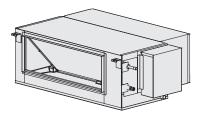
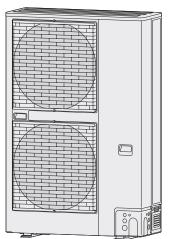
Order No: PAPAMY2308067CE

Service Manual

Air Conditioner







Indoor Unit S-160PE3R U-160PZH3R5 S-180PE4R U-160PZH3R8 S-200PE4R U-180PZH3R5 S-224PE4R U-180PZH3R8 U-200PZH3R8 U-224PZH3R8

Destination Oceania

MARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the products dealt with in this service information by anyone else could result in serious injury or death.

IMPORTANT SAFETY NOTICE =

There are special components used in this equipment which are important for safety. These parts are marked by \triangle in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

! CAUTION

R32 REFRIGERANT – This Air Conditioner contains and operates with refrigerant R32.
THIS PRODUCT MUST ONLY BE INSTALLED OR SERVICED BY QUALIFIED PERSONNEL.

Refer to Commonwealth, State, Territory and local legislation, regulations, codes, installation & operation manuals, before the installation, maintenance and/or service of this product.



Safety Precautions

- Read the following "SAFETY PRECAUTIONS" carefully before installation.
- Electrical work must be installed by a licensed electrician. Be sure to use the correct rating of the power plug and main circuit for the model to be installed.
- The caution items stated here must be followed because these important contents are related to safety. The meaning of each indication used is as below.
 - Incorrect installation due to ignoring of the instruction will cause harm or damage, and the seriousness is classified by the following indications.

⚠ WARNING	This indication shows the possibility of causing death or serious injury.
⚠ CAUTION	This indication shows the possibility of causing injury or damage to properties only.

The items to be followed are classified by the symbols:

cause fire or electrical shock.

Symbol with white background denotes item that is PROHIBITED.	
0 0	Symbol with dark background denotes item that must be carried out.

• Carry out test running to confirm that no abnormality occurs after the installation. Then, explain to user the operation, care and maintenance as stated in instructions. Please remind the customer to keep the operating instructions for future reference.

0	Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer. Any unfit method or using incompatible material may cause product damage, burst and serious injury.
0	Do not install outdoor unit near handrail of veranda. When installing air-conditioner unit on veranda of a high rise building, child may climb up to outdoor unit and cross over the handrail causing an accident.
0	Do not use unspecified cord, modified cord, joint cord or extension cord for power supply cord. Do not share the single outlet with other electrical appliances. Poor contact, poor insulation or over current will cause electrical shock or fire.
0	Do not tie up the power supply cord into a bundle by band. Abnormal temperature rise on power supply cord may happen.
0	Do not insert your fingers or other objects into the unit, high speed rotating fan may cause injury.
0	Do not sit or step on the unit, you may fall down accidentally.
0	Keep plastic bag (packaging material) away from small children, it may cling to nose and mouth and prevent breathing.
0	When installing or relocating air conditioner, do not let any substance other than the specifi ed refrigerant, eg. air etc mix into refrigeration cycle (piping). Mixing of air etc. will cause abnormal high pressure in refrigeration cycle and result in explosion, injury etc.
0	Do not pierce or burn as the appliance is pressurized. Do not expose the appliance to heat, flame, sparks, or other sources of ignition. Else, it may explode and cause injury or death.
\supset	Do not add or replace refrigerant other than specified type. It may cause product damage, burst and injury etc.
9	 For R32 model, use new piping, flare nut and tools which is specified for R32 refrigerant. Using of existing (R22) piping, flare nut and tools may cause abnormally high pressure in the refrigerant cycle (piping), and possibly result in explosion and injury. For R32 and R410A, the same flare nut on the outdoor unit side and pipe can be use. Since the working pressure for R32/R410A is higher than that of refrigerant R22 models, replacing conventional piping and flare nuts on the outdoor unit side are recommended. If reuse piping is unavoidable, refer to instruction REFRIGERANT INSTALLATION (IN CASE OF REUSING EXISTING REFRIGERANT PIPING) in outdoor unit installation manual. Thickness for copper pipes used with R32 must be more than 0.6 mm. Never use copper pipes thinner than 0.6 mm. For copper pipe ø15.88 or more use copper pipe thickness 0.8 mm and above. Refer to REFRIGERANT INSTALLATION piping thickness table. It is desirable that the amount of residual oil less than 40 mg/10 m.
9	Engage authorized dealer or specialist for installation. If installation done by the user is incorrect, it will cause water leakage, electrical shock or fire.
9	For refrigeration system work, install according to this installation instructions strictly. If installation is defective, it will cause water leakage, electrical shock or fire.
9	Use the attached accessories parts and specified parts for installation. Otherwise, it will cause the set to fall, water leakage, fire or electrical shock.
9	Install at a strong and firm location which is able to withstand weight of the set. If the strength is not enough or installation is not properly done, the set will drop and cause injury.
9	For electrical work, follow the national regulation, legislation and this installation instruction. An independent circuit and single outlet must be used. If electrical circuit capacity is not enough or defect found in electrical work, it will cause electrical shock or fire.
0	Do not use joint cable for indoor / outdoor connection cable. Use the specified indoor/outdoor connection cable, refer to instruction ELECTRICAL WIRING and connect tightly for indoor/outdoor connection. Clamp the cable so that no external force will have impact on the terminal. If connection or fixing is not perfect, it will cause heat up or fire at the connection.
O	Wire routing must be properly arranged so that control board cover is fixed properly. If control board cover is not fixed perfectly, it will

WARNING This equipment is strongly recommended to be installed with Earth Leakage Circuit Breaker (ELCB) or Residual Current Device (RCD), with sensitivity of 30mA at 0.1 sec or less. Otherwise, it may cause electrical shock and fire in case of equipment breakdown or insulation breakdown. During installation, install the refrigerant piping properly before running the compressor. Operation of compressor without fixing refrigeration piping and valves at opened position will cause suck-in of air, abnormal high pressure in refrigeration cycle and result in

- explosion, injury etc.

 During pump down operation, stop the compressor before removing the refrigeration piping. Removal of refrigeration piping while compressor is operating and valves are opened will cause suck-in of air, abnormal high pressure in refrigeration cycle and result in explosion, injury etc.
- Tighten the flare nut with torque wrench according to specified method. If the flare nut is over-tightened, after a long period, the flare may break and cause refrigerant gas leakage.
- After completion of installation, confirm there is no leakage of refrigerant gas. It may generate toxic gas when the refrigerant contacts with fire.
- Ventilate if there is refrigerant gas leakage during operation. It may cause toxic gas when the refrigerant contacts with fire.
- Be aware that refrigerants may not contain an odour.

Keep any required ventilation openings clear of obstruction.

This equipment must be properly earthed. Earth line must not be connected to gas pipe, water pipe, earth of lightning rod and telephone. Otherwise, it may cause electrical shock in case of equipment breakdown or insulation breakdown.

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\bigcirc	Do not install the unit at place where leakage of flammable gas may occur. In case gas leaks and accumulates at surrounding of the unit, it may cause fire.		
0	Prevent liquid or vapor from entering sumps or sewers since vapor is heavier than air and may form suffocating atmospheres.		
0	Do not overcharge the unit, refer to gas charge specification in Outdoor Installation manual. Overcharge will cause over current and damage to compressor.		
\Diamond	Do not release refrigerant during piping work for installation, re-installation and during repairing a refrigeration parts. Take care of the liquid refrigerant, it may cause frostbite.		
0	Do not install this appliance in a laundry room or other location where water may drip from the ceiling, etc.		
0	Do not touch the sharp aluminium fin, sharp parts may cause injury.		
0	Carry out drainage piping as mentioned in installation instructions. If drainage is not perfect, water may enter the room and damage the furniture.		
0	Select an installation location which is easy for maintenance. Incorrect installation, service or repair of this air conditioner may increase the risk of rupture and this may result in loss damage or injury and/or property.		
0	Power supply connection to the room air conditioner. Use power supply cord type designation 60245 IEC 57 or heavier cord. Connect the power supply cord of the air conditioner to a circuit breaker for the permanent connection. It must be a double pole switch with a minimum 3.0mm contact gap. Power supply point should be in easily accessible place for power disconnection in case of emergency.		
0	Installation work. It may need two people to carry out the installation work.		

Precaution for Using R32 Refrigerant

• The basic installation work procedures are the same as conventional refrigerant (R410A, R22) models. However, pay careful attention to the following points:

WARNING Do not perform flare connection inside a building or dwelling or room, when joining the heat exchanger of indoor unit with interconnecting piping. Refrigerant connection inside a building or dwelling or room must be made by brazing or welding. Joint connection of indoor unit by flaring method can only be made at outdoor or at outside of a building or dwelling or room. Flare connection may cause gas leak and flammable atmosfere. The appliance shall be stored, installed and operated in a well ventilated room with indoor floor area larger than A_{\min} (m²) [refer to Check of Density Limit] and without any continuously operating ignition source. Keep away from open flames, any operating gas appliances or any operating electric heater. Else, it may explode and cause injury or death. The mixing of different refrigerants within a system is prohibited. Models that use refrigerant R32 and R410A have a different charging port thread diameter to prevent erroneous charging with refrigerant R22 and for safety. Therefore, check beforehand. [The charging port thread diameter for R32 and R410A is 12.7 mm (1/2 inch - 20 UNF)]. Ensure that foreign matter (oil, water, etc.) does not enter the piping. 0 Also, when storing the piping, securely seal the opening by pinching, taping, etc. (Handling of R32 is similar to R410A.) Operation, maintenance, repairing and refrigerant recovery should be carried out by trained and certified personnel in the use of flammable refrigerants and as recommended by the manufacturer. Any personnel conducting an operation, servicing or maintenance on a system or associated parts of the equipment should be trained and certified. Any part of refrigerating circuit (evaporators, air coolers, AHU, condensers or liquid receivers) or piping should not be located in the 0 proximity of heat sources, open flames, operating gas appliance or an operating electric heater. The user/owner or their authorized representative shall regularly check the alarms, mechanical ventilation and detectors, at least once a year, where as required by national regulations, to ensure their correct functioning. 0 A logbook shall be maintained. The results of these checks shall be recorded in the logbook. In case of ventilations in occupied spaces shall be checked to confirm no obstruction. Before a new refrigerating system is put into service, the person responsible for placing the system in operation should ensure that trained and certified operating personnel are instructed on the basis of the instruction manual about the construction, supervision, operation and maintenance of the refrigerating system, as well as the safety measures to be observed, and the properties and handling of the refrigerant used. The general requirement of trained and certified personnel are indicated as below: a) Knowledge of legislation, regulations and standards relating to flammable refrigerants; and, b) Detailed knowledge of and skills in handling flammable refrigerants, personal protective equipment, refrigerant leakage prevention, handling of cylinders, charging, leak detection, recovery and disposal; and, c) Able to understand and to apply in practice the requirements in the national legislation, regulations and standards; and, d) Continuously undergo regular and further training to maintain this expertise. Air-conditioner piping in the occupied space shall be installed in such a way to protect against accidental damage in operation and 0 0 Precautions shall be taken to avoid excessive vibration or pulsation to refrigerating piping. Ensure protection devices, refrigerating piping and fittings are well protected against adverse environmental effects (such as the danger of water collecting and freezing in relief pipes or the accumulation of dirt and debris).

Expansion and contraction of long runs piping in refrigerating systems shall be designed and installed securely (mounted and guarded)

To ensure no leaking, 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 (>1.04 MPa, max 4.15 MPa).

Protect the refrigerating system from accidental rupture due to moving furniture or reconstruction activities.

to minimize the likelihood hydraulic shock damaging the system.

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No leak shall be detected.

↑ CAUTION

1. General

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- · Must ensure the installation of pipe-work shall be kept to a minimum. Avoid use dented pipe and do not allow acute bending.
- Must ensure that pipe-work shall be securely mounted and guarded from physical damage.
- Must comply with national gas regulations, state municipal rules and legislation. Notify relevant authorities in accordance with all applicable regulations.
- Must ensure mechanical connections be accessible for maintenance purposes.
- In cases that require mechanical ventilation, ventilation openings shall be kept clear of obstruction.
- When disposal of the product, do follow to the precautions in #10 and comply with national regulations.
- In case of field charge, the effect on refrigerant charge caused by the different pipe length has to be quantified, measured and labelled.

Always contact to local municipal offices for proper handling.

- Ensure the actual refrigerant charge is in accordance with the room size within which the refrigerant containing parts are installed.
- Ensure refrigerant charge not to leak.
- Wear appropriate protective equipment, including respiratory protection, as conditions warrant.
- Keep all sources of ignition and hot metal surfaces away.
- Explosion-proof electronic components shall only be replaced with parts specified by the appliance manufacturer. Replacement with
 other parts may result in the ignition of refrigerant in the event of a leak.

2. Servicing

2-1. Qualification of workers

 Any qualified person who is involved with working on or breaking into a refrigerant circuit should hold a current valid certificate from an industry-accredited assessment authority, which authorizes their competence to handle refrigerants safely in accordance with an industry recognized assessment specification.

Servicing shall only be performed as recommended by the equipment manufacturer. Maintenance and repair requiring the assistance of other skilled personnel shall be carried out under the supervision of the person competent in the use of flammable refrigerants.

Servicing shall be performed only as recommended by the manufacturer.

The system is inspected, regularly supervised and maintained by a trained and certified service personnel who is employed by the person user or party responsible.

2-2. Checks to the area

• Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimised.

For repair to the refrigerating system, the precautions in #2-3 to #2-7 must be followed before conducting work on the system.

2-3. 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.

2-4. General work area

All maintenance staff and others working in the local area shall be instructed and supervised on the nature of work being carried out.
Avoid working in confined spaces. Always ensure away from source, at least 2 meter of safety distance, or zoning of free space area of at least 2 meter in radius.

2-5. 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 flammable refrigerants, i.e. non sparking, adequately sealed or intrinsically safe.

In case of leakage/spillage happened, immediately ventilate area and stay upwind and away from spill/release.

 In case of leakage/spillage happened, do notify persons down wind of the leaking/spill, isolate immediate hazard area and keep unauthorized personnel out.

2-6. Presence of fire extinguisher

 If any hot work is to be conducted on the refrigerating equipment or any associated parts, appropriate fi re extinguishing equipment shall be available at hand.

Have a dry powder or CO₂ fire extinguisher adjacent to the charging area.

2-7. No ignition sources

No person carrying out work in relation to a refrigerating system which involves exposing any pipe work that contains or has
contained flammable refrigerant shall use any sources of ignition in such a manner that it can lead to the risk of fire or explosion.
They must not be smoking when carrying out such work.

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.

2-8. 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.

2-9. Checks to the refrigerating equipment

- · Where electrical components are being changed, they 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 refrigerant charge 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.
- Refrigerating pipe or components are installed in a position where they are unlikely to be exposed to any substance which can corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are properly protected against being so corroded.

CAUTION

2-10 Checks to electrical devices

- Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures.
- Initial safety checks shall include but not limit to:-
 - That capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking.
 - That there is no live electrical components and wiring are exposed while charging, recovering or purging the system.
 - That there is continuity of earth bonding.
- At all times the manufacturer's maintenance and service guidelines shall be followed.
- If in doubt consult the manufacturer's technical department for assistance.
- If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt
- If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used.
- The owner of the equipment must be informed or reported so all parties are advised thereinafter.
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- Sealed electrical components
- Sealed electrical components shall not be repaired.
- 4.
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- Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects
 - The check shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.
 - 5. Detection of flammable refrigerants
 - Under no circumstances shall potential sources of ignition be used in the searching or detection of refrigerant leaks.
 - · A halide torch (or any other detector using a naked flame) shall not be used.
 - The following leak detection methods are deemed acceptable for all refrigerant systems.
 - No leaks shall be detected when using detection equipment with a sensitivity of 5 grams per year of refrigerant or better under a pressure of at least 0,25 times the maximum allowable pressure (>1.04 MPa, max 4.15 MPa) for example, a universal sniffer.
 - Electronic leak detectors may be used to detect flammable refrigerants, but the sensitivity can be inadequate, or can 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, for example, bubble method and fluorescent agent method. The use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work.

 - 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. The precautions in #6 must be followed to remove the refrigerant.
 - 6. Refrigerant removal and circuit 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:
 - Safely remove refrigerant following local and national regulations

 - Evacuate
 Purge the circuit with inert gas
 - 4. Evacuate
 - 5. Continuously flush with inert gas when using flame to open circuit
 - Open the circuit
 - The refrigerant charge shall be recovered into the correct recovery cylinders.
 - Compressed air or oxygen shall not be used for purging refrigerant systems, only use OFN (oxygen free nitrogen) for this task.
 - Purging of the refrigerant circuit shall be achieved by breaking the vacuum in the system with inert gas and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to vacuum.
 - This process shall be repeated until no refrigerant is within the system.
 - The system shall be vented down to atmospheric pressure to enable work to take place.
 - Ensure that the outlet of the vacuum pump is not close to any potential ignition sources and there is ventilation available.
 - 7. Charging procedures

charging/discharging.

- 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 in an appropriate position according to the instructions.
 - Ensure that the refrigerating system is earthed prior to charging the system with refrigerant.
 - Label the system when charging is complete (if not already labelled).
- Extreme care shall be taken not to over fill the refrigerating system. Prior to recharging the system it shall be pressure tested with OFN (refer to #6).
- 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.
- Electrostatic charge may accumulate and create a hazardous condition when charging and discharging the refrigerant. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before

↑ CAUTION

- 8. 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 prior to re-use of recovered 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 instructions.
- b) Do not over fill 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 refrigerating system unless it has been cleaned and checked.
- Electrostatic charge may accumulate and create a hazardous condition when charging or discharging the refrigerant.
 - To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before charging/discharging.
- 9. Labelling



- Equipment shall be labelled stating that it has been de-commissioned 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.

10. Recovery

- When removing refrigerant from a system, either for servicing or decommissioning, it is required to follow 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.
- Recovery cylinders are evacuated and, if possible, cooled before recovery occurs.

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- 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 concerning the equipment that is at
 hand and shall be suitable for the recovery of flammable refrigerants. Consult manufacturer if in doubt.
- 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.
- The recovered refrigerant shall be processed according to the local legislation 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 compressor body shall not be heated by an open flame or other ignition sources to accelerate this
 process. Draining of oil from a system shall be carried out safely.

Check of Density Limit

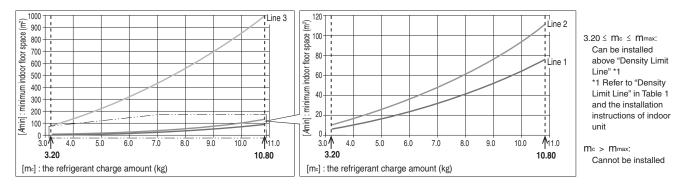
1. Outdoor

U-160PZH3R5, U-180PZH3R5

U-160PZH3R8, U-180PZH3R8, U-200PZH3R8, U-224PZH3R8

The refrigerant (R32), which is used in the air conditioner, is a flammable refrigerant. So the requirements for installation space of appliance are determined according to the refrigerant charge amount (me) used in the appliance.

The minimum indoor floor space compared with the amount of refrigerant is roughly as follows:



		U-180PZH3R5 U-180PZH3R8	
Mmax	6.35 kg	7.60 kg	10.80 kg

: The refrigerant charge amount (Total of refrigerant at shipment and refrigerant charge amount in the field).

Please calculate m₀ according to tubing length in the field as shown in the calculation example below.
 alculating example >
 Refer to table "Specification for tube connecting indoor unit to outdoor unit".

< Calculating example >

U-160PZH3R5

(conditions: Total tube length = 40 m)

$$m_c = (1 + (2) = (1 + (3) \times (4) - (5))) = 3.2 \text{ kg} + (0.045 \text{ kg} \times (40 \text{ m} - 30 \text{ m})) = 3.65 \text{ kg}$$

(1): Refrigerant charged at shipment

(2): Refrigerant charge amount in the field

(3) Additional charge per 1m

(4): Total tube length

(5): Charge-less tube length

· If the total tubing length is within the maximum value of the charge-less tubing length, refrigerant charge in the field is unnecessary.

mmax : The maximum refrigerant charge amount

2. Indoor

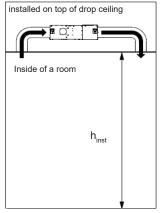
The refrigerant (R32), which is used in the air conditioner, is a flammable refrigerant. So the requirements for installation space of appliance are determined according to the refrigerant charge amount [mc] used in the appliance. Regarding the refrigerant charge amount [mc] used in the appliance, see "5. REFRIGERANT INSTALLATION" on page 1-11-2-1-14 to 1-11-2-1-17.

The minimum indoor floor space compared with the amount of refrigerant is roughly as follows:

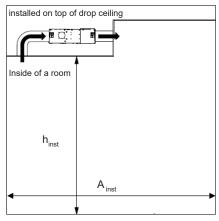
Table 2-1

Installation height of Indoor Unit: hinst	Indoor Unit Type	Density Limit Line
h _{inst} > 2.5 m	Splittable duct (S-180PE4R, S-200PE4R, S-224PE4R)	Line 1
h _{inst} ≥ 2.2 m		Line 1
1.8 m ≤ h _{inst} < 2.2 m	High static pressure duct (S-160PE3R)	Line 2
h _{inst} < 1.8 m	(8 1001 2011)	Line 3

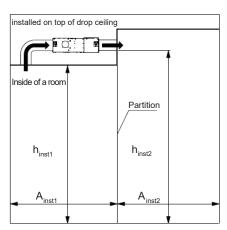
When connecting the duct to either inlet side or outlet side



 A_{inst} :Floor area of the room (m²) Satisfy the diagram for A_{inst}

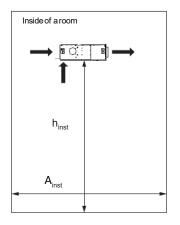


When not partitioning: Satisfy the diagram for A_{inst}

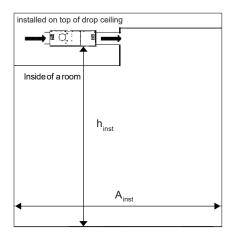


When there is a partition : Satisfy the diagram for A $_{inst1}$ and h $_{inst2}$ and satisfy the diagram for A $_{inst2}$ and h $_{inst2}$

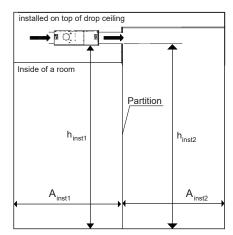
When not connecting the duct to even in both cases of inlet side/outlet side



 A_{inst} : Floor area of the room (m²) Satisfy the diagram for A_{inst}

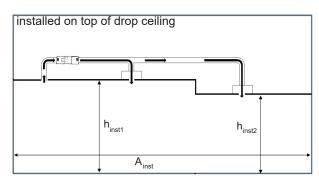


When not partitioning: Satisfy the diagram for A_{inst}

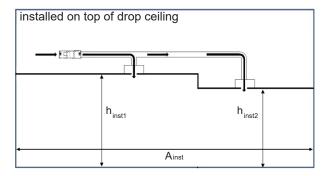


 $\label{eq:when partitioning: Satisfy the diagram for A_{inst1} \ and \ h_{inst1} \\ and \ satisfy the \ diagram \ for \ A_{inst2} \ and \ h_{inst2}$

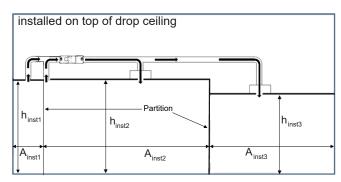
When providing outlets in multiple living rooms with outlet duct



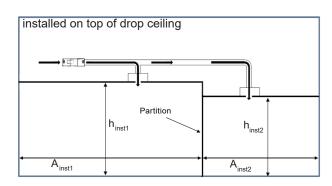
When not partitioning: Satisfy the diagram for $A_{inst} = Min(h_{inst1}, h_{inst2})$



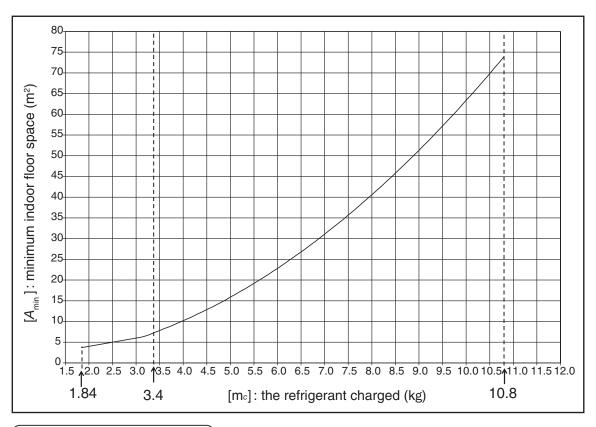
When not partitioning: Satisfy the diagram for $A_{inst} = Min(h_{inst1}, h_{inst2})$



When partitioning: Satisfy the diagram for A_{inst1} and h_{inst2} and satisfy the diagram for A_{inst2} and h_{inst3} and h_{inst3}



When partitioning: Satisfy the diagram for A_{inst1} and h_{inst2} and satisfy the diagram for A_{inst2} and h_{inst2}



Amin = $(m_c / (2.5 \times (LFL)^{(5/4)} \times h_0))^2$

** not less than safety factor margin

 A_{min} = Required minimum room area, in m² m_c = Refrigerant charge in appliance, in kg LFL = Lower flammability limit (0.307 kg/m³)

 h_0 = Release height is 2.2m.

CF = Concentration factor with a value of 0.75

** The required minimum room area, A_{min} , shall also be governed by the safety factor margin formula below:

$$A_{\min} = m_c / (CF \times LFL \times h_0)$$

The higher value shall be taken when determining the room area.

 $m_c \le 3.40$: Can be installed

3.40 < m_c ≤ m_{max} : Can be installed above "Density Limit Line" *1
 *1 Refer to table and the installation instructions of indoor unit when deciding "Density Limit Line".

[m _c] kg	[A _{min}] (m ²)
3.4	7.4
3.5	7.8
3.6	8.3
3.7	8.7
3.8	9.2
3.9	9.7
4.0	10.2
4.1	10.7
4.2	11.2
4.3	11.8
4.4	12.3
4.5	12.9
4.6	13.4
4.7	14.0
4.8	14.6

[m _c] kg	[A _{min}] (m ²)
4.9	15.2
5.0	15.9
5.1	16.5
5.2	17.2
5.3	17.8
5.4	18.5
5.5	19.2
5.6	19.9
5.7	20.6
5.8	21.3
5.9	22.1
6.0	22.8
6.1	23.6
6.2	24.4
6.3	25.2

[m _c] kg	[A _{min}] (m ²)
6.4	26.0
6.5	26.8
6.6	27.6
6.7	28.5
6.8	29.3
6.9	30.2
7.0	31.1
7.1	32.0
7.2	32.9
7.3	33.8
7.4	34.7
7.5	35.7
7.6	36.6
7.7	37.6
7.8	38.6

[m _c] kg	[A _{min}] (m ²)
7.9	39.6
8.0	40.6
8.1	41.6
8.2	42.6
8.3	43.7
8.4	44.7
8.5	45.8
8.6	46.9
8.7	48.0
8.8	49.1
8.9	50.2
9.0	51.3
9.1	52.5
9.2	53.6
9.3	54.8

[m _c] kg	[A _{min}] (m ²)
9.4	56.0
9.5	57.2
9.6	58.4
9.7	59.6
9.8	60.8
9.9	62.1
10.0	63.4
10.1	64.6
10.2	65.9
10.3	67.2
10.4	68.5
10.5	69.8
10.6	71.2
10.7	72.5
10.8	73.9

Precautions for Installation Using New Refrigerant

1. Care regarding tubing

(1) Process tubing

- Material: Use seamless phosphorous deoxidized copper tube for refrigeration. Wall thickness shall comply with the applicable legislation. For tubes of ø22.22 or larger, use the material of temper 1/2H or H (Hard copper tube). Do not bend the hard copper tube.
- For the renewal tubing size, refer to the Technical Data.
- Use a tube cutter when cutting the tubing, and be sure to remove any flash. This also applies to distribution joints (optional).
- When bending tubing, use a bending radius that is 4 times the outer diameter of the tubing or larger.

Use sufficient care in handling the tubing. Seal the tubing ends with caps or tape to prevent dirt, moisture, or other foreign substances from entering. These substances can result in system malfunction.

(2) Prevent impurities including water, dust and oxide from entering the tubing. Impurities can cause R32 refrigerant deterioration and compressor defects. Due to the features of the refrigerant and refrigerating machine oil, the prevention of water and other impurities becomes more important than ever.

2. Be sure to recharge the refrigerant only in liquid form.

(1) Since refrigerant composition changes and performance decreases when gas leaks, collect the remaining refrigerant and recharge the required total amount of new refrigerant after fixing the leak.

3. Different tools required

(1) Tool specifications have been changed due to the characteristics of R32. Some tools for R22- and R407C-type refrigerant systems cannot be used.

Item	Different tools? (From R22 and R407C)	R410A tools compatible with R32?	Remarks
Manifold gauge	Yes	Yes	Types of refrigerant, refrigerating machine oil, and pressure gauge are different.
Charge hose	Yes	Yes	To resist higher pressure, material must be changed.
Vacuum pump	Yes	Yes	Use a conventional vacuum pump if it is equipped with a check valve. If it has no check valve, purchase and attach a vacuum pump adapter.
Leak detector	Yes	Yes	Leak detectors for CFC and HCFC that react to chlorine do not function because R32 and R410A contains no chlorine. Leak detectors for HFC can be used for R32 and R410A.
Flaring oil	Yes	Yes	For systems that use R22, apply mineral oil (Suniso oil) to the flare nuts on the tubing to prevent refrigerant leakage. For machines that use R32 or R410A, apply synthetic oil (ether oil) to the flare nuts.

^{*} Using tools for R22 and R407C can cause defects.

Single-outlet valve (with siphon tube) Liquid refrigerant should be recharged with the cylinder standing on end as shown.





Vacuum pump





Important Information Regarding The Refrigerant Used

This product contains fluorinated greenhouse gases. Do not vent gases into the atmosphere.

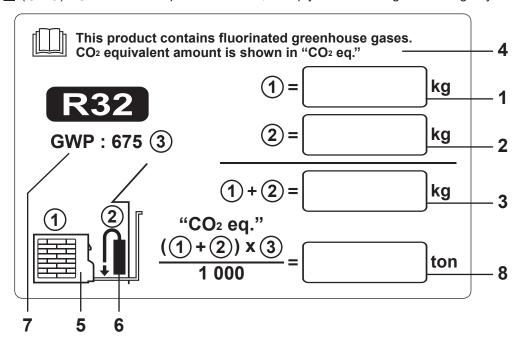
Refrigerant type: R32 GWP⁽¹⁾ value: 675

(1)GWP = global warming potential

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

Fill in the blanks below with the indelible ink pens.

- (1): the factory refrigerant charge of the product
- 2: the additional refrigerant amount charged in the field
- ① +②: the total refrigerant charge
- (1+2) x3/1000: CO₂ equivalent in tons; multiply the total refrigerant charge by GWP value, then divided by 1000.



- 1. Factory refrigerant charge of the product: see unit name plate
- 2. Additional refrigerant amount charged in the field*
- 3. Total refrigerant charge
- 4. Contains fluorinated greenhouse gases
- 5. Outdoor unit
- 6. Refrigerant cylinder and manifold for charging
- 7. GWP (global warming potential) of the refrigerant used in this product
- 8. CO₂ equivalent of fluorinated greenhouse gases contained in this product

^{*} See "5. REFRIGERANT INSTALLATION" on page 1-11-2-1-14 to 1-11-2-1-17.

Combination of Indoor and Outdoor Units

PZH3

Single-phase

		160	180
Е	3	S-160PE3R U-160PZH3R5	S-180PE4R U-180PZH3R5

PZH3 3-phase

IR H3R8

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High Static Pressure Duct Type S-160PE3R / U-160PZH3R5

	INDOOR	MODEL		S-160PE3R					I	_
	PANEL	MODEL		-			-			-
OUTDO		MODEL		-			U-160PZH3R5			-
	rmance test condition			10 5011		ISO13253 / AS				
Power s	supply	ø, Hz	00017	1Ø 50Hz	0.40\/	0001/	1Ø 50Hz	0.40\/	N.45	
		V kW	220V	230V 16.0	240V 16.0	220V	230V	240V	Min 5.2	Max 18.0
		BTU/h	-	54600	54600	-	-	-	17700	61400
	Capacity	Sensible kW		13.2	13.2	-	-	-	-	- 01400
		Latent kW	-	2.8	2.8	-	-	-	-	-
	Current	À	-	2.41	2.38	-	22.5	21.5	-	-
	Input power	W	-	540	560	-	-	-	-	-
(D		TOTAL W		-		-	4.860k	4.860k	1.25k	5.950k
U A	Annual consumption	TOTAL kWh	-	-	-	-	2430	-	-	-
O I	EER	TOTAL (W/W)	-	-	-	-	3.29	3.29	4.16	3.03
0	AEER	(W/W)	-	-	-	-	3.24	-	-	-
0	SEER rating		-	-	-	-	Commercial	Residential	-	-
O Tota	TCSPF	(W/W)	-	-	-	-	5.22	4.03	-	-
I ota	al Energy consumption Star rating	kWh	-	-	-	-	2588	1613	-	-
	Power factor	%	-	-	-	-	94	2.5 Stars 94	-	-
		dB-A (H/M/L)	-	51/49/47	-	-	- 94	94	-	-
	Noise indoor	Power Level dB		73/71/69						
		dB-A (H/L)		-			58/-		-	-
1	Noise outdoor	Power Level dB		_			76/-		-	-
	Consoity	kW		18.0	18.0		-		5.5	20.0
	Capacity	BTU/h	-	61400	61400	-	-	-	18800	68200
	Current	A	-	2.41	2.38	-	23.6	22.6	-	-
	Input power	W	-	540	560	-	-	_	-	
	* *	TOTAL W				-	5.100k	5.100k	1.200k	6.150k
ڻ ا	COP	TOTAL (W/W)	-		-	-	3.53	3.53	4.58	3.25
Z -	ACOP	(W/W)	-	-	-	-	3.47	-	-	-
<u> </u>	SEER rating		-	-	-	-	Commercial	Residential	-	-
⋖	HSPF	(W/W)	-	-	-	-	4.13	3.89	-	-
Ш Tota	al Energy consumption	kWh	-	-	-	-	1140	2570	-	-
-	Star rating Power factor	- %	-	-	-	-	94	2 Stars 94	-	-
	I OWEI IACIOI	dB-A (H/M/L)	-	51/49/47	<u> </u>	-	94	94	-	-
	Noise indoor	Power Level dB	73/71/69						-	-
		dB-A (H/L)		-			60/-		-	
	Noise outdoor	Power Level dB		-			78/-		_	_
LOW TEMP	Total capacity(kW) / Ir	nput power(W) / COP		-		16.64	5.920k	2.81		-
EXTRA LOW	Total capacity(kW) / Ir			-		-	-	-		-
	Max Current (A) / Max Input		-	2.61/590	2.59/610	-	29.0 / 6.27k	29.0 / 6.54k		-
	Starting current(A) (Cooling	g/Heating)	-	-	-	-	22.5 / 23.6	21.5 / 22.6		-
	Comp output(W)			-		-	3.80k	3.80k		-
	Time Delay fuse max s			15			40			
	Network Impedance (Ω			-			-			-
	Fan motor output (Indoor/Ou			440			120×2			-
	Moisture removal volume External static pressure	L/h Pa		4.0 (4.0×1)			-			-
Indoor	Cooling	m²/min (H/M/L) (m³/h)	60.0/50.0/42.0	100 (MAX150) (3600)/(3000)	((2E20)		-			i
Air flow	Heating	m³/min (H/M/L) (m³/h)	60.0/50.0/42.0	(3600)/(3000)					-	-
Outdoor	Cooling	m ³ /min (m ³ /h)	00.0/30.0/42.0	-	V(2020)	164.0	- //			
Air flow	Heating	m²/min (m³/h)		-		164.0		9840)	-	-
	e / amount(ship) kg/amou					R32	3.200	6.350		-
.,	GW									
F-Gas	CO₂eq (ton) (PRECHAR (ton) (MAXIMUM CF	GED AMOUNT) / CO₂eq HARGED AMOUNT)		-		675	2.16	4.29		-
		Height mm		430			1500			-
Pro	oduct dimension	Width mm		1200			980			-
D I	t disconsion (Decemb	Depth mm		700			370			-
Produc	t dimension (Panel)	H×W×D mm		-			-			-
Doc	cking dimension	Height mm Width mm		515 1315			1642 1095			-
Pat	uning ulliletision	Depth mm		1315 812			1095 529			-
		(NET) kg		50			529 117			-
	Weight	(GROSS) kg		58			129			-
	<u>.</u>	Panel (NET) kg		-			-			_
	Layers limit (actual			5(6)		1	1(2)			-
0	eration condition	Cool (DBT)		18°C~32°C			-15°C~52°C			-
		Heat (DBT)		16°C~30°C			-20°C~24°C			-
Max Wo	orking Pressure HP/LP MPa				4.15/2.7					
	Pipe port diameter n		(Liquid)Ø9.52(3/	(8) (Gas)Ø15.88	(5/8)		.52(3/8) (Gas)Ø1	9.05(3/4)		-
	Pipe diameter mm (inch)	(Under 30m)		(Liquid)Ø9.	.52(3/8)(Gas)Ø19.05					·
<u>o</u>	Pipe diameter mm (inch				.52(3/8)(Gas)Ø19.05	(3/4)				
Z	Connecting me			flared type	7.	L	flared type			-
<u>-</u>	Standard lengt				7.5 m 5 ~ 100	m				-
Δ.	Pipe length range Indoor unit & Outdoor unit he	ye III siaht difference m		30 m/OD	5 ~ 100 located lower) / 30 r		her)			-
<u> </u>	Add gas amount g/m			30 111(0D	45 g/m		1101)			-
	Pipe length for additio	nal gas m			30 m			L	-	

^{*} In the case of standard installation (Horizontal installation in the ceiling, rear side air intake)
* In the case of nance X OFF
* In case it is necessary to indicate the air flow volume in (I/s), the value in (m³/min.) shall be multiplied by 16.7 and rounded down the decimal point.
* AEER and ACOP classification is at 230V (400V) only in accordance with GEMS2019.
* TCSPF, HSPF and Total Energy consumption indicate the value of average temperature zone.
* Max Current (A) / Max Input power (W) value in the outdoor side equal to total system (Indoor + Outdoor)

High Static Pressure Duct Type S-160PE3R / U-160PZH3R8

	INDOOR	MODEL		S-160PE3R			-			-	
	PANEL	MODEL		-			-			-	
	OUTDOOR	MODEL		-		10042252 / AC	U-160PZH3R8			-	
	Performance test condition	- 11=		10 FOLI-		ISO13253 / AS					
	Power supply	ø, Hz	2201/	1Ø 50Hz	2401/	2001/	3Ø 50Hz	4451/	Min	May	
		V kW	220V -	230V 16.0	240V 16.0	380V	400V	415V -	Min 5.2	Max 18.0	
		BTU/h	-	54600	54600	-		-	17700	61400	
	Capacity	Sensible kW	-	13.2	13.2	-	-	-			
		Latent kW	-	2.8	2.8	-	-	-			
	Current	Ä	-	2.41	2.38	-	7.80	7.50	-	-	
	Input power	W	-	540	560	-	-	-	-	-	
رم L	<u> </u>	TOTAL W		-		-	4.860k	4.860k	1.25k	5.950k	
9 2	Annual consumption	TOTAL kWh	-	-	-	-	2430	-	-	-	
5 L	EER	TOTAL (W/W)	-	-	-	-	3.29	3.29	4.16	3.03	
OLIN	AEER	(W/W)	-	-	-	-	3.24	-	-	-	
0	SEER ratii TCSPF		-	-	-	-	Commercial	Residential	-	-	
٥ -		(W/W)	-	-	-	-	5.22	4.03	-	-	
H	Total Energy consumption Star rating	kWh	-	-	-		2588	1613	-	-	
H	Power factor	- %	-	-	-	-	90	2.5 Stars 90	-		
H	i owei iactoi	dB-A (H/M/L)	-	51/49/47			- 90	90	-	-	
	Noise indoor	Power Level dB		73/71/69			-		-	-	
H		dB-A (H/L)		13/11/09		<u> </u>	58/-		-	-	
	Noise outdoor	Power Level dB					76/-		-		
\dashv		kW	-	18.0	18.0	-	-	_	5.5	20.0	
- 1	Capacity	BTU/h	-	61400	61400	-	-	-	18800	68200	
F	Current	A	-	2.41	2.38	-	8.20	7.90	-	-	
ı		W	-	540	560	-	-	-	_		
	Input power	TOTAL W				-	5.100k	5.100k	1.20k	6.150k	
ַ פ	COP	TOTAL (W/W)	-	-	-	-	3.53	3.53	4.58	3.25	
Ž	ACOP	(W/W)				-	3.47		-	-	
- C	SEER ratio	ng	-	-	-	-	Commercial	Residential	-	-	
∢	HSPF	(W/W)	-	-	-	-	4.13	3.89	-	-	
	Total Energy consumption	kWh	-	-	-	-	1140	2570	-	-	
- [Star rating	-	-	-	-	-	-	2 Stars	-	-	
L	Power factor	%	-	-	-	-	90	90	-	-	
	Noise indoor	dB-A (H/M/L)	51/49/47				-		-	-	
L	110,00 1110001	Power Level dB		73/71/69			-		-	-	
	Noise outdoor	dB-A (H/L)		-			60/-		-	-	
		Power Level dB		-			78/-		-	-	
	TEMP Total capacity(kW) / Input			-		16.64	5.920k	2.81		-	
	A LOW Total capacity(kW) / Input			2.64/500	2.50/610		10 5 / 6 544	10 5 / 6 704		 	
	Max Current (A) / Max Input power (Vistarting current(A) (Cooling/Heating)	0	-	2.61/590	2.59/610	-	10.5 / 6.54k 7.80 / 8.20	10.5 / 6.78k 7.50 / 7.90		 	
	Comp output(W)		-	-	-	-	3.80k	3.80k		-	
	Time Delay fuse max size(A)			15			16	J.00K			
	Network Impedance (ΩMAX.)			-			-			_	
F	an motor output (Indoor/Outdoor) W			440			120×2			-	
	Noisture removal volume	L/h		4.0 (4.0×1)			-			_	
	External static pressure	Pa		100 (MAX150)			-			-	
Inde		m ³ /min (H/M/L) (m ³ /h)	60.0/50.0/42.0	(3600)/(3000)/(2520)		-		-	-	
Air	flow Heating	m³/min (H/M/L) (m³/h)	60.0/50.0/42.0	(3600)/(3000)/(2520)		-		-	-	
Out	door Cooling	m ³ /min (m ³ /h)		-		164.0	(984	-	-		
Air	flow Heating	m ³ /min (m ³ /h)		-		164.0	(984	-	-		
efrig	erant type / amount(ship) kg/amo	unt(max) kg		-		R32	3.200	6.350		-	
-	-Gas CO ₂ eq (ton) (PREC	WP / HARGED AMOUNT) / M CHARGED AMOUNT)		-		675	2.16	4.29		-	
-				430			1500				
_	5 - 2 - 4 () (Height mm	430							-	
_	2 22-4 () (Height mm Width mm					980				
	Product dimension	Width mm		1200			980 370				
F	Product dimension	Width mm Depth mm					980 370			-	
F		Width mm Depth mm H×W×D mm		1200 700			370				
F	Product dimension	Width mm Depth mm		1200 700 -			370 -				
F	Product dimension	Width mm Depth mm H×W×D mm Height mm		1200 700 - 515			370 - 1642				
F	Product dimension duct dimension (Panel)	Width mm Depth mm H×W×D mm Height mm Width mm		1200 700 - 515 1315 812 50			370 - 1642 1095 529 115				
F	Product dimension duct dimension (Panel) Packing dimension	Width mm Depth mm H×W×D mm Height mm Width mm Depth mm		1200 700 - 515 1315 812			370 - 1642 1095 529				
F	Product dimension duct dimension (Panel) Packing dimension Weight	Width mm Depth mm H×W×D mm Height mm Width mm Depth mm (NET) kg		1200 700 - 515 1315 812 50 58			370 - 1642 1095 529 115 127				
Pro F	Product dimension duct dimension (Panel) Packing dimension Weight Layers limit (actually)	Width mm Depth mm H×W×D mm Height mm Width mm Depth mm (NET) kg (GROSS) ka Panel (NET) kq		1200 700 - 515 1315 812 50 58 - 5(6)			370 - 1642 1095 529 115 127 - 1(2)			-	
Pro F	Product dimension duct dimension (Panel) Packing dimension Weight	Width mm Depth mm H×W×D mm Height mm Width mm Depth mm (NET) kg (GROSS) ka Panel (NET) kg		1200 700 - 515 1315 812 50 58 - 5(6) 18°C~32°C			370 - 1642 1095 529 115 127 - 1(2) -15°C~52°C				
F Pro	Product dimension duct dimension (Panel) Packing dimension Weight Layers limit (actually) Operation condition	Width mm Depth mm H×W×D mm Height mm Width mm Depth mm (NET) kg (GROSS) kg Panel(NET) kg Cool (DBT) Heat (DBT)		1200 700 - 515 1315 812 50 58 - 5(6)			370 - 1642 1095 529 115 127 - 1(2)			-	
F Pro	Product dimension duct dimension (Panel) Packing dimension Weight Layers limit (actually) Departion condition Max Working Pressure HP/LP MPa	Width mm Depth mm H×W>D mm Height mm Width mm Depth mm (NET) kg (GROSS) kg Panel (NET) kg Cool (DBT) Heat (DBT)		1200 700 - 515 1315 812 50 58 - 5(6) 18°C~32°C 16°C~30°C	4.15/2.7	0	370 - 1642 1095 529 115 127 - 1(2) -15°C~52°C -20°C~24°C	NOTION A		-	
F Pro	Product dimension duct dimension (Panel) Packing dimension Weight Layers limit (actually) Peration condition Max Working Pressure HP/LP MPa Pipe port diameter mm (inch)	Width mm Depth mm H×W×D mm Height mm Width mm Depth mm (NET) kg (GROSS) ka Panel(NET) kg Cool (DBT) Heat (DBT)	(Liquid)Ø9.52(3)	1200 700 - 515 1315 812 50 58 - 5(6) 18°C~32°C 18°C~30°C	(5/8)	(Liquid)Ø9.	370 - 1642 1095 529 115 127 - 1(2) -15°C~52°C	9.05(3/4)		- - - - - -	
Pro F	Product dimension duct dimension (Panel) Packing dimension Weight Layers limit (actually) Diperation condition Max Working Pressure HP/LP MP2 Pipe port diameter mm (inch) Pipe diameter mm (inch)	Width mm Depth mm H×W×D mm Height mm Width mm Depth mm (NET) kg (GROSS) kg Panel (NET) kg Cool (DBT) Heat (DBT)	(Liquid)Ø9.52(3)	1200 700 - 515 515 1315 812 50 58 - 5(6) 18°C~32°C 18°C~30°C (8) (Gas)Ø15.88	(5/8) .iquid)Ø9.52(3/8)(Ga	(Liquid)Ø9. s)Ø19.05(3/4)	370 - 1642 1095 529 115 127 - 1(2) -15°C~52°C -20°C~24°C	0.05(3/4)		- - - - - -	
F F	Product dimension duct dimension (Panel) Packing dimension Weight Layers limit (actually) Departion condition Max Working Pressure HP/LP MPa Pipe port diameter mm (inch) (Pipe diameter mm (inch) (Pipe diameter mm (inch) (Width mm Depth mm H×W×D mm Height mm Width mm Depth mm (NET) kg (GROSS) kg Panel (NET) kg Cool (DBT) Heat (DBT)		1200 700 - 515 1315 812 50 58 - 5(6) 18°C-32°C 8 (Gas)Ø15.88	(5/8) .iquid)Ø9.52(3/8)(Ga .iquid)Ø9.52(3/8)(Ga	(Liquid)Ø9. s)Ø19.05(3/4) s)Ø19.05(3/4)	370 -1642 1095 529 115 127 -1(2) -15°C-52°C -20°C-24°C 52(3/8) (Gas)Ø19			-	
F F	Product dimension duct dimension (Panel) Packing dimension Weight Lavers limit (actually) Deration condition Max Working Pressure HP/LP MPa Pipe port diameter mm (inch)/L Pipe diameter mm (inch)/L Pipe diameter mm (inch)/L Connecting method	Width mm Depth mm H×W×D mm Height mm Width mm Depth mm (NET) kg (GROSS) kg Panel (NET) kg Cool (DBT) Heat (DBT)		1200 700 - 515 515 1315 812 50 58 - 5(6) 18°C~32°C 18°C~30°C (8) (Gas)Ø15.88	(5/8) .iquid)Ø9.52(3/8)(Ga .iquid)Ø9.52(3/8)(Ga g connection	(Liquid)Ø9. s)Ø19.05(3/4) s)Ø19.05(3/4) (Lic	370 - 1642 1095 529 115 127 - 1(2) -15°C~52°C -20°C~24°C			- - - - - -	
F F	Product dimension duct dimension (Panel) Packing dimension Weight Lavers limit (actually) Deration condition Max Working Pressure HP/LP MPa Pipe port diameter mm (inch)/U Pipe diameter mm (inch)/U Pipe diameter mm (inch)/U Connecting method Standard length m	Width mm Depth mm H×W×D mm Height mm Width mm Depth mm (NET) kg (GROSS) kg Panel (NET) kg Cool (DBT) Heat (DBT)		1200 700 - 515 1315 812 50 58 - 5(6) 18°C-32°C 8 (Gas)Ø15.88	(5/8) .iquid)Ø9.52(3/8)(Ga .iquid)Ø9.52(3/8)(Ga g connection 7.5 m	(Liquid)Ø9. s)Ø19.05(3/4) s)Ø19.05(3/4) (Lic	370 -1642 1095 529 115 127 -1(2) -15°C-52°C -20°C-24°C 52(3/8) (Gas)Ø19			-	
F F	Product dimension duct dimension (Panel) Packing dimension Weight Layers limit (actually) Deparation condition Max Working Pressure HP/LP MP2 Pipe port diameter mm (inch) (inch) Pipe leingth range m	Width mm Depth mm H×W>D mm Height mm Width mm Depth mm (NET) kg (GROSS) ka Panel (NET) kg Cool (DBT) Heat (DBT) nder 30m) Diver 30m)		1200 700 - 515 1315 812 50 58 - 5(6) 18°C~32°C 16°C~30°C (L (L (type (Gas) brazin	(5/8) .iquid)Ø9.52(3/8)(Ga .iquid)Ø9.52(3/8)(Ga g connection 7.5 m 5 ~ 100	(Liquid)Ø9. s)Ø19.05(3/4) s)Ø19.05(3/4) (Lic	370 - 1642 1095 529 115 127 - 1(2) -15°C-52°C -20°C-24°C 52(3/8) (Gas)Ø19			-	
F	Product dimension duct dimension (Panel) Packing dimension Weight Lavers limit (actually) Deration condition Max Working Pressure HP/LP MPa Pipe port diameter mm (inch)/U Pipe diameter mm (inch)/U Pipe diameter mm (inch)/U Connecting method Standard length m	Width mm Depth mm H×W>D mm Height mm Width mm Depth mm (NET) kg (GROSS) ka Panel (NET) kg Cool (DBT) Heat (DBT) nder 30m) Diver 30m)		1200 700 - 515 1315 812 50 58 - 5(6) 18°C~32°C 16°C~30°C (L (L (type (Gas) brazin	(5/8) .iquid)Ø9.52(3/8)(Ga .iquid)Ø9.52(3/8)(Ga g connection 7.5 m	(Liquid)Ø9. s)Ø19.05(3/4) s)Ø19.05(3/4) (Lic m m(OD located hig	370 - 1642 1095 529 115 127 - 1(2) -15°C-52°C -20°C-24°C 52(3/8) (Gas)Ø19			-	

^{*} In the case of standard installation (Horizontal installation in the ceiling, rear side air intake)
* In the case of nanoe X OFF
* In case it is necessary to indicate the air flow volume in (I/s), the value in (m³/min.) shall be multiplied by 16.7 and rounded down the decimal point.
* AEER and ACOP classification is at 230V (400V) only in accordance with GEMS2019.
* TCSPF, HSPF and Total Energy consumption indicate the value of average temperature zone.
* Max Current (A) / Max Input power (W) value in the outdoor side equal to total system (Indoor + Outdoor)

High Static Pressure Ducted Type S-180PE4R / U-180PZH3R5

- IN	IDOOR PANEL	MODE MODE			S-180PE4R -			-			
OU	TDOOR	MODE	-		-			U-180PZH3R5			
	nch pipe	MODE						-			
	Performance test condition						ISO13253 / A	S / NZS3823.1			
Pow	ver supply		ø, Hz		1ø 50Hz	1		1Ø 50Hz		i	
			kW	-	230V	240V 18.0	220V	230V	240V	Min 5.5	20.0
			BTU/h	-	18.0 61400	61400	-	-	-	18800	68200
	Capacity	Sensible	kW		15.5	15.5	<u> </u>			10000	00200
		Latent	kW		2.5	2.5					
	Current		A	-	3.30	3.20	-	23.30	22.30	-	-
			W	-	600	600	-	5.030k	5.030k	-	-
υ <u></u>	Input power Annual consumption		W JATC		· -	1	-	5.630k	5.630k	1.400k	7.200k
	EER		AL kWh *4 AL (W/W)	-	-	-	-	2815 3.20	3.20	3.93	2.78
N O L I N	AEER		(W / W)	-	-	-	-	3.15	-	5.95	2.70
		R rating		-	-	-	-	Commercial	Residential		
0	TCSPF	((W / W)	-	-	-		4.76	3.93		
To	otal Energy consumption		kWh	-	-	-		3206.00	1869.00		
-	Star rating Power factor		%	-	-	-	_	94	2.0 stars		
	Power factor	dB-4	% A (H/M/L)	-	46/44/41	-	-	94	94	-	-
	Noise indoor		er Level dB		78/76/73			-			
	Noise outdoor		3-A (H/L)		-			58/-		-	-
	NOISE GUIDOU	Powe	er Level dB		-			76/-		-	-
	Capacity		kW	-	20.0	20.0	-	-	-	5.5	22.4
<u> </u>	Current		BTU/h A	-	68200 3.30	68200 3.20	-	21.90	21.00	18800	76400
<u> </u>			W	-	600	3.20 600	-	4.730k	21.00 4.730k	-	-
	Input power	T(OTAL W			300	-	5.330k	5.330k	1.05k	6.500k
ر ا	COP		AL (W/W)	-	-	-	-	3.75	3.75	5.24	3.45
	ACOP	((W / W)				-	3.70	-		
N H H		R rating		-	-	-	-	Commercial	Residential	-	-
¥ -	HSPF	((W / W)	-	-	-		4.58	4.24	-	-
± 10	otal Energy consumption Star rating		kWh -	-	-	-		1140	2620 2.5 Stars	-	-
	Power factor		%	-	-	-	-	94	94	-	
	Noise indoor	dB-A	A (H/M/L)		46/44/41	ı		-		-	-
	Noise indoor		er Level dB		78/76/73			-		-	-
	Noise outdoor		B-A (H/L)		-			60/-		-	-
	OW TEMP Total capacity(k		er Level dB		-		18.00	78/- 6.21k	2.90	-	-
	Max Current(A) / Ma			-	5.70/1070	5.60/1070	-	32.5/7.03k	32.5/7.33k		
	Starting current(A) (-	-	-	-	23.3/21.9	22.3/21.0		
	Comp out	put(W)			-	•	-	4.20k	4.20k		
	Time Delay fuse				10			40			
	Network Impeda		107		750			- 120 × 2			
Mois	Fan motor output (Inc sture removal volume		L/h(Pt/h)		3.5 (3.5×1) (7	'Δ)		120 × 2		<u>.</u>	
	ernal static pressure		Pa		60 / (100/15			-			
Indoor		m³/min (H/M/L) (m³/h)	72.0/63.	0/53.0 (4320)/(3			-		-	-
Air flow			H/M/L) (m³/h)	72.0/63.	0/53.0 (4320)/(3	3780)/(3180)		-		-	-
Outdoo			min (m³/h)		-			164 (9840)		-	-
Air flow	Heating efrigerant type / amount g(o		min (m ² /h)		-			164 (9840) R32 3.40k / 7.60	<u> </u>	-	-
IX	GWP / CO₂eq (ton)									-	
F-Gas	CO ₂ eq (ton) (MAXII				-			675 / 230 / 5.13	3	-	•
		Height	mm (inch)		486 (19-1/8)		1500 (59-1/16)		
F	Product dimension	Width	mm (inch)		1456 (57-5/1			980 (38-37/64)	·		
		Depth	mm (inch)		916 (36-1/1			370 (14-9/16)		-	
Prod	uct dimension (Panel)	H×W×D mr						-		-	
	Packing dimension	Height	mm (inch)		610 (24-1/32			1642 (64-41/64	.)		
r	aoning uniterision	Width Depth	mm (inch) mm (inch)		1646 (60-13/ 1132 (44-9/1			1095 (43-7/64) 529 (20-53/64)			
		(NET)	kg (lb)		82 (181)	·,	<u> </u>	117 (258)			
	Weight	(GROSS)	kg (lb)		96 (212)			129 (284)		-	
		Panel	kg (lb)		-			-			
	Layers limit (actually)	<u> </u>	T)		4 (5)		-	1(2)			
Opera	tion condition	Cool (DB Heat (DB			18°C ~ 32°C			-15°C ~ 52°C -20°C ~ 24°C		<u>·</u>	
Max V	Vorking Pressure HP/LP Mp		.,		10 0 - 30 ((41.5/27.0)	-20 0 - 24 0			
L	Pipe port diameter mm ((Liquid)Ø9.5	52(3/8) (Gas)Ø1			52(3/8) (Gas)Ø19	9.05(3/4)		
	Pipe diameter mm (in		(Under 50m)			Liquid)Ø9.52(3/8)	(Gas)Ø19.05(3	3/4)			
	Pipe diameter mm (in	ch)	(Over 50m)			(Liquid)Ø9.52(3/		1)			
<u>ი</u> —	Standard length m(ft)	1	(Lindor F0m)			7.5 (uid\&(Goo\ flo	Ltuno		
N -	Connecting method	,	(Under 50m) (Over 50m)	(Liquid)flared	d type (Gas)bra	zing connection		uid)&(Gas) flared type (Gas)brazii		-	•
=	Pipe lenath	range m (ft)	(0461 90111)			5 ~ 100m	(16.4 ~ 328)	SPO (Odd)DIAZII	.g cominection		
<u> </u>	Indoor unit & Outdoor un		rence m (ft)		30m (OD loca	ited lower) / 30m (her) (98.4/98.4)		-	
	Add gas amount g/m (c		(Under 50m)			45g/m					
<u> </u>	Add gas amount g/m (c		(Over 50m)			60g/m					
	Pipe length for additional g	as III (II)		30m (98.4) -							

^{*} In the case of standard installation (Horizontal installation in the ceiling, rear side air intake)

* In the case of nanoe X OFF

* In case it is necessary to indicate the air flow volume in (I/s), the value in (m³/min.) shall be multiplied by 16.7 and rounded down the decimal point.

* AEER and ACOP classification is at 230V (400V) only in accordance with GEMS2019.

* TCSPF, HSPF and Total Energy consumption indicate the value of average temperature zone.

* Max Current (A)/ Max Input Power (W) value in the outdoor side is applicable for outdoor unit only (due to power sources are separated).

High Static Pressure Ducted Type S-180PE4R / U-180PZH3R8

	INDOOR PANEL	MODE MODE			S-180PE4R -						
	OUTDOOR	MODE			-		i i	J-180PZH3R8		-	
	Branch pipe	MODE	ΞL				-	-			
	Performance test condition						ISO13253 / A	S / NZS3823.1			
	Power supply		ø, Hz		1ø 50Hz	0.4017		3Ø 50Hz	445)/		
			kW	-	230V 18.0	240V 18.0	-	400V	415V	Min 5.5	20.0
			BTU/h	-	61400	61400	-	-	-	18800	68200
	Capacity	Sensible	kW		15.5	15.5				10000	00200
		Latent	kW		2.5	2.5					
	Current		A	-	3.30	3.20	-	8.00	7.70	-	-
			W	-	600	600	-	5.030k	5.030k	-	-
Ð	Input power		OTAL W	-			-	5.630k	5.630k	1.400k	7.200k
z	Annual consumption EER		TAL kWh *4 TAL (W/W)	-	-	-	-	2815 3.20	3.20	3.93	2.78
O L I N (AEER		(W / W)	 		-	-	3.15	3.20	3.93	2.10
0 0		R rating	(** / **/)	-	- 1	_	- Commercial Residential				
Ö	TCSPF		(W / W)	-	- 1	-		4.76	3.93		
	Total Energy consumption		kWh	-	-	-		3206.00	1869.00		
	Star rating			-	-	-		-	2.0 stars		
	Power factor		%	-	- 1	-	-	91	91	-	-
	Noise indeer		A (H/M/L)		46/44/41			-		-	-
	Noise indoor		er Level dB B-A (H/L)		78/76/73		1	58/-		-	-
	Noise outdoor		er Level dB		-		1	76/-			
	Constitu	1 000	kW	-	20.0	20.0	-	-	-	5.5	22.4
	Capacity		BTU/h	-	68200	68200	-	-	-	18800	76400
	Current		A	-	3.30	3.20	-	7.50	7.25	-	-
	Input power		W	-	600	600	-	4.730k	4.730k	-	-
			OTAL W				-	5.330k	5.330k	1.05k	6.500k
O	COP		TAL (W/W)	-	- 1	-	-	3.75	3.75	5.24	3.45
z	ACOP	R rating	(W / W)	-	 	-	-	3.70 Commercial	- Residential		
A T I N (HSPF		(W / W)	-	 	-	_	4.58	4.24	-	
HE	Total Energy consumption		kWh	-	- 1	-		1140	2620	-	-
_	Star rating		-	-	- 1	-			2.5 Stars	-	-
	Power factor		%	-	-	-	-	91	91	-	-
	Noise indoor		A (H/M/L)		46/44/41			-		-	-
			er Level dB		78/76/73			-		-	-
	Noise outdoor		B-A (H/L) er Level dB		-			60/- 78/-		-	-
	LOW TEMP Total capacity(k				-		18.00	6.21k	2.90		
	Max Current(A) / Ma			-	5.70/1070	5.60/1070	-	11.5/7.24k	11.5/7.51k	-	
	Starting current(A) (ng)	-	-	-	-	8.00/7.50	7.70/7.25	-	
	Comp out						-	4.20k	4.20k		
	Time Delay fuse				10			<u>16</u>			
	Network Impeda Fan motor output (Inc				750			120 × 2			
	Moisture removal volume	addi/Outdoor	L/h(Pt/h)		3.5 (3.5×1) (7.	4)		-			
	External static pressure		Pa		60 / (100/150			-			
	loor Cooling		(H/M/L) (m³/h)		0/53.0 (4320)/(3			-		-	-
	flow Heating		(H/M/L) (m³/h)	72.0/63.	0/53.0 (4320)/(3	780)/(3180)		-		-	-
	door Cooling		min (m³/h)		-		164 (9840)			-	-
AII	flow Heating Refrigerant type / amount g(o		min (m³/h)		-		164 (9840) R32 3.40k / 7.60			-	-
	GWP / CO ₂ eq (ton)							K32 3.40K / 1.0C	,	-	
F-	Gas CO ₂ eq (ton) (MAXII				-			675 / 230 / 5.13	·		
	7 (1011) (1111 0 (111	Height			486 (19-1/8)			1500 (59-1/16)			
	Product dimension	Width	mm (inch) mm (inch)		1456 (57-5/16		1	980 (38-37/64)	<u>'</u>		
		Depth	mm (inch)		916 (36-1/16		1	370 (14-9/16)			
	Dec. dec. (Dec. 1)		m, inch		-		<u> </u>				
F	Product dimension (Panel)	TIAVVAD III	(!		610 (24-1/32)		1642 (64-41/64)		
F	` '	Height	mm (inch)	610 (24-1/32)			1095 (43-7/64)			·	
F	Product dimension (Panel) Packing dimension	Height Width	mm (inch)		1646 (60-13/1	6)				-	
F	` '	Height Width Depth	mm (inch) mm (inch)		1646 (60-13/1 1132 (44-9/16	6)		529 (20-53/64)		-	
F	Packing dimension	Height Width Depth (NET)	mm (inch) mm (inch) kg (lb)		1646 (60-13/1 1132 (44-9/16 82 (181)	6)		529 (20-53/64) 115 (254)		-	
F	` '	Height Width Depth (NET) (GROSS)	mm (inch) mm (inch) kg (lb) kg (lb)		1646 (60-13/1 1132 (44-9/16 82 (181) 96 (212)	6)		529 (20-53/64)		- - -	
F	Packing dimension	Height Width Depth (NET)	mm (inch) mm (inch) kg (lb)		1646 (60-13/1 1132 (44-9/16 82 (181)	6)		529 (20-53/64) 115 (254)		-	
	Packing dimension Weight	Height Width Depth (NET) (GROSS) Panel	mm (inch) mm (inch) kg (lb) kg (lb) kg (lb)		1646 (60-13/1 1132 (44-9/16 82 (181) 96 (212) - 4 (5) 18°C ~ 32°C	6)		529 (20-53/64) 115 (254) 127 (280) - 1(2) -15°C ~ 52°C		- - -	
Ol	Packing dimension Weight Layers limit (actually) peration condition	Height Width Depth (NET) (GROSS) Panel Cool (DR Heat (DI	mm (inch) mm (inch) kg (lb) kg (lb) kg (lb)		1646 (60-13/1 1132 (44-9/16 82 (181) 96 (212) - 4 (5)	6)		529 (20-53/64) 115 (254) 127 (280) - 1(2)		- - - - -	
Ol	Packing dimension Weight Layers limit (actually) peration condition ax Working Pressure HP/LP Mp	Height Width Depth (NET) (GROSS) Panel Cool (DI Heat (DI a (bar)	mm (inch) mm (inch) kg (lb) kg (lb) kg (lb)		1646 (60-13/1 1132 (44-9/16 82 (181) 96 (212) - 4 (5) 18°C ~ 32°C 16°C ~ 30°C	6) 5) 4.15/2.70	(41.5/27.0)	529 (20-53/64) 115 (254) 127 (280) - 1(2) -15°C ~ 52°C -20°C ~ 24°C	DEF(DIV)	- - - - -	
Ol	Packing dimension Weight Layers limit (actually) peration condition ax Working Pressure HP/LP Mp Pipe port diameter mm (Height Width Depth (NET) (GROSS) Panel Cool (DI Heat (DI a (bar)	mm (inch) mm (inch) kg (lb) kg (lb) kg (lb) BT)	(Liquid)Ø9.5	1646 (60-13/1 1132 (44-9/16 82 (181) 96 (212) - 4 (5) 18°C ~ 32°C 16°C ~ 30°C	6) 5) 	(Liquid)Ø9.5	529 (20-53/64) 115 (254) 127 (280) - 1(2) -15°C ~ 52°C -20°C ~ 24°C	0.05(3/4)	- - - - - -	
Ol	Packing dimension Weight Layers limit (actually) peration condition ax Working Pressure HP/LP Mp Pipe port diameter mm (Pipe diameter mm (in	Height Width Depth (NET) (GROSS) Panel Cool (DI Heat (DI a (bar) inch)	mm (inch) mm (inch) kg (lb) kg (lb) kg (lb) g(lb) (Under 50m)	(Liquid)Ø9.5	1646 (60-13/1 1132 (44-9/16 82 (181) 96 (212) - 4 (5) 18°C ~ 32°C 16°C ~ 30°C (2(3/8) (Gas)Ø15	6) 5) 4.15/2.70 9.05(3/4) Liquid)Ø9.52(3/8)	(Liquid)Ø9.5 (Gas)Ø19.05(3	529 (20-53/64) 115 (254) 127 (280) - 1(2) -15°C ~ 52°C -20°C ~ 24°C 52(3/8) (Gas)Ø19/4)	9.05(3/4)	- - - - -	
O _I	Packing dimension Weight Layers limit (actually) peration condition ax Working Pressure HP/LP Mp Pipe port diameter mm (in Pipe diameter mm (in	Height Width Depth (NET) (GROSS) Panel Cool (DI Heat (DI a (bar) inch)	mm (inch) mm (inch) kg (lb) kg (lb) kg (lb) BT)	(Liquid)Ø9.5	1646 (60-13/1 1132 (44-9/16 82 (181) 96 (212) - 4 (5) 18°C ~ 32°C 16°C ~ 30°C (2(3/8) (Gas)Ø15	6) 6) 4.15/2.70 6.05(3/4) 6.iquid)Ø9.52(3/8) (Liquid)Ø9.52(3/8)	(Liquid)Ø9.5 (Gas)Ø19.05(3. 8) (Gas)Ø25.4(1	529 (20-53/64) 115 (254) 127 (280) - 1(2) -15°C ~ 52°C -20°C ~ 24°C 52(3/8) (Gas)Ø19/4)	0.05(3/4)	- - - - - -	
O _l	Packing dimension Weight Layers limit (actually) peration condition ax Working Pressure HP/LP Mp Pipe port diameter mm (in Pipe diameter mm (in Pipe diameter mm (in Standard length m(ft)	Height Width Depth (NET) (GROSS) Panel Cool (Di Heat (Di a (bar) inch) ch)	mm (inch) mm (inch) kg (lb) kg (lb) kg (lb) g(lb) (Under 50m)		1646 (60-13/1 1132 (44-9/16 82 (181) 96 (212) - 4 (5) 18°C ~ 32°C 16°C ~ 30°C (2(3/8) (Gas)Ø15	6) 3) 4.15/2.70 9.05(3/4) iquid)Ø9.52(3/8) (Liquid)Ø9.52(3/8) 7.5 (:	(Liquid)Ø9.5 (Gas)Ø19.05(3. 8) (Gas)Ø25.4(1 24.6)	529 (20-53/64) 115 (254) 127 (280) - 1(2) -15°C ~ 52°C -20°C ~ 24°C 52(3/8) (Gas)Ø19/4)		-	
O _l	Packing dimension Weight Layers limit (actually) peration condition ax Working Pressure HP/LP Mp Pipe port diameter mm (in Pipe diameter mm (in	Height Width Depth (NET) (GROSS) Panel Cool (Di Heat (Di a (bar) inch) ch)	mm (inch) mm (inch) kg (lb) kg (lb) kg (lb) BT) (Under 50m) (Over 50m)		1646 (60-13/1 1132 (44-9/16 82 (181) 96 (212) - 4 (5) 18°C ~ 32°C 16°C ~ 30°C (2(3/8) (Gas)Ø15	6) 3) 4.15/2.70 9.05(3/4) iquid)Ø9.52(3/8) (Liquid)Ø9.52(3/8) 7.5 (:	(Liquid)Ø9.5 (Gas)Ø19.05(3. 8) (Gas)Ø25.4(1 24.6)	529 (20-53/64) 115 (254) 127 (280) - 1(2) -15°C ~ 52°C -20°C ~ 24°C 52(3/8) (Gas)Ø19 (/4)	type	-	
O _l	Packing dimension Weight Layers limit (actually) peration condition ax Working Pressure HP/LP Mp Pipe port diameter mm (in Pipe diameter mm (in Pipe diameter mm (in Standard length m(ft) Connecting method Pipe lengti	Height Width Depth (NET) (GROSS) Panel Cool (DI Heat (DI a (bar) inch) ch) ch)	mm (inch) mm (inch) mm (inch) kg (lb) kg (lb) kg (lb) BT) (Under 50m) (Over 50m) (Under 50m)		1646 (60-13/1 1132 (44-9/16 82 (181) 96 (212) - 4 (5) 18°C ~ 32°C 16°C ~ 30°C (2(3/8) (Gas)Ø19 (I	6) 6) 4.15/2.70 6.05(3/4) 6.iquid)Ø9.52(3/8) (Liquid)Ø9.52(3/7.5 (iing connection 5 ~ 100m ((Liquid)Ø9.5 (Gas)Ø19.05(3. 8) (Gas)Ø25.4(1. 24.6) (Liquid)flared (16.4 ~ 328)	529 (20-53/64) 115 (254) 127 (280) -1(2) -15°C ~ 52°C -20°C ~ 24°C 52(3/8) (Gas)Ø15 //4) 1) uid)&(Gas) flared type (Gas)brazir	type		
O _I	Packing dimension Weight Layers limit (actually) peration condition ax Working Pressure HP/LP Mp Pipe port diameter mm (in Pipe diameter mm (in Pipe diameter mm (ft) Connecting method Pipe lengtt Indoor unit & Outdoor ui	Height Width Depth (NET) (GROSS) Panel Cool (Di Heat (Di a (bar) inch) ch) range m (ft) nit height diffe	mm (inch) mm (inch) kg (lb) kg (lb) kg (lb) BT) (Under 50m) (Over 50m) (Under 50m) (Over 50m)		1646 (60-13/1 1132 (44-9/16 82 (181) 96 (212) - 4 (5) 18°C ~ 32°C 16°C ~ 30°C (2(3/8) (Gas)Ø19 (I	6) 6) 4.15/2.70 9.05(3/4) Liquid)Ø9.52(3/8) (Liquid)Ø9.52(3/8) 7.5 (: ing connection 5 ~ 100m (: ed lower) / 30m (:	(Liquid)Ø9.5 (Gas)Ø19.05(3 8) (Gas)Ø25.4(1 24.6) (Liquid)flared (16.4 ~ 328) OD located high	529 (20-53/64) 115 (254) 127 (280) -1(2) -15°C ~ 52°C -20°C ~ 24°C 52(3/8) (Gas)Ø15 //4) 1) uid)&(Gas) flared type (Gas)brazir	type		
O _l	Packing dimension Weight Layers limit (actually) peration condition ax Working Pressure HP/LP Mp Pipe port diameter mm (in Pipe diameter mm (in Pipe diameter mm (in Standard length m(ft) Connecting method Pipe lengti	Height Width Depth (NET) (GROSS) Panel Cool (DI Heat (DI a (bar) inch) ch) I range m (ft) oit height diffe	mm (inch) mm (inch) mm (inch) kg (lb) kg (lb) kg (lb) BT) (Under 50m) (Over 50m) (Under 50m)		1646 (60-13/1 1132 (44-9/16 82 (181) 96 (212) - 4 (5) 18°C ~ 32°C 16°C ~ 30°C (2(3/8) (Gas)Ø19 (I	6) 6) 4.15/2.70 6.05(3/4) 6.iquid)Ø9.52(3/8) (Liquid)Ø9.52(3/7.5 (iing connection 5 ~ 100m ((Liquid) Ø 9.5 (Gas) Ø 19.05(3.8) (Gas) Ø 25.4(1.24.6) (Liquid) flared (Liquid) flared (16.4 ~ 328) OD located high (0.484)	529 (20-53/64) 115 (254) 127 (280) -1(2) -15°C ~ 52°C -20°C ~ 24°C 52(3/8) (Gas)Ø15 //4) 1) uid)&(Gas) flared type (Gas)brazir	type		

^{*} In the case of standard installation (Horizontal installation in the ceiling, rear side air intake)
* In the case of nanoe X OFF
* In case it is necessary to indicate the air flow volume in (I/s), the value in (m²/min.) shall be multiplied by 16.7 and rounded down the decimal point.
* AEER and ACOP classification is at 230V (400V) only in accordance with GEMS2019.
* TCSPF, HSPF and Total Energy consumption indicate the value of average temperature zone.
* Max Current (A)/ Max Input Power (W) value in the outdoor side is applicable for outdoor unit only (due to power sources are separated).

High Static Pressure Ducted Type S-200PE4R / U-200PZH3R8

	INDOOR PANEL	MODE MODE		1	S-200PE4R			-				
	OUTDOOR	MODE		 				U-200PZH3R8				
	Branch pipe	MODE		1				-				
F	Performance test condition						ISO13253 / A	AS / NZS3823.1				
	Power supply		ø, Hz		1ø 50Hz			3Ø 50Hz				
	. элог очрргу		V	-	230V	240V	-	400V	415V	Min	Max	
			kW	-	20.0	20.0	-	-	-	5.7	22.4	
	Capacity		BTU/h	-	68200	68200	-	-	-	19400	76400	
		Sensible	kW	-	16.4	16.4						
-	Cumant	Latent	kW	-	3.6 3.40	3.6 3.30	_	0.45	0.45			
-	Current		A W	-	620	620	-	8.45 5.380k	8.15 5.380k	-	-	
	Input power	—	OTAL W	-	-	020		6.000k	6.000k	1.400k	7.800k	
ر 🗕 و	Annual consumption		OTAL kWh	-	-	_	-	3000	- 0.000K	- -	-	
<u> </u>	EER		TAL (W/W)	-	-	-	-	3.33	3.33	4.07	2.87	
	AEER	(W / W)		-	-	-	-	3.29	-	-	-	
o L		R rating		-	-	-	-	Commercial	Residential	-	-	
ا د	TCSPF		(W / W)	-	-	-	-	4.71	3.97	-	-	
Tota	al Energy consumption		kWh	-	-	-	-	3606	2063.00	-	-	
-	Star rating		%	 -	-	-	-	- 00	2.0 Stars	-	-	
-	Power factor	dB	% -A (H/M/L)	 -	46/44/41	-	-	92	92	-	-	
	Noise indoor		er Level dB		78/76/73					-	-	
\vdash	Material Co.		B-A (H/L)	1	-			58/-		-	-	
	Noise outdoor		er Level dB	1	-			77/-		-	-	
	Canacity		kW	-	22.4	22.4	-	1 -	-	5.0	25.0	
L	Capacity		BTU/h	-	76400	76400	-			17100	8530	
	Current		Α	-	3.40	3.30	-	8.60	8.30	-	-	
1	Input power		W	-	620	620	-	5.480k	5.480k	-	-	
<u> </u>			OTAL W		-		-	6.100k	6.100k	1.070k	7.400	
<u>ب</u> ا	COP		TAL (W/W)	-	-	-	-	3.67	3.67	4.67	3.38	
<u> </u>	ACOP		(W / W)	+	1		-	3.62	Daniel	-	-	
- ├─	HSPF	R rating	(W / W)	 			-	Commercial 4.14	Residential 3.90	-	-	
⊔ Tot	al Energy consumption		kWh	1				1402	3181	-	-	
- 100	Star rating		-	+				1402	2.0 Stars	-	-	
	Power factor		%	-	-	-	-	92	92	-		
		dB-	-A (H/M/L)		46/44/41			-	02	_	-	
	Noise indoor		er Level dB		78/76/73			-		-	-	
	Noise outdoor	dE	3-A (H/L)		-			62/-		-	-	
		Power Level dB			-			81/-		-	-	
LC	OW TEMP Total capacity(-			20.00 / 7.41k / 2.70					
	Max Current(A) / Ma			-	5.80/1090	5.70/1090	-	15.0/9.55k	15.0/9.91k			
	Starting current(A) (ng)	-	-	-	-	8.45/8.60	8.15/8.30			
	Comp out			1	10		-	4.80k 20	4.80k		•	
	Network Impeda)	 	-			20				
	Fan motor output (In				750			120 × 2				
	Moisture removal volume		L/h(Pt/h)		5.1 (5.1×1) (1	0.8)		-				
	External static pressure)	Pa		75 / (120/180	0)		-				
Indoor	Cooling		m ³ /min (m ³ /h)		3.0 (4320)/(3780			-		-	-	
Air flow	Heating		m ² /min (m ² /h)	72.0/63.0/53	3.0 (4320)/(3780	0)/(3180)		-	-	-		
Outdoor	Cooling		min (m³/h)		-			160 (9600)			-	
Air flow	Heating		min (m³/h)	+	-			160 (9600)	\ 0	-	-	
	frigerant type / amount g(c			+	-			R32 / 5.20k / 10		-		
F-GAS	GWP / CO ₂ eq (ton) CO ₂ eq (ton) (MAX			I	-			675 / 3.51 / 7.29	9			
	OO264 (tott) (WAX	Height	mm (inch)	+	486 (19-1/8)		1500 (59-1/16))			
Pr	oduct dimension	Width	mm (inch)	1	1456 (57-5/1			980 (38-37/64)				
		Depth	mm (inch)		916 (36-1/16			370 (14-9/16)				
Produ	ct dimension (Panel)	H×W×D m		-	1	<u> </u>						
		Height	mm (inch)		610 (24-1/32			1642 (64-41/64				
Pa	acking dimension	Width	mm (inch)		1646 (60-13/			1095 (43-7/64)				
		Depth	mm (inch)	1	1132 (44-9/1	6)		529 (20-53/64)				
	Moight	(NET)	kg (lb)	-	83 (183)			127 (280)				
	Weight	(GROSS)	kg (lb)	+	97 (214)			139 (306)		-		
	Layers limit	Panel (actually)	kg (lb)	 	4 (5)	-		1(2)			<u> </u>	
Operation	on condition	Cool (DE	BT)	+	18°C ~ 32°C	3		-15°C ~ 52°C				
Sporati	5511414011	Heat (DI		1	16°C ~ 30°C			-20°C ~ 24°C				
Max Wo	orking Pressure HP/LP Mp					4.15/2.70 (41.5/27.0)					
	Pipe port diar	neter mm (inc	h)	(Liquid)Ø12	.7(1/2) (Gas)Ø1			2.7(1/2) (Gas)Ø19	9.05(3/4)			
	Pipe diameter mm (ir	ich)	(Under 30m)		(Liquid)	Ø12.7(1/2) (Gas)Ø						
	Pipe diameter mm (ir		(Over 30m)		(Liqu	id)Ø12.7(1/2) (Gas						
و	Standard	length m(ft)	1			7.5 (2						
Standard length m Connecting method,		I,	(Under 30m)	(Liquid)flared	d type (Gas)braz	zing connection)&(Gas) flared typ				
			(Over 30m)	1 . , , ,	J. (- /	•		type (Gas)brazin	g connection			
<u> </u>	Pine lengt	n range m (ft)				5 ~ 100m (
	Pipe length range m (ft)			_ ^^	(OD log=+==1 :							
	Indoor unit & Outdoor u			30	(OD located lov	ver) / 30 (OD locate	ed higher) (98.	4/98.4)		•		
		oz/ft)	(Under 30m) (Over 30m)	30	(OD located lov	ver) / 30 (OD locate - 80g/m (0		4/98.4)				

^{*} In the case of standard installation (Horizontal installation in the ceiling, rear side air intake)
* In the case of nanoe X OFF
* In case it is necessary to indicate the air flow volume in (I/s), the value in (m³/min.) shall be multiplied by 16.7 and rounded down the decimal point.
* AEER and ACOP classification is at 230V (400V) only in accordance with GEMS2019.
* TCSPF, HSPF and Total Energy consumption indicate the value of average temperature zone.
* Max Current (A)/ Max Input Power (W) value in the outdoor side is applicable for outdoor unit only (due to power sources are separated).

High Static Pressure Ducted Type S-224PE4R/ U-224PZH3R8

	INDOOR	Ducte	MODEL		S-224PE4R		1		1		
	PANEL		MODEL		- -						
	OUTDOOR	1	MODEL		-			U-224PZH3R8			
	Branch pipe		MODEL					-			
	Performance test condition						ISO13253 / A	S / NZS3823.1			
	Power supply		ø, Hz		1ø 50Hz	0.40\/		3Ø 50Hz	445)/		
$\overline{}$			kW	-	230V 22.4	240V 22.4	-	400V	415V	Min 5.7	Max 25.0
			BTU/h	-	76400	76400	-		-	19400	85300
	Capacity	Sensible	kW	-	18.3	18.3	-	-	-	-	-
		Latent	kW	-	4.1	4.1	-	-	-	-	-
	Current		A	-	4.20	4.10	-	9.95	9.60	-	-
	Input power		W	-	830	830	-	6.410k	6.410k	-	-
L			OTAL W		-		-	7.240k	7.240k	1.500k	9.200k
ت ح	Annual consumption		OTAL kWh	-	-	-	-	3620	-	-	-
	EER	TOTAL (W/W)		-	-	-	-	3.09	3.09	3.80	2.72
	AEER	R rating	(W / W)	-	-	-	-	3.06 Commercial	- Residential	-	-
S ├─	TCSPF		(W / W)	-	-	-	-	4.31	3.69	-	
Tc	otal Energy consumption		kWh	-	_	_	-	4429	2495.00	_	-
	Star rating		-	-	-	-	-	-	2.0 Stars	-	-
	Power factor		%	-	-	-	-	93	93	-	-
	Noise indoor	dB(A) (H/M/L)		47/45/42			-		-	-
\vdash	NOISE INDUOL		er Level dB		79/77/74			-		-	-
	Noise outdoor	dB(A) (H/L)		-				58/-		-	-
+		Pow	ver Level dB	 	-	25.2	-	77/-		- 4.0	- 20.0
	Capacity		kW BTU/h	-	25.0 85300	25.0 85300	-	-	-	4.9 16700	28.0 95500
\vdash	Current		A A	-	4.20	4.10	-	9.75	9.40	16700	95500
\vdash			W	-	830	830	-	6.270k	9.40 6.270k	-	-
	Input power	Т	OTAL W		- 030		-	7.100k	7.100k	1.010k	8.700k
ے ا	COP		TAL (W/W)	-	-	-	-	3.52	3.52	4.85	3.22
ž 🗀	ACOP		(W / W)	-	-	-	-	3.48	-	-	-
× –		R rating		-	-	-		Commercial	Residential	-	-
	HSPF		(W / W)	-	-	-		4.29	3.87	-	-
H To	otal Energy consumption		kWh	-	-	-		1507	3571.00	-	-
<u> </u>	Star rating		- %		-	-	-	-	2.0 Stars		
\vdash	Power factor	dD	-A (H/M/L)	-	- 47/45/42	-	-	93	93	-	-
	Noise indoor		er Level dB	<u> </u>	79/77/74		1			-	
		dB-A (H/L)			-			62/-		_	-
	Noise outdoor	Power Level dB			-			81/-		-	-
L	.OW TEMP Total capacity(k	W)/Input pow	er(W)/COP	-			22.0 / 8.46k / 2.60				
	Max Current(A) / Ma			-	6.40/1440	6.30/1440	- 16.5/10.6k 16.5/11.0k				
	Starting current(A) (ng)	-	-	-	-	9.95/9.75	9.60/9.40		
	Comp out				- 10		-	5.50k	5.50k	-	
	Time Delay fuse Network Impeda		١		10		1	20			
	Fan motor output (In				750 × 2			120 × 2			
	Moisture removal volume		L/h(Pt/h)		5.8 (5.8×1) (12	2.2)		-			
	External static pressure		Pa		75 / (130/200			-			
Indoor			m ³ /min (m ³ /h)		0/59.0 (5040)/(4			-		-	-
Air flow) m ³/min (m³/h)	84.0/72.0	0/59.0 (5040)/(4	320)/(3540)		-		-	-
Outdoor			/min (m³/h)		-			160 (9600)		-	-
Air flow	Heating efrigerant type / amount g /		/min (m³/h)	 	-		 	160 (9600) R32 / 5.20k / 10.8	30	-	-
	CMD / CO == (4==)			-	<u>-</u>		 			-	
F-GAS					-		1	675 / 3.51 / 7.29)	-	
	/	CO ₂ eq (ton) (MAXIMUM CHARGE AMOUNT)		496 (40, 4/9)						-	
		Height	mm (inch)	486 (19-1/8) 1456 (57-5/16)				1500 (59-1/16)			
	Product dimension	Height Width	mm (inch) mm (inch)		1456 (57-5/16			980 (38-37/64)		-	
P		Width Depth	mm (inch) mm (inch)			6)				-	
P	Product dimension uct dimension (Panel)	Width Depth H×W×D m	mm (inch) mm (inch) m, inch		1456 (57-5/16 916 (36-1/16	6)		980 (38-37/64) 370 (14-9/16)			
Produ	uct dimension (Panel)	Width Depth H×W×D m Height	mm (inch) mm (inch) mm, inch mm (inch)		1456 (57-5/16 916 (36-1/16 - 610 (24-1/32	6) 3) 2)		980 (38-37/64) 370 (14-9/16) - 1642 (64-41/64		- - -	
Produ		Width Depth H×W×D m Height Width	mm (inch) mm (inch) mm, inch mm (inch) mm (inch)		1456 (57-5/16 916 (36-1/16 - 610 (24-1/32 1646 (60-13/1	6) 5) 2) 16)		980 (38-37/64) 370 (14-9/16) - 1642 (64-41/64 1095 (43-7/64)		- - -	
Produ	uct dimension (Panel)	Width Depth H×W×D m Height Width Depth	mm (inch) mm (inch) mm, inch mm (inch) mm (inch) mm (inch) mm (inch)		1456 (57-5/16 916 (36-1/16 - 610 (24-1/32 1646 (60-13/1 1132 (44-9/1	6) 5) 2) 16)		980 (38-37/64) 370 (14-9/16) - 1642 (64-41/64 1095 (43-7/64) 529 (20-53/64)		- - - -	
Produ	uct dimension (Panel) Packing dimension	Width Depth H×W×D m Height Width Depth (NET)	mm (inch) mm (inch) mm, inch mm (inch) mm (inch) mm (inch) mm (inch) kg (lb)		1456 (57-5/16 916 (36-1/16 - 610 (24-1/32 1646 (60-13/1 1132 (44-9/1) 87 (192)	6) 5) 2) 16)		980 (38-37/64) 370 (14-9/16) - 1642 (64-41/64 1095 (43-7/64) 529 (20-53/64) 127 (280)		- - -	
Produ	uct dimension (Panel)	Width Depth H×W×D m Height Width Depth	mm (inch) mm (inch) mm, inch mm (inch) mm (inch) mm (inch) mm (inch)		1456 (57-5/16 916 (36-1/16 - 610 (24-1/32 1646 (60-13/1 1132 (44-9/1	6) 5) 2) 16)		980 (38-37/64) 370 (14-9/16) - 1642 (64-41/64 1095 (43-7/64) 529 (20-53/64)		- - - -	
Produ	uct dimension (Panel) Packing dimension	Width Depth H×W×D m Height Width Depth (NET) (GROSS)	mm (inch) mm (inch) m, inch mm (inch) mm (inch) mm (inch) mm (inch) kg (lb) kg (lb)		1456 (57-5/16 916 (36-1/16 - 610 (24-1/32 1646 (60-13/1 1132 (44-9/1 87 (192) 101 (223) - 4 (5)	6) 5) 2) (6)		980 (38-37/64) 370 (14-9/16) - 1642 (64-41/64 1095 (43-7/64) 529 (20-53/64) 127 (280) 139 (306)		- - - - -	
Produ P	uct dimension (Panel) Packing dimension Weight Layers limit (actually)	Width Depth H×W×D m Height Width Depth (NET) (GROSS) Panel	mm (inch) kg (lb) kg (lb) kg (lb)		1456 (57-5/16 916 (36-1/16 - 610 (24-1/32 1646 (60-13/1 1132 (44-9/11 87 (192) 101 (223) - 4 (5) 18°C ~ 32°C	6) 5) 2) (6) 6)		980 (38-37/64) 370 (14-9/16) - 1642 (64-41/64 1095 (43-7/64) 529 (20-53/64) 127 (280) 139 (306) - 1(2) -15°C ~ 52°C		-	
Produ P	uct dimension (Panel) Packing dimension Weight Layers limit (actually) Operation condition	Width Depth H×W×D m Height Width Depth (NET) (GROSS) Panel	mm (inch) kg (lb) kg (lb) kg (lb) cool (DBT) eat (DBT)		1456 (57-5/16 916 (36-1/16 - 610 (24-1/32 1646 (60-13/1 1132 (44-9/1 87 (192) 101 (223) - 4 (5)	6) 5) 2) 16) 6)		980 (38-37/64) 370 (14-9/16) - 1642 (64-41/64 1095 (43-7/64) 529 (20-53/64) 127 (280) 139 (306) - 1(2)		-	
Produ P	uct dimension (Panel) Packing dimension Weight Layers limit (actually) Operation condition Max Working Pressure	Width Depth H×W×D m Height Width Depth (NET) (GROSS) Panel	mm (inch) kg (ib) kg (ib) kg (ib) cool (DBT) saat (DBT) (bar)		1456 (57-5/10 916 (36-1/10 - 1610 (24-1/32 1646 (60-13/1 1132 (44-9/1) 87 (192) 101 (223) - 4 (5) 18°C ~ 32°C 16°C ~ 30°C	6) 6) 2) 16) 6) 6) 4.15/2.70(980 (38-37/64) 370 (14-9/16) - 1642 (64-41/64 1095 (43-7/64) 529 (20-53/64) 127 (280) - 1(2) - 15°C ~ 52°C -20°C ~ 24°C)		
Produ P	uct dimension (Panel) Packing dimension Weight Layers limit (actually) Departion condition Max Working Pressure Pipe port dian	Width Depth H×W×D m Height Width Depth (NET) (GROSS) Panel Co Hee HP/LP Mpa neter mm (inc	mm (inch) mm (inch) mm (inch) mm (inch) mm (inch) mm (inch) kg (lb) kg (lb) kg (lb) cool (DBT) eat (DBT) (bar)	(Liquid)	1456 (57-5/10) 916 (36-1/10)	6) 6) 2) (6) 6) 2 4.15/2.70(2)(019.05(3/4)	(Liquid)@	980 (38-37/64) 370 (14-9/16) - 1642 (64-41/64 1095 (43-7/64) 529 (20-53/64) 127 (280) 139 (306) - 1(2) -15°C ~ 52°C -20°C ~ 24°C)		
Produ P	uct dimension (Panel) Packing dimension Weight Layers limit (actually) Deration condition Max Working Pressure Pipe port dian Pipe diameter mm (in	Width Depth H×W×D m Height Width Depth (NET) (GROSS) Panel Co He HP/LP Mpa neter mm (inc ch)	mm (inch) kg (lb) kg (lb) kg (lb) cool (DBT) cat (DBT) (bar) h) (Under 30m)	(Liquid)s	1456 (57-5/10) 916 (36-1/10)	6) 5) 2) 16) 6) 6) 4.15/2.70(c) 2)19.05(3/4) (Liquid)0/12.7(1/2)	(Liquid)@ (Gas)Ø19.05(980 (38-37/64) 370 (14-9/16) - 1642 (64-41/64 1095 (43-7/64) 529 (20-53/64) 127 (280) 139 (306) - 1(2) -15°C ~ 52°C -20°C ~ 24°C)		
Produ	uct dimension (Panel) Packing dimension Weight Layers limit (actually) Deration condition Max Working Pressurr Pipe port dian Pipe diameter mm (in	Width Depth H×W×D m Height Width Depth (NET) (GROSS) Panel CC He DHP/LP Mpa her mm (inc ch) ch)	mm (inch) mm (inch) mm (inch) mm (inch) mm (inch) mm (inch) kg (lb) kg (lb) kg (lb) cool (DBT) eat (DBT) (bar)	(Liquid)s	1456 (57-5/10) 916 (36-1/10)	6) 6) 2) 16) 6) 4.15/2.70(4.15/2.70(4.10juid)/212.7(1/2) (Liquid)/212.7(1/2)	(Liquid) (Gas)Ø19.05(2) (Gas)Ø25.4(980 (38-37/64) 370 (14-9/16) - 1642 (64-41/64 1095 (43-7/64) 529 (20-53/64) 127 (280) 139 (306) - 1(2) -15°C ~ 52°C -20°C ~ 24°C)		
Produ	uct dimension (Panel) Packing dimension Weight Layers limit (actually) Deration condition Max Working Pressurr Pipe port dian Pipe diameter mm (in	Width Depth H×W×D m Height Width Depth (NET) (GROSS) Panel Co He HP/LP Mpa neter mm (inc ch)	mm (inch) kg (ib) kg (ib) kg (ib) cool (DBT) sat (DBT) (bar) h) (Under 30m) (Over 30m)		1456 (57-5/10 916 (36-1/16 916 (36-1/16 610 (24-1/32 1646 (60-13/1 1132 (44-9/1) 87 (192) 101 (223)	6) 6) 6) 72) 16) 6) 6 4.15/2.70(c) 6)19.05(3/4) (Liquid)012.7(1/2) (Liquid)012.7(1/7.5)	(Liquid)@ (Gas)Ø19.05(2) (Gas)Ø25.4(24.6)	980 (38-37/64) 370 (14-9/16) - 1642 (64-41/64 1095 (43-7/64) 529 (20-53/64) 127 (280) 139 (306) - 1(2) -15°C ~ 52°C -20°C ~ 24°C 212.7(1/2) (Gas)6 3/4) 1)	719.05(3/4)		
Produ	uct dimension (Panel) Packing dimension Weight Layers limit (actually) Departion condition Max Working Pressure Pipe port dian Pipe diameter mm (in Pipe diameter mm (in	Width Depth H×W×D m Height Width Depth (NET) (GROSS) Panel Co Hee HP/LP Mpa neter mm (inc ch) ch) length m(ft)	mm (inch) kg (lb) kg (lb) kg (lb) cool (DBT) eat (DBT) (bar) (Under 30m) (Under 30m)		1456 (57-5/10) 916 (36-1/10)	6) 6) 6) 72) 16) 6) 6 4.15/2.70(c) 6)19.05(3/4) (Liquid)012.7(1/2) (Liquid)012.7(1/7.5)	(Liquid)Ø (Gas)Ø19.05(2) (Gas)Ø25.4(24.6) (Liq	980 (38-37/64) 370 (14-9/16) - 1642 (64-41/64 1095 (43-7/64) 529 (20-53/64) 127 (280) 139 (306) - 1(2) -15°C ~ 52°C -20°C ~ 24°C 212.7(1/2) (Gas)(3/4) 1) uid)&(Gas) flared) 219.05(3/4) type		
Produ	uct dimension (Panel) Packing dimension Weight Layers limit (actually) Deration condition Max Working Pressure Pipe port dian Pipe diameter mm (in Pipe diameter mm (in Standard Connecting method	Width Depth H×W×D m Height Width Depth (NET) (GROSS) Panel Co Hee HP/LP Mpa neter mm (inc ch) ch) length m(ft)	mm (inch) kg (lb) kg (lb) kg (lb) cool (DBT) coat (DBT) (bar) h) (Under 30m) (Over 30m)		1456 (57-5/10 916 (36-1/16 916 (36-1/16 610 (24-1/32 1646 (60-13/1 1132 (44-9/1) 87 (192) 101 (223)	6) 6) 2) (6) 6) 4.15/2.70(2) 4.15/2.70(2) (Liquid)Ø12.7(1/2) (Liquid)Ø12.7(1/2) (Liquid)Ø12.7(1/2) (Zing connection	(Liquid)Ø (Gas)Ø19.05(2) (Gas)Ø25.4(24.6) (Liq	980 (38-37/64) 370 (14-9/16) - 1642 (64-41/64 1095 (43-7/64) 529 (20-53/64) 127 (280) 139 (306) - 1(2) -15°C ~ 52°C -20°C ~ 24°C 212.7(1/2) (Gas)6 3/4) 1)) 219.05(3/4) type		
Produ	uct dimension (Panel) Packing dimension Weight Layers limit (actually) Deration condition Max Working Pressure Pipe port dian Pipe diameter mm (in Pipe diameter mm (in Standard Connecting method	Width Depth H×W×D m Height Width Depth (NET) (GROSS) Panel Co Height HP/LP Mpaneter mm (incide) ch) length m(ft)	mm (inch) kg (lb) kg (lb) kg (lb) bool (DBT) seat (DBT) (bar) h) (Under 30m) (Under 30m) (Over 30m)		1456 (57-5/10 916 (36-1/16 916 (36-1/16 - 610 (24-1/32 1646 (60-13/1 1132 (44-9/1) 87 (192) 101 (223) - 4 (5) 18°C ~ 32°C 16°C ~ 30°C	6) 6) 2) (6) 6) 4.15/2.70(2) 4.15/2.70(2) (Liquid)Ø12.7(1/2) (Liquid)Ø12.7(1/2) (Liquid)Ø12.7(1/2) (Zing connection	(Liquid)& (Gas)Ø19.05(32) (Gas)Ø25.4(24.6) (Liquid)flared (Liquid)flared	980 (38-37/64) 370 (14-9/16)) 219.05(3/4) type		
Produ P	uct dimension (Panel) Packing dimension Weight Layers limit (actually) Deration condition Max Working Pressure Pipe port dian Pipe diameter mm (in Pipe diameter mm (in Standard Connecting method Pipe lengti	Width Depth H×W×D m Height Width Depth (NET) (GROSS) Panel CC He B HP/LP Mpa neter mm (inc ch) ch) length m(ft) in range m (ft) pit height diffe	mm (inch) kg (lb) kg (lb) kg (lb) bool (DBT) seat (DBT) (bar) h) (Under 30m) (Under 30m) (Over 30m)		1456 (57-5/10 916 (36-1/16 916 (36-1/16 - 610 (24-1/32 1646 (60-13/1 1132 (44-9/1) 87 (192) 101 (223) - 4 (5) 18°C ~ 32°C 16°C ~ 30°C	6) 6) 7) 16) 6) 6 4.15/2.70(4.15/2.70((Liquid)Ø12.7(1/2) (Liquid)Ø12.7(1/2) (zing connection 5 ~ 100m ((Liquid)& (Gas)Ø19.05(2) (Gas)Ø25.4(24.6) (Liquid)flared (Liquid)flared 16.4 ~ 328) OD located hig	980 (38-37/64) 370 (14-9/16)) 219.05(3/4) type		

^{*} In the case of standard installation (Horizontal installation in the ceiling, rear side air intake)
* In the case of nanoe X OFF
* In case it is necessary to indicate the air flow volume in (I/s), the value in (m³/min.) shall be multiplied by 16.7 and rounded down the decimal point.
* AEER and ACOP classification is at 230V (400V) only in accordance with GEMS2019.
* TCSPF, HSPF and Total Energy consumption indicate the value of average temperature zone.
* Max Current (A)/ Max Input Power (W) value in the outdoor side is applicable for outdoor unit only (due to power sources are separated).

1-2. Major Component Specifications

(A) Indoor Units High Static Pressure Duct Type S-160PE3R

MODEL No.		S-160PE3R
Source		230 - 240V, single-phase, 50Hz
Controller P.C.B. Ass'y		ACXA73-38670
Fan (Numberdiameter)	mm	SIROCCO(2 / Ø228)
Fan motor		
ModelNominal output	W	YSK350-4G 440W
Power source	•	220-240 VAC
No. of poler.p.m. (230V, High)	rpm	4P/1150±30
Coil resistance (Ambient temperature 20°C)	Ω	M1: 12.67Ω
Run capacitor	VAC, μF	17μF/450V
Electronic expansion valve		
Coil		-
Coil resistance (at 20°C)	Ω	-
Valve body		-
Heat exchanger		
Coil		Aluminum plate fin / Copper tube
Rowsfin pitch	mm	31.4
Face area	m²	0.363

(A) Indoor Units

High Static Pressure Ducted Type S-180PE4R

MODEL No.		S-180PE4R		
Source		230 - 240V, single-phase, 50Hz		
Controller P.C.B. Ass'y		ACXA73C51510		
Fan (Numberdiameter)	mm	SIROCCO (2ø255)		
Fan motor				
ModelNominal output	W	L6CBYYYL0463750W		
Power source	•	100 - 390 VDC		
No. of poler.p.m. (230V, High)	rpm	8P1080		
Coil resistance (Ambient temperature 20°C)	Ω	-		
Run capacitor	VAC, μF	-		
Electronic expansion valve				
Coil		-		
Coil resistance (at 20°C)	Ω	-		
Valve body		-		
Heat exchanger				
Coil		Aluminium plate fin / Copper tube		
Row x Stage x FPI		3 x 22 x 18		
WxHxL	mm	38.1 x 462 x 1092		

(A) Indoor Units High Static Pressure Ducted Type S-200PE4R

MODEL No.		S-200PE4R
Source		230 - 240V, single-phase, 50Hz
Controller P.C.B. Ass'y		ACXA73C51510
Fan (Numberdiameter)	mm	SIROCCO (2ø255)
Fan motor	·	
ModelNominal output	W	L6CBYYYL0463750W
Power source	<u>'</u>	100 - 390 VDC
No. of poler.p.m. (230V, High)	rpm	8P1080
Coil resistance (Ambient temperature 20°C)	Ω	_
Run capacitor	VAC, μF	-
Electronic expansion valve		
Coil		-
Coil resistance (at 20°C)	Ω	-
Valve body	·	-
Heat exchanger		
Coil		Aluminium plate fin / Copper tube
Row x Stage x FPI		3 x 28 x 18
WxHxL	mm	38.1 x 588 x 1092

(A) Indoor Units High Static Pressure Ducted Type S-224PE4R

MODEL No.		S-224PE4R
Source		230 - 240V, single-phase, 50Hz
Controller P.C.B. Ass'y		ACXA73C51510
Fan (Numberdiameter)	mm	SIROCCO (2ø255)
Fan motor		
ModelNominal output	W	L6CBYYYL0238750W L6CBYYYL0237750W
Power source	·	100 - 391 VDC
No. of poler.p.m. (230V, High)	rpm	8P1180
Coil resistance (Ambient temperature 20°C)	Ω	_
Run capacitor	VAC, μF	-
Electronic expansion valve		
Coil		-
Coil resistance (at 20°C)	Ω	-
Valve body		-
Heat exchanger		
Coil		Aluminium plate fin / Copper tube
Row x Stage x FPI		3 x 28 x 18
WxHxL	mm	38.1 x 588 x 1092

U-160PZH3R5

MODEL No.			U-160PZH3R5	
Source			230 - 240V 1-Phase 50Hz	
Control circuit fuse			40A	
Compressor				
Modelnumber				
Source			280V DC MOTOR	
Nominal output		W	3,800	
Compressor oil		CC	1,900	
Coil resistance		Ω	U-V 0.229 U-W 0.223 V-W 0.223	
(Ambient temperature 25°C)		12	U-V 0.229 U-VV 0.223 V-VV 0.223	
Safety control	•		Discharge temperature control	
Overload relay models			-	
Operation temperature	Open	ı °C	-	
The state of the s	Close		-	
Crank case heater		W	230V-32W	
Refrigerant amount at shipment		kg	R32-3.2	
High pressure switch				
Cataracaura	OFF	MPa	4.15±0.2	
Set pressure	ON	MPa	3.05±0.2	
Fan	•			
Numberdiameter		mm	2ø540	
A:		m³/ min	404 (0040)	
Air circulation		(m³/h)	164 (9840)	
Fan speeds (Max.)	•			
Fan motor				
Model No.			L6CBYYYL0449, L6CBYYYL0450	
Source			DC280 - 340V	
No. of pole			8	
Nominal output		W	120	
Safety device			-	
Operating temperature	Open		=	
	Close		_	
Run capacitor	VAC,	, μF		
Heat exchanger				
Coil			Aluminium plate fin / Copper tube	
Row x Stage x FPI			2 x 34 + 36 x 18	
WxHxL		mm	36.4 x 1470 (714+756) x 930	
				

U-160PZH3R8

MODEL No.			U-160PZH3R8		
Source			400 - 415V 3-Phase 50Hz		
Control circuit fuse			30A		
Compressor					
Modelnumber			9VD550XAA21		
Source			520V DC MOTOR		
Nominal output		W	3,800		
Compressor oil		СС	1,900		
Coil resistance		Ω	U-V 0.735 U-W 0.715 V-W 0.715		
(Ambient temperature 25°C)		22	U-V 0.735 U-VV 0.715 V-VV 0.715		
Safety control			Discharge temperature control		
Overload relay models			_		
Operation temperature	Оре	en °C	_		
Operation temperature	Clos	se °C	_		
Crank case heater	·	W	230V-32W		
Refrigerant amount at shipment		kg	R32-3.2		
High pressure switch					
Cotonoccura	OFF	MPa	4.15±0.2		
Set pressure	ON	MPa	3.05±0.2		
Fan	•				
Numberdiameter	umberdiameter mr		2ø540		
		m³/ min			
Air circulation		(m³/h)	164 (9840)		
		(111 /11)			
Fan speeds (Max.)					
Fan motor					
Model No.			L6CBYYYL0449, L6CBYYYL0450		
Source			DC280-340V		
No. of pole			8		
Nominal output		W	120 x 2		
Safety device			-		
Operating temperature		en °C	-		
· ° ·		se °C	-		
Run capacitor	VA0	C, µF			
Heat exchanger					
Coil			Aluminium plate fin / Copper tube		
Row x Stage x FPI			218FPI		
WxHxL		mm	1.367		

U-180PZH3R5

MODEL No.	U-180PZH3R5			
Source			230 - 240V 1-Phase 50Hz	
Control circuit fuse			40A	
Compressor				
Modelnumber			9VD550XAB21	
Source			280V DC MOTOR	
Nominal output		W	3,800	
Compressor oil		СС	1,900	
Coil resistance		Ω	U-V 0.229 U-W 0.223 V-W 0.223	
(Ambient temperature 25°C)		22	0-0 0.229 0-00 0.223 0-00 0.223	
Safety control			Discharge temperature control	
Overload relay models			-	
Operation temperature		en °C	-	
Operation temperature	Clo	se °C	-	
Crank case heater		W	230V-32W	
Refrigerant amount at shipment		kg	R32-3.2	
High pressure switch				
Set pressure	OFF	MPa	4.15±0.2	
Set pressure	ON	MPa	3.05±0.2	
Fan				
Numberdiameter		mm	2ø540	
Air circulation	r circulation		164 (9840)	
Fan speeds (Max.)		,		
Fan motor				
Model No.			L6CBYYYL0449, L6CBYYYL0450	
Source			DC280 - 340V	
No. of pole			8	
Nominal output		W	120	
Safety device			-	
Operating temperature		en °C	-	
		se °C	-	
Run capacitor	VA	C, µF	-	
Heat exchanger				
Coil			Aluminium plate fin / Copper tube	
Row x Stage x FPI			2 x 34 + 36 x 18	
WxHxL	xL mm		36.4 x 1470 (714+756) x 930	

U-180PZH3R8

MODEL No.			U-180PZH3R8		
Source			400 - 415V 3-Phase 50Hz		
Control circuit fuse			30A		
Compressor					
Modelnumber			9VD550XAA21		
Source			520V DC MOTOR		
Nominal output		W	4,200		
Compressor oil		cc	1,900		
Coil resistance		Ω	U-V 0.735 U-W 0.715 V-W 0.715		
(Ambient temperature 25°C)		32	0 7 0.700 0 77 0.710 7 77 0.710		
Safety control			Discharge temperature control		
Overload relay models			_		
Operation temperature	Ope	en °C			
	Clo	se °C			
Crank case heater		W	230V-32W		
Refrigerant amount at shipment		kg	R32-3.4		
High pressure switch					
Set pressure	OFF	MPa	4.15±0.2		
ON		MPa	3.05±0.2		
Fan					
Numberdiameter		mm	2ø540		
Air since detien		m³/ min	404 (0040)		
Air circulation	Air circulation		164 (9840)		
Fan speeds (Max.)					
Fan motor					
Model No.			L6CBYYYL0449, L6CBYYYL0450		
Source			DC280-340V		
No. of pole			8		
Nominal output		W	120 x 2		
Safe <u>ty device</u>			_		
Operating temperature		en °C			
	Close °C		-		
Run capacitor	<u> </u>	C, µF	1		
Heat exchanger					
Coil			Aluminium plate fin / Copper tube		
Row x Stage x FPI			2 x 34+36 x 18		
WxHxL		mm	36.4 x 1470 (714+756) x 930		

U-200PZH3R8

MODEL No.			U-200PZH3R8		
Source			400 - 415V 3-Phase 50Hz		
Control circuit fuse			30A		
Compressor					
Modelnumber		9VD550XAA21			
Source			520V DC MOTOR		
Nominal output		W	4,800		
Compressor oil		CC	1,900		
Coil resistance		Ω	U-V 0.735 U-W 0.715 V-W 0.715		
(Ambient temperature 25°C)		32	0-7 0.755 0-77 0.715 7-77 0.715		
Safety control			Discharge temperature control		
Overload relay models			<u> </u>		
Operation temperature		en °C	-		
	Clo	se °C			
Crank case heater		W	230V-32W		
Refrigerant amount at shipment		kg	R32-5.2		
High pressure switch					
Set pressure	OFF	MPa	4.15±0.2		
Set pressure	ON	MPa	3.05±0.2		
Fan	·				
Numberdiameter		mm	2ø540		
Air circulation			160		
Fan speeds (Max.)		,			
Fan motor					
Model No.			L6CBYYYL0449, L6CBYYYL0450		
Source			DC280-340V		
No. of pole			8		
Nominal output		W	120 x 2		
Safety device			-		
Operating temperature		en °C	_		
		se °C	_		
Run capacitor	VA	C, µF	<u> </u>		
Heat exchanger					
Coil			Aluminium plate fin / Copper tube		
Row x Stage x FPI			2:1 x 34+36:34+36 x 17:17		
WxHxL		mm	36.4:18.2 x 1470 (714+756):1470 (714+756) x 930:930		

U-224PZH3R8

MODEL No.			U-224PZH3R8		
Source			400 - 415V 3-Phase 50Hz		
Control circuit fuse			30A		
Compressor					
Modelnumber			9VD550XAA21		
Source			520V DC MOTOR		
Nominal output		W	5,500		
Compressor oil		CC	1,900		
Coil resistance		Ω	U-V 0.735 U-W 0.715 V-W 0.715		
(Ambient temperature 25°C)		22	0-1 0.703 0-11 0.713 1-11		
Safety control		•	Discharge temperature control		
Overload relay models			-		
Operation temperature	Ope	en °C	-		
Operation temperature	Clo	se °C	_		
Crank case heater		W	230V-32W		
Refrigerant amount at shipment		kg	R32-5.2		
High pressure switch					
Set pressure		MPa	4.15±0.2		
Set plessure	ON	MPa	3.05±0.2		
Fan	<u> </u>				
Numberdiameter		mm	2ø540		
Air circulation		m³/h	160		
Fan speeds (Max.)					
Fan motor					
Model No.			L6CBYYYL0449, L6CBYYYL0450		
Source			DC280-340V		
No. of pole			8		
Nominal output		W	120 x 2		
Safety device			-		
Operating temperature		en °C	-		
		se °C	-		
Run capacitor	VA	C, μF			
Heat exchanger					
Coil			Aluminium plate fin / Copper tube		
Row x Stage x FPI			2:1 x 34+36:34+36 x 17:17		
WxHxL		mm	36.4:18.2 x 1470 (714+756):1470 (714+756) x 930:930		

1-3. Other Component Specifications

Outdoor Units U-160PZH3R5 U-160PZH3R8

MODEL No.						
	Outdoor Offic		0-1001 ZH31(3 / 0-1001 ZH31(0		<u> </u>	
Power Transformer						
Rated				=		
Source	VAC, Hz			-		
Secondary				<u>. </u>		
Coil resistance	Ω			-		
Thermal cut off temperatu	ire		_	-		
Thermistor (Coil / Air ser	nsor): TH1, TH2, TH3, TH4					
Resistance	kΩ	-20°C:	38.48±2%	20°C:	6.517±2%	
		-10°C:	23.67±2%	30°C:	4.448±2%	
		0°C:	15.00±2%	40°C:	3.100±2%	
		5°C :	12.06±2%	45°C :	2.607±2%	
		10°C:	9.765±2%	50°C:	2.203±2%	
Thermistor (Discharge ga	as sensor): TH5					
Resistance	kΩ	60°C:	13.85±2%	85°C:	5.946±2%	
		65°C:	11.59±2%	90°C:	5.086±2%	
		70°C:	9.743±2%	95°C:	4.367±2%	
		75°C :	8.228±2%	100°C:	3.764±2%	
		80°C:	6.981±2%	105°C:	3.256±2%	

Outdoor Units

U-180PZH3R5 U-180PZH3R8

MODEL No.	Outdoor Unit	U-180PZH3R5 / U-180PZH3R8		
Power Transformer				
Rated		-		
Source	VAC, Hz	_		
Secondary				
Coil resistance	Ω	_		
Thermal cut off temperatur	e	_		
Thermistor (Coil / Air sen	sor): TH1, TH2, TH3, TH4			
Resistance	kΩ	-20°C: 38.48±2%	20°C: 6.517±2%	
		-10°C: 23.67±2%	30°C: 4.448±2%	
		0°C: 15.00±2%	40°C: 3.100±2%	
		5°C: 12.06±2%	45°C: 2.607±2%	
		10°C: 9.765±2%	50°C: 2.203±2%	
Thermistor (Discharge ga	s sensor): TH5			
Resistance	kΩ	60°C: 13.85±2%	85°C: 5.946±2%	
		65°C: 11.59±2%	90°C: 5.086±2%	
		70°C: 9.743±2%	95°C: 4.367±2%	
		75°C: 8.228±2%	100°C: 3.764±2%	
		80°C: 6.981±2%	105°C: 3.256±2%	

Outdoor Units U-200PZH3R8

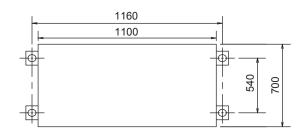
MODEL No. Outdoor Unit		U-200PZH3R8			
Power Transformer					
Rated		-			
Source	VAC, Hz				
Secondary		<u>-</u>			
Coil resistance Ω		_			
Thermal cut off temperature		_			
Thermistor (Coil / Air ser	isor): TH1, TH2, TH3, TH4				
Resistance	kΩ	-20°C:	38.48±2%	20°C:	6.517±2%
		-10°C :	23.67±2%	30°C:	4.448±2%
		0°C:	15.00±2%	40°C :	3.100±2%
		5°C :	12.06±2%	45°C:	2.607±2%
		10°C:	9.765±2%	50°C:	2.203±2%
Thermistor (Discharge ga	as sensor): TH5				
Resistance	kΩ	60°C:	13.85±2%	85°C :	5.946±2%
		65°C :	11.59±2%	90°C:	5.086±2%
		70°C :	9.743±2%	95°C :	4.367±2%
		75°C :	8.228±2%	100°C:	3.764±2%
		80°C :	6.981±2%	105°C:	3.256±2%

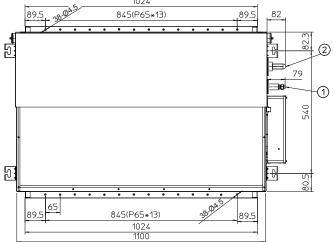
Outdoor Units U-224PZH3R8

MODEL No.	Outdoor Unit	U-224PZH3R8						
Power Transformer								
Rated			_					
Source	VAC, Hz			•				
Secondary								
Coil resistance	Ω	İ	_					
Thermal cut off temperatu	ire		_	•				
Thermistor (Coil / Air ser	nsor): TH1, TH2, TH3, TH4							
Resistance	kΩ	-20°C:	38.48±2%	20°C:	6.517±2%			
		-10°C:	23.67±2%	30°C:	4.448±2%			
		0°C:	15.00±2%	40°C:	3.100±2%			
		5°C:	12.06±2%	45°C :	2.607±2%			
		10°C:	9.765±2%	50°C:	2.203±2%			
Thermistor (Discharge g	as sensor): TH5							
Resistance	kΩ	60°C:	13.85±2%	85°C :	5.946±2%			
		65°C :	11.59±2%	90°C:	5.086±2%			
		70°C:	9.743±2%	95°C:	4.367±2%			
		75°C :	8.228±2%	100°C:	3.764±2%			
		80°C:	6.981±2%	105°C:	3.256±2%			

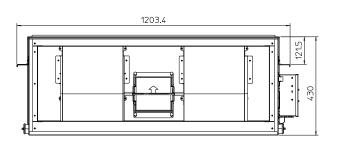
1-4. Dimensional Data (A) Indoor Units High Static Pressure Duct Type S-160PE3R

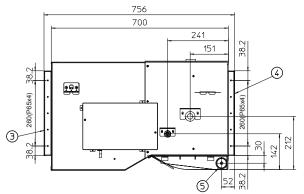
POSITION OF SUSPENSION BOLT





1	Refrigerant liquid tubing(Flare) Ø 9.52
2	Refrigerant gas tubing(Brazing) Ø 19.05
3	Air intake duct connecting side flange
4	Air discharge duct connecting side flange
(5)	Drain port



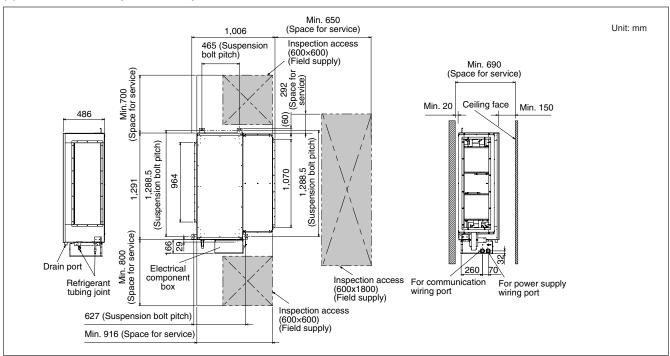


(A) Indoor Units

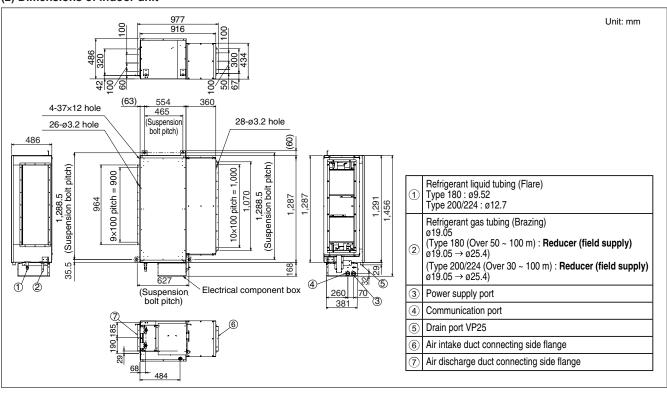
High Static Pressure Ducted Type S-180PE4R, S-200PE4R, S-224PE4R

Required Minimum Space for Installation and Service

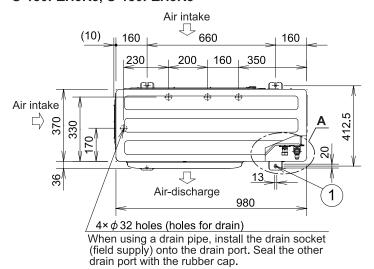
(1) Dimensions of suspension bolt pitch and unit



(2) Dimensions of indoor unit



(B) Outdoor Units U-160PZH3R5, U-160PZH3R8 U-180PZH3R5, U-180PZH3R8



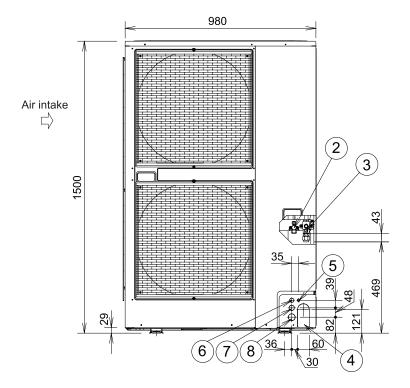
1	Mounting hole (4-R6.5), anchor bolt : M10
2	Refrigerant tubing (liquid tube), flared connection (ø9.52)
3	Refrigerant tubing (gas tube), flared connection (ø19.05) *1
4	Refrigerant tubing port
(5)	Electrical wiring port (ø13)
6	Electrical wiring port (ø22)
7	Electrical wiring port (ø27)
8	Electrical wiring port (ø35)

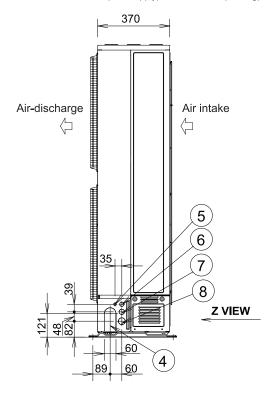
Specification for pipe connecting indoor unit to outdoor unit.

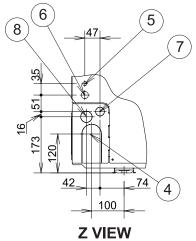
		U-160PZH3R5 U-160PZH3R8	U-180PZH3R5 U-180PZH3R8			
Tube length		_	Less than 50 m	Over 50 m		
Valve size	Liquid	ø9.52	ø9.52	ø9.52		
(Outdoor Unit)	Gas	ø19.05	ø19.05	ø19.05 *1		
Main tube	Liquid	ø9.52	ø9.52	ø9.52		
(Outdoor unit to Indoor unit)	Gas	ø19.05	ø19.05	ø25.4		

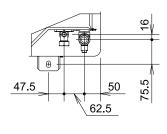
Unit: mm

*1 (Gas tubing connection) While the main gas tube is ø25.4, since connecting the outdoor unit's 3-way valve requires a ø19.05 flare, please be sure to use reducer (field supply) for connection (brazing).





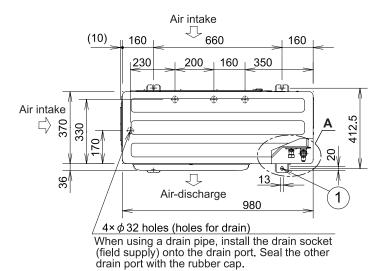




A VIEW

Unit: mm

(B) Outdoor Units U-200PZH3R8, U-224PZH3R8



Mounting hole (4-R6.5), anchor bolt: M10

Refrigerant tubing (liquid tube), flared connection (ø12.7)

Refrigerant tubing (gas tube), flared connection (ø19.05) *1

Refrigerant tubing port

Electrical wiring port (ø13)

Electrical wiring port (ø22)

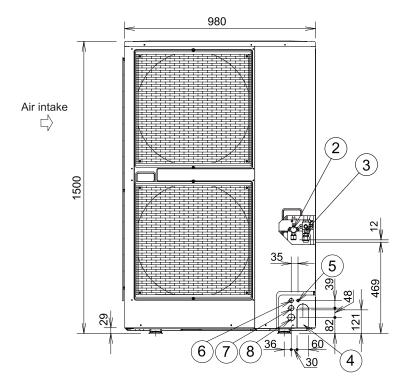
Electrical wiring port (ø27)

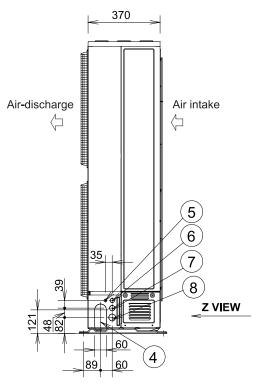
Electrical wiring port (ø35)

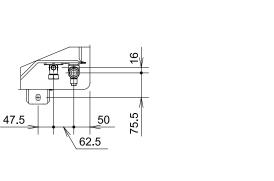
Specification for pipe connecting indoor unit to outdoor unit.

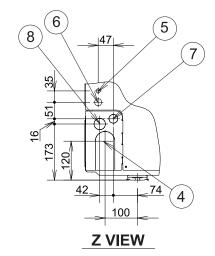
		U-200PZH3R8 U-224PZH3R8				
Tube length		Less than 30 m	Over 30 m			
Valve size	Liquid	ø12.7	ø12.7			
(Outdoor Unit)	Gas	ø19.05	ø19.05 *1			
Main tube	Liquid	ø12.7	ø12.7			
(Outdoor unit to Indoor unit)	Gas	ø19.05	ø25.4			

*1 (Gas tubing connection) While the main gas tube is ø25.4, since connecting the outdoor unit's 3-way valve requires a ø19.05 flare, please be sure to use standard accessories joint tubing A for connection (brazing).







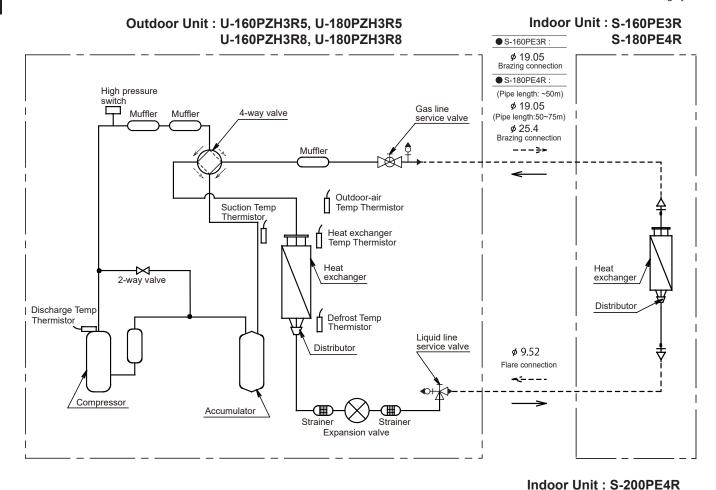


A VIEW

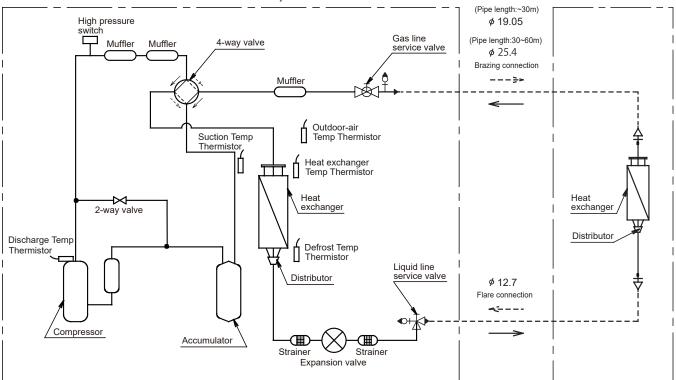
1-5. Refrigerant Flow Diagram

Cooling cycle
← - Heating cycle

S-224PE4R



Outdoor Unit: U-200PZH3R8, U-224PZH3R8



1-6. Operating Range

S-160PE3R - U-160PZH3R5, U-160PZH3R8

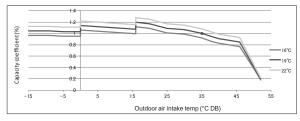
S-180PE4R - U-180PZH3R5, U-180PZH3R8

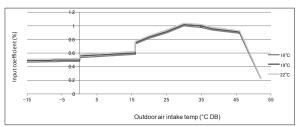
S-200PE4R - U-200PZH3R8 S-224PE4R - U-224PZH3R8

Tempe	rature °C (°F)	Indoor	Outdoor		
HEAT	Max.	30 (80.6)	24 (75.2)		
nea!	Min.	16 (60.8)	-20 (-4.0)		
COOL	Max.	32 (89.6)	52 (125.6)		
COOL	Min.	18 (64.4)	-15 (5.0)		

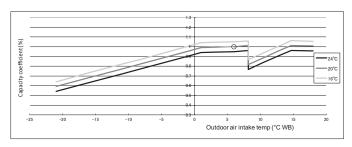
1-7. Capacity Correction Graph According to Temperature Condition U-160PZH3R5, U-160PZH3R8, U-180PZH3R5, U-180PZH3R8, U-200PZH3R8, U-224PZH3R8

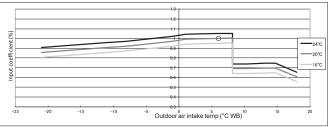
Cooling capacity ratio (maximum capacity)





Heating capacity ratio (maximum capacity)





NOTE 1

1. The graphs " ① " of the characteristics show the value under the following conditions.

Equivalent tubing length : 7.5m
Difference of elevation : 0m
Wind speed : High

2. " O" marking indicates the maximum capacity / maximum power consumption.

Maximum capacity indicates the maximum value in the parentheses of the specifications (cooling and heating capacity).

3. The characteristic of heating capacity excludes the decline of capacity when frosting (including defrost drive).

Outdoor unit heating capacity correction coefficient during of frosting/defrosting

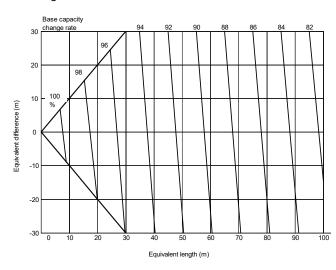
Outdoor intake air temperature °C WB	-21	-20	-19	-18	-17	-16	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3
Correction coefficient	0.880	0.880	0.880	0.880	0.880	0.880	0.880	0.880	0.880	0.880	0.880	0.880	0.880	0.880	0.880	0.880	0.860	0.830	0.830
Outdoor intake air temperature °C WB	-2	-1	0	1	2	3	4	5	6										
Correction coefficient	0.820	0.820	0.830	0.830	0.850	0.890	0.910	0.950	1.000										

To calculate the heating capacity with consideration for frosting/defrosting operation, multiply the heating capacity found from the capacity graph by the correction coefficient from the table above.

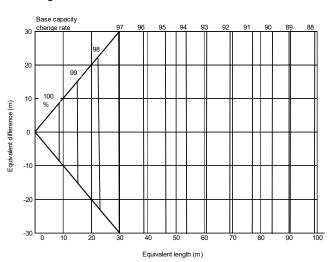
② Graph of capacity change characteristics resulting from tubing length and elevation difference (Performance correction coefficients by elevation difference of refrigerant tube length [performance change rate ÷ 100] is calculated by the following line map.)

U-160PZH3R5 / U-180PZH3R5 U-160PZH3R8 / U-180PZH3R8 U-200PZH3R8 U-224PZH3R8

<Cooling>

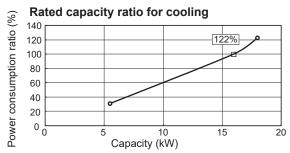


<Heating>

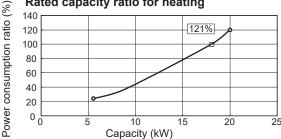


^{*}The positive side for the elevation difference indicates that the outdoor unit is installed at a higher position than the indoor units. The negative side indicates the opposite.

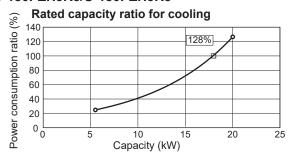
③ U-160PZH3R5/U-160PZH3R8

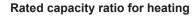


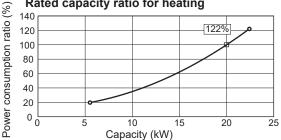
Rated capacity ratio for heating



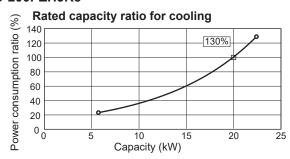
③ U-180PZH3R5/U-180PZH3R8



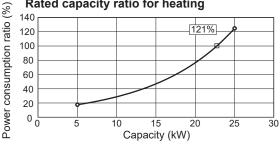




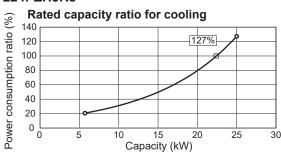
③ U-200PZH3R8



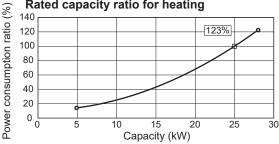
Rated capacity ratio for heating



③ U-224PZH3R8



Rated capacity ratio for heating



NOTE 2

1. The graphs " (3) " of the characteristics show the value under the following conditions.

Equivalent tubing length : 7.5m Difference of elevation : 0m : High Wind speed

- 2. " \square " marking indicates the rated capacity / rated power consumption under the JIS condition.
 - " 🔘 " marking indicates the maximum capacity / maximum power consumption under the JIS condition.
- 3. The characteristic of heating capacity excludes the decline of capacity when frosting (including defrost drive).

1-8. Noise Criterion Curves

High Static Pressure Duct Type S-160PE3R High Static Pressure Ducted Type S-180PE4R, S-200PE4R, S224PE4R

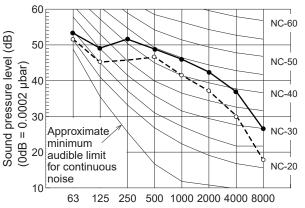
— HIGH -->- LOW

MODEL : S-160PE3R

SOUND LEVEL: HIGH 51 dB(A)

LOW 47 dB(A)

CONDITION: Under the unit 1.5 m



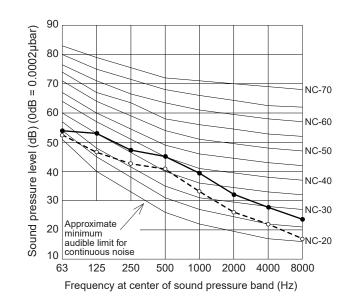
Frequency at center of sound pressure band (Hz)



SOUND LEVEL: HIGH 46 dB(A)

LOW 41 dB(A)

CONDITION: Under the unit 1.5 m

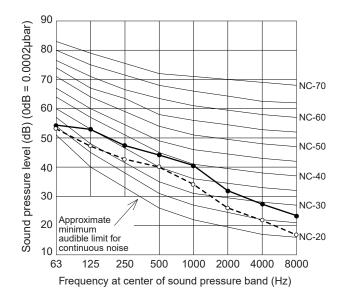


MODEL : S-200PE4R

SOUND LEVEL: HIGH 46 dB(A)

LOW 41 dB(A)

CONDITION: Under the unit 1.5 m

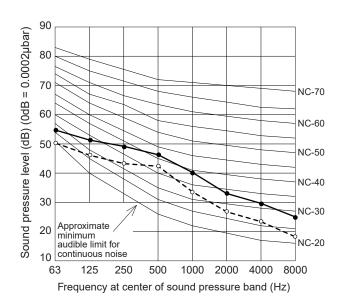


MODEL: S-224PE4R

SOUND LEVEL: HIGH 47 dB(A)

LOW 42 dB(A)

CONDITION : Under the unit 1.5 m

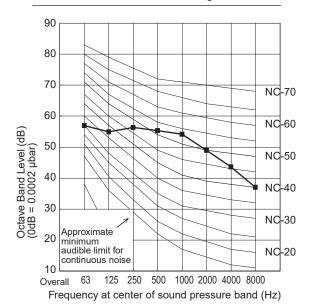


U-160PZH3R5, U-180PZH3R5 U-160PZH3R8, U-180PZH3R8, U-200PZH3R8, U-224PZH3R8

COOLING

U-160PZH3R5 : U-160PZH3R8 SOUND LEVEL : 58 dB(A)

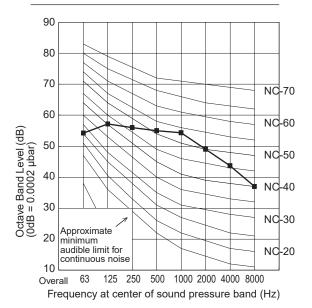
CONDITION: 1 m in front at height of 1.5 m



COOLING

U-180PZH3R5 : U-180PZH3R8 SOUND LEVEL : 58 dB(A)

CONDITION: 1 m in front at height of 1.5 m



REMARKS:

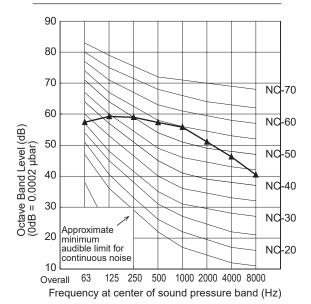
- Value obtained in the actual place where the unit is installed may be slightly higher than the values shown in this graph because of the conditions of operation, the structure of the building, the background noise and other factors.
- 2. The test results were obtained from an nechoic room.

HEATING

U-160PZH3R5
: U-160PZH3R8

SOUND LEVEL : 60dB(A)

CONDITION : 1 m in front at height of 1.5 m

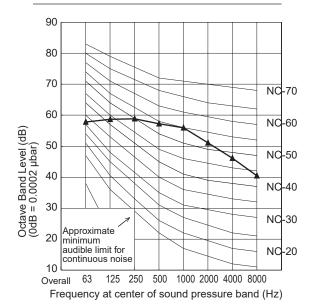


HEATING

 MODEL
 U-180PZH3R5

 SOUND LEVEL
 : 60 dB(A)

 CONDITION
 : 1 m in front at height of 1.5 m



NOTE

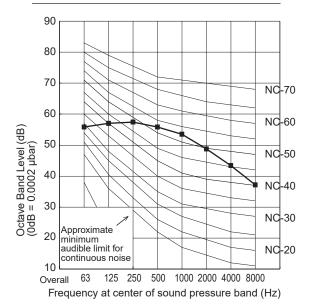
To evaluate "Noise level" the maximum number of the measured OCTAVE BAND SOUND PRESSURE LEVEL is used. Read the number on each BAND CENTER FREQUENCIES (horizontal axis) ranging from 63 Hz to 8000 Hz and select the maximum value (vertical axis) among them.

COOLING

MODEL: U-200PZH3R8

SOUND LEVEL: 58 dB(A)

CONDITION: 1 m in front at height of 1.5 m

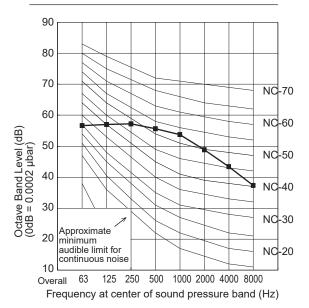


COOLING

 MODEL
 : U-224PZH3R8

 SOUND LEVEL
 : 58 dB(A)

 CONDITION
 : 1 m in front at height of 1.5 m



REMARKS:

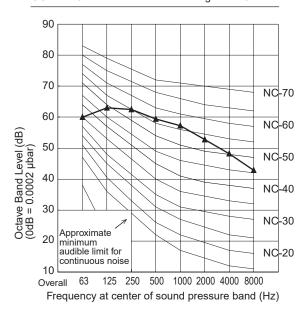
- Value obtained in the actual place where the unit is installed may be slightly higher than the values shown in this graph because of the conditions of operation, the structure of the building, the background noise and other factors.
- 2. The test results were obtained from an nechoic room.

HEATING

MODEL: U-200PZH3R8

SOUND LEVEL: 62dB(A)

CONDITION: 1 m in front at height of 1.5 m

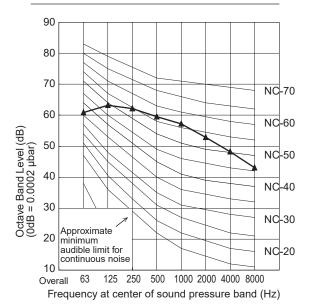


HEATING

MODEL: U-224PZH3R8

SOUND LEVEL: 62 dB(A)

CONDITION: 1 m in front at height of 1.5 m



NOTE

To evaluate "Noise level" the maximum number of the measured OCTAVE BAND SOUND PRESSURE LEVEL is used. Read the number on each BAND CENTER FREQUENCIES (horizontal axis) ranging from 63 Hz to 8000 Hz and select the maximum value (vertical axis) among them.

1-9. Installation Instructions
(A) Indoor Unit
High Static Pressure Duct Type
S-160PE3R

■ SELECTING THE INSTALLATION SITE

AVOID:

- areas where leakage of flammable gas maybe expected.
- places where large amounts of oil mist exist.
- · direct sunlight.
- locations near heat sources which may affect the performance of the unit.
- locations where external air may enter the room directly. This may cause "condensation" on the air discharge ports, causing them to spray or drip water.
- locations where the remote controller will be splashed with water or affected by dampness or humidity.
- installing the remote controller behind curtains or furniture.
- · locations where high-frequency emissions are generated.

DO:

- select an appropriate position from which every corner of the room can be uniformly cooled.
- select a location where the ceiling is strong enough to support the weight of the unit.
- make sure to install protective guards on the suction and discharge side to prevent somebody from touching the fan motor, nanoe nozzle, fan blades or heat exchanger, blades or heat exchanger.
 opening of the guard on the suction side should not exceed 50 mm.
- select a location where tubing and drain pipe have the shortest run to the outdoor unit.
- allow room for operation and maintenance as well as unrestricted air flow around the unit.
- the limitation of the tubing length between the indoor and the outdoor units should be referred to the Installation Instructions of the outdoor unit.
- allow room for mounting the remote controller about 1m off the floor, in an area that is not in direct sunlight or in the flow of cool air from the indoor unit.

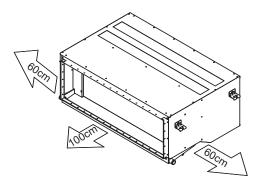


Fig. 1-11-1-1

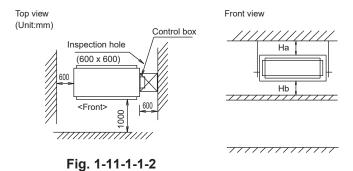
■ SELECTING THE LOCATION FOR THE INDOOR UNIT

- Required Minimum Space for Installation and Service.
- This air conditioner is usually installed above the ceiling so that the indoor unit and ducts are not visible. Only the air intake and air outlet ports are visible from below.
- The minimum space for installation and maintenance services is shown in the figure.

*It is necessary to make space for the cleaning as well as the maintenance of the drain pan and the heat exchanger. Do not put any obstacle not to cause obstructing maintenance or cleaning works.

If the place where the ceiling material cannot be removed, make an opening section below the bottom surface of the indoor unit in order to take it out.

If it is impossible to provide an opening, make space more than 300 mm between the indoor unit's bottom surface and the ceiling material.



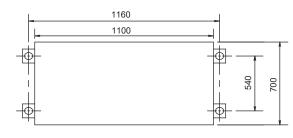
		m

TYPE	Ha *1	Hb
S-160PE3R	430	Min 20 *2

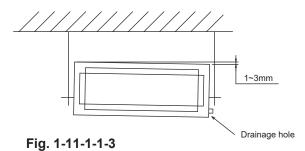
- *1 The Ha is necessary for the access to the top of the unit for repair.
- *2 A size that can handle the downward slope (1/100) of the drain pipe is required.
- * If the height from the floor to ceiling exceeds three meters, air flow distribution deteriorates and the effect is decreased.

INSTALLATION OF INDOOR UNIT

POSITION OF SUSPENSION BOLT



- Apply a joint-canvas between the unit and duct to absorb unnecessary vibration.
- Install the unit leaning to a drainage hole side as a figure for easy water drainage.



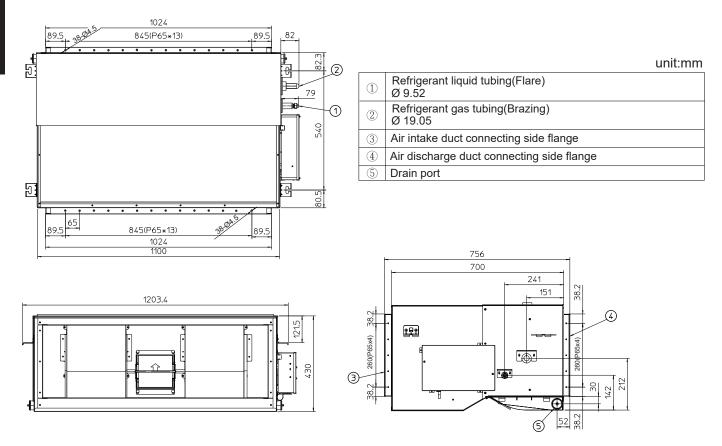


Fig. 1-11-1-4

Suspending the Indoor Unit

Depending on the ceiling type:

- Insert suspension bolts (Fig. 1-11-1-5)
- Use existing ceiling supports or construct a suitable support (Fig. 1-11-1-1-6).

↑ WARNING

It is important that you use extreme care in supporting the indoor unit inside the ceiling. Ensure that the ceiling is strong enough to support the weight of the unit. Before hanging the unit, test the strength of each attached suspension bolt.

- (1) When placing the unit inside the ceiling, determine the pitch of the suspension bolts referring to the dimensional data as shown in Figs. 1-11-1-1-2 and 1-11-1-3. Tubing must be laid and connected inside the ceiling when suspending the unit. If the ceiling is already constructed, lay the tubing into position for connection to the unit before placing the unit inside the ceiling.
- (2) Screw in the suspension bolts allowing them to protrude from the ceiling (Fig. 1-11-1-1-5). (Cut the ceiling material, if necessary.)
- (3) Thread the 3 hexagonal nuts (Field supply) and 2 washers (Supplied) onto each of the 4 suspension bolts (Figs. 1-11-1-7 and 1-11-1-8).

Use 1 nut and 1 washer for the upper part, and 2 nuts and 1 washer for the lower part, so that the unit will not fall off the suspension lugs.

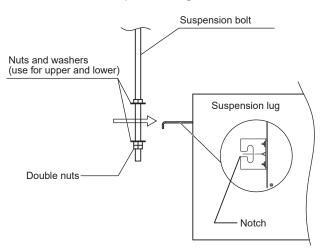


Fig.1-11-1-7

This shows an example of installation.

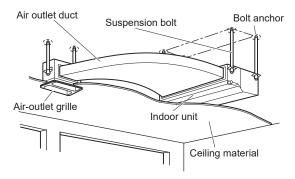


Fig.1-11-1-9

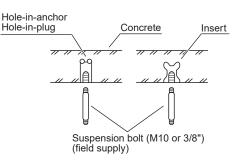


Fig.1-11-1-5

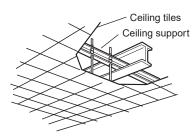


Fig.1-11-1-6

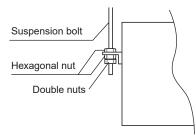
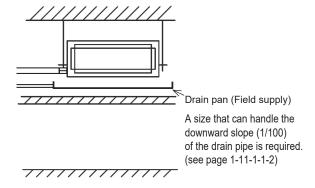


Fig.1-11-1-8

 Installing a drain pan (Field supply) could protect against condensation and leaks.

Drain pan size should be over the tube connections and any place that would condense water.



Installing the Drain Pipe

(1) Prepare standard hard PVC pipe (O.D. 32 mm) for the drain and use the supplied hose band to prevent water leaks. The PVC pipe must be purchased separately. The transparent drain part on the unit allows you to check drainage.



CAUTION

- Do not use adhesive tape at the drain connection port on the indoor unit.
- Insert the drain pipe until it contacts the socket, and then secure it tightly with the hose band.
- Do not bend the supplied drain hose, please keep it straight.
- Tighten the hose clamps so their locking nuts face upward. (Fig. 1-11-1-10)

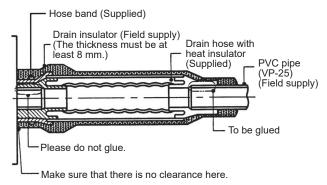


Fig.1-11-1-10

(2) After connecting the drain pipe securely, wrap the supplied packing and drain pipe insulator around the pipe, then secure it with the vinyl clamps. (Fig. 1-11-1-11)

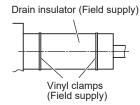


Fig.1-11-1-11

NOTE

Make sure the drain pipe has a downward gradient (1/100 or more) and that there are no water traps.



CAUTION

 Do not install an air bleeder as this may cause water to spray from the drain pipe outlet.
 (Fig. 1-11-1-12)

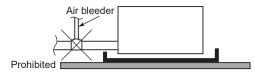


Fig.1-11-1-12

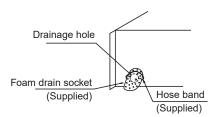


Fig.1-11-1-13

 Do not install the pipe with an upward gradient from the connection port. This will cause the drain water to flow backward and leak.
 (Fig. 1-11-1-1-14)

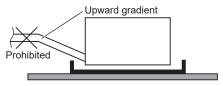


Fig.1-11-1-1-14

 Do not apply force to the piping on the unit side when connecting the drain pipe. The pipe should not be allowed to hang unsupported from its connection to the unit. Fasten the pipe to a wall, frame, or other support as close to the unit as possible.
 (Fig. 1-11-1-1-15)

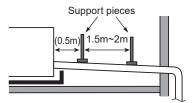
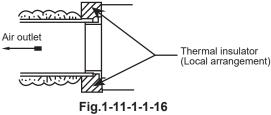


Fig.1-11-1-15

 Make sure all connecting PVC pipes are supported to the roof structure, and the drain line is installed straight.

Connecting Duct to Indoor Unit

- Install the duct (Field supply) for the Dimension of the installation hole.
 Use M5 self-tapp Screws for installation see the Fig. 1-11-1-4.
- (2) The duct connection of the air outlet needs thermal insulation.



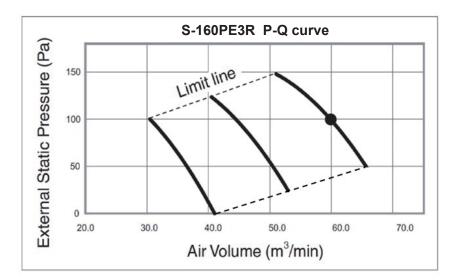
NOTE

- Select an air-intake grille with a filter at a local shop.
- To get clean air and to extend the service life of the air conditioner, an air filter must be installed in the air intake. For installation and cleaning the air filter, consult your dealer or service center.

■ Indoor Fan Performance P-Q diagram

Indoor Fan Performance

P-Q diagram



■ Installing the Refrigerant Tubing

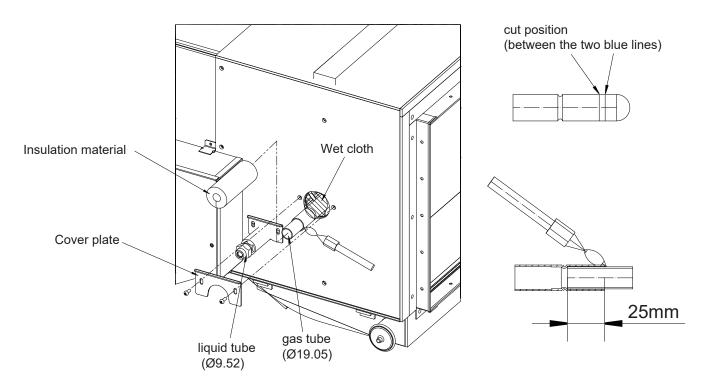
The size of the refrigerant tubing is as shown in the table below.

TYPE	S-160PE3R
Gas tube	Ø19.05(Brazing connection)
Liquid tube	Ø9.52(Flare connection) Tightening torque(approximate):32~42N · m Thickness of connecting tube:0.8mm

NOTE

To fasten the flare nuts, apply specified torque. See "HOW TO PROCESS TUBING" on page 1-11-1-1-8 for detail. Brazing for the gas tube of S-160PE3R.

- 1. Before cutting the gas tube, please loosen the flare nut of the liquid tube.
- 2. When removing the flare nut from the indoor, be sure to use 2 adjustable wrenches or spanners.
- 3. Cut off the gas tube by tube cutter. (cut position: between the two blue lines)
- When cutting the tube, take care about deformed and clear without burrs.
- 4. Brazing at the field for connecting the new tube.
- When brazing, remove the cover plate and insulation, so that a wet cloth can be placed on the tube to cool it.
- When brazing the gas tubing, cool the tubing with dampened shop clothes as you work, as shown in the figure below, to protect the unit's thermistor from the heat generated by brazing.
- When brazing, be careful not to heat the electrical component box. Doing so may cause the unit to be damaged.
- When connecting, be sure to insert the new tube at least 25mm.
- 5. After brazing for connecting the new tube, installing the cover plate and insulation back to the place.
- When installing, make sure the tube has been cooled down.



- Pipe insulation must be made after leak detection for tubing connection area was performed.
- Be sure to insulate both the gas tubing and liquid tubing.
 In addition, wrap the supplied insulation material around the tubing joints, and fasten in place with vinyl tape or other means.
 Failure to insulate the tubing may result in water leakage from condensation.
- Plug all gaps at tube through-holes in the unit with insulation or a similar substance to prevent air leakage.

HOW TO PROCESS TUBING

Must ensure mechanical connections be accessible for maintenance purposes.

Connecting the Refrigerant Tubing

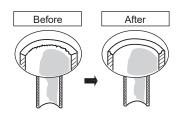
Use of the Flaring Method

Many of conventional split system air conditioners employ the flaring method to connect refrigerant tubes that run between indoor and outdoor units. In this method, the copper tubes are flared at each end and connected with flare nuts.

Flaring Procedure with a Flare Tool

- (1) Cut the copper tube to the required length with a tube cutter. It is recommended to cut approx. 30 – 50 cm longer than the tubing length you estimate.
- (2) Remove burrs at each end of the copper tubing with a tube reamer or file. This process is important and should be done carefully to make a good flare. Be sure to keep any contaminants (moisture, dirt, metal filings, etc.) from entering the tubing. (Figs. 1-11-1-17 and 1-11-1-18)

Deburring



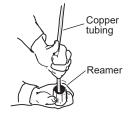


Fig. 1-11-1-17

Fig. 1-11-1-1-18

NOTE

When reaming, hold the tube end downward and be sure that no copper scraps fall into the tube. (Fig. 1-11-1-18)

- (3) Remove the flare nut from the unit and be sure to mount it on the copper tube.
- (4) Make a flare at the end of the copper tube with a flare tool. (Fig. 1-11-1-19)

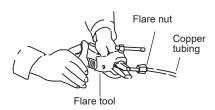


Fig. 1-11-1-19

NOTE

When flared joints are reused, the flare part shall be re-fabricated.

A good flare should have the following characteristics:

- inside surface is glossy and smooth
- edge is smooth
- tapered sides are of uniform length

Caution Before Connecting Tubes Tightly

- (1) Apply a sealing cap or water-proof tape to prevent dust or water from entering the tubes before they are used.
- (2) Be sure to apply refrigerant lubricant (ether oil) to the inside of the flare nut before making piping connections. This is effective for reducing gas leaks. (Fig. 1-11-1-20)



Apply refrigerant lubricant. Don't use any kind of leak lock or leak sealants on any flare connection as this may cause system blockages.

Fig. 1-11-1-20

(3) For proper connection, align the union tube and flare tube straight with each other, then screw on the flare nut lightly at first to obtain a smooth match. (Fig. 1-11-1-21)

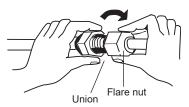


Fig. 1-11-1-21

 Adjust the shape of the liquid tube using a tube bender at the installation site and connect it to the liquid tubing side valve using a flare.

Cautions During Brazing

- Replace air inside the tube with nitrogen gas to prevent copper oxide film from forming during the brazing process. (Oxygen, carbon dioxide and Freon are not acceptable.)
- Do not allow the tubing to get too hot during braz-ing. The nitrogen gas inside the tubing may overheat, causing refrigerant system valves to become damaged. Therefore allow the tubing to cool when brazing.
- Use a reducing valve for the nitrogen cylinder.
- Do not use agents intended to prevent the format -ion of oxide film. These agents adversely affect the refrigerant and refrigerant oil, and may cause damage or malfunctions.

Connecting Tubing Between Indoor and Outdoor Units

 Tightly connect the indoor-side refrigerant tubing extended from the wall with the outdoor-side tubing.

Indoor Unit Tubing Connection

Unit : mm

Indoor unit type	S-160PE3R
Gas tube	ø19.05
Liquid tube	ø9.52

- (2) To fasten the flare nuts, apply specified torque.
- When removing the flare nuts from the tubing connections, or when tightening them after connecting the tubing, be sure to use 2 adjustable wrenches or spanners. (Fig. 1-11-1-1-22)
 If the flare nuts are over-tightened, the flare may be damaged, which could result in refrigerant leakage and cause injury or asphyxiation to room occupants.

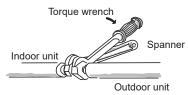


Fig.1-11-1-22

• For the flare nuts at tubing connections, be sure to use the flare nuts that were supplied with the unit, or else flare nuts for R410A, R32 (type 2). The refrigerant tubing that is used must be of the correct wall thickness as shown in the table below.

Tube diameter	Tightening torque (approximate)	Tube thickness
ø9.52 (3/8")	34 − 42 N · m (340 − 420 kgf · cm)	0.8 mm

Because the pressure is approximately 1.6 times higher than conventional refrigerant R22 pressure, the use of ordinary flare nuts (type 1) or thin-walled tubes may result in tube rupture, injury, or asphyxiation caused by refrigerant leakage.

- In order to prevent damage to the flare caused by over-tightening of the flare nuts, use the table above as a guide when tightening.
- When tightening the flare nut on the liquid tube, use an adjustable wrench with a nominal handle length of 200 mm.

Insulating the Refrigerant Tubing

Tubing Insulation

Must ensure that pipe-work shall be protected from physical damage.

- Thermal insulation must be applied to all units tubing, including distribution joint (field supply).
- * For gas tubing, the insulation material must be heat resistant to 120°C or above. For other tubing, it must be heat resistant to 80°C or above.

Insulation material thickness must be 10 mm or greater.

If the conditions inside the ceiling exceed DB 30°C and RH 70%, increase the thickness of the gas tubing insulation material by 1 step.

Two tubes arranged together

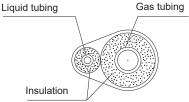


Fig.1-11-1-23

\bigwedge

CAUTION

If the exterior of the outdoor unit valves has been finished with a square duct covering, make sure you allow sufficient space to access the valves and to allow the panels to be attached and removed.

Additional Precautions For R32 Models



Ensure to do the re-flaring of pipes before connecting to units to avoid leaking.

To prevent the ingress of moisture into the joint which could have the potential to freeze and then cause leakage, the joint must be sealed with suitable silicone and insulation material. The joint should be sealed on both liquid and gas side.



Insulation material and silicone sealant. Please ensure there are no gaps where moisture can enter the joint.

Silicone Sealant must be neutral cure and ammonia free. Use of silicon containing ammonia can lead to stress corrosion on the joint and cause leakage.

Taping the flare nuts

Wind the white insulation tape around the flare nuts at the gas tube connections. Then cover up the tubing connections with the flare insulator, and fill the gap at the union with the supplied black insulation tape. Finally, fasten the insulator at both ends with the supplied vinyl clamps. (Fig. 1-11-1-1-24)

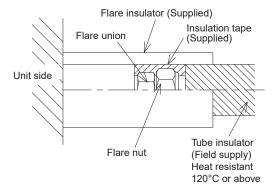


Fig.1-11-1-24

Insulation material

The material used for insulation must have good insulation characteristics, be easy to use, be age resistant, and must not easily absorb moisture.



CAUTION

After a tube has been insulated, never try to bend it into a narrow curve because it can cause the tube to break or crack.

Never grasp the drain or refrigerant connecting outlets when moving the unit.

Taping the Tubes

- (1) At this time, the refrigerant tubes (and electrical wiring if local codes permit) should be taped together with armoring tape in 1 bundle. To prevent condensation from overflowing the drain pan, keep the drain hose separate from the refrigerant tubing.
- (2) Wrap the armoring tape from the bottom of the outdoor unit to the top of the tubing where it enters the wall. As you wrap the tubing, overlap half of each previous tape turn.
- (3) Clamp the tubing bundle to the wall, using 1 clamp approx. each meter. (Fig. 1-11-1-25)

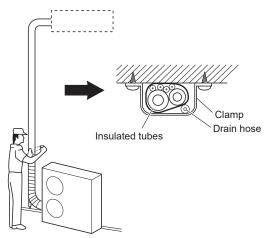


Fig.1-11-1-25

NOTE

Do not wind the armoring tape too tightly since this will decrease the heat insulation effect. Also ensure that the condensation drain hose splits away from the bundle and drips clear of the unit and the tubing.

Finishing the Installation

After finishing insulating and taping over the tubing, use sealing putty to seal off the hole in the wall to prevent rain and draft from entering. (Fig. 1-11-1-1-26)



Fig.1-11-1-26

■ HOW TO INSTALL THE TIMER REMOTE CONTROLLER OR HIGH-SPEC WIRED REMOTE CONTROLLER (OPTIONALPART)

Timer Remote Controller:CZ-RTC4
High-spec Wired Remote Controller:CZ-RTC5B
Wired Remote Controller:CZ-RTC6

NOTE

See Section "2. TEST RUN".

■ HOW TO INSTALL WIRELESS REMOTE CONTROLLER RECEIVER

NOTE

Refer to the Installation Instructions attached to the optional Wireless Remote Control Receiver.

GENERAL

This booklet briefly outlines where and how to install the air conditioning system. Please read over the entire set of instructions for the indoor and outdoor units and make sure all accessory parts listed are with the system before beginning. The installation of pipe-work shall be kept to a minimum.

WARNING	This symbol shows that this equipment uses a flammable refrigerant. If the refrigerant is leaked, together with an external ignition source, there is a possibility of ignition.
CAUTION	This symbol shows type of flammable refrigerant contained in the system.
(CAUTION	This symbol shows that the Operating Instructions should be read carefully.
EX CAUTION	This symbol shows that a service personnel should be handling this equipment with reference to the Technical Manual.
(i CAUTION	This symbol shows that there is information included in the Operating Instructions and/or Installation Instructions.

Accessories Supplied with Unit (High Static Pressure Duct)

Part Name	Figure	Q'ty	Remarks
Washer	0	8	For suspending indoor unit from ceiling
Flare insulator		2	For gas and liquid tubes
Insulating tape		2	For gas and liquid tubes flare nuts
Hose band	< <u> </u>	6	For securing drain hose
Foam drain socket		1	For drain hole (another side of drain hose)
Drain hose		1	
Operating Instructions		1	
Installation Instructions		1	

Type of Copper Tube and Insulation Material

If you wish to purchase these materials separately from a local source, you will need:

- Deoxidized annealed copper tube for refrigerant tubing.
- 2. Foamed polyethylene insulation for copper tubes as required to precise length of tubing. Wall thickness of the insulation should be not less than 8 mm.
- 3. Use insulated copper wire for field wiring. Wire size varies with the total length of wiring. See "1-10. Electrical Wiring" for details.

(CAUTION

Check local electrical codes and regulations before obtaining wire. Also, check any specified instructions or limitations.

Additional Materials Required for Installation

- 1. Refrigeration (armored) tape
- Insulated staples or clamps for connecting wire (See your local codes.)
- 3. Putty
- 4. Refrigeration tubing lubricant
- 5. Clamps or saddles to secure refrigerant tubing
- 6. Scale for weighing

Tools Required for Installation (not supplied)

- 1. Flathead screwdriver
- 2. Phillips head screwdriver
- 3. Knife or wire stripper
- 4. Tape measure
- 5. Carpenter's level
- 6. Sabre saw or key hole saw
- 7. Hacksaw
- 8. Core bits
- 9. Hammer
- 10. Drill
- 11. Tube cutter
- 12. Tube flaring tool
- 13. Torque wrench
- 14. Adjustable wrench
- 15. Reamer (for deburring)

CHECKLIST AFTER INSTALLATION WORK

Work List	No.	Content	Check ☑	Possibility of Failure & Checkpoint
Installation	1	Are the indoor units installed following the content of "■SELECTING THE INSTALLATION SITE"? (on page 1-11-1-1-1)		There is a possibility of light injure or loss of property.
	2	Is the earth leakage circuit breaker (all-pole switching function provided) installed?		
	3	Is there any wrong installation of optional parts or wrong wiring?		
	4	Was the ground wire work performed?		Power failure or short circuit may cause electric
Tubing & Wiring	5	Are there any wrong power supply wiring, wrong connection wire, wrong signal wire or loose screw?		shock or fire. Check installation work and ground wire work.
vviiing	6	Is the thickness of wire in accordance with rule?		
	7	Is the power-supply voltage equal to the nameplate of the unit?		
	8	Was the check of the airtight test, flared tube fitting and gas leakage on the welded portion performed?		If the gas leakage occurs, the unit quality not only becomes inferior but affects environment. Repair it as quickly as possible.
	9	Has the adhesive been applied to the drain connecting portion (resin portion) of the indoor unit?		The resin portion cracks after a few months and it may cause water drain.
Drain Check	10	Is there water leakage?		Since there is a possibility of water drain, repair
Official	11	Indoor unit drain pipe has a downward gradient (1/100 or more) by rule. Is the drain water flowing smoothly?		Since there is a possibility of water drain, repair the drain pipe if the drain failure or water drain occurs.
Heat Insulation	12	Was the heat insulation work at a suitable location including the flared tube fitting (refrigerant tube & drain pipe) performed properly?		The quality of unit not only becomes inferior but there is a possibility of the water drain. So, perform the heat insulation work properly.
	13	Did the abnormal sound occur?		Check if there is a fan contact or distortion of the indoor unit.
Test Run	14	Did the cool and warm airflow discharge from the indoor unit?		Check if the unit does not operate or there is a wrong tubing or wiring connection with another system.

■ APPENDIX

Care and Cleaning



/ WARNING

- For safety, be sure to turn the air conditioner off and also to disconnect the power before cleaning.
- Do not pour water on the indoor unit to clean it. This will damage the internal components and cause an electric shock hazard.

Air intake and outlet side (Indoor unit) Clean the air intake and outlet side of the indoor unit with a vacuum cleaner brush, or wipe them with a clean, soft cloth. If these parts are stained, use a clean cloth moistened with water. When cleaning the air outlet side, be careful not to force the vanes out of place.

CAUTION

- Never use solvents or harsh chemicals when cleaning the indoor unit. Do not wipe plastic parts using very hot water.
- Some metal edges and the fins are sharp and may cause injury if handled improperly; be especially careful when you clean these parts.
- The internal coil and other components of outdoor unit must be cleaned regularly. Consult your dealer or service center.

Care: After a prolonged idle period

Check the indoor and outdoor unit air intakes and outlets for blockage; if there is a blockage, remove it.

Care: Before a prolonged idle period

- Operate the fan for half a day to dry out the inside.
- Disconnect the power supply and also turn off the circuit breaker.
- Clean the air filter and replace it in its original position.
- Outdoor unit internal components must be checked and cleaned periodically. Contact your local dealer for this service.

Troubleshooting

If your air conditioner does not work properly, first check the following points before requesting service. If it still does not work properly, contact your dealer or a service center.

• Indoor unit

	Symptom	Cause
Noise	Sound like streaming water during operation or after operation.	 Sound of refrigerant liquid flowing inside unit Sound of drainage water through drain pipe
	Cracking noise during operation or when operation stops.	Cracking sound due to temperature changes of parts
Odor	Discharged air is smelled during operation.	Indoor odor components, cigarette odor and cosmetic odor accumulated in the air conditioner and its air is discharged. Unit inside is dusty. Consult your dealer.
Dewdrop	Dewdrop gets accumulated near air discharge during operation.	Indoor moisture is cooled by cool wind and accumulated by dewdrop.
Fog	Fog occurs during operation in cooling mode. (Places where large amounts of oil mist exist at restaurants.)	 Cleaning is necessary because unit inside (heat exchanger) is dirty. Consult your dealer as technical engineering is required. During defrost operation
Fan is rotatir stops.	ng for a while even though operation	 Fan rotating makes operation smoothly. Fan may sometimes rotates because of drying heat exchanger due to settings.
Wind-direction changes while operating. Wind-direction setting cannot be made. Wind-direction cannot be changed.		 When air discharge temperature is low or during defrost operation, horizontal wind flow is made automatically. Flap position is occasionally set up individually.
When wind-direction is changed, flap operates several times and stops at designated position.		When wind-direction is changed, flap operates after searching for standard position.
Dust		Dust accumulation inside indoor unit is discharged.
At the initial high-speed operation, the fan may sometimes rotate faster (for 3 to 30 minutes) than the setting speed.		This is for operation check in order to confirm whether the fan motor rotation is within use range.

Check Before Requiring Services

Symptom	Cause	Remedy
Air conditioner does not run at all although power is turned	Power failure or after power failure	Press ON/OFF operation button on remote controller again.
on.	Operation button is turned off.	 Switch on power if breaker is turned off. If breaker has been tripped, consult your dealer without turning it on.
	Fuse blow out.	If blown out, consult your dealer.
Poor cooling or heating performance.	Air intake or air discharge port of indoor and outdoor units is clogged with dust or obstacles.	Remove dust or obstruction.
	Wind speed switch is set to "Low".	Change to "Medium" or "High".
	Improper temperature settings	See "● Tips for Energy Saving" on page
	Room is exposed to direct sunlight in cooling mode.	1-11-1-15.
	Doors and /or windows are open.	
	Too much heat sources in room in cooling mode.	Use minimum heat sources and in a short time.
	Too many people in room in cooling mode.	Reduce temperature settings or change to "Medium" or "High".

If your air conditioner still does not work properly although you checked the points as described above, first stop the operation and turn off the power switch. Then contact your dealer and report the serial number and symptom. Never repair your air conditioner by yourself since it is very dangerous for you to do so.

K

Tips for Energy Saving

Avoid

- Do not block the air intake and outlet of the unit. If either is obstructed, the unit will not work well, and may be damaged.
- Do not let direct sunlight into the room. Use sunshades, blinds or curtains. If the walls and ceiling of the room are warmed by the sun, it will take longer to cool the room.

Do

• To prevent conditioned air from escaping, keep windows, doors and any other openings closed.

NOTE

Should the power fail while the unit is running

If the power supply for this unit is temporarily cut off, the unit will automatically resume operation once power is restored using the same settings before the power was interrupted.

■ Important Information Regarding The Refrigerant Used

NOTE

See "1-11. Installation Instructions of Outdoor Unit".

■ SERVICING



CAUTION

- Any qualified person who is involved with working on or breaking into a refrigerant circuit should hold a current valid certificate
 from an industry-accredited assessment authority, which authorizes their competence to handle refrigerants safely in accordance
 with an industry recognised assessment specification.
- Servicing shall only be performed as recommended by the equipment manufacturer. Maintenance and repair requiring the assistance of other skilled personnel shall be carried out under the supervision of the person competent in the use of flammable refrigerants.
- Servicing shall be performed only as recommended by the manufacturer.
- Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimised. For repair to the refrigerating system, (2) to (6) shall be completed prior to conducting work on the system.
- (1) Work shall be undertaken under a controlled procedure so as to minimise the risk of a flammable gas or vapour being present while the work is being performed.
- (2) 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.
- (3) The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially toxic or 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.
- (4) If any hot work is to be conducted on the refrigerating equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or CO2 fire extinguisher adjacent to the charging area.
- (5) No person carrying out work in relation to a refrigerating 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.
- (6) 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.
- (7) Where electrical components are being changed, they 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 actual refrigerant charge 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.
 - · Marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected.
 - Refrigerating 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.
- (8) 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. This shall be done in a safe manner to avoid possibility of sparking.
 - That no live electrical components and wiring are exposed while charging, recovering or purging the system.
 - That there is continuity of earth bonding.
- 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.
- 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 such 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.
- 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. Unspecified parts by manufacturer may result ignition of refrigerant in the atmosphere from a leak.
- The manufacturer can list in the instructions all approved auxiliary devices by the manufacturer and model number for use with the specific appliance, if those devices have a potential to become an ignition source.

5

REMOVAL AND EVACUATION



CAUTION

- 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 Oxygen free nitrogen (OFN) to render the unit safe.
- This process may need to be repeated several times.
- Compressed air or oxygen shall not be used for this task.
- Flushing shall be achieved by breaking the vacuum in the system with Oxygen free nitrogen (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 Oxygen free nitrogen (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 pipe work are to take place.
- Ensure that the outlet for the vacuum pump is not close to any ignition sources and there is ventilation available.

■ CHARGING PROCEDURES



See "1-11. Installation Instructions of Outdoor Unit".

DECOMMISSIONING



CAUTION

- 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 prior to re-use of recovered 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 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 refrigerating system unless it has been cleaned and checked.
- Electrostatic charge may accumulate and create a hazardous condition when charging or discharging the refrigerant.
 To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before charging / discharging.

■ RECOVERY



See "12. Recovery" on page 1-11-2-1-6.

High Static Pressure Ducted Type S-180PE** S-200PE** S-224PE**

■ SELECT THE INDOOR UNIT INSTALLATION LOCATION

1-1. Indoor Unit

- Provide a check port on the piping side ceiling for repair and maintenance.

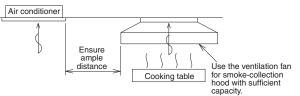
 Install the indoor unit once the following conditions are satisfied and after receiving the customer approval.
 - The indoor unit must be within a maintenance space.
 - 2. The indoor unit must be free from any obstacles in path of the air inlet and outlet, and must allow spread of air throughout the room.
- If the height from the floor to ceiling exceeds three meters, air flow distribution deteriorates and the effect is decreased.

WARNING

- The installation position must be able to support a load four times the indoor unit weight.
- The indoor unit must be away from heat and sources of steam, but avoiding installation near an entrance.
- The indoor unit must allow easy draining.
- The indoor unit must allow easy connection to the outdoor unit.
- The indoor unit must be at least 3 m away from any noise-generating equipment. The electrical wiring must be shielded with a steel conduit.
- If the power supply is subject to noise generation, add a suppressor
- Do not install the indoor unit in a laundry. Electric shocks may result.
- 10. Installation height is more than 2.5m.

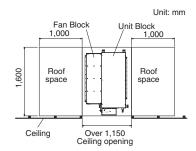
• Thoroughly study the following installation locations

- 1. In such places as restaurants and kitchens, considerable amount of oil steam and flour adhere to the fan, the fin of the heat exchanger, resulting in heat exchange reduction, spraying, dispersing of water drops, etc. In these cases, take the following actions:
- Make sure that the ventilation fan for smoke-collecting hood on a cooking table has sufficient capacity so that it draws oily steam which should not flow into the suction of the air conditioner.
- Make sure there is enough distance from the cooking room to install the air conditioner in such place where it may not suck in oily steam.
- 2. Avoid installing the air conditioner in such circumstances where cutting oil mist or iron powder exist, especially in factories, etc.
- Avoid places where inflammable gas is generated, flows-in, contaminated, or leaked.
- Avoid places where sulphurous acid gas or corrosive gas can be generated.
- 5. Avoid places near high frequency generators.



1-2. When transporting the indoor unit to the roof space through the ceiling opening

Transport is possible without separation with a ceiling opening dimension of over 500 x 1,150 mm and a roof space dimension as shown below. After transporting the unit, see section "2. HOW TO INSTALL THE INDOOR UNIT"



Criteria for ceiling opening dimension and height of roof space

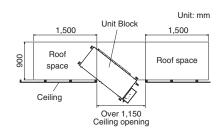
Width of ceiling opening	Height of roof space	Necessity of separating indoor unit
1,150	1,600	Unnecessary
1,150	900	Necessary
700	1,600	Necessary

Unit: mm

It is possible to separate the indoor unit into Fan Block and Unit Block. Separated transport if necessary

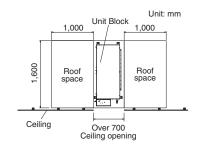
<Case 1>

If a ceiling opening dimension is over 500 × 1,150 mm and a roof space dimension is shown below, the indoor unit can be separated to fit through the space. For separating procedure, see section "1-3. How to separate the indoor unit".



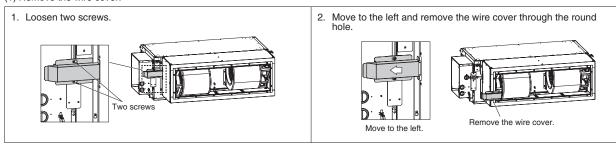
<Case 2>

If a ceiling opening dimension is over 500 × 700 mm and a roof space dimension is shown below, the indoor unit can be separated to fit through the space. For separating procedure, see section "1-3. How to separate the indoor unit".

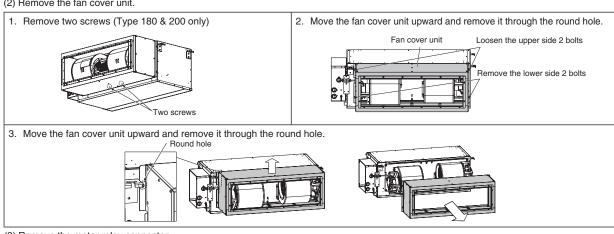


1-3. How to separate the indoor unit

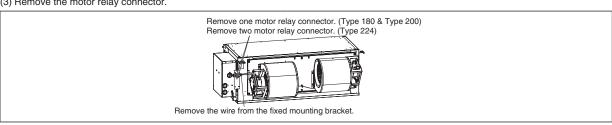
(1) Remove the wire cover.



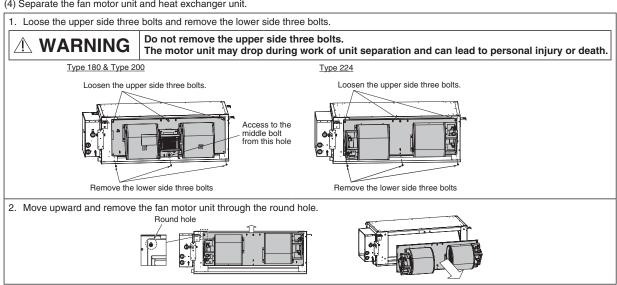
(2) Remove the fan cover unit.



(3) Remove the motor relay connector.

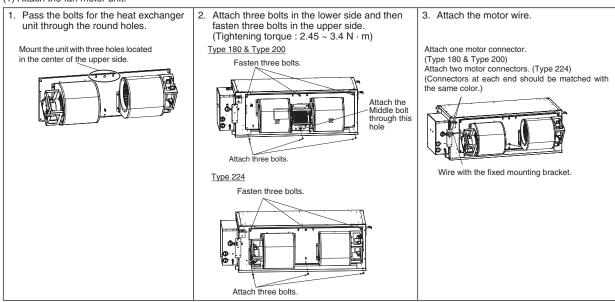


(4) Separate the fan motor unit and heat exchanger unit.



1-4. How to assemble the indoor unit

(1) Attach the fan motor unit.



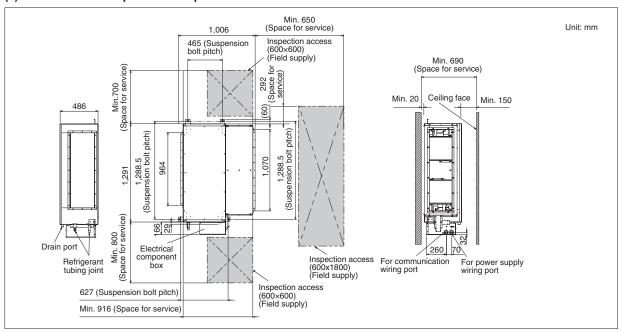
(2) Attach the fan cover unit and wire cover.

Attach the fan cover unit and wire cover in reverse order of separating unit.

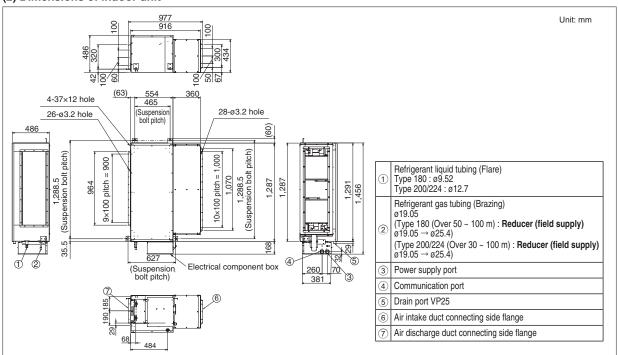
■ HOW TO INSTALL THE INDOOR UNIT

2-1. Required Minimum Space for Installation and Service

(1) Dimensions of suspension bolt pitch and unit



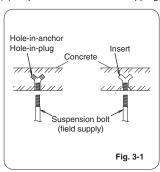
(2) Dimensions of indoor unit

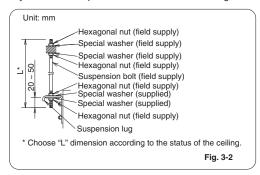


2-2. Suspending the Indoor Unit

Depending on the ceiling type:

- (1) Check the suspension bolt pitch.(2) Ensure that the ceiling is strong enough to support the weight of the unit.(3) To prevent the unit from dropping, firmly fasten the suspension bolts as shown in the figure below.





NOTE

Suspension bolt M10 or 3/8" (field supply)

WARNING

It is important that you use extreme care in supporting the indoor unit inside the ceiling.

Ensure that the ceiling is strong enough to support the weight of

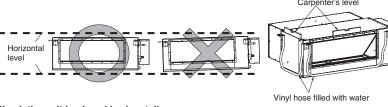
Before suspending the unit, test the strength of each attached suspension bolt.

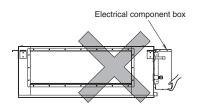
- (1) When placing the unit inside the ceiling, determine the pitch of the suspension bolts referring to the dimensional data given previously. Tubing must be laid and connected inside the ceiling when suspending the unit.

 If the ceiling is already constructed, lay the tubing into position for connection to the unit before placing the unit inside the ceiling.

 (2) Screw in the suspension bolts allowing them to protrude from the ceiling as shown in Fig. 3-1.
- (Cut the ceiling material, if necessary.)
 (3) Suspend and fix the indoor unit using the 2 hexagonal nuts (field supply) and special washers (supplied with the unit) as shown in Fig. 3-2.







Check the unit is placed horizontally.

Make sure the unit is installed level using a level or a vinyl hose filled with water.

In using a vinyl hose instead of a level, adjust the top surface of the unit to the surface of the water at both ends of the vinyl hose and make horizontal adjustment on all 4 corners of the unit.

If the air discharge side of the unit is installed downward, splashing water or water leak may occur. Also, the dust may accumulate inside the drain pan caused by draining residual water. When lifting the unit, do not attempt to hold the electrical component box in hand.

2-3. Installing the Refrigerant Tubing

The size of the refrigerant tubing is as shown in the table below.

Table 2-1

Туре	180	200 / 224
Gas tube	ø19.05 (~ 50 m) ø25.4 (Over 50 ~ 100 m) (Brazing connection)	ø19.05 (~ 30 m) ø25.4 (Over 30 ~ 100 m) (Brazing connection)
ø9.52 (Flare connection) Liquid tube Tightening torque (approximate): 34 ~ 42 N • m Thickness of connecting tube: 0.8 mm		ø12.7 (Flare connection) Tightening torque (approximate) : 49 ∼ 55 N • m Thickness of connecting tube : 0.8 mm

NOTE

To fasten the flare nuts, apply specified torque.

- When brazing, must be cool the pipe by wet cloths after removing the insulation tube and the cover plate.
- When brazing the gas tubing, cool the tubing with dampened shopcloths as you work, as shown in the figure below, to protect the unit's thermistor from the heat generated by brazing.

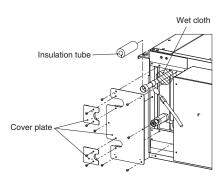
 When brazing, be careful not to heat the electrical component box. Doing so may cause the
- unit to be damaged.

 Pipe insulation must be made after leak detection for tubing connection area was

- performed.

 Be sure to insulate both the gas tubing and liquid tubing.

 In addition, wrap the insulation material (field supply) around the tubing joints, and fasten in place with vinyl tape or other means.
 Failure to insulate the tubing may result in water leakage from condensation.
 Plug all gaps at tube through-holes in the unit with insulation or a similar substance to



2-4. Installing the Drain Piping

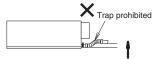
2-4-1. Before Performing the Installation Drain Piping

(1) (Prepare standard hard PVC pipe (O.D. 32 mm) for the drain and use the supplied drain socket to prevent water leaks.

The PVC pipe must be purchased separately.
When doing this, apply adhesive for the PVC pipe at the connection point.
See section "2-4-2. Installing the Drain Pipe".

(2) Limitations of Drain Hose Connection

Do not make a trap in the middle of the CAUTION supplied drain pipe. Doing so will cause abnormal sound.



The drain pipe with a trap should be installed away from the indoor unit.

Do not attach any air purge equipment.

If attached, drain water may result in splashing out of the drain pipe.

(6) When the drain piping is completed, perform the water leak test and check for a

If detected, it may result in water leakage or condensation.

(7) When the drain piping is completed, perform the drainage test if the water drains

smoothly.

If not draining smoothly, it may result in water leakage or condensation.

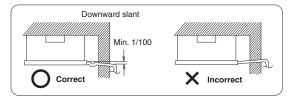
(8) When the drain piping work is finished securely, wrap the insulation material around the indoor side drain pipe.

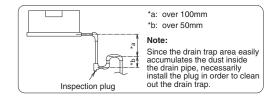
At this time, do not wrap together with the refrigerant tubing.

If wraped together, the drain pipe is lifted and water drainage will not be

Consequently, the water comes out of the drain pan and it can lead to water

(3) Ensure the drain pipe has a downward slant (1/100 or more).





2-4-2. Installing the Drain Pipe

⚠ CAUTION

(1) How to Connect Drain Port and Drain Hose

First insert the supplied hose band into the drain port pipe. Then make sure the head of the screw is facing toward a technical engineer when placing the screw of the hose band at an upward angle.

Insert the soft PVC socket of the supplied drain hose to the drain port pipe.

Never apply the adhesive to the both ends of the soft PVC socket and the drain port pipe.

Insert the drain hose to the point where there is a difference in level as shown in the figure below and fasten it with the hose band 5 mm away from that position.

Tightening torque must be 2.5 ~ 3.4 N•m.

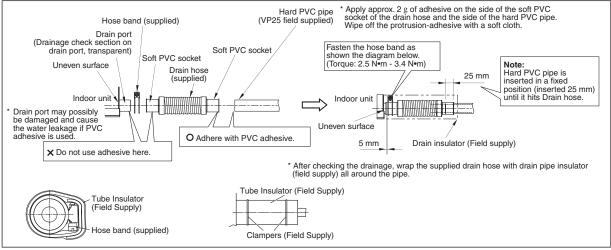
Tightening position of the hose band must be upward.

(2) How to Install the Drain Pipe

Connect the hard PVC pipe (O.D. 32 mm) to the side of the soft PVC socket of the drain hose.

Apply approx. 2 g of adhesive on the side of the soft PVC socket of the drain hose and the side of the hard PVC pipe.

Do not apply force to the drain port when connecting the drain pipe. Install and fix it near the indoor unit as close as possible.



(3) Insulating the Drain Hose

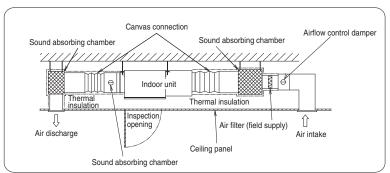
Selection of heat insulation materials for drain hose (Drain insulator). When using the heat insulation materials (field supply), kindly use the same size and performance as refrigerant tubes. Check for its size as below table.

Insulation Material	Thermal insulation thickness
Polyethylene foam (same as heat insulators for refrigerant tubes)	Insulation thickness must 10mm or greater

2-5. Caution for Ducting Work

- This unit has high static pressure.
 - In case of small pressure resistance (for instance, a short duct), install an airflow control damper (field supply) for adjusting airflow volume as airflow volume / airflow noise increases.

 If the air conditioner is to be installed in a room such as an office or meeting room which needs a low sound level, provide a supply and
- If the air conditioner is to be installed in a room such as an office or meeting room which needs a low sound level, provide a supply and return sound absorption chamber with an acoustic liner.
- Use a flexible canvas connection or vibration isolation hanger (field supply) to break transmission of mechanical vibration of the unit.



⚠ CAUTION

- Use incombustible duct materials.
- Use thermal insulation to prevent duct condensation.
- An air filter (field supply) must be installed at the air intake side.

 If not installed, the heat exchanger will get dirty.

 If not installed, the heat exchanger will get dirty.

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 If not installed, the heat exchanger will get dirty.

 If not installed, the heat exchanger will get dirty.
 - If not installed, the heat exchanger will get dirty and the unit will reduce the quality.
- Obtain and install an air filter (field supply)
 which can easily wash away the dust by
 lukewarm, soapy water or suck up with a
 vacuum cleaner.
- Clean the air filter periodically to collect dust and other particles from the air.
- Use duct static pressure within a range of specification value.

■ ELECTRICAL WIRING

♠ WARNING

As to main power source and cable size of outdoor unit, read the installation manual attached to the outdoor unit.

3-1. General Precautions on Wiring

This air conditioner must be installed in accordance with national wiring regulations.

• Cables connected to indoor unit must be approved polychloroprene sheathed type 60245 IEC 57 or heavier.

• The units must be connected to the supply cables for fixed wiring by qualified technician. Circuit breaker must be incorporated in the fixed wiring in accordance with the national wiring regulations. The circuit breaker must be approved, suitable for the voltage and current ratings of equipment and have a contact separation by 3mm in all poles.

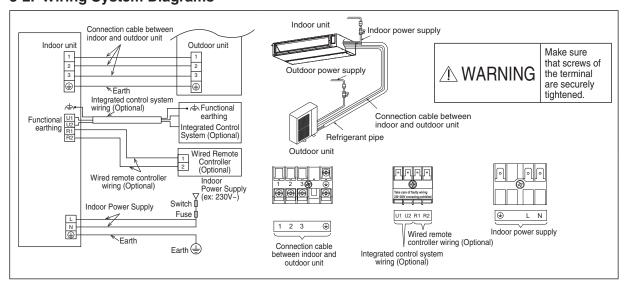
When the supply cable is damaged, it must be replaced by qualified technician.

- Be sure to install a current leakage breaker, main switch and fuse to the main power supply, otherwise electric shocks may result.
- Be sure to connect the unit to secure earth connection.
 If the earthing work is not carried out properly, electric shocks may result.
- Wiring shall be connected securely by using specified cables and fix them securely so that external force of the cables may not transfer to the terminal connection section.
 Imperfect connection and fixing leads to fire, etc.
- (1) Select a power source that is capable of supplying the current required by the air conditioner.
- (2) Feed the power source to the unit via a distribution switch board designed for this purpose, the switch should disconnect all poles with a contact separation of at least 3 mm.
- (3) Always ground the air conditioner with a grounding wire and screw to meet the LOCAL REGULATIONS.
- (4) Be sure to connect the indoor/outdoor unit connection wires correctly to terminal board.
- (5) Be sure to turn off the main power before installing and connecting the remote controller.
- (6) Each wiring connection must be done in accordance with the wiring system diagram. Wrong wiring may cause the wires overloaded and overheated.

NOTE

If momentarily turning on the power supply for both the indoor and outdoor units, do not turn the power off after at least 1 minute has passed. (For the system's automatic setting.) Turning off the power supply on the way may cause an abnormal operation.

3-2. Wiring System Diagrams



3-3. Recommended Wire Length and Wire Diameter for Power Supply System

Indoor unit

	Power Supply Cable					Time Delay					
Model	Power	Min. Wire Size		Recommended Wire Length and Wire Diameter for Power Supply Cable				Fuse or Circuit			
	Supply	(mm²)	Wire Size (mm²)	Max. Length (m)	Wire Size (mm²)	Max. Length (m)	Wire Size (mm²)	Max. Length (m)	Wire Size (mm²)	Max. Length (m)	Capacity (A)
S-180PE4R	230-240V~	1.5	1.5	27	2.5	45	4.0	72	6.0	108	10
S-200PE4R	230-240V~	1.5	1.5	26	2.5	44	4.0	71	6.0	106	10
S-224PE4R	230-240V~	1.5	1.5	24	2.5	40	4.0	64	6.0	96	10

Connection cable between Indoor and Outdoor Unit

Wire Size	Length
2.5mm ²	Max.100m

Wired Remote Controller

Wire Size	Length	
0.75mm² (AWG#18)	Max. 500m	

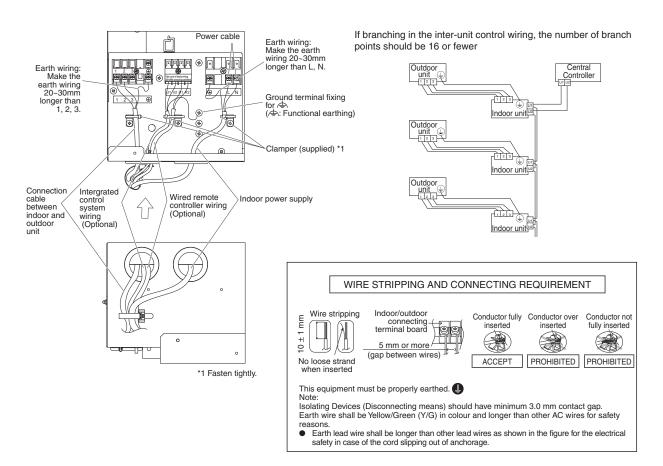
Wired Remote Controller (Optional)

Use shielded wires for integrated control system wiring and ground the shield on both sides, otherwise misoperation from noise may occur. Connect wiring as shown in Section 3-2 Wiring System Diagrams.



NOTE

For Optional Parts connecting wiring size, refer to Installation Manual of the Optional Parts



ົລ Spanner

■ REFRIGERANT PIPING

Must ensure mechanical connections be accessible for maintenance purposes. The liquid tubing side is connected by a flare nut, and the gas tubing side is connected by brazing.

4-1. Connecting the Refrigerant Tubing

Cautions During Brazing

Replace air inside the tube with nitrogen gas to prevent copper oxide film from forming during the brazing process. (Oxygen, carbon dioxide and Freon are not acceptable.)

Do not allow the tubing to get too hot during brazing. The nitrogen gas inside the tubing may overheat, causing refrigerant system valves to become damaged. Therefore allow the tubing to cool when brazing.

Use a reducing valve for the nitrogen cylinder.

Do not use agents intended to prevent the formation of oxide film. These agents adversely affect the refrigerant and refrigerant oil, and may cause damage or malfunctions.

4-2. Connecting Tubing Between Indoor and Outdoor Units

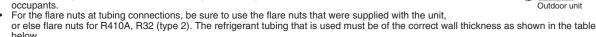
(1) Tightly connect the indoor-side refrigerant tubing extended from the wall with the outdoor-side tubing.

Indoor Unit Tubing Connection

Indoor unit type	180	200 / 224	
Gas tubing (mm)	ø19.05 (~ 50 m) ø25.4 (Over 50 ~ 100 m)	ø19.05 (~ 30 m) ø25.4 (Over 30 ~ 100 m)	
Liquid tubing (mm)	ø9.52	ø12.7	

(2) To fasten the flare nuts, apply specified torque.

When removing the flare nuts from the tubing connections, or when tightening them after connecting the tubing, be sure to use a torque wrench and a spanner. If the flare nuts are over-tightened, the flare may be damaged, which could result in refrigerant leakage and cause injury or asphyxiation to room occupants.



Tube diameter	Flare nut tightening torque (approximate)	Min. tube thickness
ø9.52 (3/8")	38±4 N•m {380±40 kgf•m}	0.8 mm
ø12.7 (1/2")	52± 3 N•m {520 ±30 kgf•cm}	0.8 mm
ø19.05 (6/8")	110± 10 N•m {1100 ±100 kgf•cm}	1.0 mm
ø25.4 (1")	-	1.0 mm

- Because the pressure is approximately 1.6 times higher than conventional refrigerant R22 pressure, the use of ordinary flare nuts (type 1)
- or thin-walled tubes may result in tube rupture, injury, or asphyxiation caused by refrigerant leakage.

 In order to prevent damage to the flare caused by over-tightening of the flare nuts, use the table above as a guide when tightening. When tightening the flare nut on the liquid tube, use an adjustable wrench with a nominal handle length of 200 mm.

4-3. Insulating the Refrigerant

Be sure to perform heat insulation on the drain, liquid and gas piping. Imperfection in heat insulation work leads to water leakage

- (1) Selection of heat insulation materials for refrigerant tube. When using heat insulation materials (field supply), kindly check for its sizes and performance.

- Material for insulation material: Polyethylene foam. Heat transfer rate: less than 0.051W/m·K. Material withstand temperature: 120°C or above (gas tubing).

- For other tubing 80°C or above Must be easy to use, age resistance and not easily absorb moisture.
- Be sure to match the below insulation material size with tube sizes.

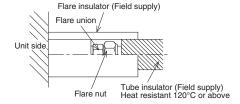
Piping size, mm (In) Thermal insulation size (I.D.)		Thermal insulation Thickness	
9.52 (3/8")	12 ~ 15 mm		
12.7 (1/2")	14 ~ 16 mm	Institution this language was the 10-rays or supplied	
19.05 (3/4")	20 ~ 24 mm	Insulation thickness must be 10mm or greater	
ø25.4 (1")	25 ~ 28 mm		

(2) Taping the flare nuts

- Wind the white insulating tape around the flare nuts at the gas tube connection.
- Then cover up the tubing connection with tube insulator (field supply) and fill in the
- gap with black insulation tape. Finally fasten with clampers (field supply)

NOTE

If noise bothers you from the area between indoor and outdoor units' connection pipes, it is effective to wind the soundproofing materials (field supply) to reduce noise.



⚠ CAUTION

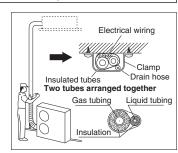
After a tube has been insulated, never try to bend it into a narrow curve because it can cause the tube to break or crack. Never grasp the drain or refrigerant connecting outlets when moving the unit.

(3) Taping the tubes

- Refrigerant tubes (and electrical wiring if local permit) should be taped together with armouring tape in 1 bundle. Keep the drain hose separate from refrigerant tube to prevent condensation.
- Wrap the armouring tape from bottom of the outdoor unit to the tubing here it enters the wall. Overlap half of each previous turn.

 Clamp the tubing to the wall, using 1 clamp approx. per each meter apart.

Do not wind the armouring tape too tightly since this will decrease the heat insulation effect. Also ensure that the condensation drain hose splits away from the bundle and drips clear of the unit and the tubing.





If the exterior of the outdoor unit valves has been finished with a square Duct covering, make sure you allow sufficient space to access the valves and to allow the panels to be attached and removed.

(4) Finishing the Installation

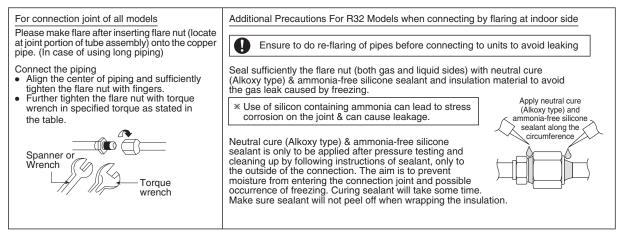
- After finishing insulating and taping over the tubing, use sealing putty to seal off the hole in the wall to prevent rain and draft from
- (5) Precautions in high humidity circumstances
- This air-conditioner has been tested according to the "JIS Standard Conditions with Mist" and have been confirmed that there are no faults. However, if it is operated for a long time in high humid atmosphere (dew point temperature: more than 23 °C), water drops are liable to fall. In this case, add heat insulation material according to the following procedures:

 1. Heat insulation material to be prepared. Adiabatic glass wool with thickness 10~20mm

 - 2. Stick the wool on all air-conditioners that are located in the ceiling atmosphere
 - 3. In addition to the normal heat insulation (thickness: more than 10mm) refrigerant piping, add a further of 10~30 mm thickness material.



4-4. Additional Precautions for R32 models



- (1) Vacuum Drying
- After completing the piping connection, execute vacuum drying for the connecting piping and the indoor unit. The vacuum drying must be carried out by using the service ports of both the liquid and gas side valves.

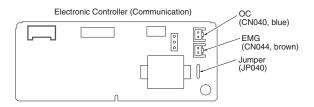
■ HOW TO INSTALL THE TIMER REMOTE CONTROLLER OR HIGH-SPEC WIRED REMOTE **CONTROLLER (OPTIONAL PART)**

Refer to the Installation Instructions attached to the optional Timer Remote Controller or optional High-spec Wired Remote Controller.

■ PRECAUTIONS ON TEST RUN

- Request that the customer be present when the test run is performed. At this time, explain the operation manual and have the customer perform the actual steps.
- Check that the 230 –240 VAC power is not connected to the U1 & U2 terminal board terminal.
 - If 230 -240 VAC is accidentally applied, the Fuse on indoor unit Electronic Controller (Communication) will blow in order to protect

In this case, recover the connection by disconnect 2P connector wires that originally connected to the indoor unit Electronic Controller (Communication) OC connector and shift the connector wires to EMG connector on same indoor unit Electronic Controller (Communication). If operation is still not possible after shift to EMG connector, cut the jumper JP040 on the same indoor unit Electronic Controller (Communication).



■ EXTERNAL STATIC PRESSURE SETTING

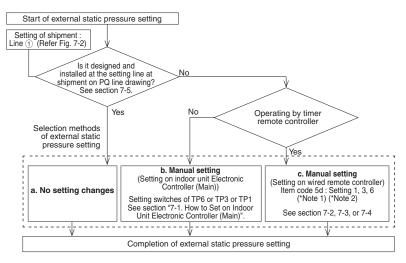
Choose one of the methods (selection of "a", "b", "c" within the range of dotted line as shown in the flowchart below) and make settings.

a. No setting changes: When using as it is factory preset at shipment.

(If resetting after external static pressure setting once, it might be different from factory preset.)

- b. Manual setting (on indoor unit Electronic Controller (Main)): This is static pressure setting excepting factory preset at shipment. Dip switch select method.
- c. Manual setting (by wired remote controller): Static pressure setting excepting factory preset at shipment.

Flow of External Static Pressure



NOTE

- (1) Refer to Tables 7-2, 7-3, 7-4 and Fig. 7-2 for details on the relationship between the value of item code "5d" and the external static pressure.
- (When set in group control (connecting multiple indoor units with one timer remote controller), set each indoor unit

When amending the setting after selecting [b. Manual setting] (due to airflow path changes, etc.), it is necessary to cancel [b. Manual setting] (switching OFF positions). When [b. Manual setting] has not been cancelled, [c. Manual setting] will be activated if selected, but [b. Manual setting] takes precedence when the power is switched back on after power outages, etc.

CAUTION

 Make sure the external static pressure is in a range of specifications.

Then proceed the external static pressure setting. Improper settings can cause noise, a shortage of airflow volume and water leakage.

Refer to Fig. 7-2 for the external static pressure setting range

 Be sure to set the [External Static Pressure Setting] once again after amending the airflow path for the duct or air outlet after setting the external static pressure.

7-1. How to Set on Indoor Unit Electronic Controller (Main)

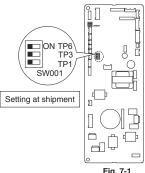
- (1) Turn off the power breaker to halt the supply of electricity to the indoor unit Electronic Controller (Main).
- (2) Open the lid of the electrical component box and confirm the location where the Select switch on the indoor unit Electronic Controller (Main) is placed. (Fig. 7-1)

 (3) Set the On/Off switches in the Off position which are now set in the On position.
- Select the positions of the Select SW001 switches respectively to make the desired external static pressure settings referring to the Table 7-1.

Table 7-1 External static pressure SW setting

External static press	External static pressure at the time of rated airflow volume			SW001	
180	200	224	TP6	TP3	TP1
170Pa	180Pa	200Pa	ON L 1	2	3
130Pa	130Pa	130Pa	1	ON 2	3
60Pa	75Pa	75Pa	1	2	ON 3

Indoor Unit Electronic Controller (Main)



7-2. Operating the Timer Remote Controller (CZ-RTC4)

How to set the external static pressure

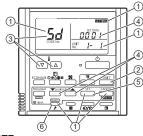
- (1) Press and hold down the ___, __ and __ buttons simultaneously for 4 or more seconds. (SETTING the Unit No., Item Code and Detailed Data will blink on the LCD display.)
- The indoor unit numbers in the group control will be sequentially displayed whenever the Unit Select button is pressed Only the fan motor for the selected indoor unit will operate during this time.
- (3) Specify the "5d" item code by pressing the \bigcirc / \bigcirc buttons for the temperature setting buttons and confirm the values. ("🖫 "set at shipment) (4) Press the \bigcirc / \bigcirc buttons for the time to amend the values for the set data.
- Refer to Table 7-2 and Fig. 7-2 and select a value "DD D6", "DD D3" or "DD D1".
- (5) Press the button.

The display will stop blinking and remain illuminated.

(6) Press the ___ button. The fan motor will stop operating and the LCD display will return to the normal stop mode.

Table 7-2 Setting the external static pressure

	Item code			
180	200	224	5 <i>d</i>	
External static pr	External static pressure of the rated air flow volume			
170 Pa	180 Pa	200 Pa	00 06	
130 Pa	130 Pa	130 Pa	00 03	
60 Pa	75 Pa	75 Pa	00 0 1	



NOTE:

Failure to set this parameter may result in decreased airflow and condensation.

7-3. Operating the High-spec Wired Remote Controller (CZ-RTC5B)

How to set the external static pressure



- (1) Keep pressing the 💍 , 🖵 and buttons simultaneously 0. ECONAVI info. for 4 or more seconds. The "Maintenance func" screen appears on the LCD display.
- (2) Press the ▼ or ▲ button to see each menu. If you wish to see the next screen instantly, press the or button. Select "8. Detailed settings" on the LCD display and press the button.

The "Detailed settings" screen appears on the LCD display. Select the "Unit no." by pressing the ▼ or ▲ button for changes.

(3) Select the "Code no." by pressing the or button. Change the "Code no." to "5D" by pressing the ▼ or ▲ button (or keeping it pressed).



Detailed se	20:30 (THU)	
Unit no. Code no.		Set data
3-1 10		0006
\$ Sel. →	Next	
Detailed se	ttings	20:30 (THU)
Unit no. Code no.		Set data
3-1 5D		0001
♠ Col A		

- (4) Select the "Set data" by pressing Table 7-3 Setting the external the or button.
 - Select one of the "Set data" among "0006", "0003" or "0001" according to the desired external static pressure setting by pressing the 🔻 or 🛕

(See Table 7-3 and Fig. 7-2.) Then press the | button.

button.

(5) Select the "Unit no." by pressing the or button and press the 💍 button. The "Exit detailed settings and restart?" (Detailed setting-end) screen appears on the LCD display.

Select "YES" and press the button.

	Item code		
180			
External the rated	5 <i>d</i>		
170 Pa	00 06		
130 Pa	00 03		
60 Pa	75 Pa	75 Pa	0001



7-4. Operating the Wired Remote Controller (CZ-RTC6 series)

Stop the system before performing these steps. How to set the external static pressure

(1) Keep pressing the ≡, and buttons simultaneously for 4 or more seconds. The "Maintenance func" screen appears on the LCD display. Maintenance func



(2) Press the vor button to see each menu. Select "Detailed settings" on the LCD display and press the **T** button.





The "Detailed settings" screen appears on the LCD display.

(3) Select the "Unit no." by pressing the vor no.

After selecting "Unit no.", press the 🔲 button and proceed to Step 4.

If the button is pressed, proceed to Step 6.

(4) Keep pressing the __ button for 2 seconds or more during selecting "Code no.".

Change the "Code no." one digit at a time so that it becomes [00005D] along with the following procedures.

Change the value by pressing the vor <

After changing the value, press the — button and set the next digit.

Change the value by pressing the vor button.

After changing the value, press the — button and set the next digit.

Change the value by pressing the

✓ or

✓ button.

After changing all digits, press the 🗾 button and proceed to Step 5.





Unit no.

000010

0005



Code no

Set data







(5) Select one of the "Set data" among "0006", "0003" or "0001" according to the desired external static pressure setting by pressing the or button. (See Table 7-4.) After selecting "Set data", press the — button. (If setting continuously, follow the procedures from **Fig. A**.)

If you wish to change the selected indoor unit or finish setting, press the button twice (the display returns to Step 3).



Table 7-4 Setting the external static pressure

	Item code		
180	200	224	5 <i>d</i>
External static p	External static pressure of the rated air flow volume		
170 Pa	180 Pa	200 Pa	00 06
130 Pa	130 Pa	130 Pa	00 03
60 Pa	75 Pa	75 Pa	0001

NOTE

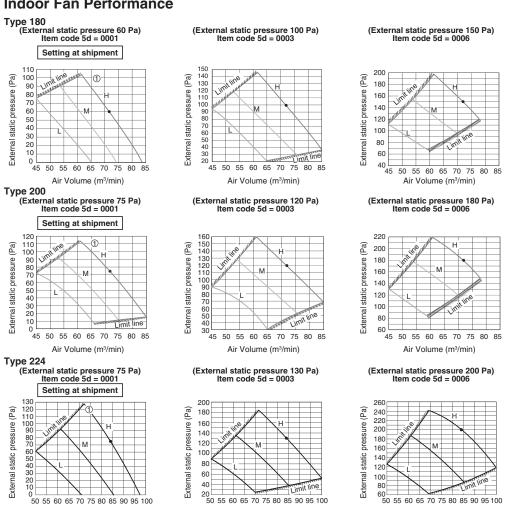
Failure to set this parameter may result in decreased airflow and condensation.

(6) If the button is pressed under the display Step 3, the following display (Detailed settingend screen) appears. Then select "YES" by pressing the vor button and press the button.



7-5. Indoor Fan Performance

Air Volume (m³/min)



20 50 55 60 65 70 75 80 85 90 95 100

Air Volume (m³/min)

Fig. 7-2

50 55 60 65 70 75 80 85 90 95 100

Air Volume (m³/min)

APPENDIX

■ Name of Parts **High Static Pressure Ducted Electrical Component Box** Air intake side duct flange (rear) Electronic Controller (FM Power) Electrical component box Controlle (Main) Air outlet side duct flange Electronic Controller

■ Care and Cleaning

⚠ WARNING

- Engage authorized dealer or specialist for cleaning.
- For safety, be sure to turn the air conditioner off and also to disconnect the
- power before cleaning.

 Do not pour water on the indoor unit to clean it. This will damage the internal components and cause an electric shock hazard.

Air intake and outlet side (Indoor unit)

Clean the air intake and outlet side of the indoor unit with a vacuum cleaner brush, or wipe them with a clean, soft cloth.

If these parts are stained, use a clean cloth moistened with water. When cleaning the air outlet side, be careful not to force the vanes out of place.

⚠ CAUTION

- Never use solvents or harsh chemicals when cleaning the indoor unit. Do not
- wipe plastic parts using very hot water. Some metal edges and the fins are sharp and may cause injury if handled improperly; be especially careful when you clean these parts.
 The internal coil and other components of
- outdoor unit must be cleaned regularly. Consult your dealer or service center.

Air filter

In case of Installing the Duct (field supply)

(Depends on filter's specifications) Period

When cleaning the air filter, consult your dealer or service center.

(Communication)



- Certain metal edges and the condenser fins are sharp and may cause injury if handled improperly; special care should be taken when you clean these parts.

 The internal coil and other components must also be cleaned periodically. Consult your dealer or
- service center.

Care: After a prolonged idle period

Check the indoor and outdoor unit air intakes and outlets for blockage; if there is a blockage, remove it.

Care: Before a prolonged idle period

- Operate the fan for half a day to dry out the inside.
- Disconnect the power supply and also turn off the circuit breaker.
- Clean the air filter and replace it in its original position.

NOTE

Should the power fail while the unit is running

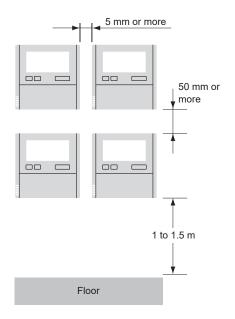
If the power supply for this unit is temporarily cut off, the unit will automatically resume operation once power is restored using the same settings before the power was interrupted.

Important Information Regarding The Refrigerant Used

Refer to the Installation Instructions attached to the outdoor unit.

■ REMOTE CONTROLLER INSTALLATION INSTRUCTION CZ-RTC4

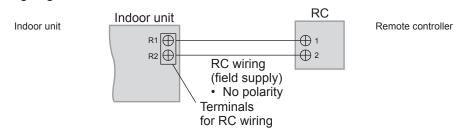
Installation Precautions Installation Location



- Install at the height of 1 to 1.5 m from the floor (Location where average room temperature can be detected).
- Install vertically against the floor.
- When installing more than 1 remote controller next to each other, keep distance of 5 mm on the right and left and 50 mm on top and bottom.
- Avoid the following locations for installation.
 - By the window, etc. exposed to direct sunlight or direct air
 - In the shadow or backside of objects deviated from the room airflow.
 - Location where condensation occurs (The remote controller is not moisture proof or drip proof.)
 - · Location near heat source
 - Uneven surface
- Keep distance of 1 m or more from the TV, radio and PC. (Cause of fuzzy images or noise)

Remote control wiring

■ Wiring diagram



■ Type of wiring

Use cables of 0.5 to 1.25 mm².

■ Total wire length: 500 m or less

(The wire length between indoor units should be 200 m or less.)

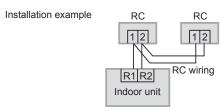
■ Number of connectable units

Remote controller: Max. 2 Indoor unit: Max. 8

Attention

- Use the field supplied RC wiring with at least 1 mm in thickness of insulation part including the sheath.
 - Regulations on wire diameters di er from locally to locally. For field wiring rules, please refer to your LOCAL ELECTRICAL CODES before beginning. You must ensure that installation complies with relevant rules and regulations.
- Be careful not to connect cables to other terminals of indoor units (e.g. power source wiring terminal). Malfunction may occur.
- Do not bundle together with the power source wiring or store in the same metal tube.
 Operation error may occur.
- If noise is induced to the unit power supply, attach a noise filter.

*Wiring as shown below is prohibited.

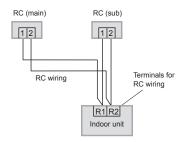


When setting both the main and sub remote controllers

After installation, set one remote controller to [Main] and the other to [Sub] for [Main/sub] for "Setting" (P.1-11-1-2-18).

Installation example

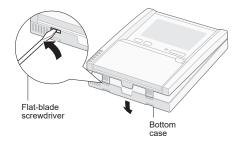
Using 1 indoor unit



*Remote controllers can be connected to any indoor unit for operation.

Mounting

Remove the bottom case.
Insert the driver and slightly turn.
*Do not insert the screw driver too deep. Doing so may cause the claw to be broken.



Attention

Mounting the bottom case

- Tighten the screws securely until the screw heads touch the bottom case.
 - (Otherwise, loose screw heads may hit the PCB and cause malfunction when mounting the top case.)
- Do not over-tighten the screws.
 (The bottom case may be deformed, resulting in fall of the unit.)

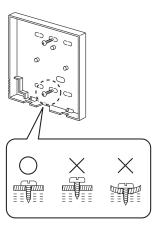
Connecting the remote control wiring

- Arrange the wires as shown in the illustration for
 in step 2 (P.1-11-1-2-17) and
 (P.1-11-1-2-17), avoiding unnecessary wires being stored in the case.
- Avoid the wires touching parts on the PCB.
- Avoid the wires coming in contact with the metallic object protruded from the PCB.

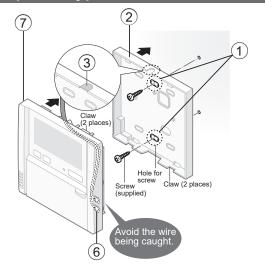
(Caught wires may destroy the PCB.)

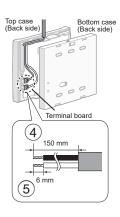
Mounting the top case

Do not push the top case with excessive force.
 (Doing so may cause the protrusions of the bottom case to hit and destroy the PCB.)



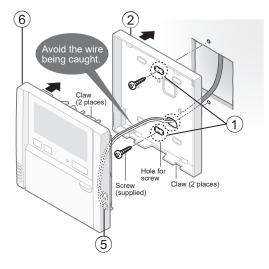
Exposed type

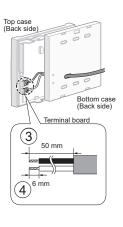




- ① Make 2 holes for screws using a driver.
- 2 Mount the bottom case to the wall.
- 3 Cut here with a nipper and remove the burr with a file.
- 4 Remove the sheath. Approx. 150 mm
- ⑤ Remove the coating. Approx. 6 mm
- 6 Connect the remote control wiring.
 - Make sure the wiring connection is in the correct direction.
 - Arrange the wires along the groove of the case.
 - · Avoid the wire being caught.
- 7 Mount the top case.
 - Align the claws of the top case and then align the claws of the bottom case.

Embedded type





- 1) Make 2 holes for screws using a driver.
- 2 Mount the bottom case to the wall.
 - Pass the wire through the hole in the centre of the bottom case.
- ③ Remove the sheath. Approx. 50 mm
- ④ Remove the coating. Approx. 6 mm
- 5 Connect the remote control wiring.
 - Make sure the wiring connection is in the correct direction.
 - Avoid the wire being caught.
- 6 Mount the top case.
 - Align the claws of the top case and then align the claws of the bottom case.

Setting / Test operation / Specifications

Setting

- Clock
- RC. setting mode (Main/sub, Clock type)
- Detailed setting mode (Ventilation fan output setting, Room temperature sensor, Temperature display setting)

Clock

- Press and hold for several seconds.
- 2 Set day of the week, hour and minute. ▼DAY/TIME/TIMER → SET "▼": Su ↔ Mo ↔ ... ↔ Sa (Repeat)

RC. setting mode

Press and hold the 2 buttons for several seconds simultaneously.

 $\mathbf{2} \overset{\text{Select the Code no.}}{\triangledown} \triangle$



The indicator illuminates after blinking.

Press -

Code	Itam	Set data		
no.	Item	0000	0001	
01	Main/sub	Sub	Main	
02	Clock type	24 hours	12 hours (AM/PM)	

Detailed setting mode

Press and hold the 3 buttons for several seconds simultaneously.

2 Select the Code no. $\nabla \Delta$

3 Select the Unit no.

4 Select the Set data.

▼DAY/TIME/TIMER → SET

The indicator illuminates after blinking.

Press -

Code	Item	Set data			
no.	item	0000	0001		
31	Ventilation fan output setting	Not connected	Connected		
32	Room temperature sensor	Main unit	RC		
33	Temperature	°C	°F		

Test operation

Turn on the circuit breaker beforehand, referring to the operating instructions for the unit. The remote controller starts.

Press and hold for several seconds.

[TEST] display appears. (The unit enters the test operation mode.)

Press Perform the test operation.

[TEST] is displayed during the test operation.

3 Press . Finish the test operation

[TEST] display disappears.

Delete the error history. Press and hold the 2 buttons for several seconds simultaneously.

F, SET

Information of errors is displayed.

To delete the error history, press (CANCEL

Press to finish service mode.

Attention

· Do not use this mode for purposes other than the test operation.

(To prevent overload of the units)

- · Read the installation instructions supplied with the units.
- · Any of the Heat, Cool and Fan operations can only be performed.
- Temperature cannot be changed.
- · The test operation mode is automatically turned off in 60 minutes. (To prevent continuous test operation)
- Outdoor units do not operate for approx. 3 minutes after the power is turned on or operation is stopped.

Specifications

Model	No.	CZ-RTC4	
Dimensions		(H) 120 mm × (W) 120 mm × (D) 20 + 4.75 mm	
Weight		160 g	
Temperature/ Humidity range		0 °C to 40 °C / 20 % to 80 % (no condensation) *Indoor use only.	
Power Source		DC16 V (supplied with indoor unit)	
	Precision	±30 seconds/month (at normal temperature 25 °C) *Adjust periodically.	
Clock	Holding time	24 hours (when fully charged) *Approx. 8 hours are required for full charge.	
Number of connected indoor units		Up to 8 units	

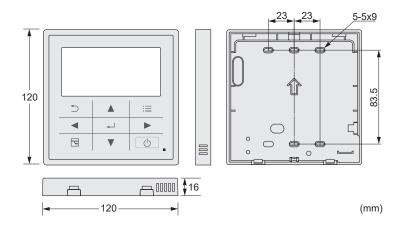
CZ-RTC5B Specifications

Model No.	CZ-RTC5B
Dimensions	(H) 120 mm x (W) 120 mm x (D) 16 mm
Weight	180 g
Temperature/ Humidity range	0 °C to 40 °C / 20 % to 80 % (no condensation) *Indoor use only.
Power Source	DC16 V (supplied with indoor unit)
Clock precision	± 30 seconds/month (at normal temperature 25 °C) *Adjust periodically.
Number of connectable indoor units	Up to 8 units

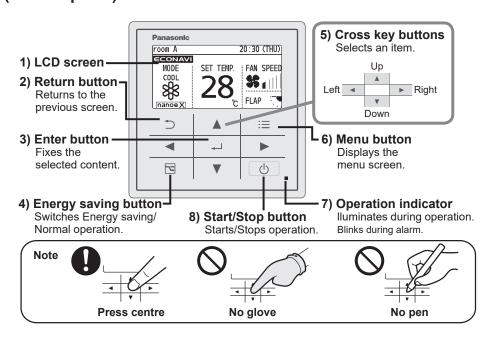
S	Supplied accessories						
Screw M3.8 x 16 (2)	Quick Reference (1)	Clamper (1)					
(Children)		3					

*Remote control wiring is not supplied. (field supplied item)

Dimensions

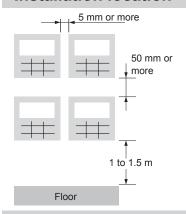


Part Names (Control panel)



Installation Precautions

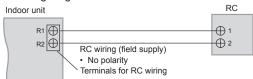
Installation location



- Install at the height of 1 to 1.5 m from the floor (Location where average room temperature can be detected).
- Install vertically against the floor.
- When installing more than 1 remote controller next to each other, keep distance of 5 mm on the right and left and 50 mm on top and bottom.
- Avoid the following locations for installation.
- By the window, etc. exposed to direct sunlight or direct air
- In the shadow or backside of objects deviated from the room airflow.
- Location where condensation occurs (The remote controller is not moisture proof or drip proof.)
- · Location near heat source
- Uneven surface
- Keep distance of 1 m or more from the TV, radio and PC. (Cause of fuzzy images or noise)

Remote control wiring

■ Wiring diagram

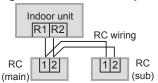


- Type of wiring
- Use cables of 0.5 to 1.25 mm².
- Total wire length: 500 m or less (The wire length between indoor units should be 200 m or less.)
- Number of connectable units Remote controller: Max. 2 Indoor unit: Max. 8

Attention

- Use the field supplied RC wiring with at least 1 mm in thickness of insulation part including the sheath. Regulations on wire diameters differ from locally to locally. For field wiring rules, please refer to your LOCAL ELECTRICAL CODES before beginning. You must ensure that installation complies with relevant rules and regulations.
- Be careful not to connect cables to other terminals of indoor units (e.g. power source wiring terminal).
 Malfunction may occur.
- Do not bundle together with the power source wiring or store in the same metal tube. Operation error may occur.
- If noise is induced to the unit power supply, attach a noise filter.

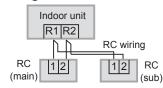
Wiring as shown below is prohibited.



When setting both the main and sub remote controllers

After installation, set one remote controller to [Main] and the other to [Sub] for [Main/sub] for "Setting". (See the other side)
When using the remote controllers* in combination, set this unit to [Main].
*CZ-RTC2, CZ-RTC4, CZ-RE2C2, CZ-RELC2

■ Using 1 indoor unit

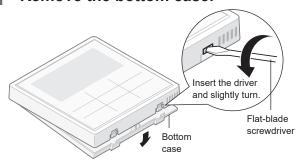


Note

Remote controllers can be connected to any indoor unit for operation.

Mounting

1 Remove the bottom case.



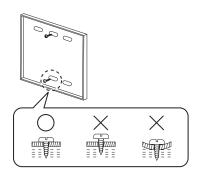
Attention

Mounting the bottom case

- Tighten the screws securely until the screw heads touch the bottom case.
 (Otherwise, loose screw heads may hit the PCB and cause malfunction when mounting the top case.)
- Do not over-tighten the screws.
 (The bottom case may be deformed, resulting in fall of the unit.)

Connecting the remote control wiring

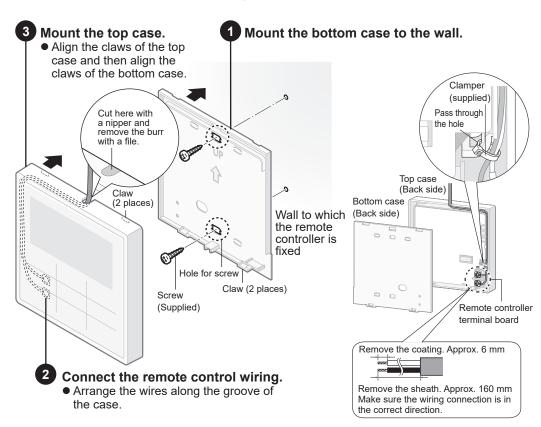
- Arrange the wires as shown in the illustration for ② in step 2, avoiding unnecessary wires being stored in the remote controller case. (Caught wires may destroy the PCB.)
- Avoid wires touching parts on the PCB. (Caught wires may destroy the PCB.)



2 Mount to the wall.

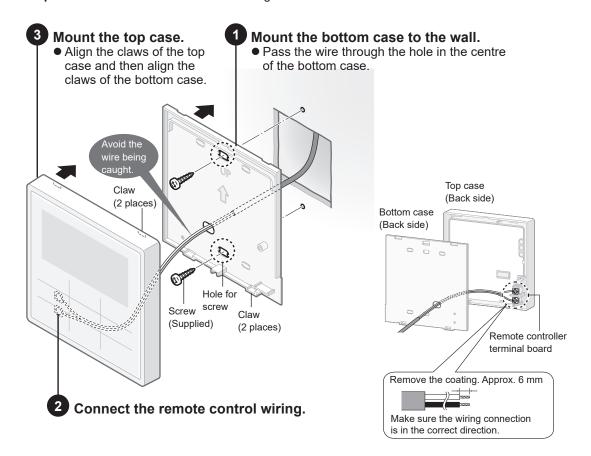
Exposed type

Preparation: Make 2 holes for screws using a driver.



Embedded type

Preparation: Make 2 holes for screws using a driver.



Setting

Preparation: Turn on the circuit breaker of units and then turn the power on. The remote controller starts, and wait until the [Assigning] display disappears.

(If [Assigning] continues to blink for 10 minutes or more, check the address setting of indoor units.)

Note

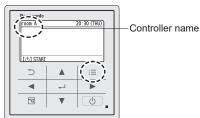
To return to the previous screen

Press 5.

■ Language ■ Clock ■ Controller name

◆ Press

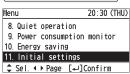
■



Select [Initial settings].

Select the item to set.

5 **A** ▼ → □



Language

4 Set. **A** ▼ ◆ ▶ → →



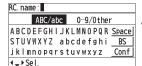
Default setting: English

Clock



Controller name

Set.
A ▼ ◆ ▶ → □
(Repeat the same procedure for all characters.)



 Up to 16 characters (Space is included in the number of characters.)

■ To change the character type

Select the character type with

▼ ▼ ■ and press □.

■To delete 1 character

Select [BS] with ▲ ▼ ◀ ▶ and

press

.

■ To enter space

Select [Space] with ▲ ▼ ◀ ▶

and press —.

Select [Conf].

A ▼ ◀ ▶ → □

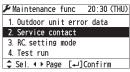


■ Service contact

Press and hold the 3 buttons for 4 seconds or more simultaneously.

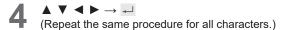


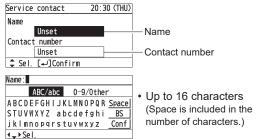


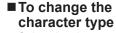


Service contact

Select. (Name) $\blacktriangle \blacktriangledown \to \blacksquare$







Select the character type with

▼ ▼ ■ and press —.



■ To enter space
Select [Space] with ▲ ▼ ◀ ▶
and press ← J.

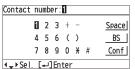
5 Select [Conf]. **A** ▼ ◆ ▶ → □



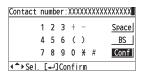
 $\blacktriangle \ \blacktriangledown \to \mathord{\longleftarrow}$







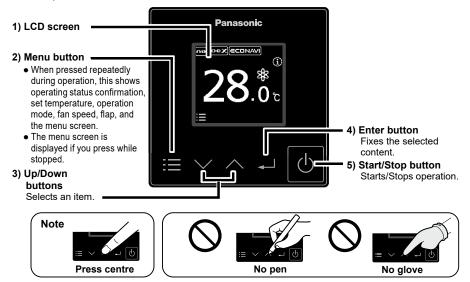
 Up to 16 characters (Space is included in the number of characters.)



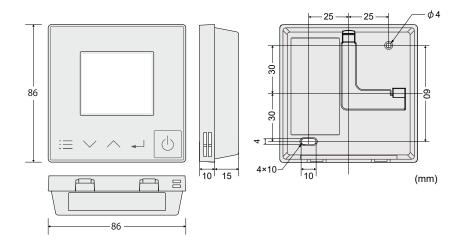
CZ-RTC6/CZ-RTC6W

Part Names (Control panel)

The control panel colour of CZ-RTC6W is white.



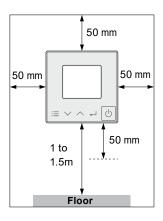
Dimensions



	Supplied accessories						
Screw M3.8 x 16 (2)	Operating Instructions (1)	Installation Instructions (1)	Clamper (1)				
			·				

^{*}Remote control wiring is not supplied. (field supplied item)

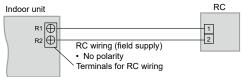
Installation location



- Install at the height of 1 to 1.5 m from the floor (Location where average room temperature can be detected).
- Install vertically against a wall or suitable supporting structure.
- Keep a space around the remote controller as detailed on the figure shown left.
- Avoid the following locations for installation.
- · By a window, etc. exposed to direct sunlight or external airflow
- In the shadow or backside of objects deviated from the room airflow
- Location where condensation occurs (The remote controller is not moisture proof or drip proof)
- · Location near heat source
- Uneven surface
- Keep distance of 1 m or more from the TV, radio and PC. (Image blur or related noise may occur)

Remote control wiring

Wiring diagram



- Type of wiring
- Use cables of 0.75 to 1.25 mm².
- Total wire length: 500 m or less (The wire length between indoor units should be 200 m or less.)
- Number of connectable units
 - Remote controller: Max. 2
 - Indoor unit:Max. 8

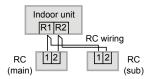
Attention

Use the field supplied RC wiring with at least 1 mm in thickness of insulation part including the sheath.
 Wiring Regulations may differ depending on location. For field wiring rules, please refer to your LOCAL ELECTRICAL CODES.

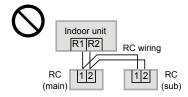
You must ensure that installation complies with relevant rules and regulations.

- Be careful not to connect cables to other terminals of indoor units (e.g. power source wiring terminal).
 Malfunction may occur.
- Do not bundle together with the power source wiring or store in the same metal tube. Operation error
 may occur.
- If noise is induced to the unit power supply, attach a noise filter.

■ Using 1 indoor unit



Wiring as shown below is prohibited.



When setting both the main and sub remote controllers

After installation, set one remote controller to [Main] and the other to [Sub] for [Main/sub] for "Setting". (See "Setting" section - "RC. setting mode")

When using the remote controllers* in combination, set the CZ-RTC6(CZ-RTC6W) unit to [Sub].

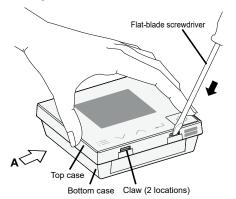
*CZ-RTC5B, CZ-RTC6BL(CZ-RTC6WBL)

Note Remote controllers can be connected to any indoor unit for operation.

Remove the top case.

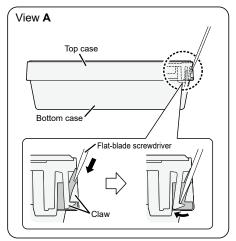
1 Insert the screwdriver to the bottom case.

Insert the flat-blade screwdriver to the claws as show in the figure.



2 Push the flat-blade screwdriver in.

Push down the flat-blade screwdriver along with the slope of the claws until the top case comes off.



2 Mount to the wall.

There are 2 types of wall-mounting methods: Exposed type and Embedded type.

Attention

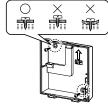
Mounting the bottom case

• Tighten the screws securely until the screw heads touch the bottom

(Otherwise, loose screw heads may hit the PCB and cause malfunction when mounting the top case.)

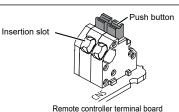
• Do not over-tighten the screws.

(The bottom case may be deformed, resulting in the unit becoming detached from the surface it is fixed to.)



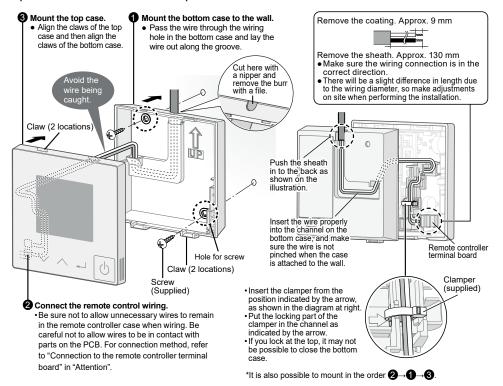
Connection to the remote controller terminal board

- Depress the push button using a round bar or finger, insert the remote control wiring securely from the wiring insertion slot and release the push button.
- Pull the remote control wiring lightly, and confirm it is secured.
 There is the danger of shorting if copper wire is exposed. Make sure the wire is properly inserted.



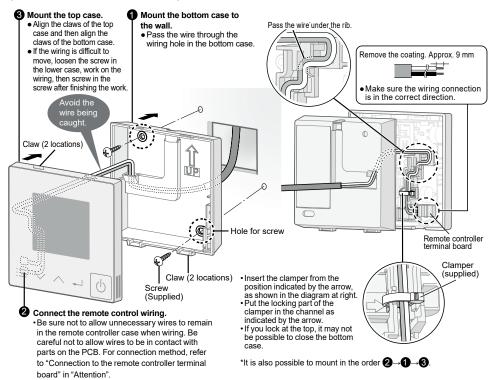
Exposed type

A protective film is attached on the Control panel.



Embedded type

A protective film is attached on the Control panel.



(B) Outdoor Unit U-160PZH3R5, U-180PZH3R5 U-160PZH3R8, U-180PZH3R8, U-200PZH3R8, U-224PZH3R8

PRECAUTION FOR USING R32 REFRIGERANT

The basic installation work procedures are the same as conventional refrigerant (R410A, R22) models.
 However, pay careful attention to the following points:

↑ WARNING

- The appliance shall be stored, installed and operated in a well ventilated room with indoor floor area larger than A_{\min} (m²) [refer to Check of Density Limit] and without any continuously operating ignition source. Keep away from open flames, any operating gas appliances or any operating electric heater. Else, it may explode and cause injury or death.
- The mixing of different refrigerants within a system is prohibited. Models that use refrigerant R32 and R410A have a different charging port thread diameter to prevent erroneous charging with refrigerant R22 and for safety.

Therefore, check beforehand. [The charging port thread diameter for R32 and R410A is 12.7 mm (1/2 inch - 20 UNF)]

- Ensure that foreign matter (oil, water, etc.) does not enter the piping.

 Also, when storing the piping, securely seal the opening by pinching, taping, etc. (Handling of R32 is similar to R410A.)
- Operation, maintenance, repairing and refrigerant recovery should be carried out by trained and certified personnel in the use of flammable refrigerants and as recommended by the manufacturer. Any personnel conducting an operation, servicing or maintenance on a system or associated parts of the equipment should be trained and certified.
- Any part of refrigerating circuit (evaporators, air coolers, AHU, condensers or liquid receivers) or piping should not be located in the proximity of heat sources, open flames, operating gas appliance or an operating electric heater.
- The user/owner or their authorized representative shall regularly check the alarms, mechanical ventilation and detectors, at least once a year, where as required by national regulations, to ensure their correct functioning.
- A logbook shall be maintained. The results of these checks shall be recorded in the logbook.
- In case of ventilations in occupied spaces shall be checked to confirm no obstruction.
- Before a new refrigerating system is put into service, the person responsible for placing the system in operation should ensure that trained and certified operating personnel are instructed on the basis of the instruction manual about the construction, supervision, operation and maintenance of the refrigerating system, as well as the safety measures to be observed, and the properties and handling of the refrigerant used.

The general requirement of trained and certified personnel are indicated as below:

- a) Knowledge of legislation, regulations and standards relating to flammable refrigerants; and,
- b) Detailed knowledge of and skills in handling flammable refrigerants, personal protective equipment, refrigerant leakage prevention, handling of cylinders, charging, leak detection, recovery and disposal; and,
 - c) Able to understand and to apply in practice the requirements in the national legislation, regulations and standards; and,
 - d) Continuously undergo regular and further training to maintain this expertise.
- Air-conditioner 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.
- Ensure protection devices, refrigerating piping and fittings are well protected against adverse environmental effects (such as the danger of water collecting and freezing in relief pipes or the accumulation of dirt and debris).
- Expansion and contraction of long runs piping in refrigerating systems shall be designed and installed securely (mounted and guarded) to minimize the likelihood hydraulic shock damaging the system.
- Protect the refrigerating system from accidental rupture due to moving furniture or reconstruction activities.
- To ensure no leaking, 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 (>1.04 MPa, max 4.15 MPa). No leak shall be detected.

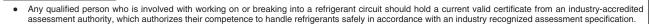
⚠ CAUTION

1 General

- Must ensure the installation of pipe-work shall be kept to a minimum. Avoid use dented pipe and do not allow acute bending.
- Must ensure that pipe-work shall be securely mounted and guarded from physical damage.
- Must comply with national gas regulations, state municipal rules and legislation. Notify relevant authorities in accordance with all applicable regulations.
- Must ensure mechanical connections be accessible for maintenance purposes.
- In cases that require mechanical ventilation, ventilation openings shall be kept clear of obstruction.
- When disposal of the product, do follow to the precautions in #10 and comply with national regulations.
- In case of field charge, the effect on refrigerant charge caused by the different pipe length has to be quantified, measured and labelled.
 Always contact to local municipal offices for proper handling.
- Ensure the actual refrigerant charge is in accordance with the room size within which the refrigerant containing parts are installed.
- · Ensure refrigerant charge not to leak.
- · Wear appropriate protective equipment, including respiratory protection, as conditions warrant.
- Keep all sources of ignition and hot metal surfaces away.
- Explosion-proof electronic components shall only be replaced with parts specified by the appliance manufacturer. Replacement with other parts may result in the ignition of refrigerant in the event of a leak.

2. Servicing

2-1. Qualification of workers



- Servicing shall only be performed as recommended by the equipment manufacturer. Maintenance and repair requiring the assistance of other skilled personnel shall be carried out under the supervision of the person competent in the use of flammable refrigerants.
- · Servicing shall be performed only as recommended by the manufacturer.
- The system is inspected, regularly supervised and maintained by a trained and certified service personnel who is employed by the person user or party responsible.



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2-2. Checks to the area

• Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimised. For repair to the refrigerating system, the precautions in #2-3 to #2-7 must be followed before conducting work on the system.



2-3. 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.



2-4. General work area

- All maintenance staff and others working in the local area shall be instructed and supervised on the nature of work being carried out.
- Avoid working in confined spaces. Always ensure away from source, at least 2 meter of safety distance, or zoning of free space area of at least 2 meter in radius.

2-5. 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 flammable refrigerants, i.e. non sparking, adequately sealed or intrinsically safe.
- In case of leakage/spillage happened, immediately ventilate area and stay upwind and away from spill/release.
- In case of leakage/spillage happened, do notify persons down wind of the leaking/spill, isolate immediate hazard area and keep unauthorized personnel out.

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2-6. Presence of fire extinguisher



Have a dry powder or CO₂ fire extinguisher adjacent to the charging area.

2-7. No ignition sources



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- No person carrying out work in relation to a refrigerating system which involves exposing any pipe work that contains or has contained flammable refrigerant shall use any sources of ignition in such a manner that it can lead to the risk of fire or explosion. They must not be smoking when carrying out such work.
- 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.

2-8. 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.

2-9. Checks to the refrigerating equipment

so corroded.

- Where electrical components are being changed, they 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 the deal the provided to include in the latest and the provided to the deal the provided to the latest and the provided to the latest and the provided to the
- The following checks shall be applied to installations using flammable refrigerants



- The refrigerant charge 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.
 Refrigerating pipe or components are installed in a position where they are unlikely to be exposed to any substance which can corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are properly protected against being

2-10. Checks to electrical devices

- Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures.
- Initial safety checks shall include but not limit to:-
 - That capacitors are discharged; this shall be done in a safe manner to avoid possibility of sparking.
 - That there is no live electrical components and wiring are exposed while charging, recovering or purging the system.
 - That there is continuity of earth bonding.
- At all times the manufacturer's maintenance and service guidelines shall be followed.
- If in doubt consult the manufacturer's technical department for assistance.
- 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. The owner of the equipment must be informed or reported so all parties are advised thereinafter.

3. Sealed electrical components A

Sealed electrical components shall not be repaired.

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

5. Detection of flammable refrigerants

- Under no circumstances shall potential sources of ignition be used in the searching or detection of refrigerant leaks.
- A halide torch (or any other detector using a naked flame) shall not be used.
- The following leak detection methods are deemed acceptable for all refrigerant systems.
 - No leaks shall be detected when using detection equipment with a sensitivity of 5 grams per year of refrigerant or better under a pressure of at least 0,25 times the maximum allowable pressure (>1.04 MPa, max 4.15 MPa) for example, a universal sniffer.
 - Electronic leak detectors may be used to detect flammable refrigerants, but the sensitivity can be inadequate, or can 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, for example, bubble method and fluorescent agent method. The use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work.
 - 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. The precautions in #6 must be followed to remove the refrigerant.

6. Refrigerant removal and circuit 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:

- 1. Safely remove refrigerant following local and national regulations
- 2. Evacuate
- Purge the circuit with inert gas
- Evacuate
- Continuously flush with inert gas when using flame to open circuit
- Open the circuit
- The refrigerant charge shall be recovered into the correct recovery cylinders.
- Compressed air or oxygen shall not be used for purging refrigerant systems, only use OFN (oxygen free nitrogen) for this task.
- Purging of the refrigerant circuit shall be achieved by breaking the vacuum in the system with inert gas and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to vacuum.
- This process shall be repeated until no refrigerant is within the system.
- The system shall be vented down to atmospheric pressure to enable work to take place.
- Ensure that the outlet of the vacuum pump is not close to any potential ignition sources and there is ventilation available.

7. 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 in an appropriate position according to the instructions.
 - Ensure that the refrigerating system is earthed prior to charging the system with refrigerant.
 - Label the system when charging is complete (if not already labelled).
 - Extreme care shall be taken not to over fill the refrigerating system.
- Prior to recharging the system it shall be pressure tested with OFN (refer to #6).
- 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.
- Electrostatic charge may accumulate and create a hazardous condition when charging and discharging the refrigerant.

To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before charging/discharging.

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 prior to re-use of recovered 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.
- 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.
- Pump down refrigerant system, if possible.
- If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
- Electrostatic charge may accumulate and create a hazardous condition when charging or discharging the refrigerant.

To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before charging/discharging.

9. Labelling

- Equipment shall be labelled stating that it has been de-commissioned 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.

10. Recovery

- When removing refrigerant from a system, either for servicing or decommissioning, it is required to follow 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.
- 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 concerning the equipment that is at hand and shall be suitable for the recovery of flammable refrigerants. Consult manufacturer if in doubt.
- 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.
- The recovered refrigerant shall be processed according to the local legislation 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 compressor body shall not be heated by an open flame or other ignition sources to accelerate this process. Draining of oil from a system shall be carried out safely.

- Start the recovery machine and operate in accordance with instructions.
- Do not over fill cylinders. (No more than 80 % volume liquid charge).
- Do not exceed the maximum working pressure of the cylinder, even temporarily.
- 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.
- Recovered refrigerant shall not be charged into another refrigerating system unless it has been cleaned and checked.



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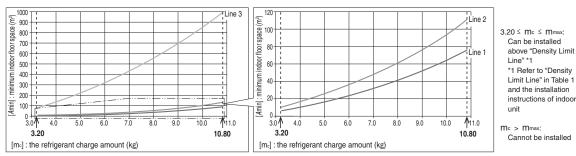


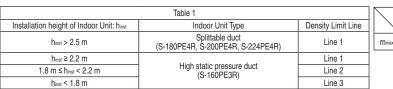
Check of Density Limit

The refrigerant (R32), which is used in the air conditioner, is a flammable refrigerant.

So the requirements for installation space of appliance are determined according to the refrigerant charge amount (me) used in the appliance.

The minimum indoor floor space compared with the amount of refrigerant is roughly as follows:





U-160PZH3R5 U-180PZH3R5 U-200PZH3R8 U-160PZH3R8 U-180PZH3R8 U-224PZH3R8 6.35 kg 7.60 kg 10.80 kg

- : The refrigerant charge amount (Total of refrigerant at shipment and refrigerant charge amount in the field).

 Please calculate m_e according to tubing length in the field as shown in the calculation example below.

 < Calculating example >

 Refer to table "Specification for tube connecting indoor unit to outdoor unit". < Calculating example > U-160PZH3R5

(conditions: Total tube length = 40 m)

 $m_{\text{\tiny G}} = \text{\scriptsize (1)} + \text{\scriptsize (2)} = \text{\scriptsize (1)} + \text{\scriptsize (3)} \text{\tiny (4)} - \text{\scriptsize (5)})) = 3.2 \text{ kg} + \text{\scriptsize $(0.045$ kg x (40 m - 30 m) = 3.65$ kg}$

- (1): Refrigerant charged at shipment
- (2): Refrigerant charge amount in the field
- 3 Additional charge per 1m

- (4): Total tube length
- (5): Charge-less tube length
- If the total tubing length is within the maximum value of the charge-less tubing length, refrigerant charge in the field is unnecessary.

mmax : The maximum refrigerant charge amount

■ ACCESSORIES SUPPLIED WITH OUTDOOR UNIT

The following parts are supplied as accessories with each outdoor unit. Check that all accessory parts are present before installing the outdoor unit.

Part name	Diagram	Quantity
Protective bushing (For protecting electrical wires)		2

* * * * * * * * * * * * * * * * * * * *		
Part name	Diagram	Quantity
Banding strap (For tying electrical wires together)	B	4

■ SELECT THE OUTDOOR UNIT INSTALLATION LOCATION

⚠ WARNING

Be careful when picking up and moving the indoor and outdoor units. Get a partner to help, and bend your knees when lifting to reduce strain on your back. Sharp edges or thin aluminum fins on the air conditioner can cut your fingers.

- Install the unit once you have checked that the installation location matches the following conditions.

 A location with sufficient ventilation.

 Possibly a location that is sheltered from rain or direct sunlight and is well-ventilated so that hot and cool air does not build up.

 A location where the area around the discharge is not exposed to animals or plants which could adversely affect the release of hot or cool air from the unit.

 A location where the discharge and operation noise will not be a nuisance to the neighbours.

 A location that can support the product's weight or vibrations and secured for horizontal installation wherever possible.

 A location that does not obstruct the air discharge or intake.

 A location where there is no danger of flammable or corrosive gas leaks.

 A location that provides space for installation and service.

 A location that where the end cable lendth fixture for internal and external connections.
- A location that provides space for installation and service.
 A location that allows the pipe and cable length fixture for internal and external connections.
 It may need two or more people to carry out the installation work.
 Refer to the diagram below for the installation location which is exposed to strong wind.
 If a strong wind of more than 5 m/sec blows to the area directly in front of the discharge, the outdoor unit's air flow is reduced and the outflow may re-enter (short circuit) causing the following outcome:

 "Reduced capacity", "Increased frost formation during heating" or "Operation stopped due to increased pressure".
 Should an exceptionally strong wind blow to the area directly in front of the discharge of the outdoor unit; there is the risk of damage due to the fan's high-speed reverse rotation

If the direction of the prevailing wind is known when operating the unit, place the unit at an appropriate angle to the wind's direction so that the discharge faces towards a building or a wall.

Air Intake

Air Intake

Air Intake





- If installing at locations prone to snowfall, install the unit as high as possible with suitable roofing which shelters the unit from snow. Avoid installing the unit in locations where there are petroleum products (such as machine oil), saline content (such as coastal areas), sulphurous
- gas and where high frequency noise is generated.

 Place the indoor and outdoor unit, power cords and indoor/outdoor unit connection cables at a minimum distance of 1 meter or more away from televisions and radios. This is to avoid interference to picture and/or sound. 5.
- 6.

- televisions and radios. This is to avoid interference to picture and/or sound. (However, depending on the electromagnetic waves, noise interference may still occur even with the 1 meter separation.) For restaurants and kitchens, avoid installing at locations which draws oil and steam. Plastic parts can deteriorate from droplets of oil and steam or it can cause falling parts or water leakage. Avoid installing at the location where cutting oil mist or iron powder is present. If there is an immense voltage fluctuation due to the location's problem, ensure to split the power supply. When installing the product in a place where it will be affected by typhoon or strong wind such as wind blowing between buildings, including the rooftop of a building and a place where there is no building in surroundings, fix the product with an overturn prevention wire, etc.

 Ensure to assign several people or use a mechanical lift, etc. to transport the unit. 9.

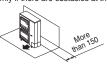
■ SELECTING THE LOCATION FOR INSTALLATION SERVICE

Please secure necessary space to guarantee performance and service & maintenance.

For multiple installations, please secure enough space to enable removal of side face screws between units. (unit:mm) The below mentioned distance is required for optimal unit performance.

Allow as much space as possible in order to obtain the best performance from the units.

- (A) If there are obstacles at the intake
 - If the upper part is open
 - (1) For separate installation location
 - Only if there are obstacles at the intake

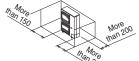


If there are obstacles above the unit

(1) For separate installation location

. Only if there are obstacles at the intake

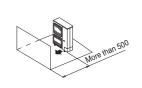




- If there are obstacles at the discharge

 If the upper part is open

 - (1) For separate installation location

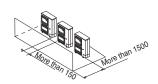




(2) For multiple units (more than 2 units)

If there are obstacles on both sides

(2) For multiple units (more than 2 units)

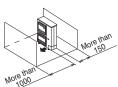


(C) If there are obstacles on both the intake and discharge (D) For multiple row installation (on the roof, etc.)

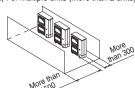
If there is an obstacle that is higher than the unit on the intake side. (There is no limit to the height of the obstacle above the discharge.)

If the upper part is open

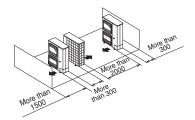
(1) For separate installation location



(2) For multiple units (more than 2 units)



(1) For one row installation setup



■ TRANSPORT AND INSTALL THE OUTDOOR UNIT

- Transporting
 1. Transport the outdoor unit in its original packaging as close as possible to the installation location.
 2. In the event that the unit needs to be lifted or suspended, use a rope or belt and use cloth or wood as padding to avoid damaging the unit.
 3. Use the side handles to carry the unit and be careful not to touch the fin with your hand or any objects.



Route the tubing so that it does not contact the compressor, panel or other parts inside the unit. Increased noise will result if the tubing contacts these parts.

When routing the tubing, use a tube bender to bend the tubes.

In cold-weather regions, in order to prevent draingage water from freezing, do not install the drain socket cap. Also take steps to prevent water from accumulating around the unit.

- Read the "Select the outdoor unit installation location" thoroughly before installing the outdoor unit.

 When installing to a concrete or solid surface, use M10 or a W 3/8 bolts and nuts to secure the unit. Ensure that it installed upright on a horizontal plane. (Use an anchor bolt for the installation as shown in the diagram below.)
- Avoid installing on a slanted roof.
- In the event where the roof is at risk of receiving oscillations or vibrations, secure the unit with a seismic isolating mount or vibration absorbing rubber. The drain water will be discharged from the unit during heating or defrosting operation mode.

Select an appropriate location with good drainage system. (In winter, there is a risk of slipping caused by freezing depending on the

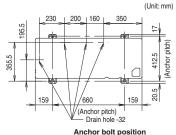
installation location.)

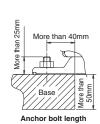
- Ensure a height of 15 cm or more at the feet on both sides of the unit.
 - Precautions for Installation in Heavy Snow Areas.

 The platform should be higher than the maximum snow depth + 50 cm. (In this case, leave clearance below the unit for the drain tube, and to prevent freezing of drainage water in cold-weather regions.) Please consult us if installing the drain socket (Field supply)
- When using a drain tube, install the drain socket (Field supply) onto the drain hole.

Seal the other drain hole with the rubber cap (Field supply). For details, refer to the instruction manual of the drain socket (Field supply). After completing the installation work of the drain socket, make sure

that the water does not leak from any part of connection. In cold regions (where the outdoor temperature can drop to below 0° for 2 to 3 consecutive days), the drain water may freeze and may prevent the fan from operating. For this case, do not use the drain socket (Field supply).





Front panel

■ REFRIGERANT INSTALLATION

For indoor unit refrigerant tubing installation, refer to the installation instruction manual that comes with that indoor unit.

- Precautions during refrigerant installation.

 Use clean tubes with no dust inside.

The tube may corrode with the presence of fluorine dust which will adversely affect the refrigerant tubing system due to deterioration of the refrigerant oil, etc.

- This unit is specifically for R32. Ensure to adhere to the following items and install accordingly:

 Use tube cutters and flaring tools which are specially designed for use with R32.

 When connecting with flaring tools, coat the flare section with ether-based oil.

- Ensure to use flare nuts supplied with the unit when connecting this unit. Only for storing or for open tubes.

Set the lower limit of the allowable tube length to 5 m.

If the tube is shorter than 5 m, the refrigerant may become overfilled and a problem such as abnormal high pressure could occur.
Carefully handle the liquid refrigerant, as it may cause a frostbite.

- Do not release refrigerants during the tubing works for installing, re-installing and repairing refrigeration parts.
- - The local tubes can protrude from any four directions.

 Make holes in the tube panel for the tubes to penetrate it and lay the tubes accordingly.
 - It is recommended to apply additional substance to the cut area for anti-rust protection.

 - Ensure to install tube panels to prevent rain water from getting into the unit.

 Close the gap at the tube connected area with putty or heat insulator (field supply).
 - . If an insect or small animal enters the outdoor unit, there is the risk of shorting in the product electronic casing.
 - [Remove the front panel]
 (1) Remove the 2 mounting screws.
 - (2) Slide the front panel using your hands downwards to release the pawls.

Then remove by pulling the panel towards you.

Specification for tube connecting indoor unit to outdoor unit.

)	Rear directio
ı	Rear tubing panel Sideways
on	Mounting screws for the front panel
ic	Putty or heat insulator (field supply) Prevention measures to avoid small animals from entering

			U-160PZH3R5	U-160PZH3R8	U-180PZH3R5	U-180PZH3R8	U-200PZH3R8	U-224PZH3R8	
Maximum pipe length (m)			100						
Mavimum alauatian	Outdoor unit is placed higher	(m)		20					
Maximum elevation	Outdoor unit is placed lower	(m)	30						
Charge-less pipe length		(m)	5–30						
Additional charge per 1 m (g)		4	5	(Tube length) Le (Tube length) O	ess than 50 m: 45 ver 50 m: 60	8	60		
Refrigerant charged at shipment (kg)		3.	20		3.40	5.	20		
Total refrigerant amount (Max. pipe length) (kg)		6.	35		7.60	10	.80		

	U-160PZH3R5 U-160PZH3R8	U-180PZH3R5 U-180PZH3R8		U-200PZH3R8 U-224PZH3R8		
Tube length		-	Less than 50 m	Over 50 m	Less than 30 m	Over 30 m
Valve size	Liquid	ø9.52	ø9.52	ø9.52	ø12.7	ø12.7
(Outdoor Unit)	Gas	ø19.05	ø19.05	ø19.05 *1	ø19.05	ø19.05 *2
Main tube	Liquid	ø9.52	ø9.52	ø9.52	ø12.7	ø12.7
(Outdoor unit to Indoor unit)	Gas	ø19.05	ø19.05	ø25.4	ø19.05	ø25.4

⁽Gas tubing connection) While the main gas tube is ø25.4, since connecting the outdoor unit's 3-way valve requires a ø19.05 flare,

please be sure to use reducer (field supply) for connection (brazing).

(Gas tubing connection) While the main gas tube is Ø25.4, since connecting the outdoor unit's 3-way valve requires a Ø19.05 flare, please be sure to use standard accessories joint tubing A for connection (brazing)

Tubing Thickness:

Size mm (in.)	ø6.35 (1/4)	ø9.52 (3/8)	ø12.7 (1/2)	ø15.88 (5/8)	ø19.05 (3/4)	ø22.22 (7/8)	ø25.4 (1)
Thickness. mm	≥ 0.8	≥ 0.8	≥ 0.8	≥ 1.0	≥ 1.0	≥ 1.0	≥ 1.0
Material	Temper-O (Soft copper tube)					Temper-1/2H, H (I	Hard copper tube)

Precautions when operating the 3-way valve for tubing installation

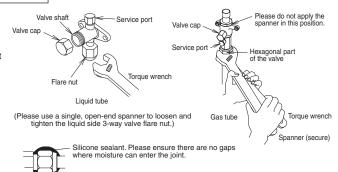
- Do not open the 3-way valve until the piping installation is completed.

 - It is closed during shipment.

 During installation the side panel may warp if only the flare nut is loosened and tightened with a torque wrench.
 As a result, always be sure to secure to the hexagonal part of the 3-way valve with a spanner, or other tool.
- Refer to the following table for the tightening torque of the 3-way valve flare nuts.
- If the nuts are over tightened, they may cause the flares to break or leak
- Do not add additional force to the valve's cove

hexagonal part of the valve.

- Using spanners on the cover or valve itself (other than the hexagonal parts) may cause gas leakage. Avoid using spanners on the cover or parts other than the
- When cooling in the low outdoor air, the low-pressure side pressure may decrease. Seal sufficiently the flare nut in the service valve (both gas and liquid tubes) with silicone sealant to avoid the gas leak caused by freezing.

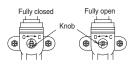


Silicone Sealant must be neutral cure and ammonia free. Use of silicon containing ammonia can lead to stress corrosion on the joint and cause leakage.

Gas tube

Opening: Open the valve cap, pull out the knob and use pliers etc. to turn the knob 90° counterclockwise

Open the valve cap, pull out the knob and use pliers etc. to turn the knob 90° clockwise.



Liquid tube

Opening: Open the valve cap and turn the Allen wrench counter-clockwise

until it stops.

Open the valve cap and turn the Allen wrench clockwise until it stops

Tubing

Insulation materia





If the exterior of the outdoor unit valves has been finished with a square duct covering, make sure you allow sufficient space to access the valves and to allow the panels to be attached and removed.

After a tube has been insulated, never try to bend it into a narrow curve because it can cause the tube to break or crack. Never grasp the drain or refrigerant connecting outlets when moving the unit.

		Tightening torque (approx.)
Valve cap (Valve size)	ø9.52 (Liquid tube)	34 N•m ~ 42 N•m {340 kgf•cm ~ 420 kgf•cm}
	ø12.70 (Liquid tube)	49 N•m ~ 55 N•m {490 kgf•cm ~ 550 kgf•cm}
	ø19.05 (Gas tube)	100 N•m ~ 120 N•m {1000 kgf•cm ~ 1200 kgf•cm}
Service port		10.7 N°m ~ 14.7 N°m {107 kgf°cm ~ 147 kgf°cm}

Precautions for handling the valve cap

- Ensure not to scratch the inner surface of the valve or the end of the valve shaft.
 - Once adjustments to the valve are completed, ensure to tighten the valve cap according to the prescribed torque.

Precautions for handling the service ports

- Use a push-rod with a charge hose.
 - · Once adjustments to the valve are completed, ensure to tighten the valve cap according to the prescribed torque.

Precautions for connecting the tubes

- For proper connection, align the union and flare straight with each other.
- Ensure that the tubes do not come into contact with the compressor's bolts or exterior panel.
- There is a risk of condensation from the 3-way valve coming out between the insulation material and the indoor unit's tubing when you install the outdoor unit above then the indoor unit. Ensure to caulk the connection parts.

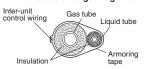
Precautions for insulation installation

Maximum temperature limit of gas or liquid tubing exceeds 120 °C

- In high humidity environment, reinforce the insulation material for the refrigerant tubing. Failure to do so may result in condensation on the surface of the insulation material.
- Use materials with good heat-resistant properties as the heat insulator for the tubes. Ensure to insulate both the gas and liquid tubes.
- If the tubes are not adequately insulated, condensation and water leakages may occur.
- Ensure that the current insulation covers the tubes up to the unit's connecting part. If the tubing is exposed, it may cause condensation or burn (when touch the tube).

Two tubes arranged together

Caulking treatment, etc.



Precautions for flare nut installation

Use of the Flaring Method

Many of conventional split system air conditioners employ the flaring method to connect refrigerant tubes that run between indoor and outdoor units. In this method, the copper tubes are flared at each end and connected with flare nuts.

- Flaring Procedure with a Flare Tool
 (1) Cut the copper tube to the required length with a tube cutter. It is recommended to cut approx. 30 50 cm longer than the tubing length you estimate.
 (2) Remove burrs at each end of the copper tubing with a tube reamer or a similar tool. This process is important and should be done carefully to make a good flare. Be sure to keep any contaminants (moisture, dirt, metal filings, etc.) from entering the tubing.

NOTE

When reaming, hold the tube end downward and be sure that no copper scraps fall into

- Remove the flare nut from the unit and be sure to mount it on the copper tube. (3) Remove the flare nut from the unit and be sure to mount it (4) Make a flare at the end of the copper tube with a flare tool.

 - Dimensions when adding flare nuts and the tightening torque
 - For the flare nuts at tubing connections, be sure to use the flare nuts that were supplied with the unit. The refrigerant tubing that is used must be of the correct wall thickness as shown in the table below.

Tubing size	Tightening torque (approx.)	Flare section dimensions A	Tube thickness	Flare configuration
ø 6.35	14.0 N•m ~ 18.0 N•m {140 kgf•cm ~ 180 kgf•cm)	8.7 ~ 9.1 mm	0.8 mm	100
ø 9.52	34.0 N•m ~ 42.0 N•m {340 kgf•cm ~ 420 kgf•cm)	12.8 ~ 13.2 mm	0.8 mm	å (å T
ø 12.7	49.0 N•m ~ 55.0 N•m {490 kgf•cm ~ 550 kgf•cm)	16.2 ~ 16.6 mm	0.8 mm	
ø 15.88	68.0 N•m ~ 82.0 N•m {680 kgf•cm ~ 820 kgf•cm)	19.3 ~ 19.7 mm	1.0 mm	8 1
ø 19.05	100.0 N•m ~ 120 N•m {1020 kgf•cm ~ 1220 kgf•cm)	20.6 ~ 24.0 mm	1.0 mm	



- Because the pressure is approximately 1.6 times higher than refrigerant R22 pressure, the use of flare nuts (type 1) or thin-walled tubes may result in tube rupture, injury, or asphyxiation caused by refrigerant leakage.
- When tightening the flare nut, coat the flares (inner surface only) with refrigerant oil on the flares. Firstly, screw in 3-4 turns by hand.
 - Ensure not to get oil on the screw part. Refrigerant oil used is ether-based.
- Once the tubing connections are completed, perform leakage inspection using nitrogen gas.
- When flared joints are reused, the flare part shall be re-fabricated.
- Selecting the location for installation service.

Incase of reusing existing refrigerant tubing

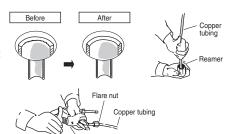
Observe the followings to decide reusing the existing refrigerant tubing.

Poor refrigerant tubing could result in product failure.

- In the circumstances listed below, do not reuse any refrigerant tubing. Instead, make sure to install a new tubing.
 - Heat insulation is not provided for either liquid or gas tube or both
 - The existing refrigerant tube has been left in an open condition.
 - The diameter and thickness of the existing refrigerant tubing does not meet the requirement. (Refer to above tables)
 - The tubing length and elevation does not meet the requirement. (Refer to above tables)
 - Use only R32 or R410A genuine branch tube.
- Perform proper pump down for operated product before reuse tubing.
- In the circumstances listed below, clean it throughly before reuse.

 Pump down operation cannot be performed for the existing air conditioner.
- The compressor has a failure history.
- Oil colour is darken. (ASTM 4.0 and above)
- The existing air conditioner is gas/oil heat pump type.

 Do not reuse the flare to prevent gas leak. Make sure to install a new flare.
- If there is a welded part on the existing refrigerant tubing, conduct a gas leak check on the welded part.
- Replace deteriorated heat insulating material with a new one. Heat insulating material is required for both liquid and gas tubes.



Deburring



Reusing existing tubing

			U-160PZH3R5 / U-160PZH3R8							
Tubing length	(m)									
Liquid tube			ø9.52			ø12.7			ø15.88	
Gas tube		ø15.88	ø19.05	ø22.22	ø15.88	ø19.05	ø22.22	ø15.88	ø19.05	ø22.22
Maximum tube length	(m)	70	75	75	45	45	45	×	×	×
Charge-less tube length	(m)	5 ~ 30	5 ~ 30	5 ~ 30	5 ~ 15	5 ~ 15	5 ~ 15	×	×	×
Additional charge per 1m	(g/m)	45			60			×		

			U-180PZH3R5 / U-180PZH3R8									
Tubing length	(m)		Less than 50									
Liquid tube		ø9.52			ø12.7				ø15.88			
Gas tube		ø15.88	ø19.05	ø22.22	ø15.88	ø19.05	ø22.22	ø25.4	ø28.58	ø15.88	ø19.05	ø22.22
Maximum tube length	(m)	50	50	50	45	45	45	45	45	×	×	×
Charge-less tube length	(m)	5 ~ 30	5 ~ 30	5 ~ 30	5 ~ 15	5 ~ 15	5 ~ 15	5 ~ 15	5 ~ 15	×	×	×
Additional charge per 1m	(g/m)	45		60		80			×			

			U-180PZH3R5 / U-180PZH3R8							
Tubing length	(m)		Over 50							
Liquid tube		ø9.52			ø12.7		ø15.88			
Gas tube		ø22.22	ø25.4	ø28.58	ø22.22	ø25.4	ø28.58	ø22.22	ø25.4	ø28.58
Maximum tube length	(m)	75	75	75	×	×	×	×	×	×
Charge-less tube length	(m)	5 ~ 30	5 ~ 30	5 ~ 30	×	×	×	×	×	×
Additional charge per 1m	(g/m)	60			×			×		

			U-200PZH3R8 / U-224PZH3R8							
Tubing length	(m)		Less than 30							
Liquid tube			ø9.52 ø12.7			ø15.88				
Gas tube		ø15.88	ø19.05	ø22.22	ø15.88	ø19.05	ø22.22	ø15.88	ø19.05	ø22.22
Maximum tube length	(m)	×	×	×	30	30	30	×	30	30
Charge-less tube length	(m)	×	×	×	5 ~ 30	5 ~ 30	5 ~ 30	×	5 ~ 20	5 ~ 20
Additional charge per 1m	(g/m)	×			80			120		

			U-200PZH3R8 / U-224PZH3R8							
Tubing length	(m)		Over 30							
Liquid tube		ø9.52 ø12.7			ø15.88					
Gas tube		ø22.22	ø25.4	ø28.58	ø22.22	ø25.4	ø28.58	ø22.22	ø25.4	ø28.58
Maximum tube length	(m)	X	×	×	60	60	60	40	40	40
Charge-less tube length	(m)	×	×	×	5 ~ 30	5 ~ 30	5 ~ 30	5 ~ 20	5 ~ 20	5 ~ 20
Additional charge per 1m	(g/m)	×			80			120		

[×] Unallowable

NOTE
Interconnecting refrigerant pipework, i.e. pipework external to the unitary components, should be marked with a Class label (see right figure) every two metres where the pipework is visible. Label size is 50 mm x 50 mm. This includes pipework located in a ceiling space or any void which a person may access for maintenance or repair work within that space.



■ LEAK TEST AND EVACUATION

Leak Tightness Test Method

- Keep 3-way valve fully closed and pressurize through 3-way valve service port.

 Do not pressurize to the default value at once.Pressurize gradually.

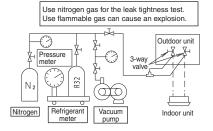
 (1) Pressurize to 0.5MPa (5 kgf/cm²G) and then leave it for 5 minutes to ensure that the pressure does not drop.

 (2) Pressurize to 1.5MPa {15 kgf/cm²G} and leave it for 5 minutes to ensure that the
 - ressure does not drop.

 (3) For the test, pressurize to 4.15MPa and leave it for about 1 day to ensure that the
 - pressure does not drop.

EVACUATION

- Use a vacuum pump (with back-flow prevention device) to vacuum through the 3-way valve service port to achieve below -101kPa {-755 mmHg, 5 Torr}. Air and moisture remaining in the refrigerant system due to poor vacuum drying can cause performance decrement and malfunction of the compressor.



7. REGARDING REFRIGERANT FILLING

Precautions during refrigerant filling

Ensure to fill only with liquid refrigerant when refilling. If gas refrigerant is filled, the refrigerant composition will not be balanced and will cause abnormal operation.



If using cylinders as shown in the bottom left diagram; without a siphon tube inside, turn it upside down and use it. (It is recommended to use the manifold with the side glass.)



- Use tools that are designed specifically for R32, for pressure resistance and to prevent mixing impurities.
- Fill the refrigerant from the 3-way valve's service port on the liquid tube.

For filling and replacing all refrigerant

(For refilling due to a leak)

For refilling refrigerant, first collect all residual refrigerant and after vacuum dehydration using the vacuum pump. Refill the refrigerant according to the prescribed amount stated on the placard affixed to this unit.

Precautions after the tubes' connection have completed

Ensure to open the 3-way valve after completing the tubing installation, leak test and vacuuming. If it is closed during operation, it can lead to compressor failure.

Charging with refrigerant

* For single combination

- At the time of shipment from the factory, this unit is charged with enough refrigerant for an equivalent tube length of 30m. If the equivalent tube length used
- will be 30m or less, no additional charging will be necessary.

 If the equivalent tube length will be between 30 and 100m, charge with additional refrigerant according to the equivalent length given in the table below.

	Additional charging amount	Equivalent length	Minimum length
U-160PZH3R5 / U-160PZH3R8	45 g/m	100 m	5 m
U-180PZH3R5, U-180PZH3R8	(Tube length) Less than 50 m: 45 g/m (Tube length) over 50 m and less than 100 m: 60 g/m	100 m	5 m
U-200PZH3R8 / U-224PZH3R8	80 g/m	100 m	5 m

Pump down operation
Please refer to "9. PRECAUTIONS REGARDING TEST RUN (Caution for Pump Down)" of this Installation instruction manual. It is also indicated on the label affixed to the outdoor unit.

■ ELECTRICAL WIRING

♠ WARNING

This air conditioner must be installed in accordance with national wiring regulations.

Cables connected to outdoor unit must be approved polychloroprene sheathed type 60245 IEC 57 or heavier.

The units must be connected to the supply cables for fixed wiring by qualified technician.

Circuit breaker must be incorporated in the fixed wiring in accordance with the national wiring regulations. The circuit breaker must be approved, suitable for the voltage and current ratings of equipment and have a contact separation by 3 mm in all poles.

When the supply cable is damaged, it must be replaced by qualified technician.

Be sure to install a current leakage breaker, main switch and fuse to the main power supply, otherwise electric shocks

Be sure to connect the unit to secure earth connection.

If the earthing work is not carried out properly, electric shocks may result



Wiring shall be connected securely by using specified cables and fix them securely so that external force of the cables may not transfer to the terminal connection section. Imperfect connection and fixing leads to fire, etc.

- Ensure to connect the electrical cable connections and clamp the wires securely to the terminal connections using cord clamps so that no undue force is

- the appropriate torque
- Ensure to connect the electrical cable connections and clamp the wires securely to the terminal connections using cord clamps so that no undue force is placed on the wires (power source cable, indoor/outdoor connection cables, earth lead wire). Do not install a phase advance capacitor for power factor improvement. (It does not improve the power factor and will cause abnormal overheating.) Do not bind the excess cables together and place them inside this unit. Protect the electrical cable with the protective bushing provided so that the cables do not get damaged on the knock hole or etched portions. If there is space between the electrical cables and the protective bushing occurs, seal it accordingly. Tie the cables with the provided binding strap so that they do not touch the compressor and the tubes.

 When setting up the cables, inside of unit install properly so that the front panel will not lift up. Make sure that front panel mount correctly.

 Use a round type terminal with an insulation sleeve for connecting to the terminal block. Use the appropriate screwdiver for tightening the terminal screws. Small sized screwdriver damages the head of the screw and cannot tighten it properly.

 There is risk of damaging the screw if the terminal screw is over tightened. Tighten with the appropriate torque.

Direction to pull out wires

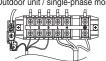


Seal wiring holes after wiring using included protection bush (other holes are for connecting conduit tube)

Earth lead wire set up Outdoor unit / 3-phase model



Outdoor unit / single-phase model

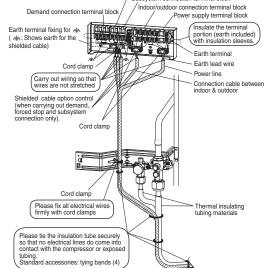


The earth lead wire shall be longer than other lead wires as shown in the figure for electrical safety in case it slips out of the cord from the anchorage.

Outdoor unit / 3-phase model

Forced stop connection terminal block Subsystem connection terminal block Indoor/outdoor connection terminal block Demand connection terminal Power supply terminal block Earth terminal fixing for 4 Insulate the terminal portion (earth included) with insulation sleeves. (A: Shows earth for the shielded cable) Earth terminal Earth lead wire Cord clamp Power line Carry out wiring so that wires are not stretched Connection cable between indoor & outdoor Shielded cable option control (when carrying out demand, forced stop and subsystem connection only). Cord clamp Cord clámp Thermal insulating tubing materials Please fix all electrical wires firmly with cord clamps Please tie the insulation tube securely so that no electrical lines do come into contact with the compressor or exposed

· Outdoor unit / single-phase model Forced stop connection terminal block Subsystem connection terminal block Earth terminal fixing for



Indoor/outdoor, 3-wire mode format, option connection (demand, forced stop and subsystem connections only)

Be sure to connect the wires correctly to terminal board with connecting the crimp type ring terminal to the wires. If connecting two separate wires to a single crimped terminal, place the two crimped terminal wires together as

shown in Fig. A.
(If the arrangement shown in Fig. B is used, poor contacts or contact damage may result.)





Wiring System Diagrams

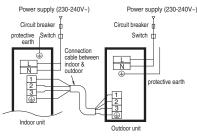
ories: tying bands (4)

Outdoor unit / 3-phase model (except U-160PZH3R8)

ver supply (230-240V~) Power supply (400-415V 3N~) Circuit breaker Circuit breaker Switch [

Indoor/outdoor, 3-wire mode format, option connection (demand, forced stop and subsystem connections only)

· Outdoor unit / single-phase model (except U-160PZH3R5)



: functional earthing (for the shielded cable)

NOTE

For model U-160PZH3R* wiring system diagrams, please refer to the installation instruction manual provided with the indoor unit.

	Power supply cable										
		Min.		Recommended wire length and wire diameter for power supply cable							
		wire size (mm²)	Wire size (mm²)	Max. length (m)	Wire size (mm²)	Max. length (m)	Wire size (mm²)	Max. length (m)	Wire size (mm²)	Max. length (m)	capacity (A)
U-160PZH3R5	230-240 V ~	6.0	-	-	-	-	-	-	6.0	22	40
U-160PZH3R8	400-415V 3N ~	1.5	1.5	30	2.5	51	4.0	82	6.0	123	16
U-180PZH3R5	230-240 V ~	6.0	-	-	-	-	-	-	6.0	19	40
U-180PZH3R8	400-415V 3N ~	1.5	1.5	28	2.5	47	4.0	75	6.0	112	16
U-200PZH3R8	400-415V 3N ~	2.5	-	-	2.5	36	4.0	57	6.0	86	20
U-224PZH3R8	400-415V 3N ~	2.5	-	-	2.5	32	4.0	52	6.0	78	20

\sim	ntral	cable	

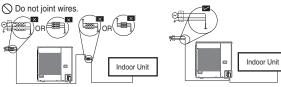
Туре	Connection cable between outdoor and indoor unit					
	Outdoor unit	Max. length				
min 2.5 mm²	U-160*** U-180*** U-200*** U-224***	100 m				

- Decide the length and size of the power supply cable based on the maximum amoere tabulated above in accordance with the national wiring regulations.
- Recommended maximum length indicates the value calculated with the 2% voltage drop of cable.
- Select the fuse(s) and/or circuit breaker(s) from the types and ratings suitable for the maximum ampere tabulated above in accordance with the national wiring regulations.
- If capacity of power supply circuit and enforcement are not enough, it can causes the electric shock and a fire.
- An RCD suitable for use with inverters, resistant to high frequency noise, is most suitable. RCD's intended for protection to include high frequency currents are unnecessary
 and should be avoided, as potentially causing nuisance tripping, in this application.



RISK OF FIRE JOINING OF WIRES MAY CAUSE OVERHEATING AND FIRE.





- Use complete wire without joining.
- Wire connection in this area must follow to national wiring rules.

Refer to the installation instruction manual provided with the indoor unit for the specifications on the indoor unit installation.



Loose wiring may cause the terminal to overheat or result in unit malfunction. A fire hazard may also occur. Therefore, ensure that all wiring is tightly connected.

When connecting each power wire to the terminal, follow the instructions on "How to connect wiring to the terminal" and fasten the wire securely with the terminal screw.

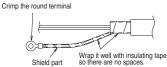
For the shield part of the shielded cable, twist the end out, crimp it with a round terminal, and connect it to the functional earthing screw.

After crimping it with a round terminal, wrap it with insulating tape so there are no spaces and adjust it so the shield part does not touch any live parts.



Be sure that the shield part of the shielded cable does not touch the terminal block or any live parts.

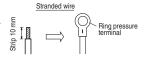
Failure to do so may lead to electric shock or fire.



How to connect wiring to the terminal

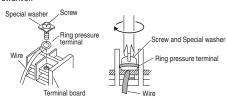
■ For stranded wires

(1) Cut the wire end with cutting pliers, then strip the insulation to expose the stranded wire about 10 mm and tightly twist the wire ends.



- (2) Using a Phillips head screwdriver, remove the terminal screw(s) on the terminal board.
- (3) Using a ring connector fastener or pliers, securely clamp each stripped wire end with a ring pressure terminal.

(4) Put the removed terminal screw through the ring pressure terminal and then replace and tighten the terminal screw using a screwdriver



■ PRECAUTIONS REGARDING TEST RUN

Check Before Test Run

	Content check
Outdoor unit	Check that the insulation resistant value is more than 1MΩ. Use the 500 V mega-testers to measure the insulation. Check point: between power supply terminal block (L1, L2, L3, N or L, N) to earth. Do not use the mega-tester for any other circuit except for voltage of 230-240V~ or 400-415V 3N~.
Power supply cable Indoor/outdoor connection wire Earth wire	 Is the wire set up and connected as described in the instructions? Check for any phase sequence. Are the wire connection's screws loose? Is the open and close device / leakage breaker installed? Is the power supply cable's thickness and length appropriately measured as described in the instructions? Is it earthed (grounded)? Are the wire connections for the indoor/outdoor units connected as described in the instructions? Are there any looped wires? Was the "N-phase" surely connected when connecting the power supply wire on the three-phase model? If N-phase is not connected, only the fan may repeat turning ON/OFF without the compressor operating. In that case, check if there is any problem with N-phase connection.
Refrigerant tube	 Is the tubing installed as described in the instructions? Are the tubes sizes appropriate? Does the tube's length adhere to the specifications? Is the branch tube slant being appropriately done as described in the instructions? Was vacuum removal sufficiently carried out? Was the leak tightness test carried out with nitrogen gas? Use the testing pressure of 4.15 MPa. Is the tubing insulation material appropriately installed? (Insulation material is necessary for both gas and liquid tubing.) Is the 3-way valve for the liquid tube and gas tube open?

- Always be sure to use a properly insulated tool to operate the short-circuit pin on the circuit board. (Do not use your finger.) Never switch the power supply ON until the installation has completed.

 Supply electrical current through all indoor units and check the voltage.

- Supply electrical current through all the outdoor units and check each inter-phase voltage.
- Before the test run, ensure to check that the 3-way valve is open. Operating while the valve is closed causes the compressor to fail.

Test Run Procedure

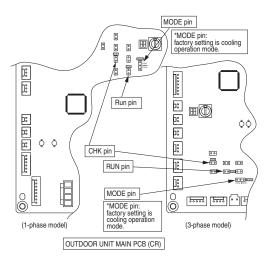
- If there are duplicated system addresses, or if the settings for the Nos. of the indoor units are not consistent, an alarm will occur and the system
- Switch the power supply ON both indoor and outdoor unit.
- Short-circuit CHK pin on the outdoor main PCB. Do not remove CHK pin until test run is completed.
- Removing CHK pin stops test run.

 Short-circuit RUN pin on the outdoor main PCB for one second or longer.

 Factory setting is cooling operation mode and cooling operation test run starts.

 If heating operation starts, short-circuit both right side and centre of the MODE pin (centre and COOL) continuously.

 Ensure to conduct a test run. In addition, be sure to run the cooling operation test run for at least 20 minutes before starting the heating operation
- To conduct heating operation test run, short-circuit left side and centre of the MODE pin (centre and HEAT) continuously.
 Removing CHK pin's and MODE pin's short-circuit stops test run.
 For the test run using remote controller, please see installation instructions included with the remote controller.



Caution for Pump Down

Pump down means refrigerant gas in the system is returned to the outdoor unit. Pump down is used when the unit is to be moved, or before servicing the refrigerant

How to perform Pump-Down (Refrigerant recovery) properly
(1) Stop operation of the unit (cooling, heating etc.).
(2) Connect the pressure gauge to the service port of the gas tubing valve.
(3) Short-circuit the "PUMPDOWN" pin on an outdoor unit control PCB (CR) for more than 1 second to release.

• Pump-Down begins and the unit starts operating.
• During Pump-Down, LED1 blinks and LED2 is lit on an outdoor unit control PCB (CR).

• "CHK" blinks on the remote controller.

Note: In the case that inter-unit wiring is 30m or longer, you cannot pump-down. (It may trigger the operation of the overload protection device.)
In this case, perform pump-down with pump-down device.

(4) Fully close the liquid tubing valve 2-3 minutes later.
The Pump-Down will begin.
(5) When the pressure gauge drops to 0.1-0.2MPa, close the gas tubing valve tightly and short-circuit the "PUMPDOWN" pin for more than 1 second to release. That is the end of Pump-

 When running for more than 10 minutes, it stops even if the Pump-Down is not completed. Check the blocked state of the liquid tubing valve.
It also stops when the "PUMPDOWN" pin is short-circuited

during the operation.

* For compressor protection, do not operate to the point where the unit wiring side reaches negative pressure.

Note: In the case that inter-unit wiring is 30m or longer, you cannot pump-down. (It may trigger the operation of the overload protection device.) In this case, perform pump-down with pump-down device.

(1-phase model)

TEST ON COM

OUTDOOR UNIT MAIN PCB (CR)



10. CHECKS AFTER INSTALLATION HAVE COMPLETED

- Check the following items after completing installation.
 - ☐ Is there a short circuit with the intake air flow?
 - ☐ Is the insulation secure? (Refrigerant tubing)
 - ☐ Are there any errors with the wiring?
 - ☐ Are the terminal screws loose? Tightening torque (Unit: N•m {kgf•cm})

M4...1.57~1.96{16~20}, M5...1.96~2.45{20~25}

- ☐ Is the drain water flowing smoothly?
- ☐ Is the insulation material properly installed?
- \square Is the earth wire securely connected?
- ☐ Is the front panel and the indoor unit air conditioner firmly fixed and was the installation completed without any leakage from the refrigerant?
- ☐ Are the indoor and outdoor units secured firmly installed with bolts at secured locations?

■ REGARDING DELIVERY TO THE CUSTOMER

- Request the customer to review the operating instructions and explain the operating method for the product.
- In addition, it is also recommended that regular inspection checks are agreed upon for maintenance.

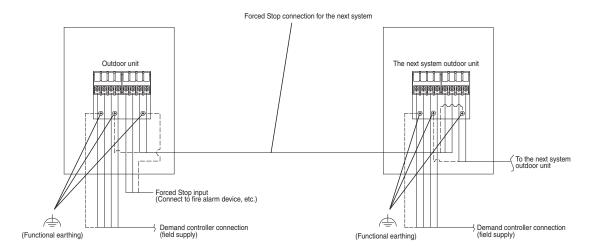
- • Heat exchanger cleaning

- • Grill cleaning User inspection places - • Exterior cleaning - • Check the operating status Serviceman inspection -Clean the drain pan or things related to the water discharge

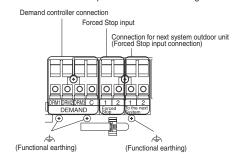
CONNECTION FOR DEMAND AND FORCED STOP

■ CONNECTION PROCEDURE

Be sure to always turn the power off first when setting up the wire and cable connections. Failure to do so may lead to electric shock or unit failure.

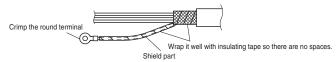


The demand terminal set up is shown in the following illustration.



• Use a shielded cable for the cable connection.

For the shield part of the shielded cable twist the end out, crimp it with a round terminal, and connect it to the functional earthing screw. After crimping it with a round terminal, wrap it with insulating tape so there are no spaces and adjust it so the shield part does not touch any live parts.

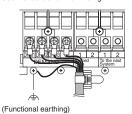




Be sure that the shield part of the shielded cable does not touch the terminal block or any live parts. Failure to do so may lead to electric shock or fire.

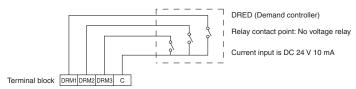
WHEN CONNECTING THE DEMAND CONTROLLER INPUT

It is possible to choose various demand levels. See the table shown on the right.



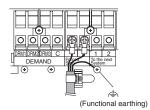
Terminal no. for demand section	Description
DRM3	Approx. 75% of rated power input
DRM2	Approx. 50% of rated power input
DRM1	Compressor off

Connect the wiring (4-wire) to the Demand section (DRM1, DRM2, DRM3, C) on the terminal block. The shield part of the shielded cable is connected with (functional earthing) under the terminal block. Secure the wiring with the cord clamp located on the lower part of the terminal block.

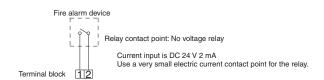


WHEN CONNECTION TO THE FORCED STOP INPUT

With the Forced Stop input, it is possible to override the air conditioning operation to force a stop if a signal is received from a fire alarm device, etc.



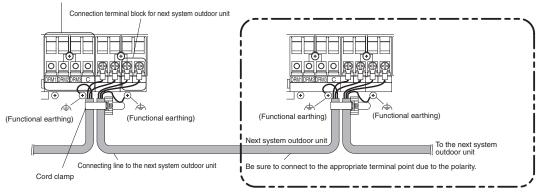
Connect the wiring (2-wire) to points 1 and 2 on the left side of the terminal block. The shield part of the shielded cable is connected with \spadesuit (functional earthing) under the terminal block. Secure the wiring with the cord clamp located on the lower part of the terminal block.



WHEN CONNECTING TO THE NEXT SYSTEM UNIT

- Forced Stop input can be transferred to the next system unit.
- When using the Forced Stop input, connect the wiring to the terminal points 1 and 2 on the right side of the lower part of the terminal block.
- The maximum wire/cable length is 100 m.
- The demand control cannot be transferred to the next system unit.
- When transferring to the next system, the maximum number of connecting units is 30.
- 1. Connecting the wiring to the lower part of the terminal block.
 When transferring the Forced Stop input to the next system connect the wiring (2-wire) to the terminal points 1 and 2 at the lower right side of the terminal block.
 The shield part of the shielded cable is connected with 🌣 (functional earthing) under the terminal block.
 Secure the wiring with the cord clamp located on the lower part of the terminal block.
- Connecting the shielded cable to the terminal block for the next system.For the Forced Stop input, connect the wiring to the terminal points 1 and 2 at the lower right side of the terminal block.When connecting to the next system be sure to connect to the appropriate terminal point due to the polarity.

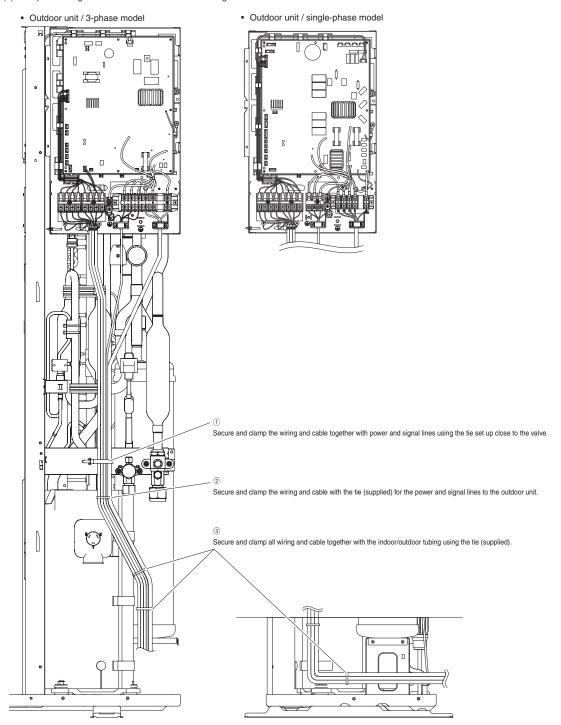
Demand control cannot be transferred to the next system



■ WIRING PROCEDURE

Follow the wiring procedure below for terminal connection.

- (1) Secure and clamp the power and signal lines with the tie, set up close to the valve.
- (2) Set the wiring and cables for the power and signal lines to the outdoor unit together, and secure each wire and cable with the tie.
- (3) Set up the wiring and cable for the outdoor unit tubing and secure with a tie.



1-10. Capacity Table High Static Pressure Duct Type S-160PE3R High Static Pressure Ducted Type S-180PE4R, S-200PE4R, S-224PE4R 1. Cooling capacity performance data

TC :Cooling Capacity
SHC :Sensible Heat Capacity
IPT :Cooling Power Consumption
unit : kW

S-160PE3R

U-160PZH3R5, U-160PZH3R8

								*		Outdo	or air intak	e temp (°C	D.B.)	*						
Amb	pient		25	25	25	30	30	30	35	35	35	40	40	40	46	46	46	52	52	52
DB	WB		TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT
	16	2316	18.1	14.1	5.39	17.8	11.9	6.00	16.6	11.3	5.88	14.9	10.6	5.58	13.9	10.1	5.16	3.3	2.3	1.37
23	19	2319	19.5	10.6	5.51	19.3	8.4	6.12	18.0	7.8	6.00	16.4	7.2	5.70	15.3	6.8	5.28	3.6	1.6	1.40
	22	2322	21.0	7.0	5.63	20.7	4.8	6.24	19.4	4.4	6.12	17.8	3.8	5.82	16.7	3.2	5.40	3.9	0.9	1.43
	16	2516	18.1	16.3	5.39	17.8	16.2	6.00	16.6	15.6	5.88	14.9	14.8	5.58	13.9	13.9	5.16	3.3	3.1	1.37
25	19	2519	19.5	12.7	5.51	19.3	12.6	6.12	18.0	12.0	6.00	16.4	11.4	5.70	15.3	11.0	5.28	3.6	2.4	1.40
	22	2522	21.0	9.1	5.63	20.7	9.0	6.24	19.4	8.6	6.12	17.8	8.0	5.82	16.7	7.4	5.40	3.9	1.7	1.43
	16	2716	18.1	18.1	5.39	17.8	17.8	6.00	16.6	16.6	5.88	14.9	14.9	5.58	13.9	13.9	5.16	3.3	3.3	1.37
27	19	2719	19.5	14.8	5.51	19.3	14.7	6.12	18.0	14.2	5.95	16.4	13.5	5.70	15.3	13.1	5.28	3.6	2.8	1.40
	22	2722	21.0	11.2	5.63	20.7	11.1	6.24	19.4	10.7	6.12	17.8	10.1	5.82	16.7	9.7	5.40	3.9	2.1	1.43
	16	2916	18.1	18.1	5.39	17.8	17.8	6.00	16.6	16.6	5.88	14.9	14.9	5.58	13.9	13.9	5.16	3.3	3.3	1.37
29	19	2919	19.5	17.0	5.51	19.3	16.9	6.12	18.0	16.3	6.00	16.4	15.7	5.70	15.3	15.2	5.28	3.6	3.3	1.40
	22	2922	21.0	13.3	5.63	20.7	13.2	6.24	19.4	12.7	6.12	17.8	12.1	5.82	16.7	11.8	5.40	3.9	2.5	1.43
	16	3216	18.1	18.1	5.39	17.8	17.8	6.00	16.6	16.6	5.88	14.9	14.9	5.58	13.9	13.9	5.16	3.3	3.3	1.37
32	19	3219	19.5	19.5	5.51	19.3	19.3	6.12	18.0	18.0	6.00	16.4	16.4	5.70	15.3	15.3	5.28	3.6	3.6	1.40
	22	3222	21.0	16.4	5.63	20.7	16.3	6.24	19.4	15.9	6.12	17.8	15.3	5.82	16.7	14.9	5.40	3.9	3.2	1.43

S-180PE4R

U-180PZH3R5, U-180PZH3R8

										Outdo	or air intak	e temp (°C	D.B.)							
Amb	ient		25	25	25	30	30	30	35	35	35	40	40	40	46	46	46	52	52	52
DB	WB		TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT
	16	2316	20.1	16.4	6.47	19.8	13.5	7.20	18.4	12.9	7.06	16.6	12.0	6.70	15.4	11.6	6.19	3.7	2.6	1.66
23	19	2319	21.7	11.8	6.62	21.4	9.1	7.34	20.0	8.5	7.20	18.2	7.8	6.84	17.0	7.3	6.34	4.0	1.7	1.69
	22	2322	23.3	7.3	6.76	23.0	4.6	7.49	21.6	4.1	7.34	19.8	3.5	6.98	18.6	3.1	6.48	4.3	0.8	1.73
	16	2516	20.1	19.0	6.47	19.8	18.9	7.20	18.4	18.4	7.06	16.6	16.6	6.70	15.4	15.4	6.19	3.7	3.7	1.66
25	19	2519	21.7	14.5	6.62	21.4	14.4	7.34	20.0	13.9	7.20	18.2	13.2	6.84	17.0	12.6	6.34	4.0	2.8	1.69
	22	2522	23.3	10.0	6.76	23.0	9.9	7.49	21.6	9.4	7.34	19.8	8.8	6.98	18.6	8.4	6.48	4.3	1.9	1.73
	16	2716	20.1	20.1	6.47	19.8	19.8	7.20	18.4	18.4	7.06	16.6	16.6	6.70	15.4	15.4	6.19	3.7	3.7	1.66
27	19	2719	21.7	17.2	6.62	21.4	17.0	7.34	20.0	16.5	7.20	18.2	15.8	6.84	17.0	15.3	6.34	4.0	3.3	1.69
	22	2722	23.3	12.6	6.76	23.0	12.5	7.49	21.6	12.1	7.34	19.8	11.4	6.98	18.6	11.0	6.48	4.3	2.4	1.73
	16	2916	20.1	20.1	6.47	19.8	19.8	7.20	18.4	18.4	7.06	16.6	16.6	6.70	15.4	15.4	6.19	3.7	3.7	1.66
29	19	2919	21.7	19.9	6.62	21.4	19.8	7.34	20.0	19.2	7.20	18.2	18.2	6.84	17.0	17.0	6.34	4.0	3.8	1.69
	22	2922	23.3	15.3	6.76	23.0	15.2	7.49	21.6	14.7	7.34	19.8	14.1	6.98	18.6	13.7	6.48	4.3	2.9	1.73
	16	3216	20.1	20.1	6.47	19.8	19.8	7.20	18.4	18.4	7.06	16.6	16.6	6.70	15.4	15.4	6.19	3.7	3.7	1.66
32	19	3219	21.7	21.7	6.62	21.4	21.4	7.34	20.0	20.0	7.20	18.2	18.2	6.84	17.0	17.0	6.34	4.0	4.0	1.69
	22	3222	23.3	19.3	6.76	23.0	19.2	7.49	21.6	18.7	7.34	19.8	18.1	6.98	18.6	17.7	6.48	4.3	3.7	1.73

S-200PE4R U-200PZH3R8

										Outdo	or air intak	e temp (°C	D.B.)							
Aml	bient		25	25	25	30	30	30	35	35	35	40	40	40	46	46	46	52	52	52
DB	WB		TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT
	16	2316	22.5	17.6	7.01	22.2	14.7	7.80	20.6	14.0	7.64	18.6	13.1	7.25	17.2	12.3	6.71	4.1	2.8	1.80
23	19	2319	24.3	13.1	7.17	24.0	10.2	7.96	22.4	9.6	7.80	20.4	8.7	7.41	19.0	8.2	6.86	4.5	1.9	1.83
	22	2322	26.1	8.5	7.32	25.8	5.7	8.11	24.2	4.9	7.96	22.2	4.4	7.57	20.8	3.9	7.02	4.8	1.0	1.87
	16	2516	22.5	20.3	7.01	22.2	20.2	7.80	20.6	19.4	7.64	18.6	18.5	7.25	17.2	17.2	6.71	4.1	3.9	1.80
25	19	2519	24.3	15.7	7.17	24.0	15.6	7.96	22.4	15.0	7.80	20.4	14.1	7.41	19.0	13.6	6.86	4.5	3.0	1.83
	22	2522	26.1	11.1	7.32	25.8	11.0	8.11	24.2	10.2	7.96	22.2	9.7	7.57	20.8	9.2	7.02	4.8	2.0	1.87
	16	2716	22.5	22.5	7.01	22.2	22.2	7.80	20.6	20.6	7.64	18.6	18.6	7.25	17.2	17.2	6.71	4.1	4.1	1.80
27	19	2719	24.3	18.4	7.17	24.0	18.0	7.96	22.4	17.4	7.80	20.4	16.8	7.41	19.0	16.2	6.86	4.5	3.5	1.83
	22	2722	26.1	13.8	7.32	25.8	13.4	8.11	24.2	13.1	7.96	22.2	12.4	7.57	20.8	11.9	7.02	4.8	2.6	1.87
	16	2916	22.5	22.5	7.01	22.2	22.2	7.80	20.6	20.6	7.64	18.6	18.6	7.25	17.2	17.2	6.71	4.1	4.1	1.80
29	19	2919	24.3	21.1	7.17	24.0	20.9	7.96	22.4	20.3	7.80	20.4	19.4	7.41	19.0	18.9	6.86	4.5	4.1	1.83
	22	2922	26.1	16.5	7.32	25.8	16.3	8.11	24.2	15.8	7.96	22.2	15.0	7.57	20.8	14.5	7.02	4.8	3.2	1.87
	16	3216	22.5	22.5	7.01	22.2	22.2	7.80	20.6	20.6	7.64	18.6	18.6	7.25	17.2	17.2	6.71	4.1	4.1	1.80
32	19	3219	24.3	24.3	7.17	24.0	24.0	7.96	22.4	22.4	7.80	20.4	20.4	7.41	19.0	19.0	6.86	4.5	4.5	1.83
	22	3222	26.1	20.2	7.32	25.8	20.3	8.11	24.2	19.5	7.96	22.2	19.0	7.57	20.8	18.5	7.02	4.8	3.9	1.87

S-224PE4R U-224PZH3R8

										Outdo	or air intak	e temp (°C	D.B.)							
Amb	ient		25	25	25	30	30	30	35	35	35	40	40	40	46	46	46	52	52	52
DB	WB		TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT
	16	2316	25.1	19.5	8.27	24.8	16.3	9.20	23.0	15.5	9.02	20.8	14.4	8.56	19.3	13.8	7.91	4.6	3.1	2.13
23	19	2319	27.1	14.4	8.45	26.8	11.2	9.38	25.0	10.5	9.20	22.8	9.6	8.74	21.3	8.9	8.10	5.0	2.1	2.16
	22	2322	29.1	9.2	8.64	28.8	6.0	9.57	27.0	5.4	9.38	24.8	4.6	8.92	23.3	4.1	8.28	5.4	1.1	2.21
	16	2516	25.1	22.7	8.27	24.8	22.5	9.20	23.0	21.7	9.02	20.8	20.6	8.56	19.3	19.3	7.91	4.6	4.3	2.13
25	19	2519	27.1	17.4	8.45	26.8	17.3	9.38	25.0	16.6	9.20	22.8	15.6	8.74	21.3	15.0	8.10	5.0	3.3	2.16
	22	2522	29.1	12.2	8.64	28.8	12.1	9.57	27.0	11.4	9.38	24.8	10.6	8.92	23.3	10.1	8.28	5.4	2.3	2.21
	16	2716	25.1	25.1	8.27	24.8	24.8	9.20	23.0	23.0	9.02	20.8	20.8	8.56	19.3	19.3	7.91	4.6	4.6	2.13
27	19	2719	27.1	20.5	8.45	26.8	20.1	9.38	25.0	19.7	9.20	22.8	18.7	8.74	21.3	18.1	8.10	5.0	3.9	2.16
	22	2722	29.1	15.2	8.64	28.8	15.1	9.57	27.0	14.4	9.38	24.8	13.6	8.92	23.3	12.9	8.28	5.4	2.9	2.21
	16	2916	25.1	25.1	8.27	24.8	24.8	9.20	23.0	23.0	9.02	20.8	20.8	8.56	19.3	19.3	7.91	4.6	4.6	2.13
29	19	2919	27.1	23.6	8.45	26.8	23.4	9.38	25.0	22.7	9.20	22.8	21.7	8.74	21.3	21.1	8.10	5.0	4.5	2.16
	22	2922	29.1	18.3	8.64	28.8	18.1	9.57	27.0	17.5	9.38	24.8	16.7	8.92	23.3	16.1	8.28	5.4	3.5	2.21
	16	3216	25.1	25.1	8.27	24.8	24.8	9.20	23.0	23.0	9.02	20.8	20.8	8.56	19.3	19.3	7.91	4.6	4.6	2.13
32	19	3219	27.1	27.1	8.45	26.8	26.8	9.38	25.0	25.0	9.20	22.8	22.8	8.74	21.3	21.3	8.10	5.0	5.0	2.16
	22	3222	29.1	22.5	8.64	28.8	22.7	9.57	27.0	22.1	9.38	24.8	21.1	8.92	23.3	20.7	8.28	5.4	4.4	2.21

2. Heating capacity performance data

TC :Heating Capacity
IPT :Heating Power Consumption
__unit : kW

						Outdo	or air intak	e temp(°C	W.B.)			
Model	Power Source	Ambient Return Air	-21	°C	-8	°C	69	°C	8°	C	15	°C
		DB	TC	IPT	TC	IPT	TC	IPT	TC	IPT	TC	IPT
S-160PE3R	230V-240V	16	12.8	4.96	17.5	5.37	21.0	5.84	17.4	3.94	21.2	3.99
(U-160PZH3R5, U-160PZH3R8)	50Hz 1phase (400V-415V	20	11.8	5.26	16.5	5.67	20.0	6.15	16.4	4.25	20.2	4.30
0-1001 2113110)	50Hz 3phase)	24	10.8	5.57	15.5	5.98	19.0	6.46	15.4	4.55	19.2	4.60
S-180PE4R	230V-240V	16	14.4	5.24	19.6	5.67	23.5	6.18	19.5	4.16	23.8	4.21
(U-180PZH3R5, U-180PZH3R8)	50Hz 1phase (400V-415V	20	13.2	5.56	18.5	6.00	22.4	6.50	18.3	4.49	22.7	4.54
0-16072113110)	50Hz 3phase)	24	12.1	5.89	17.4	6.32	21.3	6.83	17.2	4.81	21.5	4.86
	230V-240V	16	16.0	5.96	21.9	6.46	26.3	7.03	21.7	4.74	26.5	4.80
S-200PE4R (U-200PZH3R8)	50Hz 1phase (400V-415V	20	14.8	6.33	20.6	6.83	25.0	7.40	20.5	5.11	25.3	5.17
	50Hz 3phase)	24	13.5	6.70	19.4	7.20	23.8	7.77	19.2	5.48	24.0	5.54
	230V-240V	16	18.0	7.01	24.5	7.59	29.4	8.27	24.3	5.57	29.7	5.64
S-224PE4R (U-224PZH3R8)	50Hz 1phase (400V-415V	20	16.6	7.45	23.1	8.03	28.0	8.70	22.9	6.01	28.3	6.08
	50Hz 3phase)	24	15.2	7.88	21.7	8.46	26.6	9.14	21.5	6.44	26.9	6.51

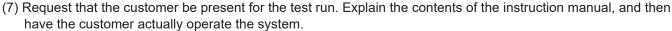
2. TEST RUN

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2-10.	CHECKS AFTER INSTALLATION HAVE COMPLETED	2-26
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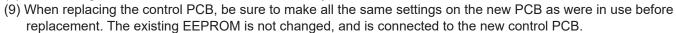
2-1. Preparing for Test Run

• Before attempting to start the air conditioner, check the following:

- (1) All loose matter is removed from the cabinet especially steel filings, bits of wire, and clips.
- (2) The control wiring is correctly connected and all electrical connections are tight.
- (3) The protective spacers for the compressor used for transportation have been removed. If not, remove them now.
- (4) The transportation pads for the indoor fan have been removed. If not, remove them now.
- (5) The power has been supplied to the unit for at least 12 hours before starting the compressor. The bottom of the compressor should be warm to the touch and the crankcase heater around the feet of the compressor
- (6) Both the gas and liquid tube service valves are open. If not, open them now. (Fig. 2-2)







should be hot to the touch. (Fig. 2-1) Liquid tube

Check Before Test Run

	Content check
Outdoor unit	 Check that the insulation resistant value is more than 1MΩ. Use the 500 V mega-testers to measure the insulation. Check point: between power supply terminal block (L1, L2, L3, or L, N) to earth. Do not use the mega-tester for any other circuit except for voltage of 230-240V~ or 400-415V 3N~.
Power supply cable Indoor / outdoor connection wire Earth wire	 Is the wire set up and connected as described in the instructions? Check for any phase sequence. Are the wire connection's screws loose? Is the open and close device / leakage breaker installed? Is the power supply cable's thickness and length appropriately measured as described in the instructions? Is it earthed (grounded)? Are the wire connections for the indoor / outdoor units connected as described in the instructions? Are there any looped wires? Was the "N-phase" surely connected when connecting the power supply wire on the three-phase model? If N-phase is not connected, only the fan may repeat turning ON/OFF without the compressor operating. In that case, check if there is any problem with N-phase connection.
Refrigerant tube	 Is the tubing installed as described in the instructions? Are the tubes sizes appropriate? Does the tube's length adhere to the specifications? Is the branch tube slant being appropriately done as described in the instructions? Was vacuum removal sufficiently carried out? Was the leak tightness test carried out with nitrogen gas? Use the testing pressure of 4.15 MPa. Is the tubing insulation material appropriately installed? (Insulation material is necessary for both gas and liquid tubing.) Is the 3-way valve for the liquid tube and gas tube open?

- Always be sure to use a properly insulated tool to operate the short-circuit pin on the circuit board. (Do not use your finger.)
- Never switch the power supply ON until the installation has completed.
- Supply electrical current through all indoor units and check the voltage.
- Supply electrical current through all the outdoor units and check each inter-phase voltage.
- Before the test run, ensure to check that the 3-way valve is open. Operating while the valve is closed causes the compressor to fail.

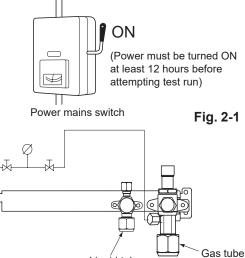


Fig. 2-2

2-2. Precautions

• Request that the customer be present when the test run is performed. At this time, explain the operation manual and have the customer perform the actual steps.

OUTDOOR UNIT MAIN PCB (CR)

- Be sure to pass the manuals and warranty certificate to the customer.
- Check that the 230 240 VAC power is not connected to the inter-unit control wiring connector terminal.
- If 230 240 VAC is accidentally applied, the indoor or outdoor unit control PCB fuse will blow in order to protect the PCB.

Correct the wiring connections, then disconnect the 2P connectors that are connected to the PCB, and replace them with 2P connectors.

If operation is still not possible after changing the brown connectors, try cutting the varistor. (Be sure to turn the power OFF before performing this work.)

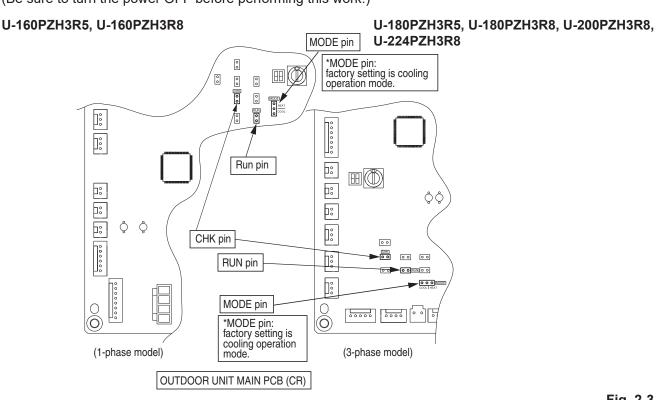


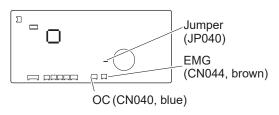
Fig. 2-3

INDOOR UNIT MAIN PCB (CR)

- Request that the customer be present when the test run is performed. At this time, explain the operation manual and have the customer perform the actual steps.
- Check that the 230 –240 VAC power is not connected to the U1 & U2 terminal board terminal.
- * If 230 –240 VAC is accidentally applied, the Fuse on indoor unit Electronic Controller (Communication) will blow in order to protect the PCB.

In this case, recover the connection by disconnect 2P connector wires that originally connected to the indoor unit Electronic Controller (Communication) OC connector and shift the connector wires to EMG connector on same indoor unit Electronic Controller (Communication). If operation is still not possible after shift to EMG connector, cut the jumper JP040 on the same indoor unit Electronic Controller (Communication).

High Static Pressure Duct Type S-160PE3R



High Static Pressure Ducted Type S-180PE4R, S-200PE4R, S-224PE4R

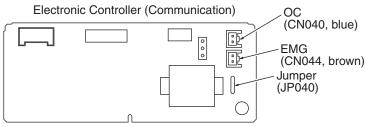


Fig. 2-4

■ Indoor Units

2-3. Caution

- This unit may be used in a single-type refrigerant system where 1 outdoor unit is connected to 1 indoor unit.
- The indoor and outdoor unit control PCB utilizes a semiconductor memory element (EEPROM).
 The settings required for operation were made at the time of shipment.
 Only the correct combinations of indoor and outdoor units can be used.
- This test run section describes primarily the procedure when using the wired remote controller.

2-4. Test Run Procedure

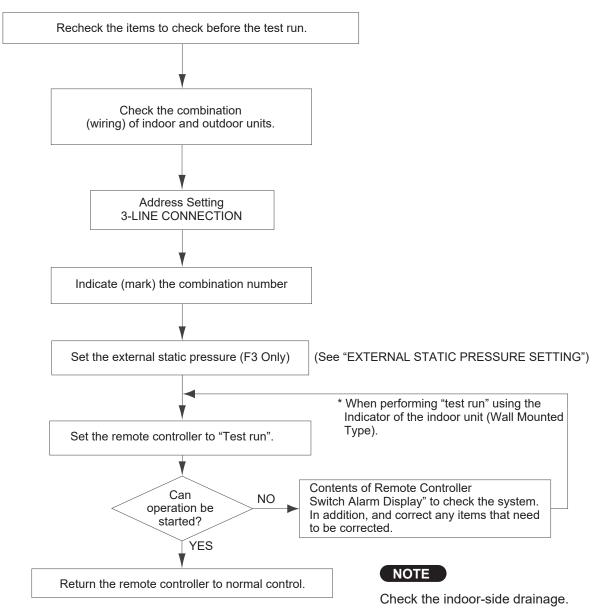


Fig. 2-5

2-5. Items to Check Before the Test Run

- (1) Turn the remote power switch ON at least 12 hours in advance in order to energize the crankcase heater.
- (2) Fully open the closed valves on the liquid-tube and gas-tube sides.

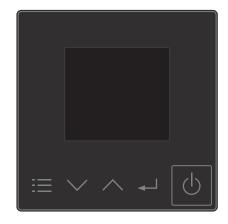
2-6. Test Run Using the Remote Controller < Procedure of CZ-RTC6 series >

This mode places a heavy load on the machines. Therefore use it only when performing the test run.

(1) Keep pressing the ≡, and buttons simultaneously for 4 or more seconds.

The "Maintenance func" screen appears on the LCD display.





CZ-RTC6 series

(2) Press the or button to see each menu.

Select "Test run" on the LCD display and press the button.

Change the display from "OFF" to "ON" by pressing the

✓ or ∧ button.

Then press the — button.

(3) Press the == button.

"TEST" will be displayed on the LCD display.

- (4) Press the button. Test run will be started.

 Test run setting mode screen appears on the LCD display.
 - The test run can be performed using the HEAT, COOL, or FAN operation mode.
 - The temperature cannot be adjusted when in test run mode.
 - If correct operation is not possible, a code is displayed on the remote controller LCD display. (Regarding the alarm contents, see "2-3-1-5. Contents of Remote Controller Switch Alarm Display".)
- (5) After the test run is completed, proceed from Step (1) and change to "OFF" at Step (2).
 - To prevent continuous test run, this remote controller includes a timer function that cancels the test run after 60 minutes.

NOTE

- The outdoor units will not operate for approximately 3 minutes after the power is turned ON and after operation is stopped.
- If the test run is performed using the wired remote controller, operation is possible even if the cassette-type ceiling panel has not been installed. ("P09" display does not occur.)







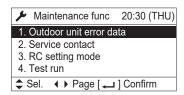


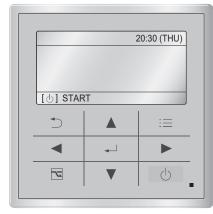
<Pre><Pre>cedure of CZ-RTC5B>

This mode places a heavy load on the machines. Therefore use it only when performing the test run.

(1) Keep pressing the □ , □ and □ buttons simultaneously for 4 or more seconds.

The "Maintenance func" screen appears on the LCD display.

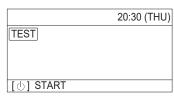




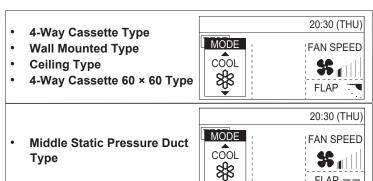
CZ-RTC5B

FLAP --

- (2) Press the ▼ or ▲ button to see each menu. If you wish to see the next screen instantly, press the ✓ or ► button. Select "4. Test run" on the LCD display and press the | \(\ldots \) button. Change the display from "OFF" to "ON" by pressing the ▼ or ▲ button. Then press the ← button.
- 20:30 (THU) Maintenance func 1. Outdoor unit error data 2. Service contact 3. RC setting mode 4. Test run \$ Sel. ◆ Page [→] Confirm Test run 20:30 (THU) Test run ON Change [🛶] Confirm
- (3) Press the button. "TEST" will be displayed on the LCD display.



- (4) Press the button. Test run will be started. Test run setting mode screen appears on the LCD display.
 - The test run can be performed using the HEAT, COOL, or FAN operation mode.
 - The temperature cannot be adjusted when in test run mode.
 - If correct operation is not possible, a code is displayed on the remote controller LCD display. (Regarding the alarm contents, see "2-3-1-5. Contents of Remote Controller Switch Alarm Display".)



- (5) After the test run is completed, proceed from Step (1) and change to "OFF" at Step (2).
 - To prevent continuous test run, this remote controller includes a timer function that cancels the test run after 60 minutes.

NOTE

- The outdoor units will not operate for approximately 3 minutes after the power is turned ONand after operation is stopped.
- If the test run is performed using the wired remote controller, operation is possible even if the cassette-type ceiling panel has not been installed. ("P09" display does not occur.)

<Pre><Pre>cedure of CZ-RTC4>

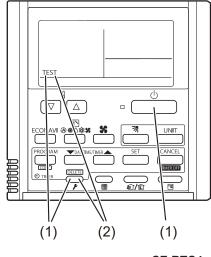
This mode places a heavy load on the machines. Therefore use it only when performing the test run.

(1) Press the remote controller button for 4 seconds or longer.

Then press the _____ button.

"TEST" appears on the LCD display while the test run is in progress.

- The test run can be performed using the HEAT, COOL, or FAN operation mode.
- The temperature cannot be adjusted when in test run mode.
- If correct operation is not possible, a code is displayed on the remote controller LCD display. (Regarding the alarm contents, see "2-3-1-5.
 Contents of Remote Controller Switch Alarm Display")
- (2) After the test run is completed, press the putton again. Check that "TEST" disappears from the LCD display.
 - To prevent continuous test run, this remote controller includes a timer function that cancels the test run after 60 minutes.



CZ-RTC4

NOTE

- The outdoor units will not operate for approximately 3 minutes after the power is turned ON and after operation is stopped.
- If the test run is performed using the wired remote controller, operation is possible even if the cassette-type ceiling panel has not been installed. ("P09" display does not occur.)

2.7. Contents of Remote Controller Switch Alarm Display

ON: ○ Blinking: ☆ OFF: ●

		C	ess re ontroll ver dis	er			
Abno	-	☼∪	0	*		Alarm contents	Error location
disp	olay	Operation	Timer	Standby			
					Faulty remote	e controller	Replace the remote controller
						/ Contact failure of remote controller wiring	Correct the remote controller wiring
	E01		ating la	mp	In the case of Power supp	pins on the indoor unit control PCB are short f non-group control: ly OFF of outdoor unit on / Contact failure of indoor / outdoor	Remove the short Execute auto address setting
		blinkir	ig •		In the case of	f group control: s operation was not carried out	
		*	•	•		of EEPROM (IC010) on indoor unit	Replace the indoor unit EEPROM
Ì	F00				Faulty remote	, ,	Replace the remote controller
	E02				Wrong wiring	of remote controller	Correct the remote controller wiring
	E03				Error in indoc controller (ce	r unit receiving signal from remote ntral)	Check the indoor unit control PCB Check the remote controller wiring Check the indoor / outdoor control line*
					Disconnectio line*	n / Contact failure of indoor / outdoor control	Check the electrical connection of indoor / outdoor controlline*
	E04	Stand blinkir	by lam		Faulty indoo Faulty outdo Communica PCB opene		Replace the indoor unit control PCB Replace the outdoor unit control PCB Check the electrical connection of fuse (F302) on indoor unit control PCB In the case of the fuse opened on an indoor unit control PCB, after correcting wiring connection, it substitutes an EMG plug for OC plug
or Unit		•	•	举	Since failure cause, both	door unit control PCB opened of an outdoor fan motor is considered as a outdoor unit control PCB(CR/HIC) and fan motor are exchanged simultaneously	In the case of the fuse opened on an outdoor unit control PCB, replace both outdoor unit control PCB (CR / HIC) an outdoor unit fan motor simultaneously
• Indoo					Capacity of	or of indoor unit address f indoor / outdoor units is mismatched.	Capacity and address re-setting after correcting the combination of units
le.	E08				-	f indoor unit address setting	Indoor unit address re-setting
ntro	E09				to main	e of more than one remote controller setting	Correct the setting
Remote controller • Indoor Unit	E14	blinkir	ating la ng	mp !		f main unit in group control	Check the indoor / outdoor control line* Check the indoor unit combination
Rer	E18	*			units • Contact faile	on of wiring between main unit and additional ure of wiring or unit control PCB (Main or Addition)	Correct the wiring connection Replace the wiring Replace the indoor unit control PCB
Ī	E15	04		i		The total capacity of indoor units is too low.	Check the indoor / outdoor control line*
	E16	blinkir	lby lam ng ●		Auto address alarm	The total capacity of indoor units is too high The numbers of indoor units is too many The numbers of indoor units is too many	Check the indoor and outdoor unit control PCB Check the power supply Capacity and address re-setting after correcting the combination of units
	F01	Opera			Indoor heat e	xchanger temperature sensor (E1) trouble	Check the indoor unit heat exchanger temperature sens (E1) Check the indoor unit control PCB
	F02	lamp l altern	blinkino ately) :	Indoor heat e	xchanger temperature sensor (E2) trouble	Check the indoor unit heat exchanger temperature sens (E2) Check the indoor unit control PCB
	F10	*	*	•	Indoor air ten	nperature sensor (TA) trouble	Check the indoor unit air temperature sensor (TA) Check the indoor unit control PCB
	F29	simult	mer blinking aneous		Indoor unit E	EPROM trouble	Check the indoor unit EEPROM Check the indoor unit control PCB
	L02	*	*			indoor / outdoor unit type /	Address re-setting after correcting the combination of unit
}	L03					tched f main indoor unit address in group control	Correct the group (main and addition)
	L03	lamps			Group contro	I wiring is connected to individual control	Correct the indoor unit address
ŀ	L08	*	•	*		ddress is not set	Correct the indoor unit address
Ì	L09	'`			Indoor unit ca	apacity is not set	Correct the capacity setting of indoor units

 $^{^{\}star}$ indoor / outdoor control line $\!\!^{\star}$: Connection cable between outdoor and indoor unit

		C	ess re ontrolle ver dis	er		
Abno	ormal	☆ -()	e	*	Alema contents	Franklanden
dis	play	Operation	Timer	Standby	Alarm contents	Error location
					Indoor unit fan motor locked	Remove the cause
	P01				Indoor unit fan motor layer short	Replace the fan motor
					Contact failure in thermostat protector circuit	Correct the wiring
	P09				Faulty wiring connections of (ceiling) indoor unit panel	Correct the wiring connection Correct insertion direction of connector. (Hook is outside)
Ξ		Timer	and	'	Faulty drain pump	Repair / Replace
j		standl			Drainage failure	• Correct
oop	P10	altern	bĺinking atelv	J	Contact failure of float switch wiring	Correct the wiring
Remote controller • Indoor Unit		•	*	*	High water alarm for the case of Middle static pressure duct (PF) model installed vertically	Change the setting
tro	P11				Faulty drain pump	Repair / Replace
00	PII				Drain pump locked	Remove the cause
mote	P12				Indoor unit fan motor locked Faulty wiring connections of indoor unit fan motor	Remove the cause Correct the wiring
Re	P31		tandby blinking	; *	Indoor unit in group control trouble	Repair indoor unit which blinking alarm

		C	ess rei ontrolle ver dis	er			
	ormal	☆ ∪	Ð	*		Alarm contents	Error location
ais	play	Operation	Timer	Standby			
		Stand	by lam	2	Disconnection line*	on / Contact failure of indoor / outdoor control	Correct the indoor / outdoor control line* • Check the electrical connection of fuse(F302) on indoor unit control PCB
	E06	blinkir		*	Communicate PCB opened		In the case of the fuse opened on an indoor unit control PCB, After correcting wiring connection, it substitutes an EMG plug for OC plug.
					Indoor unit co	ntrol PCB address setting error	Indoor unit address re-setting
	E15	Stand	by lam	1	Auto	The total capacity of indoor units is too low.	Check the power supply
	E16	blinkir	ig		address alarm	The total capacity of indoor units is too high	Check the indoor and outdoor unit control PCB Check the power supply Capacity and address re-setting after correcting the
	F20	•	•	*		The numbers of indoor units is too many No indoor unit connected	combination of units
	E20 F04				Compressor of	lischarge temperature sensor (TD) trouble	Check the Compressor discharge temperature sensor (TD) Check the outdoor unit control PCB
	F06	Opera			Outdoor heat	exchanger temperature sensor (C1) trouble	Check the outdoor unit heat exchanger temperature sensor (C1) Check the outdoor unit control PCB
	F07	and til lamp l altern	olinking		Outdoor heat	exchanger temperature sensor (C2) trouble	Check the outdoor unit heat exchanger temperature sensor (C2) Check the outdoor unit control PCB
	F08	*	*	0	Outdoor air te	mperature sensor (TO) trouble	Check the outdoor air temperature sensor (TO) Check the outdoor unit control PCB
	F12				Compressor s	uction temperature sensor (TS) trouble	Check the Compressor suction temperature sensor (TS) Check the outdoor unit control PCB
Outdoor Unit	F31	altern	mer olinking ately		Outdoor unit E	EEPROM trouble	Check the outdoor unit EEPROM Check the outdoor unit control PCB
	H01	*	 	0	Primary (inpu	t) overcurrent detected	Check the Refrigerant cycle (abnormal overload operation) Check the outdoor unit control PCB Check the power supply
	H02	Timer blinkir			PAM trouble		Check the outdoor unit control PCB Compressor locked Check the power supply
	H03	•	*	•	Primary curre	nt CT sensor failure	Check the outdoor unit control PCB Check the power supply
	H31				HIC trouble DC voltage no	ot detected	Check the outdoor unit control PCB Check the HIC Compressor locked Valve blockage
	L10	Opera	ting		Outdoor unit	capacity is not set or setting error	Replace the outdoor unit EEPROM
	L13	and st	tandby blinkin aneous			pe setting error r / outdoor units is different	Replace the indoor unit EEPROM Check the outdoor unit control PCB Check the type of IU and OU, and re-set address
	L18	*	0	*	4-way valve lo	ocked trouble / operation failure	Check the 4-way valve Check the 4-way valve wiring Check the outdoor unit control PCB
	P03	Oper			Compressor of	lischarge temperature trouble	Check the refrigerant cycle (gas leak) Trouble with the electronic expansion valve Check the discharge temperature sensor (TD)
	P04	lamp	standby blinking nately		Compressor of	lischarge pressure trouble	Check the refrigerant cycle Valve blockage Heat exchanger obstruction
	P05	*	•	*	Open phase of AC power sup		Check the power supply Check the outdoor unit control PCB Check the compressor wiring ,and reactor wiring

 $[\]ensuremath{^*}$ indoor / outdoor control line $\ensuremath{^*}$: Connection cable between outdoor and indoor unit

		C	ess re ontrolle ver dis	er		
Abno	ormal	☆ ⊕	④	*		
dis	play	Operation	Timer	Standby	Alarm contents	Error location
	P13	Timer standl lamp laltern	by blinking	ı *	Valve error Refrigerant circuit error. Wrong installation for refrigerant piping and wiring	Valve blockage Check the refrigerant circuit Check the refrigerant piping and wiring installation
hit	P15				Insufficient gas level detected	Check the refrigerant cycle (gas leak) Trouble with the electronic expansion valve Valve (or refrigerant circuit) blockage
Outdoor Unit	P16	Opera			Compressor overcurrent trouble	Layer short on the compressor Check the outdoor unit control PCB Compressor locked
Ŏ	P22		tandby blinking ately	I	Outdoor unit fan motor trouble Outdoor unit fan trouble	Check the outdoor unit fan motor, connector Check the outdoor unit control PCB
	P29	*	•	*	Inverter compressor trouble	Layer short on the compressor Check the outdoor unit control PCB Check the inverter compressor wiring (Open phase / Reverse phase) Compressor actuation failure (include lock) Valve (or refrigerant circuit) blockage
	P31				Indoor unit in group control trouble	Repair indoor unit which blinking alarm

2.8. System Control

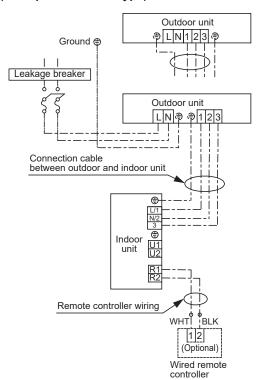
System control refers to the link wiring connection for control of simultaneous-operation multi systems, group control, and main-sub remote controller control.

2-3-1-6-1. Basic wiring diagram: 3-LINE CONNECTION

• Be careful to avoid miswiring when connecting the wires. (Miswiring will damage the units.)

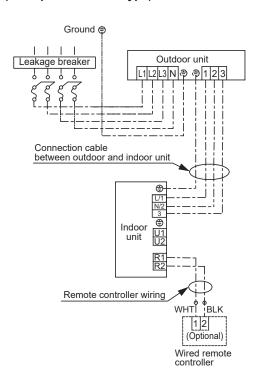
(for 1-phase Outdoor unit)

(Example of SINGLE type)



(for 3-phase Outdoor unit)

(Example of SINGLE type)



(Wiring procedure)

- (1) Connect the remote controller to the indoor unit remote controller wiring terminal plate (R1, R2). (Remote controller wiring)
- (2) Connect the indoor units (L / 1, N / 2, 3) and the outdoor units (1, 2, 3).

 Connect the remote controller communication wiring to the indoor units (R1, R2) for each refrigerant system. (Remote controller wiring)
- (3) Connect the remote controller communication wiring (2 wires) from the remote controller wiring terminal plate (R1, R2) on the indoor unit (unit where the remote controller is connected) to the remote controller terminal plates (R1, R2) on the other indoor units. (Remote controller communication wiring)
- (4) Turn ON both the indoor and outdoor unit power and perform auto address setting from the remote controller. (For the auto address setting procedure, see 2-3-1-6-3.)

NOTE

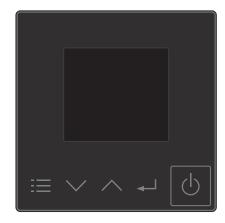
* Be sure to use the indoor unit temperature sensor (body sensor) when using this control. (Status at shipment.)

2-3-1-6-3. Auto Address Setting Using the Remote Controller < Procedure of CZ-RTC6 series>

(1) Keep pressing the ≡, and buttons simultaneously for 4 or more seconds.

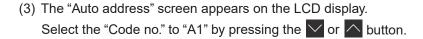
The "Maintenance func" screen appears on the LCD display.





CZ-RTC6 series

(2) Press the or button to see each menu.
Select "Auto address" on the LCD display and press the button.





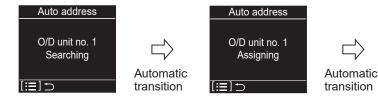
Simple settings

After selecting "Code no.", press the button and proceed to Step (4). If the button is pressed, proceed to Step (5).

(4) Select one of the "O/D unit no." for auto address by pressing the or button.



After selecting "O/D unit no.", press the -- button.





Approximately 10 minutes are required.

When auto address setting is completed, the units return to normal stopped status.

(5) If the button is pressed under the display Step (3), the following display (Auto address-end screen) appears.

Then select "YES" by pressing the or button and press the button.

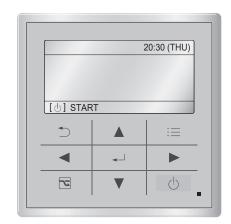


<Pre><Pre>cedure of CZ-RTC5B>

(1) Keep pressing the _____, ___ and ____ buttons simultaneously for 4 or more seconds.

The "Maintenance func" screen appears on the LCD display.



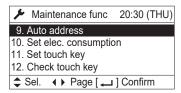


CZ-RTC5B

(2) Press the ▼ or ▲ button to see each menu.

If you wish to see the next screen instantly, press the or button.

Select "9. Auto address" on the LCD display and press the button.



(3) The "Auto address" screen appears on the LCD display.

Change the "Code no." to "A1" by pressing the ▼ or ▲ button.



(4) Select the "O/D unit no." by pressing the

or

button.

Select one of the "O/D unit no." by pressing the ▼ or ▲ button and press the ← button for auto address setting.

Approximately 10 minutes are required.

When auto address setting is completed, the units return to normal stopped status.

<Pre><Pre>cedure of CZ-RTC4>

NOTE

- · Selecting each refrigerant system individually for auto address setting
- · Auto address setting for each system : Item code "A1"
- (1) Press the remote controller timer time button and button at the same time.(Press and hold for 4 seconds or longer.)
- (2) Next, press either the temperature setting ▽/△ button. (Check that the item code is "A1".)
- (3) Use either the button to set the system No. to perform auto address setting.
- (4) Then press the set button.

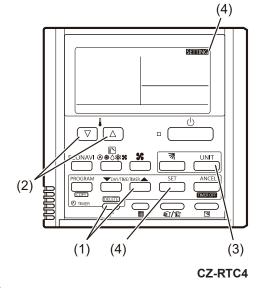
(Auto address setting for one refrigerant system begins.) (When auto address setting for one system is completed, the system returns to normal stopped status.)

<Approximately 10 minutes are required.>

(During auto address setting, "SETTING" is displayed on the remote controller.

This message disappears when auto address setting is completed.)

(5) Repeat the same steps to perform auto address setting for each successive system.



2-3-1-6-4. How to Set Refrigerant System Address (Only outdoor PZ2 and PZH2 series)

- Turn on the power in the indoor and outdoor units of the refrigerant system 1.
- Switch the power on and wait at least 1 minute and 30 seconds or more. Short-circuit the auto address pin of
 the outdoor unit with turned on and release. (LED1 and LED2 of the outdoor unit control PCB blink alternately
 and the address setting of the indoor unit is started. When completed, LEDs go off.)
 - <It takes about 10 minutes until it finished.>
 - Auto address pin: If you once again short-circuit the auto address pin before completion when the auto address started, the auto address will stop.
- Turn on the different refrigerant system's indoor and outdoor units and wait at least 1 minute and 30 seconds or more. Then short-circuit the auto address pin of the outdoor unit and release.
- · Repeat the same procedure and complete the auto address setting of each system.
- When the address setting is completed, wait at least 1 minute and 30 seconds or more. Then start the operation.

2-3-1-6-5. Checking the Indoor Unit Addresses

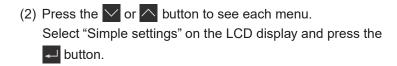
Use the remote controller to check the indoor unit address.

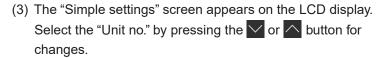
<Pre><Pre>cedure of CZ-RTC6 series>

(1) Keep pressing the ≡, and buttons simultaneously for 4 or more seconds.

The "Maintenance func" screen appears on the LCD display.



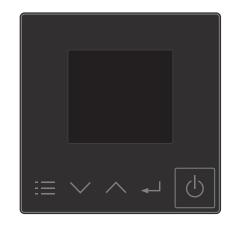




* The initial display is "ALL".

The indoor unit fan operates only at the selected indoor unit.

(4) Press the button and select "YES" to restart.



CZ-RTC6 series

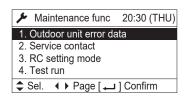




<Pre><Pre>cedure of CZ-RTC5B>

(1) Keep pressing the _____, ___ and ____ buttons simultaneously for 4 or more seconds.

The "Maintenance func" screen appears on the LCD display.





Select "7. Simple settings" on the LCD display and press the $\begin{tabular}{c} \end{tabular}$ button.

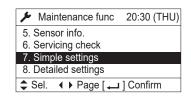
- (3) The "Simple settings" screen appears on the LCD display. Select the "Unit no." by pressing the ▼ or ▲ button for changes.
 - * The initial display is "ALL".

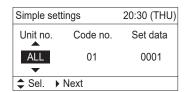
The indoor unit fan operates only at the selected indoor unit.

(4) Press the button and select "YES" to restart.



CZ-RTC5B

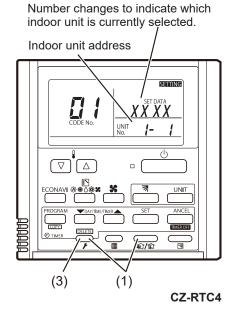




<Pre><Pre>cedure of CZ-RTC4>

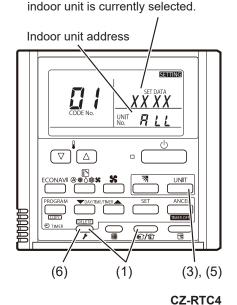
<If 1 indoor unit is connected to 1 remote controller>

- (1) Press and hold the button and button for 4 seconds or longer (simple settings mode).
- (2) The address is displayed for the indoor unit that is connected to the remote controller.(Only the address of the indoor unit that is connected to the remote controller can be checked.)
- (3) Press the putton again to return to normal remote controller mode.



<If multiple indoor units are connected to 1 remote controller (group control)>

- (1) Press and hold the button and button for 4 seconds or longer (simple settings mode).
- (2) "ALL" is displayed on the remote controller.
- (3) Next, press the ____ button.
- (4) The address is displayed for 1 of the indoor units which is connected to the remote controller. Check that the fan of that indoor unit starts and that air is discharged.
- (5) Press the button again and check the address of each indoor unit in sequence.
- (6) Press the button again to return to normal remote controller mode.

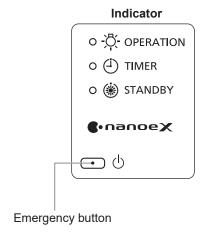


Number changes to indicate which

2-3-1-6-6. Test run using the indicator of the indoor unit (Wall Mounted Type)

This mode places a heavy load on the machines. Therefore use it only when performing the test run.

- (1) Press and hold the Emergency button for 4 seconds or more.
 The indication lamps (OPERATION, TIMER, STANDBY)
 - epeatedly light one after the other for 1 second.
 - The wireless remote controller address setting mode is set.
- (2) Press and hold the Emergency button for 4 seconds or more again. The indication lamps (OPERATION, TIMER, STANDBY) blink during test operation.
 - The test run can be performed using the HEAT, COOL, or FAN operation mode.
 - The temperature cannot be adjusted when in test run mode.
 - If correct operation is not possible, some of the display lamps (OPERATION, TIMER, STANDBY) will turn ON or OFF. (Regarding the alarm contents, see 2-3-1-5. Contents of Remote Controller Switch Alarm Display.)



- (3) To stop test operation, press and hold the Emergency button.
 - To prevent continuous test run, this mode includes a timer function that cancels the test run after 60 minutes.

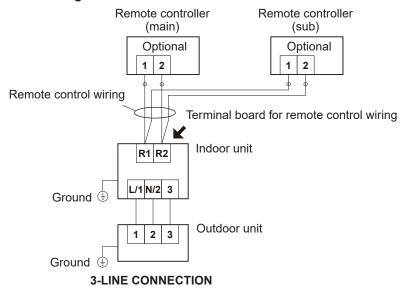
NOTE

• The outdoor units will not operate for approximately 3 minutes after the power is turned ON and after operation is stopped.

2-3-1-6-7. Main-Sub Remote Controller Control

One (1) indoor unit can be controlled by two (2) wired remote controllers. In the case of using 2 remote controllers, one of them needs to be designated as the sub remote controller.

Connecting 2 remote controllers to control 1 Indoor unit



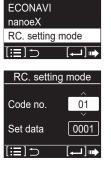
<Pre><Pre>cedure of CZ-RTC6 series>

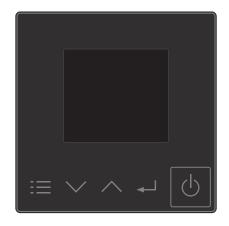
- (2) Select "RC. setting mode".



(3) Select the "Code no." and " Set data".







CZ-RTC6 series

Code no.	Item	Set data	
Code no.	item	0000	0001
01	Main/Sub	Sub	Main

- (4) Press **≡**
 - After selecting "YES", the unit restarts.

<Pre><Pre>cedure of CZ-RTC5B>

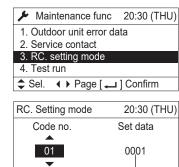
(1) Press and hold the _____, ___ and ____ for 4 seconds or more simultaneously.

(2) Select "3. RC. setting mode".

lack lac

(3) Select the "Code no." and "Set data".





Set data

\$ Sel.

Code no.

▶ Next

		20:30 (THU)	
[①] STAR	rT .		
5			
-	4	>	
	V	(b)	_

CZ-RTC5B

Code no.	Item	Set data	
Code no.	item	0000	0001
01	Main / Sub	Sub	Main

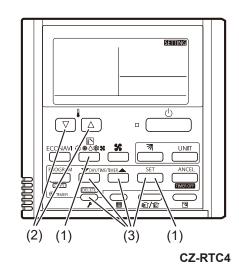
- (4) Press _____.
 - After selecting "YES", the unit restarts.

<Pre><Pre>cedure of CZ-RTC4>

- (1) Press and hold the seconds simultaneously.
- (2) Select the Code no. ▽/△
- (3) Select the Set data. ▼DAY/TIME/TIME/TIMER → □

The indicator illuminates after blinking. Press \bigcirc .

Code no.	Itom	Set data	
Code no.	Item	0000	0001
01	Main / Sub	Sub	Main

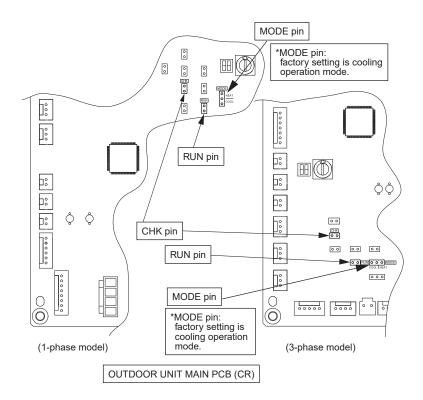


2-25

Outdoor Units

2-9. Test Run Procedure

- If there are duplicated system addresses, or if the settings for the Nos. of the indoor units are not consistent, an alarm will occur and the system will not start.
- Switch the power supply ON both indoor and outdoor unit.
- Short-circuit CHK pin on the outdoor main PCB.
 Do not remove CHK pin until test run is completed.
 Removing CHK pin stops test run.
- Short-circuit RUN pin on the outdoor main PCB for one second or longer.
 - Factory setting is cooling operation mode and cooling operation test run starts.
 - If heating operation starts, short-circuit both right side and centre of the MODE pin (centre and COOL) continuously.
- Ensure to conduct a test run. In addition, be sure to run the cooling operation test run for at least 20 minutes before starting the heating operation test run.
- To conduct heating operation test run, short-circuit left side and centre of the MODE pin (centre and HEAT) continuously.
- Removing CHK pin's and MODE pin's short-circuit stops test run.
- For the test run using remote controller, please see installation instructions included with the remote controller.



2-10. CHECKS AFTER INSTALLATION HAVE COMPLETED

• Check the following items after completing installation.

 \square Is there a short circuit with the intake air flow?

☐ Is the insulation secure? (Refrigerant tubing)

☐ Are there any errors with the wiring?

☐ Are the terminal screws loose? Tightening torque (Unit: N•m {kgf•cm})

M4...1.57~1.96{16~20}, M5...1.96~2.45{20~25}

☐ Is the drain water flowing smoothly?

☐ Is the insulation material properly installed?

 $\hfill \square$ Is the earth wire securely connected?

☐ Is the front panel and the indoor unit air conditioner firmly fixed and was the installation completed without any leakage from the refrigerant?

☐ Are the indoor and outdoor units secured firmly installed with bolts at secured locations?

2-11. REGARDING DELIVERY TO THE CUSTOMER

Request the customer to review the operating instructions and explain the operating method for the product.

In addition, it is also recommended that regular inspection checks are agreed upon for maintenance.

User inspection places

- Grill cleaning

- Exterior cleaning

Serviceman inspection

- Check the operating status

places

- Clean the drain pan or things related to the water discharge

- Heat exchanger cleaning

2-12. Caution for Pump Down

Pump down means refrigerant gas in the system is returned to the outdoor unit. Pump down is used when the unit is to be moved, or before servicing the refrigerant circuit.

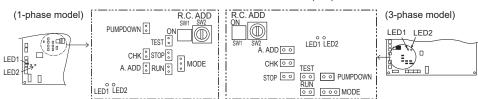
How to perform Pump-Down (Refrigerant recovery) properly

- (1) Stop operation of the unit (cooling, heating etc.).
- (2) Connect the pressure gauge to the service port of the gas tubing valve.
- (3) Short-circuit the "PUMPDOWN" pin on an outdoor unit control PCB (CR) for more than 1 second to release.
 - Pump-Down begins and the unit starts operating.
 - During Pump-Down, LED1 blinks and LED2 is lit on an outdoor unit control PCB (CR).
 - "CHK" blinks on the remote controller.
- (4) Fully close the liquid tubing valve 2-3 minutes later.
 - The Pump-Down will begin.
- (5) When the pressure gauge drops to 0.1-0.2MPa, close the gas tubing valve tightly and short-circuit the "PUMPDOWN" pin for more than 1 second to release. That is the end of Pump-Down.
 - When running for more than 10 minutes, it stops even if the Pump-Down is not completed. Check the blocked state of the liquid tubing valve.
 - It also stops when the "PUMPDOWN" pin is short-circuited during the operation.
- * For compressor protection, do not operate to the point where the unit wiring side reaches negative pressure.

Note: In the case that inter-unit wiring is 30m or longer, you cannot pump-down. (It may trigger the operation of the overload protection device.)

In this case, perform pump-down with pump-down device.

OUTDOOR UNIT MAIN PCB (CR)



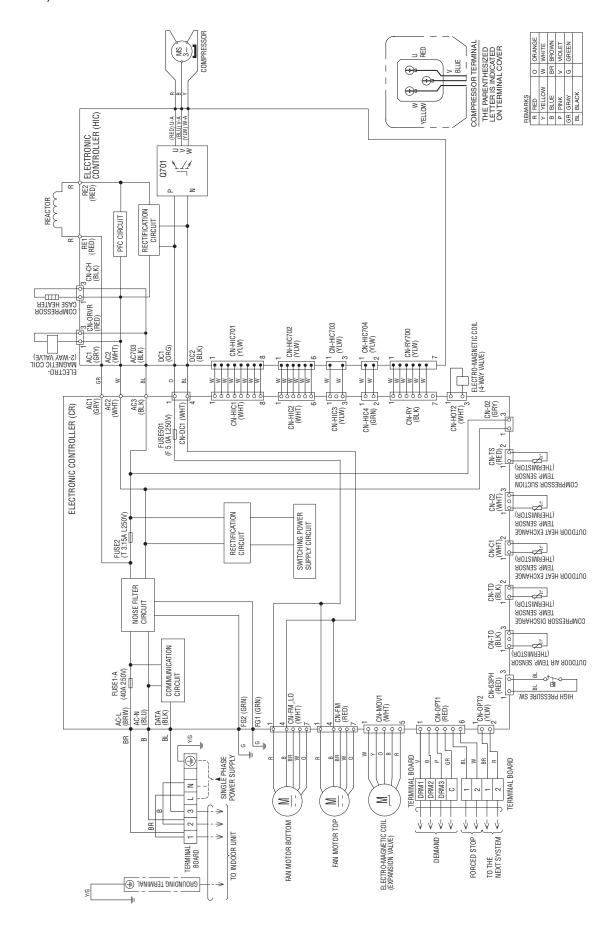
3

3. ELECTRICAL DATA

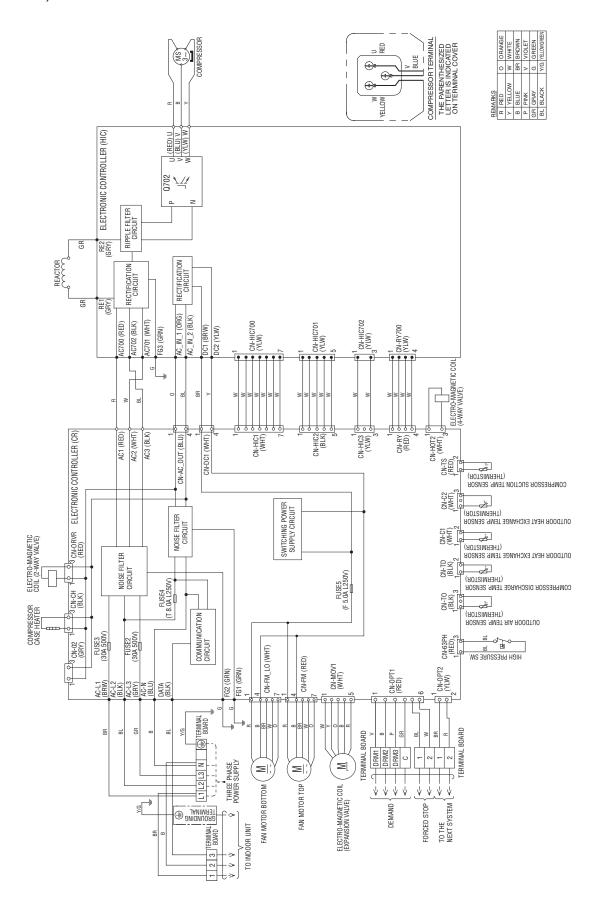
3-1.	Outdoor Units (Electric Win	ring Diagram)	3-2
3-2.	Indoor Units (Electric Wiring Diagram)		
	High Static Pressure Duct Type	S-160PE3R	
	High Static Pressure Ducted Type	S-180PE4R, S-200PE4R, S-224PE4R	

3-1. Outdoor Units (Electric Wiring Diagram)

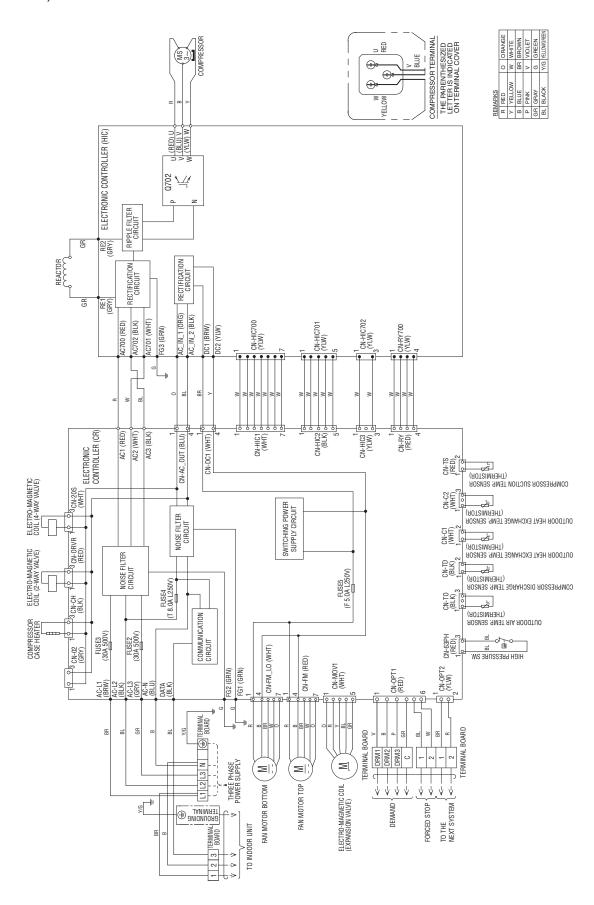
U-160PZH3R5, U-180PZH3R5



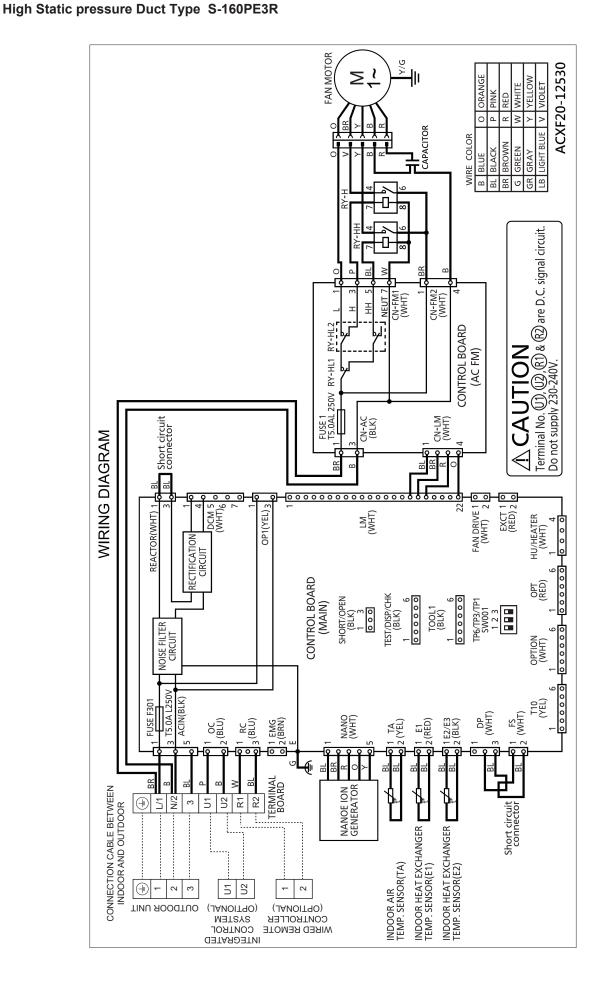
U-160PZH3R8, U-180PZH3R8



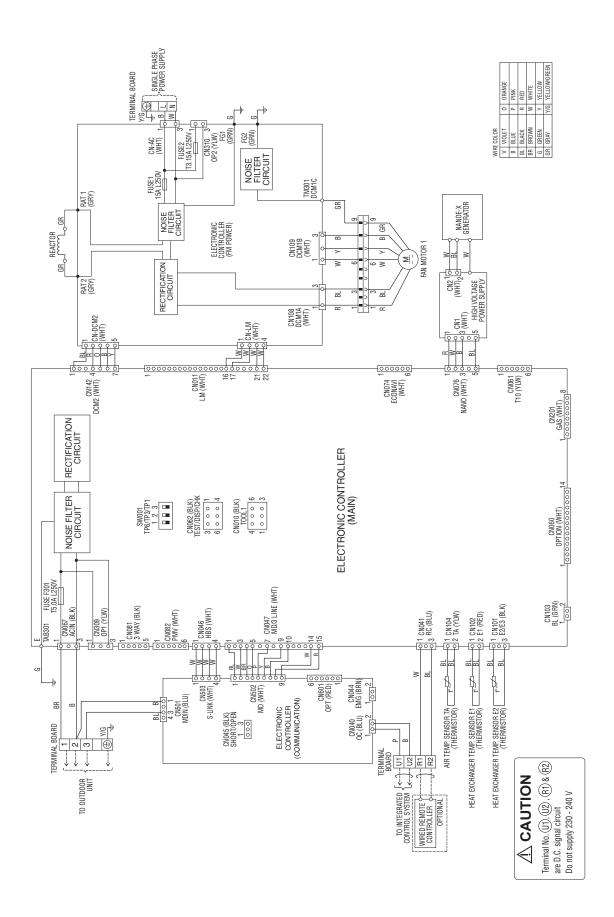
U-200PZH3R8, U-224PZH3R8



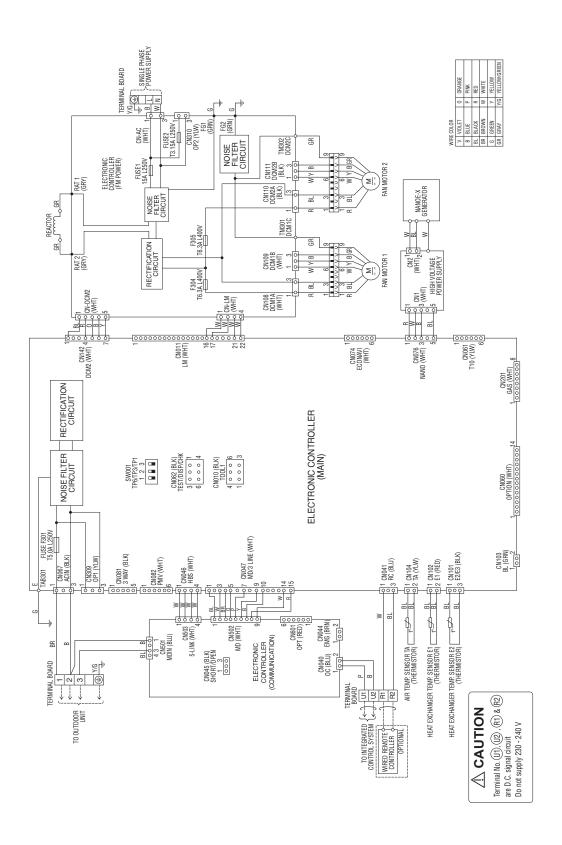
3-2. Indoor Units (Electric Wiring Diagram)



High Static Pressure Ducted Type S-180PE4R, S-200PE4R



High Static Pressure Ducted Type S-224PE4R



4

4. PROCESS AND FUNCTIONS

4-1.	Control Functions	4 - 2
4-2 .	Outdoor Unit Control PCB	4-10
4-3.	Outdoor Unit HIC Board	4-1 4
4-4.	Indoor Unit Control PCB Switches and Functions	4-16

4-1. Control Functions

1. Indoor Air Temperature Control

The thermostat is switched on and off in accordance with Δ T shown below.

∠ T= (Indoor air temperature) - (Temperature set with the remote controller)					
In the body thermostat mode (setting at factory shipment)	Indoor air temperature = (Body sensor) - (Shift temperature *)				
In the remote controller thermostat mode	Indoor air temperature = (Remote controller sensor)				

* Shift Temperature

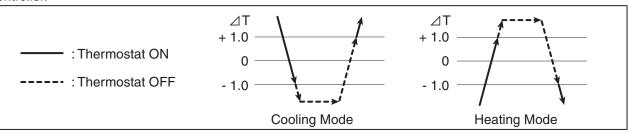
Only valid during heating operation. Set at 0 °C during cooling operation.

The settings at factory shipment during heating operation are as follows:

Wall-Mounted type : 2°C Floor Standing type : 0°C

All other types (4-Way types, Concealed types, etc.): 4°C

This function acts as the coefficient for adjusting differences in temperature caused by the height of the living space from the floor to the ceiling (the temperature at ceiling height is higher) during heating operation. The setting can be modified between 0°C and 6°C with mode [06] (Simple Settings Function) on the remote controller.



- (1) Once the thermostat has been switched on, it cannot be switched off again by indoor air temperature control for a period of 10 minutes.
- (2) Once the thermostat has been switched off, it cannot be switched on again for a period of 3 minutes.
- (3) When in the test run operation mode, the thermostat will not be switched off by indoor air temperature control and the operation will continue.

2. Compressor Frequency Control

The frequency of the compressor's inverter is limited by either of the following controls depending on whether the cooling or heating mode is in operation.

Cooling Mode:

- · Indoor air temperature control
- · Maximum and minimum frequency control
- · Current control
- · Cooling high-load prevention control
- · Cooling freeze prevention control
- · Discharge temperature control

Heating Mode:

- · Indoor air temperature control
- · Maximum and minimum frequency control
- · Current control
- · Heating high-load prevention control
- · Discharge temperature control

1) Indoor Air Temperature Control

By the control method, not only the thermostat is switched on and off, as explained section "1. Indoor Air Temperature Control", but also the frequency of the compressor's inverter is controlled in accordance with \triangle T and fluctuations in indoor air temperature. Inverter frequency is controlled as follows:

When ⊿ T is high (not yet reached the temperature set with the remote controller).	Controlled so that the inverter frequency is increased.
When ⊿ T is low (approximately +1.0 or less in the cooling mode or approximately -1.0 or more in the heating mode).	Controlled so that the inverter frequency is decreased or kept.

2) Maximum and Minimum Frequency Control

The compressor's inverter frequency is controlled in accordance with the model and operation mode. The maximum and minimum frequencies for each model are shown in the table below.

- * There are cases in which frequency is limited with other control functions depending on operational conditions, so operations are not always carried out in accordance with the maximum frequencies listed below.
 - · Maximum and Minimum Frequency

		U-160PZH3R5 U-160PZH3R8	U-180PZH3R5 U-180PZH3R8	U-200PZH3R8	U-224PZH3R8
Maximum Fraguanay (Uz)	Cooling	60	70	70	80
Maximum Frequency (Hz)	Heating	65	80	95	100
Minimum Fraguency (Hz)	Cooling	13	13	13	13
Minimum Frequency (Hz)	Heating	15	15	15	15

3) Current Control

The inverter frequency is controlled so that the current value for the inverter compressor is less than the figure listed in the table below in order to prevent abnormal increases in the inverter circuit located within the outdoor unit's electrical box.

Current control with primary current: The limited values are modified in accordance with ambient temperature.

		U-160PZH3R5	U-160PZH3R8	U-180PZH3R5	U-180PZH3R8	U-200PZH3R8	U-224PZH3R8
Is (A)	Cooling	27.5	10.5	32.5	11.5	12.5	14.0
15 (A)	Heating	29.0	10.5	32.5	11.5	15.0	16.5

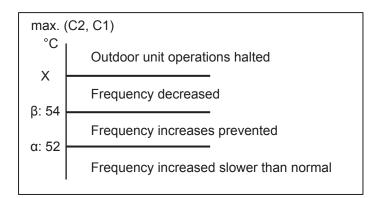
^{*} There is a case in which the frequency set at maximum and minimum may sometimes decrease in accordance with ambient temperature and indoor loads.

4) Condensation Temperature Control (cooling)

This system control is performed to limit the inverter frequency in order to restrict high pressure's abnormal increase and high-load operating prevention in the cooling mode.

In accordance with the temperature of the outdoor heat exchanger temperature sensors (C1, C2), such controls are performed as to halting the operations of the indoor unit, decreasing the inverter frequency and restricting its increase, etc.

- (a) The threshold value is decreased in accordance with the compressor frequency or indoor load (differences of temperature).
- (b) When "X" values are lowered, the results basically become β =X-2, α =X-3.



CODE: 30D (for X setting *2)

Setting No.	1	2	3	4 *
X (°C)	52	56.5	58.5	60

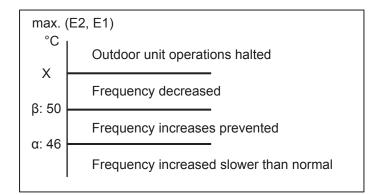
^{*} Setting at factory shipment

5) Condensation Temperature Control (heating)

This system control is performed to limit the inverter frequency in order to restrict high pressure's abnormal increase and high-load operating prevention in the heating mode.

In accordance with the temperature of the indoor heat exchanger temperatures sensor (E1, E2), such controls are performed as to halting the operations of the indoor unit, decreasing the inverter frequency and restricting its increase, etc.

- (a) The threshold value is decreased in accordance with the compressor frequency or indoor load (differences of temperature).
- (b) When "X" values are lowered, the results basically become β =X-2, α =X-3.



CODE: 30D (for X setting *2)

Setting No.	1	2	3	4 *
X (°C)	52	56.5	58.5	60

^{*} Setting at factory shipment

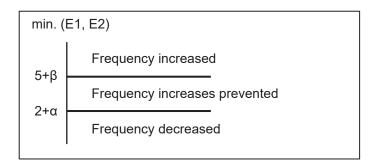
^{*2} Use the CZ-RTC6 series remote controller for setting

^{*2} Use the CZ-RTC6 series remote controller for setting

6) Cooling Freeze Prevention Control

The following control is performed during cooling operations (including dry mode operation), in accordance with whichever of the indoor heat exchanger temperatures (E1 or E2) is lower. (See the chart below.)

- (a) Frequency will not be decreased less than 6 minutes after thermostat ON.
- (b) The threshold value is increased in accordance with the indoor load (differences of temperature).



Outdoor EEPROM : Amendment of α and β values can be made due to 30A or 30B.

EEPROM setting in outdoor unit

CODE: 30A (for a setting)

Setting No.	-15	 0 *	 9
α	-15	 0	 9

CODE: 30B (for β setting)

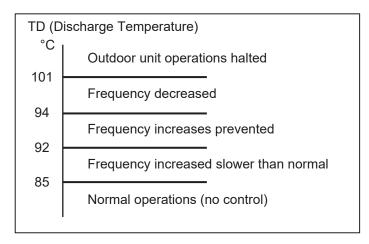
`	•	•		
Setting No.	-15		0 *	 9
β	-15		0	 9

Setting at factory shipment

7) Discharge Temperature Control

The following control is performed to prevent the discharge temperature from rising abnormally in order to protect the inverter compressor.

In accordance with the temperature of the discharge sensor TD, such controls are performed as to limiting the increase of inverter frequency, decreasing it or halting operation of the compressor.



^{*} If the discharge temperature exceeds 101°C, operations of the compressor are halted and restarted after 3 minutes.

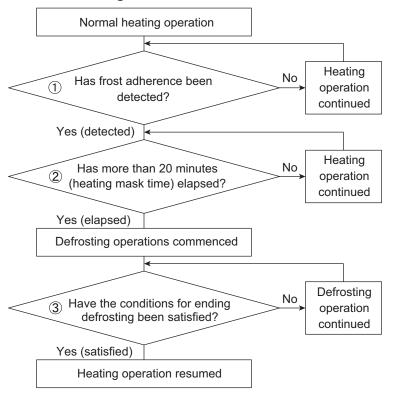
If this start/stop activity is repeated 4 times, the alarm "P03" (abnormal discharge temperature) occurs.

8) Defrosting Control

This control function removes frost that has adhered to the outdoor heat exchanger during the heating operation. The control is performed to prevent the deterioration of the heating capabilities attributed to the adherence of frost, and to prevent the crack or crush of pipes attributed to the accretion of ice.

The following control is performed in accordance with the ambient temperature and the outdoor heat exchanger temperature sensor (C1).

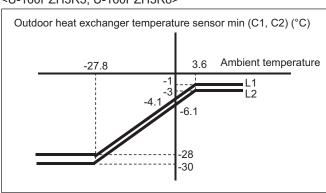
Overall Flow Chart of Defrosting Control



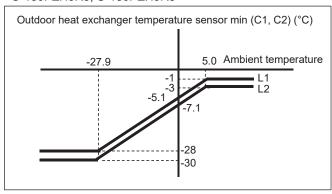
- (1) Frost adherence detection
- · If the following conditions are satisfied during heating operations, it is regarded as "frost adherence is detected".
- Frost adherence detection is performed in accordance with the ambient temperature (TO) and the outdoor heat exchanger temperature sensor min(C1, C2).
- · Frost adherence detection conditions
 - (a) Following satisfied condition is detected for accumulation of 60 minutes. Outdoor heat exchanger temperature sensor min(C1, C2) < L1
 - (b) Following satisfied condition is detected for consecutive 1 minutes or more, 2 times.

Outdoor heat exchanger temperature sensor min(C1, C2) ≤ L2

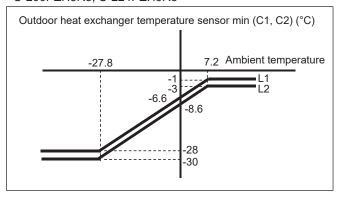
<U-160PZH3R5, U-160PZH3R8>



<U-180PZH3R5, U-180PZH3R8>



<U-200PZH3R8, U-224PZH3R8>



(c) Following satisfied condition is detected for accumulation of over 80 minutes. Outdoor heat exchanger temperature sensor min(C1, C2) < -3 °C

2 Heating Mask Time

This refers to the shortest time that heating operations must be performed without defrosting operations being executed. The mask time for this model is 20 minutes.

* Defrosting operations will not be commenced until the defrosting mask time has elapsed, even if frost adherence has been detected.

3 Ending Defrosting

Defrosting operations are ended when the following conditions are satisfied.

- · Ending defrosting conditions
 - (a) When the temperature of the outdoor heat exchanger temperature sensor (C1) is 10°C or higher.
 - (b) When the temperature of the outdoor heat exchanger temperature sensor (C1) is 6°C or higher for consecutive 60 seconds.
 - (c) When a maximum of 15 minutes defrosting time has elaped.

9) Outdoor Unit Fan Control

The appropriate rotations per minute for the outdoor unit fan are determined in accordance with the ambient temperature and the frequency of the compressor inverter.

The outdoor unit fan step is controlled between a range of W0 (Step 1) and WF (Step 16).

10) Outdoor Unit's Electrical Expansion Valve Control

The electrical expansion valve controls the amount of refrigerant that is allowed to flow in accordance with the operation status.

The valve is adjusted in accordance with the discharge temperature (TD), the outdoor heat exchanger temperature sensor (C1), the suction temperature sensor (TS), and the indoor unit's heat exchanger temperature sensors (E1 and E2).

(1) Cooling Mode

Controlled so that the suction temperature (TS) - indoor heat exchanger temperature minimum (E1 and E2) is between 0 degree and 2 degrees under normal conditions.

There are cases where the aperture opens wider than normal operation if the discharge temperature increases.

(2) Heating Mode

Controlled so that the suction temperature (TS) - outdoor heat exchanger temperature (C1) is between 0 degree and 2 degrees under normal conditions.

There are cases where the aperture opens wider than normal operation if the discharge temperature increases.

11) Demand Control

There is a demand terminal as normal equipment in the outdoor unit.

Demand control can be selected as the following table.

Input current should be DC24V, 10mA

Connecting wiring must be used "shield wiring".

	Short-circuit		Control (range of operations)	
DRM3-C	DRM2-C	DRM1-C	Control (range of operations)	
0	0	0	No ristricted	
1	0	0	Rated current restricted to A% (A% = 75% at factory shipment)	
0	1	0	Rated current restricted to B% (B% = 50% at factory shipment)	
0	0	1	Control OFF	

^{*} The operational current is restricted to either A% or B% as a general indicator during demand input.

For details on how to amend the parameters, see the chapter on the outdoor maintenance remote controller, (refer to the section "6-6. Settings Modes: Setting the Outdoor Unit EEPROM").

- A% value amendments: Parameters are amended with item code "1A" (demand 1).
- B% value amendments: Parameters are amended with item code "1B" (demand 2).

[•] A% and B% can be amended in calibrations of 5% between 70% and 100% with the outdoor unit's maintenance remote controller.

12) Silent mode

It is avilable to select one of 3 levels of silent mode as listed in the table below.

Outdoor maintenance remote controller: Item code "301" (1: Silent level 1, 2: Silent level 2, 3: Silent level 3)

Attention: Due to decrease of operating noise level, the air conditioner's capacity can be reduced.

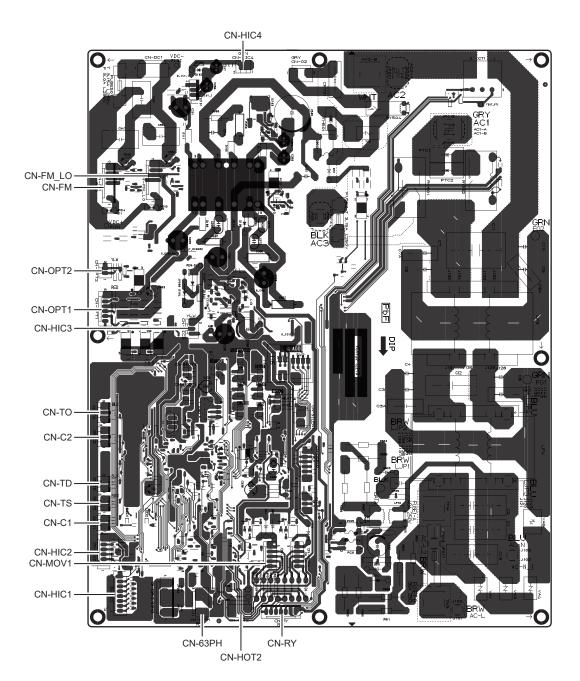
Silent mode is ineffective during the test run operation.

Mod	del		U-180PZH3R5 U-180PZH3R8	U-200PZH3R8	U-224PZH3R8
Operating mode		dB(A)	dB(A)	dB(A)	dB(A)
	Rated value	58	58	58	58
Cooling	Silent level 1	56	56	56	56
Cooling	Silent level 2	54	54	54	54
	Silent level 3	52	52	52	52
	Rated value	60	60	62	62
Heating	Silent level 1	58	58	60	60
	Silent level 2	56	56	58	58
	Silent level 3	54	54	56	56

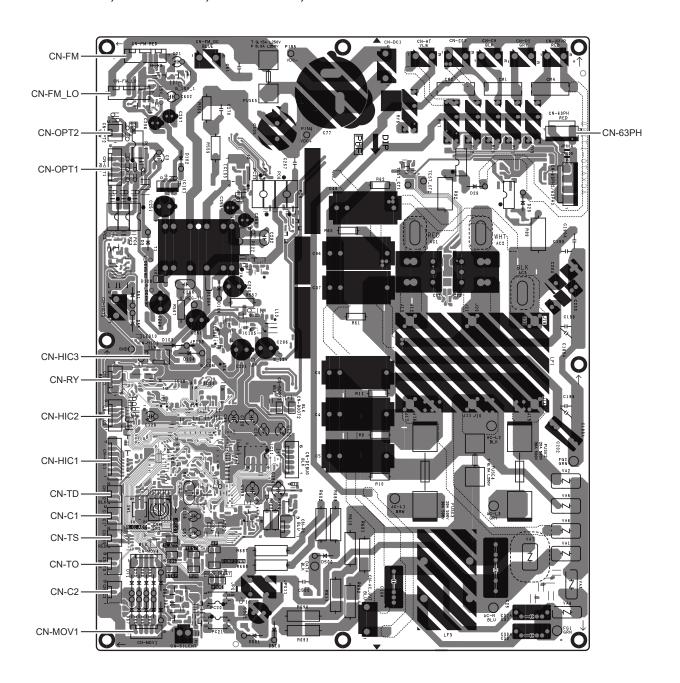
There are two types of conditions when entering into a silent mode.

- (1) From external input: When short-circuiting the silent pin of the outdoor unit control PCB
- (2) From software input: The automatic silent-mode operation can be available in the following procedure. (However, use the Schedule Timer to set the present time and check for the Schedule Timer from the outdoor unit.)

4-2. Outdoor Unit Control PCB U-160PZH3R5, U-180PZH3R5



U-160PZH3R8, U-180PZH3R8, U-200PZH3R8, U-224PZH3R8



A. ADD pin	(2P, Black)	Auto address setting pin
		Short-circuit this pin for 1 second or longer to automatically set the addresses at the indoor units that are connected to that outdoor unit and are within the same system.
		The system address is "0" at the time of shipment. Auto address setting is necessary even for communications lines in a single system where the inter-unit control wiring does not cross to any other systems.
		 While auto address setting is in progress, the 2 LEDs (LED1, 2: Red) on the outdoor unit control PCB blink alternately. (Short-circuiting this pin while auto address setting is in progress will stop the auto address setting operation.)
SW2	(10 positions, Yellow)	Outdoor system address setting switch
Rotary switch		 The setting is "0" at the time of shipment. It is not necessary to change the setting if wiring is connected only to an outdoor unit and indoor units in a single system and the inter-unit control wiring does not cross multiple systems.
		If wiring links the inter-unit control wiring for multiple systems to the same communications lines, then a different address must be set for each refrigerant tubing system.
		 If wiring links multiple systems, a maximum of 30 systems (up to 64 indoor units) can be connected. This setting can be set up to "39," however, control will be for 30 systems even if the setting is set to higher than 30. An alarm will be displayed if system addresses are duplicated. (For details, see Table 4-1.)
SW1	(2P, Black)	Switches for setting system address 10s digit and 20s digit
DIP switch		• If 10 systems or more are set, the setting is made by a combination of this DIP switch and SW2.
		• If 10 - 19 systems are set, set switch 1 (10s digit) to ON.
		• If 20 - 29 systems are set, set switch 2 (20s digit) to ON, and set switch 1 (10s digit) to OFF.
		• If 30 systems are set, set both switch 1 (10s digit) and switch 2 (20s digit) to ON.(For details, see Table 4-1.)
PUMP DOWN	(2P, Black)	Refrigerant recovery Pin • Short circuit this pin to perform refrigerant recovery control using cooling operation. The indoor unit fan will operate at HIGH and 60Hz for a maximum of 10 minutes When refrigerant recovery is completed, close the valves and open circuit this pin to stop the operation.
LED 1	(D302)	LED (red × 2)
LED 2	(D303)	 LED 1 and 2 blink alternately while automatic address setting is in progress. Display the alarm contents for alarms that are detected by the outdoor unit.
RUN	(2P, Black)	Start pin • Short-circuit this pin and apply a pulse signal to start all indoor units in that refrigerant system.
Stop	(2P, Black)	Stop pin • Short-circuit this pin and apply a pulse signal to stop all indoor units in that refrigerant system.
Mode change	(3P, Black)	 Indoor unit Heating/Cooling mode change pin Short-circuiting this pin during ordinary operation changes the mode from Cooling to Heating (if the current mode is Cooling) or from Heating to
		Cooling (if the current mode is Heating).
Test	(2P, Black)	 This pin is used to test the PCB at the factory. When the power is turned ON after this pin has been short-circuited, all output signals will be output in sequence. (Sequential output does not occur if this pin is short-circuited when the power is already ON.) Releasing this pin returns the unit to normal control.
CHK	(2P, Black)	Short-circuit during the test run operation. Open the circuit after the test run.

Table 4-1. Method of System Address Setting

[SW2 (rotary, yellow), SW1 (2P DIP switch, black)]

[0772 (10	SVV2 (rotary, yellow), SVV1 (2P DIP SWItch, black)]						
	Outdoor system	SW2 setting		setting			
	address No.	(system address switch)					
1 system only	1	0	OFF	OFF			
	1	1	OFF	OFF			
	2	2	OFF	OFF			
	3	3	OFF	OFF			
	4	4	OFF	OFF			
	5	5	OFF	OFF			
	6	6	OFF	OFF			
	7	7	OFF	OFF			
	8	8	OFF	OFF			
	9	9	OFF	OFF			
	10	0	ON	OFF			
	11	1	ON	OFF			
	12	2	ON	OFF			
	13	3	ON	OFF			
	14	4	ON	OFF			
Central	15	5	ON	OFF			
control	16	6	ON	OFF			
	17	7	ON	OFF			
	18	8	ON	OFF			
	19	9	ON	OFF			
	20	0	OFF	ON			
	21	1	OFF	ON			
	22	2	OFF	ON			
	23	3	OFF	ON			
	24	4	OFF	ON			
	25	5	OFF	ON			
	26	6	OFF	ON			
	27	7	OFF	ON			
	28	8	OFF	ON			
	29	9	OFF	ON			
	30	0	ON	ON			

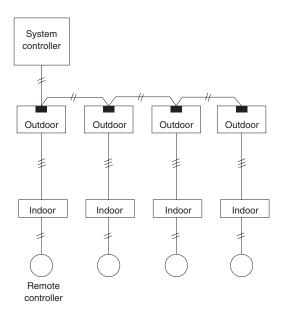
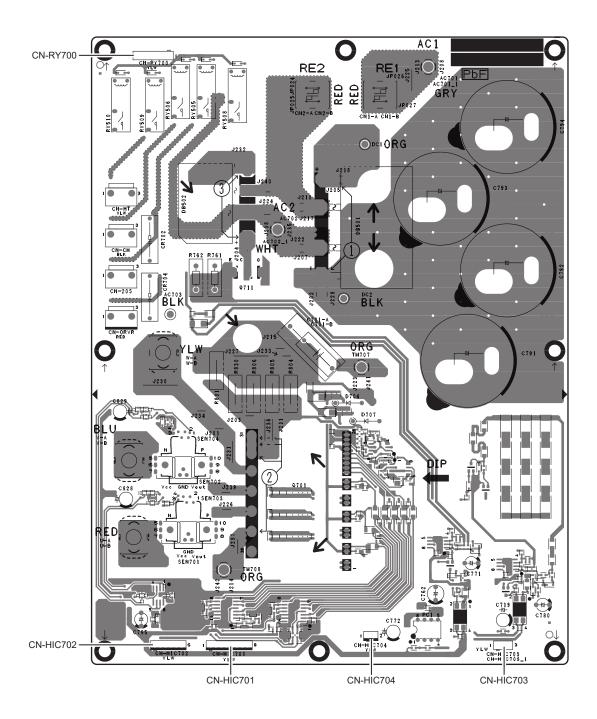
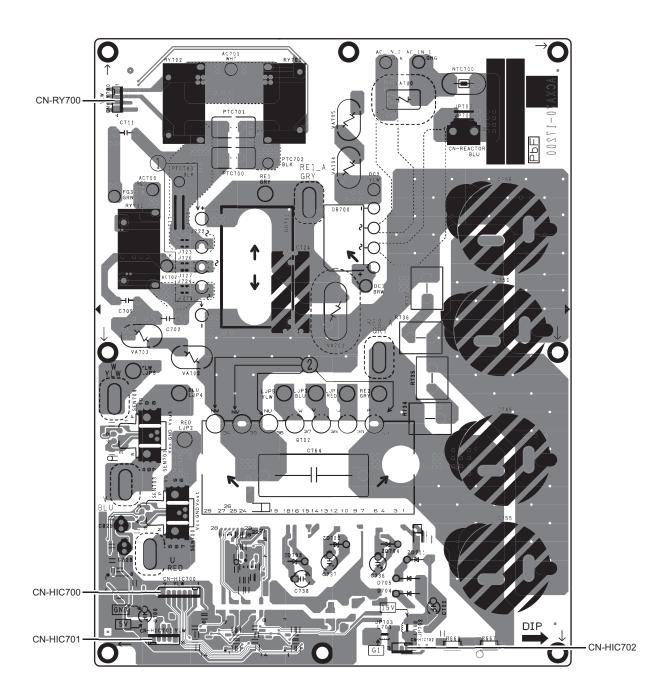


Fig. 1

4-3. Outdoor Unit HIC Board U-160PZH3R5, U-180PZH3R5



U-160PZH3R8, U-180PZH3R8, U-200PZH3R8, U-224PZH3R8



4-4. Indoor Unit Control PCB Switches and Functions

[Indoor unit control PCB]

T10 (CN061): 6P plug (YEL) / Used for remote control operation. (Refer to the Remote Control Section.)

Control items: (1) Start/stop input (2) Remote controller prohibit input

(3) Start signal output (4) Alarm signal output

EXCT (CN073): 2P plug (RED) / Can be used for demand control. When input is present, forces the unit to

operate with the thermostat OFF.

DISP (CN063): 2P plug (WHT) Type E1:

2P plug (BLK) Type E3:

Short-circuiting this plug allows operation to be controlled by the remote controller even when an outdoor unit is not connected. (In this case, alarm "E04," which indicates trouble in the

serial communication between the indoor and outdoor unit, does not occur.)

CHK (CN062): 2P plug (WHT) Type E1:

2P plug (BLK) Type E3:

Test pin. Short-circuiting this pin allows the indoor FM (H fan speed), drain pump, flap motor

(F1 position), and electronic expansion valve full-open position to be checked. However this function turns OFF if the indoor unit protection mechanism is activated. The components will operate even if the remote controller and outdoor unit are not connected, however the remote control cannot be used for control even if it is connected.

This plug can be used for short-term tests.

JP1 (JP001): Jumper wire / Allows selection of the T10 terminal start/stop signal. (Refer to the Remote

Control Section.)

Setting at time of shipment: Pulse signal

Jumper wire cut: Static signal (continuous signal)

Fan drive (CN032): 2P plug (WHT) / This terminal sends the signal to the ventilation fan when a commercially

available ventilation fan is operated by the FAN button on the wired remote controller. (Refer

to the Remote Control Section.)

Use a ventilation fan which can accept the no-voltage contact A signal as the external input

signal.

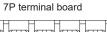
Power LED: LED (RED) / Illuminates when the power is ON. Flashes when there is trouble with the

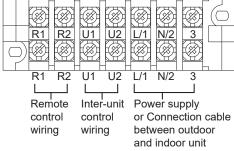
EEPROM (IC10, IC010: nonvolatile memory).

EEPROM (IC010): Nonvolatile memory / Used to store model information and other data. When replacing

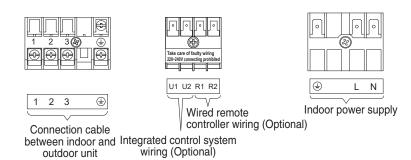
the PCB, remove the EEPROM from the old PCB and install it onto the new PCB. If there is IC trouble, replace with a new IC (provided with the servicing PCB), and set the necessary information using the wired remote controller. (For the setting procedure, refer to the

servicing technical materials.)

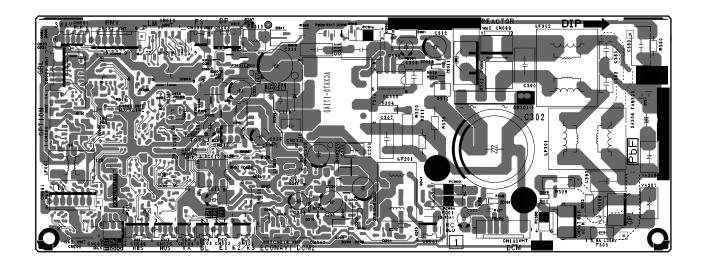






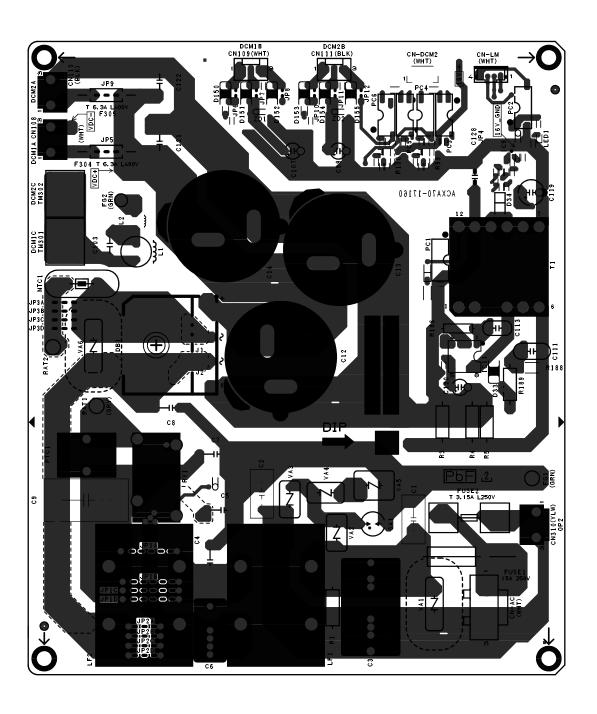


High Static Pressure Ducted Type S-180PE4R, S-200PE4R, S-224PE4R



Indoor Unit Fan Motor Control Board ACXA73-3868* : S-160PE3R





5. TROUBLE DIAGNOSIS

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5-1. Contents of Remote Controller Switch Alarm Display

Wireless remote controller receiver display Wired remote Ŭ-(J) (J) ۱ Possible cause of malfunction control display Faulty remote controller Failure in receiving serial signal from remote controller's Disconnection/Contact failure of remote controller wiring indoor unit CHK(check) pins on the indoor unit control PCB are short circuited In the case of non-group control: Settings of system address, · Power supply OFF of outdoor unit E01 indoor unit address and group · Disconnection / Contact failure of inter-unit wiring Operating lamp blinking control are not made In the case of group control: Automatic address operation was not carried out. ₩ Setting failure of nonvolatile Faulty setting of EEPROM on indoor unit memory IC Faulty remote controller Failure in indoor unit serial E02 signal from remote controller Wrong wiring of remote controller Error in indoor unit receiving signal from remote controller (central) E03 Disconnection / Contact failure of inter-unit wiring · Faulty indoor unit control PCB Faulty outdoor unit control PCB · Communication circuit fuse on indoor unit control PCB opened Failure in indoor unit receiving E04 serial signal from outdoor unit · Fuse on outdoor unit control PCB opened Since failure of an outdoor fan motor is considered as a cause, Standby both outdoor unit control PCB and outdoor unit fan motor are lamp blinking exchanged simultaneously. · Disconnection / Contact failure of inter-unit wiring Failure in outdoor unit · Disconnection of inter-unit wiring receiving serial signal from E06 · Communication circuit fuse on indoor unit control PCB opened indoor unit Indoor unit control PCB address setting error Serial Duplication of indoor unit address communication Duplication of indoor unit address setting E08 errors Duplication of main remote Error because of more than one remote controller setting to main E09 Missetting controller setting Operating lamp Automatic address setting start is prohibited E12 blinking Improper setting Duplication of main unit in group control E14 · Disconnection of wiring between main unit and additional units Communication error between · Contact failure of wiring E18 main and sub indoor units · Faulty indoor unit control PCB (Main or Addition) Automatic Address Alarm E15 The total capacity of indoor units is too low Automatic address settings Automatic Address Alarm E16 Standby lamp failure The total capacity of indoor units is too high blinking Automatic Address Alarm E20 No indoor unit connected Outdoor unit Communication error E24 Outdoor unit Communication error E29 Indoor & outdoor unit type Setting error, indoor/outdoor unit type/model miss-matched L02 miss-matched Operating and Duplication of group control's standby Duplication of main indoor unit address in group control L03 main indoor unit lamps blinking Group control wiring is connected simultaneously Group control wiring is connected to individual control indoor unit L07 to individual control indoor unit ₩ \ Indoor unit address is not set L08 Indoor unit capacity is not set L09 Operating and L04 Duplication of outdoor unit address standby Outdoor unit capacity is not set or setting error L10 lamps blinking Indoor unit type setting error simultaneously L13 Type of indoor/outdoor units is different 0 L18 4-way valve locked trouble / operation failure

ON: ○ Blinking: ☆ OFF: ●

			Wired	remo	Vireles te con iver di	trolle
	Pos	sible cause of malfunction	remote control display	Operation 🔆	Timer	Standby (
	Faulty wiring connections of (co	eiling) indoor unit panel	P09	ō	F	3
	yg(c	Indoor unit fan motor locked			į	
	Indoor unit fan motor trouble	Indoor unit fan motor layer short	P01		-	
	(AC fan)	Contact failure in thermostat protector circuit				
		Faulty drain pump		Time		
	Activation of float switch	Drainage failure	P10		r and s blinkin	
	wiring	Contact failure of float switch wiring		alteri	nately :	:
	_ , , , ,	Faulty drain pump				
	Faulty drain pump	Drain pump locked	—— P11	•	*	\
	Indoor unit fan motor trouble (DC fan)	Indoor unit fan motor locked Faulty wiring connections of indoor unit fan motor	P12			1
	Valve error	Valve error Refrigerant circuit error Wrong installation for refrigerant piping and wiring	P13			
	O ₂ sensor error	O ₂ sensor detected	P14		-	
.	Discharge temperature protective alarm	Compressor discharge temperature trouble	P03		1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Activation of protective device	Activation of high pressure switch	Compressor discharge pressure trouble	P04			
device	Power supply failure Open phase detected AC power supply trouble Insufficient gas Insufficient gas level detected				: perating ar andby lam	
	Insufficient gas	P15		ng alter		
	Compressor overcurrent trouble	P16		•		
	Fan motor locked/reversed airflow detected	Outdoor unit fan motor trouble Outdoor unit fan trouble	P22	\ \times \ \ \times \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		- ~
	Inverter compressor trouble		P29			
	Group control trouble	Indoor unit in group control trouble	P31			,
	Activation of current control compressor's protective device	Primary (input) overcurrent detected	H01			
	PAM trouble (overcurrent/over- voltage), Activation of compressor's protective device	PAM trouble	H02	Timer	lamp b	linking
	Primary current control, Activation of compressor's protective device	Primary current CT sensor failure	H03		1	
	HIC trouble	HIC trouble DC voltage not detected	H31			1
	In the second Office of the	Indoor heat exchanger temperature sensor (E1) trouble	F01		ating ar lamp b	
	Indoor unit thermistor open/short	Indoor heat exchanger temperature sensor (E2) trouble	F02		nately	
		Indoor air temperature sensor (TA) trouble	F10	*	*	•
Thermistor		Compressor discharge temperature sensor (TD) trouble	F04	0.2		
ault	Outdoor unit thermistor	Outdoor heat exchanger temperature sensor (C1) trouble		timer	ating ar lamp bl	
	open/short	Outdoor heat exchanger temperature sensor (C2) trouble	F07		nately : ماد	
	.,	Outdoor air temperature sensor (TO) trouble	F08] 🌣	*	0
		Compressor suction temperature sensor (TS) trouble	F12			
Nonvolatile memory failure		Indoor unit EEPROM trouble	F29	timer	ating ar lamp b taneous	linking
		Outdoor unit EEPROM trouble	F31	Oper timer simul	linking sly	

5-2. Outdoor Unit Control Panel LED Display

 $(\bigcirc: \mathsf{ON} \longrightarrow -: \mathsf{Blinking} \longrightarrow : \mathsf{OFF})$

		, A
LED1	LED2	Display meaning
0 0		After the power is turned ON (and automatic address setting is not in progress), no communication with the indoor units in that system is possible.
(Both	ON)	
•	0	After power is turned ON (and automatic address setting is not in progress), 1 or more indoor units are confirmed in that system; however, the number of indoor units does not match the
(OFF)	(ON)	number that was set.
•	•	Automatic address setting was completed successfully. (After the power is turned ON, the number of detected indoor units connected to that system matches the number that was set,
(Both	OFF)	and regular communications are occurring.)
*	*	Automatic address setting is in progress.
(Blinking a	alternately)	Additional address setting to in progress.
*	\	Alarm display
(Blinking a	alternately)	LED 1 blinks M times, then LED 2 blinks N times. The cycle then repeats.
, ,	• ,	M = 2: P alarm 3: H alarm 4: E alarm 5: F alarm 6: L alarm
		N = Alarm No.
		Example: LED 1 blinks 2 times, then LED 2 blinks 16 times. The cycle then repeats.
		Alarm is "P16".
*	0	DUMD DOWN is in manager
LED 1 : LED 2 :	Blinking ON	PUMP DOWN is in progress.
(0.8 / 0.3) *	•	
LED 1 : Blinking LED 2 : OFF		P04 (High pressure trouble) Pre-trip display
(0.5 / 0.5)		Other Dre twin display
LED 1 : LED 2 :	Blinking OFF	Other Pre-trip display

 $^{^{\}ast}\,$ Blinking (0.8 / 0.3) indicates that the lamp illuminates for 0.8 seconds, and then is OFF 0.3 seconds.

5-3. PAC System Alarm Codes

Alarms for outdoor units

Alarm Code	Alarm Meaning
E01	Remote Controller Reception Error
E02	Remote Controller Transmission Error
E03	Error in Indoor Unit Receiving Signal from Remote Controller (central)
E04	Error in Indoor Unit Receiving Signal from the Outdoor Unit
E05	Error in Indoor Unit Transmitting Signal to the Outdoor Unit
E06	Outdoor Unit Failed to Receive Serial Communication Signals from Indoor Unit
E08	Duplicate Indoor Unit Address Settings Error
E09	More Than One Remote Controller Set to Main Error
E10	Communication Error Between Fan Motor and Main PCB for Indoor Unit
E12	Automatic Address Setting Start is Prohibited while Auto-address Setting in Progress.
E14	Main Unit duplication in Simultaneous-operation Multi Control (detected outdoor unit)
E15	Automatic Address Alarm (The total capacity of indoor units is too low.)
E16	Automatic Address Alarm (The total capacity of indoor units is too high or the total number of indoor units is too many.)
E18	Faulty Communication in Group Control Wiring
E20	Connection Problem of Indoor/Outdoor Units
F04	Compressor Discharge Temperature Sensor (TD) Trouble
F06	Inlet Temperature Sensor (C1) in Heat Exchanger Trouble
F07	Intermediate Temperature Sensor (C2) in Heat Exchanger Trouble
F08	Outdoor Air Temperature Sensor (TO) Trouble
F12	Compressor Inlet Suction Temperature Sensor (TS) Trouble
F31	Outdoor Unit Nonvolatile Memory (EEPROM) Trouble
H01	Primary (input) Overcurrent Detected
H02	PAM Trouble
H03	Primary Current CT Sensor (current sensor) Failure
H31	HIC Trouble
101	
L04	Outdoor Unit Address Duplication
L10	Outdoor Unit Capacity not Set or Invalid
L13	Indoor Unit Type Setting Error
L18	4-way Valve Operation Failure
P03	Compressor Discharge Temperature Trouble
P04	High Pressure Trouble
P05	AC Power Supply Trouble
P13	Alarm Valve Open
P14	O2 Sensor Detect
P15	Insufficient Gas Level Detected
P16	Compressor Overcurrent Trouble
P22	Outdoor Unit Fan Motor Trouble
P29	Lack of INV compressor wiring, INV compressor actuation failure (including locked), DCCT failure
P31	Group Control Error

Symptoms and Parts to Inspect

Remote controller alarm display	Alarm contents	Judgement conditions	Eliminating condition of alarm	Judgement and correction
P03	Abnormal discharge temperature error • Discharge temp. detected at or above the specified value	Stops when temp. exceeds 101 °C. Alarm output on 5 pre-trips	Recovery at restart	Check refrigerant cycle (gas leak). Z.Trouble with electronic expansion valve Check discharge temperature sensor (TD).
P05	CT disconnected or AC power supply error DC voltage charge failure	The current value transmitted from the microcomputer on the outdoor unit control substrate is low. When no AC power input for more than 30 seconds to 5 minutes: Single alarm	Recovery at restart	 Check outdoor unit control PCB. Lack of reactor wire Check power frequency.
P15	Insufficient gas level detected.	Discharge temperature is 95 °C or higher. Electronic expansion valve is at Step 480. When the above has continued for 1 minute. Indoor air sucking due to body thermostat max (E1 or E2) - TA ≤ 4 °C Secondary current ≤ Current value of gas shortage determination	Recovery at restart	1.Check refrigerant cycle (gas leak). 2.Trouble with electronic expansion valve 3.Check outdoor unit valve opening.
L18	4-way valve operation failure • Judged after heating operating for 5 minutes consecutively.	The indoor unit heat exchanger temperature drops even though the compressor is switched on during the heating mode: To +20 °C ≤ C1 Pre-trip 1 time	Recovery at restart	Check 4-way valve. Check 4-way valve wiring. Check outdoor unit control PCB.
P04	High-pressure protection error	High pressure switched ON → OFF (Alarm is output when switch opened.) Pre-trip 4 times	Recovery at restart	Overload operation of refrigerant cycle
P22	Outdoor unit fan motor trouble • Inverter protection circuit was activated, or lock was detected at outdoor unit fan motor.	Inverter stops after alarm is detected. Pre-trip 10 times	Recovery at restart	1.Position detection trouble. 2.Outdoor unit fan motor over- current Protection circuit is activated. • Check outdoor unit control PCB. • Refer to outdoor unit fan judgement methods.
P29	Lack of INV compressor wiring, INV compressor actuation failure, DCCT failure	Inverter stops after alarm is detected. Alarm is output when inverter stops (pre-trip) consecutively 10 times.	Recovery at restart	1.Stops immediately even when operations restarted. • Layer short on the compressor 2.Check HIC circuit. • Wiring trouble
H31	HIC trouble	Pre-trip consecutively 10 times	Temperature dropped	Heat sink and PCB (HIC) • Contact trouble

Check Prior to Auto Address Setting

* If an outdoor unit displays an alarm, conduct this process after diagnosing the problem.

1 Auto Address	1 1	1-1 Is the power of the indoor unit(s) and outdoor unit(s) on?		Yes	2-1	
Address	1-1			No	Power on.	
2 Indoor/	2-1	Has the wiring of the indoor/outdoor control line been completed?		Yes	s 2-2	
outdoor control line	2-1	Is it all connected?		No	Connect the wiring.	
control line	2-2	Has high voltage (over AC200V) been applied to the control line circuit? Has the fuse on the control PC board blown?		Yes	2-3	
		(Check each board of the indoor unit(s) and outdoor unit(s).)		No	3-1	
	2-3	The power line and indoor/outdoor control line are miswired. Turn off the power, check & correct the miswiring and then make connections of the indoor/outdoor control lines to the emergency side of all the control PC boards and controllers.				
3 Installation	3-1	Be sure that the indoor and outdoor units are connected with correct combination written in catalog. Yes No	3-2			
or setting related			No	Correct the connection		
	3-2	ls the indoor/outdoor control line connected to more than one		Yes	3-3	
	3-2	outdoor unit? (Network wired?)		No	3-6	
	3-3	ls the Terminal resistor select switch (CN-TERMINAL) on the outdo	oor	Yes	3-4	
	3-3	control PC board set to just one unit?		No	Correct the setting.	
	3-4	Are other outdoor units using a duplicate setting?		Yes	3-5	
	3-4 Are other outdoor units using a duplicate setting?			No	3-6	
	3-5	When units are networked, first set the system address for each outdoor unit in the order 1-2-3 and then run auto address setting.				
	3-6	Run the auto address setting.				

E04 Error in Indoor Unit Receiving Signal from the Outdoor unit

1. Error Detection Method

When there is no communication within a 3-minute period from the outdoor unit. Or, judged an error when no reply comes from the outdoor unit.

- · The outdoor unit is not turned on.
- When the network of indoor/outdoor operation line was wired, the (SHORT) setting of the terminal resistor switch on the outdoor control PC board was set on multiple units (four or more).
- When the power was turned on after auto address setting was completed, the number of indoor units had been changed.
- Forgot to turn on the indoor unit.
- The CHK pin and/or TEST pin on the indoor unit's control PC board are shorted.
- · Forgot to install the nonvolatile memory (EEPROM) when replacing the indoor unit control PC board.
- · Mistakenly set the indoor unit address to Not Set in the remote control's detailed settings mode.
- · When indoor unit addresses are duplicated.
- There is a short, open, wrong contact or grounding of the indoor/outdoor operation line.
- There is an error in the receiving circuit on the signal output PC board (optional control PC board).
- · Malfunctions of the outdoor unit
- High voltage was applied (over AC200V) in the indoor/outdoor operations line circuit.
- · The thermistor inside the indoor unit is grounded.

2. Error Diagnosis

1 Power		Y.	Yes		r turning the power wait three minutes.		
Source	1-1	1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1		1-2			
					Power on.		
	1-2	Is the indoor unit powered off?			2-1		
2 Indoor/	Is the indoor/outdoor operation line shorted, opened, grounded		Yes	Correct the wiring.			
outdoor	2-1	or has a wrong contact?		No	2-2		
control line	2-2	When the network of indoor/outdoor operation line was wired, was the (SHORT) setting of the terminal resistor switch (CN-TERMINAL) on the outdoor control PC board set on multiple	Yes	sett	mally the (SHORT) ing is just one unit.		
		units (four or more)?	No				
	2-3	Was a high voltage (over AC200V) applied in the indoor/outdoor		Yes			
		operations line circuit?			3-1		
3 No. of	3-1	Was the number of indoor units increased or decreased after auto address setting was complete?		Yes			
Indoor Units				No	3-3		
OTILO	3-2	Conduct checks prior to auto address setting.					
	3-3	detailed settings mode.		Yes	3-2		
				No	4-1		
4 Indoor	4-1	Are the CHK pin and/or TEST pin on the indoor unit control PC			Remove the short.		
unit control		board short-circuited?			4-2		
PC board	4-2	Is the wireless remote controller connected to on the indoor unit's		Yes			
		control PC board?		No	4-5		
		Disconnect the connector mentioned above on the control PC board of the indoor unit control PC board, and see whether the E04 goe after several minutes. (When doing so, if two remote controllers a	s off	Yes	4-4		
	4-3 after several minutes. (When doing so, if two remote controllers are being used and the wireless remote controller is the main remote controller, set the other remote controller as the main.)			No	4-5		
	4-4	Replace wireless remote control parts including wiring.					
	4-5	4-5 Is the LED on the indoor unit control PC board blinking?	Yes	4-6			
	7				4-7		
	4-6	The nonvolatile memory (EEPROM) on the indoor unit's control PC bost improperly installed or the nonvolatile memory is faulty. Correct this or nonvolatile memory, write model data to it in the remote control detaile			r after replacing the		
	4-7	_/			outdoor unit control board.		
		units connected to that outdoor unit displaying E04? No Replace t	he in	door	unit control board.		

E06 Outdoor Unit Failed to Receive Serial Communication Signals from Indoor Unit

(When indoor unit(s) are connected)

1. Error Detection Method

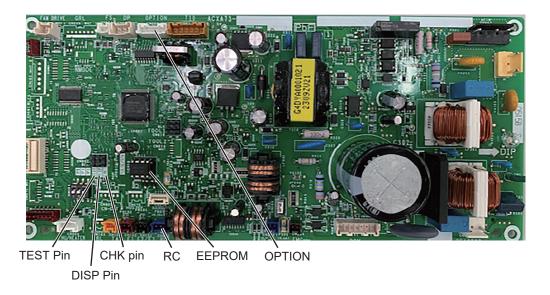
It is judged an error when there is no transmission (reply) from the indoor unit to the outdoor unit for a period of three minutes.

- · The indoor unit is not turned on.
- The DISP pin of the indoor unit is shorted.
- There is a short, open, wrong contact or grounding of the indoor/outdoor operation line.
- The signal output control PC board (optional control PC board) inside the indoor unit has failed.
- · The thermistor inside the indoor unit is grounded.

2. Error Diagnosis

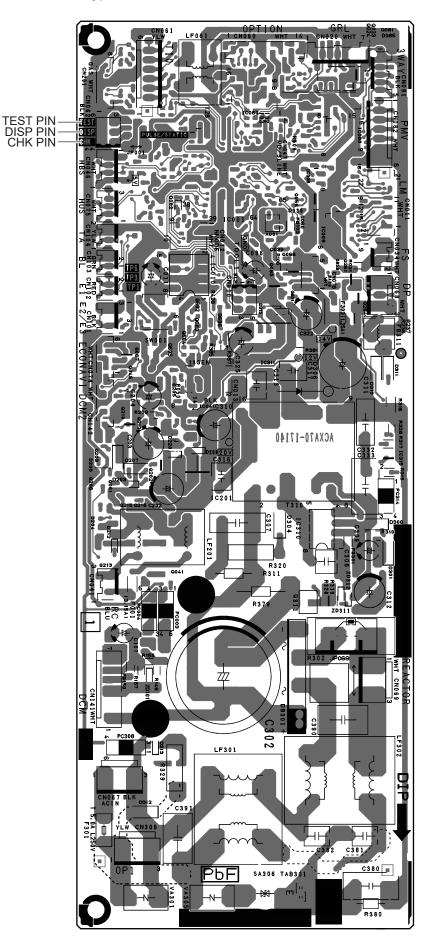
1 Indoor unit power	1-1 Is	Is the indoor unit powered off?	Yes	Power on.	
			No	2-1	
2 Indoor/ outdoor	0.4	Is the indoor/outdoor operation line shorted, opened,	Yes	Correct the wiring.	
operation line	2-1	grounded or has a wrong contact?	No	3-1	
3 Indoor units	2.4	3-1 / 1 / 1 / 2 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3	Yes	Remove the short.	
	3-1		No	3-2	
control PC board	3-2		Yes	3-3	
l o board			No	3-5	
		after several minutes. (When doing so, if two remote controllers are being used and the wireless remote controller is the main remote	Yes	3-4	
	3-3		No	3-5	
	3-4	Replace wireless remote control parts including wiring.			
	3-5	Indoor unit control PC board failure → Replace board.			

[•] For information on the procedures for replacing the indoor unit's control board, refer to the manual that is packaged with the indoor unit control PCB.



Indoor Unit Fan Motor Control Board ACXA73-3868* : High Static Pressure Duct Type S-160PE3R





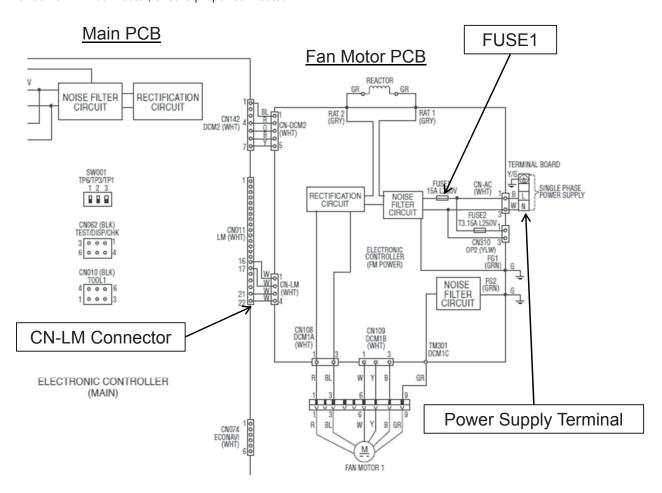
E10 Communication Error Between Fan Motor and Main PCB for Indoor Unit (Applied Model: S-180/200/224PE4R)

1. Possible Cause:

- · Power supply for fan motor PCB is OFF/disconnected/wrong connection.
- · Indoor unit fan motor PCB fuse open.
- · Indoor unit fan motor PCB malfunction.
- · CN-LM connector disconnected/unplug.

2. Troubleshoot & Check Method:

- · Power ON/reconnected power supply for fan motor PCB.
- Check fan motor PCB FUSE1.
- · Check CN-LM connector, ensure proper connected.



E15 Automatic Address Alarm (The total capacity of indoor units is too low.)

1. Error Detection Method

Connecting indoor unit

It is judged an error the total capacity of indoor units replied by communication is lower than that of outdoor unit.

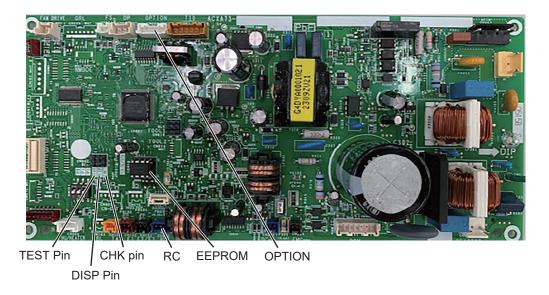
- · The total capacity of indoor units is lower than that of outdoor unit.
- Some indoor unit(s) are connected but power is not turned on.
- The CHK pin (CN062/CN071) and/or TEST pin (CN064) of the indoor unit is shorted when its power is turned on.
- High voltage was applied (over AC200V) in the indoor/outdoor operations line circuit.

2. Error Diagnosis

4.5				_	
1 Power	1-1	Is the indoor unit powered off?		Power on.	
Source			No	2-1	
2 Indoor/	2-1	le the indeed of the control line around or charted?	Yes	Correct the wiring.	
outdoor control line		Is the indoor/outdoor control line opened or shorted?	No	2-2	
Control line	2-2	Was a high voltage (over AC200V) applied in the indoor/outdoor	Yes	3-2	
	2-2	operations line circuit?	No	3-1	
3 No. of	3-1	Was the number of indoor units changed after auto address setting	Yes	3-2	
Indoor	3-1	finished?	No	4-1	
Units	3-2	Conduct checks prior to auto address setting.			
4 Indoor	4-1		Yes	Remove the short.	
unit	4-1		No	4-2	
control PC board	4-2	Is the wireless remote controller connected to on the indoor unit's	Yes	4-3	
1 C board	4-2 C	control PC board?	No	4-5	
	4-3	Disconnect the connector mentioned above on the control PC board of the indoor unit control PC board and see whether the E15 goes off after several minutes. (When doing so, if two remote controllers are	Yes	4-4	
		being word and the windless remarks controlled in the masic remarks	No	4-5	
	4-4	Replace wireless remote control parts including wiring.			
	4-5	Is the LED blinking on the indeer unit's central DC beard?	Yes	4-6	
	4-5	Is the LED blinking on the indoor unit's control PC board?		5-1	
	4-6	The nonvolatile memory (EEPROM) on the indoor unit's control board is either not installed, improperly installed or the nonvolatile memory is faulty. Correct this or after replacing the nonvolatile memory, write model data to it in the remote control detailed settings mode.			
5 Outdoor unit control PC board	rol 5-1 Check all items under the section "Check Prior to Auto Address Setting".				

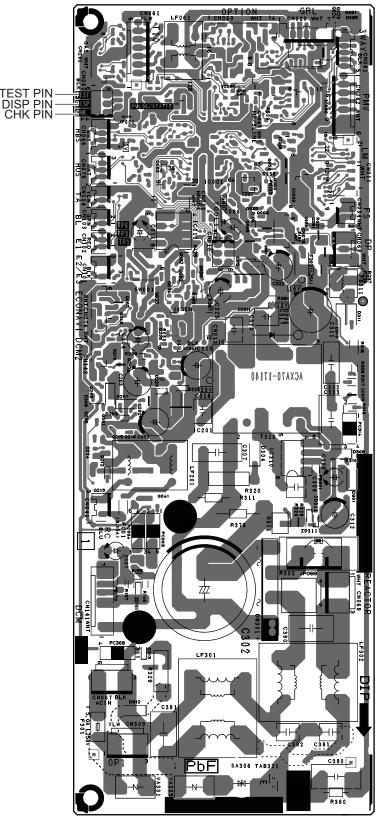
[•] For information on the procedures for replacing the nonvolatile memory (EEPROM) of the indoor unit, refer to the manual that is packaged with the indoor unit service board.

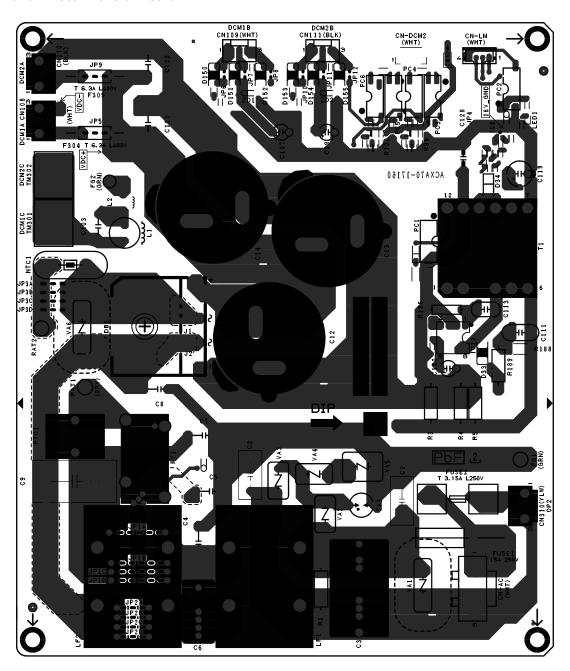
[•] For information on the remote control's detailed settings, refer to the Reference Materials.



Indoor Unit Fan Motor Control Board ACXA73-3868* : High Static Pressure Duct Type S-160PE3R







E16 Automatic Address Alarm (The total capacity of indoor units is too high.)

1. Error Detection Method

It is judged an error the total capacity of indoor units is too high or the total number of indoor units is too many.

- · The total capacity of indoor units is too high.
- The total number of indoor units is too many.

2. Error Diagnosis

1 Auto Address	1-1	Check all items under the section "Check Prior to Auto Address Setting".

F04 Compressor Discharge Temperature Sensor (TD) Trouble

1. Error Detection Method

It is judged an error based on the criteria listed below.

· Open circuit or Short circuit

1 Sensor	1 1	Conserve connector is connected to DC heard preparty	Yes	1-2
	1-1	Sensor connector is connected to PC board properly.	No	Reconnect and check.
			Yes	Replace sensor.
	1-2	Sensor is correctly installed at holder side.	No	Correct and see what happens.
				1-3
	1-3	Abnormal temperature exists even after replacing sensor.	Yes	2-1
	1-3	Abhornial temperature exists even after replacing sensor.	No	See what happens.
2 PC board	2-1	Resistance between connector pins on PC board is less than 1 k ohm.	Yes	Replace PC board.
			No	2-2
	2.2	About and the second sections as since as an afficient part of the second	Yes	3-1
	2-2	Abnormal temperature exists even after replacing PC board.	No See what happens.	See what happens.
3 Operating	3-1	Peripheral temperature of outdoor unit is over 46°C.	Yes	Correct
status			No	3-2
	3-2	Tends to have insufficient refrigerant charge in the system.	Yes	Adjust the amount of refrigerant.
			No	3-3
	3-3	Check noise.	,	

F06 Inlet Temperature Sensor (C1) in Heat Exchanger Trouble

1. Error Detection Method

· In case of open or short

2. Error Diagnosis

1 Sensor Trouble	1-1	Is the connector properly connected to PCB?	1	1-2 Reconnect & check.
	1-2	Is the resistor between the sockets infinity or 0 ohm?	Yes	Replace sensor.
2 Control PCB Failure	2-1	Outdoor unit control PCB failure Replace PCB with a new one.	110	-

F07 Intermediate Temperature Sensor (C2) in Heat Exchanger Trouble

1. Error Detection Method

It is judged an error when open circuit or short circuit.

2. Error Diagnosis

1 Sensor	1-1	Sensor connector is connected to PC board properly	Yes	1-2
	1-1		No	Reconnect and check.
	1-2	Resistance between sockets is infinity or 0 ohm.	Yes	Replace sensor.
			No	2-1
2 PC board	2-1	Replace PC board because of outdoor control PC board failure.		

F08 Outdoor Air Temperature Sensor (TO) Trouble

1. Error Detection Method

It is judged an error when open circuit or short circuit.

1 Sensor	1-1	Sensor connector is connected to PC board properly.	Yes	1-2
	1-1	Sensor connector is connected to PC board property.	No	Reconnect and check.
	1-2	Resistance between sockets is infinity or 0 ohm.	Yes	Replace sensor.
			No	2-1
2 PC board	2-1	Replace PC board because of outdoor control PC board failure.		

F12 Compressor inlet Suction Temperature Sensor (TS) Trouble

1. Error Detection Method

It is judged an error when open circuit or short circuit.

2. Error Diagnosis

1 Sensor	1-1	1 Sensor connector is connected to PC board properly.	Yes	1-2
	1-1		No	Reconnect and check.
	1 2	Posistance hotween ecokets is infinity or 0 ohm	Yes	Replace sensor.
	1-2	Resistance between sockets is infinity or 0 ohm.	No 2-1	2-1
2 Outdoor control PC board	2-1	Replace PC board because of outdoor control PC board failure.		

F31 Outdoor Unit Nonvolatile Memory (EEPROM) Trouble

1. Error Detection Method

It is judged an error based on the criteria listed below.

- When power initially turned ON for the first time, nonvolatile memory (EEPROM) is not installed.
- · Read values after writing onto nonvolatile memory (EEPROM) is inconsistent.

1 PC board	1 1	Does EEPROM exist on the control PC board?	Yes	1-2
	1-1	Does EEFROW exist off the control FC board?	No	Install EEPROM.
	1.2	Is EEPROM installed properly?	Yes	1-3
	1-2	(Check: Bent IC pin or incorrect installation, etc.)	No	Correct
	1-3	Incorrect EEPROM Replace with correct EEPROM.		

H01 Primary (input) Overcurrent Detected

1. Error Detection Method

• Primary current effective value detected overcurrent (trip current value).

Trip current value HP = horse p							
	3-phase model	6.5 HP	7 HP	8 HP	9 HP		
	Heating	13.5A	14.5A	18.0A	19.5A		
	Cooling	13.5A	14.5A	15.5A	17.0A		

HP = horse power

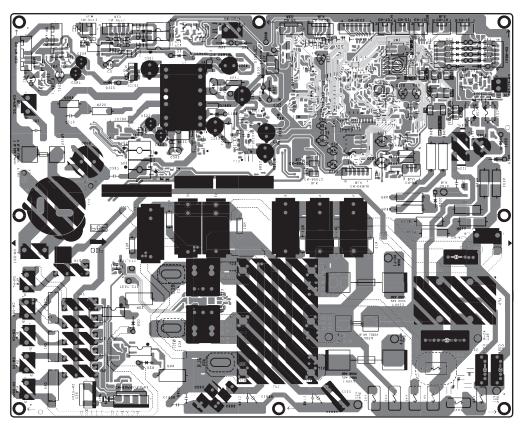
Single-phase model	6.5 HP
Heating	33.5A
Cooling	32.5A

2. Error Diagnosis

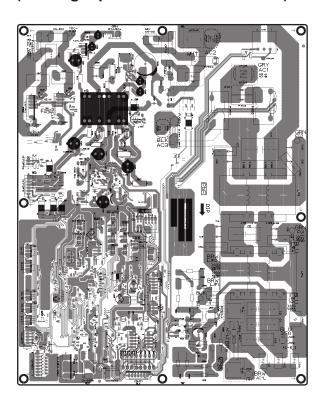
1 Power	1-1	Not satisfied with ±10% rated supply voltage	Yes	Check power supply.
supply*	1-1		No	1-2
	1.2	Extreme voltage fluctuations	Yes	Check power supply.
	1-2	Extreme voltage fluctuations	No	1-3
	1-3	Extreme distortion of voltage waveform	Yes	Check power supply.
	1-3	Extreme distortion of voltage wavelorm	No	1-4
	1-4	Instantaneous blackout may sometimes occur.	Yes	Check power supply.
	1-4		No	2-1
2 PC board	2-1	Has FUSE1-A / FUSE2 / FUSE3 blown?	Yes	2-3
wiring	2-1	Check the electrical conduction with tester.	No	2-2
	2-2	2	Yes	Correct wiring.
	2-2	Loose electrical wire connection	No	2-3
	2-3	Replace CR board.	·	

^{*} Check not only in the outdoor unit stop mode but in the drive mode.

U-160PZH3R8, U-180PZH3R8, U-200PZH3R8, U-224PZH3R8 (for 3-phase outdoor Unit PCB)



U-160PZH3R5, U-180PZH3R5 (for single-phase outdoor Unit PCB)



H03 Primary Current CT Sensor (current sensor) Failure

1. Error Detection Method

It is judged an error based on the criteria listed below.

- If 18A or greater is detected when the compressor is stopped (alarm triggered even if the connector is unplugged).
- · If no current is detected even though a compressor is running.

2. Error Diagnosis

1 Check the control	1_1	Turn the power on again and run the outdoor unit.	Yes	Replace CR board.
PC board	1-1	Is alarm occurred after operation?	No	See what happens.

H05 Sensor Failure, Compressor Discharge Temperature Sensor (TD) Disconnected

1. Error Detection Method

- (In case of outdoor temperature over 5°C) For 10 minutes since started, variation of discharge temperature is always
 detected within 2°C comparing with the temperature just before starting.
- (In case of outdoor temperature less than 5°C) For 30 minutes since started, variation of discharge temperature is always detected within 2°C comparing with the temperature just before starting.

1 Sensor	1 1	Is the sensor properly installed at the holder side?	Yes	1-2
Trouble	1-1	is the sensor property installed at the holder side?	No	Reinstall correctly.
	1-2	Replace the sensor with a new one.		

H31 HIC Trouble

1. Error Detection Method

It is judged an error if the computer detects an error signal from the HIC.

An error signal is issued by the HIC if abnormal heat occurs inside the HIC or if there is an overcurrent.

However, it is judged an error in the same way if the signal line from the HIC is not connected properly or opened.

- · HIC overcurrent due to HIC fault
- · HIC abnormal heat caused by defective HIC or HIC radiation error
- · Signal line is not connected properly or opened between the HIC and the outdoor CR board.

2. Error Diagnosis

1 Wiring		The wiring (power cord and signal line) between the HIC		1-2
between HIC &	1-1	and the outdoor CR board is connected properly.		Correct wiring (connector).
outdoor control PC board	1-2	Everything is normal in the wiring (power cord & signal line) between the HIC and the outdoor CR board. Check the wiring one by one with a tester if there is opened and		3-1 : Single-phase model 2-1 : 3-phase model
. o source		grounding.	No	Replace wiring.
2 Check the outdoor	2-1	The connector CN-RY on the CR PC board is connected	Yes	3-1
unit CR PC board.	2-1	properly (locked). (3-phase only)	No	Correct wiring (connector).
3 HIC poor radiation	3-1	The heat dissipating surface on the back of the HIC is in good contact with the heat sink (heat dissipating fins) of the		3-2
	3-1	electrical box. Check for looseness in the fastening screws and the condition of the heat-conducting putty.	No	Tighten screw(s), add putty.
	3-2	A good flow of cooling air passes through the heat sink (heat dissipating fins) of the electrical box. Check for debris blocking the fins.		4-1
	3-2			Remove foreign matter.
4 HIC overcurrent	4-1	The results of the pass/fail tests for the following HIC board	Yes	Replace the HIC PC board.
370100110111	→ -1	4-1 IPM show it to be outside the range of the resistance of a conforming part.		4-2
	4-2	The inverter compressor was stopped/started more than 10 times and it triggered H31 at a high rate. If alarm code P16		Replace the HIC PC board.
	7.2	occurs at times, refer to the alarm code P16.	No	Refer to alarm code P16.

• HIC board IPM Pass/Fail Tests

- Measure with an analog tester. (Set to the k ohm range)
- · Measure the board by itself. (Remove wires connected from other parts.)
- · Measure using IPM terminals.

★ Conforming part resistance value (measure with an analog tester)

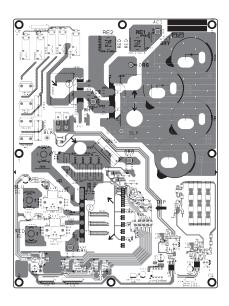
Tester terminals									
+		Р			NU				
-	U	V	W	NU	U	V	W	Р	
Resistance value (ohm)	1 k to 5 k	1 k to 5 k	1 k to 5 k	5 k to 10 k	100 k to ∞				
Tester terminals									
Tester terminals		F)			1	NU		
Tester terminals - +	U	F	o W		U	V	NU W		

[•] Excepting the parts of " 100 k to ∞ ", it is acceptable if a small resistance value appears as a reference value unless the value is "0 = short-circuit".

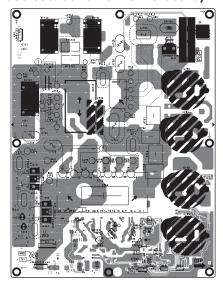
Tester terminals								
+		HIG	C+			F	IIC-	
-	U	V	W	HIC-	U	V	W	HIC+
Resistance value (ohm)	1 k to 10 k	1 k to 10 k	1 k to 10 k	5 k to 20 k	20 k to ∞ 20 k to ∞		20 k to ∞	20 k to ∞
Tester terminals								
Tester terminals		HIG	C+			F	IIC-	
Tester terminals - +	U	HIG	C+		U	V	HC-	

[•] Excepting the parts of " 20 k to ∞ ", it is acceptable if a small resistance value appears as a reference value unless the value is "0 = short-circuit".

■ Outdoor Unit Control HIC PCB U-160PZH3R5, U-180PZH3R5) (Single-phase outdoor unit HIC PC board)



U-160PZH3R8, U-180PZH3R8, U-200PZH3R8, U-224PZH3R8) (3-phase outdoor unit HIC PC board)



L04 Outdoor Unit Address Duplication

1. Error Detection Method

It is judged an error when the identical self-address communication on the indoor and outdoor wirings is received over 5 times within 3 minutes.

2. Error Diagnosis

1 System	1-1 Are other outdoor units using a duplicate setting?		Yes	2-1
address		7.10 outer outdoor arms doing a duplicate oothing.		2-2
2 Installation or setting	2-1	When units are networked, first set the system address for each outdo 1-2-3 and then run auto address setting.	or ur	nit in the order
related	2-2	Run the auto address setting.		

L10 Outdoor Unit Capacity not Set or Invalid

1. Error Detection Method

It is judged an error when outdoor unit capacity not yet setup or systematically unauthorized setting.

2. Error Diagnosis

1 Check the control	1-1	Was EEPROM replaced when PC board was replaced?	Yes	2-1
PC board	1-1		No	Replace EEPROM.
2 Installation or setting related	2-1	Set an applicable capacity value on the item code 81 display of main controller.	tenar	nce remote

 Check: Connect the outdoor maintenance remote controller and check whether item code 81 outdoor capacity value shows "0" or unauthorized capacity is set on the detailed settings mode display of the outdoor EEPROM.
 If the capacity value of the item code 81 with the outdoor maintenance remote controller is incorrect, recorrect and set it again.

L13 Indoor Unit Type Setting Error

1. Error Detection method

• Discordance model(s) between outdoor and indoor units are detected.

1 Discordance	4.4	Are models for outdoor and indoor units matched respectively?		2-1
Unit	1-1	(Ex: Are multiple indoor units connected to commercial outdoor units?)	No	Replace indoor units.
2 Installation Failure 2-1		1 \mid settings mode (2C code) and commercial indoor unit is set to "2" and \mid		3-1
				Change installation.
3 Operating Wires for Indoor & Outdoor Units	3-1	Check whether or not indoor and outdoor unit operating wires are should loose connection or earth fault.	t circ	uit, disconnection,

^{*} After setting the capacity value, be sure to reset the power supply switches of both indoor and outdoor units.

L18 4-way Valve Operation Failure

1. Error Detection Method

It is judged an error when during heating operation (Comp. ON), the highest detected temperature at an outdoor unit heat exchanger (C1) was 20°C or more above the outdoor air temperature (Air Temp.) continuously for 5 minutes or longer.

2. Error Diagnosis

				1
1 PC board	1-1	Is the connector wired from the 4-way valve plugged in the CN-HOT1	Yes	1-2
wiring	or CN-HOT2 connector on the HIC PC board properly?		No	Correct connector.
	1 2	Has the 4-way valve wiring become opened?	Yes	Correct wiring.
	1-2	Thas the 4-way valve withing become opened?	No	1-3
	4.0	Is the wire from the coil for controlling the 4-way valve firmly	Yes	2-1
	1-3	connected to the 4-way valve?	No	Correct connector.
2 4-way valve	2-1	wired from the 4-way valve into or from CN-HOT1 or CN-HOT2 connector on the HIC PC board. At the same time, does the ON & OFF sounds occur from the 4-way valve? During heating mode (Comp. ON), does the alarm code L18 reproduce for 5 minutes or longer after insertion and removal of CN-HOT1 or CN-HOT2 connector wired from the 4-way valve		2-2
				Replace HIC PC board.
				2-3
				See what happens.
	2-3	The parts inside the 4-way valve might have fixed at the cooling side. Replace the 4-way valve.		

P03 Compressor Discharge Temperature Trouble

1. Error Detection Method

• When the discharge temperature is over 106°C.

1 Adjustment to	1-1	Not additional refrigerant charged		Additional refrigerant charge
refrigerant			No	2-2
charge	1-2	Tends to have insufficient refrigerant charge in the system.	Yes	Adjust the refrigerant amount.
			No	Replace CR board.
2 Blockage in	2-1	Service valve inside the outdoor unit closed		Open service valve.
refrigerant circuit	2-1			2-2
Circuit	2-2	Are the tubes cleared?		Avoid clogging.
	2-2	Are the tubes clogged?	No	2-3
		Is the outdoor unit's electronic control valve operating correctly? (Check for debris clogging the electronic control valve, a problem with the electronical coil and/or the control PC board.)		2-4
	2-3			Replace the electronic control valve.
	2-4	Is it observable difference in status of the dew or frost between	Yes	Replace the strainer.
	∠-4	the strainer's primary and secondary sides?	No	Replace CR board.

P04 High Pressure Trouble

1. Error Detection Method

It is judged an error if the internal circuit of the high pressure switch is dead.

The electronic circuitry of the high pressure switch is cut off if the pressure at the pressure sensor port of the high pressure switch reaches 3.80 MPa. Once it is cut off, it remains cut off until the pressure drops to 3.15 MPa.

- · The high pressure switch is malfunctioning.
- · Service valve inside the outdoor unit closed
- There is a short air circuit through the outdoor unit's heat exchanger. (when cooling)
- The outdoor unit's fan is broken. (when cooling)
- · The outdoor unit's heat exchanger is clogged. (when cooling)
- There is a short air circuit at the indoor unit. (when heating)
- The filter of the indoor unit is clogged. (when heating)
- · The fan of the indoor unit is broken or the fan motor is malfunctioning. (when heating)
- The refrigerant circuit is closed and the high pressure is increasing abnormally high. (Solenoid valve or expansion valve not activated, a stuck check valve, etc.)
- Refrigerant overcharged
- · Nitrogen or air contaminated in the refrigerant system

1 High				1-2
pressure 1-		The socket of the high pressure switch is securely inserted in the PC board. The wiring is not opened.	No	Correct connection and/or wiring.
	1-2	Even if parts near the high pressure switch are shaken quite a lot, the high pressure cut off will be activated. Even if the covering is in good condition, in several cases vibration	Yes	Replace the high pressure switch (wiring).
		has caused wiring inside to open.	No	2-1
2 Service valve	2-1	Service valve inside the outdoor unit closed	Yes	Open the service valve.
			No	2-2
	2-2	There is an extreme difference in temperature in/out of the service	Yes	2-3
	2-2	valve.	No	3-1
	2-3	Check the flare connection, someone may have forgotten to remove If there is a problem within the service valve, replace the valve.	the b	onnet.
3 Problem	3-1	While cooling is operating an alarm is occurred		3-2
around the				3-5
heat exchanger	3-2			Prevent air short circuit.
		lieat exchanger is above 40°C.	No	3-3
	3-3	The outdoor unit's heat exchanger is clogged.		Clean the heat exchanger.
				3-4
		Check whether the outdoor unit fan is normal or if the sockets are	Yes	4-1
	3-4	firmly pressed anto the pluge on the outdoor PC heard, as well as		Replace the outdoor unit fan. Correct connection and/or wiring.
	3-5	While heating is operating an alarm is occurred.	Yes	3-6

3 Problem	The intake temperature (ambient temperature) of the indoor un		Yes	Prevent air short
around the heat	3-6	above 36°C.		circuit.
exchanger				3-7
	3-7 The filter of the indoor unit is closured			Clean the filter.
			No	
	3-8	The fan of the indoor unit is broken or the fan motor is faulty.	Yes	Replace the indoor fan (motor).
			No	
4 Blockage		Is the outdoor unit's electronic control valve operating correctly?	Yes	4-3
in the refrigerant circuit	4-1	(Check for debris clogging the electronic control valve, a problem with the electronical coil and/or the control PC board.)	No	Repair the electronic control valve of the outdoor unit.
		The independent continues to the continue continues continues to the continues continu	Yes	4-3
	4-2	The indoor unit's expansion valve is operating correctly. (Check for debris clogging the valve, a problem with the electronical coil and/or the control PC board.)	No	Repair the expansion valve of the indoor unit.
		If an alasma is a second with the bigh arrange halour 2 00 MDs	Yes	4-4
	4-3	If an alarm is occurred with the high pressure below 3.80 MPa, with the pressure measured as displayed by the manifold gauge, check the check valve in the compressor discharge line. Are these checking finished without fail?	No	Replace the check valve in the compressor discharge line.
	The electronic control valve is faulty. 4-4 In systems where the solenoid valve kits and the ice thermal storage tank are connected, check these solenoid valves.		Yes	Replace the electronic control valve and/or solenoid valve.
			No	5-1
5	- A		Yes	5-3
Overcharging	5-1	Error occurs when the system is operating in cooling mode.	No	5-2
	<i>-</i> 0	5-2 Error occurs when the system is operating in heating mode. An alarm is occurred with the high pressure at 3.80 MPa, with the pressure measured either as displayed by the monitoring software or with a manifold gauge, at which time the temperature of liquid in the outdoor unit's heat exchanger is detected to be at the temperature of the outside air.		5-4
	5-2			5-5
	5-3			5-5
				Contact the service representative.
		An alarm is occurred with the high pressure at 3.80 MPa, with the pressure measured either as displayed by the monitoring software	Yes	5-5
	5-4	or with a manifold gauge, at which time the temperature of liquid in the indoor heat exchanger is detected to be at room temperature (intake temperature).	No	Contact the service representative.
	5-5	The system may be overcharged. Check how much refrigerant was a When a system is inspected for airtightness, it is seldom that enough expelled, so some remains in the circuit. In this case, it is necessary to collect the refrigerant and then recharge	nitro	ogen has been

P05 AC Power Supply Trouble

1. Error Detection Method

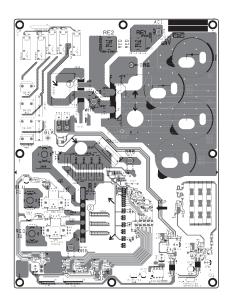
- Instantaneous blackout
- · Zero-cross (waveform input of power supply) error
- DC voltage charge failure

2. Error Diagnosis

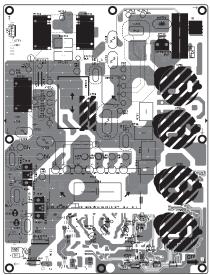
Note: The work involved in diagnosing each of the items is extremely dangerous, so turn the power off at the breaker before performing the tests.

1 Check the power	1-1	Is the voltage on each of the terminal boards within ±10%		1-4 : Single-phase model 1-2 : 3-phase model			
supply & the wiring		of the rated voltage?	No	Check for open circuit an If a problem is found, fix i			
	1-2	Power wiring N phase is connected	٠d		Yes	Correct wiring.	
	1-2	Power wiring N-phase is connected	au.		No	1-3	
	1-3	Power wiring L2 and N are revers	0 001	anastad (2 phasa aply)	Yes	Correct wiring.	
	1-3	Power willing L2 and N are revers	e coi	inected. (5-phase only)	No	1-4	
	1-4	Turn the power back on and check again.				3-1 : Single-phase model 2-1 : 3-phase model	
		s the alarm triggered again?			No	4-1	
2 Check the outdoor	2-1	The connector CN-RY on the outo	door	CR PC board is	Yes	3-1	
unit CR PC board	2-1	connected properly (locked). (3-pl	hase	only)	No	Correct wiring. (connector)	
3 Check the	3-1	Are the wires (DE1, DE2) from the	o roo	otor firmly installed?	Yes	3-2	
outdoor	3-1	Are the wires (RE1, RE2) from the reactor firmly installed?		No	Correct wiring.		
unit HIC PC board	3-2	Turn the power back on and check again.		ain.	Yes	Replace the outdoor unit HIC PC board.	
		is the alarm thygered again?	ne alarm triggered again?				
4 Final check	4-1	There may be a instantaneous blackout failure. If there is nothing abnormal, see what happens.					

■ Outdoor Unit Control HIC PCB U-160PZH3R5, U-180PZH3R5 (Single-phase outdoor unit HIC PC board)



U-160PZH3R8, U-180PZH3R8, U-200PZH3R8, U-224PZH3R8 (3-phase outdoor unit HIC PC board)



P13 Alarm Valve Open

1. Error Detection Method

Detection is performed only in the test run. When once detected or the test run finished without any error, the second detection will not be done.

In case of forgetting to open a valve, P04 (high-pressure switch operational alarm) is occasionally preceded due to the following conditions.

• The status of small temperature change of the operating indoor unit continues for the first 7 minutes since the cooling test run has started.

2. Error Diagnosis

1 Service valve	1-1	Service valve inside the outdoor unit closed		Open the service valve.
			No	2-1
2 Adjustment to	2-1	Not additional refrigerant charged	Yes	Additional refrigerant charge
refrigerant change	2-1 Not additional formgorant charged	No	3-1	
3 Blockage	3-1	Are the tubes closed?		Avoid clogging.
in		Are the tubes clogged?	No	3-2
refrigerant circuit		le the outdoor unit's electronic control valve energing correctly?	Yes	3-3
Circuit	3-2 (0	Is the outdoor unit's electronic control valve operating correctly? (Check for debris clogging the electronic control valve, a problem with the electronical coil and/or the control PC board.)	No	Replace the electronic control valve.
	3-3	As the second detection is not done, restart and see what happens	if ther	e is no error.

P14 O₂ Sensor Detect

1. Error Detection Method

- It is judged an error whenever the outdoor unit receives the signal "O2 Alarm Occurred" from the indoor unit.
- · With the indoor unit's EEPROM setting (item code 0B) set to 0001, the EXCT input was shorted.

•				
1 System	1-1 Is an O2 sensor being used?		Yes	3-1
configuration	'- '	is all 02 selisor being useu:		2-1
2 Indoor unit's EEPROM	2-1	s the indoor EEPROM setting, item code 0B, on the indoor unit's ontrol PC board set to 0001?		After correcting the setting, 3-1
setting		Control 1 C board Set to 6001:	No	4-1
3 Indoor EXCT	2.4	·1 ∐s the indoor EXCT socket (wire) shorted?		Correct wiring.
wiring	3-1			4-1
4 Indoor unit's	4-1	Is the alarm triggered if the indoor EXCT socket (wire) is	Yes	4-3
control	4-1	disconnected, and the power is reset?	No	4-2
PC board	4-2	Since there is no error, see what happens.		
	4-3	Indoor unit control PC board error → Replace PC board.		

P15 Insufficient Gas Level Detected

1. Abnormal Detection Method

Alarm occurs in the following cases:

- · Compressor's current value shows lower than a certain value.
- Compressor's discharge temperature exceeds 95°C.
- · Electronic expansion valve is fully opened.
- The difference between indoor unit heat exchanger temperature and intake temperature is less than 4K.

refrigerant amount	1-1	Insufficient gas level (Check whether or not pressure level is normal.)		Recharge with additional refrigerant.
		(enest whether of het procedure lever le horman)	No	1-2
	1-2	Check leakage of refrigeration (leak test).	Yes	Replace leaking part with a new one.
				See what happens.

P16 Compressor Overcurrent Trouble

1. Meaning of Alarm

- Secondary current effective value detected the overcurrent (trip current value).
 - 3-phase model (6.5HP 9HP) : Trip current = 25.0 A
 - Single-phase model (6.5HP): Trip current = 27.0 A
- Secondary current instantly detected overcurrent (trip current value).
 - 3-phase model (6.5HP 9HP) : Trip current = 38.0 Apeak Single-phase model (6.5HP) : Trip current = 50.0 Apeak

2. Check of content

0 Multiple	0-1	Replaced the compressor (added oil, if it was necessary)	Yes	7-1
factors	0-1	but it occurred again immediately.	No	-
	0-2	Replaced the board, but it occurred again immediately.	Yes	Replace compressor along with adding oil, then recheck from 1-1.
			No	-
1 Power	1-1	Power cord connections are loose.	_	Correct the wiring.
Source		T T T OWER GOTA GOTTHEOLIGING AIG 1993C.		1-2
	1-2	Rated power voltage is not within ±10%.		Test the power supply.
		The total port of total go to the training and to the training are to the training are to the training are to the training are training are to the training are to the training are trainin		1-3
	1-3	Extreme fluctuations in voltage.		Test the power supply.
		<u> </u>	No	
	1-4	An open phase state is observed.		Test the power supply.
2 Doord			No	2-1
2 Board wiring	2-1	Disconnected parts, miswiring and/or poor connections (loose) are observed in the connections on the CR board and/or in the	Yes	Correct
		connections of components that are connected by wiring from the CR board.	No	2-2
	2-2	Disconnected parts, miswiring and/or poor connections (loose) are observed in the connections of outdoor board(s) that are	Yes	Correct
	connected by wiring from the CR board.		No	2-3
	2-3	Disconnected parts, miswiring and/or poor connections (loose) are observed in the connections of outdoor board(s) that are		Correct
	2-0	connected by wiring from the HIC board.	No	2-4
	2.4	Disconnected parts, miswiring and/or poor connections (loose)	Yes	Correct
	2-4	are observed in the connections of HIC boards connected by wiring from the CR board.	No	2-5
	2-5	Disconnected parts, miswiring and/or poor connections (loose) -5 are observed in the connections of HIC board(s) that are		Correct
	2-5 are observed in the connections of FIC board(s) that are connected by wiring from the outdoor board. Disconnected parts, miswiring and/or poor connections (loose) are observed in the connections of HIC board(s) that are		No	2-6
			Yes	Correct
		connected by wiring to a compressor.	No	3-1
3	3-1	Disconnections and/or miswiring are observed in the		Correct
Compressor wiring		connecting location of the compressor terminals.	No	3-2
Willing	3-2	Conditions such as burned terminal covers and/or discolored terminals are observed in the connecting location of the compressor terminals.	Yes	Eliminate looseness by changing the terminals or crimping the terminals again.
			No	4-1

			1	
4 Check the	4-1	Outdoor air intake temperature is high.		Take measures.
situation		eatager an intake temperature te mgm		4-2
	4-2	May be caused by poor outdoor unit air flow		Correct
		(dirty or clogged heat exchanger, blocked discharge port, etc.)	No	4-3
	4-3	Air short circuit has occurred. This is a phenomenon when	Yes	Prevent air short circuit.
	4-3	discharged air (exhaust heat) from the outdoor unit is drawn back into the suction vent.	No	4-4
			Yes	Take measures.
	4-4	Indoor air intake temperature is high.	No	4-5
	4 -		Yes	Clean the filter.
	4-5	The filter of the indoor unit is clogged.	No	4-6
		Air short circuit has occurred. This is a phenomenon when	Yes	Prevent air short
	4-6	discharged air (exhaust heat) from the indoor unit is drawn back into the suction vent.	No	circuit.
5 Check		into the suction vent.	Yes	
operation	5-1	Possible to operate.	No	
			Yes	
	5-2	Operating pressure is affected by pressure overload.		5-4
				Adjust the amount
	5-3	Tends to have an overcharge of refrigerant in the system.	Yes	of refrigerant.
			No	5-4
	5-4		Yes	Check the operation
		Tends to operate for a long time turning gas back into liquid.		of functional parts.
			No	5-5
		To do to be a size of its double to be a size that a		Adjust the amount of refrigerant.
	ე-ე	Tends to have insufficient refrigerant charge in the system.	No	-
		Even though the high pressure saturation temperature is 43°C or	Yes	Renlace the
	Even though the high pressure saturation temperature is 43°C or 5-6 less, the secondary current of the inverter is high.			compressor.
		(The frequency (Hz) ends up dropping due to the current.)	No	See what happens.
6 Check	6-1	Dividing the outdoor EEPROM INV operation time by the number	Yes	6-2
history	0-1	of times oil was supplied to the system yields 3 hours or less.	No	6-2
				Replace the compressor and add
	6-2	There is a history of H31 in the pre-trip counter of the outdoor	Yes	oil. However, if 6-1 was "no", it is not
		EEPROM alarm history.		necessary to add oil.
			No	7-1
7 Check the	7-1	The results of HIC board IPM Pass/Fail Tests show the outside the	Yes	Replace HIC board.
HIC boards	/-1	range of the resistance of a conforming part listed in the next page.	No	8-1
8 Check the			Yes	Replace the
compressor	8-1	The compressor is causing a failure in the insulation.		compressor.
		The winding resistance of the compressor is abnormal.	INO	8-2
		Standard winding resistance HP: horse power	Yes	Replace the
		3-phase model single-phase model	33	compressor.
	8-2	(6.5HP – 9HP) (6.5HP) U-V : 0.735 ohm U-V : 0.229 ohm		
		U-W : 0.715 ohm U-W : 0.223 ohm	No	9-1
		V-W: 0.715 ohm V-W: 0.223 ohm		

9 Check the HIC PC 9-	9-1	Replace the HIC PC board and operate the unit. (Apply putty and	Yes	See what happens.
boards	9-1	Replace the HIC PC board and operate the unit. (Apply putty and screws must not be loose) Does it operate normally?	No	10-1
10 Check the outdoor unit main PC board		Replace the control PC board and operate the unit.	See	what happens.

- (Check content of 7) The test check of the HIC board is only a check on the output level, so the input stage may not be working.
- With the filter board broken, alarm P16 may not be triggered.

• HIC board IPM Pass/Fail Tests

- Measure with an analog tester. (Set to the k ohm range.)
- Measure the board by itself. (Remove wires connected from other parts.)
- · Measure using IPM terminals.

★ Conforming part resistance value (measure with an analog tester)

Tester terminals								
+		F)		NU			
-	U	V	W	NU	U	V	W	Р
Resistance value (ohm)	1 k to 5 k	1 k to 5 k	1 k to 5 k	5 k to 10 k	100 k to ∞			
Tester terminals								
	Р							
-		F				1	NU	
+	U	V	W		U	1 V	W	

• Excepting the parts of "100 k to ∞", it is acceptable if a small resistance value appears as a reference value unless the value is "0 = short-circuit".

Tester terminals								
+		HIG	C+		HIC-			
-	U	V	W	HIC-	U	V	W	HIC+
Resistance value (ohm)	1 k to 10 k	1 k to 10 k	1 k to 10 k	5 k to 20 k	20 k to ∞			
Tester terminals				·			<u> </u>	
Tester terminals		HIG	C+			ŀ	IIC-	
	U	HIG	C+ W		U	V	HC-	

[•] Excepting the parts of "20 k to ∞", it is acceptable if a small resistance value appears as a reference value unless the value is "0 = short-circuit".

P22 Outdoor Unit Fan Motor Trouble

1. Error Detection Method

• It is judged an error when the outdoor fan motor's rotating signal cannot be detected normally.

1 Wiring		Are the connectors "CN-FM_UP" and "CN-FM_LO" firmly connected to the outdoor control PC board (lock engaged)?		2-1		
	1-1			Correct the connector connections.		
2 Outdoor fan motor	2-1	the outdoor control PC board and rotate the outdoor fan by		3-1		
	2-1	hand; does it rotate freely? (Check the outdoor fan motor lock.)	No	Replace the outdoor fan motor.		
3 Outdoor control	I urn the power on and run the unit again; is P22 triggered		Yes	3-2		
PC board	3-1	again? Can you see or hear anything wrong in its rotation?	No	3-3		
	3-2	Replace the outdoor control PC board. (If it fails to operate normally even after replacing the outdoor control PC board, replace the outdoor fan motor.)				
	3-3	ns.				

P29 Lack of INV compressor wiring, INV compressor actuation failure (including locked), DCCT failure

1. Error Detection Method

- · Abnormal current is detected at DCCT before start-up.
- · Start-up failed during overcurrent and/or step-out detected.
- · Open-wire of compressor and/or backspin detected.
- · Secondary current is not detected during INV compressor is running.

2. Error Diagnosis

1 Wiring	1-1	Disconnected parts, miswiring and/or poor connections (loose) are observed in the connections of HIC PC board(s) that are	Yes	Correct wiring connections.
.		connected by wiring to a compressor. *1	No	1-2
	1-2	Disconnected parts, miswiring and/or poor connections (loose) are observed in the connections of outdoor board(s) that are	Yes	Correct wiring connections.
		connected by wiring from the HIC PC board. *1	No	2-1
2	2-1	Disconnections and/or miswiring is observed in the connections	Yes	Correct
Compressor	2-1	of the compressor terminals. *1	No	2-2
wiring	2-2	Conditions such as burned terminal covers and/or discolored terminals are observed at the connectors of the compressor terminals. *1		Eliminate looseness by changing the terminals, or crimping the terminals again.
			No	3-1
3 Check the HIC PC	3-1	The results of the pass/fail tests for the following HIC PC board IPM show it to be outside the range of the resistance of a	Yes	Replace the HIC board.
boards	0-1	conforming part.	No	3-2
	3-2	Replace the HIC PC board and operate the unit. (Apply putty		See what happens.
	3-2	and screws must not be loose) Does it operate normally?	No	4-1
4 Check the outdoor control PC board	4-1	Replace the control PC board and operate the unit.	See	what happens.

^{*1} Checking for looseness of compressor terminals by wiggling them has the adverse effect of loosening them, so do not do it. Evaluate them by discoloration of wire insulation near the terminal.

• HIC board IPM Pass/Fail Tests

- Measure with an analog tester. (Set to the k ohm range)
- Measure the board by itself. (Remove wires connected from other parts.)
- · Measure using IPM terminals.

★ Conforming part resistance value (measure with an analog tester)

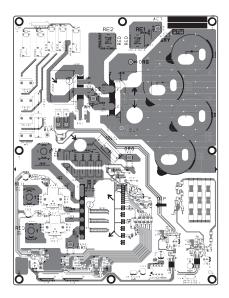
Tester terminals								
+		F)		NU			
-	U	V	W	NU	U	V	W	Р
Resistance value (ohm)	1 k to 5 k	1 k to 5 k	1 k to 5 k	5 k to 10 k	100 k to ∞	100 k to ∞	100 k to ∞	100 k to ∞
Tester terminals								
Tester terminals		F)				NU	
Tester terminals - +	U	F	W		U	V	NU W	

Excepting the parts of "100 k to ∞", it is acceptable if a small resistance value appears as a reference value unless the
value is "0 = short-circuit".

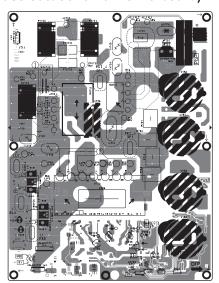
Tester terminals								
+	HIC+				HIC+ HIC-			
-	U	V	W	HIC-	U	V	W	HIC+
Resistance value (ohm)	1 k to 10 k	1 k to 10 k	1 k to 10 k	5 k to 20 k	20 k to ∞	20 k to ∞	20 k to ∞	20 k to ∞
Tester terminals								
-		HIG	C+			H	IIC-	
+	U	V	W		U	V	W	
			20 k to ∞		4 1 4 40 1	1 k to 10 k	4 1 4 40 1	

[•] Excepting the parts of "20 k to ∞", it is acceptable if a small resistance value appears as a reference value unless the value is "0 = short-circuit".

■ Outdoor Unit Control HIC PCB U-160PZH3R5, U-180PZH3R5 (Single-phase outdoor unit HIC PC board)



U-160PZH3R8, U-180PZH3R8, U-200PZH3R8, U-224PZH3R8 (3-phase outdoor unit HIC PC board)



P31 Group Control Error

1. Error Detection Method

Other indoor unit alarms within the group.

1 Other indoor	1 1	Survey the indoor unit that alarms other than "P31" in the indoor unit group and specify the	_
unit	1-1	causes of failure.	

5-4. Inspection of Parts (Outdoor Unit)

(1) Electronic control valve (MOV1)

MOV1: Measure the voltage between plug pin 5 and pins 1 through 4 at the CN-MOV1 connector (5P, white) on the outdoor unit control PCB. (Because of the pulse output, a simplified measurement method is used. Set the tester to the 12 V range; if the value displayed is approximately 4 V, then the voltage is normal.)
 If the voltage is normal, measure the resistance between connector pin 5 and pins 1 through 4.
 Resistance between pin 5 and pins 1 through 4 should be approximately 46 ohm for all. (If the result is 0 ohm or, ∞ then replace the coil.)

(2) Outdoor Unit Fan Motor

Model No.	Part No.
U-160PZH3R5, U-180PZH3R5, U-160PZH3R8,	L6CBYYYL0449
U-180PZH3R8, U-200PZH3R8, U-224PZH3R8	L6CBYYYL0450

(3) Coil Resistance of Compressor

Madal Na	Part No.	Inverter compressor (at 20°C)		
Model No.		U - V	V - W	U - W
U-160PZH3R5	9VD550XBA21	0.229	0.223	0.223
U-180PZH3R5	9VD550XBA21	0.229	0.223	0.223
U-160PZH3R8	9VD550XAA21	0.735	0.715	0.715
U-180PZH3R8	9VD550XAA21	0.735	0.715	0.715
U-200PZH3R8	9VD550XAA21	0.735	0.715	0.715
U-224PZH3R8	9VD550XAA21	0.735	0.715	0.715

5-5. Symptom: Thermostat in OFF continues or cycles OFF & ON too frequently

1. How to detect abnormality

 Abnormality does not occur. Protective function can be checked when the outdoor maintenance remote controller is connected.

1 Indoor control		Setting temperature reaches the level set ON thermostat.		Adjust setting
PC board	1-1	Setting temperature is too low in heating mode and too high in cooling and dry mode.		temperature.
			No	1-2
	1-2	Check if the sensors are connected correctly. Are all connection made properly? Room temp. (TA) in yellow, heat exchanger (E1) in red, heat exchanger (E2) in black.	Yes	Connect correctly.
			No	1-3
	1-3	DISP (display mode) is applied.	Yes	Turn OFF(OPEN).
			No	1-4
	1-4	With a thermostat OFF in heating mode, wind speed (item code 05) is out of range 0 - 6. (Use Simple Setting Function on standard timer remote controller.)	Yes	Choose one of 0 to 6.
			No	1-5
	1-5	DEMAND is applied.	Yes	Turn OFF(OPEN).
			No	2-1
2 Outdoor control PC board	2-1	Outdoor unit and protective function of a system are operating. (Connect outdoor maintenance remote controller to RC socket on outdoor unit main control PC board and check alarm messages.)	Yes	See operational status.
			No	2-2
	2-2	Discharge temperature is over 80°C in stop mode and does not decrease. (Connect outdoor maintenance remote controller to RC socket on outdoor unit main control PC board and check alarm messages.)		Replace discharge temperature sensor.
				2-3
	2-3	Demand value always stays low. (The value is lower than 70. Excluding -1 (unlimited))(Connect outdoor maintenance remote controller to RC socket on outdoor unit main control PC board and check alarm messages.)		Increase values (over 70).
				2-4
	2-4	DEMAND is applied.		Turn OFF(OPEN).
			No	
3 Control equipment	3-1	Demand setting is made by control units (P-AIMS, Seri-Para I/O unit for outdoor unit, Seri-Para I/O each indoor unit.)		Turn OFF.
			No	4-1
4 System	4-1	When operating in cooling (including auto cooling & heating) and dry mode, lowest temp. of indoor E1 and E2 sensor is less than 2°C (under anti-freeze control).		Wait until more than 2°C reaches.
			No	
	4-2	During defrosting operation		Wait for a few minutes to 10 minutes or so.
				4-3
	4-3	Outdoor unit PC board failure → Replacement		

- According to a type of model, the indoor sensors will not be supplied in some cases.
- According to a type of model, the outdoor DEMAND will not be supplied in some cases.
- When LINE Checker is used, the temperature sensors can be observed (display, record) simultaneously.
- According to some areas, some of the models are unreleased.

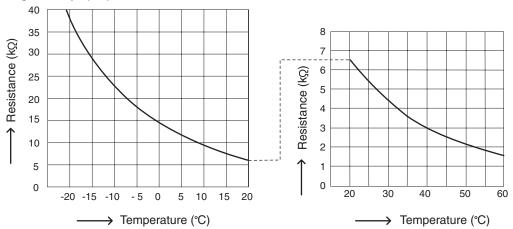
5-6. Table of Thermistor Characteristics

(1) Outdoor Air Temp. (TO) Sensor,

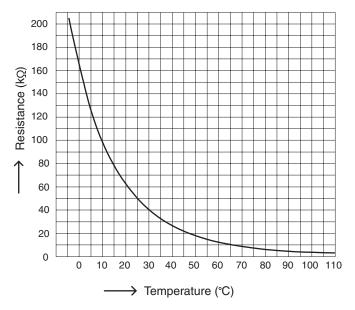
Intake Temp. (TS) Sensor,

Heat Exchanger Temp. (C1) Sensor,

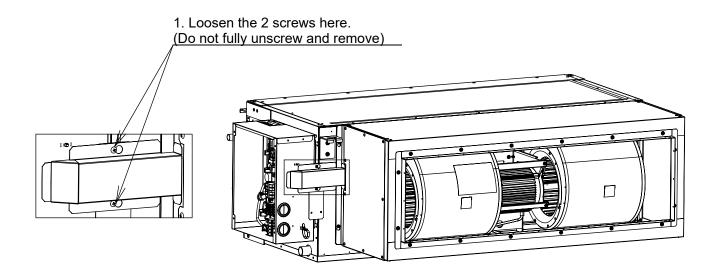
Heat Exchanger Temp. (C2) Sensor

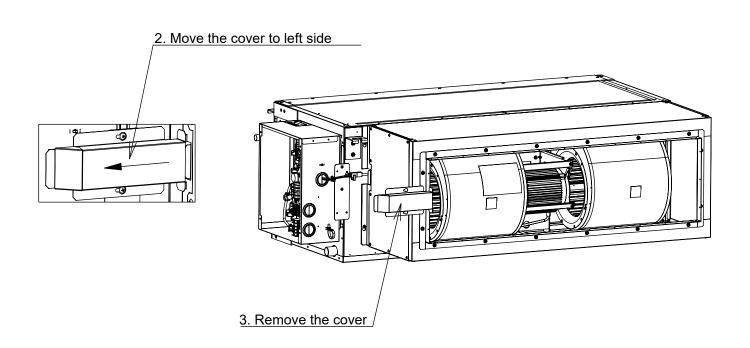


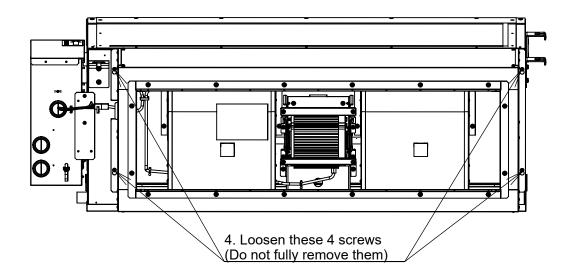
(2) Discharge Temp. (TD) Sensor

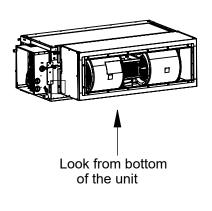


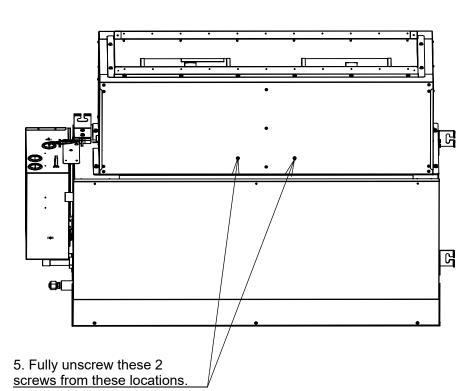
5-7. How to Remove Fan Motor (S-180PE4R S-200PE4R)

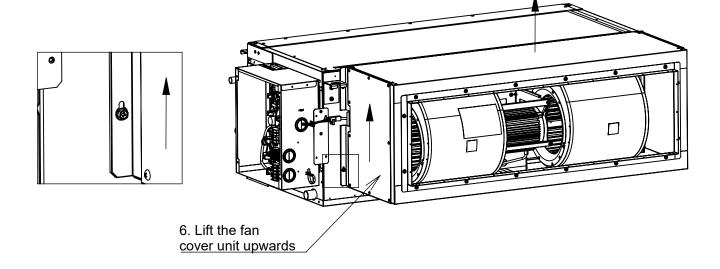


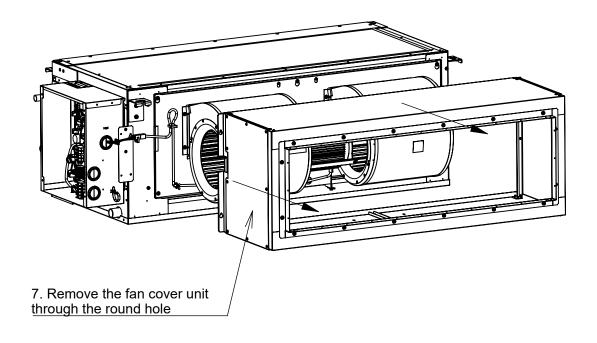


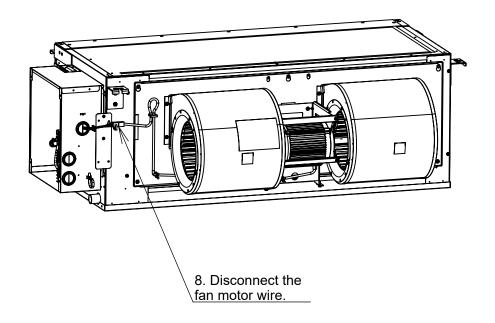


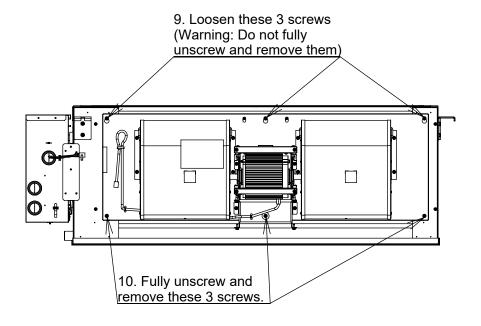


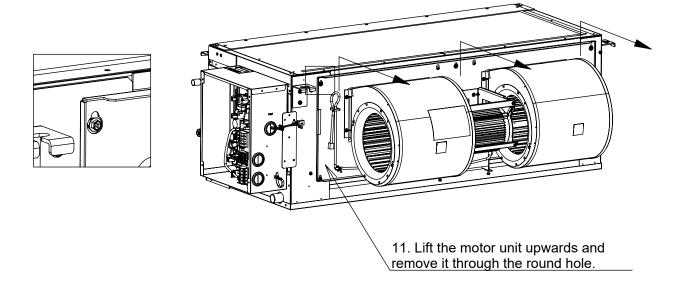


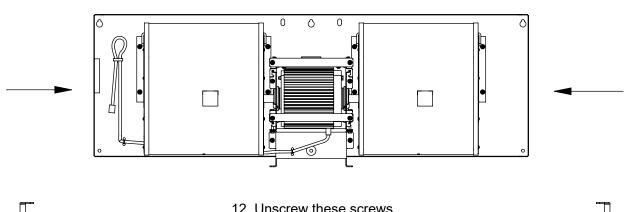


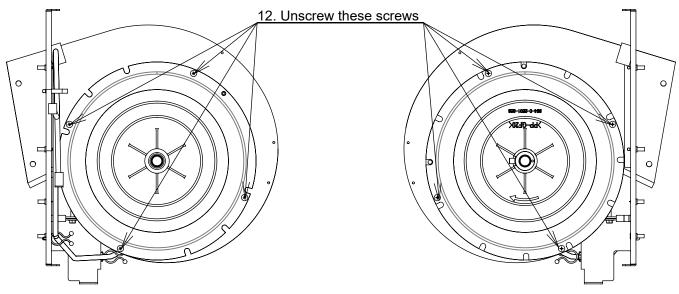


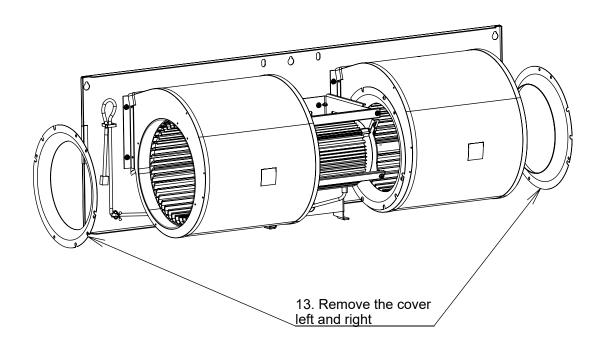


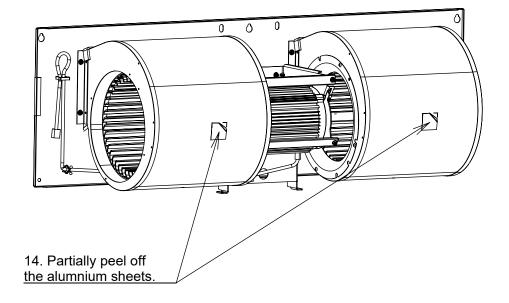


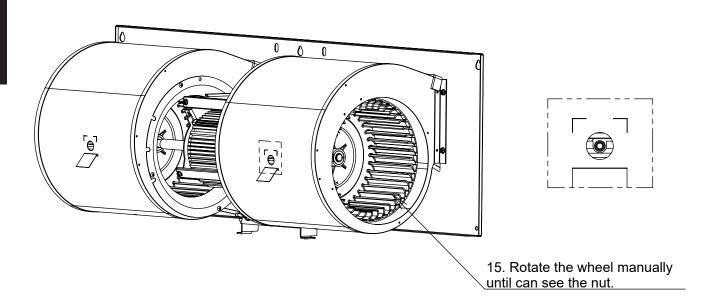


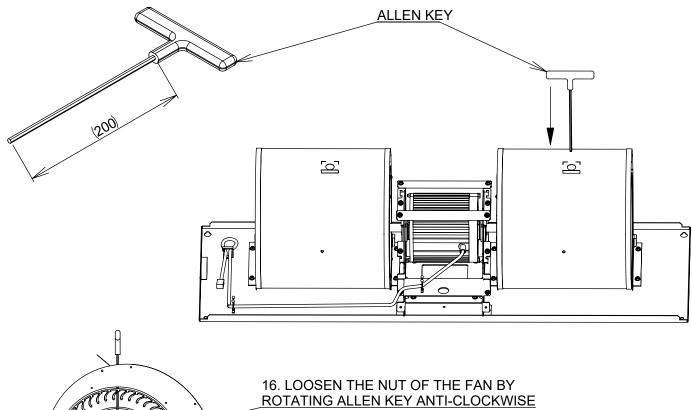


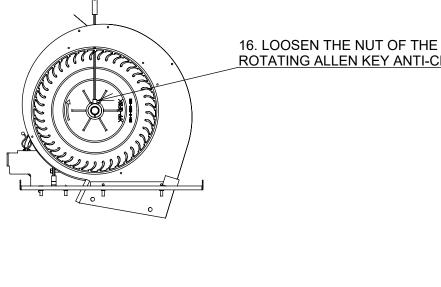


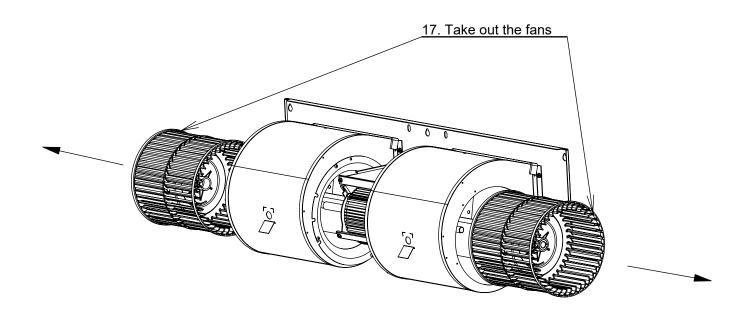




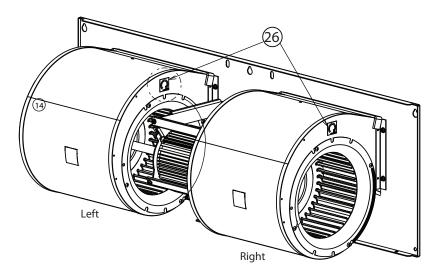


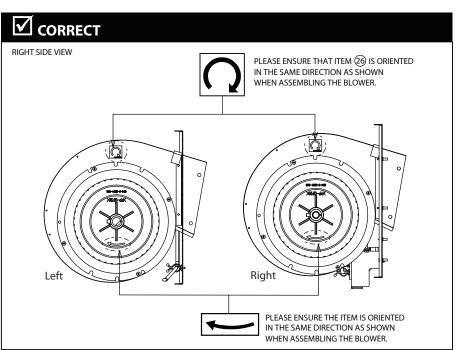


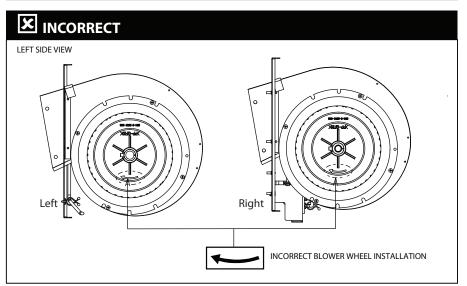




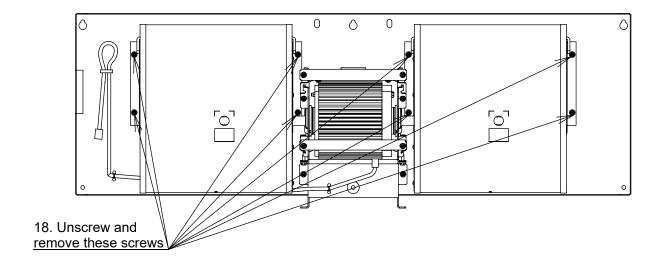
Blower Wheel Assembly Instruction

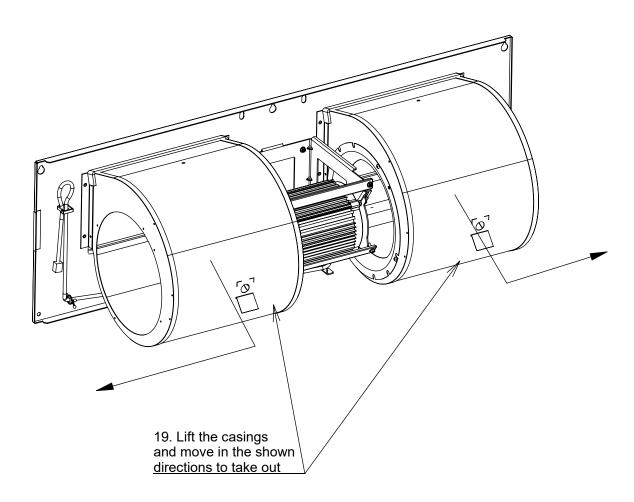


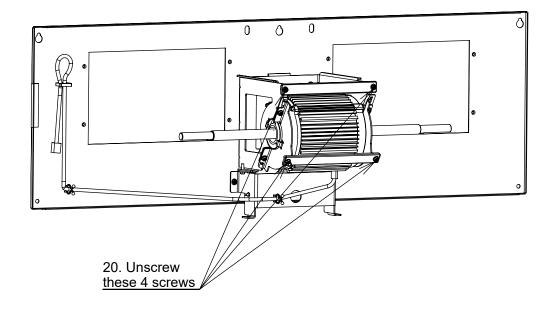


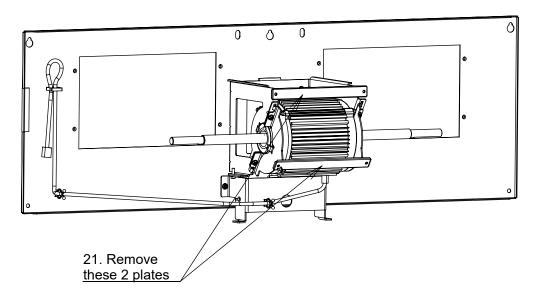


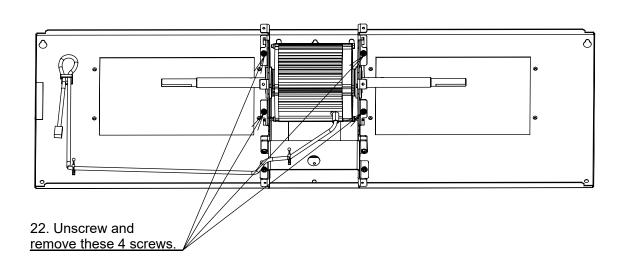
CAUTION Incorrect assembly will cause reverse airflow

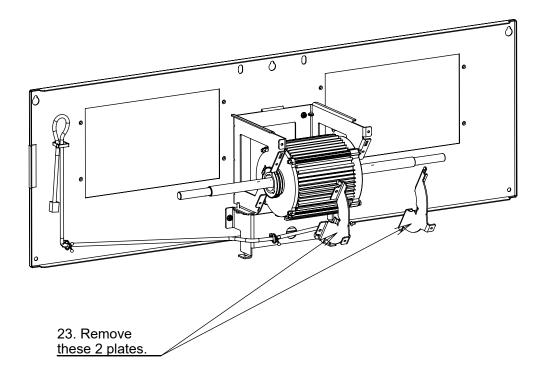


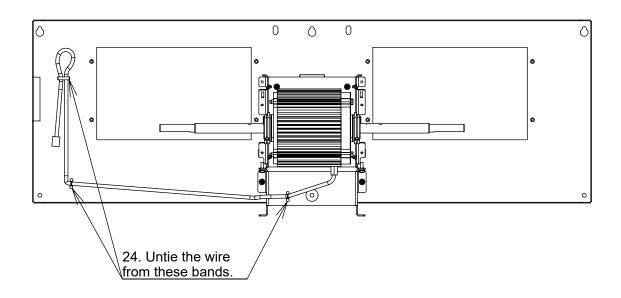


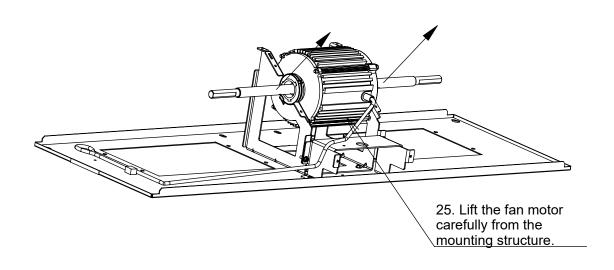










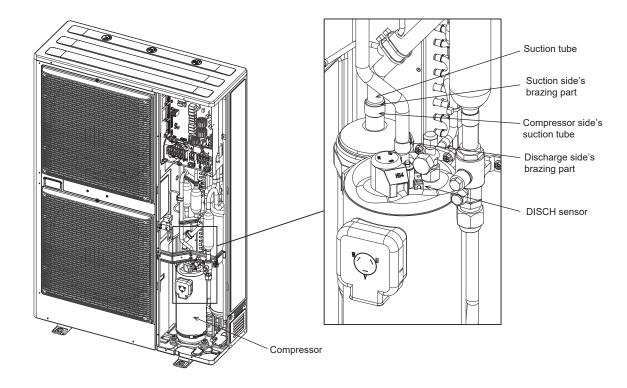


5-8. How to Remove the Compressor

Pay careful attention to prevent water or foreign objects from entering into the refrigerant tubing when removing or installing the compressor.

Removing

- 1. After collecting the refrigerant in the system, replace nitrogen gas from the service port of the gas tubing valve.
- 2. Remove the sound absorbing material protecting the compressor.
- 3.Remove the cap of the compressor's terminal and then remove the power source terminal and TD sensor.
- 4. Remove the crank case heater.
- 5. Remove the bolts (×3) and then remove the washer and rubber spacer.
- 6.Cut off the compressor side's suction tube because the suction tube is solid and unmovable. See the diagram below.
- 7.Remove the discharge side's brazing part (×1). See the diagram below.
 - NOTE: Protect the sensor part, sheet metal, rubber, lead wire and clamper.
- 8. Pull the compressor toward you.
- 9.Remove the suction side's brazing part (×1) of the cut-off compressor side's suction tube connected to the suction tube.



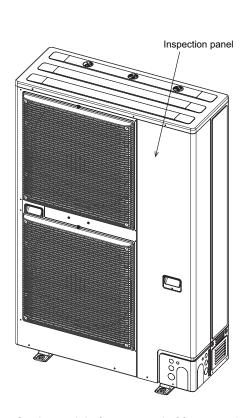
5-9. How to Remove the Electrical Component Box

Removing

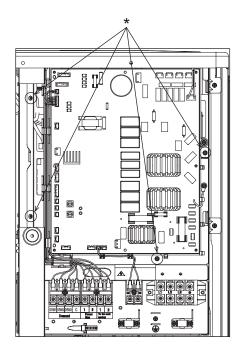
- 1. Remove the front panel and inspection panel from the outdoor unit.
- 2.Remove all local wires connected to the electrical component box.
- 3.Remove the wires (temperature sensor, coils of every sort of valve, pressure switch, fan motor and wires for connecting compressor) connected to the electrical component box in the unit.
- 4.Remove the fixture screws (×4) as shown in the diagram and remove the electrical component box.

NOTE:

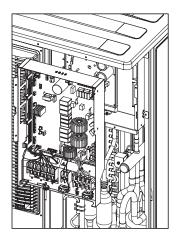
Be sure to remove the upper left side screw marked by * in the diagram because that screw cannot be seen from the front side.



Outdoor unit before removal of front panel



Fixture screws (×4) for electrical component box



Electrical component box after removal

5.10. Symptom: Thermostat in OFF continues or cycles OFF & ON too frequently

1. How to detect abnormality

 Abnormality does not occur. Protective function can be checked when the outdoor maintenance remote controller is connected.

2. Error Diagnosis

1 Indoor control PC board	1-1	Setting temperature reaches the level set ON thermostat. Setting temperature is too low in heating mode and too high	Yes	Adjust setting temperature.
		in cooling and dry mode.	No	1-2
	4.0	Check if the sensors are connected correctly. Are all connection made properly?		Connect correctly.
	1-2	Room temp. (TA) in yellow, heat exchanger (E1) in red, heat exchanger (E2) in black.	No	1-3
	4.0	DIOD (Freely and In) in a self-ed	Yes	Turn OFF(OPEN).
	1-3	DISP (display mode) is applied.	No	1-4
	4.4	With a thermostat OFF in heating mode, wind speed	Yes	Choose one of 0 to 6.
	1-4	(item code 05) is out of range 0 - 6. (Use Simple Setting Function on standard timer remote controller.)	No	1-5
	4 5	EVOT/decreased control) is a multiple	Yes	Turn OFF(OPEN).
	1-5	EXCT(demand control) is applied.		2-1
2 Outdoor control	2-1	Outdoor unit and protective function of a system are operating. (Connect outdoor maintenance remote controller to RC socket		See operational status.
PC board		on outdoor unit main control PC board and check alarm messages.)	No	2-2
	2-2	Discharge temperature is over 80°C in stop mode and does not decrease. (Connect outdoor maintenance remote controller to RC socket on outdoor unit main control PC board and check		Replace discharge temperature sensor.
		alarm messages.)		2-3
	2-3	Demand value always stays low. (The value is lower than 70. Excluding -1 (unlimited)) (Connect outdoor maintenance remote		Increase values (over 70).
		controller to RC socket on outdoor unit main control PC board and check alarm messages.)	No	2-4
	2-4	DEMAND or EXCT(demand control) is applied.		Turn OFF(OPEN).
			No	
3 Control	3-1	Demand setting is made by control units (P-AIMS, Seri-Para I/O		Turn OFF.
equipment		unit for outdoor unit, Seri-Para I/O each indoor unit.)	No	
4 System	4-1	When operating in cooling (including auto cooling & heating) and dry mode, lowest temp. of indoor E1 and E2 sensor is less	Yes	Wait until more than 2°C reaches.
		than 2°C (under anti-freeze control).	No	4-2
	4-2	During defrosting operation		Wait for a few minutes to 10 minutes or so.
			No	4-3
	4-3	Outdoor unit PC board failure → Replacement		

- According to the type of models, the indoor sensors will not be supplied in some cases.
- According to the type of models, the outdoor DEMAND or EXCT will not be supplied in some cases.
- When LINE Checker is used, the temperature sensors can be observed (display, record) simultaneously.
- According to some areas, some of the models are unreleased.

6

6. EEPROM SETTING USING THE CZ-RTC6 SERIES REMOTE CONTROLLER

6-1. Preparation for EEPROM Setting using the CZ-RTC6 series remote controller	6-2
6-2. EEPROM Setting using the CZ-RTC6 series remote controller	
6-2-1. Detailed Settings Function	6-3
6-2-2. List of Detailed Setting Items	

6-1. Preparation for EEPROM Setting using the CZ-RTC6 series remote controller

To set EEPROM, you can use the 6 series remote control (CZ-RTC6 series) or install the Panasonic H&C Control App.

You can use the "Panasonic H&C Control App" on your mobile device to operate the air conditioning unit, see "7-9 Panasonic H&C Control App" for details on installation and initial settings.

This app is compatible with the following remote controllers.

Check the model number shown in the label on the bottom of the remote controllers.

Models: CZ-RTC6BL / CZ-RTC6BLW (CZ-RTC6 incompatible)



6-2. EEPROM Setting using the CZ-RTC6 series remote controller

6-2-1. Detailed Settings Function

This allows the system address, indoor unit address, and other settings to be made for the individual or group-control indoor unit to which the remote controller used for detailed settings is connected. When detailed settings mode is engaged, operation stops at the individual or group-control indoor unit where the remote controller used for detailed settings is connected. Simple settings items can also be set at this time.

<Pre><Pre>cedure of CZ-RTC6 series>

Stop the system before performing these steps.

(1) Keep pressing the , and buttons simultaneously for 4 or more seconds.

The "Maintenance func" screen (Fig. 6-2-1) appears on the LCD display.



Fig. 6-2-1



CZ-RTC6 series

(2) Press the ✓ or ✓ button to see each menu.

Select "Detailed settings" (Fig. 6-2-2) on the LCD display and press the ✓ button.

The "Detailed settings" screen (Fig. 6-2-3) appears on the LCD display.

(3) Select the "Unit no." (Fig. 6-2-3) by pressing the or button.

After selecting "Unit no.", press the button and proceed to Step (4).



If the address setting is not set up correctly, the "ALL" will be displayed in the "Unit no.".

If the button is pressed, proceed to Step (6).

(4) Keep pressing the button for 2 seconds or more during selecting "Code no.". (Fig. 6-2-4)

Change the "Code no." one digit at a time so that it becomes [0000XX] along with the following procedures.

Change the value (Fig. 6-2-5) by pressing the ✓ or △ button.

After changing the value, press the ✓ button and set the next digit.

Change the value (Fig. 6-2-6) by pressing the ✓ or ✓ button.

After changing the value, press the ✓ button and set the next digit.



Fig. 6-2-2



Fig. 6-2-3



Fig. 6-2-4



Fig. 6-2-5



Fig. 6-2-6

Change the value (Fig. 6-2-7) by pressing the or button.

After changing all digits, press the button and proceed to Step (5).



Fig. 6-2-7

(5) Select one of the Setting Data "YYYY" by pressing the ✓ or ✓ button. After selecting "Set data", press the ✓ button. (If setting continuously, follow the procedures from Fig. 6-2-5.)

If you wish to change the selected indoor unit or finish setting, press the button twice (the display returns to Step (3)).



Fig. 6-2-8

(6) If the button is pressed under the display Step (3) the following display (Detailed setting-end screen) (Fig. 6-2-9) appears.

Then select "YES" by pressing the or button and press the button. (Return to normal remote controller display.)



Fig. 6-2-9

<Procedure of Panasonic H&C Control App>

1. Tap " 📋 "

Open Menu list.



2. Tap " or 3 seconds or longer and release.

Tap " for 3 seconds or longer and release again.



3. If successful, the menu screen will close. If Menu list does not close, perform step 2 again.



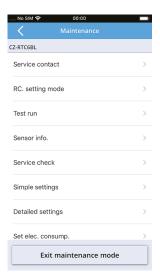
4. Open Menu list again,





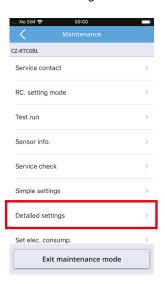


Open Menu list of "Maintenance" .

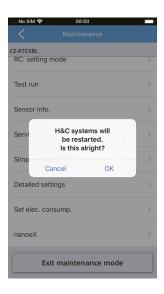


Menu list of "Maintenance"

6. Tap " Detailed settings "

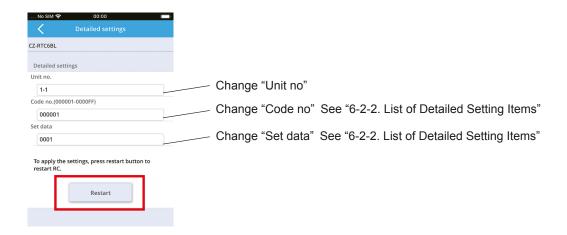


7. A dialog will appear stating that a reboot will occur. If there is no problem, tap " OK " .



8. Set "Unit no." / "Code no." / "Set data".

Then tap " Restart "



9. The unit will restart and return to the HOME screen.



6-2-2. List of Detailed Setting Items

Item code	Item		Setting of	data
	-	0000	normal	(Setting at factory shipment)
0002ED	Silent mode	0001	Auto silent	
		0002	Capacity priority	
0002EE	ODT made Setting	0000	Quiet/EXCT	(Setting at factory shipment)
0002EE	OPT mode Setting	0001	DEMAND	
0002F0	Measures against smell	0000	Invalid	(Setting at factory shipment)
00021 0	when indoor unit cooling	0001	Measures against smell	
		0000	40%	
		0001	45%	
		0002	50%	
0002F2	Demand 1 current (%)	0007	75%	(Setting at factory shipment)
0002. 2	2 0.11.0.11.0 1 00.11.0.11 (70)			
		0012	100%	
		0018	130%	
		0019	No control	
	Demand 2 current (%)	0000	40%	
		0001	45%	
		0002	50%	(Setting at factory shipment)
0002F3		0007	75%	
		0012	100%	
			4000/	
		0018	130%	
		0019	No control	
		0000	40%	
		0001	45%	
		0002	50%	
			750/	(Catting at factors, chipmont)
0002F4	Energy saving current (%)	0007	75%	(Setting at factory shipment)
			1000/	
		0012	100%	
		0019	130%	
		0018 0019	No control	
		0019	Silent mode 1	(Setting at factory shipment)
000301	Outdoor unit silent mode	0001	Silent mode 2	(Setting at factory shipment)
000001	Outdoor utilit shellt lilloue	0002	Silent mode 3	
		0003		e of the outdoor unit
		0000	Depending on the settings	(Setting at factory shipment)
000303	Capacity matching ignored	0001	Invalid	(Sound at lactory ompinions)
		0001	Valid	
		0002	valiu	

7

7. REMOTE CONTROLLER FUNCTIONS SECTION

7-1.	Simple Settings Function	7-2
7-2.	List of Simple Setting Items	7-5
7-3.	Detailed Settings Function	7-6
7-4.	List of Detailed Setting Items	7-10
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7-6.	Detailed Setting Items	7-16
7-7.	Remote Controller Servicing Functions	7-19
7-8.	Test Run Function	7-21
7-9.	Panasonic H&C Control App	7-34

7-1. Simple Settings Function

This allows the filter lifetime, operating mode priority change, central control address, and other settings to be made for an individual or groupcontrol indoor unit to which the remote controller used for simple settings is connected. When simple settings mode is engaged, operation stops at the individual or group-control indoor unit to which the remote controller for simple settings is connected.

<Pre><Pre>cedure of CZ-RTC6 series>

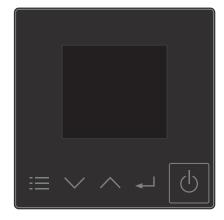
Stop the system before performing these steps.

(1) Keep pressing the ≡, △ and ✓ buttons simultaneously for 4 or more seconds.

The "Maintenance func" screen (Fig. 7-1-1) appears on the LCD display.



Fig. 7-1-1



CZ-RTC6 series

(2) Press the ✓ or ✓ button to see each menu.

Select "Simple settings" (Fig. 7-1-2) on the LCD display and press the ✓ button.

The "Simple settings" screen (Fig. 7-1-3) appears on the LCD display.

(3) Select the "Unit no." (Fig. 7-1-3) by pressing the or button.

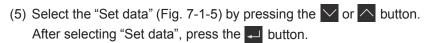
After selecting "Unit no.", press the button and proceed to Step (4).



If the button is pressed, proceed to Step (6).

(4) Select the "Code no." (Fig. 7-1-4) by pressing the ✓ or ✓ button.

After selecting "Code no.", press the ✓ button and proceed to Step (5).



The "Simple settings" screen (Fig. 7-1-6) appears on the LCD display (proceed to Step (6)).

(6) If the button is pressed under the display (Fig. 7-1-6), the following display (Simple setting-end screen) (Fig. 7-1-7) appears.

Then select "YES" by pressing the or button and press the button. (Return to normal remote controller display.)



Fig. 7-1-6



Fig. 7-1-2



Fig. 7-1-3

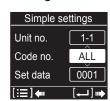


Fig. 7-1-4



Fig. 7-1-5

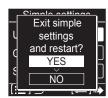
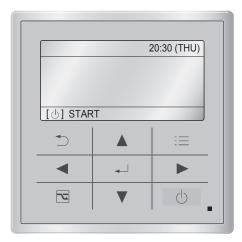


Fig. 7-1-7

<Pre><Pre>cedure of CZ-RTC5B>



CZ-RTC5B

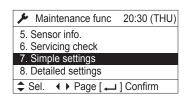
(1) Keep pressing the _____, ___ and ____ buttons simultaneously for 4 or more seconds. The "Maintenance func" screen appears on the LCD display.



(2) Press the or button to see each menu.

If you wish to see the next screen instantly, press the or button.

Select "7. Simple settings" on the LCD display and press the button.



The "Simple settings" screen appears on the LCD display.

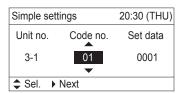
Select the "Unit no." by pressing the ▼ or button for changes.



(3) Select the "Code no." by pressing the
button.

Change the "Code no." by pressing the
or

a button.



(4) Select the "Set data" by pressing the or button.

Select one of the "Set data" by pressing the ▼ or ▲ button.

Then press the button.



(5) Select the "Unit no." by pressing the or button and press the button.

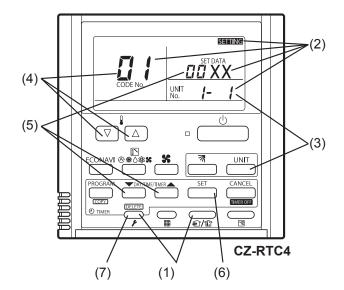
The "Exit simple settings and restart?" (Simple setting-end) screen appears on the LCD display. Select "YES" and press the button.



<Pre><Pre>cedure of CZ-RTC4>

- (1) Press and hold the \bigcap_{\digamma} and $\bigcap_{\widehat{\mathfrak{sl}}/\widehat{\mathfrak{sl}}}$ buttons simultaneously for 4 seconds or longer.
- (2) "SETING", unit No. " !- !" (or " !! !!" in the case of group control), item code "!!!" !," and settings data "!!!" XX" are displayed blinking on the remote controller LCD display (figure at right). At this time, the indoor unit fan (or all indoor unit fans in the case of group control) begins operating.
- (3) If group control is in effect, press the button and select the address (unit No.) of the indoor unit to set. At this time, the fan at the indoor unit begins operating.

 *If unit No. " # !!" is displayed, the same setting will be made for all indoor units.
- (4) Press the temperature setting ▽ / △ buttons to select the item code to change.
- (5) Press the timer time buttons to select the desired setting data.*For item codes and setting data, see the following
- (6) Press the button. (The display stops blinking and remains lit, and setting is completed.)
- (7) Press the putton to return to normal remote controller display.



7-2. List of Simple Setting Items

Code no.	Item	Set data		
oode no.	nom	No.	Descr	iption
		0000	Not displayed	
		0001	150 hours	
O 1	Filter sign ON time	0002	2,500 hours	
	(filter life time)	0003	5,000 hours	
		0004	10,000 hours	
		0005	Use the filter clogging ser	
		0000	Standard (setting at time	of shipping)
02	Degree of filter fouling 0001 Highly fouled (Filter sign ON time is reduced to one-half the set time.)			luced to
		0001	Central control address 1	
		0002	Central control address 2	
		0003	Central control address 3	
83	Central control address	>	>	
		0064	Central control address 6	4
		0099	No central control address set (setting at time of shipping)	
ПП	Operating mode	0000	Normal (setting at time of shipping)	
04	priority change	0001	Priority	
	Fan speed when heating thermostat is OFF		Compressor ON	Compressor OFF
		0000	Lo 1 min., LL 3 min.	LL
		0001	Lo	LL
05		0002	LL	LL
		0004	Lo 1 min., LL 3 min. Lo	Lo
		0005	Lo	Lo
		0006	LL	Lo
		0000	No shift	
		0001	Shifts intake temperature 1 °C down.	
77	Heating intake	0002	Shifts intake temperature	
85	temperature shift	0003	Shifts intake temperature	
		0004	Shifts intake temperature 4 °C down.	
		0005	Shifts intake temperature	
	Electric bester	0006	Shifts intake temperature 6 °C down.	
	Electric heater installation	0000 0001	No heater	
		0000	Heater installed No (setting at time of shipping)	
08	Humidifying when heater thermostat is			hina)
LICI	OFF	0001	Yes	
570 4	Permit/prohibit	0000	Permit	
Od	automatic heating/cooling	0001	Prohibit	
OF.	Cool-only	0000	Normal	
ri.	O O O I II y	0001	Cool only (Set "1" for item	code OD.)

NOTE

- In order to avoid water leakage and damage to the fan, do not set for humidifying when the thermostat is OFF unless a vaporizing humidifier is used.
- Consider the device purpose and type when changing the settings. Incorrect settings may result in malfunction.
- Do not change any setting data that does not appear in this list.

7-3. Detailed Settings Function

This allows the system address, indoor unit address, and other settings to be made for the individual or group-control indoor unit to which the remote controller used for detailed settings is connected. When detailed settings mode is engaged, operation stops at the individual or group-control indoor unit where the remote controller used for detailed settings is connected. Simple settings items can also be set at this time.

<Pre><Pre>cedure of CZ-RTC6 series>

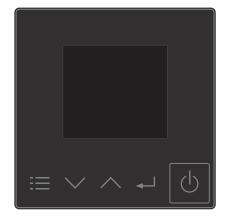
Stop the system before performing these steps.

(1) Keep pressing the ≡, and buttons simultaneously for 4 or more seconds.

The "Maintenance func" screen (Fig. 7-3-1) appears on the LCD display.



Fig. 7-3-1



CZ-RTC6 series

(2) Press the ✓ or ✓ button to see each menu.

Select "Detailed settings" (Fig. 7-3-2) on the LCD display and press the ✓ button.

The "Detailed settings" screen (Fig. 7-3-3) appears on the LCD display.

(3) Select the "Unit no." (Fig. 7-3-3) by pressing the or button.

After selecting "Unit no.", press the button and proceed to Step (4).



If the address setting is not set up correctly, the "ALL" will be displayed in the "Unit no.".

If the button is pressed, proceed to Step (6).

(4) Keep pressing the button for 2 seconds or more during selecting "Code no.". (Fig. 7-3-4)

Change the "Code no." one digit at a time so that it becomes [0000XX] along with the following procedures.

Change the value (Fig. 7-3-5) by pressing the ✓ or △ button.

After changing the value, press the ← button and set the next digit.

Change the value (Fig. 7-3-6) by pressing the \checkmark or \land button. After changing the value, press the \checkmark button and set the next digit.

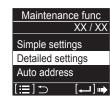


Fig. 7-3-2

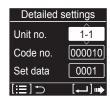


Fig. 7-3-3



Fig. 7-3-4



Fig. 7-3-5



Fig. 7-3-6

Change the value (Fig. 7-3-7) by pressing the or button.

After changing all digits, press the button and proceed to Step (5).



Fig. 7-3-7

(5) Select one of the Setting Data "YYYY" by pressing the or button. After selecting "Set data", press the button. (If setting continuously, follow the procedures from Fig. 7-3-5.)

If you wish to change the selected indoor unit or finish setting, press the

If you wish to change the selected indoor unit or finish setting, press the button twice (the display returns to Step (3)).



Fig. 7-3-8

(6) If the button is pressed under the display Step (3) the following display (Detailed setting-end screen) (Fig. 7-3-9) appears.

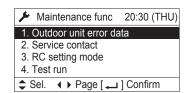
Then select "YES" by pressing the or button and press the button. (Return to normal remote controller display.)



Fig. 7-3-9

CZ-RTC5B

(1) Keep pressing the _____, ___ and ____ buttons simultaneously for 4 or more seconds. The "Maintenance func" screen appears on the LCD display.



(2) Press the or button to see each menu.

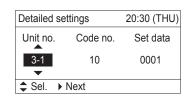
If you wish to see the next screen instantly, press the or button.

Select "8. Detailed settings" on the LCD display and press the button.



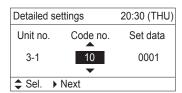
The "Detailed settings" screen appears on the LCD display.

Select the "Unit no." by pressing the ▼ or button for changes.



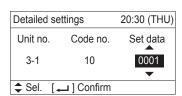
(3) Select the "Code no." by pressing the button.

Change the "Code no." by pressing the ▼ or button (or keeping it pressed).



Select one of the "Set data" by pressing the or button.

Then press the button.

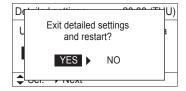


(5) Select the "Unit no." by pressing the

■ or

button and press the
button.

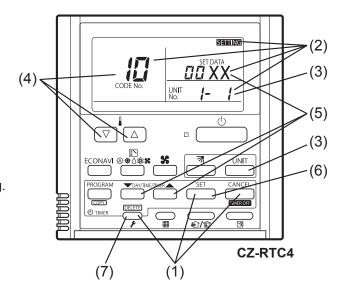
The "Exit detailed settings and restart?" (Detailed setting-end) screen appears on the LCD display. Select "YES" and press the button.



7

<Pre><Pre>cedure of CZ-RTC4>

- (1) Press and hold the \nearrow , $\stackrel{\text{\tiny SET}}{\longrightarrow}$ and $\stackrel{\text{\tiny CANCEL}}{\longrightarrow}$ buttons simultaneously for 4 seconds or longer.
- (2) "SETTING", unit No. " !- !" (or " !! !!" in the case of group control), item code " !!!", and settings data "!!!! XX" are displayed blinking on the remote controller LCD display (figure at right). At this time, the indoor unit fan (or all indoor unit fans in the case of group control) begins operating.
- (3) If group control is in effect, press the button and select the address (unit No.) of the indoor unit to set. At this time, the fan at the indoor unit begins operating.
- (4) Press the temperature setting ▽ / △ buttons to select the item code to change.
- (5) Press the timer time buttons to select the desired setting data.
 - *For item codes and setting data, see the following page.
- (6) Press the ____ button. (The display stops blinking and remains lit, and setting is completed.)
- (7) Press the putton to return to normal remote controller display.



7-4. List of Detailed Setting Items

Cadana	Itam	Set data						
Code no.	Item	No.	Description	No.	Description	No.	Description	
		0000		0001		0002		
10	Туре	0003		0005		0006	High Static Pressure Duct S-160PE3R High Static Pressure Ducte S-180, 200, 224PE4R	
		0007		8000		0010		
		0011						
		0001		0003		0005		
	la de en coit	0007		0009		0011		
11	Indoor unit capacity	0012		0015		0017		
• •	Capacity	0019	180 (Type 160)	0020	200 (Type 180)	0021	224 (Type 200)	
		0022	250 (Type 224)					
		0001	Unit no. 1			1		
	System address	0002						
12		0003	Unit no. 3					
		((
		0030	Unit no. 30					
		0099	Not set					
		0001	Unit no. 1					
		0002	Unit no. 2					
17	Indoor unit	0003	Unit no. 3					
13	address	5	5					
		0064	Unit no. 64					
		0099	Not set					
		0000			with no group wiring			
11.1	Group control	0001			-control indoor units			
14	address	0002		-control i	ndoor units except f	or main ι	unit)	
		0099	Not set					
		-010	Shifts intake tempe					
17		-009	Shifts intake tempe	erature 9°	C down.			
		5	\					
	Cooling intake	-001	Shifts intake temper		C down.			
	temperature	0000	No intake tempera					
* *	shift	0001	Shifts intake temper	erature 1°	C up.			
		5	\					
		0009	Shifts intake tempe			<u> </u>		
		0010	Shifts intake temper	erature 10)°C up.			

0.1	lt a ma			Set data
Code no.	Item		No.	Description
			0000	Function disabled
	Automatic stop time after operation start		0001	Stops automatically 5 minutes after operation starts.
			0002	Stops automatically 10 minutes after operation starts.
18			>	>
	*Can be set in 5-minute units.		0123	Stops automatically 615 minutes after operation starts.
	5-minute units.		0124	Stops automatically 620 minutes after operation starts.
			0125	Stops automatically 625 minutes after operation starts.
(1 B)	Forced thermostat ON ti	me	0000	5 minutes
()			0001	4 minutes
	Temperature shift for	or	0001	± 1°C
	cooling/heating	-	0002	± 2°C
18	change in auto	-	0003	± 3°C
	heat/cool mode		7	\ \ \
		ļ	0007	± 7°C
_			0018	18°C (Lower limit at shipment)
IF.		a	0019	19°C
(Upper limit)		Cooling))
20		ပိ	0029	29°C
(Lower limit)		-	0029	30°C (Upper limit at shipment)
			0036	16°C (Lower limit at shipment)
₽!			0017	17°C
(Upper limit)		o remote H 0030 30)	
\ <u>`</u> `22	Change to remote	leat	((
(Lower limit)		_	0029	29°C
	control temperature		0030	30°C (Upper limit at shipment)
77	setting range		0018	18°C (Lower limit at shipment)
(Upper limit)		ng	0019	19°C
(Upper limit)		Dryin	}	\ \ \
(Lower limit)			0029	29°C
(2000)			0030	30°C (Upper limit at shipment)
		_	0017	17°C (Lower limit at shipment)
25		00/	0018	18°C
(Upper limit)		Auto heat/cool	>	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
(Lower limit)		엄	0026	26°C
			0027	27°C (Upper limit at shipment)
29	Humidifier operation	,	0000	Normal
[]	Trainialier operation	1	0001	Ignore heat exchanger temperature conditions.
			0000	Filter input (differential pressure switch input)
28	Filter (CN70) input switching		0001	Alarm input (for trouble input about air cleaner or similar device)
	Switching		0002	Humidifier input (Operates linked with drain pump when humidifier is ON.)
20	Indoor unit electron	ic	0000	None
<u> </u>	control valve		0002	Present (Setting at shipment)
28	T10 terminal switch	ina	0000	Normal (Used as optional relay PCB or JEMA standard HA terminal.)
_ cc	1 To terminal switching		0001	Used for OFF reminder
			0002	Fire prevention input

0 - 1 - 11 -	léa ma		Set data
Code no.	Item	No.	Description
		0000	No forced operation
75	Automatic drain pump	0001	Forced operation for 1 minute
2F	operation	>	>
		0060	Continuous operation
7,1	Ventilation fan	0000	None
3 !	operation	0001	Ventilation fan operated by remote controller.
77	Wired remote controller	0000	Not used. (Body sensor is used.)
32	sensor	0001	Remote control sensor is used.
34	"Operation change control in progress"	0000	Normal (displayed)
	display	0001	Not displayed
35	OFF reminder function for when weekly timer is	0000	None
_1_1	used	0001	Only stop time setting is enabled.
	Heat exchanger	-001	Control temperature -1°C
_	temperature for cold air	0000	Control temperature 0°C
30	discharge (Heat exchanger control	>	>
	point for control to	0025	Control temperature 25°C
	prevent cold air)	0026	Control temperature 26°C
34	Fan output switching	0000	Output linked with fan.(ON when indoor unit fan is operating.)
		0001	Fan mode operation output
		0000	No delayed stop
		0001	1minutes delayed stop
	Drain pump delayed	0002	2minutes delayed stop
36	stop time	2 2	>
	·	0058	58minutes delayed stop
		0059	59minutes delayed stop
		0060	60minutes delayed stop
		0000	Humidifier output OFF. Drain pump stopped.
		0001	Humidifier output ON. Drain pump operates.
40	Humidifier setting	0002	Humidifier output ON. Drain pump operates for 1 minute when total humidifier operating time reaches 60 minutes.
		0003	Humidifier output ON. Drain pump stopped.
		0000	Standard setting
45	Flap operation mode	0001	Draft reduction mode (Flap lower-limit position is shifted upwards.)
		0000	Smudging reduction mode (Flap swing upper-limit position is shifted downwards.)
45	Flap swing mode	0001	Normal mode
		0002	Draft reduction mode (Flap swing lower-limit position is shifted upwards.)
•			(Continued)

Code no.	Item		Set data
Code no.	item	No.	Description
			Purpose
	Fan tap setting	0000	Standard (factory setting)
	(Fan tap change in order to prevent drop		High ceiling setting 1 (U3, T3)
58	in air discharge	0001	Air-flow blocking kit (when a duct is connected : U3)
	caused by filter		Air-flow blocking kit (for 3-way air flow : U3)
	installation)	0003	High ceiling setting 2 (U3)
		0006	Air-flow blocking kit (for 2-way air flow : U3)
		0000	No humidifier output
		0001	1 second
	Humidifier ON time	0002	2 seconds
58	(ON time per 60	>	ζ
	seconds)	0058	58 seconds
		0059	59 seconds
		0060	Continuously ON
	Timer function change	0000	Function disabled
60	prohibit	0001	Function enabled
52	Smudging control	0000	No smudging control
	Fan speed when	0000	Fan speed setting
88	cooling thermostat	0003	LL 3min.→ Fan speed setting
	OFF	0009	LL
FF	Refrigerant	0000	None
ΓĹ	adaptability	0001	Standard (factory setting)

NOTE

- Consider the device purpose and type when changing the settings. Incorrect settings may result in malfunction. Do not change any setting data that does not appear in this list.

7-5. Simple Setting Items

Item code	Item	Description
01	Filter sign ON time setting	Changes the indoor unit filter lifetime when a high-performance filter or
"	(filter lifetime)	other optional product is installed.
0.2	Dograp of filter fouling	Reduces the filter sign ON time to 1/2 of the standard time (setting at the
02	Degree of filter fouling	time of shipping) for cases when filter fouling is more severe than normal.

Filter sign ON times for each model

			Filter sign ON time			
Model data	Model				g-life	
		Standard	High fouling	Standard	High fouling	
0006	High Static Pressure Duct S-160PE3R High Static Pressure Ducted S-180, 200, 224PE4R	×	×	×	×	

NOTE

• × indicates that there is no corresponding filter.

Item code	Item Description			
03	Central control address	Set when using a central control device. Used when setting the central control address manually from the remote controller.		

When the operating mode at the priority remote controller is changed, the operating modes of other remote controllers change as shown below.

Mode change at priority remote controller		Operating modes at other remote controllers		
Current mode New mode		Current mode	New mode	
Cooling or dry	Heating	Cooling or dry	Heating	
	ricating	Fan	Fan (not changed)	
Heating	Cooling	Heating	Cooling	
ricating	Cooling	Fan	Fan (not changed)	
Cooling	Dry	Cooling	Cooling (not changed)	
		Dry	Dry (not changed)	
Lloating	Dny	Heating	Cooling	
Heating	Dry	Heating Fan	Fan (not changed)	
		Cooling	Cooling (not changed)	
Cooling or dry	Fan	Dry	Dry (not changed)	
		Fan	Fan (not changed)	
Heating	Fan	Heating	Heating (not changed)	
	Fall	Fan	Fan (not changed)	

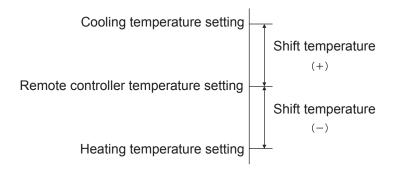
Code no.	Item	Description
05	Fan speed setting when heating thermostat is OFF	Changes the fan speed setting when the heating thermostat is OFF.
06	Heating intake temperature shift	Shifts the intake temperature during heating. Can be set when the body thermostat is used.
07	Electric heater installation	Set when cost distribution is performed using an AMY central control system or similar system, and when an optional electric heater is installed. (This is unrelated to control of the electric heater.)
08	Humidifying when heater thermostat is OFF	Normally humidifying does not occur when the thermostat is OFF during heating operation. However, this setting can be changed in order to increase the amount of humidifying. Caution: In order to avoid water leakage and damage to the fan, do not use this setting unless a vaporizing humidifier is used.
0D	Permit/prohibit automatic heating/cooling	This setting can be used to prevent the automatic heating/cooling display on the remote control if the unit configuration permits automatic heating/cooling operation.
0F	Cooling-only	This setting allows a heat pump indoor unit to be operated as a cooling only unit.

NOTE

- In order to avoid water leakage and damage to the fan, do not set for humidifying when the thermostat is OFF unless a vaporizing humidifier is used.
- Consider the device purpose and type when changing the settings. Incorrect settings may result in malfunction.
- Do not change any setting data that does not appear in this list.

7-6. Detailed Setting Items

Code no.	Item	Description	
10	Unit type	Number for each type of indoor unit	
11	Indoor unit capacity	(U3, F3, K3, T3) These are not set at the time of shipping from the factory. These need to be set by auto address setting after installation. (Y3) Number for each type of indoor unit	
12	System (outdoor unit) address	These are not set at the time of shipping from the factory.	
13	Indoor unit address	These need to be set by auto address setting after installation.	
14	Group address		
17	Cooling intake temperature shift	Shifts the intake temperature during cooling and dry operation. (Enabled only when the body thermostat is used.) Increase this value when it is difficult to turn the thermostat ON.	
18	Automatic stop time after operation start	The time at which an indoor unit is automatically stopped after operation starts can be set in increments of 5 minutes	
1b	Forced thermostat ON time	Use this setting to change the time for forced operation at installation or servicing from 5 minutes to 4 minutes. (Enabled only with PAC models.)	
1E	Temperature shift for cooling/heating change in "auto heat/cool" mode	"Auto heat/cool" selects the operating mode automatically based on the difference between the room temperature and the temperature set on the remote controller. This setting establishes a shift temperature for the heating/cooling temperature setting relative to the remote controller temperature setting.	



Code no.	Item		Description		
1F (Upper limit) 20 (Lower limit)		Cooling			
21 (Upper limit) 22 (Lower limit)	Change to the remote control	Heating	This setting changes the temperature range (upper limit and lower limit) which is set from the remote controller or central control device. The set upper limit must be greater than or equal to the lower limit. If the temperature setting is to be a single point, set the upper limit and lower limit to the same temperature.		
23 (Upper limit) 24 (Lower limit)	temperature setting range	Drying			
25 (Upper limit) 26 (Lower limit)		Auto heat/cool			
29	Humidifier operation which ignores the heat exchanger temperature		During heating operation, the humidifier operates when the heat exchanger temperature is suitable for humidifying. This setting is used to ignore this condition for humidifier operation and operate the humidifier more.		
2A	Filter input switch	ing	This setting switches the filter input according to the purpose of use.		
2C	Indoor unit electronic control valve		This setting indicates whether or not an indoor unit electronic control valve is present. At the time of shipping, this setting is set according to the conditions of the indoor unit.		
2E	T10 terminal input switching		Ordinarily, the T10 terminal is used as the HA terminal at the time of shipping. However, this setting is used when the T10 terminal is used for OFF reminder or for fire prevention input.		
31	Ventilation fan operation from remote controller		It is possible to install a total heat exchanger and ventilation fan in the system, which can be started and stopped by the wired remote controller. The ventilation fan can operate linked with the start and stop of the indoor unit, or can be operated even when the indoor unit is stopped. Use a ventilation fan that can accept the no-voltage A contact as the external input signal. In the case of group control, the fans are operated together. They cannot be operated individually.		
32	Switching to remote controller sensor		This setting is used to switch from the body sensor to the remote controller sensor. Check that "remote controller sensor" is displayed. Do not use this setting with models that do not include a remote controller sensor. Do not use this setting if both the body sensor and remote sensor are used.		
34	ON/OFF of "Operation change control in progress" display		In a MULTI system with multiple remote controllers, switching between heating and cooling is restricted, and "Operation change control in progress" is displayed. This setting is used to prevent this display from appearing. See the item concerned with operating mode priorities.		
35	OFF reminder function for weekly timer		This setting switches the operation when the weekly timer is connected to the remote controller. This can be used to prevent cases in which the unit is accidentally left ON. There is no change when this setting is ON, however, it is necessary to set the weekly timer ON time.		

(Continued from previous page)

Code no.	Item	Description	
3C	Heat exchanger temperature for cold air discharge	The heat exchanger temperature control point for prevention of cold air discharge during heating operation can be changed.	
3d	Fan output switching	The indoor unit PCB optional output for the fan can be switched according to the purpose of use.	
3E	Drain pump delayed stop time	The drain pump stops for the set time delay after cooling operation stops.	
40	Humidifier drain pump setting	This specifies the humidifier and drain pump setting.	
45	DC flap operation mode	Changes flap operation to draft reduction mode.	
46	DC flap swing mode	Selects the swing operation mode for the flap.	
5d	DC fan tap setting	Sets the DC fan tap according to the purpose of use. Change the settings data at the same time.	
5E	Humidifier ON time	Sets the humidifier output ON time for when the humidifier is operating. ON/OFF control is performed during humidifier operation. This setting therefore sets the ON time per 60-second interval.	
60	Timer function change prohibit	This function prohibits changes from being made to the remote controller time setting.	
62	Smudging control	Smudging control is disabled when 0000 is set.	
FC	Refrigerant adaptability	This item is set to 01 when the indoor unit model adapted with both R410A and R32.	

NOTE

- Consider the device purpose and type when changing the settings. Incorrect settings may result in malfunction. Do not change any setting data that does not appear in this list.

7-7. Remote Controller Servicing Functions

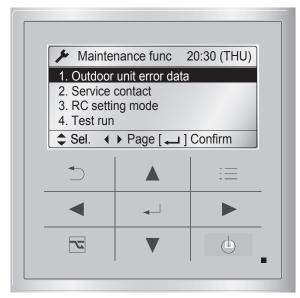
The remote controller includes a number of servicing functions. Use these as needed for test runs and inspections.

<Pre><Pre>cedure of CZ-RTC5B>

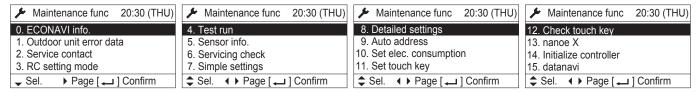
Display of "maintenance function" screen

- (1) Keep pressing the ______, ____ and _____ buttons simultaneously for 4 or more seconds. The "Maintenance func" screen appears on the LCD display.
- (2) Press the ▼ or ▲ button to see each menu.

If you wish to see the next screen instantly, press the \bigcirc or \bigcirc button.



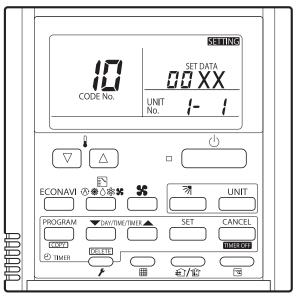
CZ-RTC5B



Maintenance function screen

List of Servicing Functions

Functions	Description	Menu selection	Reset operation	Unit status
ECONAVI CZ-KPU3A CZ-KPU3AW CZ-KPY4 CZ-CENSC1	Display from each sensor	0. ECONAVI info.		
Test run	Operation with forced thermostat ON	4. Test run	Press the button.	
Sensor temperature display	Temperature display from each sensor	5. Sensor info		
Servicing check display	Alarm history display	6. Service check		
Simple settings	Filter lifetime, operating mode priority, central control address, and other settings.	7. Simple settings	Press the button.	When settings are made from a remote controller, the indoor unit where that remote controller is connected stops.
Detailed settings	System address, indoor unit address, central control address, and other settings	8. Detailed settings	(Postart)	
Auto address	Auto address setting based on command from the wired remote controller	9. Auto address	Automatic reset	Entire system stops.
nanoe™ X (CZ-RTC5B only)	Display status of nanoe™ X	13. nanoe X	Press the button.	



CZ-RTC4

List of Servicing Functions

Functions	Description	Button operation	Reset operation	Unit status
Test run	Operation with forced thermostat ON	Press and hold the \nearrow button for 4 seconds or longer.		
Sensor temperature display	Temperature display from each sensor	Press and hold the \nearrow and $\stackrel{\text{\tiny CANCEL}}{\longrightarrow}$ buttons for 4 seconds or longer.		Current operation is maintained.
Servicing check display	Alarm history display	Press and hold the \nearrow and $\stackrel{\text{\tiny set}}{-}$ buttons for 4 seconds or longer.	Press the	
Simple settings	Filter lifetime, operating mode priority, central control address, and other settings	Press and hold the pand buttons for 4 seconds or longer.	button.	When settings are made from a remote controller, the indoor unit where that remote controller is connected stops.
Detailed settings	System address, indoor unit address, central control address, and other settings	Press and hold the , and buttons for 4 seconds or longer.		
Auto address	Auto address setting based on command from the wired remote controller	Press and hold the \nearrow and the timer operation buttons for 4 seconds or longer.	Automatic reset	Entire system
Address change	Change of indoor unit address	Press and hold the and the timer operation buttons for 4 seconds or longer.	Press the putton.	stops.

7-8. Test Run Function

Test Run Using the Remote Controller < Procedure of CZ-RTC6 series>

This mode places a heavy load on the machines. Therefore use it only when performing the test run.

(1) Keep pressing the ≡, and buttons simultaneously for 4 or more seconds.

The "Maintenance func" screen appears on the LCD display.





CZ-RTC6 series

(2) Press the or button to see each menu.

Select "Test run" on the LCD display and press the button.

Change the display from "OFF" to "ON" by pressing the

✓ or ∧ button.

Then press the — button.

(3) Press the button.

"TEST" will be displayed on the LCD display.

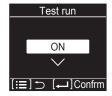
- (4) Press the button. Test run will be started.

 Test run setting mode screen appears on the LCD display.
 - The test run can be performed using the HEAT, COOL, or FAN operation mode.
 - The temperature cannot be adjusted when in test run mode.
 - If correct operation is not possible, a code is displayed on the remote controller LCD display. (Regarding the alarm contents, see "2-3-1-5. Contents of Remote Controller Switch Alarm Display".)
- (5) After the test run is completed, proceed from Step (1) and change to "OFF" at Step (2).
 - To prevent continuous test run, this remote controller includes a timer function that cancels the test run after 60 minutes.

NOTE

- The outdoor units will not operate for approximately 3 minutes after the power is turned ON and after operation is stopped.
- If the test run is performed using the wired remote controller, operation is possible even if the cassette-type ceiling panel has not been installed. ("P09" display does not occur.)









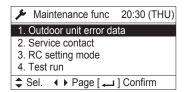
7

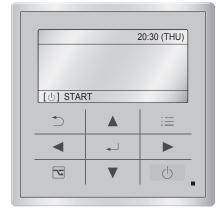
<Pre><Pre>cedure of CZ-RTC5B>

This mode places a heavy load on the machines. Therefore use it only when performing the test run.

(1) Keep pressing the , and buttons simultaneously for 4 or more seconds.

The "Maintenance func" screen appears on the LCD display.





Maintenance func 21. Outdoor unit error data

2. Service contact

Test run

Test run

Change

3. RC setting mode

 \$\Delta\$ Sel.
 \$\Delta\$ Page [→] Confirm

Test run
ON

[Langle] Confirm

CZ-RTC5B

20:30 (THU)

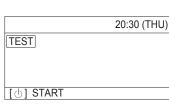
20:30 (THU)

- (2) Press the or button to see each menu.

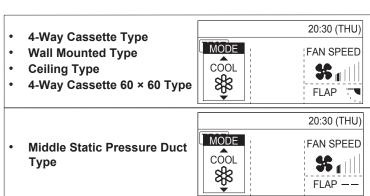
 If you wish to see the next screen instantly, press the or button.

 Select "4. Test run" on the LCD display and press the button.
 - Change the display from "OFF" to "ON" by pressing the

 ▼ or ▲ button. Then press the ← button.
- (3) Press the button. "TEST" will be displayed on the LCD display.



- (4) Press the ____ button. Test run will be started. Test run setting mode screen appears on the LCD display.
 - The test run can be performed using the HEAT, COOL, or FAN operation mode.
 - The temperature cannot be adjusted when in test run mode.
 - If correct operation is not possible, a code is displayed on the remote controller LCD display. (Regarding the alarm contents, see "2-3-1-5. Contents of Remote Controller Switch Alarm Display".)



- (5) After the test run is completed, proceed from Step (1) and change to "OFF" at Step (2).
 - To prevent continuous test run, this remote controller includes a timer function that cancels the test run after 60 minutes.

NOTE

- The outdoor units will not operate for approximately 3 minutes after the power is turned ONand after operation is stopped.
- If the test run is performed using the wired remote controller, operation is possible even if the cassette-type ceiling panel has not been installed. ("P09" display does not occur.)

<Pre><Pre>cedure of CZ-RTC4>

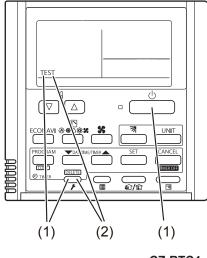
This mode places a heavy load on the machines. Therefore use it only when performing the test run.

(1) Press the remote controller button for 4 seconds or longer.

Then press the button.

"TEST" appears on the LCD display while the test run is in progress.

- The test run can be performed using the HEAT, COOL, or FAN operation mode.
- The temperature cannot be adjusted when in test run mode.
- If correct operation is not possible, a code is displayed on the remote controller LCD display. (Regarding the alarm contents, see "2-3-1-5.
 Contents of Remote Controller Switch Alarm Display")
- (2) After the test run is completed, press the putton again. Check that "TEST" disappears from the LCD display.
 - To prevent continuous test run, this remote controller includes a timer function that cancels the test run after 60 minutes.



CZ-RTC4

NOTE

- The outdoor units will not operate for approximately 3 minutes after the power is turned ON and after operation is stopped.
- If the test run is performed using the wired remote controller, operation is possible even if the cassette-type ceiling panel has not been installed. ("P09" display does not occur.)

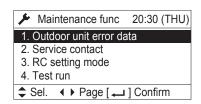
Sensor Temperature Display Function (displayed regardless of whether unit is operating or stopped)

The procedure below displays the sensor temperatures from the remote controller, indoor unit, and outdoor unit on the remote controller.

<Pre><Pre>cedure of CZ-RTC5B>

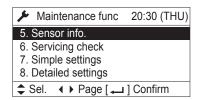
(1) Keep pressing the , and buttons simultaneously for 4 or more seconds.

The "Maintenance func" screen appears on the LCD display.

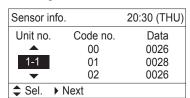


(2) Press the or button to see each menu. If you wish to see the next screen instantly, press the or button.

Select "5. Sensor info." on the LCD display and press the button.



Select the "Unit no." by pressing the ▼ or ▲ button for changes.



Then press the button.

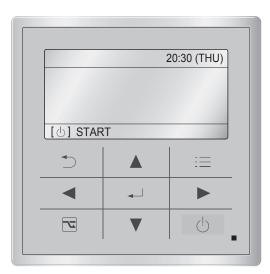
Display sensor information of the unit.

Sensor info.		20:30 (TH	U)
Unit no.	Code no.	Data	
	00	0026	•
1-1	01	0028	
	02	0026	▼

Refer the information by pressing the

▼ or

button.

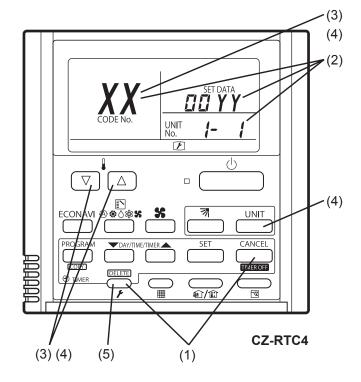


CZ-RTC5B

<Pre><Pre>cedure of CZ-RTC4>

- (1) Press and hold the and buttons simultaneously for 4 seconds or longer.
- (2) The unit No. "X-X" (main unit No.), item code "XX" (sensor address), and servicing monitor "ΔΩ Υ Υ" (sensor temperature) are displayed on the remote controller LCD display (figure at right).
- (3) Press the temperature setting ▽ / △ buttons and select the item code to the address of the sensor to monitor.
- (4) If group control is in effect, press the button to select the unit to monitor.

 Press the temperature setting buttons to select the item code to change.
- (5) Press the putton to return to normal remote controller display.



	Item code	Meaning of Code
Indoor unit data	02	Indoor unit intake temp.
	03	Indoor unit heat exchanger temp. (E1)
	04	Indoor unit heat exchanger temp. (E2)
	05	_
	06	_
	07	_
	08	_
	09	
Outdoor unit data	0A	Discharge temp. (TD)
	0b	_
	0C	_
	0d	Intake temp. (TS)
	0E	Outdoor unit heat exchanger temp. (C1)
	0F	Outdoor unit heat exchanger temp. (C2)
	10	_
	11	Outdoor air temp. (TO)
	12	_
	13	Current value (CTL2)
	14	Current value (CTL1)
	15	Outdoor MV value (MOV1)
	16	_
l.	19	Frequency

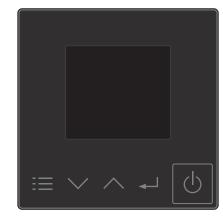
^{*} Depending on the model, some items may not be displayed.

<Pre><Pre>cedure of CZ-RTC6 series>

(1) Keep pressing the ≡, and buttons simultaneously for 4 or more seconds.

The "Maintenance func" screen appears on the LCD display.





CZ-RTC6 series

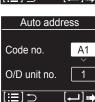
(2) Press the or button to see each menu.

Select "Auto address" on the LCD display and press the button.



(3) The "Auto address" screen appears on the LCD display.

Select the "Code no." to "A1" by pressing the or button.



After selecting "Code no.", press the button and proceed to Step (4). If the button is pressed, proceed to Step (5).

(4) Select one of the "O/D unit no." for auto address by pressing the or button.



After selecting "O/D unit no.", press the button.











Approximately 10 minutes are required.

When auto address setting is completed, the units return to normal stopped status.

(5) If the button is pressed under the display Step (3), the following display (Auto address-end screen) appears.

Then select "YES" by pressing the ✓ or ✓ button and press the button.



7

<Pre><Pre>cedure of CZ-RTC5B>

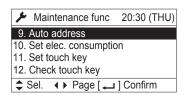
(1) Keep pressing the , and buttons simultaneously for 4 or more seconds.

The "Maintenance func" screen appears on the LCD display.

(2) Press the ▼ or ▲ button to see each menu.

If you wish to see the next screen instantly, press the or button.

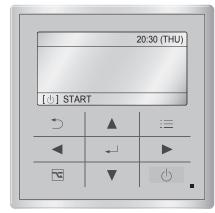
Select "9. Auto address" on the LCD display and press the button.



(3) The "Auto address" screen appears on the LCD display.

Change the "Code no." to "A1" by pressing the ▼ or ▲ button.





CZ-RTC5B

(4) Select the O/D unit no." by pressing the

or button.

Select one of the "O/D unit no." for auto address by pressing the ▼ or ▲ button for auto address setting.

Approximately 10 minutes are required.

When auto address setting is completed, the units return to normal stopped status.

<Pre><Pre>cedure of CZ-RTC4>

NOTE

- · Selecting each refrigerant system individually for auto address setting
- Auto address setting for each system : Item code "A1"
- (1) Press the remote controller timer time button and button at the same time.

(Press and hold for 4 seconds or longer.)

- (2) Next, press either the temperature setting ▽/△ button. (Check that the item code is "A1".)
- (3) Use either the button to set the system No. to perform auto address setting.
- (4) Then press the set button.

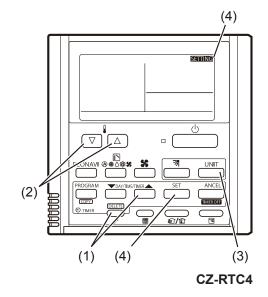
(Auto address setting for one refrigerant system begins.) (When auto address setting for one system is completed, the system returns to normal stopped status.)

<Approximately 4 – 5 minutes is required.>

(During auto address setting, "STING" is displayed on the remote controller.

This message disappears when auto address setting is completed.)

(5) Repeat the same steps to perform auto address setting for each successive system.



Checking indoor unit addresses

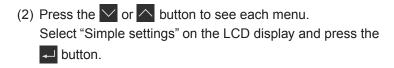
Use the remote controller to check the indoor unit address.

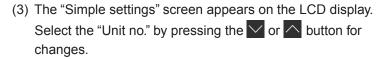
<Pre><Pre>cedure of CZ-RTC6 series>

(1) Keep pressing the ≡, and buttons simultaneously for 4 or more seconds.

The "Maintenance func" screen appears on the LCD display.



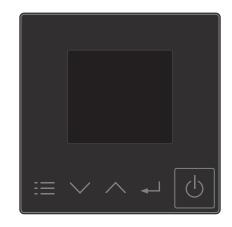




* The initial display is "ALL".

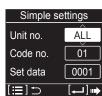
The indoor unit fan operates only at the selected indoor unit.

(4) Press the button and select "YES" to restart.



CZ-RTC6 series

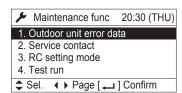




<Pre><Pre>cedure of CZ-RTC5B>

(1) Keep pressing the _____, ___ and ____ buttons simultaneously for 4 or more seconds.

The "Maintenance func" screen appears on the LCD display.



Select "7. Simple settings" on the LCD display and press the $\begin{tabular}{c} \bot \end{tabular}$ button.

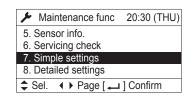
- (3) The "Simple settings" screen appears on the LCD display. Select the "Unit no." by pressing the ▼ or ▲ button for changes.
 - * The initial display is "ALL".

The indoor unit fan operates only at the selected indoor unit.

(4) Press the button and select "YES" to restart.



CZ-RTC5B

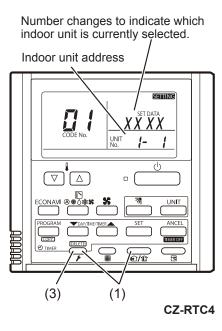




<Pre><Pre>cedure of CZ-RTC4>

<If 1 indoor unit is connected to 1 remote controller>

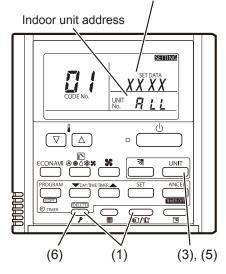
- (1) Press and hold the button and button for 4 seconds or longer (simple settings mode).
- (2) The address is displayed for the indoor unit that is connected to the remote controller.
 - (Only the address of the indoor unit that is connected to the remote controller can be checked.)
- (3) Press the putton again to return to normal remote controller mode.



<If multiple indoor units are connected to 1 remote controller (group control)>

- (1) Press and hold the button and button for 4 seconds or longer (simple settings mode).
- (2) "ALL" is displayed on the remote controller.
- (3) Next, press the \bigcirc button.
- (4) The address is displayed for 1 of the indoor units which is connected to the remote controller. Check that the fan of that indoor unit starts and that air is discharged.
- (5) Press the _____ button again and check the address of each indoor unit in sequence.
- (6) Press the button again to return to normal remote controller mode.

Number changes to indicate which indoor unit is currently selected.



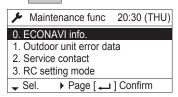
CZ-RTC4

Check of ECONAVI Operational Status

The status of ECONAVI operation can be checked instantly. It is available to check the operation when installing the indoor unit.

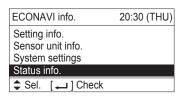
<Pre><Pre>cedure of CZ-RTC5B>

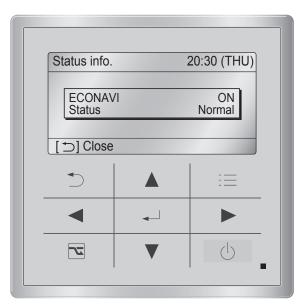
- (1) Keep pressing the ______, ____ and _____ buttons simultaneously for 4 or more seconds. The "Maintenance func" screen appears on the LCD display.
- (2) Select "0. ECONAVI info." on the LCD display and press the button.



(3) Press the or button to see each menu.

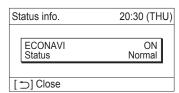
Select "Status info." on the LCD display and press the button.





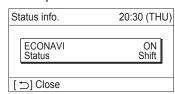
CZ-RTC5B

- (4) There are four patterns of operational status display as shown below.
 - 1. Under normal operation



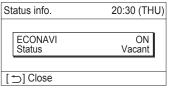
State of no energy-saving operation

2. Under temperature shift



State of energy-saving (temperature shift) operation

3. Under suspension with absentee

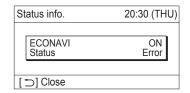


State of energy-saving (suspended) operation

*Shows that air conditioner operation was suspended because no person was detected for a certain period.

This state remains until operation is restarted.

4. Under sensor communication error



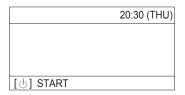
Shows that the connected ECONAVI sensor is in error state.

nanoe™ X Display

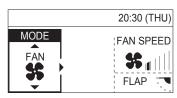
When the \bigwedge **nanoe** appears on the remote controller (CZ-RTC5B), the status of the nanoeTM X can be checked in the following way.

<Pre><Pre>cedure of CZ-RTC5B>

- (1) Switch On the earth leakage circuit breaker.
- (2) Wait until the remote control display returns to normal.

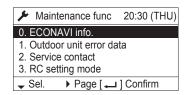


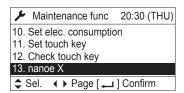
(3) Operate the unit in FAN mode.



(4) While operating in FAN mode (more than 5 minutes have elapsed), press the ______, ____ and _____ buttons simultaneously for 4 or more seconds.

The "Maintenance func" screen appears on the LCD display.







CZ-RTC5B

(6) Check that the nanoe™ X module status is "Normal". The indoor unit on the display can be scrolled up or down using ▼ / ▲ buttons.

nanoe X	20:30 (THU)
Unit no.	Status
1- 1	Normal
1- 2	Not connected
1- 3	Unsupported
→ Scroll	

The nanoeTM X module status of all indoor units will be displayed.

Normal : The nanoeTM X module is operating normally. Unsupported : The indoor unit is not available to the nanoeTM X function.

*1-1 and 1-2 represent the unit number.

*In the case of "Unsupported", select "8. Detailed settings" and check the setting data of the Code no. 9.
*If the setting data is "0000", the nanoe™ X module is not recognized. Check the status of the connection.
If the display other than "Normal" or "Unsupported" appears, check the Step (7) next page.

(7) In the case of the nanoe™ X module status other than "Normal" or "Unsupported"

If the menu "13. nanoe X" is not displayed or the module status becomes other than "Normal" or "Unsupported" even though the nanoe™ X module is connected, there is a probability that the following symptoms happen.

Display	Symptom	Countermeasure	
Discharge error	The probability of occurrence of nanoe™ X is deviated from the room temperature and humidity conditions. Outside the range of temperature: Below 5°C or over 35°C Outside the range of humidity: Over 86%	There is no abnormality in the nanoe™ X module. Use in the range of appropriate temperature and humidity.	
Humidity error	Humidity sensor not connected or sensor failure	Check if connected to the indoor unit PCB of the humidity sensor or replace the sensor.	
Faulty connection	The wiring between the indoor unit and nanoe™ X module is not connected.	Specialize the target indoor unit and check the connection to the indoor unit PCB of the	
Not connected	There is no abnormality in the nanoe [™] X module. Use in the range of appropriate room temperature and humidity.	nanoe™ X module.	

^{*}Specialization of the indoor unit can be checked by the operation of the airflow.

Checking method:

1. Stop the maintenance function.

Press the 😑 button to show the maintenance func display. Then press the 💆 button.

2. Operate the airflow.

Select the Unit no. under the E "2. Airflow setting". Make the airflow setting.

The unit which is corresponded to the preset flap operation will become the target unit.

When the unit is specialized, switch off the earth leakage circuit breaker and unplug the connector of the nanoe™ X module wiring from the PCB. Then plug it in again. Switch on the earth leakage circuit breaker and once again check the Steps 1 to 3. Then check the status by selecting the menu "13. nanoe X". If "Disconnection failure" or "Not connected" appears on the display, it is necessary to replace the nanoe™ X module with a new one.

7-9. Panasonic H&C Control App

Panasonic H&C Control App

You can use the "Panasonic H&C Control App" on your mobile device to operate the air conditioning unit, make detailed settings for functions such as the energy saving function, etc.

This app is compatible with the following remote controllers.

Check the model number shown in the label on the bottom of the remote controllers.

Models: CZ-RTC6BL / CZ-RTC6BLW (CZ-RTC6 incompatible)



Functions that can be set with the "Panasonic H&C Control App" (some examples)

· Weekly timer

The operation ON/OFF schedule or temperature setting schedule can be set by setting the day and time.

- Energy saving operation On/Off
 - Operates in an energy saving mode.
- Power consumption monitor *1

Displays the approximate power consumption for a day, a week or a year.

- Rotation and Backup functions *2
 - The rotation functions helps you equalize the operating times.
 - The backup function allows operation to continue even when an error has occurred.
- *1 Supported only by models that support the power consumption monitor
- *2 Rotation operation is available only when there is a control group of 2 PAC systems (each system being a combination of 1 outdoor unit and 1 indoor unit).

7-9-1. Bluetooth® settings

Before use, confirm the version of the OS on the mobile device and the Bluetooth® version see table below, and install the "Panasonic H&C Control App" onto the mobile device. In addition, be sure to read the "General precautions for Bluetooth® functionality" see page 7-9-1-2.

Required environment

OS version on the mobile device for "Panasonic H&C Control App"	iOS: 10.0 or later Android™: 6.0 or later
Bluetooth® version	4.2 or later

- The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Panasonic Corporation is under license. Other trademarks and trade names are those of their respective owners.
- iOS is the name of the OS of Apple Inc. IOS is a trademark or registered trademark of Cisco in the US and other countries which has been licensed for use.
- Apple and the Apple logo are trademarks of Apple Inc. that are registered in the US and other countries. App Store is a service mark of Apple Inc.
- Android[™], Google Play[™] and Google Play[™] logos are registered trademarks of Google LLC.

[General precautions for Bluetooth® functionality]



- Do not use the remote controller where pacemaker users may be around. If used, turn off Bluetooth® functionality.
 - Bluetooth® functionality may cause pacemakers to malfunction and lead to an accident.
- Do not use the remote controller near electrical medical devices. If used, turn off Bluetooth® functionality.
 - Bluetooth® functionality may cause these devices to malfunction and lead to an accident.
- Do not use the remote controller near automatic doors, fire alarms, or other automatically controlled devices. If used, turn off Bluetooth® functionality.
 - Bluetooth® functionality may cause these devices to malfunction and lead to an accident.



CAUTION

- · This product is permitted for use only in the country where it was purchased.
- · This product uses signals in the 2.4 GHz band.
 - Signals in the 2.4 GHz band are used by medical devices, other similar devices, and nonlicensed amateur radio stations (hereafter referred to as other radio stations).
 - 1. Before using this product, make sure there are no other radio stations in the vicinity.
 - 2. If a radio interference occurs between this product and other radio stations, move the product or stop using the product (turn off Bluetooth® functionality).
 - 3. If problems with radio interference occur, consult the dealer from which the product was purchased.
- Keep an appropriate distance between the product and radio-emitting devices, such as cordless phones, microwave ovens, and wireless LANs, to prevent Bluetooth® interference from these devices that can affect normal operation and performance of the product.
- · The following actions may be punishable by law.
 - Disassembling or alteration of this product

appliances (e.g., microwave ovens) exists.

- Removal of certification labels
- The maximum line-of-sight distance of this product is 10 meters.
 This distance will be shorter when obstacles or people are in the path of radio waves or radio interference from

- Open Download on the App Store
- Search for "Panasonic H&C Control App".
- · Download and install.

For Android™ user

- Open Google Play
- Search for "Panasonic H&C Control App".
- · Download and install.
- The "Panasonic H&C Control App" is free, but the communication fees for downloading it and updating it are at the customer's expense.
- The "Panasonic H&C Control App" screen may change without notice due to updates.
- Functions are not displayed in the "Panasonic H&C Control App" screen if the air conditioner does not support them.
- The screen operations are the same on iOS and Android™. The iOS screen has been used in the examples.

Bluetooth® functionality

- Display the menu screen.
 - When stopped Press .
 - When operating

Press repeatedly until the menu screen is displayed.

- To return to the top screen, press
 .
- Select [Bluetooth].





▲ Select [Enable].

Press $\wedge \vee \rightarrow \downarrow \downarrow \rightarrow \sqsubseteq$.

(Press twice to finish.)

To disable Bluetooth® functionality

- 1. Start with step 1 and select [Disable] in step 4.
- 2. Press 🚚
- 3. Press ≡ twice to finish.











You can also set [Enable/disable] wireless communication with the following procedure.

1. Display the wireless setting screen.

Press on the top screen.
(Press and hold for 4 seconds or more.)

2. Select ✓ (enable) or — (disable).

Press \longrightarrow \Longrightarrow .

(Press to finish.)

• This setting is the same as step 4 on this page.



Connecting with the "Panasonic H&C Control App"

Before connecting, set Bluetooth[®] functionality to [Enable] on the remote controller. (See page 7-9-2-1) When connecting, try getting the mobile device as close as possible to the remote controller.

- Start the "Panasonic H&C Control App".
 - Remote controllers in the vicinity are displayed on the Home screen.
 - Remote controllers that have been paired have "
 is a displayed to the left.
 - : Remote controller last connected
 - : Unconnected remote controller within Bluetooth® communication range
 - Connected remote controller outside Bluetooth® communication range



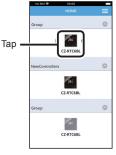
■ Mobile device

Тар " 🌁 ".

• If the remote controller is not displayed, slide down to update and the remote controller is detected.









- When making Bluetooth[®] connection for the first time, go to step 3.
- For the second and subsequent Bluetooth® connections, go to step 5.
- Confirm the numbers on the mobile device match the 6 digits on the remote controller.
 - If the numbers do not match, check the remote controller you want to connect again. (step 2)





- Start connecting.
 - Mobile device Tap "Pair".
 - Remote controller

Press ←.





- 5 Confirm that the Bluetooth® connection is completed.
 - " \(\mathbb{g}\) " is displayed on the top screen when connection is complete.
 - After the first time, connection is automatic and "\" is displayed on the top screen when connection is complete.





When Bluetooth® connection is complete, mobile device information is stored, and the above steps 3 and 4 are unnecessary next time Bluetooth® connection is made. See "
To delete all mobile device information stored" on page 7-9-2-3.

■ To delete all mobile device information stored

At first, set Bluetooth® functionality to [Enable]. See "Bluetooth® functionality" on page 7-9-2-1.

- 1. Display the menu screen.
 - When stopped

Press ■ .

■ When operating

Press repeatedly until the menu screen is displayed.

- To return to the top screen, press .
- 2. Select [Bluetooth].

Press $\wedge \vee \rightarrow \bot$.

3. Select [Initialization].

Press $\land \lor \rightarrow \blacktriangleleft$.

4. Start initialization.

Press $\longrightarrow \bigwedge \bigvee \longrightarrow \biguplus$. (Select [YES])

- Do not connect the mobile device via Bluetooth® functionality while initializing.
- 5. Confirm that initialization has completed.

Confirm, then press = .

(Press 3 times to finish.)











Note

Delete information of Bluetooth® connection with the remote controller stored on the mobile device as well.

7-9-3. Simple Settings Function

This App allows the filter lifetime, operating mode priority change, central control address, and other settings to be made for an individual or groupcontrol indoor / outdoor unit.

When simple settings mode is engaged, operation stops at the individual or group-control indoor / outdoor unit.

<Procedure of Panasonic H&C Control App>

1. Tap " 🚞 "

Open Menu list.



- 2. Tap " a for 3 seconds or longer and release.
 - Tap " for 3 seconds or longer and release again.

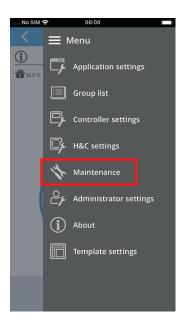


3. If successful, the menu screen will close. If Menu list does not close, perform step 2 again.



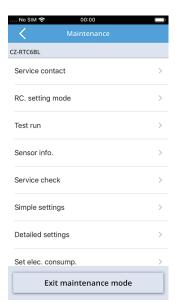
4. Open Menu list again,





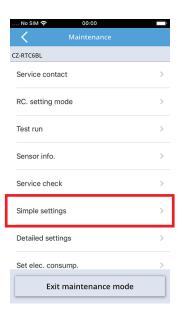
5. Tap " Maintenance "

Open Menu list of "Maintenance" .



Menu list of "Maintenance"

6. Tap "Simple settings"

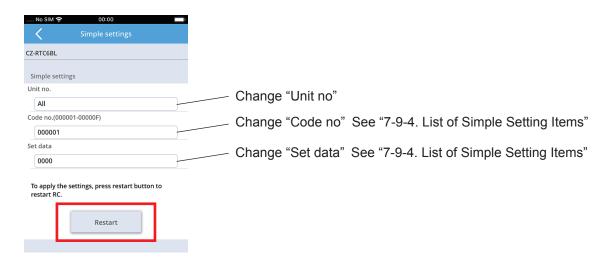


7. A dialog will appear stating that a reboot will occur. If there is no problem, tap " OK " .



8. Set "Unit no." / "Code no." / "Set data".

Then tap " Restart "



9. The unit will restart and return to the HOME screen.



7-9-4. List of Simple Setting Items

Codo no	Itam				
Code no.	Item	No.	Description		
		0000	Not displayed		
		0001	150 hours		
nnnnn i	Filter sign ON time	0002	2,500 hours		
00000 I	(filter life time)	0003	5,000 hours		
		0004	10,000 hours		
		0005	Use the filter clogging ser	isor.	
		0000	(9 11 9/		
000002	Degree of filter fouling	0001	Highly fouled (Filter sign ON time is reduced to one-half the set time.)		
		0001	Central control address 1		
		0002	Central control address 2		
		0003	Central control address 3		
000003	Central control address	>	>		
		0064	Central control address 6		
		0099	No central control address set (setting at time of shipping)		
	Operating mode	0000	Normal (setting at time of shipping)		
00000Y	priority change	0001	Priority		
	Fan speed when		Compressor ON	Compressor OFF	
		0000	Lo 1 min., LL 3 min.	LL	
		0001	Lo	LL	
000005	heating thermostat is	0002	LL	LL	
	OFF	0004	Lo 1 min., LL 3 min. Lo	Lo	
		0005	Lo	Lo	
		0006	LL	Lo	
		0000	No shift		
		0001	Shifts intake temperature		
	Heating intake	0002	Shifts intake temperature		
000008	temperature shift	0003	Shifts intake temperature 3 °C down.		
		0004	Shifts intake temperature 4 °C down.		
			Shifts intake temperature 5 °C down.		
		0005	-		
		0006	Shifts intake temperature		
רחחחחח	Electric heater	0006 0000	Shifts intake temperature No heater		
000007	installation	0006 0000 0001	Shifts intake temperature No heater Heater installed	6 °C down.	
000007 000008		0006 0000	Shifts intake temperature No heater	6 °C down.	
	installation Humidifying when heater thermostat is OFF	0006 0000 0001 0000 0001	Shifts intake temperature No heater Heater installed No (setting at time of ship Yes	6 °C down.	
	installation Humidifying when heater thermostat is	0006 0000 0001 0000	Shifts intake temperature No heater Heater installed No (setting at time of ship	6 °C down.	
000008	installation Humidifying when heater thermostat is OFF Permit/prohibit automatic	0006 0000 0001 0000 0001	Shifts intake temperature No heater Heater installed No (setting at time of ship Yes Permit	6 °C down.	

NOTE

- In order to avoid water leakage and damage to the fan, do not set for humidifying when the thermostat is OFF unless a vaporizing humidifier is used.
- Consider the device purpose and type when changing the settings. Incorrect settings may result in malfunction.
- · Do not change any setting data that does not appear in this list.

7-9-5. Detailed Settings Function

This app allows to set the system address, indoor unit address, and other settings for connected individual or group-controlled indoor / outdoor units.

When detailed settings mode is engaged, operation stops at the individual or group-control indoor / outdoor unit. Simple settings items can also be set at this time.

<Pre><Procedure of Panasonic H&C Control App>

1. Tap " ____ "

Open Menu list.



- 2. Tap " == " for 3 seconds or longer and release.
 - Tap " for 3 seconds or longer and release again.

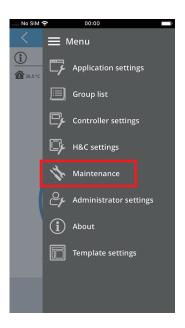


3. If successful, the menu screen will close. If Menu list does not close, perform step 2 again.



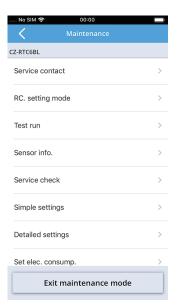
4. Open Menu list again,





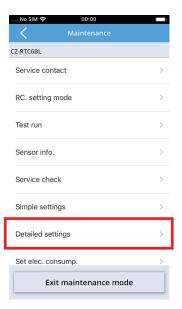


Open Menu list of "Maintenance" .

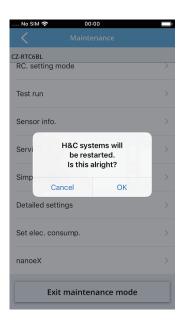


Menu list of "Maintenance"

6. Tap "Detailed settings"

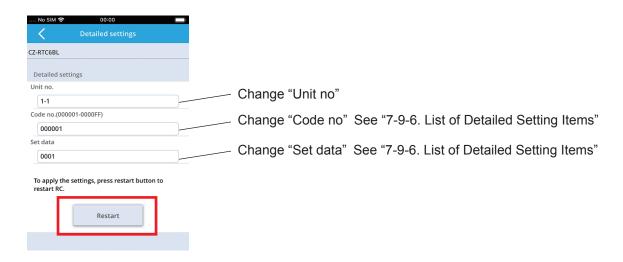


7. A dialog will appear stating that a reboot will occur. If there is no problem, tap " OK " .



8. Set "Unit no." / "Code no." / "Set data".

Then tap " Restart "



9. The unit will restart and return to the HOME screen.



7-9-6. List of Detailed Setting Items

0.1	14	Set data					
Code no.	Item	No.	Description	No.	Description	No.	Description
000010 Type	0000		0001		0002		
	Туре	0003		0005		0006	High Static Pressure Duct S-160PE3R High Static Pressure Ducted S-180, 200, 224PE4R
		0007		8000		0010	
		0011					
		0001		0003		0005	
	Indoor unit	0007		0009		0011	
000011	capacity	0012		0015		0017	
		0019	180 (Type 160)	0020	200 (Type 180)	0021	224 (Type 200)
		0022	250 (Type 224)				
000013 000013	System address Indoor unit address Group control address	0001 0002 0003 0030 0099 0001 0002 0003 \${}\ 0064 0099 0000 0001 0002 0099	Unit no. 2 Unit no. 3 Unit no. 30 Unit no. 30 Not set Unit no. 1 Unit no. 2 Unit no. 2 Unit no. 3 Unit no. 3 Individual (1:1 = Indoor unit with no group wiring) Main unit (One of the group-control indoor units)			unit)	
רוםםםם	Cooling intake temperature shift	-010 -009 \s\001 0000 0001 \s\-0009 0010	Shifts intake temperature 10°C down. Shifts intake temperature 9°C down. Shifts intake temperature 1°C down. No intake temperature shift Shifts intake temperature 1°C up. Shifts intake temperature 9°C up.				

(Continued)

	14			Set data
Code no.	Item		No.	Description
	Automatic stop time after		0000	Function disabled
			0001	Stops automatically 5 minutes after operation starts.
			0002	Stops automatically 10 minutes after operation starts.
000018	operation start		>	>
	*Can be set in 5-minute units.		0123	Stops automatically 615 minutes after operation starts.
	5-minute units.		0124 0125	Stops automatically 620 minutes after operation starts.
				Stops automatically 625 minutes after operation starts.
000016 (1B)	Forced thermostat ON ti	me	0000	5 minutes
			0001	4 minutes
	Temperature shift for	or	0001	± 1°C
	cooling/heating	-	0002	± 2°C
0000IE	change in auto	-	0003	± 3°C
	heat/cool mode		7	\ \ \
			0007	± 7°C
			0018	18°C (Lower limit at shipment)
<u> </u>		0	0019	19°C
(Upper limit)		Cooling	>	\ \?
		ပိ	0029	29°C
(Lower limit)			0030	30°C (Upper limit at shipment)
			0016	16°C (Lower limit at shipment)
00002 (0017	17°C
(Upper limit)		Heating))
000022	Change to remote control		0000	0000
(Lower limit)			0029	29°C 30°C (Upper limit at shipment)
	temperature		0030	18°C (Lower limit at shipment)
000023	setting range		0019	19°C
(Upper limit)		ing))
000024		Dryi	((
(Lower limit)			0029	29°C
	_		0030	30°C (Upper limit at shipment)
000025		0	0017	17°C (Lower limit at shipment)
(Upper limit)		heat/cool	0018	18°C
000026		pe	7	(
(Lower limit)		Auto	0026	26°C
,		 	0027	27°C (Upper limit at shipment)
000029	Humidifier operation	n [0000	Normal
	- Sporation		0001	Ignore heat exchanger temperature conditions.
			0000	Filter input (differential pressure switch input)
00002A	Filter (CN70) input switching		0001	Alarm input (for trouble input about air cleaner or similar device)
			0002	Humidifier input (Operates linked with drain pump when humidifier is ON.)
000020	Indoor unit electron	ic	0000	None
	control valve		0002	Present (Setting at shipment)
חחחחםב	T10 terminal switch	ina	0000	Normal (Used as optional relay PCB or JEMA standard HA terminal.)
00002E	T TO LETTIMAL SWILLING		0001	Used for OFF reminder
			0002	Fire prevention input

(Continued)

Codono	Itom	Set data	
Code no.	Item	No.	Description
		0000	No forced operation
000000	Automatic drain pump	0001	Forced operation for 1 minute
00002F	operation	>	>
		0060	Continuous operation
ורחחחחו	Ventilation fan	0000	None
00003 (operation	0001	Ventilation fan operated by remote controller.
ררחחחח	Wired remote controller	0000	Not used. (Body sensor is used.)
000032	sensor	0001	Remote control sensor is used.
000034	"Operation change control in progress"	0000	Normal (displayed)
	display	0001	Not displayed
000035	OFF reminder function for when weekly timer is	0000	None
	used	0001	Only stop time setting is enabled.
	Heat exchanger	-001	Control temperature -1°C
	temperature for cold air	0000	Control temperature 0°C
000030	discharge (Heat exchanger control	>	>
	point for control to	0025	Control temperature 25°C
	prevent cold air)	0026	Control temperature 26°C
000034	Fan output switching	0000	Output linked with fan.(ON when indoor unit fan is operating.)
		0001	Fan mode operation output
		0000	No delayed stop
		0001	1minutes delayed stop
	Drain pump delayed	0002	2minutes delayed stop
000038	stop time	>	>
	·	0058	58minutes delayed stop
		0059	59minutes delayed stop
		0060	60minutes delayed stop
		0000	Humidifier output OFF. Drain pump stopped.
		0001	Humidifier output ON. Drain pump operates.
000040	Humidifier setting	0002	Humidifier output ON. Drain pump operates for 1 minute when total humidifier operating time reaches 60 minutes.
		0003	Humidifier output ON. Drain pump stopped.
		0000	Standard setting
000045	Flap operation mode	0001	Draft reduction mode (Flap lower-limit position is shifted upwards.)
		0000	Smudging reduction mode (Flap swing upper-limit position is shifted downwards.)
000046	Flap swing mode	0001	Normal mode
222212		0002	Draft reduction mode (Flap swing lower-limit position is shifted upwards.)
			(Continued)

(Continued)

Code no.	Item	Set data			
Code no.	item		Description		
			Purpose		
	Fan tap setting	0000	Standard (factory setting)		
	(Fan tap change in order to prevent drop		High ceiling setting 1 (U3, T3)		
000054	in air discharge	0001	Air-flow blocking kit (when a duct is connected : U3)		
	caused by filter		Air-flow blocking kit (for 3-way air flow : U3)		
	installation)	0003	High ceiling setting 2 (U3)		
		0006	Air-flow blocking kit (for 2-way air flow : U3)		
		0000	No humidifier output		
		0001	1 second		
	Humidifier ON time	0002	2 seconds		
000058	(ON time per 60	>	>		
	seconds)	0058	58 seconds		
		0059	59 seconds		
		0060	Continuously ON		
000060	Timer function change	0000	Function disabled		
กกกกอก	prohibit	0001	Function enabled		
280000	Smudging control	0000	No smudging control		
	Fan speed when	0000	Fan speed setting		
000086	cooling thermostat	0003	LL 3min.→Fan speed setting		
	OFF	0009	LL		
0000FC	Refrigerant	0000	None		
הההה, ר	adaptability	0001	Standard (factory setting)		

NOTE

- Consider the device purpose and type when changing the settings. Incorrect settings may result in malfunction.
 Do not change any setting data that does not appear in this list.

8. HOW TO INSTALL THE WIRELESS (INFRARED) REMOTE CONTROLLER RECEIVER

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8-1. Important Safety Instructions

⚠ WARNING

Installation Precautions

Do not install yourself
 Installation should always be performed by your dealer or a professional service provider.

 Electric shock or fire may result if an inexperienced person performs any installation or wiring procedures incorrectly.

Use only specified air conditioners
 Always use only air conditions specified by the dealer.

Precautions for Use

- Do not touch switches with wet hands
 Electric shock and damage to the system can result.
- · Protect the remote controller from water Damage to the system can result.
- Stop the system and turn the power off if you sense unusual smells or other irregularities
 Continuing operation when the system is out of order can result in electric shock, fire, and damage to the system.
 Contact your dealer.
- · Do not swallow the battery.

Moving and Repair Precautions

Do not repair
 Never repair the system by yourself.

Contact your dealer before moving the system

Contact your dealer or a professional service provider about moving and reinstalling the system.

Electric shock or fire may result if an inexperienced person performs any installation procedures incorrectly.

8-2. Wireless (Infrared) Remote Controller CZ-RWS3

8-2-1. Operating Instructions

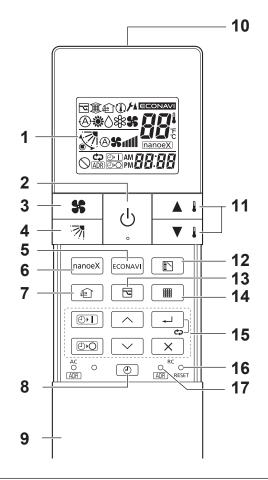
1 remote controller can control a group of up to 8 indoor units. (See "8-2-1-7. Operating Multiple In / Outdoor Units simultaneously (Group Control)")

8-2-1-1. Names and Operations

REMOTE CONTROLLER

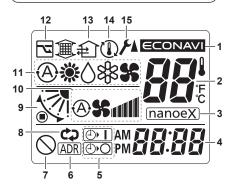
1. Operation Display	Displays the operation status. (The figure shows all the statuses.)
2. Start/Stop	Pressing this button once starts and pressing again stops the operation.
3. Fan speed speed button	Press to change the fan speed.
4. Flap button	Press to change the flap direction.
5. ECONAVI button	Press to set ECONAVI.
6. nanoe™ X button	Press to set nanoe™ X.
7. Ventilation button	Use this when connected to an aftermarket fan.
8. Clock button	Use this to set the clock.
9. Cover	Press at the top centre and then slide down.
10. Transmitter	
11. Temperature setting buttons	a i raises the temperature setting 1 °C at a time. ▼ i lowers the temperature setting 1 °C at a time.
12. Mode Select button	Press to switch the operation mode.
13. Energy saving button	Press to enable or disable energy saving.

14. Filter button	Press to turn off the filter lamp on the receiver.
15. Timer setting buttons	Use for operating with a timer.
16. RC reset button	Use this button after changing the batteries.
17.RC address button RC ADR	Press to set addresses.



From this page, the names of remote controller's buttons will be indicated with the above illustrations. E.g.: Start/Stop button $\rightarrow \boxed{\circlearrowleft}$

Screen display



- Appears when ECONAVI is being set to ON.
- 2 Indicates the set temperature.

- 3 Appears when nanoe™ X is being set to ON.
- **4** Displays the present time.
- 5 Timer program indication

 1: The indoor unit starts operation at the programmed time.

 1: The indoor unit stops operation at the programmed time.
- 6 Indicates the remote controller addresses are set.
- **7** Appears when the function is not available.
- 8 The ON timer or the OFF timer will operate repeatedly every day.
- 9 Indicates the flap position.

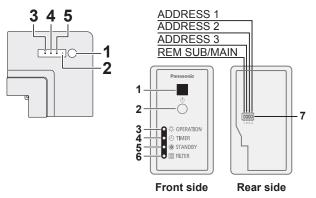
- 10 Indicates the fan speed.
- 11 Displays the selected operation mode. (AUTO ♠ /HEAT ☀ / DRY ♦ /COOL ※ /FAN ♣)
- **12** Energy saving operation is in process.
- **13** Appears when a fan available in the market is installed and is operating.
- **14** "Temperature Automatic Return" is set.
- **15** Appears when the setting screen is displayed.

RECEIVER)

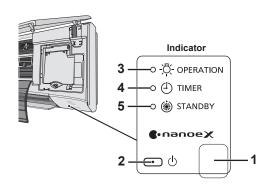
1. Receiver	Receives the signal sent from the remote controller.
2. Emergency operation button	See "8-2-1-10. Emergency Operation".
	Indicator lamps
	When an error occurs, one of the lamps flashes. When an indicator lamp is flashing, see "8-2-1-18. Troubleshooting".
3. OPERATION lamp	Lights up when the unit is operating.
4. TIMER lamp	Lights up when the timer is set.
5. STANDBY lamp	The lamp in the HEAT mode lights up at the following times: during the startup, during the thermostat operation, and during the defrosting.
6. FILTER lamp	This lamp is for notifying you when the filter needs to be cleaned.
7. Address switch	See "8-2-1-9. Pairing Addresses".

CZ-RWRU3 CZ-RWRU3W

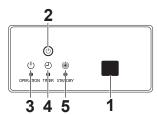
CZ-RWRC3



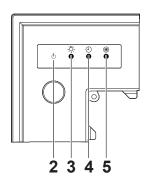
Indoor Unit: Wall Mounted Type



CZ-RWRT3



CZ-RWRY3



NOTE

- If a heat pump type is being used, it will beep twice and the operating lamp will light up on the display; if the timer
 and standby lamps blink alternately, a conflict between the heating and cooling exists, so the unit cannot operate
 in the desired mode. (On models that do not have an Auto function, even if Auto is selected, it works in the same
 way.)
- When the local operation is disabled by centralized control or similar cause, and if the Start/Stop _______,

 Mode _ or Temperature setting button _ ▲ ↓ ▼ ↓ is pressed, the unit will beep five times and the change will not be made.

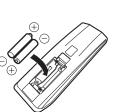
8-2-1-2. Installing Batteries

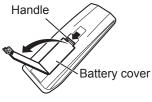
1. Remove the battery cover.

• Pinch the handle and open while pressing it towards the \vee mark.

2. Insert two LR03 size batteries.

Put the batteries in with the polarity [+/-] as shown in the figure.





3. Gently insert one end of an unfolded paper clip (or a similar object that can fit) into the RC reset hole and press the RC reset button inside the hole.

• Take the batteries out and insert again if the time display is not " Take the batteries out and insert again if the time display is not " Take the batteries out and insert again if the time display is not " Take the batteries out and insert again if the time display is not " Take the batteries out and insert again if the time display is not " Take the batteries out and insert again if the time display is not " Take the batteries out and insert again if the time display is not " Take the batteries out and insert again if the time display is not " Take the batteries out and insert again if the time display is not " Take the batteries out and insert again if the time display is not " Take the batteries out and insert again if the time display is not " Take the batteries out and insert again if the time display is not " Take the batteries out and the batteries out and the batteries out and the batteries out again if the time display is not " Take the batteries out and the batteries out again in the batterie







■ Notes on batteries

- The battery life is approximately 1 year.
- Reception may become poor or display on the remote controller fades when batteries are low.
- If the remote controller will not be used for a long period of time, remove the batteries. (In order to avoid a battery leak.)
- Emergency operations can be performed on the unit when the batteries run out. (See "8-2-1-10. Emergency Operation")

■ Replacing batteries

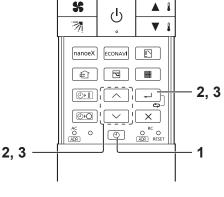
- Replace both batteries at the same time with 2 LR03 size batteries.
- Do not use rechargeable batteries (NiCd, NiMH, etc.) because their size, shape, and some performance are different.
- Dispose of the old batteries at the designated sites in your community.
- The unit is restored with the factory setting when batteries are removed.
- After changing the batteries, reset the current time. (See "8-2-1-3. Setting the Current Time")

8-2-1-3. Setting the Current Time

- 1. Press ① for 2 seconds or longer.
 - The time display flashes. (The colon lights up.)

Note

- If the buttons are not pressed for a certain duration while setting the time, the displayed time is set.
- Adjust the time periodically.



8-2-1-4. **Operation**

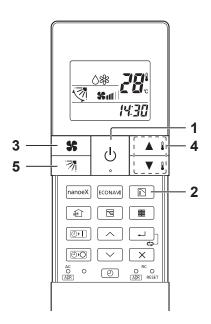
Hold the remote controller with your hand and point its transmitter at the receiver.

Power: Turn on the circuit breaker beforehand, see Section "2. TEST RUN".

- 1. Press 🕒.
- 2. Press 🗈 to select the operation mode.
 - Every time you press

 it cycles from "Auto (A) → Heat *
 Dry (A) → Cool (A) → Fan (B) ".
 - Models that only provide the cooling function cannot operate in the Auto or Heat mode.
 - The available functions differ depending on the indoor unit being used. See "8-2-1-11. Miscellaneous Settings" for how to change the operation mode display.
- 3. Press st to select the fan speed.

 - Auto does not work in Fan mode.
 - If the unit is not heating very effectively with a fan speed "
 switch the fan speed to "
 or "
 or "
 or "
 or ".
 - The available functions differ depending on the indoor unit being used.
 - "\(\sigma^{\infty}\) is displayed if the function is not available.



4. Press ▲ 1 / ▼ 1 to set the temperature.

	MAX (°C)	MIN (°C)
Auto (A)	27	17
Heat 🔆	30	16
Dry ⟨⟩ / Cool ∰	30	18

- Temperature settings cannot be made in Fan mode.
- The temperature range that can be set varies depending on the model.
- The maximum temperature varies depending on the system and operating condition. See "8-2-1-11. Miscellaneous Settings" for how to change the maximum temperature.

5. Press 7 to select the flap direction. (This section is not used.)

- Every time you press $\boxed{3}$, it cycles from " $\boxed{3}$ \rightarrow $\boxed{3}$ \rightarrow $\boxed{3}$ (Swing) \rightarrow $\boxed{3}$ (Stop)".
- If you press again while the flap is swinging, you can stop the flap from swinging and set it in place as desired
- When the unit is in heating standby, the flap (up-down wind direction plate) faces upwards.
- The available functions differ depending on the indoor unit being used.
- "\(\sigma\)" is displayed if the function is not available.
- Never try to manually move the flap (up-down wind direction plate) that is operated by the remote controller.

Stop: Press 🕛 .

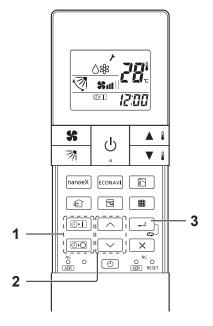
- If you cannot turn the air conditioner off in the normal way, disconnect the power to the indoor unit and contact the dealer where the product was purchased.
- When the unit is stopped with the remote controller, the fan on the outdoor unit may continue to run for a while.

< Auto operation >

It heats or cools automatically via the differences between the set temperature and the room temperature. Auto operation is available only when identical refrigerant system inside all the indoor units or cooling/heating free-type are under control as 1 group.

8-2-1-5. Timer Operation

- When setting the timer, make sure the current time on the remote controller is accurate.
- The timer's clock can only be set when the display of the remote controller is ON.
- After setting the timer, put the remote controller for in a place where its signal will reach the receiver of the indoor unit.
- 1. Press or bo twice.
 - The time last set on the timer starts blinking. (" - : - " blinks when the timer is not set or after replacing batteries.)
- 2. Press \(\cap \) to set the timer to the desired time.
 - Every time you press \(\subseteq / \subseteq \), the time changes in 10 minute increments.
 - If you press and hold the button, the time changes quickly.
- 3. Press → .
 - The timer display stops blinking and the display reverts to the current time after 3 seconds.
 - " [] / [] " is displayed when set.



Combining ON and OFF Timers

1. The ON and OFF timers can be set respectively.

Checking the timer setting

- 1. Press or .
 - The scheduled time is displayed for 4 seconds.
 - When the timer is not set or after replacing batteries, it displays " - : - ". (Initial setting)

Changing a timer setting

1. Perform Step 1 to 3 noted above as you did when setting.

Canceling a timer setting

- 1. Press \times .
 - If you wish to cancel the setting for either the on the other, press x while the scheduled time is displayed.

Using the same timer setting every day

- 1. Press for 2 seconds or longer.
 - " 🗘 " is displayed when set.
 - If you press → again for 2 seconds or longer, " co " goes off and the timer operates only once.

8-2-1-6. Lock Individual Flap (This section is not used.)

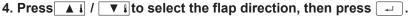
(Supported models: 4-way ceiling cassette type)

You can set the flap for each air outlet individually according to the room condition.

- Even if the flap setting is changed with [7] (See Step 5. of "8-2-1-4. Operation"), the flap directions set here are not changed.
- 1. Press and at the same time for 4 seconds or longer.
 - " F " starts blinking and the setting screen is displayed.
- 2. Press ▲ 1 / ▼ 1 to select the indoor unit to set, then press .
 - Every time you press / to switch between "U1 ↔ U2 ↔ ...
 ↔ U8 ↔ AL (All indoor units that are connected to the remote controller)", the buzzer sounds from the corresponding receiver.
 - When settable: 1 short beep
 - When not settable*: 1 short beep followed by 1 long beep
 - * When the indoor unit is not connected or does not support this function.
- - The square mark (indented □) on the panel of the indoor unit indicates air outlet No. 1.

There are some models that do not have a square mark (indented \Box).

• The air outlet No. changes according to the installation direction. Check by actual operation.



• Every time you press \blacktriangle \i/ \blacktriangledown \i/ \blacktriangledown \i/ \blacktriangledown \i/ \blacktriangledown , it cycles from " \ref{M} (Unlock) \leftrightarrow \ref{M} (Swing) \leftrightarrow \ref{M} \to \ref

5. Press \times .

• You can return to Step 2 to continue setting if you press instead of x.

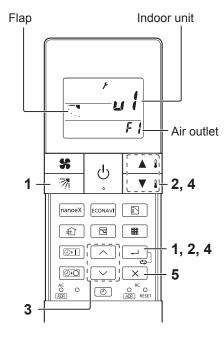
Note

• Press $\overline{}$ to stop operation in the middle.

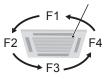
8-2-1-7. Operating Multiple In / Outdoor Units Simultaneously (Group Control)

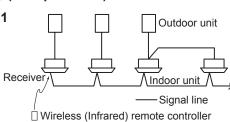
Group control works well for providing air conditioning to 1 large room with more than 1 air conditioning units.

- 1 remote controller can operate up to 8 indoor units.
- All the indoor units have identical settings.
- Set temperature sensing to the indoor unit (Main sensor).
 (See "8-2-1-1. Names and Operations")



Square mark (indented □)





8-2-1-8. Using the Remote Controller

- Hold the remote controller with your hand and point its transmitter at the receiver. When the signal is received properly, it will beep.
- Signals can travel a direct distance of 6 metres. This distance should be used only as a guide. It depends on battery strength.
- Make sure nothing is between the remote controller and the receiver that could block the signal.
- Do not leave the remote controller in direct sunlight, where the wind from the air conditioner can blow directly on it, or near any other heat source.
- Take care not to drop, throw, or wash the remote controller with water.
- The signal from the remote controller may not be received in rooms with rapid start fluorescent lighting or inverter lights.

For more information, please contact the dealer where the product was purchased.

Wall Mount Use

■ Mounting the holder

1. Fasten the remote control holder with screws.



Remote control holder

2. Slide the remote controller down into the holder.

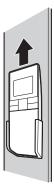
Note

 You cannot operate if the distance between the remote controller and the receiver is greater than that signals can travel.



■ Detaching the controller

1. Pull the remote controller up.



8-2-1-9. Pairing Addresses

When more than 1 indoor units are installed in the same room with a compatible remote controller, addresses can be set up to avoid crosstalk.

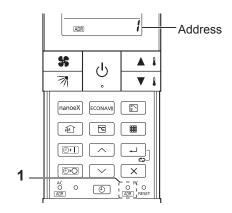
You can control up to 6 indoor units individually by the supported remote controller by pairing the address on the remote controller and the number on the address switch on the receiver.

There are separate address settings: receiver addresses for the receivers, and transmitter addresses for the remote controller.

Units will not be controlled if the setting do not match.

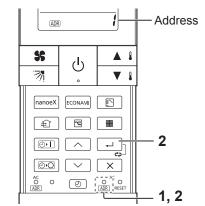
Checking Addresses

- 1. Press or with one end of an unfolded paper clip (or a similar object that can fit).
 - Its current address appears on the display for 5 seconds.
 - If this address corresponds to the address of a receiver, the buzzer sounds. (If it is on ALL, the buzzer will always sound.)
 - If it is on ALL, it can be operated regardless of receiver addresses.
 Point the remote controller at the receiver you wish to operate and transmit.



Matching Up Addresses

- ■If not wall mounted type indoor unit
- < Setting Remote Controller Addresses >
- 1. Press with one end of an unfolded paper clip (or a similar object that can fit) for 4 seconds or longer.
 - · The current address number starts blinking.
- 2. Press to select the address of the receiver you want to control, and press.
 - Every time you press $\frac{|\circ|^{RC}}{|\triangle|^{RC}}$, it cycles from "ALL (All the addresses) $\rightarrow 1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow 5 \rightarrow 6$ ".
 - If it corresponds to the receiver's address setting, the buzzer sounds.



Note

 Set the address of the receiver as instructed in the operating instructions of your receiver. Do not set by yourself. Contact the dealer where the product was purchased.

■For wall mounted type indoor unit

- < Setting the address of the indoor unit >
- 1. Press [Emergency Operation] (1) of the indoor unit for 4 seconds or longer.
 - OPERATION lamp, TIMER lamp, and then STANDBY lamp repeatedly light one after the other for 1 second each to indicate the unit is ready for address setting.
- < Setting Remote Controller Addresses >
- 2. Set the address for the remote controller following the procedure under the section
 - "■If not wall mounted type indoor unit" (see this section noted above).
 - Repeat Step 2 under "■If not wall mounted type indoor unit" if you are setting more units.
 - The address setting ready status of the indoor unit ends if data transmission is not received from the remote controller for 3 minutes.
 - Press [Emergency Operation] (I) on the receiver to end the address setting ready status of the indoor unit.

8-2-1-10. Emergency Operation

Use [Emergency Operation] () in the following situations when there is an urgent need.

- When the remote controller's batteries have failed.
- · When the remote controller is broken.
- · When the remote controller is lost.
- * See the following figures regarding Emergency button.

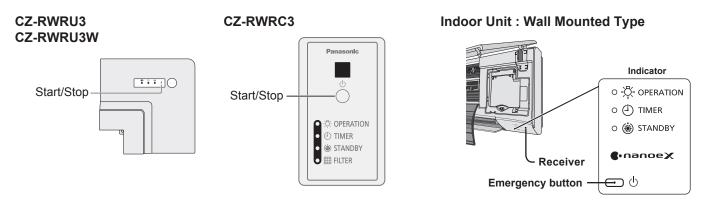
1. Press [Emergency Operation] (1) of the receiver.

- · The OPERATION lamp is lit.
- Auto operation starts. If Auto operation is not possible, the unit starts cooling if the room temperature at the time is 24 °C or higher; otherwise, the unit starts heating.
- The operation stops if you press [Emergency Operation] (1) again.

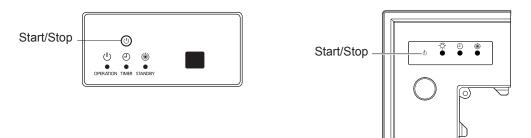
Note

- If non-cooling/heating free type is being used, it will beep twice and the operating lamp will light up on the display; if the timer and standby lamps blink alternately, a conflict between the heating and cooling exists, so the unit cannot operate in the desired mode. (On models that do not have an Auto function, even if Auto is selected, it works in the same way.)
- When the local operation is disabled by a central control device or similar cause, and if the Start/Stop ⋃, Fan speed ೄ, Flap ℳ, Temperature setting ▲ ।/ ▼ ।, Mode select ⑤ or Energy saving ⑤ button is pressed, the unit will beep 5 times and the change will not be made.

CZ-RWRU3, CZ-RWRU3W, CZ-RWRC3, Indoor Unit: Wall Mounted Type, CZ-RWRT3, CZ-RWRY3



CZ-RWRT3 CZ-RWRY3



8-2-1-11. Miscellaneous Settings

A variety of changes can be made to settings, depending on the indoor unit being used.

Operation mode indicator, time display (24 hour, AM/PM), heating maximum temperature

- These settings are saved in nonvolatile memory in the remote controller, so even when its batteries are changed, the settings do not have to be made again.
- First check the display of the remote controller when the unit is stopped and then make any desired settings

How to Operate

- While holding down the buttons below, the remote controller's display changes every time ____ is pressed.
- Whatever is being displayed when you release is set.

Setting Item	Operation Button	Setting Content	Remote Controller Display
Remote controller		Heat Pump (with Auto)	@ * \ * \$
operation mode display setting when	Press \(\times \) while pressing \(\bar{\bar{\bar{\bar{\bar{\bar{\bar{\bar	Heat Pump (without Auto)	*\^ * \$
is pressed		Dedicated air conditioner	* \$
Clock display setting	Press \(\triangle \) while pressing \(\triangle \)	24-hour	2359
Clock display setting		AM/PM	PM / 159
Max possible temperature setting in the Heat mode Max possible Press \(\triangle \) while pressing \(\triangle \) is the Heat mode		Maximum heating temperature range is 26 °C – 30 °C	<u>76~27~28</u> _30~29√

8-2-1-12. Button Control

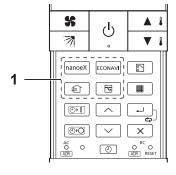
You can enable or disable the following buttons for some indoor units.

nanoe™ X, ECONAVI, Ventilation, Energy saving

- 1. Press the button for desired setting for 4 seconds or longer.
 - You can toggle between enable and disable each time you press the button for 4 seconds or longer.
 - "

 " is displayed when you press a disabled button, and the function cannot be used.

Buttons	Setting content	
Enabling or disabling the button for nanoe™ X.		
Enabling or disabling the button for ECONAVI.		
Enabling or disabling the button for ventilation.		
Enabling or disabling the button for energy saving.		



8-2-1-13. nanoe™ X Setting

1. Press nanoeX during operation.

- You can toggle between ON and OFF each time you press [nanoeX].
- "nanoeX" is displayed when this setting is ON.
- When the nanoe™ X setting is ON, "nanoe" (atomised water particle) is released from the indoor unit while in operation (Cool, Dry, Heat, Fan, Auto).
- If the receiver emits 1 short beep followed by 1 long beep after pressing [nanoex], the indoor unit does not support this function. See "8-2-1-12. Button Control" for how to enable or disable the button.
- "\(\sigma\)" is displayed if the function is not available.

8-2-1-14. ECONAVI Setting

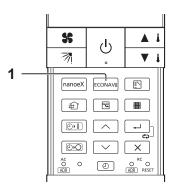
(ECONAVI can be set using the separately sold ECONAVI panel or by connecting the holder on the wall.)

1. Press during operation.

- You can toggle between ON and OFF each time you press ECONAM .
- " ECONAVI " is displayed when this setting is ON. *
- The ECONAVI sensor detects human activity and conserves energy based on the activity level.
- Even when target temperature is changed through the ECONAVI function, the set temperature shown in the remote controller does not change.
- When operating more than 1 indoor unit, the energy-saving effect may be reduced depending on the room condition.
- If the receiver emits 1 short beep followed by 1 long beep after pressing [ECONAVI], the indoor unit does not support this function.

See "8-2-1-12. Button Control" for how to enable or disable the button.

- "\(\sigma\)" is displayed if the function is not available.
- " " ECONAVI " is not displayed in Fan mode.



8-2-1-15. Ventilation Setting

(When connected to an aftermarket fan)

button is disabled as the factory setting. Enable the button if you have connected the ventilation fan.

(See "8-2-1-12. Button Control")

1. Press 🛍 .

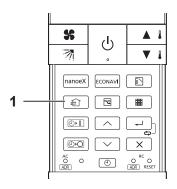
- You can toggle between ON and OFF each time you press 📵.
- " appears on the display of the remote controller when the fan is operating.
- When the air conditioner is started or stopped, the fan starts or stops at the same time.
- " \(\sigma\)" is displayed if the function is not available.

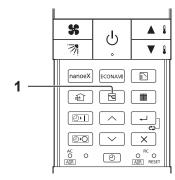
8-2-1-16. Energy Saving Setting

1. Press 🔁 during operation.

- You can toggle between ON and OFF each time you press 🖼 .
- " \sqrt{\sqrt{}}" is displayed when this setting is ON.
- The energy saving operation restricts the maximum current value, resulting in decreased cooling/heating performance. (If the current of outdoor units does not reach the peak due to low load operation, the current value is not restricted.)
- If the receiver emits 1 short beep followed by 1 long beep after pressing
 ☐, the indoor unit does not support this function.

 See "8-2-1-12. Button Control" for how to enable or disable the button.
- "(\(\cap\)" is displayed if the function is not available.





You can restore the changed temperature to the originally set temperature automatically after a specified time elapses.

- Set the time and temperature for each operation mode.
- 1. Press and and at the same time for 4 seconds or longer.
 - " * " starts blinking and the setting screen is displayed.
- 2. Press 🛐 to select the operation mode, then press 🔟.
 - Every time you press ⑤ to switch between "Dry ♦ / Cool ♦ → Heat ♦ → Auto ♠", the buzzer sounds from the corresponding receiver.
 - · When not set: 1 short beep
 - · When already set: 2 short beeps
- 3. Press \(\sigma \) to set the time to return to the set temperature.
 - Setting range: 10 to 240 min (by the 10 min)
- 4. Press ▲ 1 / ▼ 1 to set the temperature, then press .

	MAX (°C)	MIN (°C)
Auto (A)	27	17
Heat 🔆	30	16
Dry ⊘ / Cool 🞇	30	18

- The temperature range that can be set varies depending on the model.
- 5. Press \times .
 - You can return to Step 2 to continue setting if you press instead of x.

Changing the setting

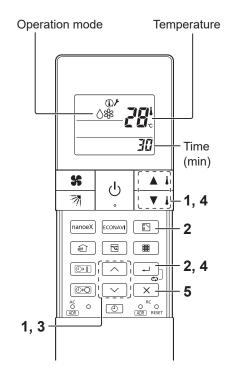
Perform Step 1 to 5 noted above as you did when setting.

Cancelling the setting

- 1. Press 🛕 and 🔽 at the same time for 4 seconds or longer.
- 2. Press \square to select the operation mode, then press \square for 4 seconds or longer.
 - The receiver emits 1 short beep.
 - Press x for 10 seconds or longer to cancel settings for all operation modes.

Note

• Press \times to stop operation in the middle.



8-2-1-18. Troubleshooting

Before requesting service, please check the followings.

Problem	Cause	Solution
The unit doesn't work even	The power to the indoor unit is not ON.	Make sure the power to the indoor unit is ON.
when big is pressed on the remote controller.	Are the remote controller's batteries dead?	Change the batteries.
	Is there a mismatch between the display lamp and cooling/heating or is it set to something other than Auto? (The operating lamp stays lit, while the timer lamp and the standby lamp blink alternately.)	Change the operating mode.
	Do the addresses match one another?	Check the addresses of the receiver and the remote controller. (See "Checking Addresses" on page 8-2-1-8)
The air conditioner starts and stops on its own.	Has the timer been set to repeat?	Check the timer settings. (See "Checking the timer setting" on page 8-2-1-5)
Although the unit is for air conditioning only, either Auto or Heat is indicated in the display.		Make settings to the remote controller's operation mode display. (See "8-2-1-11. Miscellaneous Settings")
After the batteries are put in the remote controller, even when it is operated, the display does not change.		Press the RC reset button on the remote controller. (See Step 3. of "8-2-1-2. Installing Batteries")
The timer cannot be set.		Make the settings when the remote controller is in Operation Display. (See "8-2-1-5. Timer Operation")

If the problem persists even after you check the foregoing items, stop the unit, disconnect the power to the indoor unit and contact the dealer where the product was purchased with the model number and problem you are having. As it is dangerous, under no circumstances should you undertake repairs yourself.

Further, when the receiver's lamps are blinking; please contact your retailer with that information.

Specifications

CZ-RWS3

Model No.	CZ-RWS3	
Dimensions	(H) 165 mm × (W) 59 mm × (D) 22 mm	
Weight 100 g (Batteries and remote control holder are not included)		
Temperature / Humidity range	0 °C to 40 °C / 20 % to 80 % (No condensation) *Indoor use only	
Power Source	Two LR03 size batteries	

CZ-RWRU3, CZ-RWRU3W

Model No.	CZ-RWRU3, CZ-RWRU3W	
Dimensions	sions (H) 29.7 mm × (W) 211.8 mm × (D) 211.8 mm	
Weight	160 g	
Temperature / 0 °C to 40 °C / 20% to 80% (No condensation)		
Humidity range	*Indoor use only.	
Power Source	DC16 V (supplied from indoor unit)	

CZ-RWRC3

Model No.	CZ-RWRC3
Dimensions	(H) 120 mm × (W) 70 mm × (D) 20 mm
Weight	75 g
Temperature /	0 °C to 40 °C / 20 % to 80 % (No condensation)
Humidity range	*Indoor use only.
Power Source	DC16 V (supplied from indoor unit)

CZ-RWRT3

Model No.	CZ-RWRT3	
Dimensions	(H) 65 mm × (W) 141 mm × (D) 22.5 mm	
Weight	85 g	
	erature / 0 °C to 40 °C / 20 % to 80 % (No condensation)	
Humidity range	*Indoor use only.	
Power Source	DC16 V (supplied from indoor unit)	

CZ-RWRY3

Model No.	CZ-RWRY3
Dimensions	(H) 125 mm × (W) 125 mm × (D) 29 mm
Weight	100 g
	0 °C to 40 °C / 20% to 80% (No condensation)
Humidity range	*Indoor use only.
Power Source	DC16 V (supplied from indoor unit)

8-2-2. Installation Instructions

Read before installation

This controller must be installed by the sales dealer or installer. These instructions are all you need for most installation sites and maintenance conditions. If you require help for a special problem, contact our sales / service outlet or your certified dealer for additional instructions.

Safety Precautions

We assume no responsibility for accidents or damages resulting from methods other than those described in the installation instructions or methods without using specified parts. Malfunctions that occurred due to the unauthorised installation methods are not covered by the product warranty.

- Read the installation instructions supplied with indoor units as well.
- After the installation is complete, perform test operation to confirm that no abnormality is present.
- When relocating or repairing this controller, provide the Installation Instructions to the servicing personnel.
- Do not clean inside the controller by users. Engage authorised dealer or specialist for cleaning.



This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.



This symbol refers to a hazard or unsafe practice which can result in personal injury or product or property damage.

↑ WARNING

- · Turn off the circuit breaker of the units before installation.
- Select an installation location which is rigid and strong enough to support or hold the controller, and select a location for easy maintenance.
- This controller must not be modified or disassembled under any circumstances. Modified or disassembled controller may cause fire, electric shock or injury.

⚠CAUTION

- Do not allow infants and small children to prevent them from accidentally swallowing the batteries.
- Do not use the controller at the following locations.
 - · Location where condensation occurs
 - · Location where flammable gases, etc. may leak
 - Location where corrosive gases, etc. may leak
 - Location with lots of water or oil droplets (including machine oil)
 - Location where there is a machine producing electromagnetic radiation
 - Location where droplets of organic solvents spread
 - Location where acidic or alkaline solutions or special sprays are frequently used
- Do not wash with water.
- Do not operate with wet hands.
- Do not drop or throw. (It may cause malfunction.)
- Do not insert the battery the wrong terminals (+ and -). (It may cause electrolyte leakage and may cause a fire.)

(NOTICE)

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

Supplied accessories

Remote Control Holder
Screw M4×15.5
LR03 Size Battery (for test)
Operating Instructions
Installation Instructions
Instructions Disc

Installation Precautions

- The controller uses a very weak infrared light for its signal, which can result in the signal not being received because of the following influences, so take care in where the indoor unit is installed.
 - Inverter or rapid-start type fluorescent lights (Models without glow lamps)
 - · Plasma display or LCD televisions
 - Direct sunlight or other sources of bright light
- Install in a location that does not interfere the operation
 - You cannot operate if the distance between the remote controller and the receiver is greater than that signals can travel.
 - Make sure nothing is between the remote controller and the receiver that could block the signal.
 - Confirm that the normal operation is possible at the location to install.
- Avoid the following locations for installation.
 - · Under direct sunlight
 - · Location near heat source
 - Location where the controller will be splashed with water or affected by dampness or humidity
 - · Uneven surface
 - Location that is subject to excessive vibration or physical impacts. (Fixing screws may come off, and the controller may drop.)
 - Location with large amount of oil smoke or steam (such as kitchen or machine factory)
- · Install the controller vertically to the floor.
- Install the controller at a location with suitable temperature and humidity for using.
- Do not install controller at the locations with the equipment (medical equipment, etc.) which
 generates the high-frequency emissions. (It may interfere
 with the equipment and may cause accidents due to
 malfunction.)
- Install at least 1 m away from TV, radio, PC, etc. (To prevent fuzzy images or noise)
- If a remote controller is to be operated from a remote control holder that is hung on a wall, turn on the lights in the room as well as any electrical appliances and then check to make sure the air conditioner works with the remote controller in the location where it will be installed. If it works, continue with installation.

Before Starting

Install this controller see "8-2-1. Operating Instructions".

- (1) Insert the batteries. (Installing Batteries)
- (2) Set the current time. (Setting the Current Time)
- (3) Install the remote control holder. (Using the Remote Controller)
- (4) Perform the pairing address setting, if required. (Paring Addresses)

When using the Wall Mounted Type indoor unit

Note

Also see "8-3-2. When Using Wireless Remote Controller Instead of Wired Remote Controller".

- When using the infrared remote controller and the wired remote controller in combination, set the wired remote controller to [Main].
- When only using the infrared remote controller, it is necessary to set the selector switch on the indoor unit circuit board (SW502) from "OFF" to "ON". When group-controlling the multiple indoor units, set "OFF" to "ON" on only one unit.

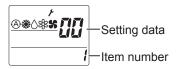
Miscellaneous Settings

The functions of the wireless (infrared) remote controller can be set on site.

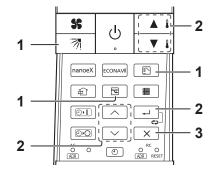
Note

Only service personnel should make the settings because the operation of the air conditioner may be affected, depending on the settings made.

- These settings are saved in nonvolatile memory in the remote controller, so even when its batteries are changed, the settings do not have to be made again.
- Furthermore, making changes to these settings may cause actual operation to deviate from what is printed in the Operating Instructions, so be sure to fully explain this to the customer.
- Do not change any settings other than those items in table below.
- 1. Press, , and at the same time for 4 seconds or longer when the unit is stopped (displaying the current time only).
 - "F" starts blinking and the setting screen is displayed.



2. Press ▲ 1 / ▼ 1 to select item number, press △ / ∨ to select setting data, and press → .



3. Press \times .

Item Number	Setting item	Setting data		Factory setting	Check
1	Operation Mode*1	00: @ / * / \delta /	03: \$ / \$\$ 04: @ / \$ / \$ / \$\$ 05: \$ / \$ / \$\$	00: ⑧/豪/ ◇/緣/	
2	Flap Display	00: 5 levels (Cool in 5 levels) + Swing + Stop 01: 5 levels (Cool in 3 levels) + Swing + Stop 02: 5 levels (Cool in 3 levels) + Swing	03: Swing 04: No switchable function	00: 5 levels (Cool in 5 levels) + Swing + Stop	
3	Select Fan Speed	00: 5 levels (1 to 5, Auto) 01: 3 levels (Low (1), Medium (3), High (5), Auto) 02: 3 levels (Low (1), Medium (3), High (5))	03: Low (1), Medium (3) 04: No switchable function	00: Speed 5 (1 to 5, Auto)	
4	Temperature Display	00: °C	01: °F	00: °C	
5	Clock Display	00: 24-hour	01: AM/PM	00: 24-hour	
6	Ventilation Fan Setting*2	00: Off	01: On	00: Off	
7	Cool Temp Max	5 – 35°C		30	
8	Cool Temp Min	5 – 35°C		18	
9	Heat Temp Max	5 – 35°C		30	
10	Heat Temp Min	5 – 35°C		16	
11	Dry Temp Max	5 – 35°C		30	
12	Dry Temp Min	5 – 35°C		18	
13	Auto Temp Max	5 – 35°C		27	
14	Auto Temp Min	5 – 35°C		17	
18	Energy Saving Setting*2	00: Off	01: On	01: On	
19	ECONAVI Setting*2	00: Off	01: On	01: On	
20	nanoe™ X Setting*2	00: Off	01: On	01: On	

- *1 Set to [02: \(\delta \ / \\$ / \\$] or [03: \(\sigma / \\$] if you are using the unit only for cooling.
- *2 Press the function setting button for 4 seconds or longer while current time is displayed to switch the function On/Off.

Note

Make sure to fill the setting status in the check column after making changes to these settings.

Set the Auto Address for each O/D unit no. (outdoor unit number) Select the O/D unit no. for Auto Address.

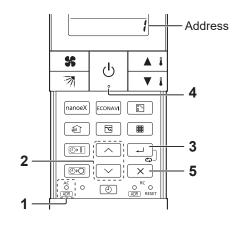
- 1. Press AC | for 4 seconds or longer.
 - " F " starts blinking and the setting screen is displayed.
- 2. Press \(\sigma \) to select the unit number (O/D unit no.) from 1 to 30.
- 3. Press __ to set the Auto Address.
- 4. Press (b) to check the Auto Address status.

(See the following table for the Auto Address status.)

- Proceed to step 5 when the status is "Completion" or "Error" .
- If "Running" keeps for 10 minutes or longer, check the unit number.

Auto	Buzzer	Indication lamp on the receiver		
Address Status	of the receiver	OPERATION	TIMER	STANDBY
Running	2 times		→ ◎ —	→ ∅]
Completion	1 time	-	-	-
Error	5 times			





- 5. Press \times for 4 seconds or longer to exit the Auto Address setting.
 - Auto Address setting is canceled while running or error occurring.
 Set the Auto Address again after resolve the error cause if an error occurs.

Attention

- Set Auto address after all units are turned on and 90 seconds or more have passed.
- Operate the units after Auto address is set and 90 seconds or more have passed.

8-3. Setting for the Receiver 8-3-1. Infrared Receiver

8-3-1-1. Common to Infrared Receiver CZ-RWRU3, CZ-RWRU3W, CZ-RWRC3, CZ-RWRT3, CZ-RWRY3

Read before installation

This receiver must be installed by the sales dealer or installer. These instructions are all you need for most installation sites and maintenance conditions. If you require help for a special problem, contact our sales/service outlet or your certified dealer for additional instructions.

Safety Precautions

We assume no responsibility for accidents or damages resulting from methods other than those described in the installation instructions or methods without using specified parts. Malfunctions that occurred due to the unauthorised installation methods are not covered by the product warranty.

- Read the installation instructions supplied with indoor units as well.
- After the installation is complete, perform test operation to confirm that no abnormality is present.
- When relocating or repairing this receiver, provide the Installation Instructions to the servicing personnel.
- Do not clean inside the receiver by users. Engage authorised dealer or specialist for cleaning.

⚠ WARNING

This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.



This symbol refers to a hazard or unsafe practice which can result in personal injury or product or property damage.

MARNING

- Turn off the circuit breaker of the units before installation.
- This receiver shall be installed in accordance with National Wiring Regulations.
- Connect and fix the specified cables for wiring securely.
- Do not allow the connection to be exposed to the external force of the cables.
- Select an installation location which is rigid and strong enough to support or hold the receiver, and select a location for easy maintenance.
- This receiver must not be modified or disassembled under any circumstances.
 Modified or disassembled receiver may cause fire, electric shock or injury.

CAUTION

- Do not use the receiver at the following locations.
 - · Location where flammable gases, etc. may leak
 - Location where corrosive gases, etc. may leak
 - Location with lots of water or oil droplets (including machine oil)
 - Location where droplets of organic solvents spread
 - Location where acidic or alkaline solutions or special sprays are frequently used
- Do not wash with water.
- Do not operate with wet hands.

NOTICE

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

Installation Precautions

- The receiver uses a very weak infrared light for its signal, which can result in the signal not being received because of the following influences, so take care in where the indoor unit is installed.
 - Inverter or rapid-start type fluorescent lights (Models without glow lamps)
 - Plasma display or LCD televisions
 - Direct sunlight or other sources of bright light
- Do not bundle together with the power source wiring or store in the same metal tube. Operation error may occur.
- Be careful not to connect cables to other terminals of indoor units (e.g.power source wiring terminal).
 Malfunction may occur.
- Avoid the following locations for installation.
 - Location where condensation occurs
 - Location where voltage fluctuation frequently occurs
 - Location where there is a machine producing electromagnetic radiation

Wiring

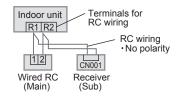
Installation when setting Main/Sub for the remote controller and the receiver

It is possible to operate one or more indoor units using two remote controllers.

After installation, set one to [Main] and the other to [Sub].

When using the infrared remote controller and the wired remote controller in combination, set the wired remote controller to [Main].

<Installation example> ■Using 1 indoor unit

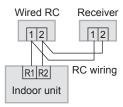


Note

- The receiver can be connected to any indoor unit for operation.
- · Wiring connected via remote controllers is prohibited.
- Also see "1-11-1. Installation Instructions of Indoor Unit" or refer to the "Installation Instructions" supplied with the wired remote controller when performing remote control with the main and sub remote controllers or group-controlling.

Attention

- Multiple wireless (infrared) remote controllers cannot be used simultaneously for a single indoor unit.
- Be careful not to connect cables to other terminals of indoor units (e.g. power source wiring terminal).
 Malfunction may occur.
- Do not bundle together with the power source wiring or store in the same metal tube. Operation error may
 occur.
- · If noise is induced to the unit power supply, attach a noise filter.
- * Wiring shown below is prohibited.

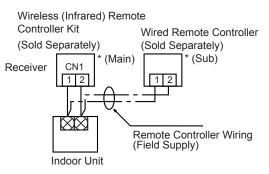


Note

The remote controller and the receiver can be connected to any indoor unit for operation.

When 1 indoor unit is operated by 2 remote controllers:

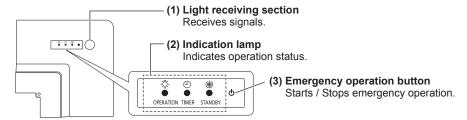
* Either of the remote controllers can be set to main/sub.



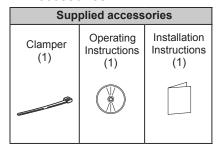
- Use wiring of 0.5 mm² to 2 mm² for field supply.
- Use a total wire length of no more than 400 m.

8-3-1-2. CZ-RWRU3, CZ-RWRU3W

Part Names

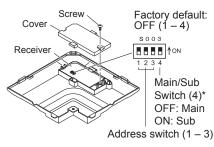


1. Accessories



2. Setting

Before installing the receiver, check the settings of the receiver address switches. Remove the cover from the receiver when performing the settings.



* When using the infrared remote controller and the wired remote controller in combination, set the wired remote controller to [Main].

Address Setting

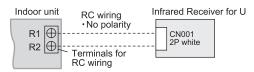
- When more than 1 receiver is installed in the same room, setting addresses prevents interference.
- For how to change addresses of infrared remote controller, see the operating instructions of infrared remote controller.

Infrared remote controller address display	Address ALL	Address 1	Address 2	Address 3	Address 4	Address 5	Address 6	ON/OFF States
	Receiving is possible at all address positions.	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	OFF ON

3. Wiring

Connect the wires from the receiver to the terminals for RC wiring on the indoor unit.

Wiring Diagram



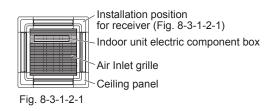
NOTE

- The receiver can be connected to any indoor unit for operation.
- Multiple infrared remote controllers cannot be used simultaneously for a single indoor unit.
- · Wiring connected via remote controllers is prohibited.
- Also see "1-11-1. Installation Instructions of Indoor Unit" or refer to the "Installation Instructions" supplied with the wired remote controller when performing remote control with the main and sub remote controllers or group-controlling.

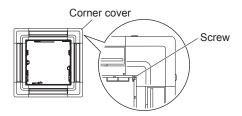
4. Mounting

See "2. Setting" before mounting.

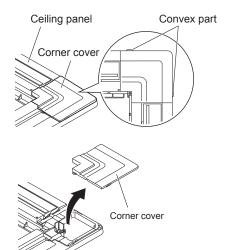
- The receiver can be installed only on the corner shown in Fig. 8-3-1-2-1. Consider the direction where the panel is attached to the indoor unit.
- 1 Remove the air inlet grille



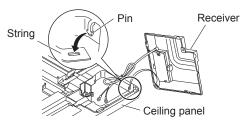
2 Remove the screw fixing the corner cover.



3 Place a hand on both the right and left convex parts of the corner cover to remove it.



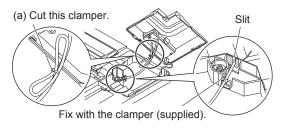
4 Hang the string of the receiver on the pin of the ceiling panel.



5 Pass the wiring from the receiver section into the slit.

For more wiring information, see the section "Wiring".

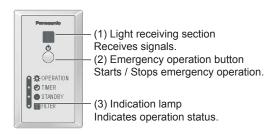
- 6 Fix the wiring with the clamper (supplied) while leaving enough length of wiring to remove the receiver.
 - When attaching the filter chamber, cut the clamper (a), and attach the receiver.



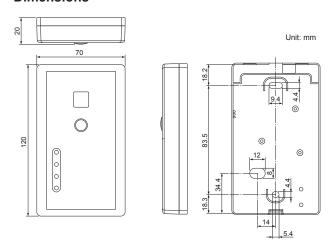
- 7 Fit the receiver to the ceiling panel so the 5 claws are properly set, and fix it with the removed screw.
 - Make sure the wire is not caught.
 - Refer to the installation instructions supplied with the panel.

8-3-1-3. CZ-RWRC3

Part Names



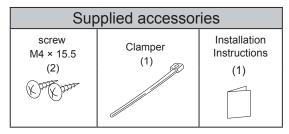
Dimensions



Installation Precautions

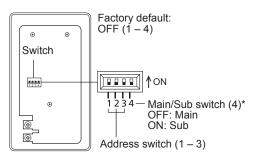
- Install at the height of 1 to 1.5 m from the floor.
- · Install vertically against the floor.
- When installing more than 1 remote controller next to each other, keep distance of 5 mm on the right and left and 50 mm on top and bottom.
- · Install the receiver at a location with suitable temperature and humidity for using.

1. Accessories



2. Setting

Remove the cover from the receiver when performing the settings.



* When using the infrared remote controller and the wired remote controller in combination, set the wired remote controller to [Main].

Address Setting

- When more than 1 receiver is installed in the same room, setting addresses prevents interference.
- For how to change addresses of infrared remote controller, see "8-2-1. Operating Instructions".

Infrared remote controller address display	Address ALL	Address 1	Address 2	Address 3	Address 4	Address 5	Address 6	ON/OFF States
	Receiving is possible at all address positions.	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	OFF ON

3. Wiring

Connect the wires from the receiver to the terminals for RC wiring on the indoor unit.

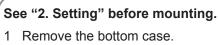
Wiring Diagram Indoor unit RC wiring (field supply) No polarity Infrared Receiver for C 1 2 Terminals for RC wiring

- Type of wiring: Use cables of 0.5 to 1.25 mm².
- Total wire length: 400 m or less (The wire length between indoor units should be 200 m or less.)
- Number of connectable units Remote controller and receiver: Max. 2, Indoor unit: Max. 8

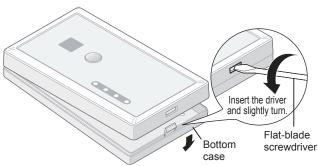
Note

- The receiver can be connected to any indoor unit for operation.
- · Wiring connected via remote controllers is prohibited.
- Also see "1-11-1. Installation Instructions of Indoor Unit" or refer to the "Installation Instructions" supplied with the wired remote controller when performing remote control with the main and sub remote controllers or group-controlling.
- Use the field supplied RC wiring with at least 1 mm in thickness of insulation part including the sheath. Regulations on wire diameters differ from locally to locally.
 - For field wiring rules, please refer to your LOCAL ELECTRICAL CODES before beginning.
 - You must ensure that installation complies with relevant rules and regulations.

4. Mounting



Bottom case



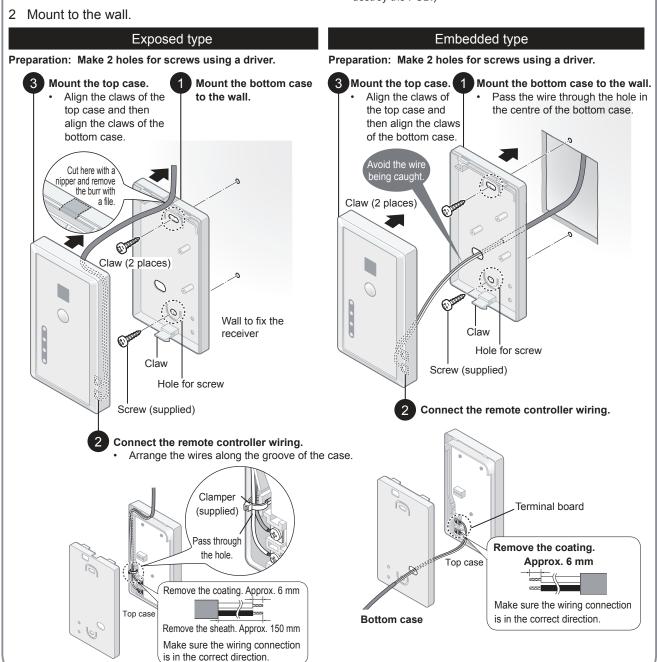
Attention

Mounting the bottom case

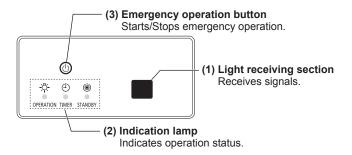
- Tighten the screws securely until the screw heads touch the bottom case.
 (Otherwise, loose screw heads may hit the PCB and cause malfunction when mounting the top case.)
- Do not over-tighten the screws.
 (The bottom case may be deformed, resulting in fall of the unit.)

Connecting the remote control wiring

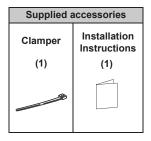
- Arrange the wires as shown in the illustration for ② in step 2, avoiding unnecessary wires being stored in the case. (Caught wires may destroy the PCB.)
- Avoid wires touching parts on the PCB. (Caught wires may destroy the PCB.)



Part Names

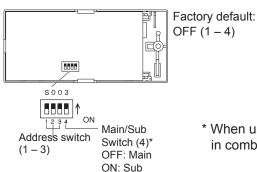


1. Accessories



2. Setting

Remove the cover from the receiver when performing the settings.



* When using the infrared remote controller and the wired remote controller in combination, set the wired remote controller to [Main].

Address Setting

- When more than 1 receiver is installed in the same room, setting addresses prevents interference.
- For how to change addresses of infrared remote controller, see "8-2-1. Operating Instructions".

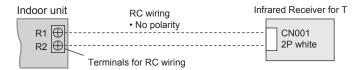
C	nfrared remote controller address display	Address ALL	Address 1	Address 2	Address 3	Address 4	Address 5	Address 6	ON/OFF States
a		Receiving is possible at all address positions.	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	OFF ON

Ω

3. Wiring

Connect the wires from the receiver to the terminals for RC wiring on the indoor unit.

Wiring Diagram



Note

- The receiver can be connected to any indoor unit for operation.
- · Multiple infrared remote controllers cannot be used simultaneously for a single indoor unit.
- · Wiring connected via remote controllers is prohibited.
- Also refer to the "Installation Instructions" supplied with the indoor unit or wired remote controller when performing remote control with the main and sub remote controllers or group-controlling.

4. Mounting

See "2. Setting" before mounting.

1 Remove the screw, and slide the latch to open the air-intake grille. (Fig. 8-3-1-4-1)

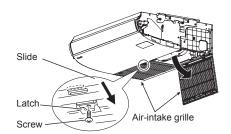


Fig. 8-3-1-4-1

2 Insert a flat-head screwdriver from the side, and remove the cover while pressing down on the two cover tabs. (Fig. 8-3-1-4-2)

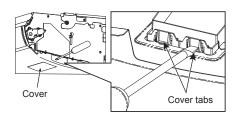


Fig. 8-3-1-4-2

- 3 Route the remote control wiring through the panel, and mount the receiver into the panel holes. (Fig. 8-3-1-4-3)
- 4 Route the remote control wiring through the adjustable clamper, and draw in the wire from the remote control wiring inlet to the inside of the indoor unit. (Fig. 8-3-1-4-3) (See Fig. 8-3-1-4-4 for how to loosen the adjustable clamper.)

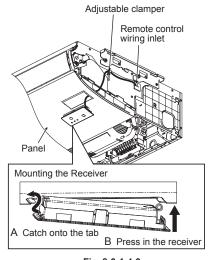


Fig. 8-3-1-4-3

- 5 Route the remote control wiring through the three saddles, and draw the wire into the electrical box. (Fig. 8-3-1-4-4)
 - * Draw in the power wire and remote control wiring separately.

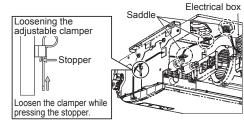


Fig. 8-3-1-4-4

- 6 Connect the remote control wiring to the terminal board, route through the clamper (supplied) to the holding clamp, and secure the remote control wiring. (Fig. 8-3-1-4-5)
- 7 Mount the side cover, and close the air-intake grille.
 - For more information about wiring and test runs, see "3. Wiring" and "8-3-3. Test Operation".

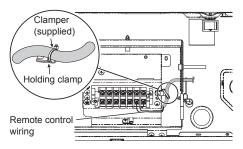


Fig. 8-3-1-4-5

■ Removing and Mounting the Side Cover

Removing the side cover

Remove the side cover mounting screw, and slide the side cover to the front side (direction of arrow in Fig. 8-3-1-4-6) to remove.

Mounting the side cover

Slide in the side cover from the indoor unit front side, mount to the latch tabs, and secure using the side cover mounting screw.

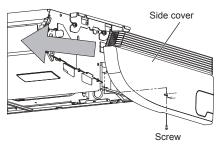
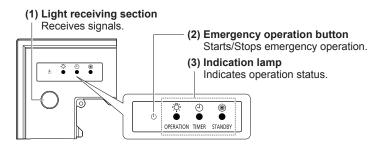


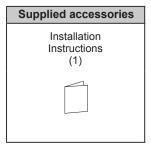
Fig. 8-3-1-4-6

8-3-1-5. CZ-RWRY3

Part Names

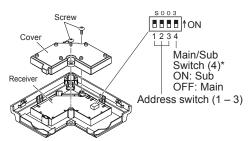


1. Accessories



2. Setting

Before installing the receiver, check the settings of the receiver address switches. Remove the cover from the receiver when performing the settings.



* When using the receiver and wired remote controller in combination, set the receiver to [Sub].

Address Setting

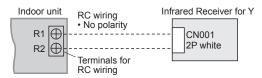
- When more than 1 receiver is installed in the same room, setting addresses prevents interference.
- For how to change addresses of infrared remote controller, see the operating instructions of infrared remote controller.
- · Settings are all off at the time of shipping.

Infrared remote controller address display	Address ALL	Address 1	Address 2	Address 3	Address 4	Address 5	Address 6	ON/OFF States
address switch	Receiving is possible at all address positions.	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	OFF ON

3. Wiring

Connect the wires from the receiver to the terminals for RC wiring on the indoor unit.

Wiring Diagram



NOTE

- The receiver can be connected to any indoor unit for operation.
- Multiple infrared remote controllers cannot be used simultaneously for a single indoor unit.
- · Wiring connected via remote controllers is prohibited.
- Also see "1-11-1. Installation Instructions of Indoor Unit" or refer to the "Installation Instructions" supplied with the wired remote controller when performing remote control with the main and sub remote controllers or group-controlling.

4. Mounting

See "2. Setting" before mounting.

- The receiver can be installed only on the corner shown in Fig. 8-3-1-5-1. Consider the direction where the panel is attached to the indoor unit.
- 1 Remove the air inlet grille

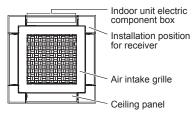
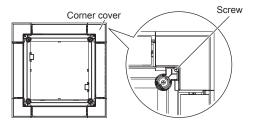
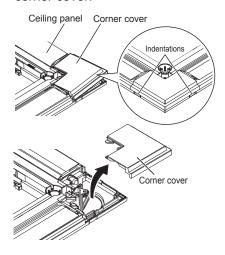


Fig. 8-3-1-5-1

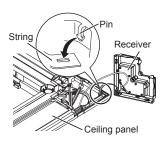
2 Remove the screw fixing the corner cover



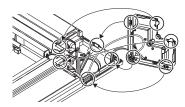
3 Put your hands into the indentations on the left and right of the ceiling panel and remove the corner cover.



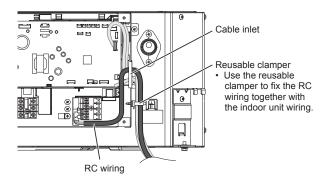
4 Hang the string of the receiver on the pin of the ceiling panel.



- 5 Fit the receiver to the ceiling panel so the 5 claws are properly set, and fix it with the removed screw.
 - · Make sure the wire is not caught.
 - Refer to the installation instructions supplied with the panel.



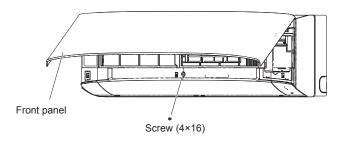
6 Pass the RC wiring through the cable inlet and connect to the terminals for RC wiring.



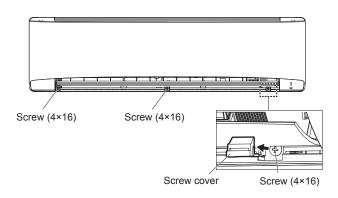
8-3-2. When Using Wireless Remote Controller Instead of Wired Remote Controller 8-3-2-1. Wall Mounted Type S-3650PK3E, S-6010PK3E

<Optional parts setting and wiring>

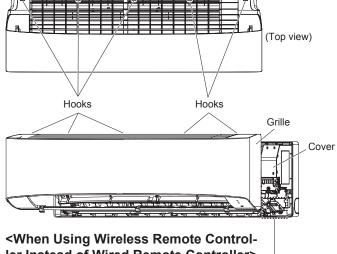
(1) Open the front panel and remove the screw (×1). Then close the panel.



(2) Open the flap and then disengage the screw covers (×3). Then remove the screws (×3).

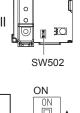


(3) Disengage the hooks holding and lifting both ends of the grille. Remove the cover of electrical component box.



When Using Wireless Remote Controller Instead of Wired Remote Controller>
When the wireless remote controller is to be used, slide the switch (SW502) to the ON position.

 If this setting is not made, an alarm will occur. (The operation lamp on the display blinks.)



Setting status
ON: Wireless: main,
Wired: sub
OFF: Wired: main,
Wireless: sub (at shipment)

ON ON OFF

8-3-3. Test Operation

8-3-3-1. Test run using the an infrared receiver. (Except for Wall Mounted Type)

Preparation: Turn on the circuit breaker of units and then turn the power on. After the power is turned on, infrared remote controller operation is ignored for approx. 1 minute because setting is being made. This is not malfunction. (Contents received while setting are disabled.)

- 1 Press and hold the emergency operation button for 10 seconds.
- 2 The indication lamps (OPERATION, TIMER, STANDBY) blink during test operation.
- 3 To finish test operation, press and hold the emergency operation button for 10 seconds.

ATTENTION

- Do not use this mode for purposes other than the test operation. (To prevent overload of the units)
- Read the installation instructions supplied with the units.
 The test operation can be performed in Heat or Cool mode.
- · Temperature cannot be changed.
- The test operation mode is automatically turned off in 60 minutes. (To prevent continuous test operation)
- Outdoor units do not operate for approx. 3 minutes after the power is turned on or operation is stopped.

8-3-3-2. Test run using the indicator of the indoor unit (Wall Mounted Type)

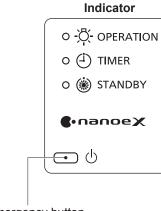
This mode places a heavy load on the machines. Therefore use it only when performing the test run.

(1) Press and hold the Emergency button for 4 seconds or more.

The indication lamps (OPERATION, TIMER, STANDBY) epeatedly light one after the other for 1 second.

- The wireless remote controller address setting mode is set.
- (2) Press and hold the Emergency button for 4 seconds or more again. The indication lamps (OPERATION, TIMER, STANDBY) blink during test operation.
 - The test run can be performed using the HEAT, COOL, or FAN operation mode.
 - The temperature cannot be adjusted when in test run mode.
 - If correct operation is not possible, some of the display lamps (OPERATION, TIMER, STANDBY) will turn ON or OFF.

(Regarding the alarm contents, see 2-3-1-5. Contents of Remote Controller Switch Alarm Display.)



- **Emergency button**
- (3) To stop test operation, press and hold the Emergency button.
 - To prevent continuous test run, this mode includes a timer function that cancels the test run after 60 minutes.

ATTENTION

• The outdoor units will not operate for approximately 3 minutes after the power is turned ON and after operation is stopped.

Self-diagnostics table and detected contents

The "Alarm Display" shown in the table below expresses the alarm contents displayed when the wired remote controller is connected. For how to handle the alarms, see Section 2 "Contents of Remote Controller Switch Alarm Display" and Section 5 "Contents of Remote Controller Switch Alarm Display".

Detected conten	its	Indication lamp on the receiver					
	Alarm Display	OPERATION	TIMER	STANDBY	Blinking		
Communication error in the remote controller circuit	E01–E03, E08–E14, E17, E18	0	•	•			
Communication error either in the in / outdoor operation line or the sub- bus of the outdoor unit	E04–E07, E15, E16, E19–E31	•	•	0			
Operation of indoor protection device	P01, P09–P14	•	0	0	Alternately		
Operation of outdoor protection device	P02–P08, P15–P31	0	•	0	Alternately		
Error in the indoor thermistor	F01–F03, F10–F11	0	0	•	Alternately		
Error in the outdoor thermistor	F04–F09, F12–F28	0	0	0	Alternately		
Error in the indoor EEPROM	F29	0	0	•	Simultaneously		
Error in the outdoor EEPROM	F30, F31	0	0	0	Simultaneously		
Error related to the compressor	H01–H31	•	0	•			
Error in indoor settings	L01–L03, L05–L09	0	•	0	Simultaneously		
Error in outdoor settings	L04, L10–L31	0	0	0	Simultaneously		
Error in the gas heat pump air conditioner	A01–A31	•	0	0	Simultaneously		
Inconsistency in Cooling/h (Including an auto-temp so a model without auto-temp	0	0	0	Alternately			
Oil alarm (Same as opera outdoor protection device	0	•	0	Alternately			
Auto addressing in progre (when it is performed with infrared remote controller	- ○	- 🔘	→ ◎ □	Sequentially			
Test operation		0	0	0	Simultaneously		

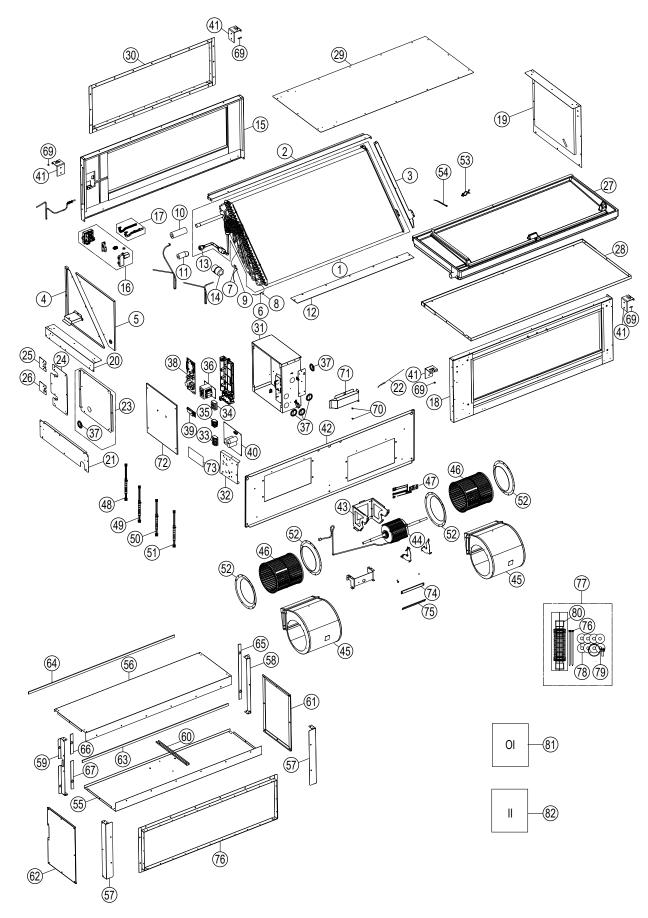
●: OFF ○: ON (Illuminated) ◎: Blinking (0.5 seconds interval)

9

9. EXPLODED VIEW AND REPLACEMENT PARTS LIST

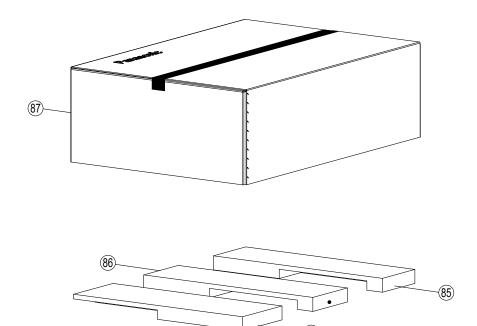
9-1.	Indoor Unit	.9-2
9-2.	Outdoor Unit	9-10

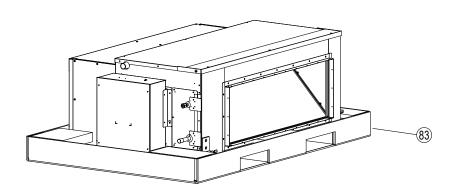
9-1. Indoor Unit S-180PE4R S-200PE4R

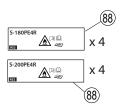


Note

The above exploded view is for the purpose of parts disassembly and replacement. The non-numbered parts are not kept as standard service parts.





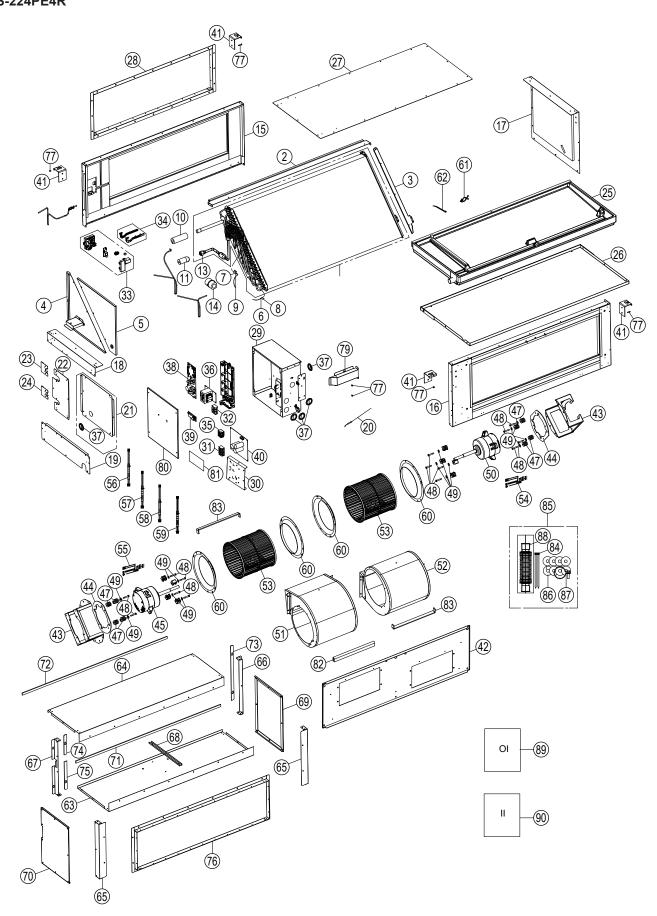


Note The above exploded view is for the purpose of parts disassembly and replacement. The non-numbered parts are not kept as standard service parts.

SAFETY	REF. NO.	PART NAME & DESCRIPTION	QTY.	S-180PE4R	S-200PE4R	REMARK
	1	FIN & TUBE EVAPORATOR ASSY	1	ACXB30K01870	ACXB30C37250	0
	2	EVAPORATOR COVER-COMPLETE	1	ACXD11C00040	ACXD11C00040	
	3	AIR REGULATING PLATE COMPLETE	1	ACXD21C00020	ACXD21C00020	
	4	AIR REGULATING PLATE COMPLETE	1	ACXD21C00070	ACXD21C00070	
	5	AIR REGULATING PLATE COMPLETE	1	ACXD21C00040	ACXD21C00040	
\triangle	6	SENSOR COMPLETE (E1)	1	ACXA50C19180	ACXA50C19180	0
\triangle	7	SENSOR COMPLETE (E2)	1	ACXA50C19190	ACXA50C19190	0
	8	PLATE SPRING (E1)	1	CWH711010	CWH711010	
	9	PLATE SPRING (E2)	1	CWH711013	CWH711013	
	10	ADH. POLY-E. FOAM	1	ACXG12-06940	ACXG12-06940	
	11	ADH. POLY-E. FOAM	1	CWG123069	CWG123168	
	12	AIR REGULATING PLATE COMPLETE	1	ACXD21C00010	-	
	13	UNION NUT	1	CWT251031	CWT251032	
	14	ADH. POLY-E. FOAM	1	CWG123573	CWG123573	
	15	CABINET FRONT PLATE-COMPLETE	1	ACXE06C04820	ACXE06C04820	
<u> </u>	16	GENERATOR COMPLETE	1	ACXH94C01810	ACXH94C01810	0
	17	DUCT-COMPLETE	1	ACXD22C00450	ACXD22C00450	
	18	CABINET REAR PLATE-COMPLETE	1	ACXE02C00840	ACXE02C00840	
	19	CABINET SIDE PLATE-COMPLETE	1	ACXE04C08800	ACXE04C08800	
	20	CABINET SIDE PLATE-COMPLETE	1	ACXE04C04780	ACXE04C04780	
	21	CABINET SIDE PLATE-COMPLETE	1	ACXE04C04790	ACXE04C04790	
\triangle	22	SENSOR-COMPLETE (TA)	1	ACXA50C19200	ACXA50C19200	0
	23	CABINET SIDE PLATE-COMPLETE	1	ACXE04C04800	ACXE04C04800	
	24	EVAPORATOR COVER-COMPLETE	1	ACXD11C00010	ACXD11C00010	
	25	EVAPORATOR COVER-COMPLETE	1	ACXD11C00020	ACXD11C00020	
	26	EVAPORATOR COVER-COMPLETE	1	ACXD11C00031	ACXD11C00031	
	27	DRAIN PAN-COMPLETE	1	ACXH40C01170	ACXH40C01170	
	28	CABINET BOTTOM PLATE-COMPLETE	1	ACXE05C00200	ACXE05C00200	
	29	CABINET TOP PLATE-COMPLETE	1	ACXE03C01370	ACXE03C01370	
	30	DUCT ASS.Y	1	ACXD22K00060	ACXD22K00060	
	31	CONTROL BOARD ASSY	1	ACXH10K03011	ACXH10K03011	
	32	CONTROL BOARD	1	ACXH10-10081	ACXH10-10081	
\triangle	33	TERMINAL BOARD ASSY (POWER SUPPLY)	1	CWA28K1191	CWA28K1191	0
\triangle	34	TERMINAL BOARD ASSY	1	CWA28K1162	CWA28K1162	0
\triangle	35	TERMINAL BOARD	1	ACXA28-00140	ACXA28-00140	0
<u> </u>	36	REACTOR	1	G0C193J00023	G0C193J00023	0
	37	PACKING	5	ACXB81-00030	ACXB81-00030	
\triangle	38	ELECTRONIC CONTROLLER - MAIN	1	ACXA73C96710	ACXA73C96720	0
\triangle	39	ELECTRONIC CONTROLLER - COMMUNICATION	1	ACXA73-47790	ACXA73-47790	0
\triangle	40	ELECTRONIC CONTROLLER - FM POWER	1	ACXA73-47570	ACXA73-47570	0
	41	INSTALLING HOLDER	4	ACXH36-00580	ACXH36-00580	
	42	BULKHEAD-COMPLETE	1	ACXD53-01931	ACXD53-01931	
	43	FAN MOTOR BRACKET	1	ACXD54-04970	ACXD54-04970	
\triangle	44	FAN MOTOR 1 DC 750W 3PH	1	L6CBYYYL0463	L6CBYYYL0463	0
	45	AIR GUIDER B.W.ASSY	2	ACXD32K00400	ACXD32K00400	
	46	BLOWER WHEEL ASSY	2	ACXH01K00370	ACXH01K00370	
\triangle	47	LEAD WIRE CO DC MTR 1	1	ACXA60C98550	ACXA60C98550	0
\triangle	48	LEAD WIRE CO - CN-LM	1	ACXA60C96270	ACXA60C96270	0
\triangle	49	LEAD WIRE CO - DCM2	1	ACXA60C96260	ACXA60C96260	0

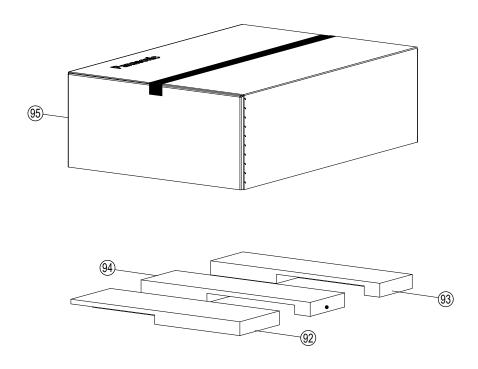
SAFETY	REF. NO.	PART NAME & DESCRIPTION	QTY.	S-180PE4R	S-200PE4R	REMARK
<u> </u>	50	LEAD WIRE CO - S-LINK	1	ACXA60C96240	ACXA60C96240	0
<u> </u>	51	LEAD WIRE CO - CN-MD	1	ACXA60C96250	ACXA60C96250	0
	52	NOZZLE	4	ACXH43-00230	ACXH43-00230	
	53	BAND	2	CWH881123	CWH881123	
	54	BAND	1	CWH881202	CWH881202	
	55	CABINET	1	ACXE00-00720	ACXE00-00720	
	56	CABINET	1	ACXE00-00270	ACXE00-00270	
	57	CABINET	2	ACXE00-00280	ACXE00-00280	
	58	CABINET	1	ACXE00-00290	ACXE00-00290	
	59	CABINET	1	ACXE00-00300	ACXE00-00300	
	60	STABILIZER	1	ACXD20-00030	ACXD20-00030	
	61	CABINET-COMPLETE	1	ACXE00C00430	ACXE00C00430	
	62	CABINET-COMPLETE	1	ACXE00C00440	ACXE00C00440	
	63	POLY-E.FOAM	1	ACXE3A16-1174	ACXE3A16-1174	
	64	POLY-E.FOAM	1	ACXE5A16-1174	ACXE5A16-1174	
	65	ADH. POLY-E. FOAM	1	ACXG12-24410	ACXG12-24410	
	66	ADH. POLY-E. FOAM	1	ACXG12-24420	ACXG12-24420	
	67	ADH. POLY-E. FOAM	1	ACXG12-24430	ACXG12-24430	
	69	SCREW	4	CWH551159	CWH551159	
	70	SCREW	2	CWH55440J	CWH55440J	
	71	TERMINAL COVER COMPLETE	1	ACXH17C00010	ACXH17C00010	
	72	CONTROL BOARD COVER	1	ACXH13-06310	ACXH13-06310	
	73	WIRING DIAGRAM (CS)	1	ACXF20-14820	ACXF20-14820	
	74	POLY-E.FOAM	2	ACXE8A50-316	ACXE8A50-316	
	75	POLY-E.FOAM	2	ACXE5A20-375	ACXE5A20-375	
	76	BAND	2	ACXH88-00090	ACXH88-00090	
	77	ACCESSORY-COMPLETE	1	ACXH82C25450	ACXH82C25450	
	78	PLAIN WASHER	8	XWH10J34FJ	XWH10J34FJ	
	79	WIRE SPRING	1	CWH722003	CWH722003	
	80	FLEXIBLE PIPE	1	CWH851032	CWH851032	
	81	OPERATING INSTRUCTION	1	ACXF55-35840	ACXF55-35840	
	82	INSTALLATION INSTRUCTION	1	ACXF60-50720	ACXF60-50720	
	83	BASE BOARD-COMPLETE	1	ACXG62C02910	ACXG62C02910	
	84	SHOCK ABSORBER	1	ACXG70-09732	ACXG70-09732	
	85	SHOCK ABSORBER	1	ACXG70-09742	ACXG70-09742	
	86	SHOCK ABSORBER	1	ACXG70-10172	ACXG70-10172	
	87	C.C.CASE	1	ACXG50-62940	ACXG50-62940	
	88	MODEL LABEL	4	ACXF87-02520	ACXF87-02530	

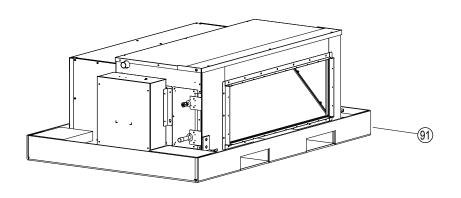
- (Note)
 All parts are supplied from PAPAMY, Malaysia (Vendor Code: 00029488).
 "O" marked parts are recommended to be kept in stock.



Note

The above exploded view is for the purpose of parts disassembly and replacement. The non-numbered parts are not kept as standard service parts.







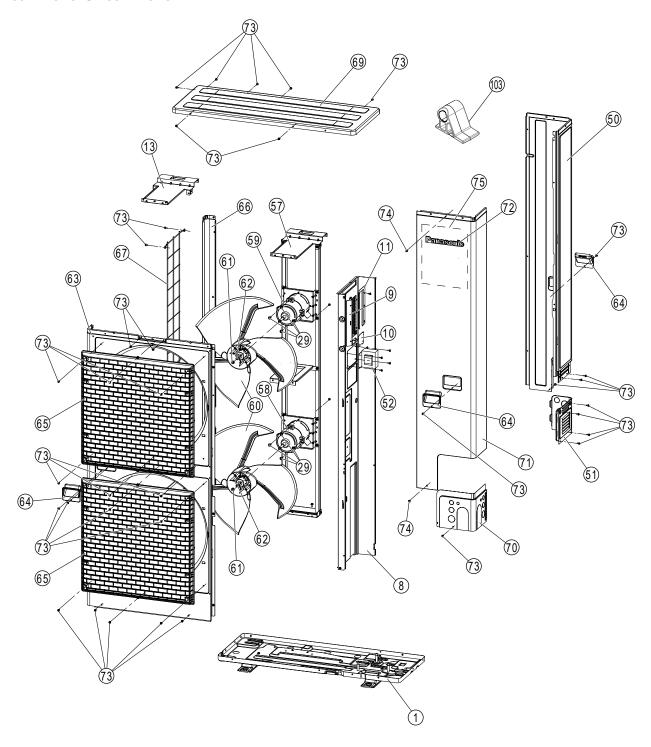
The above exploded view is for the purpose of parts disassembly and replacement. The non-numbered parts are not kept as standard service parts.

SAFETY	REF. NO.	PART NAME & DESCRIPTION	QTY.	S-224PE4R	REMARK
	1	FIN & TUBE EVAPORATOR ASSY	1	ACXB30C37250	0
	2	EVAPORATOR COVER-COMPLETE	1	ACXD11C00040	
	3	AIR REGULATING PLATE COMPLETE	1	ACXD21C00020	
	4	AIR REGULATING PLATE COMPLETE	1	ACXD21C00070	
	5	AIR REGULATING PLATE COMPLETE	1	ACXD21C00040	
<u> </u>	6	SENSOR COMPLETE (E1)	1	ACXA50C19180	0
$\overline{\mathbb{A}}$	7	SENSOR COMPLETE (E2)	1	ACXA50C19190	0
	8	PLATE SPRING (E1)	1	CWH711010	
	9	PLATE SPRING (E2)	1	CWH711013	
	10	ADH. POLY-E. FOAM	1	ACXG12-06940	
	11	ADH. POLY-E. FOAM	1	CWG123168	
	13	UNION NUT	1	CWT251032	
	14	ADH. POLY-E. FOAM	1	CWG123573	
	15	CABINET FRONT PLATE-COMPLETE	1	ACXE06C04820	
	16	CABINET REAR PLATE-COMPLETE	1	ACXE02C00840	
	17	CABINET SIDE PLATE-COMPLETE	1	ACXE04C08800	
	18	CABINET SIDE PLATE-COMPLETE	1	ACXE04C04780	
	19	CABINET SIDE PLATE-COMPLETE	1	ACXE04C04790	
<u>^</u>	20	SENSOR-COMPLETE (TA)	1	ACXA50C19200	0
	21	CABINET SIDE PLATE-COMPLETE	1	ACXE04C04800	
	22	EVAPORATOR COVER-COMPLETE	1	ACXD11C00010	
	23	EVAPORATOR COVER-COMPLETE	1	ACXD11C00020	
	24	EVAPORATOR COVER-COMPLETE	1	ACXD11C00031	
	25	DRAIN PAN-COMPLETE	1	ACXH40C01170	
	26	CABINET BOTTOM PLATE-COMPLETE	1	ACXE05C00200	
	27	CABINET TOP PLATE-COMPLETE	1	ACXE03C01370	
	28	DUCT ASS.Y	1	ACXD22K00060	
	29	CONTROL BOARD ASSY	1	ACXH10K03010	
	30	CONTROL BOARD	1	ACXH10-10080	
\triangle	31	TERMINAL BOARD ASSY (POWER SUPPLY)	1	CWA28K1191	0
$\overline{\mathbb{A}}$	32	TERMINAL BOARD ASSY	1	CWA28K1162	0
<u> </u>	33	GENERATOR COMPLETE	1	ACXH94C01810	0
	34	DUCT-COMPLETE	1	ACXD22C00450	
<u> </u>	35	TERMINAL BOARD	1	ACXA28-00140	0
$\overline{\mathbb{A}}$	36	REACTOR	1	G0C193J00023	0
	37	PACKING	5	ACXB81-00030	
<u> </u>	38	ELECTRONIC CONTROLLER - MAIN	1	ACXA73C96730	0
$\overline{\mathbb{A}}$	39	ELECTRONIC CONTROLLER - COMMUNICATION	1	ACXA73-47790	0
$\overline{\mathbb{A}}$	40	ELECTRONIC CONTROLLER - FM POWER	1	ACXA73-47580	0
	41	INSTALLING HOLDER	4	ACXH36-00580	
	42	BULKHEAD-COMPLETE	1	ACXD53C01420	
	43	FAN MOTOR BRACKET ASSY	2	ACXD54K01810	
	44	FAN MOTOR BRACKET	2	ACXD54-03060	
\triangle	45	FAN MOTOR 2 DC 750W 3PH	1	L6CBYYYL0238	0
	46	ANTI-VIBRATION BUSHING	8	ACXH50-00890	
	47	ANTI-VIBRATION BUSHING	8	ACXH50-00900	
	48	SCREW	16	ACXH55-05160	
	49	PLAIN WASHER	16	XWH8	
\triangle	50	FAN MOTOR 1 DC 750W 3PH	1	L6CBYYYL0237	0

SAFETY	REF. NO.	PART NAME & DESCRIPTION	QTY.	S-224PE4R	REMARK
	51	AIR GUIDER B.W.ASSY	1	ACXD32K00370	
	52	AIR GUIDER B.W.ASSY	1	ACXD32K00380	
	53	BLOWER WHEEL ASSY	2	ACXH01K00370	
	54	LEAD WIRE CO DC MTR 1	1	ACXA60C96220	
	55	LEAD WIRE CO DC MTR 2	1	ACXA60C96230	
	56	LEAD WIRE CO - CN-LM	1	ACXA60C96270	
	57	LEAD WIRE CO - DCM2	1	ACXA60C96260	
	58	LEAD WIRE CO - S-LINK	1	ACXA60C96240	
	59	LEAD WIRE CO - CN-MD	1	ACXA60C96250	
	60	NOZZLE	4	ACXH43-00230	
	61	BAND	1	CWH881123	
	62	BAND	1	CWH881202	
	63	CABINET	1	ACXE00-00260	
	64	CABINET	1	ACXE00-00270	
	65	CABINET	2	ACXE00-00280	
	66	CABINET	1	ACXE00-00290	
	67	CABINET	1	ACXE00-00300	
	68	STABILIZER	1	ACXD20-00030	
	69	CABINET-COMPLETE	1	ACXE00C00430	
	70	CABINET-COMPLETE	1	ACXE00C00440	
	71	POLY-E.FOAM	1	ACXE3A16-1174	
	72	POLY-E.FOAM	1	ACXE5A16-1174	
	73	ADH. POLY-E. FOAM	1	ACXG12-24410	
	74	ADH. POLY-E. FOAM	1	ACXG12-24420	
	75	ADH. POLY-E. FOAM	1	ACXG12-24430	
	76	DUCT ASS.Y	1	ACXD22K00070	
	77	SCREW	4	CWH551159	
	78	SCREW	2	CWH55440J	
	79	TERMINAL COVER COMPLETE	1	ACXH17C00010	
	80	CONTROL BOARD COVER	1	ACXH13-06310	
	81	WIRING DIAGRAM (CS)	1	ACXF20-14830	
	82	POLY-E.FOAM	1	ACXE8A50-316	
	83	POLY-E.FOAM	2	ACXE5A20-375	
	84	BAND	1	ACXH88-00090	
	85	ACCESSORY-COMPLETE	1	ACXH82C25450	
	86	PLAIN WASHER	8	XWH10J34FJ	
	87	WIRE SPRING	1	CWH722003	
	88	FLEXIBLE PIPE	1	CWH851032	
	89	OPERATING INSTRUCTION	1	ACXF55-35840	
	90	INSTALLATION INSTRUCTION	1	ACXF60-50720	
	91	BASE BOARD-COMPLETE	1	ACXG62C02910	
	92	SHOCK ABSORBER	1	ACXG70-09732	
	93	SHOCK ABSORBER	1	ACXG70-09742	
	94	SHOCK ABSORBER	1	ACXG70-10172	
	95	C.C.CASE	1	ACXG50-62940	
	96	MODEL LABEL	4	ACXF87-02540	

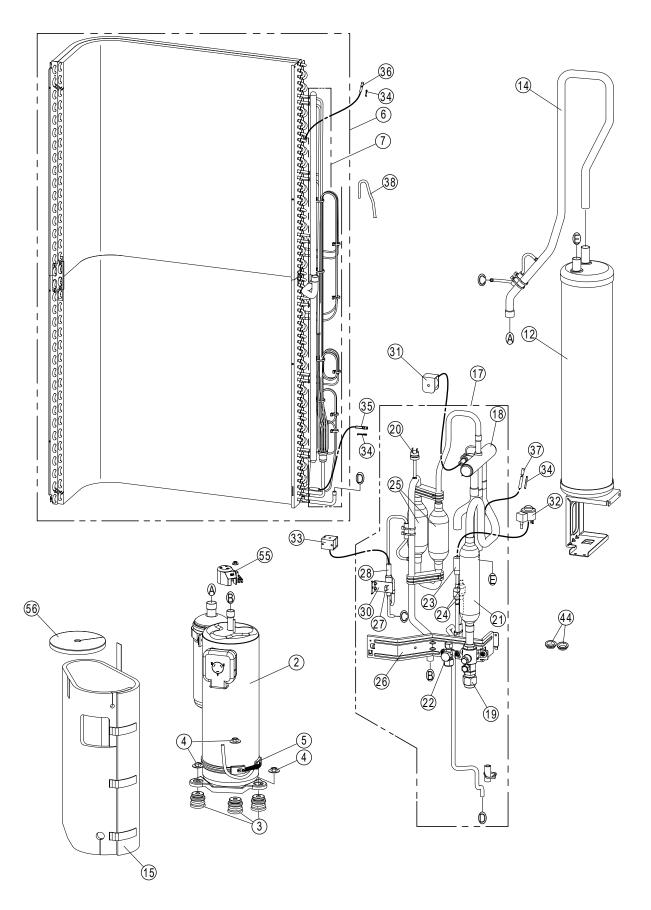
- (Note)All parts are supplied from PAPAMY, Malaysia (Vendor Code: 00029488)."O" marked parts are recommended to be kept in stock.

9-2. Outdoor Unit U-160PZH3R5 U-180PZH3R5

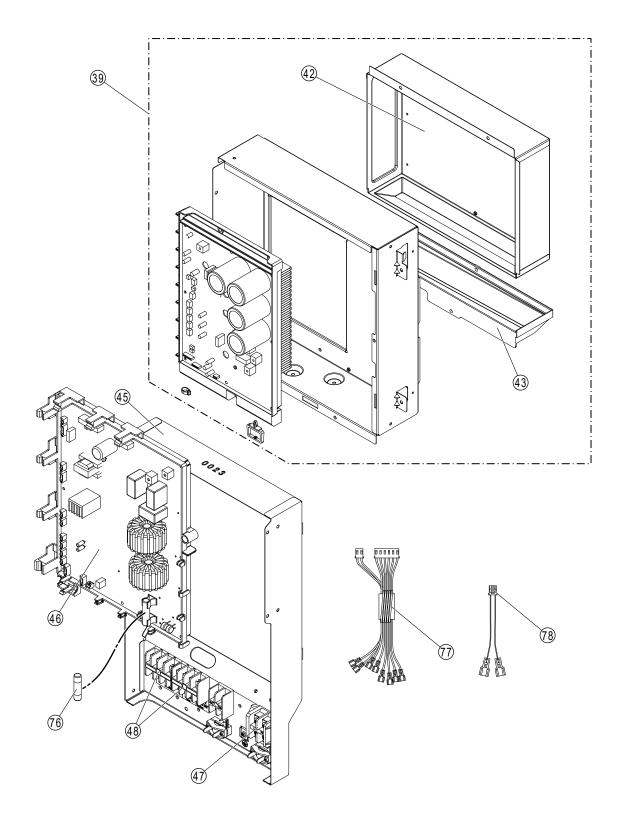


Note

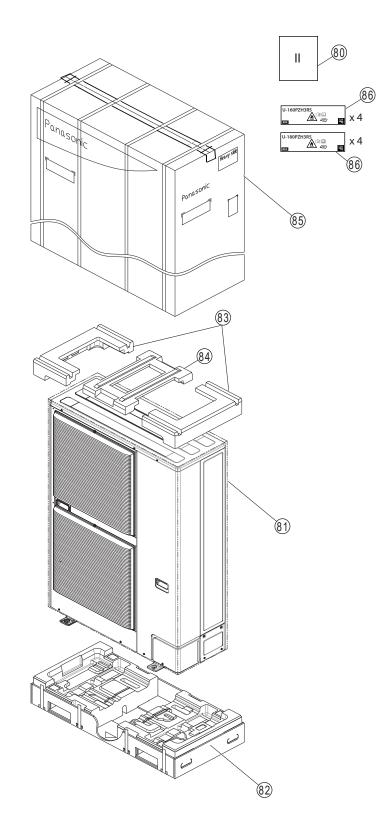
The above exploded view is for the purpose of parts disassembly and replacement. The non-numbered parts are not kept as standard service parts.



Note The above exploded view is for the purpose of parts disassembly and replacement. The non-numbered parts are not kept as standard service parts.



Note The above exploded view is for the purpose of parts disassembly and replacement. The non-numbered parts are not kept as standard service parts.

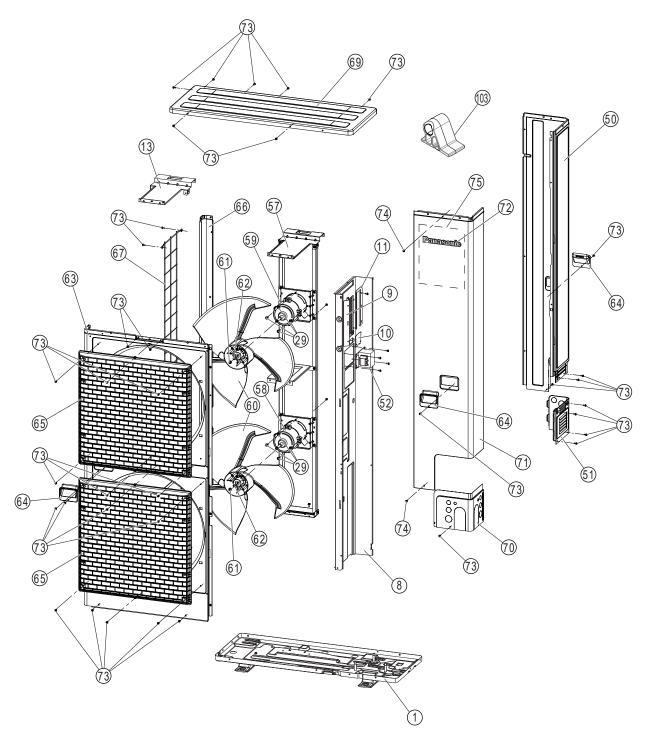


Note The above exploded view is for the purpose of parts disassembly and replacement. The non-numbered parts are not kept as standard service parts.

SAFETY	REF. NO.	PART NAME & DESCRIPTION	QTY	U-160PZH3R5	U-180PZH3R5	REMARK
	1	BASE PAN ASSY	1	ACXD52K03161A	←	0
<u> </u>	2	COMPRESSOR	1	9VD550XBA21	←	0
	3	ANTI-VIBRATION BUSHING	3	CWH50055	←	
	4	NUT	3	CWH561049	←	
\triangle	5	HEATER	1	ACXA34-01530	←	0
	6	FIN & TUBE CONDENSER COMPLETE	1	ACXB32C27880	←	0
	7	MANIFOLD TUBE ASSY	1	ACXT07K00250	←	
	8	SOUND-PROOF BOARD	1	ACXH15-04200	←	
	9	PARTICULAR PIECE	1	CWD934083	←	
	10	PARTICULAR PIECE	1	CWD934094	←	
	11	PARTICULAR PLATE	1	ACXD90-00620	←	
	12	ACCUMULATOR	1	ACXB13-01130	←	
	13	PARTICULAR PLATE	1	CWD912683	←	
	14	TUBE ASSY	1	ACXT00-56330	←	
	15	SOUND PROOF MATERIAL	1	ACXG30-08950	←	
	17	TUBE ASSY-COMPLETE	1	ACXT00C45810	←	
	18	4-WAYS VALVE	1	ACXB00-01530	←	0
	19	3-WAYS VALVE (GAS)	1	CWB011859	←	0
<u> </u>	20	PRESSURE SWITCH	1	ACXA10-00640	←	0
	21	DISCHARGE MUFFLER	1	ACXB12-01890	←	
	22	3-WAYS VALVE (LIQUID)	1	CWB011645	←	
	23	EXPANSION VALVE	1	CWB051049	←	
	24	STRAINER	2	CWB111076	←	
	25	DISCHARGE MUFFLER	2	ACXB12-01900	←	
	26	PARTICULAR PLATE	1	CWD912678	←	
	27	BUSHING	1	CWH511119	←	
	28	2-WAYS VALVE	1	CWB021637	←	0
	29	SCREW	8	CWH551455	←	
	30	PARTICULAR PLATE	1	CWD912682	←	
\triangle	31	V-COIL COMPLETE(HOT2)	1	ACXA43C00560	←	0
$\overline{\mathbb{A}}$	32	V-COIL COMPLETE (MOV)	1	CWA43C2388	←	0
$\overline{\mathbb{A}}$	33	V-COIL COMPLETE (BPV)	1	ACXA43C00570	←	0
	34	PLATE SPRING	3	CWH711010	←	
\triangle	35	THERMISTOR (C1)	1	ACXA50C00370	←	0
\triangle	36	THERMISTOR (C2)	1	ACXA50C00170	←	0
\triangle	37	THERMISTOR (TS)	1	ACXA50C00380	←	0
\triangle	38	THERMISTOR (T0)	1	ACXA50C00390	←	0
\triangle	39	ELEC.CONTROLLER-COMPLETE(HIC)	1	ACXA73C89840	ACXA73C89840	0
<u>/:\</u>	42	PARTICULAR PLATE-ASSY	1	ACXD90K00010	←	
	43	DRAIN PAN	1	CWH401093	←	
	44	BUSHING	2	CWH511089	←	
	45	CONTROL BOARD ASSY	1	ACXH10K03040	<u>←</u>	
\triangle	46	ELEC.CONTROLLER -MAIN	1	ACXA73C89860R	ACXA73C89870R	0
\triangle	47	TERMINAL BOARD ASSY(Power supply)	1	ACXA28K02860	<i>←</i>	0
\triangle	48	TERMINAL BOARD ASSY(Demand connection)	2	ACXA28K02540	<u>←</u>	0
<u>/!\</u>	50	CABINET REAR PLATE-COMPLETE	1	ACXE02C01940	←	
	51	L-SHAPED PLATE	1	CWD601317A	←	
\triangle	52	FIXED INDUCTORS	1	G0C452J00022	<u>←</u>	0
<u> </u>	54	THERMISTOR (TD)	1	ACXA50C00440	←	0

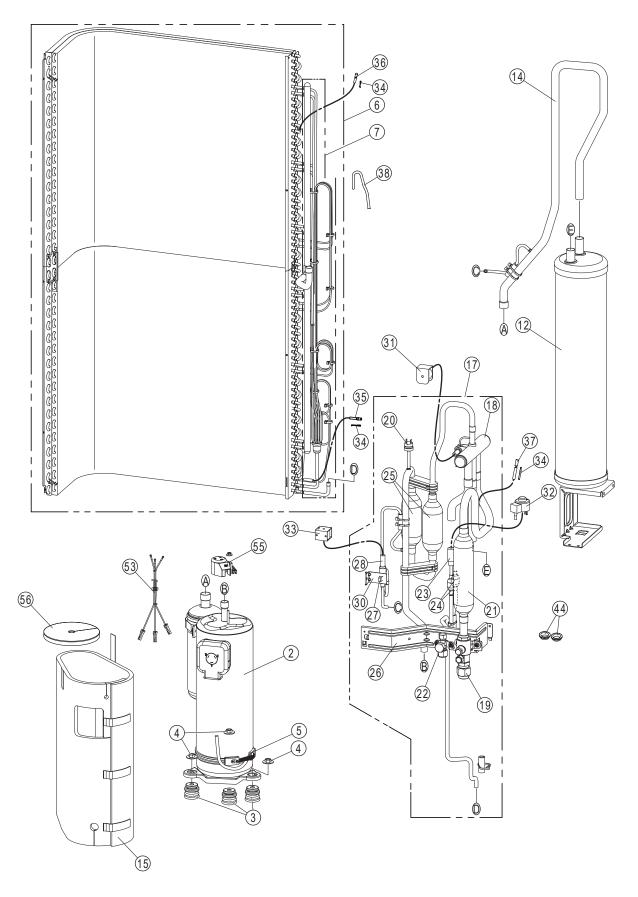
SAFETY	REF. NO.	PART NAME & DESCRIPTION	QTY	U-160PZH3R5	U-180PZH3R5	REMARK
	55	TERMINAL COVER	1	CWH171054	←	
	56	SOUND PROOF MATERIAL	1	ACXG30-08960	←	
	57	FAN MOTOR BRACKET ASSY	1	ACXD54K02590	←	
\triangle	58	FAN MOTOR DC 120W 3PH (TOP)	1	L6CBYYYL0449	←	0
\triangle	59	FAN MOTOR DC 120W 3PH (BOTTOM)	1	L6CBYYYL0450	←	0
	60	FAN ASSY	2	CWH03K1103	←	
	61	NUT	2	CWH561112A	←	
	62	WASHER	2	CWH571075A	←	
	63	CABINET FRONT PLATE	1	ACXE06-01680A	←	
	64	HANDLE	3	CWE161024	←	
	65	DISCHARGE GRILLE	2	ACXE20-01960	←	
	66	CABINET SIDE PLATE	1	CWE041848A	←	
	67	WIRE NET.RESIN NET	1	CWD041210C	←	
	69	CABINET TOP PLATE-COMPLETE	1	ACXE03C00030	←	
	70	L-SHAPED PLATE	1	CWD601316A	←	
	71	CABINET FRONT PLATE-COMPLETE	1	ACXE06C05140	←	
	72	PANASONIC BADGE	1	CWE373439	←	
	73	SCREW	80	CWH55412J	←	
	74	SCREW	2	ACXH55-00120	←	
	75	WIRING DIAGRAM (CU)	1	ACXF22-11030	←	
<u> </u>	76	FUSE 40A 250V	1	K5Y403YA0013	←	0
A	77	LEAD WIRE-COMPLETE(OPT)	1	ACXA60C98560	←	0
\triangle	78	LEAD WIRE-COMPLETE(63PH)	1	CWA68C2379	←	0
	80	INSTALLATION INSTRUCTION	1	ACXF60-52680	←	
	81	BAG	1	ACXG86-06071	←	
	82	BASE BOARD-COMPLETE	1	ACXG62C01431	←	
	83	SHOCK ABSORBER	2	ACXG70-14400A	←	
	84	SHOCK ABSORBER	1	ACXG70-14410A	←	
	85	C.C.CASE	1	ACXG50-63300	←	
	86	MODEL LABEL	4	ACXF87-09220	ACXF87-09230	
	103	HOLDER SENSOR	1	CWH321113	←	

(Note)
All parts are supplied from PAPAMY, Malaysia (Vendor Code: 00029488).
"O" marked parts are recommended to be kept in stock.

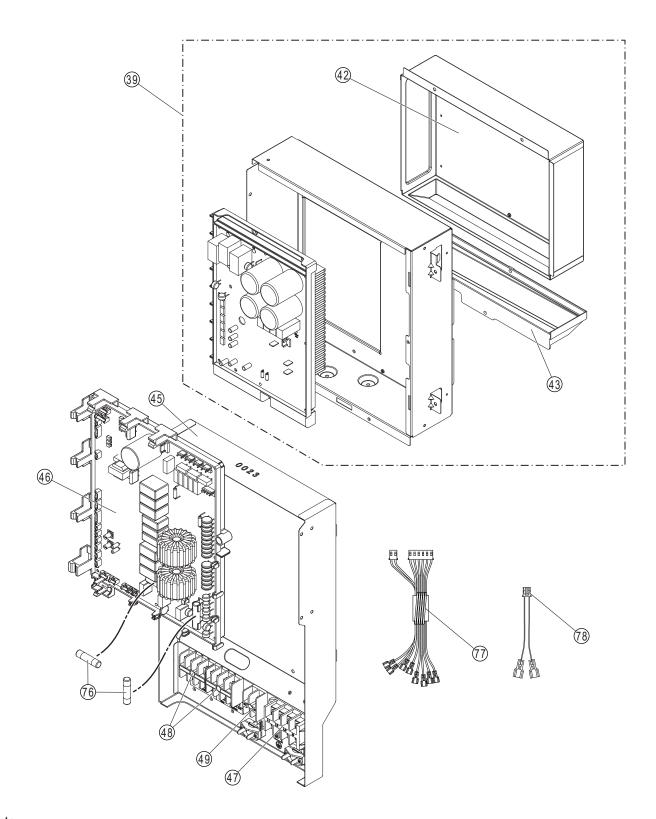


Note

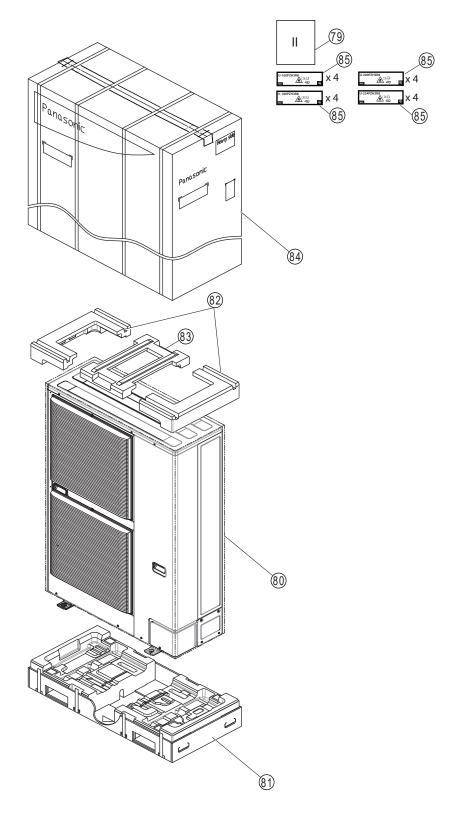
The above exploded view is for the purpose of parts disassembly and replacement. The non-numbered parts are not kept as standard service parts.



Note The above exploded view is for the purpose of parts disassembly and replacement. The non-numbered parts are not kept as standard service parts.



Note The above exploded view is for the purpose of parts disassembly and replacement. The non-numbered parts are not kept as standard service parts.



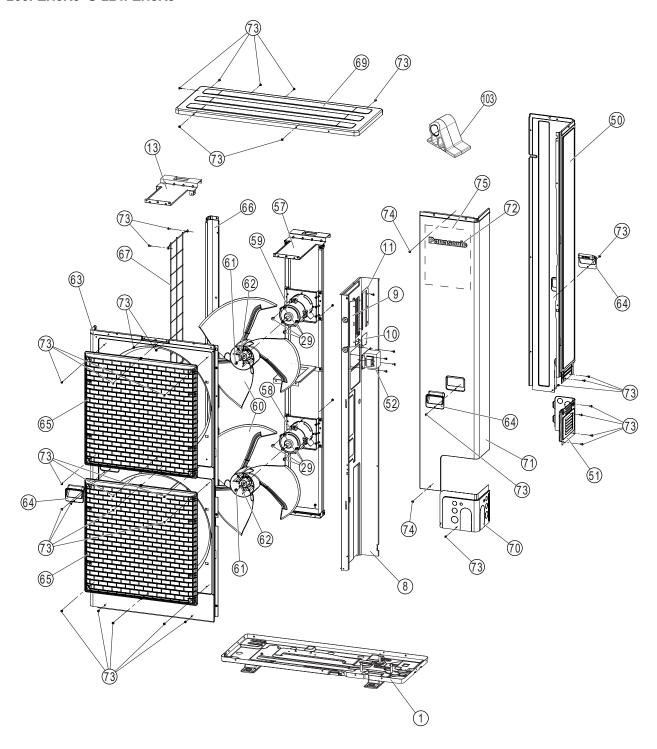
Note The above exploded view is for the purpose of parts disassembly and replacement. The non-numbered parts are not kept as standard service parts.

SAFETY	REF. NO.	PART NAME & DESCRIPTION	QTY.	U-160PZH3R8	U-180PZH3R8	REMARK
	1	BASE PAN ASSY	1	ACXD52K03161A	←	0
<u> </u>	2	COMPRESSOR	1	9VD550XAA21	←	0
	3	ANTI-VIBRATION BUSHING	3	CWH50055	←	
	4	NUT	3	CWH561049	←	
\triangle	5	HEATER	1	ACXA34-01530	←	
	6	FIN & TUBE CONDENSER COMPLETE	1	ACXB32C27880	←	0
	7	MANIFOLD TUBE ASSY	1	ACXT07K00250	←	0
	8	SOUND-PROOF BOARD	1	ACXH15-02860	←	
	9	PARTICULAR PIECE	1	CWD934083	←	
	10	PARTICULAR PIECE	1	CWD934094	←	
	11	PARTICULAR PLATE	1	ACXD90-00620	←	
	12	ACCUMULATOR	1	ACXB13-01130	←	
	13	PARTICULAR PLATE	1	CWD912683	←	
	14	TUBE ASSY	1	ACXT00-56330	←	
	15	SOUND PROOF MATERIAL (COMP. BODY)	1	ACXG30-08950	←	
	17	TUBE ASSY-COMPLETE	1	ACXT00C45810	←	
	18	4-WAYS VALVE	1	ACXB00-01530	←	0
	19	3-WAYS VALVE (GAS)	1	CWB011859	←	0
<u> </u>	20	PRESSURE SWITCH	1	ACXA10-00640	←	0
	21	DISCHARGE MUFFLER	1	ACXB12-01890	←	
	22	3-WAYS VALVE (LIQUID)	1	CWB011645	←	
	23	EXPANSION VALVE	1	CWB051049	←	
	24	STRAINER	2	CWB111076	←	
	25	DISCHARGE MUFFLER	2	ACXB12-01900	←	
	26	PARTICULAR PLATE	1	CWD912678	←	
	27	BUSHING	1	CWH511119	←	
	28	2-WAYS VALVE	1	CWB021637	←	0
	29	SCREW	8	CWH551455	←	
	30	PARTICULAR PLATE	1	CWD912682	←	
<u> </u>	31	V-COIL COMPLETE(HOT2)	1	ACXA43C00560	←	0
\triangle	32	V-COIL COMPLETE (MOV)	1	CWA43C2388	←	0
\triangle	33	V-COIL COMPLETE (BPV)	1	ACXA43C00570	←	0
	34	PLATE SPRING	3	CWH711010	←	
\triangle	35	THERMISTOR (C1)	1	ACXA50C00370	←	0
\triangle	36	THERMISTOR (C2)	1	ACXA50C00170	←	0
$\overline{\mathbb{A}}$	37	THERMISTOR (TS)	1	ACXA50C00380	←	0
\triangle	38	THERMISTOR (T0)	1	ACXA50C00390	←	0
$\overline{\triangle}$	39	ELEC.CONTROLLER-COMPLETE(HIC)	1	ACXA73C89850	ACXA73C89850	0
	42	PARTICULAR PLATE-ASSY	1	ACXD90K00010	←	
	43	DRAIN PAN	1	CWH401093	←	
	44	BUSHING	2	CWH511089	←	
	45	CONTROL BOARD ASSY	1	ACXH10K03040	←	
\triangle	46	ELEC.CONTROLLER -MAIN	1	ACXA73C89880R	ACXA73C96740R	0
\triangle	47	TERMINAL BOARD ASSY(Power supply)	1	ACXA28K02650	←	0
\triangle	48	TERMINAL BOARD ASSY(Demand connection)	2	ACXA28K02540	←	0
${\triangle}$	49	TERMINAL BOARD ASSY(Indoor/outdoor connection)	1	CWA28K1076J	←	0
	50	CABINET REAR PLATE-COMPLETE	1	ACXE02C01940	←	
	51	L-SHAPED PLATE	1	CWD601317A	←	

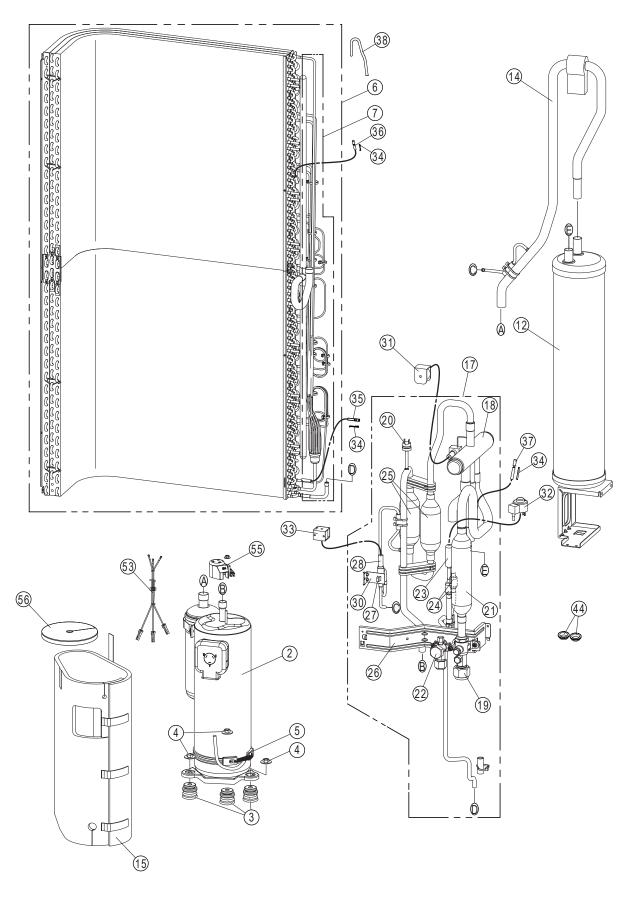
SAFETY	REF. NO.	PART NAME & DESCRIPTION	QTY.	U-160PZH3R8	U-180PZH3R8	REMARK
<u> </u>	53	LEAD WIRE-COMPLETE(CM)	1	ACXA60C99480	←	
<u> </u>	54	THERMISTOR (TD)	1	ACXA50C00440	←	
	55	TERMINAL COVER	1	CWH171054	←	
	56	SOUND PROOF MATERIAL (COMP. TOP)	1	ACXG30-08960	←	
	57	FAN MOTOR BRACKET ASSY	1	ACXD54K02590	←	
\triangle	58	FAN MOTOR DC 120W 3PH (TOP)	1	L6CBYYYL0449	←	0
\triangle	59	FAN MOTOR DC 120W 3PH (BOTTOM)	1	L6CBYYYL0450	←	0
	60	FAN ASSY	2	CWH03K1103	←	
	61	NUT	2	CWH561112A	←	
	62	WASHER	2	CWH571075A	←	
	63	CABINET FRONT PLATE	1	ACXE06-01680A	←	
	64	HANDLE	3	CWE161024	←	
	65	DISCHARGE GRILLE	2	ACXE20-01960	←	
	66	CABINET SIDE PLATE	1	CWE041848A	←	
	67	WIRE NET.RESIN NET	1	CWD041210C	←	
	69	CABINET TOP PLATE-COMPLETE	1	ACXE03C00030	←	
	70	L-SHAPED PLATE	1	CWD601316A	←	
	71	CABINET FRONT PLATE-COMPLETE	1	ACXE06C05140	←	
	72	BADGE	1	CWE373439	←	
	73	SCREW	80	CWH55412J	←	
	74	SCREW	2	ACXH55-00120	←	
	75	WIRING DIAGRAM (CU)	1	ACXF22-11040	←	
\triangle	76	FUSE 30A 500V	2	K5D303YYA059	←	0
\triangle	77	LEAD WIRE-COMPLETE(OPT)	1	ACXA60C99470	←	0
\triangle	78	LEAD WIRE-COMPLETE(63PH)	1	ACXA60C05350	←	0
	79	INSTALLATION INSTRUCTION	1	ACXF60-52680	←	
	80	BAG	1	ACXG86-06071	←	
	81	BASE BOARD-COMPLETE	1	ACXG62C01431	←	
	82	SHOCK ABSORBER	2	ACXG70-14400A	←	
	83	SHOCK ABSORBER	1	ACXG70-14410A	←	
	84	C.C.CASE	1	ACXG50-63300	←	
	85	MODEL LABEL	4	ACXF87-09240	ACXF87-09250	
	103	HOLDER SENSOR	1	CWH321113	←	

- (Note)
 All parts are supplied from PAPAMY, Malaysia (Vendor Code: 00029488).
 "O" marked parts are recommended to be kept in stock.

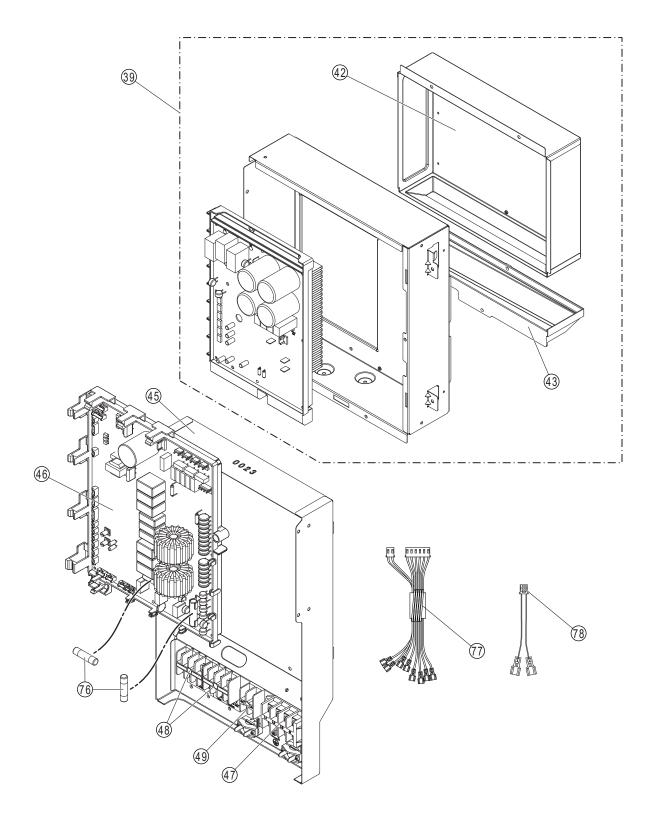
U-200PZH3R8 U-224PZH3R8



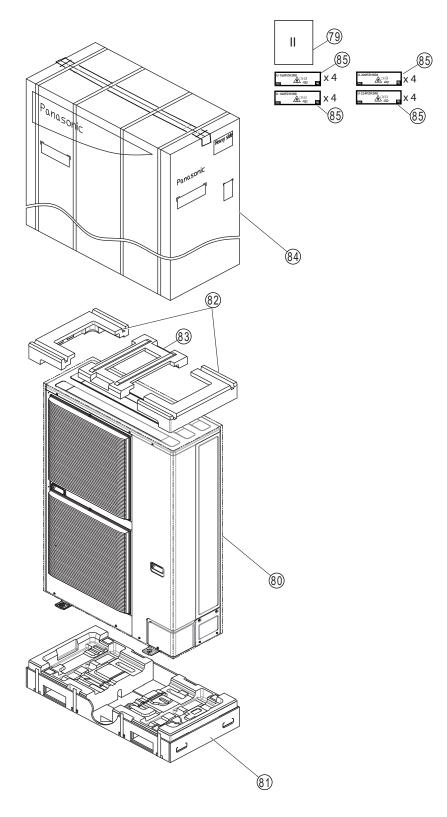
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Note The above exploded view is for the purpose of parts disassembly and replacement. The non-numbered parts are not kept as standard service parts.



Note The above exploded view is for the purpose of parts disassembly and replacement. The non-numbered parts are not kept as standard service parts.



Note The above exploded view is for the purpose of parts disassembly and replacement. The non-numbered parts are not kept as standard service parts.

SAFETY	REF. NO.	PART NAME & DESCRIPTION	QTY.	U-200PZH3R8	U-224PZH3R8	REMARK
	1	BASE PAN ASSY	1	ACXD52K03161A	←	0
<u> </u>	2	COMPRESSOR	1	9VD550XAA21	←	0
	3	ANTI-VIBRATION BUSHING	3	CWH50055	←	
	4	NUT	3	CWH561049	←	
<u> </u>	5	HEATER	1	ACXA34-01530	←	
	6	FIN & TUBE CONDENSER COMPLETE	1	ACXB32C27890	←	0
	7	MANIFOLD TUBE ASSY	1	ACXT07K00240	←	0
	8	SOUND-PROOF BOARD	1	ACXH15-02860	←	
	9	PARTICULAR PIECE	1	CWD934083	←	
	10	PARTICULAR PIECE	1	CWD934094	←	
	11	PARTICULAR PLATE	1	ACXD90-00620	←	
	12	ACCUMULATOR	1	ACXB13-01130	←	
	13	PARTICULAR PLATE	1	CWD912679	←	
	14	TUBE ASSY	1	ACXT00-56230	←	
	15	SOUND PROOF MATERIAL (COMP. BODY)	1	ACXG30-08950	←	
	17	TUBE ASSY-COMPLETE	1	ACXT00C45820	←	
	18	4-WAYS VALVE	1	CWB001112	←	0
	19	3-WAYS VALVE (GAS)	1	CWB011859	←	0
<u> </u>	20	PRESSURE SWITCH	1	ACXA10-00640	←	0
	21	DISCHARGE MUFFLER	1	ACXB12-01890	←	
	22	3-WAYS VALVE (LIQUID)	1	CWB011425	←	
	23	EXPANSION VALVE	1	CWB051095	←	
	24	STRAINER	2	CWB111062	←	
	25	DISCHARGE MUFFLER	2	ACXB12-01900	←	
	26	PARTICULAR PLATE	1	CWD912678	←	
	27	BUSHING	1	CWH511119	←	
	28	2-WAYS VALVE	1	CWB021637	←	0
	29	SCREW	8	CWH551455	←	
	30	PARTICULAR PLATE	1	CWD912682	←	
\triangle	31	V-COIL COMPLETE(HOT2)	1	ACXA43C00520	←	0
$\overline{\mathbb{A}}$	32	V-COIL COMPLETE (MOV)	1	ACXA43C00140	←	0
$\overline{\mathbb{A}}$	33	V-COIL COMPLETE (BPV)	1	ACXA43C00570	←	0
	34	PLATE SPRING	3	CWH711010	←	
\triangle	35	THERMISTOR (C1)	1	ACXA50C00370	←	0
\triangle	36	THERMISTOR (C2)	1	ACXA50C00170	←	0
\triangle	37	THERMISTOR (TS)	1	ACXA50C00380	←	0
\triangle	38	THERMISTOR (T0)	1	ACXA50C00390	←	0
\triangle	39	ELEC.CONTROLLER-COMPLETE(HIC)	1	ACXA73C89850	ACXA73C89850	0
	42	PARTICULAR PLATE-ASSY	1	ACXD90K00010	←	
	43	DRAIN PAN	1	CWH401093	←	
	44	BUSHING	2	CWH511089	←	
	45	CONTROL BOARD ASSY	1	ACXH10K03040	←	
\triangle	46	ELEC.CONTROLLER -MAIN	1	ACXA73C96750R	ACXA73C96760R	0
$\overline{\wedge}$	47	TERMINAL BOARD ASSY(Power supply)	1	ACXA28K02650	←	0
<u> </u>	48	TERMINAL BOARD ASSY(Demand connection)	2	ACXA28K02540	<u>←</u>	0
<u> </u>	49	TERMINAL BOARD ASSY(Indoor/outdoor connection)	1	CWA28K1076J	<u></u>	0
	50	CABINET REAR PLATE-COMPLETE	1	ACXE02C01940	←	-
			1	CWD601317A		
	51	L-SHAPED PLATE		CWDOOISIIA	←	

SAFETY	REF. NO.	PART NAME & DESCRIPTION	QTY.	U-200PZH3R8	U-224PZH3R8	REMARK
<u> </u>	53	LEAD WIRE-COMPLETE(CM)	1	ACXA60C99480	←	
<u> </u>	54	THERMISTOR (TD)	1	ACXA50C00440	←	
	55	TERMINAL COVER	1	CWH171054	←	
	56	SOUND PROOF MATERIAL (COMP.TOP)	1	ACXG30-08960	←	
	57	FAN MOTOR BRACKET ASSY	1	ACXD54K02600	←	
\triangle	58	FAN MOTOR DC 120W 3PH (TOP)	1	L6CBYYYL0449	←	0
<u> </u>	59	FAN MOTOR DC 120W 3PH (BOTTOM)	1	L6CBYYYL0450	←	0
	60	FAN ASSY	2	CWH03K1103	←	
	61	NUT	2	CWH561112A	←	
	62	WASHER	2	CWH571075A	←	
	63	CABINET FRONT PLATE	1	ACXE06-01680A	←	
	64	HANDLE	3	CWE161024	←	
	65	DISCHARGE GRILLE	2	ACXE20-01960	←	
	66	CABINET SIDE PLATE	1	CWE041848A	←	
	67	WIRE NET.RESIN NET	1	CWD041210C	←	
	69	CABINET TOP PLATE-COMPLETE	1	ACXE03C00030	←	
	70	L-SHAPED PLATE	1	CWD601316A	←	
	71	CABINET FRONT PLATE-COMPLETE	1	ACXE06C05140	←	
	72	BADGE	1	CWE373439	←	
	73	SCREW	80	CWH55412J	←	
	74	SCREW	2	ACXH55-00120	←	
	75	WIRING DIAGRAM (CU)	1	ACXF22-11330	←	
\triangle	76	FUSE 30A 500V	2	K5D303YYA059	←	0
\triangle	77	LEAD WIRE-COMPLETE(OPT)	1	ACXA60C99470	←	0
\triangle	78	LEAD WIRE-COMPLETE(63PH)	1	ACXA60C05350	←	0
	79	INSTALLATION INSTRUCTION	1	ACXF60-52680	←	
	80	BAG	1	ACXG86-06071	←	
	81	BASE BOARD-COMPLETE	1	ACXG62C01431	←	
	82	SHOCK ABSORBER	2	ACXG70-14400A	←	
	83	SHOCK ABSORBER	1	ACXG70-14410A	←	
	84	C.C.CASE	1	ACXG50-63300	←	
	85	MODEL LABEL	4	ACXF87-09260	ACXF87-09270	
	103	HOLDER SENSOR	1	CWH321113	-	

- (Note)
 All parts are supplied from PAPAMY, Malaysia (Vendor Code: 00029488).
 "O" marked parts are recommended to be kept in stock.