

Technical & Service Manual

Series PLA Ceiling Cassettes

Indoor unit

[Model Name]

PLA-AE12NL

PLA-AE18NL

PLA-AE24NL

PLA-AE30NL

PLA-AE36NL

PLA-AE42NL

PLA-AE48NL

[Service Ref.]

PLA-AE12NL-U1
PLA-AE18NL-U1
PLA-AE24NL-U1
PLA-AE30NL-U1
PLA-AE36NL-U1
PLA-AE42NL-U1
PLA-AE48NL-U1

Grille model

[Model Name]

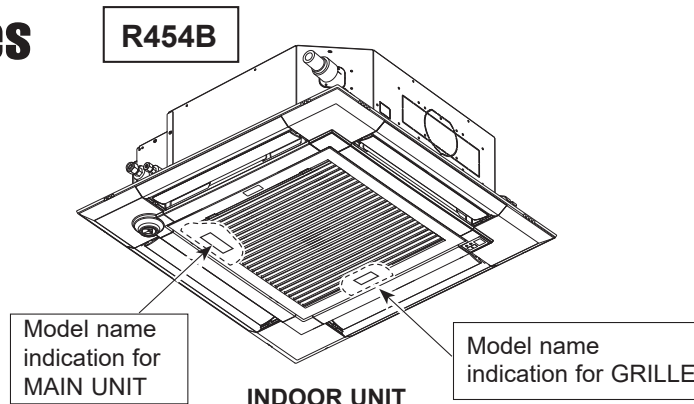
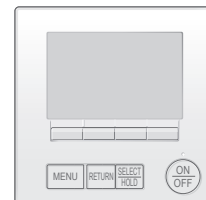
PLP-41EAEU

Revision:

- "T1. SPECIFICATIONS CONNECTED TO OUTDOOR UNITS" has been revised in REVISED EDITION-A.

OCD856 is void.

R454B


**WIRELESS REMOTE
CONTROLLER
(Option)**

**WIRED REMOTE
CONTROLLER
(Option)**

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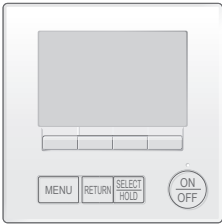
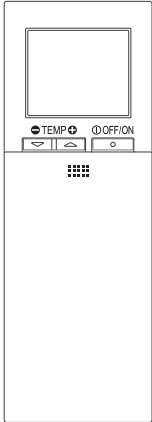
Technical data

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OUTDOOR UNIT SERVICE MANUAL

Model Name	Service Ref.	Service Manual No. / Parts catalog No.
PUZ-AK12/18NL PUY-AK12/18NL PUZ-AH24/30NL PUY-AH24/30NL	PUZ-AK12/18NL-U1 PUY-AK12/18NL-U1 PUZ-AH24/30NL-U1 PUY-AH24/30NL-U1	OCH871/OCB871
PUZ-AK36/42/48NL PUY-AK36/42/48NL	PUZ-AK36/42/48NL-U1 PUY-AK36/42/48NL-U1	OCH869/OCB869
PUZ-AK24/30/36/42/48NLHZ	PUZ-AK24/30/36/42/48NLHZ-U1	OCH870/OCB870
MXZ-SM36/48/60NL MXZ-SM36/42/48NLHZ	MXZ-SM36/48/60NL-U1 MXZ-SM36/42/48NLHZ-U1	OCH819/OCB819
PUMY-L36/48/60NKMU PUMY-HL36/42/48NKMU	PUMY-L36/48/60NKMU PUMY-HL36/42/48NKMU	OCH836/OCB836

■ Remote controller (Optional parts)

Wired remote controller	Wireless remote controller
	

MEANINGS OF SYMBOLS DISPLAYED ON THE UNIT

	WARNING (Risk of fire)	This unit uses a flammable refrigerant. If the refrigerant leaks and comes in contact with fire or a heating part, it will create a harmful gas and there is a risk of fire.
	Read the OPERATION MANUAL carefully before operation.	
	Service personnel are required to carefully read the OPERATION MANUAL and INSTALLATION MANUAL before operation.	
	Further information is available in the OPERATION MANUAL, INSTALLATION MANUAL, and the like.	

2-1. ALWAYS OBSERVE FOR SAFETY

Before obtaining access to terminal, all supply circuits must be disconnected.

2-2. CAUTIONS RELATED TO NEW REFRIGERANT

Cautions for units utilizing refrigerant R454B

Do not use the existing refrigerant piping.

The old refrigerant and lubricant in the existing piping contains a large amount of chlorine which may cause the lubricant deterioration of the new unit.

Make sure that the inside and outside of refrigerant piping is clean and it has no contaminants such as sulfur, oxides, dirt, shaving particles, etc., which are hazard to refrigerant cycle. In addition, use pipes with specified thickness.

Contamination inside refrigerant piping can cause deterioration of refrigerant oil, etc.

Store the piping indoors, and keep both ends of the piping sealed until just before brazing. (Leave elbow joints, etc. in their packaging.)

If dirt, dust or moisture enters into refrigerant cycle, that can cause deterioration of refrigerant oil or malfunction of compressor.

The refrigerant oil applied to flare and flange connections must be ester oil, ether oil or alkylbenzene oil in a small amount.

If large amount of mineral oil enters, that can cause deterioration of refrigerant oil, etc.

Charge refrigerant from liquid phase of gas cylinder.

If the refrigerant is charged from gas phase, composition change may occur in refrigerant and the efficiency will be lowered.

Ventilate the room if refrigerant leaks during operation. If refrigerant comes into contact with a flame, poisonous gases will be released.

Use a vacuum pump with a reverse flow check valve.

Vacuum pump oil may flow back into refrigerant cycle and that can cause deterioration of refrigerant oil, etc.

Use the following tools specifically designed for use with R454B refrigerant.

The following tools are necessary to use R454B refrigerant.

Tools for R454B	
Gauge manifold	Flare tool
Charge hose	Size adjustment gauge
Gas leak detector	Vacuum pump adaptor
Torque wrench	Electronic refrigerant charging scale

Handle tools with care.

If dirt, dust or moisture enters into refrigerant cycle, that can cause deterioration of refrigerant oil or malfunction of compressor.

Do not use a charging cylinder.

If a charging cylinder is used, the composition of refrigerant will change and the efficiency will be lowered.

Use the specified refrigerant only.**Never use any refrigerant other than that specified.**

Doing so may cause a burst, an explosion, or fire when the unit is being used, serviced, or disposed of. Correct refrigerant is specified on name plate of outdoor unit.

If other refrigerant (R22, etc.) is used, chlorine in refrigerant can cause deterioration of refrigerant oil, etc. We will not be held responsible for mechanical failure, system malfunction, unit breakdown or accidents caused by failure to follow the instructions.

[1] Warning for service

- (1) Do not alter the unit.
- (2) For installation and relocation work, follow the instructions in the Installation Manual and use tools and pipe components specifically made for use with refrigerant specified in the outdoor unit installation manual.
- (3) Ask a dealer or an authorized technician to install, relocate and repair the unit.
- (4) This unit should be installed in rooms which exceed the floor space specified in outdoor unit installation manual. Refer to outdoor unit installation manual.
- (5) Install the indoor unit at least 2.5 m above floor or grade level.
For appliances not accessible to the general public.
- (6) Refrigerant pipes connection shall be accessible for maintenance purposes.
- (7) If the air conditioner is installed in a small room or closed room, measures must be taken to prevent the refrigerant concentration in the room from exceeding the safety limit in the event of refrigerant leakage. Should the refrigerant leak and cause the concentration limit to be exceeded, hazards due to lack of oxygen in the room may result.
- (8) Keep gas-burning appliances, electric heaters, and other fire sources (ignition sources) away from the location where installation, repair, and other air conditioner work will be performed.
If refrigerant comes into contact with a flame, poisonous gases will be released.
- (9) When installing or relocating, or servicing the air conditioner, use only the specified refrigerant written on outdoor unit to charge the refrigerant lines.
Do not mix it with any other refrigerant and do not allow air to remain in the lines.
If air is mixed with the refrigerant, then it can be the cause of abnormal high pressure in the refrigerant line, and may result in an explosion and other hazards.
- (10) After installation has been completed, check for refrigerant leaks. If refrigerant leaks into the room and comes into contact with the flame of a heater or portable cooking range, poisonous gases will be released.
- (11) Do not use low temperature solder alloy in case of brazing the refrigerant pipes.
- (12) When performing brazing work, be sure to ventilate the room sufficiently. Make sure that there are no hazardous or flammable materials nearby.
When performing the work in a closed room, small room, or similar location, make sure that there are no refrigerant leaks before performing the work.
If refrigerant leaks and accumulates, it may ignite or poisonous gases may be released.
- (13) Do not install the unit in places where refrigerant may build-up or places with poor ventilation such as a semi-basement or a sunken place in outdoor: Refrigerant is heavier than air, and inclined to fall away from the leak source.
- (14) Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
- (15) The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater).
- (16) Do not pierce or burn.
- (17) Be aware that refrigerants may not contain an odour.
- (18) Pipe-work shall be protected from physical damage.
- (19) The installation of pipe-work shall be kept to a minimum.
- (20) Compliance with national gas regulations shall be observed.
- (21) Keep any required ventilation openings clear of obstruction.
- (22) Servicing shall be performed only as recommended by the manufacturer.
- (23) The appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation.
- (24) Maintenance, service and repair operations shall be performed by authorized technician with required qualification.

[2] Cautions for service

- (1) Perform service after recovering the refrigerant left in unit completely.
- (2) Do not release refrigerant in the air.
- (3) After completing service, charge the cycle with specified amount of refrigerant.
- (4) When performing service, install a filter drier simultaneously.
Be sure to use a filter drier for new refrigerant.

[3] Additional refrigerant charge

When charging directly from cylinder

- (1) Check that cylinder for R454B available on the market is a syphon type.
- (2) Charging should be performed with the cylinder of syphon stood vertically. (Refrigerant is charged from liquid phase.)

[4] Cautions for unit using R454B refrigerant

Basic work procedures are the same as those for conventional units using refrigerant R410A. However, pay careful attention to the following points.

(1) Information on servicing

(1-1) 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 minimized.

For repair to the REFRIGERATING SYSTEM, 1-2 to 1-6 shall be completed prior to conducting work on the system.

(1-2) Work Procedure

Work shall be undertaken under a controlled procedure so as to minimize the risk of a flammable gas or vapour being present while the work is being performed.

(1-3) General work area

All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out. Work in confined spaces shall be avoided.

(1-4) Checking for presence of refrigerant

The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially 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.

(1-5) Presence of fire extinguisher

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.

(1-6) No ignition sources

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.

(1-7) Ventilated area

Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work. A degree of ventilation shall continue during the period that the work is carried out.

The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

(1-8) 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 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.

(1-9) Checks to electrical devices

Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with.

If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used. This shall be reported to the owner of the equipment so all parties are advised.

Initial safety checks shall include:

- that capacitors are discharged: 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.

(2) Repairs to sealed components

Sealed electrical components shall be replace.

(3) Repair to intrinsically safe components

Intrinsically safe components must be replaced.

(4) Cabling

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 for 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.

Electronic leak detectors may be used to detect refrigerant leaks but, in the case of FLAMMABLE REFRIGERANTS, the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.)

Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used.

Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed, and the appropriate percentage of gas (25 % maximum) is confirmed.

Leak detection fluids are also suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode 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. Removal of refrigerant shall be according to 2-4.6.

(6) Removal and evacuation

When breaking into the refrigerant circuit to make repairs - or for any other purpose -conventional procedures shall be used. However, for flammable refrigerants it is important that best practice be 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
 - evacuate
 - continuously flush or purge with inert gas when using flame to open circuit
 - open the circuit

The refrigerant charge shall be recovered into the correct recovery cylinders if venting is not allowed by local and national codes.

For appliances containing flammable refrigerants, the system shall be purged with oxygen-free nitrogen to render the appliance safe for flammable refrigerants. This process might need to be repeated several times.

Compressed air or oxygen shall not be used for purging refrigerant systems.

For appliances containing flammable refrigerants, refrigerants purging shall be achieved by breaking the vacuum in the system with oxygen-free nitrogen 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 charge is used, the system shall be vented down to atmospheric pressure to enable work to take place.

The outlet for the vacuum pump shall not be close to any potential ignition sources, and ventilation shall be 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).
- Extreme care shall be taken not to overfill the REFRIGERATING SYSTEM.

Prior to recharging the system, it shall be pressure-tested with the appropriate purging gas. The system shall be leak-tested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.

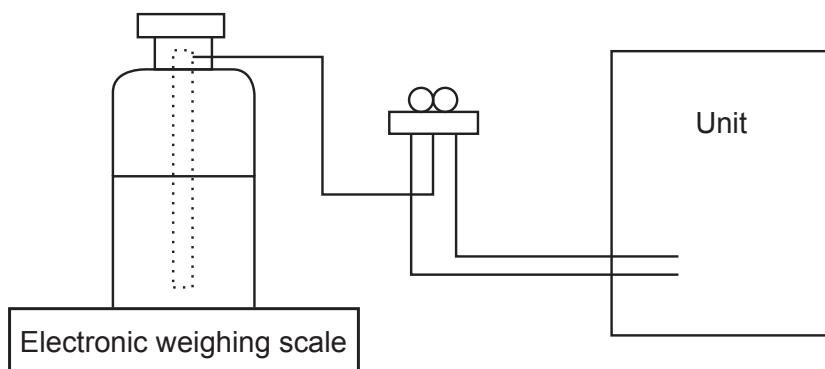
(8) Decommissioning

Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its detail. 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.

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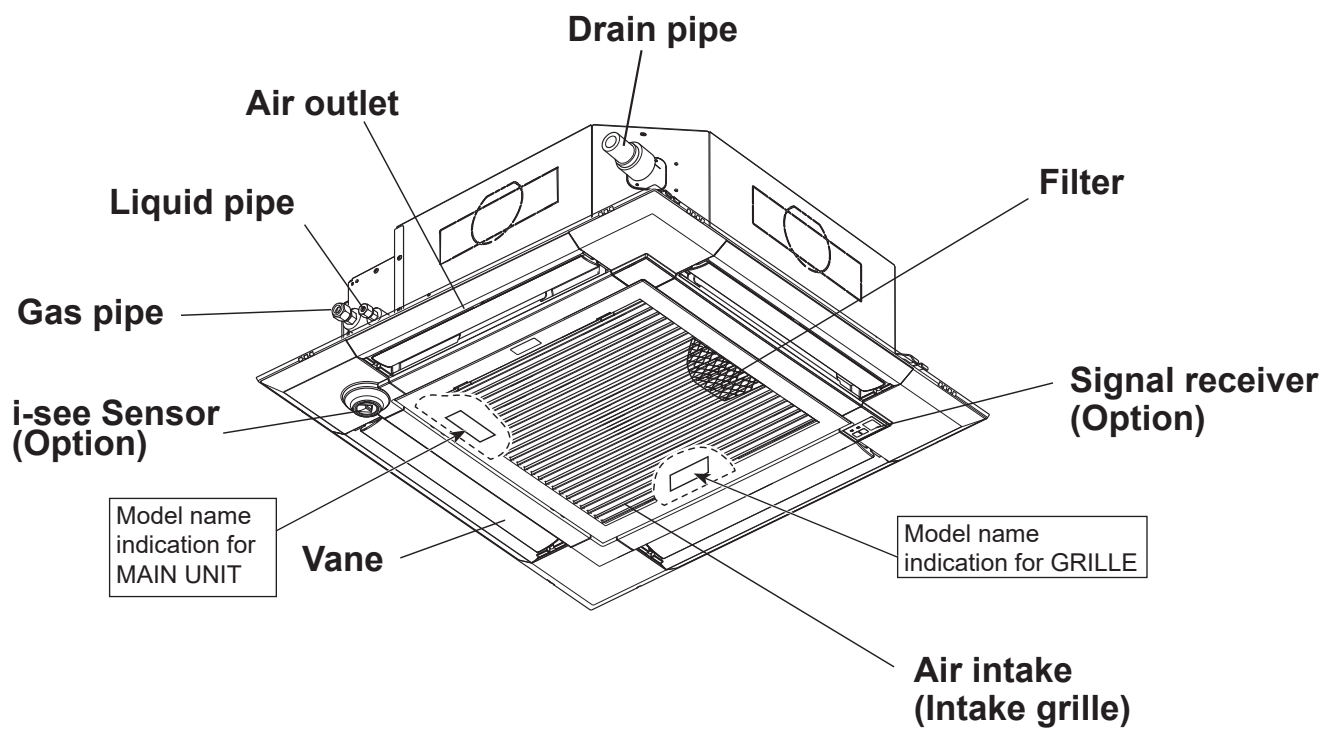
- a) Become familiar with the equipment and its operation.
- b) Isolate system electrically.
- c) Before attempting the procedure, ensure that:
- mechanical handling equipment is available, if required, for handling refrigerant cylinders.
 - all personal protective equipment is available and being used 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.
- (9) Labelling
- Equipment shall be labelled stating that it has been de-commissioned and emptied of refrigerant. The label shall be dated and signed. For appliances containing FLAMMABLE REFRIGERANTS, 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 recommended good practice that all refrigerants are removed safely.
- When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge is available.
- All cylinders to be used are designated for the recovered refrigerant and labelled for that refrigerant (i.e. special cylinders for the recovery of refrigerant). Cylinders shall be complete with pressure-relief valve and associated shut-off valves in good working order.
- Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.
- The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of the flammable refrigerant.
- If in doubt, the manufacturer should be consulted. 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 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.
- When oil is drained from a system, it shall be carried out safely.



[5] Service tools

Use the below service tools as exclusive tools for R454B refrigerant.

No.	Tool name	Specifications
①	Gauge manifold	· Only for R454B
		· Use the existing fitting specifications. (UNF1/2)
		· Use high-tension side pressure of 768.7 PSIG [5.3 MPa.G] or over.
②	Charge hose	· Only for R454B
		· Use pressure performance of 738.2 PSIG [5.09 MPa.G] or over.
③	Electronic weighing scale	—
④	Gas leak detector	· Use the detector for R454B.
⑤	Adaptor for reverse flow check	· Attach on vacuum pump.
⑥	Refrigerant charge base	—
⑦	Refrigerant cylinder	· Only for R454B
		· Cylinder with syphon
⑧	Refrigerant recovery equipment	—



INDOOR UNIT

Service Ref.			PLA-AE12NL-U1	
Power supply (phase, cycle, voltage)			1-phase, 60 Hz, 208/230 V	
	Max. Fuse Size	A	15	
	Min Circuit Ampacity	A	1	
External finish (Panel)			PLP-41EAEU: Munsell 1.0Y 9.2/0.2	
Heat exchanger			Plate fin coil	
Fan	Fan (drive) × No.		Turbo fan (direct) × 1	
	Fan motor output	kW	0.05	
	Fan motor	F.L.A.	0.28	
	Airflow (Low-Medium2-Medium1-High)	CFM (m³/min)	370-460-490-530 (10.5-13-14-15)	
	External static pressure	Pa (mmAq)	0 (direct blow)	
Booster heater		kW	—	
Operation control & Thermostat			Remote controller & built-in	
Noise level (Low-Medium2-Medium1-High)		dB	26-27-29-30	
Field drain pipe O.D.		mm (in.)	32 (1-1/4)	
Dimensions	W	mm (in.)	MAIN UNIT: 840 (33-1/16)	PANEL: 950 (37-13/32)
	D	mm (in.)	MAIN UNIT: 840 (33-1/16)	PANEL: 950 (37-13/32)
	H	mm (in.)	MAIN UNIT: 258 (10-3/16)	PANEL: 40 (1-9/16)
Weight		kg (lbs)	MAIN UNIT: 21 (46)	PANEL: 5 (11)

INDOOR UNIT

Service Ref.			PLA-AE18NL-U1	
Power supply (phase, cycle, voltage)			1-phase, 60 Hz, 208/230 V	
	Max. Fuse Size	A	15	
	Min Circuit Ampacity	A	1	
External finish (Panel)			PLP-41EAEU: Munsell 1.0Y 9.2/0.2	
Heat exchanger			Plate fin coil	
Fan	Fan (drive) × No.		Turbo fan (direct) × 1	
	Fan motor output	kW	0.05	
	Fan motor	F.L.A.	0.28	
	Airflow (Low-Medium2-Medium1-High)	CFM (m³/min)	460-490-570-600 (13-14-16-17)	
	External static pressure	Pa (mmAq)	0 (direct blow)	
Booster heater		kW	—	
Operation control & Thermostat			Remote controller & built-in	
Noise level (Low-Medium2-Medium1-High)		dB	28-29-31-32	
Field drain pipe O.D.		mm (in.)	32 (1-1/4)	
Dimensions	W	mm (in.)	MAIN UNIT: 840 (33-1/16)	PANEL: 950 (37-13/32)
	D	mm (in.)	MAIN UNIT: 840 (33-1/16)	PANEL: 950 (37-13/32)
	H	mm (in.)	MAIN UNIT: 258 (10-3/16)	PANEL: 40 (1-9/16)
Weight		kg (lbs)	MAIN UNIT: 21 (46) PANEL: 5 (11)	

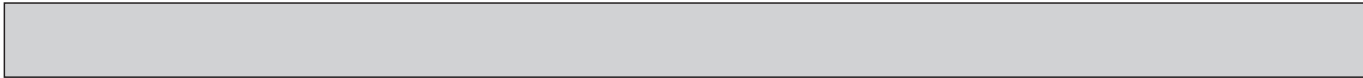
INDOOR UNIT

Service Ref.			PLA-AE24NL-U1	
Power supply (phase, cycle, voltage)			1-phase, 60 Hz, 208/230 V	
	Max. Fuse Size	A	15	
	Min Circuit Ampacity	A	1	
External finish (Panel)			PLP-41EAEU: Munsell 1.0Y 9.2/0.2	
Heat exchanger			Plate fin coil	
Fan	Fan (drive) × No.		Turbo fan (direct) × 1	
	Fan motor output		kW	
	Fan motor		F.L.A.	
	Airflow (Low-Medium2-Medium1-High)		CFM (m³/min)	
	External static pressure		Pa (mmAq)	
Booster heater		kW	—	
Operation control & Thermostat			Remote controller & built-in	
Noise level (Low-Medium2-Medium1-High)		dB	28-30-33-36	
Field drain pipe O.D.		mm (in.)	32 (1-1/4)	
Dimensions	W	mm (in.)	MAIN UNIT: 840 (33-1/16) PANEL: 950 (37-13/32)	
	D	mm (in.)	MAIN UNIT: 840 (33-1/16) PANEL: 950 (37-13/32)	
	H	mm (in.)	MAIN UNIT: 298 (11-3/4) PANEL: 40 (1-9/16)	
Weight		kg (lbs)	MAIN UNIT: 26 (57) PANEL: 5 (11)	

INDOOR UNIT	Service Ref.		PLA-AE30NL-U1	
	Power supply (phase, cycle, voltage)		1-phase, 60 Hz, 208/230 V	
		Max. Fuse Size	A	15
		Min Circuit Ampacity	A	1
	External finish (Panel)		PLP-41EAEU: Munsell 1.0Y 9.2/0.2	
	Heat exchanger		Plate fin coil	
	Fan	Fan (drive) × No.		Turbo fan (direct) × 1
		Fan motor output	kW	0.12
		Fan motor	F.L.A.	0.56
		Airflow (Low-Medium2-Medium1-High)	CFM (m³/min)	570-670-780-880 (16-19-22-25)
		External static pressure	Pa (mmAq)	0 (direct blow)
	Booster heater		kW	—
	Operation control & Thermostat		Remote controller & built-in	
	Noise level (Low-Medium2-Medium1-High)		28-32-35-38	
	Field drain pipe O.D.		mm (in.)	32 (1-1/4)
	Dimensions	W	mm (in.)	MAIN UNIT: 840 (33-1/16) PANEL: 950 (37-13/32)
		D	mm (in.)	MAIN UNIT: 840 (33-1/16) PANEL: 950 (37-13/32)
		H	mm (in.)	MAIN UNIT: 298 (11-3/4) PANEL: 40 (1-9/16)
	Weight		kg (lbs)	MAIN UNIT: 26 (57) PANEL: 5 (11)

INDOOR UNIT	Service Ref.		PLA-AE36NL-U1	
	Power supply (phase, cycle, voltage)		1-phase, 60 Hz, 208/230 V	
		Max. Fuse Size	A	15
		Min Circuit Ampacity	A	2
	External finish (Panel)		PLP-41EAEU: Munsell 1.0Y 9.2/0.2	
	Heat exchanger		Plate fin coil	
	Fan	Fan (drive) × No.		Turbo fan (direct) × 1
		Fan motor output	kW	0.12
		Fan motor	F.L.A.	0.56
		Airflow (Low-Medium2-Medium1-High)	CFM (m³/min)	670-850-1020-1200 (19-24-29-34)
		External static pressure	Pa (mmAq)	0 (direct blow)
	Booster heater		kW	—
	Operation control & Thermostat		Remote controller & built-in	
	Noise level (Low-Medium2-Medium1-High)		32-37-41-44	
	Field drain pipe O.D.		mm (in.)	32 (1-1/4)
	Dimensions	W	mm (in.)	MAIN UNIT: 840 (33-1/16) PANEL: 950 (37-13/32)
		D	mm (in.)	MAIN UNIT: 840 (33-1/16) PANEL: 950 (37-13/32)
		H	mm (in.)	MAIN UNIT: 298 (11-3/4) PANEL: 40 (1-9/16)
	Weight		kg (lbs)	MAIN UNIT: 26 (57) PANEL: 5 (11)

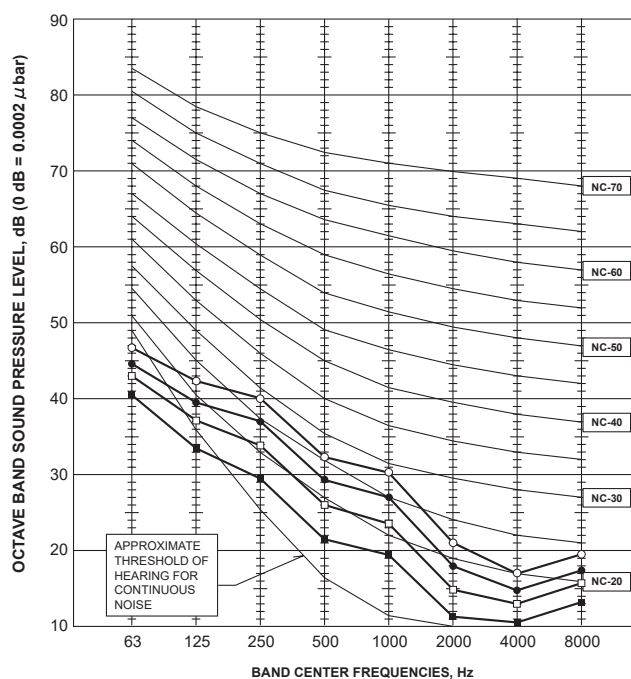
INDOOR UNIT	Service Ref.		PLA-AE42NL-U1	
	Power supply (phase, cycle, voltage)		1-phase, 60 Hz, 208/230 V	
		Max. Fuse Size	A	15
		Min Circuit Ampacity	A	2
	External finish (Panel)		PLP-41EAEU: Munsell 1.0Y 9.2/0.2	
	Heat exchanger		Plate fin coil	
	Fan	Fan (drive) × No.		Turbo fan (direct) × 1
		Fan motor output	kW	0.12
		Fan motor	F.L.A.	0.56
		Airflow (Low-Medium2-Medium1-High)	CFM (m³/min)	740-920-1060-1200 (21-26-30-34)
		External static pressure	Pa (mmAq)	0 (direct blow)
	Booster heater		kW	—
	Operation control & Thermostat		Remote controller & built-in	
	Noise level (Low-Medium2-Medium1-High)		34-38-42-45	
	Field drain pipe O.D.		mm (in.)	32 (1-1/4)
	Dimensions	W	mm (in.)	MAIN UNIT: 840 (33-1/16) PANEL: 950 (37-13/32)
		D	mm (in.)	MAIN UNIT: 840 (33-1/16) PANEL: 950 (37-13/32)
		H	mm (in.)	MAIN UNIT: 298 (11-3/4) PANEL: 40 (1-9/16)
	Weight		kg (lbs)	MAIN UNIT: 26 (57) PANEL: 5 (11)



INDOOR UNIT	Service Ref.		PLA-AE48NL-U1	
	Power supply (phase, cycle, voltage)		1-phase, 60 Hz, 208/230 V	
	Max. Fuse Size	A	15	
	Min Circuit Ampacity	A	2	
	External finish (Panel)		PLP-41EAEU: Munsell 1.0Y 9.2/0.2	
	Heat exchanger		Plate fin coil	
	Fan	Fan (drive) × No.	Turbo fan (direct) × 1	
		Fan motor output	0.12	
		Fan motor	0.56	
		Airflow (Low-Medium2-Medium1-High)	CFM (m³/min) 740-920-1060-1200 (21-26-30-34)	
		External static pressure	Pa (mmAq) 0 (direct blow)	
	Booster heater		kW –	
	Operation control & Thermostat		Remote controller & built-in	
	Noise level (Low-Medium2-Medium1-High)		dB 34-38-42-45	
	Field drain pipe O.D.		mm (in.) 32 (1-1/4)	
	Dimensions	W	mm (in.)	MAIN UNIT: 840 (33-1/16) PANEL: 950 (37-13/32)
		D	mm (in.)	MAIN UNIT: 840 (33-1/16) PANEL: 950 (37-13/32)
		H	mm (in.)	MAIN UNIT: 298 (11-3/4) PANEL: 40 (1-9/16)
	Weight		kg (lbs)	MAIN UNIT: 26 (57) PANEL: 5 (11)

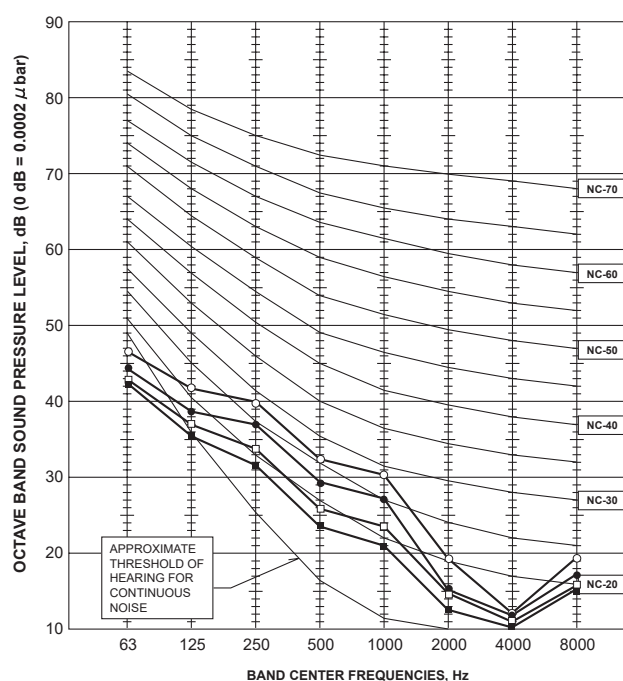
PLA-AE12NL-U1

NOTCH	SPL(dB)	LINE
High	30	○—○
Medium1	29	●—●
Medium2	27	□—□
Low	26	■—■



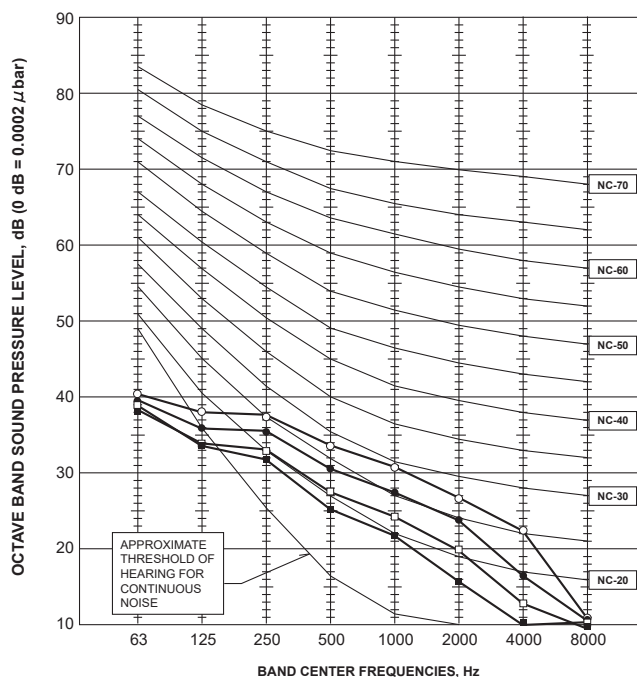
PLA-AE18NL-U1

NOTCH	SPL(dB)	LINE
High	32	○—○
Medium1	31	●—●
Medium2	29	□—□
Low	28	■—■



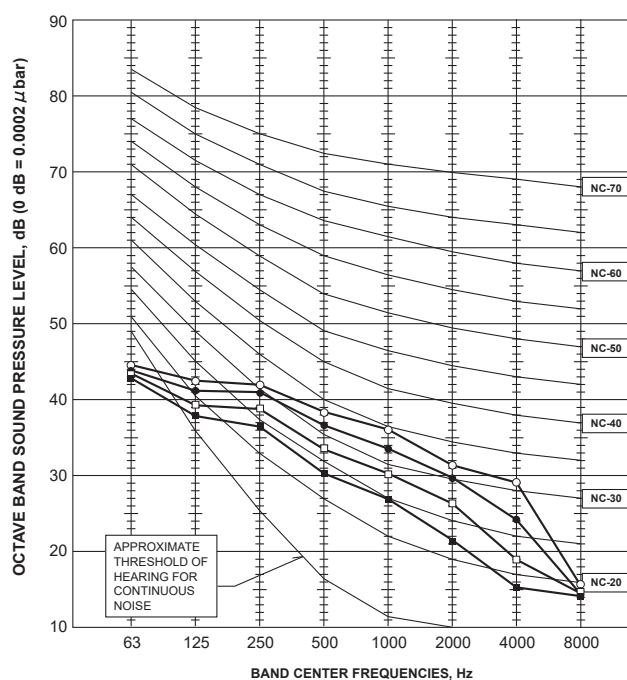
PLA-AE24NL-U1

NOTCH	SPL(dB)	LINE
High	36	○—○
Medium1	33	●—●
Medium2	30	□—□
Low	28	■—■



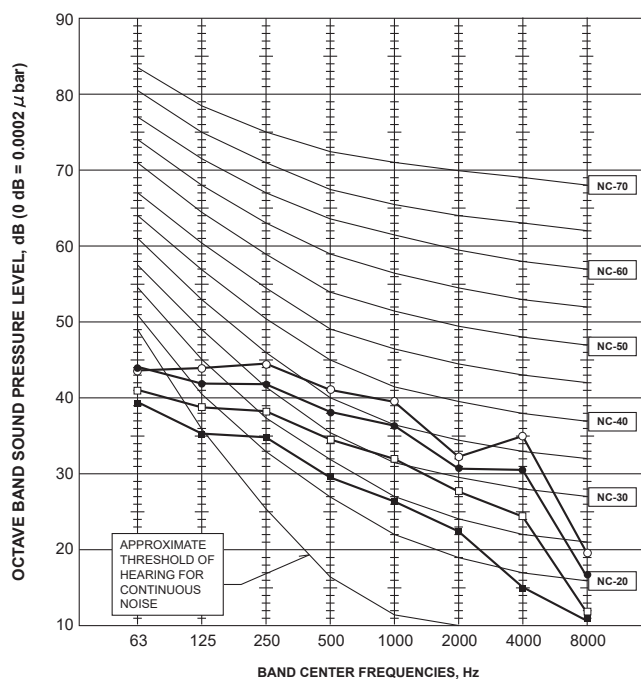
PLA-AE30NL-U1

NOTCH	SPL(dB)	LINE
High	38	○—○
Medium1	35	●—●
Medium2	32	□—□
Low	28	■—■



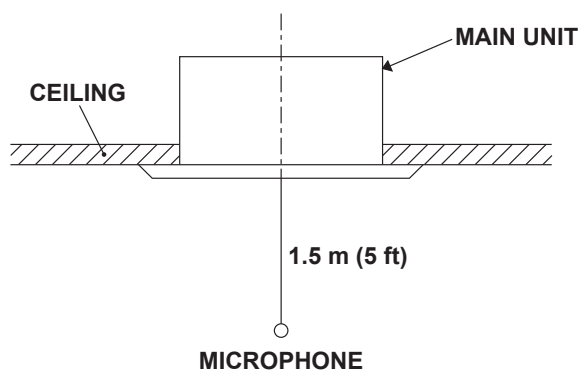
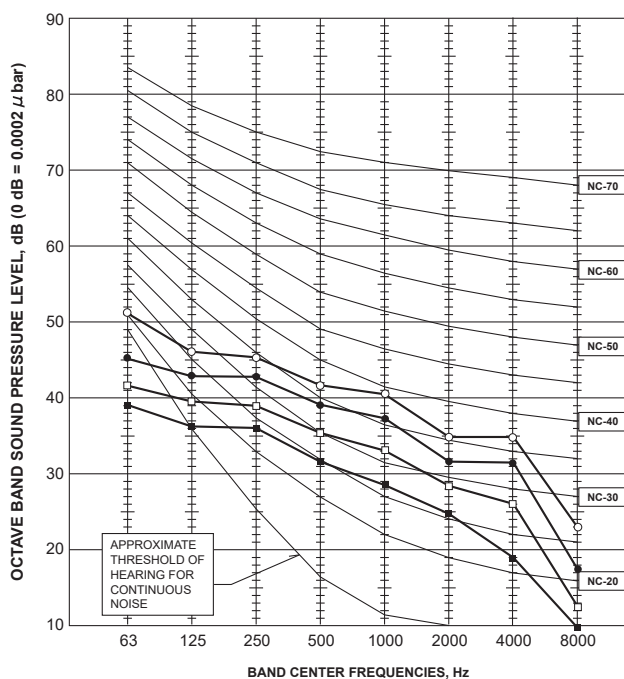
PLA-AE36NL-U1

NOTCH	SPL(dB)	LINE
High	44	○—○
Medium1	41	●—●
Medium2	37	□—□
Low	32	■—■



PLA-AE42NL-U1 PLA-AE48NL-U1

NOTCH	SPL(dB)	LINE
High	45	○—○
Medium1	42	●—●
Medium2	38	□—□
Low	34	■—■



DETAIL DRAWING OF FRESH AIR INTAKE HOLE

400 ± 45 mm
FRESH AIR INTAKE HOLE

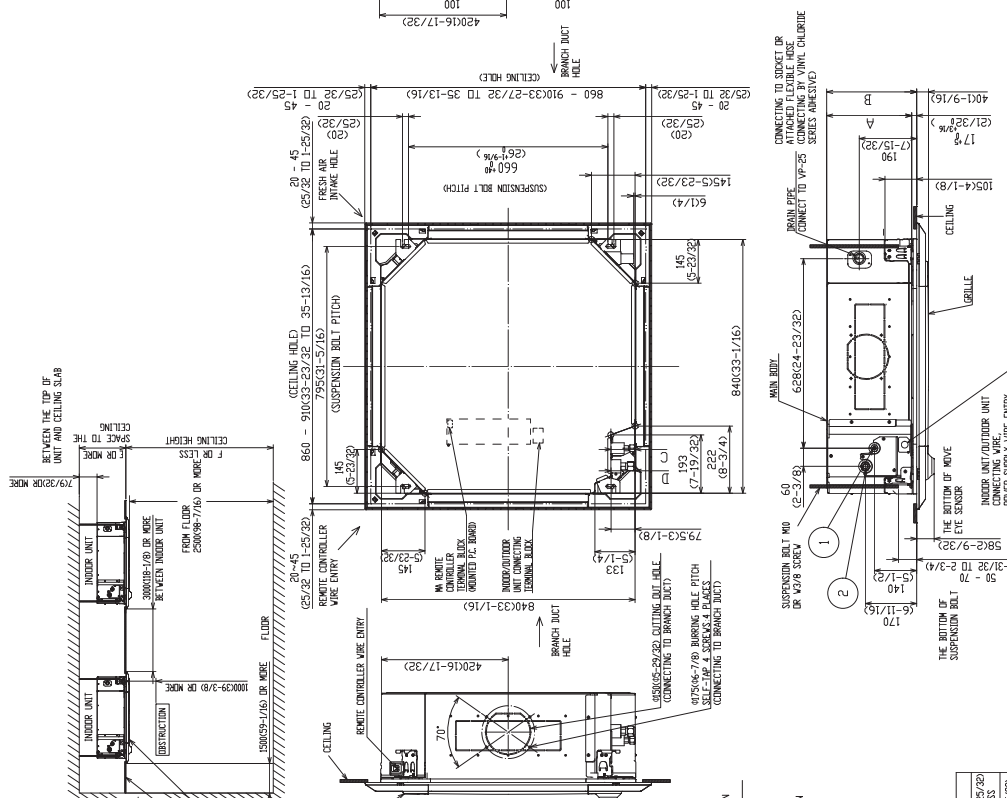
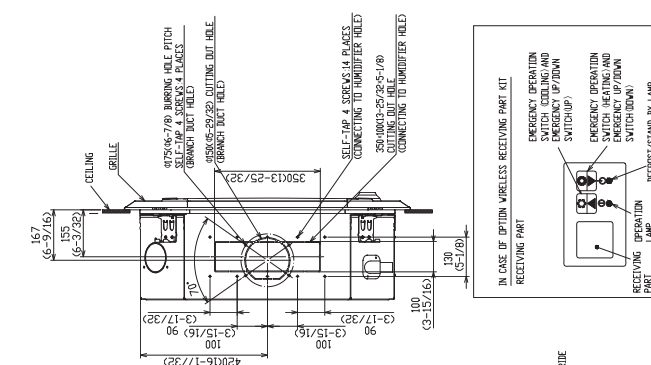
120°

120°

120°

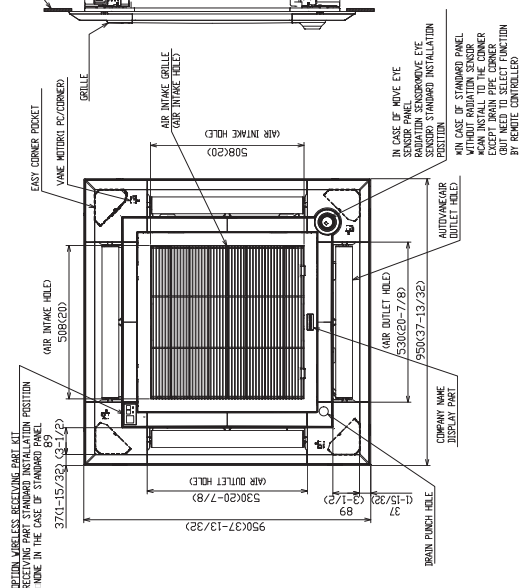
158

CEILING



MULTIPHASE CHOICE: THE GRIFFIN BOLT BY ENGINEERING RESISTANCE SUPPORTING MATERIAL WHICH PREVENTS THE DISPERSEMENT OF THE DISPERSED MATERIALS. THE DISPERSED MATERIALS ARE USED FOR STAVING PREVENTION IN ACCORDANCE WITH THE NECESSARY OF ENHANCEMENT OF THE DISPERSED MATERIALS. THE DISPERSED MATERIALS ARE USED FOR STAVING PREVENTION IN ACCORDANCE WITH THE NECESSARY OF ENHANCEMENT OF THE DISPERSED MATERIALS.

3AS FOR STAVING PREVENTION, PLEASE USE M10 OR M12 OR M14 OR M16 OR M18 OR M20 OR M22 OR M24 OR M26 OR M28 OR M30 OR M32 OR M36 OR M40 OR M44 OR M48 OR M52 OR M56 OR M60 OR M64 OR M68 OR M72 OR M76 OR M80 OR M84 OR M88 OR M92 OR M96 OR M100 OR M104 OR M108 OR M112 OR M116 OR M120 OR M124 OR M128 OR M132 OR M136 OR M140 OR M144 OR M148 OR M152 OR M156 OR M160 OR M164 OR M168 OR M172 OR M176 OR M180 OR M184 OR M188 OR M192 OR M196 OR M200 OR M204 OR M208 OR M212 OR M216 OR M220 OR M224 OR M228 OR M232 OR M236 OR M240 OR M244 OR M248 OR M252 OR M256 OR M260 OR M264 OR M268 OR M272 OR M276 OR M280 OR M284 OR M288 OR M292 OR M296 OR M300 OR M304 OR M308 OR M312 OR M316 OR M320 OR M324 OR M328 OR M332 OR M336 OR M340 OR M344 OR M348 OR M352 OR M356 OR M360 OR M364 OR M368 OR M372 OR M376 OR M380 OR M384 OR M388 OR M392 OR M396 OR M400 OR M404 OR M408 OR M412 OR M416 OR M420 OR M424 OR M428 OR M432 OR M436 OR M440 OR M444 OR M448 OR M452 OR M456 OR M460 OR M464 OR M468 OR M472 OR M476 OR M480 OR M484 OR M488 OR M492 OR M496 OR M500 OR M504 OR M508 OR M512 OR M516 OR M520 OR M524 OR M528 OR M532 OR M536 OR M540 OR M544 OR M548 OR M552 OR M556 OR M560 OR M564 OR M568 OR M572 OR M576 OR M580 OR M584 OR M588 OR M592 OR M596 OR M600 OR M604 OR M608 OR M612 OR M616 OR M620 OR M624 OR M628 OR M632 OR M636 OR M640 OR M644 OR M648 OR M652 OR M656 OR M660 OR M664 OR M668 OR M672 OR M676 OR M680 OR M684 OR M688 OR M692 OR M696 OR M700 OR M704 OR M708 OR M712 OR M716 OR M720 OR M724 OR M728 OR M732 OR M736 OR M740 OR M744 OR M748 OR M752 OR M756 OR M760 OR M764 OR M768 OR M772 OR M776 OR M780 OR M784 OR M788 OR M792 OR M796 OR M800 OR M804 OR M808 OR M812 OR M816 OR M820 OR M824 OR M828 OR M832 OR M836 OR M840 OR M844 OR M848 OR M852 OR M856 OR M860 OR M864 OR M868 OR M872 OR M876 OR M880 OR M884 OR M888 OR M892 OR M896 OR M900 OR M904 OR M908 OR M912 OR M916 OR M920 OR M924 OR M928 OR M932 OR M936 OR M940 OR M944 OR M948 OR M952 OR M956 OR M960 OR M964 OR M968 OR M972 OR M976 OR M980 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M1428 OR M1432 OR M1436 OR M1440 OR M1444 OR M1448 OR M1452 OR M1456 OR M1460 OR M1464 OR M1468 OR M1472 OR M1476 OR M1480 OR M1484 OR M1488 OR M1492 OR M1496 OR M1500 OR M1504 OR M1508 OR M1512 OR M1516 OR M1520 OR M1524 OR M1528 OR M1532 OR M1536 OR M1540 OR M1544 OR M1548 OR M1552 OR M1556 OR M1560 OR M1564 OR M1568 OR M1572 OR M1576 OR M1580 OR M1584 OR M1588 OR M1592 OR M1596 OR M1600 OR M1604 OR M1608 OR M1612 OR M1616 OR M1620 OR M1624 OR M1628 OR M1632 OR M1636 OR M1640 OR M1644 OR M1648 OR M1652 OR M1656 OR M1660 OR M1664 OR M1668 OR M1672 OR M1676 OR M1680 OR M1684 OR M1688 OR M1692 OR M1696 OR M1700 OR M1704 OR M1708 OR M1712 OR M1716 OR M1720 OR M1724 OR M1728 OR M1732 OR M1736 OR M1740 OR M1744 OR M1748 OR M1752 OR M1756 OR M1760 OR M1764 OR M1768 OR M1772 OR M1776 OR M1780 OR M1784 OR M1788 OR M1792 OR M1796 OR M1800 OR M1804 OR M1808 OR M1812 OR M1816 OR M1820 OR M1824 OR M1828 OR M1832 OR M1836 OR M1840 OR M1844 OR M1848 OR M1852 OR M1856 OR M1860 OR M1864 OR M1868 OR 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M2760 OR M2764 OR M2768 OR M2772 OR M2776 OR M2780 OR M2784 OR M2788 OR M2792 OR M2796 OR M2800 OR M2804 OR M2808 OR M2812 OR M2816 OR M

CAPACITY OF EACH MODEL AS FOLLOWING
PI A-AFNI -11:12/18/24/30/36/42/48

PLA-AEM	①	②	A	B	C	D	E	F
12~18	REFRIGERANT PPE-6.75 FLARED CONNECTION 1/4"	REFRIGERANT PPE127 FLARED CONNECTION 1/2"	241	298	76	76.5	26500-7/16/550017-25/32	DR LESS
24~48	REFRIGERANT PPE-9.92 FLARED CONNECTION 3/8"	REFRIGERANT PPE15.88 FLARED CONNECTION 3/4"	281	298	79.5	79.5	305122	4500177-5/32

[LEGEND]

SYMBOL	NAME	SYMBOL	NAME
I.B	INDOOR CONTROLLER BOARD	TB4	TERMINAL BLOCK (INDOOR/OUTDOOR CONNECTING LINE)
CN2L	CONNECTOR (LOSSNAY)	TB5, TB6	TERMINAL BLOCK (REMOTE CONTROLLER TRANSMISSION LINE)
CN32	CONNECTOR (REMOTE SWITCH)	TH1	ROOM TEMP. THERMISTOR (0°C / 15kΩ, 25°C / 5.4kΩ DETECT)(32°F / 15kΩ, 77°F / 5.4kΩ DETECT)
CN41	CONNECTOR (HA TERMINAL-A)	TH2	PIPE TEMP. THERMISTOR/LIQUID (0°C / 15kΩ, 25°C / 5.4kΩ DETECT)(32°F / 15kΩ, 77°F / 5.4kΩ DETECT)
CN51	CONNECTOR (CENTRALLY CONTROL)	TH5	COND./EVA. TEMP. THERMISTOR (0°C / 15kΩ, 25°C / 5.4kΩ DETECT)(32°F / 15kΩ, 77°F / 5.4kΩ DETECT)
CN105	CONNECTOR (IT TERMINAL)	R.B	WIRED REMOTE CONTROLLER
F1	FUSE (T6.3AL250V)		
LED1	POWER SUPPLY (I.B) 208/230V AC 60Hz		
LED2	POWER SUPPLY (R.B)		
LED3	TRANSMISSION (INDOOR-OUTDOOR)		
SW1	SWITCH (MODEL SELECTION) Refer to <Table 1>		
SW2	SWITCH (CAPACITY CODE) Refer to <Table 2>		
SW5	SWITCH (FUNCTION SETTING) Refer to <Table 3>		
SWE	CONNECTOR (EMERGENCY OPERATION)		
DP	DRAIN PUMP		
FS	DRAIN FLOAT SWITCH		
MF	FAN MOTOR		
MV	VANE MOTOR		

SYMBOL	NAME
W.B	PCB OF SIGNAL RECEIVER
BZ	BUZZER
LED1	LED (OPERATION INDICATION : GREEN)
LED2	LED (PREPARATION FOR HEATING : ORANGE) [HEAT PUMP ONLY]
RU	RECEIVING UNIT
SW1	EMERGENCY OPERATION (FAN/DOWN)
SW2	EMERGENCY OPERATION (COOL/UP)
MT	i-see Sensor MOTOR

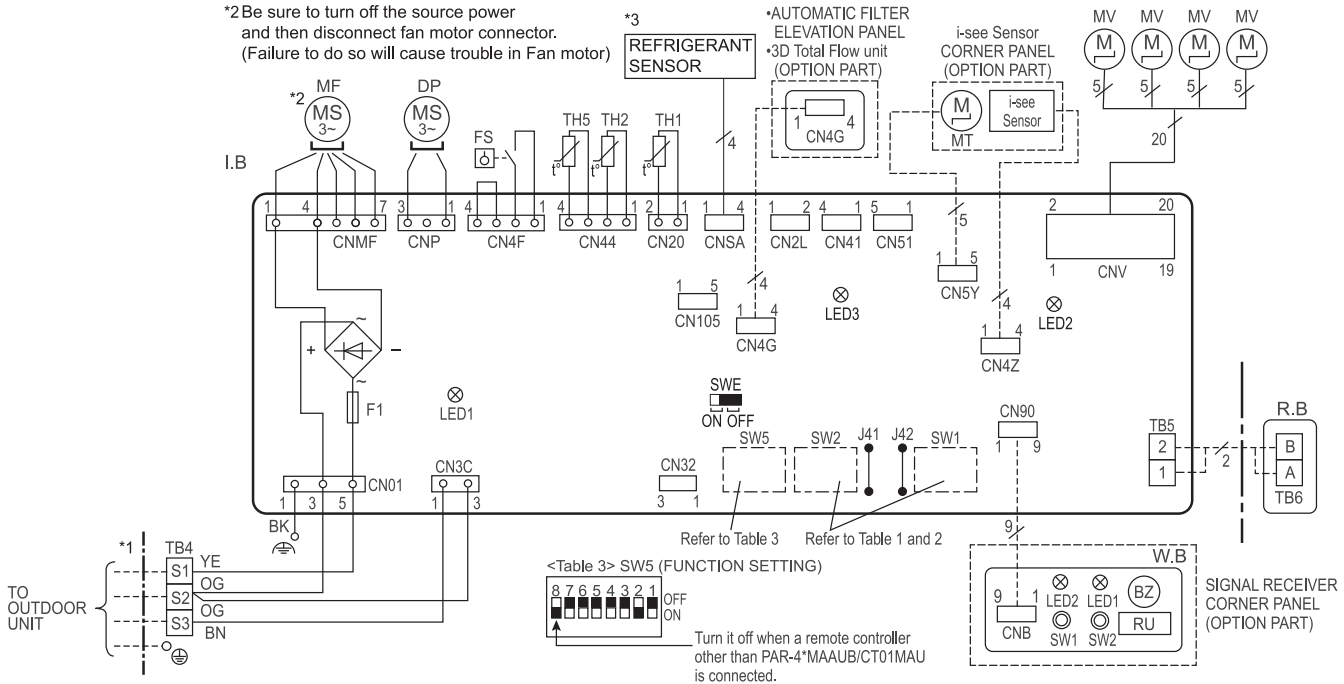
*2 Be sure to turn off the source power and then disconnect fan motor connector.
(Failure to do so will cause trouble in Fan motor)

*3

REFRIGERANT SENSOR

•AUTOMATIC FILTER
ELEVATION PANEL
•3D Total Flow unit
(OPTION PART)

i-see Sensor
CORNER PANEL
(OPTION PART)



<Table 1> SW1 (MODEL SELECTION)

MODEL	Manufacture/Service
PLA-	6 5 4 3 2 1 OFF
AE.NL	ON

<Table 2> SW2 (CAPACITY CODE)

CAPACITY	Manufacture/Service	CAPACITY	Manufacture/Service	CAPACITY	Manufacture/Service
12	5 4 3 2 1 OFF	30	5 4 3 2 1 OFF	48	5 4 3 2 1 OFF
	ON		ON		ON
18	5 4 3 2 1 OFF	36	5 4 3 2 1 OFF		
	ON		ON		
24	5 4 3 2 1 OFF	42	5 4 3 2 1 OFF		
	ON		ON		

The black square (■) indicates a switch position.

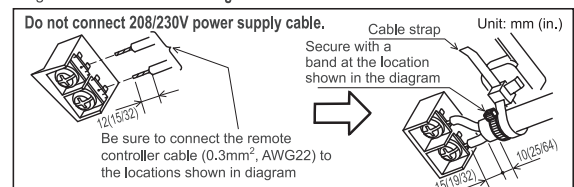
NOTES: 1. Symbols used in wiring diagram are, :terminal block, :connector.

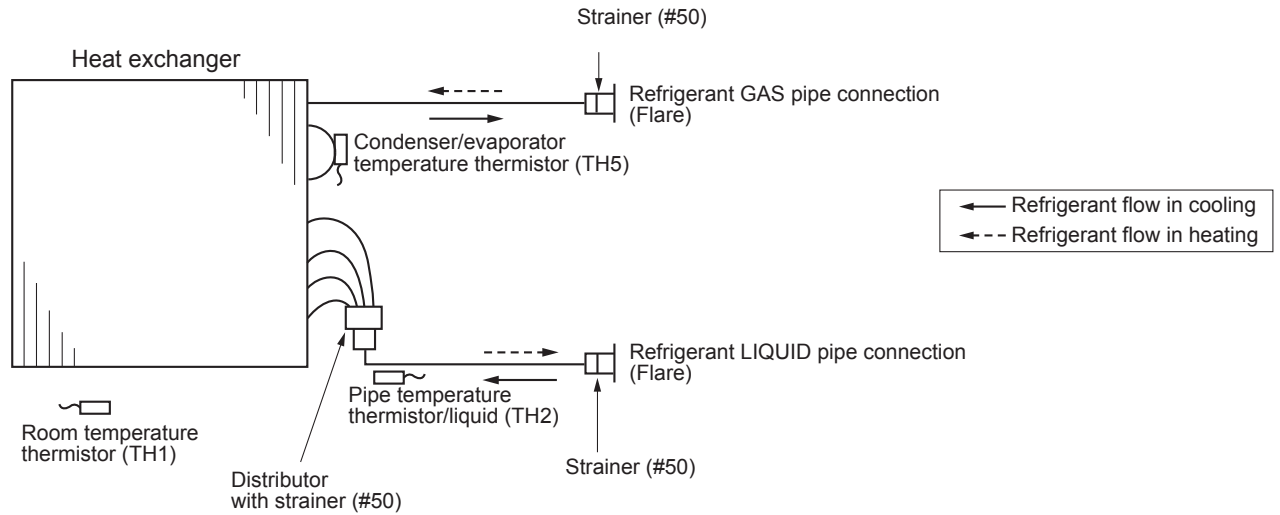
- Indoor and outdoor connecting wires are made with polarities, make wiring matching terminal numbers (S1, S2, S3).
- Since the outdoor side electric wiring may change be sure to check the outdoor unit electric wiring for servicing.
- This diagram shows the wiring of indoor and outdoor connecting wires (specification of 208/230V), adopting superimposed system of power and signal.
- For power supply system of this unit, refer to the caution label located near this diagram.

*1. Use copper supply wires.

Utiliser des fils d'alimentation en cuivre.

<Fig. 1> Caution when connecting the remote controller cable to the terminal block TB5





9-1. TROUBLESHOOTING

<Check code displayed by self-diagnosis and actions to be taken for service (summary)>

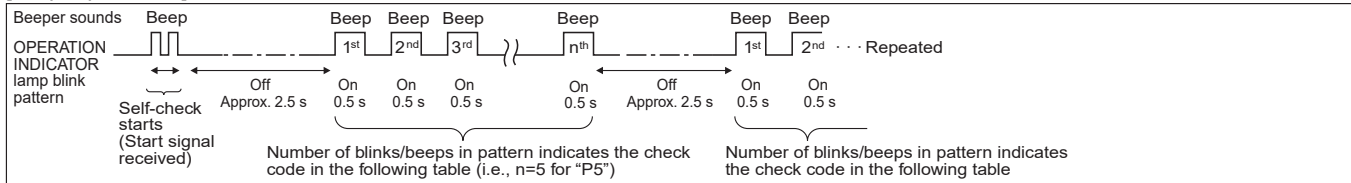
Present and past check codes are logged, and they can be displayed on the wired remote controller and control board of outdoor unit. Actions to be taken for service, which depends on whether or not the trouble is reoccurring in the field, are summarized in the table below. Check the contents below before investigating details.

Unit conditions at service	Check code	Actions to be taken for service (summary)
The trouble is reoccurring.	Displayed	Judge the problem and take a corrective action according to "9-3. SELF-DIAGNOSIS ACTION TABLE".
	Not displayed	Conduct troubleshooting and ascertain the cause of the trouble according to "9-4. TROUBLESHOOTING OF PROBLEMS".
The trouble is not reoccurring.	Logged	①Consider the temporary defects such as the work of protection devices in the refrigerant circuit including compressor, poor connection of wiring, noise, etc. Re-check the symptom, and check the installation environment, refrigerant amount, weather when the trouble occurred, matters related to wiring, etc. ②Reset check code logs and restart the unit after finishing service. ③There is no abnormality in electrical component, controller board, remote controller, etc.
	Not logged	①Re-check the abnormal symptom. ②Conduct troubleshooting and ascertain the cause of the trouble according to "9-4. TROUBLESHOOTING OF PROBLEMS". ③Continue to operate unit for the time being if the cause is not ascertained. ④There is no abnormality concerning of parts such as electrical component, controller board, remote controller, etc.

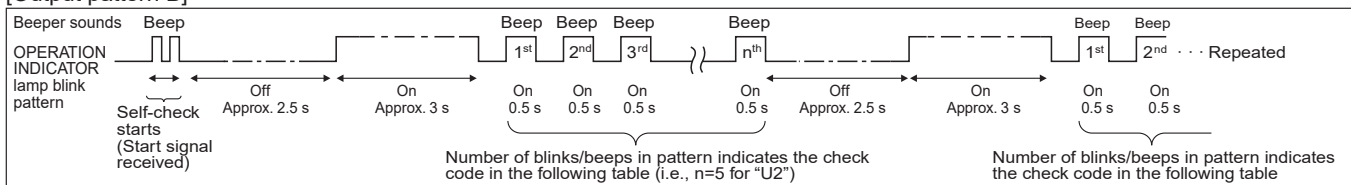
9-2. MALFUNCTION-DIAGNOSIS METHOD BY REMOTE CONTROLLER

- Refer to "13-7. SELF-DIAGNOSIS" to search for the error history.

[Output pattern A]



[Output pattern B]



[Output pattern A] Errors detected by indoor unit

Wireless remote controller	Wired remote controller	Symptom	Remarks
Beeper sounds/OPERATION INDICATOR lamp blinks (Number of times)	Check code		
1	P1	Intake sensor error	
2	P2	Pipe (TH2) sensor error	
	P9	Pipe (TH5) sensor error	
3	E6,E7	Indoor/outdoor unit communication error	
4	P4	Drain sensor error/Float switch connector (CN4F) open	
5	P5	Drain pump error	
	PA	Forced compressor stop(due to water leakage abnormality)	
6	P6	Freezing/Overheating protection operation	
7	EE	Combination error between indoor and outdoor units	
8	P8	Pipe temperature error	
9	E4, E5	Remote controller signal receiving error	
10	—	—	
11	Pb	Indoor unit fan motor error	
12	Fb (FB)*	Indoor unit control system error (memory error, etc.)	
	FL	Refrigerant leakage	
	FH	Refrigerant sensor error	
14	PL	Abnormal refrigerant circuit	
No sound	E0, E3	Remote controller transmission error	
No sound	E1, E2	Remote controller control board error	
No sound	— — — —	No corresponding	

[Output pattern B] Errors detected by unit other than indoor unit (outdoor unit, etc.)

Wireless remote controller	Wired remote controller	Symptom	Remarks
Beeper sounds/OPERATION INDICATOR lamp blinks (Number of times)	Check code		
1	E9	Indoor/outdoor unit communication error (Transmitting error) (Outdoor unit)	For details, check the LED display of the outdoor controller board. As for outdoor unit, refer to outdoor unit's service manual.
2	UP	Compressor overcurrent interruption	
3	U3,U4	Open/short of outdoor unit thermistors	
4	UF	Compressor overcurrent interruption (When compressor locked)	
5	U2	Abnormal high discharge temperature/49°C operated/insufficient refrigerant	
6	U1,Ud (UD)*	Abnormal high pressure (63H operated)/Overheating protection operation	
7	U5	Abnormal temperature of heat sink	
8	U8	Outdoor unit fan protection stop	
9	U6	Compressor overcurrent interruption/Abnormal of power module	
10	U7	Abnormality of super heat due to low discharge temperature	
11	U9,UH	Abnormality such as overvoltage or voltage shortage and abnormal synchronous signal to main circuit/Current sensor error	
12	—	—	
13	—	—	
14	Others	Other errors (Refer to the technical manual for the outdoor unit.)	
	FL	Refrigerant leakage or Refrigerant sensor error caused by other rooms	

Notes: 1. If the beeper does not sound again after the initial 2 beeps to confirm the self-check start signal was received and the OPERATION INDICATOR lamp does not come on, there are no error records.

2. If the beeper sounds 3 times continuously "beep, beep, beep (0.4 + 0.4 + 0.4 seconds)" after the initial 2 beeps to confirm the self-check start signal was received, the specified refrigerant address is incorrect.

- On wireless remote controller
The continuous buzzer sounds from receiving section of indoor unit.
Blink of operation lamp
- On wired remote controller
Check code displayed in the LCD.
* The check code in the parenthesis indicates PAR-42MAAUB model.

• If the unit cannot be operated properly after test run, refer to the following table to find the cause.

Symptom			Cause
Wired remote controller		LED 1, 2 (PCB in outdoor unit)	
Please Wait	For about 3 minutes after power-on	After LED 1, 2 are lit, LED 2 is turned off, then only LED 1 is lit. (Correct operation)	• For about 3 minutes following power-on, operation of the remote controller is not possible due to system startup. (Correct operation)
Please Wait → Check code	Subsequent to about 3 minutes after power-on	Only LED 1 is lit. → LED 1, 2 blink.	• Connector for the outdoor unit's protection device is not connected. • Reverse or open phase wiring for the outdoor unit's power terminal block (L1, L2, GR).
Display messages do not appear even when operation switch is turned ON (operation lamp does not light up).		Only LED 1 is lit. → LED 1 blinks twice, LED 2 blinks once.	• Incorrect wiring between indoor and outdoor units (incorrect polarity of S1, S2, S3) • Remote controller wire short

On the wireless remote controller with condition above, following phenomena take place.

- No signals from the remote controller can be received.
- Operation lamp is blinking.
- The buzzer makes a short ping sound.

Note:

Operation is not possible for about 30 seconds after cancellation of function selection. (Correct operation)

For description of each LED (LED1, 2, 3) provided on the indoor controller, refer to the following table.

LED1 (power for microprocessor)	Indicates whether control power is supplied. Make sure that this LED is always lit.
LED2 (power for remote controller)	Indicates whether power is supplied to the remote controller. This LED lights only in the case of the indoor unit which is connected to the outdoor unit refrigerant addresses "0".
LED3 (communication between indoor and outdoor units)	Indicates state of communication between the indoor and outdoor units. Make sure that this LED is always blinking.

9-3. SELF-DIAGNOSIS ACTION TABLE

Note:

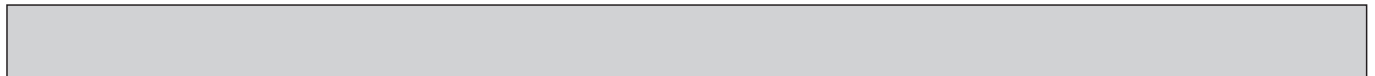
Errors to be detected in outdoor unit, such as codes starting with F, U or E (excluding E0 to E7), are not covered in this document. Please refer to the outdoor unit service manual for the details.

Check code	Abnormal point and detection method	Cause	Countermeasure
P1	Room temperature thermistor (TH1) ① The unit is in 3-minute resume prevention mode if short/open of thermistor is detected. Abnormal if the unit does not reset normally after 3 minutes. (The unit returns to normal operation, if it has been reset normally.) ② Constantly detected during cooling, drying, and heating operation. Short: 90°C [194°F] or more Open: -40°C [-40°F] or less	① Defective thermistor characteristics ② Contact failure of connector (CN20) on the indoor controller board (Insert failure) ③ Breaking of wire or contact failure of thermistor wiring ④ Defective indoor controller board	①-③ Check resistance value of thermistor. 0°C [32°F]...15.0 kΩ 10°C [50°F].....9.6 kΩ 20°C [68°F].....6.3 kΩ 30°C [86°F].....4.3 kΩ 40°C [104°F].....3.0 kΩ If you put force on (draw or bend) the lead wire with measuring resistance value of thermistor, breaking of wire or contact failure can be detected. ② Check contact failure of connector (CN20) on the indoor controller board. Refer to "9-7. TEST POINT DIAGRAM". Turn the power on again and check restart after inserting connector again. ④ Check room temperature display on remote controller. Replace indoor controller board if there is abnormal difference with actual room temperature. Turn the power off, and on again to operate after check.
P2	Pipe temperature thermistor/liquid (TH2) ① The unit is in 3-minute resume prevention mode if short/open of thermistor is detected. Abnormal if the unit does not reset normally after 3 minutes. (The unit returns to normal operation, if it has been reset normally.) ② Constantly detected during cooling, drying, and heating (except defrosting) operation Short: 90°C [194°F] or more Open: -40°C [-40°F] or less	① Defective thermistor characteristics ② Contact failure of connector (CN44) on the indoor controller board (Insert failure) ③ Breaking of wire or contact failure of thermistor wiring ④ Defective refrigerant circuit is causing thermistor temperature of 90°C [194°F] or more, or -40°C [-40°F] or less. ⑤ Defective indoor controller board	①-③ Check resistance value of thermistor. For characteristics, refer to (P1) above. ② Check contact failure of connector (CN44) on the indoor controller board. Refer to "9-7. TEST POINT DIAGRAM". Turn the power on and check restart after inserting connector again. ④ Check pipe <liquid> temperature with remote controller in test run mode. If pipe <liquid> temperature is extremely low (in cooling mode) or high (in heating mode), refrigerant circuit may have defective. ⑤ Check pipe <liquid> temperature with remote controller in test run mode. If there is extremely difference with actual pipe <liquid> temperature, replace indoor controller board. Turn the power off, and on again to operate after check.
P4	Contact failure of drain float switch (CN4F) • Extract when the connector of drain float switch is disconnected. (③ and ④ of connector CN4F is not short-circuited.) • Constantly detected during operation	① Contact failure of connector (Insert failure) ② Defective indoor controller board	① Check contact failure of float switch connector. Turn the power on again and check after inserting connector again. ② Operate with connector (CN4F) short-circuited. Replace indoor controller board if abnormality reappears.

Check code	Abnormal point and detection method	Cause	Countermeasure
P5	Drain overflow protection operation ① Suspensive abnormality, if drain float switch is detected to be underwater for 1 minute and 30 seconds continuously with drain pump on. Compressor and indoor fan will be turned off. ② Drain pump is abnormal if the condition above is detected during suspensive abnormality. ③ Constantly detected during drain pump operation Drain pump lock protection operation ① Error postponement, if drain pump stops for 5 seconds continuously while drain pump is operating. ② Drain pump is abnormal if above condition is repeated 4 times after error postponement is detected.	① Malfunction of drain pump ② Defective drain Clogged drain pump Clogged drain pipe ③ Defective drain float switch Catch of drain float switch or malfunction of moving parts cause drain float switch to be detected under water (Switch On) ④ Defective indoor-controller board ① Malfunction of drain pump ② Clogged drain pump ③ Contact failure of connector ④ Defective indoor controller board	① Check if drain-up machine works. ② Check drain function. ③ Remove drain float switch connector CN4F and check if it is short (Switch On) with the moving part of float switch UP, or OPEN with the moving part of float switch down. Replace float switch if it is short with the moving part of float switch down. ④ Replace indoor controller board if it is short-circuited between ③-④ of the drain float switch connector CN4F and abnormality reappears. It is not abnormal if there is no problem about the above-mentioned ①-④. Turn the power off, and on again to operate after check. ① Check if drain pump works. ② Check if drain pump works. ③ Check contact failure of connector CNP ④ Press the indoor emergency switch (SWE) to check the voltage between CNP①-③. • If 13 VDC, replace the drain pump. • If not 13 VDC, replace the indoor controller board.
P6	Freezing/overheating protection is working ① Freezing protection (Cooling mode) The unit is in 6-minute resume prevention mode if pipe <liquid or condenser/evaporator> temperature stays under -15°C [5°F] for 3 minutes, 3 minutes after the compressor started. Abnormal if it stays under -15°C [5°F] for 3 minutes again within 16 minutes after 6-minute resume prevention mode. ② Overheating protection (Heating mode) The unit is in 6-minute resume prevention mode if pipe <liquid or condenser/evaporator> temperature is detected as over 70°C [158°F] after the compressor started. Abnormal if the temperature of over 70°C [158°F] is detected again within 30 minutes after 6-minute resume prevention mode.	(Cooling or drying mode) ① Clogged filter (reduced airflow) ② Short cycle of air path ③ Low-load (low temperature) operation out of the tolerance range ④ Defective indoor fan motor • Fan motor is defective. • Indoor controller board is defective. ⑤ Defective outdoor fan control ⑥ Overcharge of refrigerant ⑦ Defective refrigerant circuit (clogs) (Heating mode) ① Clogged filter (reduced airflow) ② Short cycle of air path ③ Overload (high temperature) operation out of the tolerance range ④ Defective indoor fan motor • Fan motor is defective. • Indoor controller board is defective. ⑤ Defective outdoor fan control ⑥ Overcharge of refrigerant ⑦ Defective refrigerant circuit (clogs) ⑧ Bypass circuit of outdoor unit is defective.	(Cooling or drying mode) ① Check clogs of the filter. ② Remove shields. ④ Refer to "9-6. HOW TO CHECK THE PARTS". ⑤ Check outdoor fan motor. ⑥⑦ Check operating condition of refrigerant circuit. (Heating mode) ① Check clogs of the filter. ② Remove shields. ④ Refer to "9-6. HOW TO CHECK THE PARTS". ⑤ Check outdoor fan motor. ⑥-⑧ Check operating condition of refrigerant circuit.

Check code	Abnormal point and detection method	Cause	Countermeasure
P8	Pipe temperature <Cooling mode> Detected as abnormal when the pipe temperature is not in the cooling range 3 minutes after compressor start and 6 minutes after the liquid or condenser/evaporator pipe is out of cooling range. Note 1: It takes at least 9 minutes to detect. Note 2: Abnormality P8 is not detected in drying mode. Cooling range: -3°C [-5.4°F] $\geq$ (TH-TH1) TH: Lower temperature between liquid pipe temperature (TH2) and condenser/evaporator temperature (TH5) TH1: Intake temperature <Heating mode> When 10 seconds have passed after the compressor starts operation and the hot adjustment mode has finished, the unit is detected as abnormal when condenser/evaporator pipe temperature is not in heating range within 20 minutes. Note 3: It takes at least 27 minutes to detect abnormality. Note 4: It excludes the period of defrosting. (Detection restarts when defrosting mode is over.) Heating range: 3°C [5.4°F] $\leq$ (TH5-TH1)	① Slight temperature difference between indoor room temperature and pipe <liquid or condenser/evaporator> temperature thermistor • Shortage of refrigerant • Disconnected holder of pipe <liquid or condenser/evaporator> thermistor • Defective refrigerant circuit ② Converse connection of extension pipe (on plural units connection) ③ Converse wiring of indoor/outdoor unit connecting wire (on plural units connection) ④ Defective detection of indoor room temperature and pipe <condenser/evaporator> temperature thermistor ⑤ Stop valve is not opened completely.	①-④ Check pipe <liquid or condenser/evaporator> temperature with room temperature display on remote controller and outdoor controller circuit board. Pipe <liquid or condenser/evaporator> temperature display is indicated by setting SW2 of outdoor controller circuit board as follows. (Conduct temperature check with outdoor controller circuit board after connecting 'A-Control Service Tool(PAC-SK52ST)'). ②③ Check converse connection of extension pipe or converse wiring of indoor/outdoor unit connecting wire.
P9	Pipe temperature thermistor/Condensor-Evaporator (TH5) ① The unit is in 3-minute resume protection mode if short/open of thermistor is detected. Abnormal if the unit does not get back to normal within 3 minutes. (The unit returns to normal operation, if it has been reset normally.) ② Constantly detected during cooling, drying, and heating operation (except defrosting) Short: 90°C [194°F] or more Open: -40°C [-40°F] or less	① Defective thermistor characteristics ② Contact failure of connector (CN44) on the indoor controller board (Insert failure) ③ Breaking of wire or contact failure of thermistor wiring ④ Temperature of thermistor is 90°C [194°F] or more or -40°C [-40°F] or less caused by defective refrigerant circuit. ⑤ Defective indoor controller board	①-③ Check resistance value of thermistor. For characteristics, refer to (P1). ② Check contact failure of connector (CN44) on the indoor controller board. Refer to "9-7. TEST POINT DIAGRAM". Turn the power on and check restart after inserting connector again. ④ Operate in test run mode and check pipe <condenser/evaporator> temperature with outdoor controller circuit board. If pipe <condenser/evaporator> temperature is extremely low (in cooling mode) or high (in heating mode), refrigerant circuit may have defect. ⑤ Operate in test run mode and check pipe <condenser/evaporator> temperature with outdoor control circuit board. If there is extreme difference with actual pipe <condenser/evaporator> temperature, replace indoor controller board. There is no abnormality if none of above comes within the unit. (Turn the power off and on again to operate. In case of checking pipe temperature with outdoor controller circuit board, be sure to connect A-control service tool (PAC-SK52ST).)

Check code	Abnormal point and detection method	Cause	Countermeasure
PA	Forced compressor stop (due to water leakage abnormality) ① The unit has a water leakage abnormality when the following conditions, a) and b), are satisfied while the above-mentioned detection is performed. a) The intake temperature subtracted with liquid pipe temperature detects to be less than -10°C [14°F] for a total of 30 minutes. (When the drain sensor is detected to be NOT soaked in the water, the detection record of a) and b) will be cleared.) b) Drain float switch detects to be in the water for more than 15 minutes. Note: Once the water leakage abnormality is detected, abnormality state will not be released until the main power is reset.	① Drain pump trouble ② Drain defective • Drain pump clogging • Drain pipe clogging ③ Open circuit of float switch ④ Contact failure of float switch connector ⑤ Dew condensation on float switch • Drain water trickles down lead wire. • Drain water ripples due to filter clogging. ⑥ Extension piping connection difference at twin, triple or quadruple system ⑦ Miswiring of indoor/outdoor connecting at twin, triple or quadruple system ⑧ Room temperature thermistor/liquid pipe temperature thermistor detection is defective.	① Check the drain pump. ② Check whether water can be drained. ③ Check the resistance of the float switch. ④ Check the connector contact failure. ⑤ Check the float switch lead wire mounted. Check the filter clogging. ⑥ Check the piping connection. ⑦ Check the indoor/outdoor connecting wires. ⑧ Check the room temperature display of remote controller. Check the indoor liquid pipe temperature display of outdoor controller board.
E0 or E4	Remote controller transmission error(E0)/signal receiving error (E4) ① Abnormal if main or sub remote controller cannot receive any transmission normally from indoor unit of refrigerant address "0" for 3 minutes. (Check code: E0) ② Abnormal if sub remote controller could not receive any signal for 2 minutes. (Check code: E0) ① Abnormal if indoor controller board can not receive any data normally from remote controller board or from other indoor controller board for 3 minutes. (Check code: E4) ② Indoor controller board cannot receive any signal from remote controller for 2 minutes. (Check code: E4)	① Contact failure at transmission wire of remote controller ② All remote controllers are set as "sub" remote controller. In this case, E0 is displayed on remote controller, and E4 is displayed at LED (LED1, LED2) on the outdoor controller circuit board. ③ Miswiring of remote controller ④ Defective transmitting receiving circuit of remote controller ⑤ Defective transmitting receiving circuit of indoor controller board of refrigerant addresses "0". ⑥ Noise has entered into the transmission wire of remote controller.	① Check disconnection or looseness of indoor unit or transmission wire of remote controller. ② Set one of the remote controllers "main" if there is no problem with the action above. ③ Check wiring of remote controller. • Total wiring length: max. 500 m (Do not use cables with 3 cores or more. Do not use shielded wires.) • The number of connecting indoor units: max. 16 units • The number of connecting remote controller: max. 2 units When two units are connected, the total wiring length shall not exceed 200 m. If the cause of trouble is not in above ①—③, ④ Diagnose remote controllers. a) When "OK" is displayed, remote controllers have no problem. Turn the power off, and on again to check. If abnormality generates again, replace indoor controller board. b) When "NG" is displayed, replace remote controller. c) When "E3" or "ERC" is displayed, noise may be causing abnormality. Note: If the unit is not normal after replacing indoor controller board in group control, indoor controller board of address "0" may be abnormal.
E3 or E5	Remote controller transmission error(E3)/signal receiving error(E5) ① Abnormal if remote controller could not find blank of transmission path for 6 seconds and could not transmit. (Check code: E3) ② Remote controller receives transmitted data at the same time and compares the received and transmitted data. Abnormal if these data are judged to be different 30 continuous times. (Check code: E3) ① Abnormal if indoor controller board could not find blank of transmission path. (Check code: E5) ② Indoor controller board receives transmitted data at the same time and compares the received and transmitted data. Abnormal if these data are judged to be different 30 continuous times. (Check code: E5)	① 2 remote controllers are set as "main." (In case of 2 remote controllers) ② Remote controller is connected with 2 indoor units or more. ③ Repetition of refrigerant address ④ Defective transmitting receiving circuit of remote controller ⑤ Defective transmitting receiving circuit of indoor controller board ⑥ Noise has entered into transmission wire of remote controller.	① Set a remote controller to main, and the other to sub. ② Remote controller is connected with only one indoor unit. ③ The address changes to a separate setting. ④—⑥ Diagnose remote controller. a) When "OK" is displayed, remote controllers have no problem. Turn the power off, and on again to check. When becoming abnormal again, replace indoor controller board. b) When "NG" is displayed, replace remote controller. c) When "E3" or "ERC" is displayed, noise may be causing abnormality.



Check code	Abnormal point and detection method	Cause	Countermeasure
E6	Indoor/outdoor unit communication error (Signal receiving error) ① Abnormal if indoor controller board cannot receive any signal normally for 6 minutes after turning the power on. ② Abnormal if indoor controller board cannot receive any signal normally for 3 minutes. ③ Consider the unit abnormal under the following condition: When 2 or more indoor units are connected to an outdoor unit, indoor controller board cannot receive a signal for 3 minutes from outdoor controller circuit board, a signal which allows outdoor controller circuit board to transmit signals.	① Contact failure, short circuit or, miswiring (converse wiring) of indoor/outdoor unit connecting wire ② Defective transmitting receiving circuit of indoor controller board ③ Defective transmitting receiving circuit of indoor controller board ④ Noise has entered into indoor/outdoor unit connecting wire.	Check LED display on the outdoor control circuit board. (Connect A-control service tool, PAC-SK52ST.) Refer to outdoor unit service manual. ① Check disconnection or looseness of indoor/ outdoor unit connecting wire of indoor unit or outdoor unit. Check all the units in case of twin triple indoor unit system. ②-④ Turn the power off, and on again to check. If abnormality generates again, replace indoor controller board or outdoor controller circuit board. Note: Other indoor controller board may have defect in the case of twin triple indoor unit system.
E7	Indoor/outdoor unit communication error (Transmitting error) Abnormal if "1" receiving is detected 30 times continuously though indoor controller board has transmitted "0".	① Defective transmitting receiving circuit of indoor controller board ② Noise has entered into power supply. ③ Noise has entered into outdoor control wire.	①-③ Turn the power off, and on again to check. If abnormality generates again, replace indoor controller board.
FB (Fb)	Indoor controller board Abnormal if data cannot be read normally from the nonvolatile memory of the indoor controller board.	① Defective indoor controller board	① Replace indoor controller board.
FH	Refrigerant sensor error Abnormal if refrigerant sensor cannot detect errors normally.	① The refrigerant sensor mounted on the indoor unit does not work. ② The refrigerant sensor is not connected properly or the wire is broken.	①② Turn the power off, check the connection of some parts such as connectors and turn the power on again. When the error has not been cleared, replace the refrigerant sensor.
FL	Refrigerant leakage Abnormal if refrigerant leakage detected by a refrigerant sensor.	① Refrigerant leaks from the piping or the heat exchanger in the indoor unit. ② The following items are used around the indoor unit. • Spray (LP gas including Freon, and whose main ingredient is propane and butane) • Aerosol insecticide (including ethanol) • Air spray painting (including dichloromethane) • Charcoal (charcoal fire) • Chemicals (such as ethanol) ③ Refrigerant leaks from piping or heat exchangers, or sensor errors in indoor units in other rooms.	• Turn off the power after FAN operation is finished. (FAN operation continues for 8 hours.) • Check the indoor unit to detect the part where refrigerant leaks. • Repair the part where refrigerant leaks. • Turn on the power again. • Replace the refrigerant sensor if the problem is not fixed.
E1 or E2	Remote controller control board ① Abnormal if data cannot be read normally from the nonvolatile memory of the remote controller control board. (Check code: E1) ② Abnormal if the clock function of remote controller cannot be operated normally. (Check code: E2)	① Defective remote controller	① Replace remote controller.

Check code	Abnormal point and detection method	Cause	Countermeasure
PB (Pb)	Fan motor trouble	① Defective fan motor ② Defective indoor controller board ③ Contact failure of fan motor connector	①~③ Refer to "9-6-2. DC fan motor (fan motor/indoor controller circuit board)".
PL	Abnormal refrigerant circuit During Cooling, Drying, or Auto Cooling operation, the following conditions are regarded as failures when these conditions are detected for 1 second. a)The compressor continues to run for 30 or more seconds. b)The liquid pipe temperature or the condenser/evaporator temperature is 75°C [167°F] or more. <u>These detected errors will not be cancelled until the power source is reset.</u>	① Abnormal operation of 4-way valve ② Disconnection of or leakage in refrigerant pipes ③ Air into refrigerant piping ④ Abnormal operation (no rotation) of indoor fan · Defective fan motor · Defective indoor control board ⑤ Defective refrigerant circuit (clogging)	① <u>When this error occurs, be sure to replace the 4-way valve.</u> ② Check refrigerant pipes for disconnection or leakage. ③ After the recovery of refrigerant, vacuum dry the whole refrigerant circuit. ④ Refer to "9-6-2. DC fan motor (fan motor/indoor controller circuit board)". ⑤ Check refrigerant circuit for operation. <u>To avoid entry of moisture or air into refrigerant circuit which could cause abnormal high pressure, purge air in refrigerant circuit or replace refrigerant.</u>

9-4. TROUBLESHOOTING OF PROBLEMS

Note: Refer to the outdoor unit's service manual for the detail of remote controller.

Phenomena	Cause	Countermeasure
(1) LED2 on indoor controller board is off.	• When LED1 on indoor controller board is also off. ① Power supply of rated voltage is not supplied to outdoor unit. ② Defective outdoor controller circuit board ③ Power supply of 208/230 V is not supplied to indoor unit. ④ Defective indoor controller board	① Check the voltage of outdoor power supply terminal block (L1, L2). • When 208/230 VAC is not detected, check the power wiring to outdoor unit and the breaker. • When 208/230 VAC is detected, check ② (below). ② Check the voltage between outdoor terminal block S1 and S2. • When 208/230 VAC is not detected, —check the fuse on outdoor controller circuit board. —check the wiring connection. • When 208/230 VAC is detected, check ③ (below). ③ Check the voltage between indoor terminal block S1 and S2. • When 208/230 VAC is not detected, check indoor/outdoor unit connecting wire for miswiring. • When 208/230 VAC is detected, check ④ (below). ④ Check the fuse on indoor controller board. Check the wiring connection. If no problem is found, indoor controller board is defective.
	• When LED1 on indoor controller board is lit. ① Mis-setting of refrigerant address for outdoor unit (There is no unit corresponding to refrigerant address "0".)	① Check again the setting of refrigerant address for outdoor unit. Set the refrigerant address to "0". (For grouping control system under which 2 or more outdoor units are connected, set one of the units to "0".) Set refrigerant address using SW1 (3-6) on outdoor controller circuit board.

Note: Refer to the manual of outdoor unit for the detail of remote controller.

Phenomena	Cause	Countermeasure
(2) LED2 on indoor controller board is blinking.	• When LED1 on indoor controller board is also blinking. ① Connection failure of indoor/outdoor unit connecting wire • When LED1 is lit. ① Miswiring of remote controller wires Under twin or triple indoor unit system, 2 or more indoor units are wired together. ② Refrigerant address for outdoor unit is wrong or not set. Under grouping control system, there are some units whose refrigerant addresses are 0. ③ Short-circuit of remote controller wires ④ Defective remote controller	① Check indoor/outdoor unit connecting wire for connection failure. ① Check the connection of remote controller wires in case of twin triple indoor unit system. When 2 or more indoor units are wired in one refrigerant system, connect remote controller wires to one of those units. ② Check the setting of refrigerant address in case of grouping control system. If there are some units whose refrigerant addresses are 0 in one group, set one of the units to 0 using SW1 (3-6) on outdoor controller circuit board. ③④ Remove remote controller wires and check LED2 on indoor controller board. • When LED2 is blinking, check the short-circuit of remote controller wires. • When LED2 is lit, connect remote controller wires again and: if LED2 is blinking, remote controller is defective; if LED2 is lit, connection failure of remote controller terminal block, etc. has returned to normal.
(3) Upward/downward vane performance failure	① The vane is not downward during defrosting and heat preparation and when the thermostat is OFF in HEAT mode. (Working of COOL protection function) ② Vane motor does not rotate. • Defective vane motor • Breaking of wire or connection failure of connector ③ Upward/downward vane does not work. • The vane is set to fixed position.	① Normal operation (The vane is set to horizontal regardless of remote control.) ② Check ② (left). • Check the vane motor. (Refer to 9-6. HOW TO CHECK THE PARTS.) • Check for breaking of wire or connection failure of connector. ③ Normal operation (Each connector on vane motor side is disconnected or setting the fixed vanes by wired remote controller.)
(4) Receiver for wireless remote controller	① Weak batteries of wireless remote controller ② Contact failure of connector (CNB) on wireless remote controller board (Insert failure) ③ Contact failure of connector (CN90) on indoor controller board (Insert failure) ④ Contact failure of connector between wireless remote controller board and indoor controller board	① Replace batteries of wireless remote controller. ②—④ Check contact failure of each connector. If no problems are found of connector, replace indoor controller board. When the same trouble occurs even if indoor controller board is replaced, replace wireless remote controller board.

(FL): Refrigerant leakage

Abnormal points and detection methods

Refrigerant is leaking from the air conditioner.
The refrigerant sensor has detected refrigerant leak.
Refrigerant is leaking in the room where the alarm is beeping. (Optional)
A refrigerant sensor has failed.

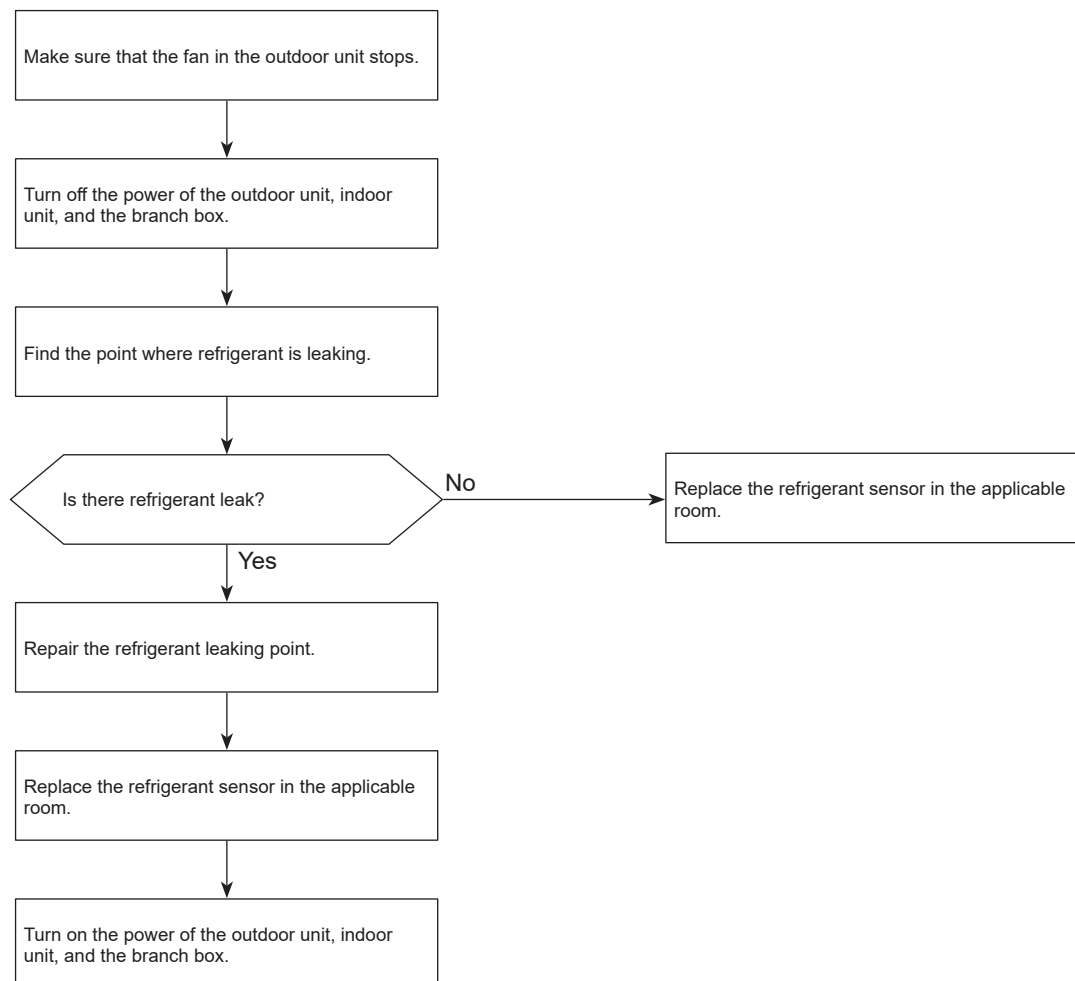
Causes and checkpoints

- Refrigerant leak from air conditioner
- Refrigerant leak from piping
- False detection (The refrigerant sensor reacted to other gas.)

Notes:

- When this error occurs, both of the alarm in the applicable room and the supervisor mode alarm beep. Also, the system closes the shut-off valve and performs refrigerant recovery.
- When this error occurs, ventilate the room.
- When this error occurs, do not turn off the power until the fan in the outdoor unit stops.

Diagnosis of failure



(FH): Refrigerant sensor error

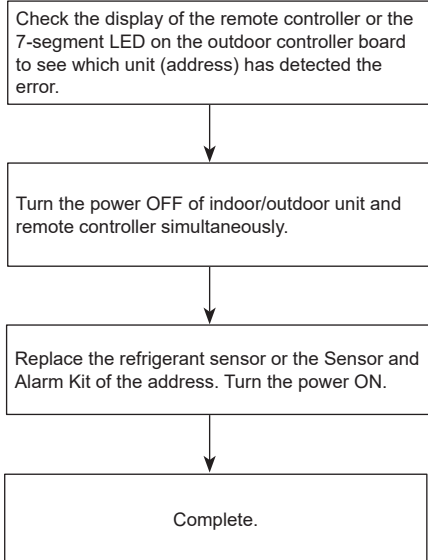
Abnormal points and detection methods

A refrigerant sensor has failed.

Causes and checkpoints

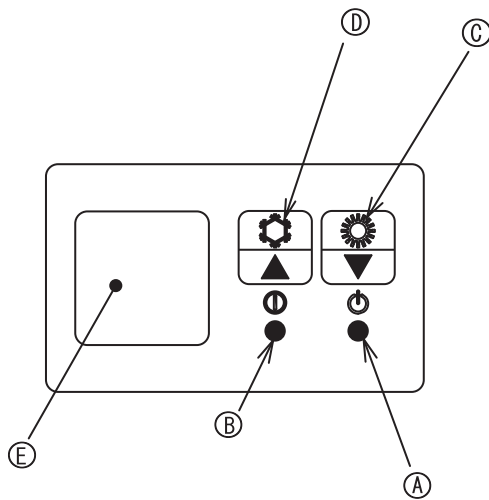
- A refrigerant sensor connected to an M-IC has failed.
- A Sensor and Alarm Kit connected to a branch box has failed.

Diagnosis of failure



9-5. EMERGENCY OPERATION

9-5-1. When wireless remote controller troubles or its battery is exhausted



- Ⓐ DEFROST/STAND BY lamp (Orange)
- Ⓑ Operation lamp (Green)
- Ⓒ Emergency operation switch (heating)
- Ⓓ Emergency operation switch (cooling)
- Ⓔ Receiver

When the remote controller cannot be used

When the batteries of the remote controller run out or the remote controller malfunctions, the emergency operation can be done using the emergency buttons on the grille.

Starting operation

- To operate the cooling mode, press the Ⓓ button for more than 2 seconds.
- To operate the heating mode, press the Ⓒ button for more than 2 seconds.

Note: Lighting of the Operation lamp Ⓑ means the start of operation.

Details of emergency mode are as shown below.

Operation mode	COOL	HEAT
Set temperature	24°C [75°F]	24°C [75°F]
Fan speed	High	High
Airflow direction	Horizontal	Downward 5

Stopping operation

- To stop operation, press the Ⓓ button or the Ⓒ button.

9-5-2. When wired remote controller or indoor unit microprocessor fails

1. When the wired remote controller or the indoor unit microcomputer has failed, but all other components work properly, setting the switch (SWE) on the indoor controller board ON will begin the indoor unit Emergency Operation.

When Emergency Operation is activated, the indoor unit operates as follows:

(1) Indoor fan is running at high speed. (2) Drain pump is working.

*Note on the wireless remote control: when the remote control does not function, it is possible to activate Emergency Operation by using the indoor unit emergency operation switch (SW1, SW2 of the wireless signal receiver board).

However, if the indoor unit microprocessor has failed, it is necessary to proceed with points 2 and 3 below as in the case of the wired remote control.

2. When activating Emergency Operation of the cooling or heating, set the switch (SWE) on the indoor controller board and activate Emergency Operation of the outdoor unit.

For details on how to activate Emergency Operation of the outdoor unit, refer to the outdoor unit wiring diagram.

3. Before activating Emergency Operation, check the following points:

(1) Emergency Operation cannot be activated when:

- the outdoor unit malfunctions.
- the indoor fan malfunctions.
- it has detected the malfunction of drain pump during self-diagnosing.

(2) Emergency Operation becomes continuous only by switching the power source on/off.

ON/OFF on the remote control or temperature control etc. does not function.

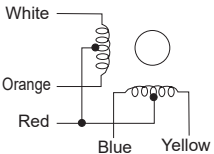
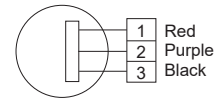
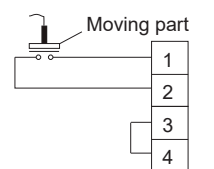
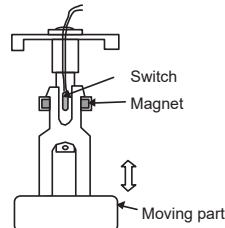
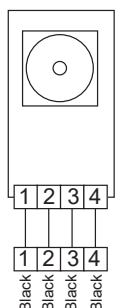
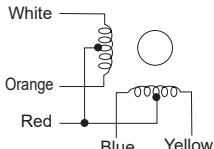
(3) Avoid operating for a long time when the outdoor unit begins defrosting while Emergency Operation of the heating is activated because it will start to blow cold air.

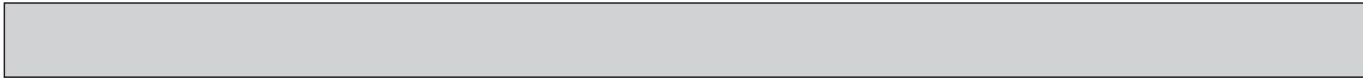
(4) Emergency cooling should be limited to 10 hours maximum (The indoor unit heat exchanger may freeze).

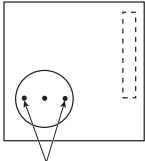
(5) After Emergency Operation has been deactivated, set the switches, etc. to their original positions.

(6) Movement of the vanes does not work in Emergency Operation, therefore slowly set them manually to the appropriate position.

9-6. HOW TO CHECK THE PARTS

Parts name	Checkpoints											
Room temperature thermistor (TH1)	Disconnect the connector then measure the resistance with a multimeter. (At the ambient temperature of 10 to 30°C [50 to 86°F])											
Pipe temperature thermistor/liquid (TH2)	<table><tr><th>Normal</th><th>Abnormal</th></tr><tr><td>4.3 to 9.6 kΩ</td><td>Opened or short - circuited</td></tr></table>			Normal	Abnormal	4.3 to 9.6 kΩ	Opened or short - circuited					
Normal	Abnormal											
4.3 to 9.6 kΩ	Opened or short - circuited											
Condenser/Evaporator temperature thermistor (TH5)	Refer to "9-6-1. Thermistor".											
Vane motor (MV)	Measure the resistance between the terminals with a multimeter. (At the ambient temperature of 20 to 30°C [68 to 86°F])											
	<table><tr><th>Connector</th><th>Normal</th><th>Abnormal</th></tr><tr><td>Red - Yellow (⑤-③, ⑩-⑧, ⑮-⑬, ⑳-⑱)</td><td rowspan="4">300 Ω ± 7%</td><td rowspan="4">Open or short</td></tr><tr><td>Red - Blue (⑤-①, ⑩-⑥, ⑮-⑪, ⑳-⑯)</td></tr><tr><td>Red - Orange (⑤-④, ⑩-⑨, ⑮-⑭, ⑳-⑰)</td></tr><tr><td>Red - White (⑤-②, ⑩-⑦, ⑮-⑫, ⑳-⑰)</td></tr></table>			Connector	Normal	Abnormal	Red - Yellow (⑤-③, ⑩-⑧, ⑮-⑬, ⑳-⑱)	300 Ω ± 7%	Open or short	Red - Blue (⑤-①, ⑩-⑥, ⑮-⑪, ⑳-⑯)	Red - Orange (⑤-④, ⑩-⑨, ⑮-⑭, ⑳-⑰)	Red - White (⑤-②, ⑩-⑦, ⑮-⑫, ⑳-⑰)
Connector	Normal	Abnormal										
Red - Yellow (⑤-③, ⑩-⑧, ⑮-⑬, ⑳-⑱)	300 Ω ± 7%	Open or short										
Red - Blue (⑤-①, ⑩-⑥, ⑮-⑪, ⑳-⑯)												
Red - Orange (⑤-④, ⑩-⑨, ⑮-⑭, ⑳-⑰)												
Red - White (⑤-②, ⑩-⑦, ⑮-⑫, ⑳-⑰)												
Drain pump (DP)	① Check if the drain float switch works properly. ② Check if the drain pump works and drains water properly in cooling operation. ③ If no water drains, confirm that the check code P5 will not be displayed 10 minutes after the operation starts. Note: The drain pump for this model is driven by the internal DC motor of controller board, so it is not possible to measure the resistance between the terminals. Normal Red-Black: Input 13 VDC → The motor starts to rotate. Purple-Black: Abnormal (check code P5) if it outputs 0-13 V square wave (5 pulses/rotation), and the number of rotation is not normal.											
												
Drain float switch (FS)	Measure the resistance between the terminals with a multimeter.											
	<table><tr><th>State of moving part</th><th>Normal</th><th>Abnormal</th></tr><tr><td>UP</td><td>Short</td><td>Other than short</td></tr><tr><td>DOWN</td><td>Open</td><td>Other than open</td></tr></table>			State of moving part	Normal	Abnormal	UP	Short	Other than short	DOWN	Open	Other than open
State of moving part	Normal	Abnormal										
UP	Short	Other than short										
DOWN	Open	Other than open										
												
i-see Sensor (Option)	Turn the power ON while the i-see Sensor connector is connected to the CN4Z on indoor controller board. A communication between the indoor controller board and i-see Sensor board is made to detect the connection.											
	Normal: When the operation starts, the motor for i-see Sensor is driven to rotate the i-see Sensor. Abnormal: The motor for i-see Sensor is not driven when the operation starts. Note: The voltage between the terminals cannot be measured accurately since it is pulse output.											
Vane motor for i-see Sensor (Option)	Measure the resistance between the terminals with a multimeter. (At the ambient temperature of 20 to 30°C [68 to 86°F])											
	<table><tr><th>Connector</th><th>Normal</th><th>Abnormal</th></tr><tr><td>Red - Yellow</td><td rowspan="4">250 Ω ± 7%</td><td rowspan="4">Open or short</td></tr><tr><td>Red - Blue</td></tr><tr><td>Red - Orange</td></tr><tr><td>Red - White</td></tr></table>			Connector	Normal	Abnormal	Red - Yellow	250 Ω ± 7%	Open or short	Red - Blue	Red - Orange	Red - White
Connector	Normal	Abnormal										
Red - Yellow	250 Ω ± 7%	Open or short										
Red - Blue												
Red - Orange												
Red - White												



Parts name	Checkpoints				
Refrigerant sensor	Measure the resistance between the terminals with a multimeter. <table><tr><th>Normal</th><th>Abnormal</th></tr><tr><td>Below 10 Ω</td><td>Open (10 Ω or more)</td></tr></table> After turning off the indoor unit breaker and leaving it for 5 minutes, measure the resistance value between the sensor terminals. < Back side of the sensor >  Measure the both sides of the sensor pin.	Normal	Abnormal	Below 10 Ω	Open (10 Ω or more)
Normal	Abnormal				
Below 10 Ω	Open (10 Ω or more)				

9-6-1. Thermistor

<Thermistor characteristic graph>

Thermistors for lower temperature

Room temperature thermistor (TH1)
Pipe temperature thermistor/liquid (TH2)
Condenser/evaporator temperature thermistor (TH5)

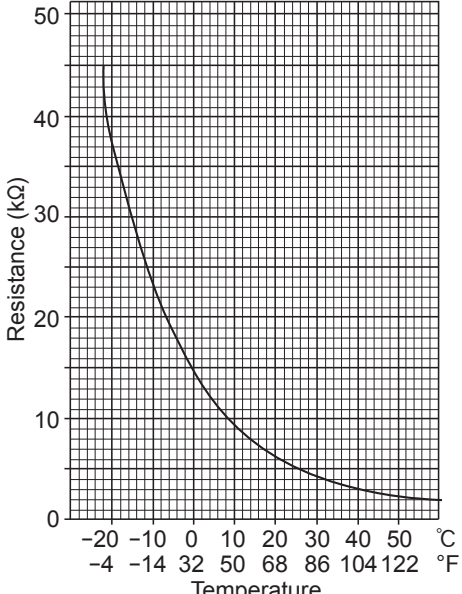
Thermistor $R_0 = 15\text{ k}\Omega \pm 3\%$
Fixed number of $B = 3480 \pm 2\%$

$t(^{\circ}\text{C}) \dots R_t(\text{k}\Omega) = R_0 \exp\{B(\frac{1}{273+t} - \frac{1}{273})\}$

$T(^{\circ}\text{F}) \dots R_T(\text{k}\Omega) = R_0 \exp\{B(\frac{1}{273+\frac{T-32}{1.8}} - \frac{1}{273})\}$

0°C	[32°F]	15 kΩ
10°C	[50°F]	9.6 kΩ
20°C	[68°F]	6.3 kΩ
25°C	[77°F]	5.4 kΩ
30°C	[86°F]	4.3 kΩ
40°C	[104°F]	3.0 kΩ

<Thermistor for lower temperature>



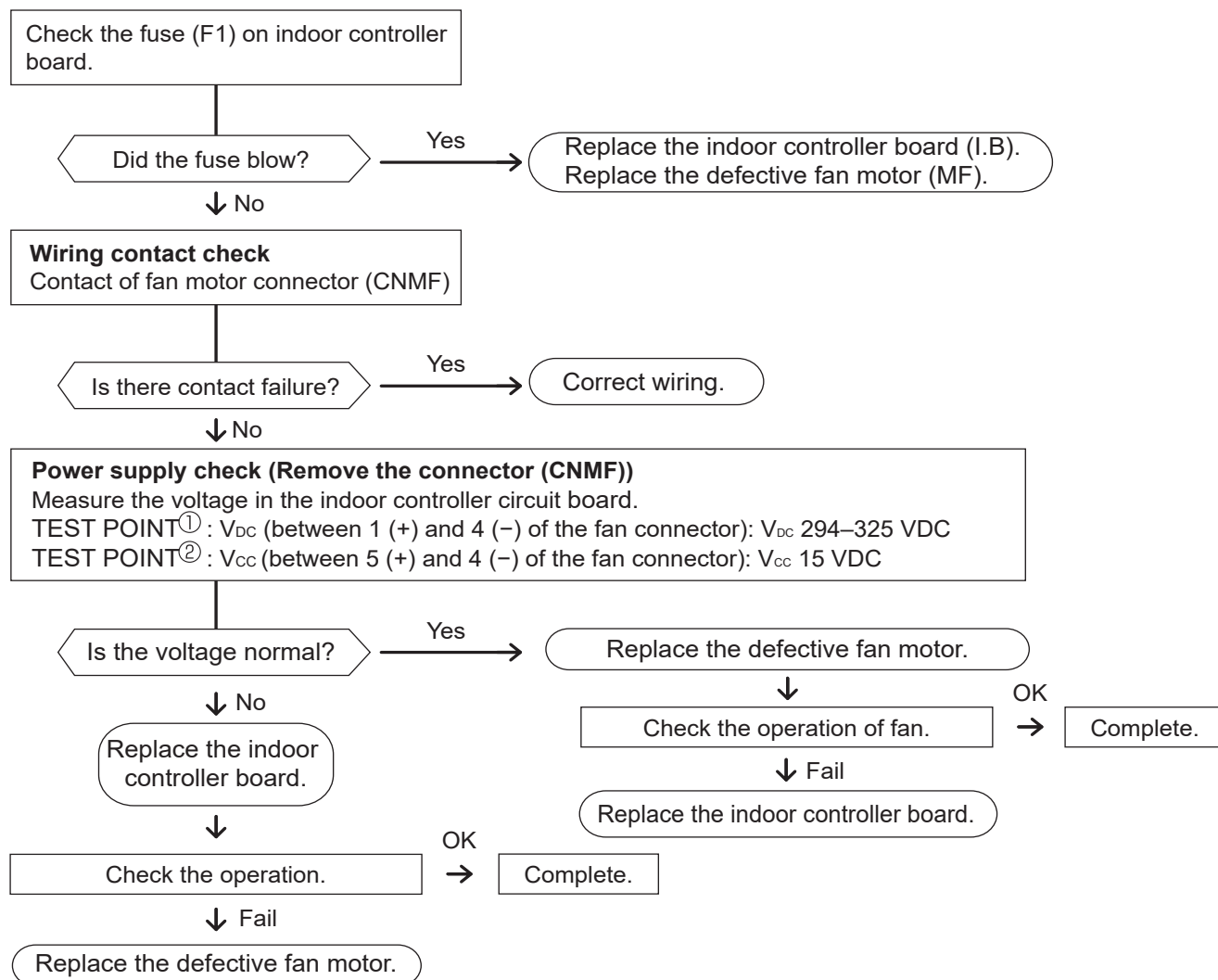
Check method of DC fan motor (fan motor/indoor controller circuit board)

① Notes

- High voltage is applied to the connector (CNMF) for the fan motor. Pay attention to the service.
- Do not pull out the connector (CNMF) for the motor with the power supply on.
(It causes trouble of the indoor controller circuit board and fan motor.)

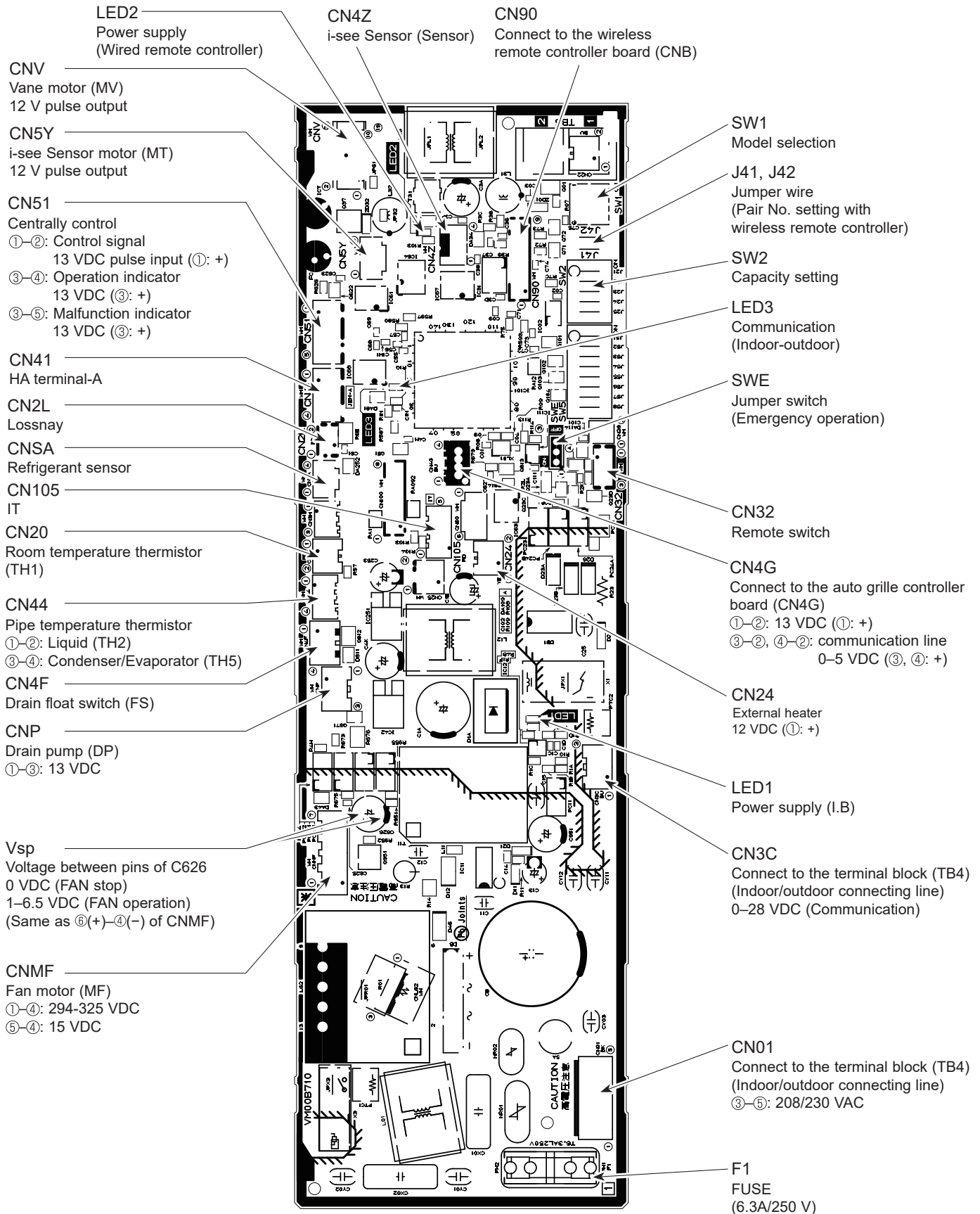
② Self check

Symptom : The indoor fan cannot rotate.



9-7. TEST POINT DIAGRAM

Indoor controller board



9-8. FUNCTIONS OF DIP SWITCH AND JUMPER WIRE

Each function is controlled by the DIP switch and the jumper wire on indoor controller board.

The black square (■) indicates a switch position.

Switch Jumper wire	Functions	Setting by the DIP switch and jumper wire	Remarks																																																																																																																																																			
SW1	Model settings	<table><tr><td>MODEL</td><td colspan="6">Manufacture/Service</td></tr><tr><td>PLA-</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>OFF</td></tr><tr><td>AE.NL</td><td>☐</td><td>☐</td><td>☐</td><td>☐</td><td>☐</td><td>☐</td><td>ON</td></tr></table>	MODEL	Manufacture/Service						PLA-	6	5	4	3	2	1	OFF	AE.NL	☐	☐	☐	☐	☐	☐	ON																																																																																																																													
MODEL	Manufacture/Service																																																																																																																																																					
PLA-	6	5	4	3	2	1	OFF																																																																																																																																															
AE.NL	☐	☐	☐	☐	☐	☐	ON																																																																																																																																															
SW2	Capacity settings	<table><tr><td>CAPACITY</td><td colspan="6">Manufacture/Service</td><td>CAPACITY</td><td colspan="6">Manufacture/Service</td><td>CAPACITY</td><td colspan="6">Manufacture/Service</td></tr><tr><td>12</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>OFF</td><td>30</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>OFF</td><td>48</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>OFF</td></tr><tr><td></td><td>☐</td><td>☐</td><td>☐</td><td>☐</td><td>☐</td><td>ON</td><td></td><td>☐</td><td>☐</td><td>☐</td><td>☐</td><td>☐</td><td>ON</td><td></td><td>☐</td><td>☐</td><td>☐</td><td>☐</td><td>☐</td><td>ON</td></tr><tr><td>18</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>OFF</td><td>36</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>OFF</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>☐</td><td>☐</td><td>☐</td><td>☐</td><td>☐</td><td>ON</td><td></td><td>☐</td><td>☐</td><td>☐</td><td>☐</td><td>☐</td><td>ON</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>24</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>OFF</td><td>42</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>OFF</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>☐</td><td>☐</td><td>☐</td><td>☐</td><td>☐</td><td>ON</td><td></td><td>☐</td><td>☐</td><td>☐</td><td>☐</td><td>☐</td><td>ON</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	CAPACITY	Manufacture/Service						CAPACITY	Manufacture/Service						CAPACITY	Manufacture/Service						12	5	4	3	2	1	OFF	30	5	4	3	2	1	OFF	48	5	4	3	2	1	OFF		☐	☐	☐	☐	☐	ON		☐	☐	☐	☐	☐	ON		☐	☐	☐	☐	☐	ON	18	5	4	3	2	1	OFF	36	5	4	3	2	1	OFF									☐	☐	☐	☐	☐	ON		☐	☐	☐	☐	☐	ON								24	5	4	3	2	1	OFF	42	5	4	3	2	1	OFF									☐	☐	☐	☐	☐	ON		☐	☐	☐	☐	☐	ON								
CAPACITY	Manufacture/Service						CAPACITY	Manufacture/Service						CAPACITY	Manufacture/Service																																																																																																																																							
12	5	4	3	2	1	OFF	30	5	4	3	2	1	OFF	48	5	4	3	2	1	OFF																																																																																																																																		
	☐	☐	☐	☐	☐	ON		☐	☐	☐	☐	☐	ON		☐	☐	☐	☐	☐	ON																																																																																																																																		
18	5	4	3	2	1	OFF	36	5	4	3	2	1	OFF																																																																																																																																									
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24	5	4	3	2	1	OFF	42	5	4	3	2	1	OFF																																																																																																																																									
	☐	☐	☐	☐	☐	ON		☐	☐	☐	☐	☐	ON																																																																																																																																									
J41 J42	Pair number setting with wireless remote controller	<table><tr><th rowspan="2">Wireless remote controller setting</th><th colspan="2">Control PCB setting</th></tr><tr><th>J41</th><th>J42</th></tr><tr><td>0</td><td>Short</td><td>Short</td></tr><tr><td>1</td><td>Open</td><td>Short</td></tr><tr><td>2</td><td>Short</td><td>Open</td></tr><tr><td>3 to 9</td><td>Open</td><td>Open</td></tr></table>	Wireless remote controller setting	Control PCB setting		J41	J42	0	Short	Short	1	Open	Short	2	Short	Open	3 to 9	Open	Open	<Initial setting> wireless remote controller: 0 Control PCB: 0 4 pair number settings are supported. The pair number settings of the wireless remote controller and indoor control PCB (J41/J42) are given in the table on the left.																																																																																																																																		
Wireless remote controller setting	Control PCB setting																																																																																																																																																					
	J41	J42																																																																																																																																																				
0	Short	Short																																																																																																																																																				
1	Open	Short																																																																																																																																																				
2	Short	Open																																																																																																																																																				
3 to 9	Open	Open																																																																																																																																																				
DIP SW 5-4	Change CN24 output setting	OFF(Initial setting)	Turn off the auxiliary heater connected to CN24 when refrigerant leak is detected.																																																																																																																																																			
		ON	Heater does not turn off when refrigerant leak is detected. Only when the protection temperature of the auxiliary heater is less than 700°C [1292°F], setting can be changed.																																																																																																																																																			

10-1. UNIT FUNCTION SETTING BY THE REMOTE CONTROLLER

Each function can be set as necessary using the remote controller. The setting of function for each unit can only be done by the remote controller.

(1) Functions available when setting the unit number to 00

Refer to the service manual that comes with each outdoor unit.

(2) Functions available when setting the unit number to 1-4 or All (07 in case of wireless remote controller)

Function	Settings	Mode No.	Setting No.	Initial setting	Setting
Filter sign	100 Hr	07	1		
	2500 Hr		2	○	
	No filter sign indicator		3		
Fan speed	Silent (low ceiling)	08	1		
	Standard		2	○	
	High ceiling		3		
No. of air outlets	4 directions	09	1	○	
	3 directions		2		
	2 directions		3		
Installed options (High-efficiency filter)	Not supported	10	1	○	
	Supported		2		
Up/down vane setting	Downward setting (vaner angle setup ③)	11	1		
	Middle setting (vaner angle setup ①)		2	○	
	Draft-less setting (vaner angle setup ②)*1		3		
3D i-see Sensor positioning	Position ①	12*2	1		
	Position ②		2		
	Position ③ (Default)		3	○	
3D i-see Sensor ceiling height setting (when installing the 3D i-see Sensor panel)	Low ceiling (ceiling height: less than 2.7 m [8.9 ft])	26	1		
	Standard (ceiling height: 2.7–3.5 m [8.9–11.5 ft])		2	○	
	High ceiling (ceiling height: 3.5–4.5 m [11.5–14.8 ft])		3		
Fan speed during the cooling thermostat is OFF	Setting fan speed	27	1	○	
	Stop		2		
	Extra low		3		

*1 Because condensation may form, do not use this setting in a high-temperature, high-humidity environment.

*2 When the 3D i-see Sensor corner panel position is changed, change this mode. For more details, refer to the Installation Manual.

11-1. ROTATION FUNCTION (AND BACK-UP FUNCTION, 2ND STAGE CUT-IN FUNCTION)

Note that this function is not available for SUZ, MXZ, and PUMY models.

11-1-1. Operation

(1) Rotation function (and Back-up function)

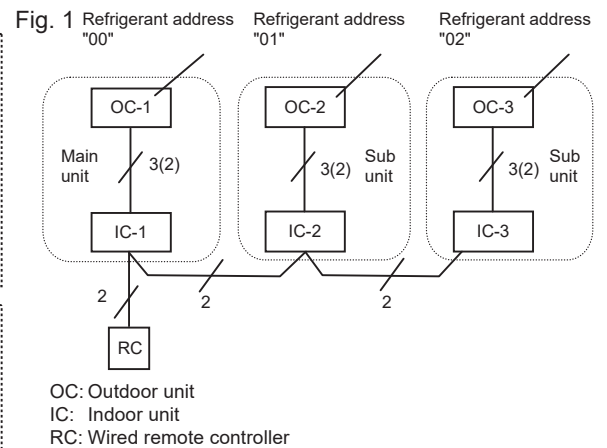
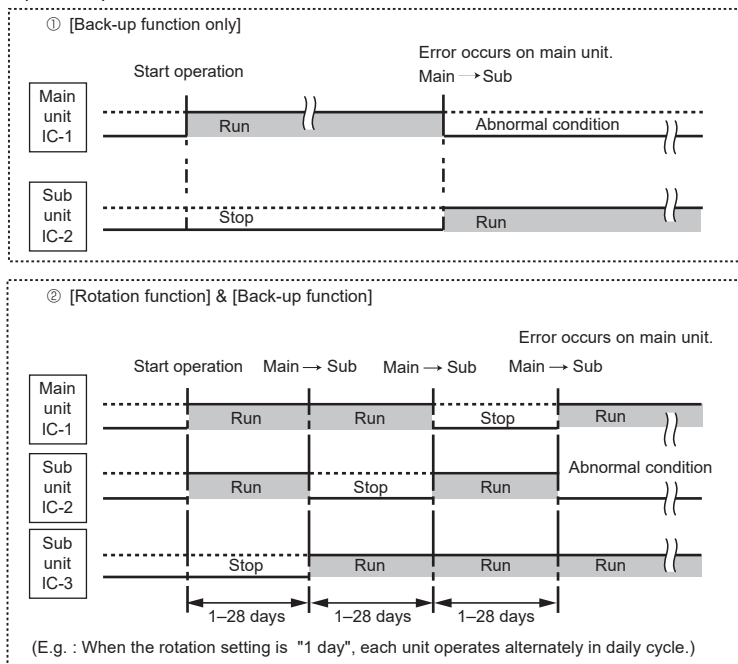
• Outline of functions

- Main and sub units operate according to the interval of rotation setting.
Main and sub units should be set by refrigerant address. (Outdoor DIP switch setting)
Refrigerant address "00" → Main unit
Refrigerant address "01", "02" → Sub unit
- When an error occurs to one unit, another unit will start operation. (Back-up function)

• System constraint

- This function is available only by the grouping control system (INDOOR UNIT: OUTDOOR UNIT=1:1) of 2 or 3 refrigerant groups. (Refer to Fig. 1)
- Main indoor unit should be connected for wired remote controller and the transmission line (TB5) for main and sub units should also be connected. (Refer to Fig. 1)
(This function cannot be set by wireless remote controller.)
- Set refrigerant address of each unit. (DIP switch on the outdoor unit ... Refrigerant address 00/01/02)

Operation pattern



Note:

- When the unit is restarted to operate after turning off the power or operation OFF status, the unit which was operating will start operation.
- To operate the main units, refer to "13-6. ROTATION SETTING" and set again.

(2) 2nd stage cut-in function

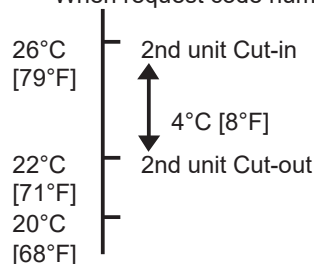
• Outline of functions

- When the 1st and 2nd units CANNOT supply sufficient capacity for exceptionally high-demand conditions and the actual room temperature reaches set point (*), the 3rd unit starts operation in conjunction with the 1st and 2nd units.
- Once the actual room temperature goes down to 4°C [8°F] below set point(*), the 3rd unit stops operation automatically.
(* set point = set temperature by R/C (remote controller) + 4, 6, 8°C [8, 10.8, 14.4°F] (selectable))
- The number of operating units is determined according to the room temperature and set point.
- When room temperature reaches higher than set point, standby unit starts. (3 units operation)
- When room temperature falls below set point -4°C [-8°F], standby unit stops. (2 units operation)

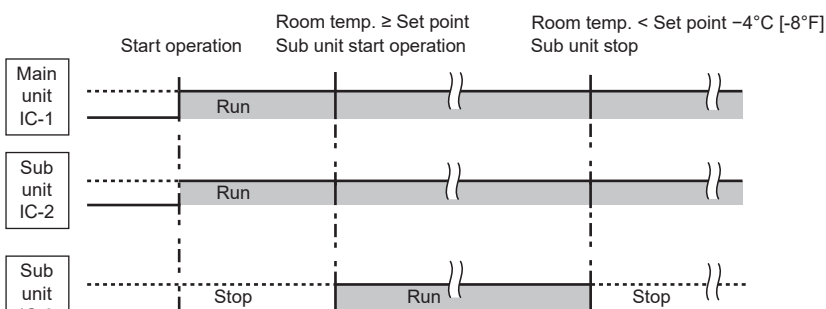
• System constraint

- This function is available only in cool mode.

Ex.) Set temp. by R/C = 20°C [68°F]
Set point = 26°C [79°F]
When request code number is "323".



[2nd stage cut-in function]



11-2. BACK-UP HEATING FUNCTION

11-2-1. Operation

The back-up heater turns ON when both of the following conditions have been satisfied:

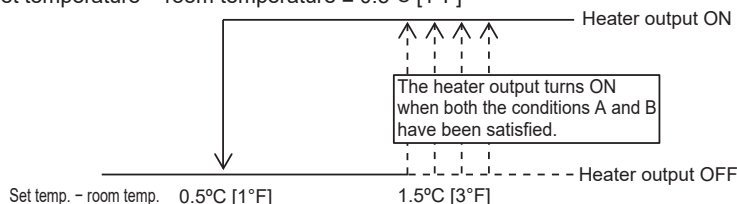
- A) When the heater ON delay time has passed and the room temperature, which is measured every minute, has not increased three times in a row compared with the temperature before the heater ON delay time started.

Note: The heater ON delay time starts when the condition of "set temperature - room temperature > 0.5°C [1°F]" has been satisfied.

- B) Set temperature - room temperature ≥ 1.5°C [3°F]

The back-up heater turns OFF when the following condition has been satisfied:

- Set temperature - room temperature ≤ 0.5°C [1°F]



11-2-2. How to change the heater ON delay time

You can set these functions by wired remote controller.

Notes:

- Both main and sub units should be set in the same setting.
- Every time replacing indoor controller board for service, the function should be set again.
- Stop the air-conditioner operation before changing the heater ON delay time.

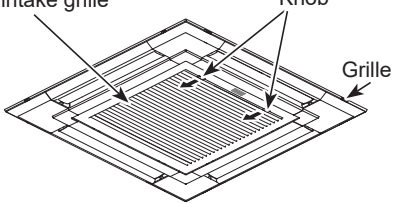
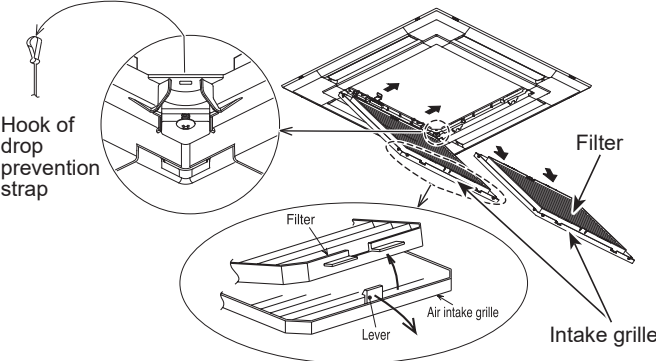
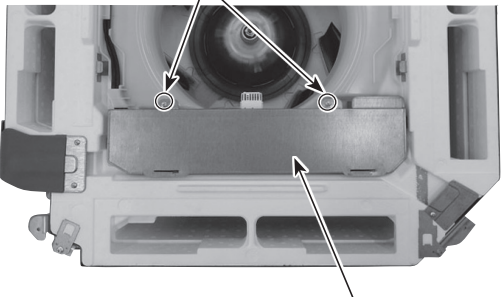
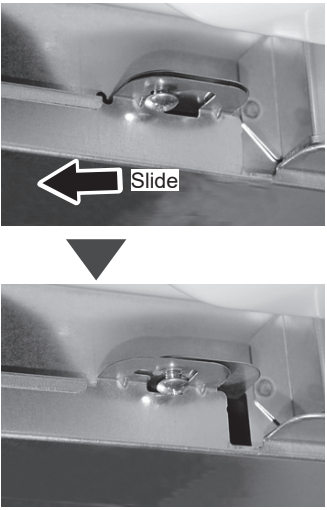
Request code list

Setting No. (Request code)	Setting contents	Initial setting
No.1 (390)	Monitoring the request code of current setting	
No.2 (391)	10 minutes	
No.3 (392)	15 minutes	
No.4 (393)	20 minutes	○
No.5 (394)	25 minutes	
No.6 (395)	5 minutes	
No.7 (396)	1 minutes	

11-2-3. How to connect

When connecting to the connector CN24 of the indoor unit, use PAC-SE56RA-E (optional parts).

Be careful when removing heavy parts.

OPERATING PROCEDURE	PHOTOS/FIGURES
1. Removing the filter (1) Slide the knob of air intake grille toward the arrow to open the air intake grille. (See Figure 1.) (2) Pull down the lever of the air intake grille to remove the filter. (See Figure 2.)	Figure 1 Air intake grille 
2. Removing the air intake grille (1) Slide the knob of air intake grille toward the arrow to open the air intake grille. (See Figure 1.) (2) Remove the hook of drop prevention strap from the panel. (3) Remove the air intake grille.	Figure 2 
3. Removing the electrical box cover (1) Remove the air intake grille and the filter. (Refer to procedure 2.) (2) Loosen the 2 electrical box cover fixing screws (M4×10) approximately 2 to 3 mm. (See Photo 1.) (3) Slide the electrical box cover toward the arrow to remove. (See Photo 2.)	Photo 1 Electrical box cover fixing screws  Photo 2 Electrical box cover 

OPERATING PROCEDURE

4. Removing the room temperature thermistor (TH1)

- (1) Remove the electrical box cover. (See Photo 1 and 2.)
- (2) Disconnect the connector CN20 from the indoor controller board.
- (3) Remove the room temperature thermistor with its holder. (See Photo 4.)

PHOTOS/FIGURES

Photo 3

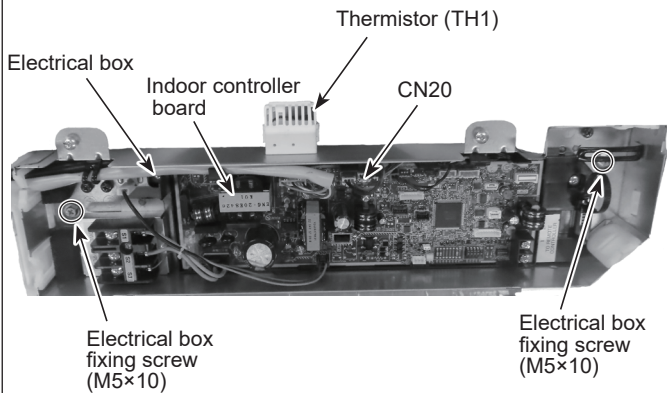
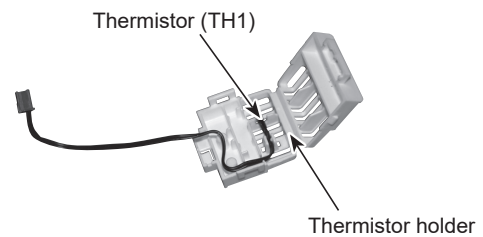


Photo 4



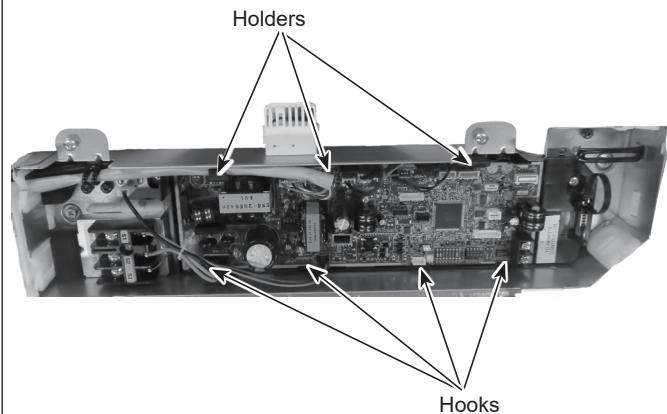
5. Removing the indoor controller board (I.B)

- (1) Remove the electrical box cover. (See Photo 1 and 2.)
- (2) Disconnect the connectors:
 - CNMF for fan motor
 - CNV for vane motor
 - CN5Y for motor for i-see Sensor
 - CN4Z for sensor for i-see Sensor (sensor)
 - CN90 for signal receiver
 - CNP for drain pump
 - CN4F for float switch
 - CN44 for thermistor (TH2/TH5)
 - CN01 for Indoor/Outdoor connecting line
 - CN3C for Indoor/Outdoor transmission
 - CNSA for R454B sensor

Disconnect the connectors for optional parts, if any.

- (3) For the unit controlled with the wireless remote controller, disconnect the lead wire connected to TB5 on the indoor controller board.
TB5: Remote controller transmission connecting wire
- (4) Remove the indoor controller board (3 holders/4 hooks). (See Photo 4.)

Photo 5



Be careful when removing heavy parts.

OPERATING PROCEDURE

6. Removing the electrical box

- (1) Remove the electrical box cover (See Photo 1 and 2.) and the connectors (Refer to procedure 5.).
- (2) Remove the electrical box fixing screws (M5 × 10: 2 screws). (See Photo 3.)
<Electrical parts in the electrical box>
 - Terminal block for earth and reactor
 - Indoor controller board
 - Thermistor (TH)
- (3) Remove the electrical box (2 hooks).

7. Removing the turbo fan

- (1) Remove the electrical box. (See Photo 3 and refer to procedure 6)
- (2) Remove the bell mouth (tapping screw 4×10: 2 screws). (See Photo 6.)
- (3) Remove the nut and washer (1 nut). (See Photo 7 and 8.)
- (4) Remove the turbo fan.

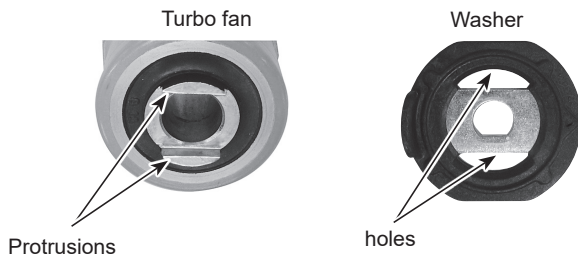
Photo 8



Turn this way to tighten. Turn this way to loosen.
(The same directions as the fan rotation.)

Rubber mount

Note: When re-attaching the motor mount, make sure that the thicker end faces the motor shaft.



PHOTOS/FIGURES

Photo 6

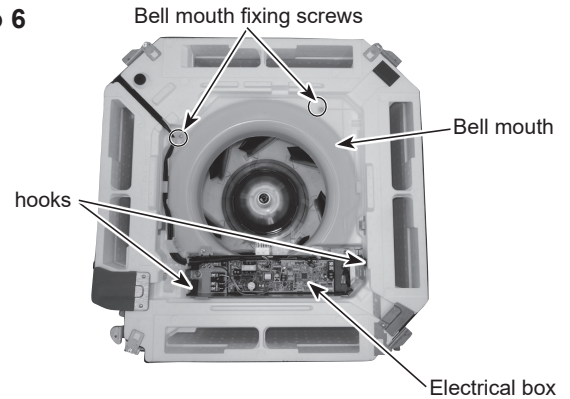


Photo 7

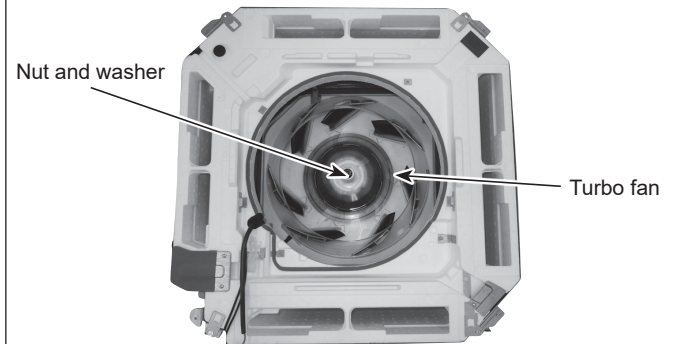
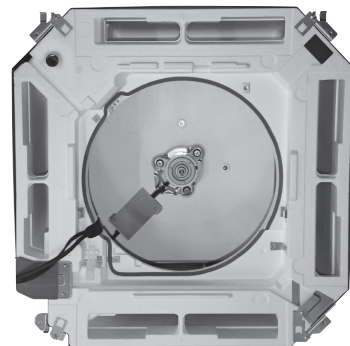
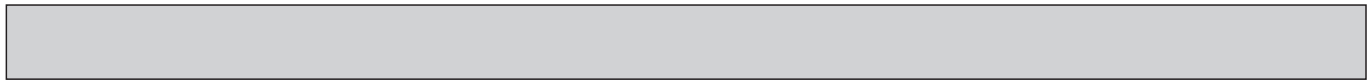
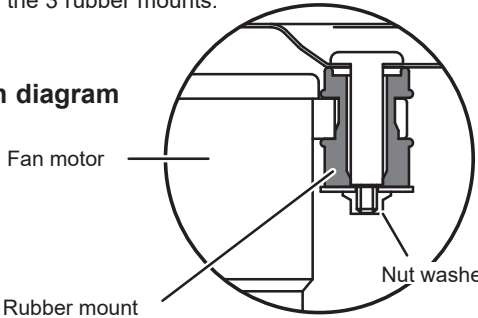
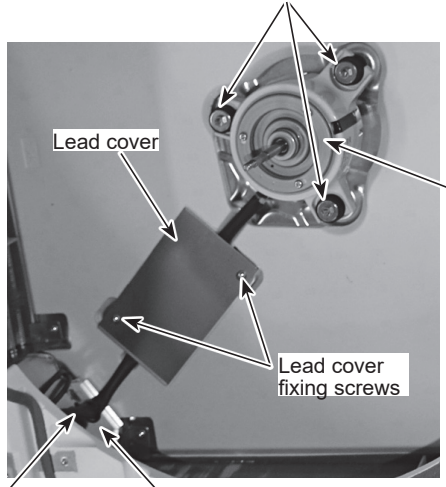
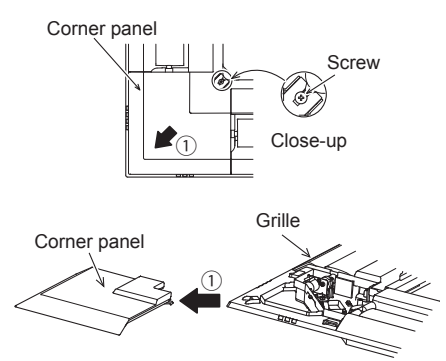
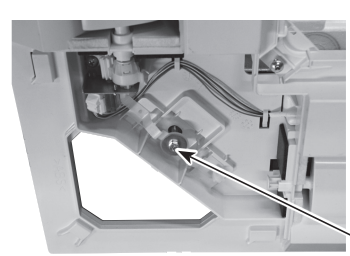
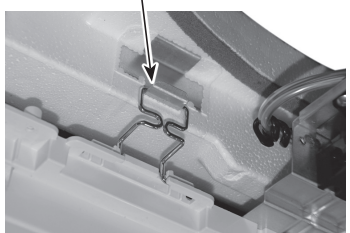
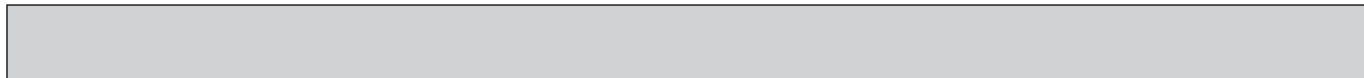


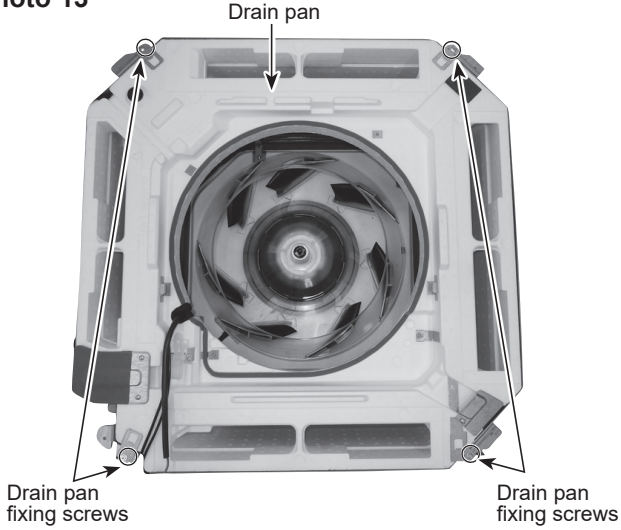
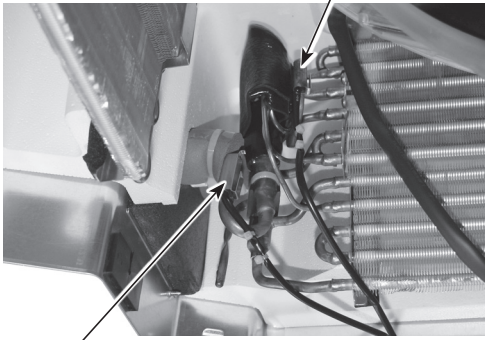
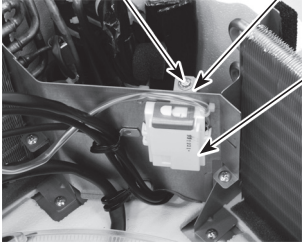
Photo 9





OPERATING PROCEDURE	PHOTOS/FIGURES
8. Removing the fan motor (MF) (1) Remove the turbo fan. (See Photo 7 and refer to procedure 8.) (2) Remove the lead cover (tapping screw 4×10: 2 screws). (See Photo 10.) (3) Loosen the 2 clamps. (4) Remove the 3 washer nuts (M5). (5) Remove the fan motor. (6) Remove the 3 rubber mounts. Figure 3 Cross section diagram  Note: When re-attaching the motor mount, make sure that the thicker end faces the motor shaft.	Photo 10  Figure 4 
9. Removing the panel (1) Remove the electrical box fixing cover. (See Photo 1.) (2) Disconnect the connector for vane motor (CNV). (Refer to procedure 5.) (3) Loosen the 4 corner panel fixing screws (tapping screw 4×16). (See Figure 4.) (4) Slide the corner panel to the direction of the arrow ①, and remove the corner panel. (See Figure 4.) (5) Remove the 4 installation screws (M5×28). (See Photo 11.) (6) Release the 2 temporary hanging hooks to remove the grille. (See Photo 12.)	Photo 11  Photo 12 



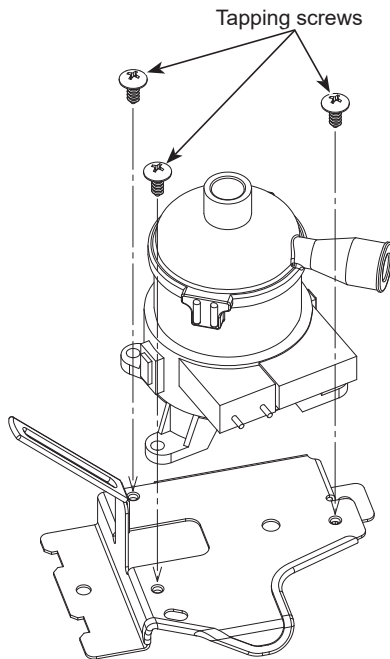
OPERATING PROCEDURE	PHOTOS/FIGURES
10. Removing the drain pan (1) Remove the electrical box. (See photo 3 and refer to 7.) (2) Remove the bell mouth (tapping screw 4×10 : 2 screws). (See Photo 6.) (3) Remove the drain pan (screw M5×10: 4 screws).	Photo 13  Drain pan Drain pan fixing screws
11. Removing the pipe temperature thermistor/liquid (TH2) and the condenser/evaporator temperature thermistor (TH5) (1) Remove the drain pan (Refer to procedure 10.) and loosen the 2 clamps of the coil plate. (See Photo 10.) (2) Remove the coil plate (tapping screw 4×10: 2 screws). (3) Disconnect the pipe temperature thermistor/liquid (TH2) and the condenser/evaporator temperature thermistor (TH5) from the holder.	Photo 14  Condenser/evaporator temperature thermistor (TH5) Pipe temperature/liquid thermistor (TH2)
12. Removing the R454B sensor (1) Remove the drain pan. (Refer to procedure 9) (2) Remove the screw of R454B sensor and remove the R454B sensor. (See Photo 15) (3) Slide and remove the R454B sensor fixing plate. (See Photo 15) Note: This refrigerant sensor shall only be replaced with manufacturer approved sensor.	Photo 15  R454B sensor fixing screw R454B sensor fixing plate R454B sensor

OPERATING PROCEDURE

13. Removing the drain pump (DP)

- (1) Remove the drain pan. (Refer to procedure 10)
- (2) Cut the hose band and remove the hose.
- (3) Loosen the clamp of the drain pump.
- (4) Remove the drain pump (tapping screw 4×10: 2 screws/2 hooks).
- (5) Cut the drain pump base and lead wire fixing band. (See Figure 5)
- (6) Remove the lead wire of the drain pump from the clamp of the drain pump base. (See Figure 5)
- (7) Remove the drain pump (tapping screw: 3 screws). (See Figure 6)

Figure 6



PHOTOS/FIGURES

Photo 16

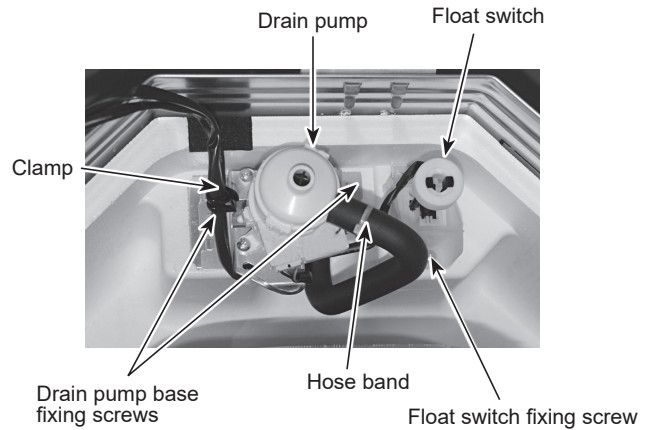
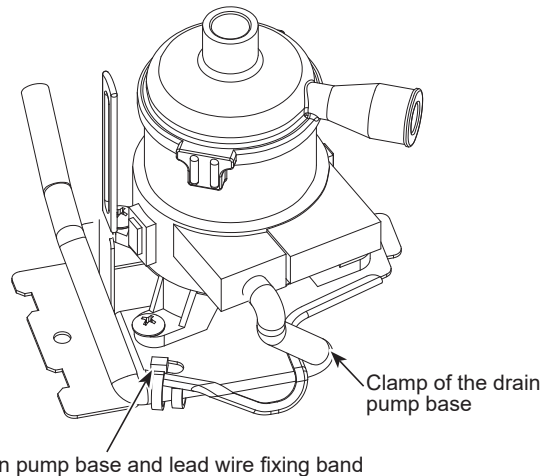


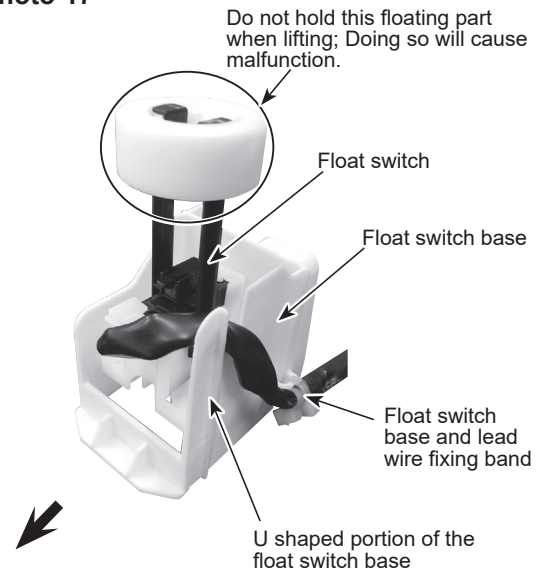
Figure 5



14. Removing the float switch (FS)

- (1) Remove the drain pan. (Refer to procedure 10)
- (2) Loosen the clamp of the drain pump. (See Photo 16)
- (3) Remove the float switch (tapping screw 4×10: 1 screw/1 hook). (See Photo 16)
- (4) Remove the float switch base and the lead wire fixing band. (See Photo 17)
- (5) Remove the lead wire from the U shaped portion of the float switch base. (See Photo 17)
- (6) Slide the float switch towards the arrow to remove from the float switch base.

Photo 17



OPERATING PROCEDURE

15. Removing the heat exchanger

- (1) Remove the drain pan. (Refer to procedure 10.)
- (2) Remove the piping cover (tapping screw 4×10: 3 screws).
- (3) Remove the coil plate (tapping screw 4×10: 2 screws).
- (4) Remove the heat exchanger fixing screws (tapping screw 4×10: 2 screws).
- (5) Remove the coil support (tapping screw 4×10: 1 screw each)

- PLA-AE12/18NL: 1 coil support (See photo 18)
- PLA-AE24/30/36/42/48NL: 3 coil supports (See photo 19)

- (6) Remove the heat exchanger.

PHOTOS/FIGURES

Photo 18

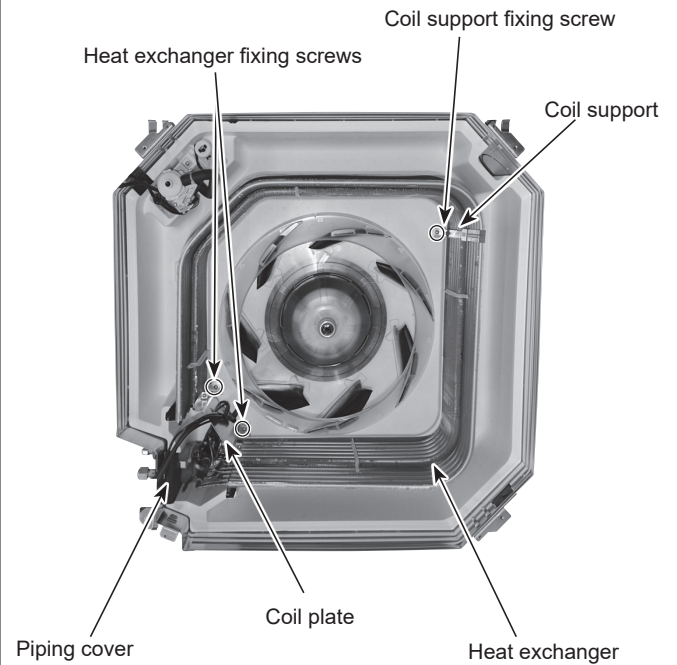
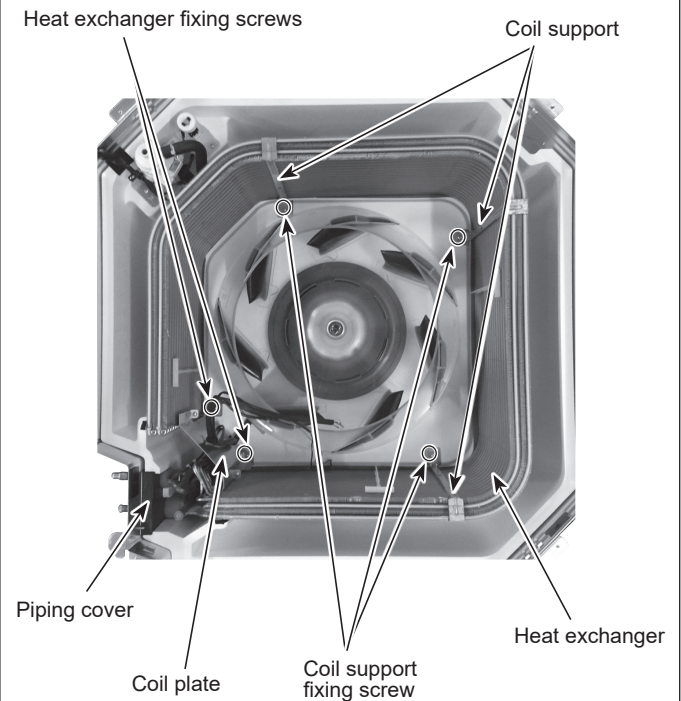


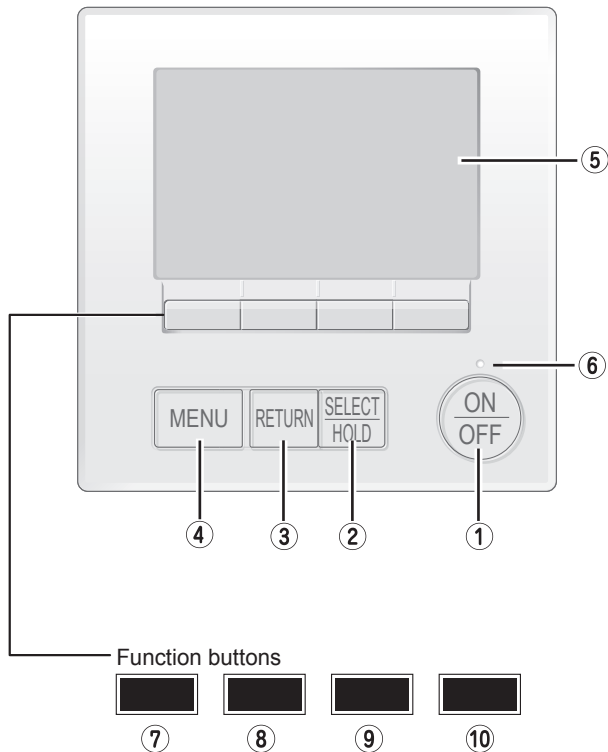
Photo 19



13-1. REMOTE CONTROLLER FUNCTIONS

<PAR-42MAAUB>

Controller interface

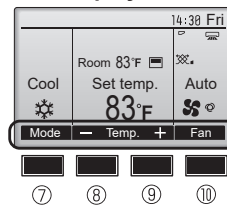


The functions of the function buttons change depending on the screen.

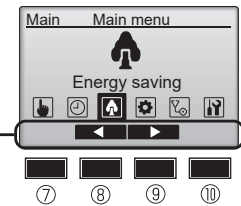
Refer to the button function guide that appears at the bottom of the LCD for the functions they serve on a given screen.

When the system is centrally controlled, the button function guide that corresponds to the locked button will not appear.

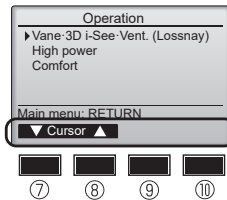
Main display



Main menu



Menu screen



Function guide

① [ON/OFF] button

Press to turn ON/OFF the indoor unit.

② [SELECT/HOLD] button

Press to save the setting.

When the Main menu is displayed, pressing this button will enable/disable the HOLD function.

③ [RETURN] button

Press to return to the previous screen.

④ [MENU] button

Press to bring up the Main menu.

⑤ Backlit LCD

Operation settings will appear.

When the backlight is off, pressing any button turns the backlight on and it will stay lit for a certain period of time depending on the screen.

When the backlight is off, pressing any button turns the backlight on and does not perform its function. (except for the [ON/OFF] button)

⑥ ON/OFF lamp

This lamp lights up in green while the unit is in operation. It blinks while the remote controller is starting up or when there is an error.

⑦ Function button [F1]

Main display: Press to change the operation mode.

Menu screen: The button function varies with the screen.

⑧ Function button [F2]

Main display: Press to decrease temperature.

Main menu: Press to move the cursor left.

Menu screen: The button function varies with the screen.

⑨ Function button [F3]

Main display: Press to increase temperature.

Main menu: Press to move the cursor right.

Menu screen: The button function varies with the screen.

⑩ Function button [F4]

Main display: Press to change the fan speed.

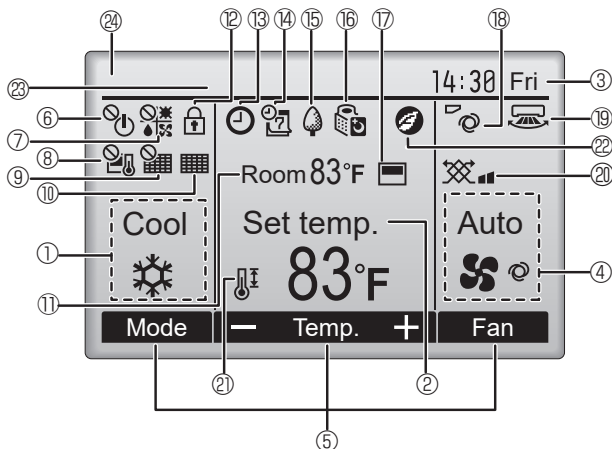
Menu screen: The button function varies with the screen.

Display

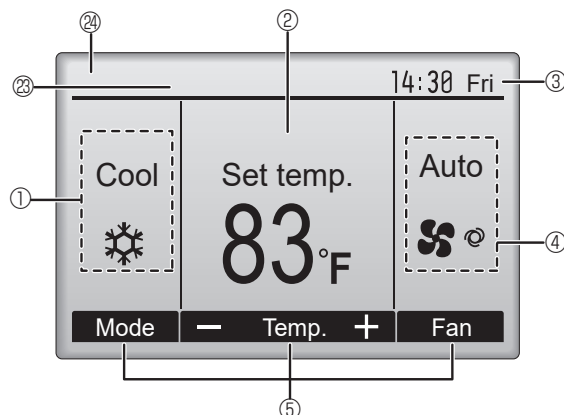
The main display can be displayed in two different modes: "Full" and "Basic". The initial setting is "Full". To switch to the "Basic" mode, change the setting on the Main display setting. (Refer to operation manual included with remote controller.)

<Full mode>

All icons are displayed for explanation.



<Basic mode>



① Operation mode

② Preset temperature

③ Clock

④ Fan speed

⑤ Button function guide

Functions of the corresponding buttons appear here.



Appears when the ON/OFF operation is centrally controlled.



Appears when the operation mode is centrally controlled.



Appears when the preset temperature is centrally controlled.



Appears when the filter reset function is centrally controlled.



Indicates when filter needs maintenance.

⑪ Room temperature



Appears when the buttons are locked.



Appears when the On/Off timer or Auto-off timer function is enabled.

appears when the timer is disabled by the centralized control system.
appears when the HOLD function is enable.



Appears when the Weekly timer is enabled.



Appears while the units are operated in the energy saving mode. (Will not appear on some models of indoor units)



Appears while the outdoor units are operated in the silent mode.



Appears when the built-in thermistor on the remote controller is activated to monitor the room temperature (1).

activated to monitor the room temperature.



Indicates the vane setting.



Indicates the louver setting.



Indicates the ventilation setting.



Appears when the preset temperature range is restricted.



Appears when an energy saving operation is performed using a "3D i-see Sensor" function.

②③ Centrally controlled

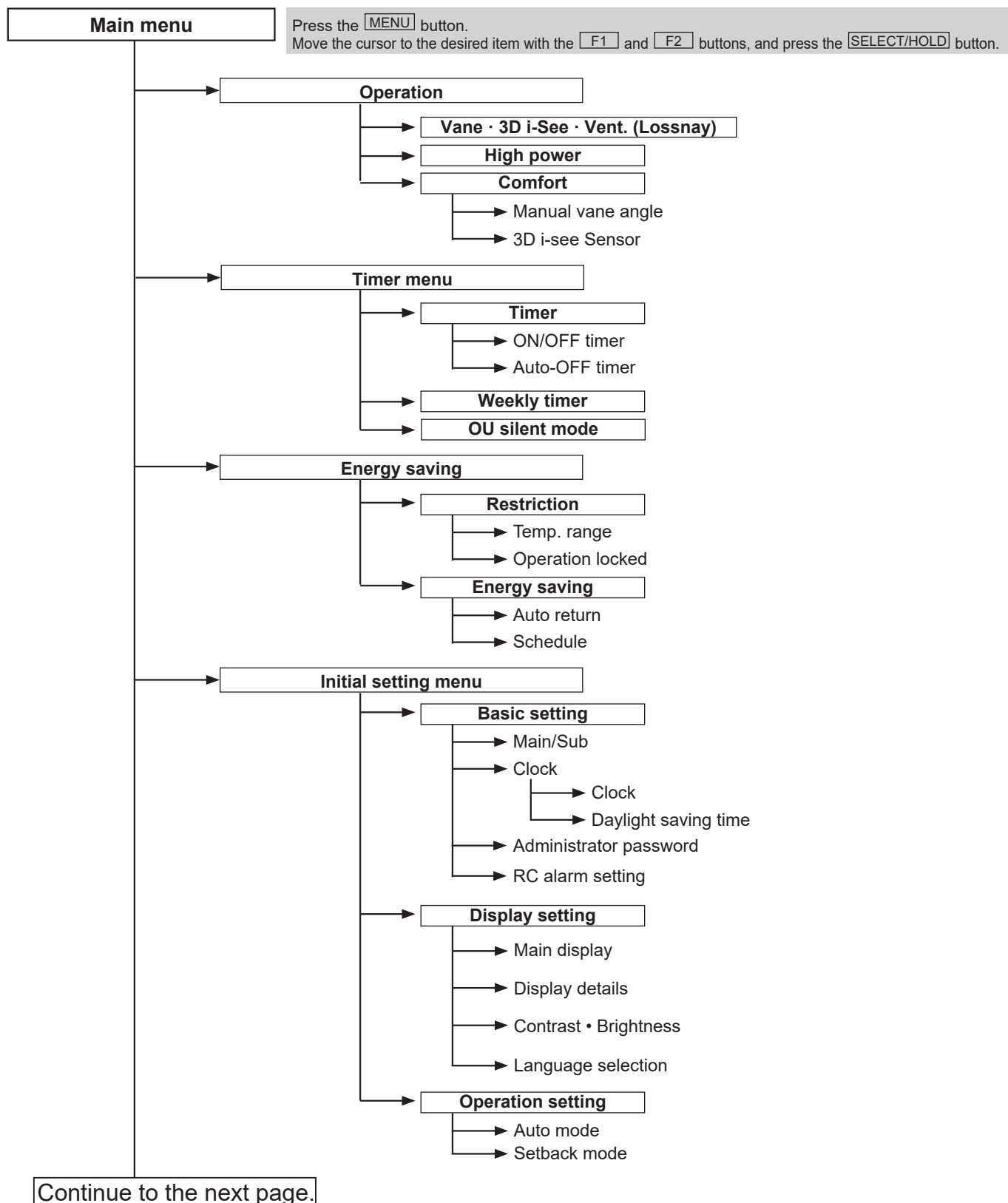
Appears for a certain period of time when a centrally-controlled item is operated.

②④ Preliminary error display

A check code appears during the preliminary error.

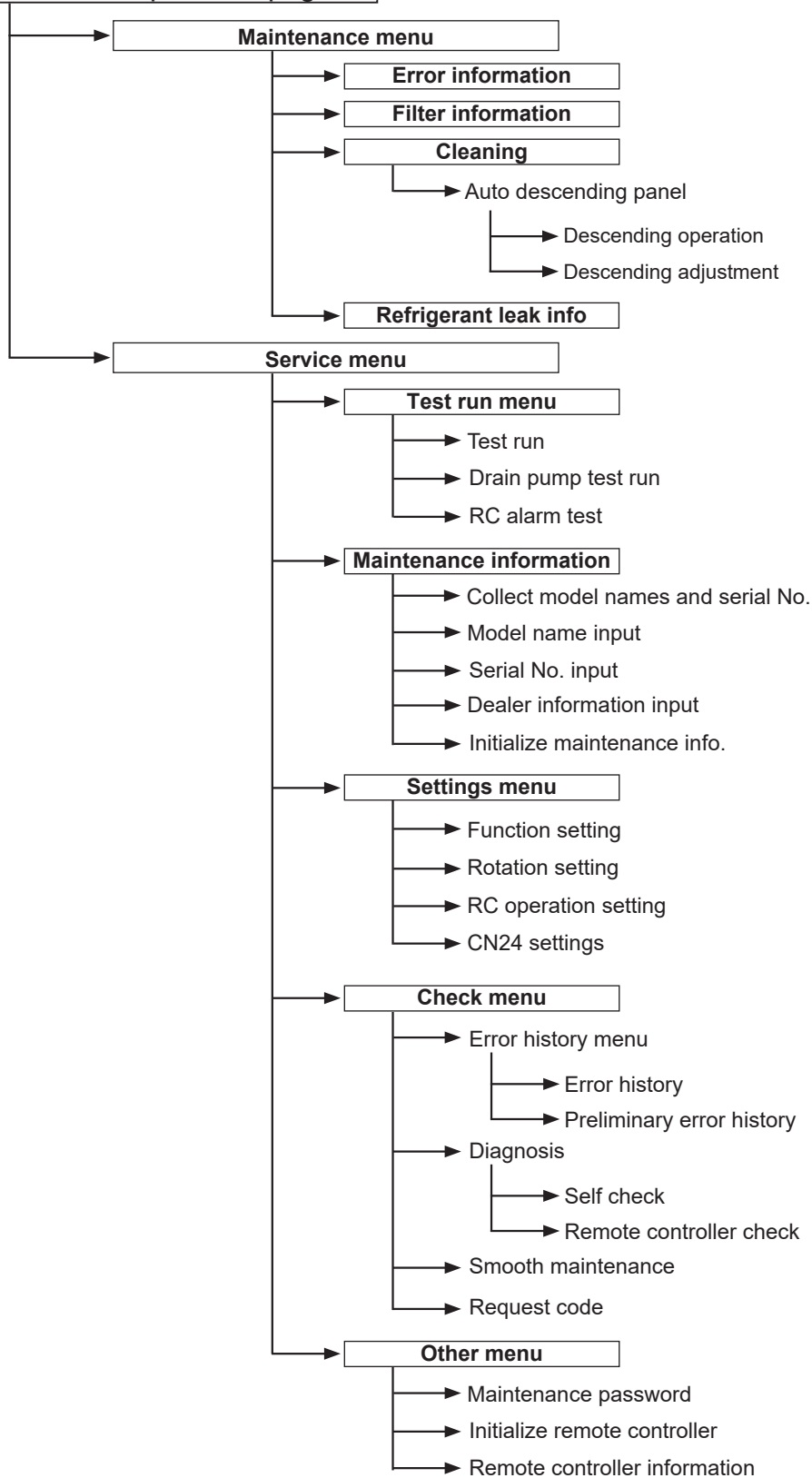
Most settings (except ON/OFF, mode, fan speed, temperature) can be made from the Main menu.

Menu structure



Not all functions are available on all models of indoor units.

Continue from the previous page.



Not all functions are available on all models of indoor units.

Main menu list

Main menu	Setting and display items		Setting details
Operation	Vane•3D i-See•Vent. (Lossnay) Vane · Louver · Vent. (Lossnay)		Vane: Use to set the vertical air direction. Louver: Use to set the horizontal air direction. 3D i-See sensor: This setting is available only for the air conditioners that support easy setting function of motion sensing air direction. Vent: Use to set the amount of ventilation. Use to set the vane angle. • Select a desired vane setting. Use to turn ON/OFF the louver. • Select a desired setting from "ON" and "OFF." Use to set the amount of ventilation. • Select a desired setting from "Off," "Low," and "High."
	High power ^{*3}		Use to reach the comfortable room temperature quickly. • Units can be operated in the High-power mode for up to 30 minutes.
	Comfort	Manual vane angle	Use to fix each vane angle.
		3D i-see Sensor	Use to set the following functions for 3D i-see Sensor. • Air distribution • Energy saving option • Seasonal airflow
Timer	Timer	ON/OFF timer ^{*1}	Use to set the operation ON/OFF times. • Time can be set in 5-minute increments.
		Auto-Off timer	Use to set the Auto-Off time. • Time can be set to a value from 30 to 240 in 10-minute increments.
	Weekly timer ^{*1, *2}		Use to set the weekly operation ON/OFF times. • Up to 8 operation patterns can be set for each day. (Not valid when the ON/OFF timer is enabled.)
	OU silent mode ^{*1, *3}		Use to set the time periods in which priority is given to quiet operation of outdoor units over temperature control. Set the Start/Stop times for each day of the week. • Select the desired silent level from "Normal," "Middle," and "Quiet."
Energy saving	Restriction	Temp. range ^{*2}	Use to restrict the preset temperature range. • Different temperature ranges can be set for different operation modes.
		Operation locked	Use to lock selected functions. • The locked functions cannot be operated.
	Energy saving	Auto return ^{*2}	Use to get the units to operate at the preset temperature after performing energy saving operation for a specified time period. • Time can be set to a value from 30 and 120 in 10-minute increments. (This function will not be valid when the preset temperature ranges are restricted.)
		Schedule ^{*1, *3}	Set the start/stop times to operate the units in the energy saving mode for each day of the week, and set the energy saving rate. • Up to 4 energy saving operation patterns can be set for each day. • Time can be set in 5-minute increments. • Energy saving rate can be set to a value from 0% or 50 to 90% in 10% increments.
Initial setting	Basic setting	Main/Sub	When connecting 2 remote controllers, one of them needs to be designated as a sub controller.
		Clock	Use to set the current time.
		Daylight saving time	Set the daylight saving time.
		Administrator password	The administrator password is required to make the settings for the following items. • Timer setting • Energy saving setting • Weekly timer setting • Restriction setting • Outdoor unit silent mode setting

^{*1} Clock setting is required.

^{*2} 2°F (1°C) increments.

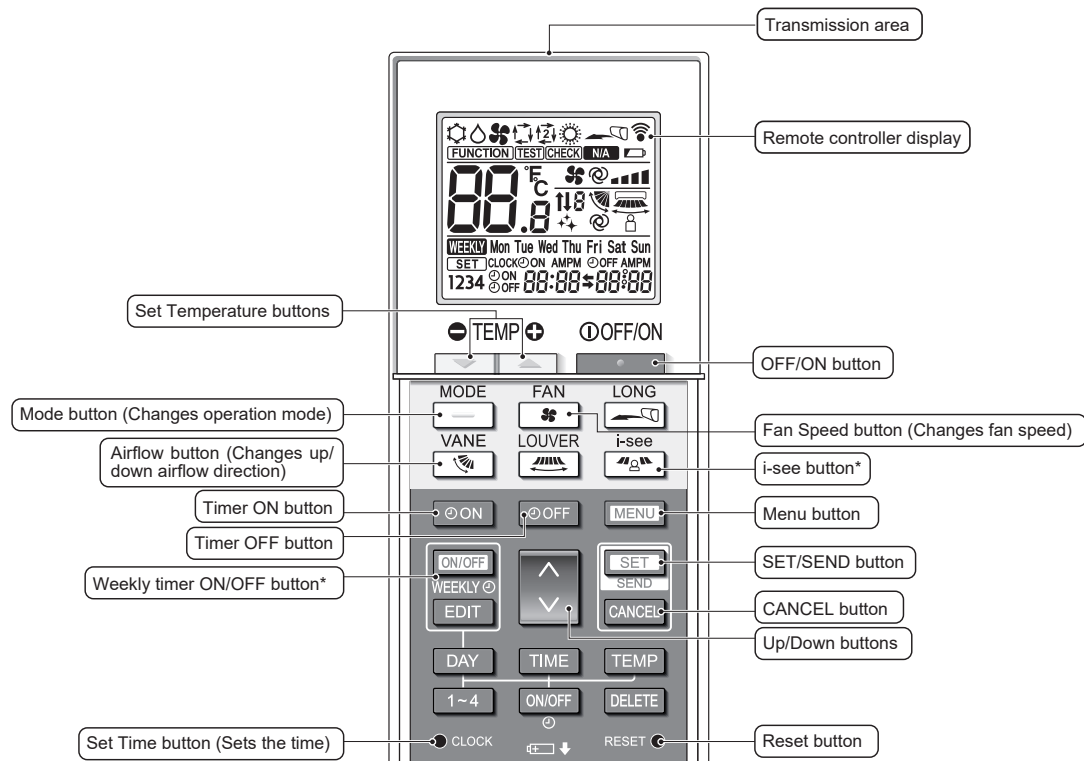
^{*3} This function is available only when certain outdoor units are connected.

Main menu	Setting and display items		Setting details
Initial setting	Display setting	Main display	Use to switch between "Full" and "Basic" modes for the Main display, and use to change the background colors of the display to black.
		Display details	Make the settings for the remote controller related items as necessary. Clock: The initial settings are "Yes" and "24h" format. Temperature: Set either Celsius (°C) or Fahrenheit (°F). Room temp.: Set Show or Hide. Auto mode: Set Auto mode display or Only Auto display.
		Contrast • Brightness	Use to adjust screen contrast and brightness.
		Language selection	Use to select the desired language.
	Operation setting	Auto mode	Whether or not to use Auto mode can be selected by using the button. This setting is valid only when indoor units with Auto mode function are connected.
		Setback mode	Whether or not to use the Setback mode can be selected by using the button. This setting is valid only when indoor units with the Setback mode function are connected.
Maintenance	Error information		Use to check error information when an error occurs. • Check code, error source, refrigerant address, model name, manufacturing number, contact information (dealer's phone number) can be displayed. (The model name, manufacturing number, and contact information need to be registered in advance to be displayed.)
	Refrigerant leak info		Use to check error information when a refrigerant leakage occurs. • Error code, error source, refrigerant address, unit model, manufacturing number, contact information (dealer's phone number) can be displayed. * The unit model, manufacturing number, and contact information need to be registered in advance to be displayed.
	Filter information		Use to check the filter status. • The filter sign can be reset.
	Cleaning	Auto descending panel	Use to lift and lower the auto descending panel (Optional parts).
Service	Test run		Select "Test run" from the Service menu to bring up the Test run menu. • Test run • Drain pump test run
	Input maintenance		Select "Input maintenance Info." from the Service menu to bring up the Maintenance information screen. The following settings can be made from the Maintenance Information screen. • Model name input • Serial No. input • Dealer information input • Initialize maintenance info.
	Settings	Function setting	Make the settings for the indoor unit functions via the remote controller as necessary.
	Check	Error history	Display the error history and execute "delete error history".
		Diagnosis	Self check: Error history of each unit can be checked via the remote controller. Remote controller check: When the remote controller does not work properly, use the remote controller checking function to troubleshoot the problem.
		Smooth maintenance * ₁	Use to display the maintenance data of indoor/outdoor units.
		Request code * ₁	Use to check operation data such as thermistor temperature and error information.
	Others	Maintenance password	Use to change the maintenance password.
		Initialize remote controller	Use to initialize the remote controller to the factory shipment status.
		Remote controller information	Use to display the remote controller model name, software version, and serial number.

*₁ This function is available only when certain outdoor units are connected.

<PAR-SL101A-E>

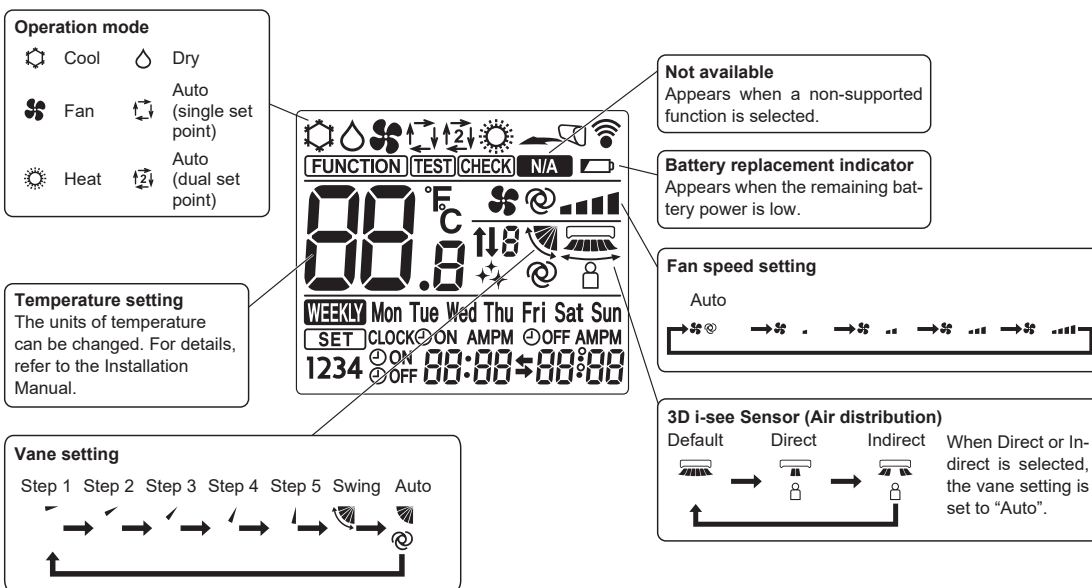
Controller interface



Note:

* This button is enabled or disabled depending on the model of the indoor unit.

Display



13-2. ERROR INFORMATION

**When an error occurs, the following screen will appear.
Check the error status, stop the operation, and consult your dealer.**

1. Check code, error unit, refrigerant address, model name, and serial number will appear.

The model name and serial number will appear only if the information has been registered.

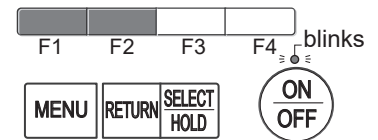
Press the **[F1]** or **[F2]** button to go to the next page.

Error information 1/2

Error code	A3
Error unit	IU 8 Unit#1
Time Occurred	82/81 4:48

Reset error: Reset button

▼ Page ▲ Reset



Contact information (dealer's phone number) will appear if the information has been registered.

Error information 2/2

Contact information

Dealer

Tel

Reset error: Reset button

▼ Page ▲ Reset

2. Press the **[F4]** button or the **[ON/OFF]** button to reset the error that is occurring.

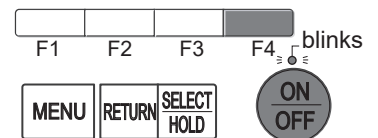
Errors cannot be reset while the ON/OFF operation is prohibited.

Error information 1/2

Error code	A3
Error unit	IU 8 Unit#1
Time Occurred	82/81 4:48

Reset error: Reset button

▼ Page ▲ Reset

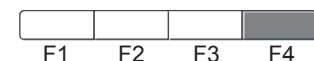


Select "OK" with the **[F4]** button.

Error reset

Reset current error?

Cancel OK



Error reset

Error reset

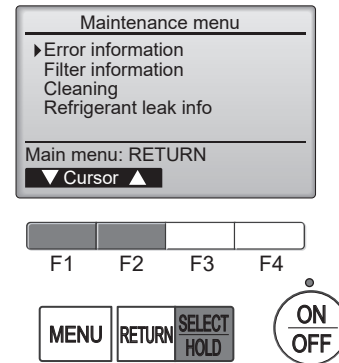
Main menu: MENU

Navigating through the screens

- To go back to the Service menu **[MENU]** button

• Checking the error information

While no errors are occurring, page 2/2 of the error information can be viewed by selecting "Error information" from the Maintenance menu. Errors cannot be reset from this screen.

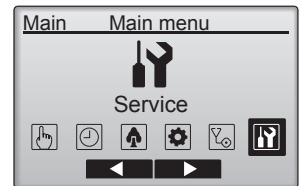


13-3. SERVICE MENU

Maintenance password is required

1. Select "Service" from the Main menu, and press the [SELECT/HOLD] button.

*At the main display, the menu button and select "Service" to make the maintenance setting.



2. When the Service menu is selected, a window will appear asking for the password.

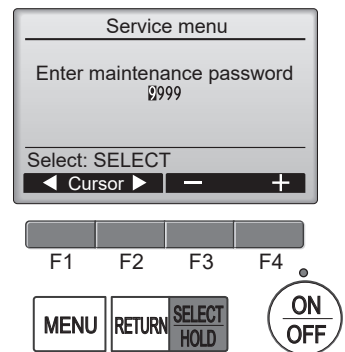
To enter the current maintenance password (4 numerical digits), move the cursor to the digit you want to change with the [F1] or [F2] button.



Set each number (0 through 9) with the [F3] or [F4] button.



Then, press the [SELECT/HOLD] button.



Note: The initial maintenance password is "9999". Change the default password as necessary to prevent unauthorized access. Have the password available for those who need it.

: If you forget your maintenance password, you can initialize the password to the default password "9999" by pressing and holding the [F1] button for 10 seconds on the maintenance password setting screen.

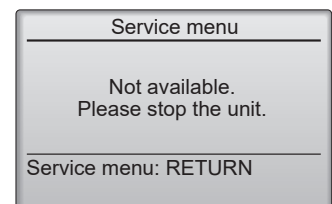
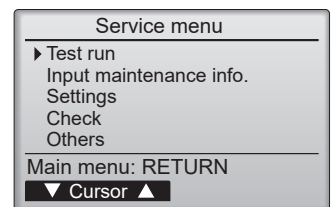
3. If the password matches, the Service menu will appear.

The type of menu that appears depends on the connected indoor units' type.

Note: Air conditioning units may need to be stopped to make only at "Settings". There may be some settings that cannot be made when the system is centrally controlled.



A screen will appear that indicates the setting has been saved.



Navigating through the screens

- To go back to the Service menu [MENU] button
- To return to the previous screen..... [RETURN] button

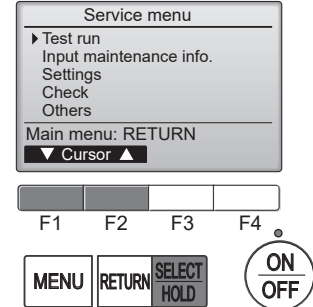
13-4. TEST RUN

13-4-1. PAR-42MAAUB

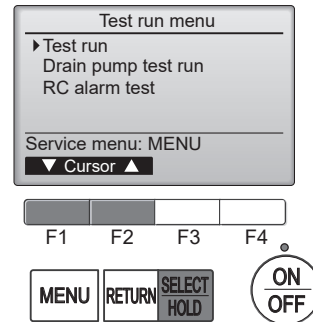
1. Select "Service" from the Main menu, and press the [SELECT/HOLD] button.



Select "Test run" with the **F1** or **F2** button, and press the [SELECT/HOLD] button.



2. Select "Test run" with the **F1** or **F2** button, and press the [SELECT/HOLD] button.



Test run operation

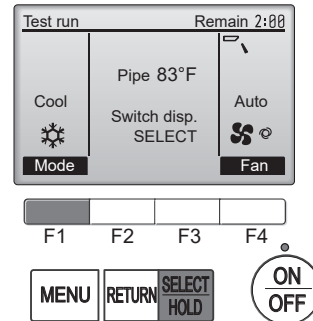
Press the **F1** button to go through the operation modes in the order of "Cool and Heat".

Cool mode: Check the cold air blows out.
Heat mode: Check the heat blows out.

Check the operation of the outdoor unit's fan.



Press the [SELECT/HOLD] button and open the Vane setting screen.



Auto vane check

Check the auto vane with the **F1** **F2** buttons.



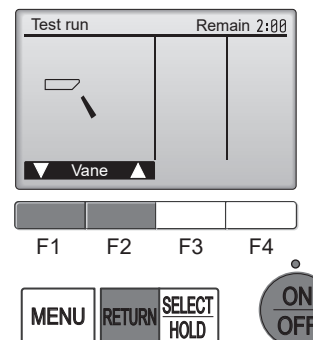
Press the [RETURN] button to return to "Test run operation".



Press the [ON/OFF] button.

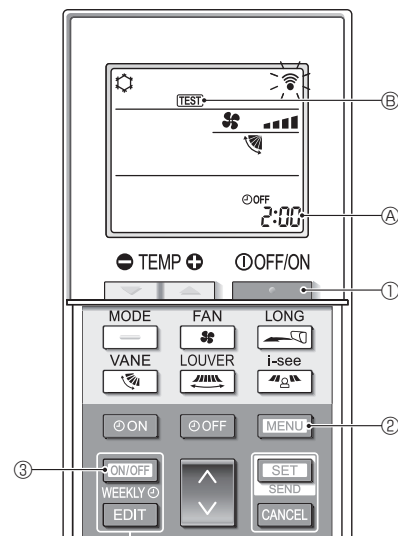
When the test run is completed, the "Test run menu" screen will appear.
The test run will automatically stop after 2 hours.

*The function is available only for the model with vanes.



13-4-2. PAR-SL101A-E

- Press the  button ① to stop the air conditioner.
 - If the weekly timer is enabled (WEEKLY is on), press the  button ③ to disable it (WEEKLY is off).
- Press the  button ② for 5 seconds.
 - CHECK comes on and the unit enters the service mode.
- Press the  button ②.
 - TEST comes on and the unit enters the test run mode.
- Press the following buttons to start the test run.
 - : Switch the operation mode between cooling and heating and start the test run.
 - : Switch the fan speed and start the test run.
 - : Switch the airflow direction and start the test run.
 - : Switch the louver and start the test run.
 - : Start the test run.
- Stop the test run.
 - Press the  button ① to stop the test run.
 - After 2 hours, the stop signal is transmitted.



13-5. FUNCTION SETTING

13-5-1. PAR-42MAAUB

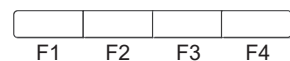
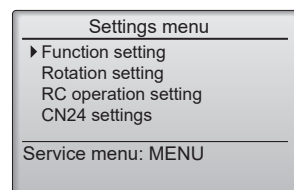
- Select "Service" from the Main menu, and press the [SELECT/HOLD] button.

▼

Select "Setting" from the Service menu, and press the [SELECT/HOLD] button.

▼

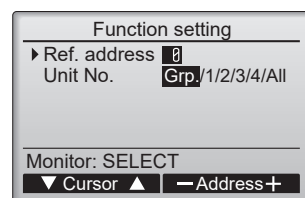
Select "Function setting", and press the [SELECT/HOLD] button.



- Set the indoor unit refrigerant addresses and unit numbers with the  through  buttons, and then press the [SELECT/HOLD] button to confirm the current setting.

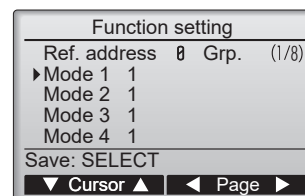
Note: Checking the indoor unit No.

When the [SELECT/HOLD] button is pressed, the target indoor unit will start fan operation. If the unit is common or when running all units, all indoor units for the selected refrigerant address will start fan operation.



- Toggle through the pages with the  or  button.

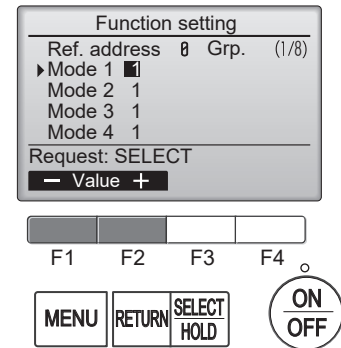
Select the mode number with the  or  button, and then press the [SELECT/HOLD] button.



4. Select the setting number with the **F1** or **F2** button.

Setting range for modes 1 through 28: 1 through 3

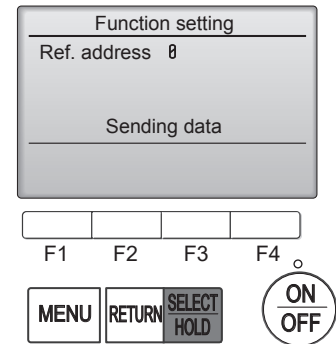
Setting range for modes 31 through 66: 1 through 15



5. When the settings are completed, press the [SELECT/HOLD] button to send the setting data from the remote controller to the indoor units.

When the transmission is successfully completed, the screen will return to the Function setting screen.

- Note:**
- Make the above settings only on Mr. Slim units as necessary.
 - The above function settings are not available for the CITY MULTI units.
 - Refer to the indoor unit Installation Manual for the detailed information about initial settings, mode numbers, and setting numbers for the indoor units.
 - Be sure to write down the settings for all functions if any of the initial settings has been changed after the completion of installation work.



13-5-2. PAR-SL101A-E

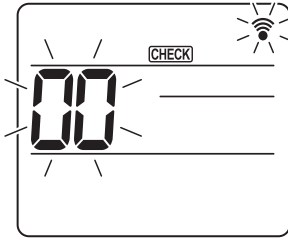


Fig. 1

1. Going to the function select mode

Press the **[MENU]** button between of 5 seconds.

(Start this operation from the status of remote controller display turned off.)

[CHECK] is lit and "00" blinks. (Fig. 1)

Press the **[↓]** button to set the "50".

Direct the wireless remote controller toward the receiver of the indoor unit and press the **[SET]** button.

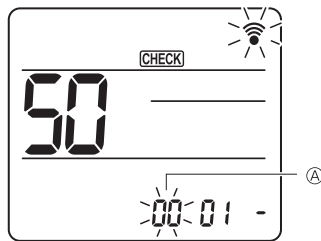


Fig. 2

2. Setting the unit number

Press the **[↓]** button to set unit number **A**. (Fig. 2)

Direct the wireless remote controller toward the receiver of the indoor unit and press the **[SET]** button.

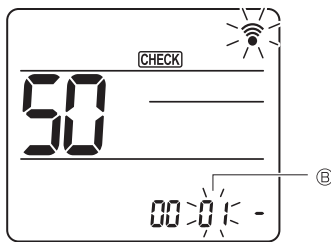


Fig. 3

3. Select a mode

Press the **[↓]** button to set Mode number **B**. (Fig. 3)

Direct the wireless remote controller toward the receiver of the indoor unit and press the **[SET]** button.

Current setting number:

1=1 beep (1 second)

2=2 beep (1 second each)

3=3 beep (1 second each)

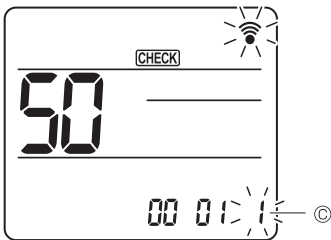


Fig. 4

4. Selecting the setting number

Use the **[↓]** button to change the Setting number **C**. (Fig. 4)

Direct the wireless remote controller toward the receiver of the indoor unit and press the **[SET]** button.

5. To select multiple functions continuously

Repeat select **③** and **④** to change multiple function settings continuously.

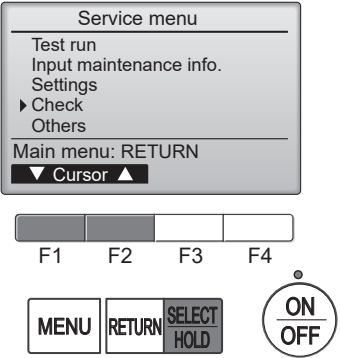
6. Complete function selection

Direct the wireless remote controller toward the sensor of the indoor unit and press the **[OFF/ON]** button.

Note: Be sure to write down the settings for all functions if any of the initial settings has been changed after the completion of installation work.

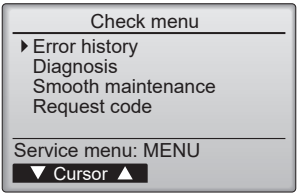
13-6. ERROR HISTORY

1. Select "Service" from the Main menu, and press the [SELECT/HOLD] button.



Select "Check" with the [F1] or [F2] button, and press the [SELECT/HOLD] button.

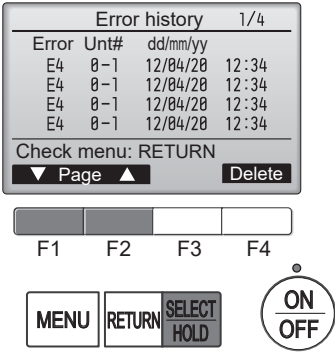
2. Select "Error history" with the [F1] or [F2] button, and press the [SELECT/HOLD] button.



Select "Error history" from the Error history menu, and press the [SELECT/HOLD] button.

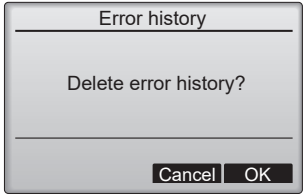
3. 16 error history records will appear.

4 records are shown per page, and the top record on the first page indicates the latest error record.



4. Deleting the error history

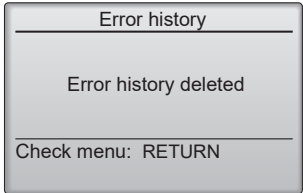
To delete the error history, press the [F4] button (Delete) on the screen that shows error history. A confirmation screen will appear asking if you want to delete the error history.



Press the [F4] button (OK) to delete the history.

"Error history deleted" will appear on the screen.

Press the [RETURN] button to go back to the Check menu screen.



13-7. SELF-DIAGNOSIS

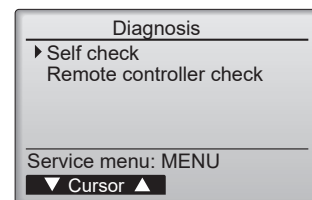
13-7-1. PAR-42MAAUB

1. Select "Service" from the Main menu,
and press the [SELECT/HOLD] button.

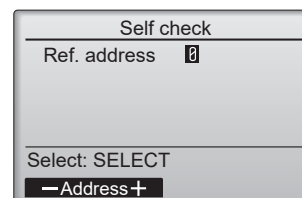
▼
Select "Check" from the Service menu,
and press the [SELECT/HOLD] button.

▼
Select "Diagnosis" from the Check menu,
and press the [SELECT/HOLD] button.

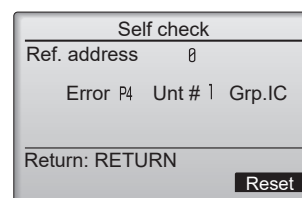
▼
Select "Self check" with the [F1] or [F2] button,
and press the [SELECT/HOLD] button.



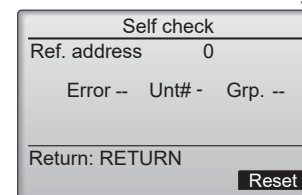
2. With the [F1] or [F2] button, enter the refrigerant address, and press the [SELECT/HOLD] button.



3. Check code, unit number, attribute will appear.
"-" will appear if no error history is available.



When there is no error history



4. Resetting the error history

Press the **[F4]** button (Reset) on the screen that shows the error history.

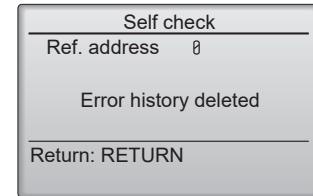
A confirmation screen will appear asking if you want to delete the error history.

Press the **[F4]** button (OK) to delete the error history.

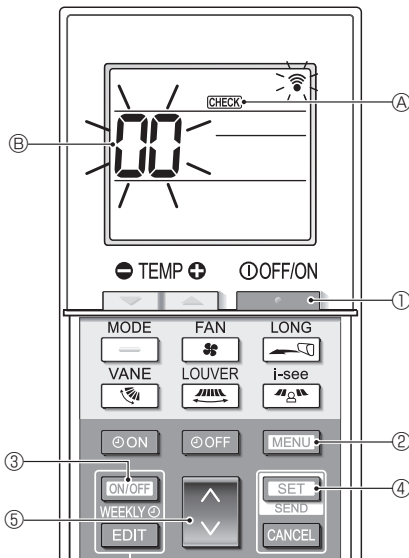
If deletion fails, "Request rejected" will appear.
"Unit not exist" will appear if no indoor units that correspond to the entered address are found.

Navigating through the screens

- To go back to the Service menu **[MENU]** button
- To return to the previous screen..... **[RETURN]** button



13-7-2. PAR-SL101A-E



1. Press the **[ON/OFF]** button ① to stop the air conditioner.
 - If the weekly timer is enabled (**WEEKLY** is on), press the **[ON/OFF WEEKLY]** button ③ to disable it (**WEEKLY** is off).
2. Press the **[MENU]** button ② for 5 seconds.
 - **CHECK** ④ comes on and the unit enters the self-check mode.
3. Press the **[UP]** button ⑤ to select the refrigerant address (M-NET address) ⑥ of the indoor unit for which you want to perform the self-check.
4. Press the **[SET]** button ④.
 - If an error is detected, the check code is indicated by the number of beeps from the indoor unit and the number of blinks of the OPERATION INDICATOR lamp.
5. Press the **[ON/OFF]** button ①.
 - **CHECK** ④ and the refrigerant address (M-NET address) ⑥ go off and the self-check is completed.

13-8. REMOTE CONTROLLER CHECK

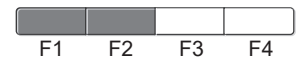
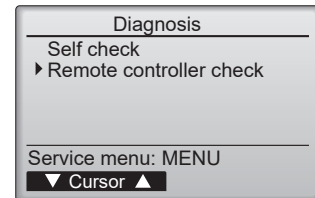
If operations cannot be completed with the remote controller, diagnose the remote controller with this function.

1. Select "Service" from the Main menu, and press the [SELECT/HOLD] button.

Select "Check" from the Service menu, and press the [SELECT/HOLD] button.

Select "Diagnosis" from the Check menu, and press the [SELECT/HOLD] button.

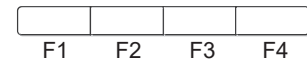
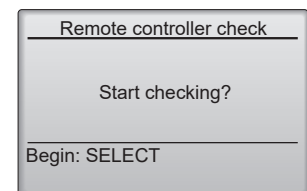
Select "Remote controller check" with the **F1** or **F2** button, and press the [SELECT/HOLD] button.



2. Select "Remote controller check" from the Diagnosis menu, and press the [SELECT/HOLD] button to start the remote controller check and see the check results.

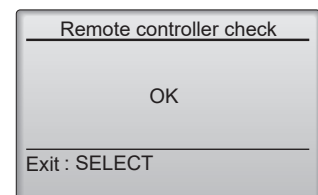
To cancel the remote controller check and exit the "Remote controller check" menu screen, press the **MENU** or the **RETURN** button.

The remote controller will not reboot itself.



3. **OK:** No problems are found with the remote controller. Check other parts for problems.
E3, 6832: There is noise on the transmission line, or the indoor unit or another remote controller is faulty. Check the transmission line and the other remote controllers.
NG (ALL0, ALL1): Send-receive circuit fault. The remote controller needs replacing.
ERC: The number of data errors is the discrepancy between the number of bits in the data transmitted from the remote controller and that of the data that was actually transmitted over the transmission line. If data errors are found, check the transmission line for external noise interference.

Remote controller check results screen

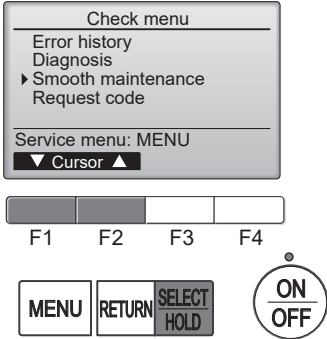


If the [SELECT/HOLD] button is pressed after the remote controller check results are displayed, remote controller check will end, and the remote controller will automatically reboot itself.

Check the remote controller display and see if anything is displayed (including lines). Nothing will appear on the remote controller display if the correct voltage (8.5–12 VDC) is not supplied to the remote controller. If this is the case, check the remote controller wiring and indoor units.

13-9. SMOOTH MAINTENANCE

1. Select "Service" from the Main menu, and press the [SELECT/HOLD] button.



Select "Check" with the [F1] or [F2] button, and press the [SELECT/HOLD] button.

Select "Smooth maintenance" with the [F1] or [F2] button, and press the [SELECT/HOLD] button.

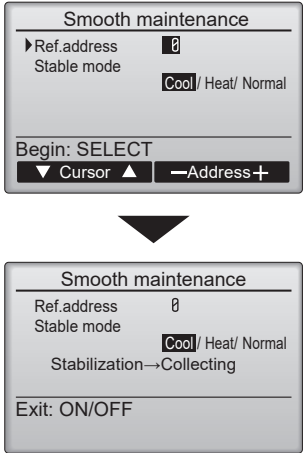
2. Set each item.

Select the item to be changed with the [F1] or [F2] button.

Select the required setting with the [F3] or [F4] button.

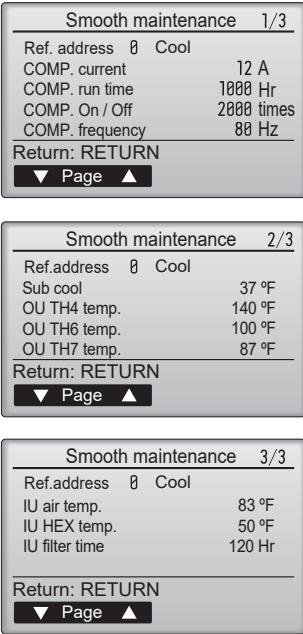
- <Ref.address>setting [0] – [15]
- <Stable mode>setting [Cool] / [Heat] / [Normal]

Press the [SELECT/HOLD] button, Fixed operation will start.
Note: Stable mode will take approx. 20 minutes.



3. The operation data will appear.

The Compressor-Accumulated operating (COMP. run) time is 10-hour unit, and the Compressor-Number of operation times (COMP. ON/OFF) is a 100-time unit (fractions discarded).



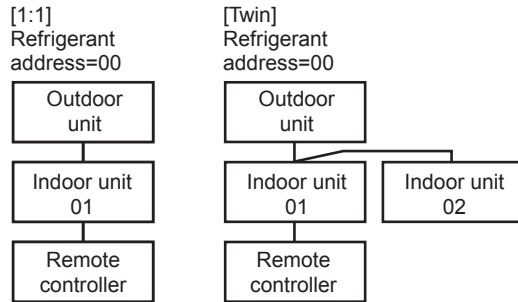
Navigating through the screens

- To go back to the Service menu [MENU] button
- To return to the previous screen [RETURN] button

■ Refrigerant address

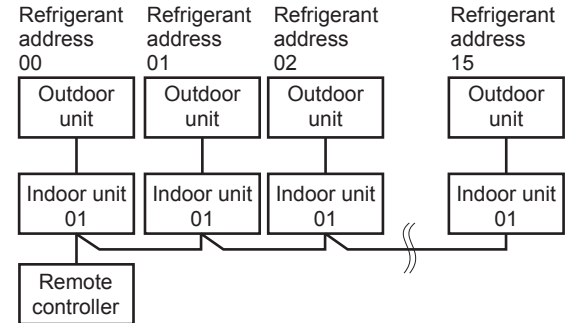
Single refrigerant system

In the case of single refrigerant system, the refrigerant address is "00" and no operation is required.
Simultaneous twin, triple units belong to this category (single refrigerant system).



Multi refrigerant system (group control)

Up to 16 refrigerant systems (16 outdoor units) can be connected as a group by 1 remote controller. To check or set the refrigerant addresses.



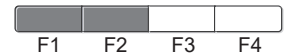
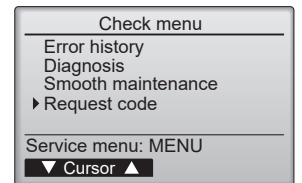
13-10. REQUEST CODE

Details on the operation data including each thermistor temperature and error history can be confirmed with the remote controller.

1. Select "Service" from the Main menu, and press the [SELECT/HOLD] button.

Select "Check" with the **F1** or **F2** button, and press the [SELECT/HOLD] button.

Select "Request code" with the **F1** or **F2** button, and press the [SELECT/HOLD] button.



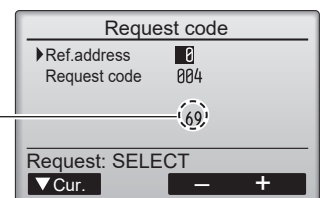
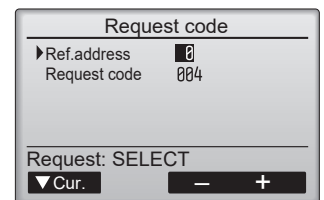
2. Set the Refrigerant address and Request code.

Select the item to be changed with the **F1** or **F2** button.

Select the required setting with the **F3** or **F4** button.

- <Ref.address>setting [0] – [15]
- <Request code>setting

Press the [SELECT/HOLD] button, Data will be collected and displayed.



Request code: 004
Discharge temperature: 69°C

T1-1. INVERTER

Model name		Indoor unit		PLA-AE12NL	PLA-AE18NL	PLA-AE24NL	PLA-AE30NL	PLA-AE12NL	PLA-AE18NL	PLA-AE24NL	PLA-AE30NL
		Outdoor unit		PUZ-AK12NL	PUZ-AK18NL	PUZ-AH24NL	PUZ-AH30NL	PUY-AK12NL	PUY-AK18NL	PUY-AH24NL	PUY-AH30NL
Cooling	at 95°F	Max. Capacity	Btu/h	12,400	18,500	24,500	30,000	12,400	18,500	24,500	30,000
		Rated Capacity *1	Btu/h	12,000	18,000	24,000	27,000	12,000	18,000	24,000	27,000
		Min. Capacity	Btu/h	4,900	5,000	10,300	10,300	4,900	5,000	10,300	10,300
		Total Input	W	700	1,310	1,810	2,300	700	1,310	1,810	2,300
		EER2	Btu/h/W	17.1	13.7	13.2	11.7	17.1	13.7	13.2	11.7
		Moisture Removal	Pints/h	1.1	3.8	4.0	9.0	1.1	3.8	4.0	9.0
		SHF		0.90	0.77	0.82	0.65	0.90	0.77	0.82	0.65
		Power factor	%	85	96	97	99	85	96	97	99
		SEER2	Btu/h/W	24.8	24.7	22.6	21.9	24.8	24.7	22.6	21.9
Heating	at 47°F	Max. Capacity	Btu/h	20,000	24,000	31,600	34,600	-	-	-	-
		Rated Capacity	Btu/h	14,000	19,000	26,000	32,000	-	-	-	-
		Min. Capacity	Btu/h	4,200	4,200	8,400	8,400	-	-	-	-
		Total Input	W	950	1,380	1,760	2,320	-	-	-	-
		COP	W/W	4.3	4.0	4.3	4.0	-	-	-	-
		Power factor	%	97	97	98	99	-	-	-	-
	at 17°F	Rated Capacity	Btu/h	10,700	12,000	15,700	17,700	-	-	-	-
		Total Input	W	1,100	1,310	1,520	1,820	-	-	-	-
		COP	W/W	2.8	2.6	3.0	2.8	-	-	-	-
		HSPF2(IV/V)	Btu/h/W	10.9/8.4	9.8/7.6	9.8/7.7	10.3/7.9	-	-	-	-
Power supply	Phase,Cycle,Voltage			1-phase, 60 Hz, 208/230 V							
	Breaker size		A	20		25		20		25	
	Indoor - Outdoor S1-S2			AC208 V / 230 V							
	Indoor - Outdoor S2-S3			DC24 V							
	Indoor - Remote controller			DC12 V							
Indoor unit	MCA		A	1							
	MOCP		A	15							
	Fan Motor Output		W	50		120		50		120	
	Air flow (LoLo-Lo-Mid-Hi)		(CFM)	370-460-490-530		460-490-570-600		530-640-710-810		570-670-780-880	
	External Static Pressure		in. WG [Pa]	0							
	Sound Pressure Level (LoLo-Lo-Mid-Hi)		dB (A)	26-27-29-30		28-29-31-32		28-30-33-36		28-32-35-38	
	Dimensions		W:mm [inch]	840 (950) [33-1/16 (37-13/32)]							
			D:mm [inch]	840 (950) [33-1/16 (37-13/32)]							
			H:mm [inch]	258 (40) [10-3/16 (1-9/16)]		298 (40) [11-3/4 (1-9/16)]		258 (40) [10-3/16 (1-9/16)]		298 (40) [11-3/4 (1-9/16)]	
	Weight Unit		kg [lbs]	21 (46)		26 (57)		21 (46)		26 (57)	
Field Drain pipe size		mm [inch]	32 (1-1/4)								
Refrigerant pipe size Gas		mm [inch]	ø12.7 [1/2F]		ø15.88 [5/8F]		ø12.7 [1/2F]		ø15.88 [5/8F]		
Refrigerant pipe size Liquid		mm [inch]	ø6.35 [1/4F]		ø9.52 [3/8F]		ø6.35 [1/4F]		ø9.52 [3/8F]		
RemoteController				Attached in Indoor Unit							
Outdoor unit	MCA		A	16		22		16		22	
	MOCP		A	27		37		27		37	
	SCCR		kA	5		5		5		5	
	Inverter input		A	11		15		11		15	
	Fan Motor Output		W	51		74		51		74	
	Compressor		Model	SRB140FQHMC-L1		SRB172FQHMC-L1		SRB140FQHMC-L1		SRB172FQHMC-L1	
	Air flow		CFM	1,590		1,940		1,590		1,940	
	Refrigerant Control			Electronic Expansion Valve							
	Defrost Method			Reverse Cycle							
	Sound Pressure Level at cooling		dB(A)	44		49		44		49	
Sound Pressure Level at heating		dB(A)	46		52		-		-		
External Finish Color			Ivory Munsell 3Y 7.8/1.1								
Dimensions		W: mm [inch]	809 + 62 [31-13/16+2-7/16]		950 [37-13/32]		809 + 62 [31-13/16+2-7/16]		950 [37-13/32]		
		D: mm [inch]	300 [11-13/16]		330 + 25 [13 + 63/64]		300 [11-13/16]		330 + 25 [13 + 63/64]		
		H: mm [inch]	630 [24-13/16]		943 [37-1/8]		630 [24-13/16]		943 [37-1/8]		
Weight Unit		kg [lbs]	45 [99]		70 [155]		45 [99]		70 [155]		
Refrigerant	Type			R454B							
	Charge		kg [lbs,oz]	2.0 [4 lbs + 6 oz]		3.5 [7 lbs + 11 oz]		2.0 [4 lbs + 6 oz]		3.5 [7 lbs + 11 oz]	
	Oil		Model	RM68EH							
			L [oz]	0.5 [16]		0.7 [23]		0.5 [16]		0.7 [23]	
Refrigerant	Gas side O.D.		mm [inch]	ø12.7 [1/2F]		ø15.88 [5/8F]		ø12.7 [1/2F]		ø15.88 [5/8F]	
Pipe Size	Liquid side O.D.		mm [inch]	ø6.35 [1/4F]		ø9.52 [3/8F]		ø6.35 [1/4F]		ø9.52 [3/8F]	
Refrigerant pipe length	Height difference			Max. 30 m [Max.100 ft]							
	Length			Max. 30 m [Max.100 ft]		Max. 50 m [Max.165 ft]		Max. 50 m [Max.165 ft]		Max. 69m [Max.225 ft]	
Refrigerant Connection Method	Piping			Not Supplied							
	Indoor/Outdoor			Flared							

NOTES: *1.Rating conditions (cooling)-Indoor : D.B. 26.7°C(80°F), W.B. 19.4°C(67°F) Outdoor : D.B. 35°C(95°F), W.B. 23.9°C(75°F)

Operating range

Cooling	Indoor intake air temperature		Outdoor intake air temperature	
	Maximum	D.B. 32°C(90°F), W.B. 23°C(73°F)	D.B. 46°C(115°F)	
	Minimum	D.B. 19°C(66°F), W.B. 15°C(59°F)	D.B. -5°C(23°F) D.B. -28.9°C(-20°F)*	

* In case that the wind baffle is installed. (In case that the wind baffle is not installed, the minimum temperature will be -5°C(23°F)DB.)

Model name		Indoor unit	PLA-AE36NL	PLA-AE42NL	PLA-AE48NL	PLA-AE36NL	PLA-AE42NL	PLA-AE48NL
Cooling	at 95°F	Outdoor unit	PUZ-AK36NL	PUZ-AK42NL	PUZ-AK48NL	PUY-AK36NL	PUY-AK42NL	PUY-AK48NL
		Max. Capacity	36,600	42,500	49,000	36,600	42,500	49,000
		Rated Capacity *1	36,000	42,000	48,000	36,000	42,000	48,000
		Min. Capacity	14,300	15,400	17,000	14,300	15,400	17,000
		Total Input	2,620	3,500	4,573	2,620	3,500	4,573
		EER2	13.7	12.0	10.4	13.7	12.0	10.4
		Moisture Removal	8.0	10.9	14.6	8.0	10.9	14.6
		SHF	0.76	0.72	0.67	0.76	0.72	0.67
		Power factor	97	99	99	97	99	99
		SEER2	23.3	21.0	19.4	23.3	21.0	19.4
Heating	at 47°F	Max. Capacity	40,000	49,600	60,000	-	-	-
		Rated Capacity	38,000	45,000	54,000	-	-	-
		Min. Capacity	13,000	13,200	16,600	-	-	-
		Total Input	2,470	3,230	4,510	-	-	-
		COP	4.5	4.0	3.5	-	-	-
		Power factor	97	99	99	-	-	-
	at 17°F	Rated Capacity	23,600	29,400	33,400	-	-	-
		Total Input	2,230	2,900	3,950	-	-	-
		COP	3.1	2.9	2.4	-	-	-
	HSPF2(IV/V)		9.8/7.9	10.1/8.3	9.4/7.6	-	-	-
Power supply	Phase,Cycle,Voltage		1-phase, 60 Hz, 208/230 V					
Voltage	Breaker size		A	35	40	35	40	
	Indoor - Outdoor S1-S2		AC208 V / 230 V					
	Indoor - Outdoor S2-S3		DC24 V					
Indoor unit	Indoor - Remote controller		DC12 V					
	MCA	A	2					
	MOCP	A	15					
	Fan Motor Output	W	120					
	Air flow (LoLo-Lo-Mid-Hi)	(CFM)	670-850-1,020-1,200	740-920-1,060-1,200	740-920-1,060-1,200	670-850-1,020-1,200	740-920-1,060-1,200	740-920-1,060-1,200
	External Static Pressure	in. WG [Pa]	0					
	Sound Pressure Level (LoLo-Lo-Mid-Hi)	dB (A)	32-37-41-44	34-38-42-45	34-38-42-45	32-37-41-44	34-38-42-45	34-38-42-45
	Dimensions	W:mm [inch]	840 (950) [33-1/16 (37-13/32)]					
		D:mm [inch]	840 (950) [33-1/16 (37-13/32)]					
		H:mm [inch]	298 (40) [11-3/4 (1-9/16)]					
RemoteController	Weight Unit	kg [lbs]	26 [57]					
	Field Drain pipe size	mm [inch]	ø32 [1-1/4F]					
	Refrigerant pipe size Gas	mm [inch]	ø15.88 [5/8F]					
	Refrigerant pipe size Liquid	mm [inch]	ø9.52 [3/8F]					
	Attached in Indoor Unit							
	MCA	A	34	38	38	34	38	
	MOCP	A	56	67	67	56	67	
	SCCR	kA	5					
	Inverter input	A	23	30	30	23	30	
	Fan Motor Output	W	74 × 2	200 × 2	200 × 2	74 × 2	200 × 2	
Outdoor unit	Compressor	Model	MRB36FEGMC	MRB53FEJMC-L	MRB36FEGMC	MRB36FEGMC	MRB53FEJMC-L	
	Air flow	CFM	3,910	4,020	3,910	3,910	4,020	
	Refrigerant Control		Electronic Expansion Valve					
	Defrost Method		Reverse Cycle					
	Sound Pressure Level at cooling	dB(A)	52	60	60	52	60	
	Sound Pressure Level at heating	dB(A)	53	62	62	-	-	
	External Finish Color		Ivory Munsell 3Y 7.8/1.1					
	Dimensions	W: mm [inch]	1,050 [41-11/32]					
		D: mm [inch]	25 + 330 [63/64+12-63/64]					
		H: mm [inch]	1,338 [52-43/64]					
	Weight Unit	kg [lbs]	102 [224]	120 [265]	120 [265]	102 [224]	120 [265]	
Refrigerant	Type		R454B					
	Charge	kg [lbs,oz]	4.5 [9lbs+14oz]	5.2 [11lbs+7oz]	5.2 [11lbs+7oz]	4.5 [9lbs+14oz]	5.2 [11lbs+7oz]	
	Oil	Model	RM68EH					
Refrigerant Pipe Size	Gas side O.D.	mm [inch]	1.4 [45]	1.9 [60]	1.9 [60]	1.4 [45]	1.9 [60]	
	Liquid side O.D.	mm [inch]	ø15.88 [5/8F]					
	Height difference		ø9.52 [3/8F]					
Refrigerant pipe length	Length		Max. 50 m [Max.165 ft]	Max. 75m [Max.245 ft]	Max. 75m [Max.245 ft]	Max. 69m [Max.225 ft]	Max. 75m [Max.245 ft]	
	Refrigerant Piping		Not Supplied					
Connection Method	Indoor/Outdoor		Flared					

NOTES: *1.Rating conditions (cooling)-Indoor : D.B. 26.7°C(80°F), W.B. 19.4°C(67°F) Outdoor : D.B. 35°C(95°F), W.B. 23.9°C(75°F)

Operating range

		Indoor intake air temperature	Outdoor intake air temperature
		D.B. 32°C(90°F), W.B. 23°C(73°F)	D.B. 46°C (115°F)
Cooling	Maximum	D.B. 32°C(90°F), W.B. 23°C(73°F)	D.B. 46°C (115°F)
	Minimum	D.B. 19°C (66°F), W.B. 15°C (59°F)	'D.B. -5°C (23°F) 'D.B. -18°C (0°F)*
Heating	Maximum	D.B. 28°C (82°F)	D.B. 21°C (70°F), W.B. 15°C (59°F)
	Minimum	D.B. 10°C (50°F)	D.B. -20°C (-4°F), W.B. -20°C (-4°F)

* In case that the wind baffle is installed. (In case that the wind baffle is not installed, the minimum temperature will be -5°C(23°F)DB.)

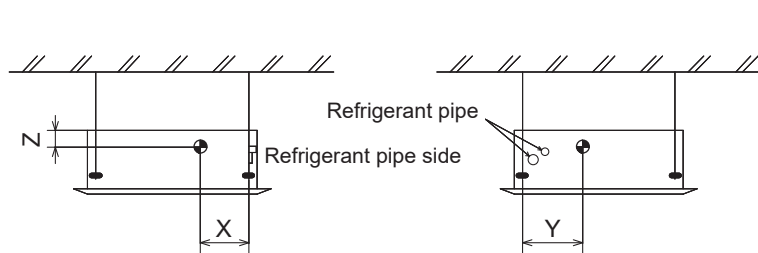
Model name		Indoor unit		PLA-AE24NL	PLA-AE30NL	PLA-AE36NL	PLA-AE42NL	PLA-AE48NL
		Outdoor unit		PUZ-AK24NLHZ	PUZ-AK30NLHZ	PUZ-AK36NLHZ	PUZ-AK42NLHZ	PUZ-AK48NLHZ
Cooling	at 95°F	Max. Capacity	Btu/h	24,400	31,000	36,600	43,000	49,000
		Rated Capacity *1	Btu/h	24,000	30,000	36,000	42,000	48,000
		Min. Capacity	Btu/h	13,600	12,600	14,300	16,800	16,800
		Total Input	W	1,490	2,130	2,620	3,530	4,560
		EER2	Btu/h/W	16.1	14.0	13.7	11.8	10.5
		Moisture Removal	Pints/h	4.7	6.7	8.0	10.0	14.6
		SHF		0.79	0.76	0.76	0.74	0.67
		Power factor	%	98	98	99	98	99
		SEER2	Btu/h/W	22.8	23.8	23.3	20.0	20.1
Heating	at 47°F	Max. Capacity	Btu/h	28,000	34,000	40,000	54,000	60,000
		Rated Capacity *1	Btu/h	26,000	32,000	38,000	48,000	52,000
		Min. Capacity	Btu/h	13,200	11,500	13,000	16,000	16,000
		Total Input	W	1,680	1,970	2,470	3,720	4,170
		COP	W/W	4.5	4.7	4.5	3.7	3.6
		Power factor	%	98	98	99	98	99
	at 17°F	Rated Capacity	Btu/h	16,400	21,600	24,000	32,400	36,600
		Total Input	W	1,650	2,020	2,400	3,450	4,110
		COP	W/W	2.9	3.1	2.9	2.7	2.6
		HSPF2(IV/V)	Btu/h/W	9.8/7.8	10.1/8.4	9.7/7.8	9.2/7.7	9.2/7.7
Power supply	Phase, Cycle, Voltage		1-phase, 60 Hz, 208/230 V					
	Breaker size		A	25	30	40		
	Indoor - Outdoor S1-S2		AC208 V / 230 V					
	Indoor - Outdoor S2-S3		DC24 V					
Voltage	Indoor - Remote controller		DC12 V					
Indoor unit	MCA	A	1		2			
	MOCP	A	15					
	Fan Motor Output	W	120					
	Air flow (LoLo-Lo-Mid-Hi)	(CFM)	530-640-710-810	570-670-780-880	670-850-1,020-1,200	740-920-1,060-1,200		
	External Static Pressure	in. WG [Pa]	0					
	Sound Pressure Level (LoLo-Lo-Mid-Hi)	dB(A)	28-30-33-36	28-32-35-38	32-37-41-44	34-38-42-45		
	Dimensions (Panel)	W:mm [inch]	840 (950) [33-1/16 (37-13/32)]					
		D:mm [inch]	840 (950) [33-1/16 (37-13/32)]					
		H:mm [inch]	298 (40) [11-3/4 (1-9/16)]					
	Weight Unit	kg [lbs]	26 [57]					
	Field Drain pipe size	mm [inch]	ø32 [1-1/4F]					
	Refrigerant pipe size Gas	mm [inch]	ø15.88 [5/8F]					
	Refrigerant pipe size Liquid	mm [inch]	ø9.52 [3/8F]					
	RemoteController			Attached in Indoor Unit				
Outdoor unit	MCA	A	24	29	35			
	MOCP	A	39	48	60			
	SCCR	kA	5					
	Inverter input	A	16	19	26			
	Fan Motor Output	W	74 × 2				200 × 2	
	Compressor	Model	MRK36FFGMC				MRK53FFJMC-L	
	Air flow	CFM	3,740				4,020	
	Refrigerant Control		Electronic Expansion Valve					
	Defrost Method		Reverse Cycle					
	Sound Pressure Level at cooling	dB(A)	52				60	
	Sound Pressure Level at heating	dB(A)	53				62	
	External Finish Color		Ivory Munsell 3Y 7.8/1.1					
	Dimensions	W: mm [inch]	1,050 [41-11/32]					
		D: mm [inch]	25 + 330 [63/64+12-63/64]					
		H: mm [inch]	1,338 [52-43/64]					
	Weight Unit	kg [lbs]	105 [231]				123 [271]	
Refrigerant	Type		R454B					
	Charge	kg [lbs,oz]	4.5[9lbs+14oz]				5.2[11lbs+7oz]	
	Oil	Model	RM68EH					
		L [oz]	1.4[45]				1.9[60]	
Refrigerant Pipe Size	Gas side O.D.	mm [inch]	ø15.88 [5/8F]					
	Liquid side O.D.	mm [inch]	ø9.52 [3/8F]					
Refrigerant pipe length	Height difference		Max. 30 m [Max.100 ft]					
	Length		Max. 50 m [Max.165 ft]	Max. 75m [Max.245 ft]				
Refrigerant Connection Method	Piping		Not Supplied					
	Indoor/Outdoor		Flared					

NOTES : *1.Rating conditions (cooling)-Indoor : D.B. 26.7°C(80°F), W.B. 19.4°C(67°F) Outdoor : D.B. 35°C(95°F), W.B. 23.9°C(75°F)
(heating)-Indoor : D.B. 21.1°C(70°F), W.B. 15.6°C(60°F) Outdoor : D.B. 8.3°C(47°F), W.B. 6.1°C(43°F)

Operating range

		Indoor intake air temperature		Outdoor intake air temperature	
Cooling	Maximum	D.B. 32°C (90°F), W.B. 23°C (73°F)		D.B. 46°C (115°F)	
	Minimum	D.B. 19°C (66°F), W.B. 15°C (59°F)		D.B. -5°C (23°F) D.B. -18°C (0°F)*	
Heating	Maximum	D.B. 28°C (83°F)		D.B. 21.1°C (70°F), W.B. 15°C (59°F)	
	Minimum	D.B. 10°C (50°F)		D.B. -25°C (-13°F), W.B. -25°C (-13°F)	

* In case that the wind baffle is installed. (In case that the wind baffle is not installed, the minimum temperature will be -5°C (23°F) DB.)



Unit: inch (mm)

Model name	X	Y	Z
PLA-AE12NL	12-13/16	15-3/8	4-9/16
PLA-AE18NL	(325)	(390)	(115)
PLA-AE24NL			
PLA-AE30NL			
PLA-AE36NL	12-13/16	14-31/32	3-15/16
PLA-AE42NL	(325)	(380)	(100)
PLA-AE48NL			

T3-1. INVERTER

T3-1-1. COOLING CAPACITY

PLA-AE12NL/PUY-AK12NL, PUZ-AK12NL

CAPACITY (Btu/h): 12,000 INPUT (kW): 0.7 SHF: 0.9

Indoor intake air D.B.(°C)	Indoor intake air D.B.(°F)	Indoor intake air W.B.(°C)	Indoor intake air W.B.(°F)	Outdoor intake air °C/°F D.B.																							
				20/68				25/77				30/86				35/95				40/104				46/115			
				CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.
19	66	16	61	12,573	10,008	0.80	0.46	11,826	9,414	0.80	0.53	10,880	8,660	0.80	0.58	9,984	7,947	0.80	0.62	9,087	7,234	0.80	0.66	8,191	6,520	0.80	0.69
19	66	18	64	13,743	9,290	0.68	0.51	12,996	8,785	0.68	0.57	12,050	8,146	0.68	0.62	11,154	7,540	0.68	0.67	10,257	6,934	0.68	0.70	9,361	6,328	0.68	0.74
20	68	16	61	12,573	10,511	0.84	0.46	11,826	9,887	0.84	0.53	10,880	9,096	0.84	0.58	9,984	8,346	0.84	0.62	9,087	7,597	0.84	0.66	8,191	6,848	0.84	0.69
20	68	18	64	13,743	9,840	0.72	0.51	12,996	9,305	0.72	0.57	12,050	8,628	0.72	0.62	11,154	7,986	0.72	0.67	10,257	7,344	0.72	0.70	9,361	6,702	0.72	0.74
20	68	20	68	14,340	8,547	0.60	0.54	13,743	8,191	0.60	0.59	12,946	7,716	0.60	0.65	12,000	7,152	0.60	0.70	11,054	6,588	0.60	0.74	10,257	6,113	0.60	0.77
22	72	16	61	12,573	11,517	0.92	0.46	11,826	10,833	0.92	0.53	10,880	9,966	0.92	0.58	9,984	9,145	0.92	0.62	9,087	8,324	0.92	0.66	8,191	7,503	0.92	0.69
22	72	18	64	13,743	10,939	0.80	0.51	12,996	10,345	0.80	0.57	12,050	9,592	0.80	0.62	11,154	8,878	0.80	0.67	10,257	8,165	0.80	0.70	9,361	7,451	0.80	0.74
22	72	20	68	14,340	9,694	0.68	0.54	13,743	9,290	0.68	0.59	12,946	8,752	0.68	0.65	12,000	8,112	0.68	0.70	11,054	7,472	0.68	0.74	10,257	6,934	0.68	0.77
24	75	16	61	12,573	12,523	1.00	0.46	11,826	11,779	1.00	0.53	10,880	10,836	1.00	0.58	9,984	9,944	1.00	0.62	9,087	9,051	1.00	0.66	8,191	8,158	1.00	0.69
24	75	18	64	13,743	12,039	0.88	0.51	12,996	11,384	0.88	0.57	12,050	10,556	0.88	0.62	11,154	9,770	0.88	0.67	10,257	8,985	0.88	0.70	9,361	8,200	0.88	0.74
24	75	20	68	14,340	10,841	0.76	0.54	13,743	10,390	0.76	0.59	12,946	9,787	0.76	0.65	12,000	9,072	0.76	0.70	11,054	8,357	0.76	0.74	10,257	7,754	0.76	0.77
24	75	22	72	15,137	9,627	0.64	0.56	14,639	9,310	0.64	0.62	13,743	8,740	0.64	0.68	12,846	8,170	0.64	0.73	11,950	7,600	0.64	0.76	10,954	6,967	0.64	0.79
26	79	16	61	12,573	12,573	1.00	0.46	11,826	11,826	1.00	0.53	10,880	10,880	1.00	0.58	9,984	9,984	1.00	0.62	9,087	9,087	1.00	0.66	8,191	8,191	1.00	0.69
26	79	18	64	13,743	13,138	0.96	0.51	12,996	12,424	0.96	0.57	12,050	11,520	0.96	0.62	11,154	10,663	0.96	0.67	10,257	9,806	0.96	0.70	9,361	8,949	0.96	0.74
26	79	20	68	14,340	11,988	0.84	0.54	13,743	11,489	0.84	0.59	12,946	10,823	0.84	0.65	12,000	10,032	0.84	0.70	11,054	9,241	0.84	0.74	10,257	8,575	0.84	0.77
26	79	22	72	15,137	10,838	0.72	0.56	14,639	10,482	0.72	0.62	13,743	9,840	0.72	0.68	12,846	9,198	0.72	0.73	11,950	8,556	0.72	0.76	10,954	7,843	0.72	0.79
27	81	16	61	12,573	12,573	1.00	0.46	11,826	11,826	1.00	0.53	10,880	10,880	1.00	0.58	9,984	9,984	1.00	0.62	9,087	9,087	1.00	0.66	8,191	8,191	1.00	0.69
27	81	18	64	13,743	13,688	1.00	0.51	12,996	12,944	1.00	0.57	12,050	12,002	1.00	0.62	11,154	11,109	1.00	0.67	10,257	10,216	1.00	0.70	9,361	9,324	1.00	0.74
27	81	20	68	14,340	12,562	0.88	0.54	13,743	12,039	0.88	0.59	12,946	11,341	0.88	0.65	12,000	10,512	0.88	0.70	11,054	9,683	0.88	0.74	10,257	8,985	0.88	0.77
27	81	22	72	15,137	11,444	0.76	0.56	14,639	11,067	0.76	0.62	13,743	10,390	0.76	0.68	12,846	9,712	0.76	0.73	11,950	9,034	0.76	0.76	10,954	8,281	0.76	0.79
28	82	16	61	12,573	12,573	1.00	0.46	11,826	11,826	1.00	0.53	10,880	10,880	1.00	0.58	9,984	9,984	1.00	0.62	9,087	9,087	1.00	0.66	8,191	8,191	1.00	0.69
28	82	18	64	13,743	13,743	1.00	0.51	12,996	12,996	1.00	0.57	12,050	12,050	1.00	0.62	11,154	11,154	1.00	0.67	10,257	10,257	1.00	0.70	9,361	9,361	1.00	0.74
28	82	20	68	14,340	13,136	0.92	0.54	13,743	12,588	0.92	0.59	12,946	11,859	0.92	0.65	12,000	10,992	0.92	0.70	11,054	10,125	0.92	0.74	10,257	9,396	0.92	0.77
28	82	22	72	15,137	12,049	0.80	0.56	14,639	11,653	0.80	0.62	13,743	10,939	0.80	0.68	12,846	10,226	0.80	0.73	11,950	9,512	0.80	0.76	10,954	8,720	0.80	0.79
30	86	16	61	12,573	12,573	1.00	0.46	11,826	11,826	1.00	0.53	10,880	10,880	1.00	0.58	9,984	9,984	1.00	0.62	9,087	9,087	1.00	0.66	8,191	8,191	1.00	0.69
30	86	18	64	13,743	13,743	1.00	0.51	12,996	12,996	1.00	0.57	12,050	12,050	1.00	0.62	11,154	11,154	1.00	0.67	10,257	10,257	1.00	0.70	9,361	9,361	1.00	0.74
30	86	20	68	14,340	14,283	1.00	0.54	13,743	13,688	1.00	0.59	12,946	12,894	1.00	0.65	12,000	11,952	1.00	0.70	11,054	11,010	1.00	0.74	10,257	10,216	1.00	0.77
30	86	22	72	15,137	13,260	0.88	0.56	14,639	12,824	0.88	0.62	13,743	12,039	0.88	0.68	12,846	11,254	0.88	0.73	11,950	10,468	0.88	0.76	10,954	9,596	0.88	0.79
32	90	16	61	12,573	12,573	1.00	0.46	11,826	11,826	1.00	0.53	10,880	10,880	1.00	0.58	9,984	9,984	1.00	0.62	9,087	9,087	1.00	0.66	8,191	8,191	1.00	0.69
32	90	18	64	13,743	13,743	1.00	0.51	12,996	12,996	1.00	0.57	12,050	12,050	1.00	0.62	11,154	11,154	1.00	0.67	10,257	10,257	1.00	0.70	9,361	9,361	1.00	0.74
32	90	20	68	14,340	14,340	1.00	0.54	13,743	13,743	1.00	0.59	12,946	12,946	1.00	0.65	12,000	12,000	1.00	0.70	11,054	11,054	1.00	0.74	10,257	10,257	1.00	0.77
32	90	22	72	15,137	14,471	0.96	0.56	14,639	13,995	0.96	0.62	13,743	13,138	0.96	0.68	12,846	12,281	0.96	0.73	11,950	11,424	0.96	0.76	10,954	10,472	0.96	0.79

PLA-AE18NL/PUY-AK18NL, PUZ-AK18NL

CAPACITY (Btu/h): 18,000 INPUT (kW): 1.31 SHF: 0.77

Indoor intake air D.B.(°C)	Indoor intake air D.B.(°F)	Indoor intake air W.B.(°C)	Indoor intake air W.B.(°F)	Outdoor intake air °C/°F D.B.																							
				20/68				25/77				30/86				35/95				40/104				46/115			
				CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.
19	66	16	61	18,859	12,560	0.67	0.87	17,739	11,814	0.67	0.99	16,320	10,869	0.67	1.08	14,976	9,974	0.67	1.17	13,631	9,078	0.67	1.23	12,287	8,183	0.67	1.29
19	66	18	64	20,614	11,255	0.55	0.96	19,494	10,644	0.55	1.08	18,075	9,869	0.55	1.17	16,730	9,135	0.55	1.26	15,386	8,401	0.55	1.32	14,041	7,667	0.55	1.38
20	68	16	61	18,859	13,315	0.71	0.87	17,739	12,524	0.71	0.99	16,320	11,522	0.71	1.08	14,976	10,573	0.71	1.17	13,631	9,624	0.71	1.23	12,287	8,674	0.71	1.29
20	68	18	64	20,614	12,080	0.59	0.96	19,494	11,423	0.59	1.08	18,075	10,592	0.59	1.17	16,730	9,804	0.59	1.26	15,386	9,016	0.59	1.32	14,041	8,228	0.59	1.38
20	68	20	68	21,510	10,024	0.47	1.01	20,614	9,606	0.47	1.10	19,419	9,049	0.47	1.21	18,000	8,388	0.47	1.31	16,581	7,727	0.47	1.38	15,386	7,170	0.47	1.44
22	72	16	61	18,859	14,823	0.79	0.87	17,739	13,943	0.79	0.99	16,320	12,828	0.79	1.08	14,976	11,771	0.79	1.17	13,631	10,714	0.79	1.23	12,287	9,657	0.79	1.29
22	72	18	64	20,614	13,729	0.67	0.96	19,494	12,983	0.67	1.08	18,075	12,038	0.67	1.17	16,730	11,142	0.67	1.26	15,386	10,247	0.67	1.32	14,041	9,352	0.67	1.38
22	72	20	68	21,510	11,745	0.55	1.01	20,614	11,255	0.55	1.10	19,419	10,603	0.55	1.21	18,000	9,828	0.55	1.31	16,581	9,053	0.55	1.38	15,386	8,401	0.55	1.44
24	75	16	61	18,859	16,332	0.87	0.87	17,739	15,362	0.87	0.99	16,320	14,133	0.87	1.08	14,976	12,969	0.87	1.17	13,631	11,805	0.87	1.23	12,287	10,640	0.87	1.29
24	75	18	64	20,614	15,378	0.75	0.96	19,494	14,542	0.75	1.08	18,075	13,484	0.75	1.17	16,730	12,481	0.75	1.26	15,386	11,478	0.75	1.32	14,041	10,475	0.75	1.38
24	75	20	68	21,510	13,465	0.63	1.01	20,614	12,904	0.63	1.10	19,419	12,156	0.63	1.21	18,000	11,268	0.63	1.31	16,581	10,380	0.63	1.38	15,386	9,632	0.63	1.44
24	75	22	72	22,705	11,489	0.51	1.05	21,959	11,111	0.51	1.17	20,614	10,431	0.51	1.27	19,270	9,750	0.51	1.36	17,925	9,070	0.51	1.43	16,432	8,314	0.51	1.47
26	79	16	61	18,859	17,841	0.95	0.87	17,739	16,781	0.95	0.99	16,320	15,439	0.95	1.08	14,976	14,167	0.95	1.17	13,631	12,895	0.95	1.23	12,287	11,623	0.95	1.29
26	79	18	64	20,614	17,027	0.83	0.96	19,494	16,102	0.83	1.08	18,075	14,930	0.83	1.17	16,730	13,819	0.83	1.26	15,386	12,709	0.83	1.32	14,041	11,598	0.83	1.38
26	79	20	68	21,510	15,186	0.71	1.01	20,614	14,554	0.71	1.10	19,419	13,710	0.71	1.21	18,000	12,708	0.71	1.31	16,581	11,706	0.71	1.38	15,386	10,862	0.71	1.44
26	79	22	72	22,705	13,305	0.59	1.05	21,959	12,686	0.59	1.17	20,614	12,080	0.59	1.27	19,270	11,292	0.59	1.36	17,925	10,504	0.59	1.43	16,432	9,629	0.59	1.47
27	81	16	61	18,859	18,595	0.99	0.87	17,739	17,491	0.99	0.99	16,320	16,092	0.99	1.08	14,976	14,766	0.99	1.17	13,631	13,440	0.99	1.23	12,287	12,115	0.99	1.29
27	81	18	64	20,614	17,852	0.87	0.96	19,494	16,882	0.87	1.08	18,075	15,653	0.87	1.17	16,730	14,488	0.87	1.26	15,386	13,324	0.87	1.32	14,041	12,160	0.87	1.38
27	81	20	68	21,510	16,047	0.75	1.01	20,614	15,378	0.75	1.10	19,419	14,487	0.75	1.21	18,000	13,428	0.75	1.31	16,581	12,369	0.75	1.38	15,386	11,476	0.75	1.44
27	81	22	72	22,705	14,214	0.63	1.05	21,959	13,746	0.63	1.17	20,614	12,904	0.63	1.27	19,270	12,063	0.63	1.36	17,925	11,221	0.63	1.43	16,432	10,286	0.63	1.47
28	82	16	61	18,859	18,859	1.00	0.87	17,739	17,739	1.00	0.99	16,320	16,320	1.00	1.08	14,976	14,976	1.00	1.17	13,631	13,631	1.00	1.23	12,287	12,287	1.00	1.29
28	82	18	64	20,614	16,676	0.91	0.96	19,494	16,661	0.91	1.08	18,075	16,376	0.91	1.17	16,730	15,158	0.91	1.26	15,386	13,940	0.91	1.32	14,041	12,272	0.91	1.38
28	82	20	68	21,510	16,907	0.79	1.01	20,614	16,203	0.79	1.10	19,419	15,263	0.79	1.21	18,000	14,148	0.79	1.31	16,581	13,033	0.79	1.38	15,386	12,093	0.79	1.44
28	82	22	72	22,705	15,122	0.67	1.05	21,959	14,624	0.67	1.17	20,614	13,729	0.67	1.27	19,270	12,834	0.67	1.36	17,925	11,938	0.67	1.43	16,432	10,943	0.67	1.47
30	86	16	61	18,859	18,859	1.00	0.87	17,739	17,739	1.00	0.99	16,320	16,320	1.00	1.08	14,976	14,976	1.00	1.17	13,631	13,631	1.00	1.23	12,287	12,287	1.00	1.29
30	86	18	64	20,614	20,326	0.99	0.96	19,494	19,221	0.99	1.08	18,075	17,822	0.99	1.17	16,730	16,496	0.99	1.26	15,386	15,170	0.99	1.32	14,041	13,845	0.99	1.38
30	86	20	68	21,510	18,628	0.87	1.01	20,614	17,852	0.87	1.10	19,419	16,817	0.87	1.21	18,000	15,588	0.87	1.31	16,581	14,359	0.87	1.38	15,386	13,324	0.87	1.44
30	86	22	72	22,705	16,938	0.75	1.05	21,959	16,381	0.75	1.17	20,614	15,378	0.75	1.27	19,270	14,375	0.75	1.36	17,925	13,372	0.75	1.43	16,432	12,258	0.75	1.47
32	90	16	61	18,859	18,859	1.00	0.87	17,739	17,739	1.00	0.99	16,320	16,320	1.00	1.08	14,976	14,976	1.00	1.17	13,631	13,631	1.00	1.23	12,287	12,287	1.00	1.29
32	90	18	64	20,614	20,614	1.00	0.96	19,494	19,494	1.00	1.08	18,075	18,075	1.00	1.17	16,730	16,730	1.00	1.26	15,386	15,386	1.00	1.32	14,041	14,041	1.00	1.38
32	90	20	68	21,510	20,349	0.95	1.01	20,614	19,501	0.95	1.10	19,419	18,370	0.95	1.21	18,000	17,028	0.95	1.31	16,581	15,686	0.95	1.38	15,386	14,555	0.95	1.44
32	90	22	72	22,705	18,755	0.83	1.05	21,959	18,138	0.83	1.17	20,614	17,027	0.83	1.27	19,270	15,917	0.83	1.36	17,925	14,806	0.83	1.43	16,432	13,572	0.83	1.47

PLA-AE24NL/PUY-AH24NL, PUZ-AH24NL

CAPACITY (Btu/h): 24,000 INPUT (kW): 1.81 SHF: 0.82

Indoor intake air D.B.(°C)	Indoor intake air D.B.(°F)	Indoor intake air W.B.(°C)	Indoor intake air W.B.(°F)	Outdoor intake air °C/°F D.B.																							
				20/68				25/77				30/86				35/95				40/104				46/115			
				CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.
19	66	16	61	25,146	18,004	0.72	1.20	23,652	16,935	0.72	1.36	21,760	15,580	0.72	1.49	19,967	14,297	0.72	1.61	18,175	13,013	0.72	1.70	16,382	11,730	0.72	1.78
19	66	18	64	27,485	16,381	0.60	1.32	25,992	15,491	0.60	1.49	24,100	14,363	0.60	1.61	22,307	13,295	0.60	1.74	20,515	12,227	0.60	1.82	18,722	11,158	0.60	1.90
20	68	16	61	25,146	19,010	0.76	1.20	23,652	17,881	0.76	1.36	21,760	16,451	0.76	1.49	19,967	15,095	0.76	1.61	18,175	13,740	0.76	1.70	16,382	12,385	0.76	1.78
20	68	18	64	27,485	17,481	0.64	1.32	25,992	16,531	0.64	1.49	24,100	15,327	0.64	1.61	22,307	14,187	0.64	1.74	20,515	13,047	0.64	1.82	18,722	11,907	0.64	1.90
20	68	20	68	28,680	14,799	0.52	1.40	27,485	14,183	0.52	1.52	25,892	13,360	0.52	1.67	24,000	12,384	0.52	1.81	22,108	11,408	0.52	1.90	20,515	10,585	0.52	1.98
22	72	16	61	25,146	21,022	0.84	1.20	23,652	19,773	0.84	1.36	21,760	18,191	0.84	1.49	19,967	16,693	0.84	1.61	18,175	15,194	0.84	1.70	16,382	13,696	0.84	1.78
22	72	18	64	27,485	19,680	0.72	1.32	25,992	18,610	0.72	1.49	24,100	17,255	0.72	1.61	22,307	15,972	0.72	1.74	20,515	14,688	0.72	1.82	18,722	13,405	0.72	1.90
22	72	20	68	28,680	17,094	0.60	1.40	27,485	16,381	0.60	1.52	25,892	15,432	0.60	1.67	24,000	14,304	0.60	1.81	22,108	13,176	0.60	1.90	20,515	12,227	0.60	1.98
24	75	16	61	25,146	23,034	0.92	1.20	23,652	21,665	0.92	1.36	21,760	19,932	0.92	1.49	19,967	18,290	0.92	1.61	18,175	16,648	0.92	1.70	16,382	15,006	0.92	1.78
24	75	18	64	27,485	21,878	0.80	1.32	25,992	20,689	0.80	1.49	24,100	19,183	0.80	1.61	22,307	17,756	0.80	1.74	20,515	16,330	0.80	1.82	18,722	14,903	0.80	1.90
24	75	20	68	28,680	19,388	0.68	1.40	27,485	18,580	0.68	1.52	25,892	17,503	0.68	1.67	24,000	16,224	0.68	1.81	22,108	14,945	0.68	1.90	20,515	13,868	0.68	1.98
24	75	22	72	30,274	16,832	0.56	1.45	29,278	16,279	0.56	1.61	27,485	15,282	0.56	1.75	25,693	14,285	0.56	1.88	23,900	13,289	0.56	1.98	21,909	12,181	0.56	2.03
26	79	16	61	25,146	25,045	1.00	1.20	23,652	23,558	1.00	1.36	21,760	21,673	1.00	1.49	19,967	19,888	1.00	1.61	18,175	18,102	1.00	1.70	16,382	16,317	1.00	1.78
26	79	18	64	27,485	24,077	0.88	1.32	25,992	22,769	0.88	1.49	24,100	21,111	0.88	1.61	22,307	19,541	0.88	1.74	20,515	17,971	0.88	1.82	18,722	16,400	0.88	1.90
26	79	20	68	28,680	21,682	0.76	1.40	27,485	20,779	0.76	1.52	25,892	19,574	0.76	1.67	24,000	18,144	0.76	1.81	22,108	16,714	0.76	1.90	20,515	15,509	0.76	1.98
26	79	22	72	30,274	19,254	0.64	1.45	29,278	18,621	0.64	1.61	27,485	17,481	0.64	1.75	25,693	16,341	0.64	1.88	23,900	15,201	0.64	1.98	21,909	13,934	0.64	2.03
27	81	16	61	25,146	25,146	1.00	1.20	23,652	23,652	1.00	1.36	21,760	21,760	1.00	1.49	19,967	19,967	1.00	1.61	18,175	18,175	1.00	1.70	16,382	16,382	1.00	1.78
27	81	18	64	27,485	25,177	0.92	1.32	25,992	23,808	0.92	1.49	24,100	22,075	0.92	1.61	22,307	20,433	0.92	1.74	20,515	18,791	0.92	1.82	18,722	17,149	0.92	1.90
27	81	20	68	28,680	22,830	0.80	1.40	27,485	21,878	0.80	1.52	25,892	20,610	0.80	1.67	24,000	19,104	0.80	1.81	22,108	17,598	0.80	1.90	20,515	16,330	0.80	1.98
27	81	22	72	30,274	20,465	0.68	1.45	29,278	19,792	0.68	1.61	27,485	18,580	0.68	1.75	25,693	17,368	0.68	1.88	23,900	16,157	0.68	1.98	21,909	14,810	0.68	2.03
28	82	16	61	25,146	25,146	1.00	1.20	23,652	23,652	1.00	1.36	21,760	21,760	1.00	1.49	19,967	19,967	1.00	1.61	18,175	18,175	1.00	1.70	16,382	16,382	1.00	1.78
28	82	18	64	27,485	26,276	0.96	1.32	25,992	24,848	0.96	1.49	24,100	23,039	0.96	1.61	22,307	21,326	0.96	1.74	20,515	19,612	0.96	1.82	18,722	17,898	0.96	1.90
28	82	20	68	28,680	23,977	0.84	1.40	27,485	22,978	0.84	1.52	25,892	21,646	0.84	1.67	24,000	20,064	0.84	1.81	22,108	18,482	0.84	1.90	20,515	17,150	0.84	1.98
28	82	22	72	30,274	21,676	0.72	1.45	29,278	20,963	0.72	1.61	27,485	19,680	0.72	1.75	25,693	18,396	0.72	1.88	23,900	17,113	0.72	1.98	21,909	15,687	0.72	2.03
30	86	16	61	25,146	25,146	1.00	1.20	23,652	23,652	1.00	1.36	21,760	21,760	1.00	1.49	19,967	19,967	1.00	1.61	18,175	18,175	1.00	1.70	16,382	16,382	1.00	1.78
30	86	18	64	27,485	27,485	1.00	1.32	25,992	25,992	1.00	1.49	24,100	24,100	1.00	1.61	22,307	22,307	1.00	1.74	20,515	20,515	1.00	1.82	18,722	18,722	1.00	1.90
30	86	20	68	28,680	26,271	0.92	1.40	27,485	25,177	0.92	1.52	25,892	23,717	0.92	1.67	24,000	21,984	0.92	1.81	22,108	20,251	0.92	1.90	20,515	18,791	0.92	1.98
30	86	22	72	30,274	24,098	0.80	1.45	29,278	23,305	0.80	1.61	27,485	21,878	0.80	1.75	25,693	20,452	0.80	1.88	23,900	19,025	0.80	1.98	21,909	17,439	0.80	2.03
32	90	16	61	25,146	25,146	1.00	1.20	23,652	23,652	1.00	1.36	21,760	21,760	1.00	1.49	19,967	19,967	1.00	1.61	18,175	18,175	1.00	1.70	16,382	16,382	1.00	1.78
32	90	18	64	27,485	27,485	1.00	1.32	25,992	25,992	1.00	1.49	24,100	24,100	1.00	1.61	22,307	22,307	1.00	1.74	20,515	20,515	1.00	1.82	18,722	18,722	1.00	1.90
32	90	20	68	28,680	28,566	1.00	1.40	27,485	27,376	1.00	1.52	25,892	25,789	1.00	1.67	24,000	23,904	1.00	1.81	22,108	22,019	1.00	1.90	20,515	20,432	1.00	1.98
32	90	22	72	30,274	26,520	0.88	1.45	29,278	25,648	0.88	1.61	27,485	24,077	0.88	1.75	25,693	22,507	0.88	1.88	23,900	20,937	0.88	1.98	21,909	19,192	0.88	2.03

PLA-AE30NL-U1/PUY-AH30NL, PUZ-AH30NL

CAPACITY (Btu/h): 27,000 INPUT (kW): 2.3 SHF: 0.65

Indoor intake air D.B.(°C)	Indoor intake air D.B.(°F)	Indoor intake air W.B.(°C)	Indoor intake air W.B.(°F)	Outdoor intake air °C/°F D.B.																							
				20/68				25/77				30/86				35/95				40/104				46/115			
				CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.
19	66	16	61	28,289	15,446	0.55	1.52	26,609	14,528	0.55	1.73	24,480	13,366	0.55	1.89	22,463	12,265	0.55	2.05	20,447	11,164	0.55	2.15	18,430	10,063	0.55	2.26
19	66	18	64	30,921	13,172	0.43	1.68	29,241	12,457	0.43	1.89	27,112	11,550	0.43	2.05	25,095	10,691	0.43	2.21	23,079	9,832	0.43	2.31	21,062	8,973	0.43	2.42
20	68	16	61	28,289	16,577	0.59	1.52	26,609	15,593	0.59	1.73	24,480	14,345	0.59	1.89	22,463	13,164	0.59	2.05	20,447	11,982	0.59	2.15	18,430	10,800	0.59	2.26
20	68	18	64	30,921	14,409	0.47	1.68	29,241	13,626	0.47	1.89	27,112	12,634	0.47	2.05	25,095	11,694	0.47	2.21	23,079	10,755	0.47	2.31	21,062	9,815	0.47	2.42
20	68	20	68	32,266	11,164	0.35	1.77	30,921	10,699	0.35	1.93	29,129	10,079	0.35	2.12	27,000	9,342	0.35	2.30	24,871	8,605	0.35	2.42	23,079	7,985	0.35	2.52
22	72	16	61	28,289	18,841	0.67	1.52	26,609	17,721	0.67	1.73	24,480	16,304	0.67	1.89	22,463	14,961	0.67	2.05	20,447	13,618	0.67	2.15	18,430	12,275	0.67	2.26
22	72	18	64	30,921	16,883	0.55	1.68	29,241	15,965	0.55	1.89	27,112	14,803	0.55	2.05	25,095	13,702	0.55	2.21	23,079	12,601	0.55	2.31	21,062	11,500	0.55	2.42
22	72	20	68	32,266	13,745	0.43	1.77	30,921	13,172	0.43	1.93	29,129	12,409	0.43	2.12	27,000	11,502	0.43	2.30	24,871	10,595	0.43	2.42	23,079	9,832	0.43	2.52
24	75	16	61	28,289	21,104	0.75	1.52	26,609	19,850	0.75	1.73	24,480	18,262	0.75	1.89	22,463	16,758	0.75	2.05	20,447	15,253	0.75	2.15	18,430	13,749	0.75	2.26
24	75	18	64	30,921	19,357	0.63	1.68	29,241	18,305	0.63	1.89	27,112	16,972	0.63	2.05	25,095	15,710	0.63	2.21	23,079	14,447	0.63	2.31	21,062	13,185	0.63	2.42
24	75	20	68	32,266	16,326	0.51	1.77	30,921	15,646	0.51	1.93	29,129	14,739	0.51	2.12	27,000	13,662	0.51	2.30	24,871	12,585	0.51	2.42	23,079	11,678	0.51	2.52
24	75	22	72	34,058	13,146	0.39	1.85	32,938	12,714	0.39	2.05	30,921	11,936	0.39	2.23	28,905	11,157	0.39	2.39	26,888	10,379	0.39	2.51	24,847	9,514	0.39	2.58
26	79	16	61	28,289	23,367	0.83	1.52	26,609	21,979	0.83	1.73	24,480	20,220	0.83	1.89	22,463	18,555	0.83	2.05	20,447	16,889	0.83	2.15	18,430	15,223	0.83	2.26
26	79	18	64	30,921	21,830	0.71	1.68	29,241	20,644	0.71	1.89	27,112	19,141	0.71	2.05	25,095	17,717	0.71	2.21	23,079	16,294	0.71	2.31	21,062	14,870	0.71	2.42
26	79	20	68	32,266	18,908	0.59	1.77	30,921	18,120	0.59	1.93	29,129	17,069	0.59	2.12	27,000	15,822	0.59	2.30	24,871	14,575	0.59	2.42	23,079	13,524	0.59	2.52
26	79	22	72	34,058	15,871	0.47	1.85	32,938	15,349	0.47	2.05	30,921	14,409	0.47	2.23	28,905	13,470	0.47	2.39	26,888	12,530	0.47	2.51	24,847	11,486	0.47	2.58
27	81	16	61	28,289	24,498	0.87	1.52	26,609	23,043	0.87	1.73	24,480	21,200	0.87	1.89	22,463	19,453	0.87	2.05	20,447	17,707	0.87	2.15	18,430	15,961	0.87	2.26
27	81	18	64	30,921	23,067	0.75	1.68	29,241	21,814	0.75	1.89	27,112	20,226	0.75	2.05	25,095	18,721	0.75	2.21	23,079	17,217	0.75	2.31	21,062	15,712	0.75	2.42
27	81	20	68	32,266	20,198	0.63	1.77	30,921	19,357	0.63	1.93	29,129	18,235	0.63	2.12	27,000	16,902	0.63	2.30	24,871	15,569	0.63	2.42	23,079	14,474	0.63	2.52
27	81	22	72	34,058	17,233	0.51	1.85	32,938	16,667	0.51	2.05	30,921	15,646	0.51	2.23	28,905	14,626	0.51	2.39	26,888	13,605	0.51	2.51	24,847	12,472	0.51	2.58
28	82	16	61	28,289	25,630	0.91	1.52	26,609	24,107	0.91	1.73	24,480	22,179	0.91	1.89	22,463	20,352	0.91	2.05	20,447	18,525	0.91	2.15	18,430	16,698	0.91	2.26
28	82	18	64	30,921	24,304	0.79	1.68	29,241	22,983	0.79	1.89	27,112	21,310	0.79	2.05	25,095	19,725	0.79	2.21	23,079	18,140	0.79	2.31	21,062	16,555	0.79	2.42
28	82	20	68	32,266	21,489	0.67	1.77	30,921	20,593	0.67	1.93	29,129	19,400	0.67	2.12	27,000	17,982	0.67	2.30	24,871	16,564	0.67	2.42	23,079	15,371	0.67	2.52
28	82	22	72	34,058	18,596	0.55	1.85	32,938	17,984	0.55	2.05	30,921	16,883	0.55	2.23	28,905	15,782	0.55	2.39	26,888	14,681	0.55	2.51	24,847	13,457	0.55	2.58
30	86	16	61	28,289	27,893	0.99	1.52	26,609	26,236	0.99	1.73	24,480	24,137	0.99	1.89	22,463	22,149	0.99	2.05	20,447	20,161	0.99	2.15	18,430	18,172	0.99	2.26
30	86	18	64	30,921	26,778	0.87	1.68	29,241	25,322	0.87	1.89	27,112	23,479	0.87	2.05	25,095	21,733	0.87	2.21	23,079	19,986	0.87	2.31	21,062	18,240	0.87	2.42
30	86	20	68	32,266	24,070	0.75	1.77	30,921	23,067	0.75	1.93	29,129	21,730	0.75	2.12	27,000	20,142	0.75	2.30	24,871	18,554	0.75	2.42	23,079	17,217	0.75	2.52
30	86	22	72	34,058	21,320	0.63	1.85	32,938	20,619	0.63	2.05	30,921	19,357	0.63	2.23	28,905	18,094	0.63	2.39	26,888	16,832	0.63	2.51	24,847	15,429	0.63	2.58
32	90	16	61	28,289	28,289	1.00	1.52	26,609	26,609	1.00	1.73	24,480	24,480	1.00	1.89	22,463	22,463	1.00	2.05	20,447	20,447	1.00	2.15	18,430	18,430	1.00	2.26
32	90	18	64	30,921	29,251	0.95	1.68	29,241	27,662	0.95	1.89	27,112	25,648	0.95	2.05	25,095	23,740	0.95	2.21	23,079	21,833	0.95	2.31	21,062	19,925	0.95	2.42
32	90	20	68	32,266	26,651	0.83	1.77	30,921	25,541	0.83	1.93	29,129	24,060	0.83	2.12	27,000	22,302	0.83	2.30	24,871	20,544	0.83	2.42	23,079	19,063	0.83	2.52
32	90	22	72	34,058	24,045	0.71	1.85	32,938	23,254	0.71	2.05	30,921	21,830	0.71	2.23	28,905	20,407	0.71	2.39	26,888	18,983	0.71	2.51	24,847	17,401	0.71	2.58



PLA-AE36NL/PUY-AK36NL, PUZ-AK36NL

CAPACITY (Btu/h): 36,000 INPUT (kW): 2.62 SHF: 0.76

Indoor intake air D.B.(°C)	Indoor intake air D.B.(°F)	Indoor intake air W.B.(°C)	Indoor intake air W.B.(°F)	Outdoor intake air °C/°F D.B.																							
				20/68				25/77				30/86				35/95				40/104				46/115			
				CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.
19	66	16	61	37,719	24,744	0.66	1.74	35,478	23,274	0.66	1.97	32,640	21,412	0.66	2.15	29,951	19,648	0.66	2.33	27,262	17,884	0.66	2.45	24,574	16,120	0.66	2.57
19	66	18	64	41,228	22,098	0.54	1.91	38,988	20,897	0.54	2.15	36,149	19,376	0.54	2.33	33,461	17,935	0.54	2.51	30,772	16,494	0.54	2.63	28,083	15,052	0.54	2.75
20	68	16	61	37,719	26,252	0.70	1.74	35,478	24,693	0.70	1.97	32,640	22,717	0.70	2.15	29,951	20,846	0.70	2.33	27,262	18,975	0.70	2.45	24,574	17,103	0.70	2.57
20	68	18	64	41,228	23,747	0.58	1.91	38,988	22,457	0.58	2.15	36,149	20,822	0.58	2.33	33,461	19,273	0.58	2.51	30,772	17,725	0.58	2.63	28,083	16,176	0.58	2.75
20	68	20	68	43,021	19,617	0.46	2.02	41,228	18,800	0.46	2.20	38,838	17,710	0.46	2.42	36,000	16,416	0.46	2.62	33,162	15,122	0.46	2.75	30,772	14,032	0.46	2.87
22	72	16	61	37,719	29,270	0.78	1.74	35,478	27,531	0.78	1.97	32,640	25,329	0.78	2.15	29,951	23,242	0.78	2.33	27,262	21,156	0.78	2.45	24,574	19,069	0.78	2.57
22	72	18	64	41,228	27,046	0.66	1.91	38,988	25,576	0.66	2.15	36,149	23,714	0.66	2.33	33,461	21,950	0.66	2.51	30,772	20,186	0.66	2.63	28,083	18,422	0.66	2.75
22	72	20	68	43,021	23,059	0.54	2.02	41,228	22,098	0.54	2.20	38,838	20,817	0.54	2.42	36,000	19,296	0.54	2.62	33,162	17,775	0.54	2.75	30,772	16,494	0.54	2.87
24	75	16	61	37,719	32,287	0.86	1.74	35,478	30,369	0.86	1.97	32,640	27,940	0.86	2.15	29,951	25,638	0.86	2.33	27,262	23,337	0.86	2.45	24,574	21,035	0.86	2.57
24	75	18	64	41,228	30,344	0.74	1.91	38,988	28,695	0.74	2.15	36,149	26,606	0.74	2.33	33,461	24,627	0.74	2.51	30,772	22,648	0.74	2.63	28,083	20,669	0.74	2.75
24	75	20	68	43,021	26,501	0.62	2.02	41,228	25,397	0.62	2.20	38,838	23,924	0.62	2.42	36,000	22,176	0.62	2.62	33,162	20,428	0.62	2.75	30,772	18,955	0.62	2.87
24	75	22	72	45,411	22,524	0.50	2.11	43,917	21,783	0.50	2.33	41,228	20,949	0.50	2.54	38,539	19,116	0.50	2.73	35,851	17,782	0.50	2.86	32,863	16,300	0.50	2.94
26	79	16	61	37,719	35,305	0.94	1.74	35,478	33,208	0.94	1.97	32,640	30,551	0.94	2.15	29,951	28,034	0.94	2.33	27,262	25,518	0.94	2.45	24,574	23,001	0.94	2.57
26	79	18	64	41,228	33,642	0.82	1.91	38,988	31,814	0.82	2.15	36,149	29,498	0.82	2.33	33,461	27,304	0.82	2.51	30,772	25,110	0.82	2.63	28,083	22,916	0.82	2.75
26	79	20	68	43,021	29,942	0.70	2.02	41,228	28,695	0.70	2.20	38,838	27,031	0.70	2.42	36,000	25,056	0.70	2.62	33,162	23,081	0.70	2.75	30,772	21,417	0.70	2.87
26	79	22	72	45,411	26,157	0.58	2.11	43,917	25,296	0.58	2.33	41,228	23,747	0.58	2.54	38,539	22,199	0.58	2.73	35,851	20,650	0.58	2.86	32,863	18,929	0.58	2.94
27	81	16	61	37,719	36,814	0.98	1.74	35,478	34,627	0.98	1.97	32,640	31,857	0.98	2.15	29,951	29,232	0.98	2.33	27,262	26,608	0.98	2.45	24,574	23,984	0.98	2.57
27	81	18	64	41,228	35,291	0.86	1.91	38,988	33,373	0.86	2.15	36,149	30,944	0.86	2.33	33,461	28,642	0.86	2.51	30,772	26,341	0.86	2.63	28,083	24,039	0.86	2.75
27	81	20	68	43,021	31,663	0.74	2.02	41,228	30,344	0.74	2.20	38,838	28,585	0.74	2.42	36,000	26,496	0.74	2.62	33,162	24,407	0.74	2.75	30,772	22,648	0.74	2.87
27	81	22	72	45,411	27,973	0.62	2.11	43,917	27,053	0.62	2.33	41,228	25,397	0.62	2.54	38,539	23,740	0.62	2.73	35,851	22,084	0.62	2.86	32,863	20,244	0.62	2.94
28	82	16	61	37,719	37,719	1.00	1.74	35,478	35,478	1.00	1.97	32,640	32,640	1.00	2.15	29,951	29,951	1.00	2.33	27,262	27,262	1.00	2.45	24,574	24,574	1.00	2.57
28	82	18	64	41,228	36,940	0.90	1.91	38,988	34,933	0.90	2.15	36,149	32,390	0.90	2.33	33,461	29,981	0.90	2.51	30,772	27,572	0.90	2.63	28,083	25,162	0.90	2.75
28	82	20	68	43,021	33,384	0.78	2.02	41,228	31,993	0.78	2.20	38,838	30,138	0.78	2.42	36,000	27,936	0.78	2.62	33,162	25,734	0.78	2.75	30,772	23,879	0.78	2.87
28	82	22	72	45,411	29,789	0.66	2.11	43,917	28,810	0.66	2.33	41,228	27,046	0.66	2.54	38,539	25,282	0.66	2.73	35,851	23,518	0.66	2.86	32,863	21,558	0.66	2.94
30	86	16	61	37,719	37,719	1.00	1.74	35,478	35,478	1.00	1.97	32,640	32,640	1.00	2.15	29,951	29,951	1.00	2.33	27,262	27,262	1.00	2.45	24,574	24,574	1.00	2.57
30	86	18	64	41,228	40,239	0.98	1.91	38,988	38,052	0.98	2.15	36,149	35,282	0.98	2.33	33,461	32,658	0.98	2.51	30,772	30,033	0.98	2.63	28,083	27,409	0.98	2.75
30	86	20	68	43,021	36,826	0.86	2.02	41,228	35,291	0.86	2.20	38,838	33,245	0.86	2.42	36,000	30,816	0.86	2.62	33,162	28,387	0.86	2.75	30,772	26,341	0.86	2.87
30	86	22	72	45,411	33,422	0.74	2.11	43,917	32,323	0.74	2.33	41,228	30,344	0.74	2.54	38,539	28,365	0.74	2.73	35,851	26,386	0.74	2.86	32,863	24,187	0.74	2.94
32	90	16	61	37,719	37,719	1.00	1.74	35,478	35,478	1.00	1.97	32,640	32,640	1.00	2.15	29,951	29,951	1.00	2.33	27,262	27,262	1.00	2.45	24,574	24,574	1.00	2.57
32	90	18	64	41,228	41,228	1.00	1.91	38,988	38,988	1.00	2.15	36,149	36,149	1.00	2.33	33,461	33,461	1.00	2.51	30,772	30,772	1.00	2.63	28,083	28,083	1.00	2.75
32	90	20	68	43,021	40,267	0.94	2.02	41,228	38,590	0.94	2.20	38,838	36,353	0.94	2.42	36,000	33,696	0.94	2.62	33,162	31,039	0.94	2.75	30,772	28,802	0.94	2.87
32	90	22	72	45,411	37,055	0.82	2.11	43,917	35,836	0.82	2.33	41,228	33,642	0.82	2.54	38,539	31,448	0.82	2.73	35,851	29,254	0.82	2.86	32,863	26,816	0.82	2.94

PLA-AE42NL/PUY-AK42NL, PUZ-AK42NL

CAPACITY (Btu/h): 42,000 INPUT(kW): 3.5 SHF: 0.72

Indoor intake air D.B.(°C)	Indoor intake air D.B.(°F)	Indoor intake air W.B.(°C)	Indoor intake air W.B.(°F)	Outdoor intake air °C/°F D.B.																							
				20/68				25/77				30/86				35/95				40/104				46/115			
				CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.
19	66	16	61	44,005	27,107	0.62	2.32	41,391	25,497	0.62	2.64	38,080	23,457	0.62	2.88	34,943	21,525	0.62	3.12	31,806	19,593	0.62	3.28	28,669	17,660	0.62	3.44
19	66	18	64	48,100	23,857	0.50	2.56	45,485	22,561	0.50	2.87	42,174	20,918	0.50	3.12	39,037	19,363	0.50	3.36	35,900	17,807	0.50	3.52	32,763	16,251	0.50	3.68
20	68	16	61	44,005	28,867	0.66	2.32	41,391	27,153	0.66	2.64	38,080	24,980	0.66	2.88	34,943	22,923	0.66	3.12	31,806	20,865	0.66	3.28	28,669	18,807	0.66	3.44
20	68	18	64	48,100	25,781	0.54	2.56	45,485	24,380	0.54	2.87	42,174	22,605	0.54	3.12	39,037	20,924	0.54	3.36	35,900	19,243	0.54	3.52	32,763	17,561	0.54	3.68
20	68	20	68	50,191	20,879	0.42	2.70	48,100	20,009	0.42	2.94	45,311	18,849	0.42	3.23	42,000	17,472	0.42	3.50	38,689	16,095	0.42	3.68	35,900	14,935	0.42	3.84
22	72	16	61	44,005	32,388	0.74	2.32	41,391	30,464	0.74	2.64	38,080	28,027	0.74	2.88	34,943	25,718	0.74	3.12	31,806	23,409	0.74	3.28	28,669	21,101	0.74	3.44
22	72	18	64	48,100	29,629	0.62	2.56	45,485	28,019	0.62	2.87	42,174	25,979	0.62	3.12	39,037	24,047	0.62	3.36	35,900	22,115	0.62	3.52	32,763	20,182	0.62	3.68
22	72	20	68	50,191	24,895	0.50	2.70	48,100	23,857	0.50	2.94	45,311	22,474	0.50	3.23	42,000	20,832	0.50	3.50	38,689	19,190	0.50	3.68	35,900	17,807	0.50	3.84
24	75	16	61	44,005	35,908	0.82	2.32	41,391	33,775	0.82	2.64	38,080	31,073	0.82	2.88	34,943	28,514	0.82	3.12	31,806	25,954	0.82	3.28	28,669	23,994	0.82	3.44
24	75	18	64	48,100	33,477	0.70	2.56	45,485	31,658	0.70	2.87	42,174	29,353	0.70	3.12	39,037	27,170	0.70	3.36	35,900	24,987	0.70	3.52	32,763	22,303	0.70	3.68
24	75	20	68	50,191	28,910	0.58	2.70	48,100	27,705	0.58	2.94	45,311	26,099	0.58	3.23	42,000	24,192	0.58	3.50	38,689	22,285	0.58	3.68	35,900	20,679	0.58	3.84
24	75	22	72	52,979	24,159	0.46	2.81	51,237	23,364	0.46	3.12	48,100	21,933	0.46	3.39	44,963	20,503	0.46	3.64	41,826	19,073	0.46	3.82	38,340	17,483	0.46	3.93
26	79	16	61	44,005	39,429	0.90	2.32	41,391	37,087	0.90	2.64	38,080	34,120	0.90	2.88	34,943	31,309	0.90	3.12	31,806	28,498	0.90	3.28	28,669	25,668	0.90	3.44
26	79	18	64	48,100	37,325	0.78	2.56	45,485	35,297	0.78	2.87	42,174	32,727	0.78	3.12	39,037	30,293	0.78	3.36	35,900	27,859	0.78	3.52	32,763	25,424	0.78	3.68
26	79	20	68	50,191	32,925	0.66	2.70	48,100	31,553	0.66	2.94	45,311	29,724	0.66	3.23	42,000	27,552	0.66	3.50	38,689	25,380	0.66	3.68	35,900	23,551	0.66	3.84
26	79	22	72	52,979	28,397	0.54	2.81	51,237	27,463	0.54	3.12	48,100	25,781	0.54	3.39	44,963	24,100	0.54	3.64	41,826	22,419	0.54	3.82	38,340	20,550	0.54	3.93
27	81	16	61	44,005	41,189	0.94	2.32	41,391	38,742	0.94	2.64	38,080	35,643	0.94	2.88	34,943	32,707	0.94	3.12	31,806	29,771	0.94	3.28	28,669	26,834	0.94	3.44
27	81	18	64	48,100	39,249	0.82	2.56	45,485	37,116	0.82	2.87	42,174	34,134	0.82	3.12	39,037	31,854	0.82	3.36	35,900	29,295	0.82	3.52	32,763	26,735	0.82	3.68
27	81	20	68	50,191	34,933	0.70	2.70	48,100	33,477	0.70	2.94	45,311	31,517	0.70	3.23	42,000	29,232	0.70	3.50	38,689	26,927	0.70	3.68	35,900	24,937	0.70	3.84
27	81	22	72	52,979	30,516	0.58	2.81	51,237	29,512	0.58	3.12	48,100	27,705	0.58	3.39	44,963	25,898	0.58	3.64	41,826	24,092	0.58	3.82	38,340	22,084	0.58	3.93
28	82	16	61	44,005	42,949	0.98	2.32	41,391	40,398	0.98	2.64	38,080	37,166	0.98	2.88	34,943	34,104	0.98	3.12	31,806	31,043	0.98	3.28	28,669	27,981	0.98	3.44
28	82	18	64	48,100	41,173	0.86	2.56	45,485	38,936	0.86	2.87	42,174	36,101	0.86	3.12	39,037	33,416	0.86	3.36	35,900	30,731	0.86	3.52	32,763	28,046	0.86	3.68
28	82	20	68	50,191	36,940	0.74	2.70	48,100	35,401	0.74	2.94	45,311	33,349	0.74	3.23	42,000	30,912	0.74	3.50	38,689	28,475	0.74	3.68	35,900	26,423	0.74	3.84
28	82	22	72	52,979	32,635	0.62	2.81	51,237	31,562	0.62	3.12	48,100	29,629	0.62	3.39	44,963	27,697	0.62	3.64	41,826	25,765	0.62	3.82	38,340	23,618	0.62	3.93
30	86	16	61	44,005	44,005	1.00	2.32	41,391	41,391	1.00	2.64	38,080	38,080	1.00	2.88	34,943	34,943	1.00	3.12	31,806	31,806	1.00	3.28	28,669	28,669	1.00	3.44
30	86	18	64	48,100	45,021	0.94	2.56	45,485	42,574	0.94	2.87	42,174	39,475	0.94	3.12	39,037	36,539	0.94	3.36	35,900	33,603	0.94	3.52	32,763	30,667	0.94	3.68
30	86	20	68	50,191	40,956	0.82	2.70	48,100	39,249	0.82	2.94	45,311	36,974	0.82	3.23	42,000	34,272	0.82	3.50	38,689	31,570	0.82	3.68	35,900	29,295	0.82	3.84
30	86	22	72	52,979	36,874	0.70	2.81	51,237	35,661	0.70	3.12	48,100	33,477	0.70	3.39	44,963	31,294	0.70	3.64	41,826	29,111	0.70	3.82	38,340	26,685	0.70	3.93
32	90	16	61	44,005	44,005	1.00	2.32	41,391	41,391	1.00	2.64	38,080	38,080	1.00	2.88	34,943	34,943	1.00	3.12	31,806	31,806	1.00	3.28	28,669	28,669	1.00	3.44
32	90	18	64	48,100	48,100	1.00	2.56	45,485	45,485	1.00	2.87	42,174	42,174	1.00	3.12	39,037	39,037	1.00	3.36	35,900	35,900	1.00	3.52	32,763	32,763	1.00	3.68
32	90	20	68	50,191	44,971	0.90	2.70	48,100	43,097	0.90	2.94	45,311	40,599	0.90	3.23	42,000	37,632	0.90	3.50	38,689	34,665	0.90	3.68	35,900	32,167	0.90	3.84
32	90	22	72	52,979	41,112	0.78	2.81	51,237	39,670	0.78	3.12	48,100	37,325	0.78	3.39	44,963	34,891	0.78	3.64	41,826	32,457	0.78	3.82	38,340	29,752	0.78	3.93

PLA-AE48NL/PUY-AK48NL, PUZ-AK48NL

CAPACITY (Btu/h): 48,000 INPUT (kW): 4.573 SHF: 0.67

Indoor intake air D.B.(°C)	Indoor intake air D.B.(°F)	Indoor intake air W.B.(°C)	Indoor intake air W.B.(°F)	Outdoor intake air °C/°F D.B.															
				20/68				25/77				30/86				35/95			
				CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.
19	66	16	61	50,292	28,465	0.57	3.03	47,304	26,774	0.57	3.44	43,520	24,632	0.57	3.76	39,935	22,603	0.57	4.07
19	66	18	64	54,971	24,517	0.45	3.34	51,983	23,185	0.45	3.75	48,199	21,497	0.45	4.07	44,614	19,898	0.45	4.39
20	68	16	61	50,292	30,477	0.61	3.03	47,304	28,666	0.61	3.44	43,520	26,373	0.61	3.76	39,935	24,201	0.61	4.07
20	68	18	64	54,971	26,716	0.49	3.34	51,983	25,264	0.49	3.75	48,199	23,425	0.49	4.07	44,614	21,682	0.49	4.39
20	68	20	68	57,361	20,994	0.37	3.53	54,971	20,119	0.37	3.84	51,784	18,953	0.37	4.22	48,000	17,568	0.37	4.57
22	72	16	61	50,292	34,500	0.69	3.03	47,304	32,451	0.69	3.44	43,520	29,855	0.69	3.76	39,935	27,395	0.69	4.07
22	72	18	64	54,971	31,114	0.57	3.34	51,983	29,423	0.57	3.75	48,199	27,281	0.57	4.07	44,614	25,252	0.57	4.39
22	72	20	68	57,361	25,583	0.45	3.53	54,971	24,517	0.45	3.84	51,784	23,096	0.45	4.22	48,000	21,408	0.45	4.57
24	75	16	61	50,292	38,523	0.77	3.03	47,304	36,235	0.77	3.44	43,520	33,336	0.77	3.76	39,935	30,590	0.77	4.07
24	75	18	64	54,971	35,511	0.65	3.34	51,983	33,581	0.65	3.75	48,199	31,137	0.65	4.07	44,614	28,821	0.65	4.39
24	75	20	68	57,361	30,172	0.53	3.53	54,971	28,915	0.53	3.84	51,784	27,239	0.53	4.22	48,000	25,248	0.53	4.57
24	75	22	72	60,548	24,582	0.41	3.68	58,556	23,774	0.41	4.07	54,971	22,318	0.41	4.43	51,386	20,863	0.41	4.76
26	79	16	61	50,292	42,547	0.85	3.03	47,304	40,019	0.85	3.44	43,520	36,818	0.85	3.76	39,935	33,785	0.85	4.07
26	79	18	64	54,971	39,909	0.73	3.34	51,983	37,740	0.73	3.75	48,199	34,993	0.73	4.07	44,614	32,390	0.73	4.39
26	79	20	68	57,361	34,761	0.61	3.53	54,971	33,312	0.61	3.84	51,784	31,381	0.61	4.22	48,000	29,088	0.61	4.57
26	79	22	72	60,548	29,426	0.49	3.68	58,556	28,458	0.49	4.07	54,971	26,716	0.49	4.43	51,386	24,974	0.49	4.76
27	81	16	61	50,292	44,559	0.89	3.03	47,304	41,912	0.89	3.44	43,520	38,559	0.89	3.76	39,935	35,382	0.89	4.07
27	81	18	64	54,971	42,108	0.77	3.34	51,983	39,819	0.77	3.75	48,199	36,921	0.77	4.07	44,614	34,174	0.77	4.39
27	81	20	68	57,361	37,055	0.65	3.53	54,971	35,511	0.65	3.84	51,784	33,453	0.65	4.22	48,000	31,008	0.65	4.57
27	81	22	72	60,548	31,848	0.53	3.68	58,556	30,800	0.53	4.07	54,971	28,915	0.53	4.43	51,386	27,029	0.53	4.76
28	82	16	61	50,292	46,570	0.93	3.03	47,304	43,804	0.93	3.44	43,520	40,300	0.93	3.76	39,935	36,980	0.93	4.07
28	82	18	64	54,971	44,307	0.81	3.34	51,983	41,899	0.81	3.75	48,199	38,849	0.81	4.07	44,614	35,959	0.81	4.39
28	82	20	68	57,361	39,350	0.69	3.53	54,971	37,710	0.69	3.84	51,784	35,524	0.69	4.22	48,000	32,928	0.69	4.57
28	82	22	72	60,548	34,270	0.57	3.68	58,556	33,143	0.57	4.07	54,971	31,114	0.57	4.43	51,386	29,084	0.57	4.76
30	86	16	61	50,292	50,292	1.00	3.03	47,304	47,304	1.00	3.44	43,520	43,520	1.00	3.76	39,935	39,935	1.00	4.07
30	86	18	64	54,971	48,704	0.89	3.34	51,983	46,057	0.89	3.75	48,199	42,704	0.89	4.07	44,614	39,528	0.89	4.39
30	86	20	68	57,361	43,939	0.77	3.53	54,971	42,108	0.77	3.84	51,784	39,667	0.77	4.22	48,000	36,768	0.77	4.57
30	86	22	72	60,548	39,114	0.65	3.68	58,556	37,827	0.65	4.07	54,971	35,511	0.65	4.43	51,386	33,195	0.65	4.76
32	90	16	61	50,292	50,292	1.00	3.03	47,304	47,304	1.00	3.44	43,520	43,520	1.00	3.76	39,935	39,935	1.00	4.07
32	90	18	64	54,971	53,102	0.97	3.34	51,983	50,216	0.97	3.75	48,199	46,560	0.97	4.07	44,614	43,097	0.97	4.39
32	90	20	68	57,361	48,527	0.85	3.53	54,971	46,505	0.85	3.84	51,784	43,809	0.85	4.22	48,000	40,608	0.85	4.57
32	90	22	72	60,548	43,958	0.73	3.68	58,556	42,512	0.73	4.07	54,971	39,909	0.73	4.43	51,386	37,306	0.73	4.76

Note: CA : Capacity (Btu/h) SHC : Sensible heat capacity (Btu/h) SHF : Sensible heat factor P.C. : Power consumption (kW)
D.B. : Dry-bulb temperature W.B. : Wet-bulb temperature

T3-1-2. HEATING CAPACITY OUTDOOR: PUZ-AK12-48NL

Model Name	Capacity Btu/h	Input kW	Indoor intake air D.B.(°C)	Indoor intake air D.B.(°F)	Outdoor intake air °C/°F W.B.									
					-10/14		-5/23		0/32		5/41		10/50	
					CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.
PLA-AE12NL	14,000	0.95	15	59	9,026	0.63	10,993	0.75	11,982	0.80	13,971	0.90	15,972	0.97
			20	68	8,536	0.68	10,523	0.80	11,522	0.85	13,518	0.93	15,492	1.00
			25	77	7,703	0.73	9,776	0.84	10,807	0.89	12,841	0.98	14,817	1.04
PLA-AE18NL	19,000	1.38	15	59	12,250	0.91	14,919	1.09	16,261	1.16	18,960	1.30	21,676	1.41
			20	68	11,585	0.99	14,281	1.16	15,637	1.23	18,346	1.36	21,025	1.45
			25	77	10,454	1.06	13,267	1.22	14,666	1.30	17,427	1.42	20,109	1.51
PLA-AE24NL	26,000	1.76	15	59	16,763	1.16	20,415	1.38	22,252	1.49	25,946	1.66	29,661	1.80
			20	68	15,853	1.26	19,542	1.48	21,398	1.57	25,104	1.73	28,771	1.85
			25	77	14,306	1.35	18,155	1.56	20,069	1.65	23,847	1.81	27,518	1.93
PLA-AE30NL	32,000	2.32	15	59	20,632	1.54	25,126	1.83	27,387	1.96	31,933	2.19	36,506	2.37
			20	68	19,511	1.66	24,052	1.95	26,336	2.07	30,898	2.28	35,411	2.44
			25	77	17,607	1.78	22,345	2.06	24,701	2.18	29,350	2.39	33,868	2.54
PLA-AE36NL	38,000	2.47	15	59	24,500	1.63	29,837	1.94	32,522	2.08	37,921	2.33	43,351	2.52
			20	68	23,169	1.77	28,562	2.07	31,273	2.20	36,691	2.43	42,050	2.60
			25	77	20,908	1.89	26,534	2.19	29,332	2.32	34,853	2.54	40,219	2.70
PLA-AE42NL	45,000	3.23	15	59	29,014	2.14	35,334	2.54	38,513	2.73	44,906	3.05	51,337	3.30
			20	68	27,437	2.32	33,823	2.71	37,034	2.88	43,450	3.17	49,796	3.40
			25	77	24,760	2.47	31,422	2.87	34,735	3.04	41,274	3.32	47,627	3.54
PLA-AE48NL	54,000	4.51	15	59	34,816	2.99	42,401	3.55	46,216	3.81	53,887	4.26	61,604	4.61
			20	68	32,925	3.23	40,587	3.79	44,441	4.02	52,140	4.43	59,755	4.75
			25	77	29,712	3.45	37,707	4.00	41,682	4.24	49,528	4.64	57,153	4.94

Note: CA : Capacity (Btu/h) P.C. : Power consumption (kW)
D.B. : Dry-bulb temperature W.B. : Wet-bulb temperature

T3-2. HYPER HEATING INVERTER
T3-2-1. COOLING CAPACITY
PLA-AE24NL/PUZ-AK24NLHZ

CAPACITY (Btu/h): 24,000 INPUT (kW): 1.49 SHF: 0.79

Indoor intake air D.B.(°C)	Indoor intake air D.B.(°F)	Indoor intake air W.B.(°C)	Indoor intake air W.B.(°F)	Outdoor intake air °C/°F D.B.																							
				20/68				25/77				30/86				35/95				40/104				46/115			
				CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.
19	68	16	61	25,146	17,250	0.69	0.99	23,652	16,225	0.69	1.12	21,760	14,927	0.69	1.23	19,967	13,698	0.69	1.33	18,175	12,468	0.69	1.40	16,382	11,238	0.69	1.46
19	68	18	64	27,485	15,557	0.57	1.09	25,992	14,711	0.57	1.22	24,100	13,640	0.57	1.33	22,307	12,626	0.57	1.43	20,515	11,611	0.57	1.50	18,722	10,597	0.57	1.56
20	68	16	61	25,146	18,256	0.73	0.99	23,652	17,171	0.73	1.12	21,760	15,798	0.73	1.23	19,967	14,496	0.73	1.33	18,175	13,195	0.73	1.40	16,382	11,894	0.73	1.46
20	68	18	64	27,485	16,656	0.61	1.09	25,992	15,751	0.61	1.22	24,100	14,604	0.61	1.33	22,307	13,518	0.61	1.43	20,515	12,432	0.61	1.50	18,722	11,346	0.61	1.56
20	68	20	68	28,680	13,939	0.49	1.15	27,485	13,358	0.49	1.25	25,892	12,584	0.49	1.37	24,000	11,664	0.49	1.49	22,108	10,744	0.49	1.56	20,515	9,970	0.49	1.63
22	72	16	61	25,146	20,268	0.81	0.99	23,652	19,064	0.81	1.12	21,760	17,539	0.81	1.23	19,967	16,094	0.81	1.33	18,175	14,649	0.81	1.40	16,382	13,204	0.81	1.46
22	72	18	64	27,485	18,855	0.69	1.09	25,992	17,830	0.69	1.22	24,100	16,532	0.69	1.33	22,307	15,303	0.69	1.43	20,515	14,073	0.69	1.50	18,722	12,843	0.69	1.56
22	72	20	68	28,680	16,233	0.57	1.15	27,485	15,557	0.57	1.25	25,892	14,655	0.57	1.37	24,000	13,584	0.57	1.49	22,108	12,513	0.57	1.56	20,515	11,611	0.57	1.63
24	75	16	61	25,146	22,279	0.89	0.99	23,652	20,956	0.89	1.12	21,760	19,279	0.89	1.23	19,967	17,691	0.89	1.33	18,175	16,103	0.89	1.40	16,382	14,515	0.89	1.46
24	75	18	64	27,485	21,054	0.77	1.09	25,992	19,910	0.77	1.22	24,100	18,460	0.77	1.33	22,307	17,087	0.77	1.43	20,515	15,714	0.77	1.50	18,722	14,341	0.77	1.56
24	75	20	68	28,680	18,528	0.65	1.15	27,485	17,756	0.65	1.25	25,892	16,726	0.65	1.37	24,000	15,504	0.65	1.49	22,108	14,282	0.65	1.56	20,515	13,252	0.65	1.63
24	75	22	72	30,274	15,924	0.53	1.20	29,278	15,400	0.53	1.33	27,485	14,457	0.53	1.44	25,693	13,514	0.53	1.55	23,900	12,572	0.53	1.63	21,909	11,524	0.53	1.67
26	79	16	61	25,146	24,291	0.97	0.99	23,652	22,848	0.97	1.12	21,760	21,020	0.97	1.23	19,967	19,289	0.97	1.33	18,175	17,557	0.97	1.40	16,382	15,825	0.97	1.46
26	79	18	64	27,485	23,253	0.85	1.09	25,992	21,989	0.85	1.22	24,100	20,388	0.85	1.33	22,307	18,872	0.85	1.43	20,515	17,355	0.85	1.50	18,722	15,839	0.85	1.56
26	79	20	68	28,680	20,822	0.73	1.15	27,485	19,954	0.73	1.25	25,892	18,798	0.73	1.37	24,000	17,424	0.73	1.49	22,108	16,050	0.73	1.56	20,515	14,894	0.73	1.63
26	79	22	72	30,274	18,346	0.61	1.20	29,278	17,742	0.61	1.33	27,485	16,656	0.61	1.44	25,693	15,570	0.61	1.55	23,900	14,484	0.61	1.63	21,909	13,277	0.61	1.67
27	81	16	61	25,146	25,146	1.00	0.99	23,652	23,652	1.00	1.12	21,760	21,760	1.00	1.23	19,967	19,967	1.00	1.33	18,175	18,175	1.00	1.40	16,382	16,382	1.00	1.46
27	81	18	64	27,485	24,352	0.89	1.09	25,992	23,029	0.89	1.22	24,100	21,352	0.89	1.33	22,307	19,764	0.89	1.43	20,515	18,176	0.89	1.50	18,722	16,588	0.89	1.56
27	81	20	68	28,680	21,969	0.77	1.15	27,485	21,054	0.77	1.25	25,892	19,833	0.77	1.37	24,000	18,384	0.77	1.49	22,108	16,935	0.77	1.56	20,515	15,714	0.77	1.63
27	81	22	72	30,274	19,557	0.65	1.20	29,278	18,914	0.65	1.33	27,485	17,756	0.65	1.44	25,693	16,598	0.65	1.55	23,900	15,440	0.65	1.63	21,909	14,153	0.65	1.67
28	82	16	61	25,146	25,146	1.00	0.99	23,652	23,652	1.00	1.12	21,760	21,760	1.00	1.23	19,967	19,967	1.00	1.33	18,175	18,175	1.00	1.40	16,382	16,382	1.00	1.46
28	82	18	64	27,485	25,452	0.93	1.09	25,992	24,068	0.93	1.22	24,100	22,316	0.93	1.33	22,307	20,656	0.93	1.43	20,515	18,996	0.93	1.50	18,722	17,337	0.93	1.56
28	82	20	68	28,680	23,116	0.81	1.15	27,485	22,153	0.81	1.25	25,892	20,869	0.81	1.37	24,000	19,344	0.81	1.49	22,108	17,819	0.81	1.56	20,515	16,535	0.81	1.63
28	82	22	72	30,274	20,768	0.69	1.20	29,278	20,085	0.69	1.33	27,485	18,855	0.69	1.44	25,693	17,625	0.69	1.55	23,900	16,396	0.69	1.63	21,909	15,029	0.69	1.67
30	86	16	61	25,146	25,146	1.00	0.99	23,652	23,652	1.00	1.12	21,760	21,760	1.00	1.23	19,967	19,967	1.00	1.33	18,175	18,175	1.00	1.40	16,382	16,382	1.00	1.46
30	86	18	64	27,485	27,485	1.00	1.09	25,992	25,992	1.00	1.22	24,100	24,100	1.00	1.33	22,307	22,307	1.00	1.43	20,515	20,515	1.00	1.50	18,722	18,722	1.00	1.56
30	86	20	68	28,680	25,411	0.89	1.15	27,485	24,352	0.89	1.25	25,892	22,940	0.89	1.37	24,000	21,264	0.89	1.49	22,108	19,588	0.89	1.56	20,515	18,176	0.89	1.63
30	86	22	72	30,274	23,190	0.77	1.20	29,278	22,427	0.77	1.33	27,485	21,054	0.77	1.44	25,693	19,681	0.77	1.55	23,900	18,308	0.77	1.63	21,909	16,782	0.77	1.67
32	90	16	61	25,146	25,146	1.00	0.99	23,652	23,652	1.00	1.12	21,760	21,760	1.00	1.23	19,967	19,967	1.00	1.33	18,175	18,175	1.00	1.40	16,382	16,382	1.00	1.46
32	90	18	64	27,485	27,485	1.00	1.09	25,992	25,992	1.00	1.22	24,100	24,100	1.00	1.33	22,307	22,307	1.00	1.43	20,515	20,515	1.00	1.50	18,722	18,722	1.00	1.56
32	90	20	68	28,680	27,705	0.97	1.15	27,485	26,551	0.97	1.25	25,892	25,012	0.97	1.37	24,000	23,184	0.97	1.49	22,108	21,356	0.97	1.56	20,515	19,817	0.97	1.63
32	90	22	72	30,274	25,612	0.85	1.20	29,278	24,769	0.85	1.33	27,485	23,253	0.85	1.44	25,693	21,736	0.85	1.55	23,900	20,220	0.85	1.63	21,909	18,535	0.85	1.67

PLA-AE30NL/PUZ-AK30NLHZ

CAPACITY (Btu/h): 30,000 INPUT (kW): 2.13 SHF: 0.76

Indoor intake air D.B.(°C)	Indoor intake air D.B.(°F)	Indoor intake air W.B.(°C)	Indoor intake air W.B.(°F)	Outdoor intake air °C/°F D.B.																							
				20/68				25/77				30/86				35/95				40/104				46/115			
				CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.
19	66	16	61	31,432	20,620	0.66	1.41	29,565	19,395	0.66	1.60	27,200	17,843	0.66	1.75	24,959	16,373	0.66	1.90	22,719	14,903	0.66	1.99	20,478	13,434	0.66	2.09
19	66	18	64	34,357	18,415	0.54	1.56	32,490	17,414	0.54	1.75	30,124	16,147	0.54	1.90	27,884	14,946	0.54	2.04	25,643	13,745	0.54	2.14	23,402	12,544	0.54	2.24
20	68	16	61	31,432	21,877	0.70	1.41	29,565	20,577	0.70	1.60	27,200	18,931	0.70	1.75	24,959	17,372	0.70	1.90	22,719	15,812	0.70	1.99	20,478	14,253	0.70	2.09
20	68	18	64	34,357	19,790	0.58	1.56	32,490	18,714	0.58	1.75	30,124	17,352	0.58	1.90	27,884	16,061	0.58	2.04	25,643	14,770	0.58	2.14	23,402	13,480	0.58	2.24
20	68	20	68	35,851	16,348	0.46	1.64	34,357	15,667	0.46	1.79	32,365	14,759	0.46	1.96	30,000	13,680	0.46	2.13	27,635	12,601	0.46	2.24	25,643	11,693	0.46	2.33
22	72	16	61	31,432	24,392	0.78	1.41	29,565	22,943	0.78	1.60	27,200	21,107	0.78	1.75	24,959	19,368	0.78	1.90	22,719	17,630	0.78	1.99	20,478	15,891	0.78	2.09
22	72	18	64	34,357	22,538	0.66	1.56	32,490	21,313	0.66	1.75	30,124	19,762	0.66	1.90	27,884	18,292	0.66	2.04	25,643	16,822	0.66	2.14	23,402	15,352	0.66	2.24
22	72	20	68	35,851	19,216	0.54	1.64	34,357	18,415	0.54	1.79	32,365	17,348	0.54	1.96	30,000	16,080	0.54	2.13	27,635	14,812	0.54	2.24	25,643	13,745	0.54	2.33
24	75	16	61	31,432	26,906	0.86	1.41	29,565	25,308	0.86	1.60	27,200	23,283	0.86	1.75	24,959	21,365	0.86	1.90	22,719	19,447	0.86	1.99	20,478	17,529	0.86	2.09
24	75	18	64	34,357	25,287	0.74	1.56	32,490	23,912	0.74	1.75	30,124	22,172	0.74	1.90	27,884	20,522	0.74	2.04	25,643	18,873	0.74	2.14	23,402	17,224	0.74	2.24
24	75	20	68	35,851	22,084	0.62	1.64	34,357	21,164	0.62	1.79	32,365	19,937	0.62	1.96	30,000	18,480	0.62	2.13	27,635	17,023	0.62	2.24	25,643	15,796	0.62	2.33
24	75	22	72	37,842	18,770	0.50	1.71	36,598	18,152	0.50	1.90	34,357	17,041	0.50	2.06	32,116	15,930	0.50	2.22	29,876	14,818	0.50	2.32	27,386	13,583	0.50	2.39
26	79	16	61	31,432	29,421	0.94	1.41	29,565	27,673	0.94	1.60	27,200	25,459	0.94	1.75	24,959	23,362	0.94	1.90	22,719	21,265	0.94	1.99	20,478	19,167	0.94	2.09
26	79	18	64	34,357	28,035	0.82	1.56	32,490	26,512	0.82	1.75	30,124	24,582	0.82	1.90	27,884	22,753	0.82	2.04	25,643	20,925	0.82	2.14	23,402	19,096	0.82	2.24
26	79	20	68	35,851	24,952	0.70	1.64	34,357	23,912	0.70	1.79	32,365	22,526	0.70	1.96	30,000	20,880	0.70	2.13	27,635	19,234	0.70	2.24	25,643	17,848	0.70	2.33
26	79	22	72	37,842	21,797	0.58	1.71	36,598	21,080	0.58	1.90	34,357	19,790	0.58	2.06	32,116	18,499	0.58	2.22	29,876	17,208	0.58	2.32	27,386	15,774	0.58	2.39
27	81	16	61	31,432	30,678	0.98	1.41	29,565	28,856	0.98	1.60	27,200	26,547	0.98	1.75	24,959	24,360	0.98	1.90	22,719	22,173	0.98	1.99	20,478	19,987	0.98	2.09
27	81	18	64	34,357	29,409	0.86	1.56	32,490	27,811	0.86	1.75	30,124	25,787	0.86	1.90	27,884	23,869	0.86	2.04	25,643	21,951	0.86	2.14	23,402	20,033	0.86	2.24
27	81	20	68	35,851	26,386	0.74	1.64	34,357	25,287	0.74	1.79	32,365	23,821	0.74	1.96	30,000	22,080	0.74	2.13	27,635	20,339	0.74	2.24	25,643	18,873	0.74	2.33
27	81	22	72	37,842	23,311	0.62	1.71	36,598	22,544	0.62	1.90	34,357	21,164	0.62	2.06	32,116	19,784	0.62	2.22	29,876	18,403	0.62	2.32	27,386	16,870	0.62	2.39
28	82	16	61	31,432	31,432	1.00	1.41	29,565	29,565	1.00	1.60	27,200	27,200	1.00	1.75	24,959	24,959	1.00	1.90	22,719	22,719	1.00	1.99	20,478	20,478	1.00	2.09
28	82	18	64	34,357	30,784	0.90	1.56	32,490	29,111	0.90	1.75	30,124	26,992	0.90	1.90	27,884	24,984	0.90	2.04	25,643	22,976	0.90	2.14	23,402	20,969	0.90	2.24
28	82	20	68	35,851	27,820	0.78	1.64	34,357	26,661	0.78	1.79	32,365	25,115	0.78	1.96	30,000	23,280	0.78	2.13	27,635	21,445	0.78	2.24	25,643	19,899	0.78	2.33
28	82	22	72	37,842	24,825	0.66	1.71	36,598	24,008	0.66	1.90	34,357	22,538	0.66	2.06	32,116	21,068	0.66	2.22	29,876	19,598	0.66	2.32	27,386	17,965	0.66	2.39
30	86	16	61	31,432	31,432	1.00	1.41	29,565	29,565	1.00	1.60	27,200	27,200	1.00	1.75	24,959	24,959	1.00	1.90	22,719	22,719	1.00	1.99	20,478	20,478	1.00	2.09
30	86	18	64	34,357	33,532	0.98	1.56	32,490	31,710	0.98	1.75	30,124	29,401	0.98	1.90	27,884	27,215	0.98	2.04	25,643	25,028	0.98	2.14	23,402	22,841	0.98	2.24
30	86	20	68	35,851	30,688	0.86	1.64	34,357	29,409	0.86	1.79	32,365	27,705	0.86	1.96	30,000	25,680	0.86	2.13	27,635	23,655	0.86	2.24	25,643	21,951	0.86	2.33
30	86	22	72	37,842	27,852	0.74	1.71	36,598	26,936	0.74	1.90	34,357	25,287	0.74	2.06	32,116	23,638	0.74	2.22	29,876	21,988	0.74	2.32	27,386	20,156	0.74	2.39
32	90	16	61	31,432	31,432	1.00	1.41	29,565	29,565	1.00	1.60	27,200	27,200	1.00	1.75	24,959	24,959	1.00	1.90	22,719	22,719	1.00	1.99	20,478	20,478	1.00	2.09
32	90	18	64	34,357	34,357	1.00	1.56	32,490	32,490	1.00	1.75	30,124	30,124	1.00	1.90	27,884	27,884	1.00	2.04	25,643	25,643	1.00	2.14	23,402	23,402	1.00	2.24
32	90	20	68	35,851	33,556	0.94	1.64	34,357	32,158	0.94	1.79	32,365	30,094	0.94	1.96	30,000	28,080	0.94	2.13	27,635	25,866	0.94	2.24	25,643	23,402	0.94	2.33
32	90	22	72	37,842	30,879	0.82	1.71	36,598	29,864	0.82	1.90	34,357	28,293	0.82	2.06	32,116	26,207	0.82	2.22	29,876	24,378	0.82	2.32	27,386	22,347	0.82	2.39



PLA-AE36NL/PUZ-AK36NLHZ

CAPACITY (Btu/h): 36,000 INPUT (kW): 2.62 SHF: 0.76

Indoor intake air D.B.(°C)	Indoor intake air D.B.(°F)	Indoor intake air W.B.(°C)	Indoor intake air W.B.(°F)	Outdoor intake air °C/°F D.B.																							
				20/68				25/77				30/86				35/95				40/104				46/115			
				CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.
19	66	16	61	37,719	24,744	0.66	1.74	35,478	23,274	0.66	1.97	32,640	21,412	0.66	2.15	29,951	19,648	0.66	2.33	27,262	17,884	0.66	2.45	24,574	16,120	0.66	2.57
19	66	18	64	41,228	22,098	0.54	1.91	38,988	20,897	0.54	2.15	36,149	19,376	0.54	2.33	33,461	17,935	0.54	2.51	30,772	16,494	0.54	2.63	28,083	15,052	0.54	2.75
20	68	16	61	37,719	26,252	0.70	1.74	35,478	24,693	0.70	1.97	32,640	22,717	0.70	2.15	29,951	20,846	0.70	2.33	27,262	18,975	0.70	2.45	24,574	17,103	0.70	2.57
20	68	18	64	41,228	23,747	0.58	1.91	38,988	22,457	0.58	2.15	36,149	20,822	0.58	2.33	33,461	19,273	0.58	2.51	30,772	17,725	0.58	2.63	28,083	16,176	0.58	2.75
20	68	20	68	43,021	19,617	0.46	2.02	41,228	18,800	0.46	2.20	38,838	17,710	0.46	2.42	36,000	16,416	0.46	2.62	33,162	15,122	0.46	2.75	30,772	14,032	0.46	2.87
22	72	16	61	37,719	29,270	0.78	1.74	35,478	27,531	0.78	1.97	32,640	25,329	0.78	2.15	29,951	23,242	0.78	2.33	27,262	21,156	0.78	2.45	24,574	19,069	0.78	2.57
22	72	18	64	41,228	27,046	0.66	1.91	38,988	25,576	0.66	2.15	36,149	23,714	0.66	2.33	33,461	21,950	0.66	2.51	30,772	20,186	0.66	2.63	28,083	18,422	0.66	2.75
22	72	20	68	43,021	23,059	0.54	2.02	41,228	22,098	0.54	2.20	38,838	20,817	0.54	2.42	36,000	19,296	0.54	2.62	33,162	17,775	0.54	2.75	30,772	16,494	0.54	2.87
24	75	16	61	37,719	32,287	0.86	1.74	35,478	30,369	0.86	1.97	32,640	27,940	0.86	2.15	29,951	25,638	0.86	2.33	27,262	23,337	0.86	2.45	24,574	21,035	0.86	2.57
24	75	18	64	41,228	30,344	0.74	1.91	38,988	28,695	0.74	2.15	36,149	26,606	0.74	2.33	33,461	24,627	0.74	2.51	30,772	22,648	0.74	2.63	28,083	20,669	0.74	2.75
24	75	20	68	43,021	26,501	0.62	2.02	41,228	25,397	0.62	2.20	38,838	23,924	0.62	2.42	36,000	22,176	0.62	2.62	33,162	20,428	0.62	2.75	30,772	18,955	0.62	2.87
24	75	22	72	45,411	22,524	0.50	2.11	43,917	21,783	0.50	2.33	41,228	20,449	0.50	2.54	38,539	19,116	0.50	2.73	35,851	17,782	0.50	2.86	32,863	16,300	0.50	2.94
26	79	16	61	37,719	35,305	0.94	1.74	35,478	33,208	0.94	1.97	32,640	30,551	0.94	2.15	29,951	28,034	0.94	2.33	27,262	25,518	0.94	2.45	24,574	23,001	0.94	2.57
26	79	18	64	41,228	33,642	0.82	1.91	38,988	31,814	0.82	2.15	36,149	29,498	0.82	2.33	33,461	27,304	0.82	2.51	30,772	25,110	0.82	2.63	28,083	22,916	0.82	2.75
26	79	20	68	43,021	29,942	0.70	2.02	41,228	28,695	0.70	2.20	38,838	27,031	0.70	2.42	36,000	25,056	0.70	2.62	33,162	23,081	0.70	2.75	30,772	21,417	0.70	2.87
26	79	22	72	45,411	26,157	0.58	2.11	43,917	25,296	0.58	2.33	41,228	23,747	0.58	2.54	38,539	22,199	0.58	2.73	35,851	20,650	0.58	2.86	32,863	18,929	0.58	2.94
27	81	16	61	37,719	36,814	0.98	1.74	35,478	34,627	0.98	1.97	32,640	31,857	0.98	2.15	29,951	29,232	0.98	2.33	27,262	26,608	0.98	2.45	24,574	23,984	0.98	2.57
27	81	18	64	41,228	35,291	0.86	1.91	38,988	33,373	0.86	2.15	36,149	30,944	0.86	2.33	33,461	28,642	0.86	2.51	30,772	26,341	0.86	2.63	28,083	24,039	0.86	2.75
27	81	20	68	43,021	31,663	0.74	2.02	41,228	30,344	0.74	2.20	38,838	28,585	0.74	2.42	36,000	26,496	0.74	2.62	33,162	24,407	0.74	2.75	30,772	22,648	0.74	2.87
27	81	22	72	45,411	27,973	0.62	2.11	43,917	27,053	0.62	2.33	41,228	25,397	0.62	2.54	38,539	23,740	0.62	2.73	35,851	22,084	0.62	2.86	32,863	20,244	0.62	2.94
28	82	16	61	37,719	37,719	1.00	1.74	35,478	35,478	1.00	1.97	32,640	32,640	1.00	2.15	29,951	29,951	1.00	2.33	27,262	27,262	1.00	2.45	24,574	24,574	1.00	2.57
28	82	18	64	41,228	36,940	0.90	1.91	38,988	34,933	0.90	2.15	36,149	32,390	0.90	2.33	33,461	29,981	0.90	2.51	30,772	27,572	0.90	2.63	28,083	25,162	0.90	2.75
28	82	20	68	43,021	33,384	0.78	2.02	41,228	31,993	0.78	2.20	38,838	30,138	0.78	2.42	36,000	27,936	0.78	2.62	33,162	25,734	0.78	2.75	30,772	23,879	0.78	2.87
28	82	22	72	45,411	29,789	0.66	2.11	43,917	28,810	0.66	2.33	41,228	27,046	0.66	2.54	38,539	25,282	0.66	2.73	35,851	23,518	0.66	2.86	32,863	21,558	0.66	2.94
30	86	16	61	37,719	37,719	1.00	1.74	35,478	35,478	1.00	1.97	32,640	32,640	1.00	2.15	29,951	29,951	1.00	2.33	27,262	27,262	1.00	2.45	24,574	24,574	1.00	2.57
30	86	18	64	41,228	40,239	0.98	1.91	38,988	38,052	0.98	2.15	36,149	35,282	0.98	2.33	33,461	32,658	0.98	2.51	30,772	30,033	0.98	2.63	28,083	27,409	0.98	2.75
30	86	20	68	43,021	36,826	0.86	2.02	41,228	35,291	0.86	2.20	38,838	33,245	0.86	2.42	36,000	30,816	0.86	2.62	33,162	28,387	0.86	2.75	30,772	26,341	0.86	2.87
30	86	22	72	45,411	33,422	0.74	2.11	43,917	32,323	0.74	2.33	41,228	30,344	0.74	2.54	38,539	28,365	0.74	2.73	35,851	26,386	0.74	2.86	32,863	24,187	0.74	2.94
32	90	16	61	37,719	37,719	1.00	1.74	35,478	35,478	1.00	1.97	32,640	32,640	1.00	2.15	29,951	29,951	1.00	2.33	27,262	27,262	1.00	2.45	24,574	24,574	1.00	2.57
32	90	18	64	41,228	41,228	1.00	1.91	38,988	38,988	1.00	2.15	36,149	36,149	1.00	2.33	33,461	33,461	1.00	2.51	30,772	30,772	1.00	2.63	28,083	28,083	1.00	2.75
32	90	20	68	43,021	40,267	0.94	2.02	41,228	38,590	0.94	2.20	38,838	36,353	0.94	2.42	36,000	33,696	0.94	2.62	33,162	31,039	0.94	2.75	30,772	28,802	0.94	2.87
32	90	22	72	45,411	37,055	0.82	2.11	43,917	35,836	0.82	2.33	41,228	33,642	0.82	2.54	38,539	31,448	0.82	2.73	35,851	29,254	0.82	2.86	32,863	26,816	0.82	2.94

PLA-AE42NL/PUZ-AK42NLHZ

CAPACITY (Btu/h): 42,000 INPUT (kW): 3.53 SHF: 0.74

Indoor intake air D.B.(°C)	Indoor intake air D.B.(°F)	Indoor intake air W.B.(°C)	Indoor intake air W.B.(°F)	Outdoor intake air °C/°F D.B.																							
				20/68				25/77				30/86				35/95				40/104				46/115			
				CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.
19	66	16	61	44,005	27,987	0.64	2.34	41,391	26,325	0.64	2.66	38,080	24,219	0.64	2.90	34,943	22,224	0.64	3.14	31,806	20,229	0.64	3.31	28,669	18,234	0.64	3.47
19	66	18	64	48,100	24,819	0.52	2.58	45,485	23,471	0.52	2.90	42,174	21,762	0.52	3.14	39,037	20,143	0.52	3.38	35,900	18,525	0.52	3.55	32,763	16,906	0.52	3.71
20	68	16	61	44,005	29,748	0.68	2.34	41,391	27,980	0.68	2.66	38,080	25,742	0.68	2.90	34,943	23,622	0.68	3.14	31,806	21,501	0.68	3.31	28,669	19,380	0.68	3.47
20	68	18	64	48,100	26,743	0.56	2.58	45,485	25,290	0.56	2.90	42,174	23,449	0.56	3.14	39,037	21,705	0.56	3.38	35,900	19,961	0.56	3.55	32,763	18,216	0.56	3.71
20	68	20	68	50,191	21,883	0.44	2.72	48,100	20,971	0.44	2.97	45,311	19,756	0.44	3.26	42,000	18,312	0.44	3.53	38,689	16,868	0.44	3.71	35,900	15,653	0.44	3.87
22	72	16	61	44,005	33,268	0.76	2.34	41,391	31,292	0.76	2.66	38,080	28,788	0.76	2.90	34,943	26,417	0.76	3.14	31,806	24,045	0.76	3.31	28,669	21,674	0.76	3.47
22	72	18	64	48,100	30,591	0.64	2.58	45,485	28,929	0.64	2.90	42,174	26,823	0.64	3.14	39,037	24,828	0.64	3.38	35,900	22,833	0.64	3.55	32,763	20,838	0.64	3.71
22	72	20	68	50,191	25,898	0.52	2.72	48,100	24,819	0.52	2.97	45,311	23,381	0.52	3.26	42,000	21,672	0.52	3.53	38,689	19,963	0.52	3.71	35,900	18,525	0.52	3.87
24	75	16	61	44,005	36,788	0.84	2.34	41,391	34,603	0.84	2.66	38,080	31,835	0.84	2.90	34,943	29,212	0.84	3.14	31,806	26,590	0.84	3.31	28,669	23,967	0.84	3.47
24	75	18	64	48,100	34,439	0.72	2.58	45,485	32,568	0.72	2.90	42,174	30,197	0.72	3.14	39,037	27,951	0.72	3.38	35,900	25,705	0.72	3.55	32,763	23,459	0.72	3.71
24	75	20	68	50,191	29,914	0.60	2.72	48,100	28,667	0.60	2.97	45,311	27,005	0.60	3.26	42,000	25,032	0.60	3.53	38,689	23,059	0.60	3.71	35,900	21,397	0.60	3.87
26	79	16	61	52,979	25,218	0.48	2.84	51,237	24,389	0.48	3.14	48,100	22,895	0.48	3.42	44,963	21,402	0.48	3.68	41,826	19,909	0.48	3.85	38,340	18,250	0.48	3.97
26	79	22	72	44,005	40,309	0.92	2.34	41,391	37,914	0.92	2.66	38,080	34,881	0.92	2.90	34,943	32,008	0.92	3.14	31,806	29,134	0.92	3.31	28,669	26,621	0.92	3.47
26	79	18	64	48,100	38,287	0.80	2.58	45,485	36,206	0.80	2.90	42,174	33,571	0.80	3.14	39,037	31,074	0.80	3.38	35,900	28,577	0.80	3.55	32,763	26,080	0.80	3.71
26	79	20	68	50,191	33,929	0.68	2.72	48,100	32,515	0.68	2.97	45,311	30,630	0.68	3.26	42,000	28,392	0.68	3.53	38,689	26,154	0.68	3.71	35,900	24,269	0.68	3.87
26	79	22	72	52,979	29,456	0.56	2.84	51,237	28,488	0.56	3.14	48,100	26,743	0.56	3.42	44,963	24,999	0.56	3.68	41,826	23,255	0.56	3.85	38,340	21,317	0.56	3.97
27	81	16	61	44,005	42,069	0.96	2.34	41,391	39,570	0.96	2.66	38,080	36,404	0.96	2.90	34,943	33,406	0.96	3.14	31,806	30,407	0.96	3.31	28,669	27,408	0.96	3.47
27	81	18	64	48,100	40,211	0.84	2.58	45,485	38,026	0.84	2.90	42,174	35,258	0.84	3.14	39,037	32,635	0.84	3.38	35,900	30,013	0.84	3.55	32,763	27,909	0.84	3.71
27	81	20	68	50,191	35,937	0.72	2.72	48,100	34,439	0.72	2.97	45,311	32,443	0.72	3.26	42,000	30,072	0.72	3.53	38,689	27,701	0.72	3.71	35,900	25,750	0.72	3.87
27	81	22	72	52,979	31,576	0.60	2.84	51,237	30,537	0.60	3.14	48,100	28,667	0.60	3.42	44,963	26,798	0.60	3.68	41,826	24,928	0.60	3.85	38,340	22,851	0.60	3.97
28	82	16	61	44,005	43,829	1.00	2.34	41,391	41,226	1.00	2.66	38,080	37,928	1.00	2.90	34,943	34,803	1.00	3.14	31,806	31,679	1.00	3.31	28,669	28,555	1.00	3.47
28	82	18	64	48,100	42,135	0.88	2.58	45,485	39,845	0.88	2.90	42,174	36,945	0.88	3.14	39,037	34,197	0.88	3.38	35,900	31,449	0.88	3.55	32,763	28,701	0.88	3.71
28	82	20	68	50,191	37,944	0.76	2.72	48,100	36,363	0.76	2.97	45,311	34,255	0.76	3.26	42,000	31,752	0.76	3.53	38,689	29,249	0.76	3.71	35,900	27,141	0.76	3.87
28	82	22	72	52,979	33,695	0.64	2.84	51,237	32,586	0.64	3.14	48,100	30,591	0.64	3.42	44,963	28,596	0.64	3.68	41,826	26,601	0.64	3.85	38,340	24,384	0.64	3.97
30	86	16	61	44,005	44,005	1.00	2.34	41,391	41,391	1.00	2.66	38,080	38,080	1.00	2.90	34,943	34,943	1.00	3.14	31,806	31,806	1.00	3.31	28,669	28,669	1.00	3.47
30	86	18	64	48,100	45,983	0.96	2.58	45,485	43,484	0.96	2.90	42,174	40,319	0.96	3.14	39,037	37,320	0.96	3.38	35,900	34,321	0.96	3.55	32,763	31,322	0.96	3.71
30	86	20	68	50,191	41,960	0.84	2.72	48,100	40,211	0.84	2.97	45,311	37,880	0.84	3.26	42,000	35,112	0.84	3.53	38,689	32,344	0.84	3.71	35,900	30,013	0.84	3.87
30	86	22	72	52,979	37,933	0.72	2.84	51,237	36,685	0.72	3.14	48,100	34,339	0.72	3.42	44,963	32,193	0.72	3.68	41,826	29,947	0.72	3.85	38,340	27,452	0.72	3.97
32	90	16	61	44,005	44,005	1.00	2.34	41,391	41,391	1.00	2.66	38,080	38,080	1.00	2.90	34,943	34,943	1.00	3.14	31,806	31,806	1.00	3.31	28,669	28,669	1.00	3.47
32	90	18	64	48,100	48,100	1.00	2.58	45,485	45,485	1.00	2.90	42,174	42,174	1.00	3.14	39,037	39,037	1.00	3.38	35,900	35,900	1.00	3.55	32,763	32,763	1.00	3.71
32	90	20	68	50,191	45,975	0.92	2.72	48,100	44,059	0.92	2.97	45,311	41,505	0.92	3.26	42,000	38,472	0.92	3.53	38,689	35,439	0.92	3.71	35,900	32,885	0.92	3.87
32	90	22	72	52,979	42,171	0.80	2.84	51,237	40,784	0.80	3.14	48,100	38,287	0.80	3.42	44,963	35,790	0.80	3.68	41,826	33,293	0.80	3.85	38,340	30,519	0.80	3.97

PLA-AE48NL/PUZ-AK48NLHZ

CAPACITY (Btu/h): 48,000 INPUT (kW): 4.56 SHF: 0.67

Indoor intake air D.B.(°C)	Indoor intake air D.B.(°F)	Indoor intake air W.B.(°C)	Indoor intake air W.B.(°F)	Outdoor intake air °C/°F D.B.																							
				20/68				25/77				30/86				35/95				40/104				46/115			
				CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.	CA	SHC	SHF	P.C.
19	66	16	61	50,292	28,465	0.57	3.02	47,304	26,774	0.57	3.43	43,520	24,632	0.57	3.75	39,935	22,603	0.57	4.06	36,350	20,574	0.57	4.27	32,765	18,545	0.57	4.48
19	66	18	64	54,971	24,517	0.45	3.33	51,983	23,185	0.45	3.74	48,199	21,497	0.45	4.06	44,614	19,898	0.45	4.37	41,029	18,299	0.45	4.58	37,444	16,700	0.45	4.79
20	68	16	61	50,292	30,477	0.61	3.02	47,304	28,666	0.61	3.43	43,520	26,373	0.61	3.75	39,935	24,201	0.61	4.06	36,350	22,028	0.61	4.27	32,765	19,855	0.61	4.48
20	68	18	64	54,971	26,716	0.49	3.33	51,983	25,264	0.49	3.74	48,199	23,425	0.49	4.06	44,614	21,682	0.49	4.37	41,029	19,940	0.49	4.58	37,444	18,198	0.49	4.79
20	68	20	68	57,361	20,994	0.37	3.52	54,971	20,119	0.37	3.83	51,784	18,953	0.37	4.21	48,000	17,568	0.37	4.56	44,216	16,183	0.37	4.79	41,029	15,017	0.37	5.00
22	72	16	61	50,292	34,500	0.69	3.02	47,304	32,451	0.69	3.43	43,520	29,855	0.69	3.75	39,935	27,395	0.69	4.06	36,350	24,936	0.69	4.27	32,765	22,477	0.69	4.48
22	72	18	64	54,971	31,114	0.57	3.33	51,983	29,423	0.57	3.74	48,199	27,281	0.57	4.06	44,614	25,252	0.57	4.37	41,029	23,222	0.57	4.58	37,444	21,193	0.57	4.79
22	72	20	68	57,361	25,583	0.45	3.52	54,971	24,517	0.45	3.83	51,784	23,096	0.45	4.21	48,000	21,408	0.45	4.56	44,216	19,720	0.45	4.79	41,029	18,299	0.45	5.00
24	75	16	61	50,292	38,523	0.77	3.02	47,304	36,235	0.77	3.43	43,520	33,336	0.77	3.75	39,935	30,590	0.77	4.06	36,350	27,844	0.77	4.27	32,765	25,098	0.77	4.48
24	75	18	64	54,971	35,511	0.65	3.33	51,983	33,581	0.65	3.74	48,199	31,137	0.65	4.06	44,614	28,821	0.65	4.37	41,029	26,505	0.65	4.58	37,444	24,189	0.65	4.79
24	75	20	68	57,361	30,172	0.53	3.52	54,971	28,915	0.53	3.83	51,784	27,239	0.53	4.21	48,000	25,248	0.53	4.56	44,216	23,257	0.53	4.79	41,029	21,581	0.53	5.00
24	75	22	72	60,548	24,582	0.41	3.66	58,556	23,774	0.41	4.06	54,971	22,318	0.41	4.41	51,386	20,863	0.41	4.75	47,801	19,407	0.41	4.98	43,817	17,790	0.41	5.12
26	79	16	61	50,292	42,547	0.85	3.02	47,304	40,019	0.85	3.43	43,520	36,818	0.85	3.75	39,935	33,785	0.85	4.06	36,350	30,752	0.85	4.27	32,765	27,719	0.85	4.48
26	79	18	64	54,971	39,909	0.73	3.33	51,983	37,740	0.73	3.74	48,199	34,993	0.73	4.06	44,614	32,390	0.73	4.37	41,029	29,787	0.73	4.58	37,444	27,184	0.73	4.79
26	79	20	68	57,361	34,761	0.61	3.52	54,971	33,312	0.61	3.83	51,784	31,381	0.61	4.21	48,000	29,088	0.61	4.56	44,216	26,795	0.61	4.79	41,029	24,864	0.61	5.00
26	79	22	72	60,548	29,246	0.49	3.66	58,556	28,458	0.49	4.06	54,971	26,716	0.49	4.41	51,386	24,974	0.49	4.75	47,801	23,231	0.49	4.98	43,817	21,295	0.49	5.12
27	81	16	61	50,292	44,559	0.89	3.02	47,304	41,912	0.89	3.43	43,520	38,559	0.89	3.75	39,935	35,382	0.89	4.06	36,350	32,206	0.89	4.27	32,765	29,030	0.89	4.48
27	81	18	64	54,971	42,108	0.77	3.33	51,983	39,819	0.77	3.74	48,199	36,921	0.77	4.06	44,614	34,174	0.77	4.37	41,029	31,428	0.77	4.58	37,444	28,682	0.77	4.79
27	81	20	68	57,361	37,055	0.65	3.52	54,971	35,511	0.65	3.83	51,784	33,453	0.65	4.21	48,000	31,008	0.65	4.56	44,216	28,563	0.65	4.79	41,029	26,505	0.65	5.00
27	81	22	72	60,548	31,848	0.53	3.66	58,556	30,800	0.53	4.06	54,971	28,915	0.53	4.41	51,386	27,029	0.53	4.75	47,801	25,143	0.53	4.98	43,817	23,048	0.53	5.12
28	82	16	61	50,292	46,570	0.93	3.02	47,304	43,804	0.93	3.43	43,520	40,300	0.93	3.75	39,935	36,980	0.93	4.06	36,350	33,660	0.93	4.27	32,765	30,340	0.93	4.48
28	82	18	64	54,971	44,307	0.81	3.33	51,983	41,899	0.81	3.74	48,199	38,849	0.81	4.06	44,614	35,959	0.81	4.37	41,029	33,069	0.81	4.58	37,444	30,180	0.81	4.79
28	82	20	68	57,361	39,350	0.69	3.52	54,971	37,710	0.69	3.83	51,784	35,524	0.69	4.21	48,000	32,928	0.69	4.56	44,216	30,332	0.69	4.79	41,029	28,146	0.69	5.00
28	82	22	72	60,548	34,270	0.57	3.66	58,556	33,143	0.57	4.06	54,971	31,114	0.57	4.41	51,386	29,084	0.57	4.75	47,801	27,055	0.57	4.98	43,817	24,801	0.57	5.12
30	86	16	61	50,292	50,292	1.00	3.02	47,304	47,304	1.00	3.43	43,520	43,520	1.00	3.75	39,935	39,935	1.00	4.06	36,350	36,350	1.00	4.27	32,765	32,765	1.00	4.48
30	86	18	64	54,971	48,704	0.89	3.33	51,983	46,057	0.89	3.74	48,199	42,704	0.89	4.06	44,614	39,528	0.89	4.37	41,029	36,352	0.89	4.58	37,444	33,175	0.89	4.79
30	86	20	68	57,361	43,939	0.77	3.52	54,971	42,108	0.77	3.83	51,784	39,667	0.77	4.21	48,000	36,768	0.77	4.56	44,216	33,869	0.77	4.79	41,029	31,428	0.77	5.00
30	86	22	72	60,548	39,114	0.65	3.66	58,556	37,827	0.65	4.06	54,971	35,511	0.65	4.41	51,386	33,195	0.65	4.75	47,801	30,879	0.65	4.98	43,817	28,306	0.65	5.12
32	90	16	61	50,292	50,292	1.00	3.02	47,304	47,304	1.00	3.43	43,520	43,520	1.00	3.75	39,935	39,935	1.00	4.06	36,350	36,350	1.00	4.27	32,765	32,765	1.00	4.48
32	90	18	64	54,971	53,102	0.97	3.33	51,983	50,216	0.97	3.74	48,199	46,560	0.97	4.06	44,614	43,097	0.97	4.37	41,029	39,634	0.97	4.58	37,444	36,171	0.97	4.79
32	90	20	68	57,361	48,527	0.85	3.52	54,971	46,505	0.85	3.83	51,784	43,809	0.85	4.21	48,000	40,608	0.85	4.56	44,216	37,407	0.85	4.79	41,029	34,711	0.85	5.00
32	90	22	72	60,548	43,958	0.73	3.66	58,556	42,512	0.73	4.06	54,971	39,909	0.73	4.41	51,386	37,306	0.73	4.75	47,801	34,703	0.73	4.98	43,817	31,811	0.73	5.12

Note: CA : Capacity (Btu/h) SHC : Sensible heat capacity (Btu/h) SHF : Sensible heat factor P.C. : Power consumption (kW)
D.B. : Dry-bulb temperature W.B. : Wet-bulb temperature

T3-2-2. HEATING CAPACITY OUTDOOR:PUZ-AK24-48NLHZ

Model Name	Capacity Btu/h	Input kW	Indoor intake air D.B.(°C)	Indoor intake air D.B.(°F)	Outdoor intake air °C/°F W.B.											
					-10/14		-5 / 23		0 / 32		5 / 41		10 / 50		15 / 59	
					CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.
PLA-AE24NL	26,000	1.68	15	59	16,763	1.11	20,415	1.32	22,252	1.42	25,946	1.59	29,661	1.72	33,395	1.80
			20	68	15,853	1.20	19,542	1.41	21,398	1.50	25,104	1.65	28,771	1.77	32,356	1.85
			25	77	14,306	1.29	18,155	1.49	20,069	1.58	23,847	1.73	27,518	1.84	31,035	1.91
PLA-AE30NL	32,000	1.97	15	59	20,632	1.30	25,126	1.55	27,387	1.66	31,933	1.86	36,506	2.01	41,101	2.11
			20	68	19,511	1.41	24,052	1.65	26,336	1.76	30,898	1.94	35,411	2.07	39,823	2.17
			25	77	17,607	1.51	22,345	1.75	24,701	1.85	29,350	2.03	33,868	2.16	38,197	2.24
PLA-AE36NL	38,000	2.47	15	59	24,500	1.63	29,837	1.94	32,522	2.08	37,921	2.33	43,351	2.52	48,808	2.65
			20	68	23,169	1.77	28,562	2.07	31,273	2.20	36,691	2.43	42,050	2.60	47,290	2.72
			25	77	20,908	1.89	26,534	2.19	29,332	2.32	34,853	2.54	40,219	2.70	45,359	2.81
PLA-AE42NL	48,000	3.72	15	59	30,948	2.46	37,689	2.93	41,081	3.14	47,900	3.51	54,759	3.80	61,652	3.99
			20	68	29,266	2.67	36,078	3.12	39,503	3.32	46,347	3.66	53,116	3.91	59,735	4.09
			25	77	26,411	2.85	33,517	3.30	37,051	3.50	44,025	3.83	50,802	4.07	57,296	4.23
PLA-AE48NL	52,000	7.26	15	59	33,527	4.81	40,830	5.71	44,504	6.13	51,891	6.85	59,323	7.42	66,790	7.78
			20	68	31,705	5.21	39,084	6.09	42,795	6.48	50,209	7.14	57,542	7.64	64,713	7.99
			25	77	28,611	5.56	36,310	6.44	40,139	6.83	47,694	7.47	55,036	7.95	62,070	8.26

T4-2. FRESH AIR INTAKE AND BRANCH DUCT

1. Branch duct hole and fresh air intake hole (Fig. 1)

At the time of installation, use the duct holes (cut out) located at the positions shown in Fig.1, as and when required.
 • A fresh air intake hole for the optional multi function casement can also be made.

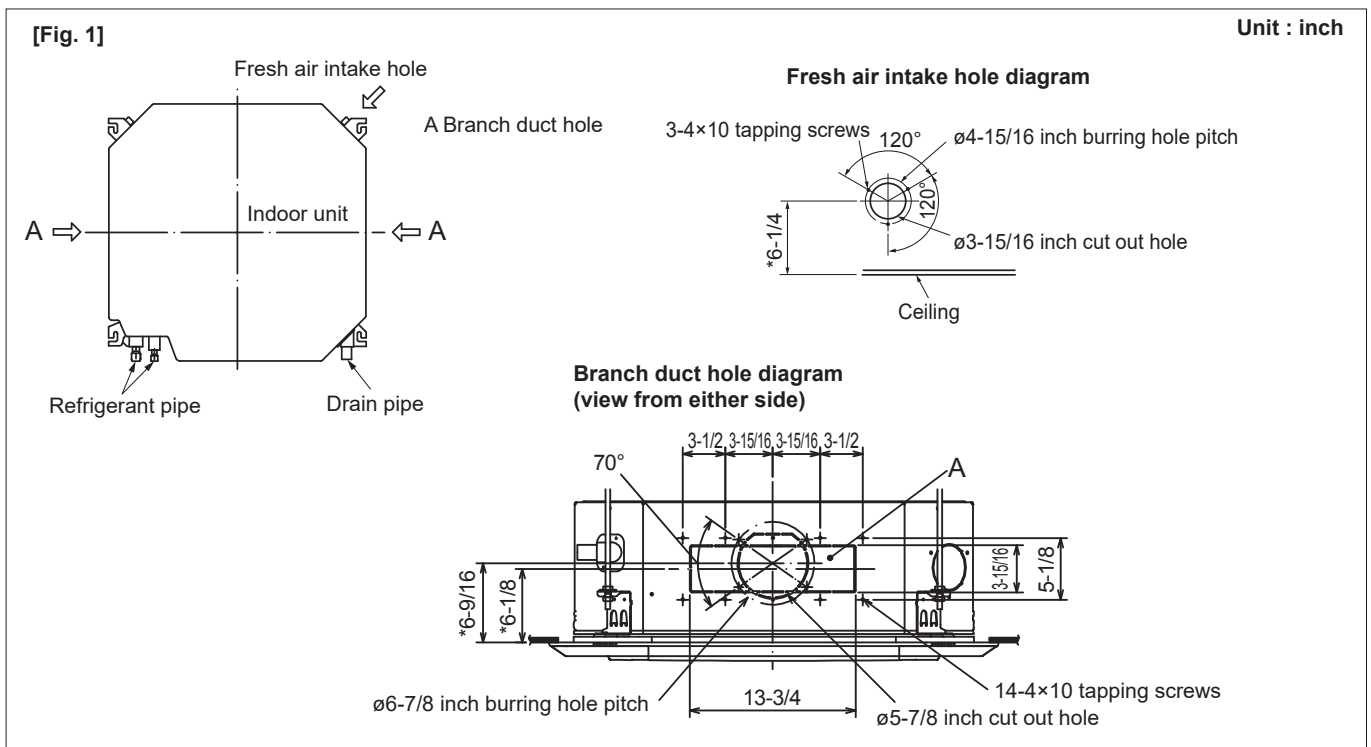
Note:

The figure marked with * in the drawing represent the dimensions of the main unit excluding those of the optional multi function casement.

When installing the optional multi function casement, add 5-5/16 to the dimensions marked on the figure.

When installing the branch ducts, be sure to insulate adequately.

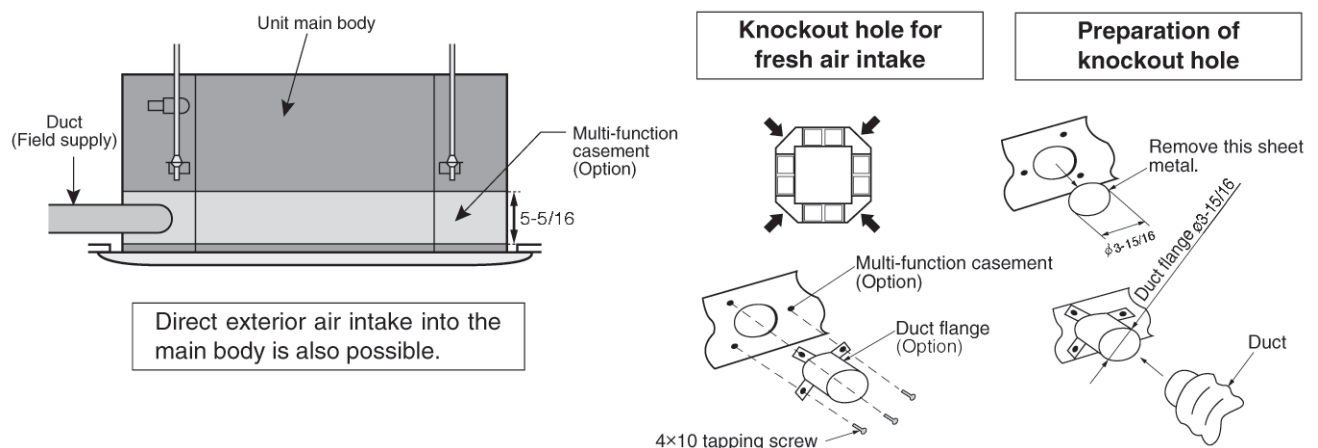
Otherwise condensation and dripping may occur.



2. Fresh air intake (Installation at site)

By mounting the optional multi-function casement to the indoor unit main body, and mounting the duct flange (option) onto it further, fresh exterior air intake can be accomplished.

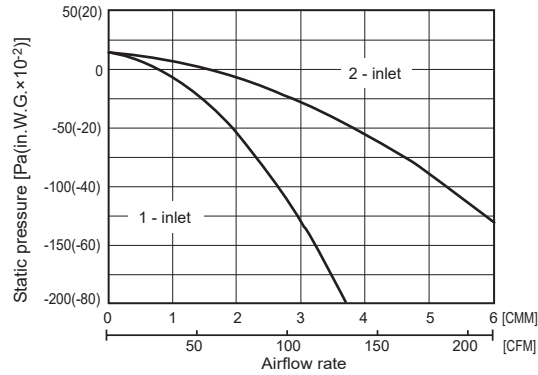
(The mounting of the multi-function casement increases the height of the ceiling plenum by 5-5/16(135mm).)



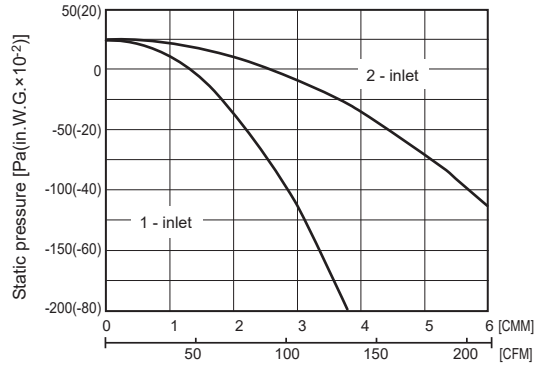
3. Fresh air intake amount & static pressure characteristics

1 PLA-AE12/18NL

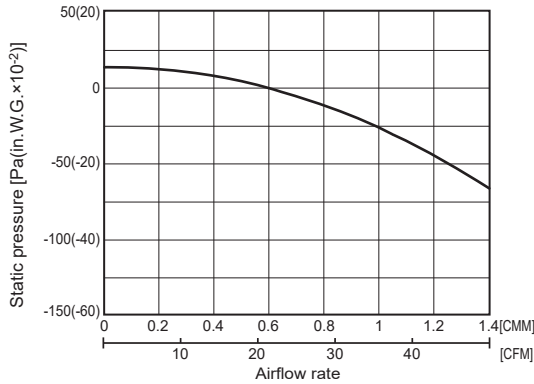
Multifunction casement + Standard filter



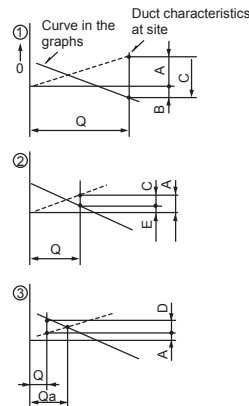
Multifunction casement + High efficiency filter



Taking air into the unit



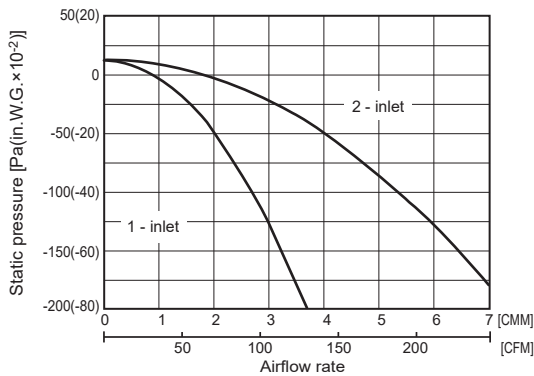
How to read curves



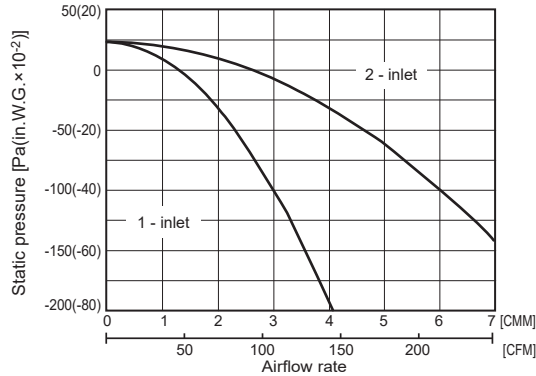
- Q...Designed amount of fresh air intake <CMM(CFM)>
- A...Static pressure loss of fresh air intake duct system with airflow amount Q <Pa(in.W.G. x 10⁻²)>
- B...Forced static pressure at air conditioner inlet with air flow amount Q <Pa(in.W.G. x 10⁻²)>
- C...Static pressure of booster fan with airflow amount Q <Pa(in.W.G. x 10⁻²)>
- D...Static pressure loss increase amount of fresh air intake dust system for air flow amount Q <Pa(in.W.G. x 10⁻²)>
- E...Static pressure of indoor unit with air flow amount Q <Pa(in.W.G. x 10⁻²)>
- Qa...Estimated amount of fresh air intake without D <CMM(CFM)>

2 PLA-AE24/30/36/42/48NL

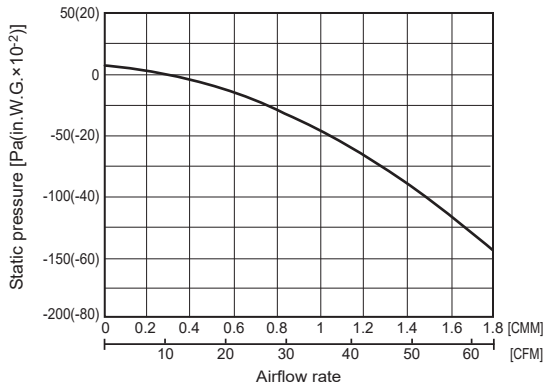
Multifunction casement + Standard filter



Multifunction casement + High efficiency filter



Taking air into the unit

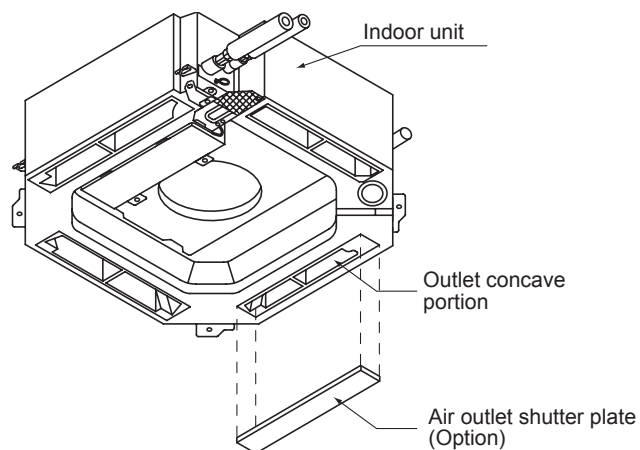
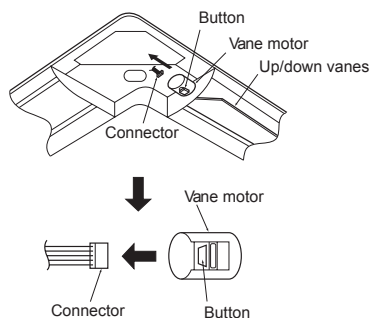


4. Change of outlet numbers

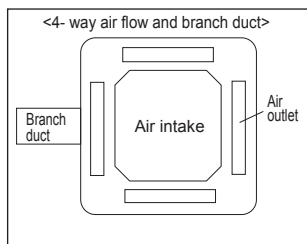
The optional air outlet is necessary.

To change the air outlet number to 3-, or 2-way outlet, the outlet number should be closed with the operational air outlet shutter.

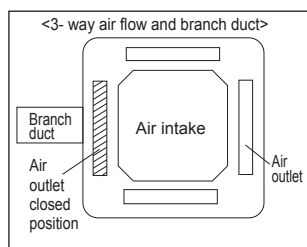
When the air outlets are closed, close the vane by removing the vane connector.



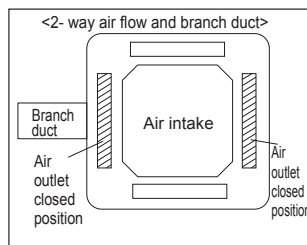
5. Branch duct and change of outlet numbers



※ Branch duct should be connected to one of the branch duct holes on the main unit.



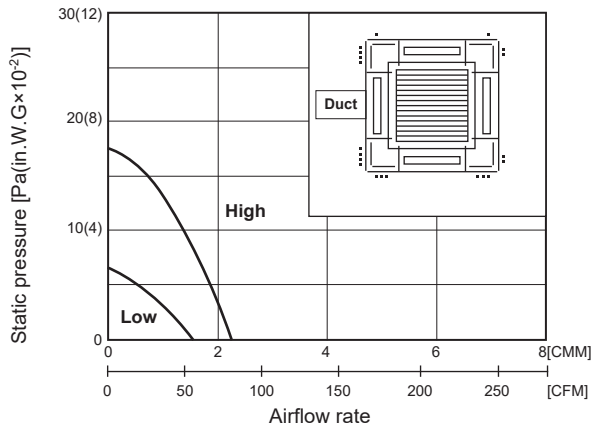
※ Close the outlet on the side of branch duct and air flows in 3 directions.



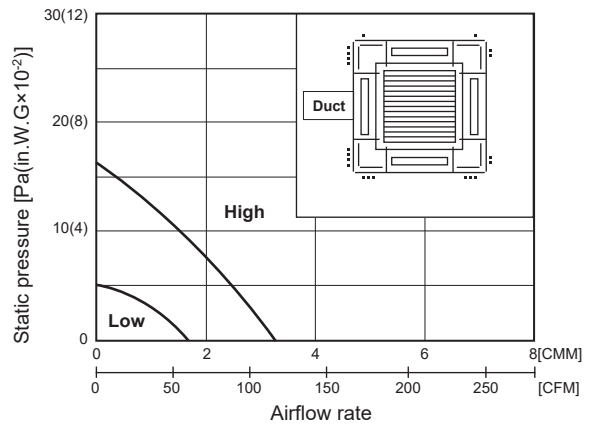
※ The outlet on the side of branch duct and one of the other outlets are closed. Air flows in 2 directions.

PLA-AE18NL

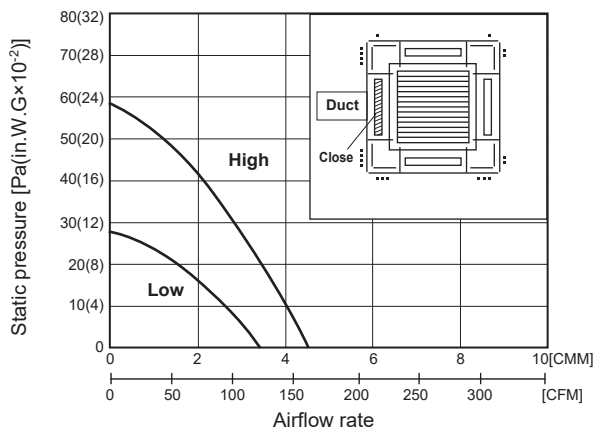
● 4-way airflow (horizontal vane) Round duct



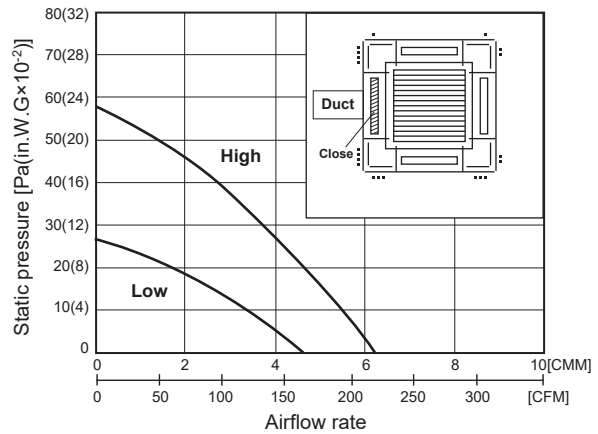
● 4-way airflow (horizontal vane) Rectangular duct



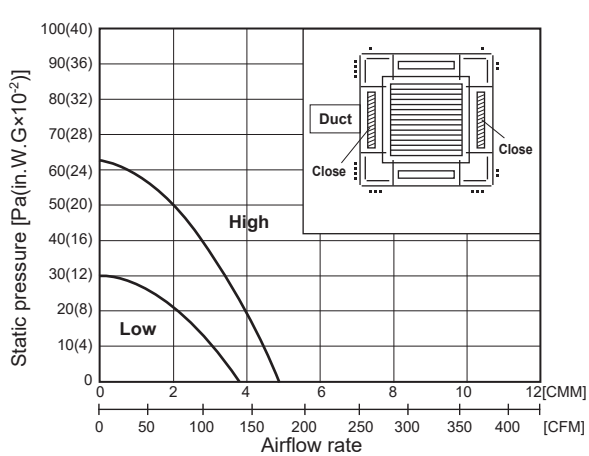
● 3-way airflow (horizontal vane) Round duct



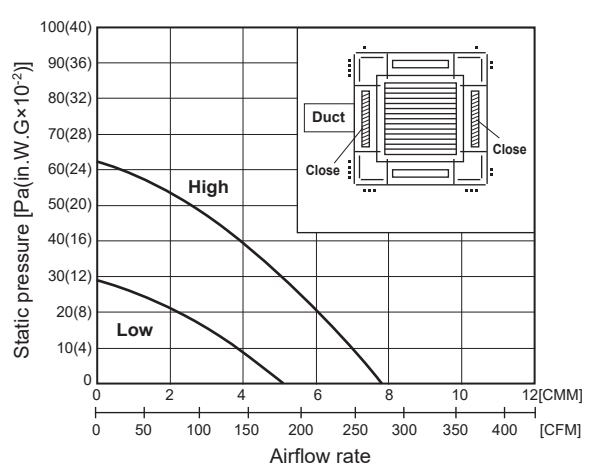
● 3-way airflow (horizontal vane) Rectangular duct



● 2-way airflow (horizontal vane) Round duct

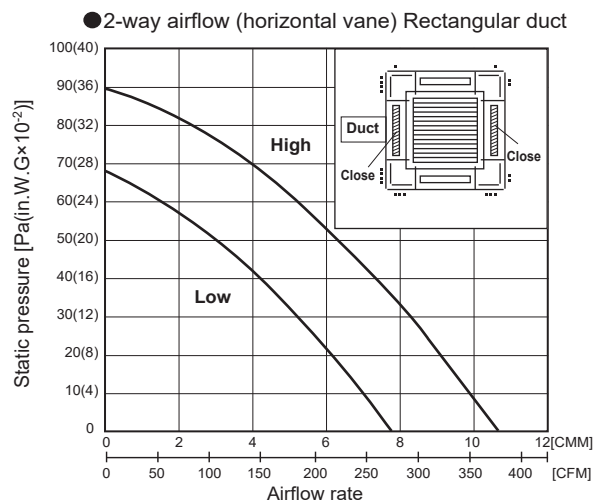
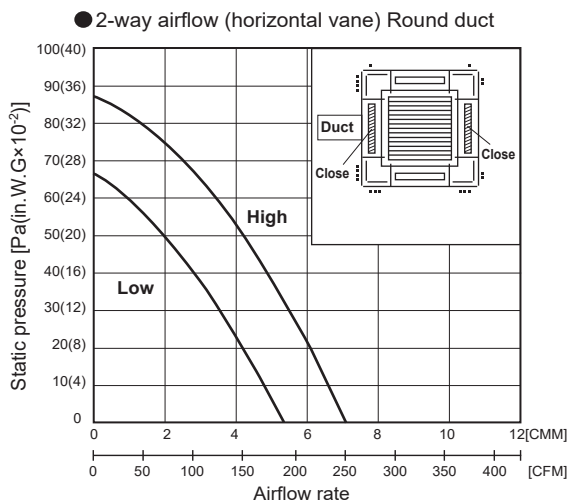
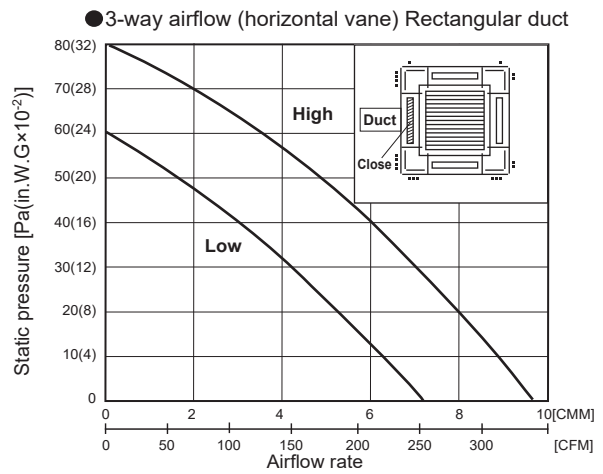
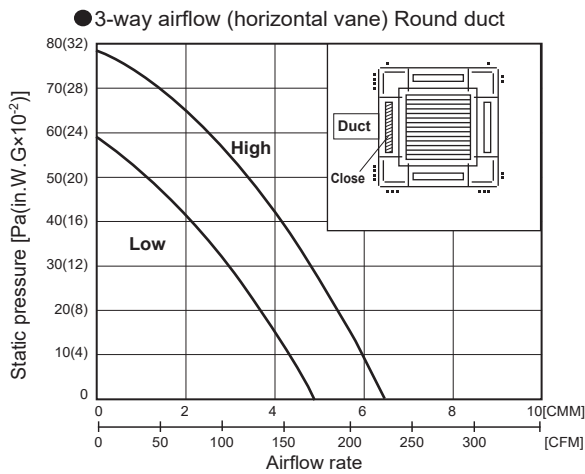
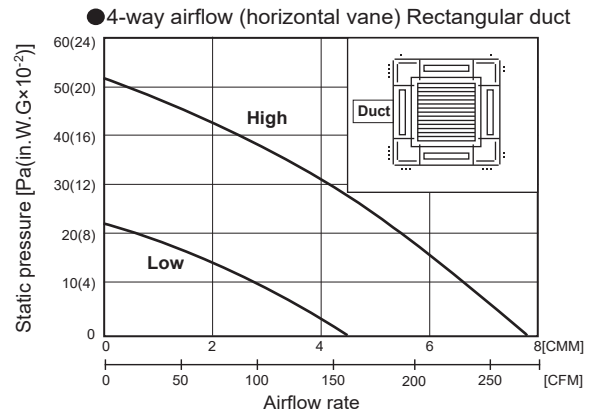
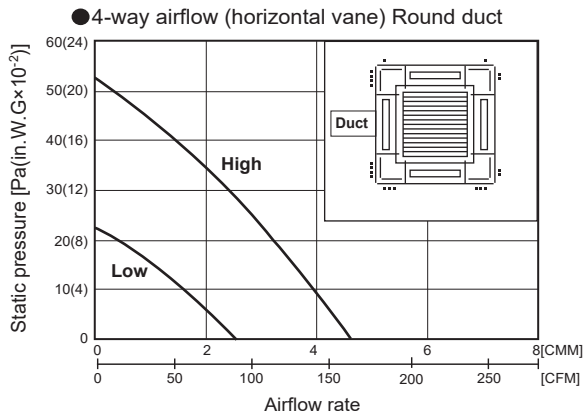


● 2-way airflow (horizontal vane) Rectangular duct



- Use 1 of the 2 duct holes on the indoor unit.
- Airflow rate of PLA-A12EA8 can be calculated from the air flow rate based on the characteristic of the duct for PLA-A18EA8.
- Use the optional air outlet shutter plate (PAC-SH51SP-E) for 3-way and 2-way airflow.

PLA-AE42NL



- Use 1 of the 2 duct holes on the indoor unit.
- Airflow rate of PLA-A24/30/36EA8 can be calculated from the air flow rate based on the characteristic of the duct for PLA-A42EA8.
- Use the optional air outlet shutter plate (PAC-SH51SP-E) for 3-way and 2-way airflow.

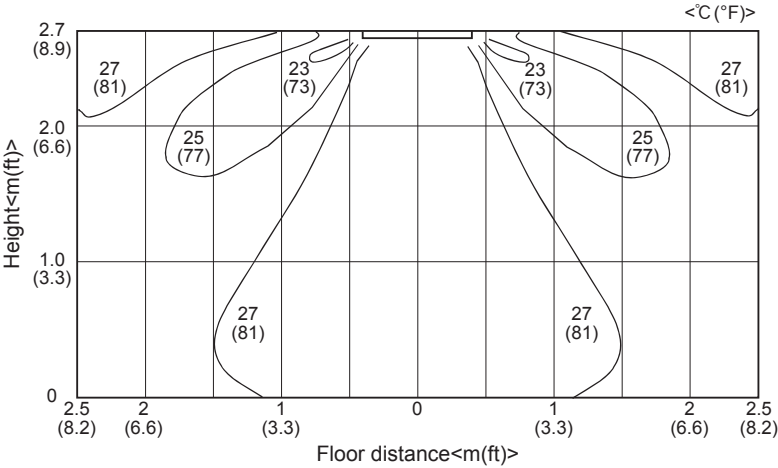
T4-3. TEMPERATURE AND AIR FLOW DISTRIBUTIONS

PLA-AE12NL

Temperature distribution

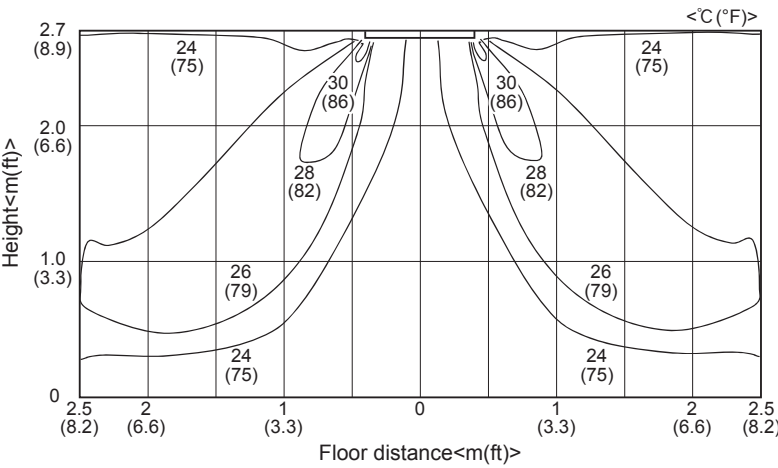
<Cooling mode>Standard

Flow angle: 30° 4-way flow
ceiling height: 2.7m(8.9ft)



<Heating mode>Standard

Flow angle: 60° 4-way flow
ceiling height: 2.7m(8.9ft)

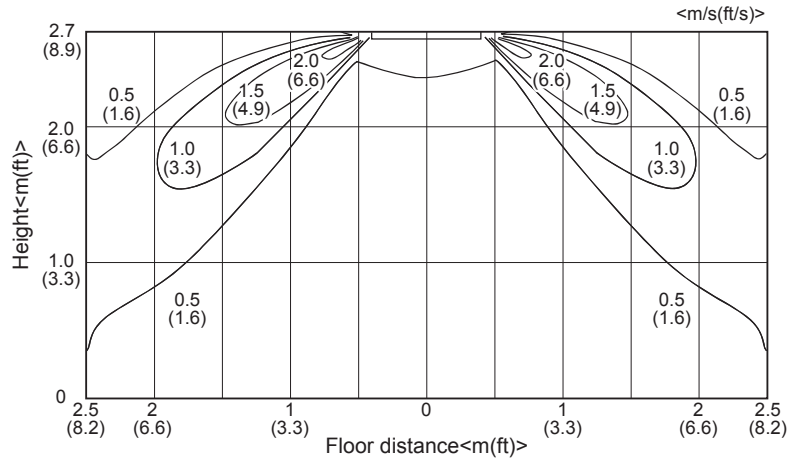


PLA-AE12NL

Airflow distribution

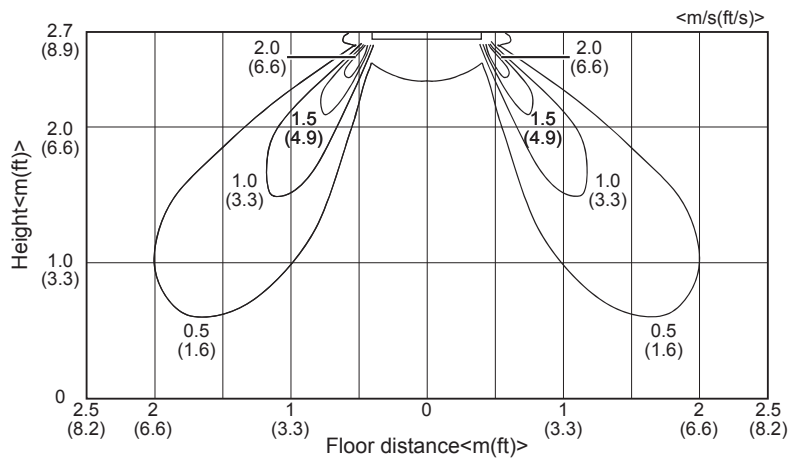
<Cooling mode>

Flow angle: 30°



<Heating mode>

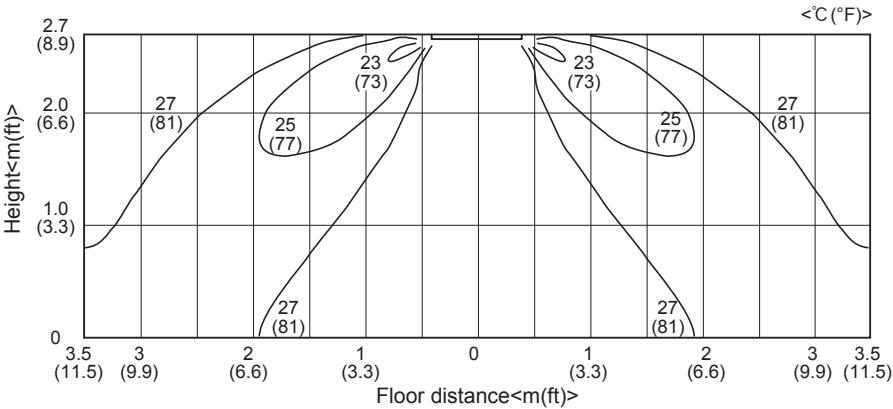
Flow angle: 60°



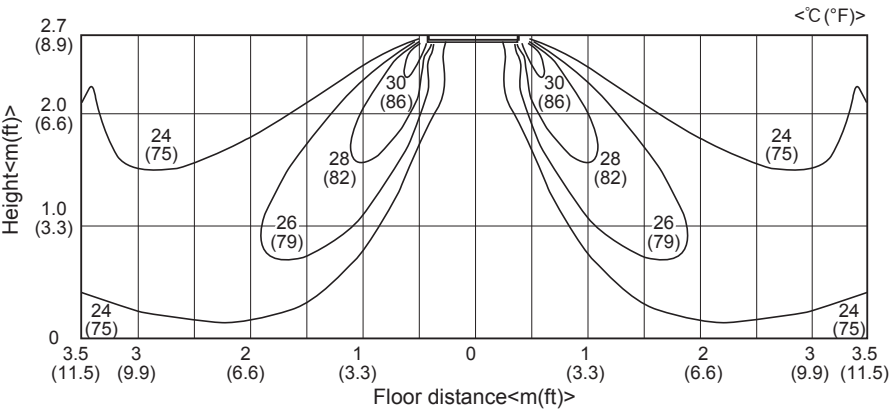
PLA-AE18NL

Temperature distribution

<Cooling mode>Standard
Flow angle: 30° 4-way flow
ceiling height: 2.7m(8.9ft)



<Heating mode>Standard
Flow angle: 60° 4-way flow
ceiling height: 2.7m(8.9ft)

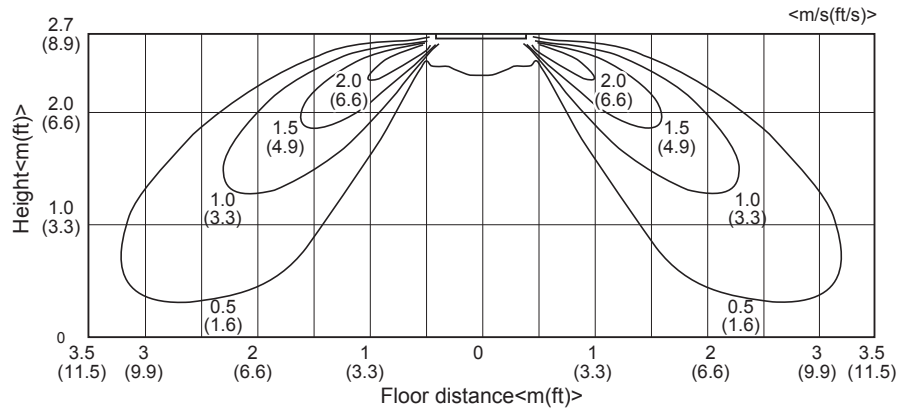


PLA-AE18NL

Airflow distribution

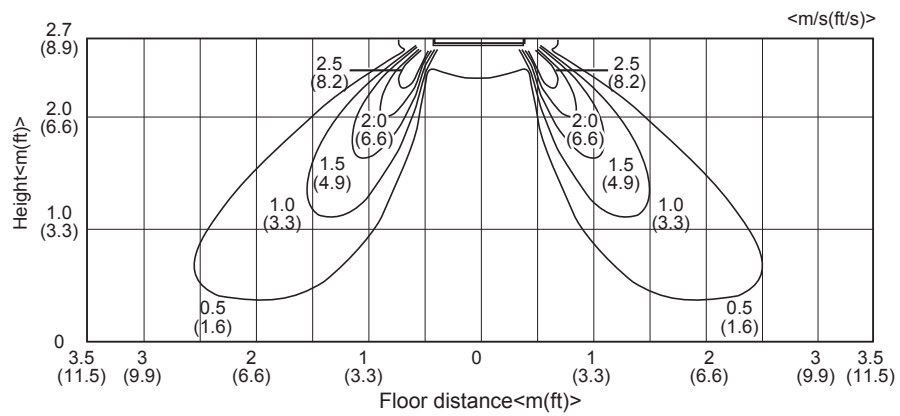
<Cooling mode>

Flow angle: 30°



<Heating mode>

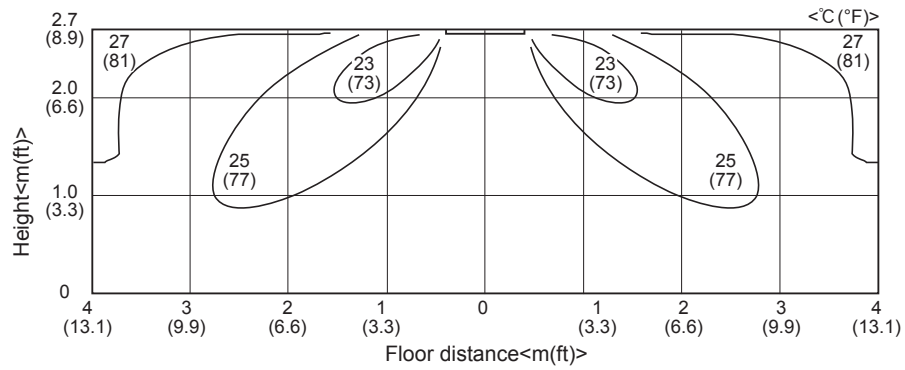
Flow angle: 60°



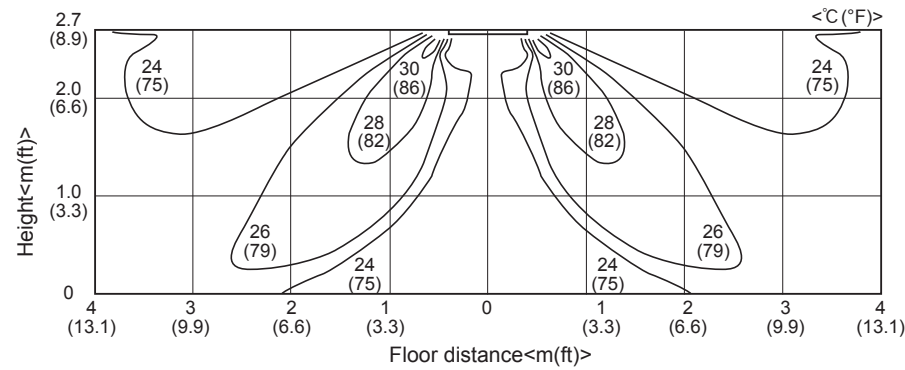
PLA-AE24/30NL

Temperature distribution

<Cooling mode>Standard
Flow angle: 30° 4-way flow
ceiling height: 2.7m(8.9ft)



<Heating mode>Standard
Flow angle: 60° 4-way flow
ceiling height: 2.7m(8.9ft)

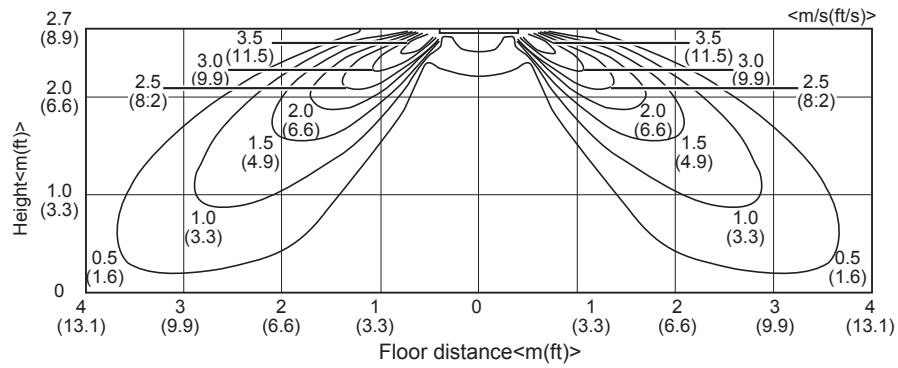


PLA-AE24/30NL

Airflow distribution

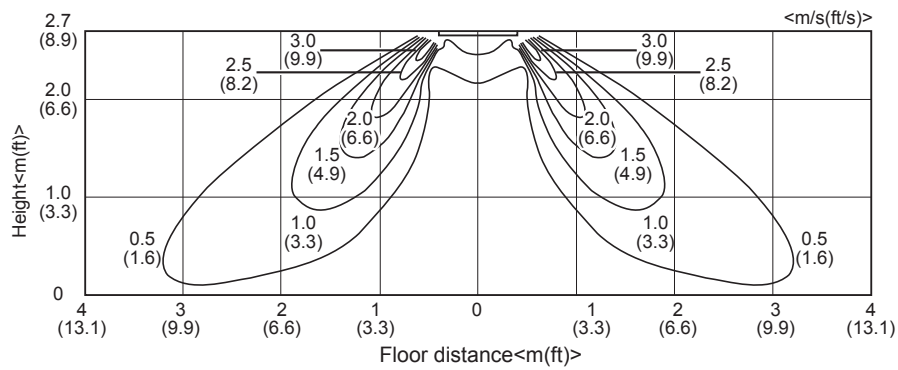
<Cooling mode>

Flow angle: 30°



<Heating mode>

Flow angle: 60°

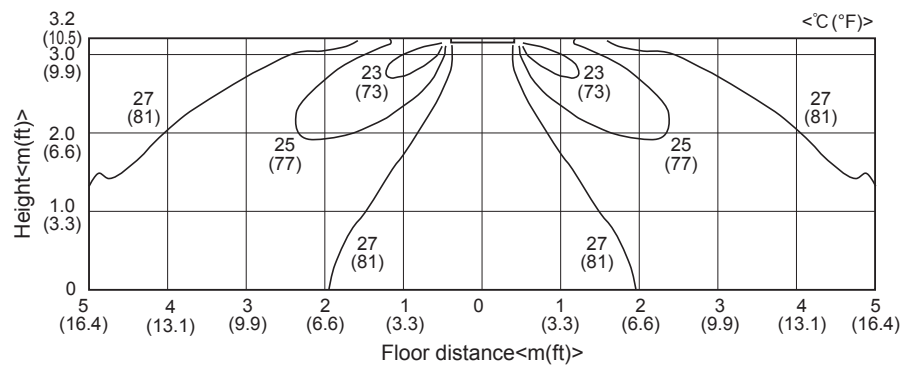


PLA-AE36NL

Temperature distribution

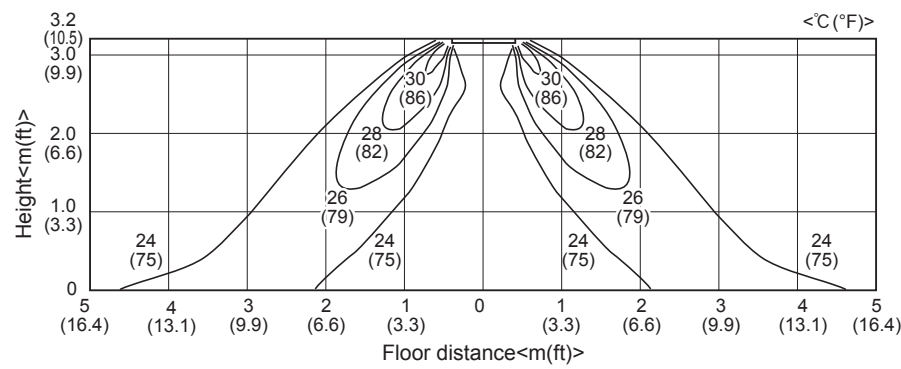
<Cooling mode>Standard

Flow angle: 30° 4-way flow
ceiling height: 3.2m(10.5ft)



<Heating mode>Standard

Flow angle: 60° 4-way flow
ceiling height: 3.2m(10.5ft)

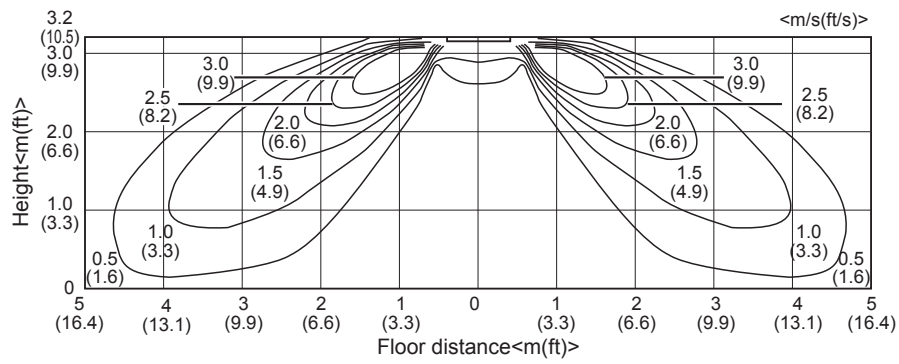


PLA-AE36NL

Airflow distribution

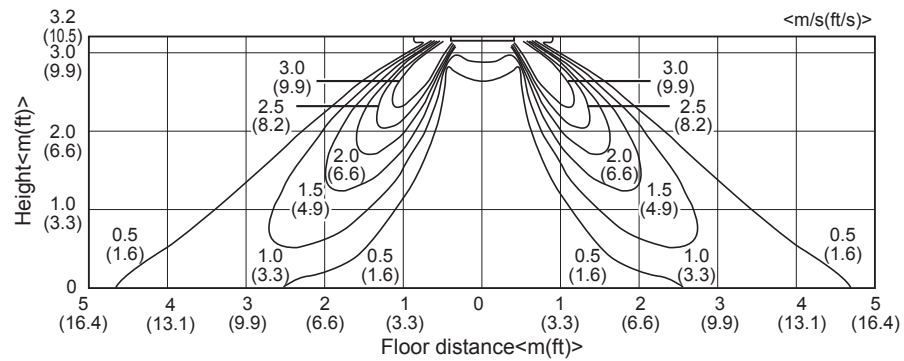
<Cooling mode>

Flow angle: 30°



<Heating mode>

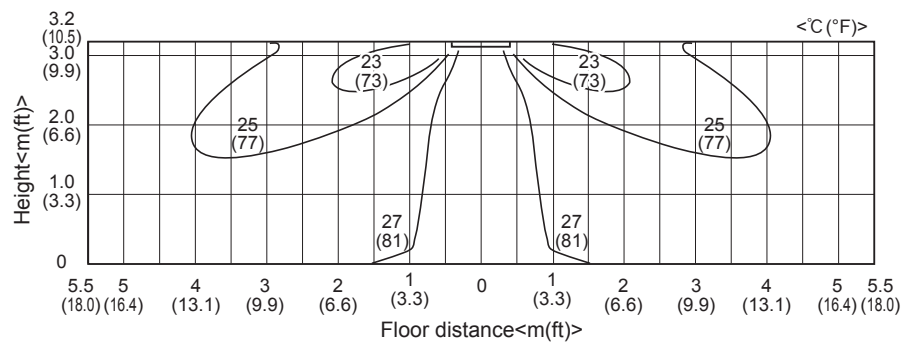
Flow angle: 60°



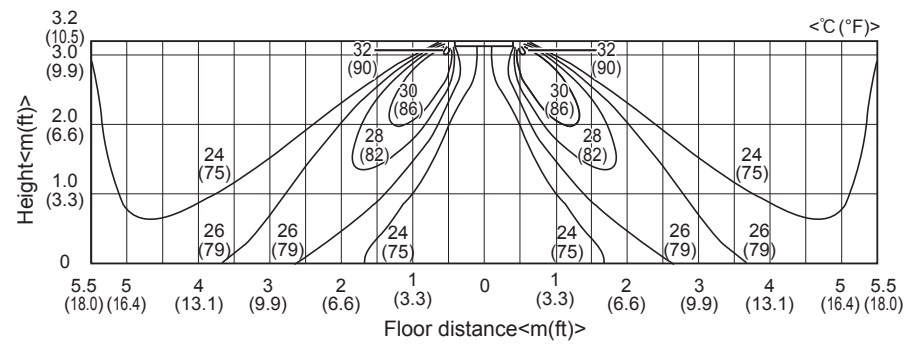
PLA-AE42/48NL

Temperature distribution

<Cooling mode>Standard
Flow angle: 30° 4-way flow
ceiling height: 3.2m(10.5ft)



<Heating mode>Standard
Flow angle: 60° 4-way flow
ceiling height: 3.2m(10.5ft)

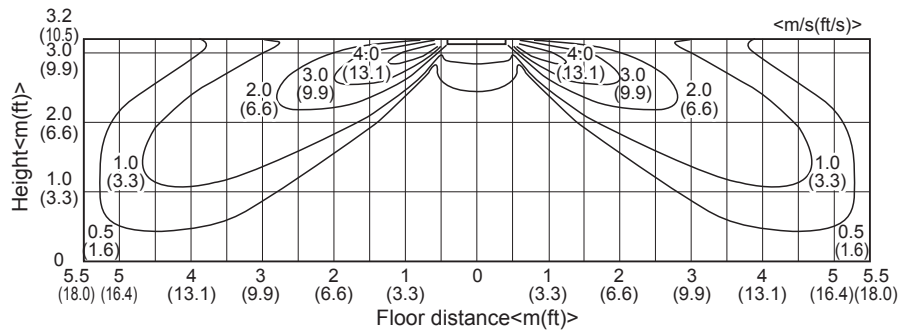


PLA-AE4248NL

Airflow distribution

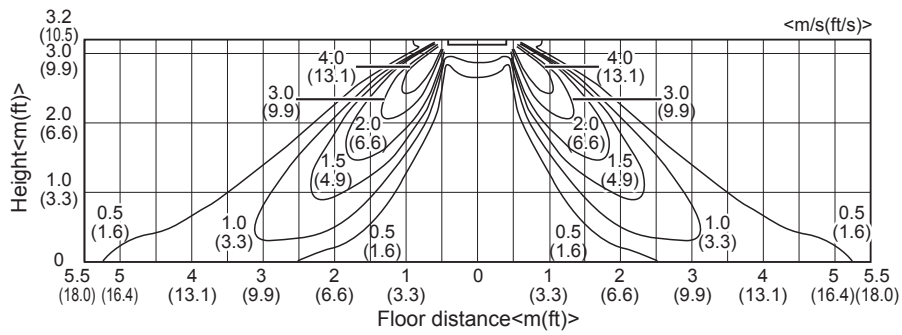
<Cooling mode>

Flow angle: 30°



<Heating mode>

Flow angle: 60°



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