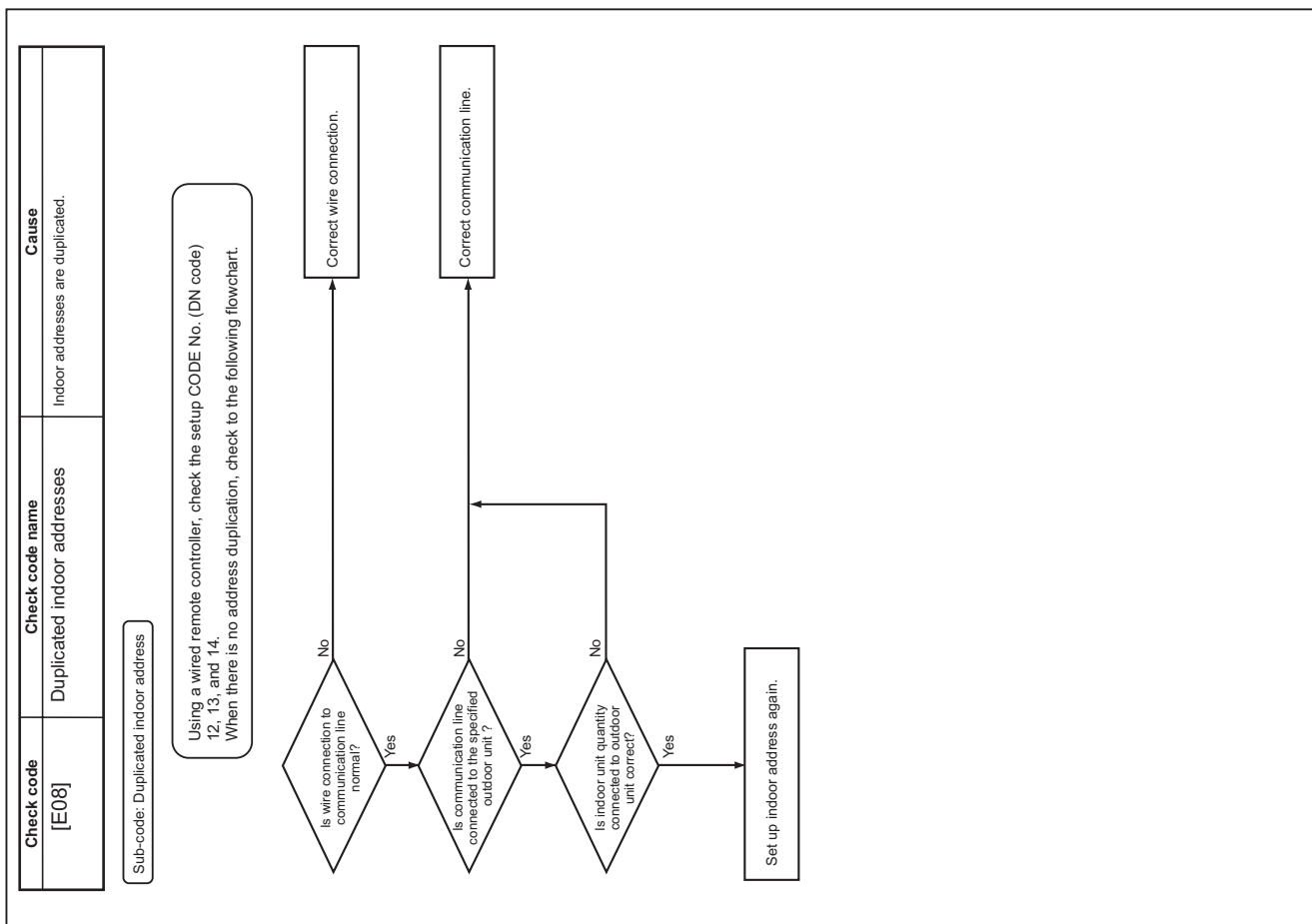
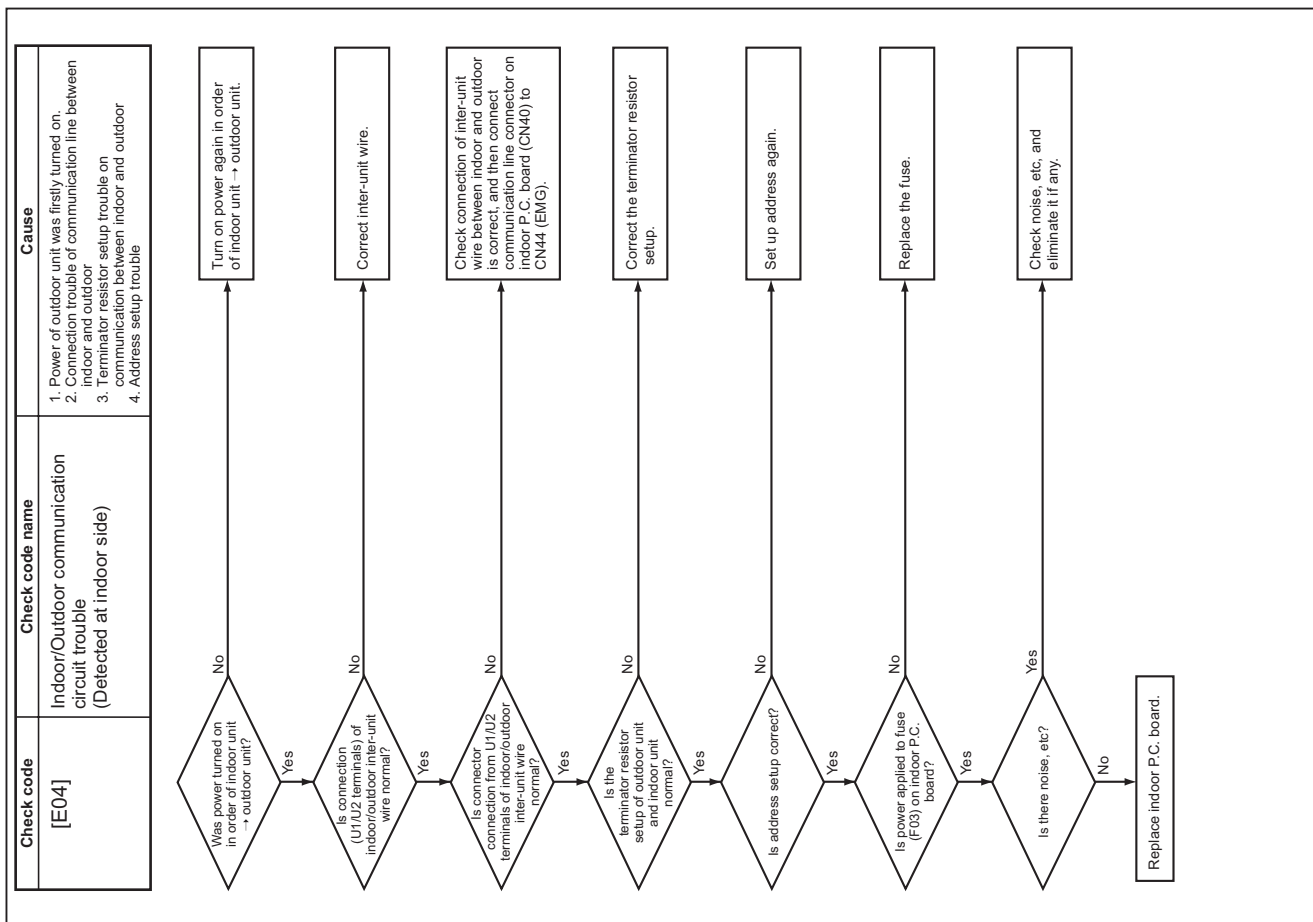
Main remote controller	Check code		Location of detection	Description	System status	Check code detection condition(s)	Check items (locations)
	Outdoor 7-segment display						
	Check code	Sub-code					
P22	P22	1*: Fan P.C. board 1 2*: Fan P.C. board 2	Fan INV. P.C. board	Outdoor fan P.C. board trouble	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 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 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>

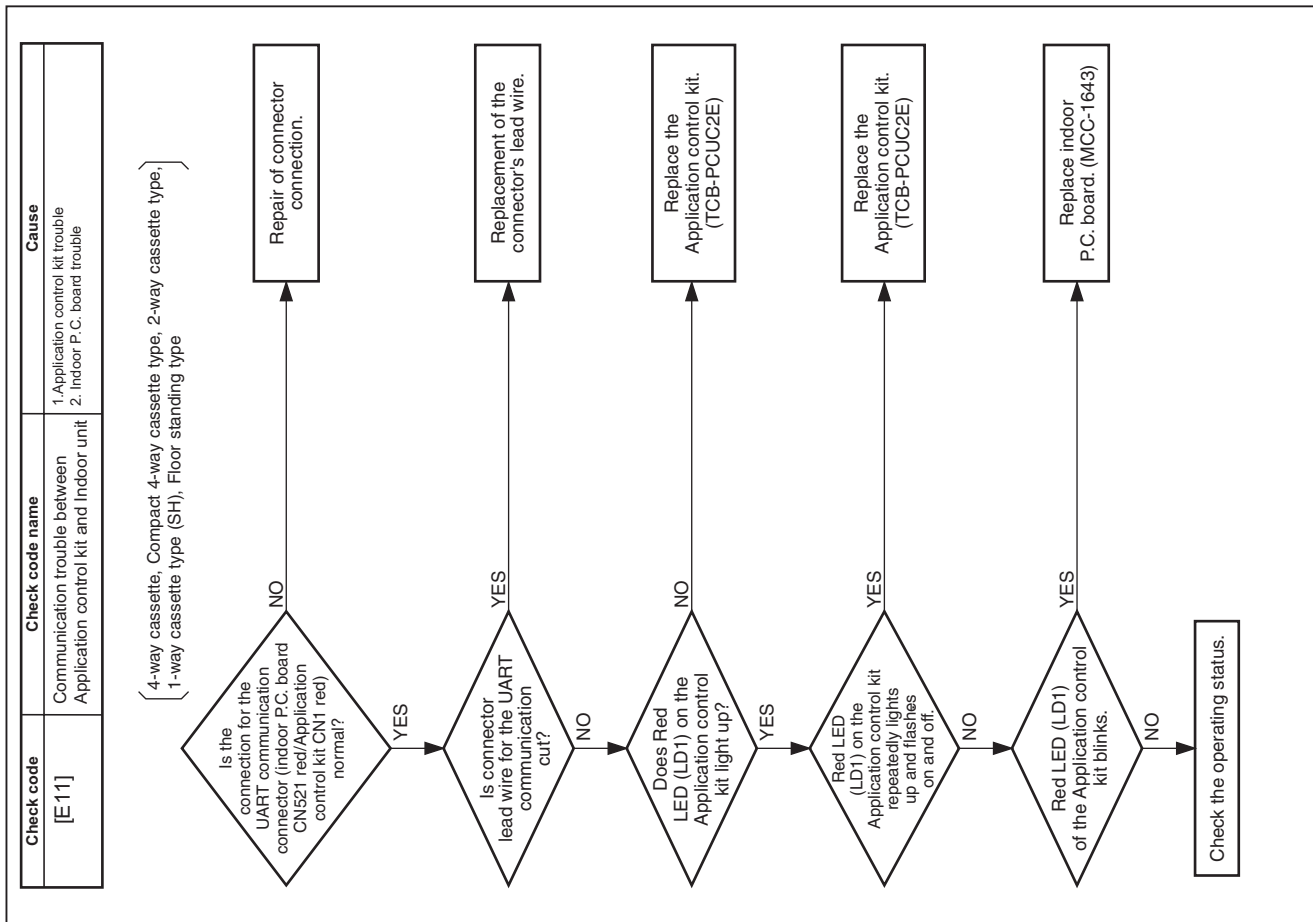
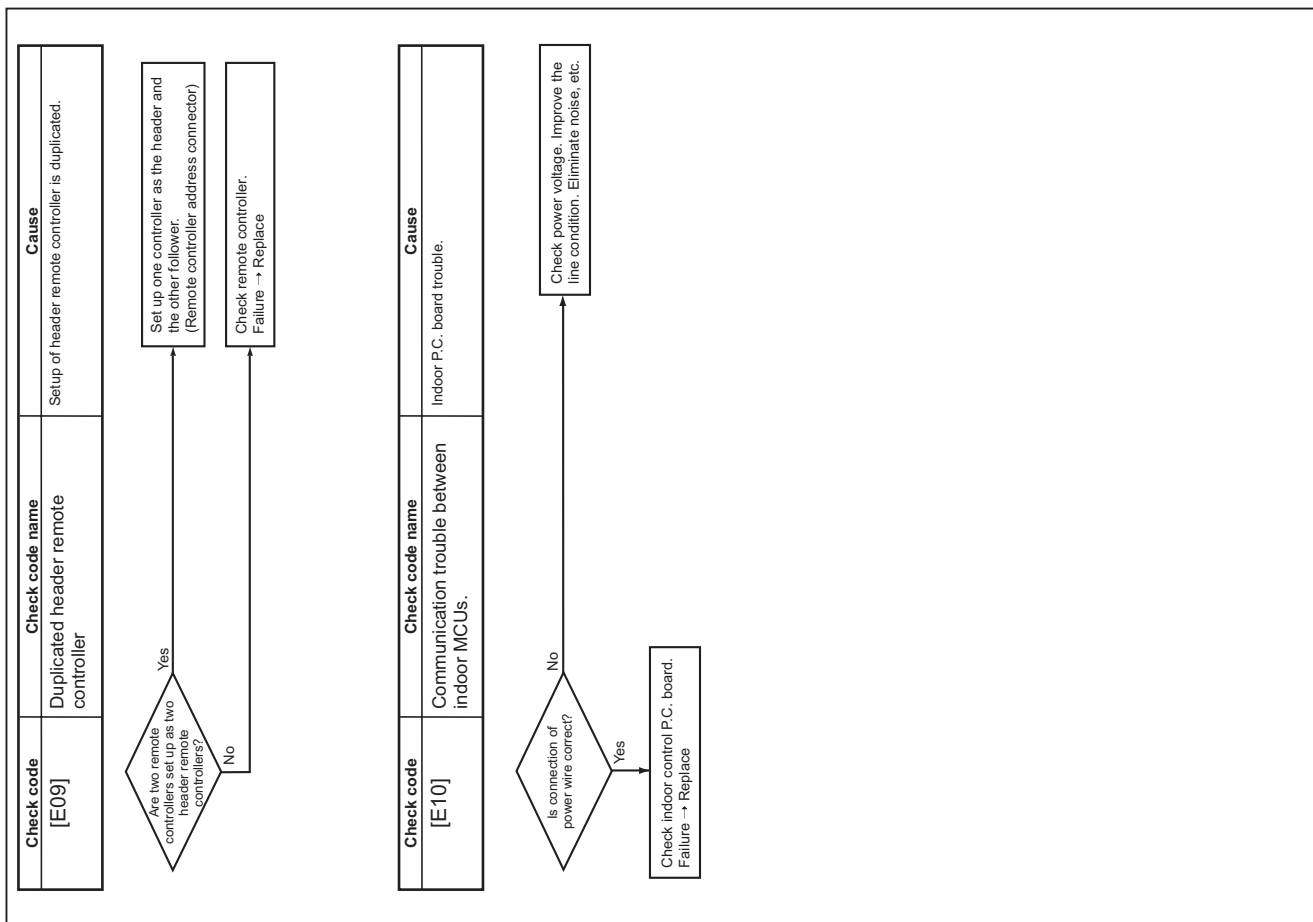
## Check codes Displayed on Central Control Device

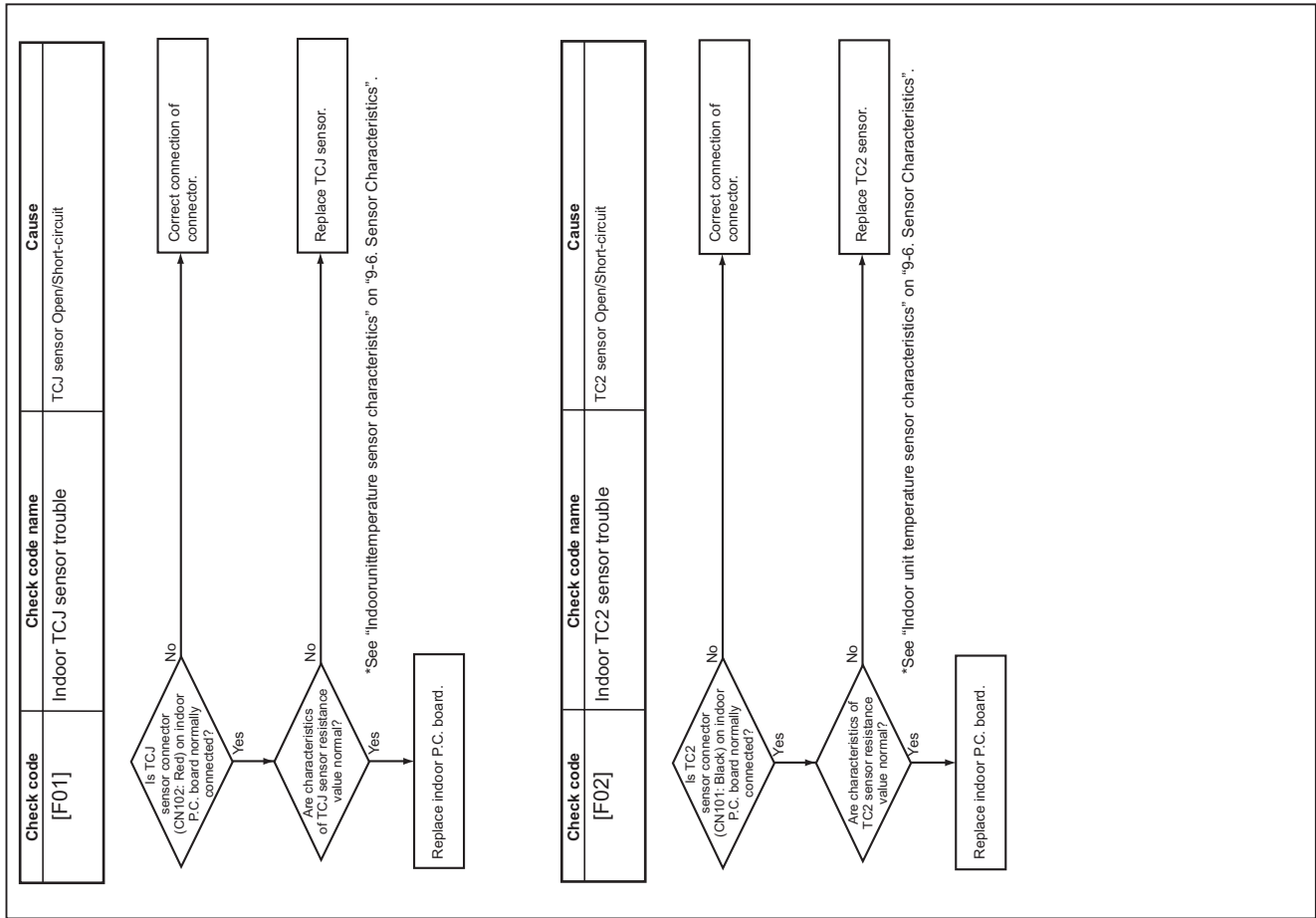
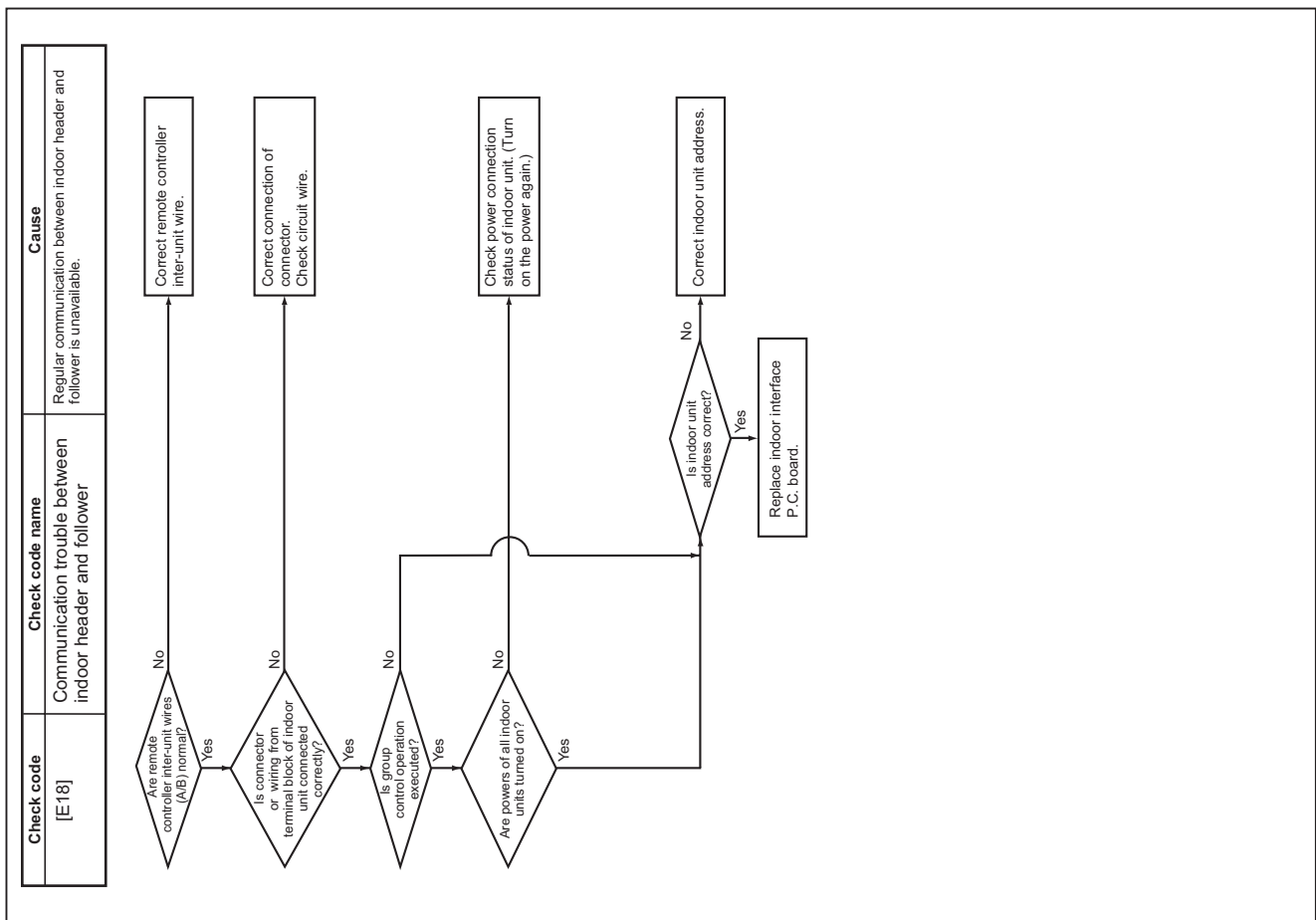
Main remote controller	Check code		Location of detection	Description	System status	Check code detection condition(s)	Check items (locations)
	Outdoor 7-segment display						
	Check code	Sub-code					
E03	—	—	Indoor unit	Indoor-remote controller communication trouble (detected at indoor end)	Stop of corresponding 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.
S01	—		—	—	—	Receiving trouble in central control device.	• Check central control device.

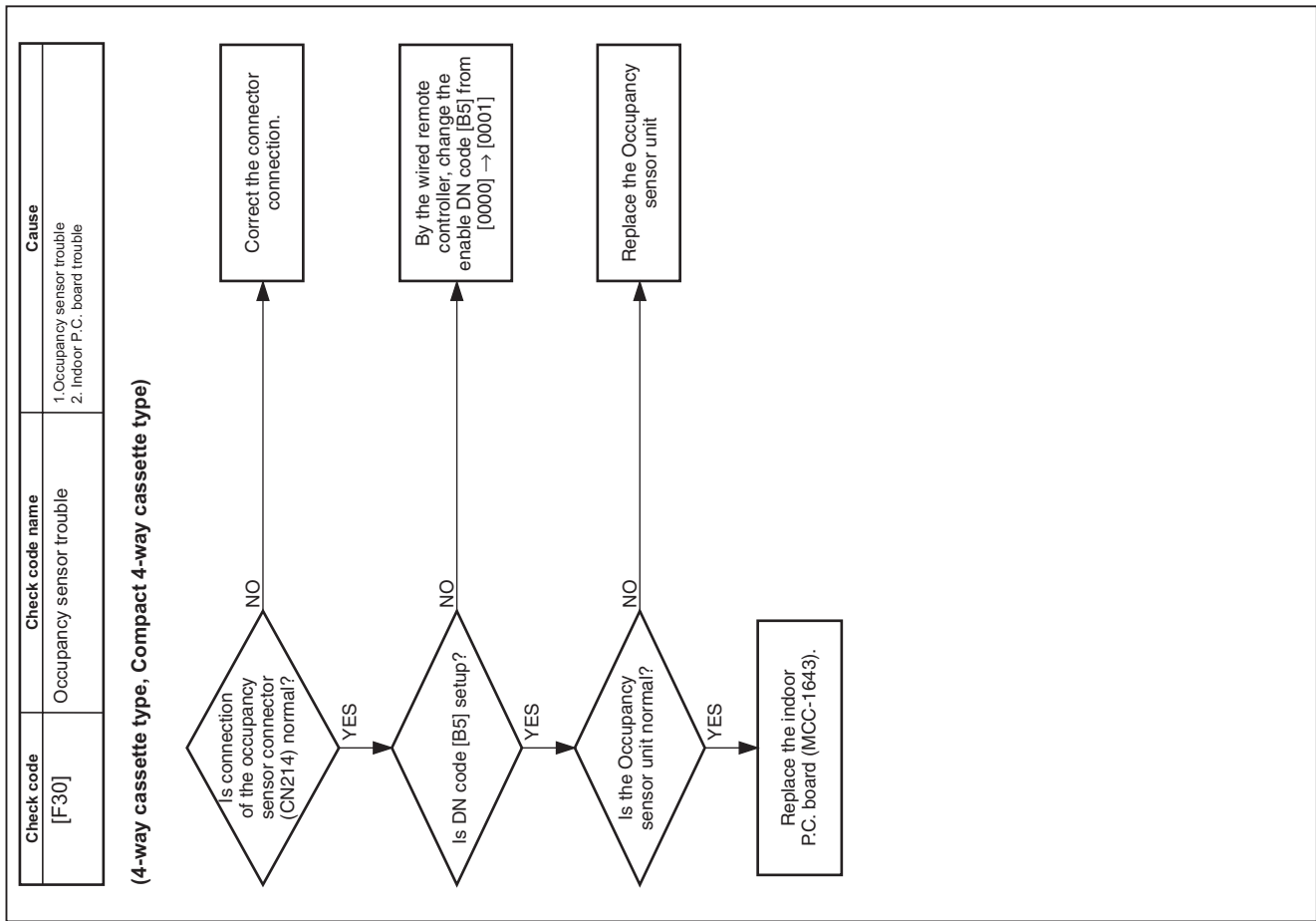
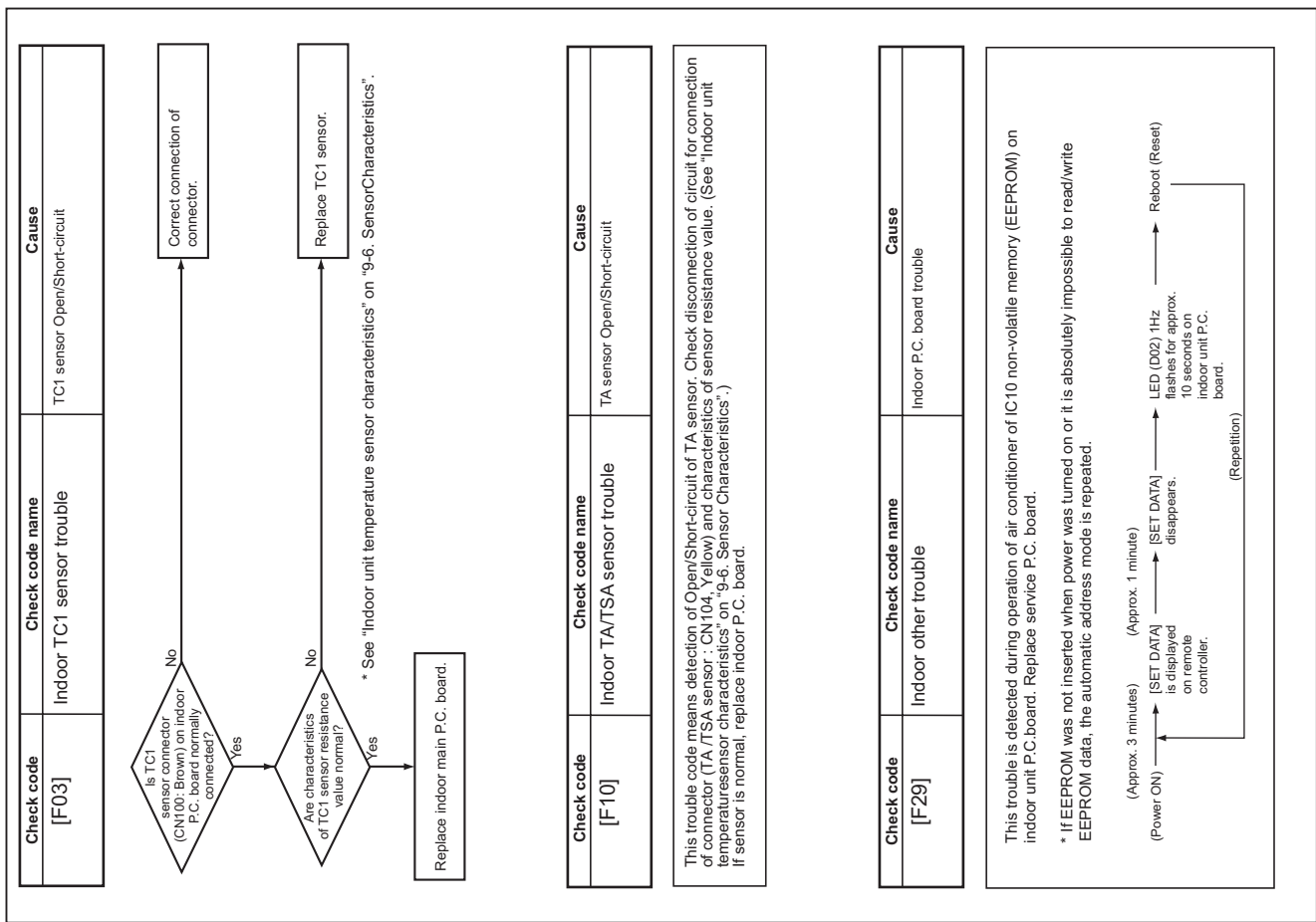
# 9-5. Diagnostic Procedure for Each Check Code (Indoor Unit)









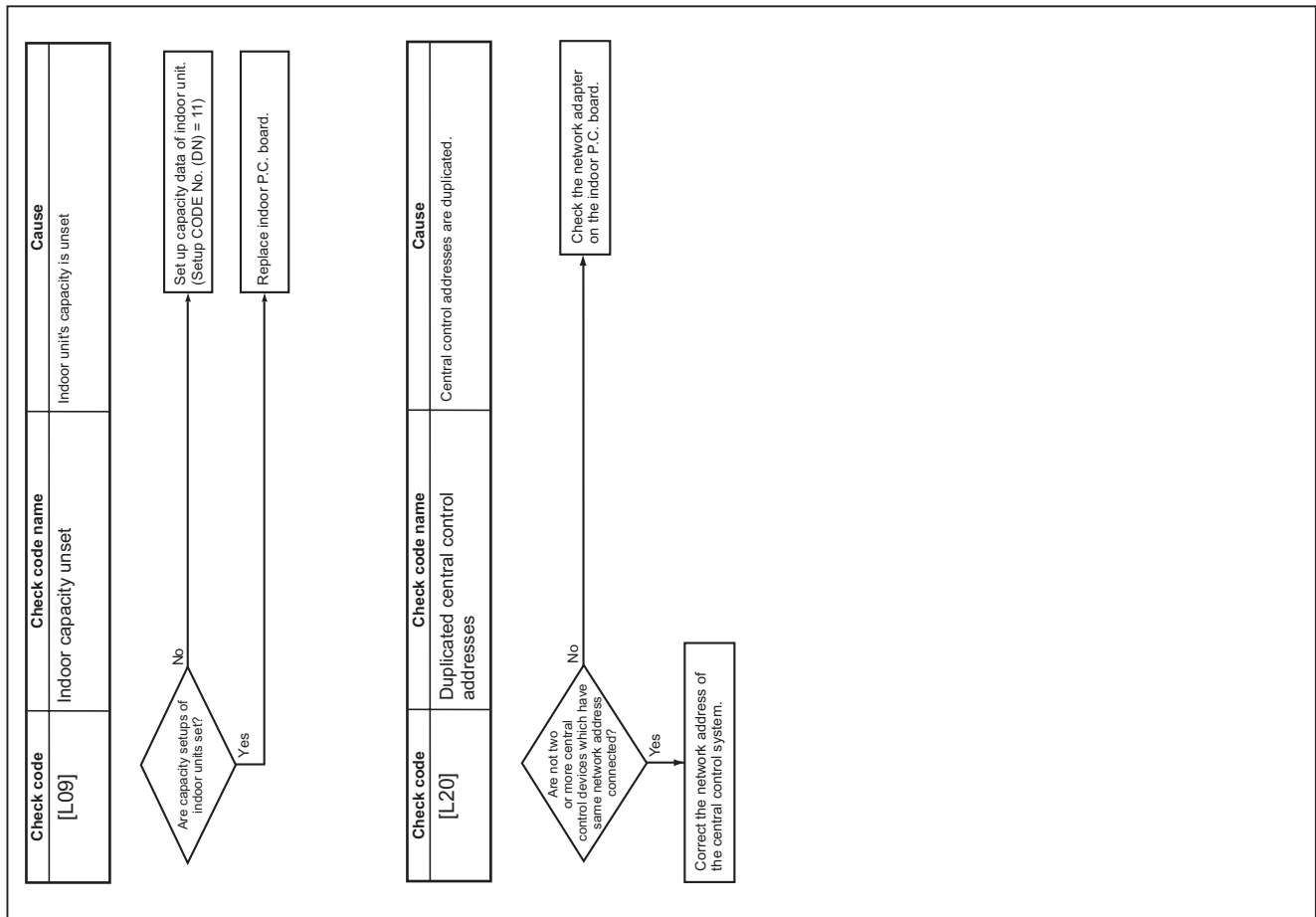
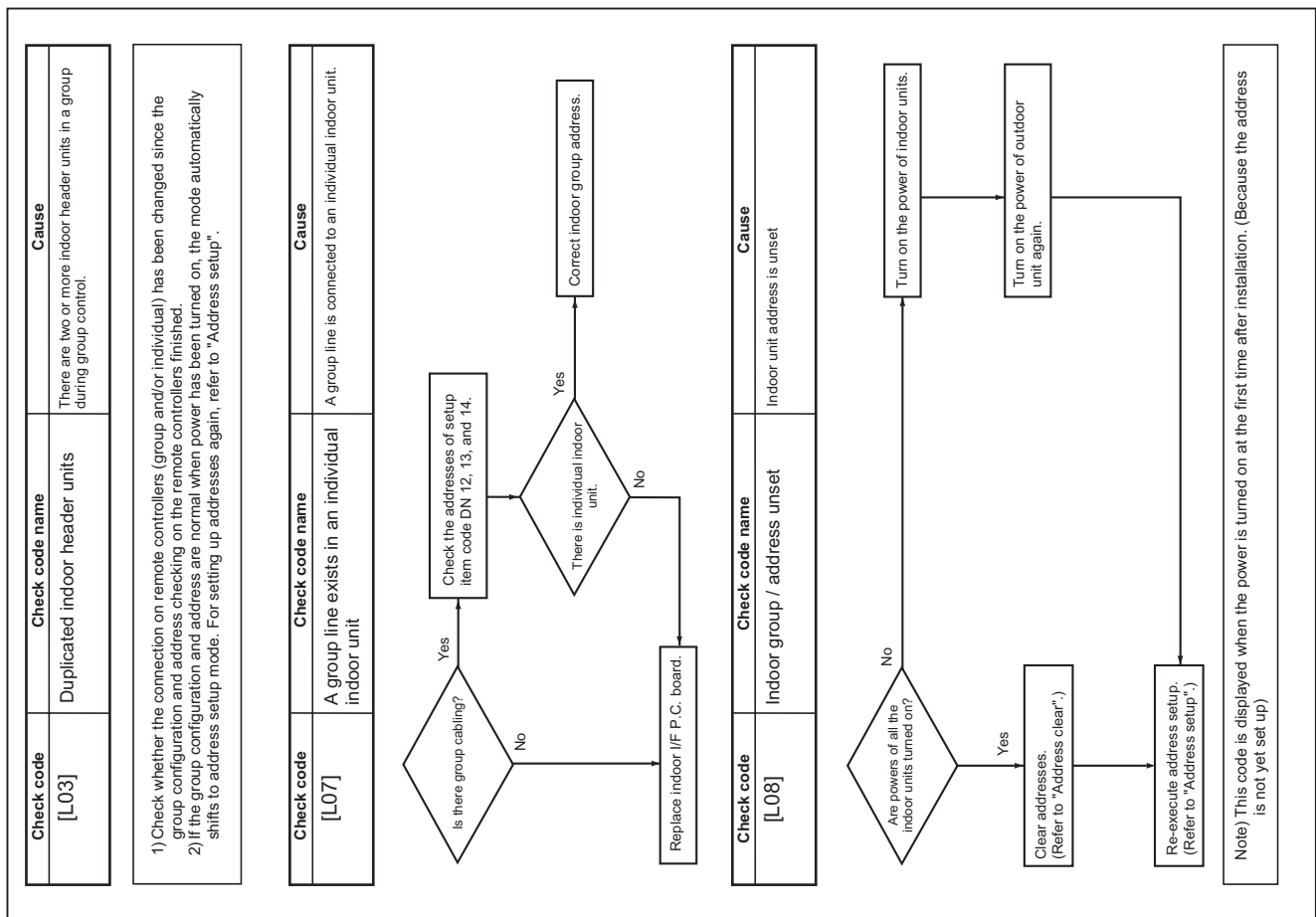


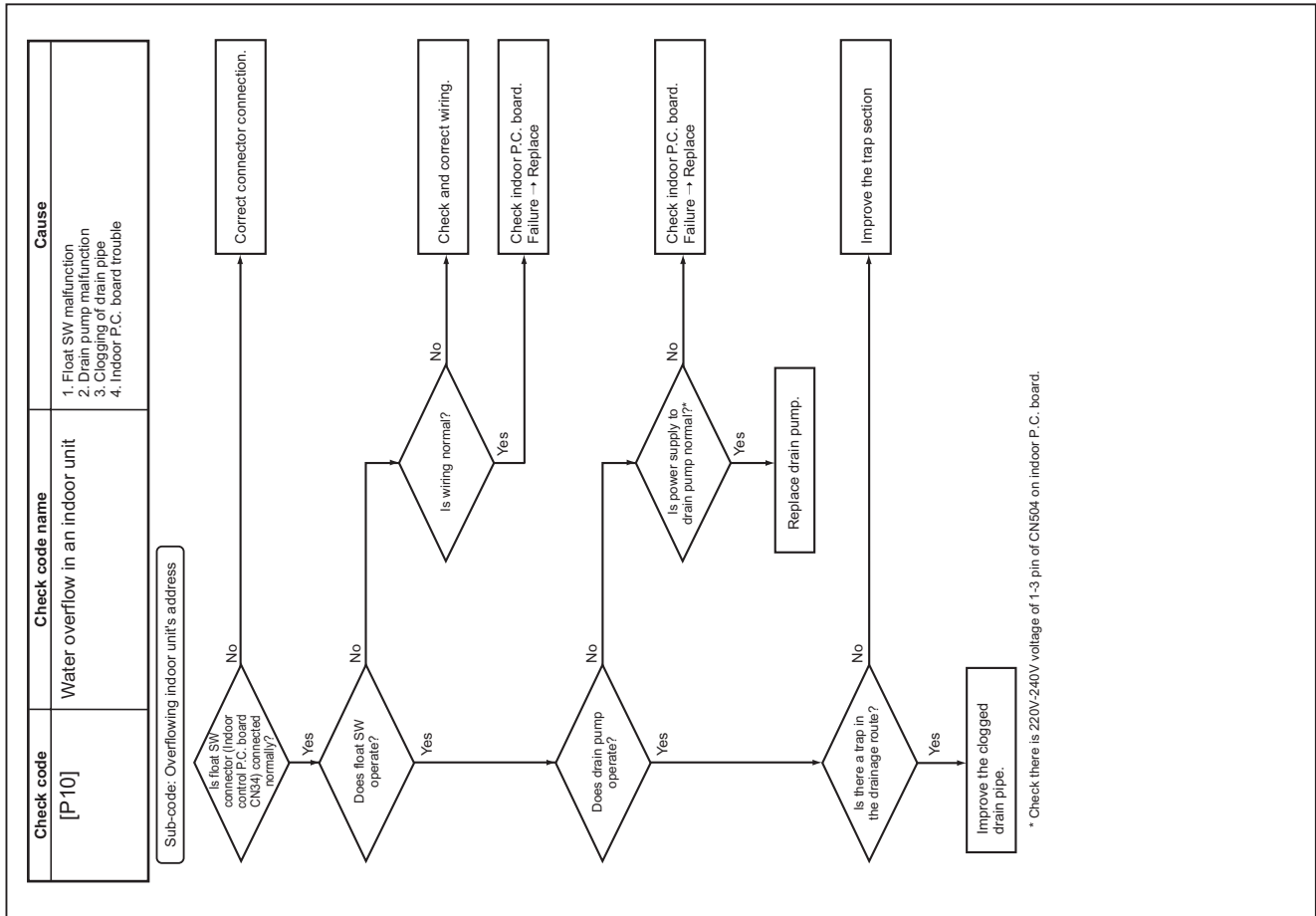
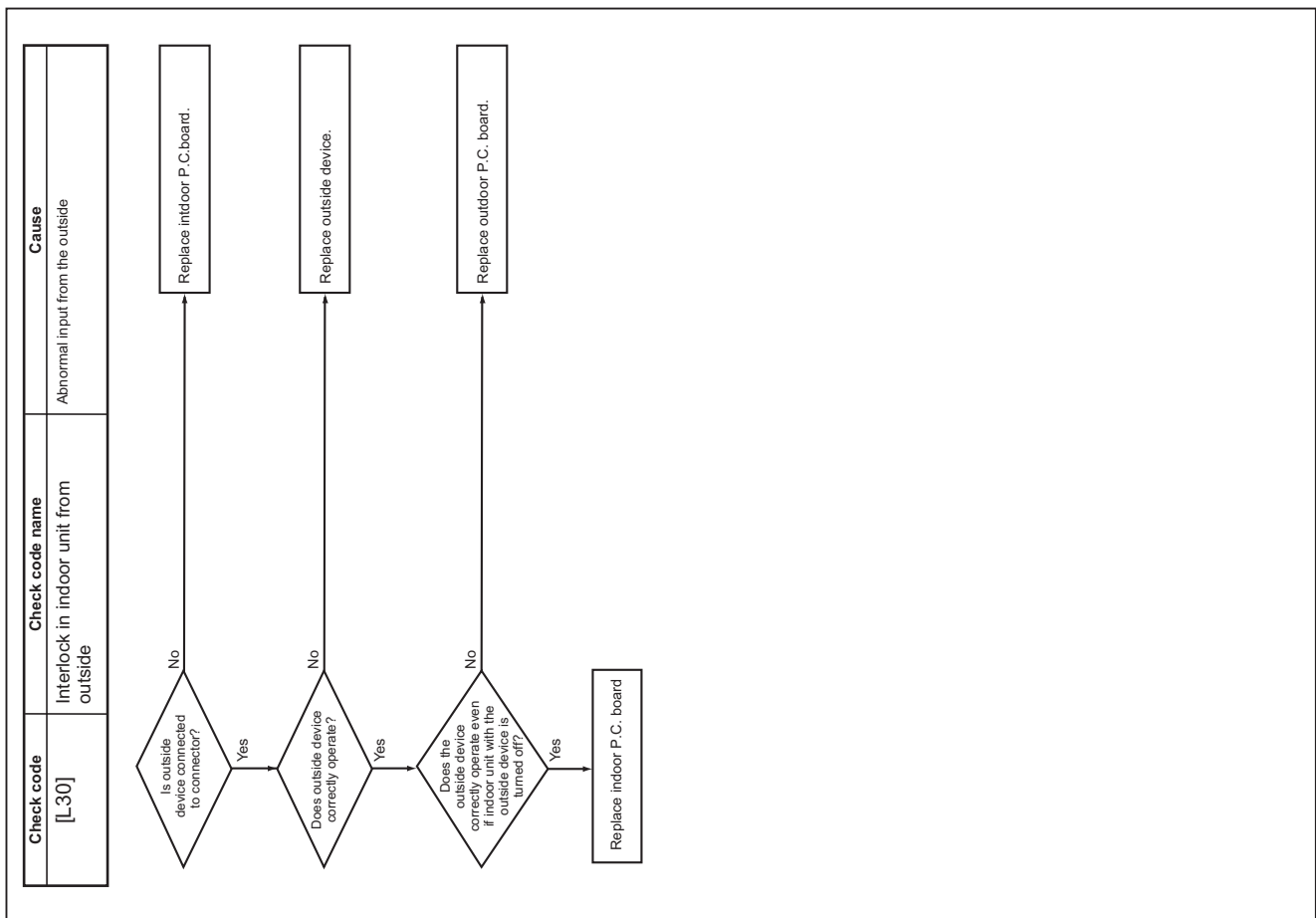
Check code	Check code name	Cause
[J29]	Leak Detector trouble	1. Indoor unit / Leak Detector communication connector trouble. 2. Refrigerant sensor trouble. 3. Leak Detector P.C. board trouble.

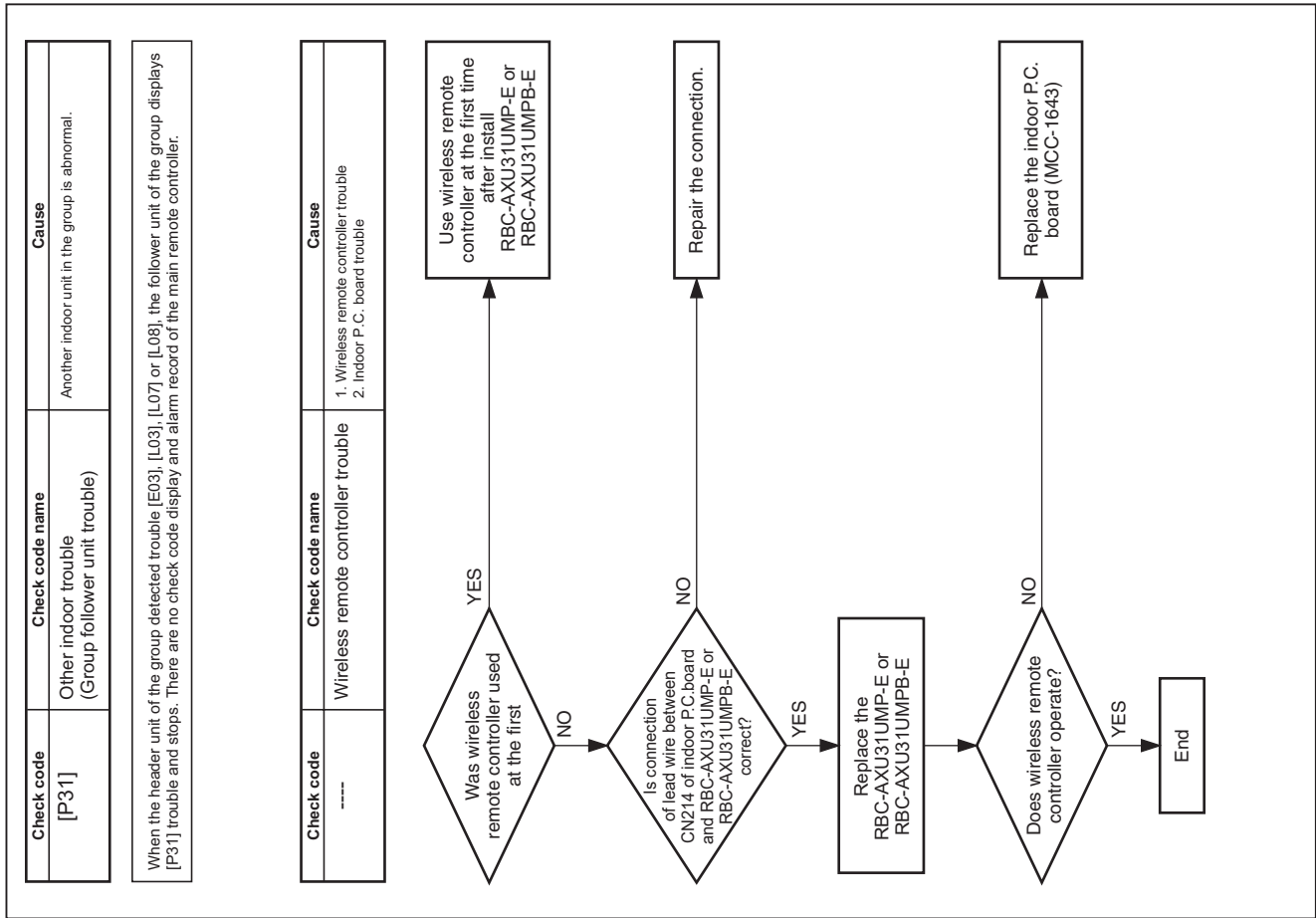
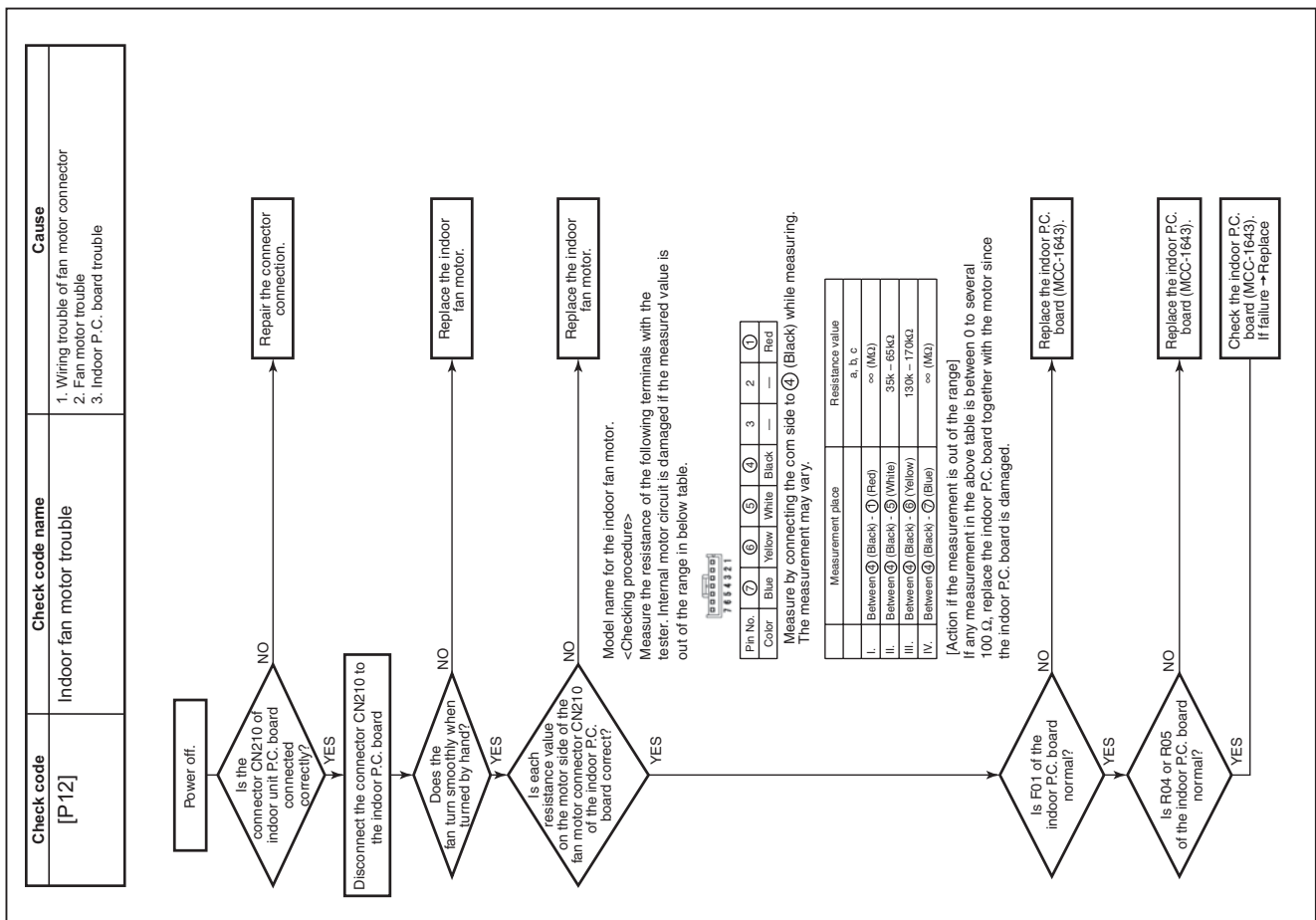
Check code	Check code name	Cause
[J30]	Refrigerant leak detection	1. Refrigerant leak detection

Check code	Check code name	Cause
[J31]	Refrigerant leak detection sensor exceeding its of the product.	1. Refrigerant sensor trouble (Exceeding its life of the product) 2. Leak Detector P.C. board trouble.

J29, J30, J31 are check codes related to Leak Detector.  
For details, refer to the service manual for the R32 refrigerant outdoor unit.





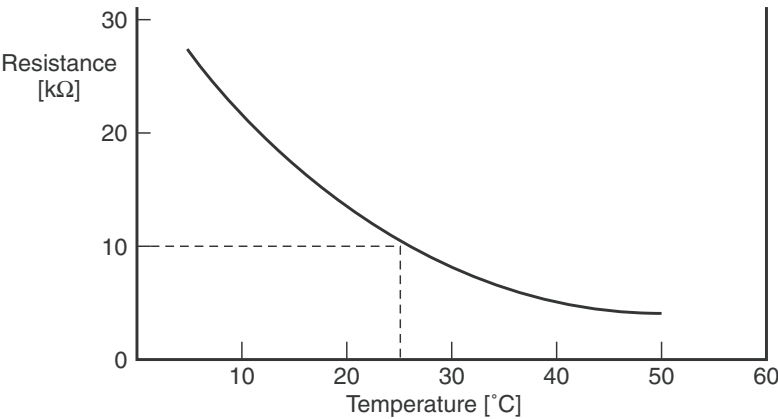


# 9-6. Sensor characteristics

## Indoor unit

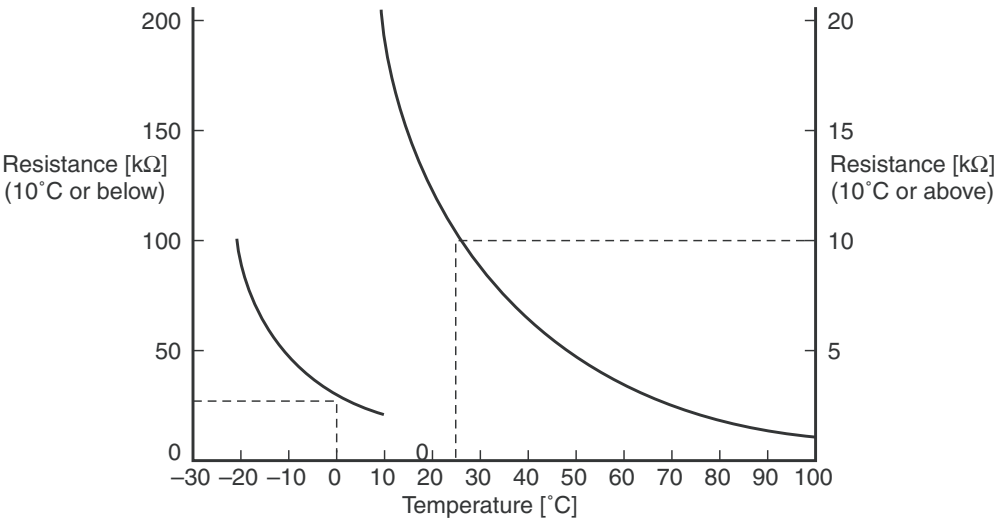
### ▼ Temperature sensor characteristics

Indoor TA sensor



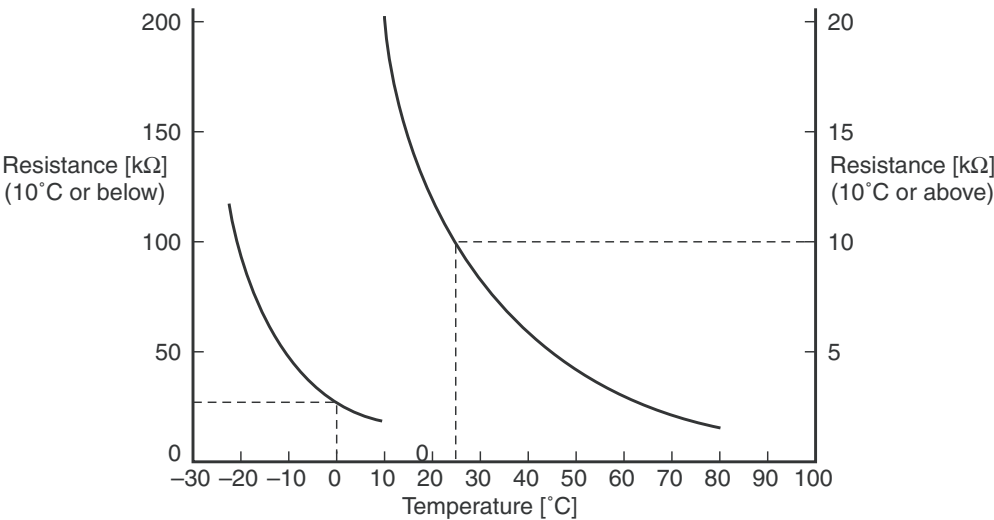
Temperature [°C]	Resistance [kΩ]
0	33.9
5	26.1
10	20.3
15	15.9
20	12.6
25	10.0
30	8.0
35	6.4
40	5.2
45	4.2
50	3.5
55	2.6
60	2.4

Indoor TC1 sensor



Temperature [°C]	Resistance [kΩ]
-20	99.9
-15	74.1
-10	55.6
-5	42.2
0	32.8
5	25.4
10	19.8
15	15.6
20	12.4
25	10.0
30	8.1
35	6.5
40	5.3
45	4.4
50	3.6
55	3.0
60	2.5
65	2.1
70	1.8
75	1.5
80	1.3
85	1.1
90	1.0
95	0.8
100	0.7

Indoor TC2 and TCJ sensors



Temperature [°C]	Resistance [kΩ]
-20	115.2
-15	84.2
-10	62.3
-5	46.6
0	35.2
5	26.9
10	20.7
15	16.1
20	12.6
25	10.0
30	8.0
35	6.4
40	5.2
45	4.2
50	3.5
55	2.8
60	2.4
65	2.0
70	1.6
75	1.4
80	1.2

## ▼ Winding resistance of PMV (Pulse Motor Vale) coil

Measure position	Resistance value
White - Red (COM)	180 to 220 Ω
Yellow - Red (COM)	
Orange - Red (COM)	
Blue - Red (COM)	

at 20°C

## 9-7. Maintenance list

Aiming in environmental preservation, it is strictly recommended to clean and maintain the indoor/outdoor units of the operating air conditioning system regularly to secure effective operation of the air conditioner.

It is also recommended to maintain the units once a year regularly when operating the air conditioner for a long time.

Check periodically signs of rust or scratches, etc. on coating of the outdoor units.

Repair the defective position or apply the rust resisting paint if necessary.

If an indoor unit operates for approx. 8 hours or more per day, usually it is necessary to clean the indoor/outdoor units once three months at least.

These cleaning and maintenance should be carried out by a qualified dealer.

Although the customer has to pay the charge for the maintenance, the life of the unit can be prolonged.

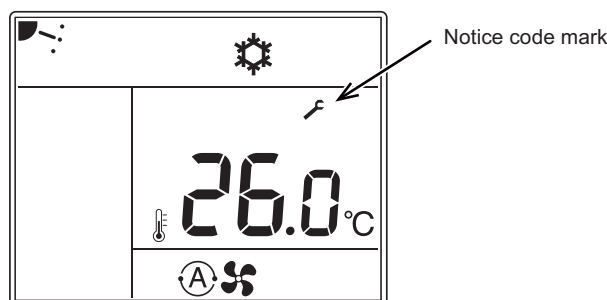
Failure to clean the indoor/outdoor units regularly will cause shortage of capacity, freezing, water leakage or trouble on the compressor.

### <Check list>

Part name	Object		Contents of check	Contents of maintenance
	Indoor	Outdoor		
Heat exchanger	✓	✓	• Blocking with dust, damage check	• Clean it when blocking is found.
Fan motor	✓	✓	• Audibility for sound	• When abnormal sound is heard
Filter	✓	—	• Visual check for dirt and breakage	• Clean with water if dirty • Replace if any breakage
Fan	✓	✓	• Visual check for swing and balance • Check adhesion of dust and external appearance.	• Replace fan when swinging or balance is remarkably poor. • If a large dust adheres, clean it with brush or water.
Suction/ Discharge grille	✓	—	• Visual check for dirt and scratch	• Repair or replace it if deformation or damage is found.
Drain pan	✓	—	• Check blocking by dust and dirt of drain water.	• Clean drain pan, Inclination check
Front panel, Louver	✓	—	• Check dirt and scratch.	• Cleaning/Coating with repair painting
External appearance	—	✓	• Check rust and peeling of insulator • Check peeling and floating of coating film	• Coating with repair painting

## 9-8. Notice code

- Notice code is a function only in TC2U-LINK communication.
- When the outdoor or indoor unit detects its conditions requiring caution or maintenance, this function notices you to check your units with the spanner mark (Notice code mark) on the wired remote controller or central controller display.
- Even while the notice code mark is displayed, the air conditioner can operate normally.
- A maximum of 5 notice codes can be issued simultaneously in one system (line).



### ■ How to check Notice code No.

- 1** Stop the operation of the air conditioner and push the Menu button and OFF timer button at the same time for 10 seconds or more.
- 2** The unit number of the indoor unit is displayed at the bottom left of the screen. Change it with the [ ▽ ] [ △ ] setting button and push the OFF timer button to confirm.
- 3** The history number is displayed in the center of the screen, and the Notice code No. is displayed in the lower left. [ ▽ ] [ △ ] You can switch the history with the setting button (a maximum of 5 notice codes).
- 4** Push the ON / OFF button to return to the operation stop screen.

### ■ Notice code list

Notice code No.	Item	Content
203	Flow Selector unit battery dead	The battery kit connected to the Flow Selector unit has reached the end of its life.
204	Leak Detector life advance display	The Leak Detector will soon reach the end of its life.

## 10. P.C. BOARD EXCHANGE PROCEDURES

### ■ Indoor unit

#### Replacement of indoor P.C. boards

##### CAUTION

For this model, please make all the following settings.

CODE No.(DN)	Setting data	Description
E0	0004	Global model
28	0001	Auto-restart

##### <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.

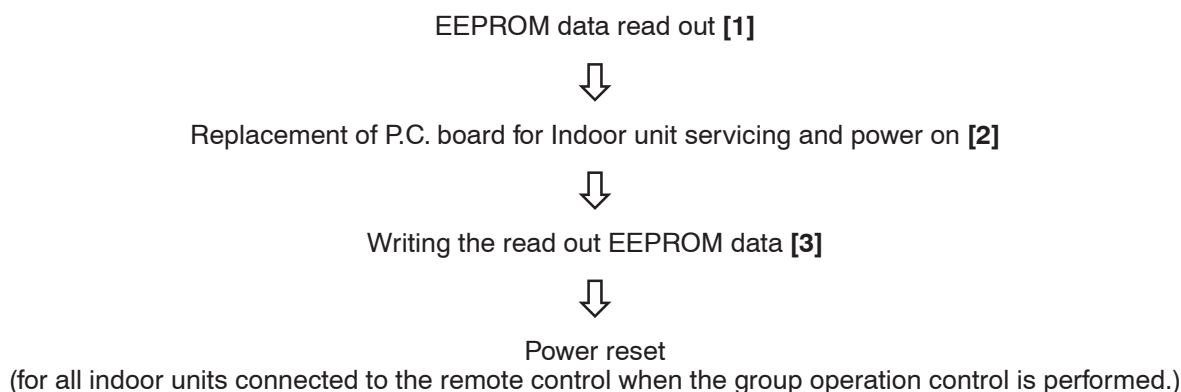
When replacing the P.C. board for indoor unit servicing, follow the procedures below.

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>

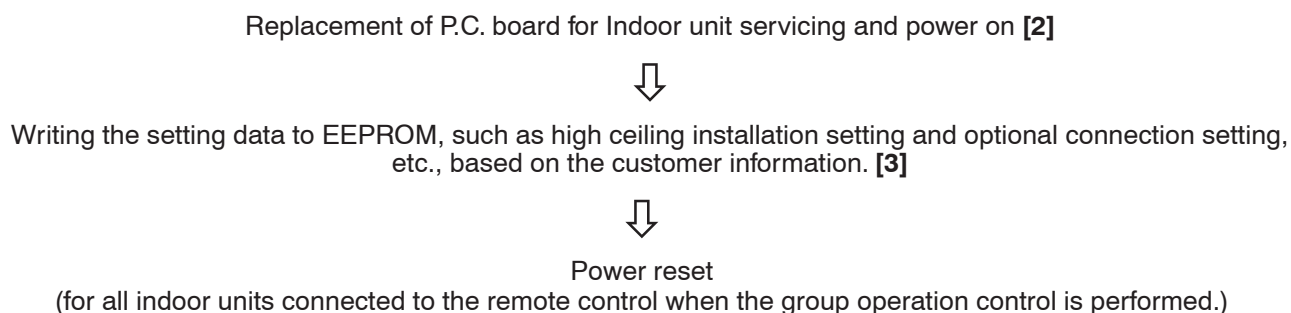
#### CASE 1

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



#### CASE 2

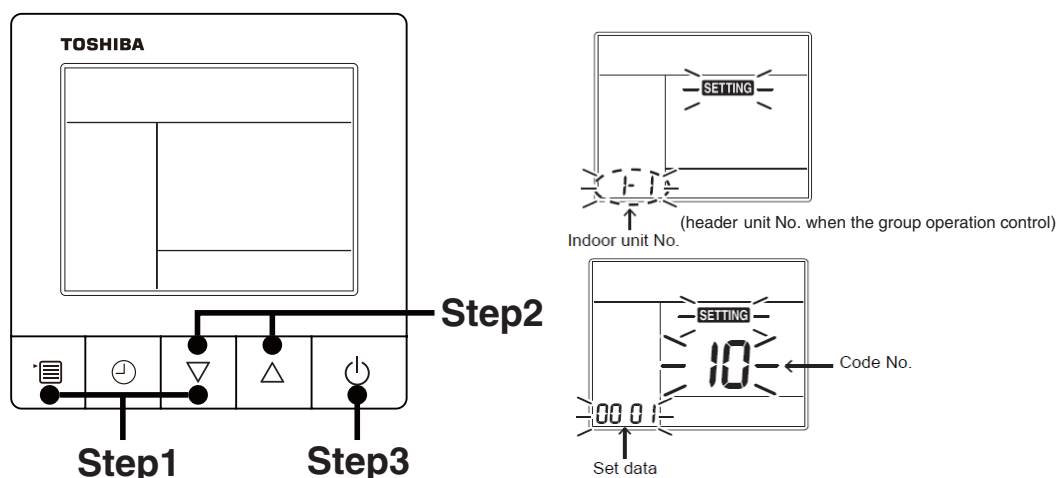
**The EEPROM before replacement is incomplete and the setting data cannot be read out.**



## [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.

<RBC-ASCU11-\*>



**Step1** Push and hold the [menu + ▽] buttons at same time for more than 10 seconds.

\*When the group operation control is performed, the unit No. displayed for the first time is the header unit No.

At this time, the Code No. (DN) shows “10”. Also, the fan of the indoor unit selected starts its operation and the swing operation also starts if it has the louvers.

**Step2** Every time when the [  $\nabla$  or  $\Delta$  ] button is pushed, the indoor unit No. under the group control is displayed in order. Specify the indoor unit No. to be replaced.

1. Change the Code No. (DN) to 10 → 01 by pushing [ ▽ or △ ] buttons setting. (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 [ ▽ or △ ] buttons.  
Similarly, be sure to write down the setting data displayed.
3. Repeat the step 2-2 to set the other settings in the same way and write down the setting data in the manual that comes with the P.C. board. (See pages 117 to 119).

**<RBC-AMTU3\*>**


## [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 ,  and  button on the remote controller simultaneously for more than 4 seconds.

\*When the group operation control is performed, the unit No. displayed for the first time is the header unit No.

At this time, the CODE No. (DN) shows “ iD ”. Also, the fan of the indoor unit selected starts its operation and the swing operation also starts if it has the louvers.

**Step 2** Every time when the  (left side button) button is pushed, the indoor unit No. under the group control is displayed in order. Specify the indoor unit No. to be replaced.

1. Change the CODE No. (DN) to **00 → 01** by pushing  /  buttons for the temperature setting. (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 for the temperature setting.  
Similarly, be sure to write down the setting data displayed.
3. Repeat the step 2-2 to set the other settings in the same way and write down the setting data in the manual that comes with the P.C. board. (See pages 117 to 119).

**CODE No. required at least**

DN	Contents
10	Type
11	Indoor unit capacity
12	System address
13	Indoor unit address
14	Group address
28	Auto-restart
E0	Destination

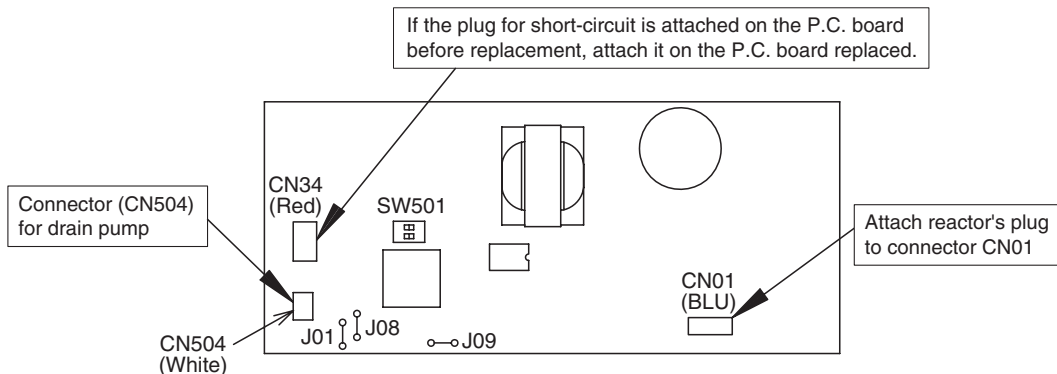
1. The Code No. for the Indoor unit type and Indoor unit capacity are required to set the rotation number setting of the fan.
2. If the system/indoor/group addresses are different from those before replacement, the auto-address setting mode starts and the manual resetting may be required again.  
(when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

**Step3** After writing down all setting data, push [ON/OFF] button to return to the normal stop status.  
(It takes approx. 1 min until the remote controller operation is available again.)

## [2] P.C. Board for indoor unit servicing replacement procedures (e.g. MCC-1643)

### Step1 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, J08, J09) setting (cut), switch SW501, (short-circuit) connector CN34 as the setting of the P.C. board before replacement.



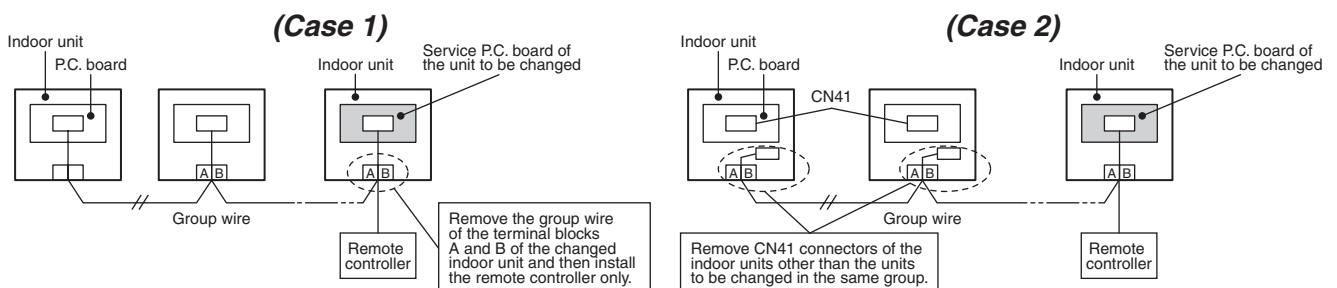
### Step2 It is necessary to set indoor unit to be exchanged: Remote controller = 1 : 1

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 exchanger 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 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.

#### <RBC-ASCU11-\*>

**Step 1** Push and hold the [menu + ▽] buttons at same time for more than 10 seconds.

\* When the group operation control is performed, the unit No. displayed for the first time is the header unit No.

At this time, the Code No. (DN) shows "10". Also, the fan of the indoor unit selected starts its operation and the swing operation also starts if it has the louvers.

**Step 2** Every time when the [▽ or △] button is pushed, the indoor unit No. in the group control operation are displayed in order.

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

Specify the indoor unit No. with its P.C. board replaced to the P.C. board for indoor unit servicing. (You cannot perform this operation if "ALL" is displayed.)

**Step 3** Select the Code No. (DN) can be selected by pushing the [▽ or △] button.

- Set the indoor unit type and capacity.

The factory-set values shall be written to the EEPROM by changing the type and capacity.

1. Push the [menu] button to make Code No. flash. And set the Code No. (DN) to 10 .
2. Push the [menu] button to make SET DATA flash. And select the type by pushing the [▽ or △] buttons.  
(For example, Compact 4-way Cassette Type is set to "0014". Refer to Type DN code "10" on page 55.)
3. Push [OFF timer] button.  
(The changed data is set.)
4. Change the Code No. (DN) to "11" by pushing the [▽ or △] buttons.
5. Select the capacity by pushing the [▽ or △] buttons.  
(For example, UP005 Type is set to "0041". Refer to Indoor Unit Capacity DN code "11" on page 55. )
6. Push [OFF timer] button.  
(The changed data is set.)

**Step 4** Write the on-site setting data to the EEPROM, such as address setting, etc. Perform the steps 1 and 2 above again.

**Step 5** Change the Code No. (DN) to "01" by pushing the [▽ or △] buttons.  
(this is the setting for the filter sign lighting time.)

**Step 6** Check the setting data displayed at this time with the setting data put down in [1].




1. If the setting data is different, modify the setting data by pushing the [▽ or △] buttons to the data put down in [1].
2. If the data is the same, proceed to next step.

**Step 7** Change the Code No. (DN) by pushing the [▽ or △] buttons.  
As described above, check the setting data and modify to the data put down in [1].

**Step 8** Repeat the steps 6 and 7.

**Step 9** After the setting completes, push the [ON/OFF] button to return to the normal stop status.  
(It takes approx. 1 min until the remote controller operation is available again.)


## <RBC-AMTU3\*>

**Step 1** Push ,  and  buttons on the remote controller simultaneously for more than 4 seconds.



\* In the group control operation, the unit No. displayed for the first time is the header unit No..

At this time, the CODE No. (DN) shows "10". Also, the fan of the indoor unit selected starts its operation and the swing operation starts if it has the louvers.

(The unit No. "ALL" is displayed if the auto-address setting mode is interrupted in [2] step 2 a))









**Step 2** Every time when  (left side button) button is pushed, the indoor unit No. in the group control operation are displayed in order.  
(The settings stored in the EEPROM of the P.C. board for indoor unit servicing are the factory-set values.)

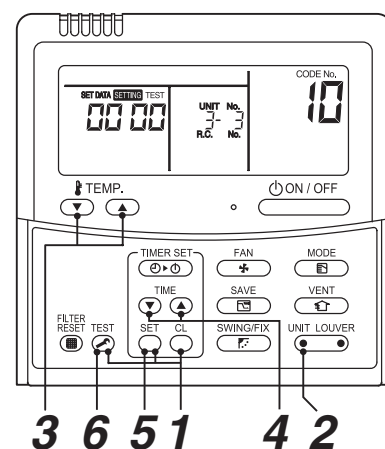
Specify the indoor unit No. with its P.C. board replaced to the P.C. board for indoor unit servicing.  
(You cannot perform this operation if "ALL" is displayed.)

**Step 3** Select the CODE No. (DN) can be selected by pushing the  /  button for the temperature setting.



- 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. Select the type by pushing  /  buttons for the timer setting.  
(For example, Compact 4-way Cassette Type is set to "0014". Refer to Type DN code "10" on page 55.)
3. Push  button.  
(The operation completes if the setting data is displayed.)
4. Change the CODE No. (DN) to "11" by pushing  /  buttons for the temperature setting.
5. Select the capacity by pushing  /  buttons for the timer setting.  
(For example, UP005 Type is set to "0041". Refer to Indoor Unit Capacity DN code "11" on page 55.)
6. Push  button.  
(The setting completes if the setting data are displayed.)





**Step 4** Write the on-site setting data to the EEPROM, such as address setting, etc. Perform the steps 1 and 2 above again.

**Step 5** Change the CODE No. (DN) to "11" by pushing  /  buttons for the temperature setting.  
(this is the setting for the filter sign lighting time.)

**Step 6** Check the setting data displayed at this time with the setting data put down in [1].

1. If the setting data is different, modify the setting data by pushing  /  buttons for the timer setting to the data put down in [1].  
The operation completes if the setting data is displayed.
2. If the data is the same, proceed to next step.

**Step 7** Change the CODE No. (DN) by pushing  /  buttons for the temperature setting.  
As described above, check the setting data and modify to the data put down in [1].

**Step 8** Repeat the steps 6 and 7.

**Step 9** After the setting completes, push  button to return to the normal stop status.

(It takes approx. 1 min until the remote controller operation is available again.)

Even after modifying the data wrongly and pushing  button, it is possible to return to the data before modification by pushing  button if the CODE No. (DN) is not changed.

# 11. DETACHMENTS

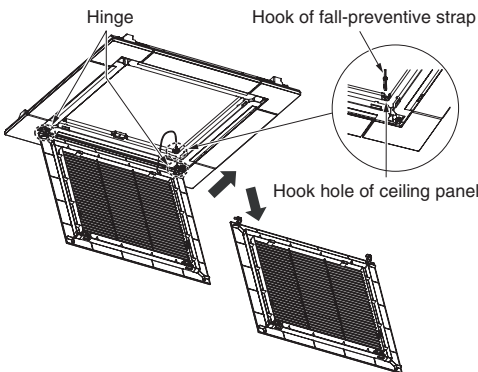
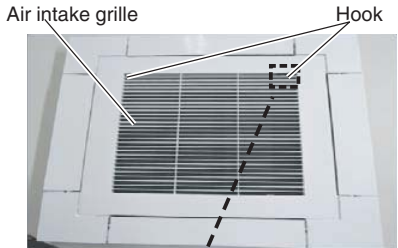
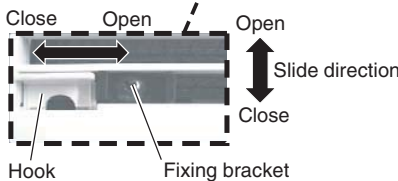
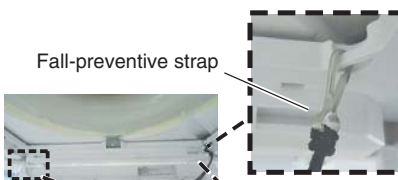
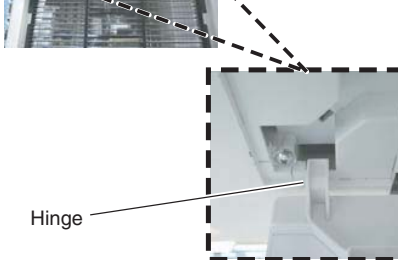

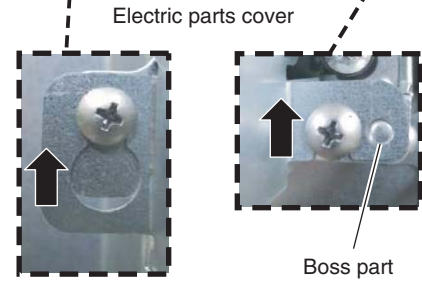
## Compact 4-way cassette

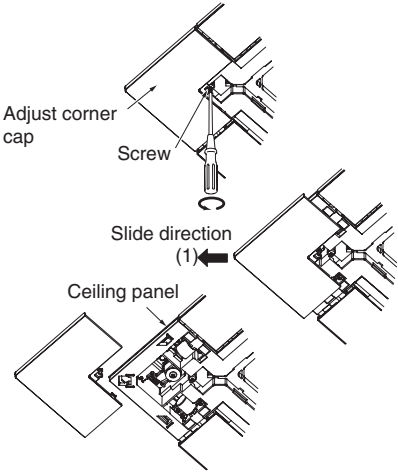
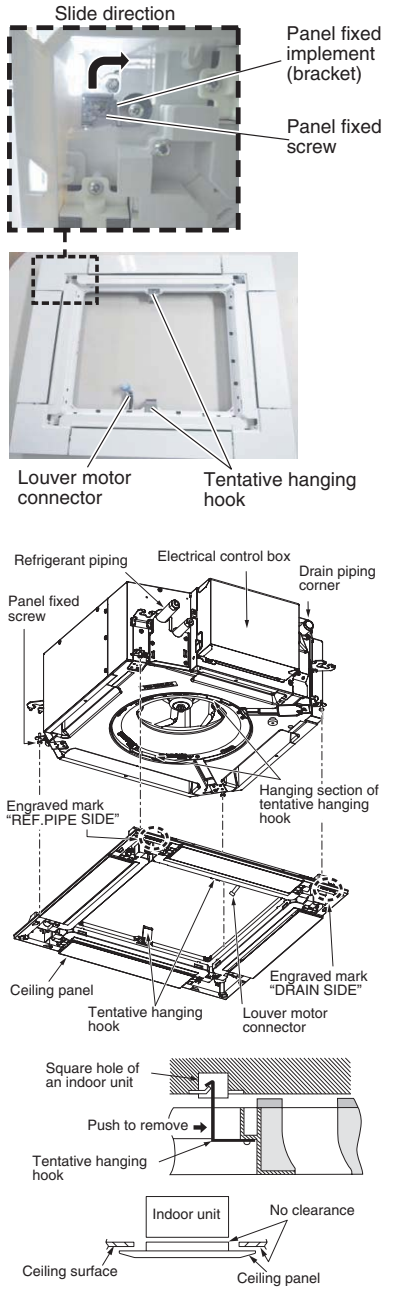
### WARNING

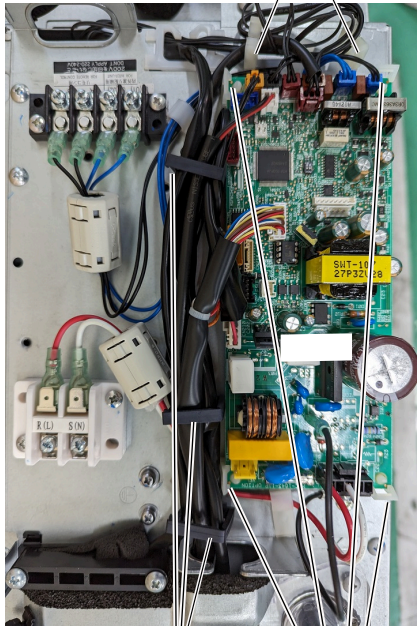
Be sure to stop operation of the air conditioner before work and then turn off switch of the breaker.

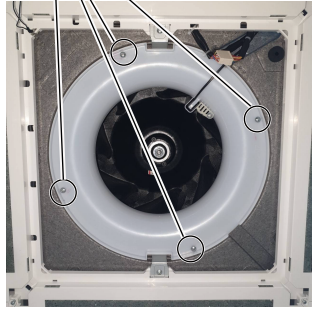



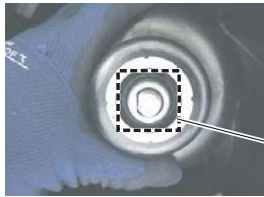
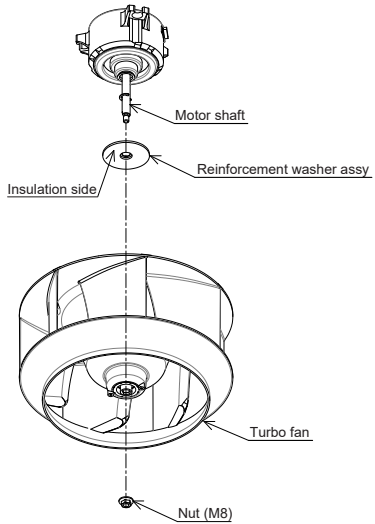
### CAUTION

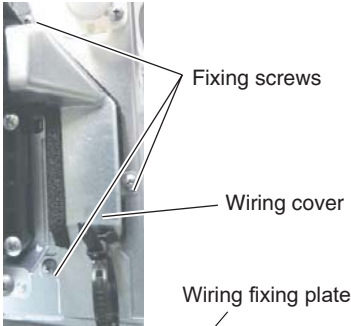

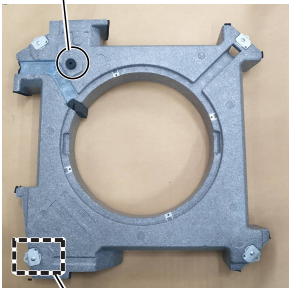
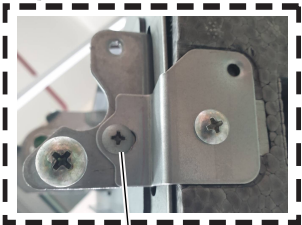

Be sure to put on gloves during working time; otherwise an injury will be caused by a part etc.

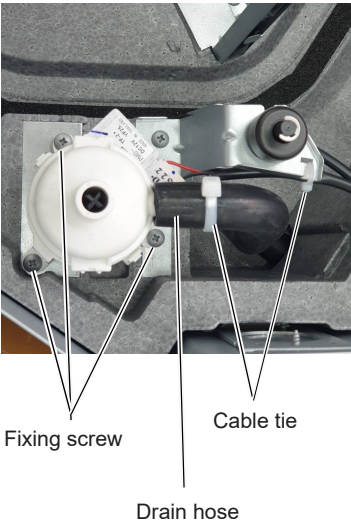
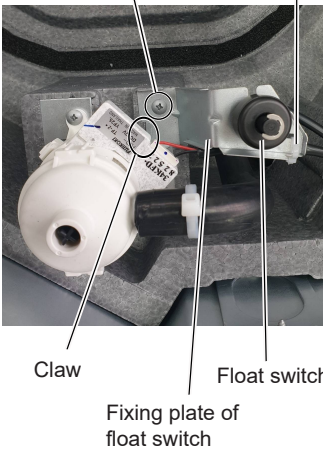
No.	Part name	Procedure	Remarks
①	Air intake grille	<p><b>1. Detachment</b></p> <ol style="list-style-type: none"> <li>1) Stop operation of the air conditioner and then turn off switch of the circuit breaker.</li> <li>2) Loosen the fixing screw. And slide the fixing bracket toward the inside. (M 4 × 8, 1 pcs.)</li> <li>3) Holding the air intake grille, slide the hook in the direction of the arrow and slowly open the grille.</li> <li>4) Remove the hook of the fall-preventive strap from the ceiling panel. Remove the hinge section of the air intake grille from the ceiling panel while the air intake grille is opened.</li> </ol> <p><b>2. Attachment</b></p> <ol style="list-style-type: none"> <li>1) Hook the hinge of the air intake grille to the main panel, and then attach the fall-preventive strap.</li> <li>2) Close the air intake grille, and then slide the hook.</li> <li>3) Slide the grille fixing bracket to fix it with the screws. (M 4 × 8, 1pc.)</li> </ol> 	   
②	Electric parts cover	<p><b>1. Detachment</b></p> <ol style="list-style-type: none"> <li>1) Loosen the fixing screws (2 places) of the electric parts cover. (M 4 × 8, 2 pcs.)</li> <li>2) Slide the electric parts cover toward upper side to remove it.</li> </ol> <p><b>2. Attachment</b></p> <ol style="list-style-type: none"> <li>1) Slide the electric parts cover to attach it. (Arrange the boss at the electric parts side just on the boss hole at the cover side.)</li> <li>2) Tighten the screws of the electric parts cover (2 positions) to fix it. (M 4 × 8, 2 pcs.)</li> </ol>	 

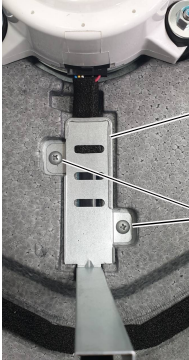
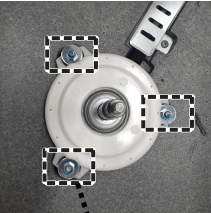

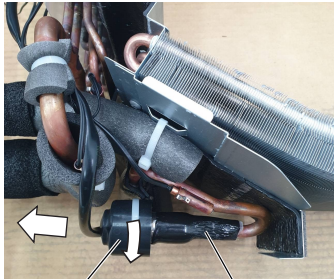
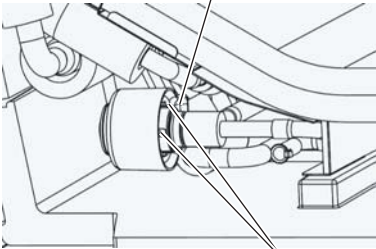
No.	Part name	Procedure	Remarks
③	Adjust corner cap	<p><b>1. Detachment</b></p> <ol style="list-style-type: none"> <li>1) Remove the air intake grille. (Refer to 1 of ①.)</li> <li>2) Loosen the fixing screws on the adjust corner cap. (M 4 × 10, 4 pcs.)</li> <li>3) Slide the adjust corner cap to outside to remove it.</li> </ol> <p><b>2. Attachment</b></p> <ol style="list-style-type: none"> <li>1) Matching claws (5 positions) of the adjust corner cap to holes of the panel main unit holes and attach them.</li> <li>2) Tighten the fixing screws of the adjust corner cap (M 4 × 10, 4 pcs.).</li> </ol> <p><b>NOTE</b></p> <p>Tighten the screw with a hand screwdriver and do not use a tool such as a electric screwdriver. Tightening torque : 1 N•m or less</p>	 <p>Adjust corner cap</p> <p>Screw</p> <p>Slide direction (1)</p> <p>Ceiling panel</p>
④	Ceiling panel	<p><b>1. Detachment</b></p> <ol style="list-style-type: none"> <li>1) Remove the air intake grille and the adjust corner cap. (Refer to 1 of ① and 1 of ③.)</li> <li>2) Remove the louver motor connector.</li> <li>3) By sliding the panel fixing bracket of the corner part, remove it from the fixing screws. (Total 4 positions)</li> <li>4) Push the tentative hanging hook at the center part of the ceiling panel main body toward the outside of the ceiling panel, and then remove the ceiling panel from the indoor unit.</li> </ol> <p><b>2. Attachment</b></p> <ol style="list-style-type: none"> <li>1) Match the louver motor connector of the ceiling panel so that it directs to the electric parts side, and then hook the tentative hanging hook at the center part of the ceiling panel main body to the bell mouth.</li> <li>2) Connect the louver motor connectors at the ceiling panel side and the indoor unit side.</li> <li>3) Lift up the panel corner part and put out the screw head of the panel fixed implement. Slide the panel fixed bracket, and then fix the indoor unit and the ceiling panel. (Total 4 positions). * In case of loosening screws of the panel fixed implement so that screw head is out under the panel fixed implement, retighten the screws after work.</li> <li>4) Following to the works in items ③-2 and ①-2, attach the adjust corner cap and the air intake grille as original.</li> </ol> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>• The ceiling panel aligns directionally with the indoor unit. Check that the lead wires of louver motor connector are on the electrical control box side.</li> <li>• When a clearance is found between the ceiling surface and the ceiling panel, readjust height of the indoor unit even if the screws have been tightened.</li> </ul>	 <p>Slide direction</p> <p>Panel fixed implement (bracket)</p> <p>Panel fixed screw</p> <p>Louver motor connector</p> <p>Tentative hanging hook</p> <p>Refrigerant piping</p> <p>Electrical control box</p> <p>Drain piping corner</p> <p>Panel fixed screw</p> <p>Engraved mark "REF. PIPE SIDE"</p> <p>Hanging section of tentative hanging hook</p> <p>Ceiling panel</p> <p>Tentative hanging hook</p> <p>Louver motor connector</p> <p>Engraved mark "DRAIN SIDE"</p> <p>Square hole of an indoor unit</p> <p>Push to remove</p> <p>Tentative hanging hook</p> <p>Indoor unit</p> <p>No clearance</p> <p>Ceiling surface</p> <p>Ceiling panel</p>

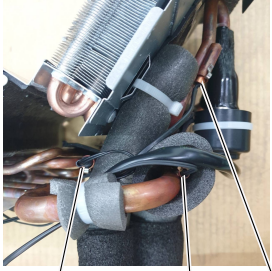
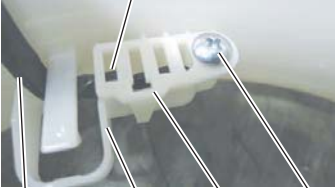
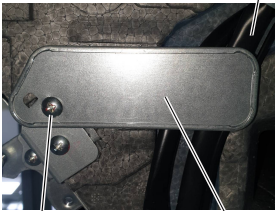
No.	Part name	Procedure	Remarks
⑤	Control P.C. board	<p><b>1. Detachment</b></p> <ol style="list-style-type: none"> <li>1) Remove the electric parts cover. (Refer to 1 of ②)</li> <li>2) Remove connectors which are connected from the control P.C. board to the other parts and then remove wiring from the clamp.</li> </ol> <p><b>NOTE</b></p> <p>Unlock the lock of the housing part and then remove the connector.</p> <p>CN34 : Float switch (3P, Red)  CN41 : Remote controller (2P, Blue)  CN40 : Control wires (2P, Blue)  CN67 : Power supply wires (5P, Black)  CN100 : TC1 sensor (3P, Brown)  CN101 : TC2 sensor (2P, Black)  CN102 : TCJ sensor (2P, Red)  CN104 : Room temp. (TA) sensor (2P, Yellow)  CN82 : PMV (6P, Blue)  CN510 : Louver motor (20P, White)  CN504 : Drain pump (2P, White)  CN210 : Fan motor (7P, White)  CN22 : Earth wire (Tab terminal)</p> <ol style="list-style-type: none"> <li>3) Unlock the locks of the card edge spacer (4 positions) and remove the control P. C. board.</li> </ol> <p><b>2. Attachment</b></p> <ol style="list-style-type: none"> <li>1) Fix the control board to the card edge spacer (4 positions).</li> <li>2) Connect the removed connectors as original, which were unconnected in item 1. Detachment, and fix the wires with clamps.</li> <li>3) Following to the work in ②-2, attach the electric parts covers as original.</li> </ol>	 <p>Clamp</p> <p>Clamp</p> <p>Card edge spacer</p>

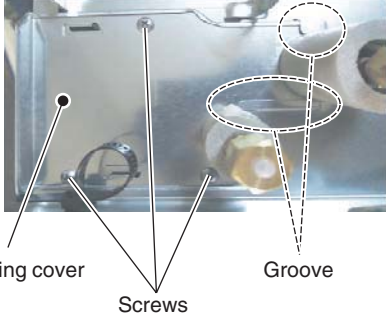
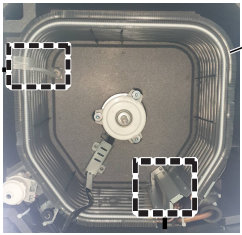
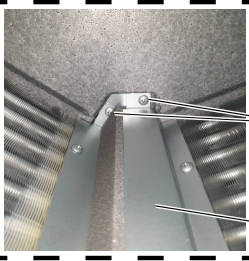

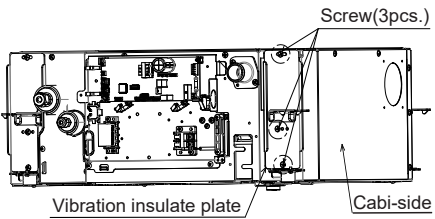
No.	Part name	Procedure	Remarks
⑤	Turbo fan and Reinforcement washer assy	<p><b>1. Detachment</b></p> <ol style="list-style-type: none"> <li>1) Remove the air intake grille. (Refer to 1 of ①.)</li> <li>2) Remove the fix screws (4 positions) of the bell mouth, and then take off it. (M 4 × 8, 4 pcs)</li> <li>3) Loosen the flange nut (M8) at the center part of the turbo fan, and then take off (Counter clockwise)</li> </ol> <p>* Supporting with hands, take off the turbo fan so that it will not fall down.</p> <p><b>NOTE</b></p> <hr/> <p>Use a box wrench for attachment and detachment of the turbo fan. If using adjustable wrench etc., the other parts may be damaged in work.</p> <hr/> <p><b>2. Attachment</b></p> <ol style="list-style-type: none"> <li>1) Match the D-cut of the motor shaft with the boss part D-cut of the turbo fan, and then insert the turbo fan into the motor shaft.</li> <li>2) Tighten M8 nut with flange. (Tightening torque of the turbo fan: 5.4+0.5, -0.2N•m)</li> <li>3) Attach Bell mouth then fix it with screws. (M 4 × 8, 4 pcs.).</li> <li>4) Following to the work in item ①-2, attach the air intake grille as original.</li> </ol> <p><b>NOTE</b></p> <hr/> <p>(Tightening torque of the turbo fan: 5.4 (+0.5, -0.2)N•m)</p> <hr/>	<p>Fixing screw of bell mouth</p>  <p>Lock release direction</p>    <p>Flange nut (M8)</p>  <p>D-cut</p>  <p>Motor shaft</p> <p>Reinforcement washer assy</p> <p>Insulation side</p> <p>Turbo fan</p> <p>Nut (M8)</p>

No.	Part name	Procedure	Remarks
⑦	Drain pan	<p><b>1. Detachment</b></p> <ol style="list-style-type: none"> <li>1) Remove the ceiling panel and the electrical parts covers. (Refer to items ④-1 and ②-1.)</li> <li>2) Remove the wiring cover. (Fixing screw M 4 × 8, 3pcs.)</li> <li>3) Remove the wiring fixing plate. (Fixing screw M 4 × 8, 1pc.)</li> <li>4) Remove the connectors of the fan motor lead wire, louver motor lead wire, and room temperature (TA) sensor from the control P.C. board, and then remove the wiring from the clamp. * Pull out the wires from the hole at the side face of the electric parts.  CN210: Fan motor (7P, White) CN510: Louver motor lead wire (20P, White) CN104: TA (Room temperature) sensor (2P, Yellow)</li> <li>5) Remove the drain plug of the drain pan, and extract the stayed drain water. * Be careful that water is extracted at a stretch when taking off the drain plug. * When taking off the drain plug, be sure to prepare a bucket, etc. for spilled water.</li> <li>6) Remove the fixing screws of the drain pan fixing bracket. (M 4 × 8, 4 pcs.)</li> <li>7) Using the both hands, hold the water-spilling port part of the drain pan and then slowly pull out the foaming parts firstly. * As there is remained water in the drain pan, clear it carefully.</li> </ol> <p><b>2. Attachment</b></p> <ol style="list-style-type: none"> <li>1) Arrange direction of the drain pan directly to the foaming parts and insert it. * Pass the fan motor lead wire through the inner side of the drain pan.</li> <li>2) Attach the fixing screws of the drain pan fixing bracket which was taken off in item 1-6). (M4 × 8, 4 pcs.)</li> <li>3) Insert the drain plug. (Put the tool with thin top in the hole of the drain plug, and then push the plug in.)</li> <li>4) Perform wiring works to original arrangement, wiring of the fan motor, louver motor lead wires, and the room temperature (TA) sensor, and then attach the wiring fixing bracket and the wiring cover.</li> <li>5) Following to works in items ④-2 and ②-2, attach the panel, electric parts cover as original.</li> </ol>	     <p>Push in the drain plug with the thin tip tool.</p>

No.	Part name	Procedure	Remarks
⑧	Drain pump	<p><b>1. Detachment</b></p> <ol style="list-style-type: none"> <li>1) Remove the drain pan. (Refer to ⑦-1.)</li> <li>2) Remove the drain pump connector (CN504: 2P, White) connected to the control P.C. board and remove the lead wires from the clamp.</li> <li>3) Remove the fixing screws to remove the drain pump. (M 4 × 10, 3 pcs.)</li> <li>4) Cut the cable tie 2 place and then remove the drain hose from the drain pump. * Be careful that water may be out.</li> </ol> <p><b>2. Attachment</b></p> <ol style="list-style-type: none"> <li>1) Confirm the direction of the drain pump, and then fix it with screws. (M 4 × 10, 3 pcs.)</li> <li>2) Connect the drain hose to the drain pump. * For the drain hose, insert up to the root of the connecting part. * Fasten a cable tie (Locally procured) to the marked position of the drain hose.</li> <li>3) Pass the drain pump wiring through side plate and clamp, and then connect the connector to the control P.C. board.</li> <li>4) Following to work in ⑦-2, attach the drain pan, panel, and electrical parts covers as original.</li> </ol>	 <p>Fixing screw</p> <p>Cable tie</p> <p>Drain hose</p>
⑨	Float switch	<p><b>1. Detachment</b></p> <ol style="list-style-type: none"> <li>1) Remove the drain pan. (Refer to ⑦-1.)</li> <li>2) Remove the float switch connector (CN34 3P, Red) connected to the control P.C. board, and then take off the lead wires from the clamp.</li> <li>3) Cut the cable tie and remove the screws which fix the float switch. (M4 × 10, 1 pc.)</li> <li>4) Slide the float switch fixed bracket as direction shown in the right figure, and then take off it from the claw.</li> </ol> <p><b>2. Attachment</b></p> <ol style="list-style-type: none"> <li>1) Insert the float switch fixing plate into the claw, and tighten the fixing screw.</li> <li>2) Fasten float switch and drain pump lead wires with a cable tie (Locally procured) to hole of the fixing plate.</li> <li>3) Pass the float switch lead wires through the side plate and the clamp, and then connect the connector to the control P.C. board.</li> <li>4) Following to work in ⑦-2, attach the covers of the drain pan, panel, and electric parts box as original.</li> </ol>	 <p>Fixing screw</p> <p>Cable tie</p> <p>Claw</p> <p>Fixing plate of float switch</p> <p>Float switch</p>

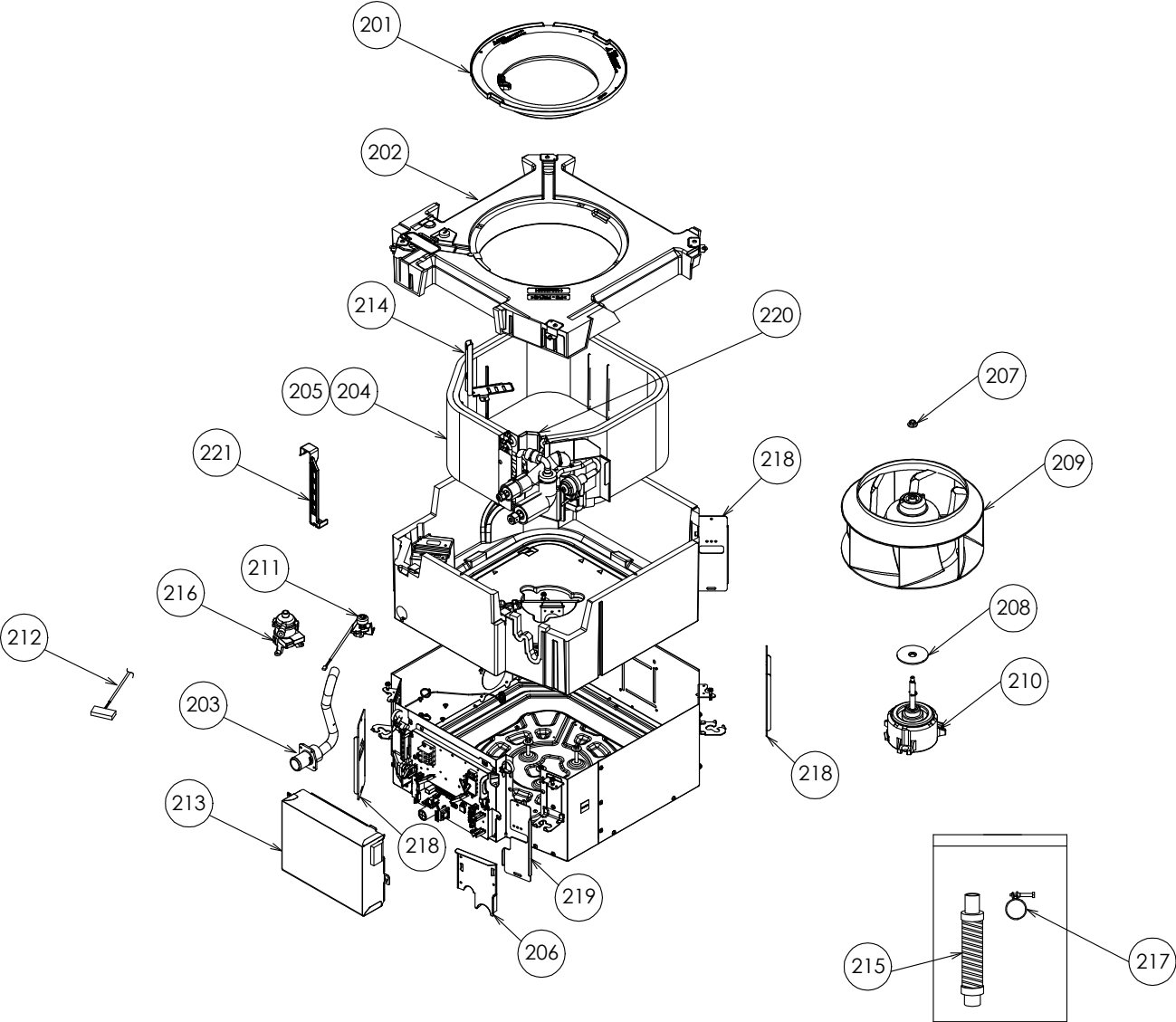
No.	Part name	Procedure	Remarks
⑩	Fan motor	<p><b>1. Detachment</b></p> <ol style="list-style-type: none"> <li>1) Remove the turbo fan, electric parts cover, wiring cover and wiring fixing plate. (Refer to ⑥-1, ②-1, ⑦-1-2, ⑦-1-3.)</li> <li>2) Remove the fan motor connector (CN210, White, 7P) connected to the control P.C. board, and then take off the lead wires from the clamp.</li> <li>3) Remove screws (M4 x 8, 2pcs.) of the motor lead wiring cover, and separate the lead wires and the lead wire cover.</li> <li>4) Remove the hexagon nuts (M6) which fix the motor, and the washers. (3 pcs. Each). * When taking off them, hold them with a hand so that motor will not fall down.</li> <li>5) Remove the motor with rubber cushion from the bolt.</li> </ol> <p><b>2. Attachment</b></p> <ol style="list-style-type: none"> <li>1) Pass rubber cushion of the motor in the bolt, put the washer and the hexagon nut in this order, and then tighten to fix them. (Tightening torque: <math>4.9 \pm 0.5\text{N}\cdot\text{m}</math>)</li> <li>2) Pass the lead wire through the motor lead wire fixing plate removed in 1-3), and then fix it with shoulder screw.</li> <li>3) Perform wiring of the motor lead wires as original, connect the connector to the control P.C. board, and then attach the wiring fixing plate and the wiring cover.</li> <li>4) Following to works in ⑥-2 and ②-2, attach the turbo fan and the electric parts covers.</li> </ol>	 <p>Motor lead wire cover</p> <p>Fixing screw</p>   <p>Bolt</p> <p>Hexagon nut</p> <p>Washer</p> <p>Rubber cushion</p>
⑪	PMV coil	<p><b>1. Detachment</b></p> <ol style="list-style-type: none"> <li>1) Remove the drain pan. (Refer to ⑦-1)</li> <li>2) Remove the PMV connectors (CN82, Blue, 6P) connected to the control P.C. board, and take off the lead wires from the clamp.</li> <li>3) A little PMV coil is rotated, pressing down so that a PMV body may not turn, and it removes in the direction of an arrow.</li> </ol> <p><b>2. Attachment</b></p> <ol style="list-style-type: none"> <li>1) Attach the PMV coil as original.</li> </ol> <p><b>NOTE</b></p> <p>Be careful of direction of a PMV coil. Check that four projections of the fixed claw of PMV coil and PMV body have fitted in.</p>	 <p>PMV coil</p> <p>PMV body</p> <p>The lead wire of PMV coil is turned in the top plate direction.</p>  <p>PMV coil fixed claw</p>

No.	Part name	Procedure	Remarks
⑫	TC1 TC2 TCJ Sensor	<b>1. Detachment</b> <ol style="list-style-type: none"> <li>1) Remove the drain pan. (Refer to ⑦-1.)</li> <li>2) Pull out the sensor to be exchanged from the sensor holder.</li> <li>3) Remove the connector connected to the control P.C. board, and take off wires from the clamp. (Refer to ⑤.)</li> </ol> <b>2. Attachment</b> <ol style="list-style-type: none"> <li>1) Insert the sensor to be exchanged into the specified sensor. (Refer to the right figure.)</li> <li>2) Perform wiring of the sensor as original.</li> </ol>	 <p>TCJ sensor      TC1 sensor      TC2 sensor</p>
⑬	TA sensor	<b>1. Detachment</b> <ol style="list-style-type: none"> <li>1) Remove the panel, electric parts box cover, wiring cover and wiring fixing plate. (Refer to ④-1, ②-1, ⑦-1-2, ⑦-1-3.)</li> <li>2) Disconnect TA sensor connector (CN104 Yellow, 2P) which is connected to the control P.C. board, and take off the lead wire from the clamp.</li> <li>3) Remove the screw of the TA sensor cover. (M 4 × 8, 1pc.)</li> <li>4) Remove TA sensor from the TA sensor fixing bracket.</li> </ol> <b>2. Attachment</b> <ol style="list-style-type: none"> <li>1) Fix TA sensor to TA sensor fixing bracket, and fix the TA sensor cover with screw. (M 4 × 8, 1 pc.)</li> <li>2) Perform wiring of TA sensor as original.</li> </ol>	<p>Adjust position of the tube so that the tube of TA sensor will be included in the cover.</p>  <p>TA sensor      TA sensor fixing bracket      Fixing screw</p> <p>Groove for wiring of the drain pan</p>  <p>Fixing screw      Wiring fixing plate</p>

No.	Part name	Procedure	Remarks
⑭	Heat exchanger	<p><b>1. Detachment</b></p> <ol style="list-style-type: none"> <li>1) Recover refrigerant gas.</li> <li>2) Remove the refrigerant pipe at indoor unit side.</li> <li>3) Remove the drain pan. (Refer ⑦-1.)</li> <li>4) Disconnect the heat exchanger sensor (TC1, TC2, TCJ), PMV lead wires connectors from the control P.C. board, and then remove their lead wires from the clamp. (Refer to ⑤-1.)</li> <li>5) Remove the fixing screws of the piping cover and take off the piping cover. (M 4 × 8, 3 pcs.)</li> <li>6) Remove the screws of the separate plate (2 positions) and fixing band (1 position), and then remove the heat exchanger. (3 screws)</li> </ol> <p><b>NOTE</b></p> <p>* Supporting with a hand, remove the heat exchanger so that it will not be fallen down.</p> <p>* Take note that you will not get hurt by touching to Aluminum fin. Be sure to put on the protective gloves and the safety working clothing.</p> <p><b>2. Attachment</b></p> <ol style="list-style-type: none"> <li>1) Attach the heat exchanger as original with the separate plate and the fixing plate.</li> <li>2) Slide the piping cover to the groove, fix it to the side plate, and then use the screws. (M 4 × 8, 3 pcs.)</li> <li>3) Perform wiring of the sensor and PMV lead wires as original.</li> <li>4) Connect the refrigerant pipe as before and then apply vacuuming.</li> <li>5) Following to the work in ⑦-2, attach the parts as original.</li> </ol> <p><b>NOTE</b></p> <p>After assembling, check if that there is no abnormal sound, vibration, or puncture. Check the exchange point when you have a problem.</p>	   
⑮	Vibration insulate plate	<p><b>1. Detachment</b></p> <ol style="list-style-type: none"> <li>1) Remove the fixing screws (3 places) of Vibration insulate plate. (M 4 × 10, 3 pcs.)</li> <li>2) Remove the Vibration insulate plate from Cabi-side.</li> </ol> <p><b>2. Attachment</b></p> <ol style="list-style-type: none"> <li>1) Attach the Vibration insulate plate to Cabi-side.</li> <li>2) Using screws taken off from the fix the assembly as original.</li> <li>3) Tighten the screws of the Vibration insulate plate (3 positions) to fix it. (M 4 × 10, 3 pcs.)</li> </ol>	

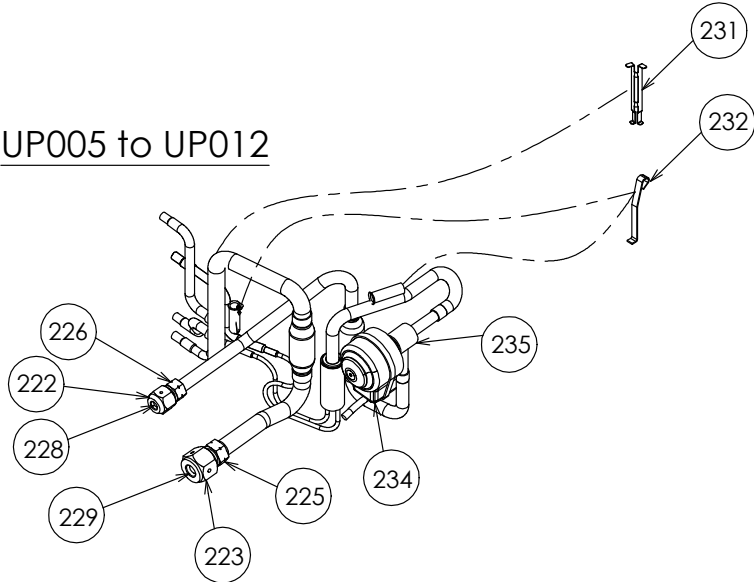
# 12. EXPLODED VIEWS AND PARTS LIST

## Compact 4-way cassette type

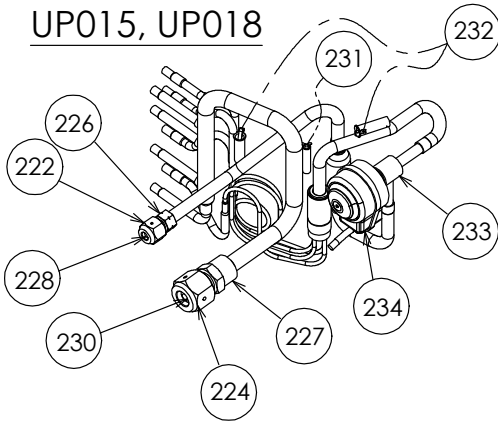


Accessory part

### UP005 to UP012

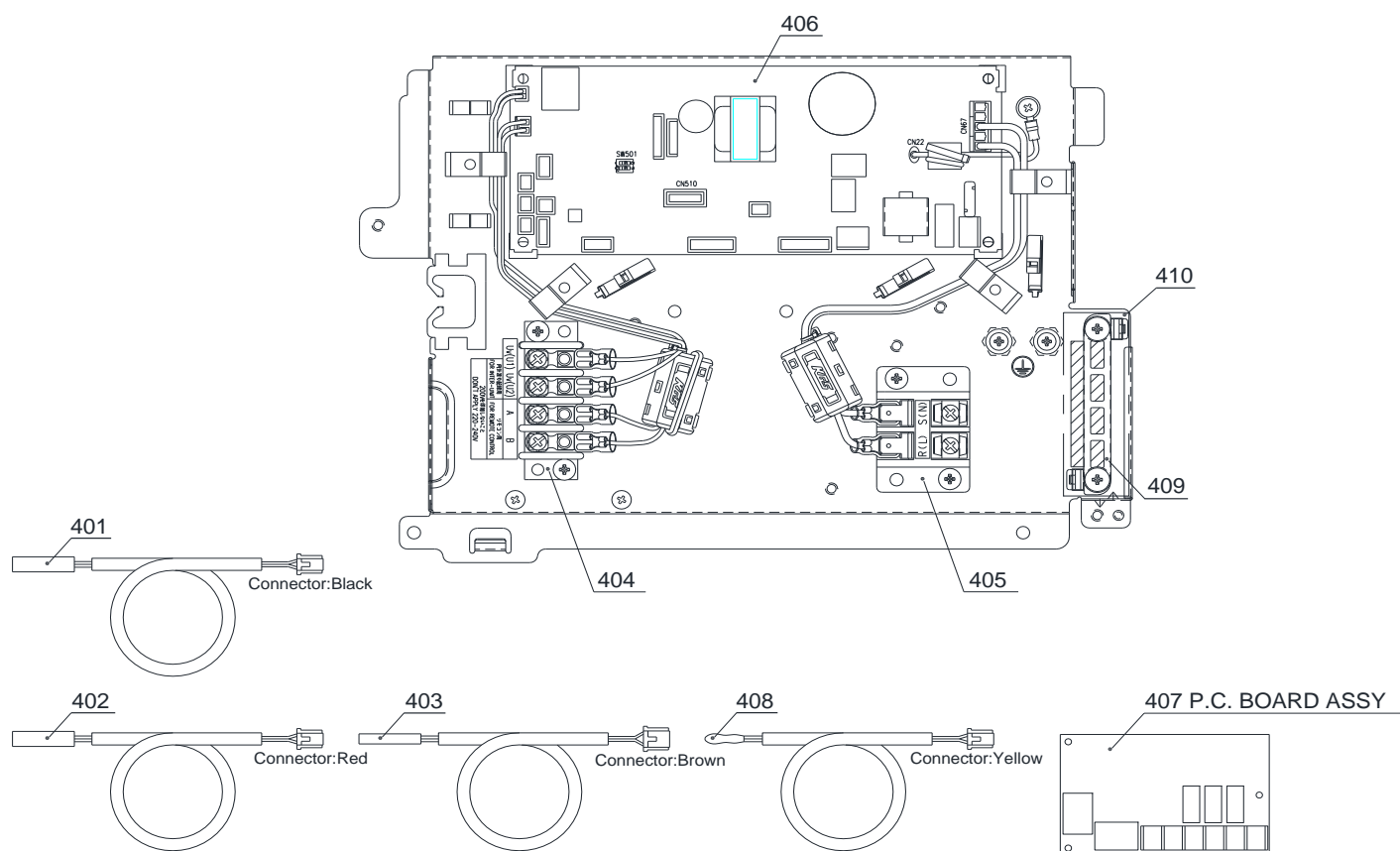


### UP015, UP018



Location No.	Part No.	Description	Model name MMU-UP					
			0051MHP-E	0071MHP-E	0091MHP-E	0121MHP-E	0151MHP-E	0181MHP-E
201	43T22414	BELLMOUTH	1	1	1	1	1	1
202	43T72411	DRAIN PAN ASSY	1	1	1	1	1	1
203	43T70330	DRAIN HOSE ASSY	1	1	1	1	1	1
204	43T44835	REFRIGERATION CYCLE ASSY	1	1	1	1	-	-
205	43T44836	REFRIGERATION CYCLE ASSY	-	-	-	-	1	1
206	43T04509	PIPE COVER ASSY	1	1	1	1	1	1
207	43T97001	NUT	1	1	1	1	1	1
208	43T22415	REINFORCEMENT WASHER ASSY	1	1	1	1	1	1
209	43T20371	TURBO FAN ASSY	1	1	1	1	1	1
210	43T21544	MOTOR FAN ASSY	1	1	1	1	1	1
211	43T51318	FLOAT SWITCH ASSY	1	1	1	1	1	1
212	43T60633	MOTOR LEAD	1	1	1	1	1	1
213	43T62415	ELECTRICAL PARTS COVER	1	1	1	1	1	1
214	43T63403	HOLDER LEAD FAN MOTOR	1	1	1	1	1	1
215	43T70326	HOSE, DRAIN	1	1	1	1	1	1
216	43T77305	PUMP ASSY	1	1	1	1	1	1
217	43T83311	BAND, HOSE	1	1	1	1	1	1
218	43T02309	VIBRATION INSULATE PLATE	3	3	3	3	3	3
219	43T02310	VIBRATION INSULATE PLATE	1	1	1	1	1	1
220	43T49404	EVAPORATOR PLATE FIXTURE	1	1	1	1	1	1
221	43T39459	EVAPORATOR BAND FIXTURE	1	1	1	1	1	1
222	43T97320	NUT, FLARE, 1/4 IN	1	1	1	1	1	1
223	43T97321	NUT, FLARE, 3/8 IN	1	1	1	1	-	-
224	43T97322	NUT, FLARE, 3/8 IN	-	-	-	-	1	1
225	43T82318	SOCKET	1	1	1	1	-	-
226	43T82319	SOCKET	1	1	1	1	1	1
227	43T82338	SOCKET	-	-	-	-	1	1
228	43T49405	PLASTIC BONNET 6.35DIA	1	1	1	1	1	1
229	43T49406	PLASTIC BONNET 9.52DIA	1	1	1	1	-	-
230	43T49407	PLASTIC BONNET 12.7DIA	-	-	-	-	1	1
231	43T19321	FIX-P-SENSOR	1	1	1	1	1	1
232	43T19333	HOLDER, SENSOR	2	2	2	2	2	2
233	43T46517	BODY, PMV	-	-	-	-	1	1
234	43T46515	COIL, PMV	1	1	1	1	1	1
235	43T46568	BODY, PMV	1	1	1	1	-	-

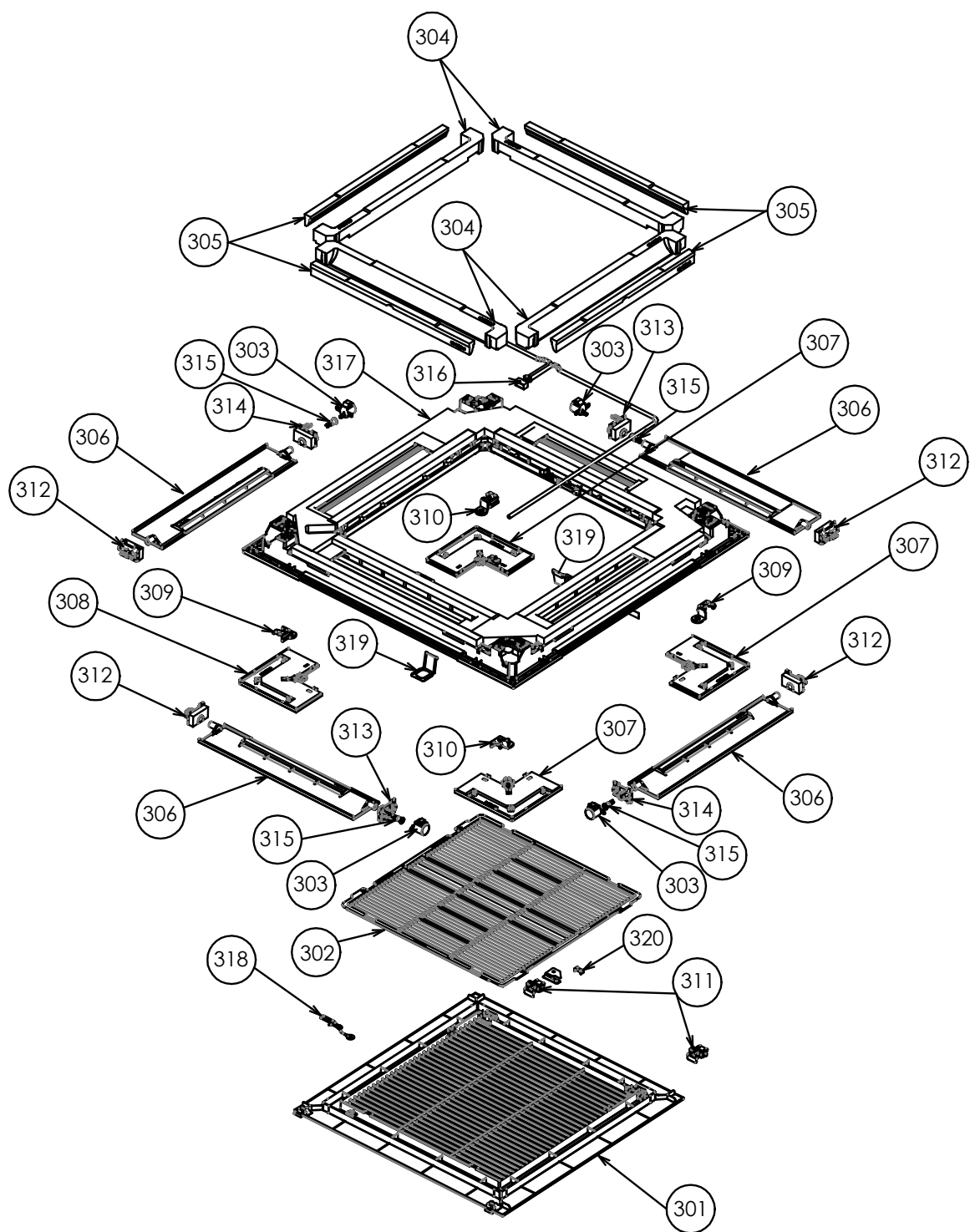
## Electric Parts



Location No.	Part No.	Description	Model name MMU-UP					
			0051MHP-E	0071MHP-E	0091MHP-E	0121MHP-E	0151MHP-E	0181MHP-E
401	43T60605	TEMPERATURE SENSOR	1	1	1	1	1	1
402	43T50456	SENSOR,TC	1	1	1	1	1	1
403	43T50410	TC-SENSOR	1	1	1	1	1	1
404	43T60362	TERMINAL	1	1	1	1	1	1
405	43T60078	TERMINAL BLOCK	1	1	1	1	1	1
406	43TNV349	PC BOARD ASSY, MCC-1643	1	1	1	1	1	1
407	43459017	ASM-PCB(OP)	1	1	1	1	1	1
408	43T50455	SENSOR,TA	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

## ◆ Ceiling panel

RBC-UM21P-E, RBC-UM21PB-E



Location No.	Part No.	Description	Model name	
			RBC-UM21P-E	RBC-UM21PB-E
301	43T09659	AIR INLET GRILLE	1	-
301	43T09660	AIR INLET GRILLE	-	1
302	43T80373	AIR FILTER	1	1
303	43T21434	STEPPING-MOTOR	4	4
304	43T11352	AIR OUTLET FOAM A	4	4
305	43T11353	AIR OUTLET FOAM B	4	4
306	43T22416	HORIZONTAL LOUVER ASSY	4	-
306	43T22417	HORIZONTAL LOUVER ASSY	-	4
307	43T01361	PANEL COVER ASSY	3	-
307	43T01363	PANEL COVER ASSY	-	3
308	43T01362	PANEL COVER ASSY	1	-
308	43T01364	PANEL COVER ASSY	-	1
309	43T07349	PANEL FIXTURE PLATE A	2	2
310	43T07350	PANEL FIXTURE PLATE B	2	2
311	43T07354	HOOK-GRILLE	2	-
311	43T07355	HOOK-GRILLE	-	2
312	43T07351	AXIS COVER ASSY	4	4
313	43T07352	MOTOR FIXTURE ASSY	2	2
314	43T07353	MOTOR FIXTURE ASSY	2	2
315	43T07338	AXIS COVER	1	1
316	43T60632	MOTOR LEAD	1	1
317	43T00945	PANEL, INSULATION ASSY	1	-
317	43T00946	PANEL, INSULATION ASSY	-	1
318	43T19390	STRING	1	1
319	43T07347	HANGER FIXTURE	2	2
320	43T07348	GRILLE FIXTURE	1	1

# **Toshiba Carrier (Thailand) Co., Ltd.**

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