MITSUBISHI ELECTRIC

SPLIT-TYPE, HEAT PUMP AIR CONDITIONERS

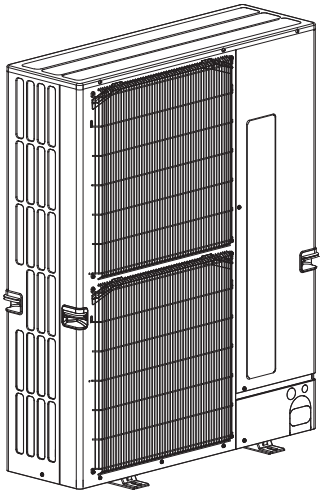
November 2025

No. OCD869

REVISED EDITION-A

Technical & Service Manual R454B

[Model Name]	[Service Ref.]
PUZ-AK36NL	PUZ-AK36NL-U1
PUZ-AK42NL	PUZ-AK42NL-U1
PUZ-AK48NL	PUZ-AK48NL-U1
PUZ-AK60NL	PUZ-AK60NL-U1
PUY-AK36NL	PUY-AK36NL-U1
PUY-AK42NL	PUY-AK42NL-U1
PUY-AK48NL	PUY-AK48NL-U1
PUY-AK60NL	PUY-AK60NL-U1
SUZ-AK48NL	SUZ-AK48NL-U1
SUZ-AK60NL	SUZ-AK60NL-U1



Revision:
- Deleted descriptions regarding SUZ-CK48NLH-U1 and SUZ-CK60NLH-U1 in REVISED EDITION-A.

OCH869 is void.

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1 REFERENCE MANUAL

INDOOR UNIT

Model name	Service Ref.	Service manual No. Parts catalog No.
PLA-AE12/18/24/30/36/42/48NL	PLA-AE12/18/24/30/36/42/48NL-U1	OCH856 OCB856
PCA-AK24/30/36/42NL	PCA-AK24/30/36/42NL-U1	OCH860 OCB860
PKA-AK24/30/36NL	PKA-AK24/30/36NL-U1	OCH859 OCB859
PEAD-AA12/18/24/30/36/42NL	PEAD-AA12/18/24/30/36/42NL-U1	HWE24030 BWE024030
PAA-AA/BA/CA18/24/30/36/42NL	-	MD-2025-K010
PVA-AA12/18/24/30/36/42/48/60NL	PVA-AA12/18/24/30/36/42/48/60NL-U1	-
SVZ-AP48/60NL	SVZ-AP48/60NL-U1	-

2 SAFETY PRECAUTION

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 OPERATING INSTRUCTIONS carefully before operation.	
	Service personnel are required to carefully read the OPERATING INSTRUCTIONS and INSTALLATION MANUAL before operation.	
	Further information is available in the OPERATING INSTRUCTIONS, INSTALLATION MANUAL, and the like.	

2-1. ALWAYS OBSERVE FOR SAFETY

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

Preparation before the repair service.

- Prepare the proper tools.
- Prepare the proper protectors.
- Provide adequate ventilation.
- After stopping the operation of the air conditioner, turn off the power-supply breaker.
- Discharge the condenser before the work involving the electric parts.

Precautions during the repair service.

- Do not perform the work involving the electric parts with wet hands.
- Do not pour water into the electric parts.
- Do not touch the refrigerant.
- Do not touch the hot or cold areas in the refrigerating cycle.
- When the repair or the inspection of the circuit needs to be done without turning off the power, exercise great caution not to touch the live parts.
- When opening or closing the valve below freezing temperatures, refrigerant may spurt out from the gap between the valve stem and the valve body, resulting in injuries.
- This model is equipped with a fusible plug. The fusible plug operates when the temperature rises above 158°F [70°C], and there is a risk of accidents or disasters such as the ejection of molten metal or refrigerant leakage. When removing the refrigerant pipe, be careful not to expose the fusible plug to the braze torch flame or transfer heat to it.

2-2. CAUTIONS RELATED TO NEW REFRIGERANT

Cautions for units utilizing refrigerant R454B

Use new refrigerant pipes.

In the case of using the existing pipes for R22, R410A, be careful with the following:
· Be sure to clean the pipes and make sure that the insides of the pipes are clean.
· Change flare nut to the one provided with this product. Use a newly flared pipe.
· Avoid using thin pipes.

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 to be used indoors during installation and 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.

Do not use refrigerant other than R454B.

If other refrigerant (R22, R410A, etc.) is used, chlorine in refrigerant can cause deterioration of refrigerant oil, etc.

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	Flaring 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.

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

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 in the manuals and on the spec labels provided with our products.
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) Refrigerant pipes connection shall be accessible for maintenance purposes.
(5) 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.
(6) 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.
(7) When installing or relocating, or servicing the air conditioner, use only the specified refrigerant (R454B) 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.
(8) 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.
(9) Do not use low temperature solder alloy in the case of brazing the refrigerant pipes.
(10) 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.
(11) Do not install the unit in places where refrigerant may build-up or places with poor ventilation such as a semibasement or a sunken place in outdoor: Refrigerant is heavier than air, and inclined to fall away from the leak source.
(12) Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
(13) 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).
(14) Do not pierce or burn.
(15) Be aware that refrigerants may not contain an odour.
(16) Pipe-work shall be protected from physical damage.
(17) The installation of pipe-work shall be kept to a minimum.
(18) Compliance with national gas regulations shall be observed.
(19) All field joints shall be accessible for inspection prior to being covered or enclosed.
(20) Keep any required ventilation openings clear of obstruction.
(21) Servicing shall be performed only as recommended by the manufacturer.
(22) The appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation.
(23) Maintenance, service and repair operations shall be performed by authorized technician with required qualification.
(24) Be sure to have appropriate ventilation in order to prevent ignition. Furthermore, be sure to carry out fire prevention measures that there are no dangerous or flammable objects in the surrounding area.

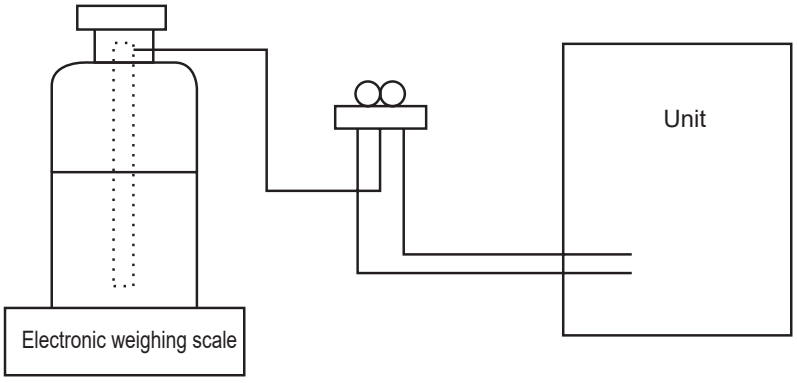
[2] Cautions for service

(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) If moisture or foreign matter might have entered the refrigerant piping during service, ensure to remove them.

[3] Additional refrigerant charge

When charging directly from cylinder

(1) Check that cylinder for R454B 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 on 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 systems, (1-3) to (1-7) shall be completed prior to conducting work on the systems.

(1-2) Work Procedure

Work shall be undertaken under a controlled procedure so as to minimize the risk of a flammable gas or vapor 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. The area around the workspace shall be sectioned off. Ensure that the conditions within the area have been made safe by control of flammable material.

(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 on the Refrigeration 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 on 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 ground bonding.

(2) Repairs to Sealed Components

Sealed electrical components shall be replaced.

(3) Repair to intrinsically Safe Components

Intrinsically safe components must be replaced.

(4) Cabling

Refer to 6.1 in the installation manual.

(5) Detection of Flammable Refrigerants

Refer to 4.4 in the installation manual.

(6) Removal and Evacuation

Refer to 1.2 in the installation manual.

(7) Charging Procedures

Refer to 4.4 in the installation manual.

(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.

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

Refer to 1.2 in the installation manual.

[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.
		· 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 R134a, R407C, R410A or R454B
⑤	Adaptor for reverse flow check	· Attach on vacuum pump.
⑥	Refrigerant charge base	—
⑦	Refrigerant cylinder	· Only for R454B ·Top of cylinder (Pink) · Cylinder with syphon
⑧	Refrigerant recovery equipment	—

2-3. CAUTIONS FOR REFRIGERANT PIPING WORK

The new refrigerant R454B is adopted for replacement inverter series. Although the refrigerant piping work for R454B is the same as for R22/R410A, exclusive tools are required to avoid mixing with different types of refrigerant. Furthermore, as the working pressure of R454B is 1.6 times higher than that of R22, their sizes of flared sections and flare nuts are different.

① Thickness of pipes

Since the working pressure of R454B is higher compared to R22, be sure to use refrigerant piping with thickness shown below. (Never use pipes of 7/256 inch [0.7 mm] or below.)

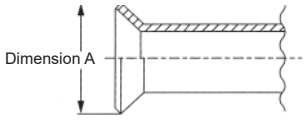
Diagram below: Piping diameter and thickness

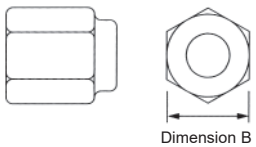
Nominal dimensions (inch)	Outside diameter (mm)	Thickness : inch [mm]	
		R454B/R410A	R22
1/4	6.35	1/32 [0.8]	1/32 [0.8]
3/8	9.52	1/32 [0.8]	1/32 [0.8]
1/2	12.70	1/32 [0.8]	1/32 [0.8]
5/8	15.88	5/128 [1.0]	5/128 [1.0]
3/4	19.05	5/128 [1.0]	5/128 [1.0]

② Dimensions of flare cutting and flare nut

The component molecules in HFC refrigerant are smaller compared to the conventional refrigerants. In addition, R454B is a refrigerant, which has higher risk of leakage because its working pressure is higher than that of other refrigerants. Therefore, to enhance air tightness and strength, flare cutting dimension of copper pipe for R454B has been specified separately from the dimensions for other refrigerants as shown below. The dimension B of the flare nut for R454B also has partly been changed to increase strength as shown below. Set copper pipe correctly referring to copper pipe flaring dimensions for R454B below. For 1/2 and 5/8 inch pipes, the dimension B changes.

Use torque wrench corresponding to each dimension.





Flare cutting dimensions

Nominal dimensions (inch)	Outside diameter (mm)	Dimension A $(^{+0}_{-0.4})$	
		R454B/R410A (inch [mm])	R22 (mm)
1/4	6.35	11/32-23/64 [9.1]	9.0
3/8	9.52	1/2-33/64 [13.2]	13.0
1/2	12.70	41/64-21/32 [16.6]	16.2
5/8	15.88	49/64-25/32 [19.7]	19.4
3/4	19.05	59/64-15/16 [24.0]	23.3

Flare nut dimensions

Nominal dimensions (inch)	Outside diameter (mm)	Dimension B	
		R454B/R410A (inch [mm])	R22 (mm)
1/4	6.35	43/64 [17.0]	17.0
3/8	9.52	7/8 [22.0]	22.0
1/2	12.70	1-3/64 [26.0]	24.0
5/8	15.88	1-9/64 [29.0]	27.0
3/4	19.05	1-27/64 [36.0]	36.0

③ Tools for R454B (The following table shows whether conventional tools can be used or not.)

Tools and materials	Use	R454B tools	Can R22 tools be used?	Can R22 tools be used?
Gauge manifold	Air purge, refrigerant charge and operation check	Tool exclusive for R454B	×	○
Charge hose		Tool exclusive for R454B	×	○
Gas leak detector	Gas leak check	Tool for HFC refrigerant	×	○
Refrigerant recovery equipment	Refrigerant recovery	Tool exclusive for R454B	×	○
Refrigerant cylinder	Refrigerant charge	Tool exclusive for R454B	×	×
Applied oil	Apply to flared section	Ester oil, ether oil and alkylbenzene oil (minimum amount)	×	Ester oil, ether oil: ○ Alkylbenzene oil: minimum amount
Safety charger	Prevent compressor malfunction when charging refrigerant by spraying liquid refrigerant	Tool exclusive for R454B	×	○
Charge valve	Prevent gas from blowing out when detaching charge hose	Tool exclusive for R454B	×	○
Vacuum pump	Vacuum dry and air purge	Tools for other refrigerants can be used if equipped with adapter for reverse flow check	△(Usable if equipped with adapter for reverse flow)	△(Usable if equipped with adapter for reverse flow)
Flaring tool*	Flaring work of piping	Tools for other refrigerants can be used by adjusting flaring dimension	△(Usable if equipped with adapter for reverse flow)	△(Usable if equipped with adapter for reverse flow)
Bender	Bend the pipes	Tools for other refrigerants can be used	○	○
Pipe cutter*	Cut the pipes	Tools for other refrigerants can be used	○	○
Welder and nitrogen gas cylinder	Weld the pipes	Tools for other refrigerants can be used	○	○
Refrigerant charging scale	Refrigerant charge	Tools for other refrigerants can be used	○	○
Vacuum gauge or thermistor vacuum gauge and vacuum valve	Check the degree of vacuum. (Vacuum valve prevents back flow of oil and refrigerant to thermistor vacuum gauge)	Tools for other refrigerants can be used	○	○
Charging cylinder	Refrigerant charge	Tool exclusive for R454B	×	×

× : Prepare a new tool. (Use the new tool as the tool exclusive for R454B.)
△ : Tools for other refrigerants can be used under certain conditions.
○ : Tools for other refrigerants can be used.

* Follow the instructions below to prevent abrasive components contained in sandpaper and cutting tools from entering the refrigerant circuit because those components can cause failures of the compressor and valves.

- To deburr pipes, use a reamer or other deburring tools, not sandpaper.
- To cut pipes, use a pipe cutter, not a grinder or other tools that use abrasive materials.
- When cutting or deburring pipes, do not allow cutting chips or other foreign matters to enter the pipes.
- If cutting chips or other foreign matters enter pipes, wipe them off the inside of the pipes.

2-4. LOW AMBIENT COOLING

Precautions for low ambient cooling

- If the outdoor temperature is 23°F or lower during cooling operation, install an optional air guide to prevent wind from blowing into the outdoor unit.
- Install the outdoor unit in a location where wind will not blow onto the back of the unit or through the unit.
- To prevent damage to the parts, be sure to install the unit, turn on the main power, and perform service in an environment where the ambient temperature is 0°F or higher.
- In order to protect the compressor and electrical components, do not turn off the circuit breaker if the unit is installed in an environment where the ambient temperature is 0°F or lower.
- It needs at least 12 hr standby to operation in order to warm the electrical parts.

Note: During cooling operation under low ambient temperature, the bottom fan motor stops occasionally. This is an intended feature, not a malfunction.

2.5. Minimum installation area

■ Indoor units

When the indoor unit is installed in a room with a floor area of A_{min} or more, charge an appropriate amount of refrigerant M (factory-charged refrigerant + locally added refrigerant) according to the table below.

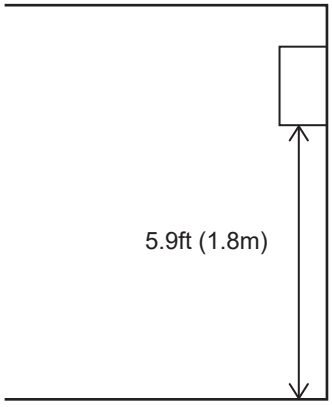
* For the factory-charged refrigerant amount, refer to the specification nameplate or installation manual. For the amount to be added locally, refer to the installation manual.
* For ducted systems to one or more rooms, first determine the system's refrigerant amount, then refer to the indoor unit installation manual for each room's restriction for minimum area.

The mounting height of indoor unit shall be 5.9 ft (1.8 m) or more from the floor, excluding ceiling concealed (PEAD), multi-position air handler (PVA), and A-Coil (PAA).

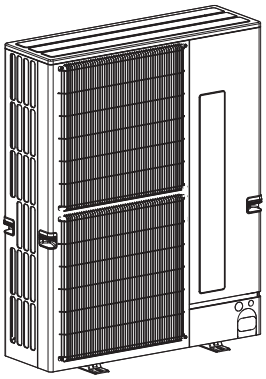
* There are restrictions in installation height for each model, so read the installation manual for the particular unit.

Refrigerant Charging Table

M			A_{min}	
[kg]	[lbs, oz]		[m^2]	[ft^2]
2.0	4	6	7.5	81
2.5	5	8	9.3	101
3.0	6	9	11.2	121
3.5	7	11	13.0	140
4.0	8	13	14.9	161
4.5	9	14	16.7	180
4.6	10	2	17.1	185
4.7	10	5	17.5	189
4.8	10	9	17.8	192
4.9	10	12	18.2	196
5.0	11	0	18.6	201
5.1	11	3	18.9	204
5.2	11	7	19.3	208
5.3	11	10	19.7	213
5.4	11	14	20.0	216
5.5	12	2	20.4	220
5.6	12	5	20.8	224
5.7	12	9	21.2	229
5.8	12	12	21.5	232
5.9	13	0	21.9	236
6.0	13	3	22.3	241
6.1	13	7	22.6	244
6.2	13	10	23.0	248
6.3	13	14	23.4	252
6.4	14	1	23.8	257
6.5	14	5	24.1	260
6.6	14	8	24.5	264
6.7	14	12	24.9	269
6.8	14	15	25.2	272
6.9	15	3	25.6	276
7.0	15	6	26.0	280
7.1	15	10	26.3	284
7.2	15	13	26.7	288
7.3	16	1	27.1	292



3 FEATURES



PUZ-AK36NL-U1
PUZ-AK42NL-U1
PUZ-AK48NL-U1
PUZ-AK60NL-U1
PUY-AK36NL-U1
PUY-AK42NL-U1
PUY-AK48NL-U1
PUY-AK60NL-U1
SUZ-AK48NL-U1
SUZ-AK60NL-U1

CHARGELESS SYSTEM
PRE-CHARGED REFRIGERANT IS SUPPLIED FOR PIPING LENGTH AT SHIPMENT.
(Maximum 100 ft [30 m])

The refrigerant circuit with LEV (Linear Expansion Valve) and the accumulator always control the optimal refrigerant level regardless of the piping length. The additional refrigerant charging work during installation often causes problems.
It is completely eliminated by chargeless system. This unique system improves the quality and reliability of the work performance. It also helps to speed up the installation time.

4 SPECIFICATIONS

Service Ref.				PUZ-AK36NL-U1 PUY-AK36NL-U1	PUZ-AK42NL-U1 PUY-AK42NL-U1	PUZ-AK48NL-U1 PUY-AK48NL-U1 SUZ-AK48NL-U1	PUZ-AK60NL-U1 PUY-AK60NL-U1 SUZ-AK60NL-U1
Power supply	Phase			Single			
	Frequency			60 Hz			
	Voltage			208/230 V			
Inverter Input			A	23		30	
MCA			A	34		38	
MOCP			A	56		67	
Breaker size			A	35		40	
External finish				Munsell 3Y 7.8/1.1			
Heat exchanger				Cross fin		Plate fin coil (Ring)	
Defrost method				Reverse cycle			
Crankcase heater			kW	—			
Compressor				Hermetic			
	Model			MRB36FEGMC		MRB53FEJMC-L	
	Motor output		kW	2.7		3.7	
	Starter type			Inverter			
Fan	Fan (drive) × No.			Propeller fan × 2			
	Fan motor output		kW	0.074 + 0.074		0.200 + 0.200	
			HP	0.0992 + 0.0992		0.2682 + 0.2682	
	Airflow		CFM	3910		4020	
			m^3/min	111		114	
Sound pressure level	Cooling		dB	52		60	
	Heating		dB	53		62	
Protection devices				HP switch			
				Comp. shell thermo			
Dimension	W		inch	41-11/32			
	D		inch	63/64+12-63/64			
	H		inch	52-43/64			
	W		mm	1050			
	D		mm	25+330			
	H		mm	1338			
Weight			lb	224		265	
			kg	102		120	
Refrigerant				R454B			
	Charged		lb	9+14/16		11+7/16	
			kg	4.5		5.2	
	Control			Linear expansion valve			
	Oil charged		Model	Ester (RM68EH)			
			oz	45		60	
			L	1.4		1.9	
Refrigerant piping	Pipe size OD liquid		inch	3/8			
			mm	9.52			
	Pipe size OD gas		inch	5/8			3/4
			mm	15.88			19.05
	Connection method - Indoor			Flared			
	Connection method - Outdoor			Flared			
	Height difference IU-OU		ft	Maximum 100			
			m	Maximum 30			
	Piping length	ft	PUZ	Maximum 165		Maximum 245	
			PUY	Maximum 225		Maximum 245	
		m	PUZ	Maximum 50		Maximum 75	
			PUY	Maximum 69		Maximum 75	

5 DATA

5-1. REFILLING REFRIGERANT CHARGE (R454B: oz, kg)

Additional charging is not necessary if the pipe length does not exceed 30 m (100 ft) for AK36, 42 connected to the A-COIL indoor unit PAA.

Service Ref.	Piping length (one way)																						Factory charged
	50 ft	60 ft	70 ft	80 ft	90 ft	100 ft	110 ft	120 ft	130 ft	140 ft	150 ft	160 ft	165 ft	170 ft	180 ft	190 ft	200 ft	210 ft	220 ft	225 ft	230 ft	240 ft	245 ft	
	15 m	18 m	21 m	24 m	27 m	30 m	33 m	37 m	40 m	43 m	46 m	49 m	50 m	52 m	55 m	58 m	61 m	64 m	67 m	69 m	70 m	73 m	75 m	
PUZ-AK36NL-U1	158 oz	158 oz	158 oz	158 oz	158 oz	158 oz	164 oz	170 oz	176 oz	182 oz	188 oz	194 oz	197 oz	-	-	-	-	-	-	-	-	-	-	158 oz
	4.5 kg	4.5 kg	4.5 kg	4.5 kg	4.5 kg	4.5 kg	4.7 kg	4.8 kg	5.0 kg	5.2 kg	5.4 kg	5.5 kg	5.6 kg	-	-	-	-	-	-	-	-	-	-	4.5 kg
PUZ-AK42NL-U1	158 oz	158 oz	158 oz	158 oz	158 oz	158 oz	164 oz	170 oz	176 oz	182 oz	188 oz	194 oz	197 oz	-	-	-	-	-	-	-	-	-	-	158 oz
	4.5 kg	4.5 kg	4.5 kg	4.5 kg	4.5 kg	4.5 kg	4.7 kg	4.8 kg	5.0 kg	5.2 kg	5.4 kg	5.5 kg	5.6 kg	-	-	-	-	-	-	-	-	-	-	4.5 kg
PUZ-AK48NL-U1 SUZ-AK48NL-U1	183 oz	183 oz	183 oz	183 oz	183 oz	183 oz	189 oz	195 oz	201 oz	207 oz	213 oz	219 oz	222 oz	225 oz	231 oz	237 oz	243 oz	249 oz	255 oz	257 oz	257 oz	257 oz	257 oz	183 oz
	5.2 kg	5.2 kg	5.2 kg	5.2 kg	5.2 kg	5.2 kg	5.4 kg	5.5 kg	5.7 kg	5.9 kg	6.1 kg	6.2 kg	6.3 kg	6.4 kg	6.6 kg	6.7 kg	6.9 kg	7.1 kg	7.2 kg	7.3 kg	7.3 kg	7.3 kg	7.3 kg	5.2 kg
PUZ-AK60NL-U1 SUZ-AK60NL-U1	183 oz	183 oz	183 oz	183 oz	183 oz	183 oz	189 oz	195 oz	201 oz	207 oz	213 oz	219 oz	222 oz	225 oz	231 oz	237 oz	243 oz	249 oz	255 oz	257 oz	257 oz	257 oz	257 oz	183 oz
	5.2 kg	5.2 kg	5.2 kg	5.2 kg	5.2 kg	5.2 kg	5.4 kg	5.5 kg	5.7 kg	5.9 kg	6.1 kg	6.2 kg	6.3 kg	6.4 kg	6.6 kg	6.7 kg	6.9 kg	7.1 kg	7.2 kg	7.3 kg	7.3 kg	7.3 kg	7.3 kg	5.2 kg
PUY-AK36NL-U1	158 oz	158 oz	158 oz	158 oz	158 oz	158 oz	164 oz	170 oz	176 oz	182 oz	188 oz	194 oz	197 oz	200 oz	200 oz	200 oz	200 oz	200 oz	200 oz	200 oz	-	-	-	158 oz
	4.5 kg	4.5 kg	4.5 kg	4.5 kg	4.5 kg	4.5 kg	4.7 kg	4.8 kg	5.0 kg	5.2 kg	5.4 kg	5.5 kg	5.6 kg	5.7 kg	5.7 kg	5.7 kg	5.7 kg	5.7 kg	5.7 kg	5.7 kg	-	-	-	4.5 kg
PUY-AK42NL-U1	158 oz	158 oz	158 oz	158 oz	158 oz	158 oz	164 oz	170 oz	176 oz	182 oz	188 oz	194 oz	197 oz	200 oz	200 oz	200 oz	200 oz	200 oz	200 oz	200 oz	-	-	-	158 oz
	4.5 kg	4.5 kg	4.5 kg	4.5 kg	4.5 kg	4.5 kg	4.7 kg	4.8 kg	5.0 kg	5.2 kg	5.4 kg	5.5 kg	5.6 kg	5.7 kg	5.7 kg	5.7 kg	5.7 kg	5.7 kg	5.7 kg	5.7 kg	-	-	-	4.5 kg
PUY-AK48NL-U1	183 oz	183 oz	183 oz	183 oz	183 oz	183 oz	189 oz	195 oz	201 oz	207 oz	213 oz	219 oz	222 oz	225 oz	231 oz	237 oz	243 oz	249 oz	255 oz	257 oz	257 oz	257 oz	257 oz	183 oz
	5.2 kg	5.2 kg	5.2 kg	5.2 kg	5.2 kg	5.2 kg	5.4 kg	5.5 kg	5.7 kg	5.9 kg	6.1 kg	6.2 kg	6.3 kg	6.4 kg	6.6 kg	6.7 kg	6.9 kg	7.1 kg	7.2 kg	7.3 kg	7.3 kg	7.3 kg	7.3 kg	5.2 kg
PUY-AK60NL-U1	183 oz	183 oz	183 oz	183 oz	183 oz	183 oz	189 oz	195 oz	201 oz	207 oz	213 oz	219 oz	222 oz	225 oz	231 oz	237 oz	243 oz	249 oz	255 oz	257 oz	257 oz	257 oz	257 oz	183 oz
	5.2 kg	5.2 kg	5.2 kg	5.2 kg	5.2 kg	5.2 kg	5.4 kg	5.5 kg	5.7 kg	5.9 kg	6.1 kg	6.2 kg	6.3 kg	6.4 kg	6.6 kg	6.7 kg	6.9 kg	7.1 kg	7.2 kg	7.3 kg	7.3 kg	7.3 kg	7.3 kg	5.2 kg

For pipes longer than 100 ft, additional charge is required.

5-2. COMPRESSOR TECHNICAL DATA

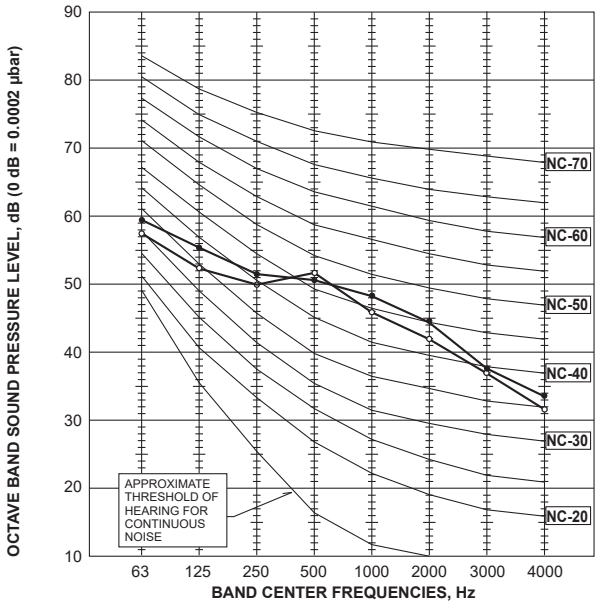
(at 68°F [20°C])

Service Ref.		PUZ-AK36NL-U1 PUY-AK36NL-U1	PUZ-AK42NL-U1 PUY-AK42NL-U1	PUZ-AK48NL-U1 PUY-AK48NL-U1 SUZ-AK48NL-U1	PUZ-AK60NL-U1 PUY-AK60NL-U1 SUZ-AK60NL-U1
Compressor model		MRB36FEGMC		MRB53FEJMC-L	
Winding resistance (Ω)	U-V	0.44		0.49	
	U-W				
	W-V				

5-3. NOISE CRITERION CURVES

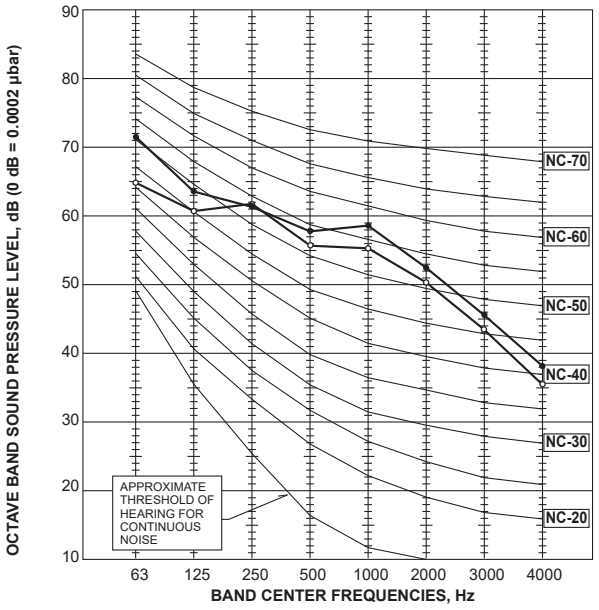
PUZ-AK36/42NL-U1
PUY-AK36/42NL-U1

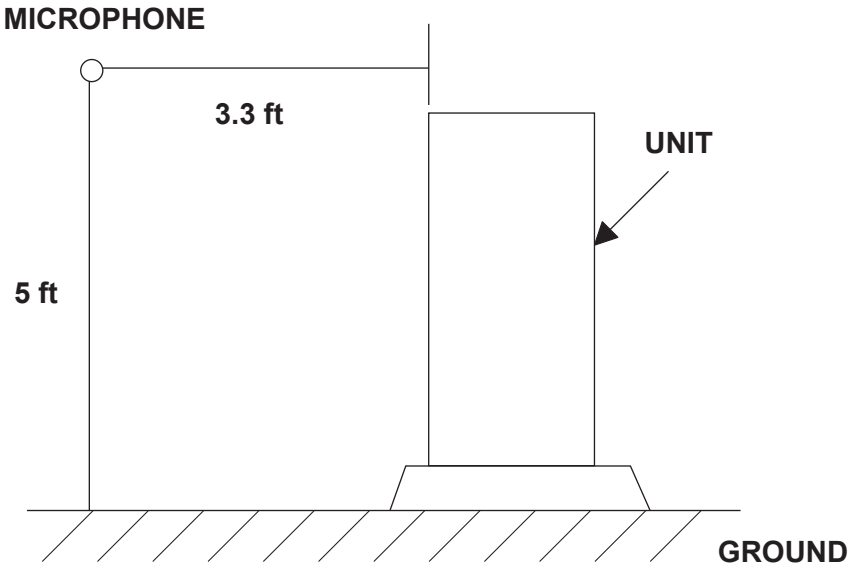
MODE	SPL (dB)	LINE
COOLING	52	○—○
HEATING	53	●—●



PUZ-AK36/42NL-U1
PUY-AK36/42NL-U1
SUZ-AK48/60NL-U1

MODE	SPL (dB)	LINE
COOLING	60	○—○
HEATING	62	●—●





5-4. STANDARD OPERATION DATA

5-4-1. Heat pump

Representative matching			PLA-AE36NL		PLA-AE42NL		PLA-AE48NL	
Mode			COOLING	HEATING	COOLING	HEATING	COOLING	HEATING
Total	Capacity	Btu/h	36,000	40,000	42,000	48,000	48,000	60,000
	Input	W	2,620	2,570	3,500	3,530	4,573	5,220
Electrical circuit	Indoor unit model		PLA-AE36NL		PLA-AE42NL		PLA-AE48NL	
	Phase		Single		Single		Single	
	Cycle		60 Hz		60 Hz		60 Hz	
	Voltage		208/230 V		208/230 V		208/230 V	
	Current		0.98 A		1.05 A		1.05 A	
	Outdoor unit model		PUZ-AK36NL		PUZ-AK42NL		PUZ-AK48NL	
	Phase		Single		Single		Single	
	Cycle		60 Hz		60 Hz		60 Hz	
	Voltage		208/230 V		208/230 V		208/230 V	
	Current		10.56 A	10.32 A	14.28 A	14.45 A	19.31 A	21.84 A
Refrigerant circuit	Discharge pressure	psig	366	335	381	359	357	395
	Suction pressure	psig	148	115	139	111	128	112
	Discharge temperature	°F	143	158	144	142	169	184
	Condensing temperature	°F	111	103	114	109	109	116
	Suction temperature	°F	52	41	53	35	55	44
	Ref. pipe length	ft	25	25	25	25	25	25
	Discharge pressure	MPa	2.52	2.31	2.63	2.48	2.46	2.72
	Suction pressure	MPa	1.02	0.80	0.96	0.76	0.88	0.78
	Discharge temperature	°C	61.7	69.9	62.4	60.9	75.9	84.7
	Condensing temperature	°C	43.8	39.7	45.6	42.7	43.0	46.6
	Suction temperature	°C	11.1	4.8	11.5	1.9	13.0	6.6
	Ref. pipe length	m	7.6	7.6	7.6	7.6	7.6	7.6
Indoor side	Intake air temperature DB	°F	80	70	80	70	80	70
	Intake air temperature WB	°F	67	60	67	60	67	60
	Discharge air temperature DB	°F	57	102	55	107	53	117
Outdoor side	Intake air temperature DB	°F	95	47	95	47	95	47
	Intake air temperature WB	°F	75	43	75	43	75	43
Indoor side	Intake air temperature DB	°C	26.7	21.1	26.7	21.1	26.7	21.1
	Intake air temperature WB	°C	19.4	15.6	19.4	15.6	19.4	15.6
	Discharge air temperature DB	°C	13.7	38.8	12.9	41.5	11.7	47.1
Outdoor side	Intake air temperature DB	°C	35.0	8.3	35.0	8.3	35.0	8.3
	Intake air temperature WB	°C	23.9	6.1	23.9	6.1	23.9	6.1
SHF			0.76	-	0.72	-	0.67	-
BF			0.10	-	0.10	-	0.17	-

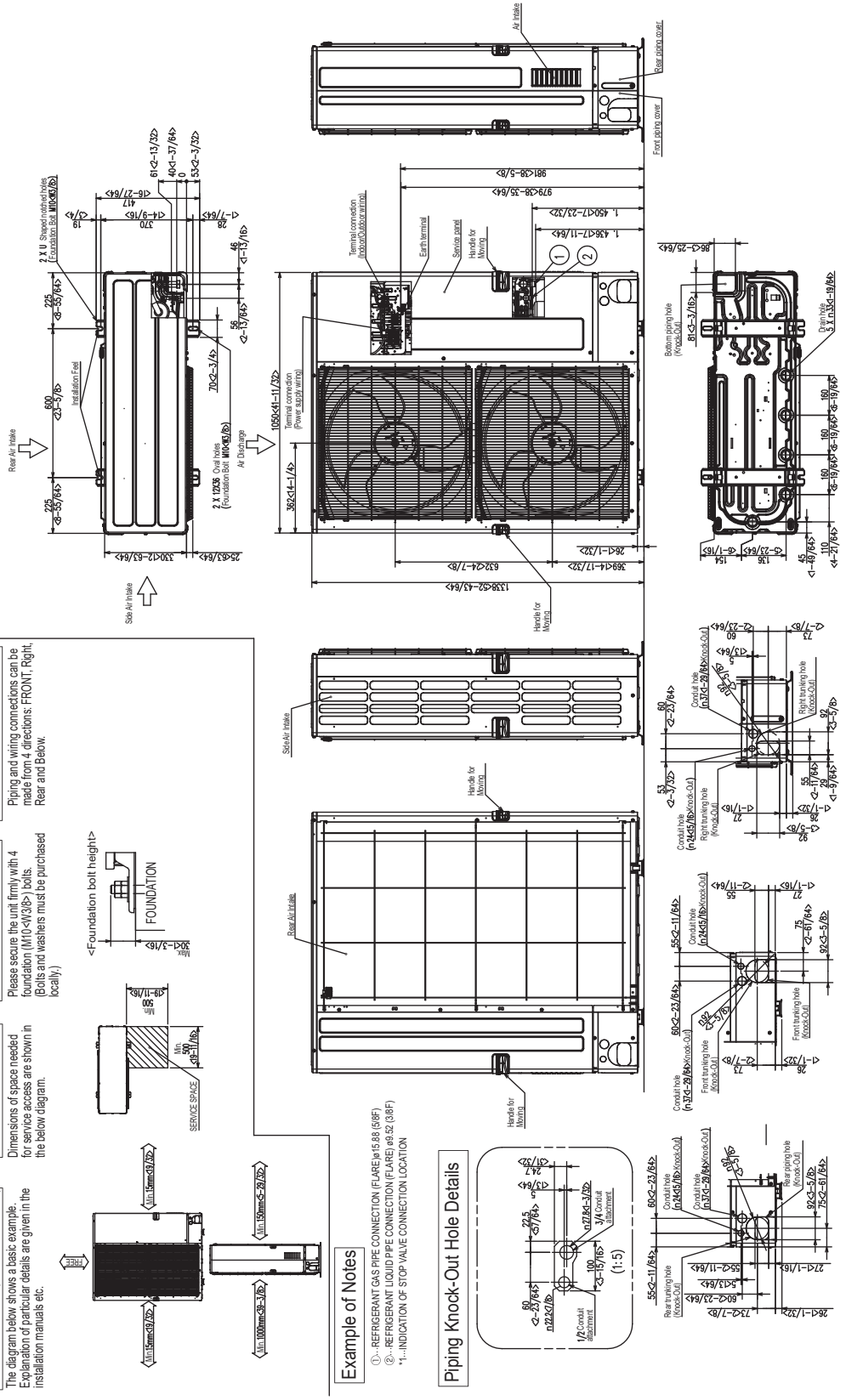
5-4-2. Cooling only

Representative matching			PLA-AE36NL	PLA-AE42NL	PLA-AE48NL
Mode			COOLING	COOLING	COOLING
Total	Capacity	Btu/h	36,000	42,000	48,000
	Input	W	2,620	3,500	4,573
Electrical circuit	Indoor unit model		PLA-AE36NL	PLA-AE42NL	PLA-AE48NL
	Phase		Single	Single	Single
	Cycle		60 Hz	60 Hz	60 Hz
	Voltage		208/230 V	208/230 V	208/230 V
	Current		0.98 A	1.05 A	1.05 A
	Outdoor unit model		PUY-AK36NL	PUY-AK42NL	PUY-AK48NL
	Phase		Single	Single	Single
	Cycle		60 Hz	60 Hz	60 Hz
	Voltage		208/230 V	208/230 V	208/230 V
	Current		10.56 A	14.28 A	19.31 A
Refrigerant circuit	Discharge pressure	psig	366	381	357
	Suction pressure	psig	148	139	128
	Discharge temperature	°F	143	144	169
	Condensing temperature	°F	111	114	109
	Suction temperature	°F	52	53	55
	Ref. pipe length	ft	25	25	25
	Discharge pressure	MPa	2.52	2.63	2.46
	Suction pressure	MPa	1.02	0.96	0.88
	Discharge temperature	°C	61.7	62.4	75.9
	Condensing temperature	°C	43.8	45.6	43.0
	Suction temperature	°C	11.1	11.5	13.0
	Ref. pipe length	m	7.6	7.6	7.6
Indoor side	Intake air temperature DB	°F	80	80	80
	Intake air temperature WB	°F	67	67	67
	Discharge air temperature DB	°F	57	55	53
Outdoor side	Intake air temperature DB	°F	95	95	95
	Intake air temperature WB	°F	75	75	75
Indoor side	Intake air temperature DB	°C	26.7	26.7	26.7
	Intake air temperature WB	°C	19.4	19.4	19.4
	Discharge air temperature DB	°C	13.7	12.9	11.7
Outdoor side	Intake air temperature DB	°C	35.0	35.0	35.0
	Intake air temperature WB	°C	23.9	23.9	23.9
SHF			0.76	0.72	0.67
BF			0.10	0.10	0.17

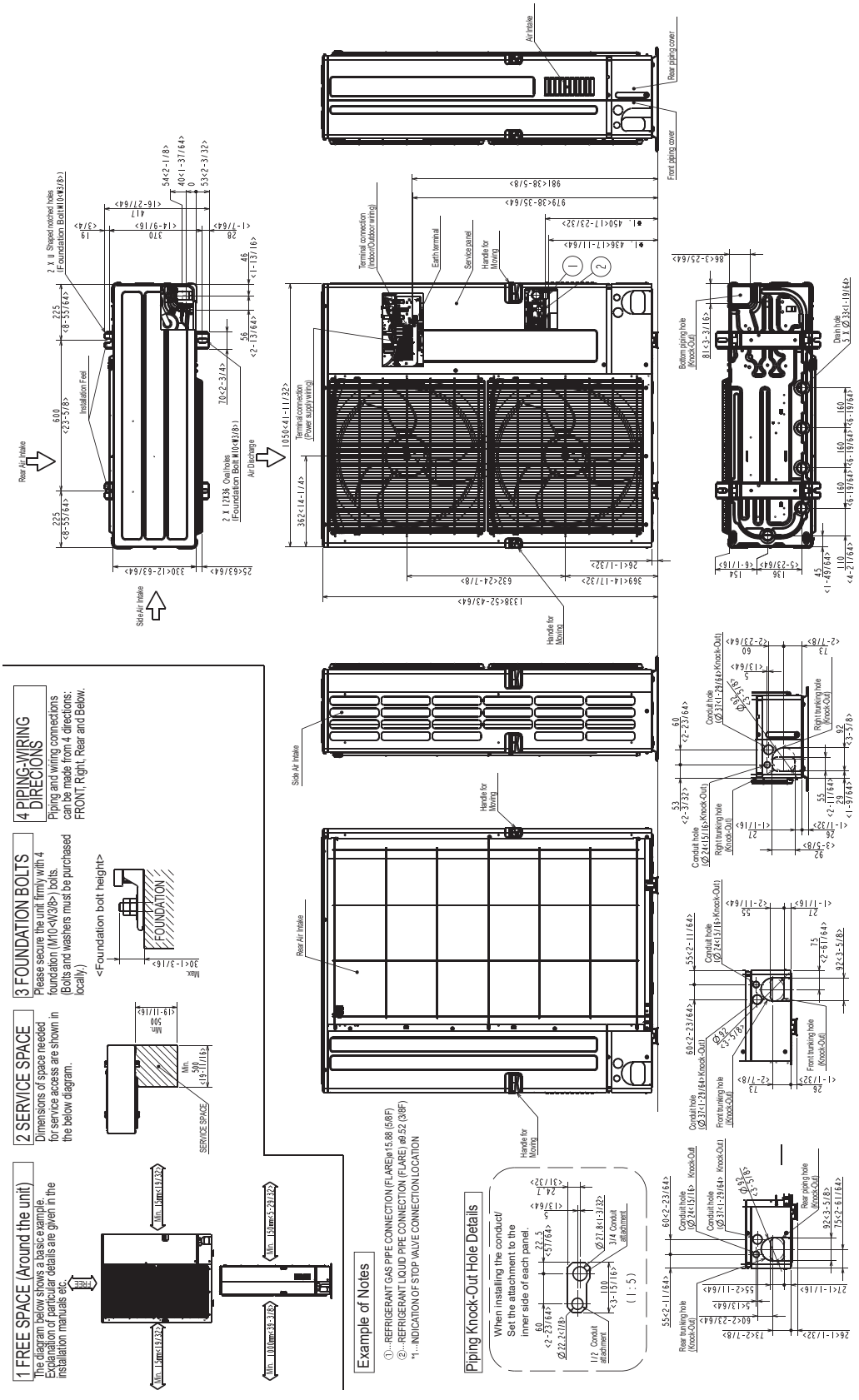
6 OUTLINES AND DIMENSIONS

PUZ-AK36NL-U1 **PUZ-AK42NL-U1** **PUZ-AK48NL-U1** **SUZ-AK48NL-U1**
PUY-AK36NL-U1 **PUY-AK42NL-U1** **PUY-AK48NL-U1**

Unit: mm<in>

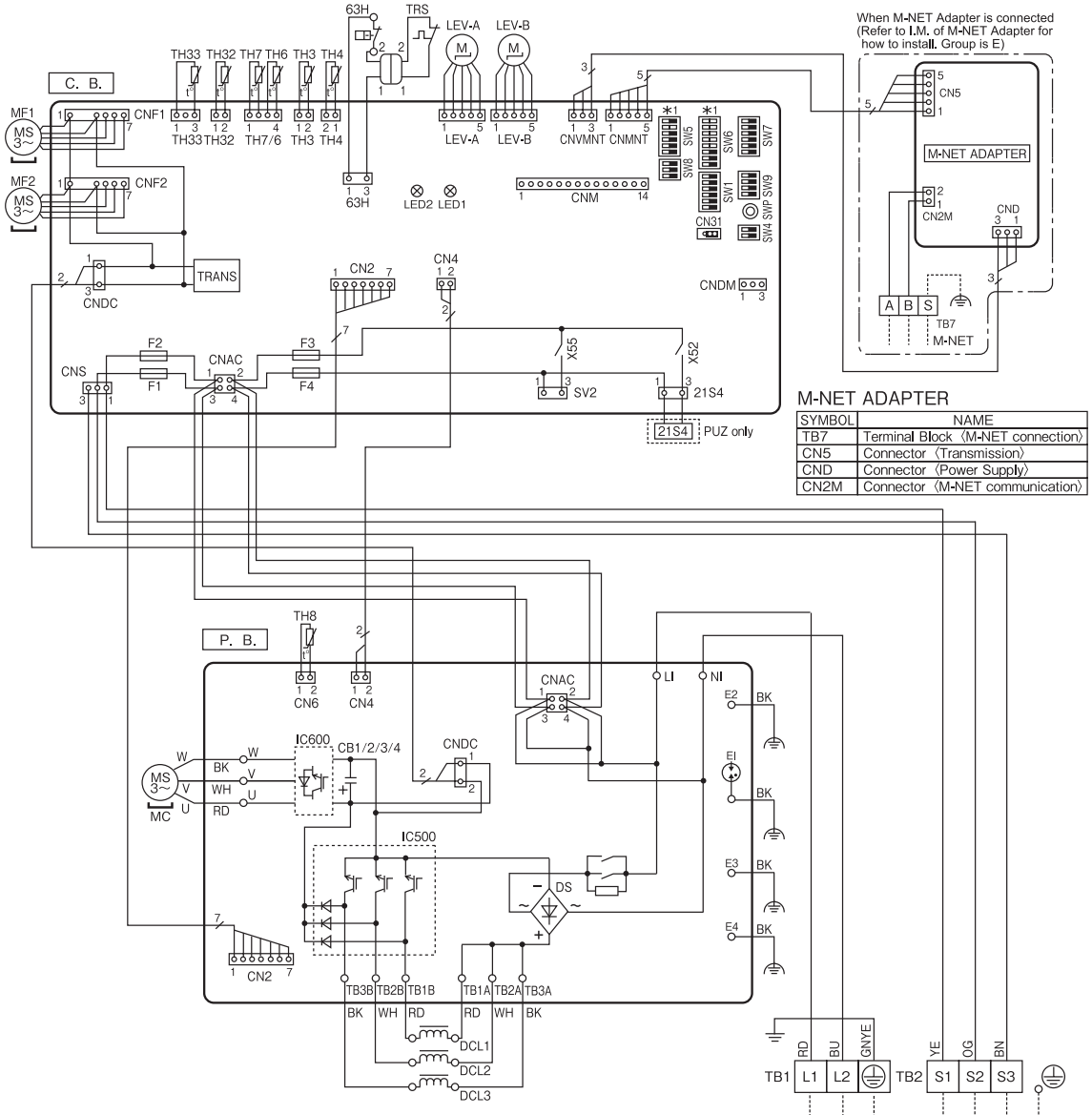


PUZ-AK60NL-U1 **SUZ-AK60NL-U1**
PUY-AK60NL-U1



7 WIRING DIAGRAM

PUZ-AK36NL-U1 **PUZ-AK42NL-U1**
PUY-AK36NL-U1 **PUY-AK42NL-U1**



M-NET ADAPTER

SYMBOL	NAME
TB7	Terminal Block 〈M-NET connection〉
CN5	Connector 〈Transmission〉
CND	Connector 〈Power Supply〉
CN2M	Connector 〈M-NET communication〉

∗1. MODEL SELECT
The black square (■) indicates a switch position.

MODEL	SW6-4, 5, 6, 7, 8 ∗2	SW5-5 ∗2
PUZ-AK36NL	ON OFF 1 2 3 4 5 6 7 8	ON OFF 1 2 3 4 5 6
PUZ-AK42NL	ON OFF 1 2 3 4 5 6 7 8	ON OFF 1 2 3 4 5 6

MODEL	SW6-4, 5, 6, 7, 8 ∗2	SW5-5 ∗2
PUY-AK36NL	ON OFF 1 2 3 4 5 6 7 8	ON OFF 1 2 3 4 5 6
PUY-AK42NL	ON OFF 1 2 3 4 5 6 7 8	ON OFF 1 2 3 4 5 6

∗2. SW6-1 to 3, SW5-1 to 4, 6 : Function Switch

∗Use copper supply wires.
∗Utiliser des fils d'alimentation en cuivre.

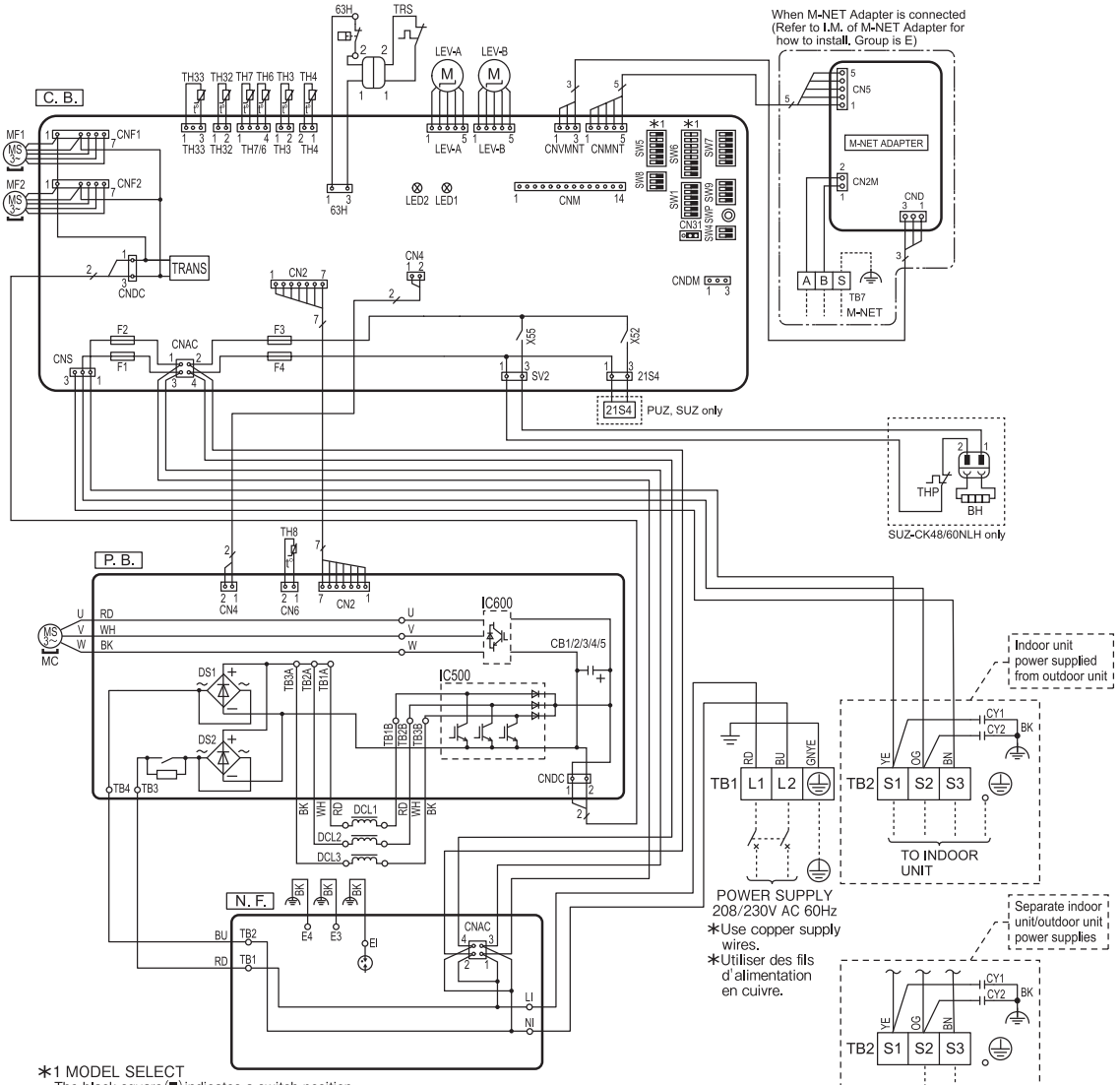
【LEGEND】

SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
TB1	Terminal Block 〈Power Supply〉	TH32	Thermistor 〈Suction〉	SW6	Switch 〈Model Select〉
TB2	Terminal Block 〈Indoor/Outdoor〉	TH33	Thermistor 〈Comp. Surface〉	SW7	Switch 〈Function Switch〉
MC	Motor for Compressor	LEV-A, LEV-B	Linear Expansion Valve	SW8	Switch 〈Function Switch〉
MF1, MF2	Fan Motor	DCL1, DCL2, DCL3	Reactor	SW9	Switch 〈Function Switch〉
21S4	Solenoid Valve 〈4-Way Valve〉	P. B.	Power Circuit Board	SWP	Switch 〈Pump Down〉
63H	High Pressure Switch	C. B.	Controller Circuit Board	CNM	Connector 〈Connection for Option〉
TRS	Thermal Protector	F1, F2	Fuse 〈T10AL250V〉	CN31	Connector 〈Emergency Operation〉
TH3	Thermistor 〈Liquid〉	F3, F4	Fuse 〈T6.3AL250V〉	CNDM	Connector 〈Connection for Option〉
TH4	Thermistor 〈Discharge〉	SW1	Switch 〈Manual Defrost, Defect History Record Reset, Refrigerant Address〉	SV2	Base Heater
TH6	Thermistor 〈2-Phase Pipe〉			LED1, LED2	LED 〈Operation Inspection Indicators〉
TH7	Thermistor 〈Ambient〉	SW4	Switch 〈Function Switch〉		
TH8	Thermistor 〈Heat Sink〉	SW5	Switch 〈Function Switch, Model Select〉		

PUZ-AK48NL-U1 **PUZ-AK60NL-U1** **SUZ-AK48NL-U1** **SUZ-AK60NL-U1**
PUY-AK48NL-U1 **PUY-AK60NL-U1**

【LEGEND】

SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
TB1	Terminal Block 〈Power Supply〉	TH8	Thermistor (internal) 〈Heat Sink〉	SW6	Switch 〈Model Select〉
TB2	Terminal Block 〈Indoor/Outdoor〉	TH32	Thermistor 〈Suction〉	SW7	Switch 〈Function Switch〉
MC	Motor for Compressor	TH33	Thermistor 〈Comp. Surface〉	SW8	Switch 〈Function Switch〉
MF1, MF2	Fan Motor	LEV-A, LEV-B	Linear Expansion Valve	SW9	Switch 〈Function Switch〉
21S4	Solenoid Valve (4-Way Valve)	DCL1, DCL2, DCL3	Reactor	SWP	Switch 〈Pump Down〉
63H	High Pressure Switch	CY1, CY2	Capacitor	CN31	Connector 〈Emergency Operation〉
TRS	Thermal Protector	N. F.	Noise Filter Circuit Board	CNDM	Connector 〈Connection for Option〉
BH	Base Heater (SUZ-CK48/60NLH only)	P. B.	Power Circuit Board	CNM	Connector 〈Connection for Option〉
THP	Thermal Protector (SUZ-CK48/60NLH only)	C. B.	Controller Circuit Board	SV2	Base Heater
TH3	Thermistor 〈Liquid〉	SW1	Switch 〈Manual Defrost, Defect History Record Reset, Refrigerant Address〉	LED1, LED2	LED 〈Operation Inspection Indicators〉
TH4	Thermistor 〈Discharge〉			F1, F2	Fuse 〈T10AL250V〉
TH6	Thermistor 〈2-Phase Pipe〉	SW4	Switch 〈Test Operation〉	F3, F4	Fuse 〈T6.3AL250V〉
TH7	Thermistor 〈Ambient〉	SW5	Switch 〈Function Switch, Model Select〉		



∗1 MODEL SELECT
The black square (■) indicates a switch position.

MODEL	SW6-4, 5, 6, 7, 8 ∗2	SW5-5 ∗2	MODEL	SW6-4, 5, 6, 7, 8 ∗2	SW5-5 ∗2
PUZ-AK48NL	ON OFF 1 2 3 4 5 6 7 8	ON OFF 1 2 3 4 5 6	PUZ-AK60NL	ON OFF 1 2 3 4 5 6 7 8	ON OFF 1 2 3 4 5 6
PUY-AK48NL	ON OFF 1 2 3 4 5 6 7 8	ON OFF 1 2 3 4 5 6	PUY-AK60NL	ON OFF 1 2 3 4 5 6 7 8	ON OFF 1 2 3 4 5 6
SUZ-AK48NL	ON OFF 1 2 3 4 5 6 7 8	ON OFF 1 2 3 4 5 6	SUZ-AK60NL	ON OFF 1 2 3 4 5 6 7 8	ON OFF 1 2 3 4 5 6
SUZ-CK48NLH	ON OFF 1 2 3 4 5 6 7 8	ON OFF 1 2 3 4 5 6	SUZ-CK60NLH	ON OFF 1 2 3 4 5 6 7 8	ON OFF 1 2 3 4 5 6

∗2 SW6-1 to 3, SW5-1 to 4, 6 : Function Switch

M-NET ADAPTER

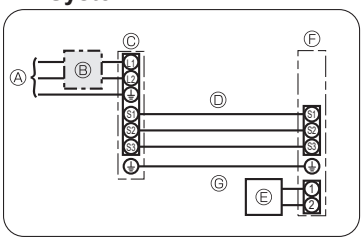
SYMBOL	NAME
TB7	Terminal Block 〈M-NET connection〉
CN5	Connector 〈Transmission〉
CND	Connector 〈Power Supply〉
CN2M	Connector 〈M-NET communication〉

8 WIRING SPECIFICATIONS

8-1. INDOOR UNIT POWER SUPPLIED FROM OUTDOOR UNIT (A-control application)

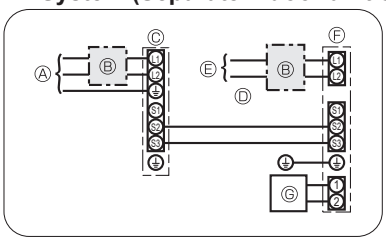
The following connection patterns are available.
The outdoor unit power supply patterns vary depending on models.

1:1 System



ⒶOutdoor unit power supply
ⒷWiring circuit breaker or isolating switch
ⒸOutdoor unit
ⒹIndoor unit/outdoor unit connecting cords
ⒺRemote controller
ⒻIndoor unit
ⒼIndoor unit/outdoor unit ground

1:1 System (Separate indoor unit/outdoor unit power supplies)



ⒶOutdoor unit power supply
ⒷWiring circuit breaker or isolating switch
ⒸOutdoor unit
ⒹIndoor unit/outdoor unit connecting cords
ⒺIndoor unit power supply
ⒻIndoor unit
ⒼRemote controller

Note: Affix a label A that is included with the manuals near each wiring diagram for the indoor and outdoor units.

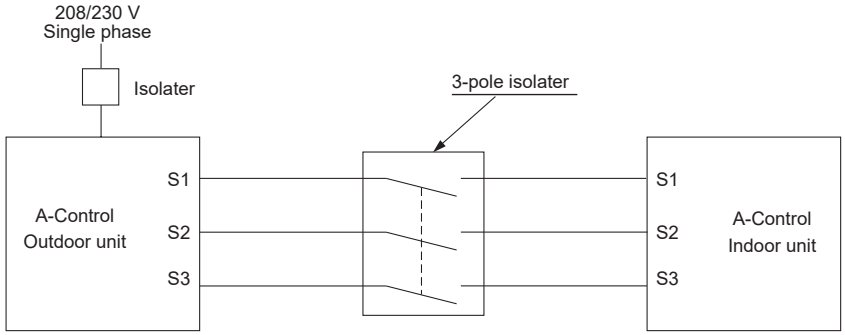
Outdoor unit model			AK36/42	AK48/60
Outdoor unit power supply			~/N (single), 60 Hz, 208/230 V	~/N (single), 60 Hz, 208/230 V
Breaker size *1			35 A	40 A
Minimum circuit ampacity			34 A	38 A
Maximum rating of overcurrent protective device			56 A	67 A
Wiring Wire No. x size (mm^2)	Outdoor unit power supply		2 x Min. AWG 8	2 x Min. AWG 8
	Outdoor unit power supply ground		1 x Min. AWG 10	1 x Min. AWG 10
	Indoor unit-Outdoor unit	*2	3 x AWG 14 (polar)	3 x AWG 14 (polar)
	Indoor unit-Outdoor unit ground	*2	1 x Min. AWG 14	1 x Min. AWG 14
	Remote controller-Indoor unit	*3	2 × AWG 22 (Non-polar)	2 x AWG 22 (Non-polar)
Circuit rating	Outdoor unit L1-L2 (single)	*4	208/230 VAC	208/230 VAC
	Indoor unit-Outdoor unit S1-S2 (single)	*4	208/230 VAC	208/230 VAC
	Indoor unit-Outdoor unit S2-S3 (single)	*4	28 VDC	28 VDC
	Remote controller-Indoor unit	*4	12 VDC	12 VDC

*1.Please follow applicable federal, state, or local codes to prevent potential leakage/electric shock. or install a ground fault interrupt for the prevention of leakage and electric shock.

IMPORTANT
If you use a ground fault circuit interrupter, it should be compatible with higher harmonics as this unit is equipped with an inverter. The use of an inadequate breaker can cause the incorrect operation of inverter.

*2. Max. 50 m, 154 ft
S3 separated, Max. 80 m, 262 ft
*3. The wire with a length of 10 m (30 ft) is attached in the remote controller accessory.
*4. The figures are NOT always against the ground.
S3 terminal has 28 VDC against S2 terminal. However between S3 and S1, these terminals are NOT electrically insulated by the transformer or other devices.

Note: 1. The wiring size must comply with the applicable local and national codes.
2. Use copper supply wires.
3. Use wires rated 600 V or more for the power supply cables and the indoor/outdoor unit connecting cables.
4. Power supply cables, the cable connecting the indoor and outdoor units (indoor-outdoor connecting cable), and the cable connecting the water heater and outdoor unit (water heater-outdoor connecting cable) shall not be lighter than polychloroprene sheathed flexible cord. (Design 60245 IEC 57)
5. Use an ground wire which is longer than the other cords so that it will not become disconnected when tension is applied.
6. The appliance shall be installed in accordance with national wiring regulations.



⚠ **Warning:**
In the case of A-control wiring, there is high voltage potential on the S3 terminal caused by electrical circuit design that has no electrical insulation between power line and communication signal line. Therefore, please turn off the main power supply when servicing.
And do not touch the S1, S2, S3 terminals when the power is energized. If isolator should be used between indoor unit and outdoor unit, please use 3-pole type.

Never splice the power cable or the indoor-outdoor connection cable, otherwise it may result in a smoke, a fire, or communication failure.

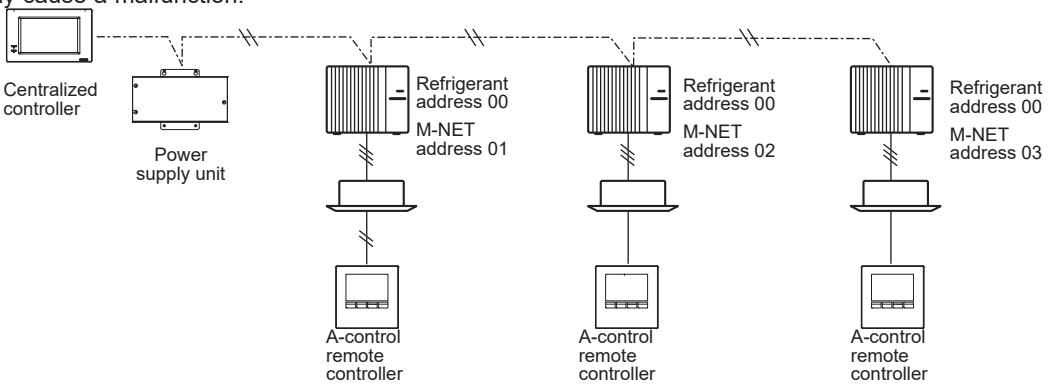
8-2. M-NET WIRING METHOD

Points to notice:

(1) Outside the unit, transmission wires should stay away from electric wires in order to prevent electromagnetic noise from making an influence on the signal communication. Place them at intervals of 5 cm [2 in.] or more. Do not put them in the same conduit tube.

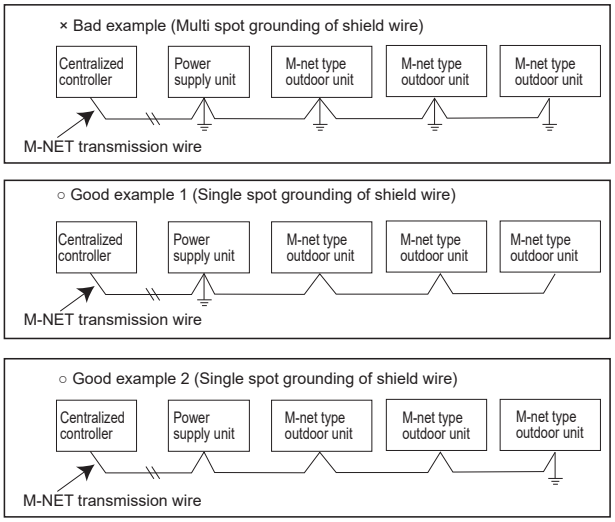
(2) Terminal block (TB7) for transmission wires should never be connected to 208/230 V power supply. If it is connected, electronic parts on M-NET P.C. board may be burnt out.

(3) Use 2-core x 1.25 mm^2 [AWG16] shield wire (CVVS, CPEVS) for the transmission wire. Transmission signals may not be sent or received normally if different types of transmission wires are put together in the same multi-conductor cable. Failure to do so may cause a malfunction.



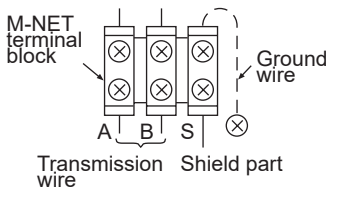
It is acceptable if M-NET wire (non-polar, 2-core) is arranged in addition to the wiring for A-control.

(4) Ground only one of any appliances through M-NET transmission wire (shield wire). Communication error may occur due to the influence of electromagnetic noise.
"Ed" error will appear on the LED display of outdoor unit.
"0403" error will appear on the centralized remote controller.



If there are more than 2 grounding spots on the shield wire, noise may enter into the shield wire because the ground wire and shield wire form one circuit and the electric potential difference occurs due to the impedance difference among grounding spots. In the case of single spot grounding, noise does not enter into the shield wire because the ground wire and shield wire do not form 1 circuit.
To avoid communication errors caused by noise, make sure to observe the single spot grounding method described in the installation manual.

● **M-NET wiring**



(1) Use 2-core x 1.25 mm^2 [AWG16] shield wire for electric wires.
(Excluding the case connecting to system controller.)

(2) Connect the wire to the M-NET terminal block. Connect one core of the transmission wire (non-polar) to A terminal and the other to B. Peel the shield wire, twist the shield part to a string and connect it to S terminal.

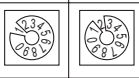
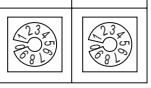
(3) In the system which several outdoor units are being connected, the terminal (A(M1), B(M2), S) on M-NET terminal block should be individually wired to the other outdoor unit's terminal. (i.e. A to A; B to B; and S to S) In this case, choose one of those outdoor units and drive a screw to fix an ground wire on the plate as shown on the right figure.

8-2-1. M-NET address setting

In A-control models, M-NET address and refrigerant address should be set only for the outdoor unit. Similar to City Multi series, there is no need to set the address of outdoor unit and remote controller. To construct a central control system, the setting of M-NET address should be conducted only upon the outdoor unit. The setting range should be 1 to 50 (the same as that of the indoor unit in City Multi system), and the address number should be consecutively set in a same group.

Address number can be set by using rotary switches (SW11 for ones digit and SW12 for tens digit), which is located on the M-NET board of outdoor unit.
(Initial setting: all addresses are set to “0”.)

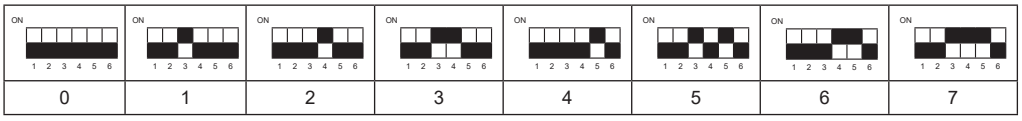
<Setting example>

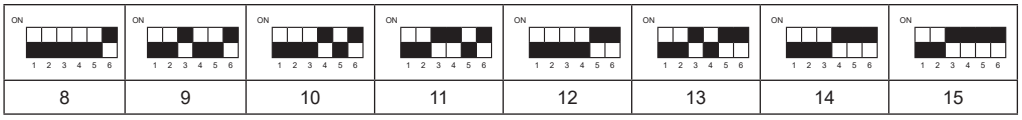
M-NET Address No.		1	2	~	50
Switching setting	SW11 ones digit				
	SW12 tens digit				

8-2-2. Refrigerant address setting

In the case of multiple grouping system (multiple refrigerant circuits in one group), indoor units should be connected by remote controller wiring (TB5) and the refrigerant address needs to be set. Leave the refrigerant addresses to “00” if the group setting is not conducted. Set the refrigerant address by using SW1-3 to 1-6 on the outdoor controller board.
Initial setting: all switches are OFF. (All refrigerant addresses are “00”.)

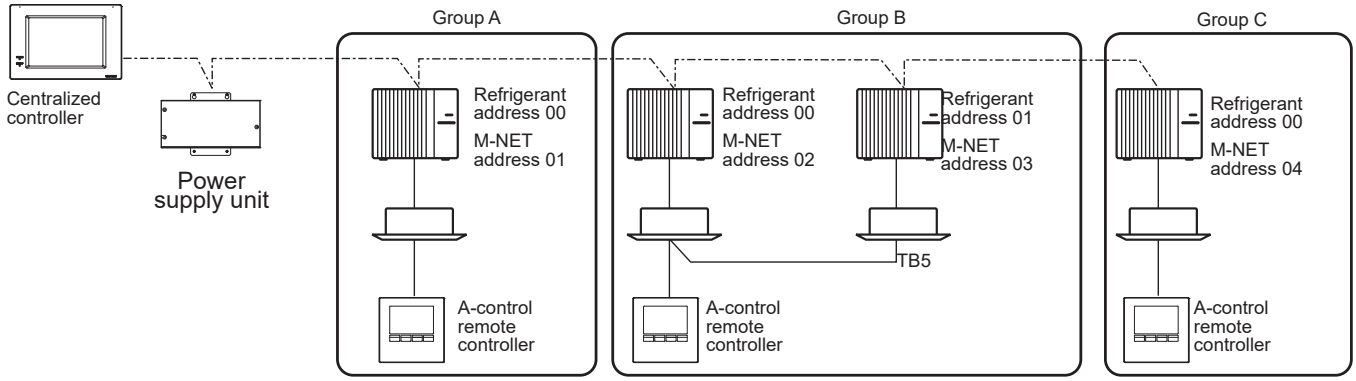
Refrigerant address



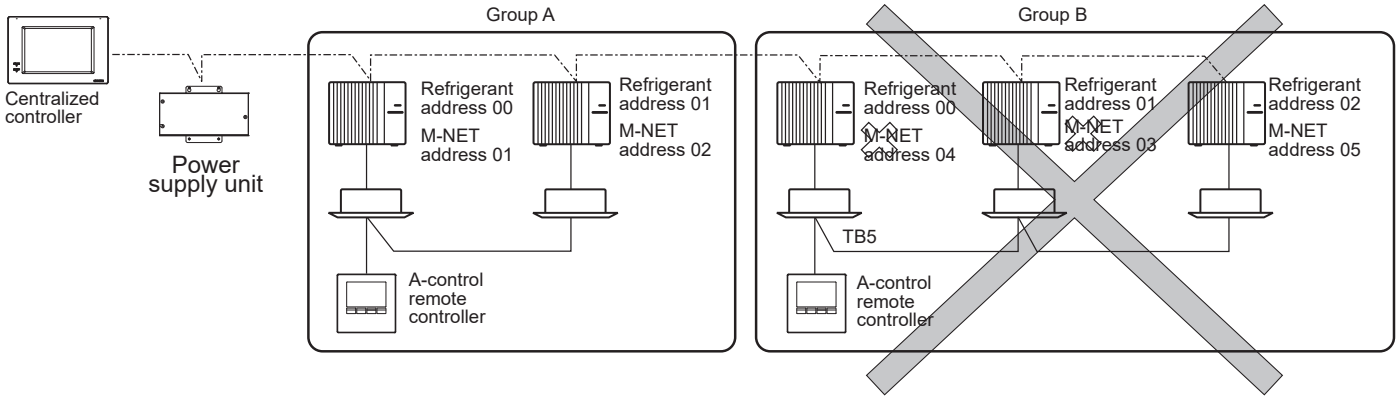


8-2-3. Regulations in address settings

In the case of multiple grouping system, M-NET and refrigerant address settings should be done as explained in the above section. Set the lowest number in the group for the outdoor unit whose refrigerant address is “00” as its M-NET address.



Note: Refrigerant addresses can be overlapped if they are in the different group.

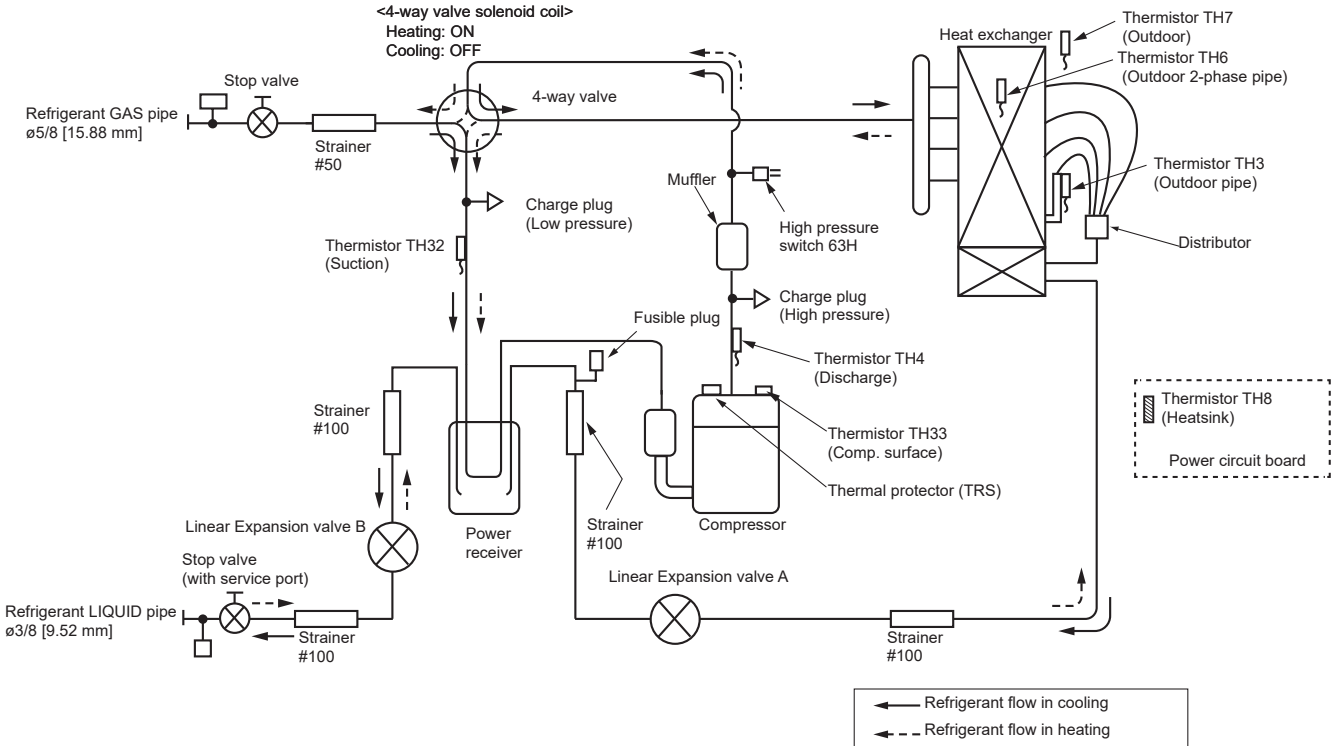


In group B, M-NET address of the outdoor unit whose refrigerant address is “00” is not set to the minimum in the group. As “03” is right for this situation, the setting is wrong. Taking group A as a good sample, set the minimum M-NET address in the group for the outdoor unit whose refrigerant address is “00”.

9 REFRIGERANT SYSTEM DIAGRAM

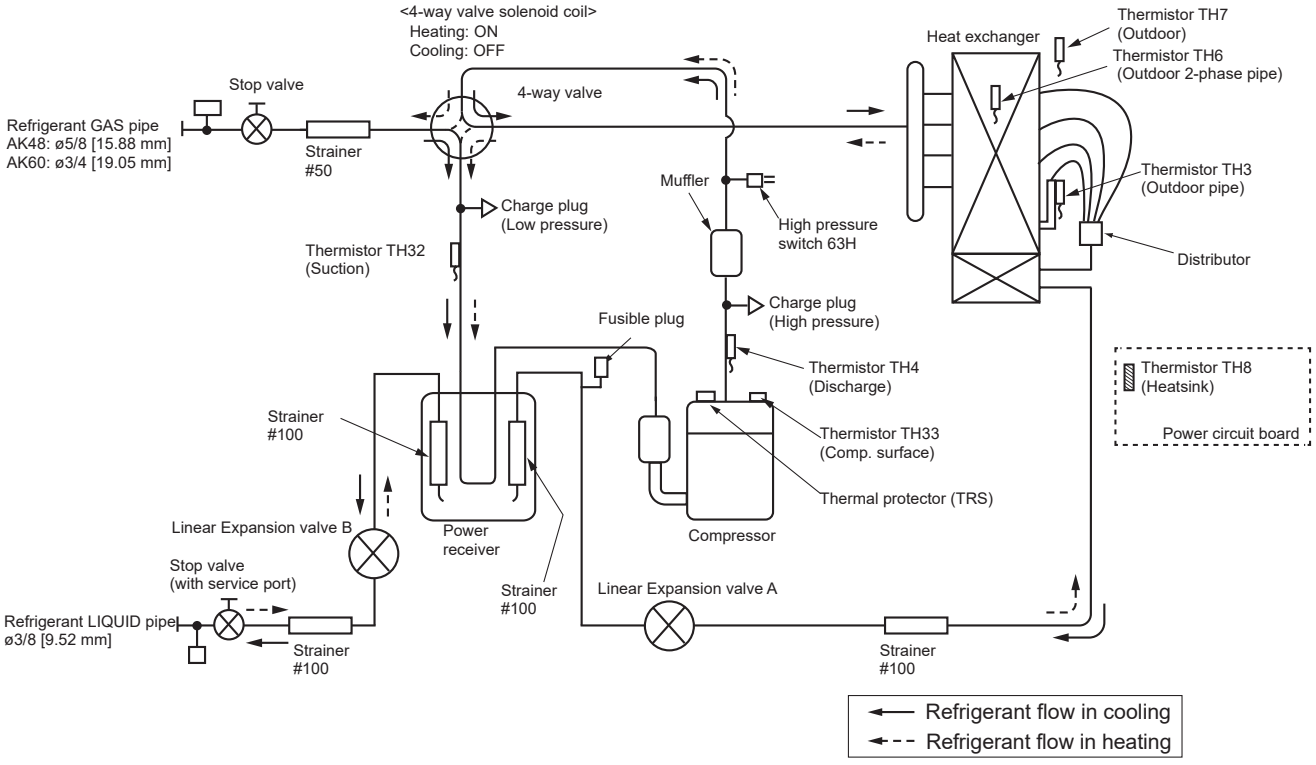
PUZ-AK36NL-U1 **PUZ-AK42NL-U1**
PUY-AK36NL-U1 **PUY-AK42NL-U1**

Unit: inch [mm]



PUZ-AK48NL-U1 **PUZ-AK60NL-U1** **SUZ-AK48NL-U1** **SUZ-AK60NL-U1**
PUY-AK48NL-U1 **PUY-AK60NL-U1**

Unit: inch [mm]



1. Refrigerant collecting (pump down)

Perform the following procedures to collect the refrigerant when moving the indoor unit or the outdoor unit.

① Supply power (circuit breaker).
- When power is supplied, make sure that [Centrally controlled] is not displayed on the remote controller. If [Centrally controlled] is displayed, the refrigerant collecting (pump down) cannot be completed normally.
- Startup of the indoor-outdoor communication takes about 3 minutes after the power (circuit breaker) is turned on. Start the pump-down operation 3 to 4 minutes after the power (circuit breaker) is turned ON.

② After the liquid stop valve is closed, set SWP on the control board of the outdoor unit to ON. The compressor (outdoor unit) and ventilators (indoor and outdoor units) start operating and refrigerant collecting operation begins. LED1 and LED2 on the control board of the outdoor unit are lit.
- Only set SWP to ON if the unit is stopped. However, even if the unit is stopped and SWP is set to ON less than 3 minutes after the compressor stops, the refrigerant collecting operation cannot be performed. Wait until compressor has been stopped for 3 minutes and then set SWP to ON again.

③ Because the unit automatically stops in about 2 to 3 minutes when the refrigerant collecting operation is completed (LED1 off, LED2 lit), be sure to quickly close the gas stop valve. If LED1 is lit and LED2 is off and the outdoor unit is stopped, refrigerant collection is not properly performed. Open the liquid stop valve completely, and then repeat step ② after 3 minutes have passed.
- If the refrigerant collecting operation has been completed normally (LED1 off, LED2 lit), the unit will remain stopped until the power supply is turned off.

④ Turn off the power supply (circuit breaker).
- Note that it may not be possible to perform a pump-down operation if the extension piping is very long with large refrigerant amount.

⚠ Warning:
- **When pumping down the refrigerant, stop the compressor before disconnecting the refrigerant pipes. The compressor may burst if air etc. get into it.**
- **Do not perform pump down work when there is a gas leak. The intake of air or other gases causes abnormally high pressure in the refrigeration cycle, which may cause explosion or injury.**

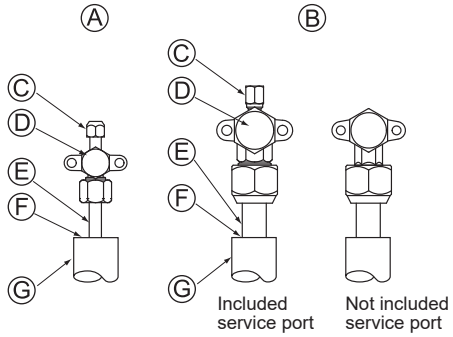
2. Refrigerant Pipe Nitrogen Pressure Test Method

(1) Connect the testing tools.
- Make sure the stop valves Ⓐ Ⓑ are closed and do not open them.
- Add pressure to the refrigerant lines through the service port <Removed "Ⓒ of the liquid stop valve Ⓓ">

(2) Do not add pressure to the specified pressure all at once; add pressure little by little.
① Pressurize to 0.5 MPa (73 psig, 5 kgf/cm²G), wait 5 minutes, and make sure the pressure does not decrease.
② Pressurize to 1.5 MPa (218 psig, 15 kgf/cm²G), wait 5 minutes, and make sure the pressure does not decrease.
③ Pressurize to 4.15 MPa (602 psig, 41.5 kgf/cm²G) and measure the surrounding temperature and refrigerant pressure.

(3) If the specified pressure holds for about 24 Hours and does not decrease, the pipes have passed the test and there are no leaks.
- If the surrounding temperature changes by 1°C (1.8°F), the pressure will change by about 0.01 MPa (1.45psig, 0.1 kgf/cm²G). Make the necessary corrections.

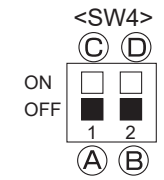
(4) If the pressure decreases in steps (2) or (3), there is a gas leak. Look for the source of the gas leak.



Ⓐ Stop valve <Liquid side>
Ⓑ Stop valve <Gas side>
Ⓒ Service port
Ⓓ Open/Close section
Ⓔ Local pipe
Ⓕ Sealed, same way for gas inside
Ⓖ Pipe cover

3. Start and finish of test run

- Operation from the indoor unit
  Execute the test run using the installation manual for the indoor unit.
- Operation from the outdoor unit
  SW4, located on the control board of the outdoor unit, starts and finishes the test run. It also sets the operation mode (cooling/heating).
  ① Set the operation mode (cooling/heating) with SW4-2.
  ② Turn on SW4-1 to start test run with the operation mode set by SW4-2.
  ③ Turn off SW4-1 to finish the test run.



Ⓐ Stop Ⓒ Operation
Ⓑ Cooling Ⓓ Heating (PUZ only)

- There may be a faint knocking sound around the machine room after power is supplied. However, this is not a problem with the product because the linear expansion valve is just moving to adjust opening pulse.
- There may be a knocking sound around the machine room for several seconds after compressor starts operating. However, this is not a problem with product because the check valve itself generates the sound because pressure difference is small in the refrigerant circuit.

Note:
The operation mode cannot be changed by SW4-2 during the test run. (To change test run mode, stop the unit by SW4-1, change the operation mode and restart the test run by SW4-1.)

10 TROUBLESHOOTING

10-1. TROUBLESHOOTING

<Error code displayed by self-diagnosis and actions required for service (summary)>
Present and past error codes are logged, and they can be displayed on the wired remote controller and control board of outdoor unit. Actions required 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	Error code	Actions required for service (summary)
The trouble is reoccurring.	Displayed	Judge the problem and take a corrective action according to “10-3. SELF-DIAGNOSIS ACTION TABLE”.
	Not displayed	Conduct troubleshooting and ascertain the cause of the trouble according to “10-4. TROUBLESHOOTING OF PROBLEMS”.
The trouble is not reoccurring.	Logged	① Consider 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, and matters related to wiring, etc. ② Reset error code logs and restart the unit after finishing service. ③ There is no abnormality in electrical component, controller board, or remote controller, etc.
	Not logged	①Re-check the abnormal symptom. ②Conduct troubleshooting to identify the cause of the trouble according to “10-4. TROUBLESHOOTING OF PROBLEMS”. ③Continue to operate unit for the time being if the cause is not identified. ④There is no abnormality concerning of parts such as electrical component, controller board, and remote controller, etc.

10-2. CHECK POINT UNDER TEST RUN

10-2-1 Before the test run

- After installation of indoor and outdoor units, piping work, and electric wiring work, re-check that there is no refrigerant leakage, loosened connections, and incorrect polarity.
- Measure impedance between the ground and the power supply terminal block (L1, L2) on the outdoor unit by 500V Megger and check that it is 1.0MΩ or over.
  Note: Do not use 500V Megger to the indoor/outdoor connecting wire terminal block (S1, S2, S3) and the remote controller terminal block (1, 2). This may cause malfunction.
- Make sure that the test run switch (SW4) is set to OFF before turning on power supply.
- Turn on power supply 12 hours before the test run in order to protect compressor.
- For specific models which requires higher ceiling settings or auto-recovery feature from power failure, make proper changes of settings referring to the description of “12. FUNCTION SETTING”.
- Make sure to read the operation manual before test run. (Especially items to secure safety.)

10-2-2. TEST RUN
Refer to "15-4. TEST RUN" for the operation procedure.

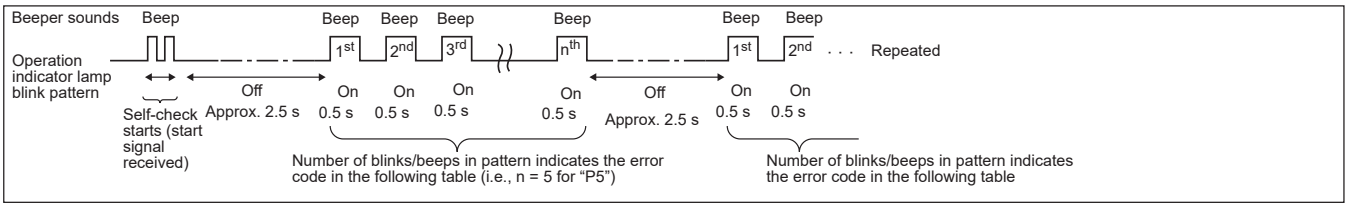
10-2-3. ERROR INFORMATION
Refer to "15-2. ERROR INFORMATION" when an error occurs.

10-2-4. ERROR HISTORY
Refer to "15-6. ERROR HISTORY" to check the errors occurred in the past.

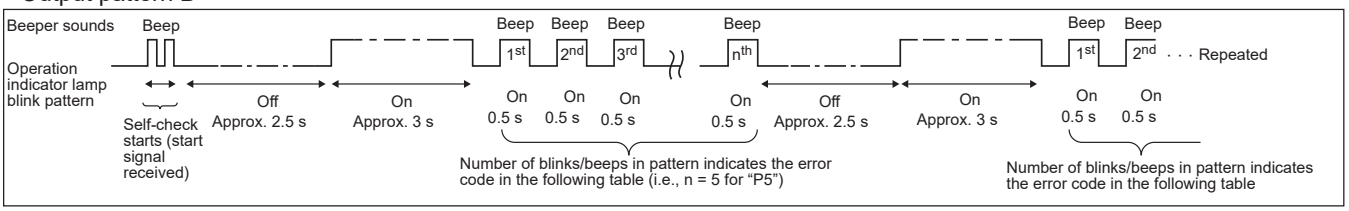
10-2-5. SELF-DIAGNOSIS
Refer to "15-7. SELF-DIAGNOSIS" to search for the error history.

• Refer to the following tables for details on the error codes.

Output pattern A



Output pattern B



Output pattern A: Errors detected by indoor unit

IR wireless remote controller	Wired remote controller	Symptom	Remark
Beeper sounds/Operation indicator lamp blinks (Number of times)	1 Error code		
1	P1	Intake sensor error	As for indoor unit, refer to indoor unit's service manual.
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 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	-	-	
12	FB (Fb)	Indoor unit control system error (memory error, etc.)	
14	PL	Abnormal refrigerant circuit	
-	E0, E3	Remote controller transmission error	
-	E1, E2	Remote controller control board error	

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

IR wireless remote controller	Wired remote controller	Symptom	Remark
Beeper sounds/Operation indicator lamp blinks (Number of times)	1 Error code		
1	E9	Indoor/outdoor unit communication error (Transmitting error) (Outdoor unit)	For details, check the LED display of the outdoor controller board.
2	UP	Compressor overcurrent interruption	
3	U3, U4	Open/short of outdoor unit thermistors	
4	UF	Compressor overcurrent interruption (When compressor is locked)	
5	U2	Abnormal high discharge temperature/49C worked/ insufficient refrigerant	
6	U1, Ud	Abnormal high pressure (63H worked)/Overheating protection operation	
7	U5	Abnormal temperature of heatsink	
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	

Note:

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 s)" after the initial 2 beeps to confirm the self-check start signal was received, the specified refrigerant address is incorrect.

10-3. SELF-DIAGNOSIS ACTION TABLE

<Abnormalities detected when the power is turned on>

Note: Refer to the indoor unit section for the codes starting with P and E.

Error code	Abnormal points and detection method	Cause	judgment and action
None	—	① No voltage is supplied to terminal block (TB1) of outdoor unit. a) Power supply breaker is turned off. b) Contact failure or disconnection of power supply terminal c) Open phase (L1 or L2 phase)	① Check following items. a) Power supply breaker b) Connection of power supply terminal block (TB1) c) Connection of power supply terminal block (TB1)
		② Electric power is not charged to power supply terminal of outdoor power circuit board. a) Contact failure of power supply terminal b) Open phase on the outdoor power circuit board (Disconnection of terminal on outdoor power circuit board)	② Check following items. a) Connection of power supply terminal block (TB1) b) Connection of terminal on outdoor power circuit board
		③ Electric power is not supplied to outdoor controller circuit board. a) Disconnection of connector (CNDC)	③ Check connection of the connector (CNDC) on the outdoor controller circuit board. Check connection of the connector CNDC on the outdoor power circuit board. Refer to "10-8. TEST POINT DIAGRAM".
		④ Disconnection of reactor (DCL or ACL)	④ Check connection of reactor. (DCL or ACL) Refer to "7. WIRING DIAGRAM".
		⑤ Disconnection of outdoor noise filter circuit board or parts failure in outdoor noise filter circuit board. (AK48, 60)	⑤ a) Check connection of outdoor noise filter circuit board.(AK48, 60) b) Replace outdoor noise filter circuit board. Refer to "10-8. TEST POINT DIAGRAM". (AK48, 60)
		⑥ Defective outdoor power circuit board	⑥ Replace outdoor power circuit board.
		⑦ Defective outdoor noise filter circuit board (AK48,60)	⑦ Replace outdoor noise filter circuit board (AK48,60)
		⑧ Defective outdoor controller circuit board	⑧ Replace controller board (When items above are checked but the units cannot be repaired)
F5 (5201)	**63H or TRS connector open** Abnormal if 63H or TRS connector circuit is open for 3 minutes continuously after power supply. 63H: High pressure switch TRS: Thermal protector	① Disconnection or contact failure of 63H or TRS connector on outdoor controller circuit board	① Check connection of 63H and TRS connector on outdoor controller circuit board. Refer to "10-8. TEST POINT DIAGRAM".
		② Disconnection or contact failure of 63H or TRS	② Check the 63H and TRS side of connecting wire.
		③ 63H or TRS is working due to defective parts.	③ Check continuity by multimeter. Replace the parts if the parts are defective.
		④ Defective outdoor controller circuit board	④ Replace outdoor controller circuit board.

Error code	Abnormal points and detection method	Cause	judgment and action
EA (6844)	**Miswiring of indoor/outdoor unit connecting wire** (1) Outdoor controller circuit board can automatically check the number of connected indoor units. Abnormal if the number cannot be checked automatically due to miswiring of indoor/outdoor unit connecting wire, etc. after power is turned on for 4 minutes. (2) Abnormal if outdoor controller circuit board detects excessive number of indoor units.	① Contact failure or miswiring of indoor/outdoor unit connecting wire ② Diameter or length of indoor/outdoor unit connecting wire is out of specified capacity. ③ Excessive number of indoor units are connected to 1 indoor unit. (4 units or more) ④ Defective transmitting receiving circuit of outdoor controller circuit board ⑤ Defective transmitting receiving circuit of indoor controller board ⑥ Defective indoor power board ⑦ 2 or more outdoor units have refrigerant address “0”. (In the case of group control) ⑧ Noise has entered into power supply or indoor/outdoor unit connecting wire.	① Check disconnection or looseness or polarity of indoor/outdoor unit connecting wire of indoor and outdoor units. ② Check diameter and length of indoor/outdoor unit connecting wire. Total wiring length: 262 ft [80 m] (including wiring connecting each indoor unit and between indoor and outdoor unit) Also check if the connection order of flat cable is S1, S2, S3. ③ Check the number of indoor units that are connected to one outdoor unit. (If EA is detected) ④–⑥ Turn the power off once and on again to check. Replace outdoor controller circuit board, indoor controller board or indoor power board if abnormality is detected again. ⑦ Check if refrigerant addresses (SW1-3 to SW1-6 on outdoor controller circuit board) are overlapping in the case of group control system. ⑧ Check transmission path and remove the cause. Note: The descriptions above, ①–⑧, are for EA, Eb and EC.
Eb (6845)	**Miswiring of indoor/outdoor unit connecting wire (converse wiring or disconnection)** (1) Outdoor controller circuit board can automatically set the unit number of indoor units. (2) Abnormal if the indoor unit number cannot be set within 4 minutes after power on because of miswiring (converse wiring or disconnection) of indoor/outdoor unit connecting wire.	① Contact failure or miswiring of indoor/outdoor unit connecting wire ② Diameter or length of indoor/outdoor unit connecting wire is out of specified capacity. ④ Defective transmitting receiving circuit of outdoor controller circuit board ⑤ Defective transmitting receiving circuit of indoor controller board ⑥ Defective indoor power board ⑦ 2 or more outdoor units have refrigerant address “0” . (In the case of group control) ⑧ Noise has entered into power supply or indoor/outdoor unit connecting wire.	
EC (6846)	**Startup time over** The unit cannot finish Startup process within 4 minutes after power on.	① Contact failure of indoor/outdoor unit connecting wire ② Diameter or length of indoor/outdoor unit connecting wire is out of specified capacity. ⑦ 2 or more outdoor units have refrigerant address “0”. (In the case of group control) ⑧ Noise has entered into power supply or indoor/outdoor unit connecting wire.	
U1 (1302)	**High pressure (High pressure switch 63H operated) /High compressor temperature (Thermal protector TRS operated)** Abnormal if high pressure switch 63H (4.15 MPa, 602psig) or thermal protector TRS (248˚F [120˚C]) operated during compressor operation	① Short cycle of indoor unit ② Clogged filter of indoor unit ③ Decreased airflow caused by dirt of indoor fan ④ Dirt of indoor heat exchanger ⑤ Locked indoor fan motor ⑥ Malfunction of indoor fan motor	①–⑥ Check indoor unit and repair defect.
		⑦ Defective operation of stop valve (Not full open)	⑦ Check if stop valve is fully open.
		⑧ Clogged or broken pipe	⑧ Check piping and repair defect.
		⑨ Locked outdoor fan motor ⑩ Malfunction of outdoor fan motor ⑪ Short cycle of outdoor unit ⑫ Dirt of outdoor heat exchanger	⑨–⑫ Check outdoor unit and repair defect.
		⑬ Decreased airflow caused by defective inspection of outside temperature thermistor (It detects lower temperature than actual temperature.)	⑬ Check the detected temperature of outside temperature thermistor on LED display. (SW2 on A-Control Service Tool : Refer to "10-9. FUNCTION OF SWITCHES, CONNECTORS AND JUMPERS".)
		⑭ Disconnection or contact failure of connector (63H or TRS) on outdoor controller board ⑮ Disconnection or contact failure of 63H or TRS connection ⑯ Defective outdoor controller board	⑭–⑯ Turn the power off and check if F5 is displayed when the power is turned on again. When F5 is displayed, refer to “Judgment and action” for F5.
		⑰ Defective action of linear expansion valve	⑰ Check linear expansion valve. Refer to "10-5. HOW TO CHECK THE PARTS".
		⑱ Malfunction of fan driving circuit	⑱ Replace outdoor controller board.
		⑲ Overheated compressor operation caused by shortage of refrigerant	⑲ Check intake superheat. Check leakage of refrigerant. Charge additional refrigerant.
		⑳ Defective operation of stop valve	⑳ Check if stop valve is fully open.

<Abnormalities detected while unit is operating>

<table>
<tr><th>Error code</th><th>Abnormal points and detection method</th><th>Cause</th><th>judgment and action</th></tr>
<tr><td>U2
(TH4: 1102)
(TH33: 1132)
(Refrigerant shortage: 1501)</td><td>(1)High discharge temperature
Abnormal if discharge temperature thermistor (TH4) exceeds 239˚F [115°C] or 221˚F [105°C] continuously for 5 minutes.
Abnormal if condenser/evaporator temperature thermistor (TH5) exceeds 104˚F [40°C] during defrosting and discharge temperature thermistor (TH4) exceeds 230˚F [110°C].

(2) High discharge superheat
Abnormal if discharge superheat (Cooling: [Higher temperature of TH4 or TH33] − TH6 /
Heating: [Higher temperature of TH4 or TH33] − TH5)
exceeds 126˚F [70˚C] continuously for 10 minutes.

(3) High comp. surface temperature
Abnormal if comp. surface temperature thermistor (TH33) exceeds 239˚F [115°C] or 221˚F [105°C] continuously for 5 minutes.</td><td>① Overheated compressor operation caused by shortage of refrigerant
② Defective operation of stop valve
③ Defective thermistor
④ Defective outdoor controller board
⑤ Defective action of linear expansion valve
⑥ Clogging with foreign objects in refrigerant circuit
Note: Clogging occur in the parts which become below freezing point when water enters in refrigerant circuit.
⑦ In the case of the unit does not restart:
Detection temp. of thermistor (TH33) ≥ 203˚F [95˚C]</td><td>① Check intake superheat.
Check leakage of refrigerant.
Charge additional refrigerant.
② Check if stop valve is fully open.
③④ Turn the power off and check if U3 is displayed when the power is on again. When U3 is displayed, refer to “Judgment and action” for U3.
⑤ Check linear expansion valve.
Refer to "10-5. HOW TO CHECK THE PARTS" and "10-6. HOW TO CHECK THE COMPONENTS".
⑥ After recovering refrigerant, remove water from entire refrigerant circuit under vacuum more than 1 hour.</td></tr>
<tr><td>U3
(TH4: 5104)
(TH33: 5132)</td><td>Open/short circuit of outdoor unit temperature thermistor (TH4, TH33)
Abnormal if open (37˚F [3°C] or less) or short (422˚F [217°C] or more) is detected during compressor operation.
(Detection is inoperative for 10 minutes of compressor starting process and for 10 minutes after and during defrosting.)
TH4: Thermistor <Discharge>
TH33: Thermistor <Comp. surface></td><td>① Disconnection or contact failure of connectors (TH4, TH33) on the outdoor controller circuit board
② Defective thermistor
③ Defective outdoor controller circuit board</td><td>① Check connection of connector (TH4, TH33) on the outdoor controller circuit board. Check breaking of the lead wire for TH4 or TH33. Refer to "10-8. TEST POINT DIAGRAM".
② Check resistance value of TH4, TH33, or temperature by microprocessor. (Thermistor/TH4, TH33: Refer to "10-5. HOW TO CHECK THE PARTS".) (SW2 on A-Control Service Tool: Refer to "10-9. FUNCTION OF SWITCHES, CONNECTORS AND JUMPERS".)
③ Replace outdoor controller board.</td></tr>
<tr><td>U4
(TH3: 5105)
(TH6: 5107)
(TH7: 5106)
(TH8: 5110)
(TH32: 5105)</td><td>Open/short of outdoor unit thermistors (TH3, TH6, TH7, TH8 and TH32)
Abnormal if open or short is detected during compressor operation.
Open detection of thermistors TH3 and TH6 is inoperative for 10 seconds to 10 minutes after compressor starting and 10 minutes after and during defrosting.
Note: Check which unit has abnormality in its thermistor by switching the mode of SW2. (PAC-SK52ST) (Refer to "10-9. FUNCTION OF SWITCHES, CONNECTORS AND JUMPERS".)

<table><tr><th colspan="2">Thermistors</th><th rowspan="2">Open detection</th><th rowspan="2">Short detection</th></tr><tr><th>Symbol</th><th>Name</th></tr><tr><td>TH3</td><td>Thermistor <Liquid></td><td>−58°F [−50°C] or below</td><td>194°F [90°C] or above</td></tr><tr><td>TH6</td><td>Thermistor <2-phase pipe></td><td>−58°F [−50°C] or below</td><td>194°F [90°C] or above</td></tr><tr><td>TH7</td><td>Thermistor <Ambient></td><td>−58°F [−50°C] or below</td><td>194°F [90°C] or above</td></tr><tr><td>TH8</td><td>Thermistor <Heat sink></td><td>−54°F [−48°C] or below</td><td>216°F [102°C] or above</td></tr><tr><td>TH32</td><td>Thermistor <Suction></td><td>−58°F [−50°C] or below</td><td>194°F [90°C] or above</td></tr></table></td><td>① Disconnection or contact failure of connectors
(Outdoor controller circuit board: TH3,TH6/TH7, TH32
Outdoor power circuit board: CN3)
② Defective thermistor
③ Defective outdoor controller circuit board</td><td>① Check connection of connector (TH3,TH6/TH7, TH32) on the outdoor controller circuit board. Check connection of connector (CN3) on the outdoor power circuit board.
Check breaking of the lead wire for thermistor (TH3,TH6,TH7,TH8, TH32). Refer to "10-8. TEST POINT DIAGRAM".
② Check resistance value of thermistor (TH3,TH6,TH7,TH8, TH32) or check temperature by microprocessor. (Thermistor/TH3, TH6, TH7, TH8, TH32: Refer to "10-5. HOW TO CHECK THE PARTS".) (SW2 on A-Control Service Tool: Refer to "10-9. FUNCTION OF SWITCHES, CONNECTORS AND JUMPERS".)
③ Replace outdoor controller circuit board.
Note: Emergency operation is available in the case of abnormalities of TH3, TH6, TH7 and TH32. Refer to "10-7. EMERGENCY OPERATION".</td></tr>
</table>

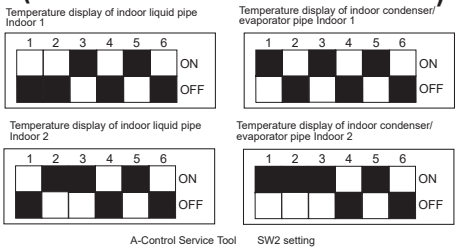
Error code	Abnormal points and detection method	Cause	judgment and action
U5 (4230)	**Temperature of heat sink** Abnormal if heat sink thermistor (TH8) detects temperature indicated below. AK48/60 ····· 172˚F [78°C] AK36/42 ····· 177˚F [81°C]	① The outdoor fan motor is locked. ② Failure of outdoor fan motor	①② Check outdoor fan.
		③ Airflow path is clogged.	③ Check airflow path for cooling.
		④ Rise of ambient temperature	④ Check if there is something which causes temperature rise around outdoor unit. (Upper limit of ambient temperature is 114˚F [46°C].) Turn off power and on again to check if U5 is displayed within 30 minutes. If U4 is displayed instead of U5, follow the action to be taken for U4.
		⑤ Defective thermistor	⑤ Check resistance value of thermistor (TH8) or temperature by microprocessor. (Thermistor/TH8: Refer to "10-5. HOW TO CHECK THE PARTS".) (SW2 on A-Control Service Tool: Refer to "10-9. FUNCTION OF SWITCHES, CONNECTORS AND JUMPERS".
		⑥ Defective input circuit of outdoor power circuit board	⑥ Replace outdoor power circuit board.
		⑦ Failure of outdoor fan drive circuit	⑦ Replace outdoor controller circuit board.
U6 (4250)	**Power module** Check abnormality by driving power module if overcurrent is detected. (UF or UP error condition)	① Outdoor stop valve is closed.	① Open stop valve.
		② Decrease of power supply voltage	② Check facility of power supply.
		③ Looseness, disconnection or converse of compressor wiring connection	③ Correct the wiring (U·V·W phase) to compressor. Refer to "10-8. TEST POINT DIAGRAM" (Outdoor power circuit board).
		④ Defective compressor	④ Check compressor referring to "10-5. HOW TO CHECK THE PARTS".
		⑤ Defective outdoor power circuit board	⑤ Replace outdoor power circuit board.
U7 (1502)	**Too low superheat due to low discharge temperature** Abnormal if discharge superheat is continuously detected less than or equal to 5˚F [−15˚C] for 3 minutes even though linear expansion valve has minimum open pulse after compressor starts operating for 15 minutes.	① Disconnection or loose connection of discharge thermistor (TH4) ② Defective holder of Discharge thermistor	①②Check the installation conditions of discharge thermistor (TH4).
		③ Disconnection or loose connection of linear expansion valve's coil	③ Check the coil of linear expansion valve. Refer to "10-6. HOW TO CHECK THE COMPONENTS".
		④ Disconnection or loose connection of linear expansion valve's connector	④ Check the connection or contact of LEV-A and LEV-B on outdoor controller circuit board.
		⑤ Defective linear expansion valve	⑤ Check linear expansion valve. Refer to "10-5. HOW TO CHECK THE PARTS".
U8 (4400)	**Outdoor fan motor** Abnormal if the rotational frequency of fan motor is not detected during DC fan motor operation. Fan motor rotational frequency is abnormal if the following conditions are observed: • 100 rpm or below detected continuously for 15 seconds at 68˚F [20°C] or more outside air temperature. • 50 rpm or below or 1500 rpm or more detected continuously for 1 minute.	① Failure in the operation of the DC fan motor	① Failure in the operation of the DC fan motor
		② Failure in the outdoor circuit controller board	② Failure in the outdoor circuit controller board

Error code	Abnormal points and detection method		Cause	judgment and action
U9 (4220)	Detailed codes	To find out the detail history (latest) about U9 error, turn ON SW2-1, 2-2, and 2-6. Refer to "10-9. FUNCTION OF SWITCHES, CONNECTORS AND JUMPERS".		
	01	**Overvoltage error** • Increase to DC bus voltage to 430V	① Abnormal increase in power source voltage	① Check the field facility for the power supply.
			② Disconnection of compressor wiring	② Correct the wiring (U·V·W phase) to compressor. Refer to "10-8. TEST POINT DIAGRAM" (Outdoor power circuit board).
			③ Defective outdoor power circuit board	③ Replace outdoor power circuit board.
			④ Compressor has a ground fault.	④ Check compressor for electrical insulation. Replace compressor.
	02	**Undervoltage error** • Instantaneous decrease in DC bus voltage to 200 V	① Decrease in power source voltage, instantaneous stop.	① Check the field facility for the power supply.
			② Defective converter drive circuit in outdoor power circuit board	② Replace outdoor power circuit board.
			③ Defective 52C drive circuit in outdoor power circuit board	③ Replace outdoor power circuit board.
			④ Disconnection or loose connection of CN2 on the outdoor power circuit board/ controller circuit board	④ Check CN2 wiring.
			⑤ Power circuit failure on DC supply for 15 VDC output on outdoor controller circuit board	⑤ Replace outdoor controller circuit board.
	04	**Input current sensor error** • Decrease in input current through outdoor unit to 0.1 A only if operation frequency is more than or equal to 40 Hz or compressor current is more than or equal to 6 A.	① Defective input current detection circuit in outdoor power circuit board	① Replace outdoor power circuit board.
			② Defective outdoor controller circuit board	② Replace outdoor controller circuit board.
	08	**Abnormal power synchronous signal** • No input of power synchronous signal to power circuit board • Power synchronous signal of 44 Hz or less, or 65 Hz or more is detected on power circuit board.	① Distortion of power source voltage, noise superimposition	① Check the field facility for the power supply.
			② Disconnection or loose connection of ground wiring	② Check ground wiring.
			③ Disconnection or loose connection of CN2 on the outdoor power circuit board/ controller circuit board	③ Check CN2 wiring.
			④ Defective power synchronous signal in outdoor controller circuit board	④ Replace outdoor controller circuit board.
			⑤ Defective power synchronous signal circuit in outdoor power circuit board	⑤ Replace outdoor power circuit board.
	10	**PFC error (Overvoltage/ Undervoltage/Overcurrent)** • PFC detected any of the following: a) Decrease in PFC control voltage to 13 VDC or lower b) Increase in input current as follows: AK36, 42, 48, 60NL: 62 A peak	① Abnormal increase in power source voltage ② Decrease in power source voltage, instantaneous stop	①② Check the field facility for the power supply.
			③ Disconnection of compressor wiring	③ Correct the wiring (U·V·W phase) to compressor. Refer to "10-8. TEST POINT DIAGRAM".
			④ Misconnection of reactor (DCL)	④ Correct the wiring (U·V·W phase) or reactor (DCL).
			⑤ Defective outdoor power circuit board	⑤ Replace outdoor power circuit board.
			⑥ Defective reactor (DCL)	⑥ Replace reactor (DCL).
			⑦ Disconnection or loose connection of CN2 on the outdoor power circuit board/ controller circuit board	⑦ Check CN2 wiring.
	80	**Input voltage sensor error** a) Increase in input voltage to 290 V or higher b) Decrease in input voltage to 162 V or lower c) A short or open circuit is detected in the input voltage detection circuit	① Distortion of power source voltage, noise superimposition	① Check the field facility for the power supply.
			② Disconnection or loose connection of ground wiring	② Check ground wiring.
			③ Disconnection or loose connection of power supply wiring on the outdoor power circuit board/ controller circuit board	③ Check power supply wiring.
			④ Defective input voltage signal circuit in outdoor power circuit board judgement and action	④ Replace outdoor power circuit board.

Error code	Abnormal points and detection method	Cause	judgment and action
UF (4100)	**Compressor overcurrent interruption (When compressor locked)** Abnormal if overcurrent of DC bus or compressor is detected within 30 seconds after compressor starts operating.	① Stop valve is closed. ② Decrease of power supply voltage ③ Looseness, disconnection or reverse of compressor wiring connection ④ Defective compressor ⑤ Defective outdoor power board ⑥DIP switch setting for selecting model is incorrect on the outdoor power circuit board.	① Open stop valve. ② Check facility of power supply. ③ Correct the wiring (U·V·W phase) to compressor. Refer to "10-8. TEST POINT DIAGRAM".(Outdoor power circuit board). ④ Check compressor. Refer to "10-5. HOW TO CHECK THE PARTS". ⑤ Replace outdoor power circuit board. ⑥ Check that the DIP switch setting is correct on the outdoor power circuit board by referring to "Model Select" in "1) Function of switches" in "10-9. FUNCTION OF SWITCHES, CONNECTORS AND JUMPERS".
UH (5300)	**Current sensor error** • It is abnormal for 38A the input current or 10 seconds continuous 34A or more. (AK36/42) • It is abnormal for 44A the input current or 10 seconds continuous 40A or more. (AK48/60)	① Defective circuit of current sensor on outdoor power circuit board ② Decrease of power supply voltage	① Replace outdoor power circuit board. ② Check the facility of power supply.
Ud (1504)	**Overheat protection** Abnormal if outdoor liquid pipe thermistor (TH3) detects 158˚F [70°C] or more during compressor operation.	① Defective outdoor fan (fan motor) or short cycle of outdoor unit during cooling operation ② Defective outdoor liquid pipe thermistor (TH3) ③ Defective outdoor controller board	① Check outdoor unit air passage. ②③ Turn the power off and on again to check the error code. If U4 is displayed, follow the U4 processing direction.
UL (1300)	**Low pressure** Abnormal if the following conditions are detected continuously for 3 minutes after compressor starts heating operating for 10 minutes. (1) Heating mode Detection mode 1 TH7 − TH3 ≤ 7°F [4°C] and TH5 − Indoor room temperature ≤ 4°F [2°C] Detection mode 2 TH7 − TH3 ≤ 4°F [2°C], TH5 − Indoor room temperature ≤ 7°F [4°C], and TH2 − Indoor room temperature ≤ 7°F [4°C] Detection mode 3 TH7 − TH3 ≤ 7°F [4°C], TH5 − Indoor room temperature ≤ 4°F [2°C], and TH4 − TH5 ≥ 36°F [20°C] (2) Cooling mode TH6 − TH7 ≤ 4°F [2°C], TH3 − TH7 ≤ 4°F [2°C], and Indoor room temperature - Indoor liquid pipe temperature (TH2) ≤ 9°F [5°C] Note that it applies when the compressor accumulated operating time is under 30 minutes, and 7 minutes has passed after the compressor operation. TH32 - TH4 ≥ 36°F [20°C] and TH32 > 144°F [80°C] Thermistors: TH3: Liquid pipe temperature TH33: Comp. surface temperature TH4: Discharge temperature TH5: Indoor 2-phase pipe temperature TH7: Ambient temperature Thermistor TH3: Outdoor liquid pipe temperature TH4: Discharge temperature TH5: Indoor cond./eva. temperature TH6: Outdoor 2-phase pipe temperature TH7: Outdoor ambient temperature	① Stop valve of outdoor unit is closed during operation. ② Leakage or shortage of refrigerant ③ Malfunction of linear expansion valve ④ Clogging with foreign objects in refrigerant circuit Note: If water enters in refrigerant circuit, clogging may occur where the part becomes below freezing point.	① Check stop valve. ② Check intake superheat. Check leakage of refrigerant. Check additional refrigerant. ③ Check linear expansion valve. Refer to "10-5. HOW TO CHECK THE PARTS". ④ After recovering refrigerant, remove water from entire refrigerant circuit under vacuum more than 1 hour.

Error code	Abnormal points and detection method	Cause	judgment and action
UP (4210)	**Compressor overcurrent interruption** Abnormal if overcurrent DC bus or compressor is detected after compressor starts operating for 30 seconds.	① Stop valve of outdoor unit is closed. ② Decrease of power supply voltage ③ Looseness, disconnection or reverse of compressor wiring connection ④ Defective fan of indoor/outdoor units ⑤ Short cycle of indoor/outdoor units ⑥ Defective input circuit of outdoor controller board ⑦ Defective compressor	① Open stop valve. ② Check facility of power supply. ③ Correct the wiring (U·V·W phase) to compressor. Refer to "10-8. TEST POINT DIAGRAM" (Outdoor power circuit board). ④ Check indoor/outdoor fan. ⑤ Resolve short cycle. ⑥ Replace outdoor controller circuit board. Check compressor. ⑦ Refer to "10-5. HOW TO CHECK THE PARTS". Note: Before the replacement of the outdoor controller circuit board, disconnect the wiring to compressor from the outdoor power circuit board and check the output voltage among phases, U, V, W, during test run. No defect on board if voltage among phases (U-V, V-W and W-U) is same. Make sure to perform the voltage check with same performing frequency.
E0 or E4 (6831, 6834)	**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. (Error code: E0) (2) Abnormal if sub-remote controller could not receive for any signal for 2 minutes. (Error code: E0) (1) Abnormal if indoor controller board cannot receive any data normally from remote controller board or from other indoor controller boards for 3 minutes. (Error code: E4) (2) The indoor controller board cannot receive any signal from remote controller for 2 minutes. (Error 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 address "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 [1640ft] (Do not use cable with 3 or more cores.) • The number of connecting indoor units: max. 16 units • The number of connecting remote controller: max. 2 units 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 occurs 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.
E1 or E2 (6201, 6202)	**Remote controller control board** (1) Abnormal if data cannot be normally read from the nonvolatile memory of the remote controller control board. (Error code: E1) (2) Abnormal if the clock function of remote controller cannot be normally operated. (Error code: E2)	① Defective remote controller	① Replace remote controller.
E3 or E5 (6832, 6833)	**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. (Error code: E3) (2) Remote controller receives and transmits data simultaneously for comparison. If different data is detected 30 times in a row, it is judged to be an error. (Error code: E3) (1) Abnormal if indoor controller board could not find blank of transmission path. (Error code: E5) (2) Indoor controller board receives and transmits data simultaneously for comparison. If different data is detected 30 times in a row, it is judged to be an error. (Error code: E5)	① 2 remote controllers are set as "main". (In the 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.

Error code	Abnormal points and detection method	Cause	judgment and action
E6 (6840)	**Indoor/outdoor unit communication error (Signal receiving error)** (1) Abnormal if indoor controller board could not receive any signal normally for 6 minutes after turning the power on. (2) Abnormal if indoor controller board could not receive any signal normally for 3 minutes. (3) Consider the unit as abnormal under the following conditions: When 2 or more indoor units are connected to an outdoor unit; when the indoor controller board could not receive a signal for 3 minutes from the outdoor controller circuit board; or when a signal which allows the outdoor controller circuit board to transmit signals.	① Contact failure, short circuit or miswiring (reversed wiring) of indoor/outdoor unit connecting wire	Note: Check LED display on outdoor controller circuit board. (Connect A-Control service tool (PAC-SK52ST)) Refer to EA–EC item if LED displays EA–AC. ① Check disconnecting or looseness of indoor/outdoor unit connecting wire of indoor unit or outdoor unit. Check all the units in the case of twin indoor unit system.
		② Defective transmitting receiving circuit of outdoor controller circuit board ③ Defective transmitting receiving circuit of indoor controller board Noise has entered into indoor/outdoor unit connecting wire. ④ High pressure (High pressure switch 63H operated) ⑤ High compressor temperature (Thermal protector TRS operated)	②–⑤ Turn the power off, wait 10 minutes and on again to check. If abnormality occurs again, replace indoor controller board or outdoor controller circuit board.
		⑥ Defective fan motor	⑥ Turn the power off, and detach fan motor from connector (CNF1). Then turn the power on again. If abnormality is not displayed, replace fan motor. If abnormality is displayed, replace outdoor controller circuit board.
		⑦ Defective rush current resistor of outdoor power circuit board	⑦ Check RS1 on outdoor noise filter board with multimeter. If open is detected, replace the board. Note: Other indoor controller boards may have defect for twin 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. Replace indoor controller board or outdoor controller circuit board if abnormality is displayed again.
E8 (6840)	**Indoor/outdoor unit communication error (Signal receiving error) (Outdoor unit)** (1) Abnormal if outdoor controller circuit board could not receive anything normally for 3 minutes.	① Contact failure of indoor/outdoor unit connecting wire ② Defective communication circuit of outdoor controller circuit board ③ Defective communication circuit of indoor controller board ④ Noise has entered into indoor/outdoor unit connecting wire.	① Check disconnection or looseness of indoor/outdoor unit connecting wire of indoor or outdoor units. ②–④ Turn the power off and on again to check. Replace indoor controller board or outdoor controller circuit board if abnormality is displayed again.
E9 (6841)	**Indoor/outdoor unit communication error (Transmitting error) (Outdoor unit)** (1) Abnormal if “0” receiving is detected 30 times continuously though outdoor controller circuit board has transmitted “1”. (2) Abnormal if outdoor controller circuit board could not find blank of transmission path for 3 minutes.	① Indoor/outdoor unit connecting wire has contact failure. ② Defective communication circuit of outdoor controller circuit board ③ Noise has entered power supply. ④ Noise has entered indoor/outdoor unit connecting wire.	① Check disconnection or looseness of indoor/outdoor unit connecting wire. ②–④ Turn the power off and on again to check. Replace outdoor controller circuit board if abnormality is displayed again.
EF (6607 or 6608)	**Non defined error code** This code is displayed when non defined error code is received.	① Noise has entered transmission wire of remote controller. ② Noise has entered indoor/outdoor unit connecting wire. ③ Outdoor unit is not a power inverter models.	①② Turn the power off and on again to check. Replace indoor controller board or outdoor controller circuit board if abnormality is displayed again. ③ Replace outdoor unit with power-inverter type outdoor unit.
EE (7130)	Abnormal if a connection of indoor unit and outdoor unit which uses different refrigerant is detected.	① Unauthorized connection of indoor unit and outdoor unit The following combinations are not authorized; • Outdoor unit: Models with R454B refrigerant • Indoor unit: Ducted type indoor unit (PVA/PEAD/PAA/SVZ) with R410A refrigerant	① Alter the connection referring to the combination as shown in the “Cause” column.

Error code	Abnormal points and detection method	Cause	judgment and action
Ed (0403)	**Serial communication error** (1) Abnormal if serial communication between outdoor controller circuit board and outdoor power circuit board is defective.	① Breaking of wire or contact failure of connector CN2 between the outdoor controller circuit board and the outdoor power circuit board ② Breaking of wire or contact failure of connector CN4 between the outdoor controller circuit board and the outdoor power circuit board ③ Defective communication circuit of outdoor power circuit board ④ Defective communication circuit of outdoor controller circuit board for outdoor power circuit board	①② Check connection of each connector CN2 and CN4 between the outdoor controller circuit board and the outdoor power circuit board. ③ Replace outdoor power circuit board. ④ Replace outdoor controller circuit board.
	(2) Abnormal if communication between outdoor controller circuit board and M-NET board is not available.	① Breaking of wire or contact failure of connector between outdoor controller circuit board and M-NET board ② Contact failure of M-NET board power supply line ③ Noise has entered into M-NET transmission wire	① Check disconnection, looseness, or breaking of connection wire between outdoor controller circuit board (CNMNT) and M-NET board (CN5). ② Check disconnection, looseness, or breaking of connection wire between outdoor controller circuit board (CNVMNT) and M-NET board (CND). ③ Check M-NET transmission wiring method.
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 dry mode. Cooling range: Indoor pipe temperature (TH2 or TH5) − intake temperature (TH1) ≤ −5.4˚F [−3°C] TH: Lower temperature between liquid pipe temperature and condenser/evaporator 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: 5.4˚F [3°C] ≤ (Condenser/evaporator temperature (TH5) − intake temperature (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 Reversed connection of extension pipe (on plural units connection) ③ Reversed 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)'.)  ②③Check reversed connection of extension pipe or reversed wiring of indoor/outdoor unit connecting wire.
PL	**Abnormal refrigerant circuit** During Cooling, Dry, or Auto Cooling operation, the following conditions are regarded as failures when they 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 167˚F [75°C] 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 "10-5. HOW TO CHECK THE PARTS". 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>**
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 the 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 the 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 the refrigerant leaks. • Repair the part where refrigerant leaks. • Turn on the power again. • Replace the refrigerant sensor if the problem is not fixed.

<M-NET communication error>

Note: “Indoor unit” in the text indicates M-NET board in outdoor unit.

Error code	Abnormal points and detection method	Cause	judgment and action
A0 (6600)	**Address duplicate definition** This error is displayed when transmission from the units of same address is detected. Note: The address and attribute displayed at remote controller indicate the controller that detected abnormality.	① There are 2 or more same address of controller of outdoor unit, indoor unit, FRESH MASTER, or LOSSNAY. ② Noise has entered into transmission signal and signal was transformed.	Search the unit with same address as abnormality is detected. If the same address is found, turn off the power supply of outdoor unit and indoor unit and FRESH MASTER or LOSSNAY at the same time for 2 minutes or more after the address is corrected, and turn the power on again. Check transmission waveform or noise on transmission wire.
A2 (6602)	**Hardware error of transmission processor** Transmission processor intended to transmit “0”, but “1” appeared on transmission wire. Note: The address and attribute display at remote controller indicate the controller that detected abnormality.	① Error is detected if waveform is transformed when wiring works of transmission wire of outdoor unit, indoor unit, FRESH MASTER, or LOSSNAY are done, or polarity is changed with the power on and transmission data collide each other. ② Defective transmitting receiving circuit of transmission processor ③ Transmission data is changed by the noise on transmission.	① If the works of transmission wire is done with the power on, turn off the power supply of outdoor unit, indoor unit, FRESH MASTER or LOSSNAY at the same time for 2 minutes or more, and turn the power on again. ② Check transmission waveform or noise on transmission wire.
A3 (6603)	**BUS BUSY** (1) Overtime error by collision damage Abnormal if transmitting signal is not possible for 8–10 minutes continuously because of collision of transmission. (2) Data could not reach transmission wire for 8–10 minutes continuously because of noise, etc. Note: The address and attribute displayed at remote controller indicate the controller that detected abnormality.	① Transmission processor could not transmit signal because short cycle voltage of noise and the like have entered into transmission wire continuously. ② Transmission quantity has increased and transmission is not possible because there was wiring mistake of terminal block for transmission wire (TB3) and terminal block for central control (TB7) in outdoor unit. ③ Mixed transmissions due to failure of outdoor unit repeater, which is a function to connect or disconnect transmission of control and central control system, increases occupation rate on transmission wire, detecting an error.	① Check if transmission wire of indoor unit, FRESH MASTER, LOSSNAY, or remote controller is not connected to terminal block for central control (TB7) of outdoor unit. ② Check if transmission wire of indoor unit, FRESH MASTER, or LOSSNAY is not connected to terminal block for transmission wire of outdoor unit. ③ Check if terminal block for transmission wire (TB3) and terminal block for central control (TB7) are not connected. ④ Check transmission waveform or noise on transmission wire.
A6 (6606)	**Communication error with communication processor** Defective communication between unit processor and transmission processor Note: The address and attribute display at remote controller indicate the controller that detected abnormality.	① Data of transmission processor or unit processor is not transmitted normally because of accidental trouble such as noise or lightning surge. ② Address forwarding from unit processor is not transmitted normally because of defective transmission processor hardware.	Turn off the power supply of outdoor unit, indoor unit, FRESH MASTER, and LOSSNAY at the same time for 2 minutes or more, and turn the power on again. System returns to normal if abnormality was accidental malfunction. If the same abnormality occurs again, abnormality-occurred controller may be defective.

Error code	Abnormal points and detection method	Cause	judgment and action
A7 (6607)	**NO ACK signal** (1) Transmitting side controller detects abnormal if a message was transmitted but there is no reply (ACK) that a message was received. Transmitting side detects abnormality every 30 seconds, 6 times continuously. Note: The address and attribute displayed at remote controller is indicate the controller that did not reply (ACK).	Common factors that have no relation with abnormality source. ① The unit of former address does not exist as address switch has changed while the unit was energized. ② Voltage drop and weak signal causing communication error, are caused by over-range transmission wire. • Maximum distance ····· 656 ft [200 m] • Remote controller line·· 39 ft [12 m] ③ Voltage drop and weak signal causing communication error are caused by type-unmatched transmission wire. Type····· With shield wire- CVVS, CPEVS With normal wire (no shield)- VCTF, VCTFK, CVV CVS, VVR, VVF, VCT Diameter···1.25 mm² [AWG16] or more ④ Voltage drop and weak signal causing communication error are caused by over-numbered units. ⑤ Accidental malfunction of abnormality-detected controller (noise, lightning surge) ⑥ Defective of abnormality occurred controller	**Always try the following when the error "A7" occurs.** ① Turn off the power supply of outdoor unit, indoor unit, FRESH MASTER, and LOSSNAY at the same time for 2 minutes or more, and turn the power on again. If malfunction was accidental, the unit returns to normal. ② Check address switch of abnormality occurred address. ③ Check disconnection or looseness of abnormality occurred or abnormality detected transmission wire (terminal block and connector) ④ Check if tolerance range of transmission wire is not exceeded. ⑤ Check if type of transmission wire is correct or not. If the cause of trouble is causing in ①–⑤ above, repair the defective, then turn off the power supply of outdoor unit, indoor unit, FRESH MASTER, and LOSSNAY at the same time for 2 minutes or more, and turn the power on again. • If the cause of trouble is not described in ①–⑤ above, in single refrigerant system (one outdoor unit), controller of displayed address or attribute is defective. • If the cause of trouble is not in ①–⑤ above in different refrigerant system (2 or more outdoor units), judge with ⑥. ⑥ If address of abnormality source is the address that should not exist, there is the unit that memorizes nonexistent address information. Delete unused address information with manual setting function of remote controller. Only the system FRESH MASTER or LOSSNAY are connected to, or the system that is equipped with group setting of different refrigerant system. If the cause of trouble is not included any of ①–⑥ above, replace the controller board of displayed address or attribute. If the unit does not return to normal, multi controller board of outdoor unit may be defective (repeater circuit). Replace multi-controller board one by one to check if the unit returns to normal.
	(2) If displayed address or attribute is outdoor unit, Indoor unit detects abnormality when indoor unit transmitted to outdoor unit and there was no reply (ACK).	① Contact failure of transmission wire of outdoor unit or indoor unit ② Disconnection of transmission connector (CN2M) of outdoor unit ③ Defective transmitting receiving circuit of outdoor unit or indoor unit	
	(3) If displayed address or attribute is indoor unit, remote controller detects abnormality when remote controller transmitted to indoor unit and there was no reply (ACK).	① During group operation with indoor unit of multi-refrigerant system, if remote controller transmit to indoor unit while outdoor unit power supply of one refrigerant system is turned off or within 2 minutes of restart, abnormality is detected. ② Contact failure of transmission wire of remote controller or indoor unit ③ Disconnection of transmission connector (CN2M) of indoor unit ④ Defective transmitting receiving circuit of indoor unit or remote controller	

Continued to the next page.

From the previous page.

Error code	Abnormal points and detection method	Cause	judgment and action
A7 (6607)	(4) If displayed address or attribute is remote controller, indoor unit detects abnormality when indoor unit transmitted to remote controller and there was no reply (ACK).	① During group operation with indoor unit of multi- refrigerant system, if indoor unit transmit to remote controller while outdoor unit power supply of one refrigerant system is turned off or within 2 minutes of restart, abnormality is detected. ② Contact failure of transmission wire of remote controller or indoor unit ③ Disconnection of transmission connector (CN2M) of indoor unit ④ Defective transmitting receiving circuit of indoor unit or remote controller	
	(5) If displayed address or attribute is FRESH MASTER, indoor unit detects abnormality when indoor unit transmitted to FRESH MASTER and there was no reply (ACK).	① During sequential operation of indoor unit and FRESH MASTER of other refrigerant system, if indoor unit transmits to FRESH MASTER while outdoor unit power supply of same refrigerant system with FRESH MASTER is turned off or within 2 minutes of restart, abnormality is detected. ② Contact failure of transmission wire of indoor unit or FRESH MASTER ③ Disconnection of transmission connector (CN2M) of indoor unit or FRESH MASTER ④ Defective transmitting receiving circuit of indoor unit or FRESH MASTER	**Same as mentioned in "A7" of the previous page.**
	(6) If displayed address or attribute is LOSSNAY. Indoor unit detects abnormality when indoor unit transmitted to LOSSNAY and there was no reply (ACK).	① If the power supply of LOSSNAY is turned off, indoor unit detects abnormality when it transmits to LOSSNAY. ② During sequential operation of indoor unit and LOSSNAY of other refrigerant system, if indoor unit transmits to LOSSNAY while outdoor unit power supply of same refrigerant system with LOSSNAY is turned off or within 2 minutes of restart, abnormality is detected. ③ Contact failure of transmission wire of indoor unit of LOSSNAY ④ Disconnection of transmission connector (CN2M) of indoor unit ⑤ Defective transmitting receiving circuit of indoor unit or LOSSNAY	
	(7) If displayed address or attribute is nonexistent.	① The unit of former address does not exist as address switch has changed while the unit was energized. ② Abnormality is detected when indoor unit transmitted because the address of FRESH MASTER and LOSSNAY are changed after sequential operation of FRESH MASTER and LOSSNAY by remote controller.	

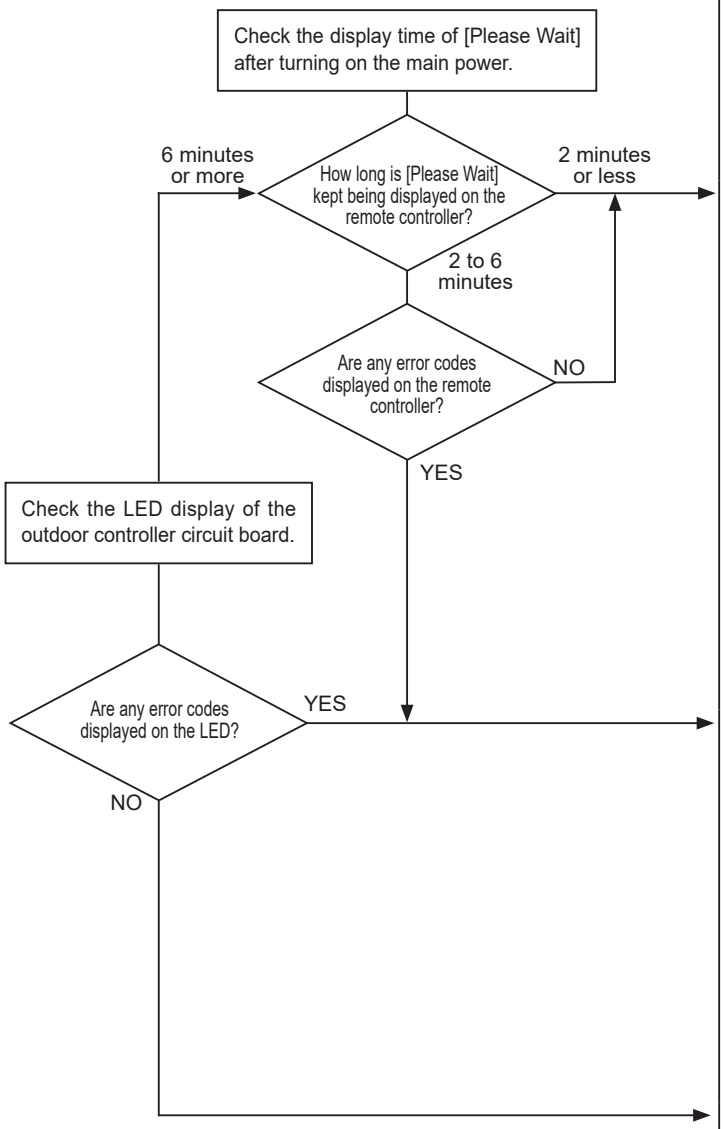
Error code	Abnormal points and detection method	Cause	judgment and action
A8 (6608)	**M-NET NO RESPONSE** Abnormal if a message was transmitted and there were reply (ACK) that message was received, but response command does not return. Transmitting side detects abnormality every 30 seconds, 6 times continuously. Note: The address and attribute displayed at remote controller indicate the controller that did not reply (ACK).	① Transmitting condition is repeated fault because of noise and the like. ② Extension of transmission wire voltage and signal is caused by over-range transmission wire. • Maximum distance ····· 656 ft [200 m] • Remote controller line ···39 ft [12 m] ③ Extension of transmission wire voltage and signal is caused by type-unmatched transmission wire. Type····· With shield wire- CVVS, CPEVS With normal wire (no shield)- VCTF, VCTFK, CVV CVS, VVR, VVF, VCT Diameter···1.25 mm^2 [AWG16] or more ④ Accidental malfunction of abnormality-occurred controller	① Check transmission waveform or noise on transmission wire. ② Turn off the power supply of the outdoor unit, indoor unit, FRESH MASTER, and LOSSNAY at the same time for 2 minutes or more, and turn the power on again. If malfunction was accidental, the unit returns to normal. If the same abnormality occurs again, controller of displayed address and attribute may be defective.

10-4. TROUBLESHOOTING OF PROBLEMS

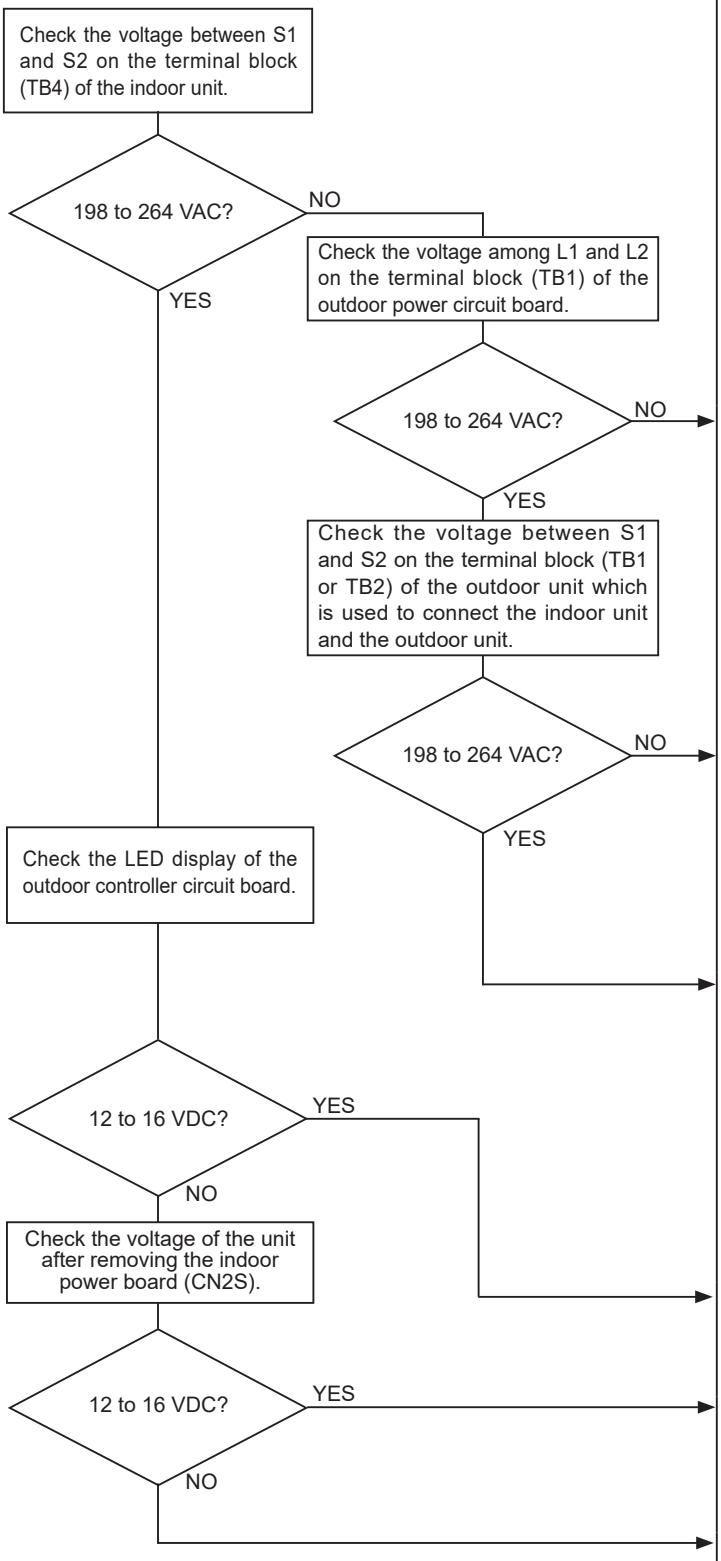
Phenomena	Factor	Countermeasure
(1) Remote controller display does not work.	① 12 VDC is not supplied to remote controller. (Power supply display ⦿ is not indicated on LCD.)	①Check LED2 on indoor controller board. (1) When LED2 is lit, check the remote controller wiring for breaking or contact failure. (2) When LED2 is blinking, check short circuit of remote controller wiring. (3) When LED2 is not lit, refer to phenomena No.3 below.
	② 12–15 VDC is supplied to remote controller, however, no display is indicated. • [Please Wait] is not displayed. • [Please Wait] is displayed.	② Check the following. • Failure of remote controller if [Please Wait] is not displayed • Refer to phenomena No.2 below if [Please Wait] is displayed.
(2) [Please Wait] display is remained on the remote controller.	① At longest 2 minutes after the power supply [Please wait] is displayed to start up.	① Normal operation
	② Communication error between the remote controller and indoor unit	② Self-diagnosis of remote controller
	③ Communication error between the indoor and outdoor unit	③ [Please wait] is displayed for 6 minutes at most in the case of indoor/outdoor unit communication error. Check LED3 on indoor controller board. (1) When LED3 is not blinking, check indoor/outdoor connecting wire for miswiring. (Reversed wiring of S1 and S2, or break of S3 wiring.) (2) When LED3 is blinking, indoor/outdoor connecting wire is normal.
	④ Outdoor unit protection device connector is open.	④ Check LED display on outdoor controller circuit board. Refer to "10-9. FUNCTION OF SWITCHES, CONNECTORS AND JUMPERS". Check protection device connector (63H and TRS) for contact failure. Refer to "10-8. TEST POINT DIAGRAM".
(3) When pressing the remote controller operation switch the OPERATION display is appeared but it will be turned off soon.	① After cancelling to select function from the remote controller, the remote controller operation switch will not be accepted for approx. 30 seconds.	① Normal operation
(4) Even controlling by the IR wireless remote controller no beep is heard and the unit does not start operating. Operation display is indicated on IR wireless remote controller.	① The pair number settings of the IR wireless remote controller and indoor controller board are mismatched.	① Check the pair number settings.

Phenomena	Factor	Countermeasure
(5) When operating by the IR wireless remote controller, beep sound is heard, however, unit does not start operating.	① No operation for 2 minutes at most after the power supply ON.	① Normal operation
	② Hand-held remote controller operation is prohibited. • Remote controlling adaptor is connected to CN32 on the indoor controller board. • Hand-held remote controller operation is prohibited by centralized controller etc. since it is connected to MELANS.	② Normal operation
	③ Refer to factor of phenomena No.2.	③ Check the details of phenomena No.2.
(6) Remote controller display works normally and the unit performs cooling operation, however, the capacity cannot be fully obtained. (The air does not cool well.)	① Refrigerant shortage	① If refrigerant leaks, discharging temperature rises and LEV opening increases. Inspect leakage by checking the temperature and opening. Check pipe connections for gas leakage.
	② Filter clogging	② Open intake grille and check the filter. Clean the filter by removing dirt or dust on it.
	③ Heat exchanger clogging	③ If the filter is clogged, indoor pipe temperature rises and discharging pressure increases. Check if heat exchanger is clogged by inspecting discharging pressure. Clean the heat exchanger.
	④ Air duct short cycle	④ Remove the blockage.
(7) Remote controller display works normally and the unit performs heating operation, however, the capacity cannot be fully obtained.	① Linear expansion valve fault Opening cannot be adjusted well due to linear expansion valve fault.	① Discharging temperature and indoor heat exchanger temperature does not rise. Inspect the failure by checking discharging pressure. Replace linear expansion valve.
	② Refrigerant shortage	② If refrigerant leaks, discharging temperature rises and LEV opening increases. Inspect leakage by checking the temperature and opening. Check pipe connections for gas leakage.
	③ Lack of insulation for refrigerant piping	③ Check the insulation.
	④ Filter clogging	④ Open intake grill and check the filter. Clean the filter by removing dirt or dust on it.
	⑤ Heat exchanger clogging	⑤ If the filter is clogged, indoor pipe temperature rises and discharging pressure increases. Check if heat exchanger is clogged by inspecting discharging pressure. Clean the heat exchanger.
	⑥ Air duct short cycle	⑥ Remove the blockage.
	⑦ Bypass circuit of outdoor unit fault	⑦ Check refrigerant system during operation.
(8) ① For 3 minutes after temperature adjuster turns off, the compressor will not start operating even if temperature adjuster is turned on. ② For 3 minutes after temperature adjuster turns on, the compressor will not stop operating even if temperature adjuster is turned off. (Compressor stops operating immediately when turning off by the remote controller.)	①② Normal operation (For protection of compressor)	①② Normal operation

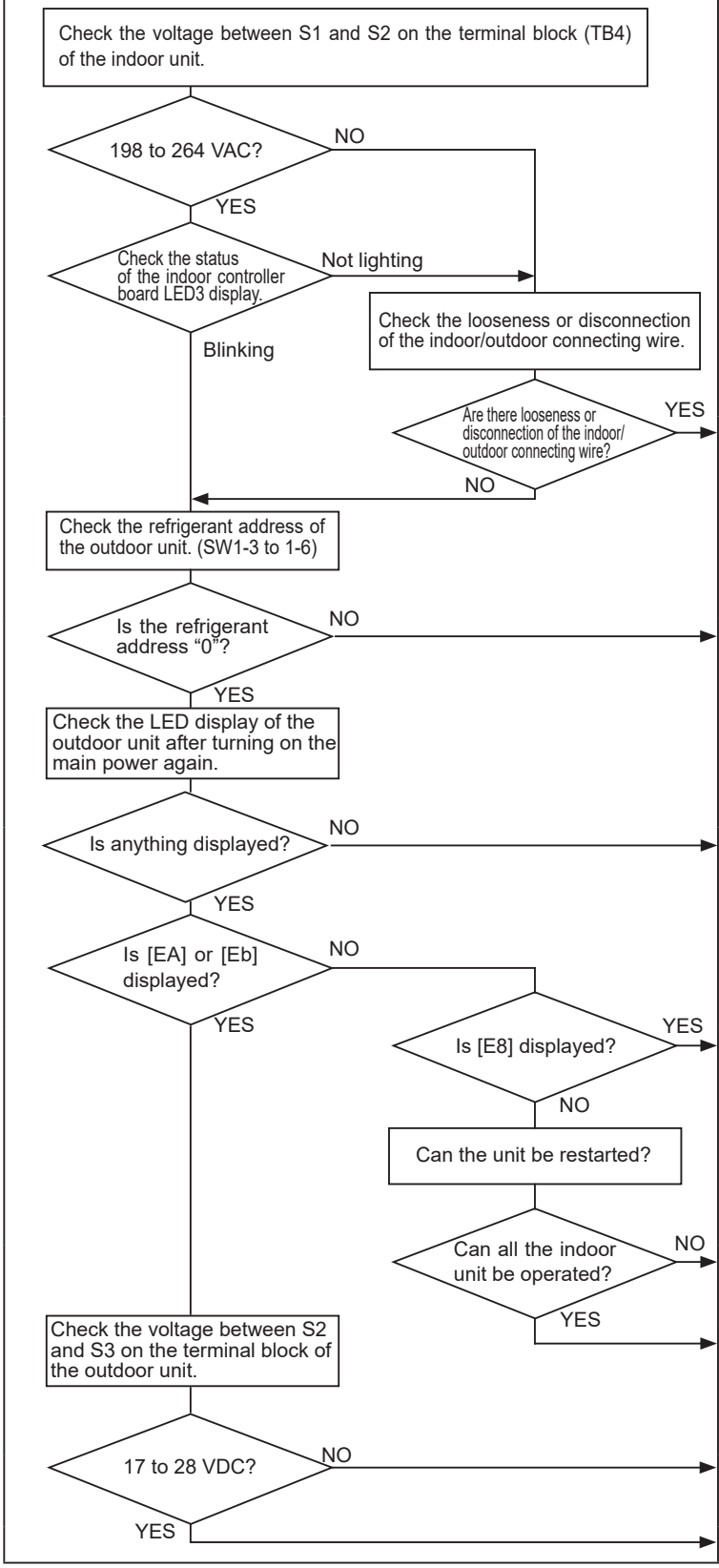
Symptoms: [Please Wait] is kept being displayed on the remote controller.

Diagnosis flow	Cause	Inspection method and troubleshooting
	• [Please Wait] will be displayed during the startup diagnosis after turning on the main power	• Normal The startup diagnosis will be over in around 2 minutes
	• Miswiring of indoor/ outdoor connecting wire • Breaking of indoor/ outdoor connecting wire (S3) • Defective indoor controller board • Defective outdoor controller circuit board	• Refer to “Self-diagnosis action table” in order to solve the trouble. • In the case of communication errors, the display of remote controller may not match the LED display of the outdoor unit.
	• Defective indoor controller board • Defective remote controller	

Symptoms: Nothing is displayed on the remote controller. ①	LED display of the indoor controller board LED1: ○ LED2: ○ LED3: ○

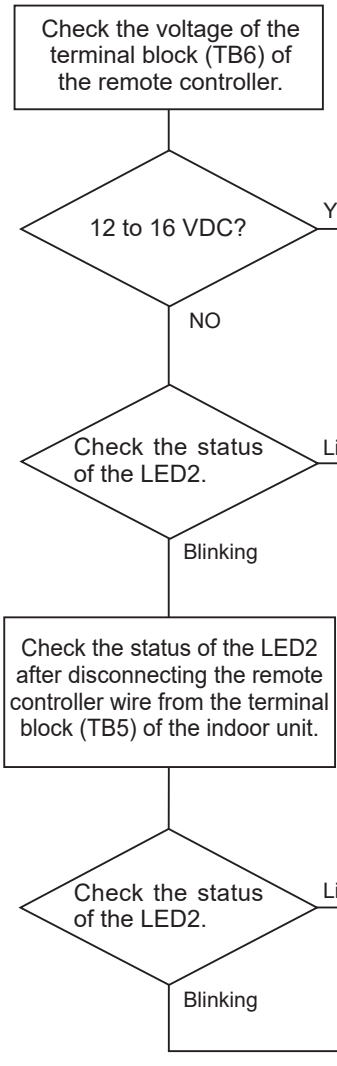
Diagnosis flow	Cause	Inspection method and troubleshooting
	• Troubles concerning power supply • Bad wiring of the outdoor controller board • The fuses on the outdoor controller circuit board are blown. • Bad wiring of the outdoor controller board • The fuses on the outdoor controller circuit board are blown • Defective indoor controller board • Miswiring, breaking or poor connection of indoor/outdoor connecting wire • Defective indoor power board	• Check the power wiring to the outdoor unit. • Check the breaker. • Check the wiring of the outdoor unit. • Check if the wiring is bad. Check if the fuses are blown. The fuses on the outdoor controller circuit board will be blown when the indoor/outdoor connecting wire short-circuits. • Check if miswiring, breaking or poor contact is causing this problem. The indoor/outdoor connecting wire is polarized 3-core type. Connect the indoor unit and the outdoor unit by wiring each pair of S1, S2 and S3 on the both side of indoor/outdoor terminal blocks. • Replace the indoor controller board. • Check if there is miswiring or breaking of wire. • Replace the indoor power board.

Symptoms: Nothing is displayed on the remote controller. ②	LED display of the indoor controller board LED1: ☀ LED2: ○ LED3: ○ or ◐



Diagnosis flow	Cause	Inspection method and troubleshooting
Are there looseness or disconnection of the indoor/ outdoor connecting wire? YES	• Breaking or poor contact of the indoor/ outdoor connecting wire	• Fix the breaking or poor contact of the indoor/outdoor connecting wire.
Is the refrigerant address "0"? NO	• Normal Only the unit which has the refrigerant address "0" supplies power to the remote controller.	• Set the refrigerant address to "0". In the case of the multiple grouping system, recheck the refrigerant address again.
Is anything displayed? NO	• Defective outdoor controller circuit board	• Replace the outdoor controller circuit board.
Is [E8] displayed? YES	• Defective outdoor controller circuit board	• Replace the outdoor controller circuit board.
Can all the indoor unit be operated? NO	• Defective indoor controller board	• Replace the indoor controller board of the indoor unit which does not operate.
YES	• Influence of electromagnetic noise	• Not abnormal. There may be the influence of electromagnetic noise. Check the transmission wire and get rid of the causes.
17 to 28 VDC? NO	• Defective outdoor power circuit board	• Replace the outdoor power circuit board.
YES	• Defective indoor power board	• Replace the indoor power board.

Symptoms: Nothing is displayed on the remote controller. ③	LED display of the indoor controller board LED1: ☀ LED2: ◐ or ☀ LED3: —

Diagnosis flow	Cause	Inspection method and troubleshooting
	• Defective remote controller • Breaking or poor contact of the remote controller wire • The remote controller wire short-circuits • Defective indoor controller board	• Replace the remote controller. • Check if there is breaking or poor contact of the remote controller wire. Check the voltage of the terminal block (TB5) connecting the remote controller wire. If it is not between 10 and 16 VDC, the indoor controller board must be defective. • Check if the remote controller wire is short-circuited. • Replace the indoor controller board.

• Before repair

Frequently Asked Questions

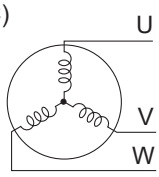
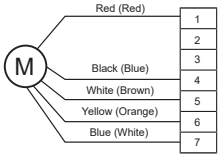
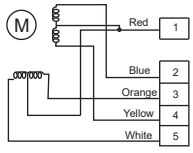
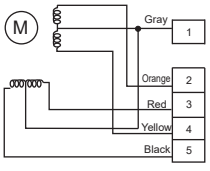
Questions from customers		Answers	Note
Unit does not operate at all.	1 The operating display of remote controller does not come on.	1 Check if power is supplied to air conditioner. Nothing appears on the display unless power is supplied.	
	2 Unit cannot be restarted for a while after it is stopped.	2 Wait around 3 minutes to restart unit. The air conditioner is in a state of being protected by the microprocessor's directive. Once the compressor is stopped, the unit cannot be restarted for 3 minutes. This control is also applied when the unit is turned on and off by remote controller or thermostat.	
	3 Error code appears and blinks on the display of remote controller.	3 Error code will be displayed if any protection devices of the air conditioner are actuated. What is error code?	Refer to "SELF-DIAGNOSIS ACTION TABLE". Check if servicing is required for the error.
Remote controller	1 [Please Wait] is displayed on the screen.	1 Wait around 2 minutes. An automatic startup test will be conducted for 2 minutes when power is supplied to the air conditioner. [Please Wait] will be kept displayed while that time.	
	2 [▦] is displayed on the screen.	2 This indicates that it is time to clean the air filters. Clean the air filters. [▦] can be cleared from the filter information of the maintenance menu. See the operation manual that came with the product for how to clean the filters.	Display time of [▦] depends on the model. Long life filter: 2500 hrs. Standard filter: 100 hrs.
	3 [Heat Standby] is displayed on the screen.	3 This is displayed when the unit starts HEAT operation, when the thermostat puts the compressor in operation mode, or when the outdoor unit ends DEFROST operation and returns to HEAT operation. The display will automatically disappear around 10 minutes later. While [Heat Standby] is displayed on the remote controller, the airflow amount will be restricted because the indoor unit's heat exchanger is not fully heated up. In addition to that, the up/down vane will be automatically set to horizontal blow in order to prevent cold air from directly blowing out to human body. The up/down vane will return to the setting specified by the remote controller when [Heat Standby] is released.	
	4 [Heat Defrost] is displayed on the screen. (No air comes out of the unit.)	4 The outdoor unit gets frosted when the outside temperature is low and the humidity is high. [Heat Defrost] indicates the DEFROST operation is being performed to melt this frost. The DEFROST operation ends in around 10 minutes (at most 15 minutes). During the DEFROST operation, the indoor unit's heat exchanger becomes cold, so the blower is stopped. The up/down vane will be automatically set to horizontal blow in order to prevent cold air from directly blowing out to human body. The display will turn into [Heat Standby] when DEFROST operation ends.	

Questions from customers		Answers	Note
The room cannot be cooled or heated sufficiently.		1 Check the set temperature of remote controller. The outdoor unit cannot be operated if the set temperature is not appropriate. The outdoor unit operates in the following modes. COOL: When the set temperature is lower than the room temperature. HEAT: When the set temperature is higher than the room temperature.	
		2 Check if filters are not dirty and clogged. If filters are clogged, the airflow amount will be reduced and the unit capacity will be lowered. See the instruction manual that came with the product for how to clean the filters.	
		3 Check there is enough space around the air conditioner. If there are any obstacles in the air intake or air outlet of indoor/outdoor units, they block the airflow direction so that the unit capacity will be lowered.	
Sound comes out from the air conditioner.	1 A gas escaping sound is heard sometimes.	1 This is not a malfunction. This is the sound when the flow of refrigerant in the air conditioner is switched.	
	2 A cracking sound is heard sometimes.	2 This is not a malfunction. This is the sound when internal parts of units expand or contract when the temperature changes.	
	3 A buzzing sound is heard sometimes.	3 This is not a malfunction. This is the sound when the outdoor unit starts operating.	
	4 A ticking sound is heard from the outdoor unit sometimes.	4 This is not a malfunction. This is the sound when the fan of the outdoor unit is controlling the airflow amount in order to keep the optimum operating condition.	
	5 A sound similar to water flowing is heard from the unit.	5 This is not a malfunction. This is the sound when the refrigerant is flowing inside the indoor unit.	
Something is wrong with the blower.	1 The fan speed does not match the setting of the remote controller during DRY operation. (No air comes out sometimes during DRY operation.)	1 This is not a malfunction. During the DRY operation, the blower's ON/OFF is controlled by the microprocessor to prevent overcooling and to ensure efficient dehumidification. The fan speed cannot be set by the remote controller during DRY operation.	
	2 The fan speed does not match the setting of the remote controller in HEAT operation.	2 This is not a malfunction. 1) When HEAT operation starts, to prevent the unit from blowing cold air, the fan speed is gradually increased from 0 to the set speed, in proportion to the temperature rise of the discharged air. 2) When the room temperature reaches the set temperature and the outdoor unit stops, the unit starts the LOW AIR operation. 3) During HEAT operation, the DEFROST operation is performed to defrost the outdoor unit. During the DEFROST operation, the fan is stopped to prevent cold air coming out of the indoor unit.	The up/down vane will be automatically set to horizontal blow in these cases listed up on the left <1)–3)>. After a while, the up/down vane will be automatically moved according to the setting of the remote controller.

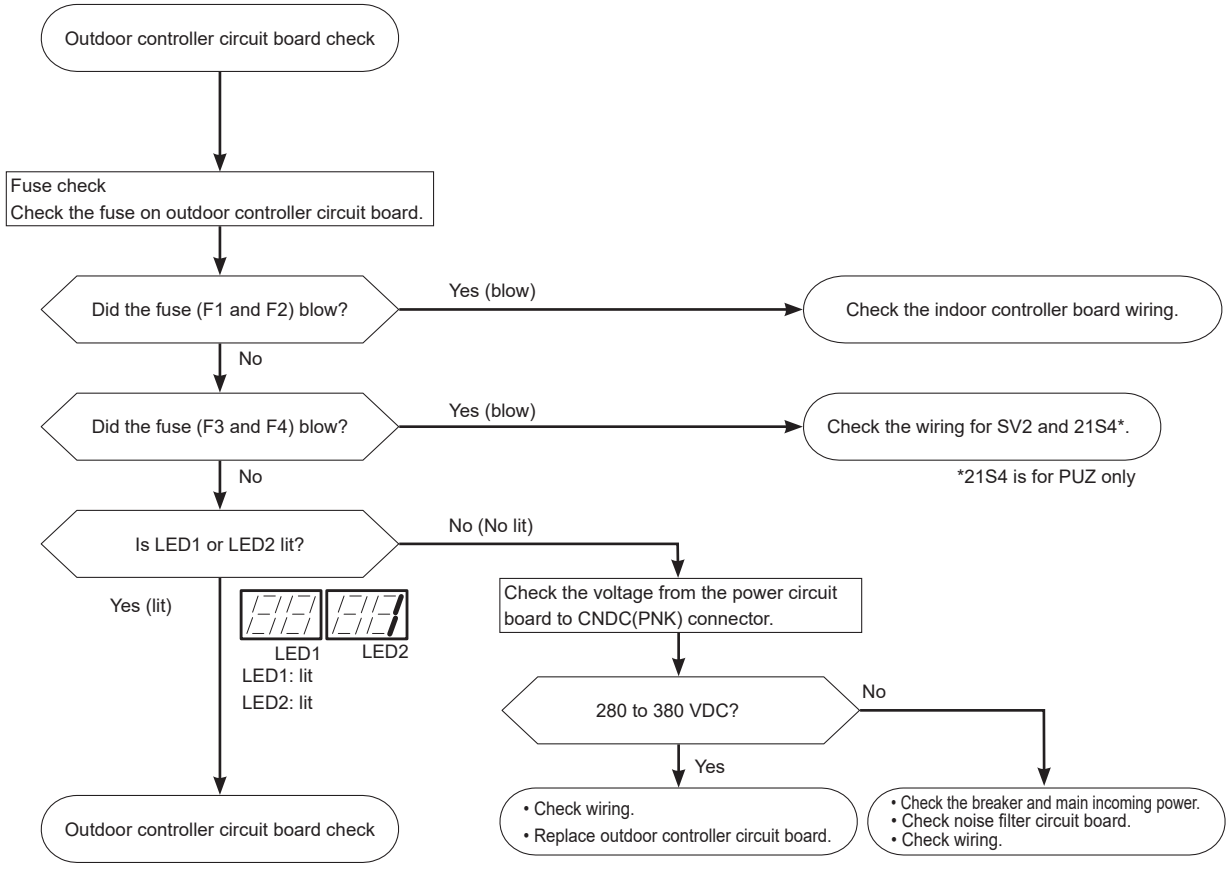
Questions from customers		Answers	Note
Something is wrong with the blower.	3 Air blows out for a while after HEAT operation is stopped.	3 This is not a malfunction. The blower is operating just for cooling down the heated-up air conditioner. This will be done within 1 minute. This control is conducted only when HEAT operation is stopped with the electric heater ON.	However, this control is also applied to the models which has no electric heater.
Something is wrong with the airflow direction.	1 The airflow direction is changed during COOL operation.	1 If the up/down vane is set to downward in COOL operation, it will be automatically set to horizontal blow by the microprocessor in order to prevent water from dropping down. [1h] will be displayed on the remote controller if the up/down vane is set to downward with the fan speed set to be less than [LOW].	
	2 The airflow direction is changed during HEAT operation. (The airflow direction cannot be set by remote controller.)	2 In HEAT operation, the up/down vane is automatically controlled according to the temperature of the indoor unit's heat exchange . In the following cases written below, the up/down vane will be set to horizontal blow, and the setting cannot be changed by remote controller. 1) At the beginning of HEAT operation 2) While the outdoor unit is being stopped by thermostat or when the outdoor unit gets started to operate. 3) During DEFROST operation The airflow direction will be back to the setting of remote controller when the above situations are released.	[Heat Standby] will be displayed on the remote controller in the case of 1) and 2). [Heat Defrost] will be displayed on the screen in the case of 3).
	3 The airflow direction does not change. (Up/down vane, left/ right louver)	3 1) Check if the vane is set to a fixed position. (Check if the vane motor connector is removed.) 2) Check if the air conditioner has a function for switching the air direction. 3) If the air conditioner does not have that function, [Unsupported function] will be displayed on the remote controller when the air direction or the louver button is pressed.	
The air conditioner starts operating even though any buttons on the remote controller are not pressed.		1 Check if you set ON/OFF timer. The air conditioner starts operating at the time designated if ON timer has been set before.	
		2 Check if any operations are ordered by distant control system or the central remote controller. While [Centrally controlled] is displayed on the remote controller, the air conditioner is under the control of external directive.	There might be a case that [Centrally controlled] will not be displayed.
		3 Check if power is recovered from power failure (black out). The units will automatically start operating when power is recovered after power failure (black out) occurs. This function is called "auto recovery feature from power ".	
The air conditioner stops even though any buttons on the remote controller are not pressed		1 Check if you set ON/OFF timer. The air conditioner stops operating at the time designated if OFF timer has been set before. 2 Check if any operations are ordered by distant control system or the central remote controller. While [Centrally controlled] is displayed on the remote controller, the air conditioner is under the control of external directive.	There might be a case that [Centrally controlled] will not be displayed.

Questions from customers	Answers	Note
A white mist is expelled from the indoor unit.	This is not a malfunction. This may occur when the operation is started in the room with high humidity.	
Water or moisture is expelled from the outdoor unit.	COOL: when pipes or piping joints are cooled, they sweat and water drips down. HEAT: water drips down from the heat exchanger. Note: Use optional parts “Drain Socket” and “Drain pan” if these water needs to be collected and drained out for once.	
The display of IR wireless remote controller gets dim or does not come on. The indoor unit does not receive a signal from remote controller at a long distance.	Batteries are being exhausted. Replace them and press the reset button of remote controller.	

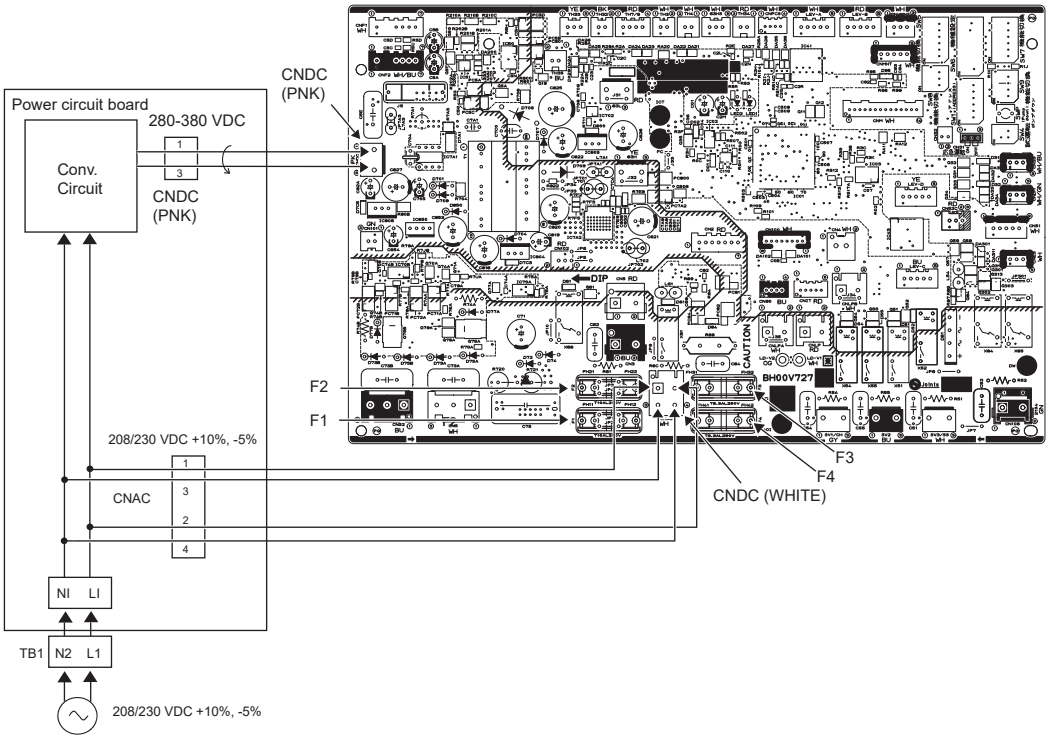
10-5. HOW TO CHECK THE PARTS

<table>
<tr><th>Parts name</th><th>Checkpoints</th></tr>
<tr><td>Thermistor (TH3)
<Liquid>
Thermistor (TH4)
<Discharge>
Thermistor (TH6)
< 2-phase pipe>
Thermistor (TH7)
<Ambient>
Thermistor (TH8)
<Heat sink>
Thermistor (TH32)
<Suction>
Thermistor (TH33)
<Comp. surface></td><td>Disconnect the connector then measure the resistance with a multimeter.
(At the ambient temperature 50 to 86°F [10 to 30°C])
<table><tr><th></th><th>Normal</th><th>Abnormal</th></tr><tr><td>TH4
TH33</td><td>160 to 410 kΩ</td><td rowspan="3">Open or short</td></tr><tr><td>TH3
TH6
TH7
TH32</td><td>4.3 to 9.6 kΩ</td></tr><tr><td>TH8</td><td>39 to 105 kΩ</td></tr></table></td></tr>
<tr><td>Solenoid valve coil
<4-way valve> (21S4)</td><td>Refer to “10-5-3. Check method of DC fan motor (fan motor/ outdoor controller circuit board)”.
Measure the resistance between the terminals with a multimeter.
(At the ambient temperature 68°F [20°C])
<table><tr><th colspan="2">Normal</th><th>Abnormal</th></tr><tr><td>AK36, 42</td><td>AK48, 60</td><td rowspan="2">Open or short</td></tr><tr><td>1200 ± 150 Ω</td><td>1707 ± 170 Ω</td></tr></table></td></tr>
<tr><td>Motor for compressor
(MC)
 
</td><td>Measure the resistance between the terminals with a multimeter.
(Winding temperature 68°F [20°C])
<table><tr><th colspan="2">Normal</th><th>Abnormal</th></tr><tr><td>AK36, 42</td><td>AK48, 60</td><td rowspan="2">Open or short</td></tr><tr><td>0.44 Ω</td><td>0.49 Ω</td></tr></table></td></tr>
<tr><td>Fan motor (MF1, MF2)
 
</td><td>Measure the resistance between the connector pins with a multimeter.
(At the ambient temperature 68°F [20ºC])
Note that the resistance between the connector pins may vary depending on the ambient temperature, so use those values as reference.
<table><tr><th></th><th colspan="4">Normal</th><th>Abnormal</th></tr><tr><th></th><th>Red - Blue</th><th>Brown - Blue</th><th>Orange - Blue</th><th>White - Blue</th><th rowspan="3">Open or short
(short, for White - Blue)</th></tr><tr><td>AK36, 42</td><td>1.3 MΩ</td><td>6.1 MΩ</td><td>220 kΩ</td><td>OL</td></tr><tr><td>AK48, 60</td><td>1.3 MΩ</td><td>6.1 MΩ</td><td>190 kΩ</td><td>OL</td></tr></table>*OL: Over Load</td></tr>
<tr><td>Linear expansion valve
(LEV-A/B)
 
</td><td>Disconnect the connector then measure the resistance with a multimeter.
(Winding temperature 68°F [20°C])
<table><tr><th colspan="4">Normal</th><th>Abnormal</th></tr><tr><td>Red - White</td><td>Red - Orange</td><td>Red - Yellow</td><td>Red - Blue</td><td rowspan="2">Open or short</td></tr><tr><td colspan="4">46 ± 4 Ω</td></tr></table></td></tr>
<tr><td>Linear expansion valve
(LEV-A/B)
 
</td><td>Disconnect the connector then measure the resistance with a multimeter.
(Winding temperature 68°F [20ºC])
<table><tr><th colspan="4">Normal</th><th>Abnormal</th></tr><tr><td>Gray - Black</td><td>Gray - Red</td><td>Gray - Yellow</td><td>Gray - Orange</td><td rowspan="2">Open or short</td></tr><tr><td colspan="4">46 ± 3 Ω</td></tr></table></td></tr>
</table>

10-5-1. Check methods of outdoor controller circuit board



Outdoor controller circuit board



10-5-2. Check methods of power circuit board

Power board check

Is the voltage of main incoming power 198–253 VAC?

No → • Check the breaker and power supply.

Yes

Is the voltage of CNDC(PNK) on outdoor controller circuit board 280–380 VDC?

No → Turn off the incoming power supply and check the resistance of PTC1 and PTC2 on the noise filter circuit board.

Yes

PTC1 or PTC2 =open?

No (normal) → • Check wiring. • Replace outdoor controller circuit board.

Yes (open) → • Replace the power board.

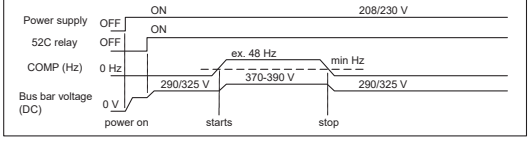
Is LED1 or LED2 lit?

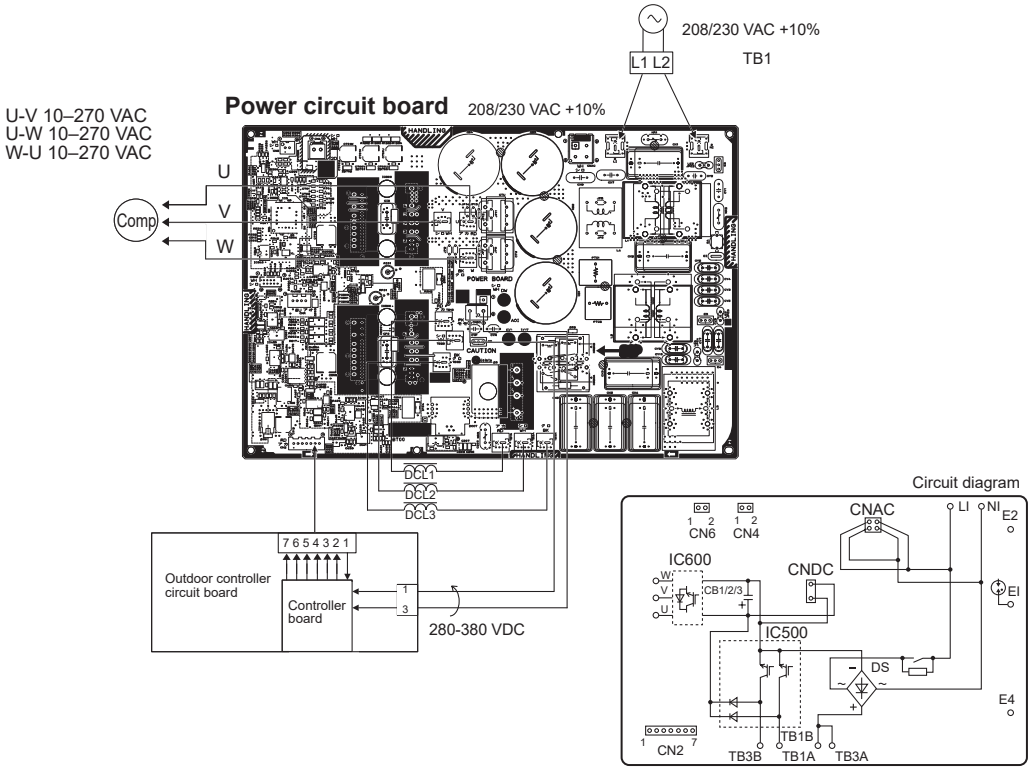
No → • Check wiring. • Check model setting switch SW6 on the outdoor controller circuit board. • Replace the power board.

Yes → Normal

Note: To check the voltage of the parts on this board with a multimeter is difficult due to its location. Test points are limited.

TIME CHART





10-5-3. Check methods of DC fan motor (fan motor/outdoor controller circuit board)

① Notes
- · High voltage is applied to the connector (CNF1, 2) for the fan motor. Pay attention to the service.
- · Do not pull out the connector (CNF1, 2) for the motor with the power supply on. (It causes trouble of the outdoor multi controller circuit board and fan motor.)

② Self check
Symptom: The outdoor fan cannot rotate.

Fuse check
Check the fuse (F5) on outdoor controller circuit board.

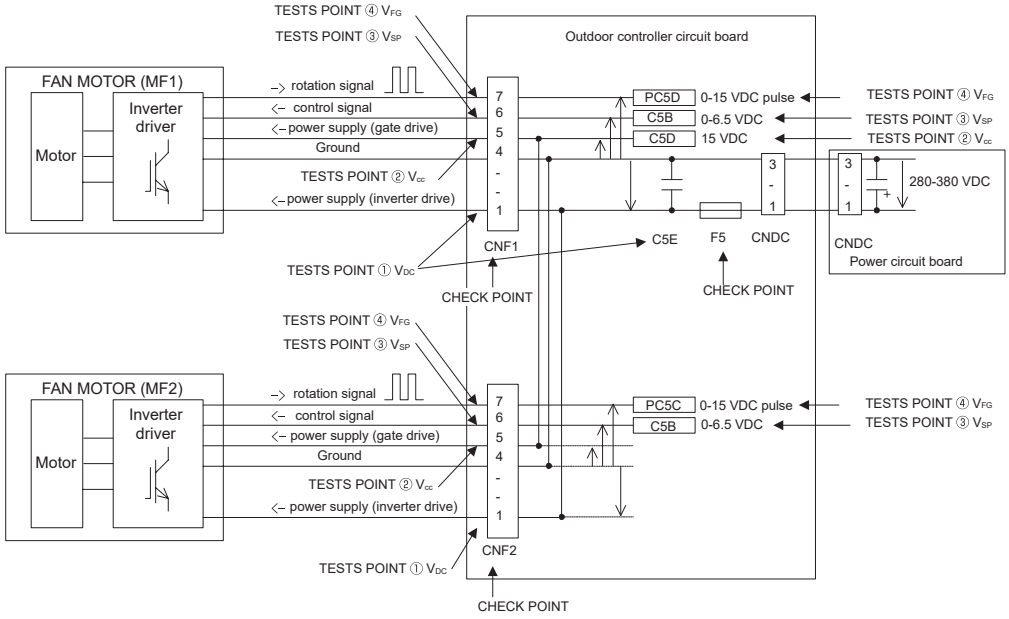
Did the F5 open?
- Yes → Disconnect the FAN motor connector and measure the resistance of connector pins. Refer to "10-5. HOW TO CHECK THE PARTS".
  - Is the fan motor normal?
    - Yes → Replace the outdoor controller circuit board (C.B.).
    - No → Replace the outdoor controller circuit board (C.B.) and the defective fan motor.
- No

Wiring contact check
Contact of fan motor connector (CNF1, 2)

Is there contact failure?
- Yes → Correct the wiring.
- No

Power supply check (Remove the connector (CNF1, 2))
Measure the voltage in the outdoor controller circuit board.
TEST POINT 1: V_{DC} (between 1 (+) and 4 (−) of the fan connector): 280–340 VDC (when PFC stops), 380 VDC (when PFC is operating)
TEST POINT 2: V_{CC} (between 5 (+) and 4 (−) of the fan connector): V_{CC} 15 VDC

Is the voltage normal?
- Yes → Replace the defective fan motor.
  - Yes
  - Check the operation of fan.
    - OK → Complete.
    - Fail → Replace the outdoor controller circuit board.
- No → Replace the outdoor multi controller circuit board.
  - Check the operation.
    - OK → Complete.
    - Fail → Replace the defective fan motor.



- · The inverter control P. C. board is built in the fan motor of this outdoor unit.
- · When F5 that is on controller board is opened, change the fan motor and outdoor controller board at the same time (F5 is impossible to change).
- · It is abnormal when the abnormality is detected from either both fan motors or only one side.

10-6. HOW TO CHECK THE COMPONENTS

<Thermistor feature chart>

Low temperature thermistors

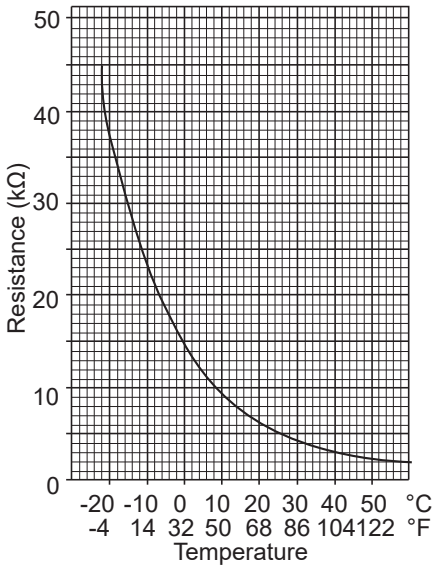
- Thermistor <Liquid> (TH3)
- Thermistor <2-phase pipe> (TH6)
- Thermistor <Ambient> (TH7)
- Thermistor <Suction> (TH32)

Thermistor R0 = 15 kΩ ± 3%
B constant = 3480 ± 1%

t (°C): $R_t = 15\exp\{3480(\frac{1}{273+t} - \frac{1}{273})\}$

T (°F): $R_T = 15\exp\{3480(\frac{1}{273+(T-32)/1.8} - \frac{1}{273})\}$

32°F [0°C]	15 kΩ	86°F [30°C]	4.3 kΩ
50°F [10°C]	9.6 kΩ	104°F [40°C]	3.0 kΩ
68°F [20°C]	6.3 kΩ		
77°F [25°C]	5.2 kΩ		



Medium temperature thermistor

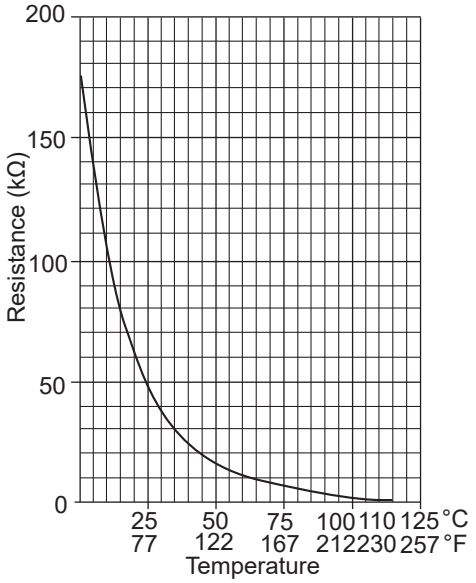
- Thermistor <Heat sink> (TH8)

Thermistor R50 = 17 kΩ ± 2%
B constant = 4150 ± 3%

t (°C): $Rt = 17\exp\{4150(\frac{1}{273+t} - \frac{1}{323})\}$

T (°F): $R_T = 17\exp\{4150(\frac{1}{273+(T-32)/1.8} - \frac{1}{323})\}$

32°F [0°C]	180 kΩ
77°F [25°C]	50 kΩ
122°F [50°C]	17 kΩ
158°F [70°C]	8 kΩ
194°F [90°C]	4 kΩ



High temperature thermistors

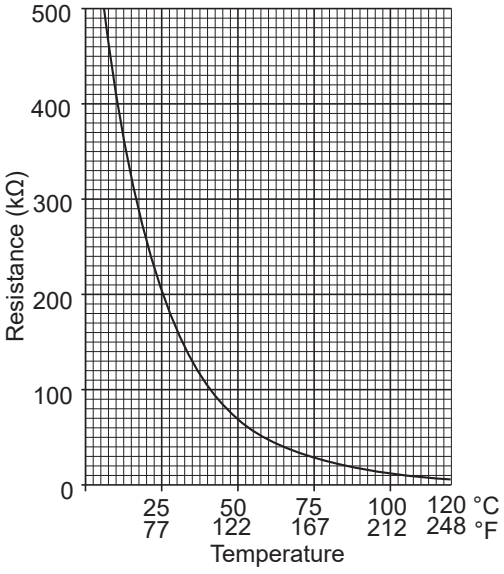
- Thermistor <Comp. surface> (TH33)
- Thermistor <Discharge> (TH4)

Thermistor R120 = 7.465 kΩ ± 2%
B constant = 4057 ± 2%

t (°C): $Rt = 7.465\exp\{4057(\frac{1}{273+t} - \frac{1}{393})\}$

T (°F): $R_T = 7.465\exp\{4057(\frac{1}{273+(T-32)/1.8} - \frac{1}{393})\}$

68°F [20°C]	250 kΩ	158°F [70°C]	34 kΩ
86°F [30°C]	160 kΩ	176°F [80°C]	24 kΩ
104°F [40°C]	104 kΩ	194°F [90°C]	17.5 kΩ
122°F [50°C]	70 kΩ	212°F [100°C]	13.0 kΩ
140°F [60°C]	48 kΩ	230°F [110°C]	9.8 kΩ



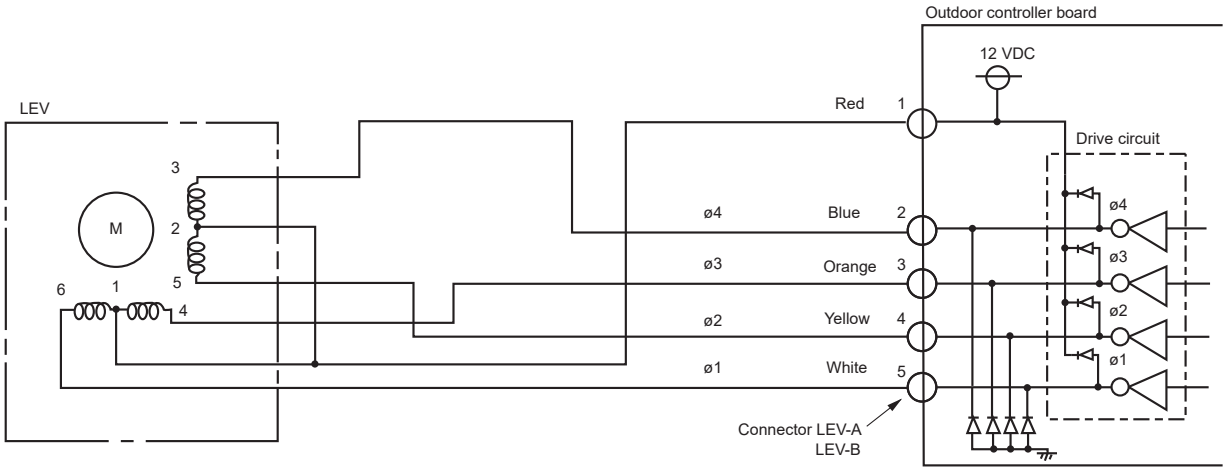
Linear expansion valve

(1) Operation summary of the linear expansion valve

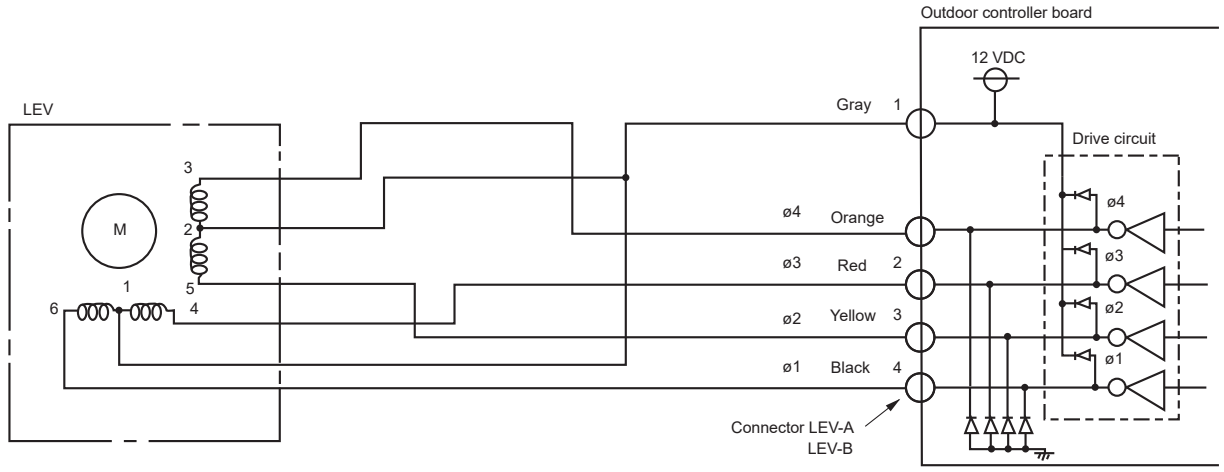
- The linear expansion valve opens/closes through stepping motor after receiving the pulse signal from the outdoor controller board.
- The valve position can be changed in proportion to the number of the pulse signal.

<Connection between the outdoor controller board and the linear expansion valve>

(AK36, 42)



(AK48, 60)



<Output pulse signal and the valve operation>

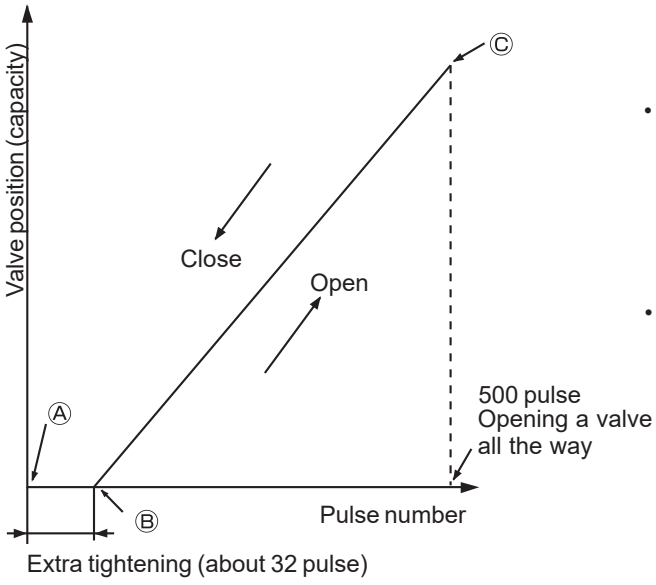
Output (Phase)	Output							
	1	2	3	4	5	6	7	8
ø1	ON	ON	OFF	OFF	OFF	OFF	OFF	ON
ø2	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
ø3	OFF	OFF	OFF	ON	ON	ON	OFF	OFF
ø4	OFF	OFF	OFF	OFF	OFF	ON	ON	ON

The output pulse shifts in the following order.

Opening a valve: 8 → 7 → 6 → 5 → 4 → 3 → 2 → 1 → 8
Closing a valve: 1 → 2 → 3 → 4 → 5 → 6 → 7 → 8 → 1

- When the linear expansion valve operation stops, all output phases become OFF.

(2) Linear expansion valve operation



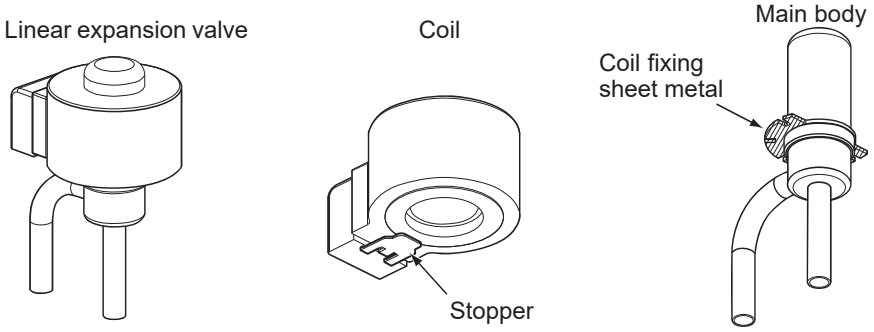
- When the power is turned on, 700 pulse closing the valve signal will be sent till it goes to Ⓐ point in order to define the valve position. (The pulse signal is being sent for about 20 seconds.)
- When the valve moves smoothly, there is no sound or vibration occurring from the linear expansion valve; however, when the pulse number moves from Ⓑ to Ⓐ or when the valve is locked, sound can be heard than the normal situation. No sound is heard when the pulse number moves from Ⓑ to Ⓐ in case coil is burn out or motor is locked by the open-phase.
- Sound can be detected by placing the ear against the screw driver handle while putting the screw driver to the linear expansion valve.

(3) How to attach and detach the coil of linear expansion valve

PUZ-AK36NL-U1 PUZ-AK42NL-U1
PUY-AK36NL-U1 PUY-AK42NL-U1

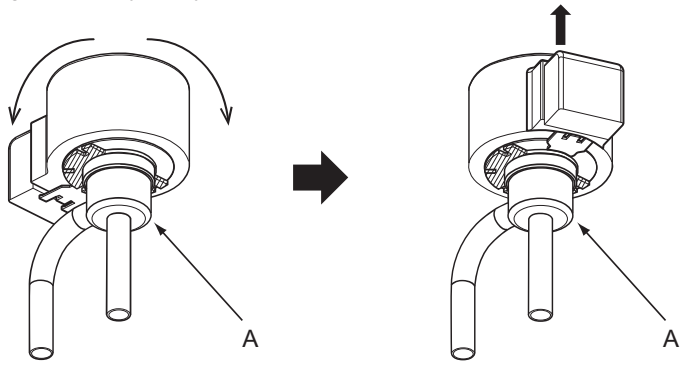
<Composition>

The linear expansion valve is separable into the main body and the coil as shown in the diagram below.



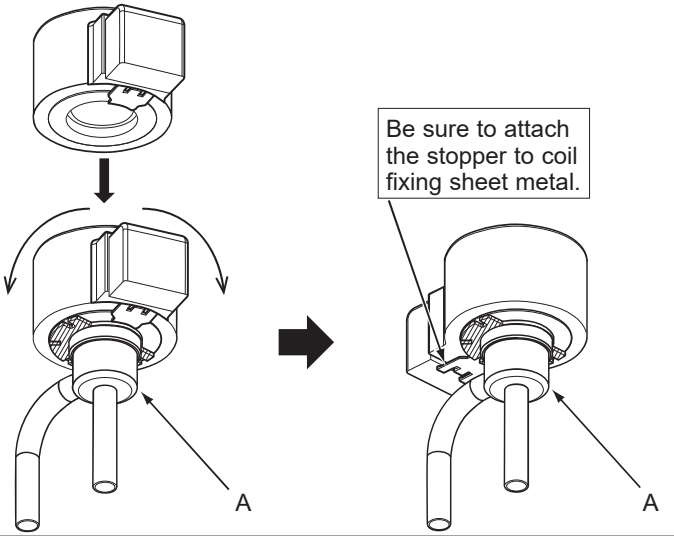
<How to detach the coil>

Hold the lower part of the main body (shown as A) firmly so that the main body does not move and detach the coil by pulling it upward. Be sure to detach the coil holding main body firmly. Otherwise the pipes can bend due to stress.



<How to attach the coil>

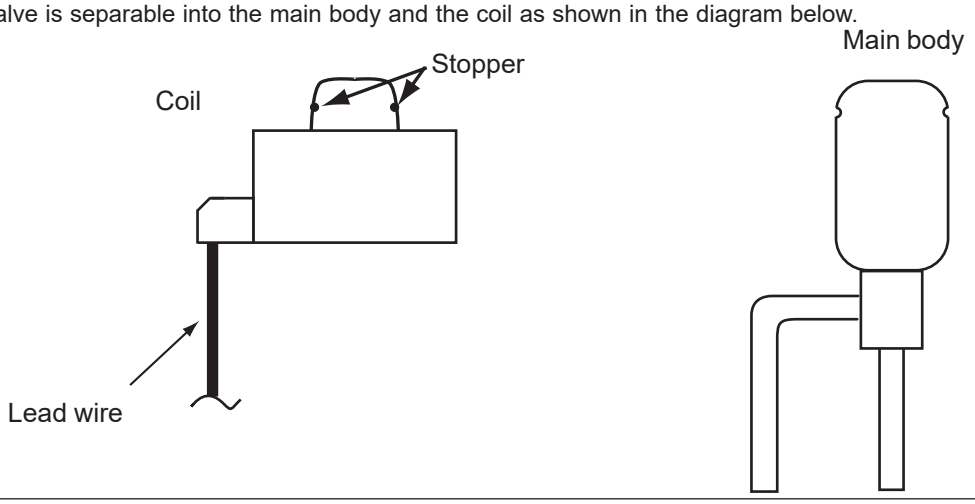
Hold the lower part of the main body (shown as A) firmly so that the main body does not move and attach the coil by inserting it downward into the main body. Then securely attach the coil stopper to coil fixing sheet metal. (At this time, be careful that stress is not added to the lead wire and the main body is not wound by the lead wire.) If the stopper is not firmly attached to the coil fixing sheet metal, the coil may be detached from the main body and that can cause defective operation of the linear expansion valve. To prevent piping stress, be sure to attach the coil holding the main body of the linear expansion valve firmly. Otherwise the pipe may break.



PUZ-AK48NL-U1 **PUZ-AK60NL-U1**
PUY-AK48NL-U1 **PUY-AK60NL-U1**
SUZ-AK48NL-U1 **SUZ-AK60NL-U1**

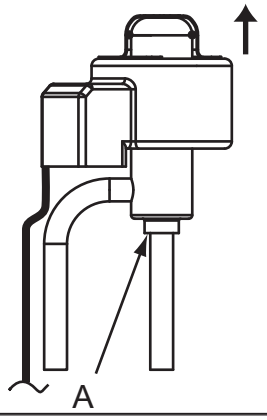
<Composition>

Linear expansion valve is separable into the main body and the coil as shown in the diagram below.



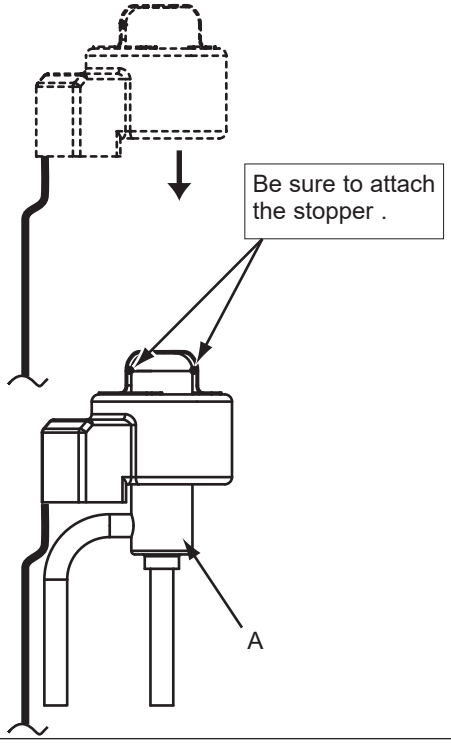
<How to detach the coil>

Hold the lower part of the main body (shown as A) firmly so that the main body does not move and detach the coil by pulling it upward.
Be sure to detach the coil holding main body firmly. Otherwise pipes can bend due to stress.



<How to attach the coil>

Hold the lower part of the main body (shown as A) firmly so that the main body does not move and attach the coil by inserting it downward into the main body. Then securely attach the coil stopper to main body. (At this time, be careful that stress is not added to lead wire and main body is not wound by lead wire.)
If the stopper is not firmly attached to main body, coil may be detached from the main body and that can cause defective operation of linear expansion valve.
To prevent piping stress, be sure to attach the coil holding the main body of linear expansion valve firmly. Otherwise pipe may break.



10-7. EMERGENCY OPERATION

(1) When the error codes shown below are displayed on outdoor unit or microprocessor for wired remote controller or indoor unit has a failure, but no other problems are found, emergency operation will be available by setting the emergency operation switch (SWE) to ON at the indoor unit control board and short-circuiting the connector (CN31) on the outdoor controller board.

When following abnormalities occur, emergency operation will be available.

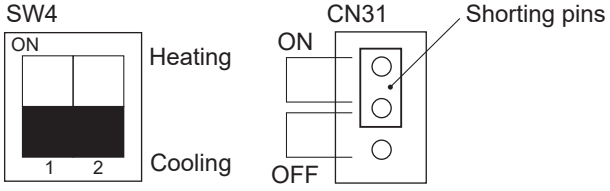
Error code	Inspected content
U4	Open/short of pipe thermistor (TH3/TH6/TH7/TH8/TH32)
E8	The indoor/outdoor unit communication error •Signal receiving error (Outdoor unit)
E9	The indoor/outdoor unit communication error •Transmitting error (Indoor unit)
E0–7	Communication error other than outdoor unit
Ed	Communication error between outdoor controller board and M-NET board (Serial communication error)

(2) Check the following items and cautions for emergency operation

① Make sure that there is no abnormality in the outdoor unit other than the above abnormalities. (Emergency operation will not be available when error codes other than the above are indicated.)
② For emergency operation, it is necessary to set the emergency operation switch (SWE) on the indoor controller board. Refer to the electrical wiring diagram of the indoor unit for how to set the indoor unit.)
③ During emergency operation, the air-conditioner will continuously be operated by supplying power and stopping it: it cannot be turned on or off by the remote control, and the temperature control is not possible.
④ Do not perform emergency heating operation for an extended period of time: if the outdoor unit starts defrosting during this period, cold air will blow out from the indoor unit.
⑤ Do not perform emergency cooling operation for more than 10 hours; otherwise, it could result in freezing the heat exchanger of the indoor unit.

(3) Emergency operation procedure

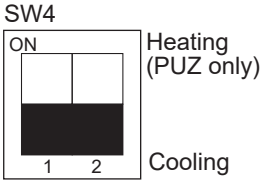
① Turn the main power supply off.
② Turn on the emergency operation switch (SWE) on the indoor controller board.
③ Set the shorting pins of the emergency operation connector (CN31) on the outdoor controller board to ON.
④ Use SW4-2 on the outdoor controller board to set the operation mode (cooling or heating). (SW4-1 is not used.)
⑤ Turning the main power supply on will start the emergency operation.



(4) Releasing emergency operation

① Turn the main power supply off.
② Set the emergency operation switch (SWE) on the indoor controller board to OFF.
③ Set the shorting pins of emergency operation connector (CN31) on the outdoor controller board to OFF.
④ Set SW4-2 on the outdoor controller board as shown below.

Note: If the shorting pins are not set on the emergency operation connector (CN31), the setting remains OFF.



(5) Operation data during emergency operation

During emergency operation, no communication is performed with the indoor unit, so the data items needed for operation shall be set to the following values:

Operation data	Operation mode		Remarks
	COOL	HEAT	
Intake temperature (TH1)	81°F [27°C]	69°F [20.5°C]	
Indoor fluid pipe temperature (TH2)	41°F [5°C]	113°F [45°C]	
Indoor 2-phase pipe temperature (TH5)	41°F [5°C]	122°F [50°C]	
Set temperature	77°F [25°C]	72°F [22°C]	
Outdoor liquid pipe temperature (TH3)	113°F [45°C]	41°F [5°C]	*1
Outdoor 2-phase pipe temperature (TH6)	122°F [50°C]	41°F [5°C]	*1
Outdoor ambient temperature (TH7)	95°F [35°C]	45°F [7°C]	*1
Outdoor suction (TH32)	41°F [5°C]	41°F [5°C]	*2
Temperature difference code (intake temperature−set temperature) (ΔTj)	5	5	
Discharge super heat (SHd)	54°F [30°C]	54°F [30°C]	*2
Subcooling (SC)	9°F [5°C]	9°F [5°C]	*2

*1 If the thermistor temperature data is normal (not open/short), that data is loaded into the control as valid data. When the unit enters emergency operation and TH values are mismatched, set the thermistors to open/short. And the unit runs emergency operation with the values listed above.

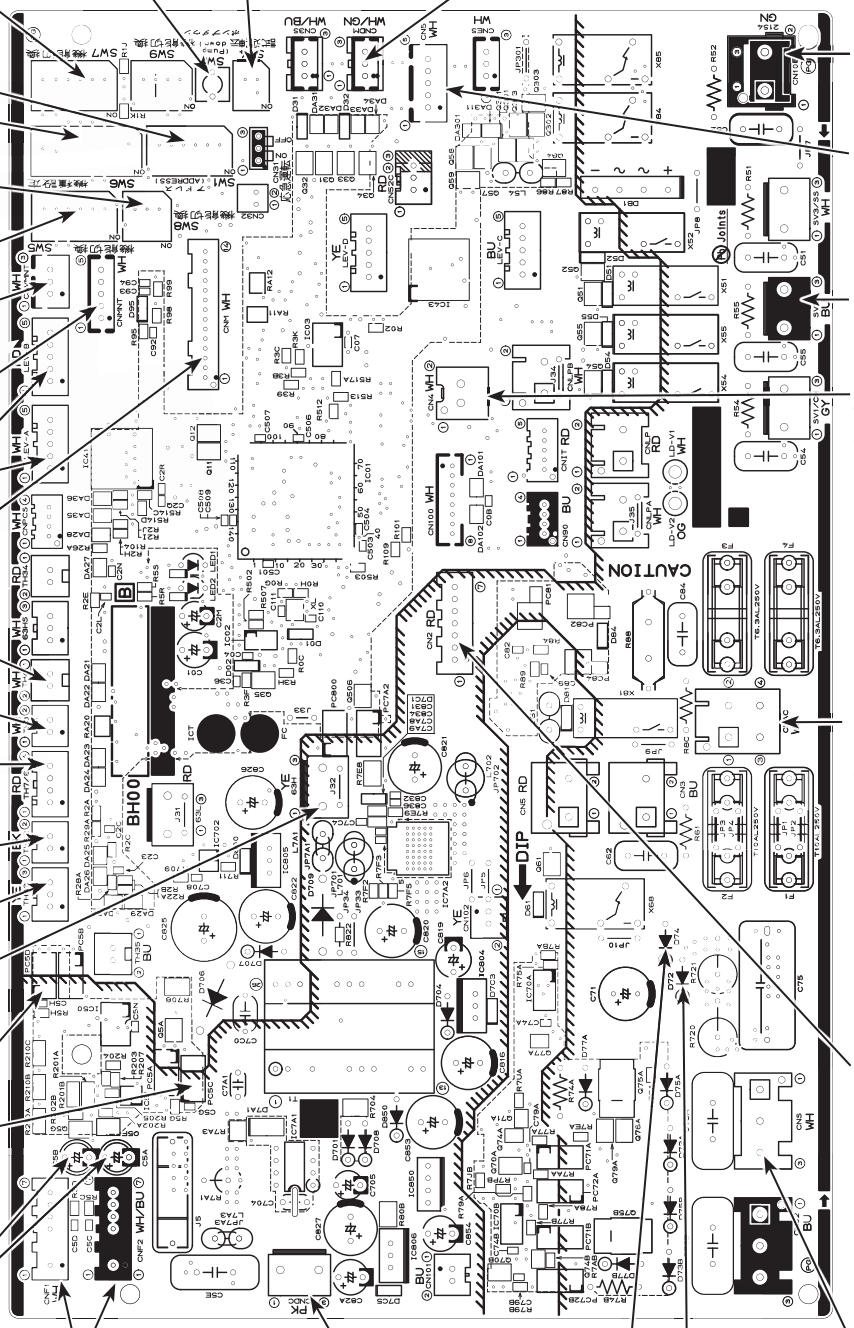
*2 If one thermistor is set to open/short, the values of SHd/SC will be different from the list above.

Example: When the liquid pipe temperature thermistor (TH3) has an open or short circuit.

Thermistor	COOL	HEAT
TH3	113°F [45°C]	41°F [5°C]
TH6	Ta	Tb
	Regard normal figure as effective data.	
TH4	Tc	Td
	Regard normal figure as effective data.	
TH5	41°F [5°C]	122°F [50°C]
TH2	41°F [5°C]	113°F [45°C]
TH33	Regard normal figure as effective data.	

Discharge superheat (SHd)
Cooling = TH4 − TH6 = Tc − Ta
Heating = TH4 − TH5 = Td − 122°F [50°C]
Degree of subcooling (SC)
Cooling = TH6 − TH3 = Ta − 113°F [45°C]
Heating = TH5 − TH2 = 50°C − 45°C = 5°C
or
= 122°F − 113°F = 9˚F

10-8. TEST POINT DIAGRAM
Outdoor controller circuit board



<CAUTION> TEST POINT CNF1① is high voltage.

SWP
Pump down

SW4
Test operation

SW7
Demand control setting

CNDM
①–②: Input of low-level sound priority mode
①–③: Input of external contact point

SW1
Manual defrost,
detect history record reset,
refrigerant address

21S4
4-way valve

SW6
Model select

CN51
External signal output
• Compressor operating signal
• Abnormal signal

SW8
Pipe replace
Wiring replace

SV2
Solenoid valve

SW5
Function switch

CNVMNT
Connect to M-NET adapter (CND)

CN4
Transmission to outdoor power circuit board (CN4)

CNMNT
Connect to M-NET adapter (CN5)

LEV-A,B
Linear expansion valve

CNM
Connect to A-control service tool

TH4
Thermistor <Discharge>

TH3
Thermistor <Liquid>

TH7/6
Thermistor <Ambient/2-phase pipe>

TH32
Thermistor <Suction>

TH33
Thermistor <Comp. surface>

63H
High pressure switch

CNAC
②–④: Power supply for outdoor controller circuit board (230 VAC)
①–③: Power supply for indoor and outdoor unit connection wire (230 VAC)

CN2
Connect to outdoor power circuit board (CN2)
①–⑤: Reception from power circuit board
②–⑤: Zero cross signal (0–5 VDC)
③,④: Not used
⑥–⑤: 15 VDC
⑦–⑤: 15 VDC

V_{FG}
(Voltage between right pins of PC5C and PC5D, pin 3 and pin 4) (Same as (CNF1⑦(+)-④(−))

CNS
S1–S2: 230 VAC

V_{SP}
(Voltage between pins of C5A, C5B):
0 VDC (when topped), 1–6.5 VDC (when operated)

CNF1, CNF2
Connect to fan motor
①–④: 280–380 VDC
⑤–④: 15 VDC
⑥–④: 0–6.5 VDC
⑦–④: 15 VDC (When stopped)
7.5 VDC (When operated)
(0–15 V pulse)

CNDC
280–380 VDC
(①+, ③−)
Outdoor power circuit board

+ 28 VDC

− Communication power supply
D71 Voltage

Outdoor power circuit board
PUZ-AK36NL-U1
PUZ-AK42NL-U1
PUY-AK36NL-U1
PUY-AK42NL-U1

Brief check for power module
If they are short-circuited, they are broken.
Measure the resistance at the following points (connectors, etc.).

1. Check for power module
   ① Check diode circuit

R	–	P1	S	–	P1	R	–	N1	S	–	N1

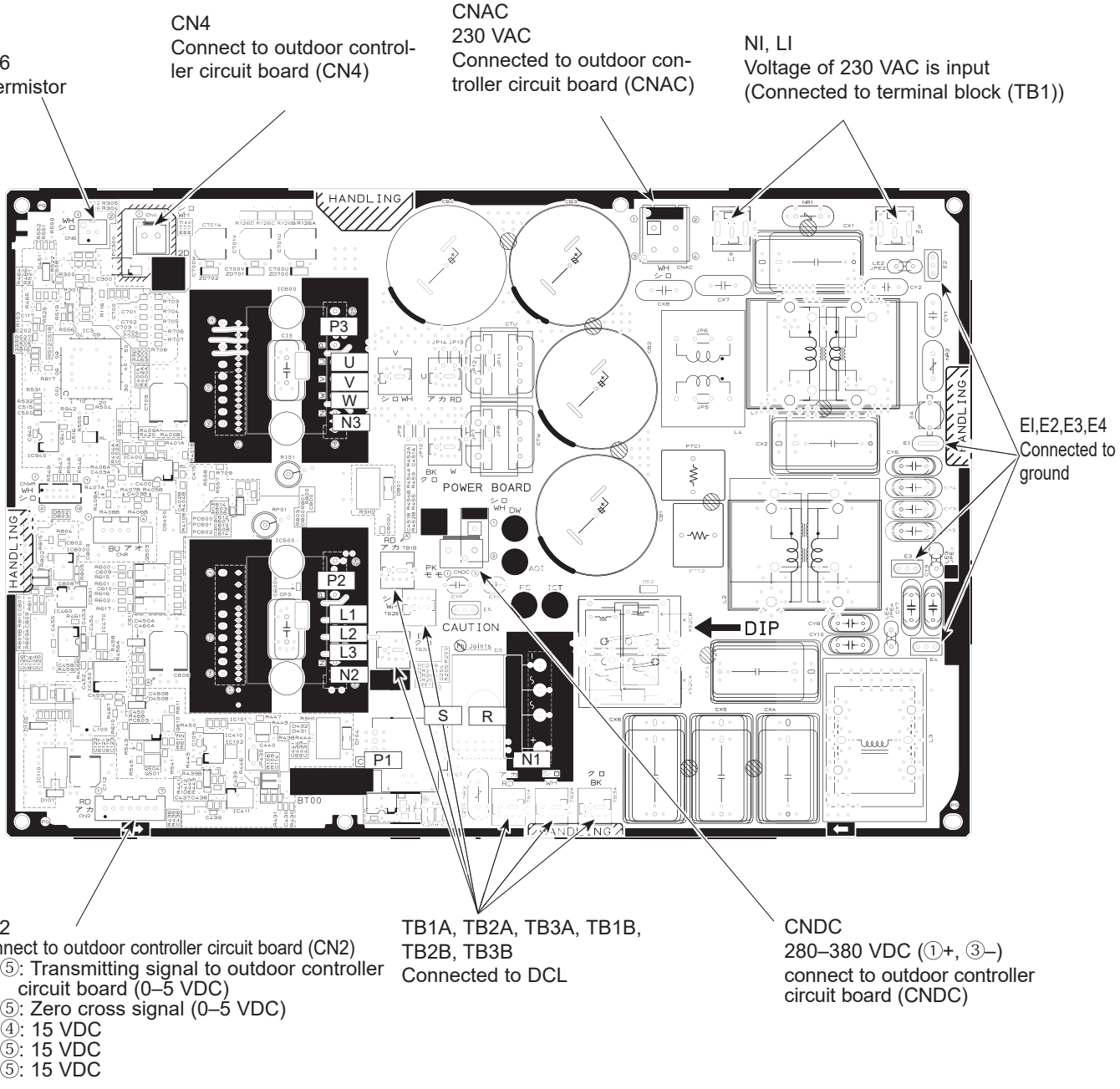
   ② Check IGBT circuit

P2	–	L1	P2	–	L2	P2	–	L3	N2	–	L1	N2	–	L2	N2	–	L3

   ③ Check inverter circuit

P3	–	U	,	P3	–	V	,	P3	–	W	,	N3	–	U	,	N3	–	V	,	N3	–	W

Note: The marks R, S, L1, L2, L3, P1, N1, U, V, and W shown in the diagram are not actually printed on the board.



Outdoor power circuit board

PUZ-AK48NL-U1
PUZ-AK60NL-U1
PUY-AK48NL-U1
PUY-AK60NL-U1
SUZ-AK48NL-U1
SUZ-AK60NL-U1

Brief check for power module
If they are short-circuited, they are broken.
Measure the resistance at the following points (connectors, etc.).

1. Check for power module
   ① Check diode circuit

R1	P1	S1	P1	R1	N1	S1	N1
R2	P4	S2	P4	R2	N4	S2	N4

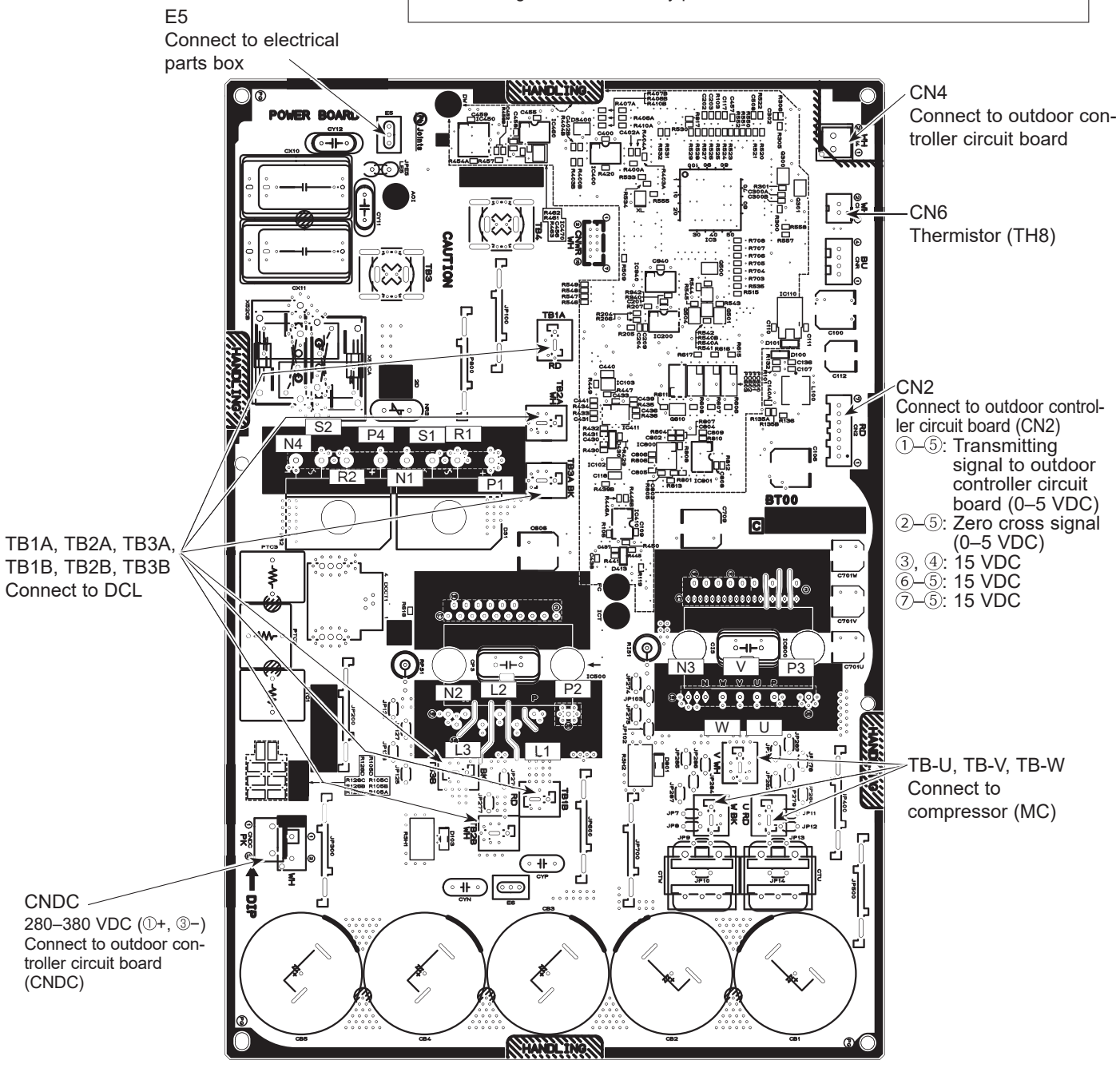
   ② Check IGBT circuit

P2	L1	P2	L2	P2	L3	N2	L1	N2	L2	N2	L3

   ③ Check inverter circuit

P3	U	P3	V	P3	W	N3	U	N3	V	N3	W

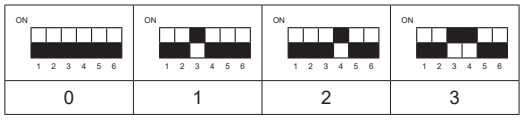
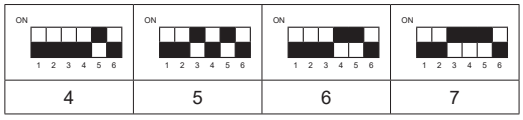
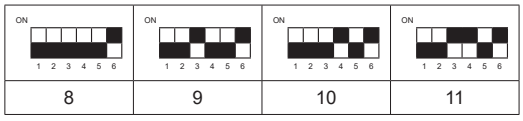
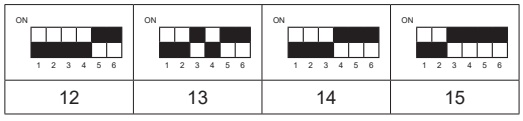
Note: The marks R, S, L1, L2, L3, P1, N1, U, V, and W shown in the diagram are not actually printed on the board.



10-9. FUNCTIONS OF SWITCHES, CONNECTORS AND JUMPERS

(1) Switch functions

The black square (■) indicates a switch position.

Type of switch	Switch	No.	Function	Action by switch operation		Effective timing
				ON	OFF	
DIP switch	SW1	1	Manual defrost *1	Start	Normal	When compressor is operating in heating operation. *1
		2	Abnormal history clear	Clear	Normal	Off or operating
		3	Refrigerant address setting			When power supply is ON
		4				
		5				
		6				
	SW4	1	Test run	Operating	OFF	Under suspension
		2	Test run mode setting	Heating	Cooling	
	SW8	1	Use of existing pipe	Used	Not used	Always
		2	No function	-	-	-
		3	Separate indoor/outdoor unit power supplies	Used	Not used	When power supply ON
Push switch	SWP		Pump down	Start	Normal	Under suspension

*1 Manual defrost should be done as follows.
① Change SW1-1 on the outdoor controller board from OFF to ON.
② Manual defrost will start by the above operation ① if all of the following conditions are satisfied.
· Heat mode setting
· 10 minutes have passed since the compressor started operating or the previous manual defrost is finished.
· Pipe temperature is less than or equal to 46°F [8°C].
Manual defrost will finish if certain conditions are satisfied.
Manual defrost can be done if the above conditions are satisfied when SW1-1 is changed from OFF to ON.
After SW1-1 is changed from OFF to ON, there is no problem if SW1-1 is left ON or changed to OFF again. This depends on the service conditions.

Continue to the next page.

Type of Switch	Switch	No.	Function	Action by the switch operation		Effective timing
				ON	OFF	
DIP switch	SW5	1	No function	—	—	—
		2	Power failure automatic recovery *2	Auto recovery	No auto recovery	When power supply is ON
		3, 4	No function	—	—	—
		6	No function	—	—	—
	SW7 *4	1	Mode select *3	—	Low noise mode	Always
		2	No function	—	—	—
		3	Max Hz setting (cooling)	Max Hz (cooling) × 0.8	Normal	Always
		4	Max Hz setting (heating)	Max Hz (heating) × 0.8	Normal	Always
		5	No function	—	—	—
		6	Defrost setting	For high humidity	Normal	Always
	SW9	1	No function	—	—	—
		2	Function switch	Valid	Normal	Always
		3	No function	—	—	—
		4	No function	—	—	—
	SW6	1	No function			
		2				
		3				
		4	Model select	Refer to "7. WIRING DIAGRAM".		
		5				
		6				
		7				
		8				
	SW5	5				

*2 The power failure automatic recovery can be set by either the remote controller or this DIP switch. If one of them is set to ON, the auto recovery is activated. Please set the auto recovery mainly by the remote controller because not all the units have the DIP switch.

*3 SW7-1 is setting change over of No function/Low noise. It is effective only in the case of the external input. (Local wiring is necessary. Refer to the next page: Special function)

*4 Please do not use SW7-3 to 6 usually. The conditions of use may cause problems.

(2) Function of connector

Type	Connector	Function	Action by open/short operation		Effective timing
			Short	Open	
Connector	CN31	Emergency operaion	Start	Normal	When power supply is ON

<Display function of inspection for outdoor unit>

The blinking patterns of both LED1 (green) and LED2 (red) indicate the types of abnormality when it occurs. Types of abnormality can be indicated in details by connecting an optional part 'A-Control Service Tool (PAC-SK52ST)' to the connector CNM on the outdoor controller board.

[Display]

(1) Normal condition

Unit condition	Outdoor controller board		A-Control Service Tool	
	LED1 (Green)	LED2 (Red)	Error code	Indication of the display
When power is turned on	Lit	Lit	— ⇔ —	Alternately blinking display
When unit stops	Lit	Not lit	00, etc.	Operation mode
When compressor is warming up	Lit	Not lit	08, etc.	
When unit operates	Lit	Lit	C5, H7, etc.	

(2) Abnormal condition

Indication		Error			
Outdoor controller board		Contents	Error code*1	Inspection method	Detailed reference page
LED (Green)	LED2 (Red)				
1 blinking	2 blinking	Connector (63H/TRS) is open.	F5	① Check if connector (63H and TRS) on the outdoor controller board is not disconnected. ② Check continuity of pressure switch (63H)/Thermal protector (TRS) by multimeter.	p.31
	4 blinking	Abnormality of indoor controller board	Fb	① Replace indoor controller board.	*2
	5 blinking	Refrigerant sensor error	FH	① Check the connectors of the refrigerant sensor.	p.39
		Refrigerant leakage	FL	① Check the indoor unit to detect the part where refrigerant leaks.	p.40
2 blinking	1 blinking	Miswiring of indoor/outdoor unit connecting wire, excessive number of indoor units (4 units or more)	—	① Check if indoor/outdoor connecting wire is connected correctly. ② Check if 4 or more indoor units are connected to outdoor unit. ③ Check if noise entered into indoor/outdoor connecting wire or power supply. ④ Re-check error by turning off power, and on again.	p.32 (EA)
		Miswiring of indoor/outdoor unit connecting wire (reversed wiring or disconnection)	—		p.32 (Eb)
		Startup time over	—		p.32 (EC)
	2 blinking	Indoor/outdoor unit communication error (signal receiving error) is detected by indoor unit.	E6	① Check if indoor/outdoor connecting wire is connected correctly. ② Check if noise entered into indoor/outdoor connecting wire or power supply. ③ Check if noise entered into indoor/outdoor controller board. ④ Re-check error by turning off power, wait 10 minutes and on again.	*2 or p.38 (E6)
		Indoor/outdoor unit communication error (transmitting error) is detected by indoor unit.	E7		*2
		Indoor/outdoor unit communication error (signal receiving error) is detected by outdoor unit.	—		p.38 (E8)
		Indoor/outdoor unit communication error (transmitting error) is detected by outdoor unit.	—		p.38 (E9)
	3 blinking	Remote controller signal receiving error is detected by remote controller.	E0	① Check if connecting wire of indoor unit or remote controller is connected correctly. ② Check if noise entered into transmission wire of remote controller. ③ Re-check error by turning off power, and on again.	p.37
		Remote controller transmitting error is detected by remote controller.	E3		p.37
		Remote controller signal receiving error is detected by indoor unit.	E4		p.37
		Remote controller transmitting error is detected by indoor unit.	E5		p.37
	4 blinking	Abnormal if a connection of indoor unit and outdoor unit using different refrigerant is detected.	EE	① Check if indoor/outdoor unit combination is authorized.	p.38
		Error code is not defined.	EF	① Check if remote controller is MA remote controller(PAR-42MAA). ② Check if noise entered into transmission wire of remote controller. ③ Check if noise entered into indoor/outdoor connecting wire. ④ Re-check error by turning off power, and on again.	p.38

*1 Error code displayed on remote controller

*2 Refer to the indoor unit service manual.

Continue to the next page

Indication		Error			
Outdoor controller board		Contents	Error code*1	Inspection method	Detailed reference page
LED (Green)	LED2 (Red)				
2 blinking	4 blinking	Abnormality of refrigerant circuit	PL	① Be sure to replace 4-way valve. ② Check refrigerant pipes for disconnection or leakage. ③ After the recovery of refrigerant, vacuum dry the whole refrigerant circuit. ④ Refer to “10-5. HOW TO CHECK THE PARTS”. ⑤ Check refrigerant circuit for operation.	p.39
		Float switch connector open (FS)	P4	① Check if connector (CN4F) on indoor controller board is not disconnected. ② Measure resistance value among terminals on drain pump using a multimeter. ③ Check if drain pump works. ④ Check drain function.	*2
	5 blinking	Serial communication error <Communication between outdoor controller board and outdoor power board> <Communication between outdoor controller board and M-NET P.C. board>	Ed	① Check if connector (CN4) on outdoor controller board and outdoor power board is not disconnected. ② Check if there is poor connection of connector on outdoor controller board (CNMNT and CNVMNT). ③ Check M-NET communication signal.	p.39
		Communication error of M-NET system	A0–A8		p.40–p.41
3 blinking	1 blinking	Abnormality of shell thermistor (TH33) and discharge temperature (TH4)	U2	① Check if stop valves are open. ② Check if connectors (TH4, TH33, LEV-A, and LEV-B) on outdoor controller board are not disconnected. ③ Check if unit is filled with specified amount of refrigerant. ④ Measure resistance values among terminals on indoor valve and outdoor linear expansion valve using a multimeter.	p.33
		Abnormality of superheat due to low discharge temperature	U7		p.34
	2 blinking	Abnormal high pressure (63H operated)/High compressor temperature (TRS operated)	U1	① Check if indoor/outdoor units have a short cycle on their air ducts. ② Check if connector (63H) (63L) on outdoor controller board is not disconnected. ③ Check if heat exchanger and filter is not dirty. ④ Measure resistance values among terminals on linear expansion valve using a multimeter. ⑤ Check if stop valves are open. ⑥ Check if unit is filled with specified amount of refrigerant.	p.32
		Abnormal low pressure (Low pressure switch 63L worked.)	UL		p.36
	3 blinking	Abnormality of outdoor fan motor rotational speed	U8	① Check the outdoor fan motor.	p.34
		Protection from overheat operation (TH3)	Ud		p.36
	4 blinking	Compressor overcurrent breaking (Startup locked)	UF	① Check if stop valves are open. ② Check looseness, disconnection, and reversed connection of compressor wiring. ③ Measure resistance values among terminals on compressor using a multimeter. ④ Check if outdoor unit has a short cycle on its air duct.	p.36
		Compressor overcurrent breaking	UP		
		Abnormality of current sensor (P.B.)	UH		
		Abnormality of power module	U6		p.34
	5 blinking	Open/short of discharge/Comp.surface thermistor (TH4, TH33)	U3	① Check if connectors (TH3, TH4, TH6, TH7, TH8, TH32, and TH33) on outdoor controller board and connector (CN3) on outdoor power board are not disconnected. ② Measure resistance value of outdoor thermistors	p.33
		Open/short of outdoor thermistors (TH3, TH6, TH7, TH8, and TH32)	U4		p.33
	6 blinking	Abnormality of Heat sink temperature	U5	① Check if indoor/outdoor units have a short cycle on their air ducts. ② Measure resistance value of outdoor heat sink thermistor (TH8).	p.34
	7 blinking	Abnormality of voltage	U9	① Check looseness, disconnection, and reversed connection of compressor wiring. ② Measure resistance value among terminals on compressor using a multimeter. ③ Check continuity of contactor (52C). ④ Check if power supply voltage decreases. ⑤ Check wiring of CN52C. ⑥ Check wiring of CNAF.	p.35

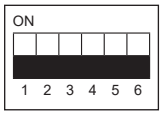
*1 Error code displayed on remote controller
*2 Refer to the indoor unit service manual.

Indication		Error			
Outdoor controller board		Contents	Error code*1	Inspection method	Detailed reference page
LED (Green)	LED2 (Red)				
4 blinking	1 blinking	Abnormality of room temperature thermistor (TH1)	P1	① Check if connectors (CN20, CN21, CN29, and CN44) on indoor controller board are not disconnected. ② Measure resistance value of indoor thermistors.	*2
		Abnormality of pipe temperature thermistor/Liquid (TH2)	P2		*2
		Abnormality of pipe temperature thermistor/Condenser-Evaporator (TH5)	P9		*2
	2 blinking	Abnormality of drain sensor (DS)	P4	① Check if connector (CN31) on indoor controller board is not disconnected.	*2
		Indoor drain overflow protection	P5	② Measure resistance value of indoor thermistors. ③ Measure resistance value among terminals on drain pump using a multimeter. ④ Check if drain pump works. ⑤ Check drain function.	*2
	3 blinking	Freezing (cooling)/overheating (heating) protection	P6	① Check if indoor unit has a short cycle on its air duct. ② Check if heat exchanger and filter are not dirty. ③ Measure resistance value on indoor and outdoor fan motors. ④ Check if the inside of refrigerant piping is not clogged.	*2
	4 blinking	Abnormality of pipe temperature	P8	① Check if indoor thermistors (TH2 and TH5) are not disconnected from holder. ② Check if stop valve is open. ③ Check reversed connection of extension pipe. (for plural unit connection) ④ Check if indoor/outdoor connecting wire is connected correctly. (for plural unit connection)	*2
	5 blinking	Indoor fan motor trouble	Pb	① Check the winding of an indoor unit fan motor.	*2
—	—	Abnormality of remote controller board	E1 E2	① Replace remote controller.	p.37

*1 Error code displayed on remote controller
*2 Refer to the indoor unit service manual.

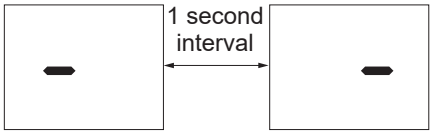
<Outdoor unit operation monitor function>
When optional part 'A-Control Service Tool (PAC-SK52ST)' is connected to outdoor controller board (CNM)
By controlling SW2 on the 'A-Control Service Tool', a 2-digit number or code is displayed on the digital indicator LED1 to indicate the operating status and the meaning of the error code.

Operation indicator SW2: Change self-diagnostic indicators The black square (■) indicates a switch position.

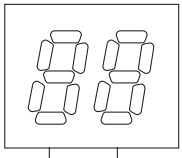
SW2 setting	Display detail	Explanation for display	Unit
			

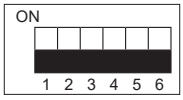
<Digital indicator LED1 working details>
(Be sure that 1 to 6 on SW2 are set to OFF.)

(1) When the power supply turns ON
The displays blink alternately. Wait for 4 minutes at the longest.



(2) When the display lights (Normal operation)
① Operation mode display

LED1  (Lighting)

SW2


(Initial setting)

The tens digit: Operation mode

Display	Operation mode
O	OFF/FAN
C	COOLING/DRY
H	HEATING
d	DEFROSTING

The ones digit: Relay output

Display	Warming-up compressor	compressor	4-way valve	Solenoid valve
0	-	-	-	-
1	-	-	-	ON
2	-	-	ON	-
3	-	-	ON	ON
4	-	ON	-	-
5	-	ON	-	ON
6	-	ON	ON	-
7	-	ON	ON	ON
8	ON	-	-	-
A	ON	-	ON	-

② Display during error postponement
Postponement code is displayed when compressor stops due to the work of protection device.
Postponement code is displayed while error is being postponed.

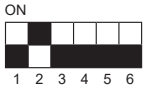
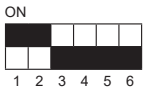
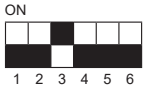
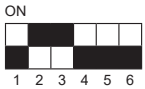
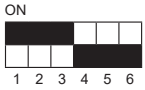
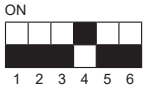
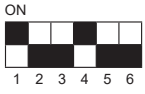
(3) When the display blinks
Inspection code is displayed when compressor stops due to the work of protection devices.

Display	Inspection unit
0	Outdoor unit
1	Indoor unit 1
2	Indoor unit 2

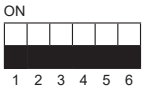
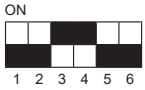
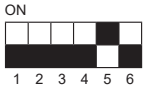
Display	Contents to be inspected (During operation)
U1	Abnormal high pressure (63H operated)/High compressor temperature (TRS operated)
U2	Abnormal high discharge temperature, shortage of refrigerant
U3	Open/short circuit of comp. surface thermistor (TH33) and discharge temperature thermistor (TH4)
U4	Open/short of outdoor unit thermistors (TH3, TH6, TH7, TH8, and TH32)
U5	Abnormal temperature of heat sink
U6	Abnormality of power module
U8	Abnormality in outdoor fan motor
UF	Compressor overcurrent interruption (When Comp. locked)
UH	Current sensor error
UL	Abnormal low pressure
UP	Compressor overcurrent interruption
P1-P8	Abnormality of indoor units
A0-A7	Communication error of M-NET system

Display	Contents to be inspected (During operation)
F5	63H connector (yellow) is open. /TRS connector is open.
F9	2 connectors (63H) are open.
E8	Indoor/outdoor communication error (Signal receiving error) (Outdoor unit)
E9	Indoor/outdoor error (Transmitting error) (Outdoor unit)
EA	Miswiring of indoor/outdoor unit connecting wire, excessive number of indoor units (4 units or more)
Eb	Miswiring of indoor/outdoor unit connecting wire (reversed wiring or disconnection)
EC	Startup time over
E0-E7	Communication error except for outdoor unit

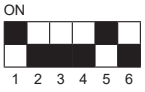
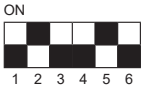
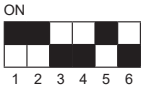
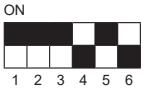
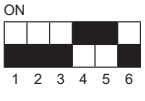
The black square (■) indicates a switch position.

SW2 setting	Display detail	Explanation for display	Unit
	Pipe temperature/Liquid (TH3) −58 to 194	−58 to 194˚F [−50 to 90˚C] (When the coil thermistor detects 0˚F [-17°C] or below, "–" and temperature are displayed alternately.) (Example) When −10˚F [-23°C]; 0.5 s 0.5 s 2 s -□ →10 →□□	˚F [˚C]
	Discharge temperature (TH4) −4 to 422	−4 to 422˚F [−20 to 217˚C] (When the discharge thermistor detects 100˚F [37°C] or more, hundreds digit, tens digit, and ones digit are displayed alternately.) (Example) When 105˚F [40°C]; 0.5 s 0.5 s 2 s □1 →05 →□□	˚F [˚C]
	Output step of outdoor FAN 0 to 25	0 to 25	Step
	Number of ON/OFF times of compressor 0 to 9999	0 to 9999 (When the number of times is 100 or more, hundreds digit, tens digit, and ones digit are displayed alternately.) (Example) When 42500 times (425 × 100 times); 0.5 s 0.5 s 2 s □4 →25 →□□	100 times
	Compressor integrating operation times 0 to 9999	0 to 9999 (When it is 100 hours or more, hundreds digit, tens digit, and ones digit are displayed alternately.) (Example) When 2450 hours (245 × 10 hours); 0.5 s 0.5 s 2 s □2 →45 →□□	10 hours
	Compressor operating current 0 to 50	0 to 50 Note: Omit the figures after the decimal fractions.	A
	Compressor operating frequency 0 to 9999	0 to 9999 (When it is 100Hz or more, hundreds digit, tens digit, and ones digit are displayed alternately.) (Example) When 125Hz; 0.5 s 0.5 s 2 s 12 → 50 →□□	0.1 Hz
	LEV-A opening pulse 0 to 500	0 to 500 (When it is 100 pulse or more, hundreds digit, tens digit, and ones digit are displayed alternately.) (Example) When 150 pulse; 0.5 s 0.5 s 2 s □1 →50 →□□	Pulse
	Error postponement code history (1) of outdoor unit	Postponement code display Blinking: During postponement Lighting: Cancellation of postponement "00" is displayed in the case of no postponement.	Code display

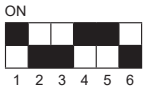
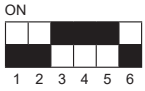
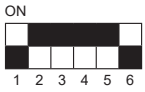
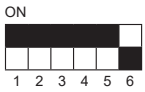
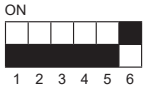
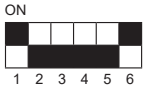
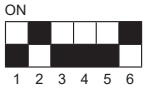
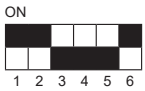
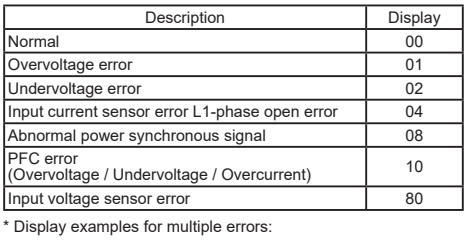
The black square (■) indicates a switch position.

SW2 setting	Display detail	Explanation for display	Unit
	Operation mode on error occurring	Operation mode of when operation stops due to error is displayed by setting SW2 as below. (SW2) 	Code display
	Pipe temperature/Liquid (TH3) on error occurring −58 to 194	−58 to 194˚F [−50 to 90˚C] (When the coil thermistor detects 0˚F [-17°C] or below, "–" and temperature are displayed alternately.) (Example) When −15˚F [-26°C]; 0.5 s 0.5 s 2 s -□ →15 →□□	˚F [˚C]
	Discharge temperature (TH4) on error occurring −4 to 422	−4 to 422˚F [−20 to 217˚C] (When the temperature is 100˚F [37°C] or more, the hundreds digit, tens digit, and ones digit are displayed alternately.) (Example) When 130˚F [54°C]; 0.5 s 0.5 s 2 s □1 →30 →□□	˚F [˚C]
	Compressor operating current on error occurring 0 to 50	Compressor operating current on error occurring 0 to 50	A
	Error history (1) (latest) Alternate display of abnormal unit number and code	When no error history, " 0 " and "– –" are displayed alternately.	Code display
	Error history (2) Alternate display of error unit number and code	When no error history, " 0 " and "– –" are displayed alternately.	Code display
	Thermostat ON time 0 to 999	0 to 999 (When it is 100 minutes or more, the hundreds digit, tens digit, and ones digit are displayed alternately.) (Example) When 245 minutes; 0.5 s 0.5 s 2 s □2 →45 →□□	Minute
	Test run elapsed time 0 to 120	0 to 120 (When it is 100 minutes or more, the hundreds digit, tens digit, and ones digit are displayed alternately.) (Example) When 105 minutes; 0.5 s 0.5 s 2 s □1 →05 →□□	

The black square (■) indicates a switch position.

SW2 setting	Display detail	Explanation for display	Unit
	The number of connected indoor units	0 to 4 (The number of connected indoor units are displayed.)	Unit
	Capacity setting display	Displayed as an outdoor capacity code Capacity / Code: AK36NL 20; AK42NL 25; AK48NL 28; AK60NL 34	Code display
	Outdoor unit setting information	• The tens digit (Total display for applied setting) Setting details: H·P/Cooling only — Display details: 0: H·P 1: Cooling only Setting details: Single phase/3-phase — Display details: 0: Single phase 2: 3-phase • The ones digit Setting details: Defrosting switch — Display details: 0: Normal 1: For high humidity (Example) When heat pump, 3-phase and defrosting (normal) are set up, “20” is displayed.	Code display
	Indoor pipe temperature/Liquid (TH2 [1]) Indoor 1 −38 to 190	−38 to 190˚F [−39 to 88˚C] (When the temperature is 0ºF [-17°C] or less, “–” and temperature are displayed alternately.)	˚F [˚C]
	Indoor pipe temperature/Cond./Eva. (TH5 [1]) Indoor 1 −38 to 190	−38 to 190˚F [−39 to 88˚C] (When the temperature is 0˚F [-17°C] or less, “–” and temperature are displayed alternately.)	˚F [˚C]
	Indoor pipe temperature/Liquid (TH2 [2]) Indoor 2 −38 to 190	−38 to 190˚F [−39 to 88˚C] (When the temperature is 0˚F [-17°C] or less, “–” and temperature are displayed alternately.)	˚F [˚C]
	Indoor pipe temperature/Cond./Eva. (TH5 [2]) Indoor 2 −38 to 190	−38 to 190˚F [−39 to 88˚C] (When the temperature is 0˚F [-17°C] or less, “–” and temperature are displayed alternately.)	˚F [˚C]
	Indoor room temperature (TH1) 46 to 102	Indoor room temperature (TH1) 46 to 102˚F [8 to 39°C]	˚F [˚C]

The black square (■) indicates a switch position.

SW2 setting	Display detail	Explanation for display	Unit
	Indoor setting temperature 62 to 86	62 to 86˚F [17 to 30˚C]	˚F [˚C]
	Outdoor pipe temperature/2-phase pipe (TH6) −58 to 194	−58 to 194˚F [−50 to 90˚C] (When the temperature is 0˚F [-17°C] or less, "–" and temperature are displayed alternately.)	˚F [˚C]
	Outdoor ambient temperature (TH7) −58 to 194	−58 to 194˚F [−50 to 90˚C] (When the temperature is 0˚F [-17°C] or less, "–" and temperature are displayed alternately.)	˚F [˚C]
	Outdoor heat sink temperature (TH8) −40 to 392	−40 to 392˚F [−40 to 200˚C] (When the temperature is 0˚F [-17°C] or less, "–" and temperature are displayed alternately.) (When the thermistor detects 100˚F [37°C] or more, hundreds digit, tens digit, and ones digit are displayed alternately.)	˚F [˚C]
	Discharge superheat. SHd 32 to 491 [Cooling = TH4 or TH33 − TH6 Heating = TH4 or TH33 − TH5]	32 to 491˚F [0 to 255˚C] (When the temperature is 100˚F [37°C] or more, hundreds digit, tens digit, and ones digit are displayed alternately.)	˚F [˚C]
	Number of defrost cycles 0 to FFFE	0 to FFFE (in hexadecimal notation) (When more than FF in hex (255 in decimal), the number is displayed in order of 16^3's and 16^2's, and 16^1's and 16^0's places. (Example) When 5000 cycles; 0.5 s → 0.5 s → 2 s □9 → C4 → □□	2 cycles
	Input current of outdoor unit	0 to 500 (When it is 100 or more, hundreds digit, tens digit, and ones digit are displayed alternately.)	0.1 A
	LEV-B opening pulse	0 to 500 (When it is 100 pulse or more, hundreds digit, tens digit, and ones digit are displayed alternately.)	Pulse
	U9 error detail history (latest)		Code display

Description	Display
Normal	00
Overvoltage error	01
Undervoltage error	02
Input current sensor error L1-phase open error	04
Abnormal power synchronous signal	08
PFC error (Overvoltage / Undervoltage / Overcurrent)	10
Input voltage sensor error	80

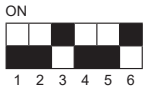
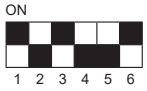
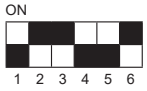
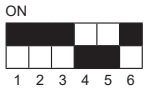
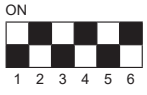
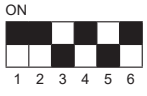
* Display examples for multiple errors:

Overvoltage (01) + Undervoltage (02) = 03

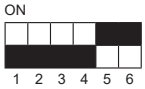
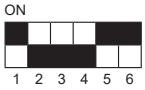
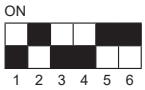
Undervoltage (02) + Power-sync. signal error (08) = 0A

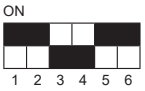
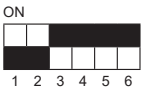
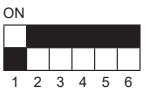
L1 phase open error (04) + PFC error (10) = 14

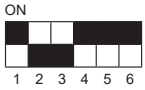
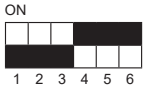
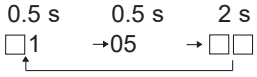
The black square (■) indicates a switch position.

SW2 setting	Display detail	Explanation for display	Unit
	DC bus voltage 180 to 500	180 to 500 (When it is 100V or more, hundreds digit, tens digit, and ones digit are displayed alternately.)	V
	Capacity save 0 to 100 When air conditioner is connected to M-NET and capacity save mode is demanded, a value from “0” to ”100” is displayed. [When there is no setting of capacity save, “100” is displayed.]	0 to 100 (When the capacity is 100%, hundreds digit, tens digit, and ones digit are displayed alternately.) (Example) When 100%; 0.5 s 0.5 s 2 s □1 →00 →□□	%
	Error postponement code history (2) of outdoor unit	Postponement code display Blinking: During postponement Lighting: Cancellation of postponement “00” is displayed in the case of no postponement.	Code display
	Error postponement code history (3) of outdoor unit	Postponement code display Blinking: During postponement Lighting: Cancellation of postponement “00” is displayed in the case of no postponement.	Code display
	Error history (3) (Oldest) Alternate display of abnormal unit number and code.	When no error history, “0” and “– –“ are displayed alternately.	Code display
	Error thermistor display [When there is no error thermistor, “–“ is displayed.]	3: Liquid/Suction pipe temperature (TH3, TH32) 4: Discharge pipe temperature (TH4) 6: 2-phase pipe temperature (TH6) 7: Ambient temperature (TH7) 8: Heat sink temperature (TH8) 33: Comp. surface temperature (TH33)	Code display
	Operation frequency on error occurring 0 to 255	0 to 255 (When it is 100 Hz or more, hundreds digit, tens digit, and ones digit are displayed alternately.) (Example) When 125 Hz; 0.5 s 0.5 s 2 s □1 →25 →□□	Hz
	Fan step on error occurring 0 to 25	0 to 25	Step

The black square (■) indicates a switch position.

SW2 setting	Display detail	Explanation for display	Unit
	Indoor room temperature (TH1) on error occurring 46 to 102	46 to 102˚F [8 to 39°C]	˚F [˚C]
	Indoor pipe temperature/Liquid (TH2) on error occurring −38 to 190	−38 to 190˚F [−39 to 88°C] (When the temperature is 0˚F [-17°C] or less, "–" and temperature are displayed alternately.) (Example) When –15˚F [-26°C]; 0.5 s 0.5 s 2 s -□ →15 →□□	˚F [˚C]
	Indoor pipe temperature/Cond./ Eva. (TH5) on error occurring −38 to 190	−38 to 190˚F [−39 to 88°C] (When the temperature is 0˚F [-17°C] or less, "–" and temperature are displayed alternately.) (Example) When –15˚F [-26°C]; 0.5 s 0.5 s 2 s -□ →15 →□□	˚F [˚C]
	Outdoor pipe temperature/2-phase (TH6) on error occurring −58 to 194	−58 to 194˚F [−50 to 90°C] (When the temperature is 0˚F [-17°C] or less, "–" and temperature are displayed alternately.) (Example) When –15˚F [-26°C]; 0.5 s 0.5 s 2 s -□ →15 →□□	˚F [˚C]
	Outdoor ambient temperature (TH7) on error occurring −58 to 194	−58 to 194˚F [−50 to 90°C] (When the temperature is 0˚F [-17°C] or less, "–" and temperature are displayed alternately.) (Example) When –15˚F [-26°C]; 0.5 s 0.5 s 2 s -□ →15 →□□	˚F [˚C]
	Outdoor heat sink temperature (TH8) on error occurring −40 to 392	−40 to 392˚F [−40 to 200°C] (When the temperature is 0˚F [-17°C] or less, "–" and temperature are displayed alternately.) (When the temperature is 100˚F [37°C] or more, hundreds digit, tens digit, and ones digit are displayed alternately.)	˚F [˚C]

SW2 setting	Display detail	Explanation for display	Unit
	Discharge superheat on error occurring SHd 32 to 491 [Cooling = TH4−TH6 Heating = TH4−TH5]	32 to 491˚F [0 to 255˚C] (When the temperature is 100˚F [37°C] or more, hundreds digit, tens digit, and ones digit are displayed alternately.) (Example) When 150˚F [65°C]; 0.5 s → 0.5 s → 2 s □1 → 50 → □□	˚F [˚C]
	Subcooling on error occurring. SC 32 to 266 [Cooling = TH6-TH3 Heating = TH5-TH2]	32 to 266˚F [0 to 130˚C] (When the temperature is 100˚F [37°C] or more, hundreds digit, tens digit, and ones digit are displayed alternately.) (Example) When 115˚F [46°C]; 0.5 s → 0.5 s → 2 s □1 → 15 → □□	˚F [˚C]
	Thermostat-on time until error stops 0 to 999	0 to 999 (When it is 100 minutes or more, hundreds digit, tens digit, and ones digit are displayed alternately.) (Example) When 415 minutes; 0.5 s → 0.5 s → 2 s □4 → 15 → □□	Minute
	Pipe temperature/Suction (TH32) −58 to 194	−58 to194˚F [−50 to 90˚C] (When the coil thermistor detects 0˚F [-17°C] or below, “–” and temperature are displayed alternately.) (Example) When -10˚F [-23°C]; 0.5 s → 0.5 s → 2 s -□ → 10 → □□	˚F [˚C]
	Indoor pipe temperature/Liquid (TH2 (3)) Indoor 3 −38 to 190	−38 to 190˚F [−39 to 88°C] (When the temperature is 0°F [-17°C] or less, “–” and temperature are displayed alternately.)	˚F [˚C]
	Indoor pipe temperature/Cond./ Eva. (TH5 (3)) Indoor 3 −38 to 190	−38 to 190˚F [−39 to 88°C] (When the temperature is 0°F [-17°C] or less, “–” and temperature are displayed alternately.) When there is no indoor unit, “00” is displayed.	˚F [˚C]
	Indoor pipe temperature/Liquid (TH2 (4)) Indoor 4 −38 to 190	−38 to 190˚F [−39 to 88°C] (When the temperature is 0˚F [-17°C] or less, “–” and temperature are displayed alternately.)	˚F [˚C]

<table>
<tr><th>SW2 setting</th><th>Display detail</th><th>Explanation for display</th><th>Unit</th></tr>
<tr>
<td> 
</td>
<td>Controlling status of compressor operating frequency</td>
<td>The following code will be a help to know the operating status of unit.
• The tens digit
<table>
<tr><th>Display</th><th>Compressor operating frequency control</th></tr>
<tr><td>1</td><td>Primary current control</td></tr>
<tr><td>2</td><td>Secondary current control</td></tr>
</table>
• The ones digit (In this digit, the total number of activated control is displayed.)
<table>
<tr><th>Display</th><th>Compressor operating frequency control</th></tr>
<tr><td>1</td><td>Preventive control for excessive temperature rise of discharge temperature</td></tr>
<tr><td>2</td><td>Preventive control for excessive temperature rise of condensing temperature</td></tr>
<tr><td>4</td><td>Frost prevention control</td></tr>
<tr><td>8</td><td>Preventive control for excessive temperature rise of heatsink</td></tr>
</table>
(Example)
The following controls are activated.
• Primary current control
• Preventive control for excessive temperature rise of condensing temperature
• Preventive control for excessive temperature rise of heatsink
LED
  </td>
<td>Code display</td>
</tr>
<tr>
<td> 
</td>
<td>Comp. surface temperature (TH33)
−4 to 422</td>
<td>−4 to 422˚F [−20 to 217˚C]
(When the comp. surface thermistor detects 100˚F [37°C] or more, hundreds digit, tens digit, and ones digit are displayed alternately.)
(Example) When 105˚F [40°C];
 
</td>
<td>˚F
[˚C]</td>
</tr>
</table>

11 EASY MAINTENANCE FUNCTION

11-1. SMOOTH MAINTENANCE

Refer to "15-9. SMOOTH MAINTENANCE" for operation procedure.

11-2. GUIDE FOR OPERATION CONDITION

Checkpoints

Enter the temperature differences between 5, 4, 7, and 8 into the graph given below.
Operation state is determined according to the plotted areas on the graph.
For data measurements, set the fan speed to "Hi" before activating maintenance mode.

Inspection item				Result	
Power supply	Loose connection	Terminal block	Breaker	Good	Retightened
			Outdoor Unit	Good	Retightened
			Indoor Unit	Good	Retightened
		(Insulation resistance)			MΩ
		(Voltage)			V
Compressor		1 Accumulated operating time			Time
		2 Number of ON/OFF times			Times
		3 Current			A
Outdoor unit	Temperature	4 Refrigerant/heat exchanger temperature		COOL °F	HEAT °F
		5 Refrigerant/discharge temperature		COOL °F	HEAT °F
		6 Air/outside air temperature		COOL °F	HEAT °F
		(Air/discharge air temperature)		COOL °F	HEAT °F
	Cleanliness	Appearance		Good	Cleaning required
		Heat exchanger		Good	Cleaning required
		Sound/vibration		None	Present
Indoor unit	Temperature	7 Air/intake air temperature		COOL °F	HEAT °F
		(Air/discharge air temperature)		COOL °F	HEAT °F
		8 Refrigerant/heat exchanger temperature		COOL °F	HEAT °F
		9 Filter operating time *			Time
	Cleanliness	Decorative panel		Good	Cleaning required
		Filter		Good	Cleaning required
		Fan		Good	Cleaning required
		Heat exchanger		Good	Cleaning required
		Sound/vibration		None	Present

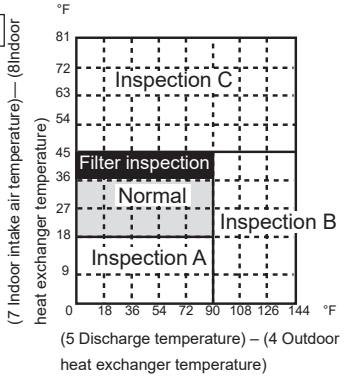
* The filter operating time is the time that has elapsed since the filter was reset.

Classification	Item	Result	
Cool	Inspection	Is "000" displayed stably in Display D on the remote controller?	Stable / Unstable
	Temperature difference	(5 Discharge temperature) – (4 Outdoor heat exchanger temperature)	°F
		(7 Indoor intake air temperature) – (8 Indoor heat exchanger temperature)	°F
Heat	Inspection	Is "000" displayed stably in Display D on the remote controller?	Stable / Unstable
	Temperature difference	(5 Discharge temperature) – (8 Indoor heat exchanger temperature)	°F
		(8 Indoor heat exchanger temperature) – (7 Indoor intake air temperature)	°F

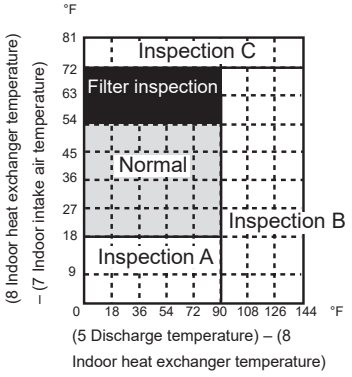
Note:

1. Fixed Hz operation may not be possible under the following temperature ranges
   A) In cool mode, outdoor intake air temperature is 104 °For higher or indoor intake air temperature is 73 °F or lower.
   B) In heat mode, outdoor intake air temperature is 68 °F or higher or indoor intake air temperature is 77 °F or lower.
2. If the air conditioner is operated at a temperature range other than the ones above but operation is not stabilized after 30 minutes or more have elapsed, carry out inspection.
3. In heat mode, the operation state may vary due to frost forming on the outdoor heat exchanger.

Cool mode



Heat mode



Result

Area	Check item	Judgement Cool	Judgement Heat
Normal	Normal operation state		
Filter inspection	Filter may be clogged.*		
Inspection A	Performance has dropped. Detailed inspection is necessary.		
Inspection B	Refrigerant amount is dropping.		
Inspection C	Filter or indoor heat exchanger may be clogged.		

Note: The above judgment is just guide based on Japanese standard conditions. It may be changed depending on the indoor and outdoor temperature.

* It may be judged as "filter inspection" due to the outdoor and indoor temperature, even though it is not clogged.

12 FUNCTION SETTING

12-1. UNIT FUNCTION SETTING BY THE REMOTE CONTROLLER

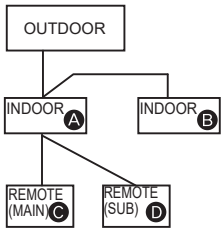
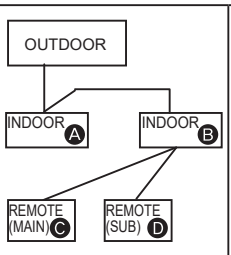
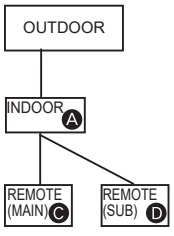
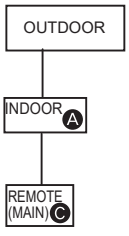
Each function can be set as necessary using the remote controller. The setting of function for each unit can only be done by the remote controller. Select function available from the table 1.

(1) Functions available when setting the unit number to 00 (Select 00 referring to ④ setting the indoor unit number.)

<Table 1> Function selections

Function	Settings	Mode No. Wired remote controller (RF thermistor)	Setting No.	●: Initial setting (when sent from the factory)	Remarks
Power failure automatic recovery	Not available	01	1		The setting is applied to all the units in the same refrigerant system.
	Available		2	●	
Indoor temperature detection	Average data from each indoor unit	02	1	●	
	Data from the indoor unit with remote controllers		2		
	Data from main remote controllers		3		
LOSSNAY connectivity	Not supported	03	1	●	
	Supported (indoor unit dose not intake outdoor air through LOSSNAY)		2		
	Supported (indoor unit intakes outdoor air through LOSSNAY)		3		
Power supply voltage	230 V	04	1	●	
	208 V		2		
Frost prevention temperature	2°C [36°F] (Normal)	15	1	●	
	3°C [37°F]		2		
Humidifier control	When the compressor operates, the humidifier also operates.	16	1		
	When the fan operates, the humidifier also operates.		2	●	
Change of defrosting control	Standard	17	1	●	
	For high humidity		2		

Meaning of "Function setting"
Mode02: indoor temperature detecting

No.	Indoor temperature(ta)=					
No.1	Average data of sensor on all indoor units	Initial setting	ta = (A+B)/2	ta = (A+B)/2	ta = A	ta = A
No.2	Data of sensor on indoor unit that connected with remote controller	Initial setting	ta = A	ta = B	ta = A	ta = A
No.3	Data of sensor on main remote controller	Initial setting	ta = C	ta = C	ta = C	ta = C

(2) Functions available when setting the unit number to 01–02 or AL (07 in the case of wireless remote controller). Refer to the service manual that comes with each indoor unit.

12-2. SELECTING FUNCTIONS USING THE REMOTE CONTROLLER

Refer to "15-3. SERVICE MENU" and "15-5. FUNCTION SETTING" when selecting functions.

13 MONITORING THE OPERATION DATA BY THE REMOTE CONTROLLER

13-1. HOW TO "MONITOR THE OPERATION DATA"

Refer to "15-10. REQUEST CODE" when monitoring the operation data.

13-2. REQUEST CODE LIST

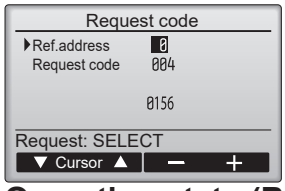
Request code	Request content	Description (Display range)	Unit	Remarks
0	Operation state	Refer to 13-2-1. Detail Contents in Request Code.	-	
1	Compressor-Operating current (rms)	0-50	A	
2	Compressor-Accumulated operating time	0–9999	10 hours	
3	Compressor-Number of operation times	0–9999	100 times	
4	Discharge temperature (TH4)	-4-422	°F	
5	Outdoor unit-Liquid pipe 1 temperature (TH3)	-58-194	°F	
6				
7	Outdoor unit-2-phase pipe temperature (TH6)	-58-194	°F	
8	Suction temperature (TH32)	-58-194	°F	
9	Outdoor unit-Ambient temperature (TH7)	-58-194	°F	
10	Outdoor unit-Heat sink temperature (TH8)	-40-392	°F	
11				
12	Discharge super heat (SHd)	0-327	°F	
13	Subcooling (SC)	0-234	°F	
14				
15				
16	Compressor-Operating frequency	0-255	Hz	
17	Compressor-Target operating frequency	0-255	Hz	
18	Outdoor unit-Fan output step	0-25	Step	
19	Outdoor unit-Fan 1 speed (Only for air conditioners with DC fan motor)	0-9999	rpm	
20	Outdoor unit-Fan 2 speed (Only for air conditioners with DC fan motor)	0-9999	rpm	"0" is displayed if air conditioner is a single-fan type.
21				
22	LEV-A opening	0-500	Pulses	
23	LEV-B opening	0-500	Pulses	
24				
25	Primary current	0–50	A	
26	DC bus voltage	180-370	V	
27				
28				
29	Number of connected indoor units	0-4	Units	
30	Indoor unit-Setting temperature	62-86	°F	
31	Indoor unit-Intake air temperature <Measured by thermostat>	46-102	°F	
32	Indoor unit-Intake air temperature (Unit No. 1) <Heat mode-4-degree correction>	46-102	°F	"0" is displayed if target unit is not present.
33	Indoor unit-Intake air temperature (Unit No. 2) <Heat mode-4-degree correction>	46-102	°F	↑
34	Indoor unit-Intake air temperature (Unit No. 3) <Heat mode-4-degree correction>	46-102	°F	↑
35	Indoor unit-Intake air temperature (Unit No. 4) <Heat mode-4-degree correction>	46-102	°F	↑
36				
37	Indoor unit-Liquid pipe temperature (Unit No. 1)	-38-190	°F	"0" is displayed if target unit is not present.
38	Indoor unit-Liquid pipe temperature (Unit No. 2)	-38-190	°F	↑
39	Indoor unit-Liquid pipe temperature (Unit No. 3)	-38-190	°F	↑
40	Indoor unit-Liquid pipe temperature (Unit No. 4)	-38-190	°F	↑
41				
42	Indoor unit-Cond./Eva. pipe temperature (Unit No. 1)	-38-190	°F	"0" is displayed if target unit is not present.
43	Indoor unit-Cond./Eva. pipe temperature (Unit No. 2)	-38-190	°F	↑
44	Indoor unit-Cond./Eva. pipe temperature (Unit No. 3)	-38-190	°F	↑
45	Indoor unit-Cond./Eva. pipe temperature (Unit No. 4)	-38-190	°F	↑
46				
47				
48	Thermo ON operating time	0-999	Minutes	
49	Test run elapsed time	0-120	Minutes	← Not possible to activate maintenance mode during test run.

Request code	Request content	Description (Display range)	Unit	Remarks
50	Indoor unit-Control state	Refer to 13-2-1. Detail Contents in Request Code.	-	
51	Outdoor unit-Control state	Refer to 13-2-1. Detail Contents in Request Code.	-	
52	Compressor-Frequency control state	Refer to 13-2-1. Detail Contents in Request Code.	-	
53	Outdoor unit-Fan control state	Refer to 13-2-1. Detail Contents in Request Code.	-	
54	Actuator output state	Refer to 13-2-1. Detail Contents in Request Code.	-	
55	Error content (U9)	Refer to 13-2-1. Detail Contents in Request Code.	-	
56				
57				
58				
59				
60	Signal transmission demand capacity	0-255	%	
61	Contact demand capacity	Refer to 13-2-1.Detail Contents in Request Code.	-	
62	External input state (silent mode, etc.)	Refer to 13-2-1.Detail Contents in Request Code.	-	
63				
64				
65				
66				
67				
68				
69				
70	Outdoor unit-Capacity setting display	Refer to 13-2-1.Detail Contents in Request Code.	-	
71	Outdoor unit-Setting information	Refer to 13-2-1.Detail Contents in Request Code.	-	
72				
73				
74				
75				
76				
77				
78				
79				
80				
81				
82				
83				
84	M-NET adapter connection (presence/absence)	"0000": Not connected "0001": Connected	-	
85				
86				
87				
88				
89	Display of execution of replace/wash operation	"0000": Not connected "0001": Connected	-	
90	Outdoor unit-Microprocessor version information	Examples) Ver 5.01 ➔ "0501"	Ver	
91	Outdoor unit-Microprocessor version information (sub No.)	Auxiliary information (displayed after version information) Examples) Ver 5.01 A000 ➔ "A000"	-	
92				
93				
94				
95				
96				
97				
98				
99				
100	Outdoor unit-Error postponement history 1 (latest)	Displays postponement code. (" - - " is displayed if no postponement code is present)	Code	
101	Outdoor unit-Error postponement history 2 (previous)	Displays postponement code. (" - - " is displayed if no postponement code is present)	Code	
102	Outdoor unit-Error postponement history 3 (second to last)	Displays postponement code. (" - - " is displayed if no postponement code is present)	Code	

Request code	Request content	Description (Display range)	Unit	Remarks
103	Error history 1 (latest)	Displays error history. (" - - " is displayed if no history is present.)	Code	
104	Error history 2 (second to last)	Displays error history. (" - - " is displayed if no history is present.)	Code	
105	Error history 3 (third to last)	Displays error history. (" - - " is displayed if no history is present.)	Code	
106	Abnormal thermistor display (TH3/TH6/TH7/TH8)	3: TH3 6: TH6 7: TH7 8:TH8 0: No thermistor error	Sensor number	
107	Operation mode at time of error	Displayed in the same way as request code "0".	-	
108	Compressor-Operating current at time of error	0-50	A	
109	Compressor-Accumulated operating time at time of error	0-9999	10 hours	
110	Compressor-Number of operation times at time of error	0-9999	100 times	
111	Discharge temperature at time of error	-4-422	°F	
112	Outdoor unit - Liquid pipe 1 temperature (TH3) at time of error	-58-194	°F	
113				
114	Outdoor unit-2-phase pipe temperature (TH6) at time of error	-58-194	°F	
115	Outdoor suction pipe temperature (TH32) at time of error	-58-194	°F	
116	Outdoor unit-Ambient temperature (TH7) at time of error	-58-194	°F	
117	Outdoor unit-Heat sink temperature (TH8) at time of error	-40-392	°F	
118	Discharge super heat (SHd) at time of error	0-327	°F	
119	Subcooling (SC) at time of error	0-255	°F	
120	Compressor-Operating frequency at time of error	0–255	Hz	
121	Outdoor unit at time of error • Fan output step	0-10	Step	
122	Outdoor unit at time of error • Fan 1 speed (Only for air conditioners with DC fan)	0-9999	rpm	
123	Outdoor unit at time of error • Fan 2 speed (Only for air conditioners with DC fan)	0-9999	rpm	"0" is displayed if air conditioner is a single-fan type.
124				
125	LEV-A opening at time of error	0-500	Pulses	
126	LEV-B opening at time of error	0-500	Pulses	
127				
128				
129				
130	Thermo ON time until operation stops due to error	0–999	Minutes	
131				
132	Indoor - Liquid pipe temperature at time of error	-38-190	°F	Average value of all indoor units is displayed if air conditioner consists of two or more indoor units (twin, triple, quad).
133	Indoor-Cond./Eva. pipe temperature at time of error	-38-190	°F	Average value of all indoor units is displayed if air conditioner consists of two or more indoor units (twin, triple, quad).
134	Indoor at time of error • Intake air temperature <Thermostat judge temperature>	-38-190	°F	
135				
136				
137				
138				
139				
140				
~				
146				
147				
148				
149				
150	Indoor-Actual intake air temperature	-38-190	°F	↑
151	Indoor - Liquid pipe temperature	-38-190	°F	↑
152	Indoor-Cond./Eva. pipe temperature	-38-190		

Request code	Request content	Description (Display range)	Unit	Remarks
153				
154	Indoor-Fan operating time (After filter is reset)	0–9999	1 hour	
155	Indoor-Total operating time (Fan motor ON time)	0–9999	10 hours	
156				
157	Indoor fan output value (Sj value)	0–255 Fan control data	-	For indoor fan phase control
158	Indoor fan output value (Pulsation ON/OFF)	"00 **" ** indicates fan control data.	-	For indoor fan pulsation control
159	Indoor fan output value (duty value)	"00 **" ** indicates fan control data.	-	For indoor DC brushless motor control
160				
161				
162	Indoor unit-Model setting information	Refer to 13-2-1. Detail Contents in Request Code.	-	
163	Indoor unit-Capacity setting information	Refer to 13-2-1. Detail Contents in Request Code.	-	
164	Indoor unit-SW3 information	Undefined	-	
165	Wireless pair No. (indoor control board side) setting	Refer to 13-2-1. Detail Contents in Request Code.	-	
166	Indoor unit-SW5 information	Undefined	-	
167				
~				
189				
190	Indoor unit-Microprocessor version information	Examples) Ver 5.01 ➔ "0501"	Ver	
191	Indoor unit-Microprocessor version information (sub No.)	Auxiliary information (displayed after version information) Examples) Ver 5.01 A000 ➔ "A000"	-	
192				

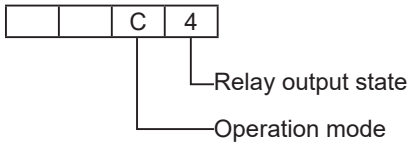
13-2-1. Detail Content in Request Code



[Example) Request code "004"
Discharge temperature 156°F
Refrigerant address "00"]

Operation state (Request code: "0")

Data display



Operation mode

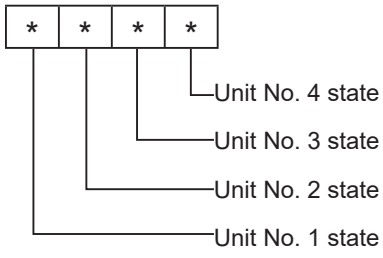
Display	Operation mode
0	STOP • FAN
C	COOL • DRY
H	HEAT
d	DEFROST

Relay output state

Display	Power currently supplied to compressor	Compressor	4-way valve	Solenoid valve
0	-	-	-	-
1				ON
2			ON	
3			ON	ON
4		ON		
5		ON		ON
6		ON	ON	
7		ON	ON	ON
8	ON			
A	ON		ON	

Indoor unit-Control state (Request code: "50")

Data display



Operation mode

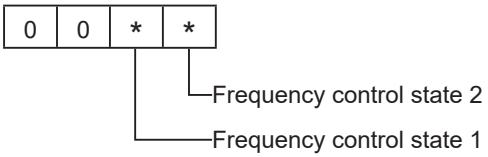
Display	State
0	Normal
1	Preparing for heat operation.
2	-
3	-
4	Heater is ON.
5	Anti-freeze protection is ON.
6	Overheat protection is ON.
7	Requesting compressor to turn OFF.
F	There are no corresponding units.

Outdoor unit-Control state (Request code: "51")

Data display				State
0	0	0	0	Normal
0	0	0	1	Preparing for heat operation.
0	0	0	2	Defrost

Compressor-Frequency control state (Request code: "52")

Data display



Frequency control state 1

Display	State
0	No current limit
1	Primary current limit control is ON.
2	Secondary current limit control is ON.

Frequency control state 2

Display	Discharge temperature overheat prevention	Condensation temperature overheat prevention	Anti-freeze protection control	Heat sink temperature overheat prevention
0				
1	Controlled			
2		Controlled		
3	Controlled	Controlled		
4			Controlled	
5	Controlled		Controlled	
6		Controlled	Controlled	
7	Controlled	Controlled	Controlled	
8				Controlled
9	Controlled			Controlled
A		Controlled		Controlled
b	Controlled	Controlled		Controlled
C			Controlled	Controlled
d	Controlled		Controlled	Controlled
E		Controlled	Controlled	Controlled
F	Controlled	Controlled	Controlled	Controlled

Fan control state (Request code: "53")

Data display

0	0	*	*

Fan step correction value by heatsink temperature overheat prevention control
Fan step correction value by cool condensation temperature overheat prevention control

Display	Correction valve
- (minus)	-1
0	0
1	+1
2	+2

Actuator output state (Request code: "54")

Data display

0	0	*	*

Actuator output state 1
Actuator output state 2

Actuator output state 1

Display	SV1	4-way valve	Compressor	Compressor is warming up
0				
1	ON			
2		ON		
3	ON	ON		
4			ON	
5	ON		ON	
6		ON	ON	
7	ON	ON	ON	
8				ON
9	ON			ON
A		ON		ON
b	ON	ON		ON
C			ON	ON
d	ON		ON	ON
E		ON	ON	ON
F	ON	ON	ON	ON

Actuator output state 2

Display	52C	SV2	SS
0			
1	ON		
2		ON	
3	ON	ON	
4			ON
5	ON		ON
6		ON	ON
7	ON	ON	ON

Error content (U9) (Request code: "55")

Data display

0	0	*	*

Error content 1
Error content 2

Error content 1 ●: Detected

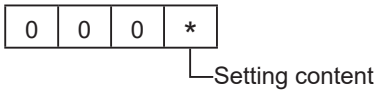
Display	Overvoltage error	Undervoltage error	L_1-phase open error	Power synchronizing signal error
0				
1	●			
2		●		
3	●	●		
4			●	
5	●		●	
6		●	●	
7	●	●	●	
8				●
9	●			●
A		●		●
b	●	●		●
C			●	●
d	●		●	●
E		●	●	●
F	●	●	●	●

Error content 2 ●: Detected

Display	Converter Fo error	PAM error	Input voltage sensor error
0			
1	●		
2		●	
3	●	●	
8			●
9	●		●
A		●	●
b	●	●	●

Contact demand capacity (Request code: "61")

Data display

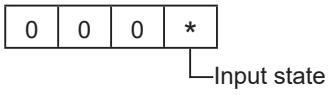


Setting content

Display	Setting value	Setting	
		SW7-1	SW7-2
0	0%		
1	50%	ON	
2	75%		ON
3	100%	ON	ON

External input state (Request code: "62")

Data display



Input state ●: Input position

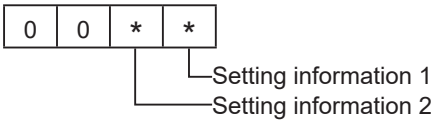
Display	Contact demand input	Silent mode input	Spare 1 input	Spare 2 input
0				
1	●			
2		●		
3	●	●		
4			●	
5	●		●	
6		●	●	
7	●	●	●	
8				●
9	●			●
A		●		●
b	●	●		●
C			●	●
d	●		●	●
E		●	●	●
F	●	●	●	●

Outdoor unit-Capacity setting display (Request code: "70")

Data Display	Capacity
9	12
10	18
11	24
14	30
20	36
25	42
28	48
34	60

Outdoor unit-Setting information (Request code: "71")

Data display



Setting information 1

Display	Defrost mode
0	Standard
1	For high humidity

Setting information 2

Display	Single-/ 3-phase	Heat pump/ cooling only
0	Single-phase	Heat pump
1		Cooling only
2	3-phase	Heat pump
3		Cooling only

Indoor unit-Capacity setting information (Request code: "163")

Data display

0	0	*	*

See the table on the right.

Display	Capacity setting state	Display	Capacity setting state
00		10	42
01		11	
02		12	48
03		13	60
04		14	
05		15	
06	12	16	
07		17	
08		18	
09	18	19	
0A		1A	
0b	24	1b	
0C		1C	
0d	30	1d	
0E		1E	
0F	36	1F	

Wireless pair No. (indoor control board side) setting (Request code: "165")

Data display

0	0	*	*

See the table on the right.

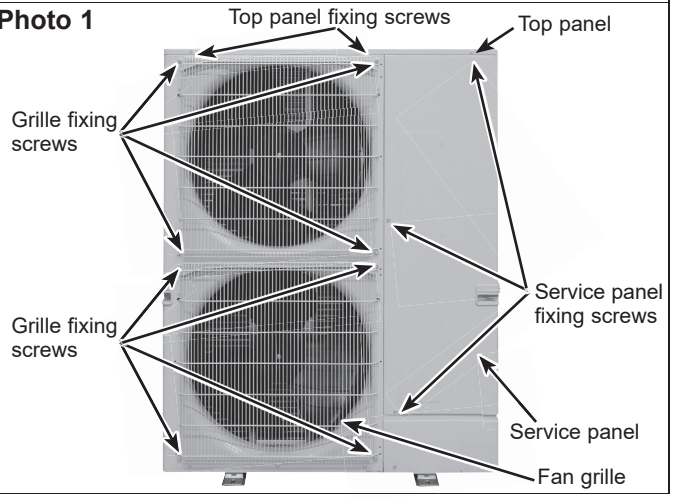
Display	Pair No. setting state
00	No. 0
01	No. 1 J41 disconnected
02	No. 2 J42 disconnected
03	No. 3 J41, J42 disconnected

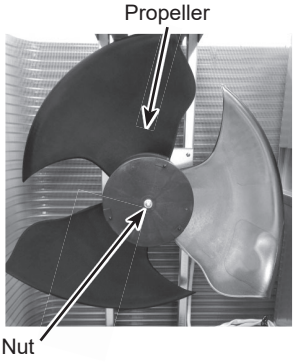
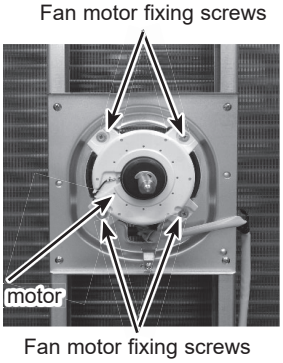
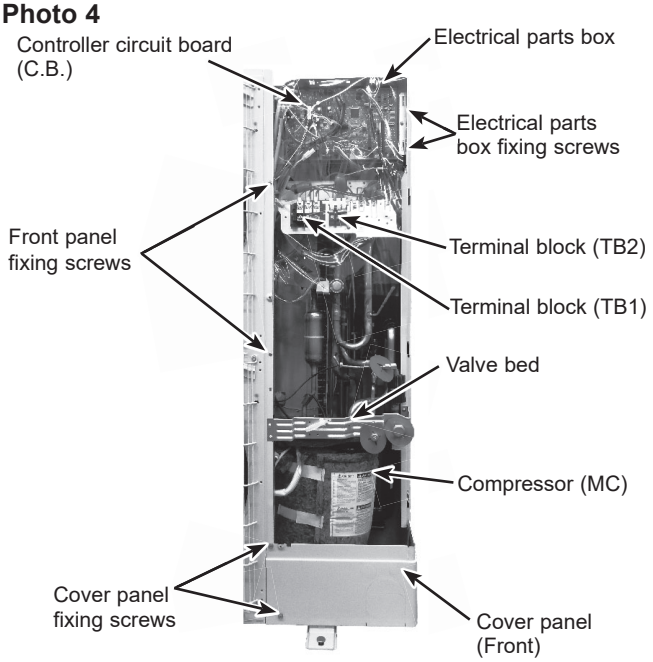
14 DISASSEMBLY PROCEDURE

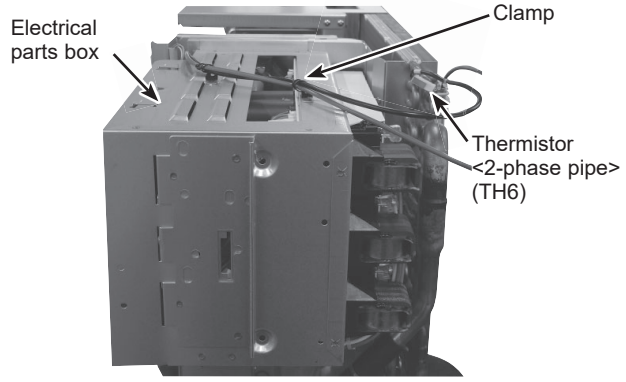
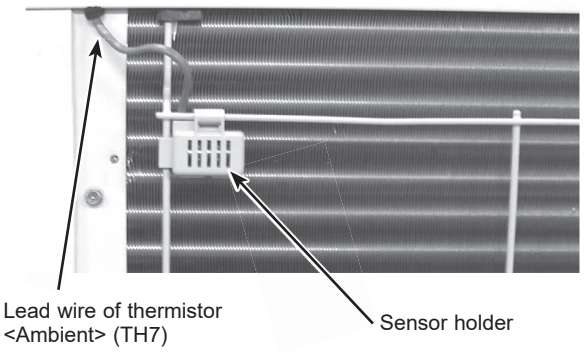
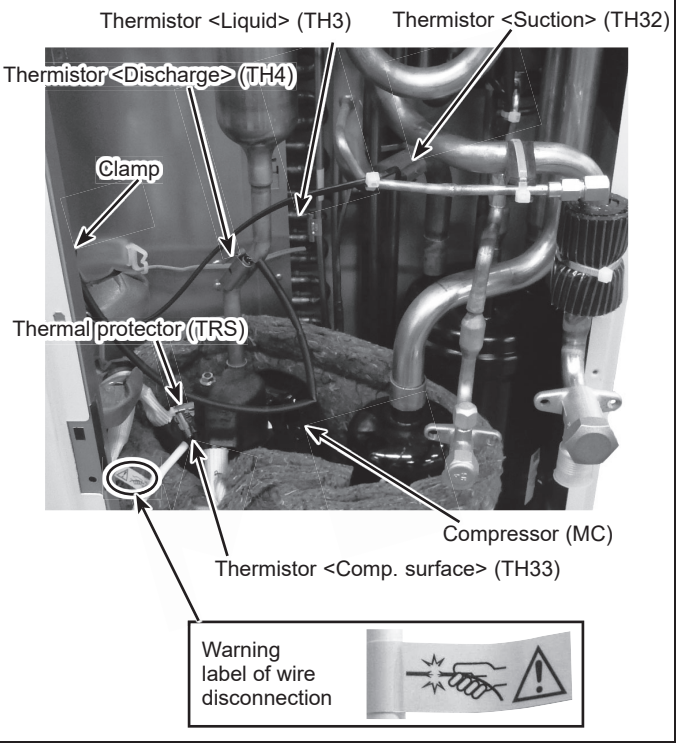
14-1. PUZ-AK36NL-U1 PUZ-AK42NL-U1 PUY-AK36NL-U1 PUY-AK42NL-U1

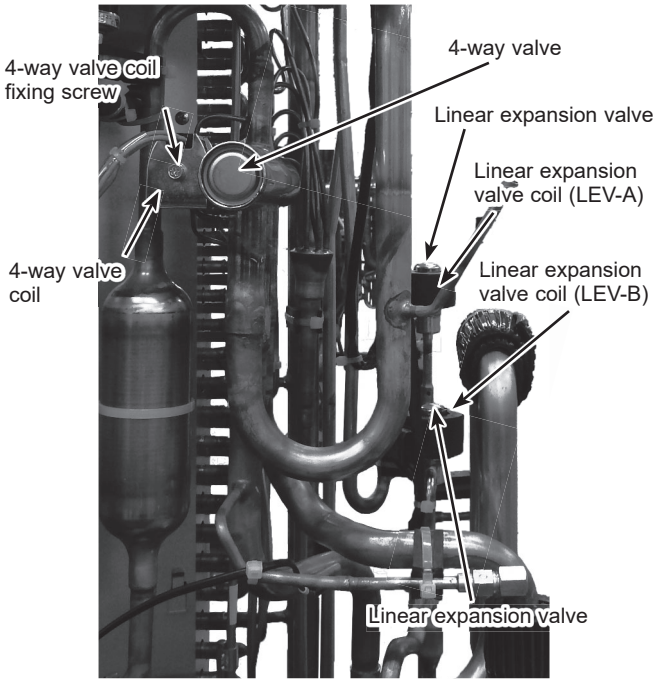
→ : Indicates the visible parts in the photos/figures.
⇢ : Indicates the invisible parts in the photos/figures.

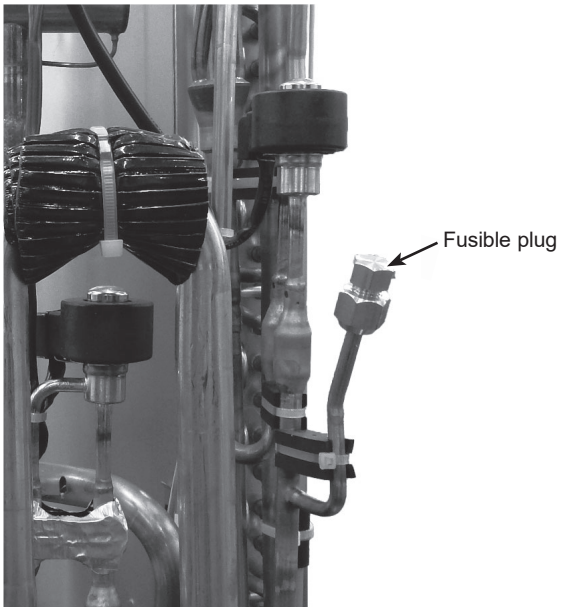
Note: The red markings indicate that flammable refrigerant is charged. If you remove the markings, put them back to the original position after the work is completed.

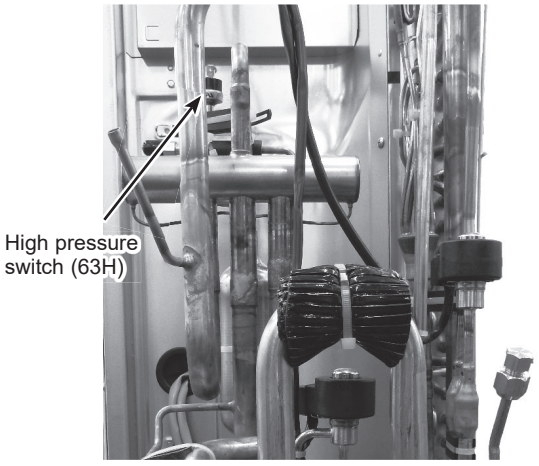
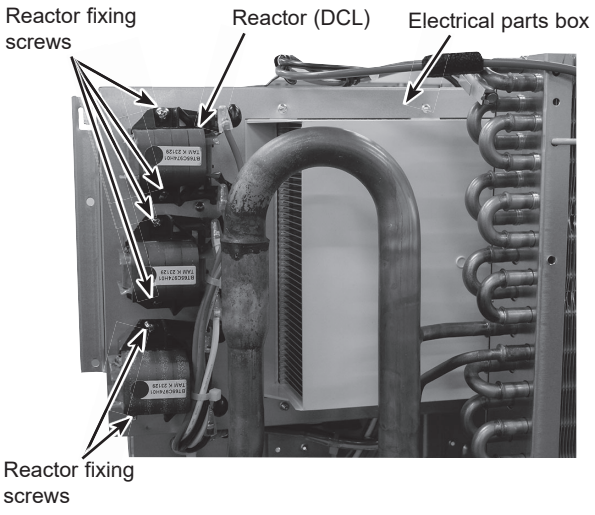
OPERATING PROCEDURE	PHOTOS/FIGURES
1. Removing the service panel, top panel, ice guard, and propeller (1) Remove the 3 service panel fixing screws (5 × 12) and slide the hook on the right downward to remove the service panel. (See Photo 1) (2) Remove screws (2 for front, 3 for rear/5 × 12) of the top panel and remove it. (See Photo 1) (3) Remove the 4 grille fixing screws (5 × 12) from each grille and remove it. (See Photo 1) (4) Pull down the ice guard and remove it. (5) Remove a nut (for right handed screw of M6) to detach the propeller. (See Photo 2)	**Photo 1** 

OPERATING PROCEDURE	PHOTOS/FIGURES
2. Removing the fan motor (MF1, MF2) (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Remove the fan grille. (See Photo 1) (4) Remove a nut (for right handed screw of M6) to detach the propeller. (See Photo 2) (5) Disconnect the connectors, CNF1, CNF2 on the controller circuit board in the electrical parts box. (6) Remove the 4 fan motor fixing screws (5 × 20) to detach the fan motor. (See Photo 3) (7) When attaching the fan motor, make sure to route the cable through the hook below the fan motor and fix firmly with the clamp. **Note:Tighten the propeller fan with a torque of 5.7 ± 0.3N·m [4.2 ± 0.2 lbf·ft].**	**Photo 2**  **Photo 3** 
3. Removing the electrical parts box (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Disconnect the indoor/outdoor connecting wire from terminal block. (4) Remove all the following connectors from the controller circuit board; fan motor, linear expansion valve, thermistor <Liquid>, thermistor <Discharge>, thermistor <2-phase pipe>, thermistor <Ambient>, high pressure switch, 4-way valve coil. Then remove a screw (4 × 8) from the valve bed to remove the lead wire. Pull out the disconnected wire from the electrical parts box. <Diagram symbol in the connector housing> • Fan motor (CNF1, CNF2) • Linear expansion valve (LEV-A, B) • Thermistor <Liquid> (TH3) • Thermistor <Discharge> (TH4) • Thermistor <Comp. surface> (TH33) • Thermistor <2-phase pipe, Ambient> (TH6/7) • Thermistor <Suction> (TH32) • Thermal protector (TRS) • High pressure switch (63H) • 4-way valve coil (21S4) (5) Remove the terminal cover and disconnect the compressor lead wire. (6) Loosen the clamp for lead wires on the separator. (7) Remove an electrical parts box fixing screw (2 for front /4 × 10) and detach the electrical parts box by pulling it upward. The electrical parts box is fixed with 2 hooks on the left and 1 hook on the right.	**Photo 4** 

OPERATING PROCEDURE	PHOTOS/FIGURES
4. Removing the thermistor <2-phase pipe> (TH6) (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Disconnect the connectors TH6 (red), on the controller circuit board in the electrical parts box. (4) Loosen the clamp for the lead wire in the rear of the electrical parts box. (5) Pull out the thermistor <2-phase pipe> (TH6) from the sensor holder. **Note: In the case of replacing the thermistor <2-phase pipe> (TH6), replace it together with thermistor <Ambient> (TH7) since they are combined together.** **Refer to No.5 below to remove thermistor <Ambient>.**	**Photo 5** 
5. Removing the thermistor <Ambient> (TH7) (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Disconnect the connector TH7 (red) on the controller circuit board in the electrical parts box. (4) Loosen the clamp for the lead wire in the rear of the electrical parts box. (See Photo 5) (5) Pull out the thermistor <Ambient> (TH7) from the sensor holder. **Note: In the case of replacing thermistor <Ambient> (TH7),** **replace it together with thermistor <2-phase pipe> (TH6), since they are combined together.** **Refer to No. 4 above to remove thermistor <2-phase pipe>.**	**Photo 6** 
6. Removing the thermistor <Liquid> (TH3), thermistor <Discharge> (TH4), thermistor <Comp. surface> (TH33), thermistor <Suction> (TH32) and thermal protector (TRS) (1) Remove the service panel. (See Photo 1) (2) Disconnect the connectors, TH3 (white), TH32 (black), TH4 (white), and TH33 (yellow), on the controller circuit board in the electrical parts box. (3) Loosen the fasteners for lead wires in the electrical parts box. Cut the band connecting the 63H lead wire and the lead wire of the thermal protector in the electrical parts box, and disconnect the relay connector of the thermal protector (TRS). (4) Loosen clamps for the lead wires on the separator. (See Photo 7) Loosen clamp and cable strap for lead wires on the bottom of the electrical parts box. (Note that this procedure is only for removing TH3.) (5) Loosen clamp for the lead wire for TH3 and TH32. (6) Pull out the thermistor <Liquid> (TH3), thermistor <Comp. surface> (TH33) and thermistor <Suction> (TH32) and thermal protector (TRS) from the sensor holder. Instead of holding the lead wires, hold the thermistor body when removing and installing the shell thermistor. See "Warning label of wire disconnection". (See Photo 6) (7) Remove the damper and pull out the thermal protector (TRS) from the holder. (See Photo 7)	**Photo 7** 

OPERATING PROCEDURE	PHOTOS/FIGURES
7. Removing the 4-way valve coil (21S4) and linear expansion valve coil (LEV-A, B) (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) **Removing the 4-way valve coil** (3) Remove 4-way valve coil fixing screw (M5 × 7). (4) Remove the 4-way valve coil by sliding the coil toward you. Loosen the clamp for lead wires on the separator. Loosen fasteners and the cable strap for lead wires in the electrical parts box. (5) Disconnect the connector 21S4 (green) on the controller circuit board in the electrical parts box. **Removing the linear expansion valve coil** (3) Remove the linear expansion valve coil by sliding the coil upward. Loosen the clamp for lead wires on the separator. Loosen the fasteners and the cable strap for lead wires in the electrical parts box. (4) Disconnect the connectors, LEV-A (white) and LEV-B (red), on the controller circuit board in the electrical parts box.	**Photo 8** 
8. Removing the 4-way valve (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Remove the electrical parts box. (See Photo 4) (4) Remove the 2 cover panel front fixing screws (5x12) and remove the cover panel front. (See Photo 1) (5) Remove the 2 cover panel rear fixing screws (5x12) and remove the cover panel rear. (6) Remove the 3 valve bed fixing screws (4 × 10) and 4 stop valve fixing screws (5 × 16), then remove the valve bed. (7) Remove the 3 right side panel fixing screws (5 × 12) in the rear of the unit and then remove the right side panel. (8) Remove the 4-way valve coil. (See Photo 8) (9) Recover refrigerant. (10) Remove the welded part of 4-way valve. **Note 1: Recover refrigerant without spreading it in the air.** **Note 2: The welded part can be removed easily by removing the right side panel.** **Note 3: When installing the 4-way valve, cover it with a wet cloth to prevent it from heating (250˚F [120°C] or more), then braze the pipes so that the inside of pipes are not oxidized.** **Note 4: Be careful not to expose the fusible plug to the braze torch flame or transfer heat to it; protect the fusible plug with a wet cloth when necessary (fusible plug breaks at 158°F [70°C]).**	

OPERATING PROCEDURE	PHOTOS/FIGURES
9. Removing linear expansion valve (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3)Remove the electrical parts box. (See Photo 4) (4)Remove the cover panel front. (Refer to procedure 8) (5)Remove the cover panel rear. (Refer to procedure 8) (6) Remove the 3 valve bed fixing screws (4 × 10) and the 4 stop valve fixing screws (5 × 16), then remove the valve bed. (7) Remove the 3 right side panel fixing screws (5 × 12) in the rear of the unit and then remove the right side panel. (8) Remove the linear expansion valve. (See Photo 8) (9) Recover refrigerant. (10) Remove the welded part of linear expansion valve. **Note 1: Recover refrigerant without spreading it in the air.** **Note 2: The welded part can be removed easily by removing the right side panel.** **Note 3: When installing the linear expansion valve, cover it with a wet cloth to prevent it from heating (250˚F or more), then braze the pipes so that the inside of pipes are not oxidized.** **Note 4: Be careful not to expose the fusible plug to the braze torch flame or transfer heat to it; protect the fusible plug with a wet cloth when necessary (fusible plug breaks at 158°F [70°C]).**	**Photo 9** 

OPERATING PROCEDURE	PHOTOS/FIGURES
10. Removing the high pressure switch (63H) (1) Remove the service panel. (See photo 1) (2) Remove the top panel. (See photo 1) (3) Remove the electrical parts box. (See Photo 4) (4) Remove the cover panel front. (Refer to procedure 8) (5) Remove the cover panel rear. (Refer to procedure 8) (6) Remove the valve bed. (Refer to procedure 8) (7) Remove the side panel (R). (Refer to procedure 8) (8) Pull out the lead wire of high pressure switch (63H). (9) Recover refrigerant. (10) Remove the welded part of high pressure switch (63H). **Note 1: Recover refrigerant without spreading it in the air.** **Note 2: The welded part can be removed easily by removing the right side panel.** **Note 3: When installing the high pressure switch, cover it with a wet cloth to prevent it from heating (210°F[100°C] or more), then braze the pipes so that the inside of pipes are not oxidized.**	**Photo 10** 
11. Removing the reactor (DCL) (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Remove the electrical parts box. (See Photo 4) <Removing the reactor> (4) Remove the reactor fixing screws (6 places, 4 × 10) and remove the reactor. **Note 1: The reactor is attached to the rear of the electrical parts box.** **Note 2: The 3 pieces of reactors to be replaced must have the same color of sticker. (Green, Orange, or Blue)**	**Photo 11** 

OPERATING PROCEDURE

12. Removing the compressor (MC)

(1) Remove the service panel. (See Photo 1)
(2) Remove the top panel. (See Photo 1)
(3) Remove the screws on the front panel (2 screws on the top, 3 screws on the bottom, and 2 screws on the right). Then slide the front panel upward for removal.
(4) Remove the electrical parts box. (See Photo 4)
(5) Remove the cover panel front. (Refer to procedure 8)
(6) Remove the cover panel rear. (Refer to procedure 8)
(7) Remove the valve bed. (Refer to procedure 8)
(8) Remove the side panel (R). (Refer to procedure 8)
(9) Remove 1 separator fixing screws (4 × 10) and move the separator to the fan side. Make sure that the separator is not in contact with the fan. (See Photo13)
(10) Remove the comp felt for the compressor.
(11) Recover refrigerant.
(12) Remove the welded pipe of compressor inlet and outlet then remove the compressor.
(To install the compressor, tilt the outdoor unit backward so that the inlet and outlet pipes are facing upward. This allows you to easily connect the unit to the compressor.) (See Photo 14)
(13) Remove the 3 points of the compressor fixing nut using a spanner or an adjustable wrench.
(14) Remove the welded pipe of the compressor inlet and outlet and then remove the compressor.

Note: Recover refrigerant without spreading it in the air.

PHOTOS/FIGURES

Photo 12

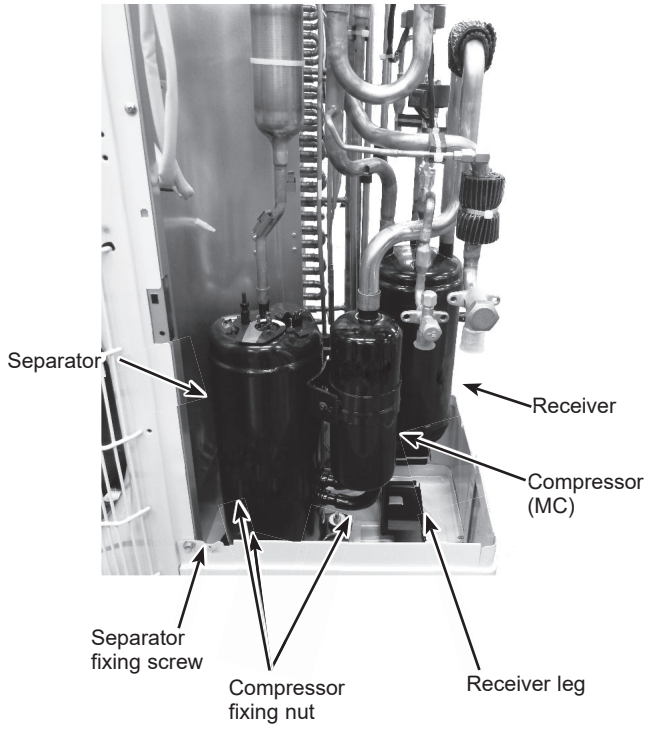


Photo 13

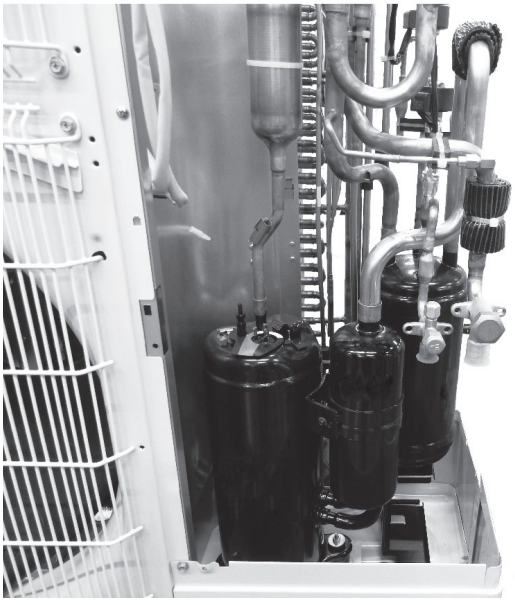
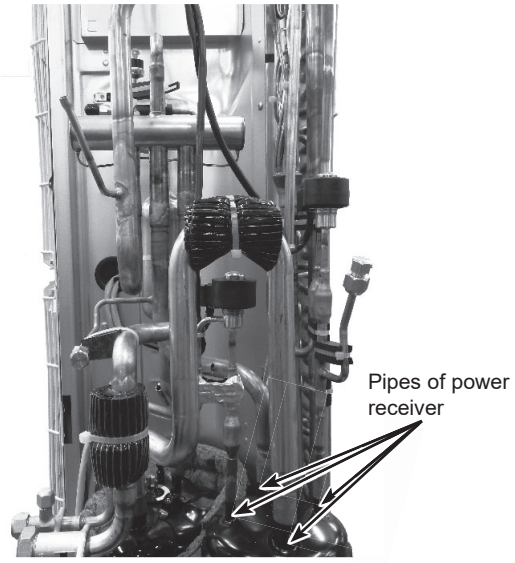


Photo 14

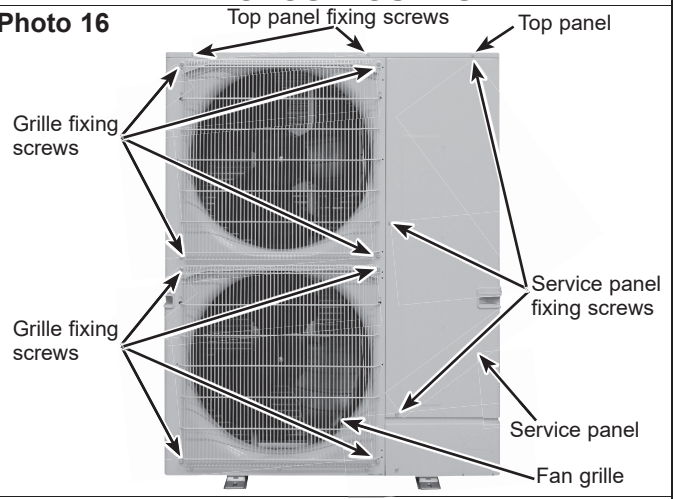
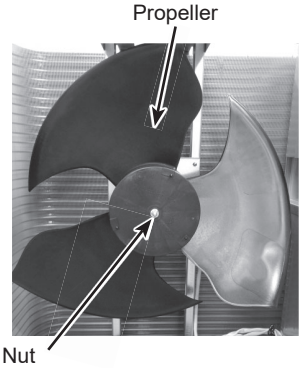
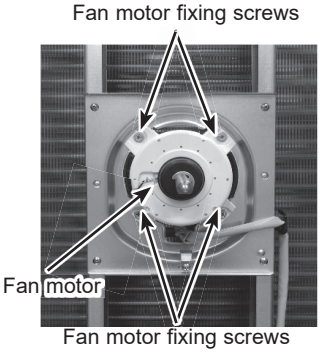
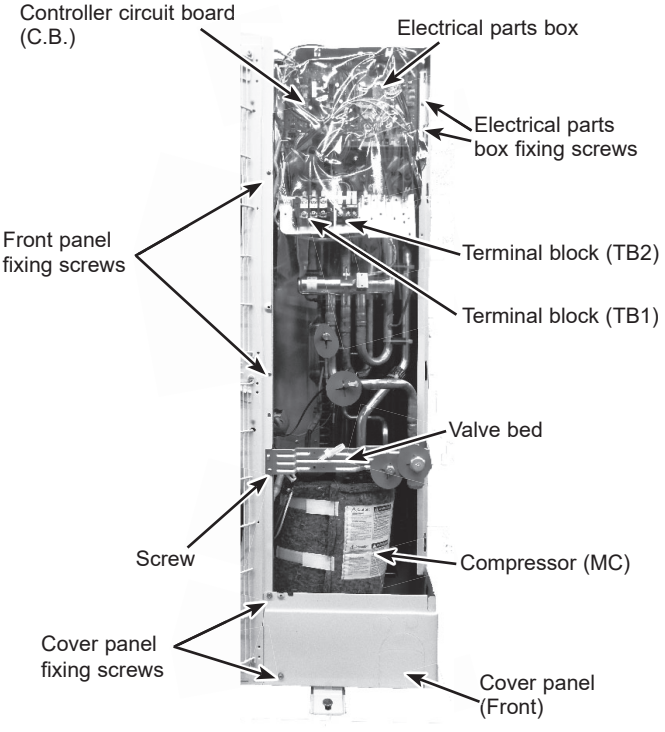


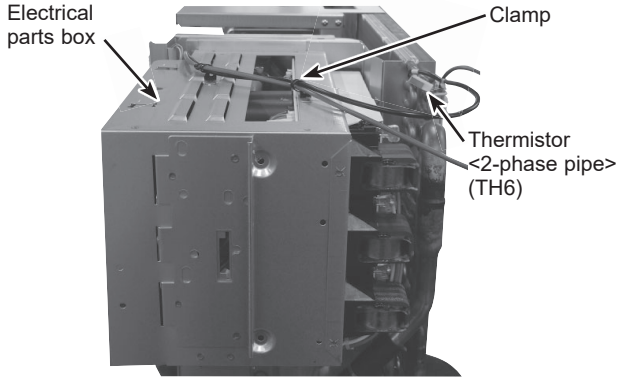
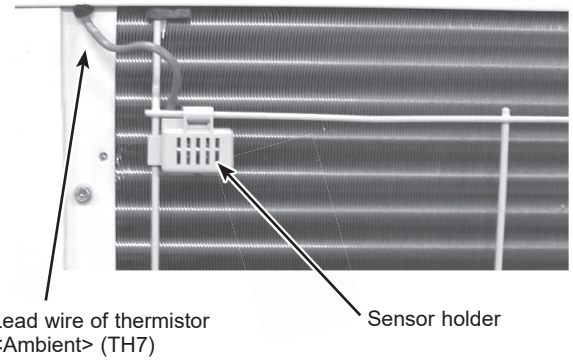
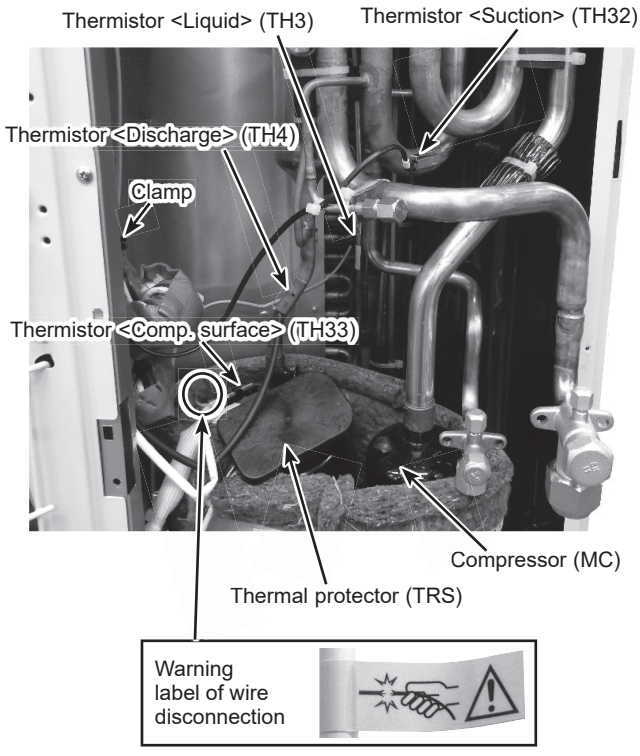
OPERATING PROCEDURE	PHOTOS/FIGURES
13. Removing the power receiver (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Remove the 2 front cover panel fixing screws (5 × 12) and remove the front cover panel. (See Photo 4) (4) Remove the 2 back cover panel fixing screws (5 × 12) and remove the rear cover panel. (5) Remove the electrical parts box. (See Photo 4) (6) Remove the 3 valve bed fixing screws (4 × 10) and the 4 stop valve fixing screws (5 × 16), then remove the valve bed. (7) Remove the right side panel fixing screws (4 for the rear, 1 on the right/5 × 12) and then remove the right side panel. (See Photo 1) (8) Recover refrigerant. (9) Remove the 4 welded pipes of receiver inlet and outlet. (10) Remove the 2 receiver leg fixing screws (4 × 10). **Note: Recover refrigerant without spreading it in the air.**	**Photo 15** 

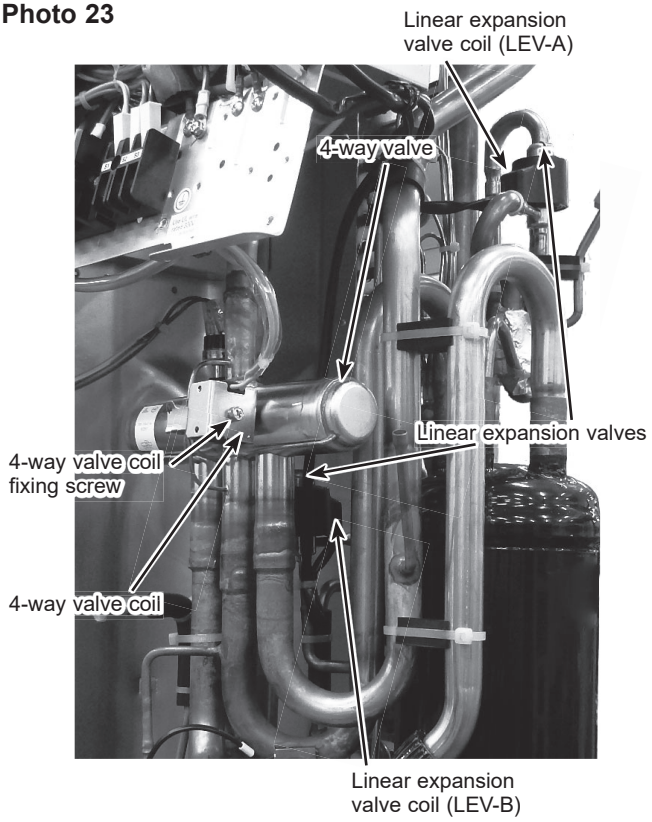
14-2. PUZ-AK48NL-U1 PUZ-AK60NL-U1 PUY-AK48NL-U1 PUY-AK60NL-U1 SUZ-AK48NL-U1 SUZ-AK60NL-U1

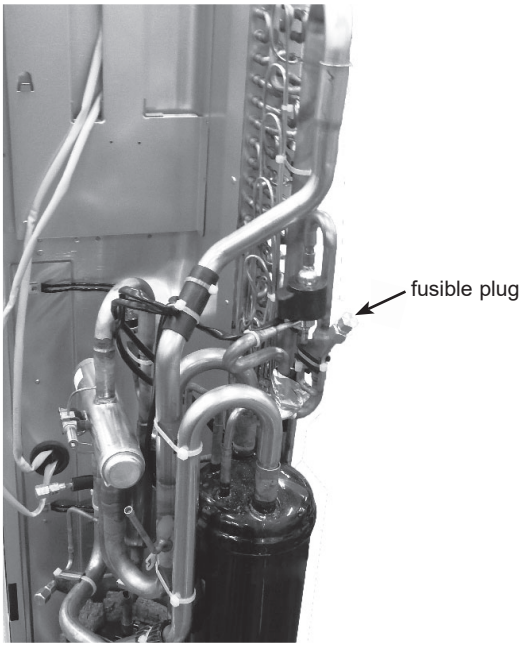
——→ : Indicates the visible parts in the photos/figures.
--------→ : Indicates the invisible parts in the photos/figures.

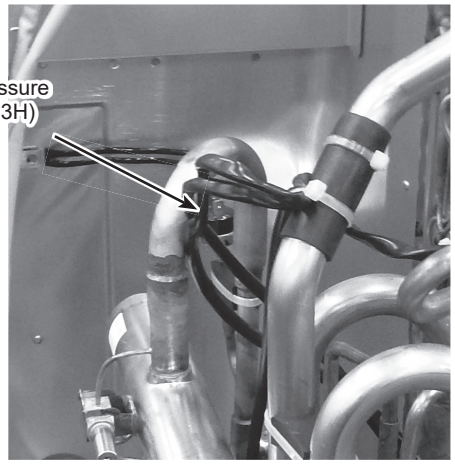
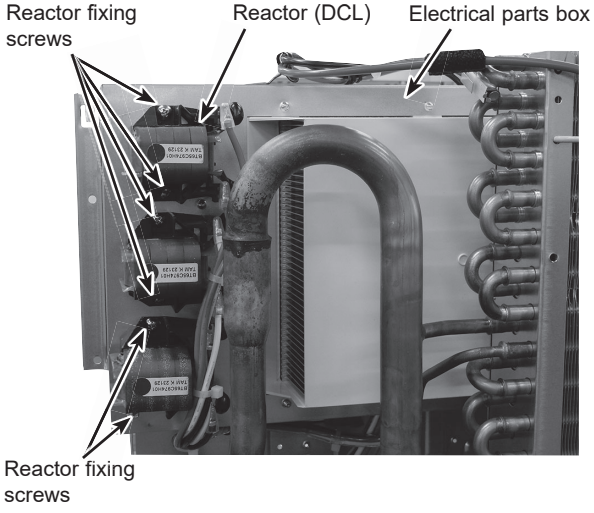
Note: The red markings indicate that flammable refrigerant is charged. If you remove the markings, put them back to the original position after the work is completed.

OPERATING PROCEDURE	PHOTOS/FIGURES
1. Removing the service panel, top panel, ice guard, and propeller (1) Remove the 3 service panel fixing screws (5 × 12) and slide the hook on the right downward to remove the service panel. (See Photo 16) (2) Remove the screws (2 for front, 3 for rear/5 × 12) of the top panel and remove it. (See Photo 16) (3) Remove the 4 grille fixing screws (5 × 12) from each grille and remove it. (See Photo 16) (4) Pull down the ice guard and remove it. (5) Remove a nut (for right handed screw of M6) to detach the propeller. (See Photo 17)	**Photo 16** 
2. Removing the fan motor (MF1, MF2) (1) Remove the service panel. (See Photo 16) (2) Remove the top panel. (See Photo 16) (3) Remove the fan grille.(See Photo 16) (4) Remove a nut (for right handed screw of M6) to detach the propeller. (See Photo 17) (5) Disconnect the connectors CNF1 and CNF2 on the controller circuit board in electrical parts box. (6) Remove the 4 fan motor fixing screws (5 × 20) to detach the fan motor. (See Photo 18) (7) When attaching the fan motor, make sure to route the cable through the hook below the fan motor and fix firmly with the clamp. **Note:Tighten the propeller fan with a torque of 5.7 ± 0.3N·m [4.2 ± 0.2 lbf·ft].**	**Photo 17**  **Photo 18** 
3. Removing the electrical parts box (1) Remove the service panel. (See Photo 16) (2) Remove the top panel. (See Photo 16) (3) Disconnect the indoor/outdoor connecting wire from terminal block. (4) Remove all the following connectors from controller circuit board; fan motor, linear expansion valve, thermistor <Liquid>, thermistor <Discharge>, thermistor <2-phase pipe>, thermistor <Ambient>, high pressure switch, 4-way valve coil. Then remove the screw (4 × 8) from the valve bed to remove the lead wire. Pull out the disconnected wire from the electrical parts box. <Diagram symbol in the connector housing> • Fan motor (CNF1, CNF2) • Linear expansion valve (LEV-A, B) • Thermistor <Liquid> (TH3) • Thermistor<Discharge> (TH4) • Thermistor <Comp. surface> (TH33) • Thermistor <2-phase pipe, Ambient> (TH6/7) • Thermistor <Suction> (TH32) • Thermal protector (TRS) • High pressure switch (63H) • 4-way valve coil (21S4) (5) Remove the terminal cover and disconnect the compressor lead wire. (6) Loosen the clamp for lead wires on the separator. (7) Remove an electrical parts box fixing screw (2 for front /4 × 10) and detach the electrical parts box by pulling it upward. The electrical parts box is fixed with 2 hooks on the left and 1 hook on the right.	**Photo 19** 

OPERATING PROCEDURE	PHOTOS/FIGURES
4. Removing the thermistor <2-phase pipe> (TH6) (1) Remove the service panel. (See Photo 16) (2) Remove the top panel. (See Photo 16) (3) Disconnect the connectors TH6 and TH7 (red) on the controller circuit board in the electrical parts box. (4) Loosen the clamp for the lead wire in the rear of the electrical parts box. (5) Pull out the thermistor <2-phase pipe> (TH6) from the sensor holder. **Note: When replacing the thermistor <2-phase pipe> (TH6), replace it together with thermistor <Ambient> (TH7) because they are combined together.** **Refer to No.5 below to remove the thermistor <Ambient>.**	**Photo 20** 
5. Removing the thermistor <Ambient> (TH7) (1) Remove the service panel. (See Photo 16) (2) Remove the top panel. (See Photo 16) (3) Disconnect the connector TH7 (red) on the controller circuit board in the electrical parts box. (4) Loosen the clamp for the lead wire in the rear of the electrical parts box. (See Photo 20) (5) Pull out the thermistor <Ambient> (TH7) from the sensor holder. **Note: When replacing the thermistor <Ambient> (TH7), replace it together with the thermistor <2-phase pipe> (TH6), because they are combined together.** **Refer to No. 4 above to remove thermistor <2-phase pipe>.**	**Photo 21** 
6. Removing the thermistor <Liquid> (TH3), thermistor <Discharge> (TH4), thermistor <Comp. surface> (TH33), thermistor <Suction> (TH32) and thermal protector (TRS) (1) Remove the service panel. (See Photo 16) (2) Disconnect the connectors, TH3 (white), TH32 (black), TH4 (white), and TH33 (yellow), on the controller circuit board in the electrical parts box. (3) Loosen fasteners for lead wires in the electrical parts box. Cut the band connecting the 63H lead wire and the lead wire of the thermal protector in the electrical parts box, and disconnect the relay connector of the thermal protector (TRS). (4) Loosen clamps for the lead wires on the separator. (See Photo 22) Loosen the clamp and the cable strap for lead wires on the bottom of the electrical parts box. (Note that this procedure is only for removing TH3.) (5) Loosen the clamp for the lead wire for TH3 and TH32. (6) Pull out the thermistor <Liquid> (TH3), thermistor <Comp. surface> (TH33) and thermistor <Suction> (TH32) and thermal protector (TRS) from the sensor holder. Instead of holding the lead wires, hold the thermistor body when removing and installing the shell thermistor. See "Warning label of wire disconnection". (See Photo 22) (7) Remove the damper and pull out the thermal protector (TRS) from the holder. (See Photo 22)	**Photo 22** 

OPERATING PROCEDURE	PHOTOS/FIGURES
7. Removing the 4-way valve coil (21S4) and linear expansion valve coil (LEV-A, B) (1) Remove the service panel. (See Photo 16) (2) Remove the top panel. (See Photo 16) **Removing the 4-way valve coil** (3) Remove the 4-way valve coil fixing screw (M5 × 6.5). (4) Remove the 4-way valve coil by sliding the coil toward you. (5) Disconnect the connector 21S4 (green) on the controller circuit board in the electrical parts box. **Removing the linear expansion valve coil** (3) Remove the linear expansion valve coil by sliding the coil upward. (4) Disconnect the connectors LEV-A (white) and LEV-B (red) on the controller circuit board in the electrical parts box.	**Photo 23** 
8. Removing the 4-way valve (1) Remove the service panel. (See Photo 16) (2) Remove the top panel. (See Photo 16) (3) Remove the electrical parts box. (See Photo 19) (4) Remove the 2 cover panel front fixing screws (5x12) and remove the cover panel front. (See Photo 16) (5) Remove the 2 cover panel rear fixing screws (5x12) and remove the cover panel rear. (6) Remove the 3 valve bed fixing screws (4 × 10), the 4 ball valve, and the stop valve fixing screws (5 × 16), then remove the valve bed. (7) Remove the 3 right side panel fixing screws (5 × 12) in the rear of the unit and then remove the right side panel. (8) Remove the 4-way valve coil. (See Photo 23) (9) Recover refrigerant. (10) Remove the welded part of 4-way valve. **Note 1: Recover refrigerant without spreading it in the air.** **Note 2: The welded part can be removed easily by removing the right side panel.** **Note 3: When installing the 4-way valve, cover it with a wet cloth to prevent it from heating (250˚F [120°C] or more), then braze the pipes so that the inside of pipes are not oxidized.** **Note 4: Be careful not to expose the fusible plug to the braze torch flame or transfer heat to it; protect the fusible plug with a wet cloth when necessary (fusible plug breaks at 158°F [70°C]).**	

OPERATING PROCEDURE	PHOTOS/FIGURES
9. Removing linear expansion valve (1) Remove the service panel. (See Photo 16) (2) Remove the top panel. (See Photo 16) (3) Remove the electrical parts box. (See Photo 19) (4) Remove the cover panel front. (Refer to procedure 8) (5) Remove the cover panel rear. (Refer to procedure 8) (6) Remove the 3 valve bed fixing screws (4 × 10) and the 4 stop valve fixing screws (5 × 16), then remove the valve bed. (7) Remove the 3 right side panel fixing screws (5 × 12) in the rear of the unit and then remove the right side panel. (8) Remove the linear expansion valve. (See Photo 23) (9) Recover refrigerant. (10) Remove the welded part of linear expansion valve. **Note 1: Recover refrigerant without spreading it in the air.** **Note 2: The welded part can be removed easily by removing the right side panel.** **Note 3: When installing the linear expansion valve, cover it with a wet cloth to prevent it from heating (250˚F or more), then braze the pipes so that the inside of pipes are not oxidized.** **Note 4: Be careful not to expose the fusible plug to the braze torch flame or transfer heat to it; protect the fusible plug with a wet cloth when necessary (fusible plug breaks at 158°F [70°C]).**	**Photo 24** 

OPERATING PROCEDURE	PHOTOS/FIGURES
10. Removing the high pressure switch (63H) (1) Remove the service panel. (See photo 16) (2) Remove the top panel. (See photo 16) (3) Remove the electrical parts box. (See Photo 19) (4) Remove the cover panel front. (Refer to procedure 8) (5) Remove the cover panel rear. (Refer to procedure 8) (6) Remove the valve bed. (Refer to procedure 8) (7) Remove the side panel (R). (Refer to procedure 8) (8) Pull out the lead wire of high pressure switch (63H). (9) Recover refrigerant. (10) Remove the welded part of high pressure switch (63H). **Note 1: Recover refrigerant without spreading it in the air.** **Note 2: The welded part can be removed easily by removing the right side panel.** **Note 3: When installing the high pressure switch, cover it with a wet cloth to prevent it from heating (210°F[100°C] or more), then braze the pipes so that the inside of pipes are not oxidized.**	**Photo 25** 
11. Removing the reactor (DCL) (1) Remove the service panel. (See Photo 16) (2) Remove the top panel. (See Photo 16) (3) Remove the electrical parts box. (See Photo 19) <Removing the reactor> (4) Remove the reactor fixing screws (6 places, 4 × 10) and remove the reactor. **Note 1: The reactor is attached to the rear of the electrical parts box.** **Note 2: The 3 pieces of reactors to be replaced must have the same color of sticker. (Green, Orange, or Blue)**	**Photo 26** 

OPERATING PROCEDURE

12. Removing the compressor (MC)

(1) Remove the service panel. (See Photo 16)
(2) Remove the top panel. (See Photo 16)
(3) Remove the screws on the front panel (2 screws on the top, 3 screws on the bottom, and 2 screws on the right). Then slide the front panel upward for removal.
(4) Remove the electrical parts box. (See Photo 19)
(5) Remove the cover panel front. (Refer to procedure 8)
(6) Remove the cover panel rear. (Refer to procedure 8)
(7) Remove the valve bed. (Refer to procedure 8)
(8) Remove the side panel (R). (Refer to procedure 8)
(9) Remove 1 separator fixing screws (4 × 10) and move the separator to the fan side. Make sure that the separator is not in contact with the fan. (See Photo 28)
(10) Remove the comp felt for the compressor.
(11) Recover refrigerant.
(12) Remove the welded pipe of compressor inlet and outlet then remove the compressor. (To install the compressor, tilt the outdoor unit backward so that the inlet and outlet pipes are facing upward. This allows you to easily connect the unit to the compressor.) (See Photo 29)
(13) Remove the 3 points of the compressor fixing nut using a spanner or an adjustable wrench.
(14) Remove the welded pipe of the compressor inlet and outlet and then remove the compressor.

Note: Recover refrigerant without spreading it in the air.

PHOTOS/FIGURES

Photo 27

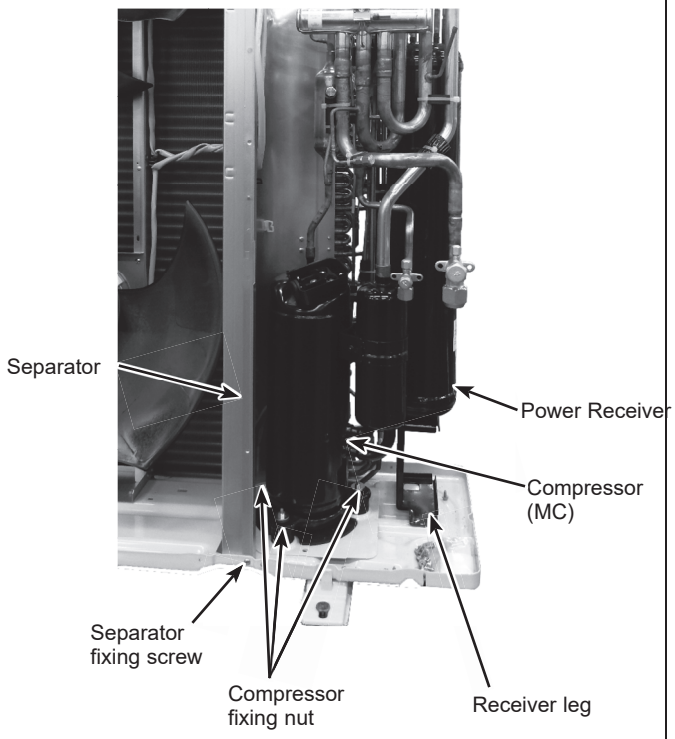


Photo 28

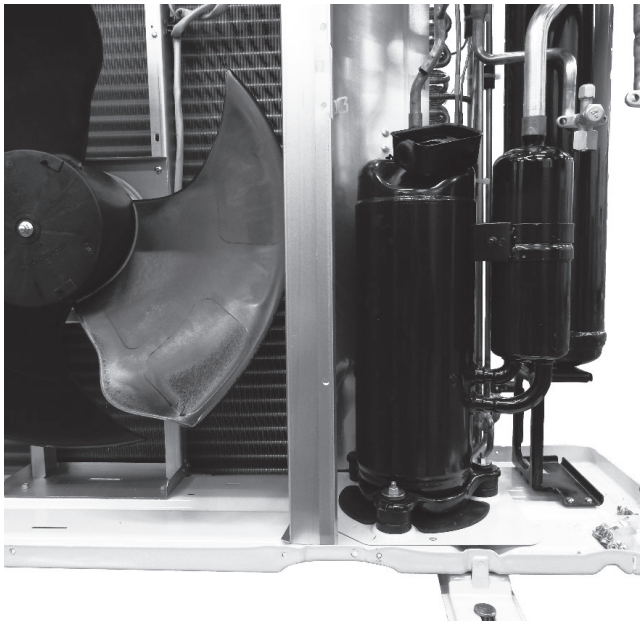
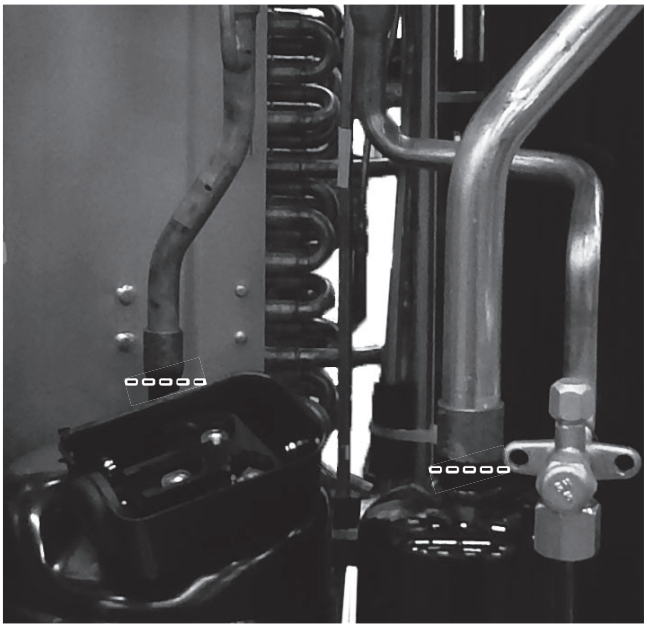
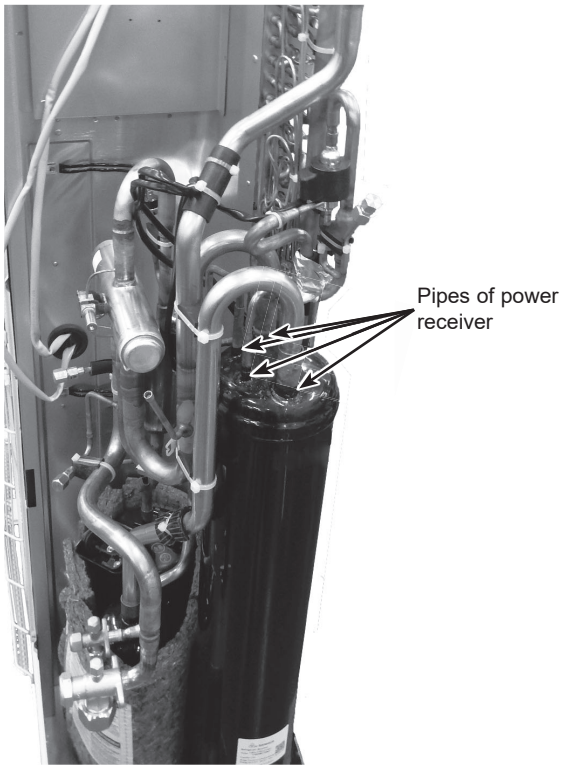


Photo 29



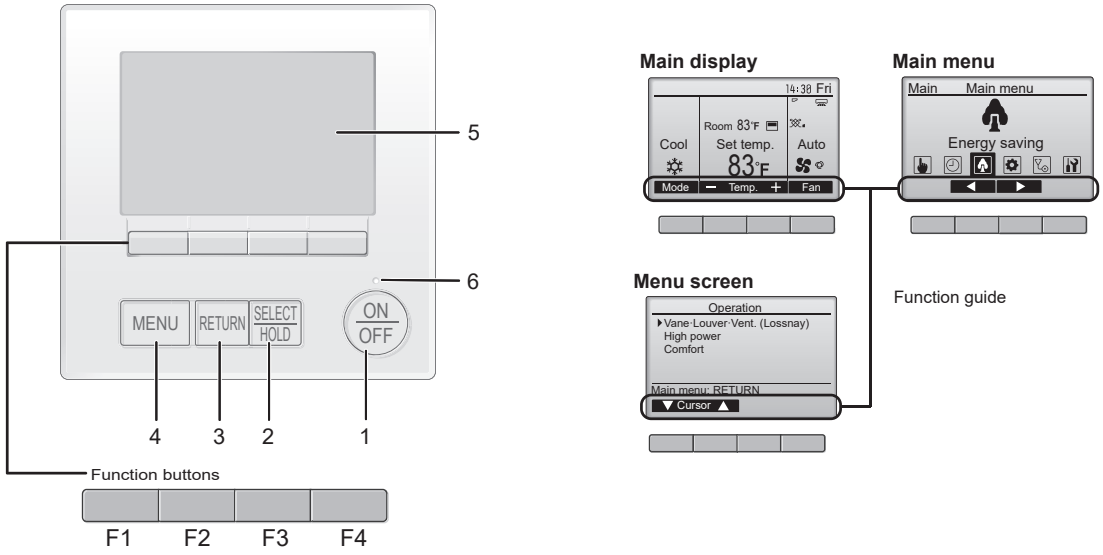
OPERATING PROCEDURE	PHOTOS/FIGURES
13. Removing the power receiver (1) Remove the service panel. (See Photo 16) (2) Remove the top panel. (See Photo 16) (3) Remove the 2 front cover panel fixing screws (5 × 12) and remove the front cover panel. (See Photo 19) (4) Remove the 2 back cover panel fixing screws (5 × 12) and remove the rear cover panel. (5) Remove the electrical parts box. (See Photo 19) (6) Remove the 3 valve bed fixing screws (4 × 10) and the 4 stop valve fixing screws (5 × 16), then remove the valve bed. (7) Remove the right side panel fixing screws (4 for the rear, 1 on the right/5 × 12) and then remove the right side panel. (See Photo 16) (8) Recover refrigerant. (9) Remove 4 welded pipes of receiver inlet and outlet. (10) Remove 2 receiver leg fixing screws (4 × 10). **Note: Recover refrigerant without spreading it in the air.**	**Photo 30** 

15 REMOTE CONTROLLER

15-1. Remote controller functions

15-1-1. PAR-42MAAUB

Controller interface



Note:

- 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.

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 open the main menu.
5. Backlit LCD
   Operation settings will appear.
   When the backlight is off, pressing any button, except for the [ON/OFF] button, turns the backlight on, and it will stay lit for a certain period of time depending on the screen.
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.

F1: Function button 1
Main display: Press to change the operation mode.
Menu screen: The button function varies depending on the screen.

F2: Function button 2
Main display: Press to decrease temperature.
Main menu: Press to move the cursor left.
Menu screen: The button function varies depending on the screen.

F3: Function button 3
Main display: Press to increase temperature.
Main menu: Press to move the cursor right.
Menu screen: The button function varies depending on the screen.

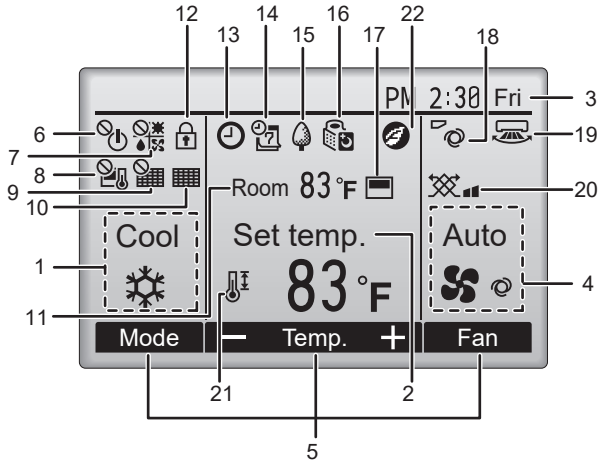
F4: Function button 4
Main display: Press to change the fan speed.
Menu screen: The button function varies depending on the screen.

Display

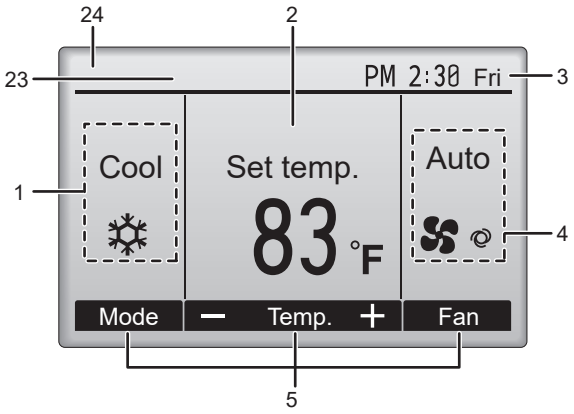
The main display can be displayed in 2 different modes: [Full] and [Basic]. The initial setting is [Full]. To switch to [Basic] mode, change the setting on the [Main display] setting. (Refer to operation manual included with remote controller.)

■ [Full] mode

All icons are displayed for explanation.



■ [Basic] mode



Note:

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

1. Operation mode
2. Preset temperature
3. Clock
4. Fan speed
5. Button function guide: Functions of the corresponding buttons appear here.
6. : Appears when the ON/OFF operation is centrally controlled.
7. : Appears when the operation mode is centrally controlled.
8. : Appears when the preset temperature is centrally controlled.
9. : Appears when the filter reset function is centrally controlled.
10. : Appears when filter needs maintenance.
11. Room temperature
12. : Appears when the buttons are locked.
13. : Appears when [On/Off timer] or [Auto-off] function is enabled.
    : Appears when the timer is disabled by the centralized control system.
14. : Appears when [Weekly timer] is enabled.
15. : Appears while the units are operated in the energy saving mode.
    (Will not appear on some models of indoor units)
16. : Appears while the outdoor units are operated in the silent mode.
17. : Appears when the built-in thermistor on the remote controller is activated to monitor the room temperature (11).
    : Appears when the thermistor on the indoor unit is activated to monitor the room temperature.
18. : Indicates the vane setting.
19. : Indicates the louver setting.*1
20. : Indicates the ventilation setting.
21. : Appears when the preset temperature range is restricted.
22. : Appears when an energy saving operation is performed using [3D i-See sensor] function.*1
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.

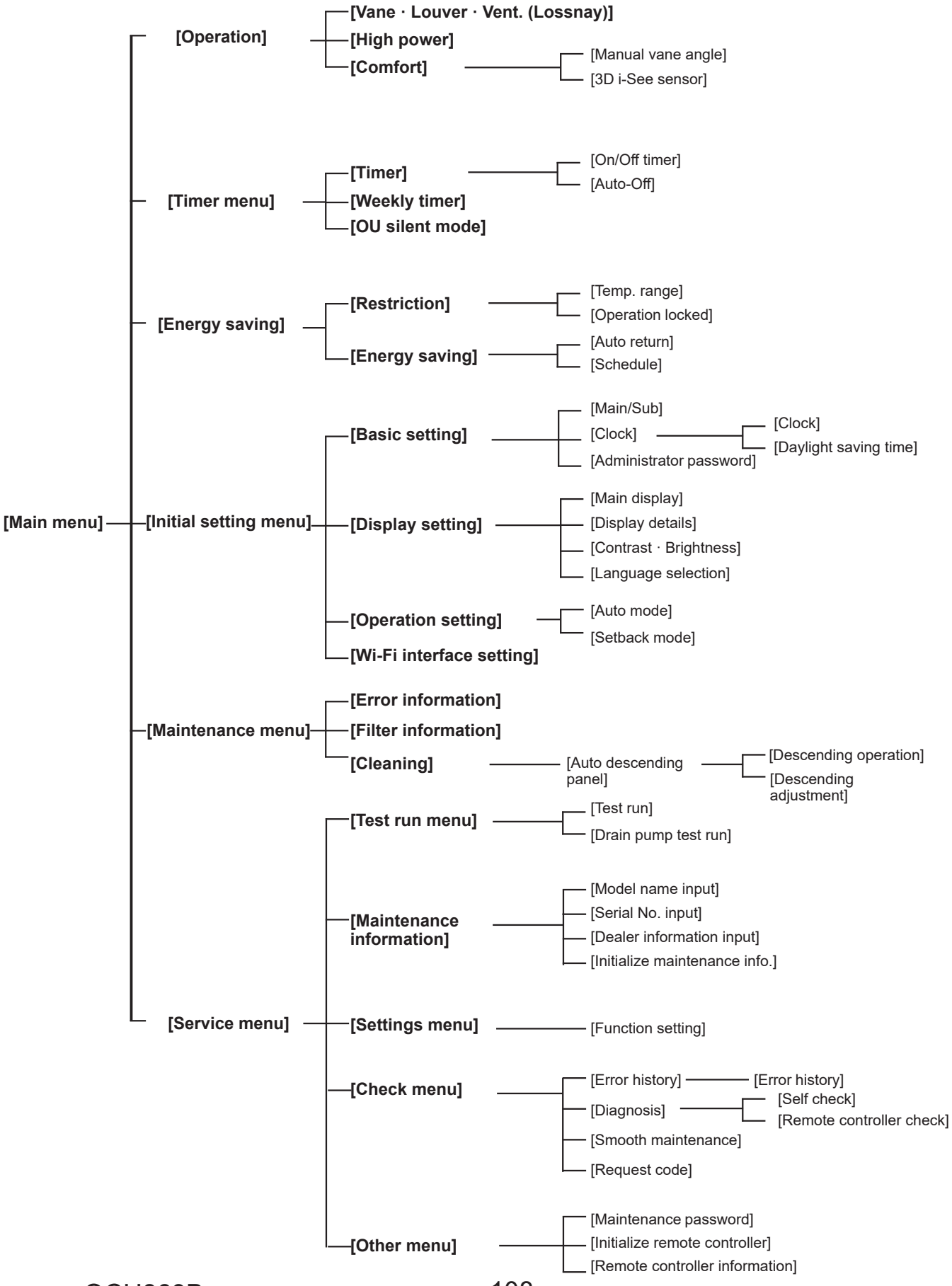
*1. These functions are not applied to the floor standing models.

Menu structure

Press [MENU] button.
Move the cursor to the desired item with the F1 and F2 buttons, and press [SELECT] button

Note:

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



Main menu list

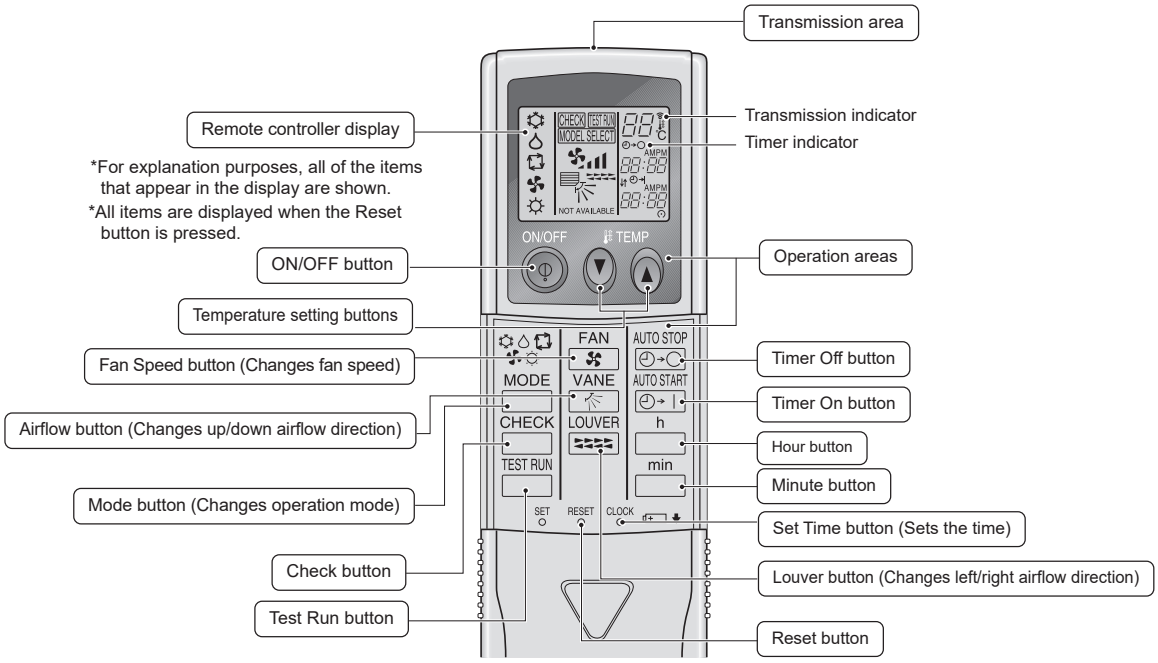
[Main menu]	Setting and display items		Setting details
[Operation]	[Vane · Louver · Vent. (Lossnay)]		Use to set the vane angle. • Select a desired vane setting. Use to turn on/off the louver. • Select a desired setting from [On] and [Off]. Use to set the amount of ventilation. • Select a desired setting 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.
			Horizontal air direction • Sets the horizontal airflow direction (vane) of each unit.
		[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]	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 [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 • [OU silent mode] 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 to either celsius (°C) or fahrenheit (°F). [Room temp.]: Set to 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 [Setback mode] can be selected by using the button. This setting is valid only when indoor units with [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.)
	[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).

[Main menu]	Setting and display items		Setting details
[Service]	[Test run]		Select [Test run] from [Service menu] to bring up the [Test run menu]. • [Test run] • [Drain pump test run]
	[Input maintenance info.]		Select [Input maintenance Info.] from [Service menu] to bring up [Maintenance information] screen. The following settings can be made from [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] *3	Use to display the maintenance data of indoor/outdoor units.
		[Request code] *3	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. Clock setting is required.
*2. 1°C (2°F) increments.
*3. This function is available only when certain outdoor units are connected.

15-1-2. PAR-FL32MA

Controller interface

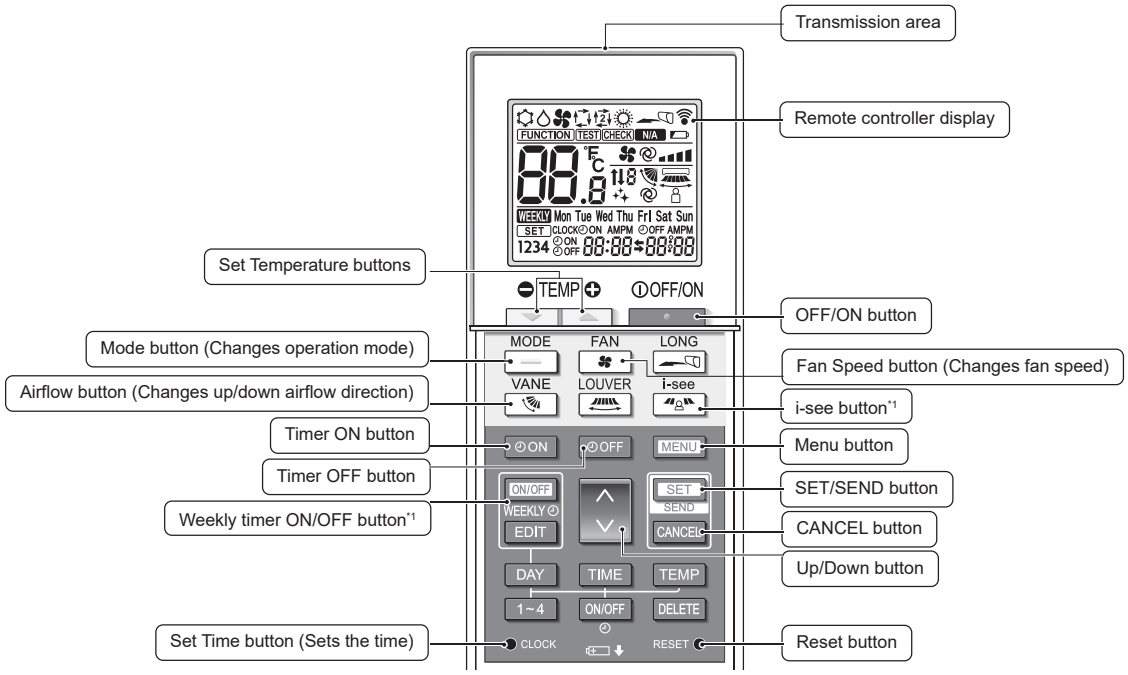


Instructions for use

- When using the wireless remote controller, point it towards the receiver on the indoor unit.
- If the remote controller is operated within approximately three minutes after power is supplied to the indoor unit, the indoor unit may beep three times as the unit is performing the initial automatic check.
- The indoor unit beeps to confirm that the signal transmitted from the remote controller has been received.
  Signals can be received up to approximately 7 meters in a direct line from the indoor unit in an area 45 to the left and right of the unit.
  However, illumination such as fluorescent lights and strong light can affect the ability of the indoor unit to receive signals.
- If the operation lamp near the receiver on the indoor unit is blinking, the unit needs to be inspected. Consult your dealer for service.
- Handle the remote controller carefully. Do not drop the remote controller or subject it to strong shocks.
  In addition, do not get the remote controller wet or leave it in a location with high humidity.
- To avoid misplacing the remote controller, install the holder included with the remote controller on a wall and be sure to always place the remote controller in the holder after use.

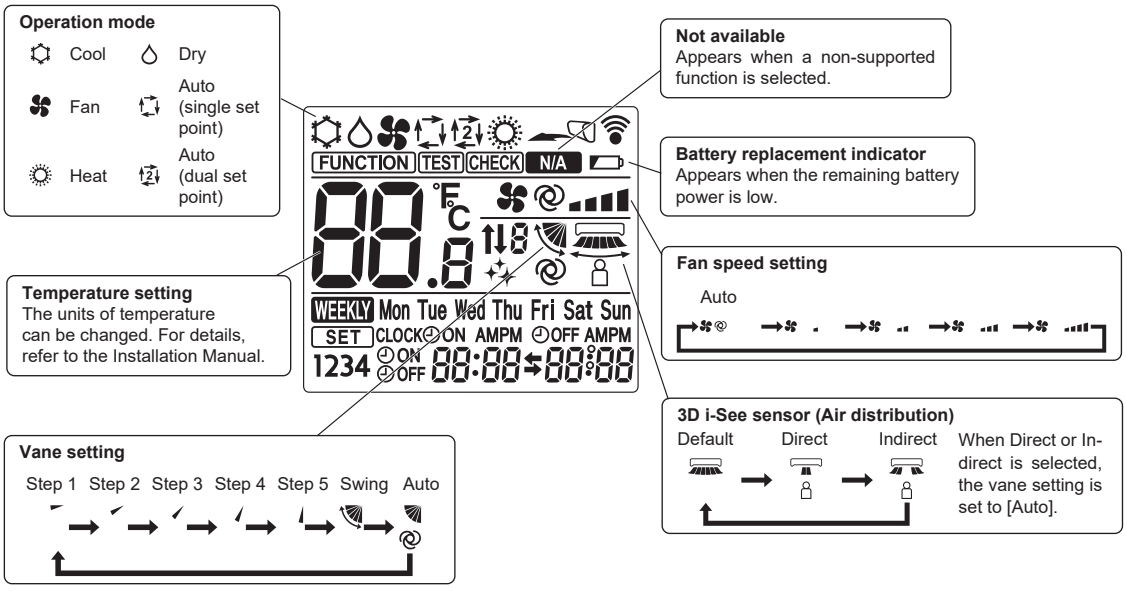
15-1-3. PAR-SL101A-E

Controller interface



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

Display



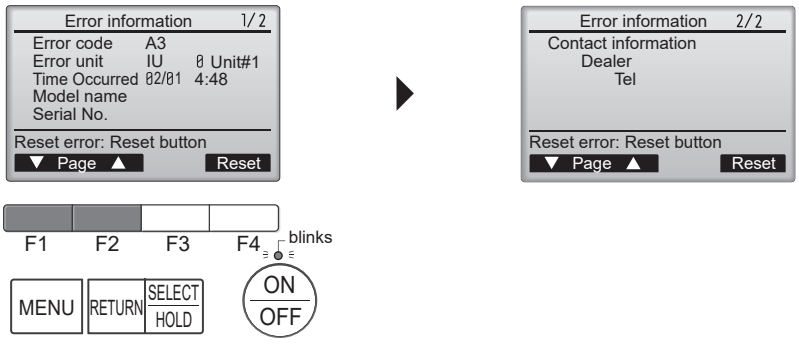
15-2. [Error information]

Operating instructions

■ How to check the error information when an error occurs

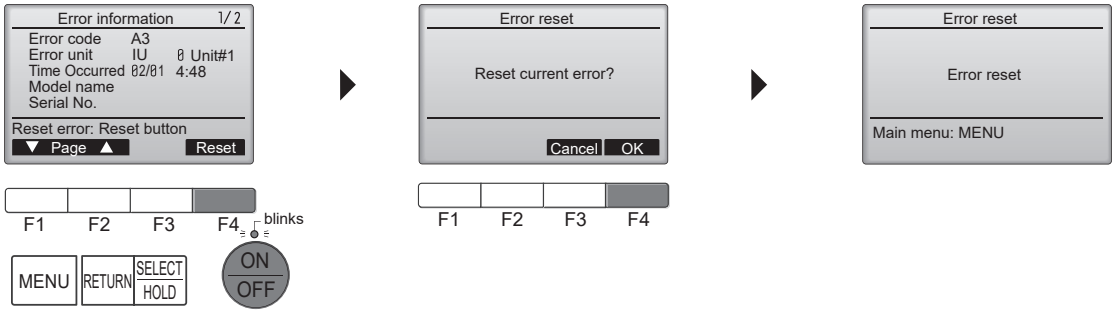
When an error occurs, the following screen will appear. Check the error status, stop the operation, and consult your dealer.

1. Check the error information
   Check code, error unit, refrigerant address, date and time of occurrence, model name, and serial number will appear.
   The model name and serial number will appear only if the information has been registered.
   • Press F1 or F2 button to go to the next screen.
   • Contact information (dealer's phone number) will appear if the information has been registered.



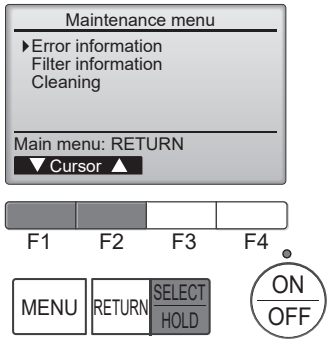
2. Reset the error
   - Press F4 button or [ON/OFF] button to reset the error that is occurring.
   - Select [OK] with F4 button.

Note:
- Errors cannot be reset while the ON/OFF operation is prohibited.
- To go back to [Service menu], press [MENU] button.



■ How to check the error information later

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

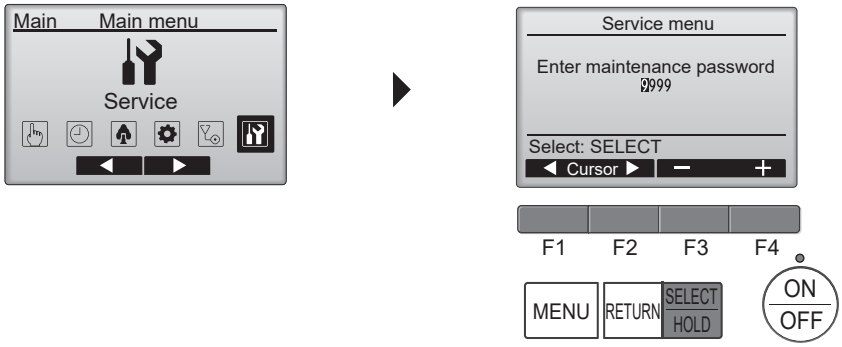


15-3. [Service menu]

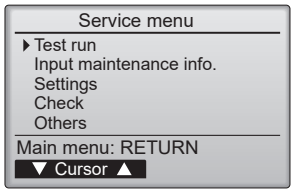
Note:
- Maintenance password is required to set each item in the service menu.

Operating instructions

1. Press [MENU] button to open the main menu.
2. Select [Service] from [Main menu], and press [SELECT] button.
   A window asking for the password will appear when [Service menu] is selected.



3. Enter the current maintenance password (4 numerical digits).
   Move the cursor to the digit you want to change with F1 or F2 button and set each number (0 through 9) with F3 or F4 button.
4. Press [SELECT] button.
   [Service menu] will appear if the password matches.



Notes:
- 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 F1 button for 10 seconds on the maintenance password setting screen.
- Air conditioning units need to be stopped depending on the item you want to set. Remote controller might not be used when the system is centrally controlled. The following screen will appear in this case.



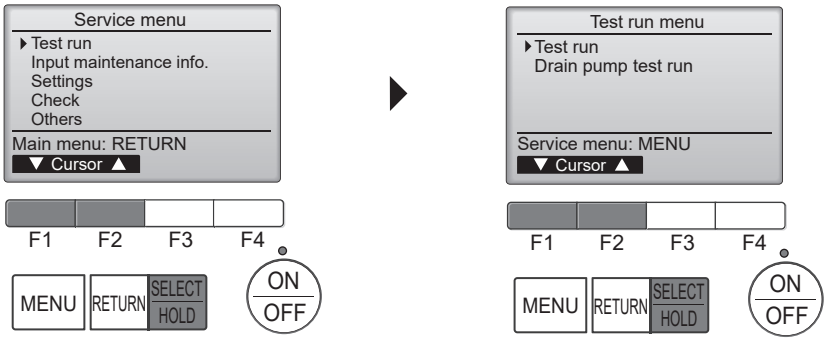
Notes:
- To go back to [Service menu], press [MENU] button.
- To return to the previous screen, press [RETURN] button.

15-4. [Test run]

15-4-1. PAR-42MAAUB

Operating instructions

1. Select [Service] from [Main menu], and press [SELECT] button.
2. Select [Test run] with F1 or F2 button, and press [SELECT] button.

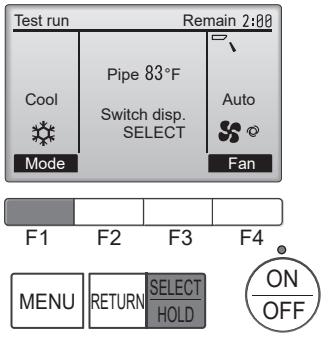


■ Test run operation

1. Press F1 button to go through the operation modes in the order of [Cool] and [Heat].

   Cooling mode: Check the cold air blows out.
   Heating mode: Check the heat blows out.

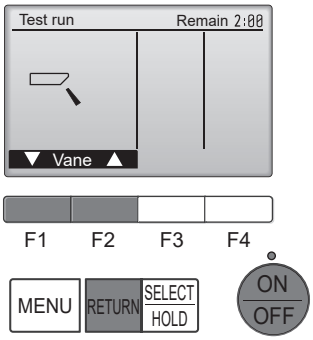
2. Check the operation of the outdoor unit's fan.
3. Press [SELECT] button and open the vane setting screen.



■ Auto vane check

1. Check the auto vane with F1 and F2 buttons.
2. Press [RETURN] button to return to test run operation.
3. Press [ON/OFF] button.

Notes:
- When the test run is completed, [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.



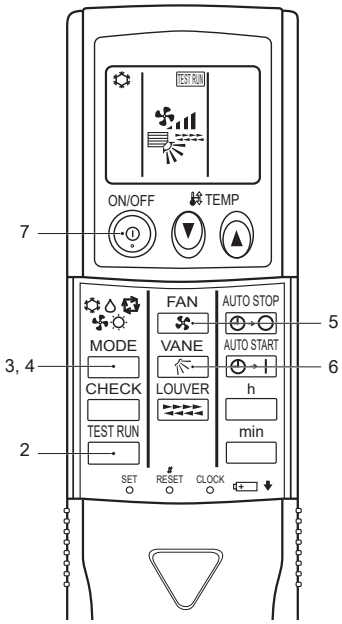
15-4-2. PAR-FL32MA

Measure an impedance between the power supply terminal block on the outdoor unit and ground with a 500 V Megger and check that it is equal to or greater than 1.0 MΩ.

Operating instructions

1. Turn on the main power to the unit.
2. Press TEST RUN button twice continuously.
   (Start this operation from the status of remote controller display turned off.)
   The symbol of TEST RUN and current operation mode are displayed.
3. Press MODE button to activate the cool mode [☼], then check whether cool air blows out from the unit.
4. Press MODE button to activate the heat mode [☼], then check whether warm air blows out from the unit.
5. Press FAN button and check whether strong air blows out from the unit.
6. Press VANE button and check whether the auto vane operates properly.
7. Press ◎ button to stop the test run.

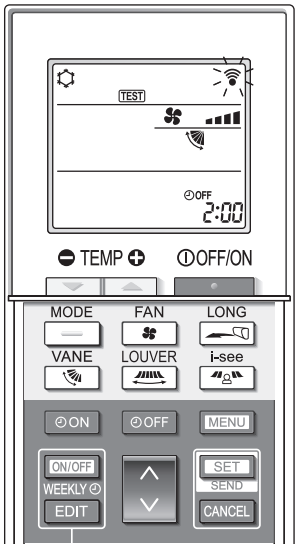
Notes:
- Point the remote controller towards the indoor unit receiver to perform steps 2 to 7.
- It is not possible to run in the fan, the dry or the auto mode.



15-4-3. PAR-SL101A-E

Operating instructions

1. Stop the air conditioner
   - Press [ ] button to stop the air conditioner.
   - If the weekly timer is enabled (WEEKLY is shown on the display), press [ON/OFF WEEKLY] button to disable it (WEEKLY is off).
2. Start the test run
   - Press [MENU] button for 5 seconds.
     CHECK appears on the display and the unit starts the service mode.
   - Press [MENU] button.
     TEST appears on the display and the unit starts 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.
     [SET]: Start the test run.
3. Stop the test run.
   - Press [ ] button to stop the test run.
   - After 2 hours, the stop signal is transmitted.



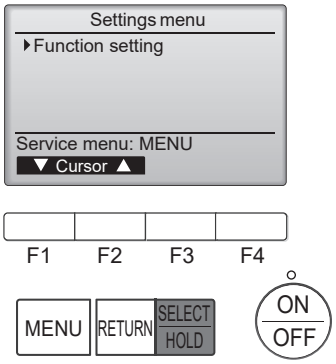
15-5. [Function setting]

15-5-1. PAR-42MAAUB

Operating instructions

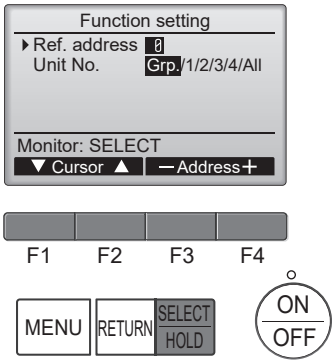
1. Open the [Function setting] screen.
   - Select [Service] from [Main menu], and press [SELECT] button.
   - Select [Setting] from [Service menu], and press [SELECT] button.
   - Select [Function setting] and press [SELECT] button.

   [Function setting] screen will appear.

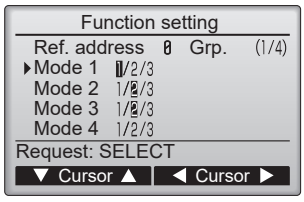


2. Set the indoor unit refrigerant addresses and indoor numbers
   - Enter the indoor unit refrigerant addresses and indoor numbers with F1 - F4 buttons, and then press [SELECT] button to confirm the current setting.

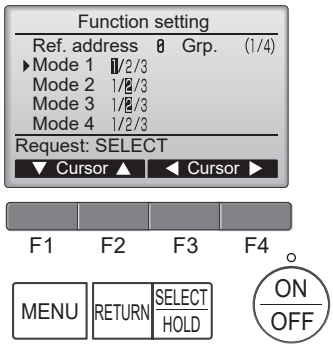
Note: Checking the indoor unit No.
- When [SELECT] button is pressed, the target indoor unit will start fan operation. If the unit is common or when running all units, all indoor units for the selected refrigerant address will start fan operation.



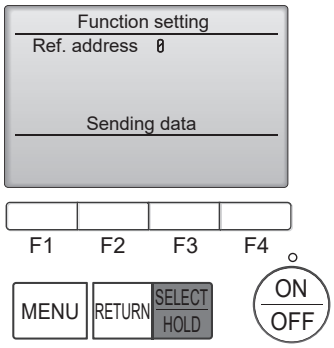
3. Check the current settings
   - When data collection from the indoor units is completed, the current settings appears highlighted. Non-highlighted items indicate that no function settings are made.
     Screen appearance varies depending on [Unit No.] setting.



4. Change the current settings
   - Use F1 or F2 button to move the cursor to select the mode number, and change the setting number with F3 or F4 button.



5. Complete the function settings
   - When the settings are completed, press [SELECT] 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 [Function setting] screen.

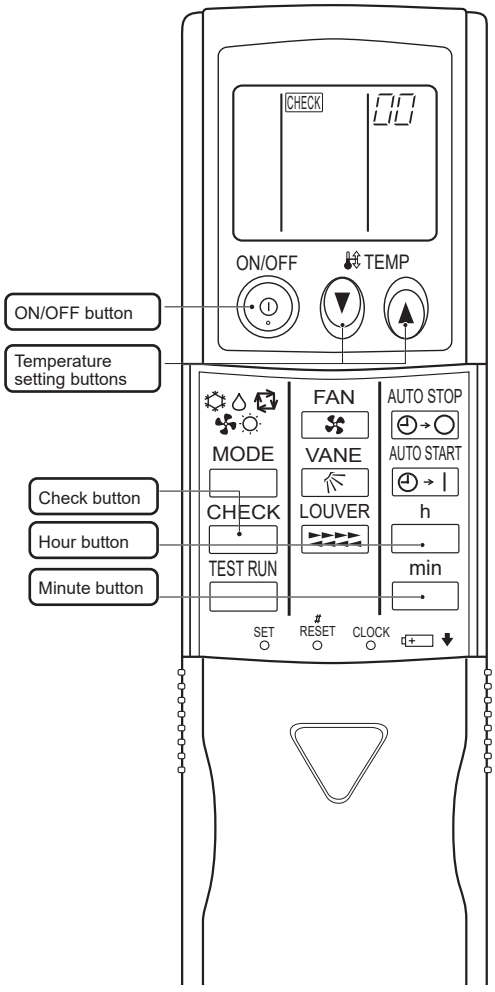


Notes:
- Make the above settings only on Mr. Slim units as necessary.
- The above function settings are not available for City Multi units.
- Refer to the installation manual of the indoor unit for the information about initial settings, mode numbers, and setting numbers of indoor units.
- Be sure to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

15-5-2. PAR-FL32MA

Functions can be selected with the wireless remote controller. Function selection using wireless remote controller is available only for refrigerant system with wireless function. Refrigerant address cannot be specified by the wireless remote controller.

An example of function selection flow



An example of a function selection flow is shown below. It shows how to turn off the function that raises the set temperature by 4 degrees during heating operation. (Mode 24: 2)

Function setting

Mode	Mode No.	Setting	Setting No.	Target unit No.
Raising the set temperature by 4 degrees	24	OFF	02	01

1. Press CHECK button twice continuously.
   CHECK will appear and ″00″ will blink. (Self-diagnosis mode)
   Enter the address ″50″ during self-diagnosis mode, then press h button.
2. Enter the unit No. ″01″ (since ″01″ is assigned to the target unit).
   (Enter the address during self-diagnosis mode, then press min button.)
   Note: You cannot specify the refrigerant address.
3. Enter the mode No. ″24″ (function that raises set temperature by 4 degrees during heating operation).
   (Enter the address during self-diagnosis mode, then press h button.)
4. Enter the setting No. ″02″ (OFF).
   (Enter the address during self-diagnosis mode, then press h button.)

Finished? No → 5. No → Change the unit No. → 6. Yes → back to 2.

7. End the function selection.
   (End the check mode.)

Note:
When you switch the mode to function selection mode with a wireless remote controller, the unit ends function selection mode automatically if nothing is input for 10 minutes or longer.

Operating instructions

1. Press CHECK button twice continuously. → CHECK appears and ″00″ blinks.
   - Press TEMP ▼ button once to set the address number to ″50″.
   - Direct the wireless remote controller toward the receiver of the indoor unit and press h button.
2. Enter the unit number.
   - Press TEMP ▼ ▲ button to enter the unit number.
   - Direct the wireless remote controller toward the receiver of the indoor unit and press min button.
     By setting the unit number with min button, the specified indoor unit starts performing fan operation.
     Detect which unit is assigned to which number using this function. If unit number is set to AL, all the indoor units in the same refrigerant system start performing fan operation simultaneously.

Notes:
- If a unit number that cannot be recognized by the unit is entered, 3 beeps of 0.4 seconds will be emitted. Reenter the unit number.
- If the signal was not received by the sensor, no beep or a ″double beep″ will be emitted. Reenter the unit number.

3. Select a mode.
   - Press TEMP ▼ ▲ button to set a mode.
   - Direct the wireless remote controller toward the sensor of the indoor unit and press h button.
     → The sensor-operation indicator will blink and beeps will be emitted to indicate the current setting number.
     Current setting number: 1 = 1 beep (1 second)
     2 = 2 beeps (1 second each)
     3 = 3 beeps (1 second each)

Notes:
- If a mode number that cannot be recognized by the unit is entered, 3 beeps of 0.4 seconds will be emitted. Reenter the mode number.
- If the signal was not received by the sensor, no beep or a ″double beep″ will be emitted. Reenter the mode number.

4. Select the setting number.
   - Press TEMP ▼ ▲ button to select the setting number.
   - Direct the wireless remote controller toward the receiver of the indoor unit and press h button.
     → The sensor-operation indicator will blink and beeps will be emitted to indicate the setting number.
     Setting number: 1 = 1 beep (0.4 seconds each)
     2 = 2 beeps (0.4 seconds each, repeated twice)
     3 = 2 beeps (0.4 seconds each, repeated 3 times)

Notes:
- If a setting number that cannot be recognized by the unit is entered, the setting will turn back to the original setting.
- If the signal was not received by the sensor, no beep or a ″double beep″ will be emitted. Reenter the setting number.

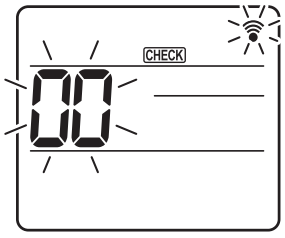
5. Repeat steps 3 and 4 to make other function setting on the same unit.
6. Repeat steps 2 to 4 to change the unit and make function settings on it.
7. Complete the function settings
   - Press ◎ button.

Note:
- Do not use the wireless remote controller for 30 seconds after completing the function setting.

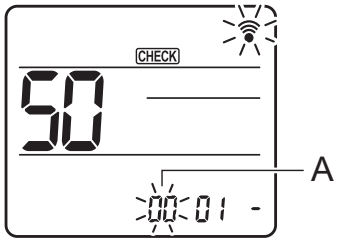
15-5-3. PAR-SL101A-E

Operating instructions

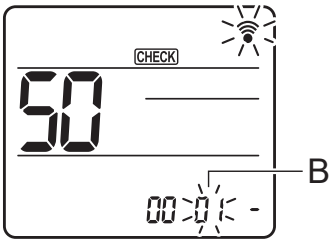
1. Go to the function select mode.
   - Press MENU button for 5 seconds. (Start this operation from the status of remote controller display turned off.) CHECK appears on the display and ″00″ blinks.
   - Press ▲ ▼ button to enter ″50″.
   - Direct the wireless remote controller toward the receiver of the indoor unit and press SET button.



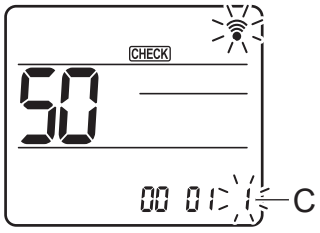
2. Set the unit number.
   - Press ▲ ▼ button to set unit number A.
   - Direct the wireless remote controller toward the receiver of the indoor unit and press SET button.



3. Select a mode
   - Press ▲ ▼ button to set the mode number B.
   - Direct the wireless remote controller toward the receiver of the indoor unit and press SET button.
     Current setting number: 1=1 beep (1 second)
     2=2 beeps (1 second each)
     3=3 beeps (1 second each)



4. Select the setting number.
   • Press ⌃⌄ button to change the setting number C.
   • Direct the wireless remote controller toward the receiver of the indoor unit and press SET button.



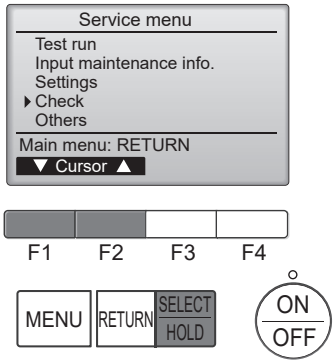
5. Select multiple functions continuously.
   • Repeat the steps 3 and 4 to change multiple function settings continuously.
6. Complete function selections.
   • Direct the wireless remote controller toward the sensor of the indoor unit and press button.

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.

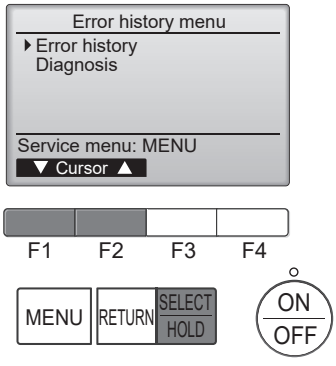
15-6. [Error history]

Operating instructions

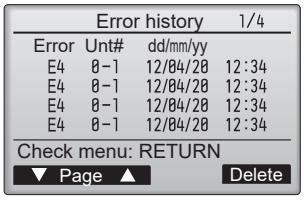
1. Open [Service menu] and select [Check].
   • Select [Service] from [Main menu], and press [SELECT] button.
   • Select [Check] with F1 or F2 button, and press [SELECT] button.



2. Select [Error history] with F1 or F2 button, and press [SELECT] 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. Delete the error history.
   • Press F4 button [Delete].
     A confirmation screen will appear asking if you want to delete the error history.
   • Press F4 button [OK] to delete the history.
     [Error history deleted] will appear on the screen.
   • Press [RETURN] button to go back to [Check menu] screen.

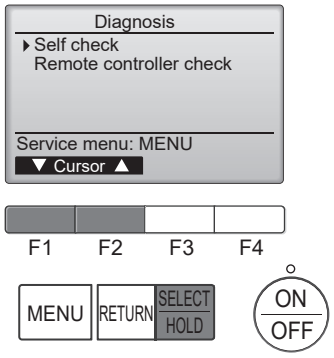


15-7. Self-diagnosis

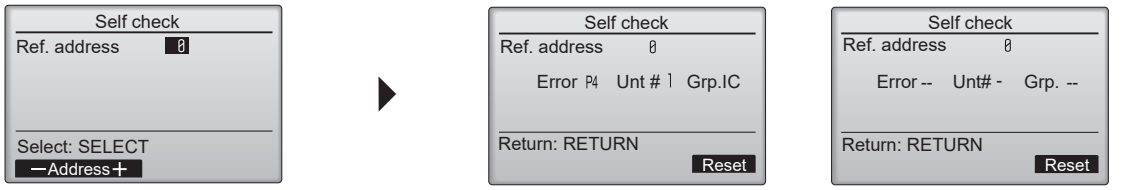
15-7-1. PAR-42MAAUB

Operating instructions

1. Open [Self check] screen
   • Select [Service] from [Main menu], and press [SELECT] button.
   • Select [Check] from [Service menu], and press [SELECT] button.
   • Select [Diagnosis] from [Check menu], and press [SELECT] button.
   • Select [Self check] with F1 or F2 button, and press [SELECT] button.
     [Self check] screen will appear.



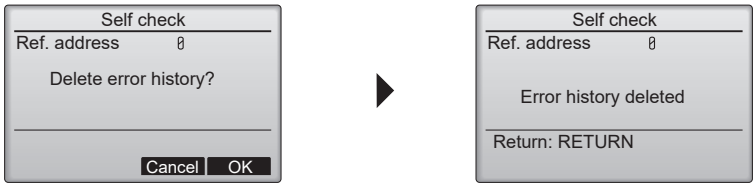
2. Enter the refrigerant address with F1 or F2 button, and press [SELECT] button.
   • Check code, unit number, attribute, and indoor unit demand signal ON/OFF status at the contact will appear.
     [-] will appear when there is no error history.



<Error history is shown.>

<When there is no error history.>

3. Reset the error history.
   • Press F4 button [Reset].
   A confirmation screen will appear to ask you if you want to delete the error history.
   • Press F4 button [OK] to delete the error history.
   [Request rejected] will appear if deletion fails.
   [Unit not exist] will appear if no indoor unit is assigned to the entered address.



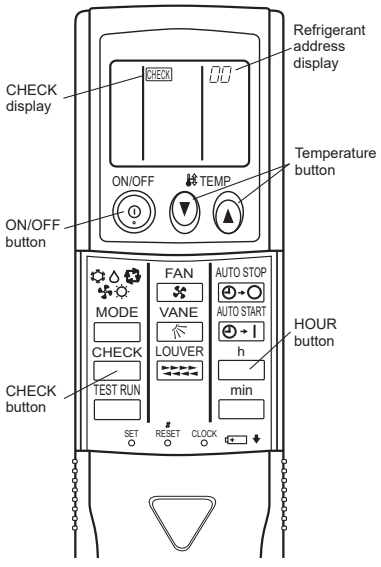
Notes:
- To go back to [Service menu], press [MENU] button
- To return to the previous screen, press [RETURN] button

15-7-2. PAR-FL32MA

When a malfunction occurs to air conditioners, both of the indoor unit and the outdoor unit will stop and the operation lamp will blink to inform the unusual stop.

Operating instructions

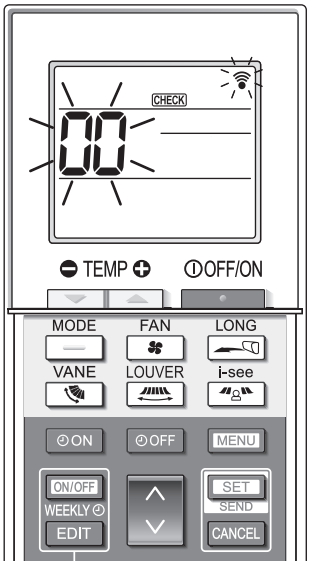
1. Press CHECK button twice.
   CHECK appears, and the refrigerant address ″00″ blinks.
   Make sure that the remote controller's display has stopped before continuing.
2. Press ▼ ▲ buttons to select the refrigerant address of the indoor unit for self-diagnosis.
   Set the address of the indoor unit that is to be self-diagnosed.
3. Point the remote controller at the sensor of the indoor unit and press h button.
   If an air conditioner error occurs, the indoor unit's sensor emits an intermittent buzzer sound, the operation light blinks, and the check code is output.
4. Point the remote controller at the sensor of the indoor unit and press ◎ button.
   The check mode is cancelled.



15-7-3. PAR-SL101A-E

Operating instructions

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

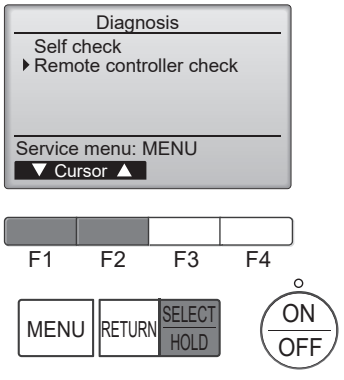


15-8. [Remote controller check]

Operating instructions

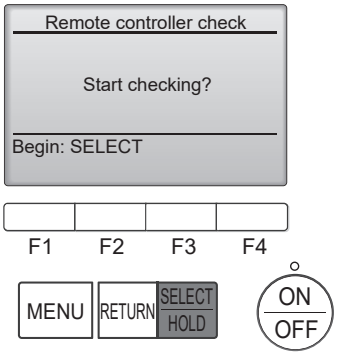
If operations cannot be completed with the remote controller, diagnose the remote controller with this function.

1. Go to [Remote controller check] screen.
   - Select [Service] from [Main menu], and press [SELECT] button.
   - Select [Check] from [Service menu], and press [SELECT] button.
   - Select [Diagnosis] from [Check menu], and press [SELECT] button.
   - Select [Remote controller check] with F1 or F2 button, and press [SELECT] button.



2. Start the remote controller check.
   - Select [Remote controller check] from [Diagnosis], and press [SELECT] button to start the remote controller check and see the check results.

Notes:
- To cancel the remote controller check and exit [Remote controller check] menu screen, press [MENU] or [RETURN] button.
- The remote controller will not reboot itself.



3. Check the result of the remote controller check.

See the following descriptions for each result:

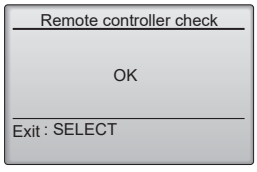
[OK]:
- The remote controller has no problem. Check other parts to find problems.

[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 to be replaced.

[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.

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



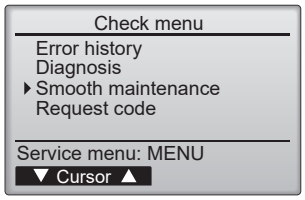
Remote controller check results screen

Note:
- 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.

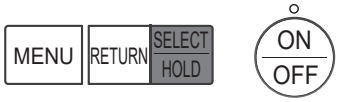
15-9. [Smooth Maintenance]

Operating instructions

1. Go to [Smooth maintenance] screen.
   - Select [Service] from [Main menu], and press [SELECT] button.
   - Select [Check] with F1 or F2 button, and press [SELECT] button.
   - Select [Smooth maintenance] with F1 or F2 button, and press [SELECT] button.

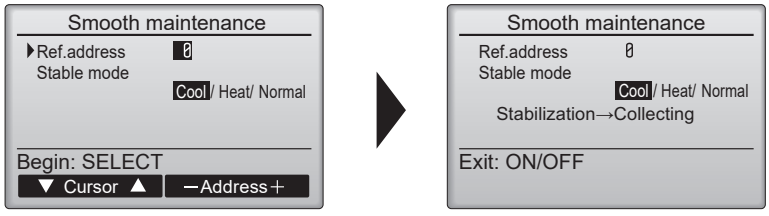






2. Set the refrigerant address and the stable mode.
   - Select the item to be changed with F1 or F2 button.
   - Select the required setting with F3 or F4 button.
     [Ref.address] setting: 0 - 15
     [Stable mode] setting: [Cool/Heat/Normal]
   - Press [SELECT] button, Fixed operation will start.

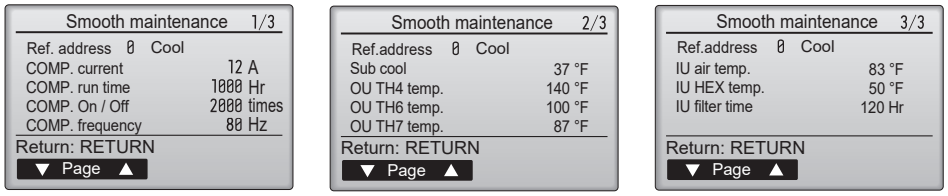
Note:
- Stable mode will take approx. 20 minutes.



3. The operation data will appear.

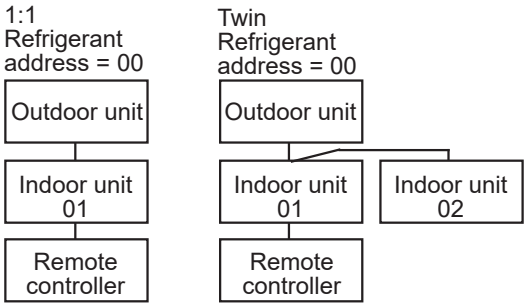
The compressor-accumulated operating (COMP. run) time is 10-hour unit, and the compressor-number of operation times (COMP. ON/OFF) is a 100-time unit (fractions discarded).

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

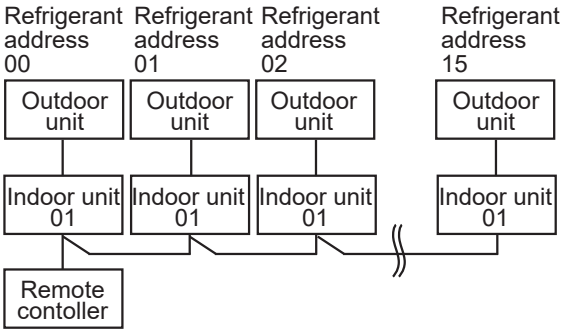


■ Refrigerant address

- 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).



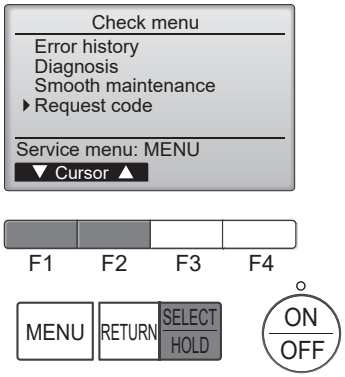
- Multi refrigerant system (group control)
  Up to 16 refrigerant systems (16 outdoor units) can be connected as a group by 1 remote controller. To check or set the refrigerant addresses.



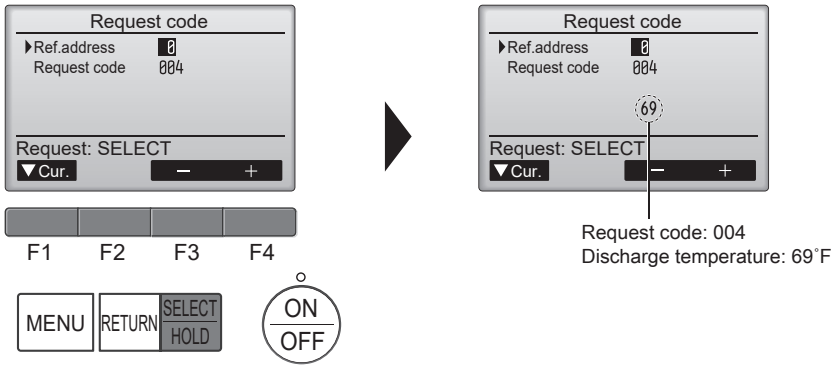
15-10. [Request code]

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

1. Go to [Request code] screen.
   - Select [Service] from [Main menu], and press [SELECT] button.
   - Select [Check] with F1 or F2 button, and press [SELECT] button.
   - Select [Request code] with F1 or F2 button, and press [SELECT] button.



2. Set the refrigerant address and the request code.
   - Select the item to be changed with F1 or F2 button.
   - Select the required setting with F3 or F4 button.
     [Ref.address] setting: 0 – 15
     [Request code] setting
   - Press [SELECT] button. Data will be collected and displayed.



T1 SPECIFICATIONS CONNECTED TO INDOOR UNIT

Model name		Indoor unit		PLA-AE36NL	PLA-AE42NL	PLA-AE48NL
		Outdoor unit		PUZ-AK36NL	PUZ-AK42NL	PUZ-AK48NL
Cooling	at 95°F	Max. Capacity	Btu/h	36,600	42,500	49,000
		Rated Capacity	Btu/h	36,000	42,000	48,000
		Min. Capacity	Btu/h	14,300	15,400	17,000
		Total Input	W	2,620	3,500	4,573
		EER2	Btu/h/W	13.7	12.0	10.4
		Moisture Removal	Pints/h	8.0	10.9	14.6
		SHF		0.76	0.72	0.67
		Power factor	%	97	99	99
	SEER2		Btu/h/W	23.3	21.0	19.4
Heating	at 47°F	Max. Capacity	Btu/h	40,000	49,600	60,000
		Rated Capacity	Btu/h	38,000	45,000	54,000
		Min. Capacity	Btu/h	13,000	13,200	16,600
		Total Input	W	2,470	3,230	4,510
		COP	W/W	4.5	4.0	3.5
		Power factor	%	97	99	99
	at 17°F	Rated Capacity	Btu/h	23,600	29,400	33,400
		Total Input	W	2,230	2,900	3,950
		COP	W/W	3.1	2.9	2.4
	HSPF2(IV/V)		Btu/h/W	9.8/7.9	10.1/8.3	9.4/7.6
Power supply		Phase,Cycle,Voltage		1 phase, 60 Hz, 208/ 230 V		
		Breaker size	A	35		40
Voltage		Indoor - Outdoor S1-S2		AC208 V/ 230 V		
		Indoor - Outdoor S2-S3		DC24 V		
		Indoor - Remote controller		DC12 V		
Indoor unit		MCA	A	2		
		MOCP	A	15		
		Fan Motor Output	W	120		
		Air flow (Lo-Mid2-Mid1-Hi)	DRY(CFM)	670 - 850 - 1020 - 1200	740 - 920 - 1060 - 1200	740 - 920 - 1060 - 1200
		External Static Pressure	in. WG [Pa]	0		
		Sound Pressure Level (Lo-Mid2-Mid1-Hi)	dB (A)	32 - 37 - 41 - 44	34 - 38 - 42 - 45	34 - 38 - 42 - 45
		External Finish		PLP-41EAEU: Munsell 1.0Y 9.2/0.2		
		Dimensions Unit (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]	32 [1-1/4]		
		Refrigerant pipe size Gas	mm[inch]	ø15.88 [5/8]		
		Refrigerant pipe size Liquid	mm[inch]	ø9.52 [3/8]		
Remote Controller				Attached in indoor unit		
Outdoor unit		MCA	A	34		38
		MOCP	A	56		67
		SCCR	kA	5		
		Inverter input	A	23		30
		Fan Motor Output	W	74 × 2		200 × 2
		Compressor	Model	MRB36FEGMC		MRB53FEJMC-L
		Air flow	CFM	3,910		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]	1050 [41-11/32]		
			D: mm [inch]	25 + 330 [63/64 + 12-63/64]		
			H: mm [inch]	1338 [52-43/64]		
		Weight Unit	kg [lbs]	102 [224]		120 [265]
Refrigerant		Type		R454B		
		Charge	kg [lbs,oz]	4.5 [9 lbs + 14 oz]		5.2 [11 lbs + 7 oz]
		Oil	Model	RM68EH		
			L [oz]	1.4 [45]		1.9 [60]
Refrigerant Pipe Size		Gas side O.D.	mm [inch]	ø15.88 [5/8]		
		Liquid side O.D.	mm [inch]	ø9.52 [3/8]		
Refrigerant pipe length		Height difference		Max. 30 m [Max.100 ft]		
		Length		Max. 50 m [Max.165 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)
(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)
2. Rating conditions (heating)-Indoor: D.B. 21.1°C (70°F), W.B. 15.6°C (60°F) Outdoor: D.B. -8.3°C (17°F), W.B. -9.4°C (15°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. 46ºC (115ºF)
	Minimum	D.B. 19ºC (66ºF), W.B. 15ºC (59ºF)	D.B. -5ºC (23ºF) / -18ºC (0ºF)*
Heating	Maximum	D.B. 28ºC (82ºF)	D.B. 21ºC (70ºF), W.B. 15ºC (59ºF)
	Minimum	D.B. 10ºC (50ºF)	D.B. -20ºC (-4ºF), W.B. -20ºC (-4ºF)

* 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
		Outdoor unit		PUY-AK36NL	PUY-AK42NL	PUY-AK48NL
Cooling	at 95°F	Max. Capacity	Btu/h	36,600	42,500	49,000
		Rated Capacity	Btu/h	36,000	42,000	48,000
		Min. Capacity	Btu/h	14,300	15,400	17,000
		Total Input	W	2,620	3,500	4,573
		EER2	Btu/h/W	13.7	12.0	10.4
		Moisture Removal	Pints/h	8.0	10.9	14.6
		SHF		0.76	0.72	0.67
		Power factor	%	97	99	99
	SEER2		Btu/h/W	23.3	21.0	19.4
Heating	at 47°F	Max. Capacity	Btu/h	-	-	-
		Rated Capacity	Btu/h	-	-	-
		Min. Capacity	Btu/h	-	-	-
		Total Input	W	-	-	-
		COP	W/W	-	-	-
		Power factor	%	-	-	-
	at 17°F	Rated Capacity	Btu/h	-	-	-
		Total Input	W	-	-	-
		COP	W/W	-	-	-
	HSPF2(IV/V)		Btu/h/W	-	-	-
Power supply		Phase,Cycle,Voltage		1 phase, 60 Hz, 208/230 V		
		Breaker size	A	35		40
Voltage		Indoor - Outdoor S1-S2		AC208 V / 230 V		
		Indoor - Outdoor S2-S3		DC24 V		
		Indoor - Remote controller		DC12 V		
Indoor unit		MCA	A	2		
		MOCP	A	15		
		Fan Motor Output	W	120		
		Air flow (Lo-Mid2-Mid1-Hi)	DRY (CFM)	670 - 850 - 1020 - 1200	740 - 920 - 1060 - 1200	740 - 920 - 1060 - 1200
		External Pressure	in. WG [Pa]	0		
		Sound Pressure Level (Lo-Mid2-Mid1-Hi)	dB (A)	32 - 37 - 41 - 44	34 - 38 - 42 - 45	34 - 38 - 42 - 45
		External Finish		PLP-41EAEU: Munsell 1.0Y 9.2/0.2		
		Dimensions Unit (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]	32 [1-1/4]		
		Refrigerant pipe size Gas	mm[inch]	ø15.88 [5/8]		
		Refrigerant pipe size Liquid	mm[inch]	ø9.52 [3/8]		
Remote Controller				Attached in indoor unit		
Outdoor unit		MCA	A	34		38
		MOCP	A	56		67
		SCCR	kA	5		
		Inverter input	A	23		30
		Fan Motor Output	W	74 × 2		200 × 2
		Compressor	Model	MRB36FEGMC		MRB53FEJMC-L
		Air flow	CFM	3,910		4,020
		Refrigerant Control		Electronic Expansion Valve		
		Defrost Method		-		
		Sound Pressure Level at cooling	dB (A)	52		60
		Sound Pressure Level at heating	dB (A)	-		
		External Finish Color		Ivory Munsell 3Y 7.8/1.1		
		Dimension	W: mm [inch]	1050 [41-11/32]		
			D: mm [inch]	25 + 330 [63/64 + 12-63/64]		
			H: mm [inch]	1338 [52-43/64]		
		Weight Unit	kg [lbs]	102 [224]		120 [265]
Refrigerant		Type		R454B		
		Charge	kg [lbs,oz]	4.5 [9 lbs + 14 oz]		5.2 [11 lbs + 7 oz]
		Oil	Model	RM68EH		
			L [oz]	1.4 [45]		1.9 [60]
Refrigerant Pipe Size		Gas side O.D.	mm [inch]	ø15.88 [5/8]		
		Liquid side O.D.	mm [inch]	ø9.52 [3/8]		
Refrigerant pipe length		Height difference		Max. 30 m [Max.100 ft]		
		Length		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
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) / -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		**PKA-AK36NL**
		Outdoor unit		**PUZ-AK36NL**
Cooling	at 95°F	Max. Capacity	Btu/h	36,000
		Rated Capacity	Btu/h	33,400
		Min. Capacity	Btu/h	13,200
		Total Input	W	2,770
		EER2	Btu/h/W	12.0
		Moisture Removal	Pints/h	12.0
		SHF		0.61
		Power factor	%	98
	SEER2		Btu/h/W	20.3
Heating	at 47°F	Max. Capacity	Btu/h	40,000
		Rated Capacity	Btu/h	38,000
		Min. Capacity	Btu/h	13,200
		Total Input	W	2,690
		COP	W/W	4.1
		Power factor	%	98
	at 17°F	Rated Capacity	Btu/h	23,200
		Total Input	W	2,400
		COP	W/W	2.8
	HSPF2(IV/V)		Btu/h/W	9.4/7.6
Power supply		Phase,Cycle,Voltage		1 phase, 60 Hz, 208/230 V
		Breaker size	A	35
Voltage		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	69
		Air flow (Lo-Mid-Hi)	DRY(CFM)	705 - 810 - 920
			WET(CFM)	705 - 810 - 920
		External static pressure	in. WG [Pa]	0
		Sound Level (Lo-Mid-Hi)	DRY dB (A)	43 - 46 - 49
			WET dB (A)	43 - 46 - 49
		External Finish		White Munsell 0.7PB 9.2/0.4
		Dimensions	W: mm [inch]	1,170 [46-1/16]
			D: mm [inch]	295 [11-5/8]
			H: mm [inch]	365 [14-3/8]
		Weight	kg [lbs]	21 [46]
		Field Drain pipe size	mm [inch]	16 [5/8]
Remote Controller				Attached in indoor unit
Outdoor unit		MCA	A	34
		MOCP	A	56
		SCCR	kA	5
		Inverter input	A	23
		Fan Motor Output	W	74 × 2
		Compressor	Model	MRB36FEGMC
		Air flow	CFM	3,910
		Refrigerant Control		Electronic Expansion Valve
		Defrost Method		Reverse Cycle
		Sound Pressure Level at cooling	dB (A)	52
		Sound Pressure Level at heating	dB (A)	53
		External Finish Color		Ivory Munsell 3Y 7.8/1.1
		Dimension	W: mm [inch]	1,050 [41-6/16]
			D: mm [inch]	25 + 330 [63/64 + 12-63/64]
			H: mm [inch]	1,338 [52-11/16]
		Weight Unit	kg [lbs]	102 [224]
Refrigerant		Type		R454B
		Charge	kg [lbs,oz]	4.5 [9 lbs + 14 oz]
		Oil	Model	RM68EH
			L [oz]	1.4 [45]
Refrigerant Pipe Size		Gas side O.D.	mm [inch]	ø15.88 [5/8]
		Liquid side O.D.	mm [inch]	ø9.52 [3/8]
Refrigerant pipe length		Height difference		Max. 30 m [Max.100 ft]
		Length		Max. 50 m [Max.165 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)
(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)
2 Rating conditions (heating)-Indoor: D.B. 21.1°C(70°F), W.B. 15.6°C(60°F) Outdoor: D.B. -8.3°C(17°F), W.B. -9.4°C(15°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. 46ºC (115ºF)
	Minimum	D.B. 19ºC (66ºF), W.B. 15ºC (59ºF)	D.B. -5ºC (23ºF) / -18ºC (0ºF)*
Heating	Maximum	D.B. 28ºC (82ºF)	D.B. 21ºC (70ºF), W.B. 15ºC (59ºF)
	Minimum	D.B. 10ºC (50ºF)	D.B. -20ºC (-4ºF), W.B. -20ºC (-4ºF)

* 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		PKA-AK36NL
		Outdoor unit		PUY-AK36NL
Cooling	at 95°F	Max. Capacity	Btu/h	36,000
		Rated Capacity	Btu/h	33,400
		Min. Capacity	Btu/h	13,200
		Total Input	W	2,770
		EER2	Btu/h/W	12.0
		Moisture Removal	Pints/h	12.0
		SHF		0.61
		Power factor	%	98
	SEER2		Btu/h/W	20.3
Heating	at 47°F	Max. Capacity	Btu/h	-
		Rated Capacity	Btu/h	-
		Min. Capacity	Btu/h	-
		Total Input	W	-
		COP	W/W	-
		Power factor	%	-
	at 17°F	Rated Capacity	Btu/h	-
		Total Input	W	-
		COP	W/W	-
	HSPF2(IV/V)		Btu/h/W	-
Power supply		Phase,Cycle,Voltage		1 phase, 60 Hz, 208/230 V
		Breaker size	A	35
Voltage		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	69
		Air flow (Lo-Mid-Hi)	DRY(CFM)	705 - 810 - 920
			WET(CFM)	705 - 810 - 920
		External static pressure	in. WG [Pa]	0
		Sound Level (Lo-Mid-Hi)	DRY dB (A)	43 - 46 - 49
			WET dB (A)	43 - 46 - 49
		External Finish		White Munsell 0.7PB 9.2/0.4
		Dimensions	W: mm [inch]	1170 [46-1/16]
			D: mm [inch]	295 [11-5/8]
			H: mm [inch]	365 [14-3/8]
		Weight	kg [lbs]	21 [46]
		Field Drain pipe size	mm [inch]	16 [5/8]
Remote Controller				Attached in indoor unit
Outdoor unit		MCA	A	34
		MOCP	A	56
		SCCR	kA	5
		Inverter input	A	23
		Fan Motor Output	W	74 × 2
		Compressor	Model	MRB36FEGMC
		Air flow	CFM	3,910
		Refrigerant Control		Electronic Expansion Valve
		Defrost Method		-
		Sound Pressure Level at cooling	dB (A)	52
		Sound Pressure Level at heating	dB (A)	-
		External finish		Ivory Munsell 3Y 7.8/1.1
		Dimension	W: mm [inch]	1,050 [41-6/16]
			D: mm [inch]	25 + 330 [63/64 + 12-63/64]
			H: mm [inch]	1,338 [52-11/16]
		Weight Unit	kg [lbs]	102 [224]
Refrigerant		Type		R454B
		Charge	kg [lbs,oz]	4.5 [9 lbs + 14 oz]
		Oil	Model	RM68EH
			L [oz]	1.4 [45]
Refrigerant Pipe		Gas side O.D.	mm [inch]	ø15.88 [5/8]
		Liquid side O.D.	mm [inch]	ø9.52 [3/8]
Refrigerant pipe length		Height difference		Max. 30 m [Max.100 ft]
		Length		Max. 69m [Max.225 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
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) / -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		PCA-AK36NL	PCA-AK42NL
		Outdoor unit		PUZ-AK36NL	PUZ-AK42NL
Cooling	at 95°F	Max. Capacity	Btu/h	37,000	42,500
		Rated Capacity	Btu/h	36,000	42,000
		Min. Capacity	Btu/h	13,500	13,600
		Total Input	W	2,930	3,820
		EER2	Btu/h/W	12.2	10.9
		Moisture Removal	Pints/h	12.7	15.4
		SHF		0.62	0.60
		Power factor	%	96	97
	SEER2		Btu/h/W	20.6	20.4
Heating	at 47°F	Max. Capacity	Btu/h	40,000	49,400
		Rated Capacity	Btu/h	38,000	45,000
		Min. Capacity	Btu/h	13,200	13,300
		Total Input	W	2,670	3,460
		COP	W/W	4.1	3.8
		Power factor	%	96	97
	at 17°F	Rated Capacity	Btu/h	23,200	29,600
		Total Input	W	2,480	3,010
		COP	W/W	2.7	2.8
	HSPF2(IV/V)		Btu/h/W	9.1/7.3	9.9/8.2
Power supply		Phase,Cycle,Voltage		1 phase, 60 Hz, 208/230 V	
		Breaker size	A	35	
Voltage		Indoor - Outdoor S1-S2		AC208 V / 230 V	
		Indoor - Outdoor S2-S3		DC24 V	
		Indoor - Remote controller		DC12 V	
Indoor unit		MCA	A	2	
		MOCP	A	15	
		Fan Motor Output	W	160	
		Air flow (Lo-Mid2-Mid1-Hi)	DRY(CFM)	775 - 850 - 920 - 990	810 - 885 - 955 - 1025
			WET(CFM)	705 - 775 - 850 - 920	740 - 810 - 885 - 955
		External Static Pressure	in. WG [Pa]	0	
		Sound Pressure Level (Lo-Mid2-Mid1-Hi)	dB (A)	37 - 39 - 41 - 43	39 - 41 - 43 - 45
		External Finish		White Munsell 6.4Y 8.9/0.4	
		Dimensions	W: mm [inch]	1,600 [63]	
			D: mm [inch]	680 [26-3/4]	
			H: mm [inch]	230 [9-1/16]	
		Weight	kg [lbs]	36 [79]	39 [86]
		Field Drain pipe size	mm [inch]	26 [1-1/32]	
		Refrigerant pipe size Gas	mm[inch]	ø15.88 [5/8]	
		Refrigerant pipe size Liquid	mm[inch]	ø9.52 [3/8]	
Remote Controller				Attached in Indoor Unit	
Outdoor unit		MCA	A	34	
		MOCP	A	56	
		SCCR	kA	5	
		Inverter input	A	23	
		Fan Motor Output	W	74 × 2	
		Compressor	Model	MRB36FEGMC	
		Air flow	CFM	3,910	
		Refrigerant Control		Electronic Expansion Valve	
		Defrost Method		Reverse Cycle	
		Sound Pressure Level at cooling	dB (A)	52	
		Sound Pressure Level at heating	dB (A)	53	
		External Finish Color		Ivory Munsell 3Y 7.8/1.1	
		Dimension	W: mm [inch]	1050 [41-11/32]	
			D: mm [inch]	25 + 330 [63/64 + 12-63/64]	
			H: mm [inch]	1338 [52-43/64]	
		Weight Unit	kg [lbs]	102 [224]	
Refrigerant		Type		R454B	
		Charge	kg [lbs,oz]	4.5 [9 lbs + 14 oz]	
		Oil	Model	RM68EH	
			L [oz]	1.4 [45]	
Refrigerant Pipe Size		Gas side O.D.	mm [inch]	ø15.88 [5/8]	
		Liquid side O.D.	mm [inch]	ø9.52 [3/8]	
Refrigerant pipe length		Height difference		Max. 30 m [Max.100 ft]	
		Length		Max. 50 m [Max.165 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)
(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)
2.Rating conditions (heating)-Indoor: D.B. 21.1°C(70°F), W.B. 15.6°C(60°F) Outdoor: D.B. -8.3°C(17°F), W.B. -9.4°C(15°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. 46ºC (115ºF)
	Minimum	D.B. 19ºC (66ºF), W.B. 15ºC (59ºF)	D.B. -5ºC (23ºF) / -18ºC (0ºF)*
Heating	Maximum	D.B. 28ºC (82ºF)	D.B. 21ºC (70ºF), W.B. 15ºC (59ºF)
	Minimum	D.B. 10ºC (50ºF)	D.B. -20ºC (-4ºF), W.B. -20ºC (-4ºF)

* 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		PCA-AK36NL	PCA-AK42NL
		Outdoor unit		PUY-AK36NL	PUY-AK42NL
Cooling	at 95°F	Max. Capacity	Btu/h	37,000	42,500
		Rated Capacity	Btu/h	36,000	42,000
		Min. Capacity	Btu/h	13,500	13,600
		Total Input	W	2,930	3,820
		EER2	Btu/h/W	12.2	10.9
		Moisture Removal	Pints/h	12.7	15.4
		SHF		0.62	0.60
		Power factor	%	96	97
	SEER2		Btu/h/W	20.6	20.4
Heating	at 47°F	Max. Capacity	Btu/h	-	-
		Rated Capacity	Btu/h	-	-
		Min. Capacity	Btu/h	-	-
		Total Input	W	-	-
		COP	W/W	-	-
		Power factor	%	-	-
	at 17°F	Rated Capacity	Btu/h	-	-
		Total Input	W	-	-
		COP	W/W	-	-
	HSPF2(IV/V)		Btu/h/W	-	-
Power supply		Phase,Cycle,Voltage		1 phase, 60 Hz, 208/230 V	
		Breaker size	A	35	
Voltage		Indoor - Outdoor S1-S2		AC208 V / 230 V	
		Indoor - Outdoor S2-S3		DC24 V	
		Indoor - Remote controller		DC12 V	
Indoor unit		MCA	A	2	
		MOCP	A	15	
		Fan Motor Output	W	160	
		Air flow (Lo-M2-M1-Hi)	DRY(CFM)	775 - 850 - 920 - 990	810 - 885 - 955 - 1025
			WET(CFM)	705 - 775 - 850 - 920	740 - 810 - 885 - 955
		External Static Pressure	in. WG [Pa]	0	
		Sound Pressure Level (Lo-M2-M1-Hi)	dB (A)	37 - 39 - 41 - 43	39 - 41 - 43 - 45
		External Finish		White Munsell 6.4Y 8.9/0.4	
		Dimensions	W: mm [inch]	1,600 [63]	
			D: mm [inch]	680 [26-3/4]	
			H: mm [inch]	230 [9-1/16]	
		Weight	kg [lbs]	36 [79]	39 [86]
		Field Drain pipe size	mm [inch]	26 [1-1/32]	
		Refrigerant pipe size Gas	mm[inch]	ø15.88 [5/8]	
		Refrigerant pipe size Liquid	mm[inch]	ø9.52 [3/8]	
Remote Controller				Attached in Indoor Unit	
Outdoor unit		MCA	A	34	
		MOCP	A	56	
		SCCR	kA	5	
		Inverter input	A	23	
		Fan Motor Output	W	74 × 2	
		Compressor	Model	MRB36FEGMC	
		Air flow	CFM	3,910	
		Refrigerant Control		Electronic Expansion Valve	
		Defrost Method		-	
		Sound Pressure Level at cooling	dB (A)	52	
		Sound Pressure Level at heating	dB (A)	-	
		External Finish Color		Ivory Munsell 3Y 7.8/1.1	
		Dimension	W: mm [inch]	1050 [41-11/32]	
			D: mm [inch]	25 + 330 [63/64 + 12-63/64]	
			H: mm [inch]	1338 [52-43/64]	
		Weight Unit	kg [lbs]	102 [224]	
Refrigerant		Type		R454B	
		Charge	kg [lbs,oz]	4.5 [9 lbs + 14 oz]	
		Oil	Model	RM68EH	
			L [oz]	1.4 [45]	
Refrigerant Pipe Size		Gas side O.D.	mm [inch]	ø15.88 [5/8]	
		Liquid side O.D.	mm [inch]	ø9.52 [3/8]	
Refrigerant pipe length		Height difference		Max. 30 m [Max.100 ft]	
		Length		Max. 69 m [Max.225 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
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) / -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		PEAD-AA36NL	PEAD-AA42NL
		Outdoor unit		PUZ-AK36NL	PUZ-AK42NL
Cooling	at 95°F	Max. Capacity	Btu/h	37,000	44,000
		Rated Capacity	Btu/h	36,000	42,000
		Min. Capacity	Btu/h	13,500	14,200
		Total Input	W	2,860	3,760
		EER2	Btu/h/W	12.5	11.1
		Moisture Removal	Pints/h	11.8	10.8
		SHF		0.65	0.72
		Power factor	%	95	95
	SEER2		Btu/h/W	20.1	18.7
Heating	at 47°F	Max. Capacity	Btu/h	40,000	49,700
		Rated Capacity	Btu/h	38,000	45,000
		Min. Capacity	Btu/h	13,200	13,300
		Total Input	W	2,610	3,400
		COP	W/W	4.2	3.8
		Power factor	%	95	95
	at 17°F	Rated Capacity	Btu/h	23,400	29,600
		Total Input	W	2,400	3,200
		COP	W/W	2.8	2.7
	HSPF2(IV/V)		Btu/h/W	9.2/7.5	9.3/7.7
Power supply		Phase,Cycle,Voltage		1 phase, 60 Hz, 208/230 V	
		Breaker size	A	35	
Voltage		Indoor - Outdoor S1-S2		AC208 V / 230 V	
		Indoor - Outdoor S2-S3		DC24 V	
		Indoor - Remote controller		DC12 V	
Indoor unit		MCA	A	3.50	4.25
		MOCP	A	15	
		Fan Motor Output	W	300	
		Air flow (LoLo-Lo-Mid-Hi)	DRY(CFM)	848-936-1024-1201	1042-1148-1254-1483
		External Static Pressure	in. WG [Pa]	0.14/0.20/0.28/0.40/0.60 [35/50/70/100/150]	
		Sound Pressure Level (LoLo-Lo-Mid-Hi)	35Pa dB(A)	33-33-35-37	37-37-39-41
			35Pa dB(A)	33-35-37-41	37-39-41-45
			50Pa dB(A)	34-36-38-42	37-39-41-45
			70Pa dB(A)	35-37-39-43	38-41-42-47
			100Pa dB(A)	37-39-41-44	40-42-44-48
			150Pa dB(A)	39-41-43-47	42-44-46-50
		External Finish		Galvanized	
		Dimensions	W: mm [inch]	1400 [55-1/8]	
			D: mm [inch]	732 [28-7/8]	
			H: mm [inch]	250 [9-7/8]	
		Weight Unit	kg [lbs]	37 [82]	39 [86]
		Field Drain pipe size	mm [inch]	ø32 [1-1/4]	
		Refrigerant pipe size Gas	mm[inch]	ø9.52 [3/8]	
		Refrigerant pipe size Liquid	mm[inch]	ø15.88 [5/8]	
Remote Controller				Attached in Indoor Unit	
Outdoor unit		MCA	A	34	
		MOCP	A	56	
		SCCR	kA	5	
		Inverter input	A	23	
		Fan Motor Output	W	74 × 2	
		Compressor	Model	MRB36FEGMC	
		Air flow	CFM	3,910	
		Refrigerant Control		Electronic Expansion Valve	
		Defrost Method		Reverse Cycle	
		Sound Pressure Level at cooling	dB (A)	52	
		Sound Pressure Level at heating	dB (A)	53	
		External Finish Color		Ivory Munsell 3Y 7.8/1.1	
		Dimensions	W: mm [inch]	1050 [41-11/32]	
			D: mm [inch]	25 + 330 [63/64 + 12-63/64]	
			H: mm [inch]	1338 [52-43/64]	
		Weight	kg [lbs]	102 [224]	
Refrigerant		Type		R454B	
		Charge	kg [lbs,oz]	4.5 [9 lbs + 14 oz]	
		Oil	Model	RM68EH	
			L [oz]	1.4 [45]	
Refrigerant Pipe Size		Gas side O.D.	mm [inch]	ø15.88 [5/8]	
		Liquid side O.D.	mm [inch]	ø9.52 [3/8]	
Refrigerant pipe length		Height difference		Max. 30 m [Max.100 ft]	
		Length		Max. 50 m [Max.165 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)
(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)
2. Rating conditions (heating)-Indoor: D.B. 21.1°C (70°F), W.B. 15.6°C (60°F) Outdoor: D.B. -8.3°C (17°F), W.B. -9.4°C (15°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. 46ºC (115ºF)
	Minimum	D.B. 19ºC (66ºF), W.B. 15ºC (59ºF)	D.B. -5ºC (23ºF) / -18ºC (0ºF)*
Heating	Maximum	D.B. 28ºC (82ºF)	D.B. 21ºC (70ºF), W.B. 15ºC (59ºF)
	Minimum	D.B. 10ºC (50ºF)	D.B. -20ºC (-4ºF), W.B. -20ºC (-4ºF)

* 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		PEAD-AA36NL	PEAD-AA42NL
		Outdoor unit		PUY-AK36NL	PUY-AK42NL
Cooling	at 95°F	Max. Capacity	Btu/h	37,000	44,000
		Rated Capacity	Btu/h	36,000	42,000
		Min. Capacity	Btu/h	13,500	14,200
		Total Input	W	2,860	3,760
		EER2	Btu/h/W	12.5	11.1
		Moisture Removal	Pints/h	11.8	10.8
		SHF		0.65	0.72
		Power factor	%	95	95
	SEER2		Btu/h/W	20.1	18.7
Heating	at 47°F	Max. Capacity	Btu/h	-	-
		Rated Capacity	Btu/h	-	-
		Min. Capacity	Btu/h	-	-
		Total Input	W	-	-
		COP	W/W	-	-
		Power factor	%	-	-
	at 17°F	Rated Capacity	Btu/h	-	-
		Total Input	W	-	-
		COP	W/W	-	-
	HSPF2(IV/V)		Btu/h/W	-	-
Power supply		Phase,Cycle,Voltage		1 phase, 60 Hz, 208/230 V	
		Breaker size	A	35	
Voltage		Indoor - Outdoor S1-S2		AC208 V / 230 V	
		Indoor - Outdoor S2-S3		DC24 V	
		Indoor - Remote controller		DC12 V	
Indoor unit		MCA	A	3.50	4.25
		MOCP	A	15	
		Fan Motor Output	W	300	
		Air flow (LoLo-Lo-Mid-Hi)	DRY(CFM)	848-936-1024-1201	1042-1148-1254-1483
		External Static Pressure	in. WG [Pa]	0.14/0.20/0.28/0.40/0.60 [35/50/70/100/150]	
		Sound Pressure Level (Lo-Mid-Hi) *Air flow down mode	0.14inWG* [dB(A)]	33-33-35-37	37-37-39-41
			0.14inWG [dB(A)]	33-35-37-41	37-39-41-45
			0.20inWG [dB(A)]	34-36-38-42	37-39-41-45
			0.28inWG [dB(A)]	35-37-39-43	38-41-42-47
			0.40inWG [dB(A)]	37-39-41-44	40-42-44-48
			0.60inWG [dB(A)]	39-41-43-47	42-44-46-50
		External Finish		Galvanized	
		Dimensions	W: mm [inch]	1400 [55-1/8]	
			D: mm [inch]	732 [28-7/8]	
			H: mm [inch]	250 [9-7/8]	
		Weight	kg [lbs]	37 [82]	39 [86]
		Field Drain pipe size	mm [inch]	ø32 [1-1/4]	
		Refrigerant pipe size Gas	mm[inch]	ø9.52 [3/8]	
		Refrigerant pipe size Liquid	mm[inch]	ø15.88 [5/8]	
Remote Controller				Attached in Indoor Unit	
Outdoor unit		MCA	A	34	
		MOCP	A	56	
		SCCR	kA	5	
		Inverter input	A	23	
		Fan Motor Output	W	74 × 2	
		Compressor	Type	MRB36FEGMC	
		Air flow	CFM	3,910	
		Refrigerant Control		Electronic Expansion Valve	
		Defrost Method		-	
		Sound Pressure Level at cooling	dB (A)	52	
		Sound Pressure Level at heating	dB (A)	-	
		External finish		Ivory Munsell 3Y 7.8/1.1	
		Dimension	W: mm [inch]	1050 [41-11/32]	
			D: mm [inch]	25 + 330 [63/64 + 12-63/64]	
			H: mm [inch]	1338 [52-43/64]	
		Weight Unit	kg [lbs]	102 [224]	
Refrigerant		Type		R454B	
		Charge	kg [lbs,oz]	4.5 [9 lbs + 14 oz]	
		Oil	Model	RM68EH	
			L [oz]	1.4 [45]	
Refrigerant Pipe Size		Gas side O.D.	mm [inch]	ø15.88 [5/8]	
		Liquid side O.D.	mm [inch]	ø9.52 [3/8]	
Refrigerant pipe length		Height difference		Max. 30 m [Max.100 ft]	
		Length		Max. 69 m [Max.225 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
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) / -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		PVA-AA36NL	PVA-AA42NL
		Outdoor unit		PUZ-AK36NL	PUZ-AK42NL
Cooling	at 95°F	Max. Capacity	Btu/h	37,000	44,000
		Rated Capacity	Btu/h	36,000	42,000
		Min. Capacity	Btu/h	13,400	14,100
		Total Input	W	2,960	3,760
		EER2	Btu/h/W	12.1	11.1
		Moisture Removal	Pints/h	12.1	12.5
		SHF		0.64	0.68
		Power factor	%	91	91
	SEER2		Btu/h/W	19.5	19.1
Heating	at 47°F	Max. Capacity	Btu/h	40,000	49,700
		Rated Capacity	Btu/h	38,000	46,000
		Min. Capacity	Btu/h	13,300	13,300
		Total Input	W	2,660	3,420
		COP	W/W	4.1	3.9
		Power factor	%	90	90
	at 17°F	Rated Capacity	Btu/h	23,600	29,600
		Total Input	W	2,400	3,150
		COP	W/W	2.8	2.7
	HSPF2(IV/V)		Btu/h/W	9.2/7.5	9.4/7.8
Power supply		Phase,Cycle,Voltage		1 phase, 60 Hz, 208/230 V	
		Breaker size	A	35	
Voltage		Indoor - Outdoor S1-S2		AC208 V / 230 V	
		Indoor - Outdoor S2-S3		DC24 V	
		Indoor - Remote controller		DC12 V	
Indoor unit		MCA	A	5.50	5.63
		MOCP	A	15	
		Fan Motor Output	W	430	
		Air flow (Lo-Mid-Hi)	DRY(CFM)	788 - 956 - 1,125	1,040 - 1,262 - 1,485
		External Static Pressure	in. WG [Pa]	0.30 - 0.50 - 0.80 [75 - 125 - 200]	
		Sound Pressure Level (Lo-Mid-Hi)	75Pa (0.30 in.WG)	30 - 34 - 38	34 - 38 - 42
			125Pa (0.50 in.WG)	38 - 43 - 43	45 - 48 - 52
			200Pa (0.80 in.WG)	37 - 41 - 45	39 - 43 - 47
		External Finish		Galvanized steel cabinet - Powder coated Slate Gray	
		Dimensions	W: mm [inch]	635 [25]	
			D: mm [inch]	548 [21-5/8]	
			H: mm [inch]	1,511 [59-1/2]	
		Weight Unit	kg [lbs]	78 [172]	
		Field Drain pipe size	mm [inch]	ø19.05 [3/4]	
		Refrigerant pipe size Gas	mm [inch]	ø15.88 [5/8]	
		Refrigerant pipe size Liquid	mm [inch]	ø9.52 [3/8]	
Remote Controller				Attached in Indoor Unit	
Outdoor unit		MCA	A	34	
		MOCP	A	56	
		SCCR	kA	5	
		Inverter input	A	23	
		Fan Motor Output	W	74 × 2	
		Compressor	Model	MRB36FEGMC	
		Air flow	CFM	3,910	
		Refrigerant Control		Electronic Expansion Valve	
		Defrost Method		Reverse Cycle	
		Sound Pressure Level at cooling	dB (A)	52	
		Sound Pressure Level at heating	dB (A)	53	
		External Finish Color		Ivory Munsell 3Y 7.8/1.1	
		Dimension	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]	
Refrigerant		Type		R454B	
		Charge	kg [lbs,oz]	4.5 [9 lbs + 14 oz]	
		Oil	Model	RM68EH	
			L [oz]	1.4 [45]	
Refrigerant Pipe Size		Gas side O.D.	mm [inch]	ø15.88 [5/8]	
		Liquid side O.D.	mm [inch]	ø9.52 [3/8]	
Refrigerant pipe length		Height difference		Max. 30 m [Max.100 ft]	
		Length		Max. 50 m [Max.165 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)
(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)
2. Rating conditions (heating)-Indoor: D.B. 21.1°C (70°F), W.B. 15.6°C (60°F) Outdoor: D.B. -8.3°C (17°F), W.B. -9.4°C (15°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) / -18°C (0°F)*
Heating	Maximum	D.B. 28°C (83°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		PVA-AA48NL	PVA-AA60NL
		Outdoor unit		PUZ-AK48NL	PUZ-AK60NL
Cooling	at 95°F	Max. Capacity	Btu/h	48,000	60,000
		Rated Capacity	Btu/h	48,000	56,000
		Min. Capacity	Btu/h	18,100	18,500
		Total Input	W	4,450	5,640
		EER2	Btu/h/W	10.6	9.8
		Moisture Removal	Pints/h	10.5	14.3
		SHF		0.77	0.74
		Power factor	%	93	99
	SEER2		Btu/h/W	18.1	18.3
Heating	at 47°F	Max. Capacity	Btu/h	60,000	66,500
		Rated Capacity	Btu/h	54,000	64,500
		Min. Capacity	Btu/h	14,700	14,600
		Total Input	W	4,940	6,520
		COP	W/W	3.2	2.9
		Power factor	%	94	97
	at 17°F	Rated Capacity	Btu/h	38,000	42,500
		Total Input	W	4,550	5,350
		COP	W/W	2.4	2.3
	HSPF2(IV/V)		Btu/h/W	8.4/7.5	8.4/7.1
Power supply		Phase,Cycle,Voltage		1 phase, 60 Hz, 208/230 V	
		Breaker size	A	40	
Voltage		Indoor - Outdoor S1-S2		AC208 V / 230 V	
		Indoor - Outdoor S2-S3		DC24 V	
		Indoor - Remote controller		DC12 V	
Indoor unit		MCA	A	5.63	9.30
		MOCP	A	15	
		Fan Motor Output	W	430	750
		Air flow (Lo-Mid-Hi)	DRY(CFM)	1,040 - 1,262 - 1,485	1,155 - 1,400 - 1,650
		External Static Pressure	in. WG [Pa]	0.30 - 0.50 - 0.80 [75 - 125 - 200]	
		Sound Pressure Level (Lo-Mid-Hi)	75Pa (0.30 in.WG)	44 - 48 - 52	48 - 53 - 56
			125Pa (0.50 in.WG)	45 - 48 - 52	48 - 55 - 56
			200Pa (0.80 in.WG)	43 - 48 - 51	49 - 53 - 56
		External Finish		Galvanized steel cabinet - Powder coated Slate Gray	
		Dimensions	W: mm [inch]	635 [25]	
			D: mm [inch]	548 [21-5/8]	
			H: mm [inch]	1,511 [59-1/2]	
		Weight Unit	kg [lbs]	78 [172]	79 [174]
		Field Drain pipe size	mm [inch]	ø19.05 [3/4]	
		Refrigerant pipe size Gas	mm [inch]	ø15.88 [5/8]	ø19.05 [3/4]
		Refrigerant pipe size Liquid	mm [inch]	ø9.52 [3/8]	
Remote Controller				Attached in Indoor Unit	
Outdoor unit		MCA	A	38	
		MOCP	A	67	
		SCCR	kA	5	
		Inverter input	A	30	
		Fan Motor Output	W	200 × 2	
		Compressor	Model	MRB53FEJMC-L	
		Air flow	CFM	4,020	
		Refrigerant Control		Electronic Expansion Valve	
		Defrost Method		Reverse Cycle	
		Sound Pressure Level at cooling	dB (A)	60	
		Sound Pressure Level at heating	dB (A)	62	
		External Finish Color		Ivory Munsell 3Y 7.8/1.1	
		Dimension	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]	120 [265]	
Refrigerant		Type		R454B	
		Charge	kg [lbs,oz]	5.2 [11 lbs + 7 oz]	
		Oil	Model	RM68EH	
			L [oz]	1.9 [60]	
Refrigerant Pipe Size		Gas side O.D.	mm [inch]	ø15.88 [5/8]	ø19.05 [3/4]
		Liquid side O.D.	mm [inch]	ø9.52 [3/8]	
Refrigerant pipe length		Height difference		Max. 30 m [Max.100 ft]	
		Length		Max. 75 m [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)
(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)
2. Rating conditions (heating)-Indoor: D.B. 21.1°C (70°F), W.B. 15.6°C (60°F) Outdoor: D.B. -8.3°C (17°F), W.B. -9.4°C (15°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) / -18°C (0°F)*
Heating	Maximum	D.B. 28°C (83°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		PVA-AA36NL	PVA-AA42NL
		Outdoor unit		PUY-AK36NL	PUY-AK42NL
Cooling	at 95°F	Max. Capacity	Btu/h	37,000	44,000
		Rated Capacity	Btu/h	36,000	42,000
		Min. Capacity	Btu/h	13,400	14,100
		Total Input	W	2,960	3,760
		EER2	Btu/h/W	12.1	11.1
		Moisture Removal	Pints/h	12.1	12.5
		SHF		0.64	0.68
		Power factor	%	91	91
	SEER2		Btu/h/W	19.5	19.1
Heating	at 47°F	Max. Capacity	Btu/h	-	-
		Rated Capacity	Btu/h	-	-
		Min. Capacity	Btu/h	-	-
		Total Input	W	-	-
		COP	W/W	-	-
		Power factor	%	-	-
	at 17°F	Rated Capacity	Btu/h	-	-
		Total Input	W	-	-
		COP	W/W	-	-
	HSPF2(IV/V)		Btu/h/W	-	-
Power supply		Phase,Cycle,Voltage		1 phase, 60 Hz, 208/230 V	
		Breaker size	A	35	
Voltage		Indoor - Outdoor S1-S2		AC208 V / 230 V	
		Indoor - Outdoor S2-S3		DC24 V	
		Indoor - Remote controller		DC12 V	
Indoor unit		MCA	A	5.50	5.63
		MOCP	A	15	
		Fan Motor Output	W	430	
		Air flow (Lo-Mid-Hi)	DRY(CFM)	788 - 956 - 1,125	1,040 - 1,262 - 1,485
		External Static Pressure	in. WG [Pa]	0.30 - 0.50 - 0.80 [75 - 125 - 200]	
		Sound Pressure Level (Lo-Mid-Hi)	75Pa (0.30 in.WG)	30 - 34 - 38	34 - 38 - 42
			125Pa (0.50 in.WG)	38 - 43 - 43	45 - 48 - 52
			200Pa (0.80 in.WG)	37 - 41 - 45	39 - 43 - 47
		External Finish		Galvanized steel cabinet - Powder coated Slate Gray	
		Dimensions	W: mm [inch]	635 [25]	
			D: mm [inch]	548 [21-5/8]	
			H: mm [inch]	1,511 [59-1/2]	
		Weight	kg [lbs]	78 [172]	
		Field Drain pipe size	mm [inch]	ø19.05 [3/4]	
		Refrigerant pipe size Gas	mm [inch]	ø15.88 [5/8]	
		Refrigerant pipe size Liquid	mm [inch]	ø9.52 [3/8]	
Remote Controller				Attached in Indoor Unit	
Outdoor unit		MCA	A	34	
		MOCP	A	56	
		SCCR	kA	5	
		Inverter input	A	23	
		Fan Motor Output	W	74 × 2	
		Compressor	Type	MRB36FEGMC	
		Air flow	CFM	3,910	
		Refrigerant Control		Electronic Expansion Valve	
		Defrost Method		-	
		Sound Pressure Level at cooling	dB (A)	52	
		Sound Pressure Level at heating	dB (A)	-	
		External Finish Color		Ivory Munsell 3Y 7.8/1.1	
		Dimension	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]	
Refrigerant		Type		R454B	
		Charge	kg [lbs,oz]	4.5 [9 lbs + 14 oz]	
		Oil	Model	RM68EH	
			L [oz]	1.4 [45]	
Refrigerant Pipe Size		Gas side O.D.	mm [inch]	ø15.88 [5/8]	
		Liquid side O.D.	mm [inch]	ø9.52 [3/8]	
Refrigerant pipe length		Height difference		Max. 30 m [Max.100 ft]	
		Length		Max. 69 m [Max.225 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
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) / --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		PVA-AA48NL	PVA-AA60NL
		Outdoor unit		PUY-AK48NL	PUY-AK60NL
Cooling	at 95°F	Max. Capacity	Btu/h	48,000	60,000
		Rated Capacity	Btu/h	48,000	56,000
		Min. Capacity	Btu/h	18,100	18,500
		Total Input	W	4,450	5,640
		EER2	Btu/h/W	10.6	9.8
		Moisture Removal	Pints/h	10.5	14.3
		SHF		0.77	0.74
		Power factor	%	93	99
	SEER2		Btu/h/W	18.1	18.3
Heating	at 47°F	Max. Capacity	Btu/h	-	-
		Rated Capacity	Btu/h	-	-
		Min. Capacity	Btu/h	-	-
		Total Input	W	-	-
		COP	W/W	-	-
		Power factor	%	-	-
	at 17°F	Rated Capacity	Btu/h	-	-
		Total Input	W	-	-
		COP	W/W	-	-
	HSPF2(IV/V)		Btu/h/W	-	-
Power supply		Phase,Cycle,Voltage		1 phase, 60 Hz, 208/230 V	
		Breaker size	A	40	
Voltage		Indoor - Outdoor S1-S2		AC208 V / 230 V	
		Indoor - Outdoor S2-S3		DC24 V	
		Indoor - Remote controller		DC12 V	
Indoor unit		MCA	A	5.63	9.30
		MOCP	A	15	
		Fan Motor Output	W	430	750
		Air flow (Lo-Mid-Hi)	DRY(CFM)	1,040 - 1,262 - 1,485	1,155 - 1,400 - 1,650
		External Static Pressure	in. WG [Pa]	0.30 - 0.50 - 0.80 [75 - 125 - 200]	
		Sound Pressure Level (Lo-Mid-Hi)	75Pa (0.30 in.WG)	44 - 48 - 52	48 - 53 - 56
			125Pa (0.50 in.WG)	45 - 48 - 52	48 - 55 - 56
			200Pa (0.80 in.WG)	43 - 48 - 51	49 - 53 - 56
		External Finish		Galvanized steel cabinet - Powder coated Slate Gray	
		Dimensions	W: mm [inch]	635 [25]	
			D: mm [inch]	548 [21-5/8]	
			H: mm [inch]	1,511 [59-1/2]	
		Weight	kg [lbs]	78 [172]	79 [174]
		Field Drain pipe size	mm [inch]	ø19.05 [3/4]	
		Refrigerant pipe size Gas	mm [inch]	ø15.88 [5/8]	ø19.05 [3/4]
		Refrigerant pipe size Liquid	mm [inch]	ø9.52 [3/8]	
Remote Controller				Attached in Indoor Unit	
Outdoor unit		MCA	A	38	
		MOCP	A	67	
		SCCR	kA	5	
		Inverter input	A	30	
		Fan Motor Output	W	200 × 2	
		Compressor	Type	MRB53FEJMC-L	
		Air flow	CFM	4,020	
		Refrigerant Control		Electronic Expansion Valve	
		Defrost Method		Reverse Cycle	
		Sound Pressure Level at cooling	dB (A)	60	
		Sound Pressure Level at heating	dB (A)	-	
		External Finish Color		Ivory Munsell 3Y 7.8/1.1	
		Dimension	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]	120 [265]	
Refrigerant		Type		R454B	
		Charge	kg [lbs,oz]	5.2 [11 lbs + 7 oz]	
		Oil	Model	RM68EH	
			L [oz]	1.9 [60]	
Refrigerant Pipe Size		Gas side O.D.	mm [inch]	ø15.88 [5/8]	ø19.05 [3/4]
		Liquid side O.D.	mm [inch]	ø9.52 [3/8]	
Refrigerant pipe length		Height difference		Max. 30 m [Max.100 ft]	
		Length		Max. 75 m [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
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) / –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		SVZ-AP48NL	SVZ-AP60NL
		Outdoor unit		SUZ-AK48NL	SUZ-AK60NL
Cooling	at 95°F	Max. Capacity	Btu/h	48,000	60,000
		Rated Capacity	Btu/h	48,000	56,000
		Min. Capacity	Btu/h	18,100	18,500
		Total Input	W	4,450	5,490
		EER2	Btu/h/W	9.1	9.0
		Moisture Removal	Pints/h	10.5	14.3
		SHF		0.77	0.74
		Power factor	%	93	99
	SEER2		Btu/h/W	17.1	17.0
Heating	at 47°F	Max. Capacity	Btu/h	60,000	66,500
		Rated Capacity	Btu/h	54,000	64,500
		Min. Capacity	Btu/h	14,700	14,600
		Total Input	W	4,940	6,520
		COP	W/W	3.2	2.9
		Power factor	%	94	97
	at 17°F	Rated Capacity	Btu/h	38,000	42,500
		Total Input	W	4,550	5,350
		COP	W/W	2.4	2.3
	HSPF2(IV/V)		Btu/h/W	8.1/7.5	8.0/7.1
Power supply		Phase,Cycle,Voltage		1 phase, 60 Hz, 208/230 V	
		Breaker size	A	40	
Voltage		Indoor - Outdoor S1-S2		AC208 V / 230 V	
		Indoor - Outdoor S2-S3		DC24 V	
		Indoor - Remote controller		DC12 V	
Indoor unit		MCA	A	5.63	9.30
		MOCP	A	15	
		Fan Motor Output	W	430	750
		Air flow (Lo-Mid-Hi)	DRY(CFM)	1,040 - 1,262 - 1,485	1,155 - 1,400 - 1,650
		External Static Pressure	in. WG [Pa]	0.30 - 0.50 - 0.80 [75 - 125 - 200]	
		Sound Pressure Level (Lo-Mid-Hi)	75Pa (0.30 in.WG)	44 - 48 - 52	48 - 53 - 56
			125Pa (0.50 in.WG)	45 - 48 - 52	48 - 55 - 56
			200Pa (0.80 in.WG)	43 - 48 - 51	49 - 53 - 56
		External Finish		Galvanized steel cabinet - Powder coated Slate Gray	
		Dimensions	W: mm [inch]	635 [25]	
			D: mm [inch]	548 [21-5/8]	
			H: mm [inch]	1,511 [59-1/2]	
		Weight	kg [lbs]	78 [172]	79 [174]
		Field Drain pipe size	mm [inch]	ø19.05 [3/4]	
		Refrigerant pipe size Gas	mm [inch]	ø15.88 [5/8]	ø19.05 [3/4]
		Refrigerant pipe size Liquid	mm [inch]	ø9.52 [3/8]	
Remote Controller				Attached in Indoor Unit	
Outdoor unit		MCA	A	38	
		MOCP	A	67	
		SCCR	kA	5	
		Inverter input	A	30	
		Fan Motor Output	W	200 × 2	
		Compressor	Type	MRB53FEJMC-L	
		Air flow	CFM	4,020	
		Refrigerant Control		Electronic Expansion Valve	
		Defrost Method		Reverse Cycle	
		Sound Pressure Level at cooling	dB (A)	60	
		Sound Pressure Level at heating	dB (A)	62	
		External Finish Color		Ivory Munsell 3Y 7.8/1.1	
		Dimension	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]	120 [265]	
Refrigerant		Type		R454B	
		Charge	kg [lbs,oz]	5.2 [11 lbs + 7 oz]	
		Oil	Model	RM68EH	
			L [oz]	1.9 [60]	
Refrigerant Pipe Size		Gas side O.D.	mm [inch]	ø15.88 [5/8]	ø19.05 [3/4]
		Liquid side O.D.	mm [inch]	ø9.52 [3/8]	
Refrigerant pipe length		Height difference		Max. 30 m [Max.100 ft]	
		Length		Max. 75 m [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)
(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)
2. Rating conditions (heating)-Indoor: D.B. 21.1°C (70°F), W.B. 15.6°C (60°F) Outdoor: D.B. -8.3°C (17°F), W.B. -9.4°C (15°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) / -18°C (0°F)*
Heating	Maximum	D.B. 28°C (83°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		PAA-BA36NL	PAA-BA42NL
		Outdoor unit		PUZ-AK36NL	PUZ-AK42NL
Cooling	at 95°F	Max. Capacity	Btu/h	36,000	43,000
		Rated Capacity	Btu/h	32,000	42,000
		Min. Capacity	Btu/h	16,200	15,400
		Total Input	W	2720	4,040
		EER2	Btu/h/W	11.7	10.3
		Moisture Removal	Pints/h	6.8	11.1
		SHF		0.78	0.72
		Power factor	%	87	90
	SEER2		Btu/h/W	18.1	17.1
Heating	at 47°F	Max. Capacity	Btu/h	42,000	50,000
		Rated Capacity	Btu/h	38,000	46,000
		Min. Capacity	Btu/h	19,200	18,900
		Total Input	W	3,030	4,030
		COP	W/W	3.6	3.3
		Power factor	%	90	91
	at 17°F	Rated Capacity	Btu/h	27,600	32,600
		Total Input	W	3,210	3,620
		COP	W/W	2.5	2.6
	HSPF2(IV/V)		Btu/h/W	9.4/7.8	9.3/8.0
Power supply		Phase,Cycle,Voltage		1 phase, 60 Hz, 208/230 V	
		Breaker size	A	35	
Voltage		Indoor - Outdoor S1-S2		AC208 V / 230 V	
		Indoor - Outdoor S2-S3		DC24 V	
		Indoor - Remote controller		DC12 V	
Indoor unit		MCA	A	0.2	
		Air flow (Min.-Max.)	DRY(CFM)	765 - 1050	936 - 1660
		Internal Static Pressure	in. WG [Pa]	0.3 [75]	
		External Finish		Galvanized steel cabinet - Powder coated Slate Gray	
		Dimensions	W: mm [inch]	445 [17-1/2]	
			D: mm [inch]	551 [21-2/3]	
			H: mm [inch]	810 [31-8/9]	
		Weight Unit	kg [lbs]	35.55 [78.20]	
		Field Drain pipe size	mm [inch]	ø19.05 [3/4]	
		Refrigerant pipe size Gas	mm [inch]	ø9.52 [3/8]	
		Refrigerant pipe size Liquid	mm [inch]	ø15.88 [5/8]	
Remote Controller				Attached in Indoor Unit	
Outdoor unit		MCA	A	34	
		MOCP	A	56	
		SCCR	kA	5	
		Inverter input	A	23	
		Fan Motor Output	W	74 × 2	
		Compressor	Model	MRB36FEGMC	
		Air flow	CFM	3,910	
		Refrigerant Control		Electronic Expansion Valve	
		Defrost Method		Reverse Cycle	
		Sound Pressure Level at cooling	dB (A)	52	
		Sound Pressure Level at heating	dB (A)	53	
		External Finish Color		Ivory Munsell 3Y 7.8/1.1	
		Dimension	W: mm [inch]	1050 [41-11/32]	
			D: mm [inch]	25 + 330 [63/64 + 12-63/64]	
			H: mm [inch]	1338 [52-43/64]	
		Weight Unit	kg [lbs]	102 [224]	
Refrigerant		Type		R454B	
		Charge	kg [lbs,oz]	4.5 [9lbs+14oz]	
		Oil	Model	RM68EH	
			L [oz]	1.4 [45]	
Refrigerant Pipe Size		Gas side O.D.	mm [inch]	ø15.88 [5/8]	
		Liquid side O.D.	mm [inch]	ø9.52 [3/8]	
Refrigerant pipe length		Height difference		Max. 30 m [Max.100 ft]	
		Length		Max. 30 m [Max.100 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)
(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)
2. Rating conditions (heating)-Indoor: D.B. 21.1°C (70°F), W.B. 15.6°C (60°F) Outdoor: D.B. -8.3°C (17°F), W.B. -9.4°C (15°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) / -18°C (0°F)*
Heating	Maximum	D.B. 28°C (83°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		PAA-BA36NL	PAA-BA42NL
		Outdoor unit		PUY-AK36NL	PUY-AK42NL
Cooling	at 95°F	Max. Capacity	Btu/h	36,000	43,000
		Rated Capacity	Btu/h	32,000	42,000
		Min. Capacity	Btu/h	16,200	15,400
		Total Input	W	2,720	4,040
		EER2	Btu/h/W	11.7	10.3
		Moisture Removal	Pints/h	6.8	11.1
		SHF		0.78	0.72
		Power factor	%	87	90
	SEER2		Btu/h/W	18.1	17.1
Heating	at 47°F	Max. Capacity	Btu/h	-	-
		Rated Capacity	Btu/h	-	-
		Min. Capacity	Btu/h	-	-
		Total Input	W	-	-
		COP	W/W	-	-
		Power factor	%	-	-
	at 17°F	Rated Capacity	Btu/h	-	-
		Total Input	W	-	-
		COP	W/W	-	-
	HSPF2(IV/V)		Btu/h/W	-	-
Power supply		Phase,Cycle,Voltage		1 phase, 60 Hz, 208/230 V	
		Breaker size	A	35	
Voltage		Indoor - Outdoor S1-S2		AC208 V / 230 V	
		Indoor - Outdoor S2-S3		DC24 V	
		Indoor - Remote controller		DC12 V	
Indoor unit		MCA	A	0.2	
		Air flow (Min.-Max.)	DRY(CFM)	765 - 1050	936 - 1660
		Internal Static Pressure	in. WG [Pa]	0.3 [75]	
		External Finish		Galvanized steel cabinet - Powder coated Slate Gray	
		Dimensions	W: mm [inch]	445 [17-1/2]	
			D: mm [inch]	551 [21-2/3]	
			H: mm [inch]	810 [31-8/9]	
		Weight Unit	kg [lbs]	35.55 [78.20]	
		Field Drain pipe size	mm [inch]	ø19.05 [3/4]	
		Refrigerant pipe size Gas	mm [inch]	ø9.52 [3/8]	
		Refrigerant pipe size Liquid	mm [inch]	ø15.88 [5/8]	
Remote Controller				Attached in Indoor Unit	
Outdoor unit		MCA	A	34	
		MOCP	A	56	
		SCCR	kA	5	
		Inverter input	A	23	
		Fan Motor Output	W	74 × 2	
		Compressor	Model	MRB36FEGMC	
		Air flow	CFM	3,910	
		Refrigerant Control		Electronic Expansion Valve	
		Defrost Method		-	
		Sound Pressure Level at cooling	dB (A)	52	
		Sound Pressure Level at heating	dB (A)	-	
		External Finish Color		Ivory Munsell 3Y 7.8/1.1	
		Dimension	W: mm [inch]	1050 [41-11/32]	
			D: mm [inch]	25 + 330 [63/64 + 12-63/64]	
			H: mm [inch]	1338 [52-43/64]	
		Weight Unit	kg [lbs]	102 [224]	
Refrigerant		Type		R454B	
		Charge	kg [lbs,oz]	4.5 [9 lbs + 14 oz]	
		Oil	Model	RM68EH	
			L [oz]	1.4 [45]	
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. 30 m [Max.100 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
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) / --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		PAA-CA36NL	PAA-CA42NL
		Outdoor unit		PUZ-AK36NL	PUZ-AK42NL
Cooling	at 95°F	Max. Capacity	Btu/h	36,000	43,000
		Rated Capacity	Btu/h	32,000	42,000
		Min. Capacity	Btu/h	16,200	15,400
		Total Input	W	2,720	4,040
		EER2	Btu/h/W	11.7	10.3
		Moisture Removal	Pints/h	6.8	11.1
		SHF		0.78	0.72
		Power factor	%	87	90
	SEER2		Btu/h/W	18.1	17.1
Heating	at 47°F	Max. Capacity	Btu/h	42,000	50,000
		Rated Capacity	Btu/h	38,000	46,000
		Min. Capacity	Btu/h	19,200	18,900
		Total Input	W	3,030	4,030
		COP	W/W	3.6	3.3
		Power factor	%	90	91
	at 17°F	Rated Capacity	Btu/h	27,600	32,600
		Total Input	W	3,210	3,620
		COP	W/W	2.5	2.6
	HSPF2(IV/V)		Btu/h/W	9.4/7.8	9.3/8.0
Power supply		Phase,Cycle,Voltage		1 phase, 60 Hz, 208/230 V	
		Breaker size	A	35	
Voltage		Indoor - Outdoor S1-S2		AC208 V / 230 V	
		Indoor - Outdoor S2-S3		DC24 V	
		Indoor - Remote controller		DC12 V	
Indoor unit		MCA	A	0.2	
		Air flow (Min.-Max.)	DRY(CFM)	765 - 1050	936 - 1660
		Internal Static Pressure	in. WG [Pa]	0.3 [75]	
		External Finish		Galvanized steel cabinet - Powder coated Slate Gray	
		Dimensions	W: mm [inch]	553 [21-7/9]	
			D: mm [inch]	551 [21-2/3]	
			H: mm [inch]	810 [31-8/9]	
		Weight Unit	kg [lbs]	38.73 [85.20]	
		Field Drain pipe size	mm [inch]	ø19.05 [3/4]	
		Refrigerant pipe size Gas	mm [inch]	ø9.52 [3/8]	
		Refrigerant pipe size Liquid	mm [inch]	ø15.88 [5/8]	
Remote Controller				Attached in Indoor Unit	
Outdoor unit		MCA	A	34	
		MOCP	A	56	
		SCCR	kA	5	
		Inverter input	A	23	
		Fan Motor Output	W	74 × 2	
		Compressor	Model	MRB36FEGMC	
		Air flow	CFM	3,910	
		Refrigerant Control		Electronic Expansion Valve	
		Defrost Method		Reverse Cycle	
		Sound Pressure Level at cooling	dB (A)	52	
		Sound Pressure Level at heating	dB (A)	53	
		External Finish Color		Ivory Munsell 3Y 7.8/1.1	
		Dimension	W: mm [inch]	1050 [41-11/32]	
			D: mm [inch]	25 + 330 [63/64 + 12-63/64]	
			H: mm [inch]	1338 [52-43/64]	
		Weight Unit	kg [lbs]	102 [224]	
Refrigerant		Type		R454B	
		Charge	kg [lbs,oz]	4.5 [9lbs+14oz]	
		Oil	Model	RM68EH	
			L [oz]	1.4 [45]	
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. 30 m [Max.100 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)
(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)
2. Rating conditions (heating)-Indoor: D.B. 21.1°C (70°F), W.B. 15.6°C (60°F) Outdoor: D.B. -8.3°C (17°F), W.B. -9.4°C (15°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) / -18°C (0°F)*
Heating	Maximum	D.B. 28°C (83°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		PAA-CA36NL	PAA-CA42NL
		Outdoor unit		PUY-AK36NL	PUY-AK42NL
Cooling	at 95°F	Max. Capacity	Btu/h	36,000	43,000
		Rated Capacity	Btu/h	32,000	42,000
		Min. Capacity	Btu/h	16,200	15,400
		Total Input	W	2,720	4,040
		EER2	Btu/h/W	11.7	10.3
		Moisture Removal	Pints/h	6.8	11.1
		SHF		0.78	0.72
		Power factor	%	87	90
	SEER2		Btu/h/W	18.1	17.1
Heating	at 47°F	Max. Capacity	Btu/h	-	-
		Rated Capacity	Btu/h	-	-
		Min. Capacity	Btu/h	-	-
		Total Input	W	-	-
		COP	W/W	-	-
		Power factor	%	-	-
	at 17°F	Rated Capacity	Btu/h	-	-
		Total Input	W	-	-
		COP	W/W	-	-
	HSPF2(IV/V)		Btu/h/W	-	-
Power supply		Phase,Cycle,Voltage		1 phase, 60 Hz, 208/230 V	
		Breaker size	A	35	
Voltage		Indoor - Outdoor S1-S2		AC208 V / 230 V	
		Indoor - Outdoor S2-S3		DC24 V	
		Indoor - Remote controller		DC12 V	
Indoor unit		MCA	A	0.2	
		Air flow (Min.-Max.)	DRY(CFM)	765 - 1050	936 - 1660
		Internal Static Pressure	in. WG [Pa]	0.3 [75]	
		External Finish		Galvanized steel cabinet - Powder coated Slate Gray	
		Dimensions	W: mm [inch]	553 [21-7/9]	
			D: mm [inch]	551 [21-2/3]	
			H: mm [inch]	810 [31-8/9]	
		Weight Unit	kg [lbs]	38.73 [85.20]	
		Field Drain pipe size	mm [inch]	ø19.05 [3/4]	
		Refrigerant pipe size Gas	mm [inch]	ø9.52 [3/8]	
		Refrigerant pipe size Liquid	mm [inch]	ø15.88 [5/8]	
Remote Controller				Attached in Indoor Unit	
Outdoor unit		MCA	A	34	
		MOCP	A	56	
		SCCR	kA	5	
		Inverter input	A	23	
		Fan Motor Output	W	74 × 2	
		Compressor	Model	MRB36FEGMC	
		Air flow	CFM	3,910	
		Refrigerant Control		Electronic Expansion Valve	
		Defrost Method		-	
		Sound Pressure Level at cooling	dB (A)	52	
		Sound Pressure Level at heating	dB (A)	-	
		External Finish Color		Ivory Munsell 3Y 7.8/1.1	
		Dimension	W: mm [inch]	1050 [41-11/32]	
			D: mm [inch]	25 + 330 [63/64 + 12-63/64]	
			H: mm [inch]	1338 [52-43/64]	
		Weight Unit	kg [lbs]	102 [224]	
Refrigerant		Type		R454B	
		Charge	kg [lbs,oz]	4.5 [9 lbs + 14 oz]	
		Oil	Model	RM68EH	
			L [oz]	1.4 [45]	
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. 30 m [Max.100 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
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) / -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.)

T2 PERFOMANCE CHART

T2-1. INVERTER
T2-1-1. COOLING CAPACITY
PLA-AE36NL/PUZ-AK36NL/ PUY-AK36NL

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

Indoor	Indoor	Indoor	Indoor	Outdoor intake air °C/°F D.B.																							
intake air	intake air	intake air	intake air	20/68				25/77				30/86				35/95				40/104				46/115			
D.B.(°C)	D.B.(°F)	W.B.(°C)	W.B.(°F)	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-AK42NL/ PUY-AK42NL

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

Indoor	Indoor	Indoor	Indoor	Outdoor intake air °C/°F D.B.																							
intake air	intake air	intake air	intake air	20/68				25/77				30/86				35/95				40/104				46/115			
D.B.(°C)	D.B.(°F)	W.B.(°C)	W.B.(°F)	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	23,394	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	22,803	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	25,688	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	34,414	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	31,537	0.70	3.23	42,000	29,232	0.70	3.50	38,689	26,927	0.70	3.68	35,900	24,987	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	39,760	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

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

PLA-AE48NL/PUZ-AK48NL/ PUY-AK48NL

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

Indoor	Indoor	Indoor	Indoor	Outdoor intake air °C/°F D.B.																							
intake air	intake air	intake air	intake air	20/68				25/77				30/86				35/95				40/104				46/115			
D.B.(°C)	D.B.(°F)	W.B.(°C)	W.B.(°F)	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	3.03	47,304	26,774	0.57	3.44	43,520	24,632	0.57	3.76	39,935	22,603	0.57	4.07	36,350	20,574	0.57	4.28	32,765	18,545	0.57	4.49
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	41,029	18,299	0.45	4.59	37,444	16,700	0.45	4.80
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	36,350	22,028	0.61	4.28	32,765	19,855	0.61	4.49
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	41,029	19,940	0.49	4.59	37,444	18,198	0.49	4.80
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	44,216	16,183	0.37	4.80	41,029	15,017	0.37	5.01
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	36,350	24,936	0.69	4.28	32,765	22,477	0.69	4.49
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	41,029	23,222	0.57	4.59	37,444	21,193	0.57	4.80
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	44,216	19,720	0.45	4.80	41,029	18,299	0.45	5.01
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	36,350	27,844	0.77	4.28	32,765	25,098	0.77	4.49
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	41,029	26,505	0.65	4.59	37,444	24,189	0.65	4.80
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	44,216	23,257	0.53	4.80	41,029	21,581	0.53	5.01
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	47,801	19,407	0.41	4.99	43,817	17,790	0.41	5.14
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	36,350	30,752	0.85	4.28	32,765	27,719	0.85	4.49
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	41,029	29,787	0.73	4.59	37,444	27,184	0.73	4.80
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	44,216	26,795	0.61	4.80	41,029	24,864	0.61	5.01
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	47,801	23,231	0.49	4.99	43,817	21,295	0.49	5.14
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	36,350	32,206	0.89	4.28	32,765	29,030	0.89	4.49
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	41,029	31,428	0.77	4.59	37,444	28,682	0.77	4.80
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	44,216	28,563	0.65	4.80	41,029	26,505	0.65	5.01
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	47,801	25,143	0.53	4.99	43,817	23,048	0.53	5.14
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	36,350	33,660	0.93	4.28	32,765	30,340	0.93	4.49
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	41,029	33,069	0.81	4.59	37,444	30,180	0.81	4.80
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	44,216	30,332	0.69	4.80	41,029	28,146	0.69	5.01
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	47,801	27,055	0.57	4.99	43,817	24,801	0.57	5.14
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	36,350	36,350	1.00	4.28	32,765	32,765	1.00	4.49
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	41,029	36,352	0.89	4.59	37,444	33,175	0.89	4.80
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	44,216	33,869	0.77	4.80	41,029	31,428	0.77	5.01
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	47,801	30,879	0.65	4.99	43,817	28,306	0.65	5.14
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	36,350	36,350	1.00	4.28	32,765	32,765	1.00	4.49
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	41,029	39,634	0.97	4.59	37,444	36,171	0.97	4.80
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	44,216	37,407	0.85	4.80	41,029	34,711	0.85	5.01
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	47,801	34,703	0.73	4.99	43,817	31,811	0.73	5.14

PKA-AK36NL/PUZ-AK36NL/ PUY-AK36NL

CAPACITY (Btu/h): 33,400 INPUT (kW): 2.77 SHF: 0.61

Indoor	Indoor	Indoor	Indoor	Outdoor intake air °C/°F D.B.																							
intake air	intake air	intake air	intake air	20/68				25/77				30/86				35/95				40/104				46/115			
D.B.(°C)	D.B.(°F)	W.B.(°C)	W.B.(°F)	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	34,995	17,707	0.51	1.84	32,916	16,655	0.51	2.09	30,283	15,323	0.51	2.28	27,788	14,061	0.51	2.47	25,293	12,798	0.51	2.59	22,799	11,536	0.51	2.72
19	66	18	64	38,251	14,765	0.39	2.02	36,172	13,962	0.39	2.27	33,539	12,946	0.39	2.47	31,044	11,983	0.39	2.66	28,549	11,020	0.39	2.78	26,055	10,057	0.39	2.91
20	68	16	61	34,995	19,107	0.55	1.84	32,916	17,972	0.55	2.09	30,283	16,534	0.55	2.28	27,788	15,172	0.55	2.47	25,293	13,810	0.55	2.59	22,799	12,448	0.55	2.72
20	68	18	64	38,251	16,295	0.43	2.02	36,172	15,409	0.43	2.27	33,539	14,287	0.43	2.47	31,044	13,225	0.43	2.66	28,549	12,162	0.43	2.78	26,055	11,099	0.43	2.91
20	68	20	68	39,914	12,214	0.31	2.14	38,251	11,705	0.31	2.33	36,033	11,026	0.31	2.55	33,400	10,220	0.31	2.77	30,767	9,415	0.31	2.91	28,549	8,736	0.31	3.04
22	72	16	61	34,995	21,907	0.63	1.84	32,916	20,605	0.63	2.09	30,283	18,957	0.63	2.28	27,788	17,395	0.63	2.47	25,293	15,834	0.63	2.59	22,799	14,272	0.63	2.72
22	72	18	64	38,251	19,355	0.51	2.02	36,172	18,303	0.51	2.27	33,539	16,971	0.51	2.47	31,044	15,708	0.51	2.66	28,549	14,446	0.51	2.78	26,055	13,184	0.51	2.91
22	72	20	68	39,914	15,407	0.39	2.14	38,251	14,765	0.39	2.33	36,033	13,909	0.39	2.55	33,400	12,892	0.39	2.77	30,767	11,876	0.39	2.91	28,549	11,020	0.39	3.04
24	75	16	61	34,995	24,706	0.71	1.84	32,916	23,239	0.71	2.09	30,283	21,380	0.71	2.28	27,788	19,618	0.71	2.47	25,293	17,857	0.71	2.59	22,799	16,096	0.71	2.72
24	75	18	64	38,251	22,415	0.59	2.02	36,172	21,197	0.59	2.27	33,539	19,654	0.59	2.47	31,044	18,192	0.59	2.66	28,549	16,730	0.59	2.78	26,055	15,268	0.59	2.91
24	75	20	68	39,914	18,600	0.47	2.14	38,251	17,825	0.47	2.33	36,033	16,791	0.47	2.55	33,400	15,564	0.47	2.77	30,767	14,337	0.47	2.91	28,549	13,304	0.47	3.04
24	75	22	72	42,131	14,577	0.35	2.23	40,745	14,098	0.35	2.47	38,251	13,235	0.35	2.68	35,756	12,372	0.35	2.88	33,261	11,508	0.35	3.02	30,490	10,549	0.35	3.11
26	79	16	61	34,995	27,506	0.79	1.84	32,916	25,872	0.79	2.09	30,283	23,802	0.79	2.28	27,788	21,841	0.79	2.47	25,293	19,881	0.79	2.59	22,799	17,920	0.79	2.72
26	79	18	64	38,251	25,475	0.67	2.02	36,172	24,090	0.67	2.27	33,539	22,337	0.67	2.47	31,044	20,675	0.67	2.66	28,549	19,014	0.67	2.78	26,055	17,352	0.67	2.91
26	79	20	68	39,914	21,793	0.55	2.14	38,251	20,885	0.55	2.33	36,033	19,674	0.55	2.55	33,400	18,236	0.55	2.77	30,767	16,799	0.55	2.91	28,549	15,588	0.55	3.04
26	79	22	72	42,131	17,948	0.43	2.23	40,745	17,357	0.43	2.47	38,251	16,295	0.43	2.68	35,756	15,232	0.43	2.88	33,261	14,169	0.43	3.02	30,490	12,989	0.43	3.11
27	81	16	61	34,995	28,906	0.83	1.84	32,916	27,188	0.83	2.09	30,283	25,013	0.83	2.28	27,788	22,953	0.83	2.47	25,293	20,892	0.83	2.59	22,799	18,832	0.83	2.72
27	81	18	64	38,251	27,005	0.71	2.02	36,172	25,537	0.71	2.27	33,539	23,678	0.71	2.47	31,044	21,917	0.71	2.66	28,549	20,156	0.71	2.78	26,055	18,395	0.71	2.91
27	81	20	68	39,914	23,389	0.59	2.14	38,251	22,415	0.59	2.33	36,033	21,115	0.59	2.55	33,400	19,572	0.59	2.77	30,767	18,029	0.59	2.91	28,549	16,730	0.59	3.04
27	81	22	72	42,131	19,633	0.47	2.23	40,745	18,987	0.47	2.47	38,251	17,825	0.47	2.68	35,756	16,662	0.47	2.88	33,261	15,500	0.47	3.02	30,490	14,208	0.47	3.11
28	82	16	61	34,995	30,305	0.87	1.84	32,916	28,505	0.87	2.09	30,283	26,225	0.87	2.28	27,788	24,064	0.87	2.47	25,293	21,904	0.87	2.59	22,799	19,744	0.87	2.72
28	82	18	64	38,251	28,535	0.75	2.02	36,172	26,984	0.75	2.27	33,539	25,020	0.75	2.47	31,044	23,159	0.75	2.66	28,549	21,298	0.75	2.78	26,055	19,437	0.75	2.91
28	82	20	68	39,914	24,986	0.63	2.14	38,251	23,945	0.63	2.33	36,033	22,557	0.63	2.55	33,400	20,908	0.63	2.77	30,767	19,260	0.63	2.91	28,549	17,872	0.63	3.04
28	82	22	72	42,131	21,318	0.51	2.23	40,745	20,617	0.51	2.47	38,251	19,355	0.51	2.68	35,756	18,093	0.51	2.88	33,261	16,830	0.51	3.02	30,490	15,428	0.51	3.11
30	86	16	61	34,995	33,105	0.95	1.84	32,916	31,138	0.95	2.09	30,283	28,647	0.95	2.28	27,788	26,287	0.95	2.47	25,293	23,928	0.95	2.59	22,799	21,568	0.95	2.72
30	86	18	64	38,251	31,595	0.83	2.02	36,172	29,878	0.83	2.27	33,539	27,703	0.83	2.47	31,044	25,642	0.83	2.66	28,549	23,582	0.83	2.78	26,055	21,521	0.83	2.91
30	86	20	68	39,914	28,179	0.71	2.14	38,251	27,005	0.71	2.33	36,033	25,439	0.71	2.55	33,400	23,580	0.71	2.77	30,767	21,721	0.71	2.91	28,549	20,156	0.71	3.04
30	86	22	72	42,131	24,689	0.59	2.23	40,745	23,877	0.59	2.47	38,251	22,415	0.59	2.68	35,756	20,953	0.59	2.88	33,261	19,491	0.59	3.02	30,490	17,867	0.59	3.11
32	90	16	61	34,995	34,995	1.00	1.84	32,916	32,916	1.00	2.09	30,283	30,283	1.00	2.28	27,788	27,788	1.00	2.47	25,293	25,293	1.00	2.59	22,799	22,799	1.00	2.72
32	90	18	64	38,251	34,655	0.91	2.02	36,172	32,772	0.91	2.27	33,539	30,386	0.91	2.47	31,044	28,126	0.91	2.66	28,549	25,866	0.91	2.78	26,055	23,606	0.91	2.91
32	90	20	68	39,914	31,372	0.79	2.14	38,251	30,065	0.79	2.33	36,033	28,322	0.79	2.55	33,400	26,252	0.79	2.77	30,767	24,183	0.79	2.91	28,549	22,440	0.79	3.04
32	90	22	72	42,131	28,059	0.67	2.23	40,745	27,136	0.67	2.47	38,251	25,475	0.67	2.68	35,756	23,814	0.67	2.88	33,261	22,152	0.67	3.02	30,490	20,306	0.67	3.11

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

PCA-AK36NL/PUZ-AK36NL/ PUY-AK36NL

CAPACITY (Btu/h): 36,000 INPUT (kW): 2.93 HF: 0.62

Indoor	Indoor	Indoor	Indoor	Outdoor intake air °C/°F D.B.																							
intake air	intake air	intake air	intake air	20/68				25/77				30/86				35/95				40/104				46/115			
D.B.(°C)	D.B.(°F)	W.B.(°C)	W.B.(°F)	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	19,463	0.52	1.94	35,478	18,307	0.52	2.21	32,640	16,842	0.52	2.41	29,951	15,455	0.52	2.61	27,262	14,067	0.52	2.74	24,574	12,680	0.52	2.88
19	66	18	64	41,228	16,326	0.40	2.14	38,988	15,439	0.40	2.41	36,149	14,315	0.40	2.61	33,461	13,250	0.40	2.81	30,772	12,186	0.40	2.94	28,083	11,121	0.40	3.08
20	68	16	61	37,719	20,972	0.56	1.94	35,478	19,726	0.56	2.21	32,640	18,148	0.56	2.41	29,951	16,653	0.56	2.61	27,262	15,158	0.56	2.74	24,574	13,663	0.56	2.88
20	68	18	64	41,228	17,976	0.44	2.14	38,988	16,999	0.44	2.41	36,149	15,761	0.44	2.61	33,461	14,589	0.44	2.81	30,772	13,416	0.44	2.94	28,083	12,244	0.44	3.08
20	68	20	68	43,021	13,595	0.32	2.26	41,228	13,028	0.32	2.46	38,838	12,273	0.32	2.70	36,000	11,376	0.32	2.93	33,162	10,479	0.32	3.08	30,772	9,724	0.32	3.21
22	72	16	61	37,719	23,989	0.64	1.94	35,478	22,564	0.64	2.21	32,640	20,759	0.64	2.41	29,951	19,049	0.64	2.61	27,262	17,339	0.64	2.74	24,574	15,629	0.64	2.88
22	72	18	64	41,228	21,274	0.52	2.14	38,988	20,118	0.52	2.41	36,149	18,653	0.52	2.61	33,461	17,266	0.52	2.81	30,772	15,878	0.52	2.94	28,083	14,491	0.52	3.08
22	72	20	68	43,021	17,036	0.40	2.26	41,228	16,326	0.40	2.46	38,838	15,380	0.40	2.70	36,000	14,256	0.40	2.93	33,162	13,132	0.40	3.08	30,772	12,186	0.40	3.21
24	75	16	61	37,719	27,007	0.72	1.94	35,478	25,402	0.72	2.21	32,640	23,370	0.72	2.41	29,951	21,445	0.72	2.61	27,262	19,520	0.72	2.74	24,574	17,595	0.72	2.88
24	75	18	64	41,228	24,572	0.60	2.14	38,988	23,237	0.60	2.41	36,149	21,545	0.60	2.61	33,461	19,943	0.60	2.81	30,772	18,340	0.60	2.94	28,083	16,737	0.60	3.08
24	75	20	68	43,021	20,478	0.48	2.26	41,228	19,625	0.48	2.46	38,838	18,487	0.48	2.70	36,000	17,136	0.48	2.93	33,162	15,785	0.48	3.08	30,772	14,647	0.48	3.21
24	75	22	72	45,411	16,166	0.36	2.35	43,917	15,634	0.36	2.61	41,228	14,677	0.36	2.84	38,539	13,720	0.36	3.05	35,851	12,763	0.36	3.20	32,863	11,699	0.36	3.29
26	79	16	61	37,719	30,024	0.80	1.94	35,478	28,241	0.80	2.21	32,640	25,981	0.80	2.41	29,951	23,841	0.80	2.61	27,262	21,701	0.80	2.74	24,574	19,561	0.80	2.88
26	79	18	64	41,228	27,870	0.68	2.14	38,988	26,356	0.68	2.41	36,149	24,437	0.68	2.61	33,461	22,619	0.68	2.81	30,772	20,802	0.68	2.94	28,083	18,984	0.68	3.08
26	79	20	68	43,021	23,920	0.56	2.26	41,228	22,923	0.56	2.46	38,838	21,594	0.56	2.70	36,000	20,016	0.56	2.93	33,162	18,438	0.56	3.08	30,772	17,109	0.56	3.21
26	79	22	72	45,411	19,799	0.44	2.35	43,917	19,148	0.44	2.61	41,228	17,976	0.44	2.84	38,539	16,803	0.44	3.05	35,851	15,631	0.44	3.20	32,863	14,328	0.44	3.29
27	81	16	61	37,719	31,533	0.84	1.94	35,478	29,660	0.84	2.21	32,640	27,287	0.84	2.41	29,951	25,039	0.84	2.61	27,262	22,791	0.84	2.74	24,574	20,544	0.84	2.88
27	81	18	64	41,228	29,519	0.72	2.14	38,988	27,915	0.72	2.41	36,149	25,883	0.72	2.61	33,461	23,958	0.72	2.81	30,772	22,033	0.72	2.94	28,083	20,107	0.72	3.08
27	81	20	68	43,021	25,640	0.60	2.26	41,228	24,572	0.60	2.46	38,838	23,148	0.60	2.70	36,000	21,456	0.60	2.93	33,162	19,764	0.60	3.08	30,772	18,340	0.60	3.21
27	81	22	72	45,411	21,616	0.48	2.35	43,917	20,904	0.48	2.61	41,228	19,625	0.48	2.84	38,539	18,345	0.48	3.05	35,851	17,065	0.48	3.20	32,863	15,643	0.48	3.29
28	82	16	61	37,719	33,042	0.88	1.94	35,478	31,079	0.88	2.21	32,640	28,593	0.88	2.41	29,951	26,237	0.88	2.61	27,262	23,882	0.88	2.74	24,574	21,526	0.88	2.88
28	82	18	64	41,228	31,169	0.76	2.14	38,988	29,475	0.76	2.41	36,149	27,329	0.76	2.61	33,461	25,296	0.76	2.81	30,772	23,263	0.76	2.94	28,083	21,231	0.76	3.08
28	82	20	68	43,021	27,361	0.64	2.26	41,228	26,221	0.64	2.46	38,838	24,701	0.64	2.70	36,000	22,896	0.64	2.93	33,162	21,091	0.64	3.08	30,772	19,571	0.64	3.21
28	82	22	72	45,411	23,432	0.52	2.35	43,917	22,661	0.52	2.61	41,228	21,274	0.52	2.84	38,539	19,886	0.52	3.05	35,851	18,499	0.52	3.20	32,863	16,957	0.52	3.29
30	86	16	61	37,719	36,059	0.96	1.94	35,478	33,917	0.96	2.21	32,640	31,204	0.96	2.41	29,951	28,633	0.96	2.61	27,262	26,063	0.96	2.74	24,574	23,492	0.96	2.88
30	86	18	64	41,228	34,467	0.84	2.14	38,988	32,594	0.84	2.41	36,149	30,221	0.84	2.61	33,461	27,973	0.84	2.81	30,772	25,725	0.84	2.94	28,083	23,477	0.84	3.08
30	86	20	68	43,021	30,803	0.72	2.26	41,228	29,519	0.72	2.46	38,838	27,808	0.72	2.70	36,000	25,776	0.72	2.93	33,162	23,744	0.72	3.08	30,772	22,033	0.72	3.21
30	86	22	72	45,411	27,065	0.60	2.35	43,917	26,175	0.60	2.61	41,228	24,572	0.60	2.84	38,539	22,969	0.60	3.05	35,851	21,367	0.60	3.20	32,863	19,586	0.60	3.29
32	90	16	61	37,719	37,719	1.00	1.94	35,478	35,478	1.00	2.21	32,640	32,640	1.00	2.41	29,951	29,951	1.00	2.61	27,262	27,262	1.00	2.74	24,574	24,574	1.00	2.88
32	90	18	64	41,228	37,765	0.92	2.14	38,988	35,713	0.92	2.41	36,149	33,113	0.92	2.61	33,461	30,650	0.92	2.81	30,772	28,187	0.92	2.94	28,083	25,724	0.92	3.08
32	90	20	68	43,021	34,245	0.80	2.26	41,228	32,818	0.80	2.46	38,838	30,915	0.80	2.70	36,000	28,656	0.80	2.93	33,162	26,397	0.80	3.08	30,772	24,494	0.80	3.21
32	90	22	72	45,411	30,698	0.68	2.35	43,917	29,688	0.68	2.61	41,228	27,870	0.68	2.84	38,539	26,053	0.68	3.05	35,851	24,235	0.68	3.20	32,863	22,215	0.68	3.29

PCA-AK42NL/PUZ-AK42NL/ PUY-AK42NL

CAPACITY (Btu/h): 42,000 INPUT (kW): 3.82 SHF: 0.6

Indoor	Indoor	Indoor	Indoor	Outdoor intake air °C/°F D.B.																							
intake air	intake air	intake air	intake air	20/68				25/77				30/86				35/95				40/104				46/115			
D.B.(°C)	D.B.(°F)	W.B.(°C)	W.B.(°F)	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	21,827	0.50	2.53	41,391	20,530	0.50	2.88	38,080	18,888	0.50	3.14	34,943	17,332	0.50	3.40	31,806	15,776	0.50	3.58	28,669	14,220	0.50	3.75
19	66	18	64	48,100	18,085	0.38	2.79	45,485	17,103	0.38	3.14	42,174	15,858	0.38	3.40	39,037	14,678	0.38	3.66	35,900	13,499	0.38	3.84	32,763	12,319	0.38	4.01
20	68	16	61	44,005	23,587	0.54	2.53	41,391	22,186	0.54	2.88	38,080	20,411	0.54	3.14	34,943	18,729	0.54	3.40	31,806	17,048	0.54	3.58	28,669	15,367	0.54	3.75
20	68	18	64	48,100	20,009	0.42	2.79	45,485	18,922	0.42	3.14	42,174	17,544	0.42	3.40	39,037	16,240	0.42	3.66	35,900	14,935	0.42	3.84	32,763	13,630	0.42	4.01
20	68	20	68	50,191	14,856	0.30	2.95	48,100	14,237	0.30	3.21	45,311	13,412	0.30	3.52	42,000	12,432	0.30	3.82	38,689	11,452	0.30	4.01	35,900	10,627	0.30	4.19
22	72	16	61	44,005	27,107	0.62	2.53	41,391	25,497	0.62	2.88	38,080	23,457	0.62	3.14	34,943	21,525	0.62	3.40	31,806	19,593	0.62	3.58	28,669	17,660	0.62	3.75
22	72	18	64	48,100	23,857	0.50	2.79	45,485	22,561	0.50	3.14	42,174	20,918	0.50	3.40	39,037	19,363	0.50	3.66	35,900	17,807	0.50	3.84	32,763	16,251	0.50	4.01
22	72	20	68	50,191	18,872	0.38	2.95	48,100	18,085	0.38	3.21	45,311	17,037	0.38	3.52	42,000	15,792	0.38	3.82	38,689	14,547	0.38	4.01	35,900	13,499	0.38	4.19
24	75	16	61	44,005	30,628	0.70	2.53	41,391	28,808	0.70	2.88	38,080	26,504	0.70	3.14	34,943	24,320	0.70	3.40	31,806	22,137	0.70	3.58	28,669	19,954	0.70	3.75
24	75	18	64	48,100	27,705	0.58	2.79	45,485	26,200	0.58	3.14	42,174	24,292	0.58	3.40	39,037	22,486	0.58	3.66	35,900	20,679	0.58	3.84	32,763	18,872	0.58	4.01
24	75	20	68	50,191	22,887	0.46	2.95	48,100	21,933	0.46	3.21	45,311	20,662	0.46	3.52	42,000	19,152	0.46	3.82	38,689	17,642	0.46	4.01	35,900	16,371	0.46	4.19
24	75	22	72	52,979	17,801	0.34	3.07	51,237	17,215	0.34	3.40	48,100	16,161	0.34	3.70	44,963	15,107	0.34	3.98	41,826	14,053	0.34	4.17	38,340	12,882	0.34	4.29
26	79	16	61	44,005	34,148	0.78	2.53	41,391	32,120	0.78	2.88	38,080	29,550	0.78	3.14	34,943	27,116	0.78	3.40	31,806	24,682	0.78	3.58	28,669	22,247	0.78	3.75
26	79	18	64	48,100	31,553	0.66	2.79	45,485	29,838	0.66	3.14	42,174	27,666	0.66	3.40	39,037	25,608	0.66	3.66	35,900	23,551	0.66	3.84	32,763	21,493	0.66	4.01
26	79	20	68	50,191	26,902	0.54	2.95	48,100	25,781	0.54	3.21	45,311	24,287	0.54	3.52	42,000	22,512	0.54	3.82	38,689	20,737	0.54	4.01	35,900	19,243	0.54	4.19
26	79	22	72	52,979	22,039	0.42	3.07	51,237	21,314	0.42	3.40	48,100	20,009	0.42	3.70	44,963	18,704	0.42	3.98	41,826	17,400	0.42	4.17	38,340	15,950	0.42	4.29
27	81	16	61	44,005	35,908	0.82	2.53	41,391	33,775	0.82	2.88	38,080	31,073	0.82	3.14	34,943	28,514	0.82	3.40	31,806	25,954	0.82	3.58	28,669	23,394	0.82	3.75
27	81	18	64	48,100	33,477	0.70	2.79	45,485	31,658	0.70	3.14	42,174	29,353	0.70	3.40	39,037	27,170	0.70	3.66	35,900	24,987	0.70	3.84	32,763	22,803	0.70	4.01
27	81	20	68	50,191	28,910	0.58	2.95	48,100	27,705	0.58	3.21	45,311	26,099	0.58	3.52	42,000	24,192	0.58	3.82	38,689	22,285	0.58	4.01	35,900	20,679	0.58	4.19
27	81	22	72	52,979	24,159	0.46	3.07	51,237	23,364	0.46	3.40	48,100	21,933	0.46	3.70	44,963	20,503	0.46	3.98	41,826	19,073	0.46	4.17	38,340	17,483	0.46	4.29
28	82	16	61	44,005	37,669	0.86	2.53	41,391	35,431	0.86	2.88	38,080	32,596	0.86	3.14	34,943	29,911	0.86	3.40	31,806	27,226	0.86	3.58	28,669	24,541	0.86	3.75
28	82	18	64	48,100	35,401	0.74	2.79	45,485	33,477	0.74	3.14	42,174	31,040	0.74	3.40	39,037	28,731	0.74	3.66	35,900	26,423	0.74	3.84	32,763	24,114	0.74	4.01
28	82	20	68	50,191	30,918	0.62	2.95	48,100	29,629	0.62	3.21	45,311	27,912	0.62	3.52	42,000	25,872	0.62	3.82	38,689	23,832	0.62	4.01	35,900	22,115	0.62	4.19
28	82	22	72	52,979	26,278	0.50	3.07	51,237	25,413	0.50	3.40	48,100	23,857	0.50	3.70	44,963	22,301	0.50	3.98	41,826	20,746	0.50	4.17	38,340	19,017	0.50	4.29
30	86	16	61	44,005	41,189	0.94	2.53	41,391	38,742	0.94	2.88	38,080	35,643	0.94	3.14	34,943	32,707	0.94	3.40	31,806	29,771	0.94	3.58	28,669	26,834	0.94	3.75
30	86	18	64	48,100	39,249	0.82	2.79	45,485	37,116	0.82	3.14	42,174	34,414	0.82	3.40	39,037	31,854	0.82	3.66	35,900	29,295	0.82	3.84	32,763	26,735	0.82	4.01
30	86	20	68	50,191	34,933	0.70	2.95	48,100	33,477	0.70	3.21	45,311	31,537	0.70	3.52	42,000	29,232	0.70	3.82	38,689	26,927	0.70	4.01	35,900	24,987	0.70	4.19
30	86	22	72	52,979	30,516	0.58	3.07	51,237	29,512	0.58	3.40	48,100	27,705	0.58	3.70	44,963	25,898	0.58	3.98	41,826	24,092	0.58	4.17	38,340	22,084	0.58	4.29
32	90	16	61	44,005	44,005	1.00	2.53	41,391	41,391	1.00	2.88	38,080	38,080	1.00	3.14	34,943	34,943	1.00	3.40	31,806	31,806	1.00	3.58	28,669	28,669	1.00	3.75
32	90	18	64	48,100	43,097	0.90	2.79	45,485	40,755	0.90	3.14	42,174	37,788	0.90	3.40	39,037	34,977	0.90	3.66	35,900	32,167	0.90	3.84	32,763	29,356	0.90	4.01
32	90	20	68	50,191	38,948	0.78	2.95	48,100	37,325	0.78	3.21	45,311	35,161	0.78	3.52	42,000	32,592	0.78	3.82	38,689	30,023	0.78	4.01	35,900	27,859	0.78	4.19
32	90	22	72	52,979	34,754	0.66	3.07	51,237	33,611	0.66	3.40	48,100	31,553	0.66	3.70	44,963	29,496	0.66	3.98	41,826	27,438	0.66	4.17	38,340	25,151	0.66	4.29

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

PEAD-AA36NL/PUZ-AK36NL/ PUY-AK36NL

CAPACITY (Btu/h): 36,000 INPUT (kW): 2.86 SHF: 0.65

Indoor	Indoor	Indoor	Indoor	Outdoor intake air °C/°F D.B.																							
intake air	intake air	intake air	intake air	20/68				25/77				30/86				35/95				40/104				46/115			
D.B.(°C)	D.B.(°F)	W.B.(°C)	W.B.(°F)	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	20,594	0.55	1.89	35,478	19,371	0.55	2.15	32,640	17,821	0.55	2.35	29,951	16,353	0.55	2.55	27,262	14,885	0.55	2.68	24,574	13,417	0.55	2.81
19	66	18	64	41,228	17,563	0.43	2.09	38,988	16,609	0.43	2.35	36,149	15,400	0.43	2.55	33,461	14,254	0.43	2.74	30,772	13,109	0.43	2.87	28,083	11,963	0.43	3.00
20	68	16	61	37,719	22,103	0.59	1.89	35,478	20,790	0.59	2.15	32,640	19,127	0.59	2.35	29,951	17,551	0.59	2.55	27,262	15,976	0.59	2.68	24,574	14,400	0.59	2.81
20	68	18	64	41,228	19,212	0.47	2.09	38,988	18,168	0.47	2.35	36,149	16,846	0.47	2.55	33,461	15,593	0.47	2.74	30,772	14,340	0.47	2.87	28,083	13,087	0.47	3.00
20	68	20	68	43,021	14,885	0.35	2.21	41,228	14,265	0.35	2.40	38,838	13,438	0.35	2.64	36,000	12,456	0.35	2.86	33,162	11,474	0.35	3.00	30,772	10,647	0.35	3.13
22	72	16	61	37,719	25,121	0.67	1.89	35,478	23,628	0.67	2.15	32,640	21,738	0.67	2.35	29,951	19,947	0.67	2.55	27,262	18,157	0.67	2.68	24,574	16,366	0.67	2.81
22	72	18	64	41,228	22,511	0.55	2.09	38,988	21,287	0.55	2.35	36,149	19,738	0.55	2.55	33,461	18,269	0.55	2.74	30,772	16,801	0.55	2.87	28,083	15,333	0.55	3.00
22	72	20	68	43,021	18,327	0.43	2.21	41,228	17,563	0.43	2.40	38,838	16,545	0.43	2.64	36,000	15,336	0.43	2.86	33,162	14,127	0.43	3.00	30,772	13,109	0.43	3.13
24	75	16	61	37,719	28,138	0.75	1.89	35,478	26,467	0.75	2.15	32,640	24,349	0.75	2.35	29,951	22,344	0.75	2.55	27,262	20,338	0.75	2.68	24,574	18,332	0.75	2.81
24	75	18	64	41,228	25,809	0.63	2.09	38,988	24,406	0.63	2.35	36,149	22,630	0.63	2.55	33,461	20,946	0.63	2.74	30,772	19,263	0.63	2.87	28,083	17,580	0.63	3.00
24	75	20	68	43,021	21,768	0.51	2.21	41,228	20,861	0.51	2.40	38,838	19,652	0.51	2.64	36,000	18,216	0.51	2.86	33,162	16,780	0.51	3.00	30,772	15,571	0.51	3.13
24	75	22	72	45,411	17,529	0.39	2.30	43,917	16,952	0.39	2.55	41,228	15,914	0.39	2.77	38,539	14,876	0.39	2.98	35,851	13,838	0.39	3.12	32,863	12,685	0.39	3.21
26	79	16	61	37,719	31,156	0.83	1.89	35,478	29,305	0.83	2.15	32,640	26,961	0.83	2.35	29,951	24,740	0.83	2.55	27,262	22,519	0.83	2.68	24,574	20,298	0.83	2.81
26	79	18	64	41,228	29,107	0.71	2.09	38,988	27,525	0.71	2.35	36,149	25,521	0.71	2.55	33,461	23,623	0.71	2.74	30,772	21,725	0.71	2.87	28,083	19,827	0.71	3.00
26	79	20	68	43,021	25,210	0.59	2.21	41,228	24,160	0.59	2.40	38,838	22,759	0.59	2.64	36,000	21,096	0.59	2.86	33,162	19,433	0.59	3.00	30,772	18,032	0.59	3.13
26	79	22	72	45,411	21,161	0.47	2.30	43,917	20,465	0.47	2.55	41,228	19,212	0.47	2.77	38,539	17,959	0.47	2.98	35,851	16,706	0.47	3.12	32,863	15,314	0.47	3.21
27	81	16	61	37,719	32,665	0.87	1.89	35,478	30,724	0.87	2.15	32,640	28,266	0.87	2.35	29,951	25,938	0.87	2.55	27,262	23,609	0.87	2.68	24,574	21,281	0.87	2.81
27	81	18	64	41,228	30,756	0.75	2.09	38,988	29,085	0.75	2.35	36,149	26,967	0.75	2.55	33,461	24,962	0.75	2.74	30,772	22,956	0.75	2.87	28,083	20,950	0.75	3.00
27	81	20	68	43,021	26,931	0.63	2.21	41,228	25,809	0.63	2.40	38,838	24,313	0.63	2.64	36,000	22,536	0.63	2.86	33,162	20,759	0.63	3.00	30,772	19,263	0.63	3.13
27	81	22	72	45,411	22,978	0.51	2.30	43,917	22,222	0.51	2.55	41,228	20,861	0.51	2.77	38,539	19,501	0.51	2.98	35,851	18,140	0.51	3.12	32,863	16,629	0.51	3.21
28	82	16	61	37,719	34,173	0.91	1.89	35,478	32,143	0.91	2.15	32,640	29,572	0.91	2.35	29,951	27,136	0.91	2.55	27,262	24,700	0.91	2.68	24,574	22,264	0.91	2.81
28	82	18	64	41,228	32,405	0.79	2.09	38,988	30,644	0.79	2.35	36,149	28,413	0.79	2.55	33,461	26,300	0.79	2.74	30,772	24,187	0.79	2.87	28,083	22,073	0.79	3.00
28	82	20	68	43,021	28,652	0.67	2.21	41,228	27,458	0.67	2.40	38,838	25,866	0.67	2.64	36,000	23,976	0.67	2.86	33,162	22,086	0.67	3.00	30,772	20,494	0.67	3.13
28	82	22	72	45,411	24,794	0.55	2.30	43,917	23,979	0.55	2.55	41,228	22,511	0.55	2.77	38,539	21,043	0.55	2.98	35,851	19,574	0.55	3.12	32,863	17,943	0.55	3.21
30	86	16	61	37,719	37,191	0.99	1.89	35,478	34,981	0.99	2.15	32,640	32,183	0.99	2.35	29,951	29,532	0.99	2.55	27,262	26,881	0.99	2.68	24,574	24,230	0.99	2.81
30	86	18	64	41,228	35,704	0.87	2.09	38,988	33,763	0.87	2.35	36,149	31,305	0.87	2.55	33,461	28,977	0.87	2.74	30,772	26,648	0.87	2.87	28,083	24,320	0.87	3.00
30	86	20	68	43,021	32,093	0.75	2.21	41,228	30,756	0.75	2.40	38,838	28,973	0.75	2.64	36,000	26,856	0.75	2.86	33,162	24,739	0.75	3.00	30,772	22,956	0.75	3.13
30	86	22	72	45,411	28,427	0.63	2.30	43,917	27,492	0.63	2.55	41,228	25,809	0.63	2.77	38,539	24,126	0.63	2.98	35,851	22,442	0.63	3.12	32,863	20,572	0.63	3.21
32	90	16	61	37,719	37,719	1.00	1.89	35,478	35,478	1.00	2.15	32,640	32,640	1.00	2.35	29,951	29,951	1.00	2.55	27,262	27,262	1.00	2.68	24,574	24,574	1.00	2.81
32	90	18	64	41,228	39,002	0.95	2.09	38,988	36,882	0.95	2.35	36,149	34,197	0.95	2.55	33,461	31,654	0.95	2.74	30,772	29,110	0.95	2.87	28,083	26,567	0.95	3.00
32	90	20	68	43,021	35,535	0.83	2.21	41,228	34,055	0.83	2.40	38,838	32,080	0.83	2.64	36,000	29,736	0.83	2.86	33,162	27,392	0.83	3.00	30,772	25,417	0.83	3.13
32	90	22	72	45,411	32,060	0.71	2.30	43,917	31,005	0.71	2.55	41,228	29,107	0.71	2.77	38,539	27,209	0.71	2.98	35,851	25,311	0.71	3.12	32,863	23,201	0.71	3.21

PEAD-AA42NL/PUZ-AK42NL/ PUY-AK42NL

CAPACITY (Btu/h): 42,000 INPUT (kW): 3.76 SHF: 0.72

Indoor	Indoor	Indoor	Indoor	Outdoor intake air °C/°F D.B.																							
intake air	intake air	intake air	intake air	20/68				25/77				30/86				35/95				40/104				46/115			
D.B.(°C)	D.B.(°F)	W.B.(°C)	W.B.(°F)	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	2.49	41,391	25,497	0.62	2.83	38,080	23,457	0.62	3.09	34,943	21,525	0.62	3.35	31,806	19,593	0.62	3.52	28,669	17,660	0.62	3.69
19	66	18	64	48,100	23,857	0.50	2.75	45,485	22,561	0.50	3.09	42,174	20,918	0.50	3.35	39,037	19,363	0.50	3.61	35,900	17,807	0.50	3.78	32,763	16,251	0.50	3.95
20	68	16	61	44,005	28,867	0.66	2.49	41,391	27,153	0.66	2.83	38,080	24,980	0.66	3.09	34,943	22,923	0.66	3.35	31,806	20,865	0.66	3.52	28,669	18,807	0.66	3.69
20	68	18	64	48,100	25,781	0.54	2.75	45,485	24,380	0.54	3.09	42,174	22,605	0.54	3.35	39,037	20,924	0.54	3.61	35,900	19,243	0.54	3.78	32,763	17,561	0.54	3.95
20	68	20	68	50,191	20,879	0.42	2.90	48,100	20,009	0.42	3.16	45,311	18,849	0.42	3.47	42,000	17,472	0.42	3.76	38,689	16,095	0.42	3.95	35,900	14,935	0.42	4.12
22	72	16	61	44,005	32,388	0.74	2.49	41,391	30,464	0.74	2.83	38,080	28,027	0.74	3.09	34,943	25,718	0.74	3.35	31,806	23,409	0.74	3.52	28,669	21,101	0.74	3.69
22	72	18	64	48,100	29,629	0.62	2.75	45,485	28,019	0.62	3.09	42,174	25,979	0.62	3.35	39,037	24,047	0.62	3.61	35,900	22,115	0.62	3.78	32,763	20,182	0.62	3.95
22	72	20	68	50,191	24,895	0.50	2.90	48,100	23,857	0.50	3.16	45,311	22,474	0.50	3.47	42,000	20,832	0.50	3.76	38,689	19,190	0.50	3.95	35,900	17,807	0.50	4.12
24	75	16	61	44,005	35,908	0.82	2.49	41,391	33,775	0.82	2.83	38,080	31,073	0.82	3.09	34,943	28,514	0.82	3.35	31,806	25,954	0.82	3.52	28,669	23,394	0.82	3.69
24	75	18	64	48,100	33,477	0.70	2.75	45,485	31,658	0.70	3.09	42,174	29,353	0.70	3.35	39,037	27,170	0.70	3.61	35,900	24,987	0.70	3.78	32,763	22,803	0.70	3.95
24	75	20	68	50,191	28,910	0.58	2.90	48,100	27,705	0.58	3.16	45,311	26,099	0.58	3.47	42,000	24,192	0.58	3.76	38,689	22,285	0.58	3.95	35,900	20,679	0.58	4.12
24	75	22	72	52,979	24,159	0.46	3.02	51,237	23,364	0.46	3.35	48,100	21,933	0.46	3.64	44,963	20,503	0.46	3.91	41,826	19,073	0.46	4.10	38,340	17,483	0.46	4.22
26	79	16	61	44,005	39,429	0.90	2.49	41,391	37,087	0.90	2.83	38,080	34,120	0.90	3.09	34,943	31,309	0.90	3.35	31,806	28,498	0.90	3.52	28,669	25,688	0.90	3.69
26	79	18	64	48,100	37,325	0.78	2.75	45,485	35,297	0.78	3.09	42,174	32,727	0.78	3.35	39,037	30,293	0.78	3.61	35,900	27,859	0.78	3.78	32,763	25,424	0.78	3.95
26	79	20	68	50,191	32,925	0.66	2.90	48,100	31,553	0.66	3.16	45,311	29,724	0.66	3.47	42,000	27,552	0.66	3.76	38,689	25,380	0.66	3.95	35,900	23,551	0.66	4.12
26	79	22	72	52,979	28,397	0.54	3.02	51,237	27,463	0.54	3.35	48,100	25,781	0.54	3.64	44,963	24,100	0.54	3.91	41,826	22,419	0.54	4.10	38,340	20,550	0.54	4.22
27	81	16	61	44,005	41,189	0.94	2.49	41,391	38,742	0.94	2.83	38,080	35,643	0.94	3.09	34,943	32,707	0.94	3.35	31,806	29,771	0.94	3.52	28,669	26,834	0.94	3.69
27	81	18	64	48,100	39,249	0.82	2.75	45,485	37,116	0.82	3.09	42,174	34,414	0.82	3.35	39,037	31,854	0.82	3.61	35,900	29,295	0.82	3.78	32,763	26,735	0.82	3.95
27	81	20	68	50,191	34,933	0.70	2.90	48,100	33,477	0.70	3.16	45,311	31,537	0.70	3.47	42,000	29,232	0.70	3.76	38,689	26,927	0.70	3.95	35,900	24,987	0.70	4.12
27	81	22	72	52,979	30,516	0.58	3.02	51,237	29,512	0.58	3.35	48,100	27,705	0.58	3.64	44,963	25,898	0.58	3.91	41,826	24,092	0.58	4.10	38,340	22,084	0.58	4.22
28	82	16	61	44,005	42,949	0.98	2.49	41,391	40,398	0.98	2.83	38,080	37,166	0.98	3.09	34,943	34,104	0.98	3.35	31,806	31,043	0.98	3.52	28,669	27,981	0.98	3.69
28	82	18	64	48,100	41,173	0.86	2.75	45,485	38,936	0.86	3.09	42,174	36,101	0.86	3.35	39,037	33,416	0.86	3.61	35,900	30,731	0.86	3.78	32,763	28,046	0.86	3.95
28	82	20	68	50,191	36,940	0.74	2.90	48,100	35,401	0.74	3.16	45,311	33,349	0.74	3.47	42,000	30,912	0.74	3.76	38,689	28,475	0.74	3.95	35,900	26,423	0.74	4.12
28	82	22	72	52,979	32,635	0.62	3.02	51,237	31,562	0.62	3.35	48,100	29,629	0.62	3.64	44,963	27,697	0.62	3.91	41,826	25,765	0.62	4.10	38,340	23,618	0.62	4.22
30	86	16	61	44,005	44,005	1.00	2.49	41,391	41,391	1.00	2.83	38,080	38,080	1.00	3.09	34,943	34,943	1.00	3.35	31,806	31,806	1.00	3.52	28,669	28,669	1.00	3.69
30	86	18	64	48,100	45,021	0.94	2.75	45,485	42,574	0.94	3.09	42,174	39,475	0.94	3.35	39,037	36,539	0.94	3.61	35,900	33,603	0.94	3.78	32,763	30,667	0.94	3.95
30	86	20	68	50,191	40,956	0.82	2.90	48,100	39,249	0.82	3.16	45,311	36,974	0.82	3.47	42,000	34,272	0.82	3.76	38,689	31,570	0.82	3.95	35,900	29,295	0.82	4.12
30	86	22	72	52,979	36,874	0.70	3.02	51,237	35,661	0.70	3.35	48,100	33,477	0.70	3.64	44,963	31,294	0.70	3.91	41,826	29,111	0.70	4.10	38,340	26,685	0.70	4.22
32	90	16	61	44,005	44,005	1.00	2.49	41,391	41,391	1.00	2.83	38,080	38,080	1.00	3.09	34,943	34,943	1.00	3.35	31,806	31,806	1.00	3.52	28,669	28,669	1.00	3.69
32	90	18	64	48,100	48,100	1.00	2.75	45,485	45,485	1.00	3.09	42,174	42,174	1.00	3.35	39,037	39,037	1.00	3.61	35,900	35,900	1.00	3.78	32,763	32,763	1.00	3.95
32	90	20	68	50,191	44,971	0.90	2.90	48,100	43,097	0.90	3.16	45,311	40,599	0.90	3.47	42,000	37,632	0.90	3.76	38,689	34,665	0.90	3.95	35,900	32,167	0.90	4.12
32	90	22	72	52,979	41,112	0.78	3.02	51,237	39,760	0.78	3.35	48,100	37,325	0.78	3.64	44,963	34,891	0.78	3.91	41,826	32,457	0.78	4.10	38,340	29,752	0.78	4.22

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

PVA-AA36NL/PUZ-AK36NL/ PUY-AK36NL

CAPACITY (Btu/h): 36,000 INPUT (kW): 2.96 HF: 0.64

Indoor	Indoor	Indoor	Indoor	Outdoor intake air °C/°F D.B.																							
intake air	intake air	intake air	intake air	20/68				25/77				30/86				35/95				40/104				46/115			
D.B.(°C)	D.B.(°F)	W.B.(°C)	W.B.(°F)	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	20,217	0.54	1.96	35,478	19,016	0.54	2.23	32,640	17,495	0.54	2.43	29,951	16,054	0.54	2.64	27,262	14,613	0.54	2.77	24,574	13,171	0.54	2.91
19	66	18	64	41,228	17,151	0.42	2.16	38,988	16,219	0.42	2.43	36,149	15,038	0.42	2.64	33,461	13,920	0.42	2.84	30,772	12,801	0.42	2.97	28,083	11,683	0.42	3.11
20	68	16	61	37,719	21,726	0.58	1.96	35,478	20,435	0.58	2.23	32,640	18,801	0.58	2.43	29,951	17,252	0.58	2.64	27,262	15,703	0.58	2.77	24,574	14,154	0.58	2.91
20	68	18	64	41,228	18,800	0.46	2.16	38,988	17,778	0.46	2.43	36,149	16,484	0.46	2.64	33,461	15,258	0.46	2.84	30,772	14,032	0.46	2.97	28,083	12,806	0.46	3.11
20	68	20	68	43,021	14,455	0.34	2.28	41,228	13,853	0.34	2.49	38,838	13,050	0.34	2.73	36,000	12,096	0.34	2.96	33,162	11,142	0.34	3.11	30,772	10,339	0.34	3.24
22	72	16	61	37,719	24,744	0.66	1.96	35,478	23,274	0.66	2.23	32,640	21,412	0.66	2.43	29,951	19,648	0.66	2.64	27,262	17,884	0.66	2.77	24,574	16,120	0.66	2.91
22	72	18	64	41,228	22,098	0.54	2.16	38,988	20,897	0.54	2.43	36,149	19,376	0.54	2.64	33,461	17,935	0.54	2.84	30,772	16,494	0.54	2.97	28,083	15,052	0.54	3.11
22	72	20	68	43,021	17,897	0.42	2.28	41,228	17,151	0.42	2.49	38,838	16,157	0.42	2.73	36,000	14,976	0.42	2.96	33,162	13,795	0.42	3.11	30,772	12,801	0.42	3.24
24	75	16	61	37,719	27,761	0.74	1.96	35,478	26,112	0.74	2.23	32,640	24,023	0.74	2.43	29,951	22,044	0.74	2.64	27,262	20,065	0.74	2.77	24,574	18,086	0.74	2.91
24	75	18	64	41,228	25,397	0.62	2.16	38,988	24,016	0.62	2.43	36,149	22,268	0.62	2.64	33,461	20,612	0.62	2.84	30,772	18,955	0.62	2.97	28,083	17,299	0.62	3.11
24	75	20	68	43,021	21,338	0.50	2.28	41,228	20,449	0.50	2.49	38,838	19,264	0.50	2.73	36,000	17,856	0.50	2.96	33,162	16,448	0.50	3.11	30,772	15,263	0.50	3.24
24	75	22	72	45,411	17,074	0.38	2.38	43,917	16,513	0.38	2.64	41,228	15,502	0.38	2.87	38,539	14,491	0.38	3.08	35,851	13,480	0.38	3.23	32,863	12,357	0.38	3.32
26	79	16	61	37,719	30,779	0.82	1.96	35,478	28,950	0.82	2.23	32,640	26,634	0.82	2.43	29,951	24,440	0.82	2.64	27,262	22,246	0.82	2.77	24,574	20,052	0.82	2.91
26	79	18	64	41,228	28,695	0.70	2.16	38,988	27,135	0.70	2.43	36,149	25,160	0.70	2.64	33,461	23,289	0.70	2.84	30,772	21,417	0.70	2.97	28,083	19,546	0.70	3.11
26	79	20	68	43,021	24,780	0.58	2.28	41,228	23,747	0.58	2.49	38,838	22,371	0.58	2.73	36,000	20,736	0.58	2.96	33,162	19,101	0.58	3.11	30,772	17,725	0.58	3.24
26	79	22	72	45,411	20,707	0.46	2.38	43,917	20,026	0.46	2.64	41,228	18,800	0.46	2.87	38,539	17,574	0.46	3.08	35,851	16,348	0.46	3.23	32,863	14,986	0.46	3.32
27	81	16	61	37,719	32,287	0.86	1.96	35,478	30,369	0.86	2.23	32,640	27,940	0.86	2.43	29,951	25,638	0.86	2.64	27,262	23,337	0.86	2.77	24,574	21,035	0.86	2.91
27	81	18	64	41,228	30,344	0.74	2.16	38,988	28,695	0.74	2.43	36,149	26,606	0.74	2.64	33,461	24,627	0.74	2.84	30,772	22,648	0.74	2.97	28,083	20,669	0.74	3.11
27	81	20	68	43,021	26,501	0.62	2.28	41,228	25,397	0.62	2.49	38,838	23,924	0.62	2.73	36,000	22,176	0.62	2.96	33,162	20,428	0.62	3.11	30,772	18,955	0.62	3.24
27	81	22	72	45,411	22,524	0.50	2.38	43,917	21,783	0.50	2.64	41,228	20,449	0.50	2.87	38,539	19,116	0.50	3.08	35,851	17,782	0.50	3.23	32,863	16,300	0.50	3.32
28	82	16	61	37,719	33,796	0.90	1.96	35,478	31,788	0.90	2.23	32,640	29,245	0.90	2.43	29,951	26,836	0.90	2.64	27,262	24,427	0.90	2.77	24,574	22,018	0.90	2.91
28	82	18	64	41,228	31,993	0.78	2.16	38,988	30,254	0.78	2.43	36,149	28,052	0.78	2.64	33,461	25,965	0.78	2.84	30,772	23,879	0.78	2.97	28,083	21,792	0.78	3.11
28	82	20	68	43,021	28,222	0.66	2.28	41,228	27,046	0.66	2.49	38,838	25,478	0.66	2.73	36,000	23,616	0.66	2.96	33,162	21,754	0.66	3.11	30,772	20,186	0.66	3.24
28	82	22	72	45,411	24,340	0.54	2.38	43,917	23,540	0.54	2.64	41,228	22,098	0.54	2.87	38,539	20,657	0.54	3.08	35,851	19,216	0.54	3.23	32,863	17,615	0.54	3.32
30	86	16	61	37,719	36,814	0.98	1.96	35,478	34,627	0.98	2.23	32,640	31,857	0.98	2.43	29,951	29,232	0.98	2.64	27,262	26,608	0.98	2.77	24,574	23,984	0.98	2.91
30	86	18	64	41,228	35,291	0.86	2.16	38,988	33,373	0.86	2.43	36,149	30,944	0.86	2.64	33,461	28,642	0.86	2.84	30,772	26,341	0.86	2.97	28,083	24,039	0.86	3.11
30	86	20	68	43,021	31,663	0.74	2.28	41,228	30,344	0.74	2.49	38,838	28,585	0.74	2.73	36,000	26,496	0.74	2.96	33,162	24,407	0.74	3.11	30,772	22,648	0.74	3.24
30	86	22	72	45,411	27,973	0.62	2.38	43,917	27,053	0.62	2.64	41,228	25,397	0.62	2.87	38,539	23,740	0.62	3.08	35,851	22,084	0.62	3.23	32,863	20,244	0.62	3.32
32	90	16	61	37,719	37,719	1.00	1.96	35,478	35,478	1.00	2.23	32,640	32,640	1.00	2.43	29,951	29,951	1.00	2.64	27,262	27,262	1.00	2.77	24,574	24,574	1.00	2.91
32	90	18	64	41,228	38,590	0.94	2.16	38,988	36,492	0.94	2.43	36,149	33,836	0.94	2.64	33,461	31,319	0.94	2.84	30,772	28,802	0.94	2.97	28,083	26,286	0.94	3.11
32	90	20	68	43,021	35,105	0.82	2.28	41,228	33,642	0.82	2.49	38,838	31,692	0.82	2.73	36,000	29,376	0.82	2.96	33,162	27,060	0.82	3.11	30,772	25,110	0.82	3.24
32	90	22	72	45,411	31,606	0.70	2.38	43,917	30,566	0.70	2.64	41,228	28,695	0.70	2.87	38,539	26,823	0.70	3.08	35,851	24,952	0.70	3.23	32,863	22,873	0.70	3.32

PVA-AA42NL/PUZ-AK42NL/ PUY-AK42NL

CAPACITY (Btu/h): 42,000 INPUT (kW): 3.76 SHF: 0.68

Indoor	Indoor	Indoor	Indoor	Outdoor intake air °C/°F D.B.																							
intake air	intake air	intake air	intake air	20/68				25/77				30/86				35/95				40/104				46/115			
D.B.(°C)	D.B.(°F)	W.B.(°C)	W.B.(°F)	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	25,347	0.58	2.49	41,391	23,841	0.58	2.83	38,080	21,934	0.58	3.09	34,943	20,127	0.58	3.35	31,806	18,320	0.58	3.52	28,669	16,513	0.58	3.69
19	66	18	64	48,100	21,933	0.46	2.75	45,485	20,741	0.46	3.09	42,174	19,231	0.46	3.35	39,037	17,801	0.46	3.61	35,900	16,371	0.46	3.78	32,763	14,940	0.46	3.95
20	68	16	61	44,005	27,107	0.62	2.49	41,391	25,497	0.62	2.83	38,080	23,457	0.62	3.09	34,943	21,525	0.62	3.35	31,806	19,593	0.62	3.52	28,669	17,660	0.62	3.69
20	68	18	64	48,100	23,857	0.50	2.75	45,485	22,561	0.50	3.09	42,174	20,918	0.50	3.35	39,037	19,363	0.50	3.61	35,900	17,807	0.50	3.78	32,763	16,251	0.50	3.95
20	68	20	68	50,191	18,872	0.38	2.90	48,100	18,085	0.38	3.16	45,311	17,037	0.38	3.47	42,000	15,792	0.38	3.76	38,689	14,547	0.38	3.95	35,900	13,499	0.38	4.12
22	72	16	61	44,005	30,628	0.70	2.49	41,391	28,808	0.70	2.83	38,080	26,504	0.70	3.09	34,943	24,320	0.70	3.35	31,806	22,137	0.70	3.52	28,669	19,954	0.70	3.69
22	72	18	64	48,100	27,705	0.58	2.75	45,485	26,200	0.58	3.09	42,174	24,292	0.58	3.35	39,037	22,486	0.58	3.61	35,900	20,679	0.58	3.78	32,763	18,872	0.58	3.95
22	72	20	68	50,191	22,887	0.46	2.90	48,100	21,933	0.46	3.16	45,311	20,662	0.46	3.47	42,000	19,152	0.46	3.76	38,689	17,642	0.46	3.95	35,900	16,371	0.46	4.12
24	75	16	61	44,005	34,148	0.78	2.49	41,391	32,120	0.78	2.83	38,080	29,550	0.78	3.09	34,943	27,116	0.78	3.35	31,806	24,682	0.78	3.52	28,669	22,247	0.78	3.69
24	75	18	64	48,100	31,553	0.66	2.75	45,485	29,838	0.66	3.09	42,174	27,666	0.66	3.35	39,037	25,608	0.66	3.61	35,900	23,551	0.66	3.78	32,763	21,493	0.66	3.95
24	75	20	68	50,191	26,902	0.54	2.90	48,100	25,781	0.54	3.16	45,311	24,287	0.54	3.47	42,000	22,512	0.54	3.76	38,689	20,737	0.54	3.95	35,900	19,243	0.54	4.12
24	75	22	72	52,979	22,039	0.42	3.02	51,237	21,314	0.42	3.35	48,100	20,009	0.42	3.64	44,963	18,704	0.42	3.91	41,826	17,400	0.42	4.10	38,340	15,950	0.42	4.22
26	79	16	61	44,005	37,669	0.86	2.49	41,391	35,431	0.86	2.83	38,080	32,596	0.86	3.09	34,943	29,911	0.86	3.35	31,806	27,226	0.86	3.52	28,669	24,541	0.86	3.69
26	79	18	64	48,100	35,401	0.74	2.75	45,485	33,477	0.74	3.09	42,174	31,040	0.74	3.35	39,037	28,731	0.74	3.61	35,900	26,423	0.74	3.78	32,763	24,114	0.74	3.95
26	79	20	68	50,191	30,918	0.62	2.90	48,100	29,629	0.62	3.16	45,311	27,912	0.62	3.47	42,000	25,872	0.62	3.76	38,689	23,832	0.62	3.95	35,900	22,115	0.62	4.12
26	79	22	72	52,979	26,278	0.50	3.02	51,237	25,413	0.50	3.35	48,100	23,857	0.50	3.64	44,963	22,301	0.50	3.91	41,826	20,746	0.50	4.10	38,340	19,017	0.50	4.22
27	81	16	61	44,005	39,429	0.90	2.49	41,391	37,087	0.90	2.83	38,080	34,120	0.90	3.09	34,943	31,309	0.90	3.35	31,806	28,498	0.90	3.52	28,669	25,688	0.90	3.69
27	81	18	64	48,100	37,325	0.78	2.75	45,485	35,297	0.78	3.09	42,174	32,727	0.78	3.35	39,037	30,293	0.78	3.61	35,900	27,859	0.78	3.78	32,763	25,424	0.78	3.95
27	81	20	68	50,191	32,925	0.66	2.90	48,100	31,553	0.66	3.16	45,311	29,724	0.66	3.47	42,000	27,552	0.66	3.76	38,689	25,380	0.66	3.95	35,900	23,551	0.66	4.12
27	81	22	72	52,979	28,397	0.54	3.02	51,237	27,463	0.54	3.35	48,100	25,781	0.54	3.64	44,963	24,100	0.54	3.91	41,826	22,419	0.54	4.10	38,340	20,550	0.54	4.22
28	82	16	61	44,005	41,189	0.94	2.49	41,391	38,742	0.94	2.83	38,080	35,643	0.94	3.09	34,943	32,707	0.94	3.35	31,806	29,771	0.94	3.52	28,669	26,834	0.94	3.69
28	82	18	64	48,100	39,249	0.82	2.75	45,485	37,116	0.82	3.09	42,174	34,414	0.82	3.35	39,037	31,854	0.82	3.61	35,900	29,295	0.82	3.78	32,763	26,735	0.82	3.95
28	82	20	68	50,191	34,933	0.70	2.90	48,100	33,477	0.70	3.16	45,311	31,537	0.70	3.47	42,000	29,232	0.70	3.76	38,689	26,927	0.70	3.95	35,900	24,987	0.70	4.12
28	82	22	72	52,979	30,516	0.58	3.02	51,237	29,512	0.58	3.35	48,100	27,705	0.58	3.64	44,963	25,898	0.58	3.91	41,826	24,092	0.58	4.10	38,340	22,084	0.58	4.22
30	86	16	61	44,005	44,005	1.00	2.49	41,391	41,391	1.00	2.83	38,080	38,080	1.00	3.09	34,943	34,943	1.00	3.35	31,806	31,806	1.00	3.52	28,669	28,669	1.00	3.69
30	86	18	64	48,100	43,097	0.90	2.75	45,485	40,755	0.90	3.09	42,174	37,788	0.90	3.35	39,037	34,977	0.90	3.61	35,900	32,167	0.90	3.78	32,763	29,356	0.90	3.95
30	86	20	68	50,191	38,948	0.78	2.90	48,100	37,325	0.78	3.16	45,311	35,161	0.78	3.47	42,000	32,592	0.78	3.76	38,689	30,023	0.78	3.95	35,900	27,859	0.78	4.12
30	86	22	72	52,979	34,754	0.66	3.02	51,237	33,611	0.66	3.35	48,100	31,553	0.66	3.64	44,963	29,496	0.66	3.91	41,826	27,438	0.66	4.10	38,340	25,151	0.66	4.22
32	90	16	61	44,005	44,005	1.00	2.49	41,391	41,391	1.00	2.83	38,080	38,080	1.00	3.09	34,943	34,943	1.00	3.35	31,806	31,806	1.00	3.52	28,669	28,669	1.00	3.69
32	90	18	64	48,100	46,945	0.98	2.75	45,485	44,394	0.98	3.09	42,174	41,162	0.98	3.35	39,037	38,100	0.98	3.61	35,900	35,039	0.98	3.78	32,763	31,977	0.98	3.95
32	90	20	68	50,191	42,963	0.86	2.90	48,100	41,173	0.86	3.16	45,311	38,786	0.86	3.47	42,000	35,952	0.86	3.76	38,689	33,118	0.86	3.95	35,900	30,731	0.86	4.12
32	90	22	72	52,979	38,993	0.74	3.02	51,237	37,710	0.74	3.35	48,100	35,401	0.74	3.64	44,963	33,093	0.74	3.91	41,826	30,784	0.74	4.10	38,340	28,218	0.74	4.22

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

PVA-AA48NL/PUZ-AK48NL/ PUY-AK48NL

CAPACITY (Btu/h): 48,000 INPUT (kW): 4.45 SHF: 0.77

Indoor	Indoor	Indoor	Indoor	Outdoor intake air °C/°F D.B.																							
intake air	intake air	intake air	intake air	20/68				25/77				30/86				35/95				40/104				46/115			
D.B.(°C)	D.B.(°F)	W.B.(°C)	W.B.(°F)	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	33,494	0.67	2.95	47,304	31,505	0.67	3.35	43,520	28,984	0.67	3.66	39,935	26,597	0.67	3.96	36,350	24,209	0.67	4.17	32,765	21,821	0.67	4.37
19	66	18	64	54,971	30,014	0.55	3.25	51,983	28,383	0.55	3.65	48,199	26,317	0.55	3.96	44,614	24,359	0.55	4.27	41,029	22,402	0.55	4.47	37,444	20,444	0.55	4.67
20	68	16	61	50,292	35,506	0.71	2.95	47,304	33,397	0.71	3.35	43,520	30,725	0.71	3.66	39,935	28,194	0.71	3.96	36,350	25,663	0.71	4.17	32,765	23,132	0.71	4.37
20	68	18	64	54,971	32,213	0.59	3.25	51,983	30,462	0.59	3.65	48,199	28,245	0.59	3.96	44,614	26,144	0.59	4.27	41,029	24,043	0.59	4.47	37,444	21,942	0.59	4.67
20	68	20	68	57,361	26,730	0.47	3.43	54,971	25,616	0.47	3.74	51,784	24,131	0.47	4.10	48,000	22,368	0.47	4.45	44,216	20,605	0.47	4.67	41,029	19,120	0.47	4.88
22	72	16	61	50,292	39,529	0.79	2.95	47,304	37,181	0.79	3.35	43,520	34,207	0.79	3.66	39,935	31,389	0.79	3.96	36,350	28,571	0.79	4.17	32,765	25,753	0.79	4.37
22	72	18	64	54,971	36,611	0.67	3.25	51,983	34,621	0.67	3.65	48,199	32,101	0.67	3.96	44,614	29,713	0.67	4.27	41,029	27,325	0.67	4.47	37,444	24,938	0.67	4.67
22	72	20	68	57,361	31,319	0.55	3.43	54,971	30,014	0.55	3.74	51,784	28,274	0.55	4.10	48,000	26,208	0.55	4.45	44,216	24,142	0.55	4.67	41,029	22,402	0.55	4.88
24	75	16	61	50,292	43,553	0.87	2.95	47,304	40,965	0.87	3.35	43,520	37,688	0.87	3.66	39,935	34,584	0.87	3.96	36,350	31,479	0.87	4.17	32,765	28,374	0.87	4.37
24	75	18	64	54,971	41,008	0.75	3.25	51,983	38,780	0.75	3.65	48,199	35,957	0.75	3.96	44,614	33,282	0.75	4.27	41,029	30,608	0.75	4.47	37,444	27,933	0.75	4.67
24	75	20	68	57,361	35,908	0.63	3.43	54,971	34,412	0.63	3.74	51,784	32,417	0.63	4.10	48,000	30,048	0.63	4.45	44,216	27,679	0.63	4.67	41,029	25,684	0.63	4.88
24	75	22	72	60,548	30,637	0.51	3.58	58,556	29,629	0.51	3.96	54,971	27,815	0.51	4.31	51,386	26,001	0.51	4.63	47,801	24,187	0.51	4.86	43,817	22,172	0.51	5.00
26	79	16	61	50,292	47,576	0.95	2.95	47,304	44,750	0.95	3.35	43,520	41,170	0.95	3.66	39,935	37,778	0.95	3.96	36,350	34,387	0.95	4.17	32,765	30,996	0.95	4.37
26	79	18	64	54,971	45,406	0.83	3.25	51,983	42,938	0.83	3.65	48,199	39,813	0.83	3.96	44,614	36,851	0.83	4.27	41,029	33,890	0.83	4.47	37,444	30,929	0.83	4.67
26	79	20	68	57,361	40,497	0.71	3.43	54,971	38,809	0.71	3.74	51,784	36,560	0.71	4.10	48,000	33,888	0.71	4.45	44,216	31,216	0.71	4.67	41,029	28,967	0.71	4.88
26	79	22	72	60,548	35,481	0.59	3.58	58,556	34,314	0.59	3.96	54,971	32,213	0.59	4.31	51,386	30,112	0.59	4.63	47,801	28,011	0.59	4.86	43,817	25,677	0.59	5.00
27	81	16	61	50,292	49,588	0.99	2.95	47,304	46,642	0.99	3.35	43,520	42,911	0.99	3.66	39,935	39,376	0.99	3.96	36,350	35,841	0.99	4.17	32,765	32,306	0.99	4.37
27	81	18	64	54,971	47,605	0.87	3.25	51,983	45,018	0.87	3.65	48,199	41,740	0.87	3.96	44,614	38,636	0.87	4.27	41,029	35,531	0.87	4.47	37,444	32,426	0.87	4.67
27	81	20	68	57,361	42,791	0.75	3.43	54,971	41,008	0.75	3.74	51,784	38,631	0.75	4.10	48,000	35,808	0.75	4.45	44,216	32,985	0.75	4.67	41,029	30,608	0.75	4.88
27	81	22	72	60,548	37,903	0.63	3.58	58,556	36,656	0.63	3.96	54,971	34,412	0.63	4.31	51,386	32,168	0.63	4.63	47,801	29,923	0.63	4.86	43,817	27,430	0.63	5.00
28	82	16	61	50,292	50,292	1.00	2.95	47,304	47,304	1.00	3.35	43,520	43,520	1.00	3.66	39,935	39,935	1.00	3.96	36,350	36,350	1.00	4.17	32,765	32,765	1.00	4.37
28	82	18	64	54,971	49,804	0.91	3.25	51,983	47,097	0.91	3.65	48,199	43,668	0.91	3.96	44,614	40,420	0.91	4.27	41,029	37,172	0.91	4.47	37,444	33,924	0.91	4.67
28	82	20	68	57,361	45,086	0.79	3.43	54,971	43,207	0.79	3.74	51,784	40,702	0.79	4.10	48,000	37,728	0.79	4.45	44,216	34,754	0.79	4.67	41,029	32,249	0.79	4.88
28	82	22	72	60,548	40,325	0.67	3.58	58,556	38,998	0.67	3.96	54,971	36,611	0.67	4.31	51,386	34,223	0.67	4.63	47,801	31,835	0.67	4.86	43,817	29,182	0.67	5.00
30	86	16	61	50,292	50,292	1.00	2.95	47,304	47,304	1.00	3.35	43,520	43,520	1.00	3.66	39,935	39,935	1.00	3.96	36,350	36,350	1.00	4.17	32,765	32,765	1.00	4.37
30	86	18	64	54,971	54,201	0.99	3.25	51,983	51,256	0.99	3.65	48,199	47,524	0.99	3.96	44,614	43,990	0.99	4.27	41,029	40,455	0.99	4.47	37,444	36,920	0.99	4.67
30	86	20	68	57,361	49,675	0.87	3.43	54,971	47,605	0.87	3.74	51,784	44,845	0.87	4.10	48,000	41,568	0.87	4.45	44,216	38,291	0.87	4.67	41,029	35,531	0.87	4.88
30	86	22	72	60,548	45,169	0.75	3.58	58,556	43,683	0.75	3.96	54,971	41,008	0.75	4.31	51,386	38,334	0.75	4.63	47,801	35,659	0.75	4.86	43,817	32,688	0.75	5.00
32	90	16	61	50,292	50,292	1.00	2.95	47,304	47,304	1.00	3.35	43,520	43,520	1.00	3.66	39,935	39,935	1.00	3.96	36,350	36,350	1.00	4.17	32,765	32,765	1.00	4.37
32	90	18	64	54,971	54,971	1.00	3.25	51,983	51,983	1.00	3.65	48,199	48,199	1.00	3.96	44,614	44,614	1.00	4.27	41,029	41,029	1.00	4.47	37,444	37,444	1.00	4.67
32	90	20	68	57,361	54,264	0.95	3.43	54,971	52,003	0.95	3.74	51,784	48,988	0.95	4.10	48,000	45,408	0.95	4.45	44,216	41,828	0.95	4.67	41,029	38,813	0.95	4.88
32	90	22	72	60,548	50,012	0.83	3.58	58,556	48,367	0.83	3.96	54,971	45,406	0.83	4.31	51,386	42,445	0.83	4.63	47,801	39,483	0.83	4.86	43,817	36,193	0.83	5.00

PVA-AA60NL/PUZ-AK60NL/ PUY-AK60NL

CAPACITY (Btu/h): 56,000 INPUT (kW): 5.64 SHF: 0.74

Indoor	Indoor	Indoor	Indoor	Outdoor intake air °C/°F D.B.																							
intake air	intake air	intake air	intake air	20/68				25/77				30/86				35/95				40/104				46/115			
D.B.(°C)	D.B.(°F)	W.B.(°C)	W.B.(°F)	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	58,674	37,316	0.64	3.74	55,188	35,100	0.64	4.25	50,773	32,292	0.64	4.64	46,591	29,632	0.64	5.02	42,408	26,972	0.64	5.28	38,226	24,311	0.64	5.54
19	66	18	64	64,133	33,093	0.52	4.12	60,647	31,294	0.52	4.63	56,232	29,016	0.52	5.02	52,050	26,858	0.52	5.41	47,867	24,699	0.52	5.67	43,685	22,541	0.52	5.92
20	68	16	61	58,674	39,663	0.68	3.74	55,188	37,307	0.68	4.25	50,773	34,323	0.68	4.64	46,591	31,495	0.68	5.02	42,408	28,668	0.68	5.28	38,226	25,841	0.68	5.54
20	68	18	64	64,133	35,658	0.56	4.12	60,647	33,720	0.56	4.63	56,232	31,265	0.56	5.02	52,050	28,940	0.56	5.41	47,867	26,614	0.56	5.67	43,685	24,289	0.56	5.92
20	68	20	68	66,921	29,178	0.44	4.35	64,133	27,962	0.44	4.74	60,415	26,341	0.44	5.20	56,000	24,416	0.44	5.64	51,585	22,491	0.44	5.92	47,867	20,870	0.44	6.18
22	72	16	61	58,674	44,357	0.76	3.74	55,188	41,722	0.76	4.25	50,773	38,385	0.76	4.64	46,591	35,223	0.76	5.02	42,408	32,061	0.76	5.28	38,226	28,899	0.76	5.54
22	72	18	64	64,133	40,788	0.64	4.12	60,647	38,572	0.64	4.63	56,232	35,764	0.64	5.02	52,050	33,104	0.64	5.41	47,867	30,444	0.64	5.67	43,685	27,783	0.64	5.92
22	72	20	68	66,921	34,531	0.52	4.35	64,133	33,093	0.52	4.74	60,415	31,174	0.52	5.20	56,000	28,896	0.52	5.64	51,585	26,618	0.52	5.92	47,867	24,699	0.52	6.18
24	75	16	61	58,674	49,051	0.84	3.74	55,188	46,137	0.84	4.25	50,773	42,446	0.84	4.64	46,591	38,950	0.84	5.02	42,408	35,453	0.84	5.28	38,226	31,957	0.84	5.54
24	75	18	64	64,133	45,919	0.72	4.12	60,647	43,423	0.72	4.63	56,232	40,262	0.72	5.02	52,050	37,268	0.72	5.41	47,867	34,273	0.72	5.67	43,685	31,278	0.72	5.92
24	75	20	68	66,921	39,885	0.60	4.35	64,133	38,223	0.60	4.74	60,415	36,007	0.60	5.20	56,000	33,376	0.60	5.64	51,585	30,745	0.60	5.92	47,867	28,529	0.60	6.18
24	75	22	72	70,639	33,624	0.48	4.53	68,315	32,518	0.48	5.02	64,133	30,527	0.48	5.46	59,950	28,536	0.48	5.87	55,768	26,545	0.48	6.16	51,120	24,333	0.48	6.34
26	79	16	61	58,674	53,745	0.92	3.74	55,188	50,552	0.92	4.25	50,773	46,508	0.92	4.64	46,591	42,677	0.92	5.02	42,408	38,846	0.92	5.28	38,226	35,015	0.92	5.54
26	79	18	64	64,133	51,050	0.80	4.12	60,647	48,275	0.80	4.63	56,232	44,761	0.80	5.02	52,050	41,432	0.80	5.41	47,867	38,102	0.80	5.67	43,685	34,773	0.80	5.92
26	79	20	68	66,921	45,239	0.68	4.35	64,133	43,354	0.68	4.74	60,415	40,840	0.68	5.20	56,000	37,856	0.68	5.64	51,585	34,872	0.68	5.92	47,867	32,358	0.68	6.18
26	79	22	72	70,639	39,275	0.56	4.53	68,315	37,983	0.56	5.02	64,133	35,658	0.56	5.46	59,950	33,332	0.56	5.87	55,768	31,007	0.56	6.16	51,120	28,423	0.56	6.34
27	81	16	61	58,674	56,092	0.96	3.74	55,188	52,760	0.96	4.25	50,773	48,539	0.96	4.64	46,591	44,541	0.96	5.02	42,408	40,542	0.96	5.28	38,226	36,544	0.96	5.54
27	81	18	64	64,133	53,615	0.84	4.12	60,647	50,701	0.84	4.63	56,232	47,010	0.84	5.02	52,050	43,514	0.84	5.41	47,867	40,017	0.84	5.67	43,685	36,520	0.84	5.92
27	81	20	68	66,921	47,916	0.72	4.35	64,133	45,919	0.72	4.74	60,415	43,257	0.72	5.20	56,000	40,096	0.72	5.64	51,585	36,935	0.72	5.92	47,867	34,273	0.72	6.18
27	81	22	72	70,639	42,101	0.60	4.53	68,315	40,716	0.60	5.02	64,133	38,223	0.60	5.46	59,950	35,730	0.60	5.87	55,768	33,238	0.60	6.16	51,120	30,468	0.60	6.34
28	82	16	61	58,674	58,439	1.00	3.74	55,188	54,968	1.00	4.25	50,773	50,570	1.00	4.64	46,591	46,404	1.00	5.02	42,408	42,239	1.00	5.28	38,226	38,073	1.00	5.54
28	82	18	64	64,133	56,180	0.88	4.12	60,647	53,127	0.88	4.63	56,232	49,260	0.88	5.02	52,050	45,596	0.88	5.41	47,867	41,932	0.88	5.67	43,685	38,268	0.88	5.92
28	82	20	68	66,921	50,592	0.76	4.35	64,133	48,484	0.76	4.74	60,415	45,674	0.76	5.20	56,000	42,336	0.76	5.64	51,585	38,998	0.76	5.92	47,867	36,188	0.76	6.18
28	82	22	72	70,639	44,926	0.64	4.53	68,315	43,449	0.64	5.02	64,133	40,788	0.64	5.46	59,950	38,128	0.64	5.87	55,768	35,468	0.64	6.16	51,120	32,513	0.64	6.34
30	86	16	61	58,674	58,674	1.00	3.74	55,188	55,188	1.00	4.25	50,773	50,773	1.00	4.64	46,591	46,591	1.00	5.02	42,408	42,408	1.00	5.28	38,226	38,226	1.00	5.54
30	86	18	64	64,133	61,311	0.96	4.12	60,647	57,979	0.96	4.63	56,232	53,758	0.96	5.02	52,050	49,760	0.96	5.41	47,867	45,761	0.96	5.67	43,685	41,763	0.96	5.92
30	86	20	68	66,921	55,946	0.84	4.35	64,133	53,615	0.84	4.74	60,415	50,507	0.84	5.20	56,000	46,816	0.84	5.64	51,585	43,125	0.84	5.92	47,867	40,017	0.84	6.18
30	86	22	72	70,639	50,578	0.72	4.53	68,315	48,914	0.72	5.02	64,133	45,919	0.72	5.46	59,950	42,924	0.72	5.87	55,768	39,930	0.72	6.16	51,120	36,602	0.72	6.34
32	90	16	61	58,674	58,674	1.00	3.74	55,188	55,188	1.00	4.25	50,773	50,773	1.00	4.64	46,591	46,591	1.00	5.02	42,408	42,408	1.00	5.28	38,226	38,226	1.00	5.54
32	90	18	64	64,133	64,133	1.00	4.12	60,647	60,647	1.00	4.63	56,232	56,232	1.00	5.02	52,050	52,050	1.00	5.41	47,867	47,867	1.00	5.67	43,685	43,685	1.00	5.92
32	90	20	68	66,921	61,300	0.92	4.35	64,133	58,746	0.92	4.74	60,415	55,340	0.92	5.20	56,000	51,296	0.92	5.64	51,585	47,252	0.92	5.92	47,867	43,846	0.92	6.18
32	90	22	72	70,639	56,229	0.80	4.53	68,315	54,379	0.80	5.02	64,133	51,050	0.80	5.46	59,950	47,720	0.80	5.87	55,768	44,391	0.80	6.16	51,120	40,692	0.80	6.34

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

SVZ-AP48NL/SUZ-AK48NL

CAPACITY (Btu/h): 48,000 INPUT (kW): 4.45 SHF: 0.77

Indoor	Indoor	Indoor	Indoor	Outdoor intake air °C/°F D.B.																							
intake air	intake air	intake air	intake air	20/68				25/77				30/86				35/95				40/104				46/115			
D.B.(°C)	D.B.(°F)	W.B.(°C)	W.B.(°F)	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	33,494	0.67	2.95	47,304	31,505	0.67	3.35	43,520	28,984	0.67	3.66	39,935	26,597	0.67	3.96	36,350	24,209	0.67	4.17	32,765	21,821	0.67	4.37
19	66	18	64	54,971	30,014	0.55	3.25	51,983	28,383	0.55	3.65	48,199	26,317	0.55	3.96	44,614	24,359	0.55	4.27	41,029	22,402	0.55	4.47	37,444	20,444	0.55	4.67
20	68	16	61	50,292	35,506	0.71	2.95	47,304	33,397	0.71	3.35	43,520	30,725	0.71	3.66	39,935	28,194	0.71	3.96	36,350	25,663	0.71	4.17	32,765	23,132	0.71	4.37
20	68	18	64	54,971	32,213	0.59	3.25	51,983	30,462	0.59	3.65	48,199	28,245	0.59	3.96	44,614	26,144	0.59	4.27	41,029	24,043	0.59	4.47	37,444	21,942	0.59	4.67
20	68	20	68	57,361	26,730	0.47	3.43	54,971	25,616	0.47	3.74	51,784	24,131	0.47	4.10	48,000	22,368	0.47	4.45	44,216	20,605	0.47	4.67	41,029	19,120	0.47	4.88
22	72	16	61	50,292	39,529	0.79	2.95	47,304	37,181	0.79	3.35	43,520	34,207	0.79	3.66	39,935	31,389	0.79	3.96	36,350	28,571	0.79	4.17	32,765	25,753	0.79	4.37
22	72	18	64	54,971	36,611	0.67	3.25	51,983	34,621	0.67	3.65	48,199	32,101	0.67	3.96	44,614	29,713	0.67	4.27	41,029	27,325	0.67	4.47	37,444	24,938	0.67	4.67
22	72	20	68	57,361	31,319	0.55	3.43	54,971	30,014	0.55	3.74	51,784	28,274	0.55	4.10	48,000	26,208	0.55	4.45	44,216	24,142	0.55	4.67	41,029	22,402	0.55	4.88
24	75	16	61	50,292	43,553	0.87	2.95	47,304	40,965	0.87	3.35	43,520	37,688	0.87	3.66	39,935	34,584	0.87	3.96	36,350	31,479	0.87	4.17	32,765	28,374	0.87	4.37
24	75	18	64	54,971	41,008	0.75	3.25	51,983	38,780	0.75	3.65	48,199	35,957	0.75	3.96	44,614	33,282	0.75	4.27	41,029	30,608	0.75	4.47	37,444	27,933	0.75	4.67
24	75	20	68	57,361	35,908	0.63	3.43	54,971	34,412	0.63	3.74	51,784	32,417	0.63	4.10	48,000	30,048	0.63	4.45	44,216	27,679	0.63	4.67	41,029	25,684	0.63	4.88
24	75	22	72	60,548	30,637	0.51	3.58	58,556	29,629	0.51	3.96	54,971	27,815	0.51	4.31	51,386	26,001	0.51	4.63	47,801	24,187	0.51	4.86	43,817	22,172	0.51	5.00
26	79	16	61	50,292	47,576	0.95	2.95	47,304	44,750	0.95	3.35	43,520	41,170	0.95	3.66	39,935	37,778	0.95	3.96	36,350	34,387	0.95	4.17	32,765	30,996	0.95	4.37
26	79	18	64	54,971	45,406	0.83	3.25	51,983	42,938	0.83	3.65	48,199	39,813	0.83	3.96	44,614	36,851	0.83	4.27	41,029	33,890	0.83	4.47	37,444	30,929	0.83	4.67
26	79	20	68	57,361	40,497	0.71	3.43	54,971	38,809	0.71	3.74	51,784	36,560	0.71	4.10	48,000	33,888	0.71	4.45	44,216	31,216	0.71	4.67	41,029	28,967	0.71	4.88
26	79	22	72	60,548	35,481	0.59	3.58	58,556	34,314	0.59	3.96	54,971	32,213	0.59	4.31	51,386	30,112	0.59	4.63	47,801	28,011	0.59	4.86	43,817	25,677	0.59	5.00
27	81	16	61	50,292	49,588	0.99	2.95	47,304	46,642	0.99	3.35	43,520	42,911	0.99	3.66	39,935	39,376	0.99	3.96	36,350	35,841	0.99	4.17	32,765	32,306	0.99	4.37
27	81	18	64	54,971	47,605	0.87	3.25	51,983	45,018	0.87	3.65	48,199	41,740	0.87	3.96	44,614	38,636	0.87	4.27	41,029	35,531	0.87	4.47	37,444	32,426	0.87	4.67
27	81	20	68	57,361	42,791	0.75	3.43	54,971	41,008	0.75	3.74	51,784	38,631	0.75	4.10	48,000	35,808	0.75	4.45	44,216	32,985	0.75	4.67	41,029	30,608	0.75	4.88
27	81	22	72	60,548	37,903	0.63	3.58	58,556	36,656	0.63	3.96	54,971	34,412	0.63	4.31	51,386	32,168	0.63	4.63	47,801	29,923	0.63	4.86	43,817	27,430	0.63	5.00
28	82	16	61	50,292	50,292	1.00	2.95	47,304	47,304	1.00	3.35	43,520	43,520	1.00	3.66	39,935	39,935	1.00	3.96	36,350	36,350	1.00	4.17	32,765	32,765	1.00	4.37
28	82	18	64	54,971	49,804	0.91	3.25	51,983	47,097	0.91	3.65	48,199	43,668	0.91	3.96	44,614	40,420	0.91	4.27	41,029	37,172	0.91	4.47	37,444	33,924	0.91	4.67
28	82	20	68	57,361	45,086	0.79	3.43	54,971	43,207	0.79	3.74	51,784	40,702	0.79	4.10	48,000	37,728	0.79	4.45	44,216	34,754	0.79	4.67	41,029	32,249	0.79	4.88
28	82	22	72	60,548	40,325	0.67	3.58	58,556	38,998	0.67	3.96	54,971	36,611	0.67	4.31	51,386	34,223	0.67	4.63	47,801	31,835	0.67	4.86	43,817	29,182	0.67	5.00
30	86	16	61	50,292	50,292	1.00	2.95	47,304	47,304	1.00	3.35	43,520	43,520	1.00	3.66	39,935	39,935	1.00	3.96	36,350	36,350	1.00	4.17	32,765	32,765	1.00	4.37
30	86	18	64	54,971	54,201	0.99	3.25	51,983	51,256	0.99	3.65	48,199	47,524	0.99	3.96	44,614	43,990	0.99	4.27	41,029	40,455	0.99	4.47	37,444	36,920	0.99	4.67
30	86	20	68	57,361	49,675	0.87	3.43	54,971	47,605	0.87	3.74	51,784	44,845	0.87	4.10	48,000	41,568	0.87	4.45	44,216	38,291	0.87	4.67	41,029	35,531	0.87	4.88
30	86	22	72	60,548	45,169	0.75	3.58	58,556	43,683	0.75	3.96	54,971	41,008	0.75	4.31	51,386	38,334	0.75	4.63	47,801	35,659	0.75	4.86	43,817	32,688	0.75	5.00
32	90	16	61	50,292	50,292	1.00	2.95	47,304	47,304	1.00	3.35	43,520	43,520	1.00	3.66	39,935	39,935	1.00	3.96	36,350	36,350	1.00	4.17	32,765	32,765	1.00	4.37
32	90	18	64	54,971	54,971	1.00	3.25	51,983	51,983	1.00	3.65	48,199	48,199	1.00	3.96	44,614	44,614	1.00	4.27	41,029	41,029	1.00	4.47	37,444	37,444	1.00	4.67
32	90	20	68	57,361	54,264	0.95	3.43	54,971	52,003	0.95	3.74	51,784	48,988	0.95	4.10	48,000	45,408	0.95	4.45	44,216	41,828	0.95	4.67	41,029	38,813	0.95	4.88
32	90	22	72	60,548	50,012	0.83	3.58	58,556	48,367	0.83	3.96	54,971	45,406	0.83	4.31	51,386	42,445	0.83	4.63	47,801	39,483	0.83	4.86	43,817	36,193	0.83	5.00

SVZ-AP60NL/SUZ-AK60NL

CAPACITY (Btu/h): 56,000 INPUT (kW): 5.49 SHF: 0.74

Indoor	Indoor	Indoor	Indoor	Outdoor intake air °C/°F D.B.																							
intake air	intake air	intake air	intake air	20/68				25/77				30/86				35/95				40/104				46/115			
D.B.(°C)	D.B.(°F)	W.B.(°C)	W.B.(°F)	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	58,674	37,316	0.64	3.64	55,188	35,100	0.64	4.13	50,773	32,292	0.64	4.51	46,591	29,632	0.64	4.89	42,408	26,972	0.64	5.14	38,226	24,311	0.64	5.39
19	66	18	64	64,133	33,093	0.52	4.01	60,647	31,294	0.52	4.51	56,232	29,016	0.52	4.89	52,050	26,858	0.52	5.26	47,867	24,699	0.52	5.52	43,685	22,541	0.52	5.77
20	68	16	61	58,674	39,663	0.68	3.64	55,188	37,307	0.68	4.13	50,773	34,323	0.68	4.51	46,591	31,495	0.68	4.89	42,408	28,668	0.68	5.14	38,226	25,841	0.68	5.39
20	68	18	64	64,133	35,658	0.56	4.01	60,647	33,720	0.56	4.51	56,232	31,265	0.56	4.89	52,050	28,940	0.56	5.26	47,867	26,614	0.56	5.52	43,685	24,289	0.56	5.77
20	68	20	68	66,921	29,178	0.44	4.24	64,133	27,962	0.44	4.61	60,415	26,341	0.44	5.06	56,000	24,416	0.44	5.49	51,585	22,491	0.44	5.77	47,867	20,870	0.44	6.02
22	72	16	61	58,674	44,357	0.76	3.64	55,188	41,722	0.76	4.13	50,773	38,385	0.76	4.51	46,591	35,223	0.76	4.89	42,408	32,061	0.76	5.14	38,226	28,899	0.76	5.39
22	72	18	64	64,133	40,788	0.64	4.01	60,647	38,572	0.64	4.51	56,232	35,764	0.64	4.89	52,050	33,104	0.64	5.26	47,867	30,444	0.64	5.52	43,685	27,783	0.64	5.77
22	72	20	68	66,921	34,531	0.52	4.24	64,133	33,093	0.52	4.61	60,415	31,174	0.52	5.06	56,000	28,896	0.52	5.49	51,585	26,618	0.52	5.77	47,867	24,699	0.52	6.02
24	75	16	61	58,674	49,051	0.84	3.64	55,188	46,137	0.84	4.13	50,773	42,446	0.84	4.51	46,591	38,950	0.84	4.89	42,408	35,453	0.84	5.14	38,226	31,957	0.84	5.39
24	75	18	64	64,133	45,919	0.72	4.01	60,647	43,423	0.72	4.51	56,232	40,262	0.72	4.89	52,050	37,268	0.72	5.26	47,867	34,273	0.72	5.52	43,685	31,278	0.72	5.77
24	75	20	68	66,921	39,885	0.60	4.24	64,133	38,223	0.60	4.61	60,415	36,007	0.60	5.06	56,000	33,376	0.60	5.49	51,585	30,745	0.60	5.77	47,867	28,529	0.60	6.02
24	75	22	72	70,639	33,624	0.48	4.41	68,315	32,518	0.48	4.89	64,133	30,527	0.48	5.31	59,950	28,536	0.48	5.72	55,768	26,545	0.48	5.99	51,120	24,333	0.48	6.17
26	79	16	61	58,674	53,745	0.92	3.64	55,188	50,552	0.92	4.13	50,773	46,508	0.92	4.51	46,591	42,677	0.92	4.89	42,408	38,846	0.92	5.14	38,226	35,015	0.92	5.39
26	79	18	64	64,133	51,050	0.80	4.01	60,647	48,275	0.80	4.51	56,232	44,761	0.80	4.89	52,050	41,432	0.80	5.26	47,867	38,102	0.80	5.52	43,685	34,773	0.80	5.77
26	79	20	68	66,921	45,239	0.68	4.24	64,133	43,354	0.68	4.61	60,415	40,840	0.68	5.06	56,000	37,856	0.68	5.49	51,585	34,872	0.68	5.77	47,867	32,358	0.68	6.02
26	79	22	72	70,639	39,275	0.56	4.41	68,315	37,983	0.56	4.89	64,133	35,658	0.56	5.31	59,950	33,332	0.56	5.72	55,768	31,007	0.56	5.99	51,120	28,423	0.56	6.17
27	81	16	61	58,674	56,092	0.96	3.64	55,188	52,760	0.96	4.13	50,773	48,539	0.96	4.51	46,591	44,541	0.96	4.89	42,408	40,542	0.96	5.14	38,226	36,544	0.96	5.39
27	81	18	64	64,133	53,615	0.84	4.01	60,647	50,701	0.84	4.51	56,232	47,010	0.84	4.89	52,050	43,514	0.84	5.26	47,867	40,017	0.84	5.52	43,685	36,520	0.84	5.77
27	81	20	68	66,921	47,916	0.72	4.24	64,133	45,919	0.72	4.61	60,415	43,257	0.72	5.06	56,000	40,096	0.72	5.49	51,585	36,935	0.72	5.77	47,867	34,273	0.72	6.02
27	81	22	72	70,639	42,101	0.60	4.41	68,315	40,716	0.60	4.89	64,133	38,223	0.60	5.31	59,950	35,730	0.60	5.72	55,768	33,238	0.60	5.99	51,120	30,468	0.60	6.17
28	82	16	61	58,674	58,439	1.00	3.64	55,188	54,968	1.00	4.13	50,773	50,570	1.00	4.51	46,591	46,404	1.00	4.89	42,408	42,239	1.00	5.14	38,226	38,073	1.00	5.39
28	82	18	64	64,133	56,180	0.88	4.01	60,647	53,127	0.88	4.51	56,232	49,260	0.88	4.89	52,050	45,596	0.88	5.26	47,867	41,932	0.88	5.52	43,685	38,268	0.88	5.77
28	82	20	68	66,921	50,592	0.76	4.24	64,133	48,484	0.76	4.61	60,415	45,674	0.76	5.06	56,000	42,336	0.76	5.49	51,585	38,998	0.76	5.77	47,867	36,188	0.76	6.02
28	82	22	72	70,639	44,926	0.64	4.41	68,315	43,449	0.64	4.89	64,133	40,788	0.64	5.31	59,950	38,128	0.64	5.72	55,768	35,468	0.64	5.99	51,120	32,513	0.64	6.17
30	86	16	61	58,674	58,674	1.00	3.64	55,188	55,188	1.00	4.13	50,773	50,773	1.00	4.51	46,591	46,591	1.00	4.89	42,408	42,408	1.00	5.14	38,226	38,226	1.00	5.39
30	86	18	64	64,133	61,311	0.96	4.01	60,647	57,979	0.96	4.51	56,232	53,758	0.96	4.89	52,050	49,760	0.96	5.26	47,867	45,761	0.96	5.52	43,685	41,763	0.96	5.77
30	86	20	68	66,921	55,946	0.84	4.24	64,133	53,615	0.84	4.61	60,415	50,507	0.84	5.06	56,000	46,816	0.84	5.49	51,585	43,125	0.84	5.77	47,867	40,017	0.84	6.02
30	86	22	72	70,639	50,578	0.72	4.41	68,315	48,914	0.72	4.89	64,133	45,919	0.72	5.31	59,950	42,924	0.72	5.72	55,768	39,930	0.72	5.99	51,120	36,602	0.72	6.17
32	90	16	61	58,674	58,674	1.00	3.64	55,188	55,188	1.00	4.13	50,773	50,773	1.00	4.51	46,591	46,591	1.00	4.89	42,408	42,408	1.00	5.14	38,226	38,226	1.00	5.39
32	90	18	64	64,133	64,133	1.00	4.01	60,647	60,647	1.00	4.51	56,232	56,232	1.00	4.89	52,050	52,050	1.00	5.26	47,867	47,867	1.00	5.52	43,685	43,685	1.00	5.77
32	90	20	68	66,921	61,300	0.92	4.24	64,133	58,746	0.92	4.61	60,415	55,340	0.92	5.06	56,000	51,296	0.92	5.49	51,585	47,252	0.92	5.77	47,867	43,846	0.92	6.02
32	90	22	72	70,639	56,229	0.80	4.41	68,315	54,379	0.80	4.89	64,133	51,050	0.80	5.31	59,950	47,720	0.80	5.72	55,768	44,391	0.80	5.99	51,120	40,692	0.80	6.17

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

PAA-B/CA36NL/PUZ-AK36NL/ PUY-AK36NL

CAPACITY (Btu/h): 32,000 INPUT (kW): 2.72 HF: 0.78

Indoor	Indoor	Indoor	Indoor	Outdoor intake air °C/°F D.B.																							
intake air	intake air	intake air	intake air	20/68				25/77				30/86				35/95				40/104				46/115			
D.B.(°C)	D.B.(°F)	W.B.(°C)	W.B.(°F)	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	33,528	22,665	0.68	1.80	31,536	21,318	0.68	2.05	29,013	19,613	0.68	2.24	26,623	17,997	0.68	2.42	24,233	16,382	0.68	2.55	21,843	14,766	0.68	2.67
19	66	18	64	36,647	20,376	0.56	1.99	34,656	19,269	0.56	2.23	32,133	17,866	0.56	2.42	29,743	16,537	0.56	2.61	27,353	15,208	0.56	2.73	24,963	13,879	0.56	2.86
20	68	16	61	33,528	24,006	0.72	1.80	31,536	22,580	0.72	2.05	29,013	20,774	0.72	2.24	26,623	19,062	0.72	2.42	24,233	17,351	0.72	2.55	21,843	15,640	0.72	2.67
20	68	18	64	36,647	21,842	0.60	1.99	34,656	20,655	0.60	2.23	32,133	19,151	0.60	2.42	29,743	17,727	0.60	2.61	27,353	16,302	0.60	2.73	24,963	14,878	0.60	2.86
20	68	20	68	38,241	18,203	0.48	2.10	36,647	17,444	0.48	2.29	34,523	16,433	0.48	2.51	32,000	15,232	0.48	2.72	29,477	14,031	0.48	2.86	27,353	13,020	0.48	2.98
22	72	16	61	33,528	26,688	0.80	1.80	31,536	25,103	0.80	2.05	29,013	23,095	0.80	2.24	26,623	21,192	0.80	2.42	24,233	19,290	0.80	2.55	21,843	17,387	0.80	2.67
22	72	18	64	36,647	24,774	0.68	1.99	34,656	23,427	0.68	2.23	32,133	21,722	0.68	2.42	29,743	20,106	0.68	2.61	27,353	18,490	0.68	2.73	24,963	16,875	0.68	2.86
22	72	20	68	38,241	21,262	0.56	2.10	36,647	20,376	0.56	2.29	34,523	19,195	0.56	2.51	32,000	17,792	0.56	2.72	29,477	16,389	0.56	2.86	27,353	15,208	0.56	2.98
24	75	16	61	33,528	29,370	0.88	1.80	31,536	27,626	0.88	2.05	29,013	25,416	0.88	2.24	26,623	23,322	0.88	2.42	24,233	21,228	0.88	2.55	21,843	19,135	0.88	2.67
24	75	18	64	36,647	27,705	0.76	1.99	34,656	26,200	0.76	2.23	32,133	24,292	0.76	2.42	29,743	22,486	0.76	2.61	27,353	20,679	0.76	2.73	24,963	18,872	0.76	2.86
24	75	20	68	38,241	24,321	0.64	2.10	36,647	23,308	0.64	2.29	34,523	21,957	0.64	2.51	32,000	20,352	0.64	2.72	29,477	18,747	0.64	2.86	27,353	17,396	0.64	2.98
24	75	22	72	40,365	20,828	0.52	2.19	39,037	20,143	0.52	2.42	36,647	18,910	0.52	2.63	34,257	17,677	0.52	2.83	31,867	16,443	0.52	2.97	29,212	15,073	0.52	3.06
26	79	16	61	33,528	32,053	0.96	1.80	31,536	30,149	0.96	2.05	29,013	27,737	0.96	2.24	26,623	25,452	0.96	2.42	24,233	23,167	0.96	2.55	21,843	20,882	0.96	2.67
26	79	18	64	36,647	30,637	0.84	1.99	34,656	28,972	0.84	2.23	32,133	26,863	0.84	2.42	29,743	24,865	0.84	2.61	27,353	22,867	0.84	2.73	24,963	20,869	0.84	2.86
26	79	20	68	38,241	27,380	0.72	2.10	36,647	26,239	0.72	2.29	34,523	24,718	0.72	2.51	32,000	22,912	0.72	2.72	29,477	21,106	0.72	2.86	27,353	19,585	0.72	2.98
26	79	22	72	40,365	24,058	0.60	2.19	39,037	23,266	0.60	2.42	36,647	21,842	0.60	2.63	34,257	20,417	0.60	2.83	31,867	18,993	0.60	2.97	29,212	17,410	0.60	3.06
27	81	16	61	33,528	33,394	1.00	1.80	31,536	31,410	1.00	2.05	29,013	28,897	1.00	2.24	26,623	26,517	1.00	2.42	24,233	24,136	1.00	2.55	21,843	21,756	1.00	2.67
27	81	18	64	36,647	32,103	0.88	1.99	34,656	30,358	0.88	2.23	32,133	28,148	0.88	2.42	29,743	26,055	0.88	2.61	27,353	23,961	0.88	2.73	24,963	21,867	0.88	2.86
27	81	20	68	38,241	28,910	0.76	2.10	36,647	27,705	0.76	2.29	34,523	26,099	0.76	2.51	32,000	24,192	0.76	2.72	29,477	22,285	0.76	2.86	27,353	20,679	0.76	2.98
27	81	22	72	40,365	25,672	0.64	2.19	39,037	24,828	0.64	2.42	36,647	23,308	0.64	2.63	34,257	21,788	0.64	2.83	31,867	20,268	0.64	2.97	29,212	18,579	0.64	3.06
28	82	16	61	33,528	33,528	1.00	1.80	31,536	31,536	1.00	2.05	29,013	29,013	1.00	2.24	26,623	26,623	1.00	2.42	24,233	24,233	1.00	2.55	21,843	21,843	1.00	2.67
28	82	18	64	36,647	33,569	0.92	1.99	34,656	31,745	0.92	2.23	32,133	29,434	0.92	2.42	29,743	27,244	0.92	2.61	27,353	25,055	0.92	2.73	24,963	22,866	0.92	2.86
28	82	20	68	38,241	30,440	0.80	2.10	36,647	29,171	0.80	2.29	34,523	27,480	0.80	2.51	32,000	25,472	0.80	2.72	29,477	23,464	0.80	2.86	27,353	21,773	0.80	2.98
28	82	22	72	40,365	27,287	0.68	2.19	39,037	26,389	0.68	2.42	36,647	24,774	0.68	2.63	34,257	23,158	0.68	2.83	31,867	21,542	0.68	2.97	29,212	19,747	0.68	3.06
30	86	16	61	33,528	33,528	1.00	1.80	31,536	31,536	1.00	2.05	29,013	29,013	1.00	2.24	26,623	26,623	1.00	2.42	24,233	24,233	1.00	2.55	21,843	21,843	1.00	2.67
30	86	18	64	36,647	36,501	1.00	1.99	34,656	34,517	1.00	2.23	32,133	32,004	1.00	2.42	29,743	29,624	1.00	2.61	27,353	27,243	1.00	2.73	24,963	24,863	1.00	2.86
30	86	20	68	38,241	33,499	0.88	2.10	36,647	32,103	0.88	2.29	34,523	30,242	0.88	2.51	32,000	28,032	0.88	2.72	29,477	25,822	0.88	2.86	27,353	23,961	0.88	2.98
30	86	22	72	40,365	30,516	0.76	2.19	39,037	29,512	0.76	2.42	36,647	27,705	0.76	2.63	34,257	25,898	0.76	2.83	31,867	24,092	0.76	2.97	29,212	22,084	0.76	3.06
32	90	16	61	33,528	33,528	1.00	1.80	31,536	31,536	1.00	2.05	29,013	29,013	1.00	2.24	26,623	26,623	1.00	2.42	24,233	24,233	1.00	2.55	21,843	21,843	1.00	2.67
32	90	18	64	36,647	36,647	1.00	1.99	34,656	34,656	1.00	2.23	32,133	32,133	1.00	2.42	29,743	29,743	1.00	2.61	27,353	27,353	1.00	2.73	24,963	24,963	1.00	2.86
32	90	20	68	38,241	36,558	0.96	2.10	36,647	35,035	0.96	2.29	34,523	33,004	0.96	2.51	32,000	30,592	0.96	2.72	29,477	28,180	0.96	2.86	27,353	26,149	0.96	2.98
32	90	22	72	40,365	33,745	0.84	2.19	39,037	32,635	0.84	2.42	36,647	30,637	0.84	2.63	34,257	28,639	0.84	2.83	31,867	26,641	0.84	2.97	29,212	24,421	0.84	3.06

PAA-B/CA42NL/PUZ-AK42NL/ PUY-AK42NL

CAPACITY (Btu/h): 42,000 INPUT (kW): 4.04 SHF: 0.72

Indoor	Indoor	Indoor	Indoor	Outdoor intake air °C/°F D.B.																							
intake air	intake air	intake air	intake air	20/68				25/77				30/86				35/95				40/104				46/115			
D.B.(°C)	D.B.(°F)	W.B.(°C)	W.B.(°F)	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	2.68	41,391	25,497	0.62	3.04	38,080	23,457	0.62	3.32	34,943	21,525	0.62	3.60	31,806	19,593	0.62	3.78	28,669	17,660	0.62	3.97
19	66	18	64	48,100	23,857	0.50	2.95	45,485	22,561	0.50	3.32	42,174	20,918	0.50	3.60	39,037	19,363	0.50	3.87	35,900	17,807	0.50	4.06	32,763	16,251	0.50	4.24
20	68	16	61	44,005	28,867	0.66	2.68	41,391	27,153	0.66	3.04	38,080	24,980	0.66	3.32	34,943	22,923	0.66	3.60	31,806	20,865	0.66	3.78	28,669	18,807	0.66	3.97
20	68	18	64	48,100	25,781	0.54	2.95	45,485	24,380	0.54	3.32	42,174	22,605	0.54	3.60	39,037	20,924	0.54	3.87	35,900	19,243	0.54	4.06	32,763	17,561	0.54	4.24
20	68	20	68	50,191	20,879	0.42	3.12	48,100	20,009	0.42	3.39	45,311	18,849	0.42	3.73	42,000	17,472	0.42	4.04	38,689	16,095	0.42	4.24	35,900	14,935	0.42	4.43
22	72	16	61	44,005	32,388	0.74	2.68	41,391	30,464	0.74	3.04	38,080	28,027	0.74	3.32	34,943	25,718	0.74	3.60	31,806	23,409	0.74	3.78	28,669	21,101	0.74	3.97
22	72	18	64	48,100	29,629	0.62	2.95	45,485	28,019	0.62	3.32	42,174	25,979	0.62	3.60	39,037	24,047	0.62	3.87	35,900	22,115	0.62	4.06	32,763	20,182	0.62	4.24
22	72	20	68	50,191	24,895	0.50	3.12	48,100	23,857	0.50	3.39	45,311	22,474	0.50	3.73	42,000	20,832	0.50	4.04	38,689	19,190	0.50	4.24	35,900	17,807	0.50	4.43
24	75	16	61	44,005	35,908	0.82	2.68	41,391	33,775	0.82	3.04	38,080	31,073	0.82	3.32	34,943	28,514	0.82	3.60	31,806	25,954	0.82	3.78	28,669	23,394	0.82	3.97
24	75	18	64	48,100	33,477	0.70	2.95	45,485	31,658	0.70	3.32	42,174	29,353	0.70	3.60	39,037	27,170	0.70	3.87	35,900	24,987	0.70	4.06	32,763	22,803	0.70	4.24
24	75	20	68	50,191	28,910	0.58	3.12	48,100	27,705	0.58	3.39	45,311	26,099	0.58	3.73	42,000	24,192	0.58	4.04	38,689	22,285	0.58	4.24	35,900	20,679	0.58	4.43
24	75	22	72	52,979	24,159	0.46	3.25	51,237	23,364	0.46	3.60	48,100	21,933	0.46	3.91	44,963	20,503	0.46	4.21	41,826	19,073	0.46	4.41	38,340	17,483	0.46	4.54
26	79	16	61	44,005	39,429	0.90	2.68	41,391	37,087	0.90	3.04	38,080	34,120	0.90	3.32	34,943	31,309	0.90	3.60	31,806	28,498	0.90	3.78	28,669	25,688	0.90	3.97
26	79	18	64	48,100	37,325	0.78	2.95	45,485	35,297	0.78	3.32	42,174	32,727	0.78	3.60	39,037	30,293	0.78	3.87	35,900	27,859	0.78	4.06	32,763	25,424	0.78	4.24
26	79	20	68	50,191	32,925	0.66	3.12	48,100	31,553	0.66	3.39	45,311	29,724	0.66	3.73	42,000	27,552	0.66	4.04	38,689	25,380	0.66	4.24	35,900	23,551	0.66	4.43
26	79	22	72	52,979	28,397	0.54	3.25	51,237	27,463	0.54	3.60	48,100	25,781	0.54	3.91	44,963	24,100	0.54	4.21	41,826	22,419	0.54	4.41	38,340	20,550	0.54	4.54
27	81	16	61	44,005	41,189	0.94	2.68	41,391	38,742	0.94	3.04	38,080	35,643	0.94	3.32	34,943	32,707	0.94	3.60	31,806	29,771	0.94	3.78	28,669	26,834	0.94	3.97
27	81	18	64	48,100	39,249	0.82	2.95	45,485	37,116	0.82	3.32	42,174	34,414	0.82	3.60	39,037	31,854	0.82	3.87	35,900	29,295	0.82	4.06	32,763	26,735	0.82	4.24
27	81	20	68	50,191	34,933	0.70	3.12	48,100	33,477	0.70	3.39	45,311	31,537	0.70	3.73	42,000	29,232	0.70	4.04	38,689	26,927	0.70	4.24	35,900	24,987	0.70	4.43
27	81	22	72	52,979	30,516	0.58	3.25	51,237	29,512	0.58	3.60	48,100	27,705	0.58	3.91	44,963	25,898	0.58	4.21	41,826	24,092	0.58	4.41	38,340	22,084	0.58	4.54
28	82	16	61	44,005	42,949	0.98	2.68	41,391	40,398	0.98	3.04	38,080	37,166	0.98	3.32	34,943	34,104	0.98	3.60	31,806	31,043	0.98	3.78	28,669	27,981	0.98	3.97
28	82	18	64	48,100	41,173	0.86	2.95	45,485	38,936	0.86	3.32	42,174	36,101	0.86	3.60	39,037	33,416	0.86	3.87	35,900	30,731	0.86	4.06	32,763	28,046	0.86	4.24
28	82	20	68	50,191	36,940	0.74	3.12	48,100	35,401	0.74	3.39	45,311	33,349	0.74	3.73	42,000	30,912	0.74	4.04	38,689	28,475	0.74	4.24	35,900	26,423	0.74	4.43
28	82	22	72	52,979	32,635	0.62	3.25	51,237	31,562	0.62	3.60	48,100	29,629	0.62	3.91	44,963	27,697	0.62	4.21	41,826	25,765	0.62	4.41	38,340	23,618	0.62	4.54
30	86	16	61	44,005	44,005	1.00	2.68	41,391	41,391	1.00	3.04	38,080	38,080	1.00	3.32	34,943	34,943	1.00	3.60	31,806	31,806	1.00	3.78	28,669	28,669	1.00	3.97
30	86	18	64	48,100	45,021	0.94	2.95	45,485	42,574	0.94	3.32	42,174	39,475	0.94	3.60	39,037	36,539	0.94	3.87	35,900	33,603	0.94	4.06	32,763	30,667	0.94	4.24
30	86	20	68	50,191	40,956	0.82	3.12	48,100	39,249	0.82	3.39	45,311	36,974	0.82	3.73	42,000	34,272	0.82	4.04	38,689	31,570	0.82	4.24	35,900	29,295	0.82	4.43
30	86	22	72	52,979	36,874	0.70	3.25	51,237	35,661	0.70	3.60	48,100	33,477	0.70	3.91	44,963	31,294	0.70	4.21	41,826	29,111	0.70	4.41	38,340	26,685	0.70	4.54
32	90	16	61	44,005	44,005	1.00	2.68	41,391	41,391	1.00	3.04	38,080	38,080	1.00	3.32	34,943	34,943	1.00	3.60	31,806	31,806	1.00	3.78	28,669	28,669	1.00	3.97
32	90	18	64	48,100	48,100	1.00	2.95	45,485	45,485	1.00	3.32	42,174	42,174	1.00	3.60	39,037	39,037	1.00	3.87	35,900	35,900	1.00	4.06	32,763	32,763	1.00	4.24
32	90	20	68	50,191	44,971	0.90	3.12	48,100	43,097	0.90	3.39	45,311	40,599	0.90	3.73	42,000	37,632	0.90	4.04	38,689	34,665	0.90	4.24	35,900	32,167	0.90	4.43
32	90	22	72	52,979	41,112	0.78	3.25	51,237	39,760	0.78	3.60	48,100	37,325	0.78	3.91	44,963	34,891	0.78	4.21	41,826	32,457	0.78	4.41	38,340	29,752	0.78	4.54

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

T2-1-2. HEATING CAPACITY
PUZ-AK·NL/SUZ-AK·NL

Model Name	Capacity Btu/h	Input kW	Indoor intake air	Indoor intake air	Outdoor intake air °C/°F W.B.											
					-10/14		-5/23		0/32		5/41		10/50		15/59	
			D.B.(°C)	D.B.(°F)	CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.
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	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	57,799	3.46
			20	68	27,437	2.32	33,823	2.71	37,034	2.88	43,450	3.17	49,796	3.40	56,002	3.55
			25	77	24,760	2.47	31,422	2.87	34,735	3.04	41,274	3.32	47,627	3.54	53,715	3.68
PLA-AE42NL	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	69,358	4.83
			20	68	32,925	3.23	40,587	3.79	44,441	4.02	52,140	4.43	59,755	4.75	67,202	4.96
			25	77	29,712	3.45	37,707	4.00	41,682	4.24	49,528	4.64	57,153	4.94	64,457	5.13

Model Name	Capacity Btu/h	Input kW	Indoor intake air	Indoor intake air	Outdoor intake air °C/°F W.B.											
					-10/14		-5/23		0/32		5/41		10/50		15/59	
			D.B.(°C)	D.B.(°F)	CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.
PKA-AK36NL	38,000	2.69	15	59	24,500	1.78	29,837	2.12	32,522	2.27	37,921	2.54	43,351	2.75	48,808	2.88
			20	68	23,169	1.93	28,562	2.26	31,273	2.40	36,691	2.64	42,050	2.83	47,290	2.96
			25	77	20,908	2.06	26,534	2.39	29,332	2.53	34,853	2.77	40,219	2.94	45,359	3.06

Model Name	Capacity Btu/h	Input kW	Indoor intake air	Indoor intake air	Outdoor intake air °C/°F W.B.											
					-10/14		-5/23		0/32		5/41		10/50		15/59	
			D.B.(°C)	D.B.(°F)	CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.
PCA-AK36NL	38,000	2.67	15	59	24,500	1.77	29,837	2.10	32,522	2.25	37,921	2.52	43,351	2.73	48,808	2.86
			20	68	23,169	1.91	28,562	2.24	31,273	2.38	36,691	2.62	42,050	2.81	47,290	2.94
			25	77	20,908	2.04	26,534	2.37	29,332	2.51	34,853	2.75	40,219	2.92	45,359	3.04
PCA-AK42NL	45,000	3.46	15	59	29,014	2.29	35,334	2.72	38,513	2.92	44,906	3.27	51,337	3.53	57,799	3.71
			20	68	27,437	2.48	33,823	2.90	37,034	3.09	43,450	3.40	49,796	3.64	56,002	3.81
			25	77	24,760	2.65	31,422	3.07	34,735	3.25	41,274	3.56	47,627	3.79	53,715	3.94

Model Name	Capacity Btu/h	Input kW	Indoor intake air	Indoor intake air	Outdoor intake air °C/°F W.B.											
					-10/14		-5/23		0/32		5/41		10/50		15/59	
			D.B.(°C)	D.B.(°F)	CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.
PEAD-AA36NL	38,000	2.61	15	59	24,500	1.73	29,837	2.05	32,522	2.20	37,921	2.46	43,351	2.67	48,808	2.80
			20	68	23,169	1.87	28,562	2.19	31,273	2.33	36,691	2.57	42,050	2.75	47,290	2.87
			25	77	20,908	2.00	26,534	2.32	29,332	2.45	34,853	2.68	40,219	2.86	45,359	2.97
PEAD-AA42NL	45,000	3.46	15	59	29,014	2.29	35,334	2.72	38,513	2.92	44,906	3.27	51,337	3.53	57,799	3.71
			20	68	27,437	2.48	33,823	2.90	37,034	3.09	43,450	3.40	49,796	3.64	56,002	3.81
			25	77	24,760	2.65	31,422	3.07	34,735	3.25	41,274	3.56	47,627	3.79	53,715	3.94

Model Name	Capacity Btu/h	Input kW	Indoor intake air	Indoor intake air	Outdoor intake air °C/°F W.B.											
					-10/14		-5/23		0/32		5/41		10/50		15/59	
			D.B.(°C)	D.B.(°F)	CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.
PVA-AA36NL	38,000	2.66	15	59	24,500	1.76	29,837	2.09	32,522	2.24	37,921	2.51	43,351	2.72	48,808	2.85
			20	68	23,169	1.91	28,562	2.23	31,273	2.37	36,691	2.61	42,050	2.80	47,290	2.93
			25	77	20,908	2.04	26,534	2.36	29,332	2.50	34,853	2.74	40,219	2.91	45,359	3.03
PVA-AA42NL	46,000	3.42	15	59	29,658	2.26	36,119	2.69	39,369	2.89	45,904	3.23	52,478	3.49	59,083	3.67
			20	68	28,047	2.45	34,574	2.87	37,857	3.05	44,416	3.36	50,903	3.60	57,246	3.76
			25	77	25,310	2.62	32,121	3.04	35,507	3.22	42,191	3.52	48,686	3.74	54,908	3.89
PVA-AA48NL	54,000	4.94	15	59	34,816	3.27	42,401	3.89	46,216	4.17	53,887	4.66	61,604	5.05	69,358	5.29
			20	68	32,925	3.54	40,587	4.15	44,441	4.41	52,140	4.86	59,755	5.20	67,202	5.43
			25	77	29,712	3.78	37,707	4.38	41,682	4.64	49,528	5.08	57,153	5.41	64,457	5.62
PVA-AA60NL	64,500	6.52	15	59	41,586	4.32	50,645	5.13	55,202	5.50	64,365	6.16	73,583	6.66	82,845	6.99
			20	68	39,327	4.68	48,479	5.47	53,083	5.82	62,278	6.41	71,375	6.86	80,269	7.17
			25	77	35,489	4.99	45,039	5.79	49,787	6.13	59,159	6.71	68,266	7.14	76,991	7.42
SVZ-AP48NL	54,000	4.94	15	59	34,816	3.27	42,401	3.89	46,216	4.17	53,887	4.66	61,604	5.05	69,358	5.29
			20	68	32,925	3.54	40,587	4.15	44,441	4.41	52,140	4.86	59,755	5.20	67,202	5.43
			25	77	29,712	3.78	37,707	4.38	41,682	4.64	49,528	5.08	57,153	5.41	64,457	5.62
SVZ-AP60NL	64,500	6.52	15	59	41,586	4.32	50,645	5.13	55,202	5.50	64,365	6.16	73,583	6.66	82,845	6.99
			20	68	39,327	4.68	48,479	5.47	53,083	5.82	62,278	6.41	71,375	6.86	80,269	7.17
			25	77	35,489	4.99	45,039	5.79	49,787	6.13	59,159	6.71	68,266	7.14	76,991	7.42

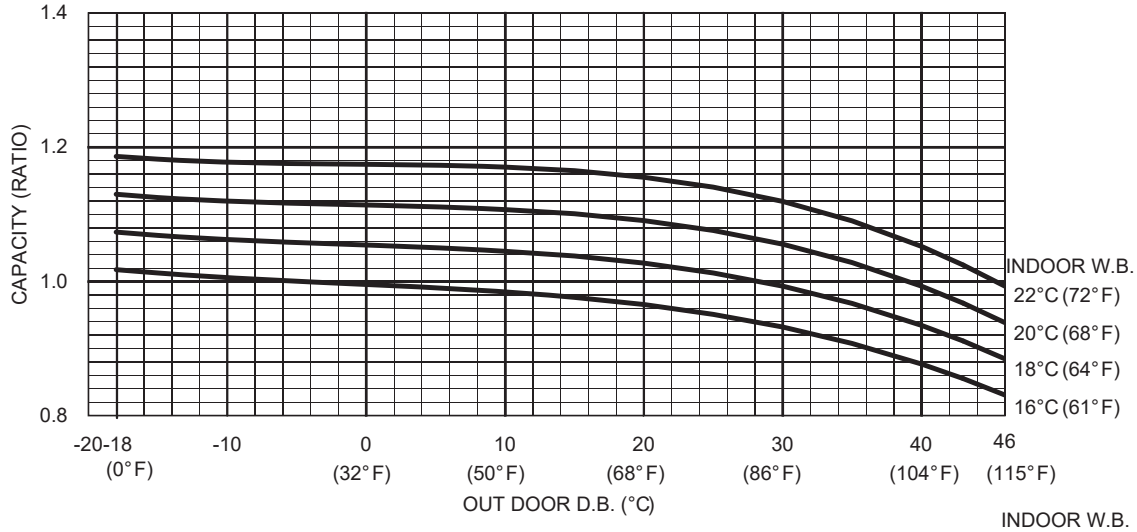
Model Name	Capacity Btu/h	Input kW	Indoor intake air	Indoor intake air	Outdoor intake air °C/°F W.B.											
					-10/14		-5/23		0/32		5/41		10/50		15/59	
			D.B.(°C)	D.B.(°F)	CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.	CA	P.C.
PAA-B/CA36NL	38,000	3.03	15	59	24,500	2.01	29,837	2.38	32,522	2.56	37,921	2.86	43,351	3.10	48,808	3.25
			20	68	23,169	2.17	28,562	2.54	31,273	2.70	36,691	2.98	42,050	3.19	47,290	3.33
			25	77	20,908	2.32	26,534	2.69	29,332	2.85	34,853	3.12	40,219	3.32	45,359	3.45
PAA-B/CA42NL	46,000	4.03	15	59	29,658	2.67	36,119	3.17	39,369	3.40	45,904	3.80	52,478	4.12	59,083	4.32
			20	68	28,047	2.89	34,574	3.38	37,857	3.60	44,416	3.96	50,903	4.24	57,246	4.43
			25	77	25,310	3.08	32,121	3.58	35,507	3.79	42,191	4.15	48,686	4.41	54,908	4.59

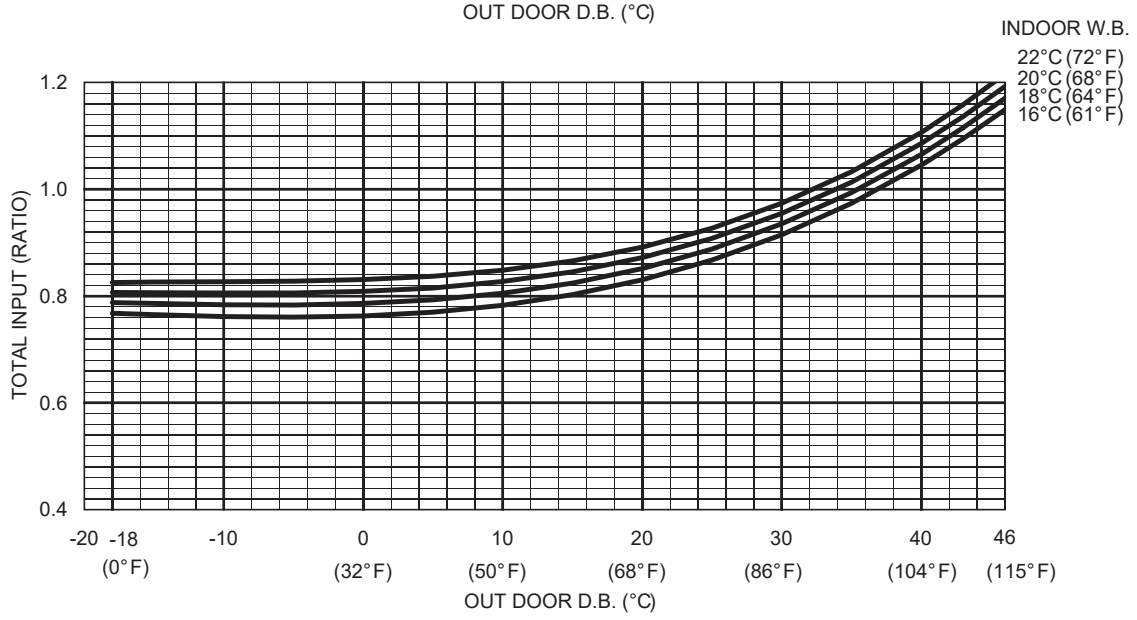
Note: CA : Capacity (Btu/h) P.C. : Power consumption (kW)
D.B. : Dry-bulb temperature W.B. : Wet-bulb temperature

T3 PERFORMANCE CURVES

FOR THE COMBINATION OF OUTDOOR UNIT
PUZ-AK36/42/48/60NL SUZ-AK48/60NL

Cooling performance curve





Note:This diagram shows the case where the operation frequency of a compressor is fixed.

CAPACITY (RATIO)

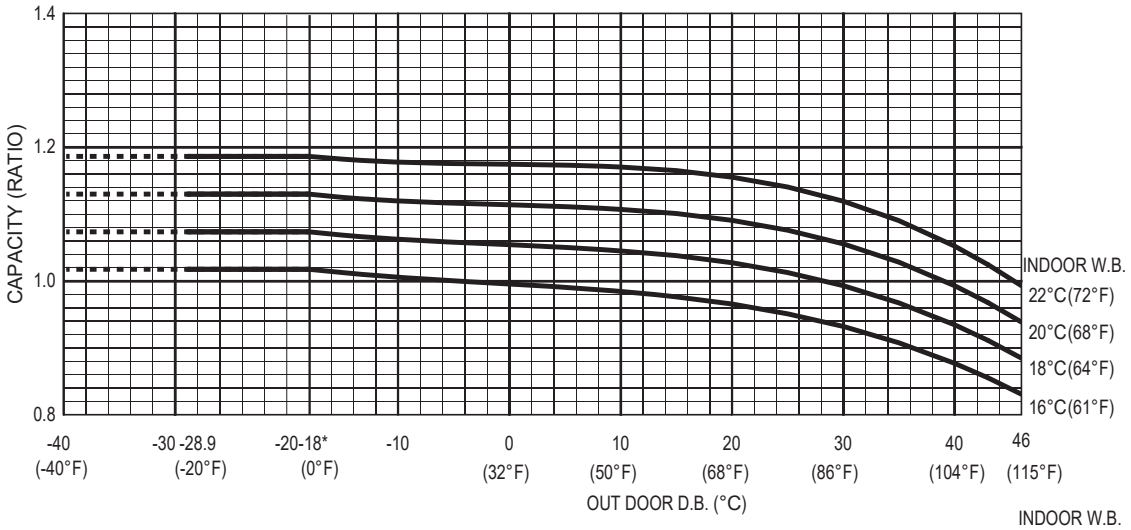
Outdoor D.B.[°C]	-18	-15	-10	-5	0	5	10	15	20	25	30	35	40	43	46
Outdoor D.B.[°F]	0	-	-	23	32	-	50	-	68	-	86	-	104	-	115
Indoor W.B. 22°C(72°F)	1.186	1.182	1.178	1.175	1.174	1.173	1.170	1.165	1.155	1.141	1.119	1.090	1.052	1.024	0.993
Indoor W.B. 20°C(68°F)	1.130	1.125	1.120	1.116	1.114	1.111	1.107	1.101	1.091	1.076	1.056	1.028	0.993	0.968	0.939
Indoor W.B. 18°C(64°F)	1.073	1.068	1.062	1.058	1.054	1.050	1.045	1.038	1.027	1.013	0.993	0.967	0.934	0.911	0.885
Indoor W.B. 16°C(61°F)	1.018	1.012	1.006	1.000	0.995	0.990	0.984	0.976	0.965	0.951	0.932	0.908	0.877	0.855	0.831

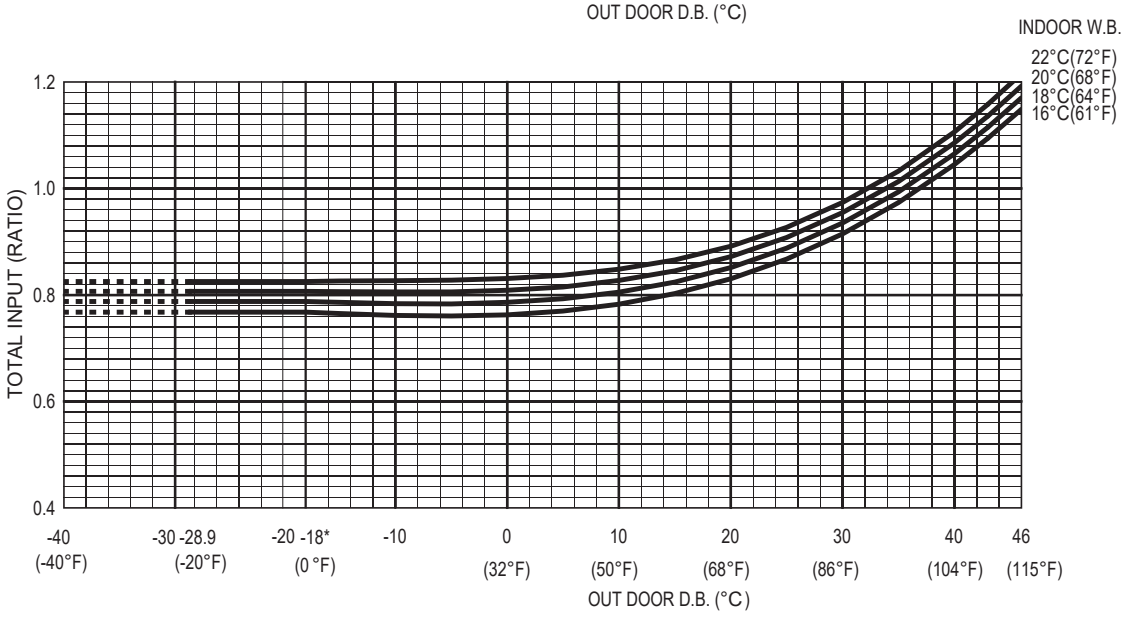
TOTAL INPUT (RATIO)

Outdoor D.B.[°C]	-18	-15	-10	-5	0	5	10	15	20	25	30	35	40	43	46
Outdoor D.B.[°F]	0	-	-	23	-	-	50	-	68	-	86	-	104	-	115
Indoor W.B. 22°C(72°F)	0.825	0.826	0.827	0.828	0.831	0.837	0.848	0.866	0.892	0.927	0.973	1.033	1.106	1.158	1.216
Indoor W.B. 20°C(68°F)	0.807	0.806	0.805	0.806	0.809	0.815	0.827	0.845	0.872	0.908	0.954	1.013	1.086	1.136	1.192
Indoor W.B. 18°C(64°F)	0.788	0.786	0.784	0.783	0.786	0.793	0.805	0.824	0.852	0.888	0.935	0.994	1.065	1.115	1.170
Indoor W.B. 16°C(61°F)	0.768	0.765	0.761	0.760	0.763	0.770	0.783	0.802	0.830	0.867	0.915	0.974	1.045	1.094	1.149

FOR THE COMBINATION OF OUTDOOR UNIT
PUY-AK36/42/48/60NL

Cooling performance curve





Note:This diagram shows the case where the operation frequency of a compressor is fixed.

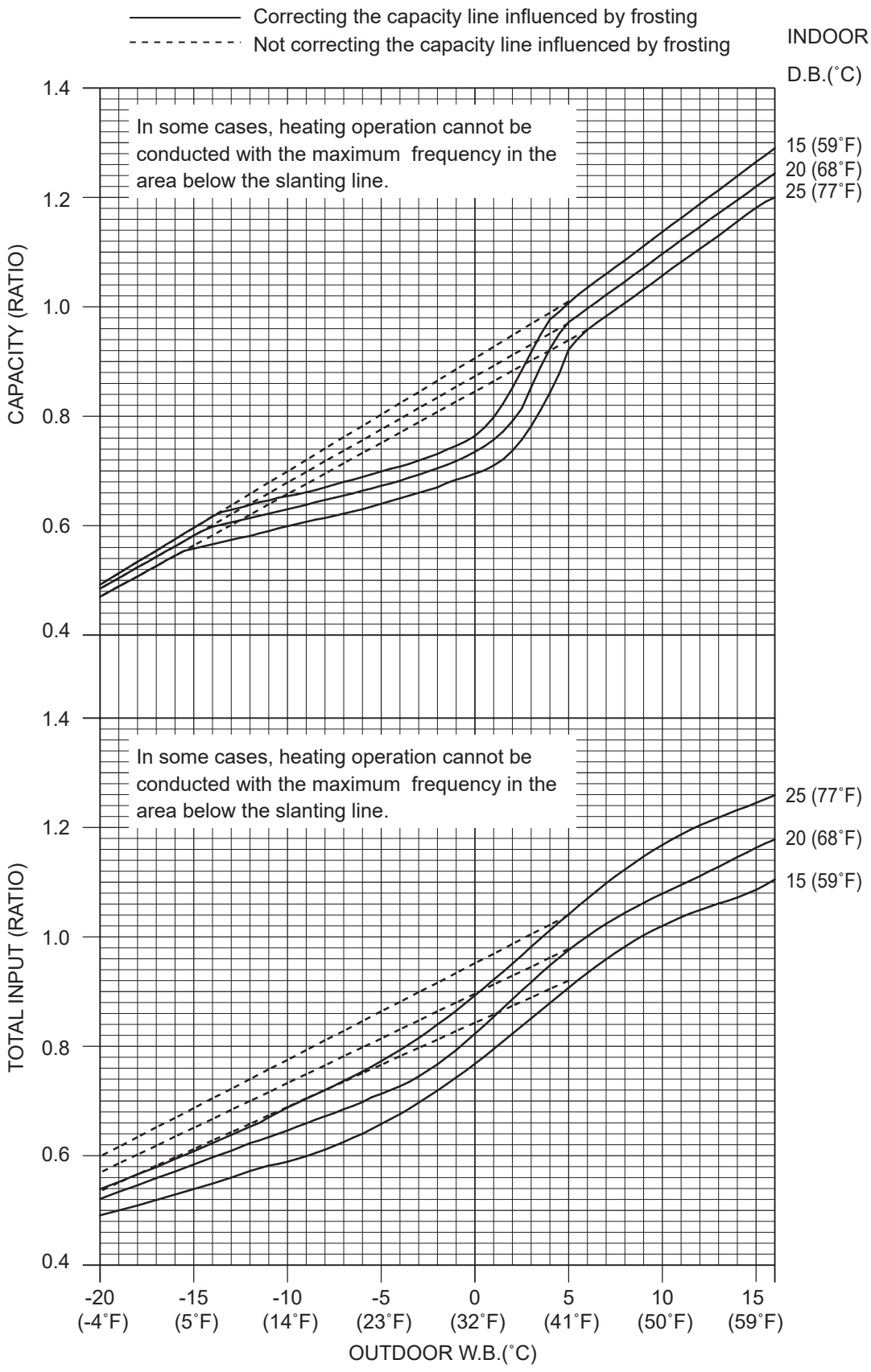
CAPACITY (RATIO)

Outdoor D.B.[°C]	-28.9	-18	-15	-10	-5	0	5	10	15	20	25	30	35	40	43	46
Outdoor D.B.[°F]	-20	0	-	-	23	32	-	50	-	68	-	86	-	104	-	115
Indoor W.B. 22°C (72°F)	1.186	1.186	1.182	1.178	1.175	1.174	1.173	1.170	1.165	1.155	1.141	1.119	1.090	1.052	1.024	0.993
Indoor W.B. 20°C (68°F)	1.130	1.130	1.125	1.120	1.116	1.114	1.111	1.107	1.101	1.091	1.076	1.056	1.028	0.993	0.968	0.939
Indoor W.B. 18°C (64°F)	1.073	1.073	1.068	1.062	1.058	1.054	1.050	1.045	1.038	1.027	1.013	0.993	0.967	0.934	0.911	0.885
Indoor W.B. 16°C (61°F)	1.018	1.018	1.012	1.006	1.000	0.995	0.990	0.984	0.976	0.965	0.951	0.932	0.908	0.877	0.855	0.831

TOTAL INPUT (RATIO)

Outdoor D.B.[°C]	-28.9	-18	-15	-10	-5	0	5	10	15	20	25	30	35	40	43	46
Outdoor D.B.[°F]	-20	0	-	-	23	-	-	50	-	68	-	86	-	104	-	115
Indoor W.B. 22°C (72°F)	0.825	0.825	0.826	0.827	0.828	0.831	0.837	0.848	0.866	0.892	0.927	0.973	1.033	1.106	1.158	1.216
Indoor W.B. 20°C (68°F)	0.807	0.807	0.806	0.805	0.806	0.809	0.815	0.827	0.845	0.872	0.908	0.954	1.013	1.086	1.136	1.192
Indoor W.B. 18°C (64°F)	0.788	0.788	0.786	0.784	0.783	0.786	0.793	0.805	0.824	0.852	0.888	0.935	0.994	1.065	1.115	1.170
Indoor W.B. 16°C (61°F)	0.768	0.768	0.765	0.761	0.760	0.763	0.770	0.783	0.802	0.830	0.867	0.915	0.974	1.045	1.094	1.149

Heating performance curve



Note: This diagram shows the case where the operation frequency of a compressor is fixed.

T4 CORRECTION FACTORS

T4-1. COOLING CAPACITY CORRECTION FACTORS

Outdoor unit	Refrigerant piping length (one way)									
	15ft (5m)	30ft (9m)	50ft (15m)	70ft (21m)	100ft (30m)	130ft (40m)	165ft (50m)	200ft (61m)	225ft (69m)	245ft (75m)
PUZ-AK36/42NL	1.000	0.987	0.971	0.954	0.929	0.904	0.875	-	-	-
PUZ-AK48/60NL SUZ-AK48/60NL	1.000	0.980	0.953	0.926	0.886	0.862	0.835	0.807	0.787	0.762
PUY-AK36/42NL	1.000	0.987	0.971	0.954	0.929	0.904	0.875	0.833	0.801	-
PUY-AK48/60NL	1.000	0.980	0.953	0.926	0.886	0.862	0.835	0.807	0.787	0.762

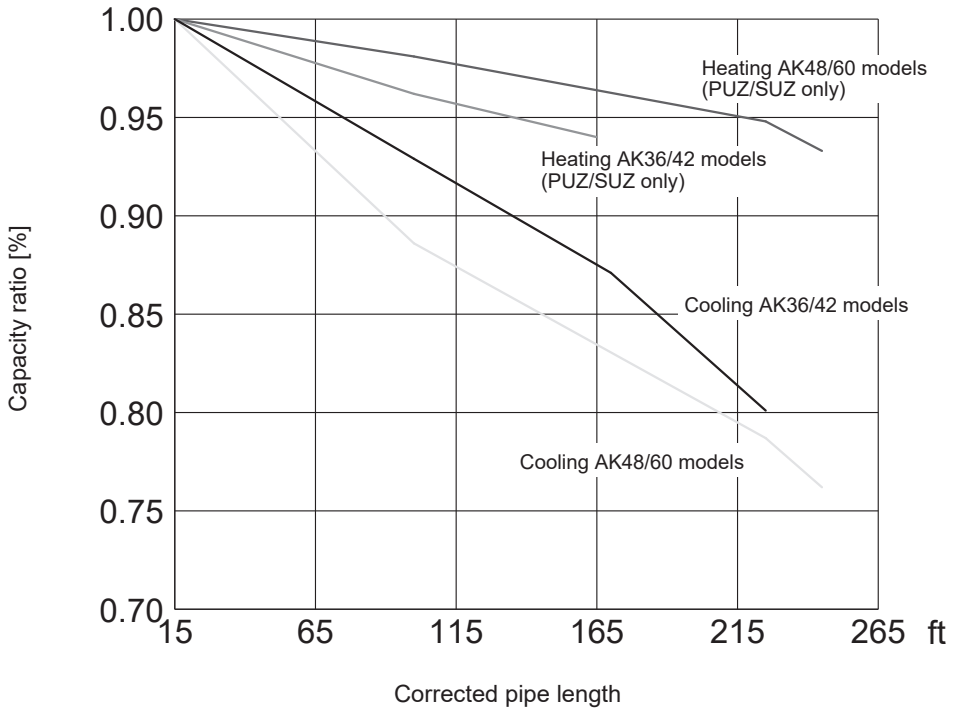
T4-2. HEATING CAPACITY CORRECTION FACTORS

Outdoor unit	Refrigerant piping length (one way)									
	15ft (5m)	30ft (9m)	50ft (15m)	70ft (21m)	100ft (30m)	130ft (40m)	165ft (50m)	200ft (61m)	225ft (69m)	245ft (75m)
PUZ-AK36/42NL	1.000	0.993	0.984	0.975	0.962	0.951	0.940	-	-	-
PUZ-AK48/60NL SUZ-AK48/60NL	1.000	0.997	0.992	0.988	0.981	0.973	0.964	0.955	0.948	0.933

Refer to the following graphs as to the connection with each indoor unit.

T4-3. CAPACITY CORRECTION

Cooling and heating capacity is lowered according to pipe length. Capacity can be obtained by referring to the capacity curves below.
Corrected pipe length (m) = actual pipe length (m) + number of bends x 0.3 (m)
Corrected pipe length (ft) = actual pipe length (ft) + number of bends x 1 (ft)



When pipe is one size larger than standard size, capacity can be obtained by referring to capacity curves of standard size.

T4-4. ADDITION OF REFRIGERANT

- Additional charging is not necessary if the pipe length does not exceed 30 m 100 ft.
- Especially, additional charging is not necessary if the pipe length does not exceed 30 m 100 ft when connected to the A-COIL indoor unit (PAA).
- If the pipe length exceeds the specified length above, charge the unit with additional R454B refrigerant according to the permitted pipe lengths in the chart below.

Notes:

1. When the unit is stopped, charge the unit with the additional refrigerant through the liquid stop valve after the pipe extensions and indoor unit have been vacuumized.
   When the unit is operating, add refrigerant to the gas check valve using a safety charger. Do not add liquid refrigerant directly to the check valve.
2. After charging the unit with refrigerant, note the added refrigerant amount and the total refrigerant amount on the service label (attached to the unit).

- Be careful when installing multiple units. Connecting to an incorrect indoor unit can lead to abnormally high pressure and have a serious effect on operation performance.

Models	Max pipe length	Max height difference	Additional refrigerant charging amount (kg/lbs, oz) *2																
			30 m 100 ft	34 m 110 ft	37 m 120 ft	40 m 130 ft	43 m 140 ft	46 m 150 ft	49 m 160 ft	50 m 165 ft	52 m 170 ft	55 m 180 ft	58 m 190 ft	61 m 200 ft	64 m 210 ft	67 m 220 ft	69 m 225 ft	73 m 240 ft	75 m 245 ft
PUZ-AK36 PUZ-AK42	50 m, 165 ft *1	30 m, 100 ft	0	0.17 kg 6 oz	0.34 kg 12 oz	0.51 kg 1 lbs 2 oz	0.68 kg 1 lbs 8 oz	0.85 kg 1 lbs 14 oz	1.02 kg 2 lbs 4 oz	1.10 kg 2 lbs 7 oz	-	-	-	-	-	-	-	-	-
PUZ-AK48 PUZ-AK60 SUZ-AK48 SUZ-AK60	75 m, 245 ft	30 m, 100 ft	0	0.17 kg 6 oz	0.34 kg 12 oz	0.51 kg 1 lbs 2 oz	0.68 kg 1 lbs 8 oz	0.85 kg 1 lbs 14 oz	1.02 kg 2 lbs 4 oz	1.10 kg 2 lbs 7 oz	1.20 kg 2 lbs 10 oz	1.36 kg 3 lbs	1.53 kg 3 lbs 6 oz	1.70 kg 3 lbs 12 oz	1.87 kg 4 lbs 2 oz	2.04 kg 4 lbs 8 oz	2.10 kg 4 lbs 10 oz	2.10 kg 4 lbs 10 oz	2.10 kg 4 lbs 10 oz
PUY-AK36 PUY-AK42	69 m, 225 ft *1	30 m, 100 ft	0	0.17 kg 6 oz	0.34 kg 12 oz	0.51 kg 1 lbs 2 oz	0.68 kg 1 lbs 8 oz	0.85 kg 1 lbs 14 oz	1.02 kg 2 lbs 4 oz	1.10 kg 2 lbs 7 oz	1.20 kg 2 lbs 10 oz	1.20 kg 2 lbs 10 oz	1.20 kg 2 lbs 10 oz	1.20 kg 2 lbs 10 oz	1.20 kg 2 lbs 10 oz	1.20 kg 2 lbs 10 oz	1.20 kg 2 lbs 10 oz	-	-
PUY-AK48 PUY-AK60	75 m, 245 ft	30 m, 100 ft	0	0.17 kg 6 oz	0.34 kg 12 oz	0.51 kg 1 lbs 2 oz	0.68 kg 1 lbs 8 oz	0.85 kg 1 lbs 14 oz	1.02 kg 2 lbs 4 oz	1.10 kg 2 lbs 7 oz	1.20 kg 2 lbs 10 oz	1.36 kg 3 lbs	1.53 kg 3 lbs 6 oz	1.70 kg 3 lbs 12 oz	1.87 kg 4 lbs 2 oz	2.04 kg 4 lbs 8 oz	2.10 kg 4 lbs 10 oz	2.10 kg 4 lbs 10 oz	2.10 kg 4 lbs 10 oz

*1. If outdoor unit is connected to the A-COIL indoor unit (PAA), pipe length is “Max. 30 m, 100 ft”.
*2. This additional refrigerant chart is used only when connected to an indoor unit other than A-COIL indoor unit (PAA). Additional charging is not necessary if the pipe length does not exceed 30 m 100 ft when connected to the A-COIL indoor unit (PAA).

T5 PART LOAD CAPACITY CHART

PLA-AE36NL
PUZ-AK36NL PUY-AK36NL
1) COOLING

Rated
Q(Btu/h): 36000
W: 2620

Indoor W.B.			71°F / 21.7°C						67°F / 19.4°C						63°F / 17.2°C					
Outdoor D.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
115	46.1	Q(Btu/h)	36,893	36,288	27,216	18,144	-	14,414	34,038	33,480	25,110	16,740	-	13,299	31,952	31,428	23,571	15,714	-	12,484
		W	3,343	3,196	2,397	1,598	-	854	3,233	3,092	2,319	1,546	-	826	3,151	3,013	2,260	1,507	-	805
110	43.3	Q(Btu/h)	38,759	38,124	28,593	19,062	-	15,144	35,905	35,316	26,487	17,658	-	14,028	33,818	33,264	24,948	16,632	-	13,213
		W	3,173	3,034	2,275	1,517	-	811	3,063	2,929	2,197	1,465	-	783	2,981	2,851	2,138	1,425	-	762
105	40.6	Q(Btu/h)	39,565	38,916	29,187	19,458	-	15,458	36,710	36,108	27,081	18,054	-	14,343	34,624	34,056	25,542	17,028	-	13,528
		W	3,066	2,932	2,199	1,466	-	783	2,956	2,827	2,120	1,413	-	755	2,874	2,748	2,061	1,374	-	734
100	37.8	Q(Btu/h)	40,626	39,960	29,970	19,980	-	15,873	37,771	37,152	27,864	18,576	-	14,758	35,685	35,100	26,325	17,550	-	13,943
		W	2,918	2,790	2,093	1,395	-	746	2,809	2,686	2,014	1,343	-	718	2,726	2,607	1,955	1,303	-	697
95	35.0	Q(Btu/h)	41,504	40,824	30,618	20,412	-	16,216	38,650	38,016	28,512	19,008	-	15,101	36,563	35,964	26,973	17,982	-	14,286
		W	2,800	2,678	2,008	1,339	-	715	2,691	2,573	1,930	1,286	-	687	2,608	2,494	1,871	1,247	-	666
90	32.2	Q(Btu/h)	42,090	41,400	31,050	20,700	-	16,445	39,235	38,592	28,944	19,296	-	15,330	37,149	36,540	27,405	18,270	-	14,515
		W	2,713	2,594	1,945	1,297	-	693	2,603	2,489	1,867	1,245	-	665	2,521	2,410	1,808	1,205	-	644
85	29.4	Q(Btu/h)	42,529	41,832	31,374	20,916	-	16,617	39,674	39,024	29,268	19,512	-	15,501	37,588	36,972	27,729	18,486	-	14,686
		W	2,630	2,515	1,886	1,258	-	672	2,521	2,410	1,808	1,205	-	644	2,439	2,332	1,749	1,166	-	623
80	26.7	Q(Btu/h)	43,188	42,480	31,860	21,240	-	16,874	40,333	39,672	29,754	19,836	-	15,759	38,247	37,620	28,215	18,810	-	14,944
		W	2,543	2,431	1,824	1,216	-	650	2,433	2,327	1,745	1,163	-	622	2,351	2,248	1,686	1,124	-	601
75	23.9	Q(Btu/h)	43,664	42,948	32,211	21,474	-	17,060	40,809	40,140	30,105	20,070	-	15,945	38,723	38,088	28,566	19,044	-	15,129
		W	2,466	2,358	1,769	1,179	-	630	2,356	2,253	1,690	1,127	-	602	2,274	2,175	1,631	1,087	-	581
70	21.1	Q(Btu/h)	43,920	43,200	32,400	21,600	-	17,160	41,065	40,392	30,294	20,196	-	16,045	38,979	38,340	28,755	19,170	-	15,230
		W	2,406	2,300	1,725	1,150	-	615	2,296	2,196	1,647	1,098	-	587	2,214	2,117	1,588	1,058	-	566
67	19.4	Q(Btu/h)	44,213	43,488	32,616	21,744	-	17,274	41,358	40,680	30,510	20,340	-	16,159	39,272	38,628	28,971	19,314	-	15,344
		W	2,362	2,258	1,694	1,129	-	603	2,252	2,154	1,615	1,077	-	575	2,170	2,075	1,556	1,038	-	554

PLA-AE36NL
PUZ-AK36NL
2) HEATING

Rated
Q(Btu/h): 38000
W: 2470

Indoor D.B.			77°F / 25°C						68°F / 20°C						59°F / 15°C					
Outdoor W.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
65	18.3	Q(Btu/h)	51,052	48,499	36,375	24,250	-	16,592	52,532	49,905	37,429	24,953	-	17,073	54,212	51,501	38,626	25,751	-	17,619
		W	3,367	3,236	2,427	1,618	-	812	3,135	3,038	2,279	1,519	-	763	2,956	2,841	2,130	1,420	-	713
60	15.6	Q(Btu/h)	48,200	45,790	34,343	22,895	-	15,665	49,680	47,196	35,397	23,598	-	16,146	51,360	48,792	36,594	24,396	-	16,692
		W	3,238	3,112	2,334	1,556	-	781	3,007	2,915	2,186	1,457	-	732	2,827	2,717	2,038	1,359	-	682
55	12.8	Q(Btu/h)	45,000	42,750	32,063	21,375	-	14,625	46,480	44,156	33,117	22,078	-	15,106	48,160	45,752	34,314	22,876	-	15,652
		W	3,110	3,013	2,260	1,507	-	756	2,878	2,816	2,112	1,408	-	707	2,699	2,618	1,964	1,309	-	657
50	10.0	Q(Btu/h)	42,320	40,204	30,153	20,102	-	13,754	43,800	41,610	31,208	20,805	-	14,235	45,480	43,206	32,405	21,603	-	14,781
		W	2,981	2,878	2,158	1,439	-	722	2,750	2,680	2,010	1,340	-	673	2,570	2,482	1,862	1,241	-	623
45	7.2	Q(Btu/h)	35,179	37,240	27,930	18,620	-	12,740	36,607	38,646	28,985	19,323	-	13,221	38,036	40,242	30,182	20,121	-	13,767
		W	2,853	2,717	2,038	1,359	-	682	2,621	2,519	1,890	1,260	-	632	2,442	2,322	1,741	1,161	-	583
40	4.4	Q(Btu/h)	34,286	31,160	23,370	15,580	-	10,660	35,714	32,566	24,425	16,283	-	11,141	37,143	34,162	25,622	17,081	-	11,687
		W	2,776	2,495	1,871	1,247	-	626	2,544	2,347	1,760	1,173	-	589	2,364	2,174	1,630	1,087	-	546
35	1.7	Q(Btu/h)	34,286	26,980	20,235	13,490	-	9,230	35,714	30,020	22,515	15,010	-	10,270	37,143	31,920	23,940	15,960	-	10,920
		W	2,958	2,351	1,764	1,176	-	590	2,822	2,203	1,652	1,102	-	553	2,640	2,030	1,523	1,015	-	510
30	-1.1	Q(Btu/h)	34,286	25,840	19,380	12,920	-	8,840	35,714	27,208	20,406	13,604	-	9,308	37,143	28,348	21,261	14,174	-	9,698
		W	3,482	2,144	1,608	1,072	-	538	3,345	1,996	1,497	998	-	501	3,163	1,823	1,367	911	-	458
25	-3.9	Q(Btu/h)	34,286	24,700	18,525	12,350	-	8,450	35,714	26,068	19,551	13,034	-	8,918	37,143	27,208	20,406	13,604	-	9,308
		W	3,777	1,865	1,399	932	-	468	3,641	1,717	1,287	858	-	431	3,459	1,544	1,158	772	-	388
20	-6.7	Q(Btu/h)	34,286	23,560	17,670	11,780	-	8,060	35,714	24,928	18,696	12,464	-	8,528	37,143	26,068	19,551	13,034	-	8,918
		W	3,982	1,828	1,371	914	-	459	3,846	1,680	1,260	840	-	422	3,664	1,507	1,130	753	-	378
15	-9.4	Q(Btu/h)	34,286	22,990	17,243	11,495	-	7,865	35,714	24,358	18,269	12,179	-	8,333	37,143	25,498	19,124	12,749	-	8,723
		W	4,164	1,741	1,306	871	-	437	4,028	1,593	1,195	797	-	400	3,846	1,420	1,065	710	-	357
10	-12.2	Q(Btu/h)	34,286	22,116	16,587	11,058	-	7,566	35,714	23,484	17,613	11,742	-	8,034	37,143	24,624	18,468	12,312	-	8,424
		W	4,278	1,610	1,208	805	-	404	4,141	1,462	1,097	731	-	367	3,959	1,289	967	645	-	324
5	-15.0	Q(Btu/h)	34,286	21,641	16,231	10,821	-	7,404	35,714	23,009	17,257	11,505	-	7,872	37,143	24,149	18,112	12,075	-	8,262
		W	4,369	1,605	1,204	802	-	403	4,232	1,457	1,092	728	-	366	4,050	1,284	963	642	-	322
0	-17.8	Q(Btu/h)	32,321	21,280	15,960	10,640	-	7,280	33,750	22,648	16,986	11,324	-	7,748	35,179	23,788	17,841	11,894	-	8,138
		W	4,415	1,608	1,206	804	-	404	4,278	1,460	1,095	730	-	367	4,096	1,287	966	644	-	323
-4	-20.0	Q(Btu/h)	30,679	21,052	15,789	10,526	-	7,202	32,107	22,420	16,815	11,210	-	7,670	33,536	23,560	17,670	11,780	-	8,060
		W	4,437	1,592	1,194	796	-	400	4,301	1,444	1,083	722	-	363	4,119	1,271	953	636	-	319
-13	-25.0	Q(Btu/h)	27,143	20,853	15,640	10,427	-	7,134	28,571	22,221	16,666	11,111	-	7,602	30,000	23,361	17,521	11,681	-	7,992
		W	4,460	1,567	1,175	784	-	393	4,323	1,419	1,064	709	-	356	4,141	1,246	935	623	-	313

PKA-AK36NL
PUZ-AK36NL PUY-AK36NL
1) COOLING

Rated
Q(Btu/h): 33400
W: 2770

Indoor W.B.			71°F / 21.7°C						67°F / 19.4°C						63°F / 17.2°C					
Outdoor D.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
115	46.1	Q(Btu/h)	36,288	33,667	25,250	16,834	-	13,306	33,480	31,062	23,297	15,531	-	12,276	31,428	29,158	21,869	14,579	-	11,524
		W	3,794	3,379	2,535	1,690	-	976	3,670	3,269	2,451	1,634	-	944	3,577	3,186	2,389	1,593	-	920
110	43.3	Q(Btu/h)	38,124	35,371	26,528	17,685	-	13,979	35,316	32,765	24,574	16,383	-	12,949	33,264	30,862	23,146	15,431	-	12,197
		W	3,601	3,208	2,406	1,604	-	926	3,477	3,097	2,323	1,548	-	894	3,384	3,014	2,260	1,507	-	870
105	40.6	Q(Btu/h)	38,916	36,105	27,079	18,053	-	14,269	36,108	33,500	25,125	16,750	-	13,240	34,056	31,596	23,697	15,798	-	12,487
		W	3,480	3,100	2,325	1,550	-	895	3,356	2,989	2,242	1,494	-	863	3,262	2,906	2,179	1,453	-	839
100	37.8	Q(Btu/h)	39,960	37,074	27,806	18,537	-	14,652	37,152	34,469	25,852	17,234	-	13,622	35,100	32,565	24,424	16,283	-	12,870
		W	3,312	2,950	2,213	1,475	-	852	3,188	2,839	2,129	1,420	-	820	3,094	2,756	2,067	1,378	-	796
95	35.0	Q(Btu/h)	40,824	37,876	28,407	18,938	-	14,969	38,016	35,270	26,453	17,635	-	13,939	35,964	33,367	25,025	16,683	-	13,187
		W	3,178	2,831	2,123	1,415	-	818	3,054	2,720	2,040	1,360	-	786	2,961	2,637	1,978	1,319	-	762
90	32.2	Q(Btu/h)	41,400	38,410	28,808	19,205	-	15,180	38,592	35,805	26,854	17,902	-	14,150	36,540	33,901	25,426	16,951	-	13,398
		W	3,079	2,742	2,057	1,371	-	792	2,955	2,632	1,974	1,316	-	760	2,861	2,548	1,911	1,274	-	736
85	29.4	Q(Btu/h)	41,832	38,811	29,108	19,405	-	15,338	39,024	36,206	27,154	18,103	-	14,309	36,972	34,302	25,726	17,151	-	13,556
		W	2,986	2,659	1,994	1,330	-	768	2,861	2,548	1,911	1,274	-	736	2,768	2,465	1,849	1,233	-	712
80	26.7	Q(Btu/h)	42,480	39,412	29,559	19,706	-	15,576	39,672	36,807	27,605	18,403	-	14,546	37,620	34,903	26,177	17,452	-	13,794
		W	2,886	2,571	1,928	1,285	-	742	2,762	2,460	1,845	1,230	-	710	2,668	2,377	1,782	1,188	-	686
75	23.9	Q(Btu/h)	42,948	39,846	29,885	19,923	-	15,748	40,140	37,241	27,931	18,621	-	14,718	38,088	35,337	26,503	17,669	-	13,966
		W	2,799	2,493	1,870	1,247	-	720	2,675	2,382	1,787	1,191	-	688	2,581	2,299	1,724	1,150	-	664
70	21.1	Q(Btu/h)	43,200	40,080	30,060	20,040	-	15,840	40,392	37,475	28,106	18,737	-	14,810	38,340	35,571	26,678	17,786	-	14,058
		W	2,731	2,432	1,824	1,216	-	702	2,606	2,321	1,741	1,161	-	670	2,513	2,238	1,679	1,119	-	646
67	19.4	Q(Btu/h)	43,488	40,347	30,260	20,174	-	15,946	40,680	37,742	28,307	18,871	-	14,916	38,628	35,838	26,879	17,919	-	14,164
		W	2,681	2,388	1,791	1,194	-	690	2,556	2,277	1,708	1,138	-	658	2,463	2,194	1,645	1,097	-	634

PKA-AK36NL
PUZ-AK36NL
2) HEATING

Rated
Q(Btu/h): 38000
W: 2690

Indoor D.B.			77°F / 25°C						68°F / 20°C						59°F / 15°C					
Outdoor W.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
65	18.3	Q(Btu/h)	51,052	48,499	36,375	24,250	-	16,847	52,532	49,905	37,429	24,953	-	17,336	54,212	51,501	38,626	25,751	-	17,890
		W	3,694	3,524	2,643	1,762	-	878	3,440	3,309	2,482	1,654	-	824	3,243	3,094	2,320	1,547	-	771
60	15.6	Q(Btu/h)	48,200	45,790	34,343	22,895	-	15,906	49,680	47,196	35,397	23,598	-	16,394	51,360	48,792	36,594	24,396	-	16,949
		W	3,553	3,389	2,542	1,695	-	844	3,299	3,174	2,381	1,587	-	791	3,102	2,959	2,219	1,480	-	737
55	12.8	Q(Btu/h)	45,000	42,750	32,063	21,375	-	14,850	46,480	44,156	33,117	22,078	-	15,338	48,160	45,752	34,314	22,876	-	15,893
		W	3,412	3,282	2,461	1,641	-	817	3,158	3,067	2,300	1,533	-	764	2,961	2,851	2,139	1,426	-	710
50	10.0	Q(Btu/h)	42,320	40,204	30,153	20,102	-	13,966	43,800	41,610	31,208	20,805	-	14,454	45,480	43,206	32,405	21,603	-	15,008
		W	3,271	3,134	2,350	1,567	-	781	3,017	2,919	2,189	1,459	-	727	2,820	2,703	2,028	1,352	-	673
45	7.2	Q(Btu/h)	37,082	37,240	27,930	18,620	-	12,936	38,588	38,646	28,985	19,323	-	13,424	40,094	40,242	30,182	20,121	-	13,979
		W	3,130	2,959	2,219	1,480	-	737	2,876	2,744	2,058	1,372	-	683	2,679	2,529	1,896	1,264	-	630
40	4.4	Q(Btu/h)	36,141	31,160	23,370	15,580	-	10,824	37,647	32,566	24,425	16,283	-	11,312	39,153	34,162	25,622	17,081	-	11,867
		W	3,046	2,717	2,038	1,358	-	677	2,792	2,556	1,917	1,278	-	637	2,594	2,367	1,775	1,184	-	590
35	1.7	Q(Btu/h)	36,141	26,980	20,235	13,490	-	9,372	37,647	30,020	22,515	15,010	-	10,428	39,153	31,920	23,940	15,960	-	11,088
		W	3,246	2,561	1,921	1,280	-	638	3,096	2,399	1,800	1,200	-	598	2,896	2,211	1,658	1,106	-	551
30	-1.1	Q(Btu/h)	36,141	25,840	19,380	12,920	-	8,976	37,647	27,208	20,406	13,604	-	9,451	39,153	28,348	21,261	14,174	-	9,847
		W	3,820	2,335	1,751	1,167	-	582	3,670	2,174	1,630	1,087	-	541	3,471	1,985	1,489	993	-	494
25	-3.9	Q(Btu/h)	36,141	24,700	18,525	12,350	-	8,580	37,647	26,068	19,551	13,034	-	9,055	39,153	27,208	20,406	13,604	-	9,451
		W	4,145	2,031	1,523	1,015	-	506	3,995	1,870	1,402	935	-	466	3,795	1,681	1,261	841	-	419
20	-6.7	Q(Btu/h)	36,141	23,560	17,670	11,780	-	8,184	37,647	24,928	18,696	12,464	-	8,659	39,153	26,068	19,551	13,034	-	9,055
		W	4,370	1,991	1,493	995	-	496	4,220	1,829	1,372	915	-	456	4,020	1,641	1,231	820	-	409
15	-9.4	Q(Btu/h)	36,141	22,990	17,243	11,495	-	7,986	37,647	24,358	18,269	12,179	-	8,461	39,153	25,498	19,124	12,749	-	8,857
		W	4,569	1,896	1,422	948	-	472	4,419	1,735	1,301	868	-	432	4,220	1,547	1,160	773	-	385
10	-12.2	Q(Btu/h)	36,141	22,116	16,587	11,058	-	7,682	37,647	23,484	17,613	11,742	-	8,158	39,153	24,624	18,468	12,312	-	8,554
		W	4,694	1,754	1,315	877	-	437	4,544	1,592	1,194	796	-	397	4,345	1,404	1,053	702	-	350
5	-15.0	Q(Btu/h)	36,141	21,641	16,231	10,821	-	7,517	37,647	23,009	17,257	11,505	-	7,993	39,153	24,149	18,112	12,075	-	8,389
		W	4,794	1,748	1,311	874	-	435	4,644	1,586	1,190	793	-	395	4,444	1,398	1,048	699	-	348
0	-17.8	Q(Btu/h)	34,071	21,280	15,960	10,640	-	7,392	35,576	22,648	16,986	11,324	-	7,867	37,082	23,788	17,841	11,894	-	8,263
		W	4,844	1,752	1,314	876	-	436	4,694	1,590	1,193	795	-	396	4,494	1,402	1,052	701	-	349
-4	-20.0	Q(Btu/h)	32,339	21,052	15,789	10,526	-	7,313	33,845	22,420	16,815	11,210	-	7,788	35,351	23,560	17,670	11,780	-	8,184
		W	4,869	1,734	1,301	867	-	432	4,719	1,573	1,180	786	-	392	4,519	1,384	1,038	692	-	345
-13	-25.0	Q(Btu/h)	28,612	20,853	15,640	10,427	-	7,244	30,118	22,221	16,666	11,111	-	7,719	31,624	23,361	17,521	11,681	-	8,115
		W	4,894	1,707	1,280	853	-	425	4,744	1,545	1,159	773	-	385	4,544	1,357	1,018	679	-	338

PEAD-AA36NL
PUZ-AK36NL PUY-AK36NL
1) COOLING

Rated
Q(Btu/h): 36000
W: 2860

Indoor W.B.			71°F / 21.7°C						67°F / 19.4°C						63°F / 17.2°C					
Outdoor D.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
115	46.1	Q(Btu/h)	37,296	36,288	27,216	18,144	-	13,608	34,410	33,480	25,110	16,740	-	12,555	32,301	31,428	23,571	15,714	-	11,786
		W	3,636	3,489	2,617	1,745	-	964	3,516	3,375	2,531	1,687	-	932	3,427	3,289	2,467	1,645	-	909
110	43.3	Q(Btu/h)	39,183	38,124	28,593	19,062	-	14,297	36,297	35,316	26,487	17,658	-	13,244	34,188	33,264	24,948	16,632	-	12,474
		W	3,451	3,312	2,484	1,656	-	915	3,332	3,197	2,398	1,599	-	883	3,242	3,112	2,334	1,556	-	860
105	40.6	Q(Btu/h)	39,997	38,916	29,187	19,458	-	14,594	37,111	36,108	27,081	18,054	-	13,541	35,002	34,056	25,542	17,028	-	12,771
		W	3,335	3,200	2,400	1,600	-	884	3,215	3,086	2,314	1,543	-	852	3,126	3,000	2,250	1,500	-	829
100	37.8	Q(Btu/h)	41,070	39,960	29,970	19,980	-	14,985	38,184	37,152	27,864	18,576	-	13,932	36,075	35,100	26,325	17,550	-	13,163
		W	3,174	3,046	2,284	1,523	-	841	3,055	2,932	2,199	1,466	-	810	2,965	2,846	2,134	1,423	-	786
95	35.0	Q(Btu/h)	41,958	40,824	30,618	20,412	-	15,309	39,072	38,016	28,512	19,008	-	14,256	36,963	35,964	26,973	17,982	-	13,487
		W	3,046	2,923	2,192	1,461	-	807	2,926	2,809	2,106	1,404	-	776	2,837	2,723	2,042	1,361	-	752
90	32.2	Q(Btu/h)	42,550	41,400	31,050	20,700	-	15,525	39,664	38,592	28,944	19,296	-	14,472	37,555	36,540	27,405	18,270	-	13,703
		W	2,950	2,831	2,124	1,416	-	782	2,831	2,717	2,038	1,359	-	751	2,742	2,631	1,973	1,316	-	727
85	29.4	Q(Btu/h)	42,994	41,832	31,374	20,916	-	15,687	40,108	39,024	29,268	19,512	-	14,634	37,999	36,972	27,729	18,486	-	13,865
		W	2,861	2,746	2,059	1,373	-	758	2,742	2,631	1,973	1,316	-	727	2,652	2,545	1,909	1,273	-	703
80	26.7	Q(Btu/h)	43,660	42,480	31,860	21,240	-	15,930	40,774	39,672	29,754	19,836	-	14,877	38,665	37,620	28,215	18,810	-	14,108
		W	2,765	2,654	1,991	1,327	-	733	2,646	2,540	1,905	1,270	-	702	2,557	2,454	1,840	1,227	-	678
75	23.9	Q(Btu/h)	44,141	42,948	32,211	21,474	-	16,106	41,255	40,140	30,105	20,070	-	15,053	39,146	38,088	28,566	19,044	-	14,283
		W	2,682	2,574	1,931	1,287	-	711	2,563	2,460	1,845	1,230	-	679	2,473	2,374	1,780	1,187	-	656
70	21.1	Q(Btu/h)	44,400	43,200	32,400	21,600	-	16,200	41,514	40,392	30,294	20,196	-	15,147	39,405	38,340	28,755	19,170	-	14,378
		W	2,616	2,511	1,883	1,256	-	694	2,497	2,397	1,798	1,198	-	662	2,408	2,311	1,733	1,155	-	638
67	19.4	Q(Btu/h)	44,696	43,488	32,616	21,744	-	16,308	41,810	40,680	30,510	20,340	-	15,255	39,701	38,628	28,971	19,314	-	14,486
		W	2,569	2,465	1,849	1,233	-	681	2,450	2,351	1,763	1,175	-	649	2,360	2,265	1,699	1,133	-	626

PEAD-AA36NL
PUZ-AK36NL
2) HEATING

Rated
Q(Btu/h): 38000
W: 2610

Indoor D.B.			77°F / 25°C						68°F / 20°C						59°F / 15°C					
Outdoor W.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
65	18.3	Q(Btu/h)	51,052	48,499	36,375	24,250	-	16,847	52,532	49,905	37,429	24,953	-	17,336	54,212	51,501	38,626	25,751	-	17,890
		W	3,576	3,419	2,564	1,710	-	891	3,331	3,210	2,408	1,605	-	836	3,140	3,002	2,251	1,501	-	782
60	15.6	Q(Btu/h)	48,200	45,790	34,343	22,895	-	15,906	49,680	47,196	35,397	23,598	-	16,394	51,360	48,792	36,594	24,396	-	16,949
		W	3,440	3,289	2,466	1,644	-	857	3,194	3,080	2,310	1,540	-	802	3,003	2,871	2,153	1,436	-	748
55	12.8	Q(Btu/h)	45,000	42,750	32,063	21,375	-	14,850	46,480	44,156	33,117	22,078	-	15,338	48,160	45,752	34,314	22,876	-	15,893
		W	3,303	3,184	2,388	1,592	-	830	3,058	2,975	2,232	1,488	-	775	2,867	2,767	2,075	1,383	-	721
50	10.0	Q(Btu/h)	42,320	40,204	30,153	20,102	-	13,966	43,800	41,610	31,208	20,805	-	14,454	45,480	43,206	32,405	21,603	-	15,008
		W	3,167	3,041	2,280	1,520	-	792	2,921	2,832	2,124	1,416	-	738	2,730	2,623	1,967	1,312	-	683
45	7.2	Q(Btu/h)	36,445	37,240	27,930	18,620	-	12,936	37,925	38,646	28,985	19,323	-	13,424	39,405	40,242	30,182	20,121	-	13,979
		W	3,030	2,871	2,153	1,436	-	748	2,785	2,662	1,997	1,331	-	694	2,594	2,453	1,840	1,227	-	639
40	4.4	Q(Btu/h)	35,520	31,160	23,370	15,580	-	10,824	37,000	32,566	24,425	16,283	-	11,312	38,480	34,162	25,622	17,081	-	11,867
		W	2,948	2,636	1,977	1,318	-	687	2,703	2,480	1,860	1,240	-	646	2,512	2,297	1,723	1,148	-	598
35	1.7	Q(Btu/h)	35,520	26,980	20,235	13,490	-	9,372	37,000	30,020	22,515	15,010	-	10,428	38,480	31,920	23,940	15,960	-	11,088
		W	3,327	2,485	1,864	1,242	-	647	3,174	2,328	1,746	1,164	-	607	2,969	2,145	1,609	1,073	-	559
30	-1.1	Q(Btu/h)	35,520	25,840	19,380	12,920	-	8,976	37,000	27,208	20,406	13,604	-	9,451	38,480	28,348	21,261	14,174	-	9,847
		W	3,916	2,265	1,699	1,133	-	590	3,762	2,109	1,582	1,054	-	549	3,558	1,926	1,445	963	-	502
25	-3.9	Q(Btu/h)	35,520	24,700	18,525	12,350	-	8,580	37,000	26,068	19,551	13,034	-	9,055	38,480	27,208	20,406	13,604	-	9,451
		W	4,249	1,971	1,478	985	-	513	4,095	1,814	1,360	907	-	473	3,890	1,631	1,223	816	-	425
20	-6.7	Q(Btu/h)	35,520	23,560	17,670	11,780	-	8,184	37,000	24,928	18,696	12,464	-	8,659	38,480	26,068	19,551	13,034	-	9,055
		W	4,479	1,931	1,449	966	-	503	4,325	1,775	1,331	887	-	462	4,121	1,592	1,194	796	-	415
15	-9.4	Q(Btu/h)	35,520	22,990	17,243	11,495	-	7,986	37,000	24,358	18,269	12,179	-	8,461	38,480	25,498	19,124	12,749	-	8,857
		W	4,684	1,840	1,380	920	-	479	4,530	1,683	1,263	842	-	439	4,325	1,501	1,126	750	-	391
10	-12.2	Q(Btu/h)	35,520	22,116	16,587	11,058	-	7,682	37,000	23,484	17,613	11,742	-	8,158	38,480	24,624	18,468	12,312	-	8,554
		W	4,812	1,702	1,276	851	-	443	4,658	1,545	1,159	773	-	403	4,453	1,362	1,022	681	-	355
5	-15.0	Q(Btu/h)	35,520	21,641	16,231	10,821	-	7,517	37,000	23,009	17,257	11,505	-	7,993	38,480	24,149	18,112	12,075	-	8,389
		W	4,914	1,696	1,272	848	-	442	4,760	1,539	1,154	770	-	401	4,556	1,356	1,017	678	-	353
0	-17.8	Q(Btu/h)	33,485	21,280	15,960	10,640	-	7,392	34,965	22,648	16,986	11,324	-	7,867	36,445	23,788	17,841	11,894	-	8,263
		W	4,965	1,700	1,275	850	-	443	4,812	1,543	1,157	772	-	402	4,607	1,360	1,020	680	-	354
-4	-20.0	Q(Btu/h)	31,783	21,052	15,789	10,526	-	7,313	33,263	22,420	16,815	11,210	-	7,788	34,743	23,560	17,670	11,780	-	8,184
		W	4,991	1,683	1,262	841	-	438	4,837	1,526	1,145	763	-	398	4,632	1,343	1,007	672	-	350
-13	-25.0	Q(Btu/h)	28,120	20,853	15,640	10,427	-	7,244	29,600	22,221	16,666	11,111	-	7,719	31,080	23,361	17,521	11,681	-	8,115
		W	5,016	1,656	1,242	828	-	431	4,863	1,499	1,125	750	-	391	4,658	1,317	987	658	-	343

PVA-AA36NL
PUZ-AK36NL PUY-AK36NL
1) COOLING

Rated
Q(Btu/h): 36000
W: 2960

Indoor W.B.			71°F / 21.7°C						67°F / 19.4°C						63°F / 17.2°C					
Outdoor D.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
115	46.1	Q(Btu/h)	37,296	36,288	27,216	18,144	-	13,507	34,410	33,480	25,110	16,740	-	12,462	32,301	31,428	23,571	15,714	-	11,698
		W	3,733	3,611	2,708	1,806	-	964	3,611	3,493	2,620	1,746	-	932	3,519	3,404	2,553	1,702	-	909
110	43.3	Q(Btu/h)	39,183	38,124	28,593	19,062	-	14,191	36,297	35,316	26,487	17,658	-	13,145	34,188	33,264	24,948	16,632	-	12,382
		W	3,543	3,428	2,571	1,714	-	915	3,421	3,309	2,482	1,655	-	883	3,329	3,220	2,415	1,610	-	860
105	40.6	Q(Btu/h)	39,997	38,916	29,187	19,458	-	14,485	37,111	36,108	27,081	18,054	-	13,440	35,002	34,056	25,542	17,028	-	12,676
		W	3,424	3,312	2,484	1,656	-	884	3,302	3,194	2,395	1,597	-	852	3,210	3,105	2,329	1,553	-	829
100	37.8	Q(Btu/h)	41,070	39,960	29,970	19,980	-	14,874	38,184	37,152	27,864	18,576	-	13,829	36,075	35,100	26,325	17,550	-	13,065
		W	3,259	3,152	2,364	1,576	-	841	3,137	3,034	2,276	1,517	-	810	3,045	2,945	2,209	1,473	-	786
95	35.0	Q(Btu/h)	41,958	40,824	30,618	20,412	-	15,196	39,072	38,016	28,512	19,008	-	14,150	36,963	35,964	26,973	17,982	-	13,387
		W	3,127	3,025	2,269	1,513	-	807	3,005	2,907	2,180	1,453	-	776	2,913	2,818	2,113	1,409	-	752
90	32.2	Q(Btu/h)	42,550	41,400	31,050	20,700	-	15,410	39,664	38,592	28,944	19,296	-	14,365	37,555	36,540	27,405	18,270	-	13,601
		W	3,029	2,930	2,198	1,465	-	782	2,907	2,812	2,109	1,406	-	751	2,815	2,723	2,042	1,362	-	727
85	29.4	Q(Btu/h)	42,994	41,832	31,374	20,916	-	15,571	40,108	39,024	29,268	19,512	-	14,526	37,999	36,972	27,729	18,486	-	13,762
		W	2,938	2,842	2,131	1,421	-	758	2,815	2,723	2,042	1,362	-	727	2,723	2,634	1,976	1,317	-	703
80	26.7	Q(Btu/h)	43,660	42,480	31,860	21,240	-	15,812	40,774	39,672	29,754	19,836	-	14,767	38,665	37,620	28,215	18,810	-	14,003
		W	2,840	2,747	2,060	1,373	-	733	2,717	2,628	1,971	1,314	-	702	2,625	2,540	1,905	1,270	-	678
75	23.9	Q(Btu/h)	44,141	42,948	32,211	21,474	-	15,986	41,255	40,140	30,105	20,070	-	14,941	39,146	38,088	28,566	19,044	-	14,177
		W	2,754	2,664	1,998	1,332	-	711	2,632	2,546	1,909	1,273	-	679	2,540	2,457	1,843	1,228	-	656
70	21.1	Q(Btu/h)	44,400	43,200	32,400	21,600	-	16,080	41,514	40,392	30,294	20,196	-	15,035	39,405	38,340	28,755	19,170	-	14,271
		W	2,687	2,599	1,949	1,299	-	694	2,564	2,480	1,860	1,240	-	662	2,472	2,392	1,794	1,196	-	638
67	19.4	Q(Btu/h)	44,696	43,488	32,616	21,744	-	16,187	41,810	40,680	30,510	20,340	-	15,142	39,701	38,628	28,971	19,314	-	14,378
		W	2,638	2,552	1,914	1,276	-	681	2,515	2,433	1,825	1,217	-	649	2,424	2,344	1,758	1,172	-	626

PVA-AA36NL
PUZ-AK36NL
2) HEATING

Rated
Q(Btu/h): 38000
W: 2660

Indoor D.B.			77°F / 25°C						68°F / 20°C						59°F / 15°C					
Outdoor W.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
65	18.3	Q(Btu/h)	51,052	48,499	36,375	24,250	-	16,975	52,532	49,905	37,429	24,953	-	17,467	54,212	51,501	38,626	25,751	-	18,025
		W	3,642	3,485	2,613	1,742	-	904	3,392	3,272	2,454	1,636	-	849	3,197	3,059	2,294	1,530	-	794
60	15.6	Q(Btu/h)	48,200	45,790	34,343	22,895	-	16,027	49,680	47,196	35,397	23,598	-	16,519	51,360	48,792	36,594	24,396	-	17,077
		W	3,503	3,352	2,514	1,676	-	869	3,253	3,139	2,354	1,569	-	814	3,058	2,926	2,195	1,463	-	759
55	12.8	Q(Btu/h)	45,000	42,750	32,063	21,375	-	14,963	46,480	44,156	33,117	22,078	-	15,455	48,160	45,752	34,314	22,876	-	16,013
		W	3,364	3,245	2,434	1,623	-	842	3,114	3,032	2,274	1,516	-	787	2,919	2,820	2,115	1,410	-	731
50	10.0	Q(Btu/h)	42,320	40,204	30,153	20,102	-	14,071	43,800	41,610	31,208	20,805	-	14,564	45,480	43,206	32,405	21,603	-	15,122
		W	3,225	3,099	2,324	1,549	-	804	2,975	2,886	2,165	1,443	-	749	2,780	2,673	2,005	1,337	-	693
45	7.2	Q(Btu/h)	36,445	37,240	27,930	18,620	-	13,034	37,925	38,646	28,985	19,323	-	13,526	39,405	40,242	30,182	20,121	-	14,085
		W	3,086	2,926	2,195	1,463	-	759	2,836	2,713	2,035	1,357	-	704	2,641	2,500	1,875	1,250	-	649
40	4.4	Q(Btu/h)	35,520	31,160	23,370	15,580	-	10,906	37,000	32,566	24,425	16,283	-	11,398	38,480	34,162	25,622	17,081	-	11,957
		W	3,002	2,687	2,015	1,343	-	697	2,752	2,527	1,895	1,264	-	656	2,558	2,341	1,756	1,170	-	607
35	1.7	Q(Btu/h)	35,520	26,980	20,235	13,490	-	9,443	37,000	30,020	22,515	15,010	-	10,507	38,480	31,920	23,940	15,960	-	11,172
		W	3,388	2,532	1,899	1,266	-	657	3,232	2,373	1,780	1,186	-	615	3,023	2,187	1,640	1,093	-	567
30	-1.1	Q(Btu/h)	35,520	25,840	19,380	12,920	-	9,044	37,000	27,208	20,406	13,604	-	9,523	38,480	28,348	21,261	14,174	-	9,922
		W	3,988	2,309	1,732	1,154	-	599	3,831	2,149	1,612	1,075	-	558	3,623	1,963	1,472	982	-	509
25	-3.9	Q(Btu/h)	35,520	24,700	18,525	12,350	-	8,645	37,000	26,068	19,551	13,034	-	9,124	38,480	27,208	20,406	13,604	-	9,523
		W	4,326	2,008	1,506	1,004	-	521	4,170	1,849	1,387	924	-	480	3,962	1,663	1,247	831	-	431
20	-6.7	Q(Btu/h)	35,520	23,560	17,670	11,780	-	8,246	37,000	24,928	18,696	12,464	-	8,725	38,480	26,068	19,551	13,034	-	9,124
		W	4,561	1,968	1,476	984	-	511	4,405	1,809	1,357	904	-	469	4,196	1,623	1,217	811	-	421
15	-9.4	Q(Btu/h)	35,520	22,990	17,243	11,495	-	8,047	37,000	24,358	18,269	12,179	-	8,525	38,480	25,498	19,124	12,749	-	8,924
		W	4,769	1,875	1,406	938	-	486	4,613	1,716	1,287	858	-	445	4,405	1,530	1,147	765	-	397
10	-12.2	Q(Btu/h)	35,520	22,116	16,587	11,058	-	7,741	37,000	23,484	17,613	11,742	-	8,219	38,480	24,624	18,468	12,312	-	8,618
		W	4,900	1,734	1,301	867	-	450	4,743	1,575	1,181	787	-	408	4,535	1,389	1,041	694	-	360
5	-15.0	Q(Btu/h)	35,520	21,641	16,231	10,821	-	7,574	37,000	23,009	17,257	11,505	-	8,053	38,480	24,149	18,112	12,075	-	8,452
		W	5,004	1,728	1,296	864	-	448	4,848	1,569	1,176	784	-	407	4,639	1,382	1,037	691	-	359
0	-17.8	Q(Btu/h)	33,485	21,280	15,960	10,640	-	7,448	34,965	22,648	16,986	11,324	-	7,927	36,445	23,788	17,841	11,894	-	8,326
		W	5,056	1,732	1,299	866	-	449	4,900	1,573	1,179	786	-	408	4,691	1,386	1,040	693	-	360
-4	-20.0	Q(Btu/h)	31,783	21,052	15,789	10,526	-	7,368	33,263	22,420	16,815	11,210	-	7,847	34,743	23,560	17,670	11,780	-	8,246
		W	5,082	1,715	1,286	857	-	445	4,926	1,555	1,166	778	-	403	4,717	1,369	1,027	685	-	355
-13	-25.0	Q(Btu/h)	28,120	20,853	15,640	10,427	-	7,299	29,600	22,221	16,666	11,111	-	7,777	31,080	23,361	17,521	11,681	-	8,176
		W	5,108	1,688	1,266	844	-	438	4,952	1,528	1,146	764	-	396	4,743	1,342	1,006	671	-	348

PAA-BA36NL PAA-CA36NL
PUZ-AK36NL PUY-AK36NL
1) COOLING

Rated
Q(Btu/h): 32000
W: 2720

Indoor W.B.			71°F / 21.7°C						67°F / 19.4°C						63°F / 17.2°C					
Outdoor D.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
115	46.1	Q(Btu/h)	36,288	32,256	24,192	-	-	16,330	33,480	29,760	22,320	-	-	15,066	31,428	27,936	20,952	-	-	14,143
		W	3,904	3,318	2,489	-	-	854	3,776	3,210	2,407	-	-	826	3,680	3,128	2,346	-	-	805
110	43.3	Q(Btu/h)	38,124	33,888	25,416	-	-	17,156	35,316	31,392	23,544	-	-	15,892	33,264	29,568	22,176	-	-	14,969
		W	3,706	3,150	2,362	-	-	811	3,578	3,041	2,281	-	-	783	3,482	2,959	2,220	-	-	762
105	40.6	Q(Btu/h)	38,916	34,592	25,944	-	-	17,512	36,108	32,096	24,072	-	-	16,249	34,056	30,272	22,704	-	-	15,325
		W	3,581	3,044	2,283	-	-	783	3,453	2,935	2,201	-	-	755	3,357	2,853	2,140	-	-	734
100	37.8	Q(Btu/h)	39,960	35,520	26,640	-	-	17,982	37,152	33,024	24,768	-	-	16,718	35,100	31,200	23,400	-	-	15,795
		W	3,408	2,897	2,173	-	-	746	3,280	2,788	2,091	-	-	718	3,184	2,706	2,030	-	-	697
95	35.0	Q(Btu/h)	40,824	36,288	27,216	-	-	18,371	38,016	33,792	25,344	-	-	17,107	35,964	31,968	23,976	-	-	16,184
		W	3,270	2,780	2,085	-	-	715	3,142	2,671	2,003	-	-	687	3,046	2,589	1,942	-	-	666
90	32.2	Q(Btu/h)	41,400	36,800	27,600	-	-	18,630	38,592	34,304	25,728	-	-	17,366	36,540	32,480	24,360	-	-	16,443
		W	3,168	2,693	2,020	-	-	693	3,040	2,584	1,938	-	-	665	2,944	2,502	1,877	-	-	644
85	29.4	Q(Btu/h)	41,832	37,184	27,888	-	-	18,824	39,024	34,688	26,016	-	-	17,561	36,972	32,864	24,648	-	-	16,637
		W	3,072	2,611	1,958	-	-	672	2,944	2,502	1,877	-	-	644	2,848	2,421	1,816	-	-	623
80	26.7	Q(Btu/h)	42,480	37,760	28,320	-	-	19,116	39,672	35,264	26,448	-	-	17,852	37,620	33,440	25,080	-	-	16,929
		W	2,970	2,524	1,893	-	-	650	2,842	2,415	1,812	-	-	622	2,746	2,334	1,750	-	-	601
75	23.9	Q(Btu/h)	42,948	38,176	28,632	-	-	19,327	40,140	35,680	26,760	-	-	18,063	38,088	33,856	25,392	-	-	17,140
		W	2,880	2,448	1,836	-	-	630	2,752	2,339	1,754	-	-	602	2,656	2,258	1,693	-	-	581
70	21.1	Q(Btu/h)	43,200	38,400	28,800	-	-	19,440	40,392	35,904	26,928	-	-	18,176	38,340	34,080	25,560	-	-	17,253
		W	2,810	2,388	1,791	-	-	615	2,682	2,279	1,710	-	-	587	2,586	2,198	1,648	-	-	566
67	19.4	Q(Btu/h)	43,488	38,656	28,992	-	-	19,570	40,680	36,160	27,120	-	-	18,306	38,628	34,336	25,752	-	-	17,383
		W	2,758	2,345	1,758	-	-	603	2,630	2,236	1,677	-	-	575	2,534	2,154	1,616	-	-	554

PAA-BA36NL PAA-CA36NL
PUZ-AK36NL
2) HEATING

Rated
Q(Btu/h): 38000
W: 3030

Indoor D.B.			77°F / 25°C						68°F / 20°C						59°F / 15°C					
Outdoor W.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
65	18.3	Q(Btu/h)	53,605	48,499	36,375	-	-	24,505	55,159	49,905	37,429	-	-	25,215	56,923	51,501	38,626	-	-	26,022
		W	4,559	3,969	2,977	-	-	1,651	4,246	3,727	2,795	-	-	1,550	4,002	3,485	2,613	-	-	1,449
60	15.6	Q(Btu/h)	50,610	45,790	34,343	-	-	23,136	52,164	47,196	35,397	-	-	23,846	53,928	48,792	36,594	-	-	24,653
		W	4,385	3,818	2,863	-	-	1,588	4,072	3,575	2,682	-	-	1,487	3,828	3,333	2,500	-	-	1,386
55	12.8	Q(Btu/h)	47,250	42,750	32,063	-	-	21,600	48,804	44,156	33,117	-	-	22,310	50,568	45,752	34,314	-	-	23,117
		W	4,211	3,697	2,772	-	-	1,537	3,898	3,454	2,591	-	-	1,436	3,654	3,212	2,409	-	-	1,336
50	10.0	Q(Btu/h)	44,436	40,204	30,153	-	-	20,314	45,990	41,610	31,208	-	-	21,024	47,754	43,206	32,405	-	-	21,830
		W	4,037	3,530	2,647	-	-	1,468	3,724	3,288	2,466	-	-	1,367	3,480	3,045	2,284	-	-	1,266
45	7.2	Q(Btu/h)	38,267	37,240	27,930	-	-	18,816	39,821	38,646	28,985	-	-	19,526	41,375	40,242	30,182	-	-	20,333
		W	3,863	3,333	2,500	-	-	1,386	3,550	3,091	2,318	-	-	1,285	3,306	2,848	2,136	-	-	1,184
40	4.4	Q(Btu/h)	37,296	31,160	23,370	-	-	15,744	38,850	32,566	24,425	-	-	16,454	40,404	34,162	25,622	-	-	17,261
		W	3,758	3,060	2,295	-	-	1,273	3,445	2,879	2,159	-	-	1,197	3,202	2,666	2,000	-	-	1,109
35	1.7	Q(Btu/h)	37,296	26,980	20,235	-	-	13,632	38,850	30,020	22,515	-	-	15,168	40,404	31,920	23,940	-	-	16,128
		W	4,241	2,885	2,163	-	-	1,200	4,046	2,703	2,027	-	-	1,124	3,785	2,491	1,868	-	-	1,036
30	-1.1	Q(Btu/h)	37,296	25,840	19,380	-	-	13,056	38,850	27,208	20,406	-	-	13,747	40,404	28,348	21,261	-	-	14,323
		W	4,992	2,630	1,973	-	-	1,094	4,796	2,448	1,836	-	-	1,018	4,535	2,236	1,677	-	-	930
25	-3.9	Q(Btu/h)	37,296	24,700	18,525	-	-	12,480	38,850	26,068	19,551	-	-	13,171	40,404	27,208	20,406	-	-	13,747
		W	5,416	2,288	1,716	-	-	951	5,220	2,106	1,579	-	-	876	4,959	1,894	1,420	-	-	788
20	-6.7	Q(Btu/h)	37,296	23,560	17,670	-	-	11,904	38,850	24,928	18,696	-	-	12,595	40,404	26,068	19,551	-	-	13,171
		W	5,709	2,242	1,682	-	-	932	5,514	2,060	1,545	-	-	857	5,253	1,848	1,386	-	-	769
15	-9.4	Q(Btu/h)	37,296	22,990	17,243	-	-	11,616	38,850	24,358	18,269	-	-	12,307	40,404	25,498	19,124	-	-	12,883
		W	5,970	2,136	1,602	-	-	888	5,775	1,954	1,466	-	-	813	5,514	1,742	1,307	-	-	725
10	-12.2	Q(Btu/h)	37,296	22,116	16,587	-	-	11,174	38,850	23,484	17,613	-	-	11,866	40,404	24,624	18,468	-	-	12,442
		W	6,134	1,976	1,482	-	-	822	5,938	1,794	1,345	-	-	746	5,677	1,582	1,186	-	-	658
5	-15.0	Q(Btu/h)	37,296	21,641	16,231	-	-	10,934	38,850	23,009	17,257	-	-	11,626	40,404	24,149	18,112	-	-	12,202
		W	6,264	1,969	1,476	-	-	819	6,068	1,787	1,340	-	-	743	5,807	1,575	1,181	-	-	655
0	-17.8	Q(Btu/h)	35,159	21,280	15,960	-	-	10,752	36,713	22,648	16,986	-	-	11,443	38,267	23,788	17,841	-	-	12,019
		W	6,329	1,973	1,480	-	-	821	6,134	1,791	1,344	-	-	745	5,873	1,579	1,184	-	-	657
-4	-20.0	Q(Btu/h)	33,372	21,052	15,789	-	-	10,637	34,926	22,420	16,815	-	-	11,328	36,480	23,560	17,670	-	-	11,904
		W	6,362	1,953	1,465	-	-	812	6,166	1,772	1,329	-	-	737	5,905	1,559	1,170	-	-	648
-13	-25.0	Q(Btu/h)	29,526	20,853	15,640	-	-	10,536	31,080	22,221	16,666	-	-	11,228	32,634	23,361	17,521	-	-	11,804
		W	6,395	1,922	1,442	-	-	799	6,199	1,741	1,305	-	-	724	5,938	1,529	1,146	-	-	636

PLA-AE42NL
PUZ-AK42NL PUY-AK42NL
1) COOLING

Rated
Q(Btu/h): 42000
W: 3500

Indoor W.B.			71°F / 21.7°C						67°F / 19.4°C						63°F / 17.2°C					
Outdoor D.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
115	46.1	Q(Btu/h)	42,840	42,336	31,752	21,168	-	15,523	39,525	39,060	29,295	19,530	-	14,322	37,103	36,666	27,500	18,333	-	13,444
		W	4,404	4,270	3,203	2,135	-	903	4,260	4,130	3,098	2,065	-	873	4,152	4,025	3,019	2,013	-	851
110	43.3	Q(Btu/h)	45,008	44,478	33,359	22,239	-	16,309	41,693	41,202	30,902	20,601	-	15,107	39,270	38,808	29,106	19,404	-	14,230
		W	4,180	4,053	3,040	2,027	-	857	4,036	3,913	2,935	1,957	-	827	3,928	3,808	2,856	1,904	-	805
105	40.6	Q(Btu/h)	45,943	45,402	34,052	22,701	-	16,647	42,628	42,126	31,595	21,063	-	15,446	40,205	39,732	29,799	19,866	-	14,568
		W	4,040	3,917	2,937	1,958	-	828	3,895	3,777	2,832	1,888	-	798	3,787	3,672	2,754	1,836	-	776
100	37.8	Q(Btu/h)	47,175	46,620	34,965	23,310	-	17,094	43,860	43,344	32,508	21,672	-	15,893	41,438	40,950	30,713	20,475	-	15,015
		W	3,845	3,728	2,796	1,864	-	788	3,700	3,588	2,691	1,794	-	759	3,592	3,483	2,612	1,741	-	736
95	35.0	Q(Btu/h)	48,195	47,628	35,721	23,814	-	17,464	44,880	44,352	33,264	22,176	-	16,262	42,458	41,958	31,469	20,979	-	15,385
		W	3,689	3,577	2,683	1,789	-	756	3,545	3,437	2,578	1,719	-	727	3,437	3,332	2,499	1,666	-	704
90	32.2	Q(Btu/h)	48,875	48,300	36,225	24,150	-	17,710	45,560	45,024	33,768	22,512	-	16,509	43,138	42,630	31,973	21,315	-	15,631
		W	3,574	3,465	2,599	1,733	-	733	3,430	3,325	2,494	1,663	-	703	3,321	3,220	2,415	1,610	-	681
85	29.4	Q(Btu/h)	49,385	48,804	36,603	24,402	-	17,895	46,070	45,528	34,146	22,764	-	16,694	43,648	43,134	32,351	21,567	-	15,816
		W	3,466	3,360	2,520	1,680	-	710	3,321	3,220	2,415	1,610	-	681	3,213	3,115	2,336	1,558	-	659
80	26.7	Q(Btu/h)	50,150	49,560	37,170	24,780	-	18,172	46,835	46,284	34,713	23,142	-	16,971	44,413	43,890	32,918	21,945	-	16,093
		W	3,350	3,248	2,436	1,624	-	687	3,206	3,108	2,331	1,554	-	657	3,097	3,003	2,252	1,502	-	635
75	23.9	Q(Btu/h)	50,703	50,106	37,580	25,053	-	18,372	47,388	46,830	35,123	23,415	-	17,171	44,965	44,436	33,327	22,218	-	16,293
		W	3,249	3,150	2,363	1,575	-	666	3,105	3,010	2,258	1,505	-	636	2,996	2,905	2,179	1,453	-	614
70	21.1	Q(Btu/h)	51,000	50,400	37,800	25,200	-	18,480	47,685	47,124	35,343	23,562	-	17,279	45,263	44,730	33,548	22,365	-	16,401
		W	3,170	3,073	2,305	1,537	-	650	3,025	2,933	2,200	1,467	-	620	2,917	2,828	2,121	1,414	-	598
67	19.4	Q(Btu/h)	51,340	50,736	38,052	25,368	-	18,603	48,025	47,460	35,595	23,730	-	17,402	45,603	45,066	33,800	22,533	-	16,524
		W	3,112	3,017	2,263	1,509	-	638	2,967	2,877	2,158	1,439	-	608	2,859	2,772	2,079	1,386	-	586

PLA-AE42NL
PUZ-AK42NL
2) HEATING

Rated
Q(Btu/h): 45000
W: 3230

Indoor D.B.			77°F / 25°C						68°F / 20°C						59°F / 15°C					
Outdoor W.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
65	18.3	Q(Btu/h)	63,304	57,434	43,075	28,717	-	16,847	65,140	59,099	44,324	29,549	-	17,336	67,223	60,989	45,741	30,494	-	17,890
		W	4,821	4,231	3,173	2,116	-	825	4,490	3,973	2,980	1,986	-	775	4,232	3,715	2,786	1,857	-	725
60	15.6	Q(Btu/h)	59,768	54,225	40,669	27,113	-	15,906	61,603	55,890	41,918	27,945	-	16,394	63,686	57,780	43,335	28,890	-	16,949
		W	4,637	4,070	3,052	2,035	-	794	4,306	3,811	2,859	1,906	-	743	4,048	3,553	2,665	1,777	-	693
55	12.8	Q(Btu/h)	55,800	50,625	37,969	25,313	-	14,850	57,635	52,290	39,218	26,145	-	15,338	59,718	54,180	40,635	27,090	-	15,893
		W	4,453	3,941	2,955	1,970	-	769	4,122	3,682	2,762	1,841	-	718	3,864	3,424	2,568	1,712	-	668
50	10.0	Q(Btu/h)	52,477	47,610	35,708	23,805	-	13,966	54,312	49,275	36,956	24,638	-	14,454	56,395	51,165	38,374	25,583	-	15,008
		W	4,269	3,763	2,822	1,881	-	734	3,938	3,505	2,628	1,752	-	684	3,680	3,246	2,435	1,623	-	633
45	7.2	Q(Btu/h)	45,192	44,100	33,075	22,050	-	12,936	47,027	45,765	34,324	22,883	-	13,424	48,862	47,655	35,741	23,828	-	13,979
		W	4,085	3,553	2,665	1,777	-	693	3,754	3,295	2,471	1,647	-	643	3,496	3,036	2,277	1,518	-	592
40	4.4	Q(Btu/h)	44,045	36,900	27,675	18,450	-	10,824	45,880	38,565	28,924	19,283	-	11,312	47,715	40,455	30,341	20,228	-	11,867
		W	3,974	3,262	2,447	1,631	-	636	3,643	3,069	2,301	1,534	-	599	3,386	2,842	2,132	1,421	-	554
35	1.7	Q(Btu/h)	44,045	31,950	23,963	15,975	-	9,372	45,880	35,550	26,663	17,775	-	10,428	47,715	37,800	28,350	18,900	-	11,088
		W	4,485	3,075	2,306	1,537	-	600	4,278	2,881	2,161	1,441	-	562	4,002	2,655	1,991	1,328	-	518
30	-1.1	Q(Btu/h)	44,045	30,600	22,950	15,300	-	8,976	45,880	32,220	24,165	16,110	-	9,451	47,715	33,570	25,178	16,785	-	9,847
		W	5,279	2,804	2,103	1,402	-	547	5,072	2,610	1,957	1,305	-	509	4,796	2,384	1,788	1,192	-	465
25	-3.9	Q(Btu/h)	44,045	29,250	21,938	14,625	-	8,580	45,880	30,870	23,153	15,435	-	9,055	47,715	32,220	24,165	16,110	-	9,451
		W	5,727	2,439	1,829	1,219	-	476	5,520	2,245	1,684	1,122	-	438	5,244	2,019	1,514	1,009	-	394
20	-6.7	Q(Btu/h)	44,045	27,900	20,925	13,950	-	8,184	45,880	29,520	22,140	14,760	-	8,659	47,715	30,870	23,153	15,435	-	9,055
		W	6,038	2,390	1,793	1,195	-	466	5,831	2,196	1,647	1,098	-	428	5,555	1,970	1,478	985	-	384
15	-9.4	Q(Btu/h)	44,045	27,225	20,419	13,613	-	7,986	45,880	28,845	21,634	14,423	-	8,461	47,715	30,195	22,646	15,098	-	8,857
		W	6,314	2,277	1,708	1,139	-	444	6,107	2,083	1,563	1,042	-	406	5,831	1,857	1,393	929	-	362
10	-12.2	Q(Btu/h)	44,045	26,190	19,643	13,095	-	7,682	45,880	27,810	20,858	13,905	-	8,158	47,715	29,160	21,870	14,580	-	8,554
		W	6,486	2,106	1,579	1,053	-	411	6,279	1,912	1,434	956	-	373	6,003	1,686	1,265	843	-	329
5	-15.0	Q(Btu/h)	44,045	25,628	19,221	12,814	-	7,517	45,880	27,248	20,436	13,624	-	7,993	47,715	28,598	21,448	14,299	-	8,389
		W	6,624	2,099	1,574	1,049	-	409	6,417	1,905	1,429	952	-	372	6,141	1,679	1,259	839	-	327
0	-17.8	Q(Btu/h)	41,521	25,200	18,900	12,600	-	7,392	43,357	26,820	20,115	13,410	-	7,867	45,192	28,170	21,128	14,085	-	8,263
		W	6,693	2,103	1,578	1,052	-	410	6,486	1,910	1,432	955	-	372	6,210	1,683	1,263	842	-	328
-4	-20.0	Q(Btu/h)	39,411	24,930	18,698	12,465	-	7,313	41,246	26,550	19,913	13,275	-	7,788	43,081	27,900	20,925	13,950	-	8,184
		W	6,728	2,082	1,562	1,041	-	406	6,521	1,889	1,416	944	-	368	6,245	1,662	1,247	831	-	324
-13	-25.0	Q(Btu/h)	34,869	24,695	18,521	12,347	-	7,244	36,704	26,315	19,736	13,157	-	7,719	38,539	27,665	20,749	13,832	-	8,115
		W	6,762	2,049	1,537	1,025	-	400	6,555	1,856	1,392	928	-	362	6,279	1,629	1,222	815	-	318

PCA-AK42NL
PUZ-AK42NL PUY-AK42NL
1) COOLING

Rated
Q(Btu/h): 42000
W: 3820

Indoor W.B.			71°F / 21.7°C						67°F / 19.4°C						63°F / 17.2°C					
Outdoor D.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
115	46.1	Q(Btu/h)	42,840	42,336	31,752	21,168	-	13,709	39,525	39,060	29,295	19,530	-	12,648	37,103	36,666	27,500	18,333	-	11,873
		W	4,758	4,660	3,495	2,330	-	1,000	4,602	4,508	3,381	2,254	-	968	4,485	4,393	3,295	2,197	-	943
110	43.3	Q(Btu/h)	45,008	44,478	33,359	22,239	-	14,402	41,693	41,202	30,902	20,601	-	13,342	39,270	38,808	29,106	19,404	-	12,566
		W	4,516	4,424	3,318	2,212	-	950	4,360	4,271	3,203	2,135	-	917	4,243	4,156	3,117	2,078	-	892
105	40.6	Q(Btu/h)	45,943	45,402	34,052	22,701	-	14,702	42,628	42,126	31,595	21,063	-	13,641	40,205	39,732	29,799	19,866	-	12,866
		W	4,364	4,275	3,206	2,137	-	918	4,208	4,122	3,091	2,061	-	885	4,091	4,007	3,005	2,004	-	860
100	37.8	Q(Btu/h)	47,175	46,620	34,965	23,310	-	15,096	43,860	43,344	32,508	21,672	-	14,035	41,438	40,950	30,713	20,475	-	13,260
		W	4,154	4,068	3,051	2,034	-	873	3,998	3,916	2,937	1,958	-	841	3,881	3,801	2,851	1,900	-	816
95	35.0	Q(Btu/h)	48,195	47,628	35,721	23,814	-	15,422	44,880	44,352	33,264	22,176	-	14,362	42,458	41,958	31,469	20,979	-	13,586
		W	3,986	3,904	2,928	1,952	-	838	3,830	3,751	2,813	1,876	-	805	3,713	3,637	2,727	1,818	-	781
90	32.2	Q(Btu/h)	48,875	48,300	36,225	24,150	-	15,640	45,560	45,024	33,768	22,512	-	14,579	43,138	42,630	31,973	21,315	-	13,804
		W	3,861	3,782	2,836	1,891	-	812	3,705	3,629	2,722	1,815	-	779	3,588	3,514	2,636	1,757	-	754
85	29.4	Q(Btu/h)	49,385	48,804	36,603	24,402	-	15,803	46,070	45,528	34,146	22,764	-	14,742	43,648	43,134	32,351	21,567	-	13,967
		W	3,744	3,667	2,750	1,834	-	787	3,588	3,514	2,636	1,757	-	754	3,471	3,400	2,550	1,700	-	730
80	26.7	Q(Btu/h)	50,150	49,560	37,170	24,780	-	16,048	46,835	46,284	34,713	23,142	-	14,987	44,413	43,890	32,918	21,945	-	14,212
		W	3,619	3,545	2,659	1,772	-	761	3,463	3,392	2,544	1,696	-	728	3,346	3,278	2,458	1,639	-	704
75	23.9	Q(Btu/h)	50,703	50,106	37,580	25,053	-	16,225	47,388	46,830	35,123	23,415	-	15,164	44,965	44,436	33,327	22,218	-	14,389
		W	3,510	3,438	2,579	1,719	-	738	3,354	3,285	2,464	1,643	-	705	3,237	3,171	2,378	1,585	-	681
70	21.1	Q(Btu/h)	51,000	50,400	37,800	25,200	-	16,320	47,685	47,124	35,343	23,562	-	15,259	45,263	44,730	33,548	22,365	-	14,484
		W	3,424	3,354	2,515	1,677	-	720	3,268	3,201	2,401	1,601	-	687	3,151	3,087	2,315	1,543	-	663
67	19.4	Q(Btu/h)	51,340	50,736	38,052	25,368	-	16,429	48,025	47,460	35,595	23,730	-	15,368	45,603	45,066	33,800	22,533	-	14,593
		W	3,362	3,293	2,470	1,646	-	707	3,206	3,140	2,355	1,570	-	674	3,089	3,025	2,269	1,513	-	649

PCA-AK42NL
PUZ-AK42NL
2) HEATING

Rated
Q(Btu/h): 45000
W: 3460

Indoor D.B.			77°F / 25°C						68°F / 20°C						59°F / 15°C					
Outdoor W.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
65	18.3	Q(Btu/h)	63,049	57,434	43,075	28,717	-	16,975	64,877	59,099	44,324	29,549	-	17,467	66,952	60,989	45,741	30,494	-	18,025
		W	5,201	4,533	3,399	2,266	-	865	4,843	4,256	3,192	2,128	-	812	4,566	3,979	2,984	1,990	-	759
60	15.6	Q(Btu/h)	59,527	54,225	40,669	27,113	-	16,027	61,355	55,890	41,918	27,945	-	16,519	63,430	57,780	43,335	28,890	-	17,077
		W	5,002	4,360	3,270	2,180	-	832	4,645	4,083	3,062	2,041	-	779	4,367	3,806	2,855	1,903	-	726
55	12.8	Q(Btu/h)	55,575	50,625	37,969	25,313	-	14,963	57,403	52,290	39,218	26,145	-	15,455	59,478	54,180	40,635	27,090	-	16,013
		W	4,804	4,221	3,166	2,111	-	805	4,446	3,944	2,958	1,972	-	752	4,169	3,668	2,751	1,834	-	700
50	10.0	Q(Btu/h)	52,265	47,610	35,708	23,805	-	14,071	54,093	49,275	36,956	24,638	-	14,564	56,168	51,165	38,374	25,583	-	15,122
		W	4,605	4,031	3,023	2,015	-	769	4,248	3,754	2,816	1,877	-	716	3,970	3,477	2,608	1,739	-	663
45	7.2	Q(Btu/h)	45,010	44,100	33,075	22,050	-	13,034	46,837	45,765	34,324	22,883	-	13,526	48,665	47,655	35,741	23,828	-	14,085
		W	4,407	3,806	2,855	1,903	-	726	4,049	3,529	2,647	1,765	-	673	3,772	3,252	2,439	1,626	-	620
40	4.4	Q(Btu/h)	43,867	36,900	27,675	18,450	-	10,906	45,695	38,565	28,924	19,283	-	11,398	47,523	40,455	30,341	20,228	-	11,957
		W	4,288	3,495	2,621	1,747	-	667	3,930	3,287	2,465	1,644	-	627	3,652	3,045	2,284	1,522	-	581
35	1.7	Q(Btu/h)	43,867	31,950	23,963	15,975	-	9,443	45,695	35,550	26,663	17,775	-	10,507	47,523	37,800	28,350	18,900	-	11,172
		W	4,838	3,294	2,470	1,647	-	628	4,615	3,086	2,315	1,543	-	589	4,317	2,844	2,133	1,422	-	543
30	-1.1	Q(Btu/h)	43,867	30,600	22,950	15,300	-	9,044	45,695	32,220	24,165	16,110	-	9,523	47,523	33,570	25,178	16,785	-	9,922
		W	5,694	3,003	2,252	1,502	-	573	5,471	2,796	2,097	1,398	-	533	5,173	2,553	1,915	1,277	-	487
25	-3.9	Q(Btu/h)	43,867	29,250	21,938	14,625	-	8,645	45,695	30,870	23,153	15,435	-	9,124	47,523	32,220	24,165	16,110	-	9,523
		W	6,178	2,612	1,959	1,306	-	498	5,955	2,405	1,804	1,202	-	459	5,657	2,163	1,622	1,081	-	413
20	-6.7	Q(Btu/h)	43,867	27,900	20,925	13,950	-	8,246	45,695	29,520	22,140	14,760	-	8,725	47,523	30,870	23,153	15,435	-	9,124
		W	6,513	2,560	1,920	1,280	-	488	6,290	2,353	1,765	1,176	-	449	5,992	2,111	1,583	1,055	-	403
15	-9.4	Q(Btu/h)	43,867	27,225	20,419	13,613	-	8,047	45,695	28,845	21,634	14,423	-	8,525	47,523	30,195	22,646	15,098	-	8,924
		W	6,811	2,439	1,829	1,220	-	465	6,588	2,232	1,674	1,116	-	426	6,290	1,990	1,492	995	-	380
10	-12.2	Q(Btu/h)	43,867	26,190	19,643	13,095	-	7,741	45,695	27,810	20,858	13,905	-	8,219	47,523	29,160	21,870	14,580	-	8,618
		W	6,997	2,256	1,692	1,128	-	430	6,774	2,048	1,536	1,024	-	391	6,476	1,806	1,355	903	-	345
5	-15.0	Q(Btu/h)	43,867	25,628	19,221	12,814	-	7,574	45,695	27,248	20,436	13,624	-	8,053	47,523	28,598	21,448	14,299	-	8,452
		W	7,146	2,248	1,686	1,124	-	429	6,923	2,040	1,530	1,020	-	389	6,625	1,798	1,349	899	-	343
0	-17.8	Q(Btu/h)	41,354	25,200	18,900	12,600	-	7,448	43,182	26,820	20,115	13,410	-	7,927	45,010	28,170	21,128	14,085	-	8,326
		W	7,220	2,253	1,690	1,127	-	430	6,997	2,046	1,534	1,023	-	390	6,699	1,803	1,353	902	-	344
-4	-20.0	Q(Btu/h)	39,252	24,930	18,698	12,465	-	7,368	41,080	26,550	19,913	13,275	-	7,847	42,908	27,900	20,925	13,950	-	8,246
		W	7,258	2,231	1,673	1,115	-	425	7,034	2,023	1,517	1,011	-	386	6,737	1,781	1,336	890	-	340
-13	-25.0	Q(Btu/h)	34,728	24,695	18,521	12,347	-	7,299	36,556	26,315	19,736	13,157	-	7,777	38,384	27,665	20,749	13,832	-	8,176
		W	7,295	2,195	1,646	1,098	-	419	7,072	1,988	1,491	994	-	379	6,774	1,745	1,309	873	-	333

PEAD-AA42NL
PUZ-AK42NL PUY-AK42NL
1) COOLING

Rated
Q(Btu/h): 44000
W: 3970

Indoor W.B.			71°F / 21.7°C						67°F / 19.4°C						63°F / 17.2°C					
Outdoor D.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
115	46.1	Q(Btu/h)	42,336	44,352	33,264	22,176	-	14,314	39,060	40,920	30,690	20,460	-	13,206	36,666	38,412	28,809	19,206	-	12,397
		W	4,587	4,843	3,633	2,422	-	1,135	4,437	4,685	3,513	2,342	-	1,097	4,324	4,566	3,424	2,283	-	1,070
110	43.3	Q(Btu/h)	44,478	46,596	34,947	23,298	-	15,038	41,202	43,164	32,373	21,582	-	13,930	38,808	40,656	30,492	20,328	-	13,121
		W	4,354	4,597	3,448	2,299	-	1,077	4,204	4,438	3,329	2,219	-	1,040	4,091	4,319	3,240	2,160	-	1,012
105	40.6	Q(Btu/h)	45,402	47,564	35,673	23,782	-	15,350	42,126	44,132	33,099	22,066	-	14,243	39,732	41,624	31,218	20,812	-	13,433
		W	4,207	4,442	3,332	2,221	-	1,041	4,057	4,284	3,213	2,142	-	1,003	3,944	4,165	3,123	2,082	-	976
100	37.8	Q(Btu/h)	46,620	48,840	36,630	24,420	-	15,762	43,344	45,408	34,056	22,704	-	14,654	40,950	42,900	32,175	21,450	-	13,845
		W	4,004	4,228	3,171	2,114	-	990	3,854	4,069	3,052	2,035	-	953	3,741	3,950	2,963	1,975	-	925
95	35.0	Q(Btu/h)	47,628	49,896	37,422	24,948	-	16,103	44,352	46,464	34,848	23,232	-	14,995	41,958	43,956	32,967	21,978	-	14,186
		W	3,843	4,057	3,043	2,029	-	950	3,692	3,899	2,924	1,949	-	913	3,580	3,779	2,835	1,890	-	885
90	32.2	Q(Btu/h)	48,300	50,600	37,950	25,300	-	16,330	45,024	47,168	35,376	23,584	-	15,222	42,630	44,660	33,495	22,330	-	14,413
		W	3,722	3,930	2,948	1,965	-	921	3,572	3,772	2,829	1,886	-	884	3,459	3,652	2,739	1,826	-	856
85	29.4	Q(Btu/h)	48,804	51,128	38,346	25,564	-	16,500	45,528	47,696	35,772	23,848	-	15,393	43,134	45,188	33,891	22,594	-	14,583
		W	3,610	3,811	2,858	1,906	-	893	3,459	3,652	2,739	1,826	-	856	3,346	3,533	2,650	1,767	-	828
80	26.7	Q(Btu/h)	49,560	51,920	38,940	25,960	-	16,756	46,284	48,488	36,366	24,244	-	15,648	43,890	45,980	34,485	22,990	-	14,839
		W	3,489	3,684	2,763	1,842	-	863	3,339	3,525	2,644	1,763	-	826	3,226	3,406	2,555	1,703	-	798
75	23.9	Q(Btu/h)	50,106	52,492	39,369	26,246	-	16,941	46,830	49,060	36,795	24,530	-	15,833	44,436	46,552	34,914	23,276	-	15,024
		W	3,384	3,573	2,680	1,787	-	837	3,234	3,414	2,561	1,707	-	800	3,121	3,295	2,471	1,648	-	772
70	21.1	Q(Btu/h)	50,400	52,800	39,600	26,400	-	17,040	47,124	49,368	37,026	24,684	-	15,932	44,730	46,860	35,145	23,430	-	15,123
		W	3,301	3,486	2,614	1,743	-	817	3,151	3,327	2,495	1,663	-	779	3,038	3,208	2,406	1,604	-	751
67	19.4	Q(Btu/h)	50,736	53,152	39,864	26,576	-	17,154	47,460	49,720	37,290	24,860	-	16,046	45,066	47,212	35,409	23,606	-	15,237
		W	3,241	3,422	2,567	1,711	-	802	3,091	3,263	2,448	1,632	-	764	2,978	3,144	2,358	1,572	-	737

PEAD-AA42NL
PUZ-AK42NL
2) HEATING

Rated
Q(Btu/h): 45000
W: 3400

Indoor D.B.			77°F / 25°C						68°F / 20°C						59°F / 15°C					
Outdoor W.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
65	18.3	Q(Btu/h)	63,432	57,434	43,075	28,717	-	16,975	65,271	59,099	44,324	29,549	-	17,467	67,358	60,989	45,741	30,494	-	18,025
		W	4,991	4,454	3,341	2,227	-	983	4,648	4,182	3,137	2,091	-	923	4,382	3,910	2,933	1,955	-	863
60	15.6	Q(Btu/h)	59,889	54,225	40,669	27,113	-	16,027	61,727	55,890	41,918	27,945	-	16,519	63,815	57,780	43,335	28,890	-	17,077
		W	4,801	4,284	3,213	2,142	-	945	4,458	4,012	3,009	2,006	-	885	4,191	3,740	2,805	1,870	-	825
55	12.8	Q(Btu/h)	55,913	50,625	37,969	25,313	-	14,963	57,751	52,290	39,218	26,145	-	15,455	59,839	54,180	40,635	27,090	-	16,013
		W	4,610	4,148	3,111	2,074	-	915	4,267	3,876	2,907	1,938	-	855	4,001	3,604	2,703	1,802	-	795
50	10.0	Q(Btu/h)	52,583	47,610	35,708	23,805	-	14,071	54,422	49,275	36,956	24,638	-	14,564	56,509	51,165	38,374	25,583	-	15,122
		W	4,420	3,961	2,971	1,981	-	874	4,077	3,689	2,767	1,845	-	814	3,810	3,417	2,563	1,709	-	754
45	7.2	Q(Btu/h)	45,283	44,100	33,075	22,050	-	13,034	47,122	45,765	34,324	22,883	-	13,526	48,961	47,655	35,741	23,828	-	14,085
		W	4,229	3,740	2,805	1,870	-	825	3,886	3,468	2,601	1,734	-	765	3,620	3,196	2,397	1,598	-	705
40	4.4	Q(Btu/h)	44,134	36,900	27,675	18,450	-	10,906	45,973	38,565	28,924	19,283	-	11,398	47,811	40,455	30,341	20,228	-	11,957
		W	4,115	3,434	2,576	1,717	-	758	3,772	3,230	2,423	1,615	-	713	3,505	2,992	2,244	1,496	-	660
35	1.7	Q(Btu/h)	44,134	31,950	23,963	15,975	-	9,443	45,973	35,550	26,663	17,775	-	10,507	47,811	37,800	28,350	18,900	-	11,172
		W	4,643	3,237	2,428	1,618	-	714	4,429	3,033	2,275	1,516	-	669	4,143	2,795	2,096	1,397	-	617
30	-1.1	Q(Btu/h)	44,134	30,600	22,950	15,300	-	9,044	45,973	32,220	24,165	16,110	-	9,523	47,811	33,570	25,178	16,785	-	9,922
		W	5,465	2,951	2,213	1,476	-	651	5,251	2,747	2,060	1,374	-	606	4,965	2,509	1,882	1,255	-	554
25	-3.9	Q(Btu/h)	44,134	29,250	21,938	14,625	-	8,645	45,973	30,870	23,153	15,435	-	9,124	47,811	32,220	24,165	16,110	-	9,523
		W	5,929	2,567	1,925	1,284	-	566	5,715	2,363	1,772	1,182	-	521	5,429	2,125	1,594	1,063	-	469
20	-6.7	Q(Btu/h)	44,134	27,900	20,925	13,950	-	8,246	45,973	29,520	22,140	14,760	-	8,725	47,811	30,870	23,153	15,435	-	9,124
		W	6,251	2,516	1,887	1,258	-	555	6,036	2,312	1,734	1,156	-	510	5,751	2,074	1,556	1,037	-	458
15	-9.4	Q(Btu/h)	44,134	27,225	20,419	13,613	-	8,047	45,973	28,845	21,634	14,423	-	8,525	47,811	30,195	22,646	15,098	-	8,924
		W	6,537	2,397	1,798	1,199	-	529	6,322	2,193	1,645	1,097	-	484	6,036	1,955	1,466	978	-	431
10	-12.2	Q(Btu/h)	44,134	26,190	19,643	13,095	-	7,741	45,973	27,810	20,858	13,905	-	8,219	47,811	29,160	21,870	14,580	-	8,618
		W	6,715	2,217	1,663	1,108	-	489	6,501	2,013	1,510	1,006	-	444	6,215	1,775	1,331	887	-	392
5	-15.0	Q(Btu/h)	44,134	25,628	19,221	12,814	-	7,574	45,973	27,248	20,436	13,624	-	8,053	47,811	28,598	21,448	14,299	-	8,452
		W	6,858	2,209	1,657	1,104	-	487	6,644	2,005	1,504	1,002	-	442	6,358	1,767	1,325	883	-	390
0	-17.8	Q(Btu/h)	41,605	25,200	18,900	12,600	-	7,448	43,444	26,820	20,115	13,410	-	7,927	45,283	28,170	21,128	14,085	-	8,326
		W	6,929	2,214	1,661	1,107	-	488	6,715	2,010	1,508	1,005	-	443	6,429	1,772	1,329	886	-	391
-4	-20.0	Q(Btu/h)	39,490	24,930	18,698	12,465	-	7,368	41,329	26,550	19,913	13,275	-	7,847	43,168	27,900	20,925	13,950	-	8,246
		W	6,965	2,192	1,644	1,096	-	484	6,751	1,988	1,491	994	-	439	6,465	1,750	1,312	875	-	386
-13	-25.0	Q(Btu/h)	34,939	24,695	18,521	12,347	-	7,299	36,778	26,315	19,736	13,157	-	7,777	38,617	27,665	20,749	13,832	-	8,176
		W	7,001	2,157	1,618	1,079	-	476	6,787	1,953	1,465	977	-	431	6,501	1,715	1,286	858	-	378

PVA-AA42NL
PUZ-AK42NL PUY-AK42NL
1) COOLING

Rated
Q(Btu/h): 42000
W: 3760

Indoor W.B.			71°F / 21.7°C						67°F / 19.4°C						63°F / 17.2°C					
Outdoor D.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
115	46.1	Q(Btu/h)	44,352	42,336	31,752	21,168	-	14,213	40,920	39,060	29,295	19,530	-	13,113	38,412	36,666	27,500	18,333	-	12,309
		W	4,843	4,587	3,440	2,294	-	1,098	4,685	4,437	3,328	2,218	-	1,062	4,566	4,324	3,243	2,162	-	1,035
110	43.3	Q(Btu/h)	46,596	44,478	33,359	22,239	-	14,932	43,164	41,202	30,902	20,601	-	13,832	40,656	38,808	29,106	19,404	-	13,028
		W	4,597	4,354	3,266	2,177	-	1,042	4,438	4,204	3,153	2,102	-	1,006	4,319	4,091	3,068	2,045	-	979
105	40.6	Q(Btu/h)	47,564	45,402	34,052	22,701	-	15,242	44,132	42,126	31,595	21,063	-	14,142	41,624	39,732	29,799	19,866	-	13,339
		W	4,442	4,207	3,156	2,104	-	1,007	4,284	4,057	3,043	2,029	-	971	4,165	3,944	2,958	1,972	-	944
100	37.8	Q(Btu/h)	48,840	46,620	34,965	23,310	-	15,651	45,408	43,344	32,508	21,672	-	14,551	42,900	40,950	30,713	20,475	-	13,748
		W	4,228	4,004	3,003	2,002	-	959	4,069	3,854	2,891	1,927	-	923	3,950	3,741	2,806	1,871	-	896
95	35.0	Q(Btu/h)	49,896	47,628	35,721	23,814	-	15,989	46,464	44,352	33,264	22,176	-	14,890	43,956	41,958	31,469	20,979	-	14,086
		W	4,057	3,843	2,882	1,921	-	920	3,899	3,692	2,769	1,846	-	884	3,779	3,580	2,685	1,790	-	857
90	32.2	Q(Btu/h)	50,600	48,300	36,225	24,150	-	16,215	47,168	45,024	33,768	22,512	-	15,115	44,660	42,630	31,973	21,315	-	14,312
		W	3,930	3,722	2,792	1,861	-	891	3,772	3,572	2,679	1,786	-	855	3,652	3,459	2,594	1,730	-	828
85	29.4	Q(Btu/h)	51,128	48,804	36,603	24,402	-	16,384	47,696	45,528	34,146	22,764	-	15,284	45,188	43,134	32,351	21,567	-	14,481
		W	3,811	3,610	2,707	1,805	-	864	3,652	3,459	2,594	1,730	-	828	3,533	3,346	2,510	1,673	-	801
80	26.7	Q(Btu/h)	51,920	49,560	37,170	24,780	-	16,638	48,488	46,284	34,713	23,142	-	15,538	45,980	43,890	32,918	21,945	-	14,735
		W	3,684	3,489	2,617	1,745	-	835	3,525	3,339	2,504	1,669	-	799	3,406	3,226	2,420	1,613	-	772
75	23.9	Q(Btu/h)	52,492	50,106	37,580	25,053	-	16,821	49,060	46,830	35,123	23,415	-	15,722	46,552	44,436	33,327	22,218	-	14,918
		W	3,573	3,384	2,538	1,692	-	810	3,414	3,234	2,425	1,617	-	774	3,295	3,121	2,341	1,560	-	747
70	21.1	Q(Btu/h)	52,800	50,400	37,800	25,200	-	16,920	49,368	47,124	35,343	23,562	-	15,820	46,860	44,730	33,548	22,365	-	15,017
		W	3,486	3,301	2,476	1,651	-	790	3,327	3,151	2,363	1,575	-	754	3,208	3,038	2,279	1,519	-	727
67	19.4	Q(Btu/h)	53,152	50,736	38,052	25,368	-	17,033	49,720	47,460	35,595	23,730	-	15,933	47,212	45,066	33,800	22,533	-	15,129
		W	3,422	3,241	2,431	1,621	-	776	3,263	3,091	2,318	1,545	-	740	3,144	2,978	2,233	1,489	-	713

PVA-AA42NL
PUZ-AK42NL
2) HEATING

Rated
Q(Btu/h): 46000
W: 3420

Indoor D.B.			77°F / 25°C						68°F / 20°C						59°F / 15°C					
Outdoor W.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
65	18.3	Q(Btu/h)	63,432	58,710	44,032	29,355	-	16,975	65,271	60,412	45,309	30,206	-	17,467	67,358	62,344	46,758	31,172	-	18,025
		W	4,952	4,480	3,360	2,240	-	930	4,612	4,207	3,155	2,103	-	873	4,347	3,933	2,950	1,967	-	817
60	15.6	Q(Btu/h)	59,889	55,430	41,573	27,715	-	16,027	61,727	57,132	42,849	28,566	-	16,519	63,815	59,064	44,298	29,532	-	17,077
		W	4,763	4,309	3,232	2,155	-	895	4,423	4,036	3,027	2,018	-	838	4,158	3,762	2,822	1,881	-	781
55	12.8	Q(Btu/h)	55,913	51,750	38,813	25,875	-	14,963	57,751	53,452	40,089	26,726	-	15,455	59,839	55,384	41,538	27,692	-	16,013
		W	4,574	4,172	3,129	2,086	-	866	4,234	3,899	2,924	1,949	-	809	3,969	3,625	2,719	1,813	-	753
50	10.0	Q(Btu/h)	52,583	48,668	36,501	24,334	-	14,071	54,422	50,370	37,778	25,185	-	14,564	56,509	52,302	39,227	26,151	-	15,122
		W	4,385	3,984	2,988	1,992	-	827	4,045	3,711	2,783	1,855	-	770	3,780	3,437	2,578	1,719	-	714
45	7.2	Q(Btu/h)	45,283	45,080	33,810	22,540	-	13,034	47,122	46,782	35,087	23,391	-	13,526	48,961	48,714	36,536	24,357	-	14,085
		W	4,196	3,762	2,822	1,881	-	781	3,856	3,488	2,616	1,744	-	724	3,591	3,215	2,411	1,607	-	667
40	4.4	Q(Btu/h)	44,134	37,720	28,290	18,860	-	10,906	45,973	39,422	29,567	19,711	-	11,398	47,811	41,354	31,016	20,677	-	11,957
		W	4,082	3,454	2,591	1,727	-	717	3,742	3,249	2,437	1,625	-	675	3,478	3,010	2,257	1,505	-	625
35	1.7	Q(Btu/h)	44,134	32,660	24,495	16,330	-	9,443	45,973	36,340	27,255	18,170	-	10,507	47,811	38,640	28,980	19,320	-	11,172
		W	4,607	3,256	2,442	1,628	-	676	4,394	3,051	2,288	1,525	-	633	4,111	2,811	2,108	1,406	-	584
30	-1.1	Q(Btu/h)	44,134	31,280	23,460	15,640	-	9,044	45,973	32,936	24,702	16,468	-	9,523	47,811	34,316	25,737	17,158	-	9,922
		W	5,422	2,969	2,226	1,484	-	616	5,209	2,763	2,073	1,382	-	574	4,926	2,524	1,893	1,262	-	524
25	-3.9	Q(Btu/h)	44,134	29,900	22,425	14,950	-	8,645	45,973	31,556	23,667	15,778	-	9,124	47,811	32,936	24,702	16,468	-	9,523
		W	5,883	2,582	1,937	1,291	-	536	5,670	2,377	1,783	1,188	-	493	5,387	2,138	1,603	1,069	-	444
20	-6.7	Q(Btu/h)	44,134	28,520	21,390	14,260	-	8,246	45,973	30,176	22,632	15,088	-	8,725	47,811	31,556	23,667	15,778	-	9,124
		W	6,202	2,531	1,898	1,265	-	525	5,989	2,326	1,744	1,163	-	483	5,705	2,086	1,565	1,043	-	433
15	-9.4	Q(Btu/h)	44,134	27,830	20,873	13,915	-	8,047	45,973	29,486	22,115	14,743	-	8,525	47,811	30,866	23,150	15,433	-	8,924
		W	6,485	2,411	1,808	1,206	-	501	6,272	2,206	1,654	1,103	-	458	5,989	1,967	1,475	983	-	408
10	-12.2	Q(Btu/h)	44,134	26,772	20,079	13,386	-	7,741	45,973	28,428	21,321	14,214	-	8,219	47,811	29,808	22,356	14,904	-	8,618
		W	6,662	2,230	1,672	1,115	-	463	6,450	2,025	1,518	1,012	-	420	6,166	1,785	1,339	893	-	371
5	-15.0	Q(Btu/h)	44,134	26,197	19,648	13,099	-	7,574	45,973	27,853	20,890	13,927	-	8,053	47,811	29,233	21,925	14,617	-	8,452
		W	6,804	2,222	1,666	1,111	-	461	6,591	2,017	1,513	1,008	-	419	6,308	1,777	1,333	889	-	369
0	-17.8	Q(Btu/h)	41,605	25,760	19,320	12,880	-	7,448	43,444	27,416	20,562	13,708	-	7,927	45,283	28,796	21,597	14,398	-	8,326
		W	6,875	2,227	1,670	1,114	-	462	6,662	2,022	1,516	1,011	-	420	6,379	1,783	1,337	891	-	370
-4	-20.0	Q(Btu/h)	39,490	25,484	19,113	12,742	-	7,368	41,329	27,140	20,355	13,570	-	7,847	43,168	28,520	21,390	14,260	-	8,246
		W	6,910	2,205	1,654	1,102	-	458	6,698	2,000	1,500	1,000	-	415	6,414	1,760	1,320	880	-	365
-13	-25.0	Q(Btu/h)	34,939	25,243	18,933	12,622	-	7,299	36,778	26,899	20,175	13,450	-	7,777	38,617	28,279	21,210	14,140	-	8,176
		W	6,946	2,170	1,627	1,085	-	450	6,733	1,965	1,474	982	-	408	6,450	1,725	1,294	863	-	358

PAA-BA42NL PAA-CA42NL
PUZ-AK42NL PUY-AK42NL

Rated
Q(Btu/h): 42000
W: 4040

1) COOLING

Indoor W.B.			71°F / 21.7°C						67°F / 19.4°C						63°F / 17.2°C					
Outdoor D.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
115	46.1	Q(Btu/h)	43,344	42,336	31,752	21,168	-	15,523	39,990	39,060	29,295	19,530	-	14,322	37,539	36,666	27,500	18,333	-	13,444
		W	5,124	4,929	3,697	2,464	-	1,232	4,956	4,767	3,575	2,384	-	1,192	4,830	4,646	3,485	2,323	-	1,162
110	43.3	Q(Btu/h)	45,537	44,478	33,359	22,239	-	16,309	42,183	41,202	30,902	20,601	-	15,107	39,732	38,808	29,106	19,404	-	14,230
		W	4,864	4,678	3,509	2,339	-	1,170	4,696	4,517	3,388	2,258	-	1,129	4,570	4,396	3,297	2,198	-	1,099
105	40.6	Q(Btu/h)	46,483	45,402	34,052	22,701	-	16,647	43,129	42,126	31,595	21,063	-	15,446	40,678	39,732	29,799	19,866	-	14,568
		W	4,700	4,521	3,391	2,260	-	1,130	4,532	4,359	3,269	2,180	-	1,090	4,406	4,238	3,178	2,119	-	1,059
100	37.8	Q(Btu/h)	47,730	46,620	34,965	23,310	-	17,094	44,376	43,344	32,508	21,672	-	15,893	41,925	40,950	30,713	20,475	-	15,015
		W	4,473	4,303	3,227	2,151	-	1,076	4,305	4,141	3,106	2,071	-	1,035	4,179	4,020	3,015	2,010	-	1,005
95	35.0	Q(Btu/h)	48,762	47,628	35,721	23,814	-	17,464	45,408	44,352	33,264	22,176	-	16,262	42,957	41,958	31,469	20,979	-	15,385
		W	4,292	4,129	3,097	2,064	-	1,032	4,124	3,967	2,975	1,984	-	992	3,998	3,846	2,885	1,923	-	962
90	32.2	Q(Btu/h)	49,450	48,300	36,225	24,150	-	17,710	46,096	45,024	33,768	22,512	-	16,509	43,645	42,630	31,973	21,315	-	15,631
		W	4,158	4,000	3,000	2,000	-	1,000	3,990	3,838	2,879	1,919	-	960	3,864	3,717	2,788	1,858	-	929
85	29.4	Q(Btu/h)	49,966	48,804	36,603	24,402	-	17,895	46,612	45,528	34,146	22,764	-	16,694	44,161	43,134	32,351	21,567	-	15,816
		W	4,032	3,878	2,909	1,939	-	970	3,864	3,717	2,788	1,858	-	929	3,738	3,596	2,697	1,798	-	899
80	26.7	Q(Btu/h)	50,740	49,560	37,170	24,780	-	18,172	47,386	46,284	34,713	23,142	-	16,971	44,935	43,890	32,918	21,945	-	16,093
		W	3,898	3,749	2,812	1,875	-	937	3,730	3,588	2,691	1,794	-	897	3,604	3,466	2,600	1,733	-	867
75	23.9	Q(Btu/h)	51,299	50,106	37,580	25,053	-	18,372	47,945	46,830	35,123	23,415	-	17,171	45,494	44,436	33,327	22,218	-	16,293
		W	3,780	3,636	2,727	1,818	-	909	3,612	3,474	2,606	1,737	-	869	3,486	3,353	2,515	1,677	-	838
70	21.1	Q(Btu/h)	51,600	50,400	37,800	25,200	-	18,480	48,246	47,124	35,343	23,562	-	17,279	45,795	44,730	33,548	22,365	-	16,401
		W	3,688	3,547	2,660	1,774	-	887	3,520	3,386	2,539	1,693	-	846	3,394	3,264	2,448	1,632	-	816
67	19.4	Q(Btu/h)	51,944	50,736	38,052	25,368	-	18,603	48,590	47,460	35,595	23,730	-	17,402	46,139	45,066	33,800	22,533	-	16,524
		W	3,620	3,482	2,612	1,741	-	871	3,452	3,321	2,491	1,660	-	830	3,326	3,200	2,400	1,600	-	800

PAA-BA42NL PAA-CA42NL
PUZ-AK42NL
2) HEATING

Rated
Q(Btu/h): 46000
W: 4030

Indoor D.B.			77°F / 25°C						68°F / 20°C						59°F / 15°C					
Outdoor W.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
65	18.3	Q(Btu/h)	63,815	58,710	44,032	29,355	-	24,122	65,665	60,412	45,309	30,206	-	24,821	67,765	62,344	46,758	31,172	-	25,615
		W	6,078	5,279	3,959	2,640	-	1,664	5,661	4,957	3,718	2,478	-	1,562	5,336	4,635	3,476	2,317	-	1,461
60	15.6	Q(Btu/h)	60,250	55,430	41,573	27,715	-	22,775	62,100	57,132	42,849	28,566	-	23,474	64,200	59,064	44,298	29,532	-	24,268
		W	5,846	5,078	3,808	2,539	-	1,600	5,429	4,755	3,567	2,378	-	1,499	5,104	4,433	3,325	2,217	-	1,397
55	12.8	Q(Btu/h)	56,250	51,750	38,813	25,875	-	21,263	58,100	53,452	40,089	26,726	-	21,962	60,200	55,384	41,538	27,692	-	22,756
		W	5,614	4,917	3,687	2,458	-	1,549	5,197	4,594	3,446	2,297	-	1,448	4,872	4,272	3,204	2,136	-	1,346
50	10.0	Q(Btu/h)	52,900	48,668	36,501	24,334	-	19,996	54,750	50,370	37,778	25,185	-	20,696	56,850	52,302	39,227	26,151	-	21,489
		W	5,382	4,695	3,521	2,347	-	1,480	4,965	4,373	3,279	2,186	-	1,378	4,640	4,050	3,038	2,025	-	1,276
45	7.2	Q(Btu/h)	45,556	45,080	33,810	22,540	-	18,522	47,406	46,782	35,087	23,391	-	19,221	49,256	48,714	36,536	24,357	-	20,015
		W	5,150	4,433	3,325	2,217	-	1,397	4,733	4,111	3,083	2,055	-	1,295	4,408	3,788	2,841	1,894	-	1,194
40	4.4	Q(Btu/h)	44,400	37,720	28,290	18,860	-	15,498	46,250	39,422	29,567	19,711	-	16,197	48,100	41,354	31,016	20,677	-	16,991
		W	5,011	4,070	3,053	2,035	-	1,283	4,594	3,829	2,871	1,914	-	1,207	4,269	3,546	2,660	1,773	-	1,118
35	1.7	Q(Btu/h)	44,400	32,660	24,495	16,330	-	13,419	46,250	36,340	27,255	18,170	-	14,931	48,100	38,640	28,980	19,320	-	15,876
		W	5,655	3,837	2,877	1,918	-	1,209	5,394	3,595	2,696	1,797	-	1,133	5,046	3,313	2,484	1,656	-	1,044
30	-1.1	Q(Btu/h)	44,400	31,280	23,460	15,640	-	12,852	46,250	32,936	24,702	16,468	-	13,532	48,100	34,316	25,737	17,158	-	14,099
		W	6,656	3,498	2,624	1,749	-	1,102	6,395	3,256	2,442	1,628	-	1,026	6,047	2,974	2,231	1,487	-	937
25	-3.9	Q(Btu/h)	44,400	29,900	22,425	14,950	-	12,285	46,250	31,556	23,667	15,778	-	12,965	48,100	32,936	24,702	16,468	-	13,532
		W	7,221	3,043	2,282	1,521	-	959	6,960	2,801	2,101	1,400	-	883	6,612	2,519	1,889	1,259	-	794
20	-6.7	Q(Btu/h)	44,400	28,520	21,390	14,260	-	11,718	46,250	30,176	22,632	15,088	-	12,398	48,100	31,556	23,667	15,778	-	12,965
		W	7,613	2,982	2,237	1,491	-	940	7,352	2,740	2,055	1,370	-	864	7,004	2,458	1,844	1,229	-	775
15	-9.4	Q(Btu/h)	44,400	27,830	20,873	13,915	-	11,435	46,250	29,486	22,115	14,743	-	12,115	48,100	30,866	23,150	15,433	-	12,682
		W	7,961	2,841	2,131	1,421	-	895	7,700	2,599	1,950	1,300	-	819	7,352	2,317	1,738	1,159	-	730
10	-12.2	Q(Btu/h)	44,400	26,772	20,079	13,386	-	11,000	46,250	28,428	21,321	14,214	-	11,680	48,100	29,808	22,356	14,904	-	12,247
		W	8,178	2,628	1,971	1,314	-	828	7,917	2,386	1,789	1,193	-	752	7,569	2,104	1,578	1,052	-	663
5	-15.0	Q(Btu/h)	44,400	26,197	19,648	13,099	-	10,764	46,250	27,853	20,890	13,927	-	11,444	48,100	29,233	21,925	14,617	-	12,011
		W	8,352	2,618	1,964	1,309	-	825	8,091	2,376	1,782	1,188	-	749	7,743	2,094	1,571	1,047	-	660
0	-17.8	Q(Btu/h)	41,856	25,760	19,320	12,880	-	10,584	43,706	27,416	20,562	13,708	-	11,264	45,556	28,796	21,597	14,398	-	11,831
		W	8,439	2,624	1,968	1,312	-	827	8,178	2,383	1,787	1,191	-	751	7,830	2,100	1,575	1,050	-	662
-4	-20.0	Q(Btu/h)	39,729	25,484	19,113	12,742	-	10,471	41,579	27,140	20,355	13,570	-	11,151	43,429	28,520	21,390	14,260	-	11,718
		W	8,483	2,598	1,949	1,299	-	819	8,222	2,356	1,767	1,178	-	743	7,874	2,074	1,556	1,037	-	654
-13	-25.0	Q(Btu/h)	35,150	25,243	18,933	12,622	-	10,372	37,000	26,899	20,175	13,450	-	11,052	38,850	28,279	21,210	14,140	-	11,619
		W	8,526	2,557	1,918	1,278	-	806	8,265	2,315	1,736	1,158	-	730	7,917	2,033	1,525	1,016	-	641

PLA-AE48NL
PUZ-AK48NL PUY-AK48NL
1) COOLING

Rated
Q(Btu/h): 48000
W: 4573

Indoor W.B.			71°F / 21.7°C						67°F / 19.4°C						63°F / 17.2°C					
Outdoor D.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
115	46.1	Q(Btu/h)	49,392	48,384	36,288	24,192	-	17,136	45,570	44,640	33,480	22,320	-	15,810	42,777	41,904	31,428	20,952	-	14,841
		W	5,856	5,579	4,184	2,790	-	1,232	5,664	5,396	4,047	2,698	-	1,192	5,520	5,259	3,944	2,629	-	1,162
110	43.3	Q(Btu/h)	51,891	50,832	38,124	25,416	-	18,003	48,069	47,088	35,316	23,544	-	16,677	45,276	44,352	33,264	22,176	-	15,708
		W	5,558	5,296	3,972	2,648	-	1,170	5,366	5,113	3,834	2,556	-	1,129	5,222	4,975	3,732	2,488	-	1,099
105	40.6	Q(Btu/h)	52,969	51,888	38,916	25,944	-	18,377	49,147	48,144	36,108	24,072	-	17,051	46,354	45,408	34,056	22,704	-	16,082
		W	5,371	5,117	3,838	2,559	-	1,130	5,179	4,934	3,701	2,467	-	1,090	5,035	4,797	3,598	2,399	-	1,059
100	37.8	Q(Btu/h)	54,390	53,280	39,960	26,640	-	18,870	50,568	49,536	37,152	24,768	-	17,544	47,775	46,800	35,100	23,400	-	16,575
		W	5,112	4,870	3,653	2,435	-	1,076	4,920	4,687	3,515	2,344	-	1,035	4,776	4,550	3,413	2,275	-	1,005
95	35.0	Q(Btu/h)	55,566	54,432	40,824	27,216	-	19,278	51,744	50,688	38,016	25,344	-	17,952	48,951	47,952	35,964	23,976	-	16,983
		W	4,906	4,674	3,505	2,337	-	1,032	4,714	4,491	3,368	2,245	-	992	4,570	4,353	3,265	2,177	-	962
90	32.2	Q(Btu/h)	56,350	55,200	41,400	27,600	-	19,550	52,528	51,456	38,592	25,728	-	18,224	49,735	48,720	36,540	24,360	-	17,255
		W	4,752	4,527	3,395	2,264	-	1,000	4,560	4,344	3,258	2,172	-	960	4,416	4,207	3,155	2,104	-	929
85	29.4	Q(Btu/h)	56,938	55,776	41,832	27,888	-	19,754	53,116	52,032	39,024	26,016	-	18,428	50,323	49,296	36,972	24,648	-	17,459
		W	4,608	4,390	3,293	2,195	-	970	4,416	4,207	3,155	2,104	-	929	4,272	4,070	3,052	2,035	-	899
80	26.7	Q(Btu/h)	57,820	56,640	42,480	28,320	-	20,060	53,998	52,896	39,672	26,448	-	18,734	51,205	50,160	37,620	25,080	-	17,765
		W	4,454	4,244	3,183	2,122	-	937	4,262	4,061	3,046	2,030	-	897	4,118	3,924	2,943	1,962	-	867
75	23.9	Q(Btu/h)	58,457	57,264	42,948	28,632	-	20,281	54,635	53,520	40,140	26,760	-	18,955	51,842	50,784	38,088	25,392	-	17,986
		W	4,320	4,116	3,087	2,058	-	909	4,128	3,933	2,950	1,966	-	869	3,984	3,796	2,847	1,898	-	838
70	21.1	Q(Btu/h)	58,800	57,600	43,200	28,800	-	20,400	54,978	53,856	40,392	26,928	-	19,074	52,185	51,120	38,340	25,560	-	18,105
		W	4,214	4,015	3,011	2,008	-	887	4,022	3,832	2,874	1,916	-	846	3,878	3,695	2,771	1,847	-	816
67	19.4	Q(Btu/h)	59,192	57,984	43,488	28,992	-	20,536	55,370	54,240	40,680	27,120	-	19,210	52,577	51,504	38,628	25,752	-	18,241
		W	4,138	3,942	2,956	1,971	-	871	3,946	3,759	2,819	1,880	-	830	3,802	3,622	2,716	1,811	-	800

PLA-AE48NL
PUZ-AK48NL
2) HEATING

Rated
Q(Btu/h): 54000
W: 4510

Indoor D.B.			77°F / 25°C						68°F / 20°C						59°F / 15°C					
Outdoor W.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
65	18.3	Q(Btu/h)	76578	68920	51690	34460	-	21187	78798	70918	53189	35459	-	21801	81318	73186	54890	36593	-	22498
		W	6838	5908	4431	2954	-	1192	6368	5547	4160	2774	-	1119	6003	5187	3890	2593	-	1047
60	15.6	Q(Btu/h)	72300	65070	48803	32535	-	20003	74520	67068	50301	33534	-	20617	77040	69336	52002	34668	-	21314
		W	6577	5683	4262	2841	-	1147	6107	5322	3991	2661	-	1074	5742	4961	3721	2481	-	1001
55	12.8	Q(Btu/h)	67500	60750	45563	30375	-	18675	69720	62748	47061	31374	-	19289	72240	65016	48762	32508	-	19986
		W	6316	5502	4127	2751	-	1110	5846	5141	3856	2571	-	1037	5481	4781	3585	2390	-	965
50	10.0	Q(Btu/h)	63480	57132	42849	28566	-	17563	65700	59130	44348	29565	-	18177	68220	61398	46049	30699	-	18874
		W	6055	5254	3941	2627	-	1060	5585	4893	3670	2447	-	987	5220	4533	3399	2266	-	915
45	7.2	Q(Btu/h)	52768	52920	39690	26460	-	16268	54911	54918	41189	27459	-	16882	57054	57186	42890	28593	-	17579
		W	5794	4961	3721	2481	-	1001	5324	4600	3450	2300	-	928	4959	4239	3180	2120	-	855
40	4.4	Q(Btu/h)	51429	44280	33210	22140	-	13612	53571	46278	34709	23139	-	14226	55714	48546	36410	24273	-	14923
		W	5638	4555	3416	2278	-	919	5168	4285	3213	2142	-	865	4802	3969	2977	1984	-	801
35	1.7	Q(Btu/h)	51429	38340	28755	19170	-	11786	53571	42660	31995	21330	-	13114	55714	45360	34020	22680	-	13944
		W	6008	4294	3220	2147	-	866	5731	4023	3017	2011	-	812	5361	3707	2780	1854	-	748
30	-1.1	Q(Btu/h)	51429	36720	27540	18360	-	11288	53571	38664	28998	19332	-	11886	55714	40284	30213	20142	-	12384
		W	7071	3915	2936	1957	-	790	6794	3644	2733	1822	-	735	6424	3328	2496	1664	-	672
25	-3.9	Q(Btu/h)	51429	35100	26325	17550	-	10790	53571	37044	27783	18522	-	11388	55714	38664	28998	19332	-	11886
		W	7672	3405	2554	1703	-	687	7395	3134	2351	1567	-	632	7025	2819	2114	1409	-	569
20	-6.7	Q(Btu/h)	51429	33480	25110	16740	-	10292	53571	35424	26568	17712	-	10890	55714	37044	27783	18522	-	11388
		W	8088	3337	2503	1669	-	673	7811	3067	2300	1533	-	619	7441	2751	2063	1376	-	555
15	-9.4	Q(Btu/h)	51429	32670	24503	16335	-	10043	53571	34614	25961	17307	-	10641	55714	36234	27176	18117	-	11139
		W	8458	3180	2385	1590	-	642	8181	2909	2182	1454	-	587	7811	2593	1945	1297	-	523
10	-12.2	Q(Btu/h)	51429	31428	23571	15714	-	9661	53571	33372	25029	16686	-	10259	55714	34992	26244	17496	-	10757
		W	8689	2941	2205	1470	-	593	8412	2670	2002	1335	-	539	8042	2354	1766	1177	-	475
5	-15.0	Q(Btu/h)	51429	30753	23065	15377	-	9454	53571	32697	24523	16349	-	10051	55714	34317	25738	17159	-	10549
		W	8874	2930	2198	1465	-	591	8597	2660	1995	1330	-	537	8227	2344	1758	1172	-	473
0	-17.8	Q(Btu/h)	48482	30240	22680	15120	-	9296	50625	32184	24138	16092	-	9894	52768	33804	25353	16902	-	10392
		W	8966	2937	2203	1468	-	593	8689	2666	2000	1333	-	538	8319	2351	1763	1175	-	474
-4	-20.0	Q(Btu/h)	46018	29916	22437	14958	-	9196	48161	31860	23895	15930	-	9794	50304	33480	25110	16740	-	10292
		W	9013	2908	2181	1454	-	587	8735	2637	1978	1318	-	532	8366	2321	1741	1161	-	468
-13	-25.0	Q(Btu/h)	40714	29634	22225	14817	-	9110	42857	31578	23683	15789	-	9707	45000	33198	24898	16599	-	10205
		W	9059	2861	2146	1431	-	577	8782	2591	1943	1295	-	523	8412	2275	1706	1138	-	459

PVA-AA48NL
PUZ-AK48NL PUY-AK48NL
1) COOLING

Rated
Q(Btu/h): 48000
W: 4450

Indoor W.B.			71°F / 21.7°C						67°F / 19.4°C						63°F / 17.2°C					
Outdoor D.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
115	46.1	Q(Btu/h)	48,384	48,384	36,288	24,192	-	18,245	44,640	44,640	33,480	22,320	-	16,833	41,904	41,904	31,428	20,952	-	15,801
		W	5,429	5,429	4,072	2,715	-	1,318	5,251	5,251	3,938	2,626	-	1,274	5,118	5,118	3,838	2,559	-	1,242
110	43.3	Q(Btu/h)	50,832	50,832	38,124	25,416	-	19,168	47,088	47,088	35,316	23,544	-	17,756	44,352	44,352	33,264	22,176	-	16,724
		W	5,153	5,153	3,865	2,577	-	1,251	4,975	4,975	3,731	2,488	-	1,207	4,842	4,842	3,631	2,421	-	1,175
105	40.6	Q(Btu/h)	51,888	51,888	38,916	25,944	-	19,566	48,144	48,144	36,108	24,072	-	18,154	45,408	45,408	34,056	22,704	-	17,123
		W	4,980	4,980	3,735	2,490	-	1,209	4,802	4,802	3,601	2,401	-	1,165	4,668	4,668	3,501	2,334	-	1,133
100	37.8	Q(Btu/h)	53,280	53,280	39,960	26,640	-	20,091	49,536	49,536	37,152	24,768	-	18,679	46,800	46,800	35,100	23,400	-	17,648
		W	4,739	4,739	3,554	2,370	-	1,150	4,561	4,561	3,421	2,281	-	1,107	4,428	4,428	3,321	2,214	-	1,075
95	35.0	Q(Btu/h)	54,432	54,432	40,824	27,216	-	20,525	50,688	50,688	38,016	25,344	-	19,114	47,952	47,952	35,964	23,976	-	18,082
		W	4,548	4,548	3,411	2,274	-	1,104	4,370	4,370	3,277	2,185	-	1,061	4,236	4,236	3,177	2,118	-	1,028
90	32.2	Q(Btu/h)	55,200	55,200	41,400	27,600	-	20,815	51,456	51,456	38,592	25,728	-	19,403	48,720	48,720	36,540	24,360	-	18,372
		W	4,406	4,406	3,304	2,203	-	1,069	4,228	4,228	3,171	2,114	-	1,026	4,094	4,094	3,071	2,047	-	994
85	29.4	Q(Btu/h)	55,776	55,776	41,832	27,888	-	21,032	52,032	52,032	39,024	26,016	-	19,620	49,296	49,296	36,972	24,648	-	18,589
		W	4,272	4,272	3,204	2,136	-	1,037	4,094	4,094	3,071	2,047	-	994	3,961	3,961	2,970	1,980	-	961
80	26.7	Q(Btu/h)	56,640	56,640	42,480	28,320	-	21,358	52,896	52,896	39,672	26,448	-	19,946	50,160	50,160	37,620	25,080	-	18,915
		W	4,130	4,130	3,097	2,065	-	1,002	3,952	3,952	2,964	1,976	-	959	3,818	3,818	2,864	1,909	-	927
75	23.9	Q(Btu/h)	57,264	57,264	42,948	28,632	-	21,593	53,520	53,520	40,140	26,760	-	20,182	50,784	50,784	38,088	25,392	-	19,150
		W	4,005	4,005	3,004	2,003	-	972	3,827	3,827	2,870	1,914	-	929	3,694	3,694	2,770	1,847	-	896
70	21.1	Q(Btu/h)	57,600	57,600	43,200	28,800	-	21,720	53,856	53,856	40,392	26,928	-	20,308	51,120	51,120	38,340	25,560	-	19,277
		W	3,907	3,907	2,930	1,954	-	948	3,729	3,729	2,797	1,865	-	905	3,596	3,596	2,697	1,798	-	873
67	19.4	Q(Btu/h)	57,984	57,984	43,488	28,992	-	21,865	54,240	54,240	40,680	27,120	-	20,453	51,504	51,504	38,628	25,752	-	19,421
		W	3,836	3,836	2,877	1,918	-	931	3,658	3,658	2,743	1,829	-	888	3,524	3,524	2,643	1,762	-	855

PVA-AA48NL
PUZ-AK48NL
2) HEATING

Rated
Q(Btu/h): 54000
W: 4940

Indoor D.B.			77°F / 25°C						68°F / 20°C						59°F / 15°C					
Outdoor W.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
65	18.3	Q(Btu/h)	76,578	68,920	51,690	34,460	-	18,762	78,798	70,918	53,189	35,459	-	19,306	81,318	73,186	54,890	36,593	-	19,923
		W	7,362	6,471	4,854	3,236	-	1,192	6,856	6,076	4,557	3,038	-	1,119	6,463	5,681	4,261	2,841	-	1,047
60	15.6	Q(Btu/h)	72,300	65,070	48,803	32,535	-	17,714	74,520	67,068	50,301	33,534	-	18,257	77,040	69,336	52,002	34,668	-	18,875
		W	7,081	6,224	4,668	3,112	-	1,147	6,575	5,829	4,372	2,915	-	1,074	6,182	5,434	4,076	2,717	-	1,001
55	12.8	Q(Btu/h)	67,500	60,750	45,563	30,375	-	16,538	69,720	62,748	47,061	31,374	-	17,081	72,240	65,016	48,762	32,508	-	17,699
		W	6,800	6,027	4,520	3,013	-	1,110	6,294	5,632	4,224	2,816	-	1,037	5,901	5,236	3,927	2,618	-	965
50	10.0	Q(Btu/h)	63,480	57,132	42,849	28,566	-	15,553	65,700	59,130	44,348	29,565	-	16,097	68,220	61,398	46,049	30,699	-	16,714
		W	6,519	5,755	4,316	2,878	-	1,060	6,013	5,360	4,020	2,680	-	987	5,620	4,965	3,724	2,482	-	915
45	7.2	Q(Btu/h)	52,768	52,920	39,690	26,460	-	14,406	54,911	54,918	41,189	27,459	-	14,950	57,054	57,186	42,890	28,593	-	15,567
		W	6,238	5,434	4,076	2,717	-	1,001	5,732	5,039	3,779	2,519	-	928	5,339	4,644	3,483	2,322	-	855
40	4.4	Q(Btu/h)	51,429	44,280	33,210	22,140	-	12,054	53,571	46,278	34,709	23,139	-	12,598	55,714	48,546	36,410	24,273	-	13,215
		W	6,070	4,989	3,742	2,495	-	919	5,564	4,693	3,520	2,347	-	865	5,170	4,347	3,260	2,174	-	801
35	1.7	Q(Btu/h)	51,429	38,340	28,755	19,170	-	10,437	53,571	42,660	31,995	21,330	-	11,613	55,714	45,360	34,020	22,680	-	12,348
		W	6,469	4,703	3,527	2,351	-	866	6,170	4,406	3,305	2,203	-	812	5,772	4,061	3,046	2,030	-	748
30	-1.1	Q(Btu/h)	51,429	36,720	27,540	18,360	-	9,996	53,571	38,664	28,998	19,332	-	10,525	55,714	40,284	30,213	20,142	-	10,966
		W	7,613	4,288	3,216	2,144	-	790	7,315	3,992	2,994	1,996	-	735	6,917	3,646	2,734	1,823	-	672
25	-3.9	Q(Btu/h)	51,429	35,100	26,325	17,550	-	9,555	53,571	37,044	27,783	18,522	-	10,084	55,714	38,664	28,998	19,332	-	10,525
		W	8,260	3,730	2,797	1,865	-	687	7,962	3,433	2,575	1,717	-	632	7,564	3,088	2,316	1,544	-	569
20	-6.7	Q(Btu/h)	51,429	33,480	25,110	16,740	-	9,114	53,571	35,424	26,568	17,712	-	9,643	55,714	37,044	27,783	18,522	-	10,084
		W	8,708	3,656	2,742	1,828	-	673	8,410	3,359	2,519	1,680	-	619	8,011	3,013	2,260	1,507	-	555
15	-9.4	Q(Btu/h)	51,429	32,670	24,503	16,335	-	8,894	53,571	34,614	25,961	17,307	-	9,423	55,714	36,234	27,176	18,117	-	9,864
		W	9,106	3,483	2,612	1,741	-	642	8,808	3,186	2,390	1,593	-	587	8,410	2,841	2,130	1,420	-	523
10	-12.2	Q(Btu/h)	51,429	31,428	23,571	15,714	-	8,555	53,571	33,372	25,029	16,686	-	9,085	55,714	34,992	26,244	17,496	-	9,526
		W	9,355	3,221	2,416	1,610	-	593	9,056	2,924	2,193	1,462	-	539	8,658	2,579	1,934	1,289	-	475
5	-15.0	Q(Btu/h)	51,429	30,753	23,065	15,377	-	8,372	53,571	32,697	24,523	16,349	-	8,901	55,714	34,317	25,738	17,159	-	9,342
		W	9,554	3,210	2,407	1,605	-	591	9,255	2,913	2,185	1,457	-	537	8,857	2,567	1,925	1,284	-	473
0	-17.8	Q(Btu/h)	48,482	30,240	22,680	15,120	-	8,232	50,625	32,184	24,138	16,092	-	8,761	52,768	33,804	25,353	16,902	-	9,202
		W	9,654	3,217	2,413	1,608	-	593	9,355	2,921	2,190	1,460	-	538	8,957	2,575	1,931	1,287	-	474
-4	-20.0	Q(Btu/h)	46,018	29,916	22,437	14,958	-	8,144	48,161	31,860	23,895	15,930	-	8,673	50,304	33,480	25,110	16,740	-	9,114
		W	9,703	3,185	2,389	1,592	-	587	9,405	2,888	2,166	1,444	-	532	9,007	2,543	1,907	1,271	-	468
-13	-25.0	Q(Btu/h)	40,714	29,634	22,225	14,817	-	8,067	42,857	31,578	23,683	15,789	-	8,596	45,000	33,198	24,898	16,599	-	9,037
		W	9,753	3,134	2,351	1,567	-	577	9,454	2,838	2,128	1,419	-	523	9,056	2,492	1,869	1,246	-	459

SVZ-AP48NL
SUZ-AK48NL
1) COOLING

Rated
Q(Btu/h): 48000
W: 4450

Indoor W.B.			71°F / 21.7°C						67°F / 19.4°C						63°F / 17.2°C					
Outdoor D.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
115	46.1	Q(Btu/h)	48,384	48,384	36,288	24,192	-	18,245	44,640	44,640	33,480	22,320	-	16,833	41,904	41,904	31,428	20,952	-	15,801
		W	5,429	5,429	4,072	2,715	-	1,318	5,251	5,251	3,938	2,626	-	1,274	5,118	5,118	3,838	2,559	-	1,242
110	43.3	Q(Btu/h)	50,832	50,832	38,124	25,416	-	19,168	47,088	47,088	35,316	23,544	-	17,756	44,352	44,352	33,264	22,176	-	16,724
		W	5,153	5,153	3,865	2,577	-	1,251	4,975	4,975	3,731	2,488	-	1,207	4,842	4,842	3,631	2,421	-	1,175
105	40.6	Q(Btu/h)	51,888	51,888	38,916	25,944	-	19,566	48,144	48,144	36,108	24,072	-	18,154	45,408	45,408	34,056	22,704	-	17,123
		W	4,980	4,980	3,735	2,490	-	1,209	4,802	4,802	3,601	2,401	-	1,165	4,668	4,668	3,501	2,334	-	1,133
100	37.8	Q(Btu/h)	53,280	53,280	39,960	26,640	-	20,091	49,536	49,536	37,152	24,768	-	18,679	46,800	46,800	35,100	23,400	-	17,648
		W	4,739	4,739	3,554	2,370	-	1,150	4,561	4,561	3,421	2,281	-	1,107	4,428	4,428	3,321	2,214	-	1,075
95	35.0	Q(Btu/h)	54,432	54,432	40,824	27,216	-	20,525	50,688	50,688	38,016	25,344	-	19,114	47,952	47,952	35,964	23,976	-	18,082
		W	4,548	4,548	3,411	2,274	-	1,104	4,370	4,370	3,277	2,185	-	1,061	4,236	4,236	3,177	2,118	-	1,028
90	32.2	Q(Btu/h)	55,200	55,200	41,400	27,600	-	20,815	51,456	51,456	38,592	25,728	-	19,403	48,720	48,720	36,540	24,360	-	18,372
		W	4,406	4,406	3,304	2,203	-	1,069	4,228	4,228	3,171	2,114	-	1,026	4,094	4,094	3,071	2,047	-	994
85	29.4	Q(Btu/h)	55,776	55,776	41,832	27,888	-	21,032	52,032	52,032	39,024	26,016	-	19,620	49,296	49,296	36,972	24,648	-	18,589
		W	4,272	4,272	3,204	2,136	-	1,037	4,094	4,094	3,071	2,047	-	994	3,961	3,961	2,970	1,980	-	961
80	26.7	Q(Btu/h)	56,640	56,640	42,480	28,320	-	21,358	52,896	52,896	39,672	26,448	-	19,946	50,160	50,160	37,620	25,080	-	18,915
		W	4,130	4,130	3,097	2,065	-	1,002	3,952	3,952	2,964	1,976	-	959	3,818	3,818	2,864	1,909	-	927
75	23.9	Q(Btu/h)	57,264	57,264	42,948	28,632	-	21,593	53,520	53,520	40,140	26,760	-	20,182	50,784	50,784	38,088	25,392	-	19,150
		W	4,005	4,005	3,004	2,003	-	972	3,827	3,827	2,870	1,914	-	929	3,694	3,694	2,770	1,847	-	896
70	21.1	Q(Btu/h)	57,600	57,600	43,200	28,800	-	21,720	53,856	53,856	40,392	26,928	-	20,308	51,120	51,120	38,340	25,560	-	19,277
		W	3,907	3,907	2,930	1,954	-	948	3,729	3,729	2,797	1,865	-	905	3,596	3,596	2,697	1,798	-	873
67	19.4	Q(Btu/h)	57,984	57,984	43,488	28,992	-	21,865	54,240	54,240	40,680	27,120	-	20,453	51,504	51,504	38,628	25,752	-	19,421
		W	3,836	3,836	2,877	1,918	-	931	3,658	3,658	2,743	1,829	-	888	3,524	3,524	2,643	1,762	-	855

SVZ-AP48NL
SUZ-AK48NL
2) HEATING

Rated
Q(Btu/h): 54000
W: 4940

Indoor D.B.			77°F / 25°C						68°F / 20°C						59°F / 15°C					
Outdoor W.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
65	18.3	Q(Btu/h)	76,578	68,920	51,690	34,460	-	18,762	78,798	70,918	53,189	35,459	-	19,306	81,318	73,186	54,890	36,593	-	19,923
		W	7,362	6,471	4,854	3,236	-	1,192	6,856	6,076	4,557	3,038	-	1,119	6,463	5,681	4,261	2,841	-	1,047
60	15.6	Q(Btu/h)	72,300	65,070	48,803	32,535	-	17,714	74,520	67,068	50,301	33,534	-	18,257	77,040	69,336	52,002	34,668	-	18,875
		W	7,081	6,224	4,668	3,112	-	1,147	6,575	5,829	4,372	2,915	-	1,074	6,182	5,434	4,076	2,717	-	1,001
55	12.8	Q(Btu/h)	67,500	60,750	45,563	30,375	-	16,538	69,720	62,748	47,061	31,374	-	17,081	72,240	65,016	48,762	32,508	-	17,699
		W	6,800	6,027	4,520	3,013	-	1,110	6,294	5,632	4,224	2,816	-	1,037	5,901	5,236	3,927	2,618	-	965
50	10.0	Q(Btu/h)	63,480	57,132	42,849	28,566	-	15,553	65,700	59,130	44,348	29,565	-	16,097	68,220	61,398	46,049	30,699	-	16,714
		W	6,519	5,755	4,316	2,878	-	1,060	6,013	5,360	4,020	2,680	-	987	5,620	4,965	3,724	2,482	-	915
45	7.2	Q(Btu/h)	52,768	52,920	39,690	26,460	-	14,406	54,911	54,918	41,189	27,459	-	14,950	57,054	57,186	42,890	28,593	-	15,567
		W	6,238	5,434	4,076	2,717	-	1,001	5,732	5,039	3,779	2,519	-	928	5,339	4,644	3,483	2,322	-	855
40	4.4	Q(Btu/h)	51,429	44,280	33,210	22,140	-	12,054	53,571	46,278	34,709	23,139	-	12,598	55,714	48,546	36,410	24,273	-	13,215
		W	6,070	4,989	3,742	2,495	-	919	5,564	4,693	3,520	2,347	-	865	5,170	4,347	3,260	2,174	-	801
35	1.7	Q(Btu/h)	51,429	38,340	28,755	19,170	-	10,437	53,571	42,660	31,995	21,330	-	11,613	55,714	45,360	34,020	22,680	-	12,348
		W	6,469	4,703	3,527	2,351	-	866	6,170	4,406	3,305	2,203	-	812	5,772	4,061	3,046	2,030	-	748
30	-1.1	Q(Btu/h)	51,429	36,720	27,540	18,360	-	9,996	53,571	38,664	28,998	19,332	-	10,525	55,714	40,284	30,213	20,142	-	10,966
		W	7,613	4,288	3,216	2,144	-	790	7,315	3,992	2,994	1,996	-	735	6,917	3,646	2,734	1,823	-	672
25	-3.9	Q(Btu/h)	51,429	35,100	26,325	17,550	-	9,555	53,571	37,044	27,783	18,522	-	10,084	55,714	38,664	28,998	19,332	-	10,525
		W	8,260	3,730	2,797	1,865	-	687	7,962	3,433	2,575	1,717	-	632	7,564	3,088	2,316	1,544	-	569
20	-6.7	Q(Btu/h)	51,429	33,480	25,110	16,740	-	9,114	53,571	35,424	26,568	17,712	-	9,643	55,714	37,044	27,783	18,522	-	10,084
		W	8,708	3,656	2,742	1,828	-	673	8,410	3,359	2,519	1,680	-	619	8,011	3,013	2,260	1,507	-	555
15	-9.4	Q(Btu/h)	51,429	32,670	24,503	16,335	-	8,894	53,571	34,614	25,961	17,307	-	9,423	55,714	36,234	27,176	18,117	-	9,864
		W	9,106	3,483	2,612	1,741	-	642	8,808	3,186	2,390	1,593	-	587	8,410	2,841	2,130	1,420	-	523
10	-12.2	Q(Btu/h)	51,429	31,428	23,571	15,714	-	8,555	53,571	33,372	25,029	16,686	-	9,085	55,714	34,992	26,244	17,496	-	9,526
		W	9,355	3,221	2,416	1,610	-	593	9,056	2,924	2,193	1,462	-	539	8,658	2,579	1,934	1,289	-	475
5	-15.0	Q(Btu/h)	51,429	30,753	23,065	15,377	-	8,372	53,571	32,697	24,523	16,349	-	8,901	55,714	34,317	25,738	17,159	-	9,342
		W	9,554	3,210	2,407	1,605	-	591	9,255	2,913	2,185	1,457	-	537	8,857	2,567	1,925	1,284	-	473
0	-17.8	Q(Btu/h)	48,482	30,240	22,680	15,120	-	8,232	50,625	32,184	24,138	16,092	-	8,761	52,768	33,804	25,353	16,902	-	9,202
		W	9,654	3,217	2,413	1,608	-	593	9,355	2,921	2,190	1,460	-	538	8,957	2,575	1,931	1,287	-	474
-4	-20.0	Q(Btu/h)	46,018	29,916	22,437	14,958	-	8,144	48,161	31,860	23,895	15,930	-	8,673	50,304	33,480	25,110	16,740	-	9,114
		W	9,703	3,185	2,389	1,592	-	587	9,405	2,888	2,166	1,444	-	532	9,007	2,543	1,907	1,271	-	468
-13	-25.0	Q(Btu/h)	40,714	29,634	22,225	14,817	-	8,067	42,857	31,578	23,683	15,789	-	8,596	45,000	33,198	24,898	16,599	-	9,037
		W	9,753	3,134	2,351	1,567	-	577	9,454	2,838	2,128	1,419	-	523	9,056	2,492	1,869	1,246	-	459

PVA-AA60NL
PUZ-AK60NL PUY-AK60NL
1) COOLING

Rated
Q(Btu/h): 56000
W: 5640

Indoor W.B.			71°F / 21.7°C						67°F / 19.4°C						63°F / 17.2°C					
Outdoor D.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
115	46.1	Q(Btu/h)	60,480	56,448	42,336	28,224	-	18,648	55,800	52,080	39,060	26,040	-	17,205	52,380	48,888	36,666	24,444	-	16,151
		W	7,405	6,881	5,161	3,440	-	1,415	7,163	6,655	4,991	3,328	-	1,369	6,981	6,486	4,865	3,243	-	1,334
110	43.3	Q(Btu/h)	63,540	59,304	44,478	29,652	-	19,592	58,860	54,936	41,202	27,468	-	18,149	55,440	51,744	38,808	25,872	-	17,094
		W	7,029	6,531	4,898	3,266	-	1,343	6,786	6,306	4,729	3,153	-	1,297	6,604	6,136	4,602	3,068	-	1,262
105	40.6	Q(Btu/h)	64,860	60,536	45,402	30,268	-	19,999	60,180	56,168	42,126	28,084	-	18,556	56,760	52,976	39,732	26,488	-	17,501
		W	6,792	6,311	4,733	3,156	-	1,298	6,550	6,086	4,564	3,043	-	1,252	6,367	5,916	4,437	2,958	-	1,217
100	37.8	Q(Btu/h)	66,600	62,160	46,620	31,080	-	20,535	61,920	57,792	43,344	28,896	-	19,092	58,500	54,600	40,950	27,300	-	18,038
		W	6,465	6,007	4,505	3,003	-	1,235	6,222	5,781	4,336	2,891	-	1,189	6,040	5,612	4,209	2,806	-	1,154
95	35.0	Q(Btu/h)	68,040	63,504	47,628	31,752	-	20,979	63,360	59,136	44,352	29,568	-	19,536	59,940	55,944	41,958	27,972	-	18,482
		W	6,204	5,764	4,323	2,882	-	1,186	5,961	5,538	4,154	2,769	-	1,139	5,779	5,369	4,027	2,685	-	1,104
90	32.2	Q(Btu/h)	69,000	64,400	48,300	32,200	-	21,275	64,320	60,032	45,024	30,016	-	19,832	60,900	56,840	42,630	28,420	-	18,778
		W	6,009	5,584	4,188	2,792	-	1,148	5,767	5,358	4,019	2,679	-	1,102	5,584	5,189	3,892	2,594	-	1,067
85	29.4	Q(Btu/h)	69,720	65,072	48,804	32,536	-	21,497	65,040	60,704	45,528	30,352	-	20,054	61,620	57,512	43,134	28,756	-	19,000
		W	5,827	5,414	4,061	2,707	-	1,114	5,584	5,189	3,892	2,594	-	1,067	5,402	5,020	3,765	2,510	-	1,032
80	26.7	Q(Btu/h)	70,800	66,080	49,560	33,040	-	21,830	66,120	61,712	46,284	30,856	-	20,387	62,700	58,520	43,890	29,260	-	19,333
		W	5,633	5,234	3,925	2,617	-	1,076	5,390	5,008	3,756	2,504	-	1,030	5,208	4,839	3,629	2,420	-	995
75	23.9	Q(Btu/h)	71,580	66,808	50,106	33,404	-	22,071	66,900	62,440	46,830	31,220	-	20,628	63,480	59,248	44,436	29,624	-	19,573
		W	5,463	5,076	3,807	2,538	-	1,044	5,220	4,850	3,638	2,425	-	998	5,038	4,681	3,511	2,341	-	963
70	21.1	Q(Btu/h)	72,000	67,200	50,400	33,600	-	22,200	67,320	62,832	47,124	31,416	-	20,757	63,900	59,640	44,730	29,820	-	19,703
		W	5,329	4,952	3,714	2,476	-	1,018	5,087	4,726	3,545	2,363	-	972	4,905	4,557	3,418	2,279	-	937
67	19.4	Q(Btu/h)	72,480	67,648	50,736	33,824	-	22,348	67,800	63,280	47,460	31,640	-	20,905	64,380	60,088	45,066	30,044	-	19,851
		W	5,232	4,862	3,646	2,431	-	1,000	4,990	4,636	3,477	2,318	-	954	4,807	4,467	3,350	2,233	-	919

PVA-AA60NL
PUZ-AK60NL
2) HEATING

Rated
Q(Btu/h): 64500
W: 6520

Indoor D.B.			77°F / 25°C						68°F / 20°C						59°F / 15°C					
Outdoor W.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
65	18.3	Q(Btu/h)	84,874	82,321	61,741	41,161	20,580	18,634	87,334	84,708	63,531	42,354	21,177	19,174	90,127	87,417	65,563	43,708	21,854	19,787
		W	8,633	8,541	6,406	4,271	2,135	1,336	8,040	8,020	6,015	4,010	2,005	1,255	7,579	7,498	5,624	3,749	1,875	1,173
60	15.6	Q(Btu/h)	80,133	77,723	58,292	38,861	19,431	17,593	82,593	80,109	60,082	40,055	20,027	18,133	85,386	82,818	62,114	41,409	20,705	18,746
		W	8,303	8,215	6,161	4,108	2,054	1,285	7,710	7,694	5,770	3,847	1,923	1,204	7,249	7,172	5,379	3,586	1,793	1,122
55	12.8	Q(Btu/h)	74,813	72,563	54,422	36,281	18,141	16,425	77,273	74,949	56,212	37,475	18,737	16,965	80,066	77,658	58,244	38,829	19,415	17,578
		W	7,974	7,954	5,966	3,977	1,989	1,244	7,381	7,433	5,575	3,716	1,858	1,163	6,920	6,911	5,183	3,456	1,728	1,081
50	10.0	Q(Btu/h)	70,357	68,241	51,181	34,121	17,060	15,447	72,818	70,628	52,971	35,314	17,657	15,987	75,611	73,337	55,002	36,668	18,334	16,600
		W	7,644	7,596	5,697	3,798	1,899	1,188	7,051	7,074	5,306	3,537	1,769	1,107	6,590	6,553	4,914	3,276	1,638	1,025
45	7.2	Q(Btu/h)	58,484	63,210	47,408	31,605	15,803	14,308	60,859	65,597	49,197	32,798	16,399	14,848	63,234	68,306	51,229	34,153	17,076	15,461
		W	7,315	7,172	5,379	3,586	1,793	1,122	6,722	6,650	4,988	3,325	1,663	1,040	6,261	6,129	4,597	3,064	1,532	959
40	4.4	Q(Btu/h)	57,000	52,890	39,668	26,445	13,223	11,972	59,375	55,277	41,457	27,638	13,819	12,512	61,750	57,986	43,489	28,993	14,496	13,125
		W	7,117	6,585	4,939	3,293	1,646	1,030	6,524	6,194	4,646	3,097	1,549	969	6,063	5,738	4,303	2,869	1,434	898
35	1.7	Q(Btu/h)	57,000	45,795	34,346	22,898	11,449	10,366	59,375	50,955	38,216	25,478	12,739	11,534	61,750	54,180	40,635	27,090	13,545	12,264
		W	7,585	6,207	4,655	3,104	1,552	971	7,235	5,816	4,362	2,908	1,454	910	6,768	5,359	4,020	2,680	1,340	838
30	-1.1	Q(Btu/h)	57,000	43,860	32,895	21,930	10,965	9,928	59,375	46,182	34,637	23,091	11,546	10,454	61,750	48,117	36,088	24,059	12,029	10,892
		W	8,927	5,659	4,245	2,830	1,415	885	8,577	5,268	3,951	2,634	1,317	824	8,111	4,812	3,609	2,406	1,203	753
25	-3.9	Q(Btu/h)	57,000	41,925	31,444	20,963	10,481	9,490	59,375	44,247	33,185	22,124	11,062	10,016	61,750	46,182	34,637	23,091	11,546	10,454
		W	9,686	4,923	3,692	2,461	1,231	770	9,336	4,531	3,399	2,266	1,133	709	8,869	4,075	3,056	2,038	1,019	638
20	-6.7	Q(Btu/h)	57,000	39,990	29,993	19,995	9,998	9,052	59,375	42,312	31,734	21,156	10,578	9,578	61,750	44,247	33,185	22,124	11,062	10,016
		W	10,211	4,825	3,619	2,412	1,206	755	9,861	4,434	3,325	2,217	1,108	694	9,394	3,977	2,983	1,989	994	622
15	-9.4	Q(Btu/h)	57,000	39,023	29,267	19,511	9,756	8,833	59,375	41,345	31,008	20,672	10,336	9,359	61,750	43,280	32,460	21,640	10,820	9,797
		W	10,678	4,597	3,447	2,298	1,149	719	10,328	4,205	3,154	2,103	1,051	658	9,861	3,749	2,812	1,875	937	587
10	-12.2	Q(Btu/h)	57,000	37,539	28,154	18,770	9,385	8,497	59,375	39,861	29,896	19,931	9,965	9,023	61,750	41,796	31,347	20,898	10,449	9,461
		W	10,970	4,251	3,188	2,126	1,063	665	10,620	3,860	2,895	1,930	965	604	10,153	3,403	2,553	1,702	851	532
5	-15.0	Q(Btu/h)	57,000	36,733	27,550	18,366	9,183	8,315	59,375	39,055	29,291	19,527	9,764	8,840	61,750	40,990	30,742	20,495	10,247	9,278
		W	11,203	4,236	3,177	2,118	1,059	663	10,853	3,845	2,884	1,922	961	601	10,386	3,388	2,541	1,694	847	530
0	-17.8	Q(Btu/h)	53,734	36,120	27,090	18,060	9,030	8,176	56,109	38,442	28,832	19,221	9,611	8,702	58,484	40,377	30,283	20,189	10,094	9,140
		W	11,320	4,246	3,184	2,123	1,061	664	10,970	3,855	2,891	1,927	964	603	10,503	3,398	2,549	1,699	850	532
-4	-20.0	Q(Btu/h)	51,003	35,733	26,800	17,867	8,933	8,088	53,378	38,055	28,541	19,028	9,514	8,614	55,753	39,990	29,993	19,995	9,998	9,052
		W	11,378	4,203	3,152	2,102	1,051	658	11,028	3,812	2,859	1,906	953	596	10,561	3,356	2,517	1,678	839	525
-13	-25.0	Q(Btu/h)	45,125	35,396	26,547	17,698	8,849	8,012	47,500	37,718	28,288	18,859	9,429	8,538	49,875	39,653	29,740	19,826	9,913	8,976
		W	11,436	4,137	3,103	2,068	1,034	647	11,086	3,746	2,809	1,873	936	586	10,620	3,289	2,467	1,645	822	515

SVZ-AP60NL
SUZ-AK60NL
1) COOLING

Rated
Q(Btu/h): 56000
W: 5490

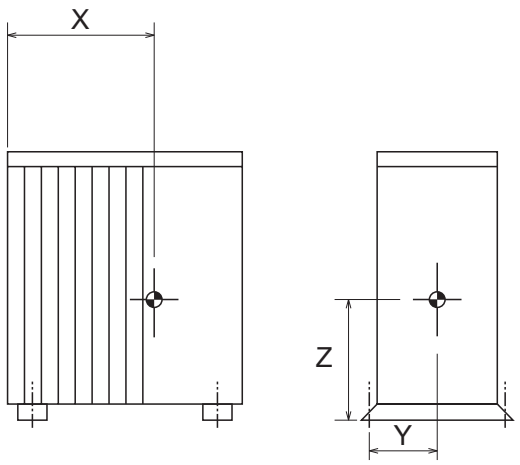
Indoor W.B.			71°F / 21.7°C						67°F / 19.4°C						63°F / 17.2°C					
Outdoor D.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
115	46.1	Q(Btu/h)	60,480	56,448	42,336	28,224	-	18,648	55,800	52,080	39,060	26,040	-	17,205	52,380	48,888	36,666	24,444	-	16,151
		W	7,405	6,698	5,023	3,349	-	1,415	7,163	6,478	4,859	3,239	-	1,369	6,981	6,314	4,735	3,157	-	1,334
110	43.3	Q(Btu/h)	63,540	59,304	44,478	29,652	-	19,592	58,860	54,936	41,202	27,468	-	18,149	55,440	51,744	38,808	25,872	-	17,094
		W	7,029	6,357	4,768	3,179	-	1,343	6,786	6,138	4,603	3,069	-	1,297	6,604	5,973	4,480	2,987	-	1,262
105	40.6	Q(Btu/h)	64,860	60,536	45,402	30,268	-	19,999	60,180	56,168	42,126	28,084	-	18,556	56,760	52,976	39,732	26,488	-	17,501
		W	6,792	6,143	4,607	3,072	-	1,298	6,550	5,924	4,443	2,962	-	1,252	6,367	5,759	4,319	2,880	-	1,217
100	37.8	Q(Btu/h)	66,600	62,160	46,620	31,080	-	20,535	61,920	57,792	43,344	28,896	-	19,092	58,500	54,600	40,950	27,300	-	18,038
		W	6,465	5,847	4,385	2,923	-	1,235	6,222	5,627	4,220	2,814	-	1,189	6,040	5,463	4,097	2,731	-	1,154
95	35.0	Q(Btu/h)	68,040	63,504	47,628	31,752	-	20,979	63,360	59,136	44,352	29,568	-	19,536	59,940	55,944	41,958	27,972	-	18,482
		W	6,204	5,611	4,208	2,805	-	1,186	5,961	5,391	4,043	2,696	-	1,139	5,779	5,226	3,920	2,613	-	1,104
90	32.2	Q(Btu/h)	69,000	64,400	48,300	32,200	-	21,275	64,320	60,032	45,024	30,016	-	19,832	60,900	56,840	42,630	28,420	-	18,778
		W	6,009	5,435	4,076	2,718	-	1,148	5,767	5,216	3,912	2,608	-	1,102	5,584	5,051	3,788	2,525	-	1,067
85	29.4	Q(Btu/h)	69,720	65,072	48,804	32,536	-	21,497	65,040	60,704	45,528	30,352	-	20,054	61,620	57,512	43,134	28,756	-	19,000
		W	5,827	5,270	3,953	2,635	-	1,114	5,584	5,051	3,788	2,525	-	1,067	5,402	4,886	3,665	2,443	-	1,032
80	26.7	Q(Btu/h)	70,800	66,080	49,560	33,040	-	21,830	66,120	61,712	46,284	30,856	-	20,387	62,700	58,520	43,890	29,260	-	19,333
		W	5,633	5,095	3,821	2,547	-	1,076	5,390	4,875	3,656	2,438	-	1,030	5,208	4,710	3,533	2,355	-	995
75	23.9	Q(Btu/h)	71,580	66,808	50,106	33,404	-	22,071	66,900	62,440	46,830	31,220	-	20,628	63,480	59,248	44,436	29,624	-	19,573
		W	5,463	4,941	3,706	2,471	-	1,044	5,220	4,721	3,541	2,361	-	998	5,038	4,557	3,418	2,278	-	963
70	21.1	Q(Btu/h)	72,000	67,200	50,400	33,600	-	22,200	67,320	62,832	47,124	31,416	-	20,757	63,900	59,640	44,730	29,820	-	19,703
		W	5,329	4,820	3,615	2,410	-	1,018	5,087	4,601	3,450	2,300	-	972	4,905	4,436	3,327	2,218	-	937
67	19.4	Q(Btu/h)	72,480	67,648	50,736	33,824	-	22,348	67,800	63,280	47,460	31,640	-	20,905	64,380	60,088	45,066	30,044	-	19,851
		W	5,232	4,732	3,549	2,366	-	1,000	4,990	4,513	3,385	2,256	-	954	4,807	4,348	3,261	2,174	-	919

SVZ-AP60NL
SUZ-AK60NL
2) HEATING

Rated
Q(Btu/h): 64500
W: 6520

Indoor D.B.			77°F / 25°C						68°F / 20°C						59°F / 15°C					
Outdoor W.B.			Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min	Max	Rated	75%	50%	25%	Min
(°F)	(°C)																			
65	18.3	Q(Btu/h)	84,874	82,321	61,741	41,161	20,580	18,634	87,334	84,708	63,531	42,354	21,177	19,174	90,127	87,417	65,563	43,708	21,854	19,787
		W	8,633	8,541	6,406	4,271	2,135	1,336	8,040	8,020	6,015	4,010	2,005	1,255	7,579	7,498	5,624	3,749	1,875	1,173
60	15.6	Q(Btu/h)	80,133	77,723	58,292	38,861	19,431	17,593	82,593	80,109	60,082	40,055	20,027	18,133	85,386	82,818	62,114	41,409	20,705	18,746
		W	8,303	8,215	6,161	4,108	2,054	1,285	7,710	7,694	5,770	3,847	1,923	1,204	7,249	7,172	5,379	3,586	1,793	1,122
55	12.8	Q(Btu/h)	74,813	72,563	54,422	36,281	18,141	16,425	77,273	74,949	56,212	37,475	18,737	16,965	80,066	77,658	58,244	38,829	19,415	17,578
		W	7,974	7,954	5,966	3,977	1,989	1,244	7,381	7,433	5,575	3,716	1,858	1,163	6,920	6,911	5,183	3,456	1,728	1,081
50	10.0	Q(Btu/h)	70,357	68,241	51,181	34,121	17,060	15,447	72,818	70,628	52,971	35,314	17,657	15,987	75,611	73,337	55,002	36,668	18,334	16,600
		W	7,644	7,596	5,697	3,798	1,899	1,188	7,051	7,074	5,306	3,537	1,769	1,107	6,590	6,553	4,914	3,276	1,638	1,025
45	7.2	Q(Btu/h)	58,484	63,210	47,408	31,605	15,803	14,308	60,859	65,597	49,197	32,798	16,399	14,848	63,234	68,306	51,229	34,153	17,076	15,461
		W	7,315	7,172	5,379	3,586	1,793	1,122	6,722	6,650	4,988	3,325	1,663	1,040	6,261	6,129	4,597	3,064	1,532	959
40	4.4	Q(Btu/h)	57,000	52,890	39,668	26,445	13,223	11,972	59,375	55,277	41,457	27,638	13,819	12,512	61,750	57,986	43,489	28,993	14,496	13,125
		W	7,117	6,585	4,939	3,293	1,646	1,030	6,524	6,194	4,646	3,097	1,549	969	6,063	5,738	4,303	2,869	1,434	898
35	1.7	Q(Btu/h)	57,000	45,795	34,346	22,898	11,449	10,366	59,375	50,955	38,216	25,478	12,739	11,534	61,750	54,180	40,635	27,090	13,545	12,264
		W	7,585	6,207	4,655	3,104	1,552	971	7,235	5,816	4,362	2,908	1,454	910	6,768	5,359	4,020	2,680	1,340	838
30	-1.1	Q(Btu/h)	57,000	43,860	32,895	21,930	10,965	9,928	59,375	46,182	34,637	23,091	11,546	10,454	61,750	48,117	36,088	24,059	12,029	10,892
		W	8,927	5,659	4,245	2,830	1,415	885	8,577	5,268	3,951	2,634	1,317	824	8,111	4,812	3,609	2,406	1,203	753
25	-3.9	Q(Btu/h)	57,000	41,925	31,444	20,963	10,481	9,490	59,375	44,247	33,185	22,124	11,062	10,016	61,750	46,182	34,637	23,091	11,546	10,454
		W	9,686	4,923	3,692	2,461	1,231	770	9,336	4,531	3,399	2,266	1,133	709	8,869	4,075	3,056	2,038	1,019	638
20	-6.7	Q(Btu/h)	57,000	39,990	29,993	19,995	9,998	9,052	59,375	42,312	31,734	21,156	10,578	9,578	61,750	44,247	33,185	22,124	11,062	10,016
		W	10,211	4,825	3,619	2,412	1,206	755	9,861	4,434	3,325	2,217	1,108	694	9,394	3,977	2,983	1,989	994	622
15	-9.4	Q(Btu/h)	57,000	39,023	29,267	19,511	9,756	8,833	59,375	41,345	31,008	20,672	10,336	9,359	61,750	43,280	32,460	21,640	10,820	9,797
		W	10,678	4,597	3,447	2,298	1,149	719	10,328	4,205	3,154	2,103	1,051	658	9,861	3,749	2,812	1,875	937	587
10	-12.2	Q(Btu/h)	57,000	37,539	28,154	18,770	9,385	8,497	59,375	39,861	29,896	19,931	9,965	9,023	61,750	41,796	31,347	20,898	10,449	9,461
		W	10,970	4,251	3,188	2,126	1,063	665	10,620	3,860	2,895	1,930	965	604	10,153	3,403	2,553	1,702	851	532
5	-15.0	Q(Btu/h)	57,000	36,733	27,550	18,366	9,183	8,315	59,375	39,055	29,291	19,527	9,764	8,840	61,750	40,990	30,742	20,495	10,247	9,278
		W	11,203	4,236	3,177	2,118	1,059	663	10,853	3,845	2,884	1,922	961	601	10,386	3,388	2,541	1,694	847	530
0	-17.8	Q(Btu/h)	53,734	36,120	27,090	18,060	9,030	8,176	56,109	38,442	28,832	19,221	9,611	8,702	58,484	40,377	30,283	20,189	10,094	9,140
		W	11,320	4,246	3,184	2,123	1,061	664	10,970	3,855	2,891	1,927	964	603	10,503	3,398	2,549	1,699	850	532
-4	-20.0	Q(Btu/h)	51,003	35,733	26,800	17,867	8,933	8,088	53,378	38,055	28,541	19,028	9,514	8,614	55,753	39,990	29,993	19,995	9,998	9,052
		W	11,378	4,203	3,152	2,102	1,051	658	11,028	3,812	2,859	1,906	953	596	10,561	3,356	2,517	1,678	839	525
-13	-25.0	Q(Btu/h)	45,125	35,396	26,547	17,698	8,849	8,012	47,500	37,718	28,288	18,859	9,429	8,538	49,875	39,653	29,740	19,826	9,913	8,976
		W	11,436	4,137	3,103	2,068	1,034	647	11,086	3,746	2,809	1,873	936	586	10,620	3,289	2,467	1,645	822	515

T6 POSITION OF THE CENTER OF GRAVITY



Unit: inch (mm)

Model name	X	Y	Z
PUZ-AK36/42NL PUY-AK36/42NL	17-1/3 (440)	7-1/2 (190)	23-2/5 (594)
PUZ-AK48/60NL PUY-AK48/60NL SUZ-AK48/60NL	16-2/9 (412)	6 (150)	23-1/2 (596)

T7 OPTIONAL PARTS

Optional Parts List for Indoor [P-series]

Series Name		P series								
		Wall-mounted					Ceiling-suspended			
		PKA					PCA			
		12	18	24	30	36	24	30	36	42
High-efficiency Filter Element	PAC-SH59KF-E									
	PAC-SH89KF-E						●	●		
	PAC-SH90KF-E								●	●
Filter Box	PAC-KE92TB-E									
	PAC-KE93TB-E									
	PAC-KE94TB-E									
Decoration panel with 3D I-see sensor	PLP-41EAEU									
Air outlet shutter Plate	PAC-SJ37SP-E									
Multi-functional Casement	PAC-SJ41TM-E									
Flange for fresh-air Intake	PAC-SH65OF-E									
Space Panel	PAC-SJ65AS-E									
Drain Pump	PAC-SL48DM-E	●	●	●	●	●				
Wi-Fi adapter	PAC-WHS01WF-1	●	●	●	●	●	●	●	●	●
T-STAT Interface	PAC-US445CN-1	●	●	●	●	●	●	●	●	●
Wired remote controller	PAR-42MAAUB	●	●	●	●	●	●	●	●	●
Signal Receiver	PAR-SR4LA-E									
Simple remote controller	PAC-YT53CRAU(-J)	●	●	●	●	●	●	●	●	●
Wireless Remote Controller	PAR-FL32MA-E	●	●	●	●	●	●	●	●	●
	PAR-SL101A-E	●	●	●	●	●	●	●	●	●
Controller Kit (Sender & Receiver)	PAR-SL93B-E						●	●	●	●
Controller Kit with i-see Sensor	PAR-SA92MW-E						●	●	●	●
Remote Sensor (extensible)	PAC-SE41TS-E	●	●	●	●	●				
Connector Cable for Remote Display	PAC-SA88HA-EP									
	PAC-725AD-E									
Connector for CN32 (remote on/off)	PAC-SE55RA-E	●	●	●	●	●	●	●	●	●
Connector for CN24 (Back up heating)	PAC-SE56RA-E									
Connector for CN30 (LLC)	PAC-SA57RA-E									
Remote Operation Adapter	PAC-SF40RM-E *1									
i-see Sensor	PAC-SH91MK-E						●	●	●	●
External fan / Heater control relay adapter	CN24RELAY-KIT-CM3									

*1 Unable to use with wireless remote controller *2 Unable to use with the electric heat time delay

Optional Parts List for Outdoor [P-series]

Series Name		Cooling Only							
		PUY							
		AK12NL	AK18NL	AK24NL	AK30NL	AK36NL	AK42NL	AK48NL	AK60NL
Air Outlet Guide	PAC-SJ07SG-E	●	●						
	PAC-SG59SG-E			●	●				
	PAC-SH96SG-E					●	●	●	●
Air Protection Guide	PAC-SJ06AG-E	●	●						
	PAC-SH63AG-E			●	●				
	PAC-SH95AG-E					●	●	●	●
Drain socket	PAC-SJ08DS-E	●	●						
	PAC-SG61DS-E			●	●	●	●	●	●
Centralized Drain Pan	PAC-SG63DP-E	●	●						
	PAC-SG64DP-E			●	●				
	PAC-SH97DP-E					●	●	●	●
M-NET Converter	PAC-SJ96MA-E	●	●						
	PAC-SJ95MA-E			●	●	●	●	●	●
Control/Service Tool	PAC-SK52ST	●	●	●	●	●	●	●	●

Optional Parts List for Indoor [P-series/S-series]

Series Name		P series/S series																								
		4-way Cassette							Ceiling-concealed						Multi position								A-Coil				
		PLA							PEAD						PVA/SVZ								PAA				
		12	18	24	30	36	42	48	9	12	18	24	30	36	12	18	24	30	36	42	48	60	18	24	30	36	42
High-efficiency Filter Element	PAC-SH59KF-E	●	●	●	●	●	●	●																			
	PAC-SH89KF-E																										
	PAC-SH90KF-E																										
Filter Box	PAC-KE92TB-E									●	●				●	●											
	PAC-KE93TB-E											●	●		●	●											
	PAC-KE94TB-E													●	●	●											
Decoration panel with 3D I-see sensor	PLP-41EAEU	●	●	●	●	●	●	●																			
Air outlet shutter Plate	PAC-SJ37SP-E	●	●	●	●	●	●	●																			
Multi-functional Casement	PAC-SJ41TM-E	●	●	●	●	●	●	●																			
Flange for fresh-air Intake	PAC-SH65OF-E	●	●	●	●	●	●	●																			
Space Panel	PAC-SJ65AS-E	●	●	●	●	●	●	●																			
Drain Pump	PAC-SL48DM-E																										
Wi-Fi adapter	PAC-WHS01WF-1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
T-STAT Interface	PAC-US445CN-1	●	●	●	●	●	●	●	●	●	●	●	●	●	● *2	● *2	● *2	● *2	● *2	● *2	● *2	● *2					
Wired remote controller	PAR-42MAAUB	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Signal Receiver	PAR-SR4LA-E	●	●	●	●	●	●	●															●	●	●	●	●
Simple remote controller	PAC-YT53CRAU	●	●	●	●	●	●	●															●	●	●	●	●
Wireless Remote Controller	PAR-FL32MA-E	●	●	●	●	●	●	●	●					●	●	●	●	●	●	●	●	●					
	PAR-SL101A-E	●	●	●	●	●	●	●															●	●	●	●	●
Controller Kit (Sender & Receiver)	PAR-SL93B-E																						●	●	●	●	●
Controller Kit with i-see Sensor	PAR-SA92MW-E																										
Remote Sensor (extensible)	PAC-SE41TS-E	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
Connector Cable for Remote Display	PAC-SA88HA-EP								●	●	●	●	●	●	●	●	●	●	●	●	●	●					
	PAC-725AD-E								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Connector for CN32 (remote on/off)	PAC-SE55RA-E	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Connector for CN 24 (Back up heating)	PAC-SE56RA-E								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Connector for CN 30 (LLC)	PAC-SA57RA-E								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Remote Operation Adapter	PAC-SF40RM-E *1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
i-see Sensor	PAC-SH91MK-E	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
External fan / Heater control relay adapter	CN24RELAY-KIT-CM3													●	●	●	●	●	●	●	●	●	●	●	●	●	●

*1 Unable to use with wireless remote controller *2 Unable to use with the electric heat time delay

Optional Parts List for Outdoor [P-series]

Series Name		Heat pump								Hyper heating				
		PUZ								PUZ				
		AK12NL	AK18NL	AK24NL	AK30NL	AK36NL	AK42NL	AK48NL	AK60NL	AK24NLHZ	AK30NLHZ	AK36NLHZ	AK42NLHZ	AK48NLHZ
Air Outlet Guide	PAC-SJ07SG-E	●	●											
	PAC-SG59SG-E			●	●									
	PAC-SH96SG-E					●	●	●	●	●	●	●	●	●
Air Protection Guide	PAC-SJ06AG-E	●	●											
	PAC-SH63AG-E			●	●									
	PAC-SH95AG-E					●	●	●	●	●	●	●	●	●
Drain socket	PAC-SJ08DS-E	●	●											
	PAC-SG61DS-E			●	●	●	●	●	●	●	●	●	●	●
Centralized Drain Pan	PAC-SG63DP-E	●	●											
	PAC-SG64DP-E			●	●									
	PAC-SH97DP-E					●	●	●	●	●	●	●	●	●
M-NET Converter	PAC-SJ96MA-E	●	●											
	PAC-SJ95MA-E			●	●	●	●	●	●	●	●	●	●	●
Control/Service Tool	PAC-SK52ST	●	●	●	●	●	●	●	●	●	●	●	●	●
Base heater	PAC-SK62BH-E			●	●									
	PAC-SL11BH-E					●	●	●	●					

Optional Parts List for Outdoor [S-series]

Series Name		Heat pump		Hyper heating				
		SUZ		SUZ				
		AK48NL	AK60NL	AK24NLHZ	AK30NLHZ	AK36NLHZ	AK42NLHZ	AK48NLHZ
Air Outlet Guide	PAC-SJ07SG-E							
	PAC-SG59SG-E							
	PAC-SH96SG-E	●	●	●	●	●	●	●
Air Protection Guide	PAC-SJ06AG-E							
	PAC-SH63AG-E							
	PAC-SH95AG-E	●	●	●	●	●	●	●
Drain socket	PAC-SJ08DS-E							
	PAC-SG61DS-E	●	●	●	●	●	●	●
Centralized Drain Pan	PAC-SG63DP-E							
	PAC-SG64DP-E							
	PAC-SH97DP-E	●	●	●	●	●	●	●
M-NET Converter	PAC-SJ96MA-E							
	PAC-SJ95MA-E	●	●	●	●	●	●	●
Control/Service Tool	PAC-SK52ST	●	●	●	●	●	●	●
Base heater	PAC-SK62BH-E							
	PAC-SL11BH-E	●	●					

Optional Parts

Optional parts for indoor units

1. PAC-SH59KF-E ····· 195
2. PAC-SH89/90KF-E ····· 197
3. PAC-KE92/93/94TB-E ····· 198
4. PLP-41EAEU ····· 202
5. PAC-SJ37SP-E ····· 206
6. PAC-SJ41TM-E ····· 208
7. PAC-SH65OF-E ····· 213
8. PAC-SJ65AS-E ····· 215
9. PAC-SL48DM-E ····· 217
10. PAC-WHS01WF-1 ····· 221
11. PAC-US445CN-1 ····· 222
12. PAR-42MAAUB ····· 230
13. PAR-SR4LA-E ····· 256
14. PAC-YT53CRAU ····· 259
15. PAR-FL32MA-E ····· 281
16. PAR-SL101A-E ····· 282
17. PAC-SH91MK-E/PAR-SA92MW-E/PAR-SL93B-E ····· 291
18. PAC-SE41TS-E ····· 298
19. PAC-SA88HA-E/PAC-725AD-E ····· 300
20. PAC-SE55RA-E ····· 302
21. PAC-SF40RM-E ····· 304
22. CN24RELAY-KIT-CM3 ····· 308

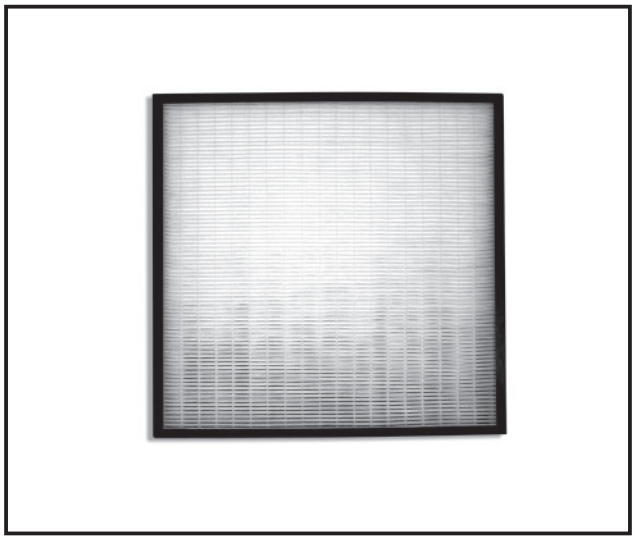
Optional parts for outdoor units

1. PAC-SJ07SG-E ····· 311
2. PAC-SG59SG-E ····· 314
3. PAC-SH96SG-E ····· 316
4. PAC-SJ06AG-E ····· 318
5. PAC-SH63AG-E ····· 320
6. PAC-SH95AG-E ····· 323
7. PAC-SJ08DS-E ····· 325
8. PAC-SG61DS-E ····· 326
9. PAC-SG63DP-E ····· 328
10. PAC-SG64DP-E ····· 330
11. PAC-SH97DP-E ····· 332
12. PAC-SJ96MA-E ····· 334
13. PAC-SJ95MA-E ····· 336
14. PAC-SK52ST ····· 338
15. PAC-SK62BH-E ····· 339
16. PAC-SL11BH-E ····· 343

High-efficiency Filter Element

PAC-SH59KF-E

Photo



Descriptions

High-efficiency Filter is part that remove dust in air.
PAC-SH53TM-E (Multi-function Casement) is required for installation.

Applicable Models

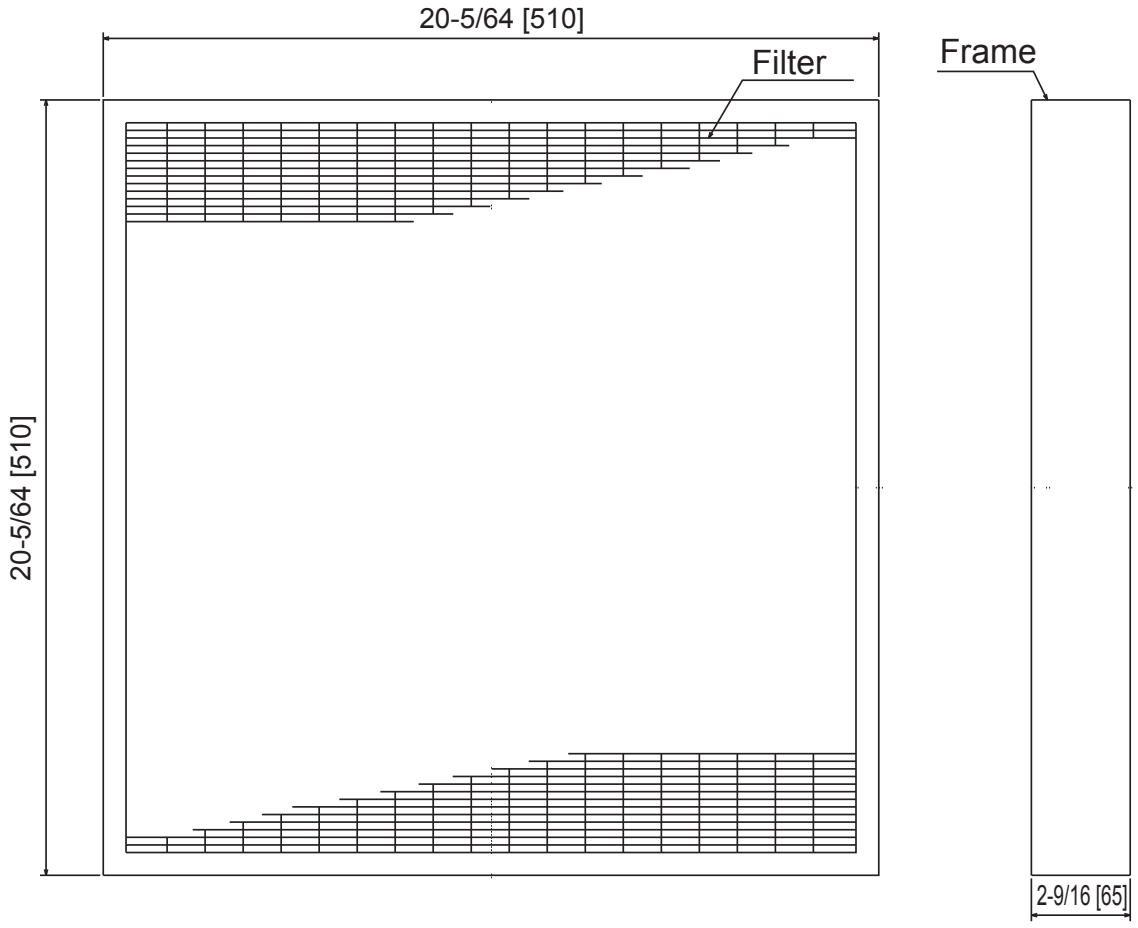
■ PLA-AE12/18/24/30/36/42/48NL

Specifications

Dust collection efficiency	Colorimetric method 65% (JIS 11 class)
Filter element ,aterial	Electrostatic polyolefin fiber
Life	Approx. 2,500 hours (at dust density 0.15 mg/m^3) *Reproduction not possible
Parts composition	This element x 1

Dimensions

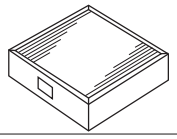
Unit: inch [mm]



How to Use / How to Install

1 Checking packed parts

(The unit is provided with this manual and following parts in the box.)

Part #, Name	High-efficiency filter element
Q'ty	1
Shape	

NOTICE

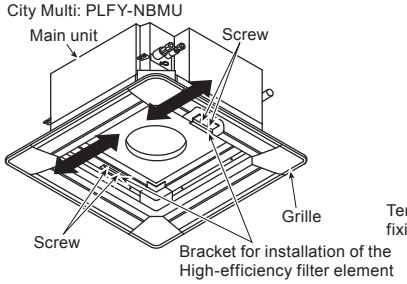
In case that the High-efficiency filter element is installed, it should be installed on the Multi-functional casement which is option.
Be sure to purchase the Multi-functional casement.

2 Installation of High-efficiency filter element (same procedure for replacement)

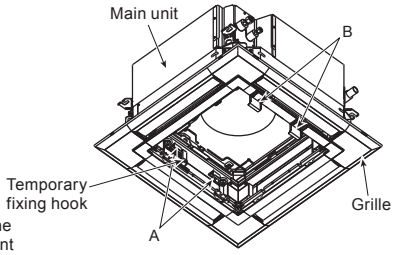
- ●Remove the intake grille of the grille in advance. (See the "installation instructions of grille" for details.)
- ●Loosen the 4 screws (B type)/8 screws (E type) of the 2 plates (B type)/4 plates (E type) for installation of the High-efficiency filter element of the Multi-functional casement as shown below. Then, slide them outward.
- ●Set the High-efficiency filter element in the Multi-functional casement, slide the plates inward, and then tighten the 4 screws (B type)/8 screws (E type) securely.

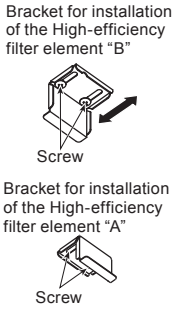
Note:
1. When the main unit is used with "2 ways" air outlet, the High-efficiency filter element is not available.
2. When the High-efficiency filter element is installed, the operation noise can be larger.
3. When attaching the High-efficiency filter element, check the direction of air flow, referring to the stamp on the side.

B type
Mr.Slim: PLA-BA
City Multi: PLFY-NBMU



E type
Mr.Slim: PLA-EA
City Multi: PLFY-NEMU





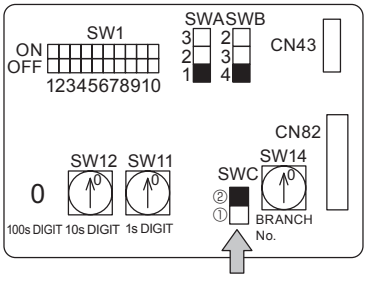
3 Air flow volume setting when High-efficiency filter element is installed

Note:
1. When the High-efficiency filter element is attached for the first time, the setting for increase in airflow rate must be performed.
2. This setting is necessary only when the element is newly attached: No setting is required when the filter is replaced.

⚠CAUTION	Set up for increasing air flow volume.
	●If the set up is not done correctly, the air flow volume will decrease and it can lower the performance and cause dew drop.

1) If the main unit to be combined is a slim air conditioner (combination with PLA):
   - ●Setting must be performed from the remote control: See the pages of "Function Selection" in the installation manual provided with the remote control. (Set optional assembly to "Yes".)
2) If the main unit to be combined is a multi air conditioner (combination with PLFY):
   - ●For PLFY-NBMU: Set switch "SWC" on the address board in the main unit to the "option" ② side ("standard" at the factory).
   - ●For PLFY-NEMU: Set switch SW21-5 on the control board in the main unit to the "ON" side ("OFF" at the factory). For the location of switch SW21 on the control board, see the wiring diagram of the main unit.

<Address board PLFY-NBMU>



4 Replacement Period

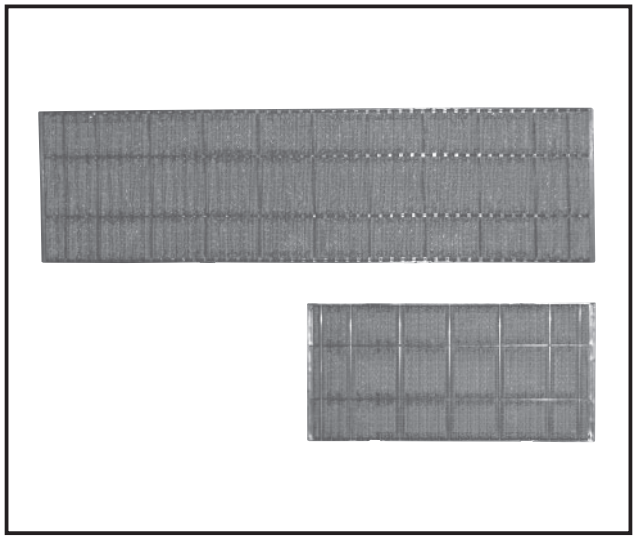
- ●The High-efficiency filter element is single-use (not recyclable).
- ●The reference for operation time is 2,500 hours (depending on the environment in which the air-conditioner is installed).

⚠CAUTION	Do not wash with water.
	●Washing with water will degrade the performance and could cause the element to become unusable.

High-efficiency Filter Element

PAC-SH89/90KF-E

Photo



Descriptions

- High-efficiency Filter is part that remove dust in air.
  Dust collection efficiency: 70% (Weighing method)
- It is the best for the air-conditioning of the stove where a lot of going of the person in and out exists.

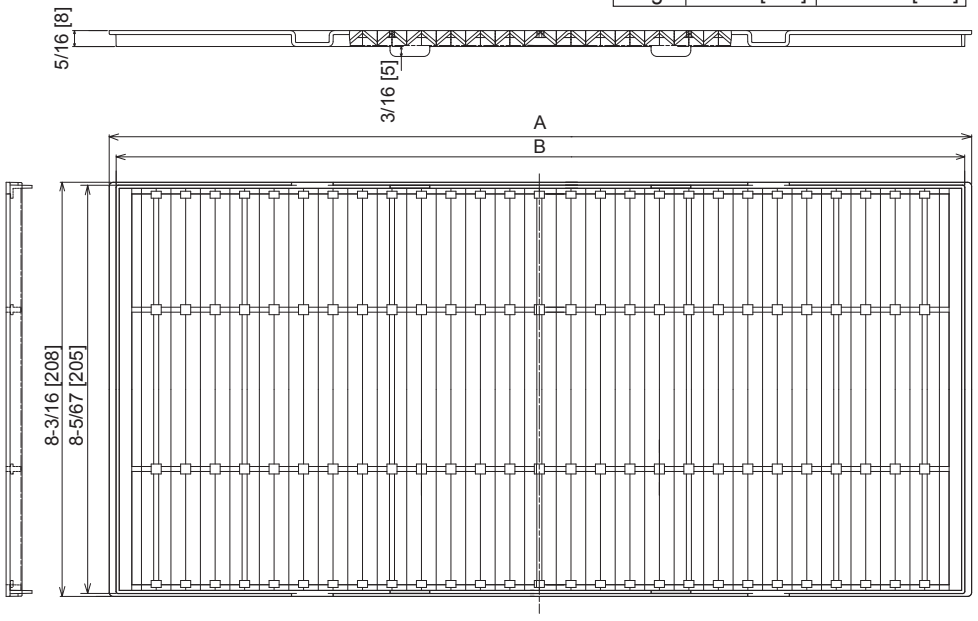
Applicable Models and Specifications

Model		PAC-SH89KF-E	PAC-SH90KF-E
Dust collection efficiency		70% (weighing method)	
Filter material		PP fiber (antibacterial + mildew-proof), honeycomb weave (Identification: gray yarn woven)	
Maintenance		Approx. 2,500 hours (varies with operating conditions)	
Parts composition	Filter (large)	1	2
	Filter (small)	1	—
Applicable models		PCA-AK24/30NL	PCA-AK36/42NL

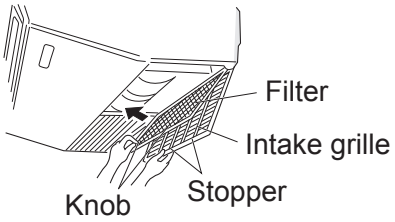
Dimensions

Unit: inch [mm]

	A	B
Small	17 [432]	16-47/64 [425]
Large	29-5/8 [752]	29-21/64 [745]

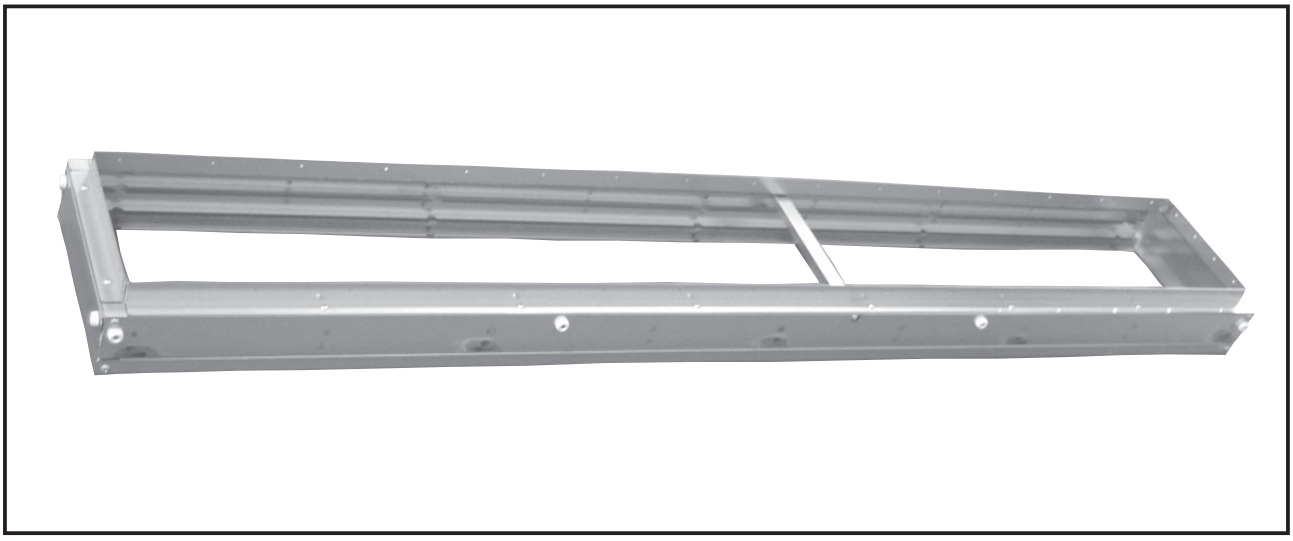


How to Use / How to Install



1 Open the intake grille.
2 Hold the knob on the filter then pull the filter up in the direction of an arrow. To replace the high efficiency filter, be sure to insert the filter far enough until it fits into the stopper.

Photo



Applicable Models

Model	PAC-KE92TB-E	PAC-KE93TB-E	PAC-KE94TB-E
Applicable models	PEAD-AA12NL PEAD-AA18NL	PEAD-AA24NL PEAD-AA30NL	PEAD-AA36NL PEAD-AA42NL

How to Use / How to Install

1 Confirming the Supplied Parts

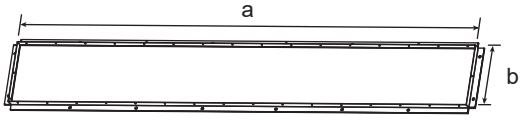
1. Model names and applicable models

Unit : inch [mm]

Model name	Applicable types	Applicable filter	
		Size	Q'ty
PAC-KE92TB-E	PEAD-AA12NL PEAD-AA18NL	35-7/16 × 9-1/2 [900×240]	1
PAC-KE93TB-E	PEAD-AA24NL PEAD-AA30NL	21-21/32 × 9-1/2 [550×240]	2
PAC-KE94TB-E	PEAD-AA36NL PEAD-AA42NL	27-9/16 × 9-1/2 [700×240]	2

2. Provided parts

Check that the packet includes the following parts in addition to this installation manual.

PARTS	SHAPE		Q'ty	Model name
① SCREW(4 × 10)			24	PAC-KE92/93TB-E
			30	PAC-KE94TB-E
② SUCTION FLANGE		a × b	-	-
		33-3/4 × 8-3/16 [857×208]	1	PAC-KE92TB-E
		41-39/64 × 8-3/16 [1057×208]	1	PAC-KE93TB-E
		53-27/64 × 8-3/16 [1357×208]	1	PAC-KE94TB-E

2 Attach the filter box

Attach the filter box before installalling the indoor unit.

1. Remove the filter on the indoor unit. (Fig. 2-1)

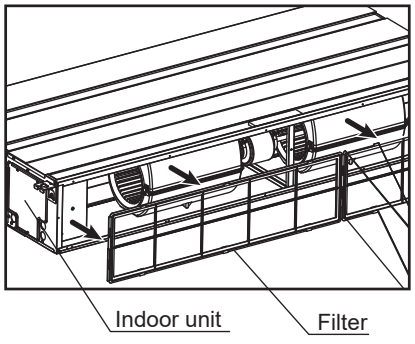


Fig.2-1

2. Install the filter box on the indoor unit with the supplied screws. (Fig. 2-2)

PAC-KE92/93TB-E ·····10 pcs.
PAC-KE94TB-E ·····12 pcs.

Note) Failure to firmly tightened the screws will cause air leakage. Make sure the screws are firmly tightened.

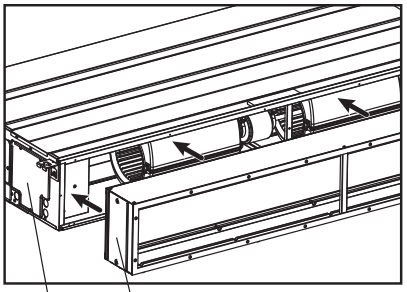


Fig.2-2

3. Install the supplied suction flange on the filter box with the supplied screws. (Fig. 2-3)

PAC-KE92/93TB-E ·····12 pcs.
PAC-KE94TB-E ·····16 pcs.

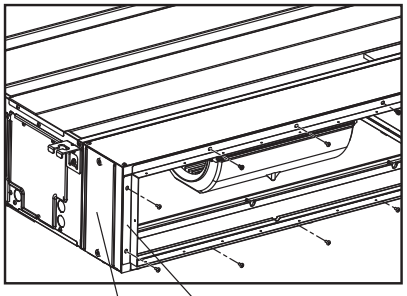


Fig.2-3

3 Installing the filter

1. Installation that allows for maintenance from the side

(1) Remove the side panel from the filter box. (Fig. 3-1-1)

(2) Insert the filter that was removed in step 2-1 above along the top and bottom rails. (Fig. 3-1-2)
When using the PAC-KE93 or 94TB model, join the two filters before inserting them. (Fig. 3-1-3)

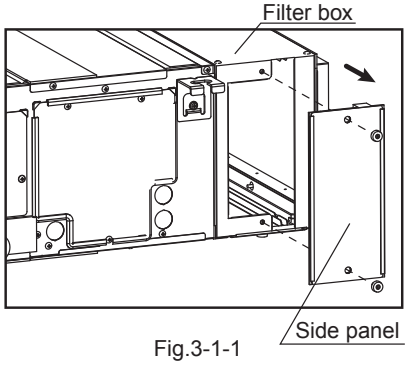


Fig.3-1-1

If the two filters are inserted without them being joined together, it will render the one in the back difficult to remove.

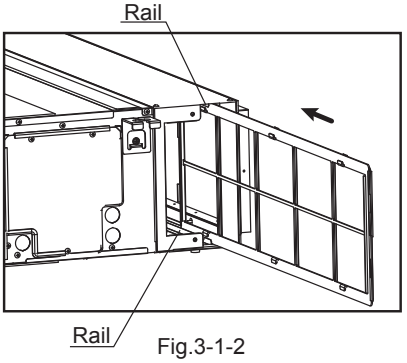


Fig.3-1-2

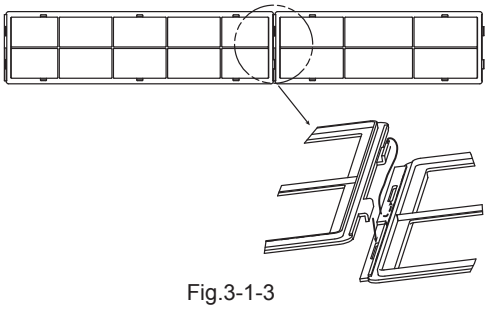


Fig.3-1-3

⚠ CAUTION

Never place your hand inside the filter box during maintenance. If the filter tabs become caught when the filter is removed for maintenance, use a long stick or similar item to remove the remaining filter.

2. Installation that allows for maintenance from the bottom

(1) Remove the under panel from the filter box. (Fig. 3-2-1)

(2) Insert the filter that was removed in step 3-1 above through the bottom of the filter box. (Fig. 3-2-2)

(3) Insert the filter between the insulators on the top plate of the filter box until the filter is completely inside the filter box, and place the filter on the under frame of the filter box. (Fig. 3-2-3)

(4) Install the under panel.

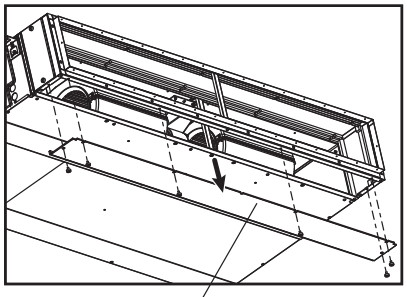


Fig.3-2-1

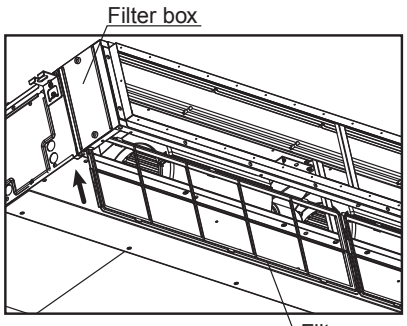


Fig.3-2-2

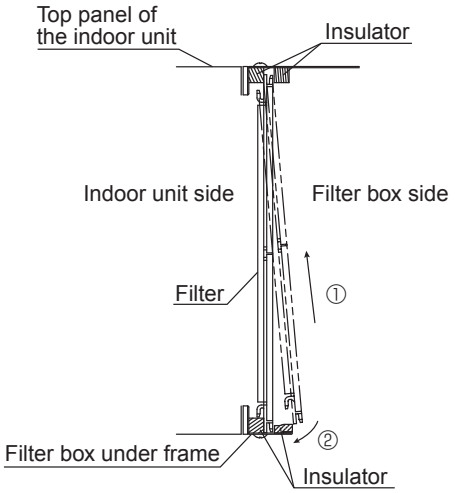


Fig.3-2-3

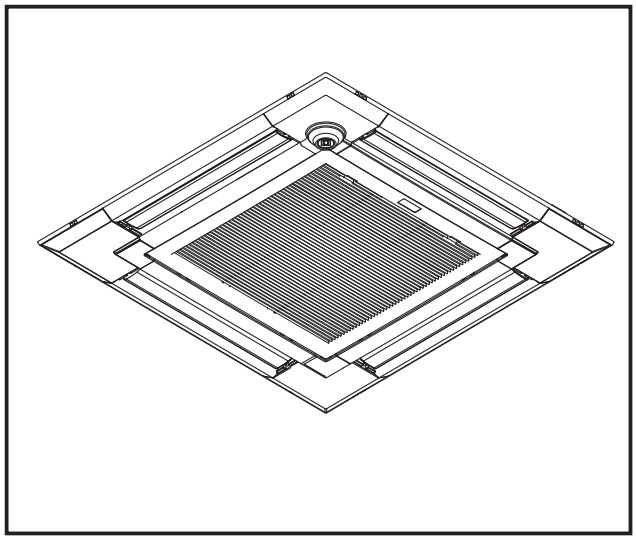
Final Check

The last step of the procedure is to make sure that nothing has been overlooked during the procedure. In addition, once the filter box has been mounted and the above procedure has been completed, carefully check for air leakage at the connections of the indoor unit.

For more detailed information, please consult your dealer.

Decoration panel with 3D i-see sensor PLP-41EAEU

Figure



Descriptions

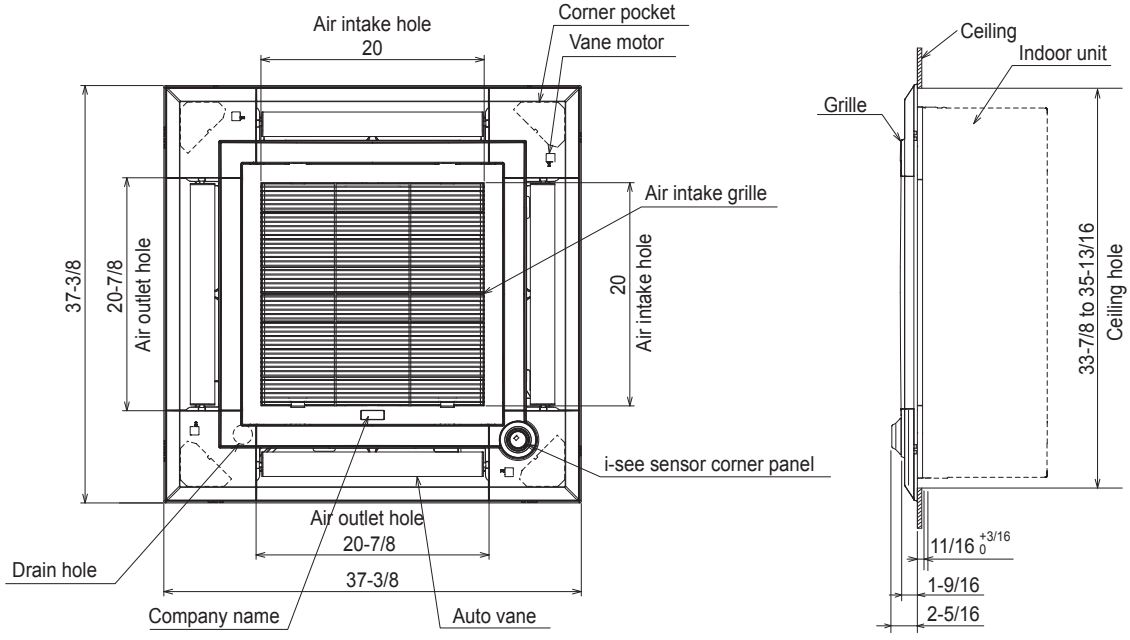
This panel is only for ceiling cassette type indoor units with i-see sensor.

Applicable Models

■ PLA-AE12/18/24/30/36/42/48NL

Dimensions

Unit : inch



How to Use / How to Install

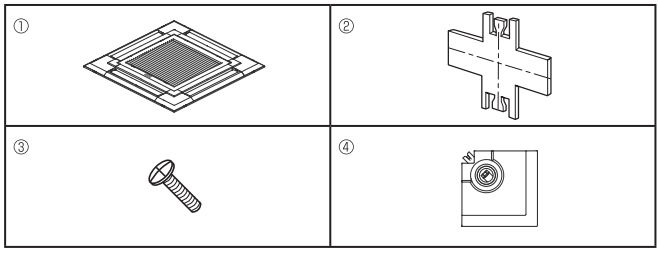


Fig. 1

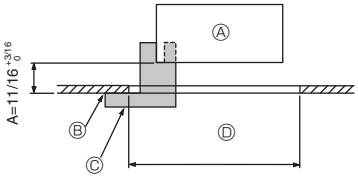


Fig. 2

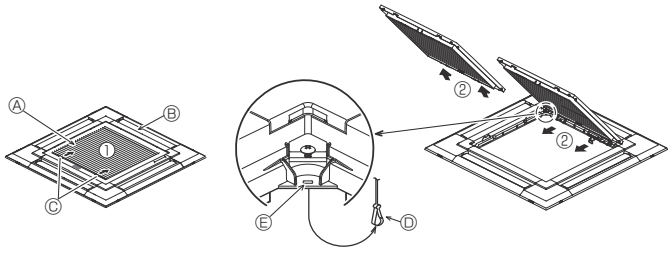


Fig. 3

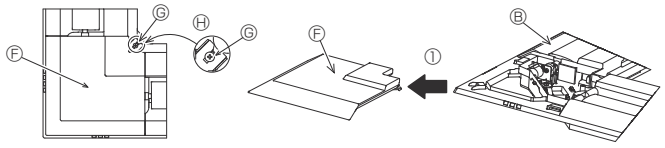


Fig. 4

	4-directional	3-directional
Blowout direction patterns	1 pattern: initial setting	4 patterns: one air outlet fully closed
	2-directional	
Blowout direction patterns	6 patterns: 2 air outlet fully closed	

Table 1

<Hook is in the raised position> <Hook is in the lowered position>

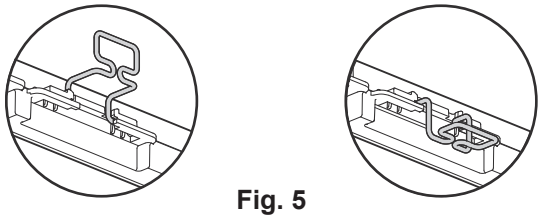


Fig. 5

1. Checking the contents (Fig. 1)

• This kit contains this manual and the following parts.

	Accessory name	Q'ty	Remarks
①	Grille	1	950 × 950 (mm), 37-3/8 × 37-3/8 (inch)
②	Installation gauge	1	(Divided into 4 parts)
③	Screw (4 × 16)	1	
④	i-see Sensor corner panel	1	

2. Preparing to attach the grille (Fig. 2)

• With the gauge ② supplied with this kit, adjust and check the positioning of the main unit relative to the ceiling surface. If the main unit is not properly positioned relative to the ceiling surface, it may allow air leaks or cause condensation to collect.
• Make sure that the opening in the ceiling is within the following tolerances: 860 × 860-910 × 910 mm, 33-7/8 × 33-7/8 to 35-13/16 × 35-13/16 inch
• Make sure that A is performed within 17-22 mm, 11/16 to 7/8 inch. Damage could result by failing to adhere to this range.
  Ⓐ Main unit
  Ⓑ Ceiling surface
  Ⓒ Installation gauge ② (inserted into the main unit)
  Ⓓ Ceiling opening dimensions

2.1. Removing the intake grille (Fig. 3)

• Slide the levers in the direction indicated by the arrows ① to open the intake grille.
• Unlatch the hook that secures the grille.
  * Do not unlatch the hook for the intake grille.
• With the intake grille in the "open" position, remove the hinge of the intake grille from the grille as indicated by the arrows ②.

2.2. Removing the corner panel (Fig. 4)

• Loose the 4 screws on the corner. Slide the corner panel in the direction of the arrow ① in the figure and remove the corner panel.

[Fig. 3] [Fig. 4]

Ⓐ Intake grille
Ⓑ Grille ①
Ⓒ Intake grille levers
Ⓓ Grille hook
Ⓔ Hole for the grille's hook
Ⓕ Corner panel
Ⓖ Screw
Ⓗ Detail

3. Selection of air outlets

For this grille the discharge direction is available in 11 patterns. Also, by setting the remote controller to the appropriate settings, you can adjust the air-flow and speed. Select the required settings from the Table 1 according to the location in which you want to install the unit. (More than two directions must be selected.)

1) Decide on the discharge direction pattern.
2) Be sure to set the remote controller to the appropriate settings according to the number of air outlets and the height of the ceiling on which the main unit will be installed.

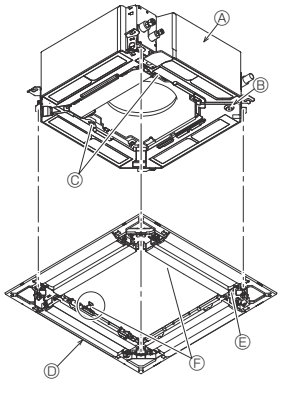
Notes:

• **When changing the number of directions, you need an air outlet shutter plate, which is optional part.**
• **Do not select 2 directions in a hot and humid environment. (Dew formation or dew drop may result.)**

4. Installing the grille

4.1. Preparations (Fig. 5)

Make sure to flip 2 hooks on the grille up.



Ⓐ Main unit
Ⓑ Corner of drain pipe
Ⓒ Claw on the main unit
Ⓓ Grille ①
Ⓔ Hole on the grille
Ⓕ Hook for temporary installation
Ⓖ Screw with captive washer
Ⓗ Ceiling surface
Ⓙ No gap
Ⓚ Adjust the nut of main unit using a wrench, etc.

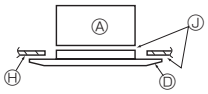


Fig. 6

< The grille temporary installed >

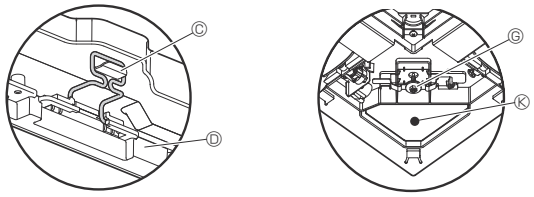
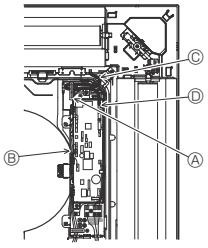
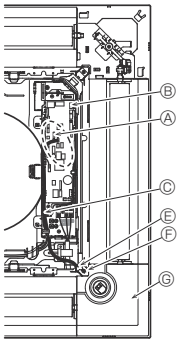


Fig. 7



Ⓐ Clamp of the main unit
Ⓑ Electrical box
Ⓒ Lead wires of the grille
Ⓓ CNV connector on the controller board

Fig. 8



Ⓐ CN4Z on the controller board
Ⓑ CN5Y on the controller board
Ⓒ Lead wire of i-see Sensor corner panel
Ⓓ Clamp
Ⓔ Hole of grille (Pass the lead wire.)
Ⓕ Screw ③
Ⓖ i-see Sensor corner panel ④

Fig. 9

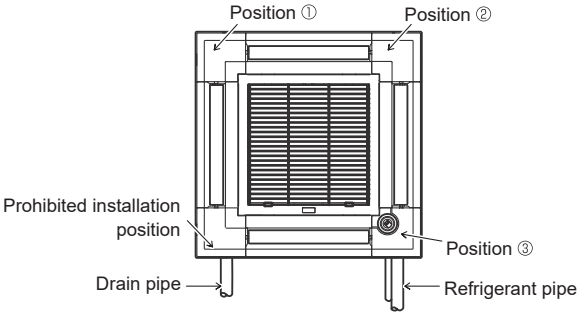


Fig. 10

4.2. Temporary installation of the grille (Fig. 6)

- Join the corner of drain pipe on the main unit with the corner with hole on the grille and put them together temporarily by hanging the hook of the grille to the claw of the main unit.

4.3. Fixing the grille

- By tightening the pre-installed screws, fix the grille onto the main unit. (Fig. 6)
  Note:
  Make sure there is no gap between the main unit and the grille or between the grille and the ceiling surface. (Fig. 7)

  If there is a gap between the grille and the ceiling:
  With the grille attached, slightly adjust the installation height of the main unit and clear the gap.

⚠ **Caution:**

- **When tightening the screw, make sure that the tightening torque is 2.8 N·m to 3.6 N·m, 2.1 to 2.6 ft·lbs. Never use an impact screw driver.**
- **After tightening the screw, confirm that the two grille hooks (Fig. 6) are latched onto the hooks on the main unit.**

4.4. Wire connection (Fig. 8)

- Loose the 2 screws fixing the electrical box cover on the main unit, and slide the cover to open.
- Route the lead wire from side of the electrical box.
- Make sure to connect a connector for vane motor (white, 20 poles) to CNV connector (white) on the controller board of the main unit.
- Lead wires that lead off the grille must be held together without slack using a clamp into the electrical box.

4.5. Installation of i-see Sensor corner panel (Fig. 9)

- Route the lead wire from the side of electrical box.
- Route the lead wire connector (white, 4 poles and white, 5 poles) of the i-see Sensor corner panel ④ from the side of the electrical box on the main unit and connect to the connector CN4Z and CN5Y on the controller board.
- The remaining lead wire of i-see Sensor corner panel must be held together without slack using the clamp into the electrical box.
- Put the cover back on the electrical box with 2 screws.
  Note:
  Make sure wires are not caught in the electrical box cover.
- The i-see Sensor corner panel should be fixed onto the grille ① with screw ③.

* If the position of the i-see Sensor was changed from default position (Position ③) to the other position, change the function settings. (Refer to Fig. 10)

- The i-see Sensor corner panel can not installed on the drain pipe side for the main unit. (Refer to Fig. 10)

Position ①: (Air outlet identification marks □/□□□□)
Position ②: (Air outlet identification marks □/□□)
Position ③: Default i-see Sensor position (Air outlet identification marks □□/□□□)

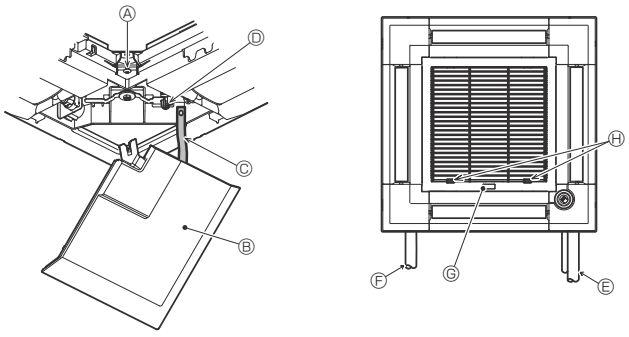


Fig. 11

5. Installing the intake grille (Fig. 11)

Note:

When reinstalling the corner panels (each with a safety strap attached), connect the other end of each safety strap to the grille as shown in the illustration.

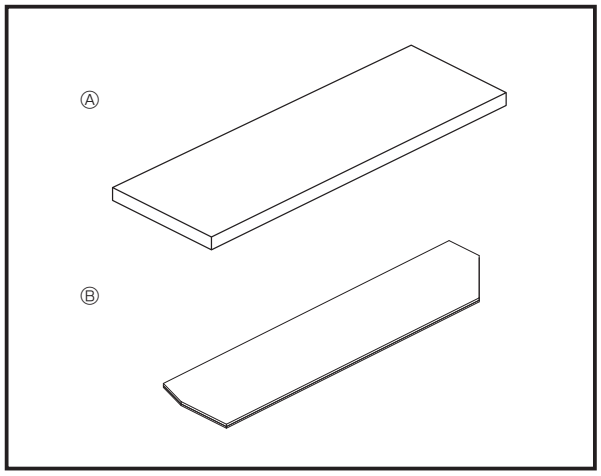
* If the corner panels are not attached surely, they may fall off while the main unit is operating.
- Perform the procedure that is described in “2. Preparing to attach the grille” in reverse order to install the intake grille and the corner panel.
- The direction of the intake grille can be changed according to the wishes of the customer.

Ⓐ Screw (4 × 16)
Ⓑ Corner panel
Ⓒ Safety strap
Ⓓ Hook
Ⓔ Refrigerant pipe
Ⓕ Drain pipe
Ⓖ Company logo
* Installation in any position is possible.
Ⓗ Initial position of the levers on the intake grille
* Although the clips can be installed in any of 4 positions, the configuration shown here is recommended. (It is not necessary to remove the intake grille when maintenance is performed on the electrical box of the main unit.)

Air Outlet Shutter Plate

PAC-SJ37SP-E

Figure



Descriptions

Part to block the air outlet of a cassette-type indoor unit.

Applicable Models

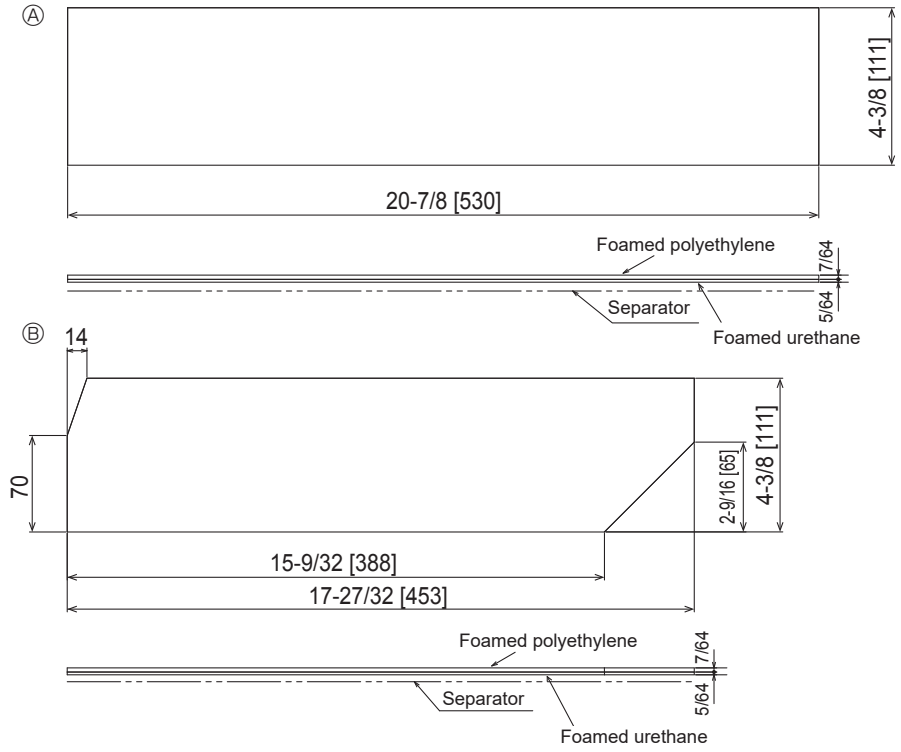
■ PLA-AE12/18/24/30/36/42/48NL

Specifications

Air outlet pattern	<table><tr><th></th><th>Number of shutter plates</th></tr><tr><td>4 directions → 3 directions</td><td>1</td></tr><tr><td>4 directions → 2 directions</td><td>2</td></tr></table> (Change to 1 direction is not possible.) Note 1: Selecting “2 directions” requires cleaning of the filter approximately once. (Filter clogging may cause cooling/heating performance to drop.) Note 2: Selecting “3 directions” or “2 directions” may increase operating sound. Note 3: “2 directions” should not be selected when operating in high-temperature/high-humidity environment. (Dew formation or dewdrop may result.) Note 4: When set to “2 ways”, the unit cannot be used with the optional high efficiency filter element. Note 5: When this air outlet shutter plate is installed, a draft reduction setting is not available.
Material	Foamed polyethylene + Foamed urethane
Color	Black
Installation method	Glued to the air outlet of the indoor unit.

Dimensions

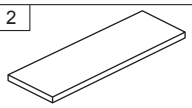
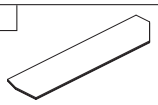
Unit : inch [mm]



How to Use / How to Install

Checking for provided parts

Make sure that the parts shown on the right are in this bag, along with the instruction sheet.

Part #, Name	① Shutter plate	② Shutter plate
Q'ty	2	1
Figure		

Air-outlet shutter plate Installation Manual

1. Locate the Shutter Plate installation position
- This is a part which is used to convert the number of air-outlet from "4 ways" to "3 ways" or "2 ways".
  Note: Convert to "1 way" is not available.
- Select the outlet direction and decide the outlet to be closed.
  Notes:
  1. When the number of outlet is selected to "2 ways", be sure to explain to the customer that the filter should be cleaned once a month.
     (Otherwise, the filter will be clogged, and the performance of the cooling and heating can be lower.)
  2. When the number of outlet is selected to "3 ways" or "2 ways", the operation noise can be larger.
  3. Never to select "2 ways" in the environment of high temperature and high humidity.
     (It can cause dew drops.)

2. Installation of shutter plate (Fig.1)
- Install the shutter plate to the indoor unit so that it can fit the air-outlet concave portion.
  Notes:
  1. Install one piece of Shutter plate ① per one air-outlet.
  2. The installation should be done before the grille is installed.
  3. The shutter plate must be installed not to cause wrinkle or gap.
     (It can cause dew drops.)
  4. When attaching the shutter plate to the blow outlet (marked ★) between the refrigerant piping and the drain pump, attach the shutter plate ②.

3. Function setting
- When the number of air-outlet is changed, it is necessary to make function selection.
  For the setting method, refer to the installation manual of the main unit.

4. Setting of the auto vane (Fig.2)
- It is possible to fix the auto vane of the grille to the fully closed position, which is applied to the air-outlet installed on the shutter plate.
  Once the auto vane is fixed, the operation of a remote controller and all of automatic control will not be available.
  Note that the fixed vane angle differs from the one which is displayed on the remote controller.

Fig.1

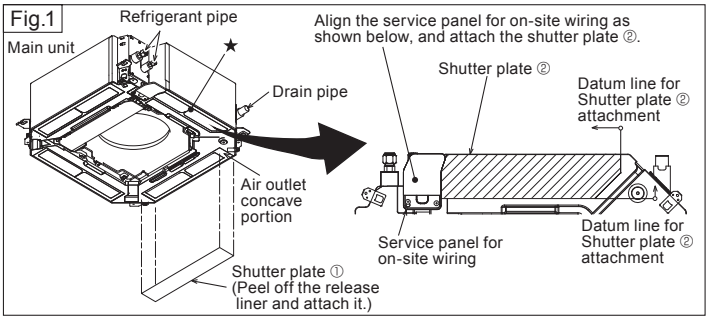
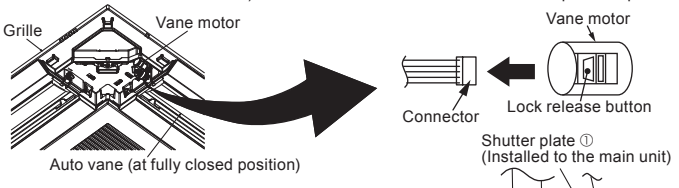


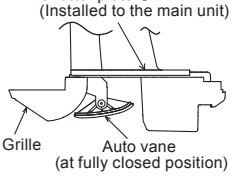
Fig.2

1) Turn OFF the main power (earth leakage breaker).

⚠Warning
Turn OFF the main power.
- The fan of the unit will run, which can cause accident or electric shock.

2) Disconnect the vane motor connector from the grille of which the shutter plate ② is attached to its air outlet. (To disconnect, press the lock release button while pulling the connector toward the arrow as shown below.) Insulate the disconnected connector with plastic tape.





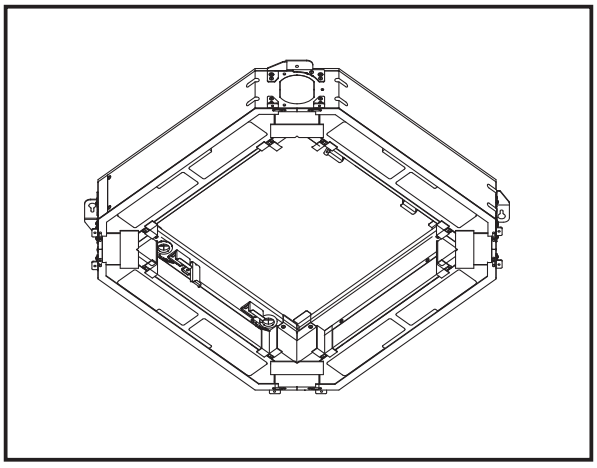
3) Slowly move the auto vane of which the shutter plate is attached to its air outlet, and fully close.

⚠Caution
Do not fully close the auto vane if no shutter plate I attached to its air outlet.
- Otherwise, dew formation or dew drop, or a unit malfunction may result.

Multi-functional Casement

PAC-SJ41TM-E

Figure



Descriptions

Part to block the air outlet of a cassette-type indoor unit.

Applicable Models

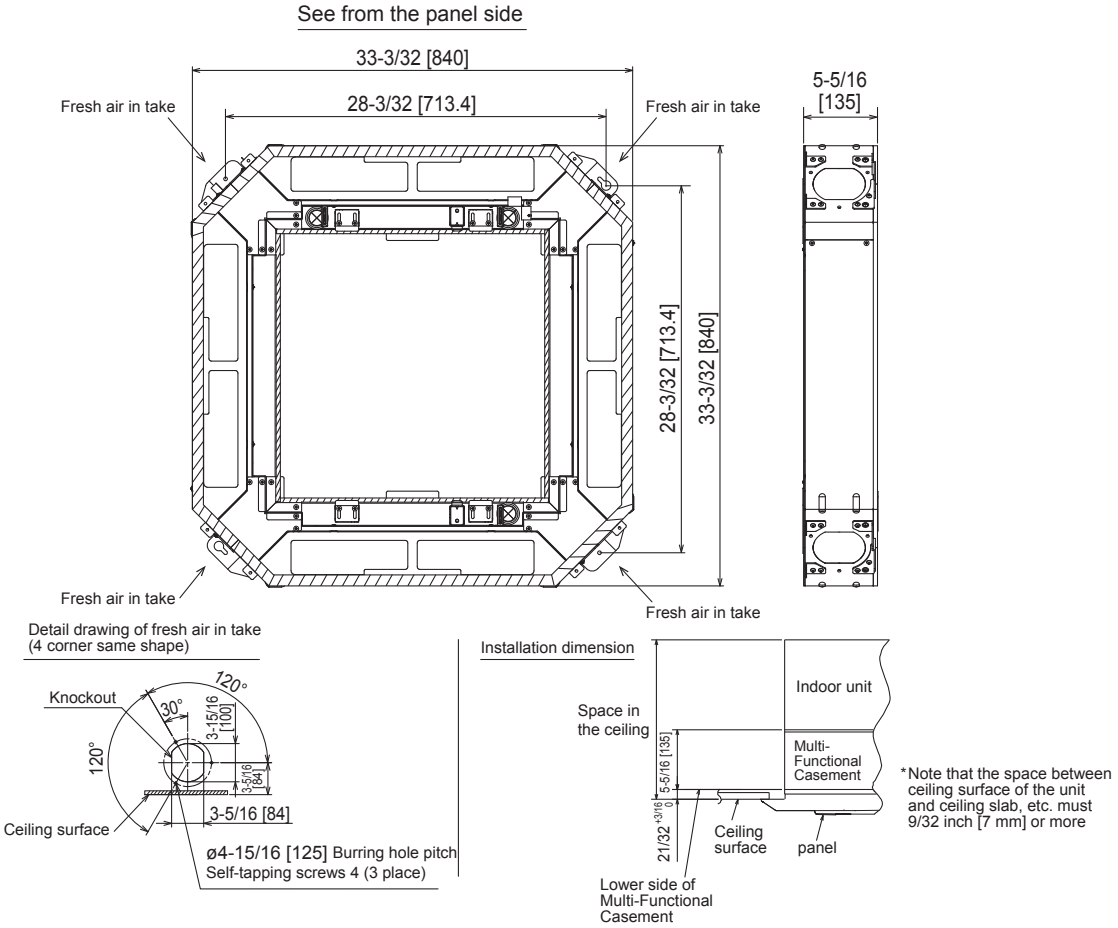
■ PLA-AE12/18/24/30/36/42/48NL

Specifications

Connected duct diameter (inch)		Ø3-15/16
Fresh air intake	Number of intakes	Any 2 corners or less (among four corners)
	Input volume	20% or less of indoor units air volume
High-performance filter element (Optional parts)		Colorimetric method (65%)

Dimensions

Unit: inch [mm]

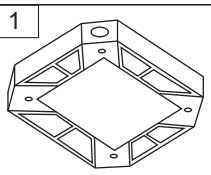
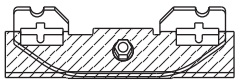


How to Use / How to Install

1 Parts check

(The unit is provided with this manual and following parts in the box.)

MULTI-FUNCTIONAL CASEMENT

Part No., Name	① Multi-functional casement	② Screw with washer (black)	③ Screw	④ Grille securing bracket
Q'ty	1	4 M5×0.8×25	8 M5×0.8×12	4 With insulator
Figure				

NOTICE

(1) When taking in fresh air from outside, use the PAC-SH65OF-E duct flange (optional).
In addition, procure following items at local site: duct fan, duct, and dust collecting filter.
Intake-air volume should be 20% or less of indoor unit air volume.
Note: It is available of fresh-air intake even when the High-efficiency filter element is installed.
(2) Follow the procedure in this installation manual of the Multi-functional casement ①.
Otherwise, it is possible that installation of refrigerant pipes, drain pipe, and electrical wiring will not be available.

2 Installation of Main unit

●Follow the procedure in the installation manual which is attached to the main unit.

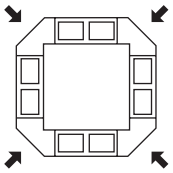
3 Installation of Multi-functional casement

Preparation before installation

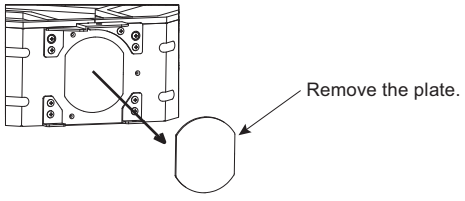
●An optional part Shutter plate to change the number of air outlet is to be installed on the main unit of the indoor unit; thus install the shutter plate before installing the Multi-functional casement ①.

●The Multi-functional casement ① has 4 knockout on each side so that the fresh air can be taken from any of four sides. Select any one or two sides in advance and make knockout holes on the Multi-functional casement ①.

Knockout hole position for fresh-air intake.



Making knockout holes

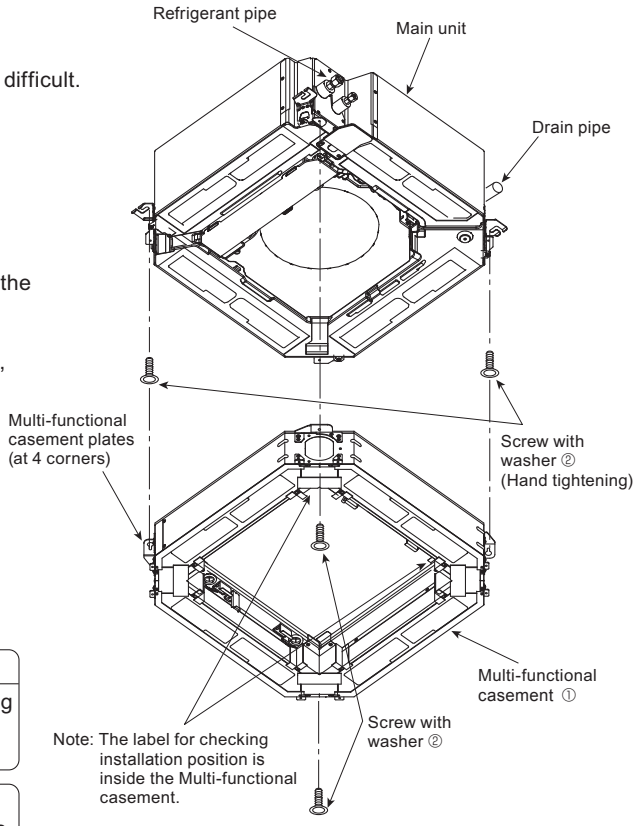


●Be sure to use the PAC-SH65OF-E (optional) for duct flange.

3 Installation of Multi-functional casement

Electrical work of main unit

●Be sure to do the wiring (indoor/outdoor unit connection cable, remote controller cable, etc.) before installing the Multi-functional casement ①:
Note: Wiring after installing the Multi-functional casement ① will be difficult.



Temporary installation

Note: Be sure to use two persons for this work.

●Fix the 2 screw with washer (black) ② to each position.
(drain pipe corner position and to its opposite corner).
●Align the direction of the Multi-functional casement ① according to the label for checking the installation position attached inside the Multi-functional casement ①.
Note: If installed in improper direction, parts damage, wind leakage, or dew drop may result.
●Hook the hole of the Multi-functional casement ① to the screw with washer (black) ② and hand tight.

Fixing

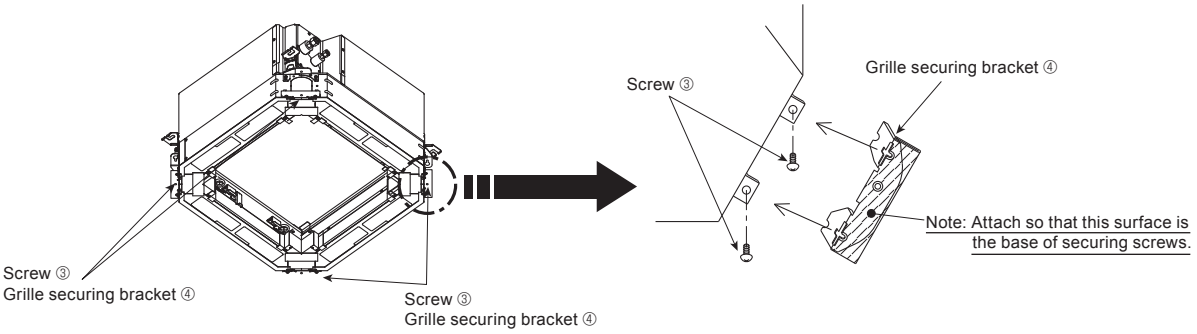
●Temporarily secure the 2 screws with washers ②, and also the other 2 screws with washers ②, and then tighten these screws with washers ② after making sure that the position of Multi-functional casement ① is correct.

⚠**Caution**	Temporarily secure the 4 screws with washers.
	●Tightening the screws without temporarily securing them could damage the screws with washers, or cause air leakage.

⚠**Caution**	When tightening the screw with washer ②, tighten it at a torque of 2.8 to 3.6 N•m (2.1 to 2.6 ft•lbs) or less. Never use an impact screwdriver.
	●It may result in parts damage.

Attaching bracket for securing grille

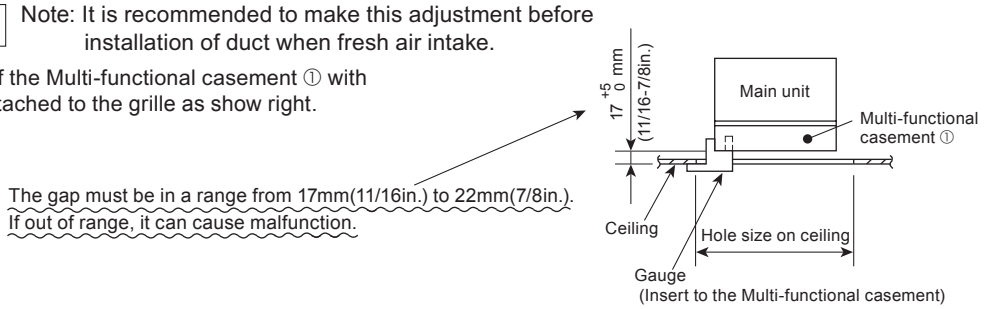
●Use 8 screws ③ to secure the 4 Grille securing brackets ④ to each corner of Multi-functional casement ①.
(See the figure below.)



Height adjustment

Note: It is recommended to make this adjustment before installation of duct when fresh air intake.

●Readjust the height of the Multi-functional casement ① with the gauge which is attached to the grille as show right.



4 Installation of duct (in case of fresh air intake)

Installation of duct flange

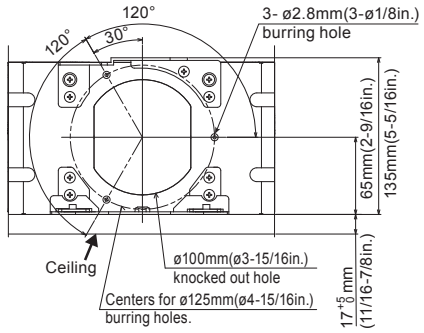
- Install the optional duct flange referring to the installation manual provided with it.

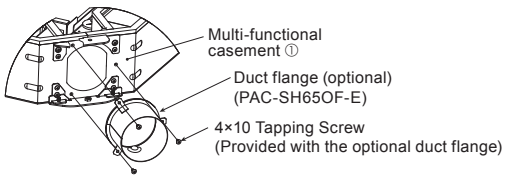
⚠Caution

Linkage of duct fan and air conditioner.

- In case that a duct fan is used, be sure to make it linked with the air conditioner when outside air is taken. Do not run the duct fan only. It can cause dew drop.

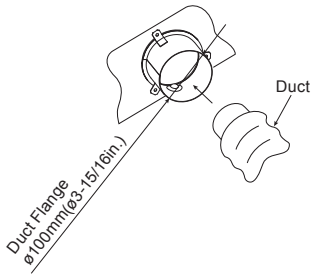
Details of air inlet (Example)





Installation of duct (should be prepared locally)

- Prepare a duct of which inner diameter fits into the outer diameter of the duct flange.
- In case that the environment above the ceiling is high temperature and high humidity, wrap the duct in a heat insulator to avoid causing dew drop on the wall.
- A duct must be procured at local site for dust collecting filter since the dust contained in the outside air taken into the indoor unit is not removed without such filter.

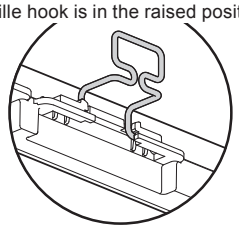


5 Installation of grille

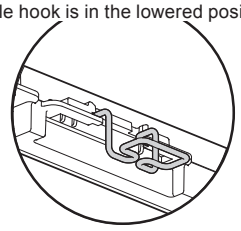
Preparation for temporarily hanging the grille

- Check that the 2 temporary hanging hooks on the grille are in the raised position.

<Grille hook is in the raised position>



<Grille hook is in the lowered position>



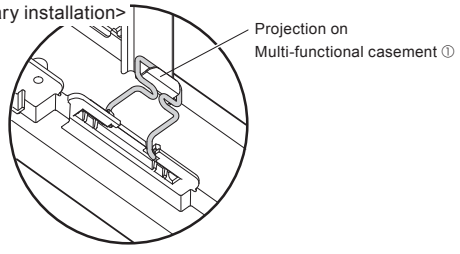
Temporary installation of the grille

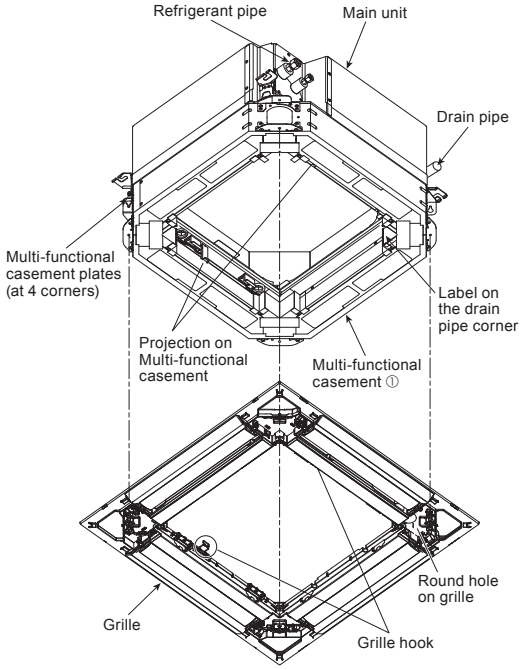
- Align the label attached on the drain pipe corner of the Multi-functional casement to the corner with the round hole of the grille, and temporarily install the grille by latching the grille hooks onto the projections on the Multi-functional casement ①.

Notes:

1. Make sure electrical wires are not caught between the Multi-functional casement and the grille.
2. Never force pressure on the grille during the temporary installation. It may result in accident and damage.

<A grille in temporary installation>





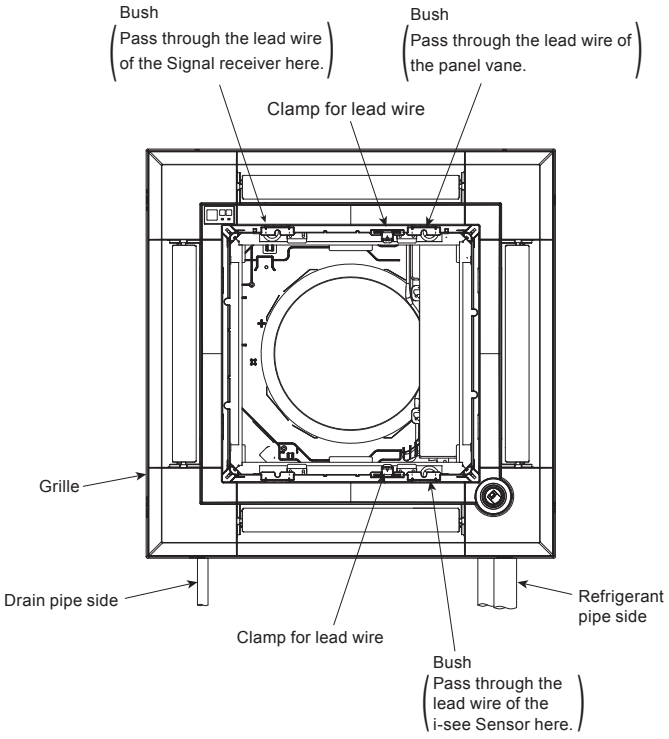
5 Installation of grille

Fixing the grille

- Refer to the installation manual of the main unit for the installation.

Electrical work

- For lead wires of the grille the Signal receiver, and the i-see Sensor make sure that they passed through the bush on the Multi-functional casement, as shown in the right figure, and connect to the main unit.



Duct Flange for Fresh-air Intake

PAC-SH65OF-E

Photo



Descriptions

Part to attach a duct to take in fresh air from outdoors.

Applicable Models

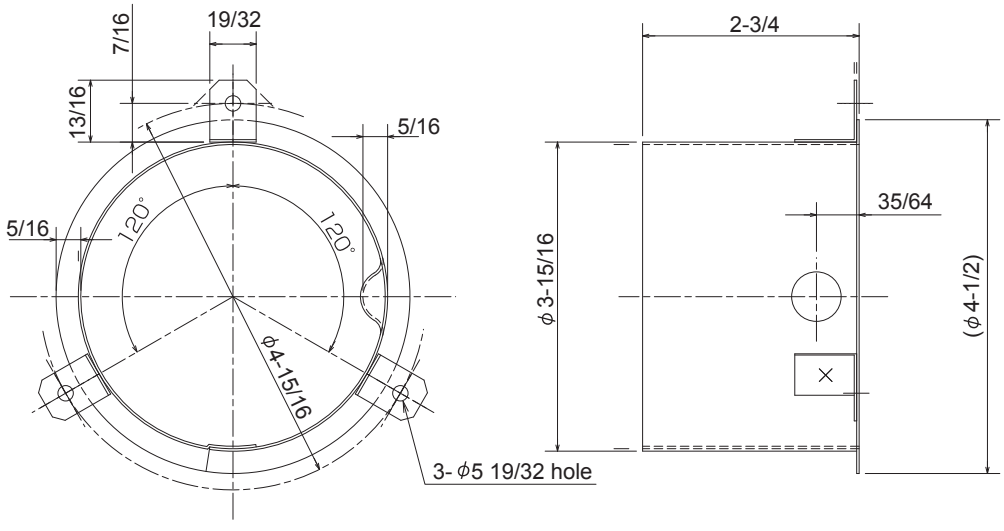
■ PLA-AE12/18/24/30/36/42/48NL

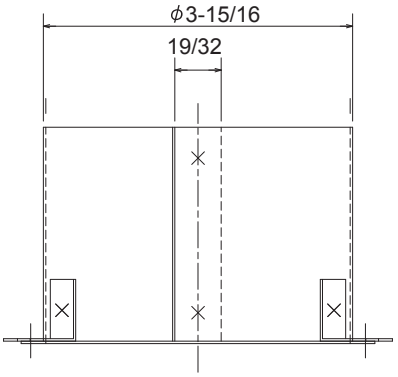
Specifications

Connection duct diameter (inch)	ø7-7/8
Material	Hot-dip zinc-coated carbon steel sheet (t0.8)
Accessory	Insulator, Fixing screw (ST4x10)x3

Dimensions

Unit : inch

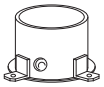




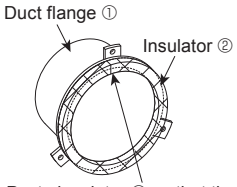
How to Use / How to Install

1. Checking Parts

(This box contains the installation manual and the following parts)

Part	①Duct flange	②Insulator	③Screws(M4×10)
Qty	1	1	3
Shape			

2. Attaching Duct Flange for External Air Input



Paste insulator ② so that there is no gap at joints.

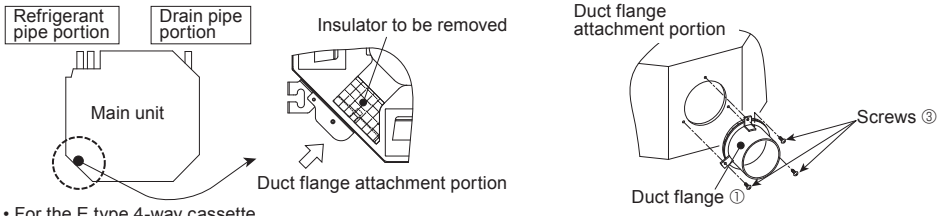
1) Punch an opening for the duct flange.
   <When attaching to main unit>
   • Cut the slit of the ø100 cut-out hole to which the duct flange is to be attached.
   <When attaching to Multi-functional casement>
   • Remove the ø100 knockout hole to which the duct flange is to be attached.
2) Paste insulator ② on the duct flange ① (see the figure on the right).
3) Use 3 screws ③ to attach duct flange ① (see the figure below).

Note:

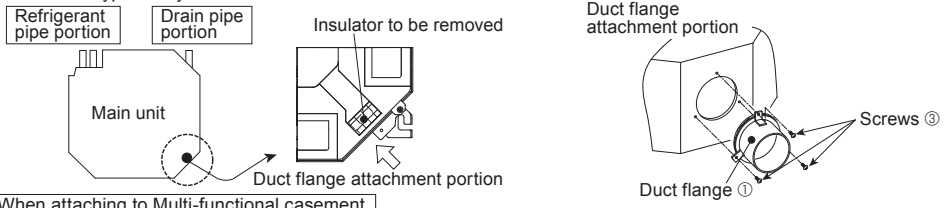
1. When attaching to the main unit, **be sure to remove the insulator** that is pasted on the location of main unit (shown in the figure below).
2. When attaching to Multi-functional casement, be sure to **set the concave portion of duct flange ① toward the grille attachment surface when attaching it**. (If the duct flange is attached to a location other than the specified one, the grille cannot be attached.)
3. When external air is input directly through the main unit, intake-air volume should be 5% or less of indoor unit air volume.
4. When external air is input through the Multi-functional casement, intake-air volume should be 20% or less of indoor unit air volume.
5. To input the external air, the duct fan and dust collecting filter to prevent drawing in dust and other particles are necessary.
   For details, see “Fresh air intake volume & static pressure characteristics” in the P series DATA BOOK.
6. When external air is input into the main unit, the operation noise can be larger.

When attaching to main unit

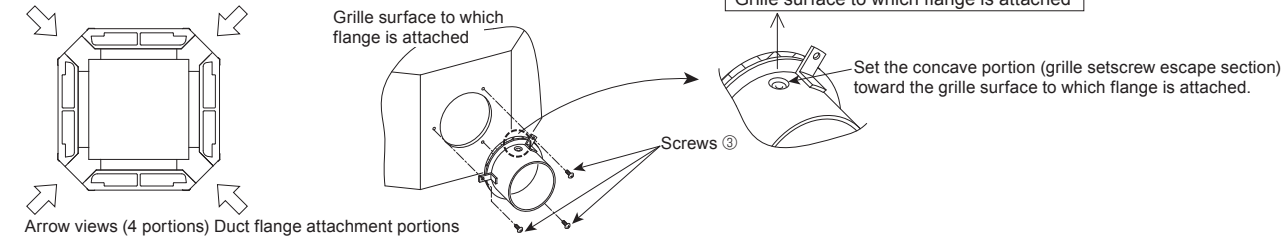
• For the B type 4-way cassette



• For the E type 4-way cassette



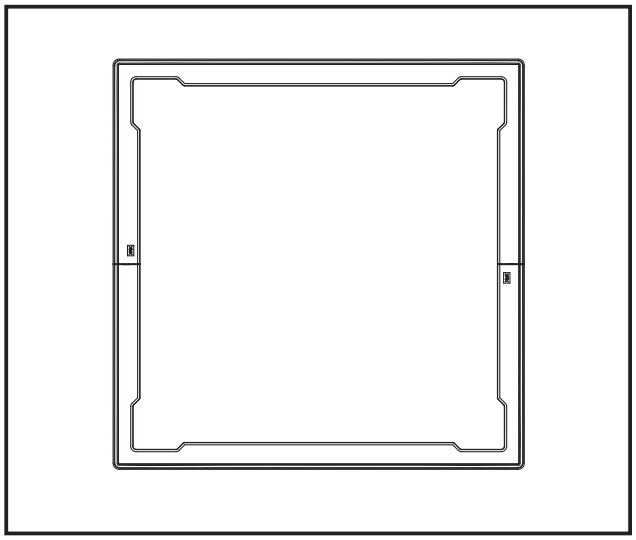
When attaching to Multi-functional casement



Space Panel

PAC-SJ65AS-E

Figure



Descriptions

Enables to install cassette-type indoor units even if the ceiling height is low.
A part to the panel 40 mm lower than the ceiling surface.

Applicable Models

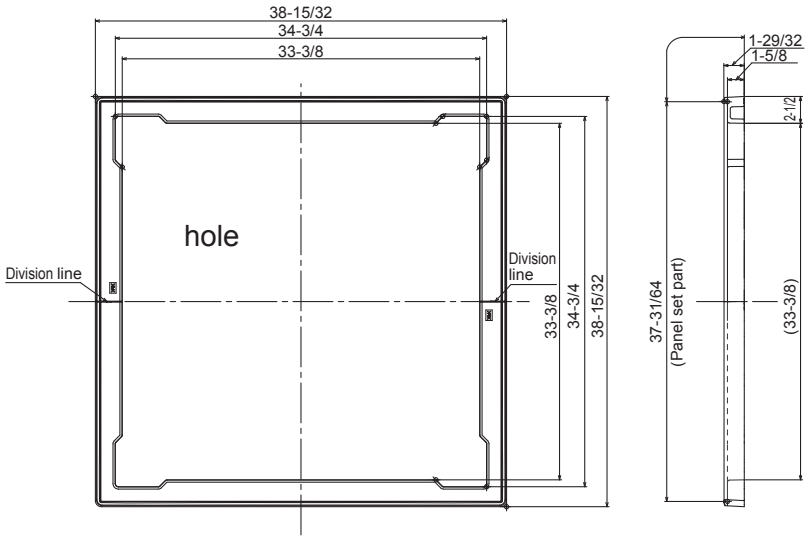
■ PLA-AE12/18/24/30/36/42/48NL

Specifications

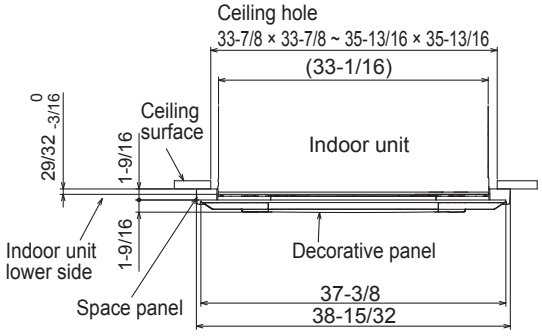
Exterior	Color (Mansell No.)	Pure White (6.4Y 8.9/0.4)
	Surface treatment	Coating
	Material	Styrofoam

Dimensions

Unit : inch



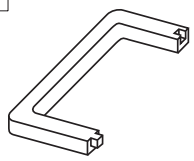
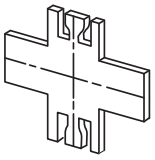
Installation dimension



How to Use / How to Install

1. Checking packed parts

Make sure that you have all the following parts, in addition to this manual in this box:

Part No. /Part name	① Space panel	② Gauge for installation
Quantity	2	1 (Split this into 4 pieces)
Shape		

2. Installing space panel

- ●Install before installing grille.
- ●This space panel is to be installed on grille before installing on main unit.
  (If grille has already been installed, remove it.)

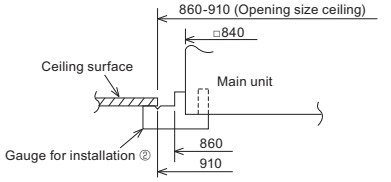
Preparation for installation

(1)Checking size of opening in ceiling

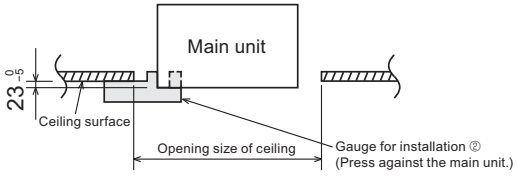
- ●Make sure that opening in ceiling is within the range shown below:
  860×860-910×910

(2)Positioning of ceiling surface and main unit

- ●Divide the provided gauge for installation ② into four parts, and insert it into the unit or outlet of Multi-functional casement.
  Place the unit in the center of opening in ceiling, referring to the figure below.

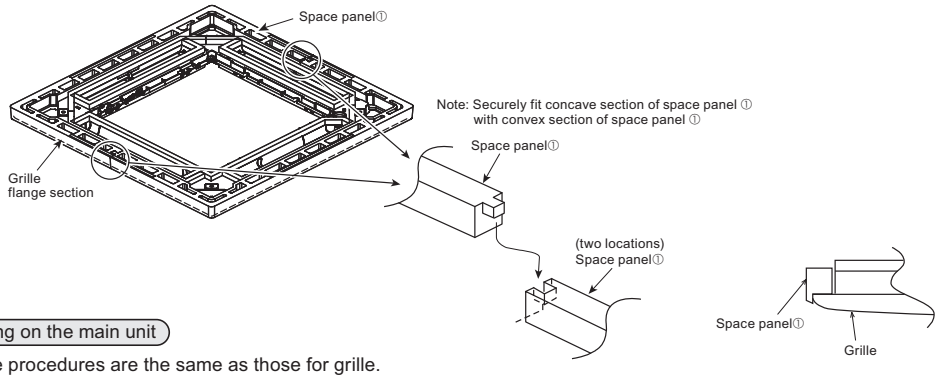


- ●Using provided gauge for installation ②, position the ceiling surface and main unit.
  If position of ceiling surface and main unit does not match, it may result in leak of draft, drip of dewdrops and incorrect operation of horizontal vane of grille, etc.



Setting the grille and space panel

- ●Place the space panel ① (two locations), matching the flange section of grille, and assemble space panel ① on the grille and then set them.
  Note: Be sure to assemble space panel ① on the grille.
  If assembled incorrectly, space panel ① may break.
  Note: As an example, the illustration of the E type 4-way cassette is shown.



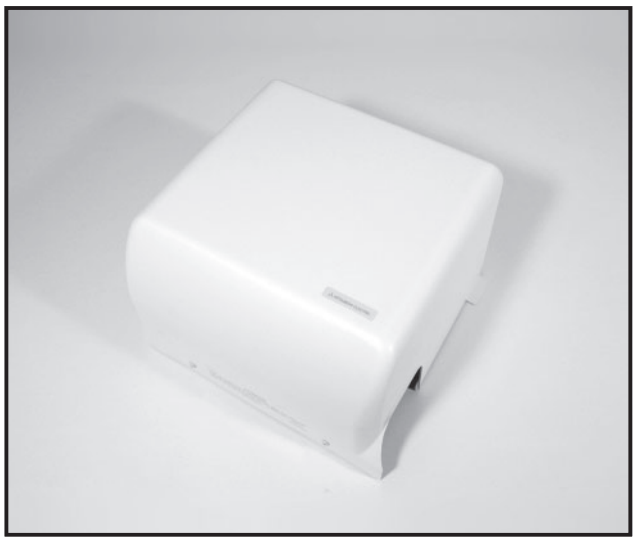
Installing on the main unit

- ●The procedures are the same as those for grille.
  Install the assembled set, referring to the installation manual for grille.

Drain Pump

PAC-SL48DM-E

Photo



Descriptions

Raises drain generated during unit's operation to secure the appropriate angle of the drain pipe.

Applicable Models

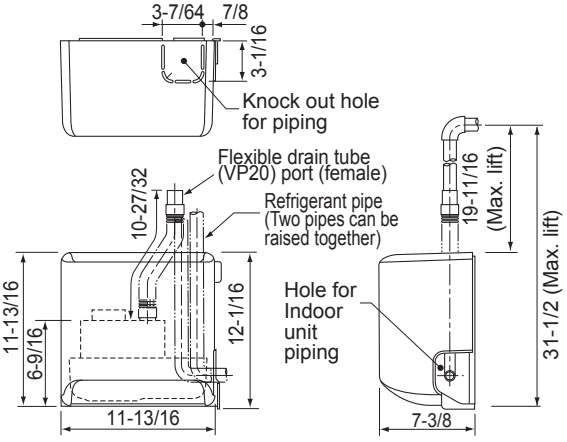
- PKA-AL12/18NL
- PKA-AK24/30/36NL

Specifications

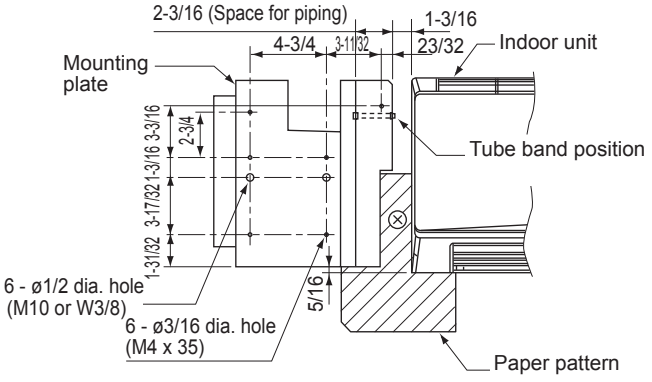
Rated voltage	220-240V 50Hz / 60Hz
Power consumption	12 / 10.8W
Operating current	0.114 / 0.092A
Discharge lift	Max. 500 mm from drain pump's top surface
Discharge rate	24ℓ/h or more
External dimensions (inch)	11-13/16 (H) x 11-13/16 (W) x 7-3/8 (D)
Exterior	Cover : ABS resin (Munsell 6.4Y 8.9/0.4)
Driving motor	Single, shading type (Class E insulation)
Drain piping	Connected to drain outlet. PVC pipe VP-20 (O.D. 26) can be used

Dimensions

Unit : inch



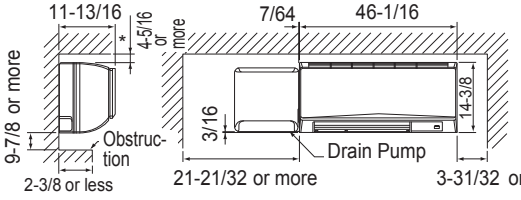
Dimension of Mounting plate



Required space for installation of Drain Pump

[Maintenance space]

* In case that there is a rim at the corner of ceiling, consider the dimension of the rim before installation.



* The same space is required for the left front and rear piping.

Accessories

(Make sure of the following items attached with the Drain Pump before installation.)

(A) Drain Pump	(B) Screw	(C) Drain tube	(D) Drain tube cover	(E) Tube clip	(F) Pull tight	(G) Paper pattern	(H) Wiring plate
x 1	(M4 x 16) x 1 (M4 x 35) x 6	x 1	x 1	x 1	x 1	x 2	x 1

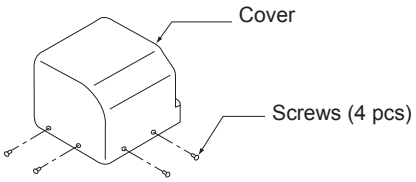
* The items (B) – (F) are packed between main body and cover of the Drain Pump. Take them out after the cover removed.
* The item (G) are one for PKA-AL and the other is for PLA-AK.

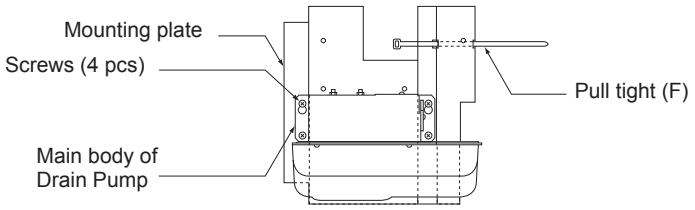
How to Use / How to Install

1. Before installation of the Drain Pump (* Position the indoor unit first.)

1-1 Set up of the Drain Pump

- Remove the cover and the mounting plate which is fixed on the back of the Drain Pump each.
  * The packaging material which is put between the cover and the main body of Drain Pump is only for cushion for transportation. Take it out as it is unnecessary.
  * Take out the accessories.
- Run the pull tight (F) attached through the square hole on the mounting plate.
- Cut the knock out hole on the cover with a nipper and etc.



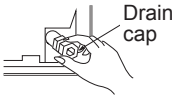


* The screws removed will be used later. Keep them not to lose.

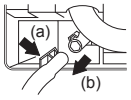
1-2 Set up and installation of the indoor unit (* See the item of piping connection set up in the installation manual of the indoor unit.)

(1) Make the knock out hole for left side piping on the left side panel of the indoor unit.

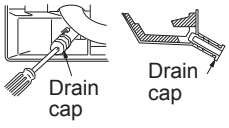
(2) Pull out the drain cap from the left drain outlet.
- Hold the convex section at the end and pull the drain cap.



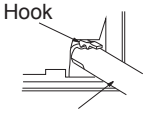
(3) Remove the drain hose from the indoor unit.
- Hold the end of the drain hose (a) (marked by the arrow) and pull the drain hose out (b).



(4) Insert the drain cap into the right drain outlet.
- Insert a screwdriver or similar tool into the hole at the end of the cap and insert the cap fully into the outlet.



(5) Insert the accessory drain hose (C) into the left drain outlet.
- Insert the hose up to the base of the drain pipe connection opening.
* Make sure that the hook on the drain hose is securely caught on the projection in the opening in the drain pan.



(6) Install the indoor unit.

⚠ CAUTION	**The indoor unit must be installed horizontally.**
	Otherwise, the water can leak and it will make the wall dirty.

2. Installation of the Drain Pump

2-1 Fixing of the mounting plate

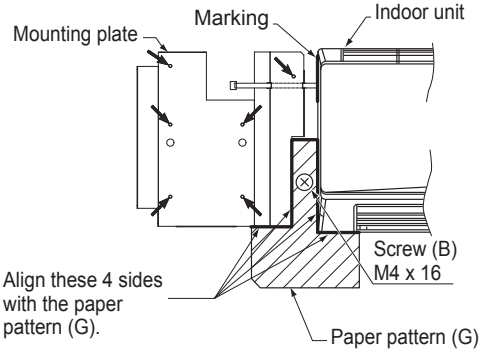
- The installation place should be carefully considered if it is proper for installation. If it is not strong enough to hole the unit, make it stronger by using board or beam before installation.

(1) Decide the installation position of the mounting plate by using the paper pattern (G) attached.
(* The left end of the indoor unit should be marked in advance.)
  1) Fix the paper pattern on the wall with the screw (B) (M4 × 16) attached with putting it to the left end of the indoor unit for positioning of the Drain Pump as shown in the drawing.
  2) Position the mounting plate with pushing it against the paper pattern.

(2) Fix the mounting plate with the screws (B) (M4 × 35) attached. Fix the mounting plate using the 5 dia. holes.
(6 locations pointed by arrows in the drawing.)
In case that the mounting plate is fixed by fixing bolts (through bolts, bolt anchors, or nut anchors), get M10 or W3/8 screws locally and put them into two ø 12 holes of the mounting plate to fix it.

(3) When the mounting plates is installed, remove the paper pattern.

(4) Check that the mounting plate is level and positioned correctly with the indoor unit. (Refer to Dimensions)

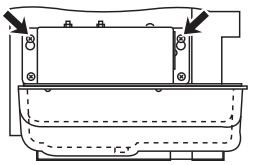


2-2 Installation of the Drain Pump

- Fix the Drain Pump on the mounting plate

(1) Install the screws to the 2 upper holes (indicated by the arrows shown in right figure) of the mounting plate by hand tightening them about halfway, and then hook the Drain Pump on the screws.

(2) Level the Drain Pump by using a spirit level. Then tighten the 4 screws securely to fix the Drain Pump.



⚠ CAUTION	**The Drain Pump must be leveled.**
	Otherwise, the water leaks and it makes wall dirty.

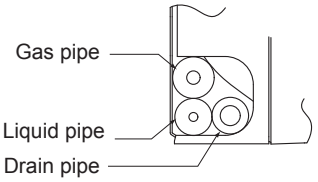
3. Installation of refrigerant piping (* See the item of refrigerant piping connection in the Installation of the indoor unit.)

(1) Install the refrigerant piping using the left piping method.

(2) When the refrigerant piping and drain pipe are routed vertically together, route the piping through the space in the mounting plate.

- Be sure that the indoor unit must be positioned at the place where was marked at 2-1.
- The bending radius of the refrigerant pipe must be R80 or less.
- The tube raised should be fixed with the pull tight which was put through the square hole of the mounting plate.

(3) Position the refrigerant piping in the left piping space of the indoor unit as shown in right figure.



4. Installation of drain piping

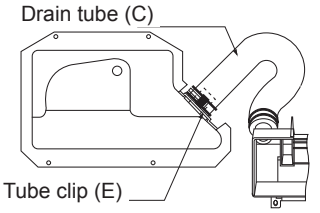
4-1 Connection of drain tube

(1) Connect the drain tube (C) which is installed to the left side drain port of the indoor unit to the drain port of the Drain Pump.

(2) Fix the connection port securely with the tube clip (E) attached.

(3) Connect the flexible drain tube, which is run from the top panel of the Drain Pump, to the local drain piping. The part connected must be closed by vinyl chloride type glue.

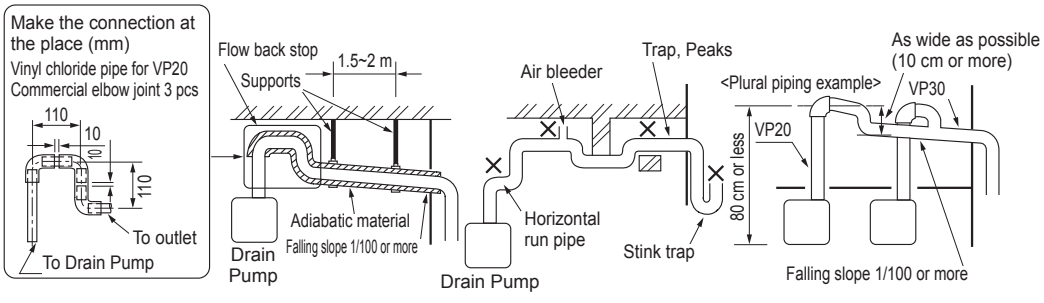
(4) Insulate the flexible drain tube which is run from top panel of Drain Pump with the drain tube cover (D) attached.



4-2 Installation of drain piping

(1) The drain pipe should be installed in accordance with the following procedure.

- The drain pipe should be installed so that the outdoor side (drain side) becomes falling slope (1/100 or more) and do not make trap or peaks.
- The horizontal run of the drain pipe should be 20 m or less. In case that the tube is crosscut sawing for long distance, some support brackets should be installed to prevent the pipe from being wavy. Never install the air bleeder. The drain will blow out.
- The hard vinyl chloride pipe VP20 (outer dia. 26 mm) should be used for the drain pipe. And the part connected must be closed by vinyl chloride type glue to prevent water leak.
- Be sure to wrap the drain pipe with adiabatic material (foam polyethylene: specific gravity 0.03, thickness 9 mm or more) available on the market.
- Do not install stink trap to the outlet of the drain pipe.
- The outlet of the drain pipe should be installed the place where it is not possible to cause stink.
- In case that plural drain pipes are installed, install the main pipe so that it comes approximately 10 cm lower than the drain outlet and the pipes must be made of material of VP30 or similar and they should be falling slope (1/100 or more).
- It is possible to raise the outlet of the drain pipe to 80 cm (max. lift) from bottom face of Drain Pump. However, if there is a horizontal run pipe connected to the vertical section of the drain pipe, water will overflow from the drain pan. This is because too much water will flow back when the operation stops. Therefore, the drain pipe must be raised vertically. Also, install the flow back stop at the highest point to prevent the water from flow back from horizontal part of the pipe. See the drawing below.



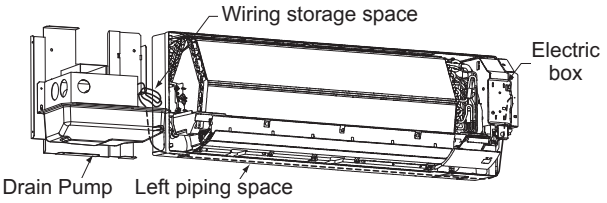
5. Electric wiring

5-1 Set up of the indoor unit (* Confirm that the power is off before starting the installation work.)

(1) Remove the panel of indoor unit and the electric box cover. (* See the indoor unit installation section in the installation manual of the indoor unit.)

5-2 Electric wiring

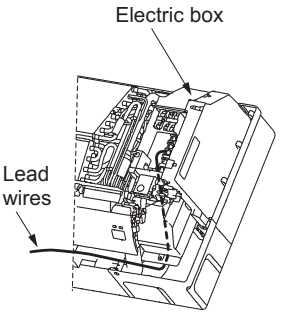
- Route the wiring through the left piping space of the indoor unit to the electric box as shown in right figure.
- Connect the lead wires to the connectors of the indoor unit control board, and then place the slack in the wires in the wiring storage space of the Drain Pump. (Fix the lead wires with the clamps.)



5-3 Electric wiring operation

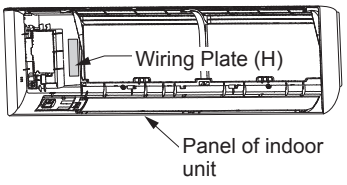
- Pull out the electric box as far as necessary to connect the lead wires to the control board connectors “CNP” and “CN4F”.
- Connect the lead wires with connectors to the control board connectors “CNP” and “CN4F”. At this time, remove the bypass connector (will be unused) from the terminal CN4F of the control board.
- Be sure not to have the lead wires touch the heat generator (heat sink) on the control board.

Electric wiring operation

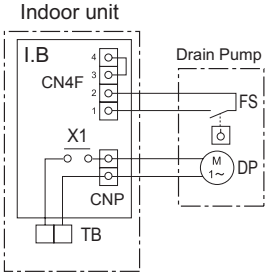


Wiring plate

- Affix the wiring plate (H) to the rear of the panel.



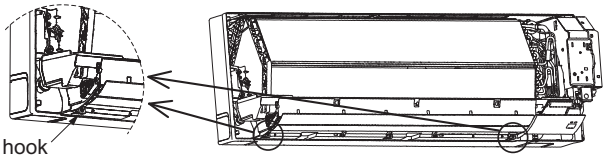
Electric circuit diagram



Symbol	Name
TB	Terminal block (indoor/outdoor connecting line)
I.B	Indoor control board
CNP	Connector (Drain Pump)
CN4F	Connector (Float switch)
DP	Drain Pump
FS	Float switch
X1	Relay (Drain Pump)

Note: □ stands for terminal connection.
⊡ stands for connector joint.

- After completing the electric wiring operation, make sure that the hooks are securely caught on the unit, and then put the electric box cover and panel back in place.



6. Test run

- After the installation of the Drain Pump has been completed, make sure that the drain works correctly and the water does not leak from any part of connection.

(1) Pour water
Pour water approximately 800 cc to the drain pan. (* See the drain pipe [checking the drain flow] section in the installation manual of the indoor unit.)
(* If the water is poured too much, it is possible that the drainage does not work due to alarm stop by activation of drain over flow protection device.)

(2) Test run
In accordance with the procedure for test run in the installation manual for the indoor unit, operate the air cooling and make sure that the drainage works and the water does not leak.
* When the Drain Pump is installed in winter season, the water must be drained.
To drain water, remove the drain plug under the Drain Pump. Prepare the pan to receive drain.
When the drainage has been completed, put the drain plug back in place.

(3) After checking, put the cover back in place.
* Make sure that the left end of the indoor unit perfectly comes on the point marked at 2-1. (If they do not match, the cover will not be able to be installed or there will be a gap between the cover and the indoor unit.)

Wi-Fi Adapter

PAC-WHS01WF-1

Photo



Descriptions

Allows for a Mitsubishi Electric indoor unit to communicate with to the kumo cloud™ app and web.

Applicable Models

- MSZ-FH06/09/12/15NA
- MSZ-FH18NA2
- MSZ-EF09/12/15/18NAW(B)(S)
- MSZ-GL06/09/12/15/18/24NA
- MSZ-D30/36NA
- MSY-GL09/12/15/18/24NA
- MSY-D30/36NA
- MFZ-KJ09/12/15/18NA
- SLZ-KA09/12/15NA
- SEZ-KD09/12/15/18NA4
- MVZ-A09/12/15/18/24AA4
- PKA-A12/18HA7
- PKA-A24/30/36KA7
- PCA-A24/30/36/42KA7
- PLA-A12/18/24/30/36/42EA7
- PEAD-A12/18/24/30/36/42AA7
- PVA-A12/18/24/30/36/42AA7

Specifications

Input Voltage	DC12.7V (from indoor unit)
Power consumption	MAX 2W
Size W×H×D (mm,inch)	17.526×46.228×74.168, 0.69×1.82×2.92
RF channel	1ch ~ 11ch
Usgae environment	Temperature 32 ~ 104°F (0 ~ 40°F)

About Wireless Interface

This Wireless Interface will communicate status information and control the connected air conditioner.

• Some room air conditioners are not compatible with the Wireless Interface.
Make sure that the room air conditioner is compatible with the Wireless Interface before attempting to install the Wireless Interface.

Connecting the Wireless Interface

Note: Installation should be conducted by a professional installer.

- Turn off and verify the power has been disconnected to the complete air-conditioning system
- Dismantle the indoor unit in accordance with the service manual and locate CN105 on the main control PCB
- Connect the cable on the PAC-USWHS002-WF-1 to the CN105 connector on the indoor unit
- PAC-USWHS002-WF-1 may be attached on or in close vicinity to the indoor unit. Attach one strip to the PAC-USWHS002-WF-1 and the other to the installation site. Align the strips and press to securely attach the PAC-USWHS002-WF-1 to the installation site.
- Start up: Refer to the PAC-USWHS002-WF-1 Install guide located at https://meus.mylinkdrive.com/item/PAC-USWHS002-WF-1.html.

T-STAT Interface

PAC-US445CN-1

Photo



Descriptions

Allows a HVAC Thermostat or I/O Controller to control a MitsubishiElectric Cooling & Heating CITY MULTI® or M-Series or P-Series indoor unit.

Applicable Models

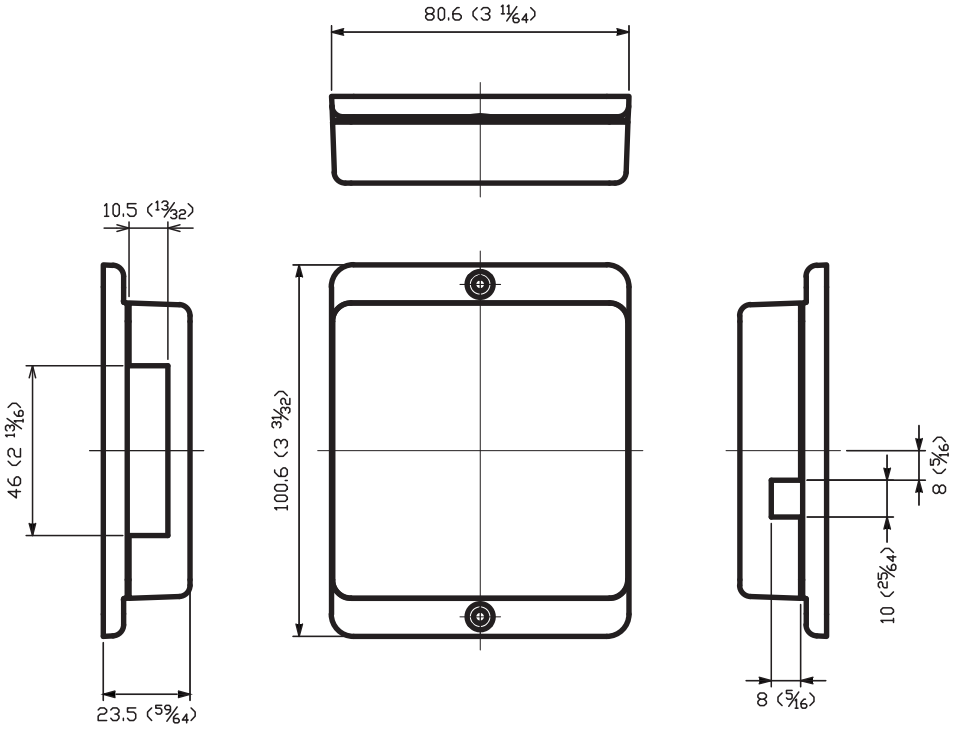
- MSZ-FH06/09/12/15NA
- MSZ-FH18NA2
- MSZ-EF09/12/15/18NAW(B)(S)
- MSZ-GL06/09/12/15/18/24NA
- MSZ-HM09/12/15/18/24NA
- MSZ-D30/36NA
- MSY-GL09/12/15/18/24NA
- MSY-D30/36NA
- MFZ-KJ09/12/15/18NA
- SLZ-KA09/12/15NA
- SEZ-KD09/12/15/18NA4
- MVZ-A12/18/24/30/36AA4
- PKA-A12/18HA7
- PKA-A24/30/36KA7
- PCA-A24/30/36/42KA7
- PLA-A12/18/24/30/36/42EA7
- PEAD-A12/18/24/30/36/42AA7
- PVA-A12/18/24/30/36/42AA7

Specifications

Indoor unit mode	Cool, Heat, Fan, and Off
Provide 3 input terminals to control fan speed control	High, Medium, Low
Addressing	No addressing required
Connection	CN105 - IT Terminal
Dimensions(H × W × D) [in]	3.96 × 3.17 × 0.93
Terminal Block	20 - 30 VAC Rated

Dimensions

Unit : mm [inch]



System Configuration

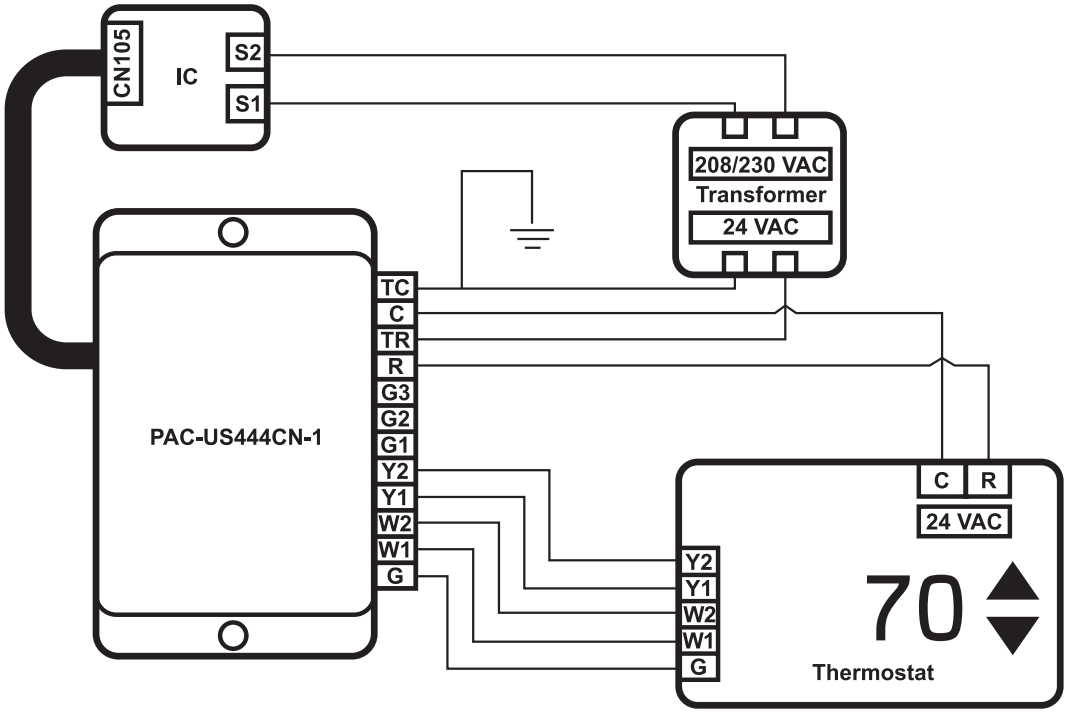
Warning: Thermostat should be configured for use with a conventional system (not heat pump).

Note: When either Y2 or W2 is left unconnected, it is recommended to set SW2-6 to the OFF position.

1. All wiring shown should be performed with 18 AWG thermostat wire.
2. Terminals on the PAC-US444CN-1 support 20-30VAC.
3. High/medium/low fan signals are optional, and may not be available on all thermostat models.
4. W2 and Y2 signals are optional, and may be omitted for single-stage thermostats.

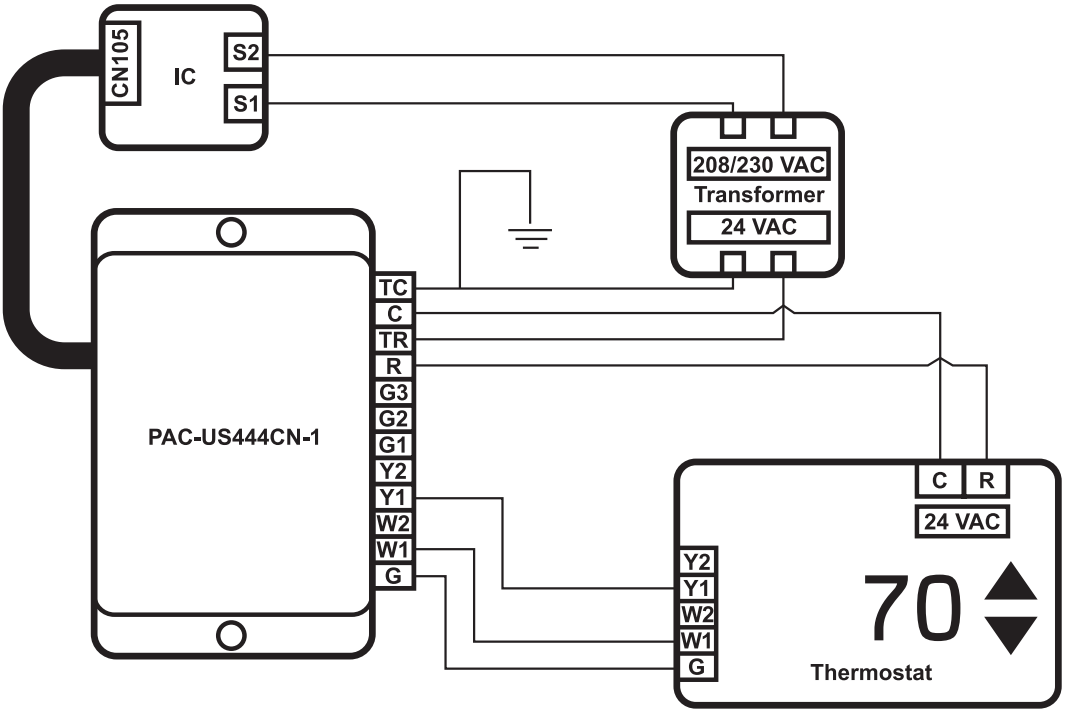
Example 1: Two-stage Cooling and Heating

Note: When both Y2 and W2 are connected, it is recommended to set SW2-6 to the ON position.



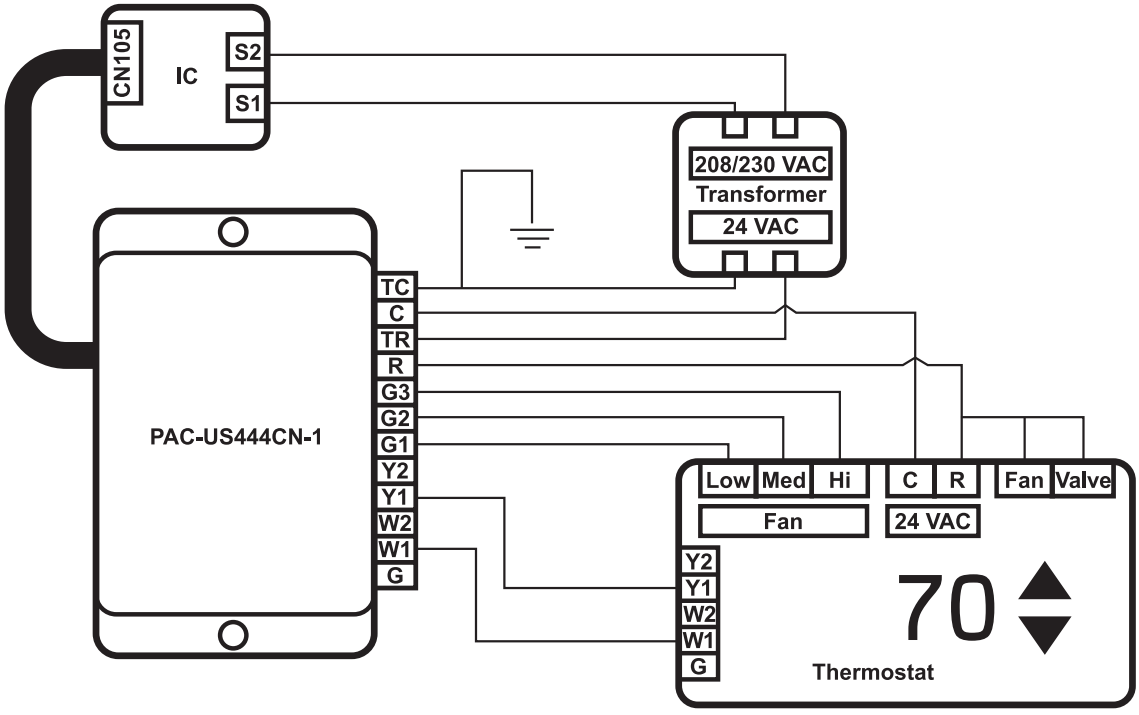
Example 2: Single-stage Cooling and Heating

Note: When either Y2 or W2 is left unconnected, it is recommended to set SW2-6 to the OFF position.



Example 3: Single-stage Cooling and Heating with Dedicated Fan Speed Relays

Note: When connecting only first stage signals (Y1/W1), it is recommended to set SW2-6 to the OFF position.



Example 4: Single-stage Cooling with Alternate Primary Heating Source

Note: For this configuration, it is recommended to set SW2-6 to the OFF position.

Follow the wiring from example 2, with the following adjustments:

1. Connect thermostat W1 to the alternate heat source.
2. Connect the thermostat W2 terminal to the PAC-US444CN-1 W1 terminal.

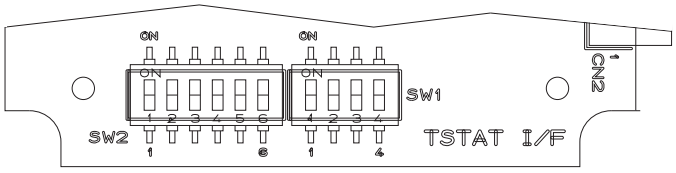
Connector	**Purpose**	**Purpose**
TC	Common (In)	C
C	Common (Out)	C
TR	24VAC (In)	R
R	24VAC (Out)	R
G3	Fan High	High Fan Speed
G2	Fan Medium	Medium Fan Speed
G1	Fan Low	Low Fan Speed
Y2	Y2	Stage 2 Cooling
Y1	Y1	Stage 1 Cooling
W2	W2	Stage 2 Heating
W1	W1	Stage 1 Heating
G	G	Fan

How to Install

1. Choose a place where to install the PAC-US444CN-1. The device provides two mounting holes that can be used to mechanically affix the case to a solid surface. Double-sided tape may be used to affix the device. When using tape, ensure that the tape is approved for use within the anticipated operating temperature ranges.
2. Install the transformer, as necessary, per building code and manufacturer's installation instructions.
3. Connect the PAC-US444CN-1 cable to the connector CN105 on the indoor unit control board.
4. Connect PAC-US444CN-1 terminals using 18 AWG wire.

Device Configuration

Initial settings can be configured via the two banks of dip switches on the circuit board, SW1 and SW2. The circuit board can be accessed by unfastening the four screws on the back of the case.



DIP Switch Definitions (Factory default is OFF for all switches):

Delayed Off

SW1-1/2: After reaching thermostat set point, the unit will continue to run for a set period of time in order to improve efficiency. The period of time is set by adjusting SW1-1 and SW1-2 according to the following table:

SW1-1	**SW1-2**	**Result**
OFF	OFF	5 minutes (Default)
ON	OFF	10 minutes
OFF	ON	30 minutes
ON	ON	0 minutes

SW1-3/4: The indoor unit fan speed can be adjusted via the following settings:

SW1-3	SW1-4	Result
OFF	OFF	Auto (Default)
ON	OFF	Medium
OFF	ON	High
ON	ON	Custom Auto

Note: Custom Auto provides more comfortable fan speed operation vs. the more efficient Auto (default).

Two-Stage Thermostat Operation

SW2-6: Adjusts indoor unit operation during stage 1 heating and stage 1 cooling according to the following table:

SW2-6	Operation during stage 1
OFF	Full capacity
ON	The capacity is adjusted so that the room temperature is adjusted (heated or cooled) at a fixed rate.

Note: When either Y2 or W2 is left unconnected, it is recommended to set SW2-6 to the OFF position. When both Y2 and W2 are connected, it is recommended to set SW2-6 to the ON position.

Static Pressure Settings

SW2-1, SW2-2, SW2-3: These adjust the static pressure function settings of the indoor unit according to the following table:

DIP switch position on PAC-US444CN-1			Indoor Unit Settings			
SW2-1	**SW2-2**	**SW2-3**	**Mode 8**	**Mode 10**	**Mode 23**	**Mode 11**
OFF	OFF	OFF	Not set	Not set	Not set	Not set
OFF	OFF	ON	Not set	Not set	Not set	Not set
OFF	ON	OFF	2	1	Set by SW2-4	2
OFF	ON	ON	2	2	Set by SW2-4	2
ON	OFF	OFF	1	1	Set by SW2-4	2
ON	OFF	ON	1	2	Set by SW2-4	2
ON	ON	OFF	3	1	Set by SW2-4	2
ON	ON	ON	3	2	Set by SW2-4	2

**Refer to the appropriate Indoor Unit Installation Manual for Mode 8 and Mode 10 function setting definitions.*

CN24 Operation During Defrost

SW2-4: Adjusts Mode 23 function settings according to the following table:

SW2-4	Result	Fan and CN24
OFF	Setting 2 (Default)	ON
ON	Setting 1	OFF

**Refer to the appropriate Indoor Unit Installation Manual for Mode 23 function setting definitions.*

Fan Speed During Heating Mode, Thermal Off

SW2-5: Adjusts Mode 25 initial setting (fan speed in thermal off for heating) according to the following table:

SW2-5	Result
OFF	Extra low (Default)
ON	Set by Thermostat Interface

In addition, the adapter also affects the following function settings of the connected indoor unit:

Mode	When using the adapter
Mode 1 (auto recovery after power failure)	Always enabled
Mode 2 (room temperature detection location)	Unused (room temperature detected by the connected thermostat)
Mode 24 (heat offset for height)	Unused

Additional function settings not addressed by the thermostat interface may be configured by temporarily connecting an MA remote controller.

Grouping

The connection of more than one PAC-US444CN-1 to a single set of thermostat dry-contacts is not supported.

Temperature Sensing

The PAC-US444CN-1 relies upon both the dry-contact thermostat and the indoor unit's thermistors in order to monitor room temperature. The thermostat's temperature sensing is used to set the room temperature. The indoor unit thermistor is used when calculating cooling and heating rates of change.

Usage

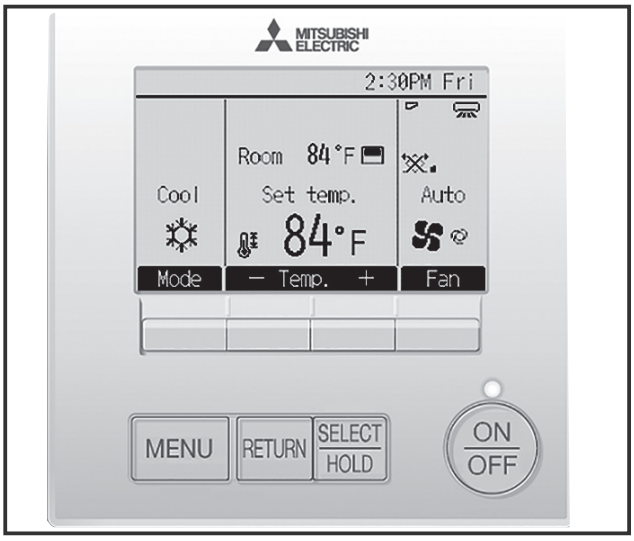
Operate the third-party thermostat per the manufacturer's instructions. During normal operation, the connection of Mitsubishi remote controllers (e.g. MA/ME) is not supported, as they will interfere with the correct operation of the PAC-US444CN-1.

Notes:

1. The indoor unit will limit the internal temperature control set point based on the indoor unit specification.
2. Fan signals G1,G2,G3, when energized, take precedence over SW1-3&4.
3. Only fan speeds available on the IDU can be set by the Thermostat Interface.
4. The G signal is used only for operating the IDU in ventilation mode when all cooling and heating signals are disabled.
5. When all cooling and signals are disabled, energizing G will place the IDU into ventilation mode.

Wired Remote Controller PAR-42MAAUB

Figure



Descriptions

Advanced MA remote controller with the large size dot liquid crystal display. Multi-language display and weekly timer function are available.

Applicable Models

- SLZ-AF09/12/15/18NL
- SEZ-AD09/12/15/18NL
- SVZ-AP12/18/24/30/36NL
- PKA-AL12/18NL
- PKA-AK24/30/36NL
- PCA-AK24/30/36/42NL
- PLA-AE12/18/24/30/36/42/48NL
- PEAD-AA09/12/15/18/24/30/36/42NL
- PVA-AA12/18/24/30/36/42NL

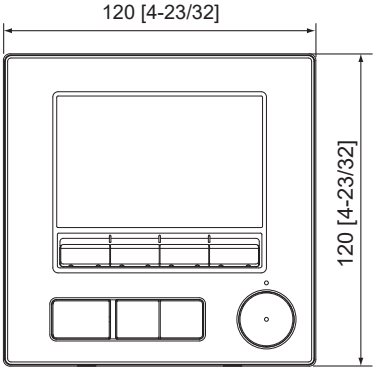
※ MAC-333IF-E required

Specifications

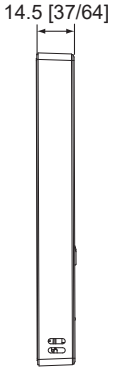
External colors	Cover	Clear white (Munsell 1.0Y 9.2/0.2)
	LCD peripheral area	Medium gray

Dimensions

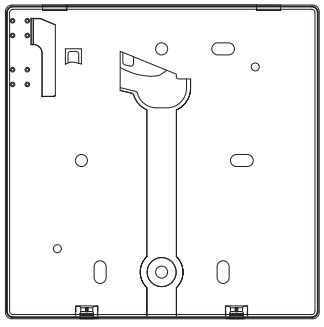
Unit : inch [mm]



(Front view)



(Side view)



(Rear view)

How to Use / How to Install

1. System Requirements

⚠ WARNING	The CD-ROM that is supplied with the unit can only be played on a CD-drive or a DVD-drive. Do not attempt to play this CD-ROM on an audio CD player as this may damage your ears and/or speakers.

Your computer must meet the following requirements to run Manual Navigation Software.

[PC] PC/AT compatible

[CPU] Core2 Duo 1.66 GHz or faster (Core2 Duo 1.86 GHz or faster recommended)
Pentium D 1.7 GHz or faster (Pentium D 3.0 GHz or faster recommended)
Pentium M 1.7 GHz or faster (Pentium M 2.0 GHz or faster recommended)
Pentium 4 2.4 GHz or faster (Pentium 4 2.8 GHz or faster recommended)
* Core2 Duo or faster processor is required to run Manual Navigation Software on Windows Vista or later.

[RAM] Windows Vista or later: 1 GB minimum (2 GB or more recommended)
Windows XP: 512 MB minimum (1 GB or more recommended)

[HDD space] 1 GB minimum (available space)
* Windows Vista or later: Available space in the drive that has the Document folder
* Windows XP: Available space in the drive that has the My Document folder

[Resolution] SVGA 800 × 600 or greater

[OS] Windows8/Pro/Enterprise (Pro recommended)
Windows7 Ultimate/Enterprise/Professional/Home Premium Service Pack1 (Professional recommended)
Windows Vista Ultimate/Business/Home Basic Service Pack1 (Business version recommended)
Windows XP Professional/Home Edition Service Pack2 or Service Pack3 (Professional version recommended)

[Required software] Windows8: Adobe Reader 11.0.2 or later (Windows Reader, installed by default in Windows8, cannot be used.)
Windows7: Adobe Reader 10.1.0 or later
Windows XP and Windows Vista: Adobe Reader 8.1.3 or later
* Software to view PDF files

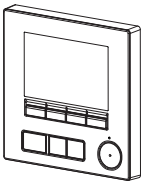
“Windows”, “Windows XP”, “Windows Vista”, “Windows7” and “Windows8]]] are registered trade marks of Microsoft Corporation.
“Adobe Reader” and “Adobe Acrobat” are registered trademarks of Adobe Systems Incorporated.
“Core2 Duo” and “Pentium” are registered trademarks of Intel Corporation.

2. Component names and supplied parts

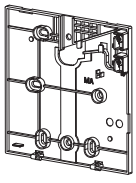
The following parts are included in the box.

Parts name	Qty.	Appearance
Remote controller (top case)	1	Right figure *1
Remote controller (bottom case)	1	Right figure *2
Roundhead cross slot screws M4×30	2	*3
Wood screw 4.1×16 (for direct wall installation)	2	*3
Simple Manual	1	
CD-ROM (this manual) Instruction Book and Installation Manual	1	

Top case *1



Bottom case *2



*3 ISO metric screw thread
*4 Remote controller cable is not included.

3. Field-supplied parts/Required tools

(1) Field-supplied parts

The following parts are field-supplied parts.

Parts name	Qty.	Notes
Double switch box or 86type switch box	1	Not required for direct wall installation
Thin metal conduit	Necessary	
Lock nut and bushing	Necessary	
Cable cover	Necessary	Required for routing remote controller cable along a wall
Putty	Reasonable	
Molly anchor	Necessary	
Remote controller cable (Use a 0.3 mm² (AWG22) 2-core sheathed cable.)	Necessary	

(2) Field-supplied tools

- Flat-tip screwdriver (Width: 3 - 5 mm (1/8 - 7/32 inch))
- Nipper
- Miscellaneous tools

4. Selecting an installation site

This remote controller is for the wall installation. It can be installed either in the switch box or directly on the wall. When performing direct wall installation, wires can be thread through either back or top of the remote controller.

(1) Selecting an installation site

Install the remote controller (switch box) on the site where the following conditions are met.

(a) For connection to the indoor unit with an Auto descending panel, a place where people can check the Auto descending panel operation of the indoor unit while they are operating the remote controller (Refer to the indoor unit Instructions Book for how to operate Auto descending panel.)

(b) A flat surface

(c) A place where the remote controller can measure the accurate indoor temperature
Sensors to monitor indoor temperature are on the indoor unit and on the remote controller. When the room temperature is monitored with the sensor on the remote controller, the built-in sensor on the remote controller monitors the room temperature. When using the sensor on the remote controller, follow the instructions below.

- To monitor the accurate indoor temperature, install the remote controller away from direct sunlight, heat sources, and the supply air outlet of the air conditioner.
- Install the remote controller in a location that allows the sensor to measure the representative room temperature.
- Install the remote controller where no wires are routed around the temperature sensor on the controller. (If wires are routed, the sensor cannot measure accurate indoor temperature.)

Important

■ **Discrepancy between the indoor temperature measured at the wall and the actual indoor temperature may occur.**
If the following conditions are met, the use of the temperature sensor on the indoor unit is recommended.
- Supply air does not reach to the wall easily where the remote controller is installed due to improper airflow distribution.
- There is a great discrepancy between the wall temperature and the actual indoor temperature.
- The back side of the wall is directly exposed to the outside air.

Note: When temperature changes rapidly, the temperature may not be detected accurately.

Do not install the controller in a place where the difference between the remote controller surface temperature and the actual room temperature will be great.
If the temperature difference is too high, room temperature may not be adequately controlled.

To reduce the risk of malfunctions, do not install the controller in a place where water or oil may come into contact with the controller, or in a condensing or corrosive environments.

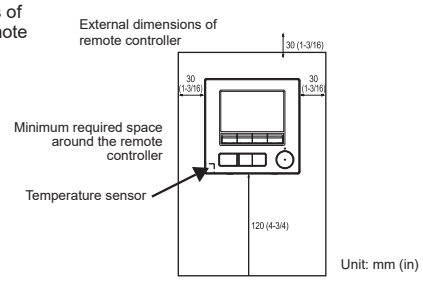
To avoid deformation and malfunction, do not install the remote controller in direct sunlight or where the ambient temperature may exceed 40ºC (104ºF) or drop below 0ºC (32ºF).

To reduce the risk of malfunctions and damage to the controller, avoid installing the remote controller on an electrically conductive surface, such as an unpainted metal sheet.

Refer to either of the following manuals for temperature sensor setting: indoor unit Installation Manual for CITY MULTI; this manual for M/P-series.

(2) Installation space

Leave a space around the remote controller as shown in the figure shown below, regardless of whether the controller is installed in the switch box or directly on the wall. Removing the remote controller will not be easy with insufficient space.
Also, leave an operating space in front of the remote controller.

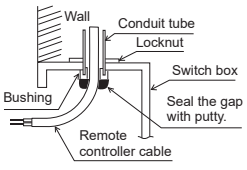


(3) Installation work

Controller can be installed either in the switch box or directly on the wall. Perform the installation properly according to the installation method.

① **Drill a hole in the wall.**
■ Installation using a switch box
- Drill a hole in the wall, and install the switch box on the wall.
- Connect the switch box to the conduit tube.

■ Direct wall installation
- Drill a hole in the wall, and thread the cable through it.



② **Seal the cable access hole with putty.**
■ Installation using a switch box
- Seal the remote controller cable access hole at the connection of switch box and conduit tube with putty.

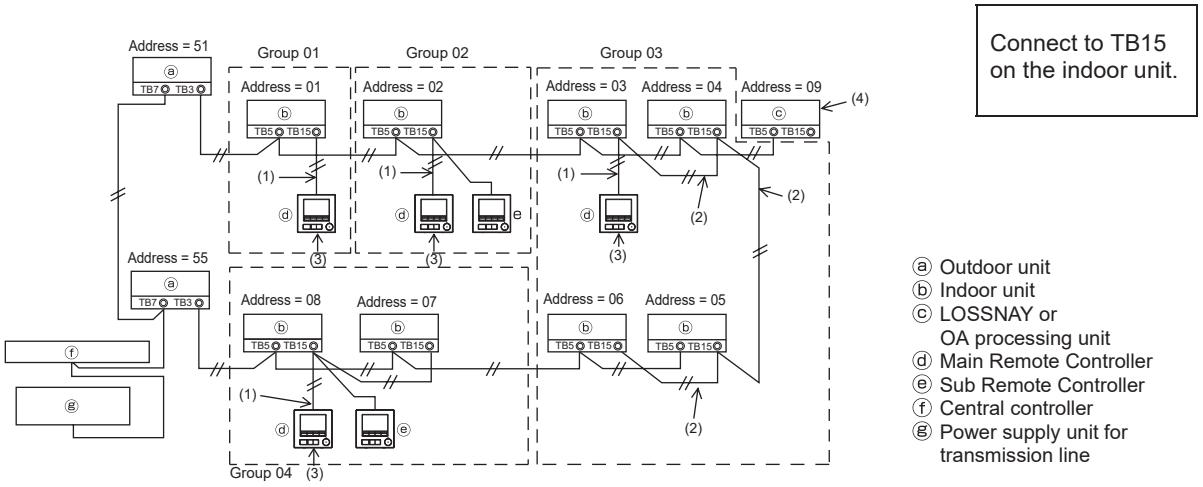
To reduce the risk of electric shock, malfunctions, or fire, seal the gap between the cables and cable access holes with putty.

5. How To Wire Transmission Line

The wiring is different when the remote controller is connected to a CITY MULTI control system ("-A" type and later) and when it is connected to M-series and P-series air conditioners (A control type). The wiring also differs with the system configuration. Check the system used.

1. Connecting to CITY MULTI control system

The numbers (1) to (4) in the figure correspond to items (1) to (4) in the following description.



(1) Wiring from the remote controller
- Connect to the MA remote controller terminal block (TB15) on the indoor unit.
- The terminal block has no polarity. Connect to the terminal block at the bottom of the remote controller case.

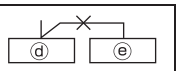
(2) Operating in a group (Groups 03, and 04 above)
- Interconnect the MA remote controller terminal block (TB15) of the indoor units you want to operate as a group, and connect the MA remote controller to that point.
- When the remote controller is used in combination with the system controller as shown in the figure above, group setting at the system controller (central controller in the figure above) is necessary.

(3) Number of connectable remote controllers
- A main remote controller and one sub remote controller, a total of two, can be connected to a group made up of indoor units.

(4) To interlock to a LOSSNAY or OA processing unit, make the following settings using the remote controller. (For a description of how to set an interlock, see section 10 "Service menu" (5) "LOSSNAY setting".)
Set the LOSSNAY or OA processing unit address and the address of all the indoor units you want to interlock.

(5) Total length of remote controller wiring
- The MA Remote Controller can be wired up to 200 m (656 ft).

⚠ CAUTION	Remote controllers cannot be wired together. Only one wire can be connected to the remote controller terminal block.

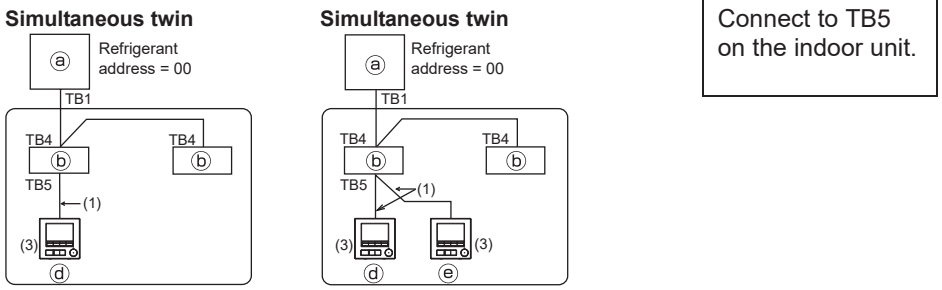


NOTE: When interlocking the MA remote controller with a LOSSNAY or OA processing unit, always set the address of all the indoor units in the group and the address of the LOSSNAY or OA processing unit.

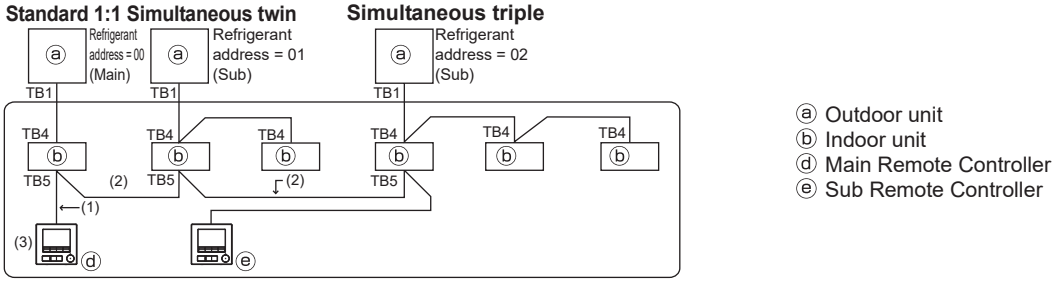
2. Connecting to M-series and P-series air conditioners

The remote controller wiring depends on the system configuration. Check the system configuration. Wire the remote controller as shown in the example below.
The numbers (1) to (3) in the figure correspond to items (1) to (3) in the following description.

[1] Connecting the remote controller for each refrigerant system (Standard 1:1, simultaneous twin, simultaneous triple, simultaneous four)



[2] When grouping by different refrigerant systems



* Set the refrigerant address using the outdoor unit dip switches. (For more information, refer to the outdoor unit installation manual.)

* All the indoor units enclosed in ▭ are controlled as one group.

(1) Wiring from remote controller
- Connect to indoor unit TB5 (remote controller terminal block). (The terminal block has no polarity.)
- For simultaneous multi type, when mixing various types of indoor units, always connect the remote controller to the indoor unit with the most functions (wind velocity, vane, louver, etc.).

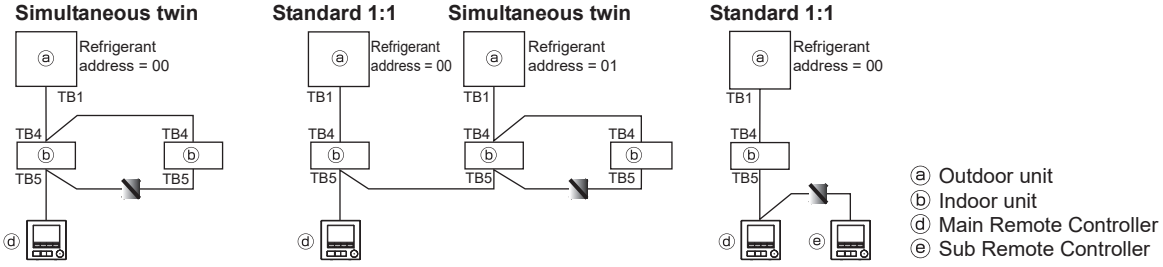
(2) When grouping with difference refrigerant systems
- Group using the remote controller wiring. Connect the remote controller to an arbitrary indoor unit of each refrigerant system you want to group.
- When mixing different types of indoor units in the same group, always make the outdoor unit connecting the indoor unit with the most functions (wind velocity, vane, louver, etc.) the Main unit (refrigerant address = 00). Also, when the Main unit is the simultaneous multi type, always satisfy the conditions of (1) above.
- The MA Remote Controller can control up to 16 refrigerant systems as one group.

(3) Up to two remote controllers can be connected to one group
- When only one remote controller is connected to one group, set it as the Main controller. When two remote controllers are connected to one group, set the Main remote controller and Sub remote controller. (For a description of how to set the Main/Sub setting, refer to the section on initial setting in this manual.

(4) Total length of remote controller wiring

• The MA Remote Controller can be wired up to 450 m (1476 ft).

⚠CAUTION
- The wiring cannot be connected to TB5 of the indoor unit of the same refrigerant system. If so connected, the system will not operate normally.
- Remote controllers cannot be wired together. Only one wire can be connected to the remote controller terminal block.
- When connecting to TB5, connect up to two wires of the same size to one terminal block.



6. How To Install

This remote controller is for the wall installation. It can be installed either in the switch box or directly on the wall. When performing direct wall installation, wires can be thread through either back or top of the remote controller.

(1) Selecting an installation site

Install the remote controller (switch box) on the site where the following conditions are met.

(a) For connection to the indoor unit with an Auto descending panel, a place where people can check the Auto descending panel operation of the indoor unit while they are operating the remote controller (Refer to the indoor unit Instructions Book for how to operate Auto descending panel.)

(b) A flat surface

(c) A place where the remote controller can measure the accurate indoor temperature
Sensors to monitor indoor temperature are on the indoor unit and on the remote controller. When the room temperature is monitored with the sensor on the remote controller, the built-in sensor on the remote controller monitors the room temperature. When using the sensor on the remote controller, follow the instructions below.

- To monitor the accurate indoor temperature, install the remote controller away from direct sunlight, heat sources, and the supply air outlet of the air conditioner.
- Install the remote controller in a location that allows the sensor to measure the representative room temperature.
- Install the remote controller where no wires are routed around the temperature sensor on the controller. (If wires are routed, the sensor cannot measure accurate indoor temperature.)

Important

■ **Discrepancy between the indoor temperature measured at the wall and the actual indoor temperature may occur.**
If the following conditions are met, the use of the temperature sensor on the indoor unit is recommended.
- Supply air does not reach to the wall easily where the remote controller is installed due to improper airflow distribution.
- There is a great discrepancy between the wall temperature and the actual indoor temperature.
- The back side of the wall is directly exposed to the outside air.

Note: When temperature changes rapidly, the temperature may not be detected accurately.

Do not install the controller in a place where the difference between the remote controller surface temperature and the actual room temperature will be great.
If the temperature difference is too high, room temperature may not be adequately controlled.

To reduce the risk of malfunctions, do not install the controller in a place where water or oil may come into contact with the controller, or in a condensing or corrosive environments.

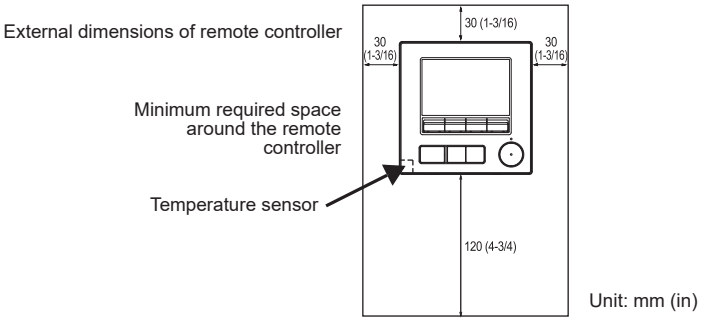
To avoid deformation and malfunction, do not install the remote controller in direct sunlight or where the ambient temperature may exceed 40ºC (104ºF) or drop below 0ºC (32ºF).

To reduce the risk of malfunctions and damage to the controller, avoid installing the remote controller on an electrically conductive surface, such as an unpainted metal sheet.

Refer to either of the following manuals for temperature sensor setting: indoor unit Installation Manual for CITY MULTI; this manual for M/P-series.

(2) Installation space

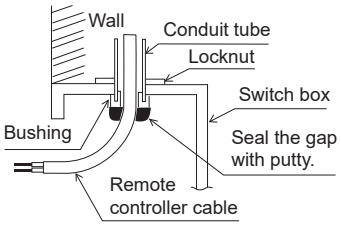
Leave a space around the remote controller as shown in the figure shown below, regardless of whether the controller is installed in the switch box or directly on the wall. Removing the remote controller will not be easy with insufficient space.
Also, leave an operating space in front of the remote controller.



Unit: mm (in)

(3) Installation work

Controller can be installed either in the switch box or directly on the wall. Perform the installation properly according to the installation method.



① **Drill a hole in the wall.**

■ Installation using a switch box
- Drill a hole in the wall, and install the switch box on the wall.
- Connect the switch box to the conduit tube.

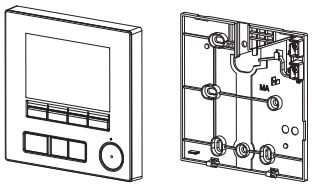
■ Direct wall installation
- Drill a hole in the wall, and thread the cable through it.

② **Seal the cable access hole with putty.**

■ Installation using a switch box
- Seal the remote controller cable access hole at the connection of switch box and conduit tube with putty.

To reduce the risk of electric shock, malfunctions, or fire, seal the gap between the cables and cable access holes with putty.

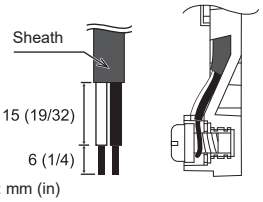
③ **Prepare the bottom case of the remote controller.**



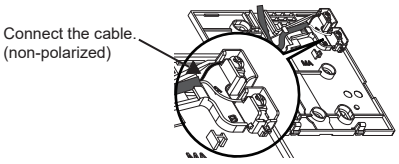
Top case Bottom case

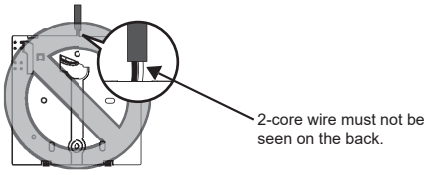
④ **Connect the remote controller cable to the terminal block on the bottom case.**

Peel off the remote controller cable sheath as shown below to connect to the terminal block properly.
Secure the remote controller cable so that the peeled part of the cable will fit into the case.



Unit: mm (in)

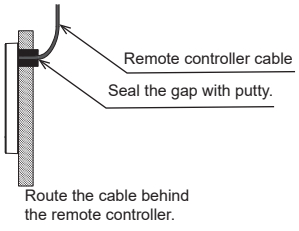




■ Direct wall installation

• Seal the hole through which the cable is threaded with putty.

To reduce the risk of electric shock, shorting, or malfunctions, keep wire pieces and sheath shavings out of the terminal block.



Important

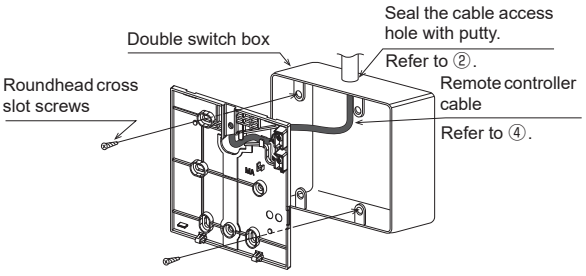
Do not use solderless terminals to connect cables to the terminal block.
Solderless terminals may come in contact with the circuit board and cause malfunctions or damage the controller cover.

⑤ **Install the bottom case.**

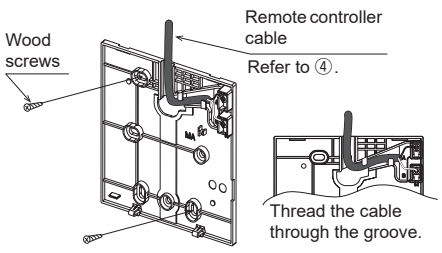
■ Installation using a switch box
- Secure at least two corners of the switch box with screws.

■ Direct wall installation
- Thread the cable through the groove.
- Secure at least two corners of the remote controller with screws.
- Be sure to secure top-left and bottom-right corners of the remote controller (viewed from the front) to prevent it from lifting. (Use molly anchor etc.)

■ Installation using a switch box



■ Direct wall installation

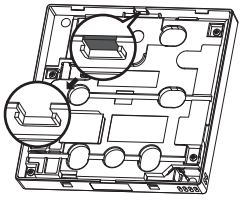


Important

To avoid damage to the controller, do not overtighten the screws.	To avoid damage to the controller, do not make holes on the controller cover.

⑥ **Cut out the cable access hole.**

■ Direct wall installation (when running the cable along the wall)
- Cut out the thin-wall part on the cover (the shaded area in the right figure) with a nipper.
- Thread the cable from the groove behind the bottom case through this access hole.

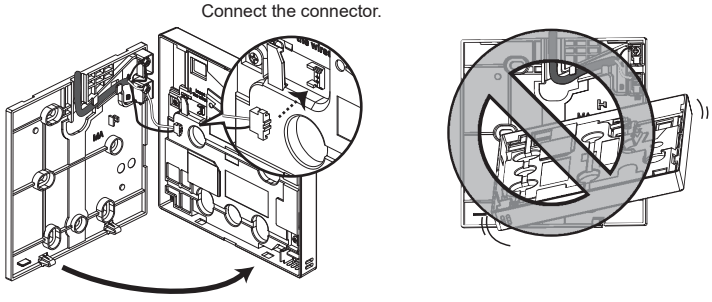


Notice

To prevent damage to the circuit board, remove the front cover from the top case before cutting out a cable access hole.	Note that accidentally touching the circuit board may damage the circuit board when cutting out a cable access hole.

⑦ **Connect the connector to the top case.**

Connect the connector on the bottom case to the socket on the top case.



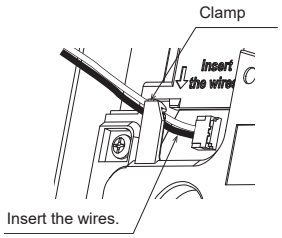
Important

To prevent malfunctions, do not remove the protective sheet or the circuit board from the top case.	To prevent cable breakage and malfunctions, do not hang the top controller casing hang by the cable as shown in the figure above.

⑧ **Insert the wires into the clamp.**

Important

Hold the wires in place with the clamp to prevent undue force from being applied to the terminal block and causing cable breakage.

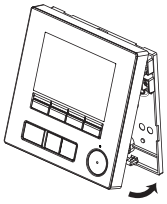


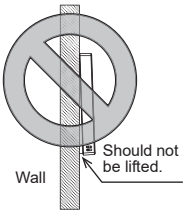
⑨ **Install the top case on the bottom case.**

Two mounting tabs are at the top of the top case.
Hook those two tabs onto the bottom case, and click the top case into place. Check that the case is securely installed and not lifted.

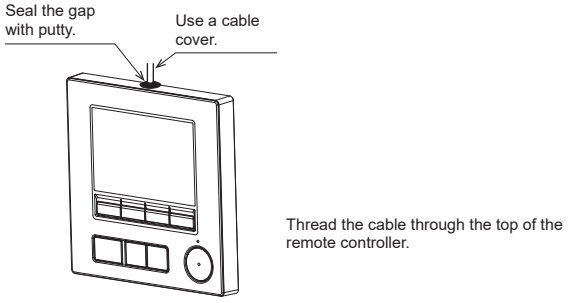
Important

When attaching the top casing to the bottom casing, push it until it they click into place. If they are not properly locked into place, they may fall, causing personal injury, controller damage, or malfunctions.





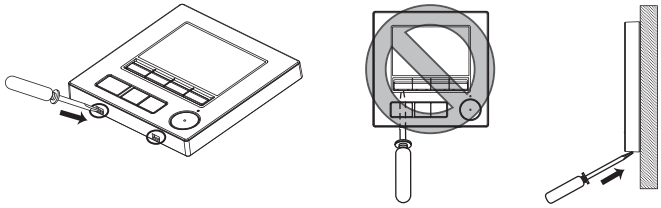
■ Direct wall installation (when running the cable along the wall)
- Thread the cable through the access hole at the top of the remote controller.
- Seal the cut-out part of the cover with putty.
- Use a cable cover.



- **Uninstalling the top case**

① Uninstalling the top case

Insert a flat-tip screwdriver with a blade width of 3-5 mm (1/8-7/32 inch) into the latches at the bottom of the remote controller and lift the latches. Then, pull up the top case.

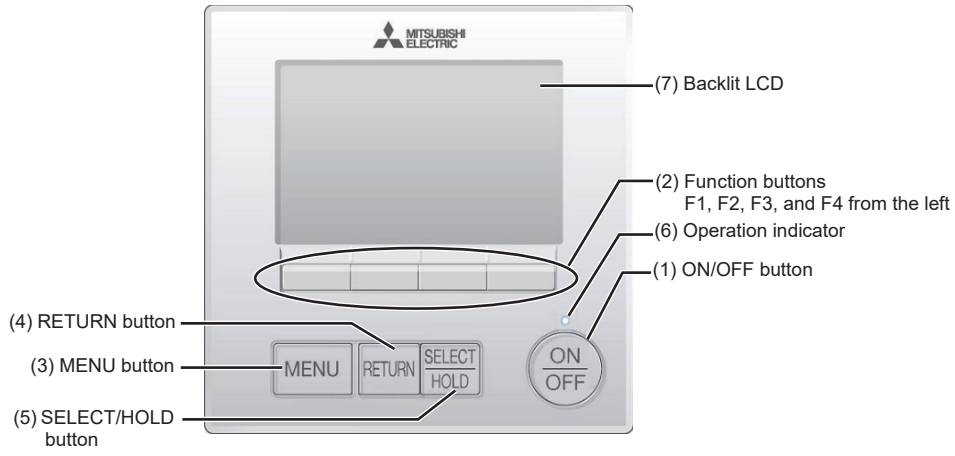


■ **At the time of factory shipment, protective sheet is on the operation interface of the front cover. Peel off the protective sheet on the operation interface prior to use.**

Important

To prevent damage to the controller casing, do not force the flat-tip screwdriver to turn with its tip inserted in the slot.	To prevent damage to the controller casing, use a flat-head screwdriver with a blade width of 3-5 mm (1/8-7/32 inch).
Do not insert the flat-tip screwdriver too far. Doing so will damage the circuit board.	

7. Remote controller button functions



(1) ON/OFF button

Use to turn ON/OFF the indoor unit.

(2) Function buttons

Use to select the operation mode or to set the temperature and fan speed on the Main display. Use to select items on other screens.

(3) MENU button

Use to bring up the Main menu.

(4) RETURN button

Use to return to the previous screen.

(5) SELECT/HOLD button

Use to jump to the setting screen or to save the settings.
When the Main menu is displayed, pressing this button will enable/disable the HOLD function.

(6) Operation indicator

Stays lit during normal operation. Blinks during startup and when an error occurs.

(7) Backlit LCD

Dot display. 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. Performing any button operation keeps the backlight on.

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

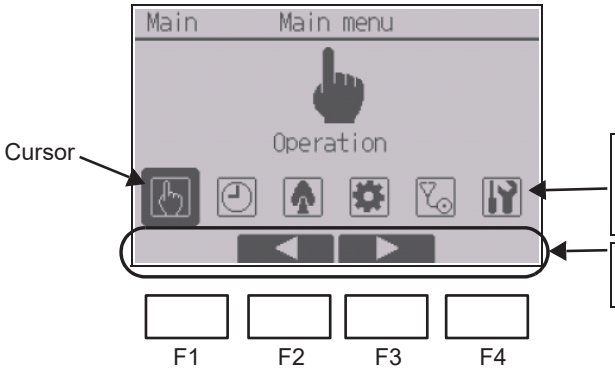
Pressing the MENU button will bring up the Main menu as shown below.

Operation menu *1
Timer menu *1
Energy saving menu *1
Initial setting menu *2*3
Maintenance menu *1
Service menu *2*3

*1 Refer to the Instructions Book for details.
*2 Explained in this manual.
*3 If no buttons are pressed for 10 minutes on the initial setting screens, or 2 hours on the service screens (10 minutes on some screens), the screen will automatically return to the Main display. Any settings that have not been saved will be lost.

The available items on the menu depend on the connected indoor unit model. For items not described in the manuals that are enclosed with the MA Remote Controller, refer to the manuals that came with the air conditioning units.

Button operations on the Main menu



Move the cursor to the desired function with the F2 and F3 buttons, and press the SELECT button to go to the next page. Password may be required.

Button function guide will appear at the bottom of the screens.

8. Turning on the power

Make sure that the MA remote controller is properly installed according to the instructions in the Installation Manual and that the indoor and outdoor unit installation has been completed before turning on the power.

(1) When the power is turned on, the following screen will appear.

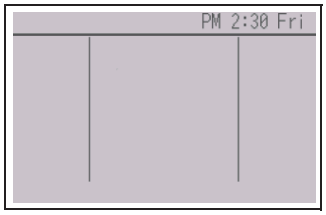


Normal start up (indicating the percentage of process completion)

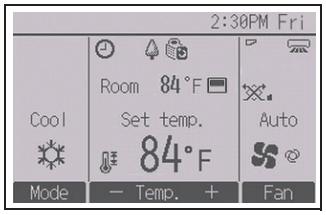
Note: When the power is on for the first time, the Language selection screen will be displayed. Refer to section 9 (5) under “Display setting menu”. Select a desired language. The system will not start-up without language selection.

(2) Main display

After the successful startup, the Main display will appear. The Main display can be displayed in two different modes: “Full” and “Basic.” Refer to section 9 “Initial settings” for how to select the display mode. (The factory setting is “Full.”)



Main display in the Full mode (while the unit is not in operation)



Main display in the Full mode (while the unit is in operation)

Note: Refer to the Instruction Book for the icons on the display.

9. Test run

Note: Maintenance password is required.

(1) Read the section about Test run in the indoor unit Installation Manual before performing a test run.
(2) At the Main display, press the Setting button and select Service>Test run>Test run.
(3) Press the ON/OFF button to cancel the test run if necessary.
(4) Refer to the indoor unit Installation Manual for the detailed information about test run and for how to handle the errors that occur during a test run.

Note: Refer to section 10 “Service menu” for information about the maintenance password.

10. Initial settings (Remote controller settings)

Note: Administrator password is required.

From the Main display, select Main menu>Initial setting, and make the remote controller settings on the screen that appears.



Basic setting menu
- Main/Sub
- Clock
- Daylight saving time
- Administrator password

Display setting menu
- Main display
- Remote controller display details setting
- Contrast•Brightness
- Language selection

Operation setting menu
- Auto mode
- Setback mode

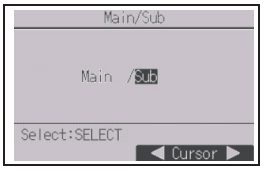
Note: The initial administrator password is “0000.” Refer to section (4) “Administrator password setting” for how to change the password.

Basic setting menu

(1) Main/Sub setting
When connecting two remote controllers, one of them needs to be designated as a sub controller.

[Button operation]

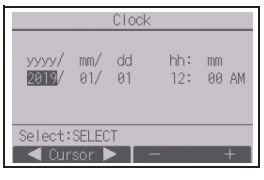
① When the F3 or F4 button is pressed, the currently selected setting will appear highlighted. Select “Sub”, and press the SELECT button to save the change.
② Press the MENU button to return to the Main menu screen. (This button always brings up the Main menu screen.)



(2) Clock setting

[Button operation]

① Move the cursor with the F1 or F2 button to the desired item.
② Change the date and time with the F3 or F4 button, and press the SELECT button to save the change. The change will be reflected on the clock display on the Status display and the Main display.

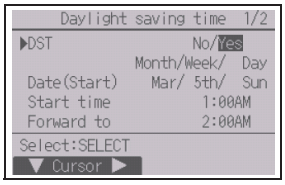


Note: Clock setting is necessary for time display, weekly timer, timer setting and error history. Make sure to perform clock setting when the unit is used for the first time or has not used for a long time.
Note: If a given system has no system controllers, the clock time will not automatically be corrected. In this case, periodically correct the clock time.

(3) Daylight saving time

The start/end time for daylight saving time can be set. The daylight saving time function will be activated based on the setting contents.

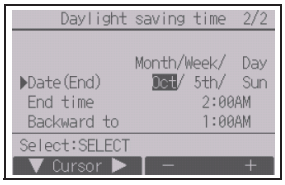
- If a given system has a system controller, disable this setting to keep the correct time.
- At the beginning and the end of daylight saving time, the timer may go into action twice or not at all.
- This function will not work unless the clock has been set.



[Button operation]

① The daylight saving time function can be activated/deactivated or the start/end times can be set by using the F1 through F4 buttons.

- DST
  Select “Yes” to activate the daylight saving time, or select “No” to deactivate.
- Date(Start)
  Set the start day of the week, week number, and month for daylight saving time.
- Start time
  Set the start time for daylight saving time.
- Forward to
  Set the time when the clock is to be set forward to at the start time above.
- Date(End) (2nd page)
  Set the end day of the week, week number, and month for daylight saving time.
- End time (2nd page)
  Set the end time for daylight saving time.
- Backward to (2nd page)
  Set the time when the clock is to be set backward to at the end time above.



② Press the SELECT button to save the setting.

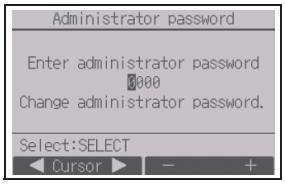
* If “5th” is selected for the week number and the 5th week does not exist in the selected month of the year, the setting is considered to be “4th.”

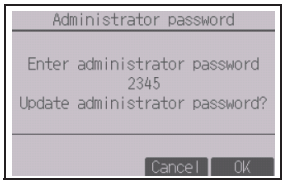
(4) Administrator password setting

[Button operation]

① A window to enter a new password will appear. Enter a new password, and press the SELECT button.

② Press the F4 button (OK) on the password change confirmation screen to save the change. Press the F3 button (Cancel) to cancel the change.





Note: The initial administrator password is “0000.” Change the default password as necessary to prevent unauthorized access. Have the password available for those who need it.

Note: If you forget your administrator password, you can initialize the password to the default password “0000” by pressing and holding the F1 button for ten seconds on the administrator password setting screen.

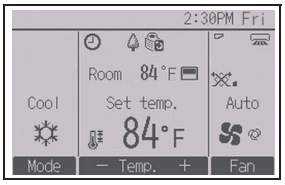
Note: The administrator password is required to make the settings for the following items.
· Timer setting · Weekly timer setting · Energy-save setting
· Outdoor unit silent mode setting · Restriction setting
· Initial setting
Refer to the Instruction Book that came with the remote controller for the detailed information about how to make the settings for these items.

Display setting menu

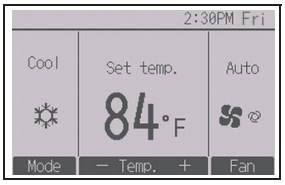
(1) Main display setting

[Button operation]

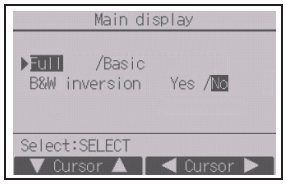
Move the cursor to “Full/Basic,” and use the F3 or F4 button to select the display mode “Full” or “Basic.” (The factory setting is “Full.”)



Full mode (Example)



Basic mode (Example)

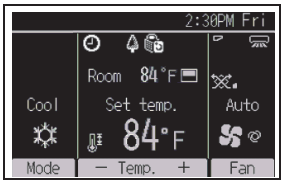


Note: This setting is only for the Main display. In the Basic mode, icons that indicate control status on timer and schedule settings will not appear on the display. Vane, louver, and ventilation settings or room temperature will not appear, either.

(2) Black and white inversion setting

Move the cursor to “B&W inversion” and use the F3 or F4 button to select the display mode “Yes” or “No.” (The factory setting is “No.”)

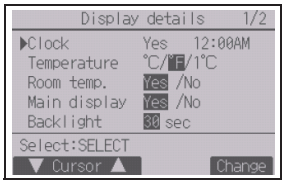
Selecting “Yes” will invert the colors of the display, turning white background to black and black characters to white as shown at right.



(3) Remote controller display details setting

Make the settings for the remote-controller-related items as necessary.

Press the SELECT button to save the changes.



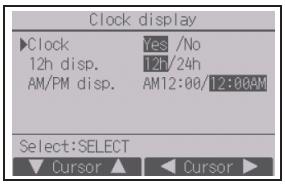
[1] Clock display

[Button operation]

① Select “Clock” from the display details setting screen, and press the F4 button (Change) to bring up the clock display setting screen.

② Use the F1 through F4 buttons to select “Yes” (display) or “No” (non-display) and its format for the Status display and the Main display.

③ Save the settings with the SELECT button. (The factory settings are “Yes” (display) and “12 h” format.)



Clock display: Yes (Time is displayed on the Status display and the Main display.)
No (Time is not displayed on the Status display and the Main display.)
Display format: 24-hour format
12-hour format
AM/PM display (Effective when the display format is 12-hour): AM/PM before the time
AM/PM after the time

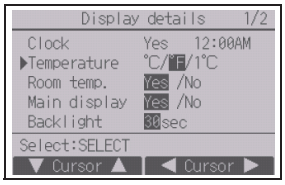
Note: Time display format will also be reflected on the timer and schedule setting display. The time is displayed as shown below.
12-hour format: AM12:00 ~ AM1:00 ~ PM12:00 ~ PM1:00 ~ PM11:59
24-hour format: 0:00 ~ 1:00 ~ 12:00 ~ 13:00 ~ 23:59

[2] Temperature unit setting

[Button operation]

Move the cursor to “Temperature” from the display details setting screen, and select the desired temperature unit with the F3 or F4 button. (The factory setting is Fahrenheit (ºF).)

- ºC: Temperature is displayed in Centigrade. Temperature is displayed in 0.5- or 1-degree increments, depending on the model of indoor units.
- ºF: Temperature is displayed in Fahrenheit.
- 1 ºC: Temperature is displayed in Centigrade in 1-degree increments.



[3] Room temperature display

[Button operation]

Move the cursor to “Room temp.” on the display details setting screen, and select the desired setting with the F3 or F4 button.

(The factory setting is “Yes”.)

- Yes: Room temperature appears on the Main display.
- No: Room temperature does not appear on the Main display.

Note: Even when “Yes” is set, the room temperature is not displayed on the Main display in the “Basic” mode.

[4] Auto (single set point) mode display setting

[Button operation]

Move the cursor to “Auto mode” from the display details setting screen, and select the desired mode with the F3 or F4 button. (The factory setting is “Yes.”)

- Yes: “Auto Cool” or “Auto Heat” is displayed during operation in the Auto (single set point) mode.
- No: Only “Auto” is displayed during operation in the Auto (single set point) mode.

[5] Backlight

The backlight lighting-up time can be set.

[Button operation]

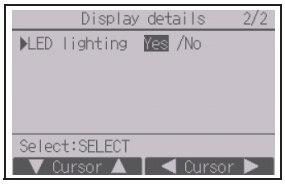
Move the cursor to “Backlight” from the display details setting screen, and select the desired time (5/10/20/30/60 seconds) with the F4 button. (The factory setting is “30” seconds.)

Note: This setting is effective on the Status display and the Main display.

[6] LED lighting

The LED lighting can be set to either “Yes” (On) or “No” (Off). (The factory setting is “Yes”.)

When “No” is selected, the LED will not light up even during the normal operation.



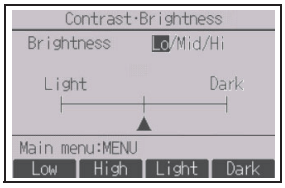
(4) Contrast•Brightness

[Button operation]

Select the desired brightness for the remote controller LCD with the F1 and F2 buttons.

Adjust the contrast with the F3 or F4 button. The current level is indicated with a triangle.

Note: Adjust the contrast and brightness to improve viewing in different lighting conditions or installation locations. This setting can not improve viewing from all directions.

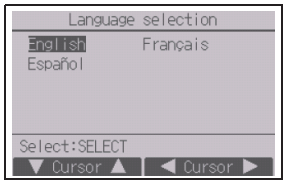


(5) Language selection

[Button operation]

Move the cursor to the language you desire with the F1 through F4 buttons.

Press the SELECT button to save the setting.



Operation setting menu

(1) Auto mode setting

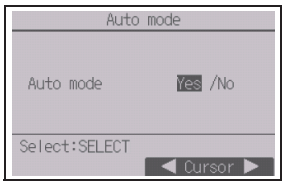
[Button operation]

Whether or not to use the Auto (single set point) or Auto (dual set points) mode can be selected by using the F3 or F4 button. This setting is valid only when indoor units with the Auto mode function are connected.

(The factory setting is “Yes”.)

Press the SELECT button to save the changes made.

- Yes: The Auto mode can be selected in the operation mode setting.
- No: The Auto mode cannot be selected in the operation mode setting.



(2) Setback mode setting

[Button operation]

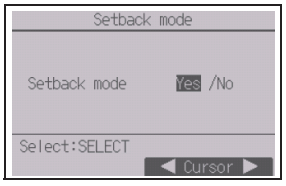
If setback mode setting can be made on multiple units, make the setting on one of the units only.

The Setback mode can be selected by using the F3 or F4 button.

(The factory setting is “Yes”.)

Press the SELECT button to save the changes made.

- Yes: The Setback mode can be selected in the operation mode setting.
- No: The Setback mode cannot be selected in the operation mode setting.



11. Service menu

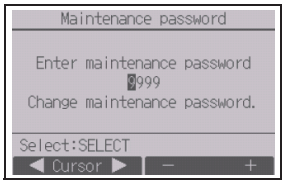
Note: Maintenance password is required.

At the Main display, press the Setting button and select “Service” to make the maintenance settings.

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, and set each number (0 through 9) with the F3 or F4 button. Then, press the SELECT 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.



Note: If you forget your maintenance password, you can initialize the password to the default password “9999” by pressing and holding the F1 button for ten seconds on the maintenance password setting screen.

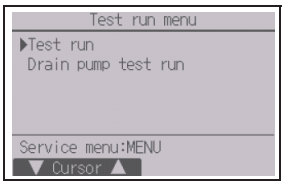
Note: Air conditioning units may need to be stopped to make certain settings. There may be some settings that cannot be made when the system is centrally controlled.



(1) Test run (CITY MULTI and M/P-series)

Select “Test run” from the Service menu to bring up the Test run menu.

- Test run: Select this option to perform a test run.
- Drain pump test run: Select this option to perform a test run on the drain pump on the indoor unit.

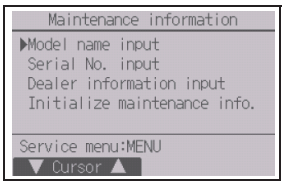


Applicable only to the type of indoor units that support the test run function.

Note: Refer to the indoor unit Installation Manual for the detailed information about test run.

(2) Input maintenance information (CITY MULTI and M/P-series)

Select “Input maintenance info.” from the Service menu to bring up the Maintenance information screen. Refer to the indoor unit Installation Manual for how to make the settings.



Note: The following settings can be made from the Maintenance information screen.

·Registering model names and serial numbers
Enter the model names and serial numbers of outdoor and indoor units. The information entered will appear on the Error information screen. Model names can have up to 18 characters, and the serial numbers can have up to 8 characters.

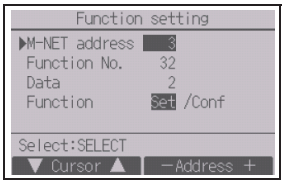
·Registering dealer information
Enter phone number of a dealer. The entered information will appear on the Error information screen. Phone number can have up to 13 characters.

·Initializing maintenance information
Select the desired item to initialize the model name, serial number, and dealer information settings.

(3) Function setting (CITY MULTI)

Make the settings for the indoor unit functions via the remote controller as necessary.

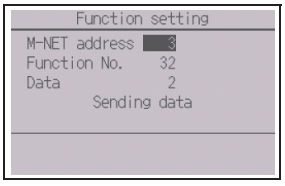
Select “Function setting” from the Settings menu to bring up the Function setting screen.



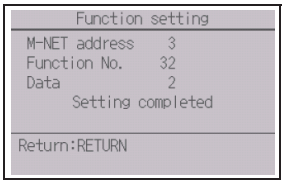
[Button operation]

① The Function setting screen will appear.
Press the F1 or F2 button to move the cursor to one of the following: M-NET address, function setting number, or setting value. Then, press the F3 or F4 button to change the settings to the desired settings.

② Once the settings have been completed, press the SELECT button.
A screen will appear that indicates that the settings information is being sent.
To check the current settings of a given unit, enter the setting for its M-NET address and function setting number, select Conf for the Function, and press the SELECT button.
A screen will appear that indicates that the settings are being searched for. When the search is done, the current settings will appear.



③ When the settings information has been sent, a screen will appear that indicates its completion.
To make additional settings, press the RETURN button to return to the screen shown in Step ② above. Set the function numbers for other indoor units by following the same steps.

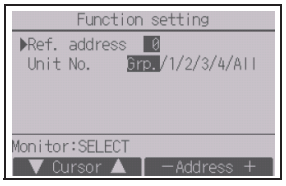


Note:
- **Refer to the indoor unit Installation Manual for information about the factory settings of indoor units, function setting numbers, and setting values.**
- Be sure to write down the settings for all functions if any of the initial settings has been changed after the completion of installation work.

(4) Function setting (M/P-series)

Make the settings for the indoor unit functions via the remote controller as necessary.

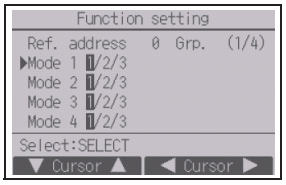
Select “Function setting” from the Settings menu to bring up the Function setting screen.



[Button operation]

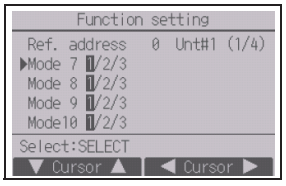
① Set the indoor unit refrigerant addresses and unit numbers with the F1 through F4 buttons, and then press the SELECT button to confirm the current setting.

② When data collection from the indoor units is completed, the current settings appears highlighted. Non-highlighted items indicate that no function settings are made. Screen appearance varies depending on the “Unit No.” setting.



Common items

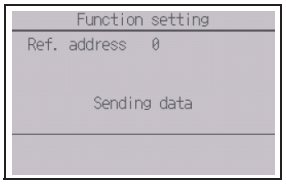
③ Use the F1 or F2 button to move the cursor to select the mode number, and change the setting number with the F3 or F4 button.



Individual items
(Unit No. 1 through 4)

④ When the settings are completed, press the SELECT button to send the setting data from the remote controller to the indoor units.

⑤ When the transmission is successfully completed, the screen will return to the Function setting screen.



Note:
- Make the function settings shown in Table 1 on M/P-series units as necessary.
- Refer to the Instructions Book when it is necessary to set the settings for CITY MULTI units.
- **Table 1 summarizes the setting options for each mode number. 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.

Table1. Function setting options

Mode No.	Mode	Settings	Setting No.	Unit numbers
01	Automatic recovery after power failure	Disable	1	Set “Grp.” for the Unit number. These settings apply to all the connected indoor units.
		Enable (Four minutes of standby time is required after the restoration of power.)	2	
02	Thermistor selection (indoor temperature detection)	Average temperature reading of the indoor units in operation	1	
		Thermistor on the indoor unit to which the remote controller is connected (fixed)	2	
		Built-in sensor on the remote controller	3	
03	LOSSNAY connection	Not connected	1	
		Connected (without outdoor air intake by the indoor units)	2	
		Connected (with outdoor air intake by the indoor units)	3	
04	Power voltage	240 V	1	
		220 V, 230 V	2	
05	Auto mode	Enable (Automatically the unit achieves effective energy saving operation.)	1	
		Disable	2	
07	Filter sign	100 hours	1	Set “1, 2, 3, 4, or All” for the Unit number. These settings apply to each indoor unit. ・If “1, 2, 3, or 4” is set for the Unit number, the settings apply only to the specified indoor unit regardless of the number of connected indoor units (one through four units). ・If “All” is set for the Unit number, the settings apply to all the connected indoor units regardless of the number of connected indoor units (one through four units).
		2500 hours	2	
		Not displayed	3	
08	Fan speed	Silent mode (or standard)	1	
		Standard (or High ceiling 1)	2	
		High ceiling (or High ceiling 2)	3	
09	Outlet	4 directional	1	
		3 directional	2	
		2 directional	3	
10	Optional parts (High-efficiency filter)	No	1	
		Yes	2	
11	Vane	No vanes (or the vane setting No.3 is effective.)	1	
		Equipped with vanes (The vane setting No.1 is effective.)	2	
		Equipped with vanes (The vane setting No.2 is effective.)	3	

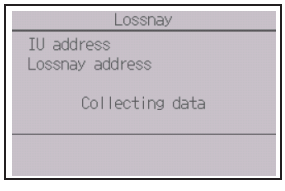
(5) LOSSNAY setting (CITY MULTI only)

This setting is required only when the operation of CITY MULTI units is interlocked with LOSSNAY units. This setting is not available for the M/P-series units. Interlock settings can be made for the indoor unit to which the remote controller is connected. (They can also be confirmed or deleted.)

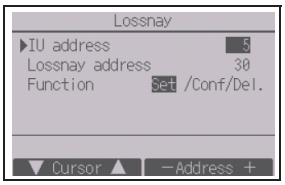
Note:
· Use the centralized controller to make the settings if it is connected.
· To interlock the operation of the indoor units with the LOSSNAY units, be sure to interlock the addresses of ALL indoor units in the group and that of the LOSSNAY unit.

[Button operation]

① When “Lossnay” on the Settings menu is selected, the remote controller will automatically begin searching for the registered LOSSNAY addresses of the currently connected indoor unit.

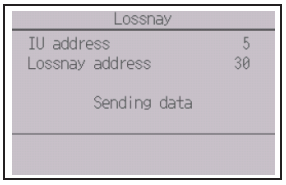


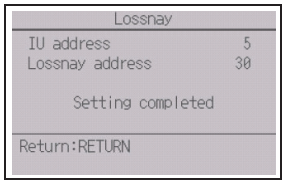
② When the search is completed, the smallest address of the indoor units that are connected to the remote controller and the address of the interlocked LOSSNAY unit will appear. “--” will appear if no LOSSNAY unit is interlocked with the indoor units.
If no settings need to be made, press the RETURN button to go back to the Settings menu.



To make LOSSNAY interlock setting

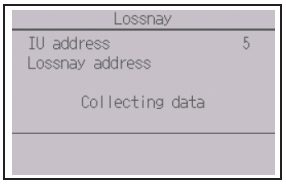
③ Enter the addresses of the indoor unit and the LOSSNAY unit to be interlocked, with the F1 through F4 buttons, select “Set” in the “Function”, and press the SELECT button to save the settings. “Sending data” will appear on the screen. If the setting is successfully completed, “Setting completed” will appear.

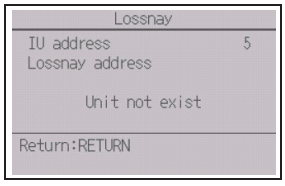




To search for the LOSSNAY address

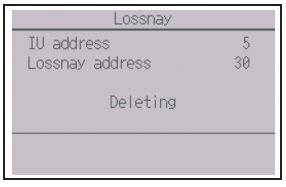
④ Enter the address of the indoor unit to which the remote controller is connected, select “Conf” in the “Function”, and press the SELECT button. “Collecting data” will appear on the screen. If the signal is received correctly, the indoor unit address and LOSSNAY address will appear. “--” will appear when no LOSSNAY unit is found. “Unit not exist” will appear if no indoor units that are correspond to the entered address are found.

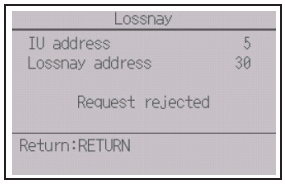




To delete the interlock setting

⑤ To delete the interlocked setting between LOSSNAY unit and the indoor units to which the remote controller is connected, enter the indoor unit address and LOSSNAY address with the F1 through F4 buttons, select “Del.” in the “Function”, and press the SELECT button. “Deleting” will appear. The screen will return to the search result screen if the deletion is successfully completed. “Unit not exist” will appear if no indoor units that are correspond to the entered address are found. If deletion fails, “Request rejected” will appear on the screen.





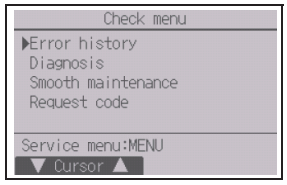
(6) Check

Select “Check” on the Service menu to bring up the Check menu screen.

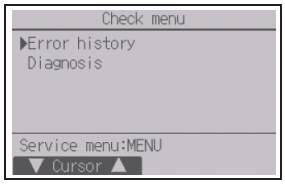
The type of menu that appears depends on the type of indoor units that are connected (CITY MULTI or M/P-series).

(When CITY MULTI is connected, only “Error history” will appear in the menu.)

<M/P-series>



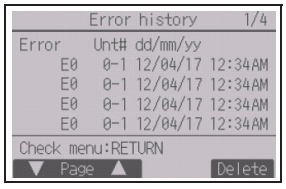
<CITY MULTI>



[Button operation]

① Error history

Select “Error history” from the Check menu, and press the SELECT button to view up to 16 error history records. Four records are shown per page, and the top record on the first page indicates the latest error record.



[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 error history.



“Error history deleted” will appear on the screen. Press the RETURN button to go back to the Check menu screen.



② Other options in the Check menu (M/P-series only)

The following options are also available on the M/P-series units in the Check menu.

- Smooth maintenance
- Request code

These options are available only on the M/P-series units. Refer to the indoor unit Installation Manual for details.

(7) Diagnostic function

Error history of each unit can be checked via the remote controller.

[Button operation]

① Select “Self check” from the Diagnosis menu, and press the SELECT button to view the Self check screen.

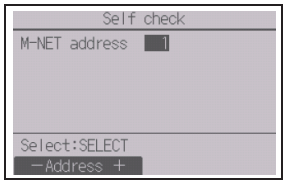
② With the F1 or F2 button, enter the refrigerant address (M/P-series) or the M-NET address (CITY MULTI), and press the SELECT button.

③ Error code, unit number, attribute, and indoor unit demand signal ON/OFF status at the contact (CITY MULTI only) will appear. “-” will appear if no error history is available.

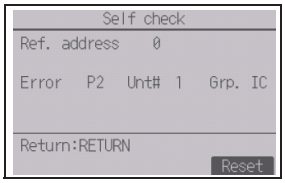
<M/P-series>



<CITY MULTI>

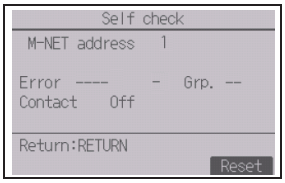


<M/P-series>



<CITY MULTI>





When there is no error history

[Resetting the error history]

① 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.



② Press the F4 button (OK) to delete the error history. If deletion fails, “Request rejected” will appear, and “Unit not exist” will appear if no indoor units that are correspond to the entered address are found.



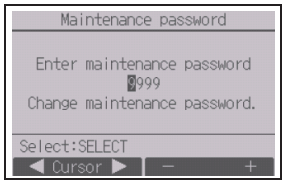
(8) Changing the maintenance password

[Button operation]

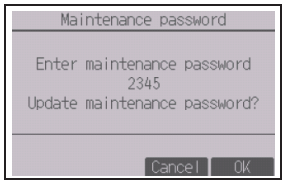
① Select “Maintenance password” on the Others menu, and press the SELECT button to bring up the screen to enter a new password.

② Move the cursor to the digit you want to change with the F1 or F2 button, and set each digit to the desired number (0 through 9) with the F3 or F4 button.

③ Press the SELECT button to save the new password.

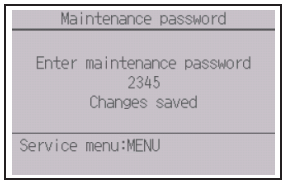


④ A confirmation screen will appear asking if you want to change the maintenance password. Press the F4 button (OK) to save the change. Press the F3 button (Cancel) to cancel the change.



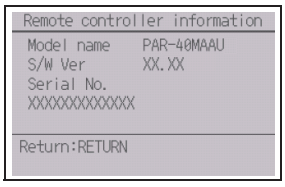
⑤ “Changes saved” will appear when the password is updated.

⑥ Press the MENU button to return to the Service menu or press the RETURN button to go back to the “Maintenance password” screen.



(9) Remote controller information

The following information of the remote controller in use can be checked.
- Model name
- Software version
- Serial number



[Button operation]

① Select “Others” from the Service menu.

② Select “Remote controller information”.

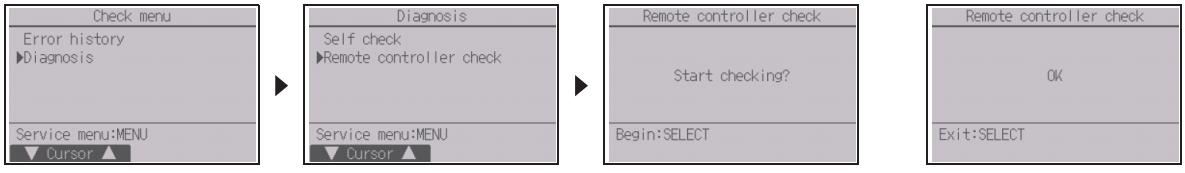
12. Remote controller check

When the remote controller does not work properly, use the remote controller checking function to troubleshoot the problem.

(1) 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.

[Button operation]

① Select “Remote controller check” from the Diagnosis menu, and press the SELECT 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.



Select “Remote controller check”.

Remote controller check results screen

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. 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.

② If the SELECT button is pressed after the remote controller check results are displayed, remote controller check will end, and the remote controller will automatically reboot itself.

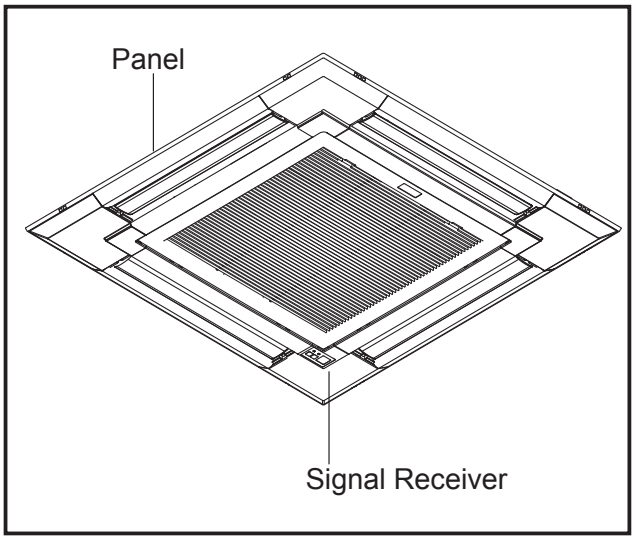
Note:
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.
If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Signal Receiver

PAR-SR4LA-E

Figure



Descriptions

- Integrate the Signal Receiver in the corner panel (the opposite side of refrigerant piping).
- Applicable only for PLA models.

Applicable Models

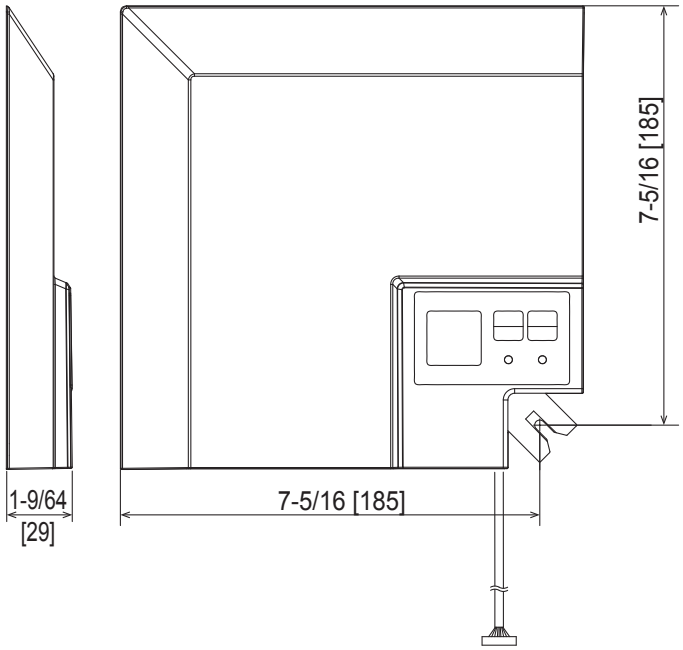
■ PLA-AE12/18/24/30/36/42/48NL

Specifications

Model name	PAR-SR4LA-E
Operation indicator lamp	During operation: LED (green) lights, Abnormal condition: LED (green) blinks, Preparing for heating operation:LED.(orange) lights
Emergency operation	Cooling/heating switch (operate/stop) equipped.
Number of controllable units	Maximum 16 refrigerant systems in one group (At least one wireless signal receiving kit must be installed to each refrigerant system.)
Adapter wiring	Connect the 9-core cord with connector (attached) to CN90 of the indoor controller board of the indoor unit.
Signal distance	Within 7m in 45 degrees range from the front of the Signal Receiver

Dimensions

Unit: inch [mm]



How to Use / How to Install

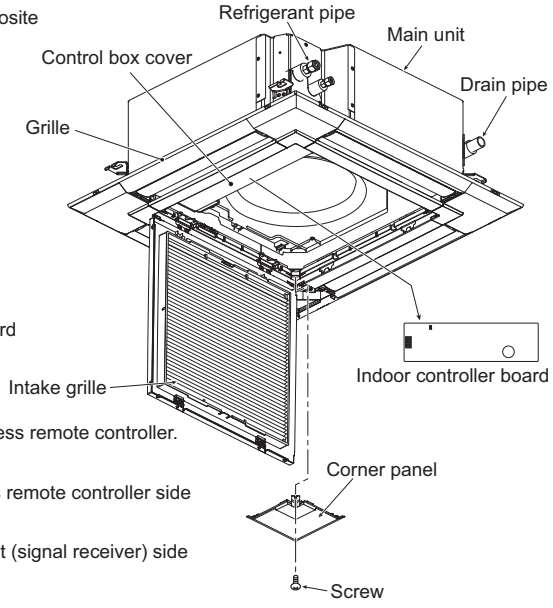
1 Preparation for installing SIGNAL RECEIVER

※Make sure to turn off the main power before work.

1. Open the intake grille and remove the corner panel. The corner panel is in opposite to where refrigerant pipes are (where local wires are drawn into).

   Note:
   - Discard only the removed corner panel.
   - Reuse the screw of the removed corner panel to install the signal receiver.
   - When installing the signal receiver during grille installation, complete the wiring work of grille before proceeding to the following procedure.

2. Loosen the 2 screws on the control box cover, and remove the control box cover by sliding; however, in this installation, the cover can hang temporarily.
3. Specify the target unit for wireless remote controller operation. Follow the procedure below to set the pair number on the indoor controller board and the wireless remote controller.



■ Setting pair number

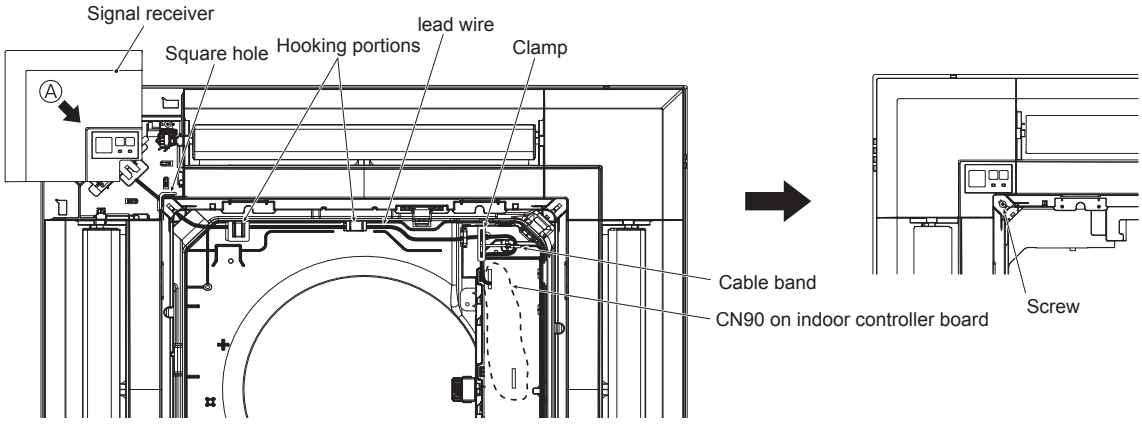
- The pair number setting is to specify the unit which is to be operated by wireless remote controller.
  When specifying the unit is not required, this setting is not necessary.
  The pair number is set to "0" on indoor unit (signal receiver) side and wireless remote controller side at an initial setting.
- When specifying the unit is required, match the pair number on the indoor unit (signal receiver) side and on the wireless remote controller side as shown in the table below.

Pair number of wireless remote controller	Pair number of indoor unit		
	• When the unit is in combination with PLA-EA Cut jumper wire J41, J42, or both on the indoor controller board.	• When the unit is in combination with PLFY-EM Set SW22.	
		SW 22-3	SW 22-4
0	No need to cut.	ON	ON
1	Cut only J41.	OFF	ON
2	Cut only J42.	ON	OFF
3 to 9	Cut J41 and J42.	OFF	OFF

2 Installing SIGNAL RECEIVER

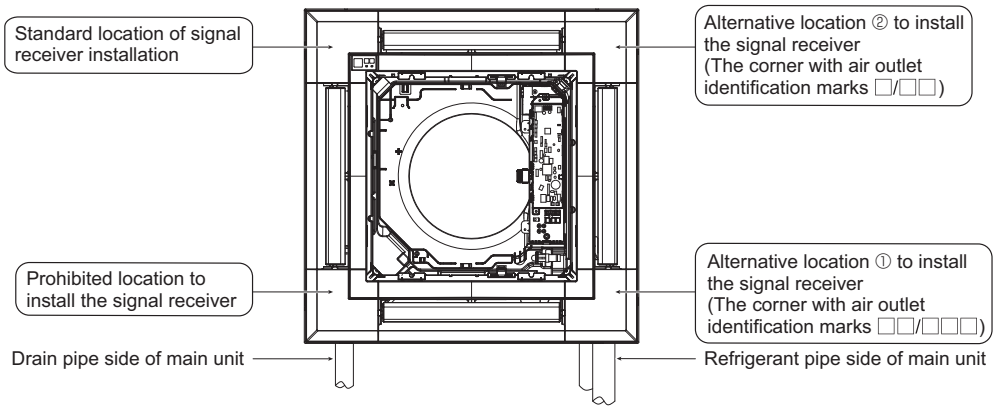
- Installation procedure for the standard location

1. Pull out the lead wire of signal receiver from the square hole located in the corner of grille, where the removed corner panel was in the preparation procedure.
2. Pass the lead wire through the 2 hooking portions and inside the control box, and connect it to CN90 on the indoor controller board as shown below.
   Adjust the lead wire length to allow the corner panel to be removed again, and fix it with the cable band.
3. Install the signal receiver by sliding it towards the arrow A, and fix in the corner with the screw.
   (Reuse the screw which was used to fix the removed corner panel.)



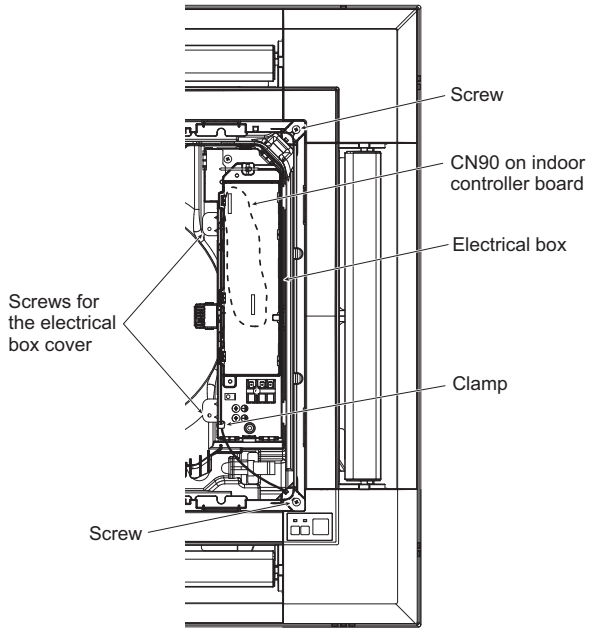
4. After completing the installation, attach the control box cover to the unit as it was.

● To install the signal receiver to the 2 locations other than the standard location, follow the procedure below.



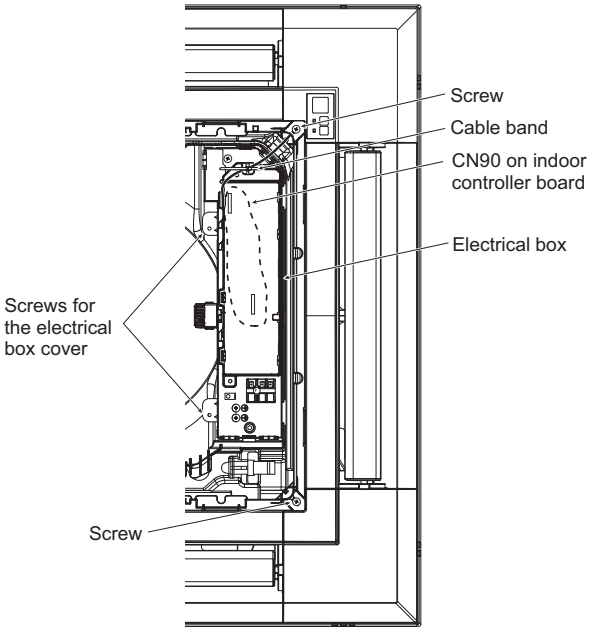
● Installation procedure for the alternative location ①

1. Pass the lead wire of signal receiver through the square hall located in the corner of grille.
2. Loosen the 2 screws fixing the electrical box cover on the unit, and slide the cover to open.
3. Route the lead wire of signal receiver (white, 9 poles) from the electrical box side on the unit, and certainly connect it to CN90 on the indoor controller board.
4. The lead wire of signal receiver must be held together without slack using the clamp into the electrical box.
5. Follow the reverse procedure of 2 to reinstall the electrical box cover on the unit.
6. Install the signal receiver to the grille and fix with the screws.



● Installation procedure for the alternative location ②

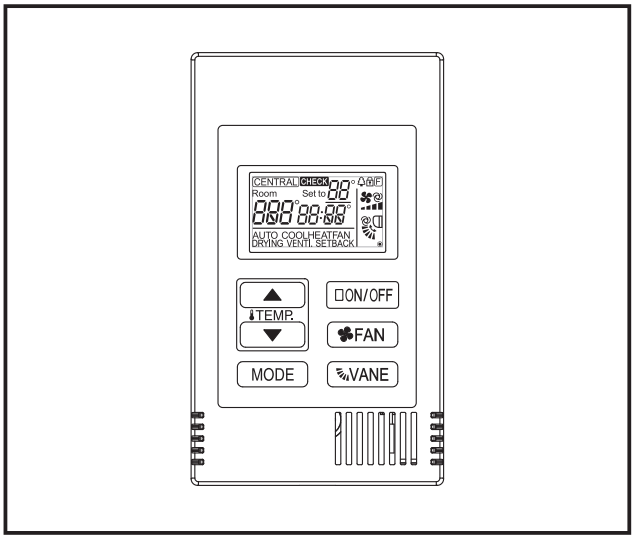
1. Pass the lead wire of signal receiver through the square hall located in the corner of grille.
2. Loosen the 2 screws fixing the electrical box cover on the unit, and slide the cover to open.
3. Route the lead wire of signal receiver (white, 9 poles) from the electrical box side on the unit, and certainly connect it to CN90 on the indoor controller board.
4. The lead wire of signal receiver must be held together without slack, and fixed with the cable band into the electrical box.
5. Follow the reverse procedure of 2 to reinstall the electrical box cover on the unit.
6. Install the signal receiver to the grille and fix with the screws.



Simple MA Remote Controller

PAC-YT53CRAU

Photo



Descriptions

New functions have been added to the CITY MULTI series that enable the setting of certain indoor unit functions (such as static pressure) from the remote controller. (For more detailed information, please contact your nearest sales office or distributor.)

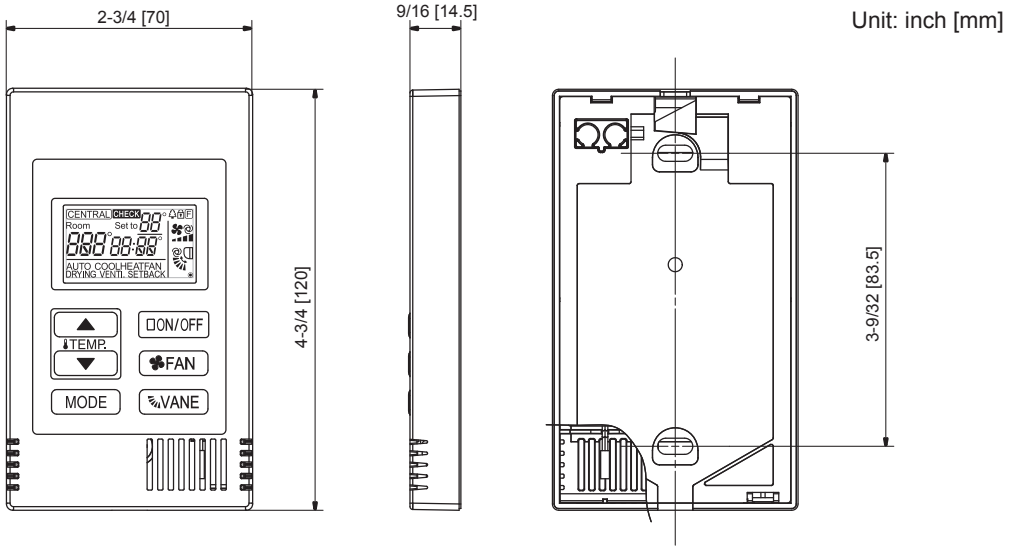
Applicable Models

- PKA-A12/18HA7
- PKA-A24/30/36KA7
- PCA-A24/30/36/42KA7
- PLA-A12/18/24/30/36/42EA7

Specifications

	Specifications
Product size	70 (W) × 120 (H) × 14.5 (D) mm (2-3/4 × 4-3/4 × 9/16 [in]) (not including the protruding part)
Net weight	0.1 kg (1/4 lb.)
Rated power supply voltage	12 VDC (supplied from indoor units)
Power consumption	0.3 W
Usage environment	Temperature 0 ~ 40ºC (32 ~ 104ºF) Humidity 30 ~ 90%RH (with no dew condensation)
Material	PC + ABS

Dimensions



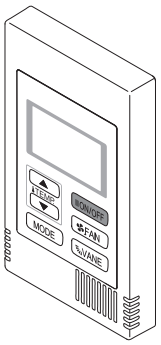
How to Use / How to Install

1 Component names and supplied parts

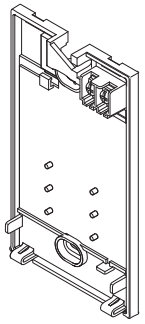
The following parts are included in the box.

Parts name	Qty.	Appearance
Remote controller (top case)	1	Right figure *1
Remote controller (bottom case)	1	Right figure *2
Roundhead cross slot screws M4×30	2	*3
Wood screw 4.1×16 (for direct wall installation)	2	*3
Installation Manual (this manual)	1	
Instruction Book	1	

Top case *1



Bottom case *2



*3 ISO metric screw thread
*4 Remote controller cable is not included.

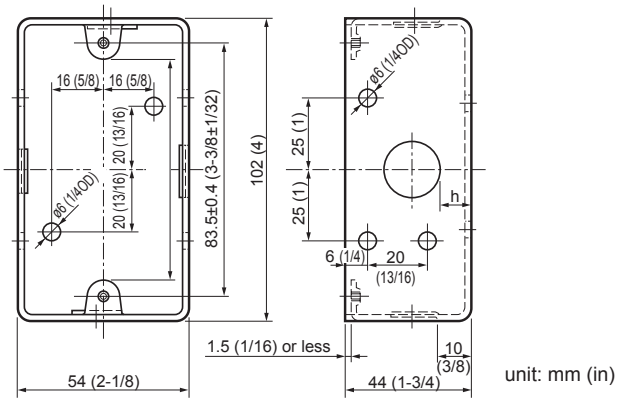
2 Field-supplied parts/Required tools

(1) Field-supplied parts

The following parts are field-supplied parts.

Parts name	Qty.	Notes
Single switch box	1	Not required for direct wall installation
Thin metal conduit	Necessary	
Lock nut and bushing	Necessary	
Cable cover	Necessary	Required for routing remote controller cable along a wall
Putty	Reasonable	
Molly anchor	Necessary	
Remote controller cable (Use a 0.3 mm² (AWG22) 2-core sheathed cable.)	Necessary	If you need to use a cable extension longer than 10 m (32 ft), select an electric wire that meets the following specifications: Wire specification VCTF or CVV (2-core): 1.25 mm² (stranded 16 AWG) or equivalent

Switch box



unit: mm (in)

(2) Field-supplied tools

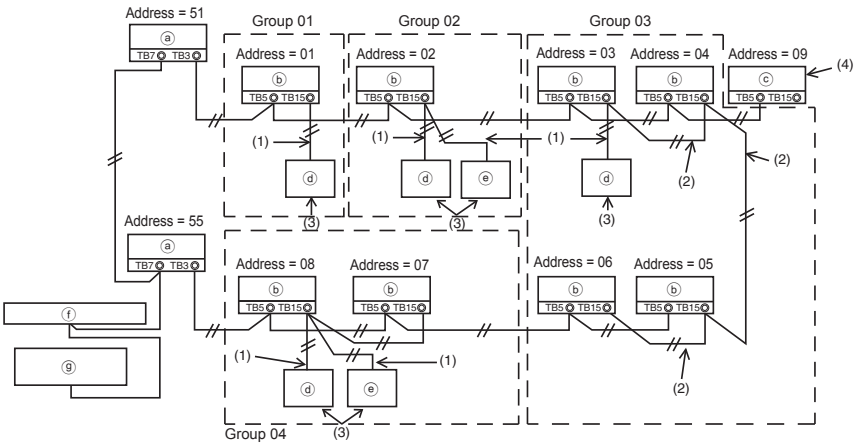
- Flat-tip screwdriver (Width: 3 - 5 mm (1/8 - 7/32 inch))
- Knife or Nipper
- Miscellaneous tools

3 How To Wire Transmission Line

The wiring is different when the remote controller is connected to a CITY MULTI control system ("-A" type and later) and when it is connected to a M-Series and P-Series air conditioner (A control type). The wiring also differs with the system configuration. Check the system used.

1. Connecting to CITY MULTI control system

The numbers (1) to (4) in the figure correspond to items (1) to (4) in the following description.



Connect to TB15 on the indoor unit.

ⓐ Outdoor unit
ⓑ Indoor unit
ⓒ LOSSNAY or OA processing unit
ⓓ Main Remote Controller
ⓔ Sub Remote Controller
ⓕ Central controller
ⓖ Power supply unit for transmission line

(1) Wiring from the remote controller
- Connect to the MA remote controller terminal block (TB15) on the indoor unit.
- The terminal block has no polarity. Connect to the terminal block at the rear bottom of the remote controller.

(2) Operating in a group (Groups 03, and 04 above)
- Interconnect the MA remote controller terminal block (TB15) of the indoor units you want to operate as a group, and connect the MA remote controller to that point.
- When the remote controller is used in combination with the system controller as shown in the figure above, group setting at the system controller (central controller in the figure above) is necessary.

(3) Number of connectable remote controllers (groups 02 and 04)
- A main remote controller and one sub remote controller, a total of two, can be connected to a group made up of indoor units.

NOTE: When using this Simple MA remote controller in combination with other MA remote controllers, be sure to follow the compatibility rules below.

Indoor unit function	Main remote controller	Sub remote controller	Compatibility
Models applicable for AUTO (dual set point) and SETBACK mode	This Simple MA remote controller	This Simple MA remote controller	Compatible, and AUTO (dual set point) and SETBACK mode can be used depending on the indoor units to be connected.
	Other MA remote controllers	This Simple MA remote controller	Compatible, but AUTO (dual set point) and SETBACK mode cannot be used.
	This Simple MA remote controller	Other MA remote controllers	Incompatible
Models not applicable for AUTO (dual set point) and SETBACK mode	Combination with all of the above		Compatible

(4) To interlock to a LOSSNAY or OA processing unit, make the following settings using the remote controller. (For a description of how to set an interlock, see section 7 Ventilation Setting .)
Set the LOSSNAY or OA processing unit address and the address of all the indoor units you want to interlock.

(5) Total length of remote controller wiring
- The simple MA controller can be wired up to 200 m (656 ft). Procure 0.75 - 1.25 mm² (stranded 16 - 28 AWG), 2-core cable at the installation site.

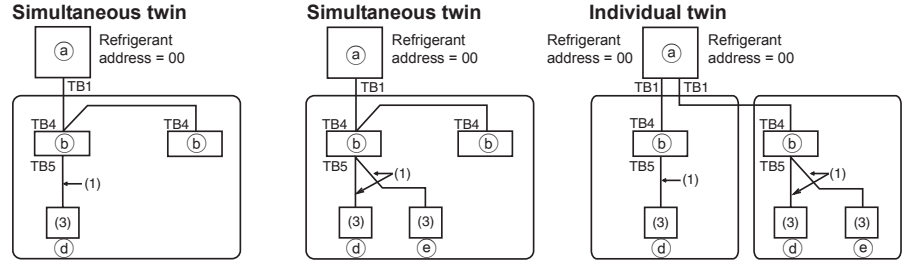
⚠ CAUTION	Remote controllers cannot be wired together. Only one wire can be connected to the remote controller terminal block. 

NOTE: When interlocking the MA remote controller with a LOSSNAY or OA processing unit, always set the address of all the indoor units in the group and the address of the LOSSNAY or OA processing unit.

2. Connecting to M-Series and P-Series air conditioner

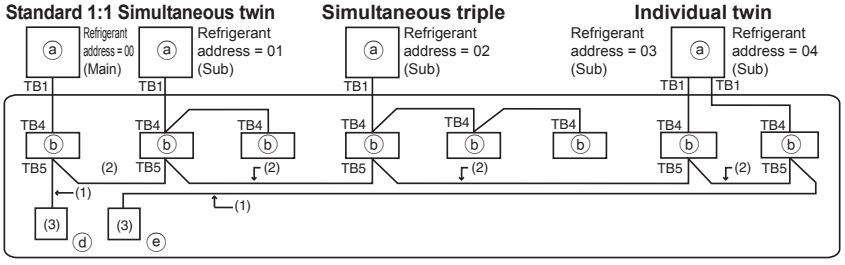
The remote controller wiring depends on the system configuration. Check the system configuration. Wire the remote controller as shown in the example below.
The numbers (1) to (3) in the figure correspond to items (1) to (3) in the following description.

[1] Connecting the remote controller for each refrigerant system (Standard 1:1, simultaneous twin, simultaneous triple, simultaneous four, individual twin)



Connect to TB5 on the indoor unit.

[2] When grouping by different refrigerant systems



ⓐ Outdoor unit
ⓑ Indoor unit
ⓓ Main Remote Controller (Simple MA Controller)
ⓔ Sub Remote Controller (Simple MA Controller)

* Set the refrigerant address using the outdoor unit dip switches. (For more information, refer to the outdoor unit installation manual.)

* All the indoor units enclosed in ▭ are controlled as one group.

(1) Wiring from remote controller
- Connect to indoor unit TB5 (remote controller terminal block). (The terminal block has no polarity.)
- For simultaneous multi type, when mixing various types of indoor units, always connect the remote controller to the indoor unit with the most functions (wind velocity, vane, louver, etc.).

(2) When grouping with difference refrigerant systems
- Group using the remote controller wiring. Connect the remote controller to an arbitrary indoor unit of each refrigerant system you want to group.
- When mixing different types of indoor units in the same group, always make the outdoor unit connecting the indoor unit with the most functions (wind velocity, vane, louver, etc.) the Main unit (refrigerant address = 00). Also, when the Main unit is the simultaneous multi type, always satisfy the conditions of (1) above.
- The Simple MA Remote Controller can control up to 16 refrigerant systems as one group.

(3) Up to two remote controllers can be connected to one group

- When two remote controllers are connected to one group, always set the Main remote controller and Sub remote controller.
- When only one remote controller is connected to one group, set it as the Main controller. When two remote controllers are connected to one group, set the Main remote controller and Sub remote controller. (For a description of how to set the Main/Sub switch, see step 5 in section 5 How To Install .)

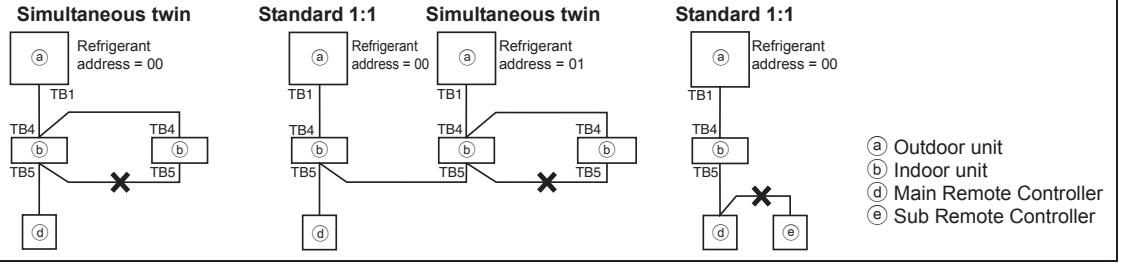
NOTE: When using this Simple MA remote controller in combination with other MA remote controllers, be sure to follow the compatibility rules below.

Indoor unit function	Main remote controller	Sub remote controller	Compatibility
Models applicable for AUTO (dual set point) and SETBACK mode	This Simple MA remote controller	This Simple MA remote controller	Compatible, and AUTO (dual set point) and SETBACK mode can be used depending on the indoor units to be connected.
	Other MA remote controllers	This Simple MA remote controller	Compatible, but AUTO (dual set point) and SETBACK mode cannot be used.
	This Simple MA remote controller	Other MA remote controllers	Incompatible
Models not applicable for AUTO (dual set point) and SETBACK mode	Combination with all of the above		Compatible

(4) Total length of remote controller wiring

- The Simple MA Remote Controller can be wired up to 200 m (656-1/8 ft).
  Procure 0.75 ~ 1.25 mm² (16 ~ 28 AWG), 2-core cable at the installation site.

⚠CAUTION
- The wiring cannot be connected to TB5 of the indoor unit of the same refrigerant system. If so connected, the system will not operate normally.
- Remote controllers cannot be wired together. Only one wire can be connected to the remote controller terminal block.
- When connecting to TB5, connect up to two wires of the same size to one terminal block.



4 How To Install

This remote controller is for the wall installation. It can be installed either in the switch box or directly on the wall. When performing direct wall installation, wires can be thread through either back or top of the remote controller.

(1) Selecting an installation site

Install the remote controller (switch box) on the site where the following conditions are met.

(a) A flat surface

(b) A place where the remote controller can measure the accurate indoor temperature
Sensors to monitor indoor temperature are on the indoor unit and on the remote controller. When the room temperature is monitored with the sensor on the remote controller, the built-in sensor on the Main remote controller monitors the room temperature. When using the sensor on the remote controller, follow the instructions below.

- To monitor the accurate indoor temperature, install the remote controller away from direct sunlight, heat sources, and the supply air outlet of the air conditioner.
- Install the remote controller in a location that allows the sensor to measure the representative room temperature.
- Install the remote controller where no wires are routed around the temperature sensor on the controller. (If wires are routed, the sensor cannot measure accurate indoor temperature.)

Important

Do not install the controller in a place where the difference between the remote controller surface temperature and the actual room temperature will be great.
If the temperature difference is too high, room temperature may not be adequately controlled.

To avoid deformation and malfunction, do not install the remote controller in direct sunlight or where the ambient temperature may exceed 40ºC (104ºF) or drop below 0ºC (32ºF).

Do not install the remote controller directly onto electrically conductive objects such as metal plate that has not been painted.

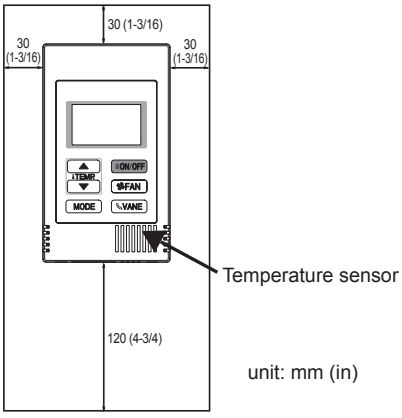
To reduce the risk of malfunctions, do not install the controller in a place where water or oil may come into contact with the controller, or in a condensing or corrosive environments.

(2) Installation space

Leave a space around the remote controller as shown in the figure shown below, regardless of whether the controller is installed in the switch box or directly on the wall. Removing the remote controller will not be easy with insufficient space.
Also, leave an operating space in front of the remote controller.

External dimensions of remote controller

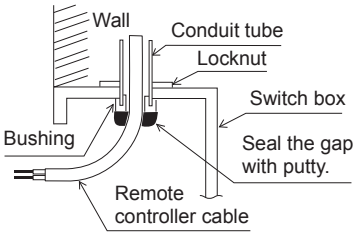
Minimum required space around the remote controller



unit: mm (in)

(3) Installation work

Controller can be installed either in the switch box or directly on the wall. Perform the installation properly according to the installation method.



① **Drill a hole in the wall.**

■ Installation using a switch box
- Drill a hole in the wall, and install the switch box on the wall.
- Connect the switch box to the conduit tube.

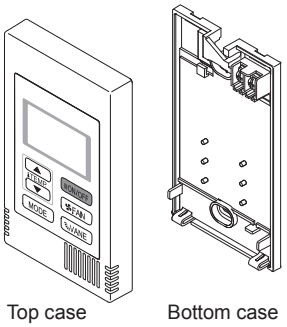
■ Direct wall installation
- Drill a hole in the wall, and thread the cable through it.

② **Seal the cable access hole with putty**

■ Installation using a switch box
- Seal the remote controller cable access hole at the connection of switch box and conduit tube with putty.

To reduce the risk of electric shock, malfunctions, or fire, seal the gap between the cables and cable access holes with putty.

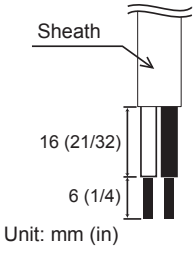
③ Prepare the bottom case of the remote controller.



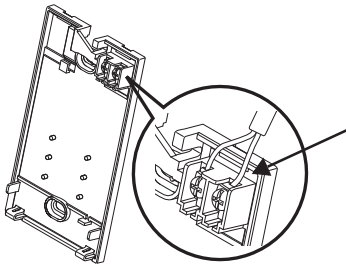
Top case Bottom case

④ Connect the remote controller cable to the terminal block on the bottom case.

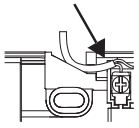
Peel off the remote controller cable sheath as shown below to connect to the terminal block properly. Secure the remote controller cable so that the peeled part of the cable will fit into the case.

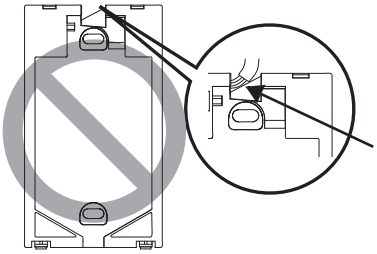


Unit: mm (in)



Insert the sheathed part of the cable inside the case, and then secure the cable.

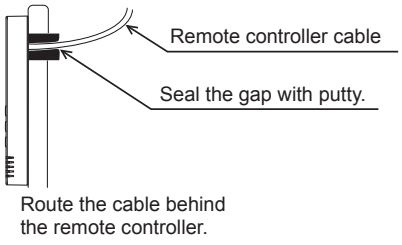




■ Direct wall installation

- Seal the hole through which the cable is threaded with putty.

To reduce the risk of electric shock, shorting, or malfunctions, keep wire pieces and sheath shavings out of the terminal block.



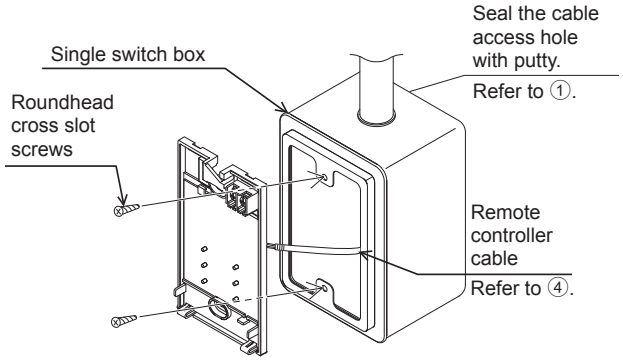
Important

Do not use solderless terminals to connect cables to the terminal block.
Solderless terminals may come in contact with the circuit board and cause malfunctions or damage the controller cover.

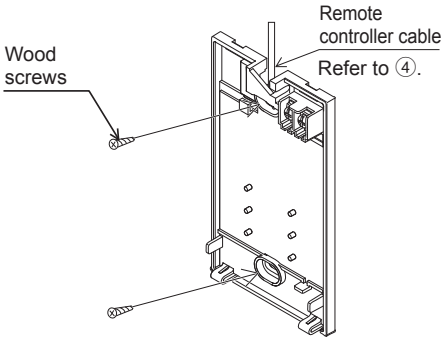
⑤ Install the bottom case.

Be sure to secure two places of the bottom case.

■ Installation using a switch box



■ Direct wall installation



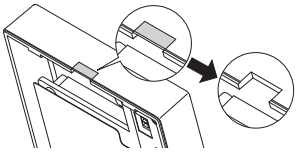
Important

To avoid deformation and damage to the bottom case, do not overtighten the screws.	To avoid damage to the bottom case, do not make holes on it.

⑥ Cut out the cable access hole.

■ Direct wall installation (when running the cable along the wall)

- Cut out the thin-wall part on the cover (the shaded area in the right figure) with a knife or a nipper.
- Thread the cable from the groove behind the bottom case through this access hole.



⑦ Set the dip switches on the top case.

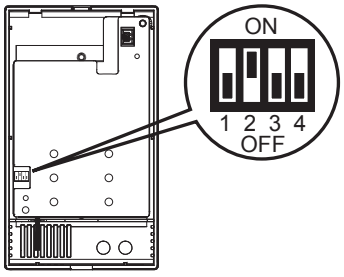
When using two remote controllers in one group, set the dip switches.
When using two remote controllers in one group, specify the main and sub remote controllers using dip switch No. 1 shown below.

- When connecting only one remote controller to one group, it is always the main remote controller. When connecting two remote controllers to one group, set one remote controller as the main remote controller and the other as the sub remote controller.
- The factory setting is “Main”.

Setting the dip switches

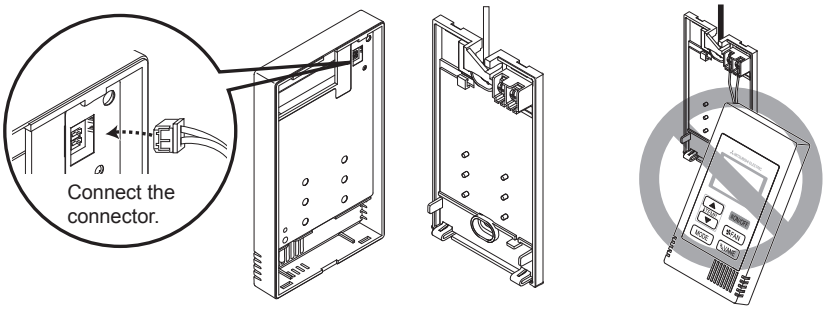
There are switches on the back of the top case. Remote controller Main/Sub and other function settings are performed using these switches. Ordinarily, only change the Main/Sub setting of SW1. (The factory settings are ON for SW1, 3, and 4 and OFF for SW2.)

SW No.	SW contents Main	ON	OFF	Comment
1	Remote controller Main/Sub setting	Main	Sub	Set one of the two remote controllers at one group to “ON”.
2	Temperature display units setting	Celsius	Fahrenheit	When the temperature is displayed in [Fahrenheit], set to “OFF”.
3	Cooling/heating display in AUTO mode	Yes	No	When you do not want to display “Cooling” and “Heating” in the AUTO mode, set to “OFF”.
4	Indoor temperature display	Yes	No	When you do not want to display the indoor temperature, set to “OFF”.



⑧ Connect the connector to the top case.

Connect the connector on the bottom case to the socket on the top case.



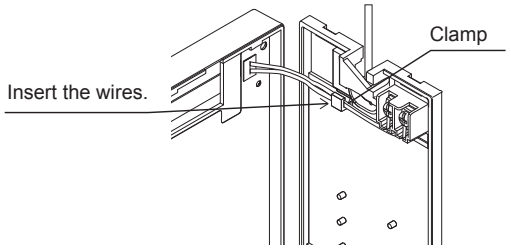
Important

To prevent malfunctions, do not remove the protective sheet or the circuit board from the top case.	To prevent cable breakage and malfunctions, do not hang the top controller casing hang by the cable as shown in the figure above.

⑨ Insert the wires into the clamp.

Important

Hold the wires in place with the clamp to prevent undue force from being applied to the terminal block and causing cable breakage.

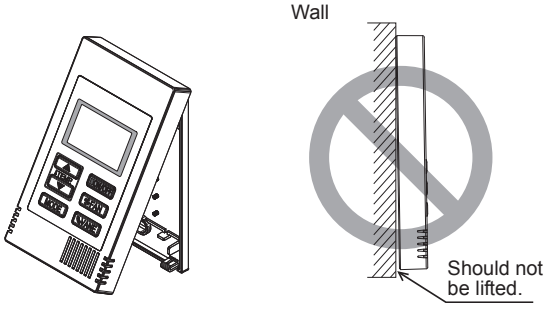


⑩ Install the top case on the bottom case.

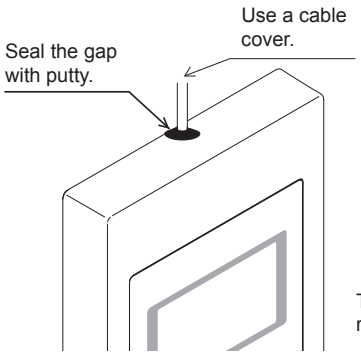
Two mounting tabs are at the top of the top case.
Hook those two tabs onto the bottom case, and click the top case into place. Check that the case is securely installed and not lifted.

Important

When attaching the top casing to the bottom casing, push it until it they click into place. If they are not properly locked into place, they may fall, causing personal injury, controller damage, or malfunctions.



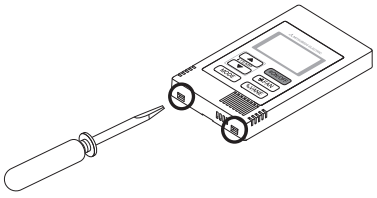
■ Direct wall installation (when running the cable along the wall)
- Thread the cable through the access hole at the top of the remote controller.
- Seal the cut-out part of the cover with putty.
- Use a cable cover.



- **Uninstalling the top case**

① Uninstalling the top case

Insert a flat-tip screwdriver with a blade width of 3-5 mm (1/8-7/32 inch) into the latches at the bottom of the remote controller and lift the latches. Then, pull up the top case.



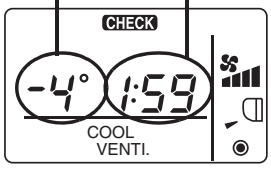
Important

To prevent damage to the controller casing, do not force the flat-tip screwdriver to turn with its tip inserted in the slot.
Do not insert the flat-tip screwdriver too far. Doing so will damage the circuit board.

5 Test Run

1. Before making a test run, refer to the “Test Run” section of the indoor unit installation manual.
2. When the [ON/OFF] button and [TEMP. ▲] button are pressed simultaneously for 2 seconds or longer, test run is performed.
3. Stop the test run by pressing the [ON/OFF] button.
4. If trouble occurred during the test run, refer to the “Test Run” section of the indoor unit installation manual.

Indoor unit piping temperature	Test run time
Display range: -4ºF (-20ºC) to 158ºF (70ºC) “-4ºF” or “158ºF” flashes on the display.	The remaining time for test run is displayed. Display range: 2:00 to 0:01 After two hours, the test run stops automatically.



6 Ventilation Setting

Make this setting only when interlocked operation with LOSSNAY or OA processing unit is necessary with CITY MULTI models.
(This setting cannot be made with M-Series and P-Series air conditioners.)

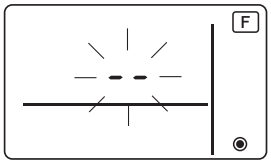
Perform this operation when you want to register the LOSSNAY or OA processing unit, confirm the registered units, or delete the registered units controlled by the remote controller.

The following uses indoor unit address 05 and LOSSNAY or OA processing unit address 30 as an example to describe the setting procedure.

[Setting Procedure]

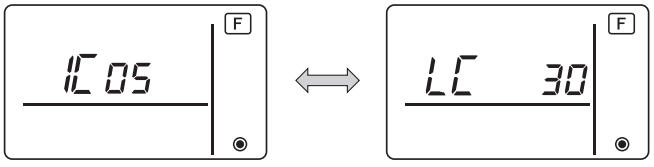
① Stop the air conditioner using the remote controller [ON/OFF] button.

② Press and hold down the [FAN] and [TEMP. ▼] buttons at the same time for two seconds. The display shown below appears. The remote controller confirms the registered LOSSNAY or OA processing unit addresses of the currently connected indoor units.



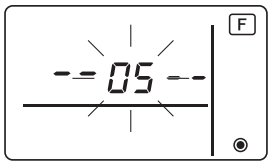
③ Registration confirmation result

- The indoor unit address and registered LOSSNAY or OA processing unit address are displayed alternately.



<Indoor unit address and indoor unit display> <LOSSNAY address display and LOSSNAY display>

- When LOSSNAY or OA processing unit are not registered

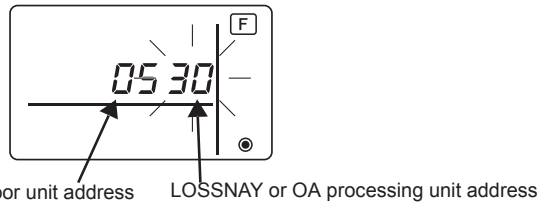


④ If registration is unnecessary, end registration by pressing and holding down the [FAN] and [TEMP. ▼] buttons at the same time for two seconds.
If a new LOSSNAY or OA processing unit must be registered, go to step **1. Registration procedure**.
If you want to confirm another LOSSNAY or OA processing unit, go to step **2. Confirmation procedure**. To delete a registered LOSSNAY or OA processing unit, go to step **3. Deletion procedure**.

<1. Registration procedure>

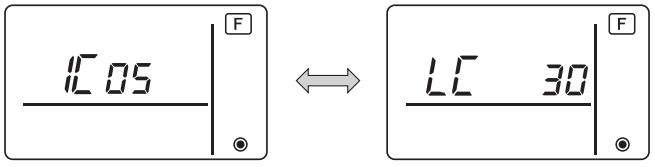
⑤ Set the address of the indoor unit to be interlocked with the LOSSNAY unit using the [TEMP. ▲] and [TEMP. ▼] buttons. (01 to 50)

⑥ After setting, press the [FAN] button and set the Lossnay address you want to register by operating the [TEMP. ▲] and [TEMP. ▼] buttons. (01~50)

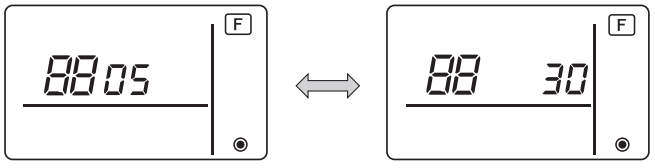


⑦ Press the [ON/OFF] button, and register the set indoor unit address and LOSSNAY address.

- Registration end display
The indoor unit address and “IC” and LOSSNAY address and “LC” are alternately displayed.



- Registration error display
If the address is not registered correctly, the indoor unit address and [88], and the registered LOSSNAY (or OA processing unit address) and [88] are alternately displayed.



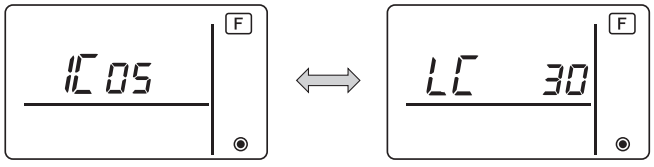
Cannot be registered because the registered indoor unit or LOSSNAY or OA processing unit does not exist.
Cannot be registered because another LOSSNAY or OA processing unit was registered at the registered indoor unit.

<2. Confirmation procedure>

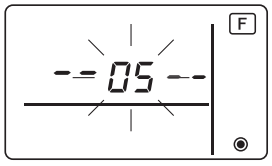
⑧ Set the address of the indoor unit connected by the remote controller whose LOSSNAY or OA processing unit you want to confirm using the [TEMP. ▲] and [TEMP. ▼] buttons. (01 to 50)

⑨ Press the [ON/OFF] button and [FAN] button simultaneously for 2 seconds, and check the LOSSNAY address registered at the set indoor unit address.

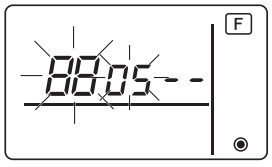
- Confirmation end display (When LOSSNAY is connected.)
  The indoor unit address and “IC” and registered LOSSNAY address and “LC” are alternately displayed.



- Confirmation end display (When LOSSNAY or OA processing unit is not connected.)



- Registered indoor unit address does not exist.



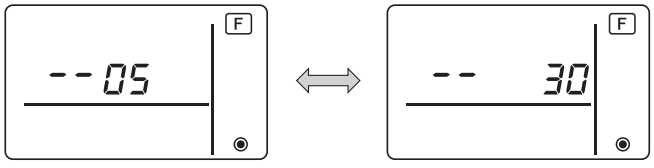
<3. Deletion procedure>

Use this procedure when you want to delete registration of indoor units connected by the remote controller and LOSSNAY or OA processing unit.

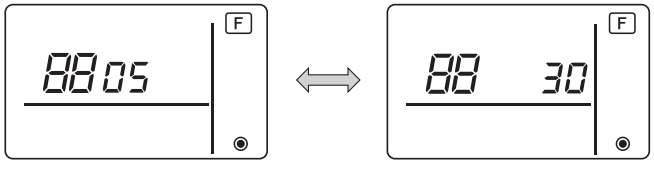
⑩ Confirm (see **2. Confirmation procedure**) the LOSSNAY or OA processing unit you want to delete and display the indoor units and LOSSNAY or OA processing unit confirmation results.

⑪ Press the [TEMP. ▲] and [TEMP. ▼] buttons simultaneously for 2 seconds, and delete registration of the LOSSNAY or OA processing unit address registered at the set indoor unit.

- Deletion end display
  Indoor unit address and “– –” and registered LOSSNAY or OA processing unit address and “– –” are alternately displayed.



- Deletion error display
  When deletion was not performed properly.



7 Function Selection for M-Series and P-Series

Make the following settings for M-Series and P-Series if necessary.
(This setting cannot be made with CITY MULTI Control System. To make CITY MULTI indoor unit settings from the remote controller, refer to section 9 Function Selection for CITY MULTI .)

Set the functions of each indoor unit from the remote controller, as required. The functions of each indoor unit can be selected only from the remote controller.
Set the functions by selecting the necessary items from Table 1.

Table1. Function selection contents
(For a detailed description of the factory settings and mode of each indoor unit, refer to the indoor unit installation manual.)

Mode No.	Mode	Settings	Setting No.	Check	Unit numbers
01	Automatic recovery after power failure	Disable	1		Set "00" for the Unit number. These settings apply to all the connected indoor units.
		Enable (Four minutes of standby time is required after the restoration of power.)	2		
02	Thermistor selection (Indoor temperature detection)	Average temperature reading of the indoor units in operation	1		
		Thermistor on the indoor unit to which the remote controller is connected (fixed)	2		
		Built-in sensor on the remote controller	3		
03	LOSSNAY connection	Not connected	1		
		Connected (without outdoor air intake by the indoor units)	2		
		Connected (with outdoor air intake by the indoor units)	3		
04	Power voltage	240 V	1		
		220 V, 230 V	2		
05	AUTO mode	Enable (Automatically the unit achieves effective energy saving operation.)	1		
		Disable	2		
07	Filter sign	100 hours	1		Set "01" to "04" or "AL" for the Unit number. These settings apply to each indoor unit. • If "01" ("02", "03", "04") is set for the Unit number, the settings apply only to the specified indoor unit regardless of the number of connected indoor units (one through four units). • If "AL" is set for the Unit number, the settings apply to all the connected indoor units regardless of the number of connected indoor units (one through four units).
		2500 hours	2		
		Not displayed	3		
08	Fan speed	Silent mode (or standard)	1		
		Standard (or High ceiling 1)	2		
		High ceiling (or High ceiling 2)	3		
09	No. of air outlets	4 directional	1		
		3 directional	2		
		2 directional	3		
10	Installed options (High performance filter)	No	1		
		Yes	2		
11	Vane setting	No vanes (or the vane setting No.3 is effective.)	1		
		Equipped with vanes (The vane setting No.1 is effective.)	2		
		Equipped with vanes (The vane setting No.2 is effective.)	3		

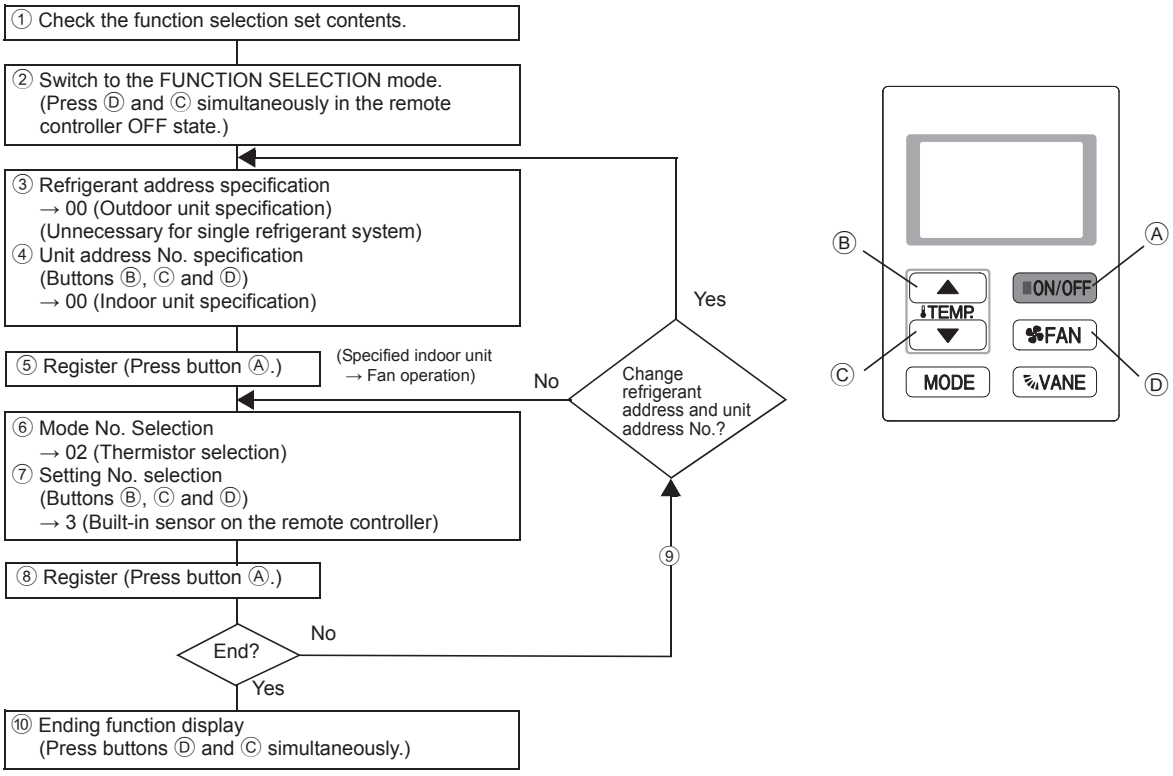
* Static pressure setting can be made by using Mode 08 in combination with Mode 10 depending on the indoor unit model. Refer to the Indoor unit Installation Manual for details.
* For mode numbers other than listed above, refer to the indoor unit installation manual.

NOTE: When the indoor unit functions were changed using the function selection after installation is complete, always indicate the set contents by entering check marks or other marks in the appropriate check field of Table 1.

[Function selection flow]

First grasp the function selection flow. The following describes setting of “Thermistor selection” of Table 1 as an example.

(For the actual setting procedure, see [Setting procedure] ① to ⑩.)

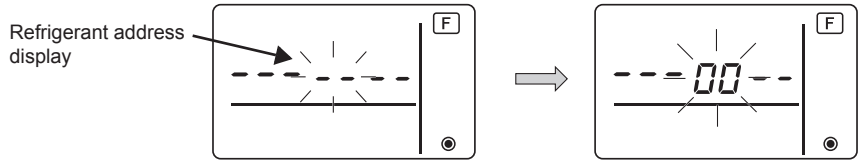


[Setting procedure] (Set only when change is necessary.)

① Check the set contents of each mode. When the set contents of a mode were changed by function selection, the functions of that mode also change.
Check the set contents as described in steps ② to ⑦ and change the setting based on the entries in the Table 1 check field. For the factory settings, refer to the indoor unit installation manual.

---

② Set the remote controller to Off.
Press and hold down the Ⓓ [FAN] and the Ⓒ [TEMP. ▼] buttons at the same time for two seconds or longer.
“ F (FUNCTION)” blinks for a while, then the remote controller display changes to the display shown below.



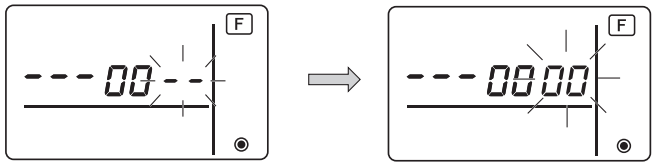
③ Set the outdoor unit refrigerant address No.
When the Ⓑ [TEMP. ▲] and Ⓒ [TEMP. ▼] buttons are pressed, the refrigerant address No. decreases and increases between 00 and 15.
Set it to the refrigerant address No. whose function you want to select.
(This step is unnecessary for single refrigerant system.)

* If the remote controller enters the OFF state after the "F (FUNCTION)" and room temperature displays " 88 " have flashes for two seconds, communication is probably abnormal. Make sure there are no noise sources near the transmission line.

NOTE: If you make a mistake during operation, end function selection by step ⑩ and repeat selection from step ② .

④ Set the indoor unit address No.
Press the Ⓓ [FAN] button. The unit address No. display "– –" flashes.
When the Ⓑ [TEMP. ▲] and Ⓒ [TEMP. ▼] buttons are pressed, the unit address No. changes in the order of 00 ↔ 01 ↔ 02 ↔ 03 ↔ 04 ↔ AL. Set it to the unit address No. of the indoor unit whose functions you want to set.

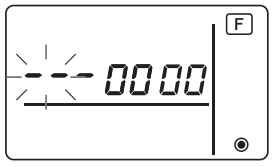
Unit address No. display



* When setting mode 1 ~ 6, set the unit address No. to "00".
* When setting modes 7 to 14:
  - When setting for each indoor unit, set the unit address No. to "01-04".
  - When batch setting for all indoor units, set the unit address No. to "AL".

⑤ Refrigerant address and unit address No. registration
Press the Ⓐ [ON/OFF] button. The refrigerant address and unit address No. are registered.
After a while, the mode No. display "– –" flashes.

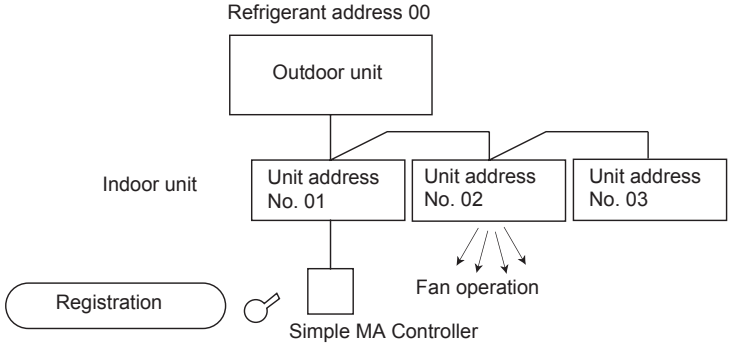
Mode No. display



* When " 88 " flashes at the room temperature display, the selected refrigerant address is not in the system. When "F" is displayed at the unit address No. display, and when it flashes together with the refrigerant address display, the selected unit address No. does not exist. Correctly set the refrigerant address and unit address No. by repeating steps ③ and ④ .

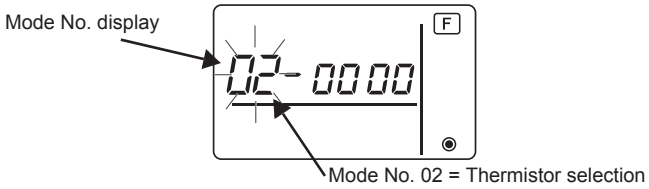
When registered using the Ⓐ [ON/OFF] , the registered indoor unit begins fan operation.
When you want to know the location of the indoor units of the unit address No. whose functions were selected, check here.
When the unit address No. is 00 or AL, all the indoor units of the selected refrigerant address perform the fan operation.

EX): When refrigerant address 00, unit address No. = 02 registered

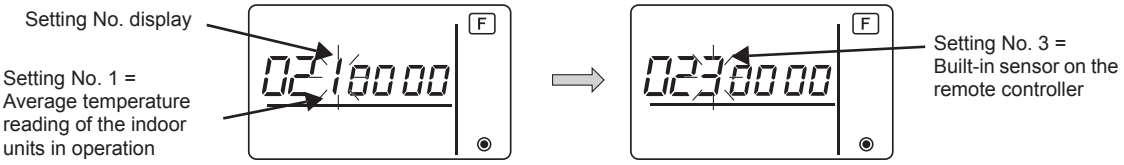


* When grouping by different refrigerant systems and an indoor unit other than the specified refrigerant address performs the fan operation, the refrigerant address set here is probably duplicated.
Recheck the refrigerant address at the outdoor unit dip switches.

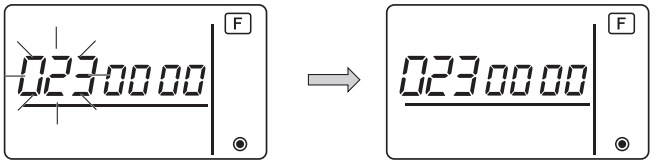
⑥ Mode No. selection
Select the mode No. you want to set with the Ⓑ [TEMP. ▲] and Ⓒ [TEMP. ▼] buttons. (Only the settable mode numbers can be selected.)



⑦ Select the setting contents of the selected mode.
When the Ⓓ [FAN] button is pressed, the current setting No. flashes. Use this to check the currently set contents.
Select the setting No. using the Ⓑ [TEMP. ▲] and Ⓒ [TEMP. ▼] buttons.



⑧ The contents set at steps ③ to ⑦ are registered.
When the Ⓐ [ON/OFF] button is pressed, the mode No. and setting No. flash and registration begins. The flashing mode No. and setting No. change to a steady light and setting ends.



* When " 88 " flashes at the Mode No. display, communication is probably abnormal.
Make sure there are no noise sources near the transmission line.

---

⑨ To select more functions, press the Ⓓ [FAN] and repeat steps ③ to ⑧ .

---

⑩ End function selection.
Press and hold down the Ⓒ [TEMP. ▼] and Ⓓ [FAN] buttons at the same time for two seconds or longer.
After a while, the function selection display disappears and the remote controller returns to the air conditioner off display.
* Do not operate the air conditioner from the remote controller for 30 seconds after the end of function selection.

NOTE: When the functions of an indoor unit were changed by function selection after the end of installation, always indicate the set contents by entering check marks or other marks in the appropriate check field of Table 1.

8 Function Selection for CITY MULTI

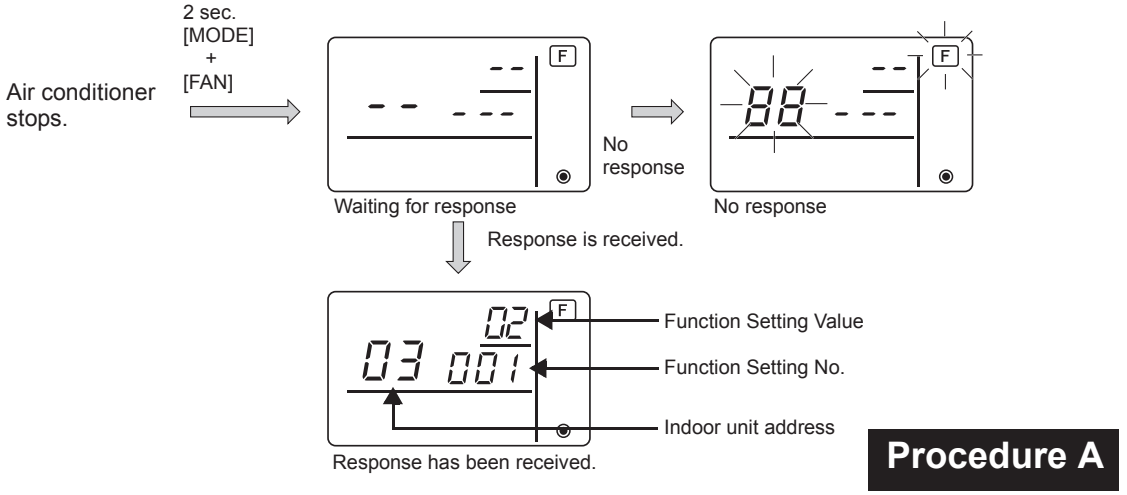
Make this setting only when the function settings need to be changed on CITY MULTI.
(This setting cannot be made with M-Series and P-Series Control System. To make settings for M-Series and P-Series, refer to section 8 Function Selection for M-Series and P-Series .)

Set the functions of each indoor unit from the remote controller, as required.
Refer to the Indoor unit Installation Manual for factory settings, mode No., and the setting No. of the indoor units.

NOTE: Be sure to write down any settings that you change performing the following steps.

■ Setting the indoor unit Setting Value

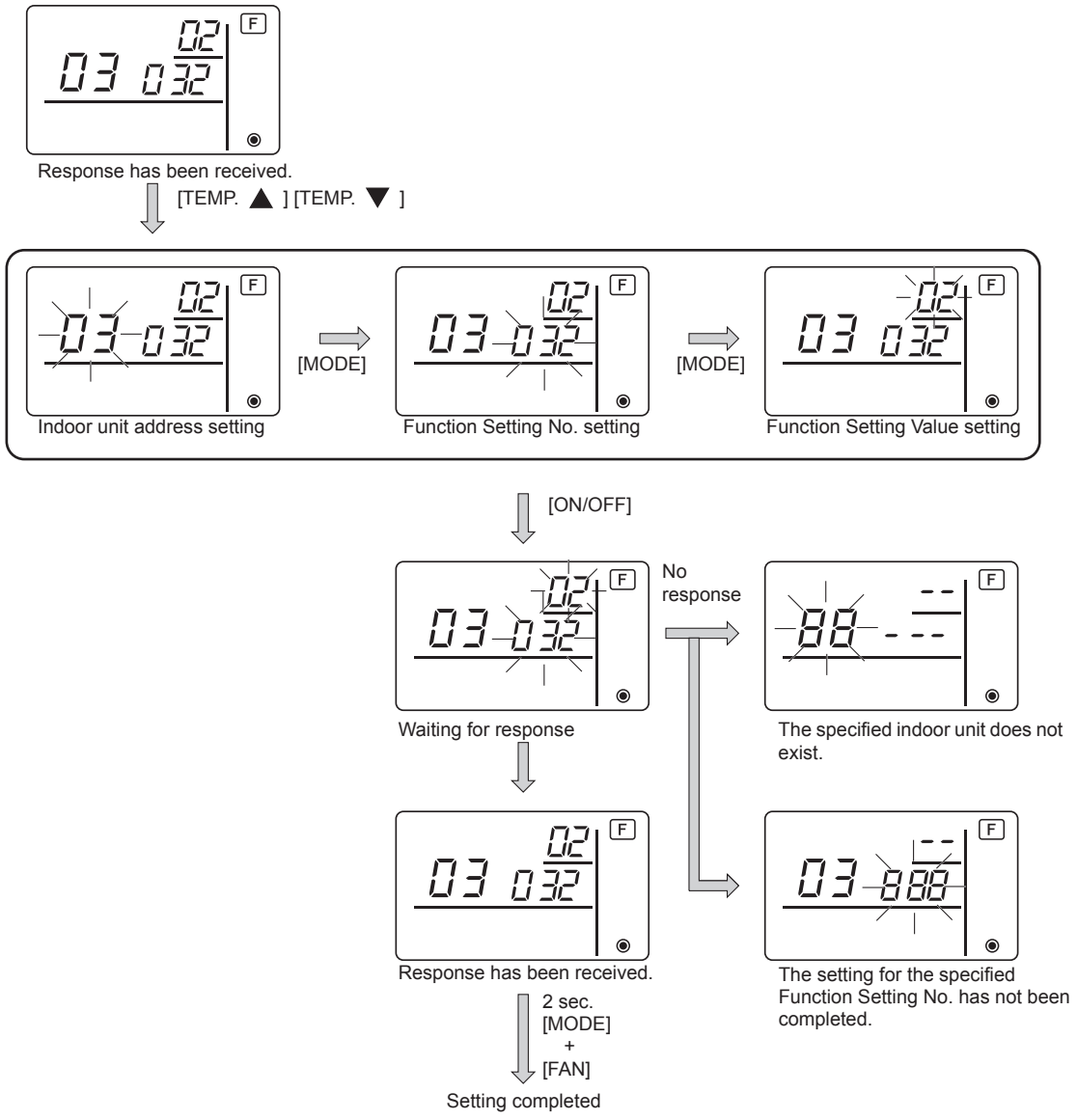
① Press the [ON/OFF] button to stop the operation of the air conditioner.
② Press and hold down the [MODE] and the [FAN] buttons at the same time for two seconds or longer to check the current settings.
③ When the response has been received from the indoor unit, the current settings appear. If there is no response, nothing appears.



Procedure A

④Press the [TEMP. ▲] and the [TEMP. ▼] buttons to set the address of the indoor unit whose settings to be made. (0 to 50)
⑤Press the [MODE] button, then press the [TEMP. ▲] and the [TEMP. ▼] buttons to set the Function Setting No. to be set. (000 to 255)
⑥Press the [MODE] button, then press the [TEMP. ▲] and the [TEMP. ▼] buttons to set the Function Setting Value. to be set (00 to 15)
⑦Press the [ON/OFF] button to set the settings.

⑧If the set settings need to be changed, repeat steps ④ to ⑦.
To complete the settings, press the [MODE] and the [FAN] buttons at the same time for two seconds or longer.



■ **Checking the indoor unit Function Setting Value**

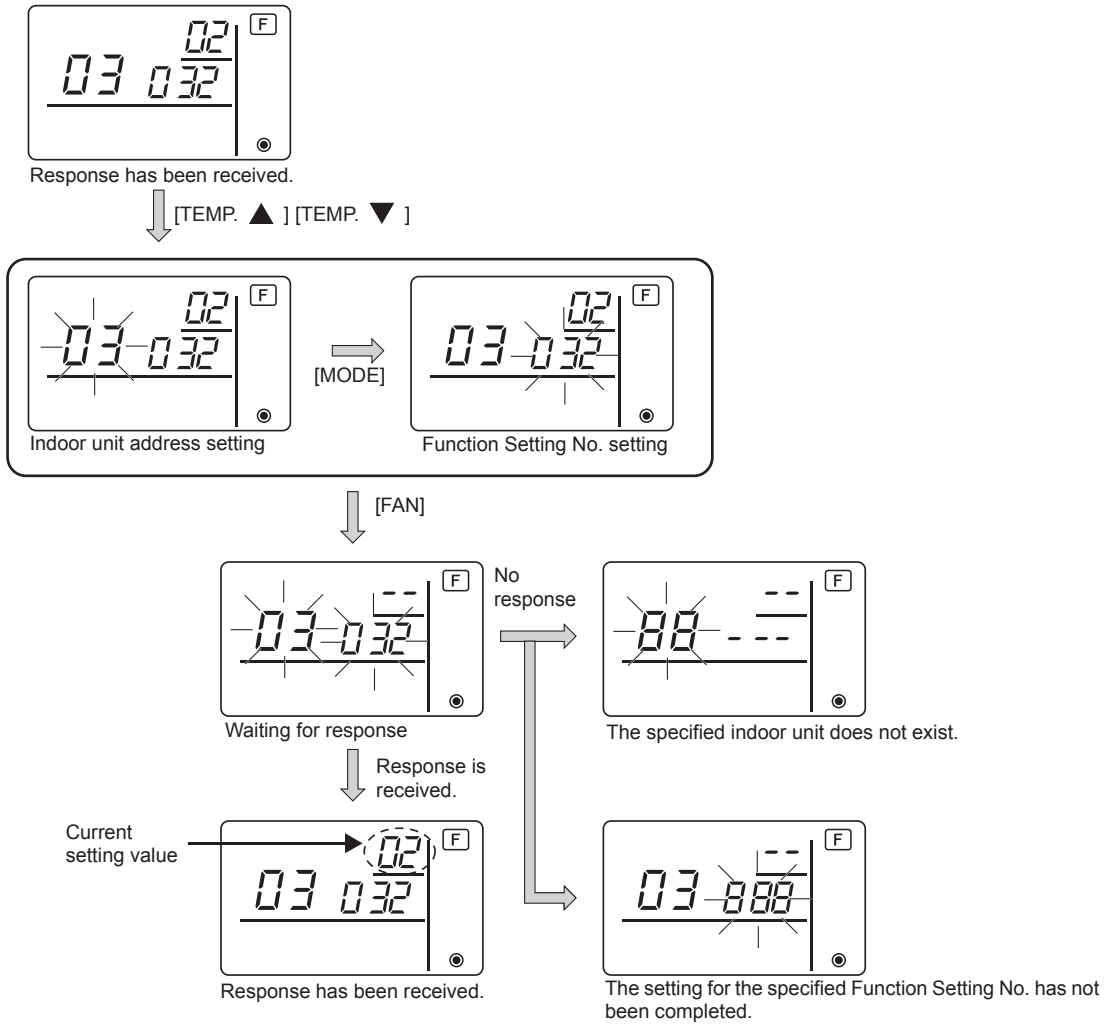
①Perform the Procedure A on the previous page.

②Press the [TEMP. ▲] and the [TEMP. ▼] buttons to set the address of the indoor unit whose settings to be checked. (0 to 50)

③Press the [MODE] button, then press the [TEMP. ▲] and the [TEMP. ▼] buttons to set the Function Setting No. to be checked. (000 to 255)

④Press the [FAN] button to display the current Function Setting Value.

⑤To check the settings, repeat steps ② to ④.
To complete the checking process, press the [MODE] and the [FAN] buttons at the same time for two seconds or longer.

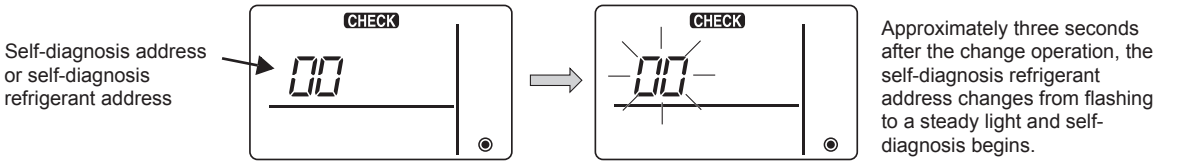


9 Self diagnosis

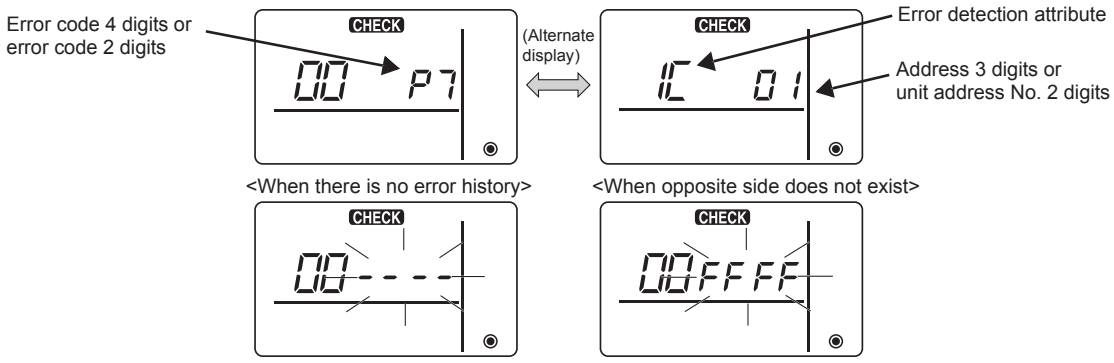
Retrieve the error history of each unit using the Simple MA controller.

① Switch to the self-diagnosis mode.
When the Ⓐ [ON/OFF] button and the Ⓒ [TEMP. ▼] button are pressed for 5 seconds or longer, the figure shown below is displayed.

② Set the address or refrigerant address No. you want to self-diagnosis.
When the Ⓑ [TEMP. ▲] and Ⓒ [TEMP. ▼] are pressed, the address decreases and increases between 01 and 50 or 00 and 15. Set it to the address No. or refrigerant address No. you want to self-diagnosis.



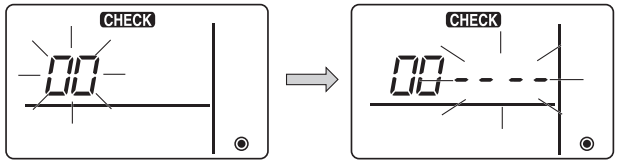
③ Self-diagnosis result display <Error history> (For the contents of the error code, refer to the indoor unit installation manual or service handbook.)



---

④ Error history reset

The error history is displayed in ③ self-diagnosis results display.
When the Ⓓ [FAN] button is pressed two times successively within three seconds, the self-diagnosis object address and refrigerant address flash.
When the error history was reset, the display shown below appears.
When error history reset failed, the error contents are displayed again.



---

⑤ Self-diagnosis reset

There are the following two ways of resetting self-diagnosis.

Press the Ⓐ [ON/OFF] button and the Ⓒ [TEMP. ▼] button simultaneously for 5 seconds or longer. → Resets self-diagnosis and returns to the state before self-diagnosis.

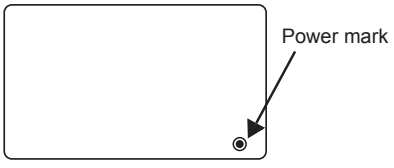
Press the Ⓐ [ON/OFF] button. → Self-diagnosis resets and indoor units stop. (When operation is prohibited, this operation is ineffective.)

10 Remote Controller Check

When the air conditioner cannot be controlled from the Simple MA controller, use this function to check the remote controller.

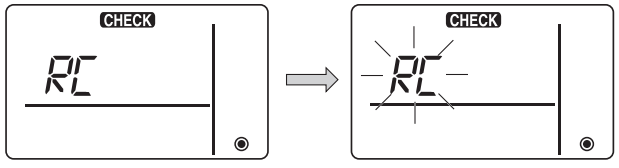
① First check the power mark.

When normal voltage (DC12V) is not applied to the remote controller, the power mark goes off.
When the power mark is off, check the remote controller wiring and the indoor unit.



② Switch to the remote controller check mode.

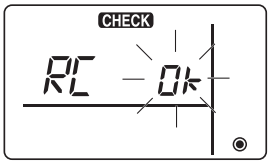
When the Ⓑ [TEMP. ▲] button and Ⓓ [FAN] button are pressed simultaneously for 5 seconds or longer, the figure shown below is displayed.
When the Ⓐ [ON/OFF] button is pressed, remote controller check begins.



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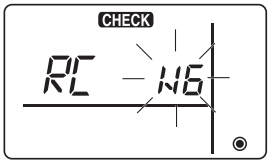
③ Remote controller check result

<When remote controller is normal>



Since there is no problem at the remote controller, check for other causes.

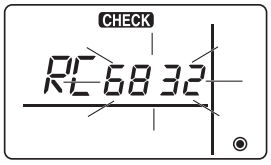
<When remote controller is faulty>



(Error display 1) “NG” flashes → Remote controller send/receive circuit abnormal

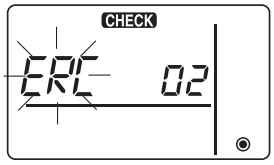
Remote controller switching is necessary.

When the problem is other than the checked remote controller



(Error display 2) “E3” “6833” “6832” flash → Cannot send

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.

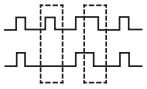


(Error display 3) “ERC” and data error count are displayed → Data error generation

“Data error count” is the difference between the number of bits of remote controller send data and the number of bits actually sent to the transmission line. In this case, the send data was disturbed by the noise, etc. Check the transmission line.

When data error count is 02

Remote controller send data
Send data on transmission line



---

④ Remote controller check reset

When the Ⓑ [TEMP. ▲] button and Ⓓ [FAN] button are pressed simultaneously for 5 seconds or longer, remote controller diagnosis is reset and the [HO] and run lamp flash and 30 seconds later the remote controller returns to its state before diagnosis.

Wireless Remote Controller

PAR-FL32MA-E

Photo



Descriptions

Wireless remote controller for P series and SEZ models.
(The receiver is necessary.)

Applicable Models

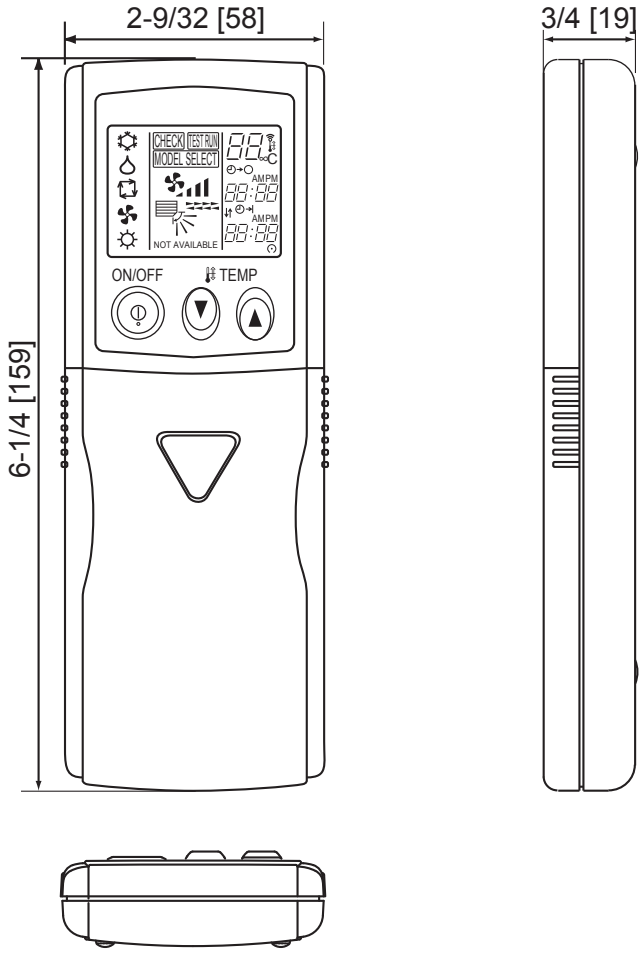
- SEZ-KD09/12/15/18NA4
- PKA-A12/18HA7
- PKA-A24/30/36KA7
- PCA-A24/30/36/42KA7
- PLA-A12/18/24/30/36/42EA7
- PEAD-A12/18/24/30/36/42AA7
- PVA-A12/18/24/30/36/42AA7

Specifications

Accessory	"AAA" LR03 alkaline batteries: 2pcs
	4.1×16 tapping screws: 2

Dimensions

Unit: inch [mm]



Wireless Remote Controller PAR-SL101A-E

Photo



Descriptions

Wireless remote controller for P-series and S-series.

Applicable Models

- SLZ-M • FA2 series
- SEZ-M • DAL2 series
- SFZ-M·VA series
- PLA-ZM • EA2 series
- PLA-M • EA2 series
- PLA-SM • EA2 series
- PEAD-M • JA(L)2 * series
- PEAD-SM35/50/60JA(L)
- PEAD-SM71/100/125/140JA(L)2
- PEA-M • LA series
- PKA-M • LAL2 series
- PKA-M • KAL2 series
- PCA-M • KA2 * series
- PCA-M • HA2 * series
- PSA-M • KA * series

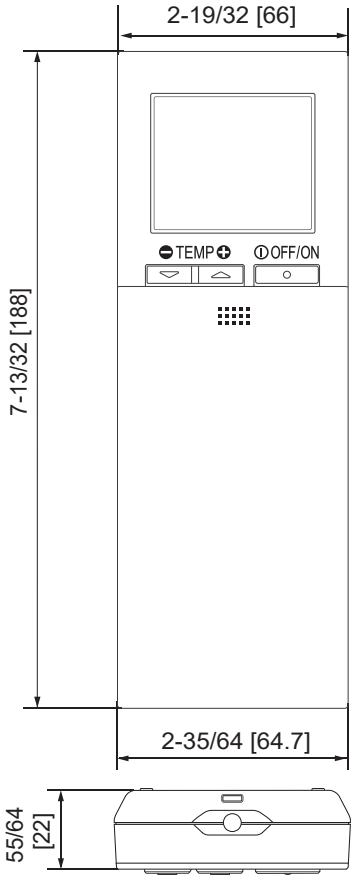
*Signal receiver “PAR-SA9CA-E” is required.

Specifications

Parts Name	Quantity
Wireless remote controller	1
Remote controller holder	1
AA(LR6) alkaline battery	2
Tapping screws 3.5 × 16	2

Dimensions

Unit: inch [mm]



How to Use / How to Install

1. Confirming the Supplied Parts

Check that the box includes the following parts in addition to this installation manual:

Parts Name	Quantity
Wireless remote controller	1
Remote controller holder	1
LR6 AA alkaline battery	2
Tapping screws 3.5 × 16	2

Only use LR6 AA batteries. Replace low batteries with new LR6 AA batteries. Observe the polarity of the batteries as indicated, and insert the negative end first.

2. Installation

- Use the remote controller holder that is provided to avoid misplacing the remote controller.
- Install the remote controller in a location that meets the following conditions.
  - Out of the direct sun light
  - Away from any heat sources
  - Out of the airflow from the air conditioner (cool or warm)
  - Where the operation of the remote controller can easily be performed and the display is readily visible to the user
  - Out of the reach of small children

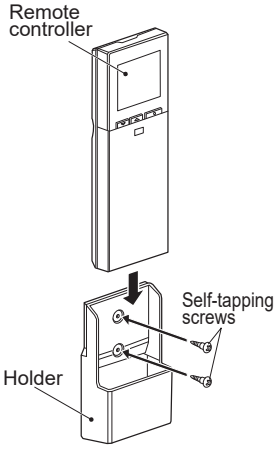
NOTES:

* If there is a fluorescent light in the room in which the air conditioner is to be installed, turn it on and make sure that the signal from the remote controller can be received by the indoor unit from the intended installation location. When the signal receiving unit receives a signal from the remote controller, a short beeping sound will be heard.

> If the air conditioner unit is installed in a room in which a fluorescent light on an electronic lighting control system (i.e., inverter light) is installed, signal interference may occur.

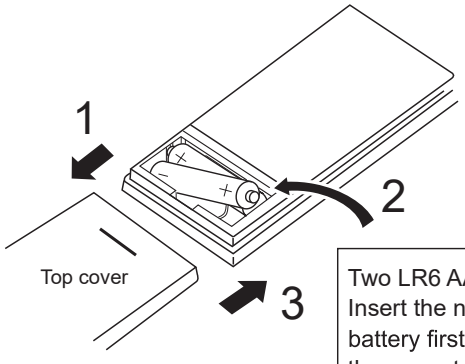
* Maximum signal receiving distance is approximately 7 meters (Approx. 22 feet). Signal receiving angle is approximately 45 degrees to the right and the left from the center.

* Install the unit at least 1 meter (Approx. 3 feet) away from the TV or radio.
(If the unit is installed too close to these appliances, signal interference (picture distortion and noise) may occur.)



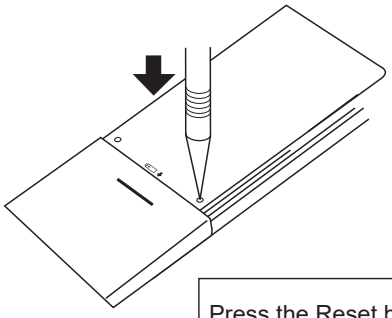
- Use the tapping screws that are provided to mount the remote controller holder on the wall, and then place the remote controller in the holder.

1. Remove the top cover, insert two LR6 AA batteries, and then install the top cover.



Two LR6 AA batteries
Insert the negative (–) end of each battery first. Install the batteries in the correct directions (+, –)!

2. Press the Reset button.



Press the Reset button with an object that has a narrow end.

3. Initial Setting

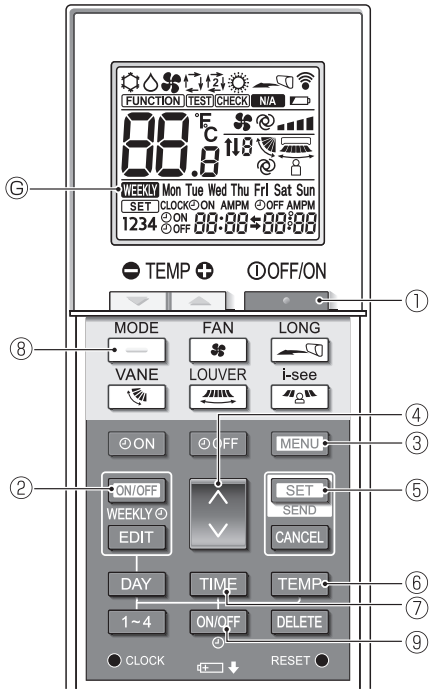


Fig. 3-1

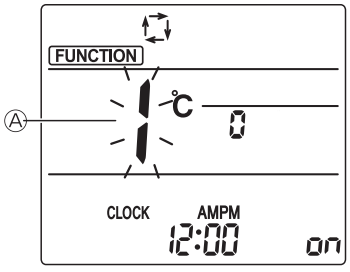


Fig. 3-2

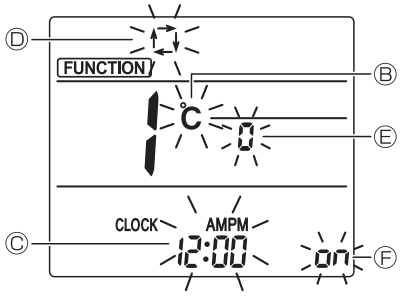


Fig. 3-3

The following settings can be made in the initial setting mode.

Item	Setting	Fig. 5-3
Temperature unit	°C/°F	Ⓑ
Time display	12-hour format/24-hour format	Ⓒ
AUTO mode	Single set point/Dual set point	Ⓓ
Pair No.	0–3	Ⓔ
Backlight	On/Off	Ⓕ

1. Switching to the initial setting mode (Fig. 3-1, Fig. 3-2)

1. Press the [ ] button ① to stop the air conditioner.
   - If the weekly timer is enabled, press the [ON/OFF WEEKLY] button ② to disable the timer. (WEEKLY Ⓖ disappears.)
2. Press the [MENU] button ③.
   - The Function setting screen will be displayed and the function No. Ⓐ will blink.
   - Press the [▲▼] button ④ to change the function No.
3. Check that function No. "1" is displayed, and then press the [SET] button ⑤.
   - The Screen display setting screen will be displayed.

2. Changing the temperature unit (Fig. 3-1, Fig. 3-3 Ⓑ)

Press the [TEMP] button ⑥.

- Pressing the [TEMP] button ⑥ changes the temperature unit (**°C / °F**). (The factory setting is "°C".)
  °C : The temperature is displayed in degrees Celsius.
  °F : The temperature is displayed in degrees Fahrenheit.

3. Changing the time display (Fig. 3-1, Fig.3-3 Ⓒ)

Press the [TIME] button ⑦.

- Pressing the [TIME] button ⑦ changes the time display (12:00 (AM/PM) / 24:00). (The factory setting is "12-hour format".)
  12:00 (AM/PM) : The time is displayed in the 12-hour format.
  24:00 : The time is displayed in the 24-hour format.

4. Changing the AUTO mode (Fig. 3-1, Fig.3-3 Ⓓ)

Press the [—] button ⑧.

- Pressing the [—] button ⑧ changes the Auto mode (/). (The factory setting is "Single set point".)
  : The AUTO mode operates as the usual automatic mode (Single set point).
  : The AUTO mode operates using dual set points.

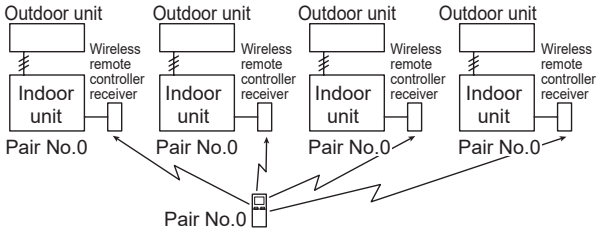
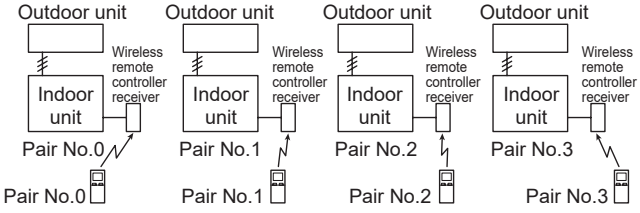
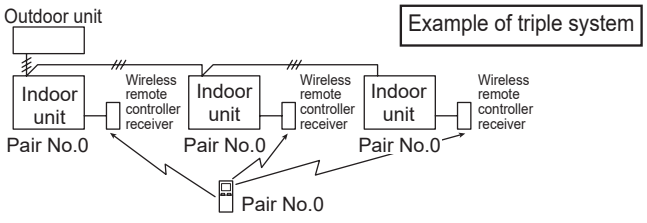
5. Changing the pair No. (Fig. 3-1, Fig.3-3 Ⓔ)

Press the ▲▼ button ④.

- Set the pair number to "0"–"3". (The factory setting is “0”.)

Pair No. of wireless remote controller	Indoor unit setting		
	Mr. Slim	CITY MULTI	
	Indoor PC board jumper wire (J41 and J42 settings)	Indoor PC board SW22 settings	
		SW22-3	SW22-4
0	Do not cut (initial setting)	ON	ON
1	Cut only J41	OFF	ON
2	Cut only J42	ON	OFF
3	Cut both J41 and J42	OFF	OFF

Setting example (when using Mr. Slim)

<table>
<tr>
<td rowspan="2">Independent system</td>
<td>(1) Same settings
• All of the units can be operated by the same wireless remote controller.
 
</td>
<td>• All of the indoor PC boards and the wireless remote controller are set to the same pair number.
• Install each unit within the receiving range of the wireless remote controller or have the operator move the wireless remote controller to operate each unit.</td>
</tr>
<tr>
<td>(2) Separate settings
• Each unit can be operated only by its own wireless remote controller.
 
</td>
<td>• The indoor PC boards and wireless remote controllers are set to different pair numbers for each unit.</td>
</tr>
<tr>
<td>Simultaneous twin/triple/quadruple system</td>
<td> 
</td>
<td>• The system operates regardless of which indoor unit receives the signals.</td>
</tr>
</table>

4. Function settings

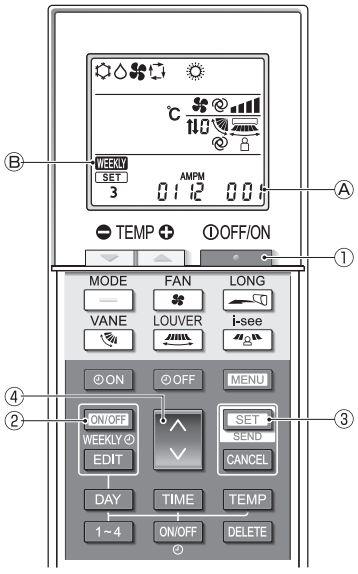


Fig. 4-1

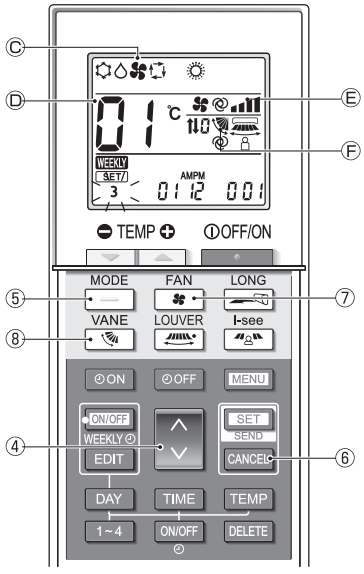


Fig. 4-2

To confirm the functions and settings for the indoor unit you want to set, refer to the operation manual and technical materials for the unit.

1. Switching to the function setting mode (Fig. 4-1)

1. Press the button ① to stop the air conditioner.
   - If the weekly timer is enabled, press the ON/OFF WEEKLY button ② to disable the timer. (WEEKLY Ⓑ disappears.)
2. Press the SET button ③ for 5 seconds.
   - The remote controller enters the function setting mode. (The group model setting number Ⓐ blinks.)

2. Entering the group model setting number (Fig. 4-1)

Press the button ④.

- Enter the group model setting number for the indoor unit you want to operate. (The factory setting is "001".)
  To confirm the group model setting number, refer to the indoor unit operation manual.
- The fan speed, vertical airflow direction and operation mode can be set by operating the group model setting number.
  When you want to change any settings other than above, refer to the descriptions about the separate setting modes in the following pages.

3. Separate settings mode 1 (Fig. 4-2, Fig. 4-3)

You can also set the functions as necessary for the indoor unit that you want to operate.

1) Operation mode setting (The factory setting is "01".)

1. Press the button ⑤.
   - The operation mode Ⓒ blinks.
2. Press the button ④ to select the setting number Ⓓ.

Operation mode display Ⓒ	Setting No. Ⓓ	Operation mode display Ⓒ	Setting No. Ⓓ
	01		05
	02		06
	03		07
	04		

* If the setting is incorrect, press the CANCEL button ⑥ and repeat the procedure from step 1.

2) Fan speed setting (The factory setting is "01".)

1. Press the button ⑦.
   - The fan speed Ⓔ blinks.
2. Press the button ④ to select the setting number Ⓓ.

Fan speed display Ⓔ	Setting No. Ⓓ
(4 speeds)	01
(3 speeds)	02
(2 speeds)	03
(1 speed, none)	04

* If the setting is incorrect, press the CANCEL button ⑥ and repeat the procedure from step 1.

3) Vertical airflow direction setting (The factory setting is "01".)

1. Press the button ⑧.
   - The airflow direction Ⓕ blinks.
2. Press the button ④ to select the setting number Ⓓ.

Airflow direction Ⓕ				Setting No. Ⓓ
With auto vane		Without auto vane		
	(With vane, swing)		(With vane, swing)	01
	(With vane, no swing)		(With vane, no swing)	02
No display (no vane)		No display (no vane)		03

* If the setting is incorrect, press the CANCEL button 6 and repeat the procedure from step 1.

5. Service

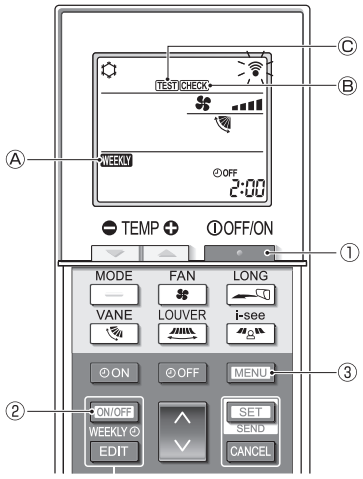


Fig. 5-1

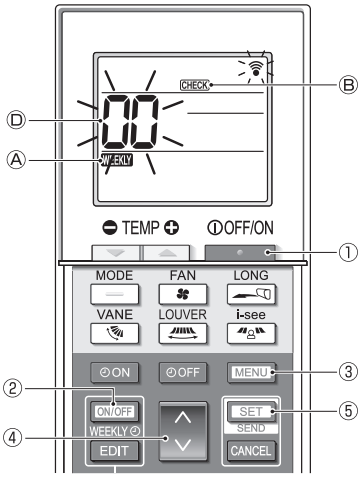


Fig. 5-2

1. Testrun (Fig. 5-1)

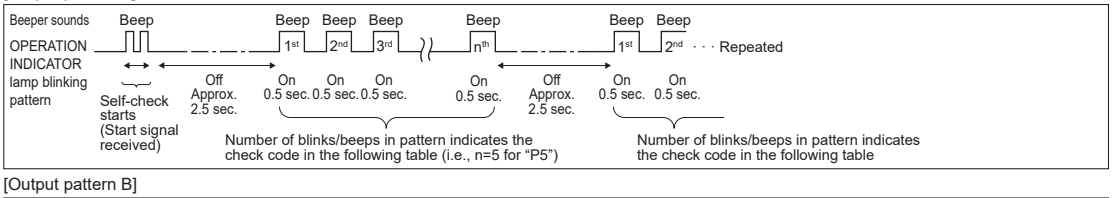
1. Press the [ ] button ① to stop the air conditioner.
   - If the weekly timer is enabled (WEEKLY Ⓐ is on), press the [ON/OFF WEEKLY] button ② to disable it (WEEKLY Ⓐ is off).
2. Press the [MENU] button ③ for 5 seconds.
   - [CHECK] Ⓑ comes on and the unit enters the service mode.
3. Press the [MENU] button ③.
   - [TEST] Ⓒ comes on and the unit enters the test run mode.
4. 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.
   - [SET] : Start the test run.
5. Stop the test run.
   - Press the [ ] button ① to stop the test run.
   - After 2 hours, the stop signal is transmitted.

2. Self-check (Fig. 5-2)

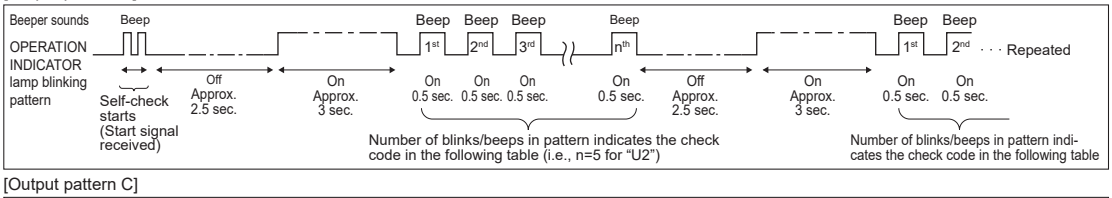
1. Press the [ ] button 1 to stop the air conditioner.
   - If the weekly timer is enabled (WEEKLY Ⓐ is on), press the [ON/OFF WEEKLY] button ② to disable it (WEEKLY Ⓐ is off).
2. Press the [MENU] button ③ for 5 seconds.
   - [CHECK] Ⓑ comes on and the unit enters the self-check mode.
3. Press the [ ] button ④ to select the refrigerant address (M-NET address) Ⓓ of the indoor unit for which you want to perform the self-check.
4. Press the [SET] button ⑤.
   - 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 [ ] button ①.
   - [CHECK] Ⓑ and the refrigerant address (M-NET address) Ⓓ go off and the self-check is completed.

Refer to the following tables for details on the check codes.
* A receiver adapter (MA type) cannot be used.

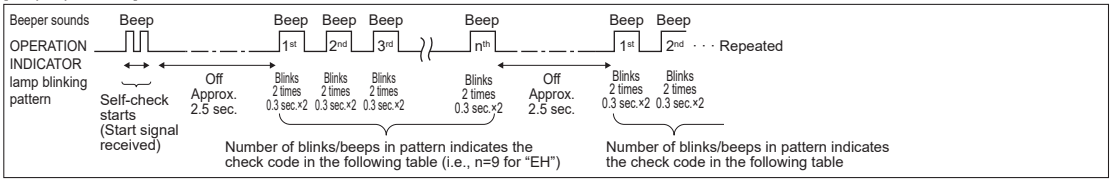
[Output pattern A]



[Output pattern B]



[Output pattern C]



■ Mr. Slim output contents

[Output pattern A] Errors detected by indoor unit

Wireless remote controller	Wired remote controller	Symptom	Remark
Beeper sounds/OPERATION INDICATOR lamp blinks (Number of times)	Check code		
1	P1	Intake sensor error	
2	P2, P9	Pipe (liquid or 2-phase pipe) sensor error	
3	E6, E7	Indoor/outdoor unit communication error	
4	P4	Drain sensor error/Float switch connector open	
5	P5	Drain overflow protection operation	
	PA	Forced compressor error	
6	P6	Freezing (during cooling operation)/Overheating protection operation (during heating operation)	
7	EE	Assembly error (system error)	
8	P8	Pipe temperature error	
9	E4	Communication error between wired remote controller and indoor unit	
10	—	—	
11	Pb	Indoor unit fan motor error	
12	Fb	Indoor unit control system error (memory error, etc.)	
14	PL	Refrigerant circuit abnormal	

[Output pattern B] Errors detected by unit other than indoor unit (outdoor unit, etc.) * The supported check codes may vary depending on the connected outdoor unit.

Wireless remote controller	Wired remote controller	Symptom	Remark
Beeper sounds/OPERATION INDICATOR lamp blinks (Number of times)	Check code		
1	E9	Indoor/outdoor unit communication error	For details, check the LED display of the outdoor controller board.
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 discharging temperature/49C worked/insufficient refrigerant	
6	U1, Ud	Abnormal high pressure (63H worked)/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.)	

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

Wireless remote controller	Wired remote controller	Symptom	Remark
Beeper sounds/OPERATION INDICATOR lamp blinks (Number of times)	Check code		
9	EH	Panel communication abnormal (auto ascending/descending panel)	

■ CITY MULTI output contents

[Output pattern A] The abnormal unit (attribute) is an indoor unit, LOSSNAY unit, or outdoor air processing unit.
[Output pattern B] The abnormal unit (attribute) is an outdoor unit or other unit (a unit other than an indoor unit, LOSSNAY unit, or outdoor air processing unit).

Beeper sounds/OPERATION INDICATOR lamp blinks (Number of times)	M-NET check code	Remarks
1	1000 – 1999	If the wired remote controller and system controller are not used together, the details of the check codes in the error history can be checked using the LED display of the outdoor PC board. To check the error history of the outdoor unit, refer to the outdoor unit service handbook.
2	2000 – 2999	
3	3000 – 3999	
4	4000 – 4999	
5	5000 – 5999	
6	6000 – 6999	
7	7000 – 7999	
8	0 – 999	

Notes:
1. If the beeper does not sound and the OPERATION INDICATOR lamp remains off after the signal was received when the self-check starts, there is no error history.
2. If the beeper sounds 3 times continuously “beep, beep, beep (0.4 + 0.4 + 0.4 seconds)” after the signal was received when the self-check starts, the specified refrigerant address (M-NET address) is incorrect.

3. Unit function selection

This setting method is for Mr. Slim. For CITY MULTI models, set the DIP switches on the indoor PC board and outdoor PC board.
To set the DIP switches, refer to the technical materials for the CITY MULTI models.

Set the functions as necessary using the remote controller. The functions for each unit can be set only from the remote controller.
Select the functions from table 1 that must be set.
Only the refrigerant systems that are connected to indoor units equipped with wireless remote controller receivers can be set from the wireless remote controller operation unit. The refrigerant address cannot be specified using the wireless remote controller operation unit.

Table 1 Function selection settings (For details about the factory settings and modes of each indoor unit, refer to the indoor unit installation manual.)

Note: The items in the following table are representative examples. Because the settings for each mode may vary depending on the model, refer to the indoor unit installation manual for details.

Mode	Settings	Mode no.	Setting no.	Initial setting	Setting
Power failure automatic recovery	Not available	01	1		Select unit number 00.
	Available		2		
Indoor temperature detecting	Indoor unit operating average	02	1		
	Set by indoor unit’s remote controller		2		
	Remote controller’s internal sensor		3		
LOSSNAY connectivity	Not Supported	03	1		
	Supported (indoor unit is not equipped with fresh air intake)		2		
	Supported (indoor unit is equipped with fresh air intake)		3		
Auto operation mode	Auto operation mode Single set point (Available 14°C (58°F) cooling setting) *1 *2	06	1		
	Dual set point (Not available 14°C (58°F) cooling setting) *1 *2		2		
Filter sign	100Hr	07	1		Select unit number 01–04 or AL (all units).
	2500Hr		2		
	No filter sign indicator		3		
Fan speed	Silent	08	1		
	Standard		2		
	High ceiling		3		
Number of air outlets	4-directional	09	1		
	3-directional		2		
	2-directional		3		
Installed option (high-efficiency filter, etc.)	Without	10	1		
	With		2		
Up/down vane setting *3	Not setting/Equipped with vanes (vanes angle setup 3)	11	1		
	Equipped with vanes (vanes angle setup 1)		2		
	Equipped with vanes (vanes angle setup 2)		3		
Built-in humidifier	Not equipped	13	1		
	Equipped		2		

*1 It is available when the indoor unit is connected to any of the particular outdoor units.
*2 An optional insulation kit is required.
*3 The setting varies depending on the model.

Function selection procedure (Fig. 5-3, 5-4)
First, it is important to understand the procedure for the function selection. The following procedure explains how to set "LOSSNAY connectivity" in table 1 to "Supported (indoor unit is not equipped with outdoor-air intake)" as an example.
For the actual operations, refer to the following procedure.

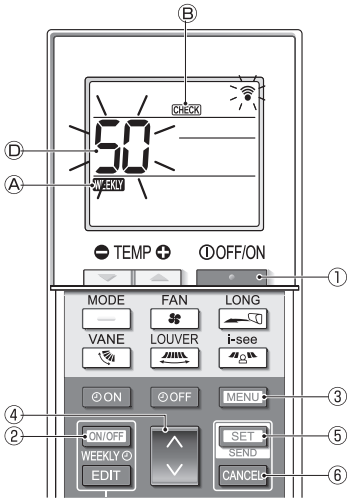


Fig. 5-3

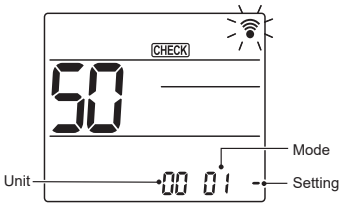


Fig. 5-4

1. Press the [ ] button ① to stop the air conditioner.
   * If the weekly timer is enabled (WEEKLY Ⓐ is on), press the [ON/OFF WEEKLY] button ② to disable it (WEEKLY Ⓐ is off).
2. Press the [MENU] button ③ for 5 seconds.
   • CHECK Ⓑ comes on and the unit enters the self-check mode.
3. Press the [▲▼] button ④ to set the displayed number Ⓓ to "50".
   • While pointing the wireless remote controller toward the receiver, press the [SET] button ⑤. (The unit number blinks.)
4. Press the [▲▼] button ④ to set the unit number of the indoor unit.
   • While pointing the wireless remote controller toward the receiver, press the [SET] button ⑤. (The mode number blinks.)
   * When the unit number is transmitted, the selected indoor unit starts operating in the fan mode.
   You can use this step to confirm which indoor unit corresponds to the unit number you selected to change the functions.
   However, if you set the unit number to "00" or "AL", all of the indoor units in the same refrigerant system will start operating in the fan mode.
   * If you transmit a unit number that cannot be selected, the beeper sounds 3 times continuously "beep, beep, beep (0.4 + 0.4 + 0.4 sec.)".
   If this occurs, press the [CANCEL] button ⑥, and then set the unit number again while the unit number display is blinking.
   * If the signal was not received correctly, the beeper will not sound or it will beep twice.
   If this occurs, press the [CANCEL] button ⑥, and then set the unit number again while the unit number display is blinking.
5. Press the [▲▼] button ④ to set the mode number.
   • While pointing the wireless remote controller toward the receiver, press the [SET] button ⑤. (The setting number blinks.)
   At this time, the beeper sound and OPERATION INDICATOR lamp blinking pattern indicate the current setting number for the selected mode number.
   Current setting value = 1: Beep (1 sec.) × 1 time
   = 2: Beep (1 sec.) × 2 times
   = 3: Beep (1 sec.) × 3 times
   * If you enter a mode that cannot be set, the beeper sounds 3 times continuously "beep, beep, beep (0.4 + 0.4 + 0.4 sec.)".
   If this occurs, press the [CANCEL] button ⑥, and then set the mode number again while the mode number display is blinking.
   * If the signal was not received correctly, the beeper will not sound or it will beep twice.
   If this occurs, press the [CANCEL] button ⑥, and then set the mode number again while the mode number display is blinking.
6. Press the [▲▼] button ④ to select the setting number.
   • While pointing the wireless remote controller toward the receiver, press the [SET] button ⑤. (The mode number blinks.)
   At this time, the beeper sound and OPERATION INDICATOR lamp blinking pattern indicate the setting number for the selected mode number.
   Current setting value = 1: Beep (1 sec.) × 1 time
   = 2: Beep (1 sec.) × 2 times
   = 3: Beep (1 sec.) × 3 times
   * If you enter a number that cannot be set, the originally set number will be used.
   * If the signal was not received correctly, the beeper will not sound or it will beep twice.
   If this occurs, repeat the procedure from step 5.
7. To set another mode without changing the unit number of the indoor unit, repeat steps 5 and 6.
8. To change the unit number of the indoor unit and perform the function selection, repeat steps 4–6.
9. Press the [ ] button ① to complete the function selection.

Note:
- **After the function selection is complete, do not operate the wireless remote controller for 30 seconds.**
- **Whenever the function selection is used to change the indoor unit functions after installation, be sure to record all of the settings with a "○" or other mark in the "Initial setting" column of the table.**

i-see Sensor Controller Kit with i-see Sensor Wireless Remote Controller Kit

PAC-SH91MK-E/ PAR-SA92MW-E/ PAR-SL93B-E

Applicable Models

■ PCA-AK24/30/36/42NL

Making Sure of Components

Make sure that the following components, along with this manual, are packed in the box.

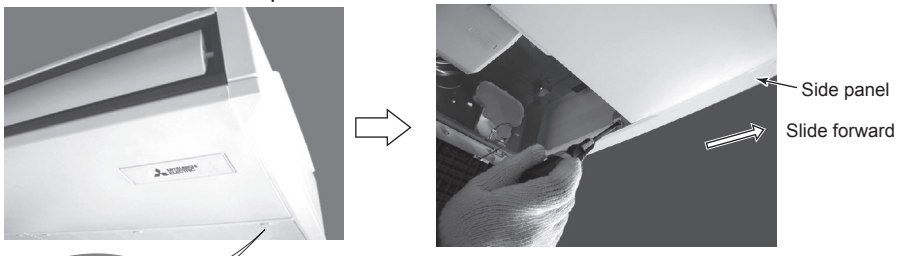
Component	PAC-SH91MK-E	PAR-SA92MW-E	PAR-SL93B-E
i-see sensor	1	–	–
Wireless remote controller receiver with i-see sensor	–	1	–
Wireless remote controller receiver	–	–	1
Wireless remote controller	–	1	1
Remote control holder	–	1	1
“AAA” LR03 alkaline batteries	–	2	2
4.1×16 wood screws	–	2	2
Cord retaining clips	–	2	2
Connection cord fixing seal (12×30 size)	–	1	1

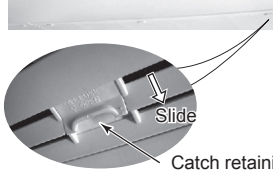
How to Install

* Be sure to turn the power off before installing.

① Removing the intake grille and the right side panel

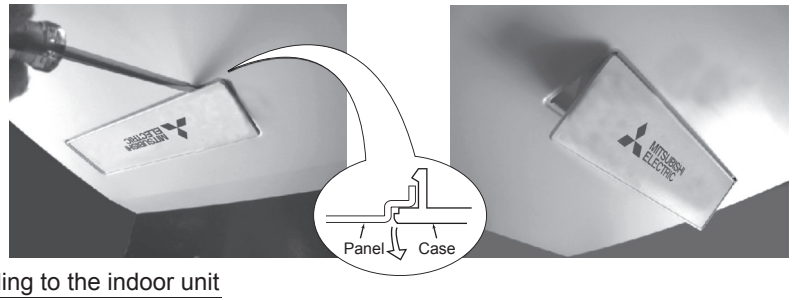
• Slide the catch holding the intake grille backwards to open the grille. Remove the screw holding the side panel, and then slide the side panel forward to remove it.





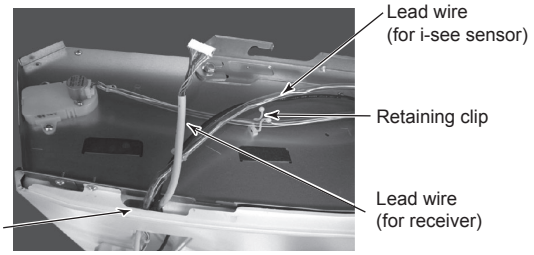
② Removing the existing brand label case

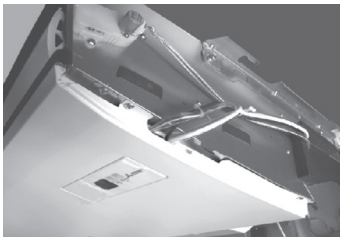
• Remove the brand label case (name plate with MITSUBISHI ELECTRIC) from the bottom right of the unit. If it is difficult to remove the case, use a flat-blade screwdriver, etc., taking care not to damage the panel.



③ Installing to the indoor unit

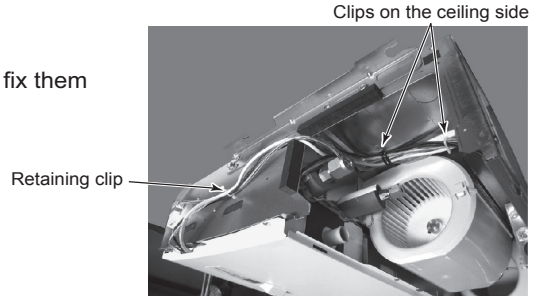
• Pass the lead wire through the right side of the square hole to which the brand label case was attached, and then pull them through the slit in the right side of the bottom panel.
• Fit the receiver or i-see sensor into the square hole where the brand label case was attached.





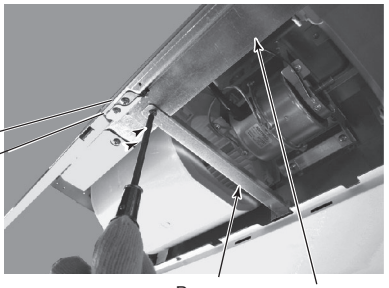
④ Laying out the lead wire

- Pass the lead wire through the retaining clips.
- Layout the lead wire along the vane motor lead wire, then fix them with the clips on the ceiling side of the unit.



⑤ Removing the beam and the electrical box cover

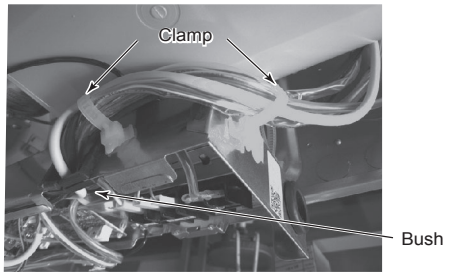
- Remove the beam.
- Loosen the two screws at the bottom of the electrical box cover, and then slide the cover to the left to remove it.
- Pull down the electrical box.

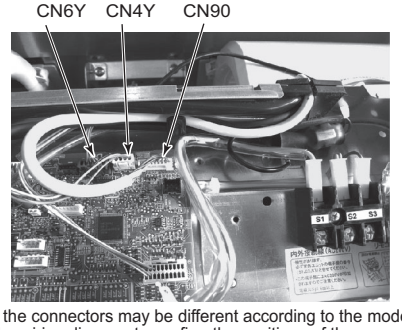


⑥ Connecting the receiver board connector to the control circuit board

<※only when wireless remote controller kit with i-see sensor PAR-SA92MW-E or wireless remote controller receiver PAR-SL93B-E is used. >

- Pass the cord through the bush at the top right of the electrical box.
- Connect the connector to CN90 on the right of the control board.
- If the cord is loose, bundle it using the clamps under the above bush.





* The positions of the connectors may be different according to the model. Please refer to the wiring diagram to confirm the positions of the connectors.

⑦ Connecting the i-see sensor lead wire (radiation temp. sensor (black) and the stepping motor connector (transparent)) to the control circuit board

<※only when wireless remote controller receiver PAC-SH91MK-E or wireless remote controller kit with i-see sensor PAR-SA92MW-E is used. >

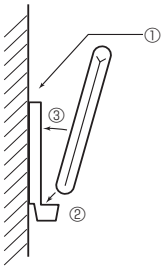
- Pass the cord through the bush at the top right of the electrical parts case.
- Connect the radiation temp. sensor (black) lead wire to CN4Y (white) on the control circuit board.
- Connect the stepping motor (transparent) lead wire to CN6Y (red) on the control circuit board.

⑧ Reinstalling the removed components

- Reinstall the removed components in reverse order. (The brand label case is not needed.)

⑨ Remote control holder

- To install the wireless remote controller on a wall, first attach the remote control holder to a wall.



Fitting remote control into holder

① Fix the remote control holder to the wall using the 2 wood screws provided.
② Insert the remote control into the holder.
③ Push the remote control against the wall.

Removing remote control

● Pull the top of remote control forward.

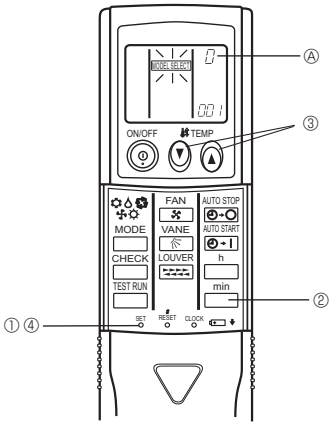
NOTE : The remote signal will reach the receiver over a distance of approx. 7m (23 ft.) in a straight line and approx. 45° left or right. If the infrared receiver is affected by fluorescent light (especially, inverter type), it may not be able to receive the signal. Take this into consideration when installing fluorescent lights or replacing them.

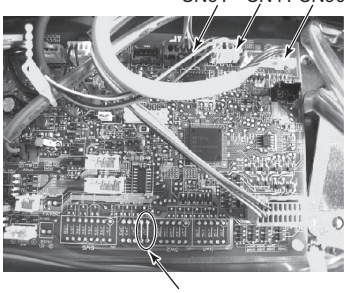
Pair Number Setting

- This is the setting to specify the unit to operate with the wireless remote controller.
- Make setting for J41, J42 (Jumper wire) of indoor controller board and the pair number of wireless remote controller.
- The pair number setting is available with the 4 patterns as shown in the following table. Make setting for the pair number (J41, J42) of indoor controller board and the pair number of wireless remote controller which is used as shown in the following table. *The initial setting is Pair No. “0”.

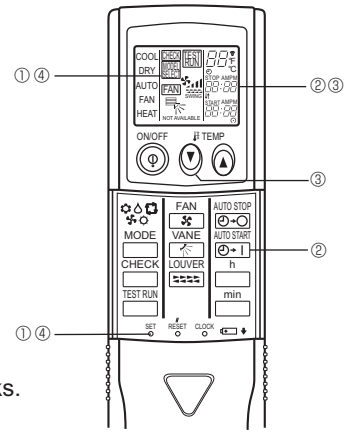
① Press the SET button with something sharp at the end.
Start this operation from the status of remote controller display turned off.
MODEL SELECT blinks and Model No. is lighted.
② Press the min button twice continuously. Pair No. “0” blinks.
③ Press the temp ▼ ▲ button to set the pair number you want to set.
④ Press the SET button with something sharp at the end.
Set pair number is lighted for 3 seconds then turned off.

Ⓐ Pair No. of wireless remote controller	Indoor PC board
0	Initial setting
1	Cut J41
2	Cut J42
3 ~ 9	Cut J41, J42





* The positions of the connectors may be different according to the model.
Please refer to the wiring diagram to confirm the positions of the connectors.

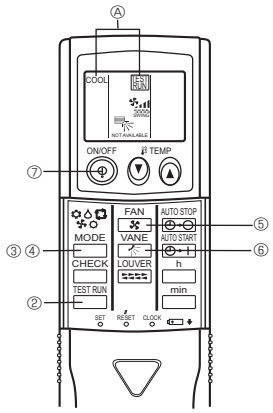


Function Selection of Wireless Remote Controller

- Temperature display °C/°F setting (Change of temp mode from °F to °C)

① Press the set button with something sharp at the end. MODEL SELECT blinks.
② Press the AUTO START button. “F:” blinks.
③ Press the ▼ button. “C:” blinks.
④ Press the SET button with something sharp at the end.
MODEL SELECT is lighted for three seconds, then turned off.

Test Run



Measure an impedance between the power supply terminal block on the outdoor unit and the ground with a 500V Megger and check that it is equal to or greater than 1.0 MΩ.

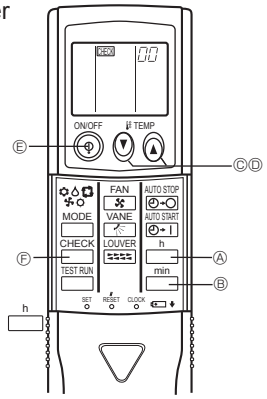
① Turn on the main power to the unit.
② Press the TEST RUN button twice continuously.
(Start this operation from the status of remote controller display turned off.)
Ⓐ TEST RUN and current operation mode are displayed.
③ Press the MODE (☼ ◊ ◘ ✣ ○) button to activate COOL ☼ mode, then check whether cool air is blown out from the unit.
④ Press the MODE (☼ ◊ ◘ ✣ ○) button to activate HEAT ☼ mode, then check whether warm air is blown out from the unit.
⑤ Press the FAN button and check whether strong air is blown out from the unit.
⑥ Press the VANE button and check whether the auto vane operates properly.
⑦ Press the ON/OFF button to stop the test run.

NOTE : • Point the remote controller towards the indoor unit receiver while following steps ② to ⑦.
• It is not possible to run in FAN, DRY or AUTO mode.

Function Selection

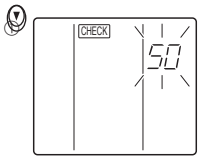
This setting is available only for Mr. Slim model. CITY MULTI model can be set by dip switch of indoor/outdoor control circuit board. Refer to technical data of CITY MULTI model to set dip switch.

Each function can be set according to necessity using the remote controller.
The setting of function for each unit can only be done by the remote controller.
Select function available from the Table3. Function selection using wireless remote controller is available only for refrigerant system with wireless function. Refrigerant address cannot be specified by the wireless remote controller.
The article below describes how to set “LOSSNAY connectivity” into “supported (indoor unit is not equipped with outdoor-air intake)” in Table 3 as an example.

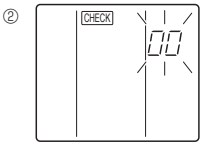


①Go to the function select mode
Press the CHECK button Ⓕ twice continuously.
(Start this operation from the status of remote controller display turned off.)
CHECK is lighted and “00” blinks.
Press the temp button Ⓒ once to set “50”. Direct the wireless remote controller toward the receiver of the indoor unit and press the h button Ⓐ.

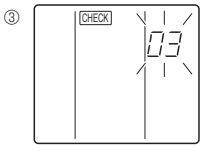
② Setting the unit number
Press the temp button Ⓒ and Ⓓ to set the unit number “00”. Direct the wireless remote controller toward the receiver of the indoor unit and press the min button Ⓑ.



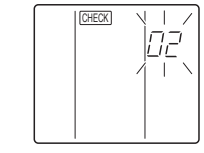
③Selecting a mode
Enter 03 to change the LOSSNAY connectivity setting using the Ⓒ and Ⓓ buttons. Direct the wireless remote controller toward the receiver of the indoor unit and press the h button Ⓐ .
Current setting number: 1=1 beep (1 second)
2=2 beeps (1 second each)
3=3 beeps (1 second each)



※ If a mode number that can not be recognized by the unit is entered, 3 beeps (3 beeps of 0.4 seconds duration)will be heard.
Reenter the mode number selecting.
※ If the signal was not received by the sensor or an error occurred during transmission, you will not hear a beep or a “double beep” may be heard.
Press the h button again.



④Selecting the setting number
Use the Ⓒ and Ⓓ buttons to change the LOSSNAY connectivity setting to 02. Direct the wireless remote controller toward the sensor of the indoor unit and press the h button Ⓐ.
→ At this time, current setting number for selected mode number will be output by the interrupted buzzer sounds and the blinks of operation indicator.
Output : setting number = 1 → beep beep (0.4 second + 0.4 second) ×1
2 → beep beep (0.4 second + 0.4 second) ×2
3 → beep beep (0.4 second + 0.4 second) ×3



※ If a setting number that can not be recognized by the unit is entered, 3 beeps (3 beeps of 0.4 seconds duration) will be heard (unit will beep only).
Reenter the setting number selecting.
※ If the signal was not received by the sensor or an error occurred during transmission, you will not hear a beep or a “double beep” may be heard.
Press the h button again.
※ If the number that can not be set is input, the former setting number will be set.
⑤To select multiple functions continuously
Repeat steps ③ and ④ to change multiple function settings continuously.
⑥Complete function selection
Direct the wireless remote controller toward the sensor of the indoor unit and press the Ⓔ button Ⓔ.

NOTE : Whenever changes are made to the function settings after construction or maintenance, be sure to record the added functions with an “○”, in the “Check” column provided on the chart.

Other function selections

Now that you know how to change LOSSANY connectivity setting, there are several other settings that can be changed as well. The following table lists the various settings that can be changed through the remote controller and the default settings.

Table 3.

Function	Settings	PCA-AK
Power failure automatic recovery	Not available	*1
	Available	*1
Indoor temperature detecting	Indoor unit operating average	○
	Set by indoor unit's remote controller	
	Remote controller's internal sensor	
LOSSNAY connectivity	Not supported	○
	Supported (indoor unit is not equipped with outdoor-air intake)	
	Not supported (indoor unit is not equipped with outdoor-air intake)	
Auto mode (only for PUZ)	Energy saving cycle automatically enabled	○
	Energy saving cycle automatically disabled	
Filter sign	100Hr	
	2500Hr	○
	No filter sign indicator	
Fan speed	Quiet	
	Standard	○
	High ceiling	
Up/down vane setting	No vanes	
	Equipped with vanes (No.1 set)	○
	Equipped with vanes (No.2 set)	

*1 Power failure automatic recovery initial setting depends on the connecting outdoor unit.

Things to remember when entering function selections:

The basic procedure for entering function selections is the same as described for switching between LOSSNAY connectivity. However, there are some differences at step ② for selecting the unit number, step ③ for selecting the mode number and step ④ for selecting the setting number.

The following Tables 4 and 5 list the various function settings, mode numbers and setting numbers.

Table 4 details the function of the entire refrigerant system while Table 5 shows the function that can be set for the indoor unit.

Table 4. Itemized functions of the entire refrigerant system (select unit number 00)

Mode	Settings	Mode no.	Setting no.	Check	Remarks
Power failure automatic recovery	Not available	01	1		
	Available (Approximately 4-minutes wait-period after power is restored.)		2		Approximately 4-minutes wait-period after power is restored.
Indoor temperature detecting	Indoor unit operating average	02	1		
	Set by indoor unit's remote controller		2		
	Remote controller's internal sensor		3		
LOSSNAY connectivity	Not supported	03	1		
	Supported (indoor unit is not equipped with outdoor-air intake)		2		
	Not supported (indoor unit is not equipped with outdoor-air intake)		3		
Auto mode (only for PUZ)	Energy saving cycle automatically enabled	05	1		
	Energy saving cycle automatically disabled		2		

Table 5. Itemized functions of the indoor unit (select unit numbers 01 to 02 or 07)

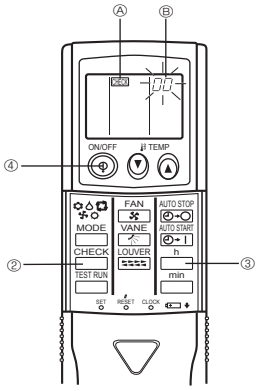
Mode	Settings	Mode no.	Setting no.	Check	Remarks
Filter sign	100Hr	07	1		
	2500Hr		2		
	No filter sign indicator		3		
Fan speed	Quiet	08	1		
	standard		2		
	High ceiling		3		
Up/down vane setting	No vanes	11	1		
	Equipped with vanes (No.1 set)		2		
	Equipped with vanes (No.2 set)		3		

② Setting the unit numbers
Set “00” as the unit number when setting function from Table 4.
When setting function from Table 5.
- When setting function for an indoor unit in an independent system, set the unit number to 01.
- When setting function for a simultaneous-Twin indoor unit system, assign unit numbers from 01 to 02 to each indoor unit.
- When setting the same functions for an entire simultaneous Twin-indoor unit system, assign “07” as the unit number.

③ Selecting the mode number
Select from Table 4 and Table 5.

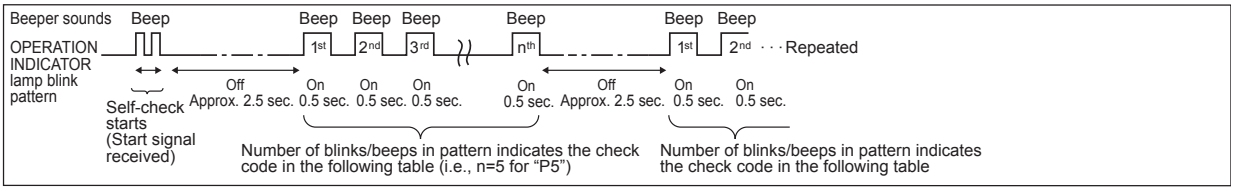
④ Selecting the setting number.

Self-Check

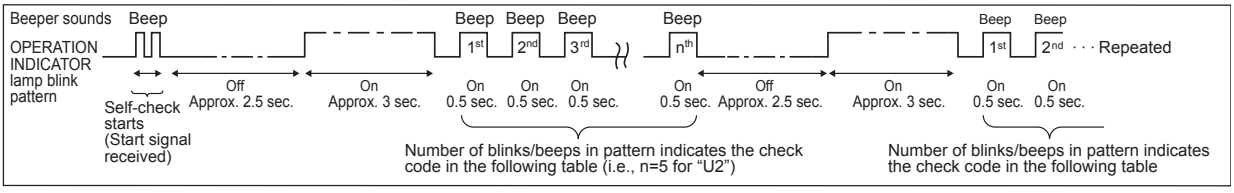


① Turn on the main power to the unit.
② Press the CHECK button twice continuously.
(Start this operation from the status of remote controller display turned off.)
Ⓐ CHECK begins to light.
Ⓑ «00» begins to blink.
③ While pointing the remote controller toward the unit’s receiver, press the h button. The check code will be indicated by the number of times that the buzzer sounds from the receiver section and the number of blinks of the operation lamp.
④ Press the ON/OFF button to stop the self-check.

● Refer to the following tables for details on the check codes.
① Output pattern (Mr.Slim model / CITY MULTI model)
[Output pattern A]



[Output pattern B]



② Check code (Mr.Slim model)
[Output pattern A] Errors detected by indoor unit

Wireless remote controller	Wired remote controller	Symptom	Remark
Beeper sounds/OPERATION INDICATOR lamp blinks (Number of times)	Check code		
1	P1	Intake sensor error	
2	P2, P9	Pipe (Liquid or 2-phase pipe) sensor error	
3	E6,E7	Indoor/outdoor unit communication error	
4	P4	Drain sensor error/Float switch connector open	
5	P5	Drain pump error	
6	P6	Freezing/Overheating safeguard operation	
7	EE	Communication error between indoor and outdoor units	
8	P8	Pipe temperature error	
9	E4	Remote controller signal receiving error	
10	–	–	
11	–	–	
12	Fb	Indoor unit control system error (memory error, etc.)	
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	Remark
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.
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 discharging temperature/ insufficient refrigerant	
6	U1,Ud	Abnormal high pressure (63H worked)/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.)	

*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 sec.)” 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 display in the LCD.

③ Check code (CITY MULTI model)

[Output pattern A] Errors detected by indoor unit or LOSSNAY unit

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

Wireless remote controller	Wired remote controller	Remark
Beeper sounds/OPERATION INDICATOR lamp blinks (Number of times)	Check code	
1	1000 ~ 1999	
2	2000 ~ 2999	
3	3000 ~ 3999	
4	4000 ~ 4999	
5	5000 ~ 5999	
6	6000 ~ 6999	
7	7000 ~ 7999	
8	0000 ~ 0999	
9	8000 over	

*1 Refer to service handbook of outdoor unit for the detail.

*2 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.

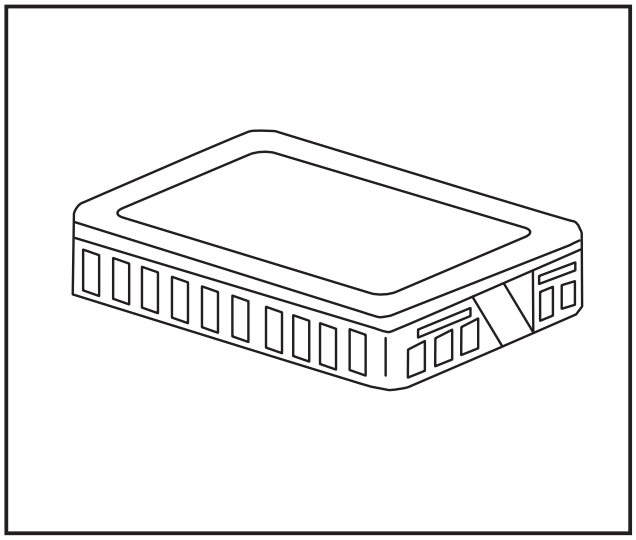
*3 If the beeper sounds 3 times continuously “beep, beep, beep (0.4 + 0.4 + 0.4 sec.)” after the initial 2 beeps to confirm the self-check start signal was received, the specified address is incorrect.

- On wireless remote controller
  The continuous buzzer sounds from receiving section of indoor unit.
  Blink of operation lamp
- On wired remote controller
  Check code display in the LCD.

Remote Sensor

PAC-SE41TS-E

Figure



Descriptions

Enables to pick up the room temperature at the remote position.

Applicable Models

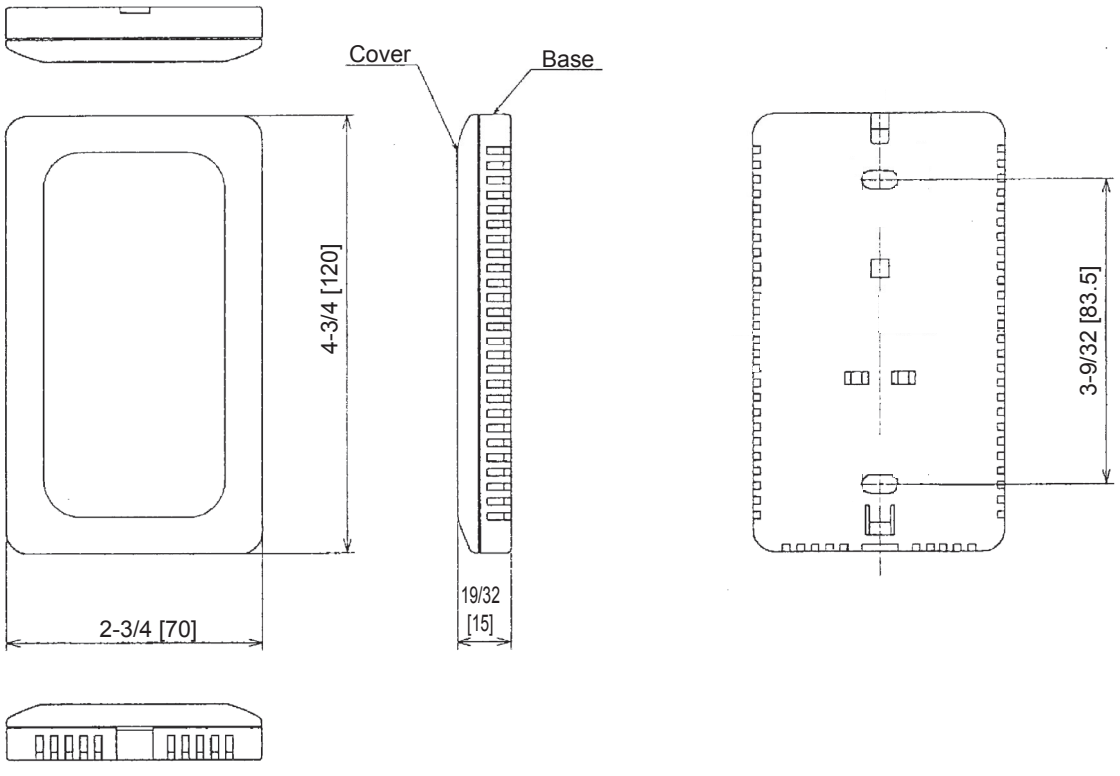
- SLZ-AF09/12/15/18NL
- SEZ-AE09/12/15/18NL
- PKA-AL12/18NL
- PKA-AK24/30/36NL
- PLA-AE12/18/24/30/36/42/48NL
- PEAD-AA12/18/24/30/36/42NL
- PVA-A12/18/24/30/36/42NL

Specifications

External dimensions (mm)	120 (H) x 70 (W) x 15 (D)
Exterior	White gray (Munsell 4.48Y 7.92/0.66) Material: ABS resin
Operating conditions	Temperature: -20 to 65℃ Humidity: 30 to 90% RH (no condensation)
Installation method	Mounting on single-type switch box (JIS C8336) or directly mounting on wall
Accessory	2-wire cable (12m), Connector with post, Fixing screw (x2)
When combining with environmental measurement controller	
Temperature measuring range	-20 to 65℃
Measurement resolution	0.1℃ (10 to 35℃), 0.5℃ (other temperature ranges)

Dimensions

Unit: inch [mm]



How to Use / How to Install

1 How to Install

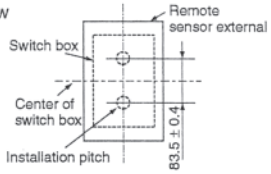
(1)Determine the installation of the remote sensor (switch box). The follwing items must be observed.

①Select a place where the remote sensor will detect an average temperature of the room, and where the sensor will not be subject to direct sunlight, heat sources, or the blow-off from the air conditioner, etc.

②Install the sensor within the length of the cable provided (12m). (The cable cannot be extented. If extented, it may cause misoperation due to noise.)

③The following parts must be procured at the site.

- •Cross-recessed pan head screw M4 .... Tow screws
- •Single switch box
- •Thin steel conduit
- •Lock nut, bushing



(2)Connect the wires.

•Connect the 2-core cable to the terminal block in the lower case. Peel the sheath of the 2-core cable as shown in Fig.1 , and correctly wire it as shown in Fig.2.

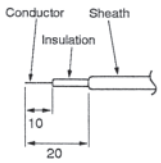


Fig.1

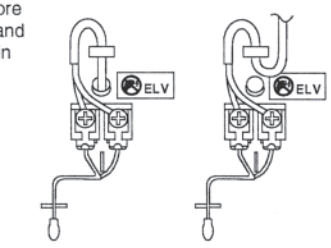


Fig.2

•The wiring connection of the indoor unit's electrical box and remote sensor is an shown in Fig.3. There are three methods of connecting the 2-core cable to the electrical box.

Exchange 2-core cable (connector 20)

①When using the connector attached to the end of the 2-core cable as it is.

②When cutting the connector attached to the end of the 2-core cable and connecting the cable to the terminal block in the I.B. (Indoor Board).

③When using the enclosed post for connection and convert cable.

The above three methods are used according to the indoor unit being used. If the 2-core cable is to be embedded in the wall, follow Fig.4.

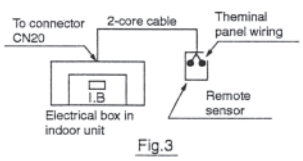


Fig.3

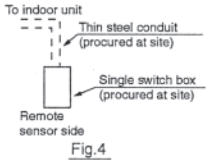
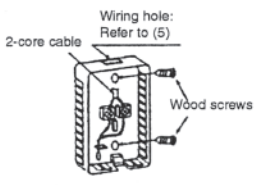


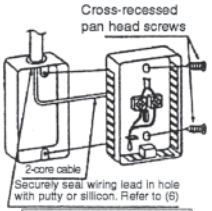
Fig.4

(3)Install the lower case on the wall or switch box.

NOTE The recommended tightening torque for installing the 2-core cable to the terminal block is 1.17N·m.



To install on wall



To install on switch box

⚠CAUTION •If the screws are tightened too hard, the case may break or deform.
•Install the sensor on a flat wall. If installed on a bumpy wall, the case may break or trouble may occur.

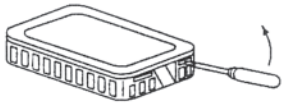
(4)Fit the upper case.



Catch the two upper claws first, and fit the case as shown on the left.

⚠CAUTION •Securely fit the case until a catching sound is heard. It may drop off if is not fitted securely.

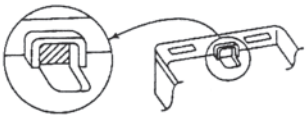
To remove the case, fit a flat-flap screwdriver into the claw section as shown below, and move the screwdriver in the direction of the arrow.



⚠CAUTION
•Do not turn the screwdriver when it is fit into the claw section as the claws may be broken.

(5)Wiring hole for direction installation on wall, etc.

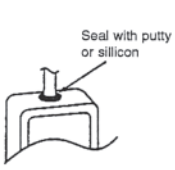
Cut the thin section (shaded section) of the lower case with a knife or pair of nippers, etc. The 2-core cable connected to the terminal block is led out from here.



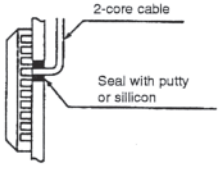
(6)Securely seal the wiring lead hole with putty or silicon to prevent dew, water drops, cockroaches and other insects from entering.

•When installing directly on the wall, seal the section cut on the lower case with putty or silicon.
If the wiring is to be passed through a hole in the wall (when leading the wiring from the rear of the remote sensor), seal the hole in the same manner.

•When installing on a switch box, seal the connection of the switch box and conduit with putty or silicon.

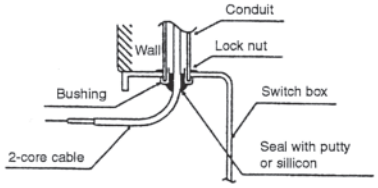


To lead wiring from top of remote sensor.



To lead wiring from rear of remote sensor.

To install directly on wall



To use switch box

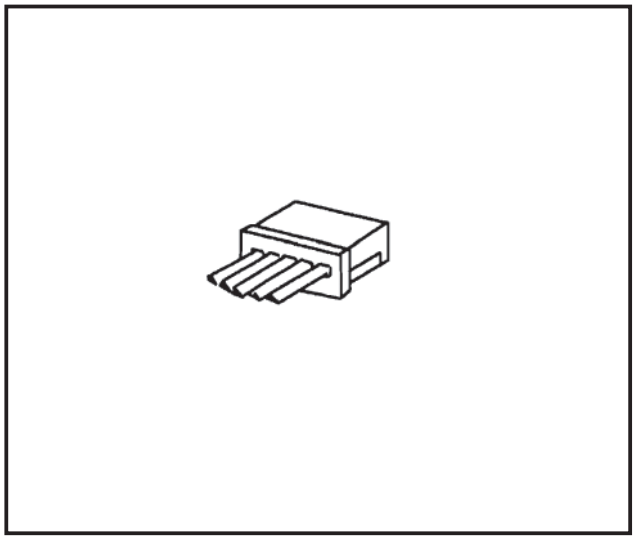
2 Setting of indoor unit

When the remote sensor is connected to the indoor unit and room temepature detection poisition is changed, reset the setting of "Set temp. 4-deg. up" in the heating mode as shown below.

① K control models : DIP switch Nos 1-6 on the control PCB of the indoor unit.
② M-NET control models : DIP switch Nos 3-8 on the control PCB of the indoor unit.
③ A control models : Refer to A-control air-conditioners SERVICE TECHNICAL GUIDE.

Connector Cable for Remote Display PAC-SA88HA-E/PAC-725AD-E

Figure



Descriptions

• This adapter enables control of several units with a multiple remote control display.

Applicable Models

- SLZ-AF09/12/15NL
- SEZ-AE09/12/15/18NL
- PEAD-AA09/12/18/24/30/36/42NL
- PVA-AA12/18/24/30/36/42NL

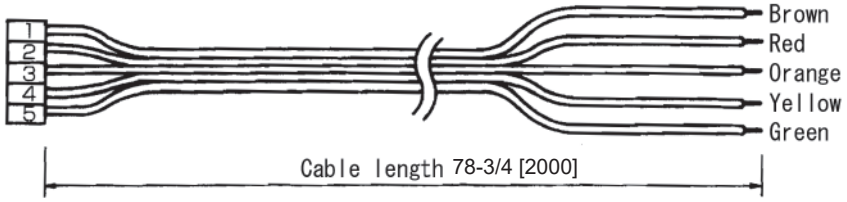
Specifications

Function	Connecting cable to output status signal of the air conditioner, and ON/OFF by external (pulse) signal.
Input signal	Pulse signal (no voltage instantaneous ON contact) Pulse duration 200m/s or more.
Connector	5P (connector to CN51 or CN52 on indoor unit control board)
Cable type	5-wire vinyl cable, for extension: sheathed vinyl cord or cable (0.5 to 1.25mm²)
Cable length	2m (max. 10m when extended locally)
Output capacity)	DC12V 75mA (Max 0.9W)

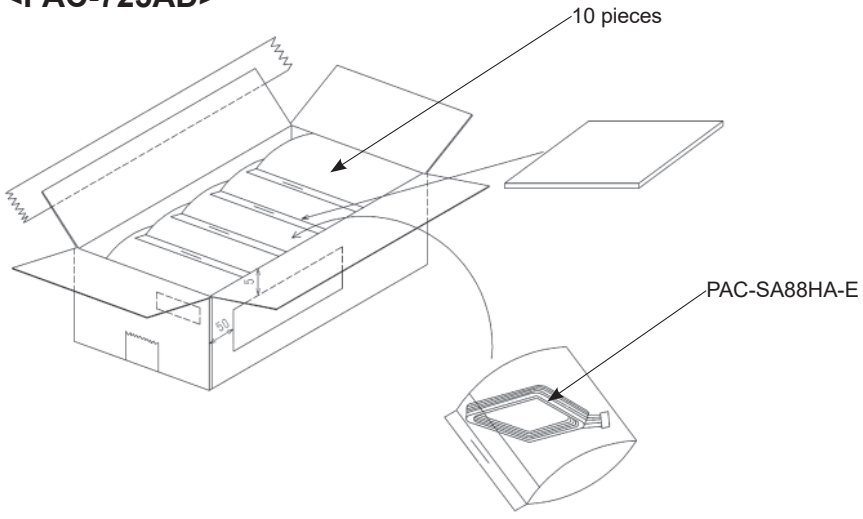
Dimensions

Unit: inch [mm]

<PAC-SA88HA-E>



<PAC-725AD>



How to Use / How to Install

MULTIPLE REMOTE CONTROL DISPLAY

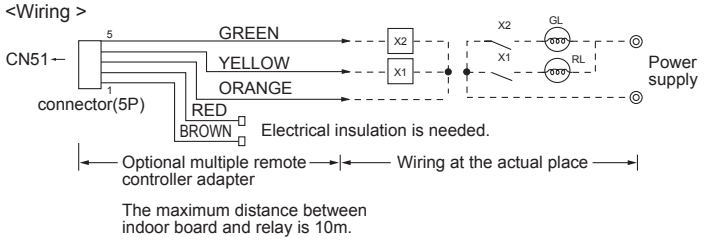
You can control several units with a multiple remote control display, by wiring an optional multiple remote controller adapter (PAC-SA88HA-E) with relays and lamps on the market.

How to wire

(1) Connect the multiple remote controller adapter to the connector CN51 on the indoor controller board.

(2) Wire three of the five wires from the multiple remote controller adapter as shown in the figure below.

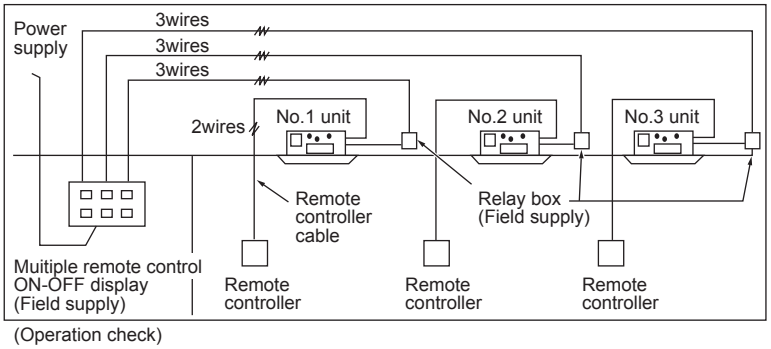
<Wiring >



[Notes on Signs]
X1:Relay (for operation lamp)
X2:Relay (for check lamp)
RL:Operation Lamp
GL:Check Lamp

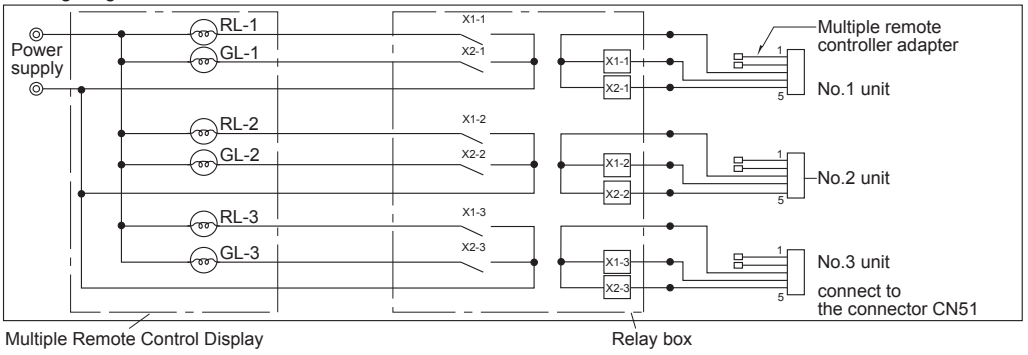
[Field supplied parts]
Relays:12V DC with rated coil power consumption below 0.9W.
Lamps:Matching to power supply voltage.

<System>



(Operation check)

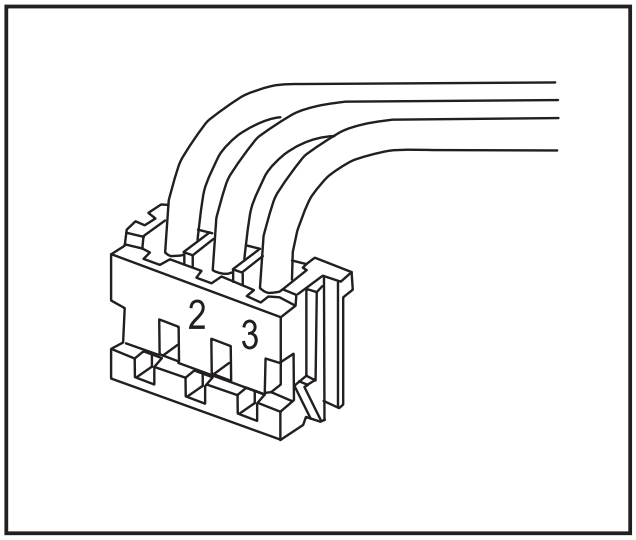
<Wiring diagram>



Remote On/Off Adapter

PAC-SE55RA-E

Figure



Descriptions

- Operation other than ON/OFF (adjustment of temperature, fan speed, and air direction, for example) can be performed even when remote controller operation is prohibited.

Applicable Models

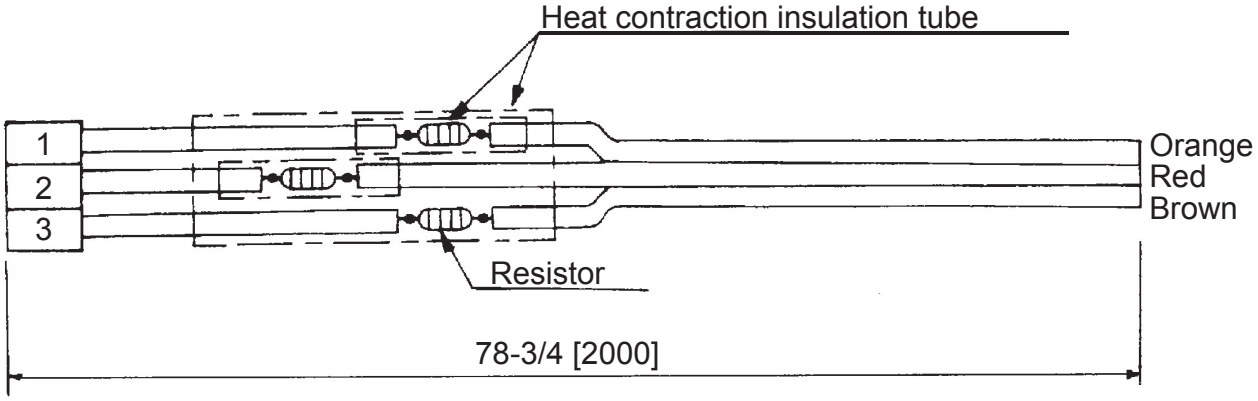
- SLZ-AF09/12/15/18NL
- SEZ-AD09/12/15/18NL
- PKA-AL12/18NL
- PKA-AK24/30/36NL
- PLA-AE12/18/24/30/36/42/48NL
- PEAD-AA09/12/15/18/24/30/36/42NL
- PVA-AA12/18/24/30/36/42NL

Specifications

Function	ON/OFF by external signal External signal ON (remote control disabled) / OFF (remote control enabled) switch able
Input signal	No-voltage contact (ON/OFF level signal)
Connector	3P (connected to CN32 on outdoor unit control board)
Cable type	3-wire cable, for extension: Sheathed vinyl cord or cable (0.5 to 1.25mm^2)
Cable length	2m (max. 10m when extended locally)

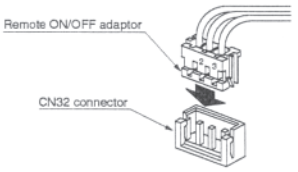
Dimensions

Unit: inch [mm]



How to Use / How to Install

1 Connecting to the Indoor Unit



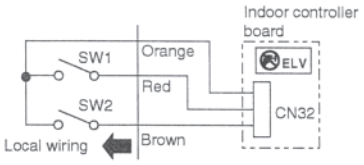
1. Connect to the connector CN32 on the indoor controller board.
2. Press the connector for the remote ON/OFF adaptor into the CN32 connector.
   The connector can only be connected in one direction only. Do not force the connection.

2 Locally Procured Wiring

With the remote ON/OFF adaptor, variations of connection method with the locally installed circuit will provide different types of operating configurations.

Example: External timer operation, remote control operation

1. Basic Connection Method
   - SW1 - Operating switch
     Performs operation/stopping of indoor unit.
   - SW2 - Selecting switch
     For selecting whether the operation/stopping is to be performed by external circuit or remote control.*
     * Also includes system controller (central controller).



2. Switch Settings (Refer to table at right for details.)

SW2 - If on.
- Operation/stopping cannot be controlled from remote controller.
  Other operations (such as temperature settings and changing fan speed) can be performed.
- Operation/stopping can be performed by SW1.

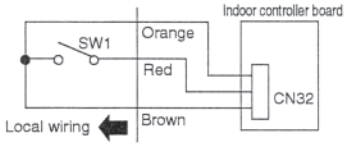
SW2 - If off.
- Operations can be performed from remote controller.
- Operation/stopping cannot be performed by SW1.

		SW2	
		ON	OFF
Remote controller		Cannot perform operation/stopping	Can perform operation/stopping
SW1	ON	Operation	Cannot perform operation/stopping
	OFF	Stopping	

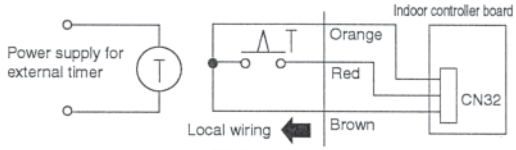
3 Examples of Usage

In either case, there is a 5 to 6 second delay from the time when the operating command is sent until the unit operates.

1. To perform operation/stopping by only remote operation or external timer and to prohibit operation/stopping by the remote controller, use the following circuits.

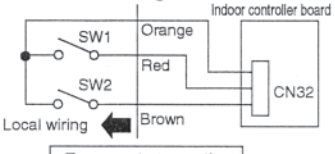


For remote operation

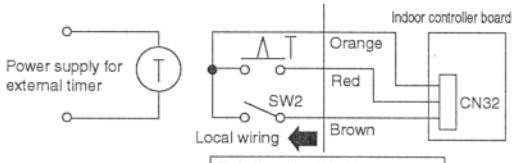


For remote timer operation

2. To perform operation/stopping by remote operation or external timer and allow operation/stopping by the remote controller, use the following circuits.

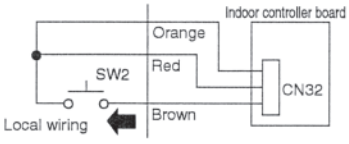


For remote operation



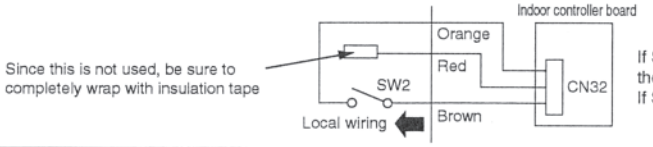
For remote timer operation

3. To start operation by remote operation and then freely use remote controller, use the following circuit.



Use a momentary switch (a switch that is turned on manually and turns off automatically) for SW2.
Press SW2 (for 1 second or more) and the operation starts. After this, the remote controller can be used for operations.

4. To permit/prohibit the use of the remote controller by an external circuit.

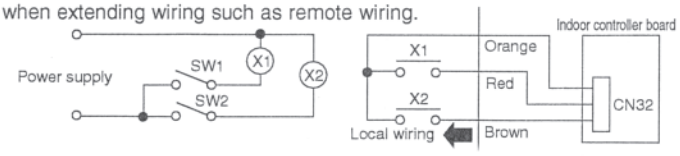


If SW2 is on, operation cannot be performed by the remote controller.
If SW2 is off, operation is permited.

4 Wiring Restrictions

Keep the length of wire from the circuit board of the indoor unit within 10 meters. Excessive length could cause improper operation.

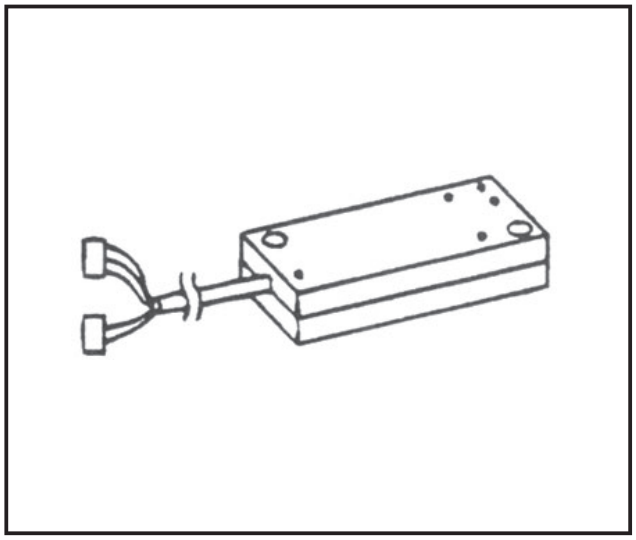
Use a transit relay when extending wiring such as remote wiring.



Remote Operation Adapter

PAC-SF40RM-E

Figure



Descriptions

Extraction of non-voltage contact output.
*Use of optional [Remote Operation Adapter] and "remote display panel" Part to be provided at your site) provides non-voltage contact outputs of signals (operation, error) and operation/stop input function.
Unable to use with wireless remote controller. (except for PKA-RP·HAL/KAL)

Applicable Models

- SLZ-AF09/12/15/18NL
- SEZ-AD09/12/15/18NL
- PLA-AE12/18/24/30/36/42/48NL
- PEAD-AA09/12/18/24/30/36/42NL
- PVA-AA12/18/24/30/36/42NL

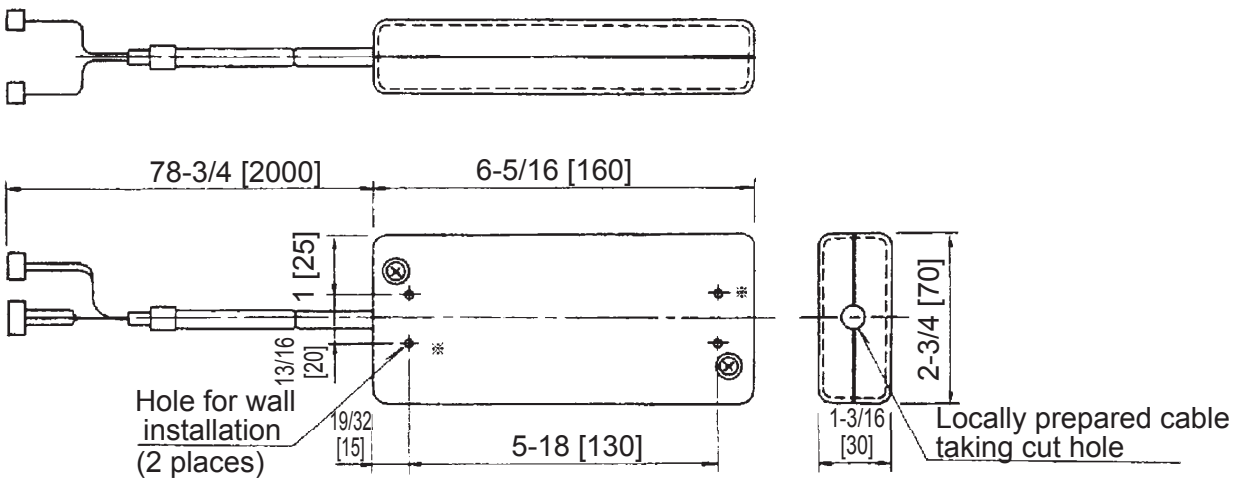
Specifications

Power		Supplied from indoor unit
External dimensions (mm)		160 x 70 x 30
Exterior		Material: ABS resin, Color: Gray (Munsell 3.07Y 6.16/0.33)
Weight		200g
Operating conditions		Indoor only Temperature: 0 to 40℃, Humidity: 35 to 85%RH (no condensation)
Connecting cable (indoor unit)		5-wire (3 + 2) cable with connector (9-pin, 4-pin)
Output signal		No-voltage "a" contact (relay contact method)
	Number of Contacts	2 (Operation / Alarm)
	Contact capacity	200V AC (30V DC)/1A or less
	Minimum load	10mA
Input signal		Pulse signal (instantaneous non-voltage "a" contact), pulse width: 200ms or more
	Number of Contacts	1 (start/stop)
Input/output signal cable (locally prepared)	Type	CV, CVS, or equivalent sheathed vinyl cord/cable
	Diameter	Twisted: 0.5 to 1.25mm2, Single: Ø0.65 to Ø1.2mm
	Distance	Output signal cable: Max. 100m Input signal cable: Max. 10m (Extension relay must be used when exceeding 10m)

* This kit cannot be used with a wireless remote controller.
Water leakage alarm will not be displayed if the unit is built into the ceiling (PDH)

Dimensions

Unit: inch [mm]

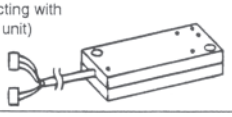
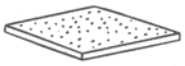


How to Use / How to Install

1 Confirming the Supplied Parts

(1) Parts Provided

Check that the box includes the following parts in addition to this installation manual.

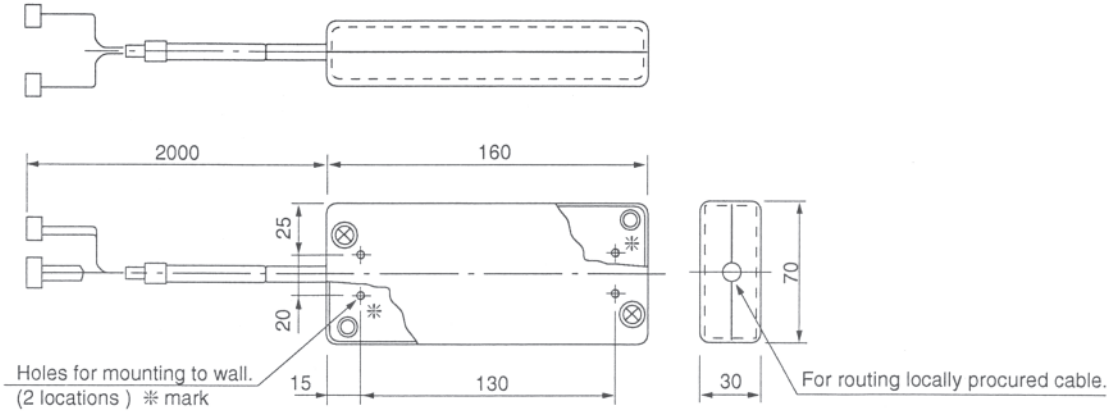
Parts	① Remote operation adaptor unit	② Cord clamp	③ Wall mount bracket
Shape	(with 2 meter wire for connecting with indoor unit) 	(Use this clamp if the local wiring is too thick to be held by the clamp inside the main unit.) 	
Quantity	1	1	1
Parts	④ Screws for mounting ③	⑤ Cushion material	⑥ Tie-wrap
Shape	 3.5 x 12 (Black)	(With adhesive on both sides.) 	(Use this for bundling lead wires.) 
Quantity	4	1	5
Parts	⑦ Cord clamp	⑧ Screws for mounting ⑦	⑨ Screws for mounting main unit
Shape		 3.5 x 12 (Black)	 3.5 x 12 (Black)
Quantity	5	5	2

(2) Locally Procured Parts

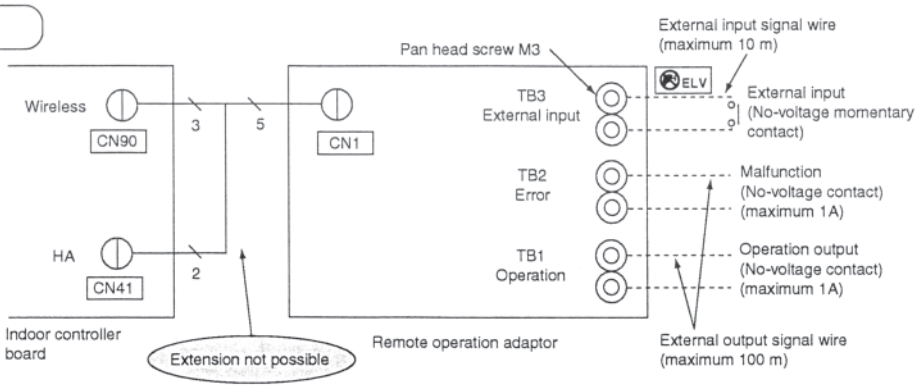
Note : Please keep LVD. LVD;Low Voltage Directive (EC Directive of Europe)
Apply some countermeasure for wiring and relay not to be touched from outside.
① Wiring should be covered by the insulation tube. ② Use relay with EU regulation.

Item	Part Name	Model & Specifications
External output function	External signal output wire	Use a vinyl cord with sheath or cable Electric wire type: CV, CVS or equivalent Electric wire size: 0.5 mm² to 1.25 mm² Single wire: ø0.65 mm to ø1.2 mm
	Display lamp, etc.	No-voltage contact AC 220 to 240 V (DC30V), 1A or less
External input function	External signal input wire	Use a vinyl cord with sheath or cable Electric wire type: CV, CVS or equivalent Electric wire size: 0.5 mm² To 1.25 mm² (Single wire: ø0.65 mm to ø1.2 mm)
	Switch	No-voltage momentary contact (Operation ⇄ Stop is switched by input of a pulse of 200 ms or more)

2 External Dimension Drawing



3 Wiring



⚠Caution

1) TB3 is a dedicated terminal for contact input. Do not apply voltage. Applying voltage will cause damage to the circuit board inside the for the indoor unit controller.
2) Always use the cable provided for connecting the unit to the indoor unit. Never make modifications to extend this cable. Extensions could cause the cable to be affected by external noise which could lead to mis-operation.
If an extension is needed, refer to specification chart in "6. Product Specifications" a follow it when extending the external signal wire.

<Connecting to the indoor unit>

① If external output functions are used ····· Insert the 9-electrode (3 core) side of the cable provided into CN90 on the controller circuit board for the indoor unit.

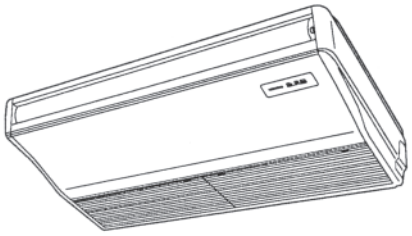
② If external input functions are used ····· Insert the 4-electrode (2 core)side of the cable provided into CN41 on the controller circuit board for the indoor unit.

※ The connector can only be inserted in one direction. Be sure to check that the connector is in the proper direction before inserting. Forcing the connector will cause damage.

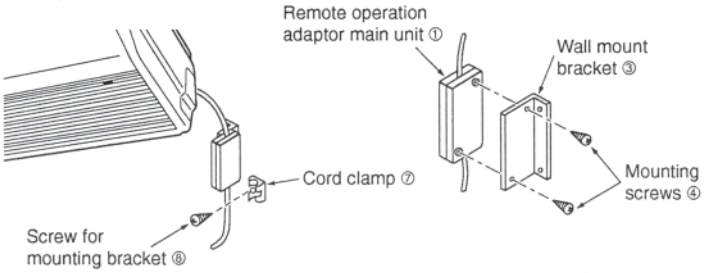
4 How to Install

There are three ways to mount the remote operation adaptor main unit: [A] Using mounting bracket, [B] Mounting directly, and [C] Using the cushion material.

(1) Installation Example (Suspended Type)



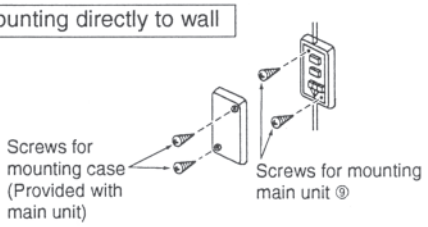
[A] Mounting to wall mounting bracket

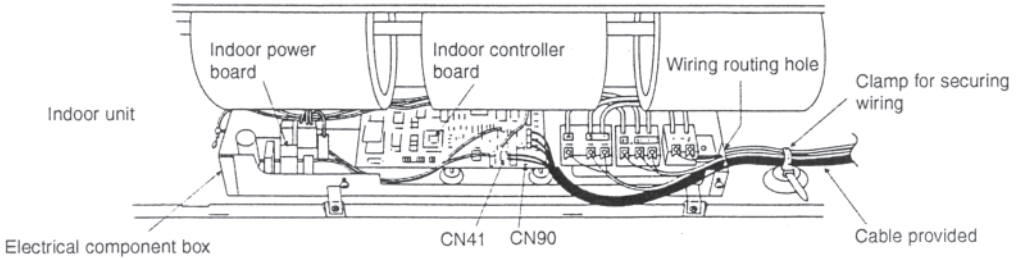


⚠Caution

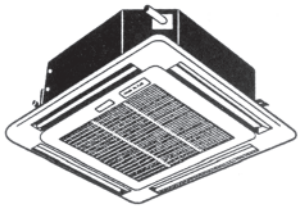
1) When mounting the remote operation adaptor main unit, be sure to use the mounting hardware to mount it to a wall or beam so that an inspection port is available for servicing.
2) If there is any loose remaining wire after installation, use a tie-wrap ⑥ to bundle it.

[B] Mounting directly to wall

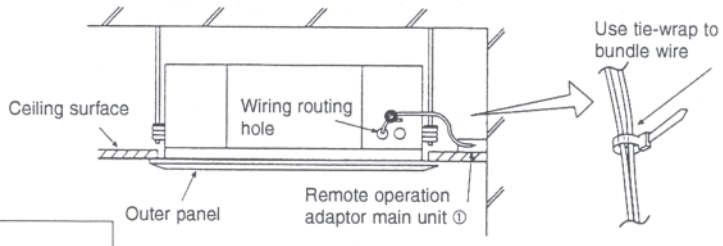




(2) Installation Example 2 [Cassette Type]



[A] If recess-mounted into ceiling

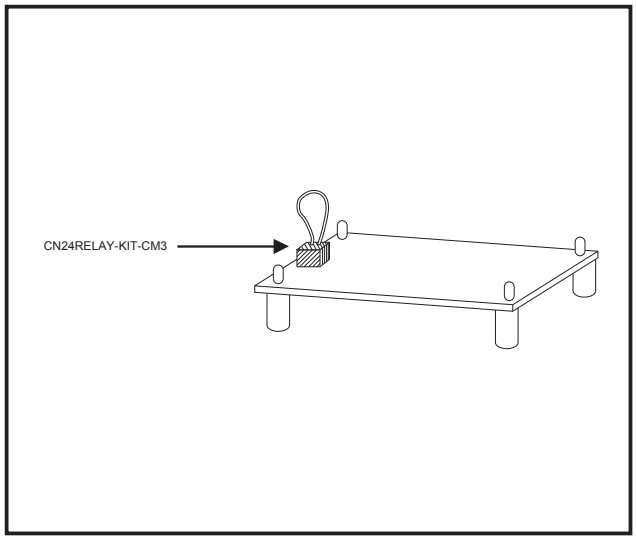


⚠Caution

1) When mounting the remote operation adaptor main unit, be sure to use the mounting hardware to mount it to a wall or beam so that an inspection port is available for servicing.
2) If there is any loose remaining wire after installation, use a tie-wrap ⑥ to bundle it.

External Heater Adapter CN24RELAY-KIT-CM3

Figure



Descriptions

This product is the special adapter necessary to operate an electric heater with the air conditioner.

Applicable Models

- SEZ-AD09/12/15/18NL
- SVZ-AP12/18/24/30/36/48/60NL
- PEAD-AA09/12/18/24/30/36/42NL
- PVA-AA12/18/24/30/36/42NL

Specifications

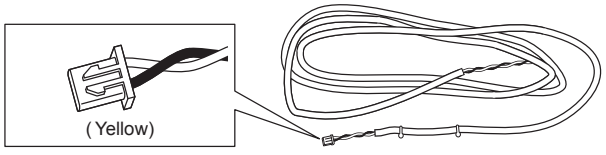
Item	Content
Coil Voltage	12VDC
Power Consumption	0.9W or less
Maximum Distance	32feet (10meters)
Wire Size	16 to 22AWG

Parts list

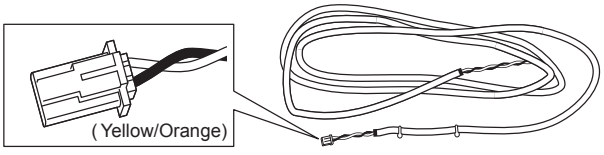
This Installation Manual and the parts listed below are included with the CN24RELAY-KIT-CM3.

(1) External output cable ..... 2 cables total

① CN24 without lock mechanism (Yellow) : 1

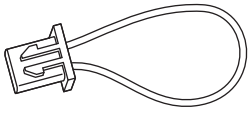


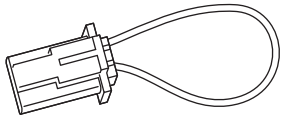
② CN24 with lock mechanism (Yellow/Orange) : 1

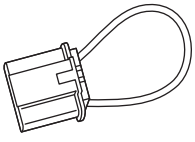


(2) Fan control connector ..... 3 connectors total

① CN22 without lock mechanism (Green) : 1 ② CN22 with lock mechanism (Green) : 1 ③ CN4Y (White) : 1



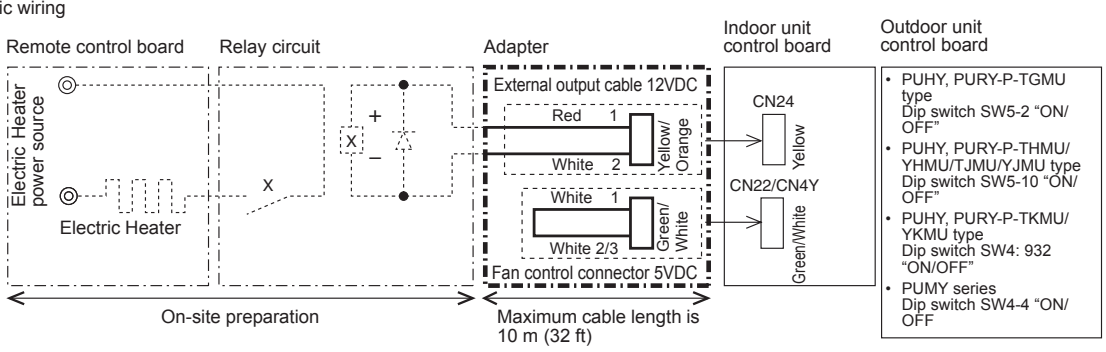




How to Use / How to Install

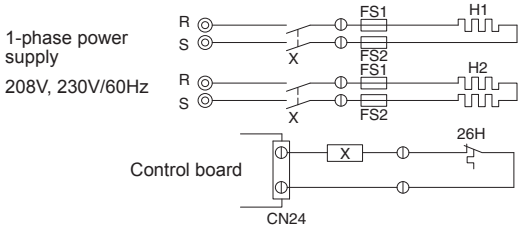
1 Field-supplied Wiring

(1) Basic wiring



Use X relay having the following specifications
Rated voltage : 12VDC
Power consumption : 0.9W or less
* Always insert a diode on both ends the relay coil.
The length of the electrical wiring for the CN24RELAY-KIT-CM3 is 2 meters (6-1/2 ft).
For longer lengths, up to no more than 10 m (32ft), use sheathed 2-core cable.
Control cable type : CVV, CVS, CPEV or equivalent.
Cable size : 0.5 mm^2 ~ 1.25 mm^2 (16 to 22 AWG)

(2) Recommended circuit



FS1, 2 ------Thermal fuse
H1, H2------Electric heater
26H----------Overheat protection thermostat
X ----------Relay (Electromagnetic contactor)

2 Wiring Restrictions

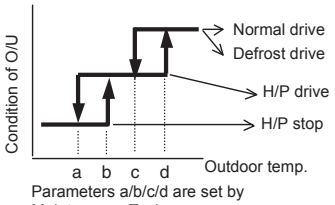
The length of cable connecting the heater adapter to the circuit board of the indoor unit must be no more than 10 meters (32ft).
Any cable longer than 10 meters (32ft) could cause improper operation.
Use a transit relay when extending the wiring.

3 Control specifications and DIP Switch settings

* Table 1 shows how the field-installed heater is controlled. Select the desired operation in the table below, and set the DIP S/W on the outdoor and indoor units as shown in Table 1. Table 2 shows Heater Control patterns #A and B.

Table.1

<table>
<tr><th rowspan="2">Outdoor unit setting</th><th rowspan="2" colspan="2">Condition of outdoor unit</th><th colspan="2">Ducted unit (PEFY-NMSU-E, PEFY-NMH(S)U-E, PVFY, PEFY-NMAU-E, PFFY-NEMU-E, PFFY-NRMU-E)</th><th>NON ducted unit (PL/PK/PC/PM)</th></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td rowspan="2">DIP S/W OFF
In the case of:
• TGMU: S/W5-2 OFF
• THMU/YHMU/TJMU/ YJMU: S/W5-10 OFF
• TKMU/YKMU: SW4: 932 OFF
• PUMY: S/W4-4 OFF</td><td rowspan="2" colspan="2">Applies to ALL Condenser unit models.

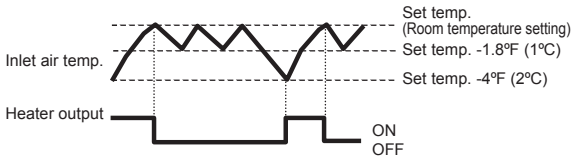
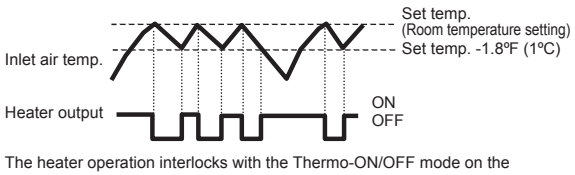
N/A</td><td>DIP S/W3-4
OFF (Indoor unit)</td><td>Heater control #A (defrost/error: Heater OFF)</td><td rowspan="2">Heater control #A (defrost/error: Heater ON)*1</td></tr>
<tr><td>DIP S/W3-4
ON (Indoor unit)*2</td><td>Heater control #A (defrost/error: Heater ON)</td></tr>
<tr><td rowspan="3">DIP S/W ON
In the case of:
• TGMU: S/W5-2 ON
• THMU/YHMU /TJMU/YJMU: S/W5-10 ON
• TKMU/YKMU: SW4: 932 ON
• PUMY: S/W4-4 ON</td><td rowspan="3">Applies to ONLY Air Cooled Condenser unit models that have OA sensor.
 

Parameters a/b/c/d are set by Maintenance Tool.</td><td>Normal drive</td><td colspan="2">Heater OFF</td><td>Heater OFF</td></tr>
<tr><td rowspan="2">Defrost drive
H/P drive
H/P stop</td><td>DIP S/W3-4
OFF (Indoor unit)</td><td>Heater control #A (defrost/error: Heater OFF)</td><td rowspan="2">Heater control #B (defrost/error: Heater ON)*1</td></tr>
<tr><td>DIP S/W3-4
ON (Indoor unit)*2</td><td>Heater control #B (defrost/error: Heater ON)</td></tr>
</table>

*1 DIP S/W3-4 setting on NON ducted unit is used for Vane Control function. DIP S/W3-4 setting is not required.
*2 For ducted units when S/W3-4 is ON, heater is ON in defrost mode.
*3 Heater On signal can not be output in the following cases for safety reasons.

- Return air temperature sensor fault (Error code: 5101)
- Indoor unit fan operation error (Error code: 4109)
- Transmission error (Error code: 6***, 7***)
- When heating mode is prohibited
- When demand control or capacity save is set to 0%
- During refrigerant recovery mode on PUMY system
- For a few minutes when change from thermo OFF to ON or ON to OFF in R2/WR2 system

Table.2

Heater control #A	Heater OFF Inlet air temp. ≥ set temp. Heater ON Inlet air temp. < set temp. -4ºF (2ºC)	Heater control #B	Heater OFF Inlet air temp. ≥ set temp. Heater ON Inlet air temp. < set temp. -1.8ºF (1ºC)
			
		The heater operation interlocks with the Thermo-ON/OFF mode on the indoor units.	
Note: <For heater> The value “4ºF (2ºC)” is modifiable from 1.8ºF (1ºC) to 9ºF (5ºC) by maintenance tool.			

Note:

(1) On the ducted model units (except the Fresh air intake type), turning on the heater with the fan setting set to OFF requires that the DIP S/W and connectors on the indoor units*1 are set on site.
*1: DIP SW3-4, CN24, and CN4Y (or CN22)

Table.3 Fan control in defrost

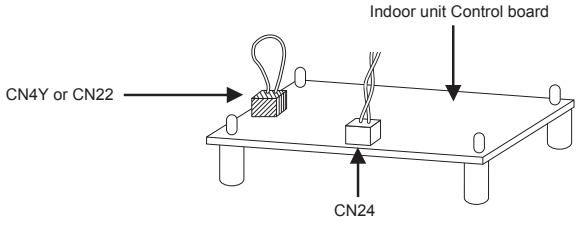
Pattern	Duct unit (PEFY-NMSU-E, PEFY-NMH(S)U-E, PEFY-NMAU-E, PFFY-NEMU-E, PFFY-NRMU-E, PVFY)			
	CN4Y or CN22 for FAN control (YU25)	DIP S/W3-4 (Indoor unit)	Fan speed in defrost (Heater)	
1	Unplugged	OFF	Stop	(Heater OFF)
2		ON	See Table.4	(Heater ON)
3	Plugged	OFF	Stop	(Heater OFF)
4		ON	Stop	(Heater ON)

Table.4 Fan speed setting in defrost

SW3-1	SW1-7	SW1-8	Fan speed *1
OFF	OFF	OFF	Very low
OFF	ON	OFF	Low
OFF	OFF	ON	Remote controller setting
OFF	ON	ON	Stop (Remote controller setting *2)
ON	ON	ON	Stop (Remote controller setting *2)

*1: The fan operates at the same speed settings as shown in this table during the Heating Thermo-OFF mode.
*2: If Pattern 2 in the table above is selected for fan control, the fan will follow the remote controller setting.

<Image>



(2) On the Fresh air intake type units, the heater cannot be turned on when the fan setting set to OFF.

(3) Non-ducted models do not require the settings as described in Section (1) above.

- Reference (not applicable to the ducted models)

Pattern	NON ducted unit (PLFY/PKFY/PCFY/PMFY)		
	CN4Y or CN22 for FAN control (YU25)*1	DIP S/W (Indoor unit)	Fan in defrost
1	N/A	N/A	Stop (Heater ON)

*1: Refer to Section 5 “Dipswitch Setting” for further information.

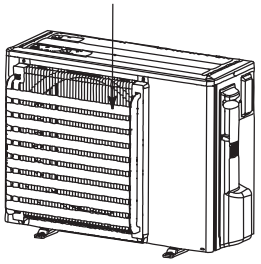
(4) Back-up heating will not operate when the heater turns on during demand control.

(5) This is applicable only to the R410A series. Make the settings for the following dip swiches on the outdoor unit control board before turning on the power.

Air Outlet Guide (to change air blowing direction) PAC-SJ07SG-E

Figure

Air Outlet Guide



Descriptions

A part to change air direction from outdoor unit. Can also be used to prevent short cycles.

Applicable Models

- PUY-AK12/18NL
- PUZ-AK12/18NL

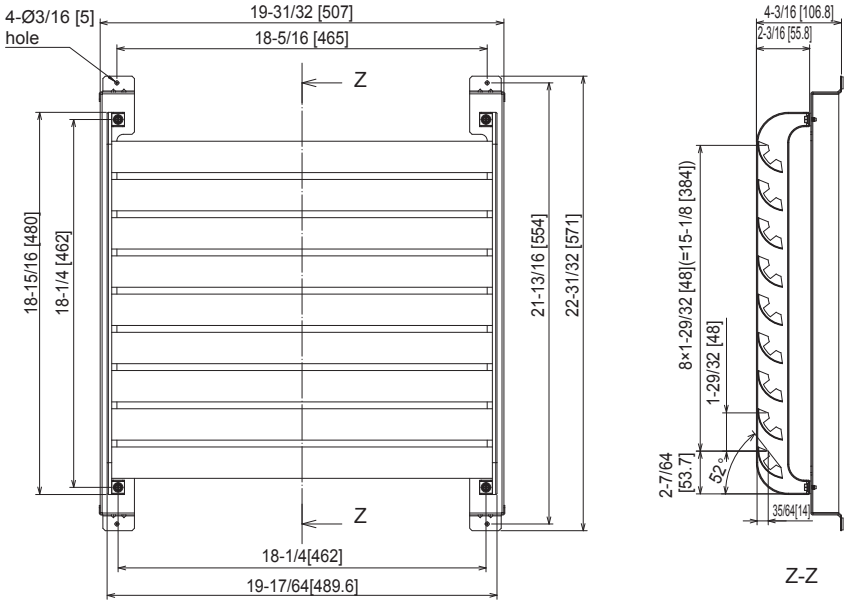
only 1 piece required

Specifications

Exterior	Color (Munsell)	Ivory (3.0Y 7.8/1.1)
	Material/surface treatment	Alloy hot-dip zinc-coated carbon steel sheet/Acrylic resin coating
Weight		2.8kg
Air outlet direction		Changeable between up, down or sideways
Accessory name x Qty. <Material/Surface treatment>		Screw (M5x10) x 4 (Iron/Zinc nickel alloy plated) Screw (M4x12) x 4 (Iron/Zinc nickel alloy plated)

Dimensions

Unit: inch [mm]



⚠ CAUTION

When the outdoor unit is installed in front of a store or in a passage, this air outlet guide is used to change the discharge direction of hot air (during cooling) or cold air (during heating) from the outdoor unit.
Upward, downward and sideways directions are possible. This guide is also effective to protect the winds may blow against the discharge outlet.

Note the followings when installing this guide:

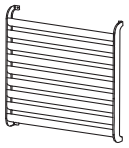
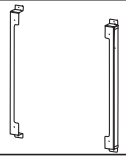
1) Be sure not to use "upward discharge" in a place where snowing is possible. Snow may accumulate in the guard, which could damage the fan, etc.
2) Attaching this unit will decrease the performance (by 2-3%) and increase noise from outdoor unit (by approx. 1-2 dB).
3) Do not use "upward discharge" when there are any obstacles at the back and on both sides of outdoor unit (air is taken in from top of unit): This could cause a short cycle.
4) To eliminate the influence of external wind, be sure to install the unit with its back facing to wall.
5) Do not install this unit in a place where wind directly blows to the back of the unit.

How to Use / How to Install

Note that two sets of this product are necessary for RP100, RP125, RP140.

1 Accesories

Make sure that this package has the following parts as well as the installation sheet:

①Air outlet guide	1	②Support	2	③Attachment screw 5×10	4	④Attachment screw 4×12	4
							

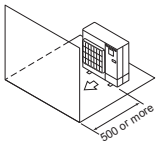
2 Requirements of installation space [Unit:mm]

●Secure the necessary surrounding space shown below and select a place with less obstacles, to prevent a short cycle.

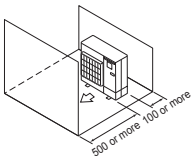
1) Surrounding space needed when installing one unit

・Do not use "upward discharge" in cases of figures (3) and (5) below.

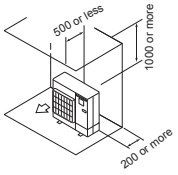
(1) Obstacle at front (open at back, sides and top)



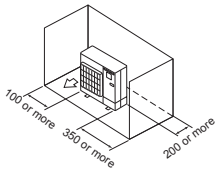
(2) Obstacles at back and front (open at sides and top)



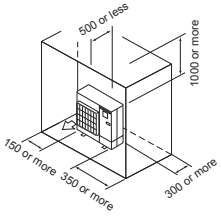
(3) Obstacles at back and top (open at front and sides)



(4) Obstacles at back, and sides (open at front and top)



(5) Obstacles at back, sides and top (open at front)

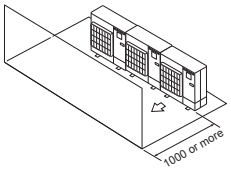


2) Surrounding space needed when installing multiple units

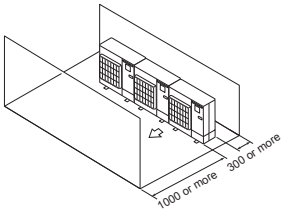
・When installing units horizontally in a series, leave at least 350 mm space between units .

・Do not use "upward discharge" in case of figure (3) below.

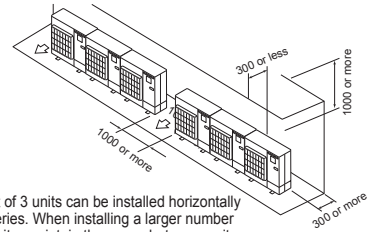
(1) Obstacle at front (open at back, sides and top)



(2) Obstacles at back and front (open at sides and top)

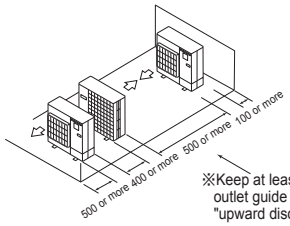


(3) Obstacles at back and top (open at front and sides)



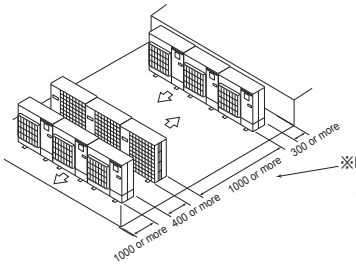
※Limit of 3 units can be installed horizontally in series. When installing a larger number of units, maintain the space between units shown above.

(4) Installing units, one in each row



※Keep at least 1000 when using outlet guide in directions other than "upward discharge".

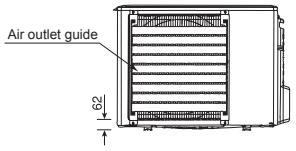
(5) Installing multiple units in multiple rows



※Keep at least 2000 when using outlet guide in directions other than "upward discharge".

3 Installation Complete Diagrams

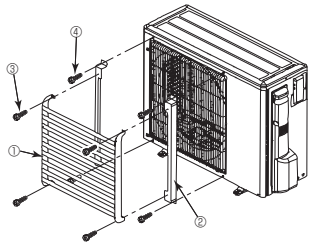
809W × 300D × 630H(mm)
Outdoor unit



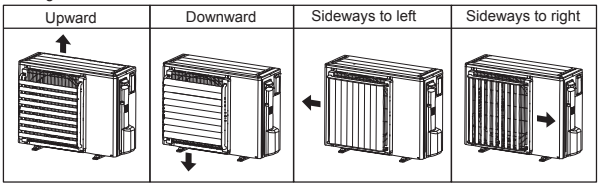
4 Installation Method

● Four blowout directions can be selected: Check the orientation of blowout vane, and attach the blowout guide in the direction that matches the situation at local site.

(1) Make a frame by fixing 2 supports ② on the outdoor unit with 4 screws ④.
(2) Fix the air outlet guide ① to the supports mounted on the outdoor unit with 4 screws ③.



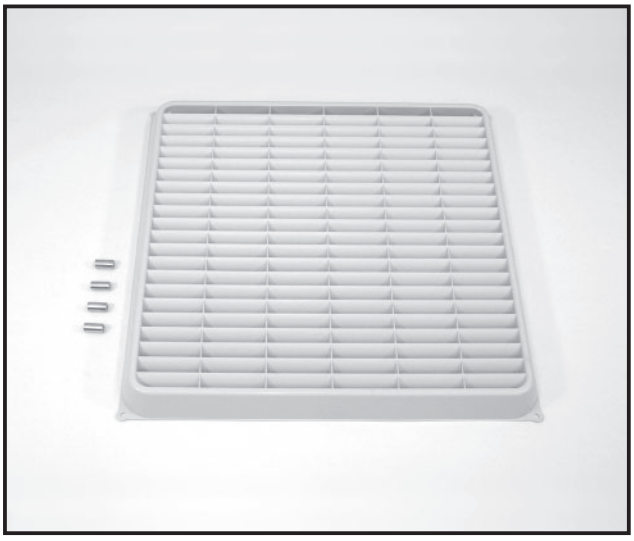
<Setting blow-off direction>



Air Outlet Guide

PAC-SG59SG-E

Photo



Descriptions

A part to change air direction from outdoor unit.
Can also be used to prevent short cycles.

Applicable Models

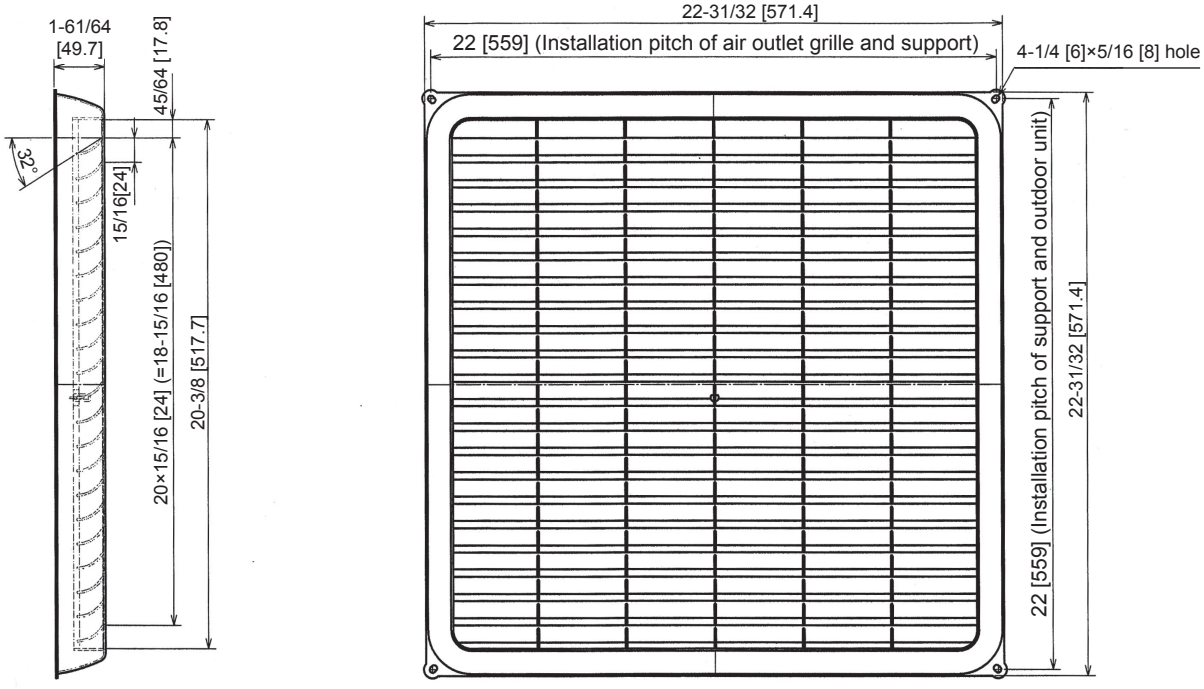
- PUY-AH24/30NL
- PUZ-AH24/30NL

Specifications

Exterior	Color (Munsell)	Ivory (3.0Y 7.8/1.1)
	Material	Air outlet grille: PP resin
Weight		1.2kg
Air outlet direction		Changeable between up, down or sideways
Accessory name x Qty. <Material/Surface treatment>		Washer faced screw (M5x35) x 4 (Iron wire (SWCH18A)/Zinc nickel plated)

Dimensions

Unit: inch [mm]



⚠ CAUTION

* Air Guide prevents reverse rotation of outdoor unit fan when it enters low speed rotation mode with fan controller being operated. It is also used for protection of fan when strong winds, such as a typhoon, wind blowing through tall buildings, etc., directly strike the air outlet. In addition, installation of this product is necessary when cooling operation is to be performed in outdoor temperature of -5℃ or lower (down to -15℃).

Note the followings when installing this guide:

1) Be sure not to use "upward discharge" in a place where snowing is possible. Snow may accumulate in the guard, which could damage the fan, etc.
2) Attaching this unit will decrease the performance (by 2-3%) and increase noise from outdoor unit (by approx. 1-2 dB).
3) Do not use "upward discharge" when there are any obstacles at the back and on both sides of outdoor unit (air is taken in from top of unit): This could cause a short cycle.
4) To eliminate the influence of external wind, be sure to install the unit with its back facing to wall.
5) Do not install this unit in a place where wind directly blows to the back of the unit.

How to Use / How to Install

2-fan type outdoor unit

1 Checking provided parts

Make sure that this package has the following parts as well as the installation sheet:

①Air Discharge guide × 1	②Support × 2 (For the upper and lower sides)	③Support × 2 (For right and left)	④Attachment screw × 4	⑥Spacer × 4
	※PAC-SG58SG-E (Screw hole × 6) 	PAC-SG58SG-E (Screw hole × 2) 	PAC-SG58SG-E(5 × 10) PAC-SG59SG-E(5 × 35)  ⑤Attachment screw × 8 PAC-SG58SG-E(4 × 10) 	※PAC-SG59SG-E 

2 Checking Installation Space

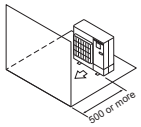
(In the following diagrams, dimensions in parentheses are for 2 fan type models. Dimensions not in parentheses are common for all series models. Unit: mm)

●Secure the necessary surrounding space shown below and select a place with less obstacles, to prevent a short cycle.

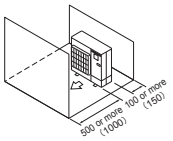
1) Surrounding space needed when installing one unit

・Do not use "upward discharge" in cases of figures (3) and (5) below.

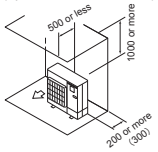
(1) Obstacle at front (open at back, sides and top)



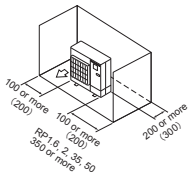
(2) Obstacles at back and front (open at sides and top)



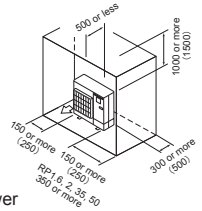
(3) Obstacles at back and top (open at front and sides)



(4) Obstacles at back, and sides (open at front and top)



(5) Obstacles at back, sides and top (open at front)

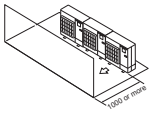


2) Surrounding space needed when installing multiple units

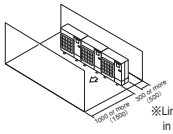
・When installing units horizontally in a series, leave at least 350 mm space between units for RP2, 50 type or lower models, and at least 10 mm for RP2.5, 60 type or higher models.

・Do not use "upward discharge" in case of figure (3) below.

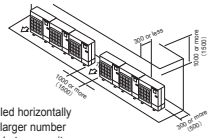
(1) Obstacle at front (open at back, sides and top)



(2) Obstacles at back and front (open at sides and top)

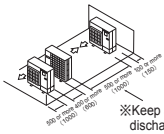


(3) Obstacles at back and top (open at front and sides)



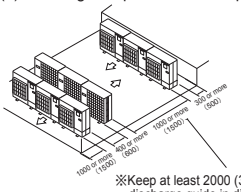
※Limit of 3 units can be installed horizontally in series. When installing a larger number of units, maintain the space between units shown above.

(4) Installing units, one in each row



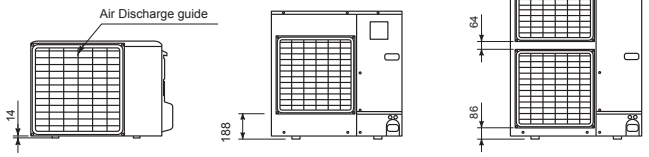
※Keep at least 1000 (2000) when using discharge guide in directions other than "upward discharge".

(5) Installing multiple units in multiple rows



※Keep at least 2000 (3000) when using discharge guide in directions other than "upward discharge".

3 Installation Complete Diagrams



＜Models RP1.6, 2, 35, 50＞ ＜Models RP2.5, 3, 60, 71＞ ＜Models RP4～6,100～140＞

4 Installation Method

For RP1.6, 2, 35, 50 :

1) Fix the two supports (2) and two supports (3), using four screws (5) to make a frame.

2) Attach the assembled supports to the outdoor unit using four screws (5), and then attach blowout guide (1) to the support (2), using four screws (4).

・Four blowout directions can be selected: Check the orientation of blowout vane, and attach the blowout guide in the direction that matches the situation at local site.

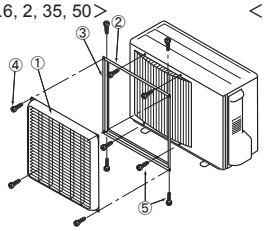
For (R)P2.5～6, 60～140: (Two sets of support and blowout guide are necessary for two-fan type models.)

1) Remove the 4 screws that hold the existing fan guard.

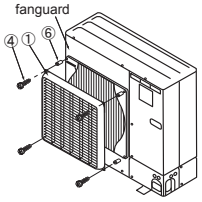
2) Fit the 4 spacers ⑥ into the hole in fan guard, and then use the 4 screws ④ to install the provided blowout guide ① to the outdoor unit above the existing fan guard.

・The four blowout directions can be selected: Check the orientation of blowout vane, and install the blowout guide in the direction that matches the circumstance at local site.

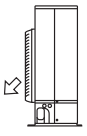
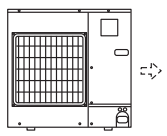
＜RP1.6, 2, 35, 50＞



＜(R)P2.5～6, 60～140＞



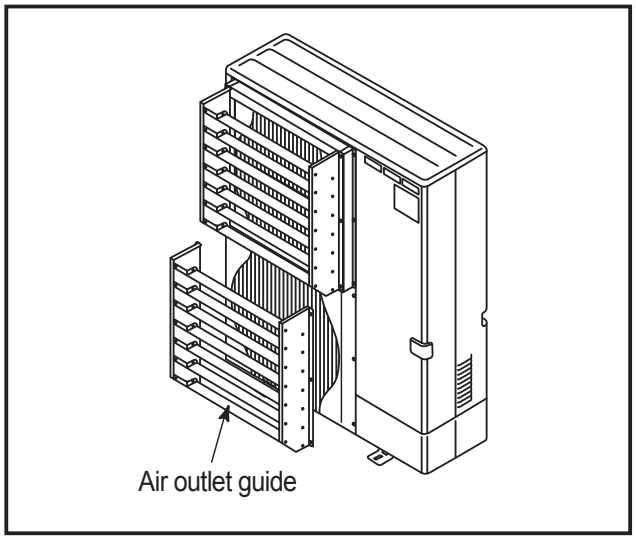
＜Setting blow-off direction＞

Upward	Downward	Sideways (to left or right)
Discharge vane  Air Discharge guide		

Air Outlet Guide

PAC-SH96SG-E

Figure



Descriptions

A part to change air direction from outdoor unit.
Can also be used to prevent short cycles.

Applicable Models

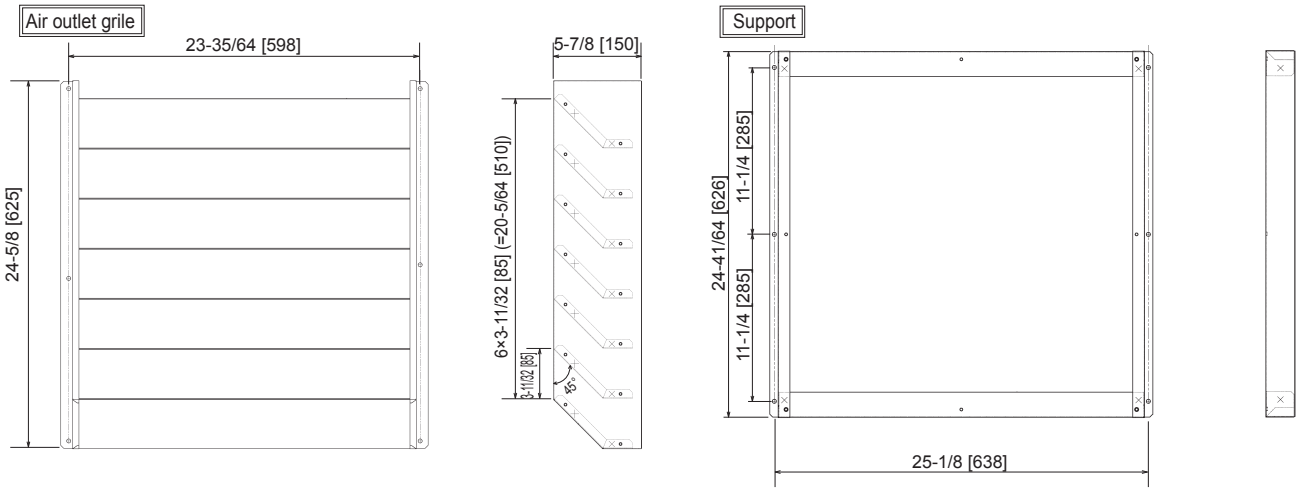
- PUY-AK36/42/48/60NL
- PUZ-AK36/42/48/60NL
- SUZ-AK48/60NL
- PUZ-AK24/30/36/42/48NLHZ
- SUZ-AK24/30/36/48NLHZ

Specifications

Exterior	Color (Munsell)	Ivory (3.0Y 7.8/1.1)
	Material	Air outlet grille: Alloy hot-dip zinc-coated carbon steel sheet
Weight		7kg
Air outlet direction		Changeable between up, down or sideways
Accessory name x Qty. <Material/Surface treatment>		Washer faced screw (M5x15) x 12 (Iron wire (SWCH18A)/Zinc nickel plated) Washer x 12, Spring washer x 12

Dimensions

Unit: inch [mm]



⚠ CAUTION

* Air Guide prevents reverse rotation of outdoor unit fan when it enters low speed rotation mode with fan controller being operated. It is also used for protection of fan when strong winds, such as a typhoon, wind blowing through tall buildings, etc., directly strike the air outlet. In addition, installation of this product is necessary when cooling operation is to be performed in outdoor temperature of -5℃ or lower (down to -15℃).

Note the followings when installing this guide:

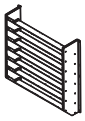
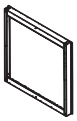
1) Be sure not to use "upward discharge" in a place where snowing is possible. Snow may accumulate in the guard, which could damage the fan, etc.
2) Attaching this unit will decrease the performance (by 2-3%) and increase noise from outdoor unit (by approx. 1-2 dB).
3) Do not use "upward discharge" when there are any obstacles at the back and on both sides of outdoor unit (air is taken in from top of unit): This could cause a short cycle.
4) To eliminate the influence of external wind, be sure to install the unit with its back facing to wall.
5) Do not install this unit in a place where wind directly blows to the back of the unit.

How to Use / How to Install

2-fan type outdoor unit

1 Checking provided parts

Make sure that this package has the following parts as well as the installation sheet:

①Air Discharge guide	1	②Support	1	③Screw(5×15)	12	④Washer	12	⑤Spring washer	12
									

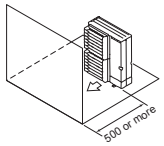
2 Checking Installation Space (Unit: mm)

●Secure the necessary surrounding space shown below and select a place with less obstacles, to prevent a short cycle.

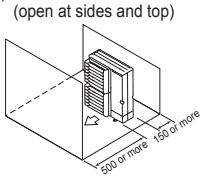
1) Surrounding space needed when installing one unit

・Do not use "upward discharge" in cases of figures (3) and (5) below.

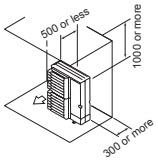
(1) Obstacle at front (open at back, sides and top)



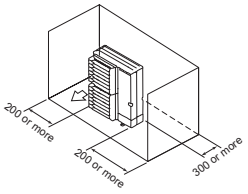
(2) Obstacles at back and front (open at sides and top)



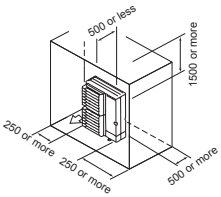
(3) Obstacles at back and top (open at front and sides)



(4) Obstacles at back, and sides (open at front and top)



(5) Obstacles at back, sides and top (open at front)

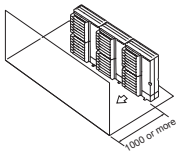


2) Surrounding space needed when installing multiple units

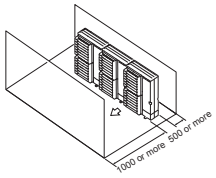
・When installing units horizontally in a series, leave at least 10 mm space between units.

・Do not use "upward discharge" in case of figure (3) below.

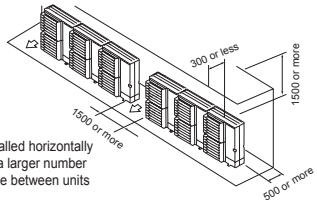
(1) Obstacle at front (open at back, sides and top)



(2) Obstacles at back and front (open at sides and top)

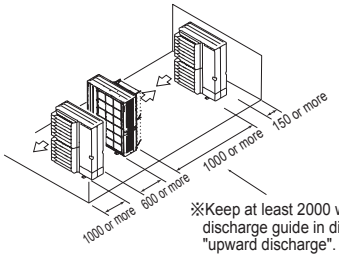


(3) Obstacles at back and top (open at front and sides)



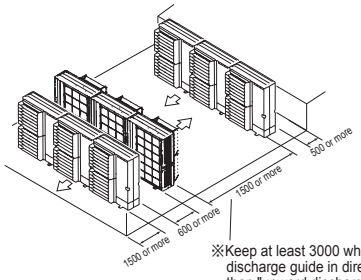
※Limit of 3 units can be installed horizontally in series. When installing a larger number of units, maintain the space between units shown above.

(1) Installing units, one in each row



※Keep at least 2000 when using discharge guide in directions other than "upward discharge".

(2) Installing multiple units in multiple rows

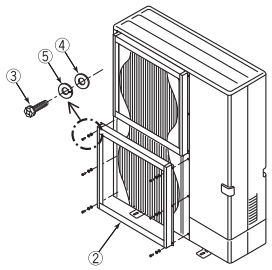


※Keep at least 3000 when using discharge guide in directions other than "upward discharge".

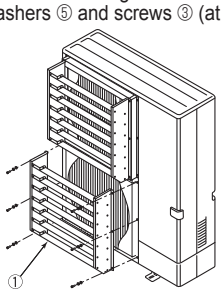
3 Installation Method

・4 blowout directions can be selected: Check the orientation of blowout vane, and attach the blowout guide in the direction that matches the situation at local site.

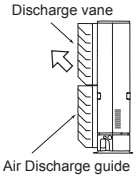
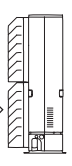
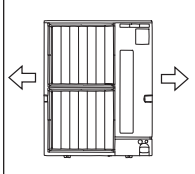
(1)Attach the support ② to the outdoor unit using the washers ④ , spring washers ⑤ and screws ③ (at the 6 points) on the existing fan guard



(2)Set the orientation of the blowout vane of the discharge guide ① to the desired direction and install the vane to the outdoor unit using the washers ④, spring washers ⑤ and screws ③ (at 6 points).

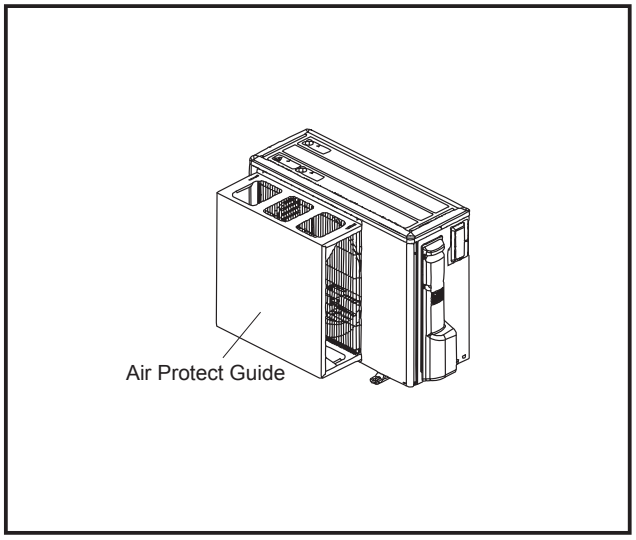


＜Setting blow-off direction＞

Upward	Downward	Sideways (to left or right)
		

Air Protect Guide (for cooling at -15℃) PAC-SJ06AG-E

Figure



Descriptions

Enables operation even when the outside temperature is low.
Protect the unit from cold wind.

Applicable Models

- PUY-AK12/18NL
- PUZ-AK12/18NL

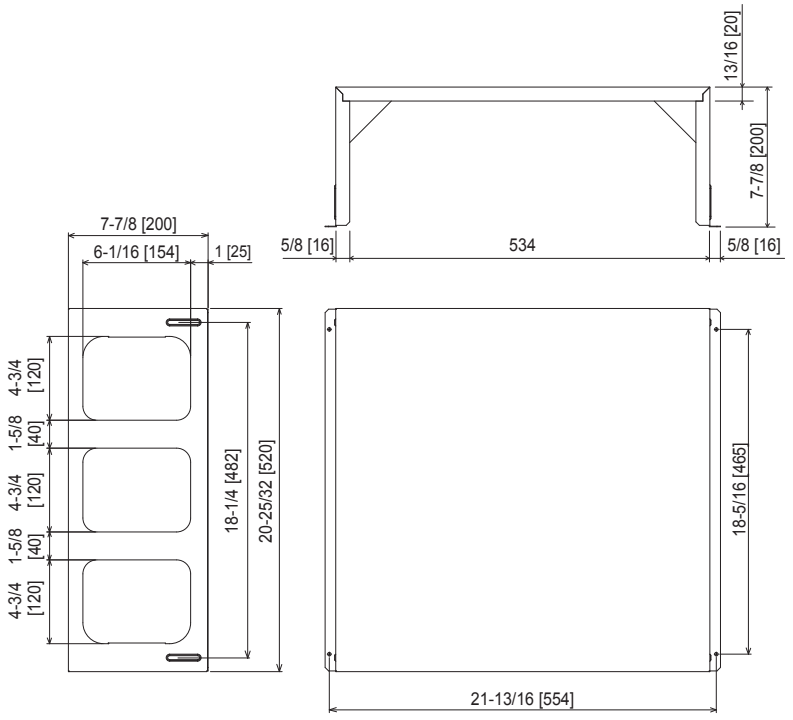
only 1 piece required

Specifications

Exterior	Color (Munsell)	Ivory (3.0Y 7.8/1.1)
	Surface treatment	Acrylic resin coating
	Material	Alloy hot-dip zinc-coated carbon steel sheet
Weight		3.4kg
Accessory name x Qty.		Mounting screw (4x10) x 4 Spring washerx 4

Dimensions

Unit: inch [mm]



⚠ CAUTION

* This Air protect prevents reverse rotation of outdoor unit fan when it enters low speed rotation mode with fan controller being operated. It is also used for protection of fan when strong winds, such as a typhoon, wind blowing through tall buildings, etc., directly strike the air outlet. In addition, installation of this product is necessary when cooling operation is to be performed in outdoor temperature of -5℃ or lower (down to -15℃).

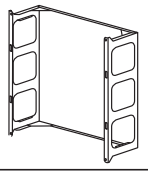
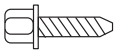
Pay attention to the following points when installing this product:

1) To eliminate the effects of external wind, be sure to install this unit with back surface facing wall side.
2) Do not install this unit in orientation or site where wind directly blows at the back of the unit.
3) Installing of this product will reduce the capacity of the unit (approx. 2 or 3%) and increase the noise of outdoor unit (approx. 1 or 2dB)
4) Do not use this product where there is any obstacle at either side or above the outdoor unit (discharge air will be blocked): This may cause a short cycle.

How to Use / How to Install

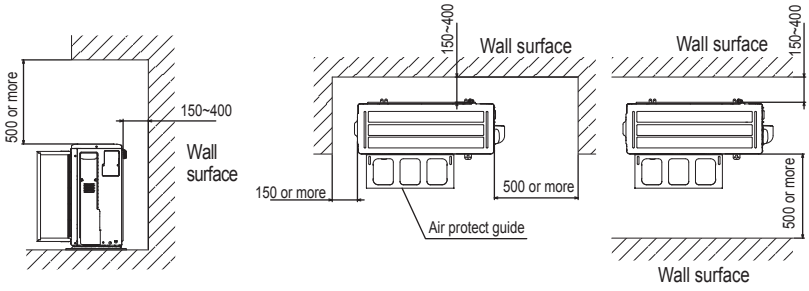
1 Accessories

Make sure that all the following parts, in addition to this manual, are in this box.

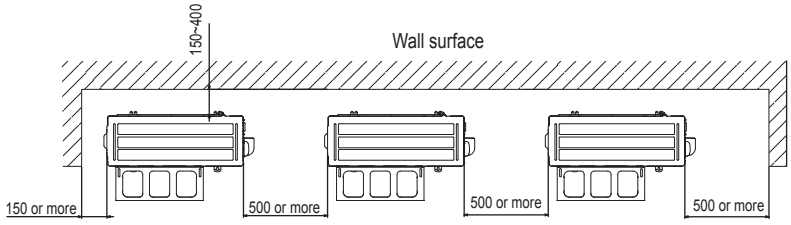
① Air protect guide	1	② Mounting screw 4×16	4	③ Washer	4	④ Spring washer	4
							

2 Requirements of installation space [Unit: mm]

(1) One unit installation:

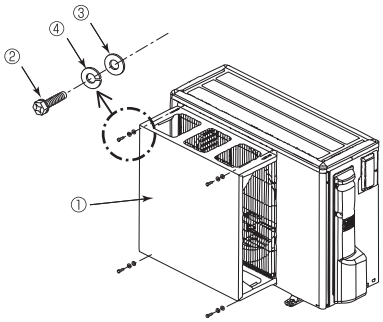


(2) Multiple unit installation: ※Installation of multiple units in series must be no more than five units.



3 Installation procedure

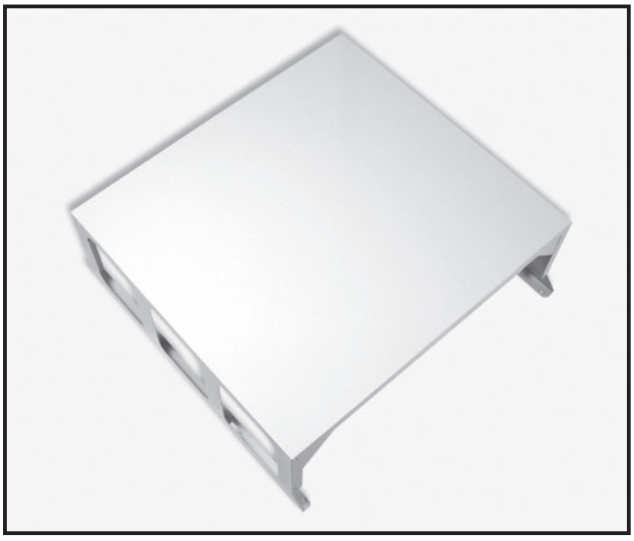
(1) Install the air protect guide ①on the outdoor unit using washers ③, spring washers ④ and screws ②.



Air Protect Guide

PAC-SH63AG-E

Photo



Descriptions

Enables operation even when the outside temperature is low.
Protect the unit from cold wind.

Applicable Models

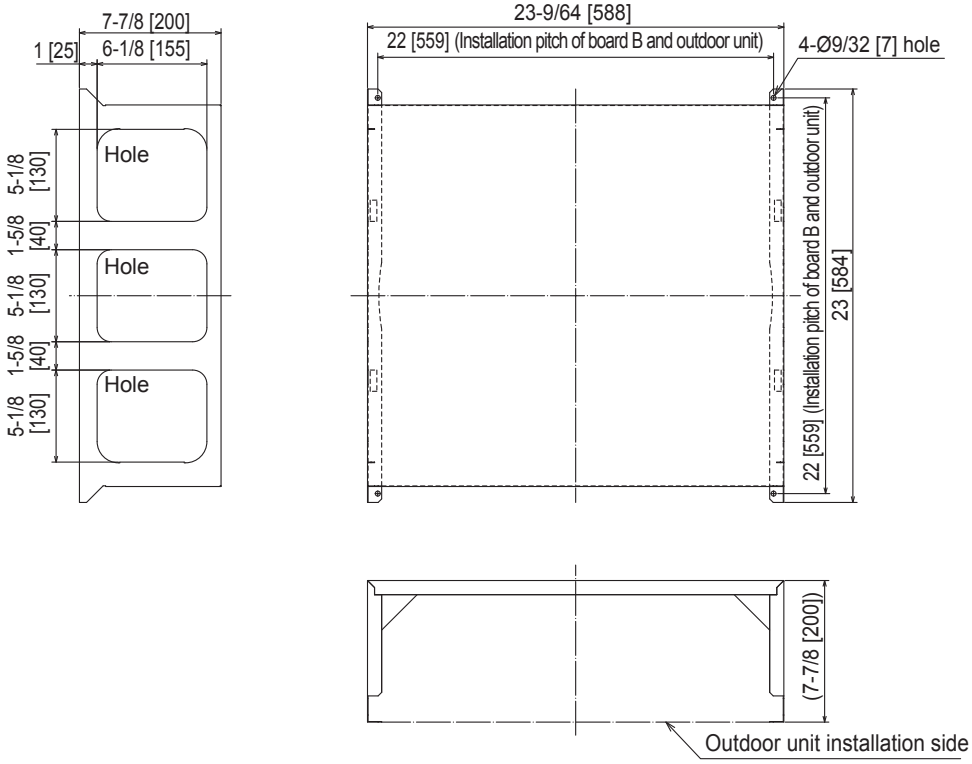
- PUY-AH24/30NL
- PUZ-AH24/30NL

Specifications

Exterior	Color (Munsell)	Ivory (3.0Y 7.8/1.1)
	Surface treatment	Acrylic resin coating
	Material	Alloy hot-dip zinc-coated carbon steel sheet
Weight		3.3kg
Accessory name x Qty. <Material/Surface treatment>		Washer faced screw (M5x15) x 4 <Iron wire (SWCH18A)/Zinc nickel plated>

Dimensions

Unit: inch [mm]



⚠ CAUTION

* Air Guide prevents reverse rotation of outdoor unit fan when it enters low speed rotation mode with fan controller being operated. It is also used for protection of fan when strong winds, such as a typhoon, wind blowing through tall buildings, etc., directly strike the air outlet. In addition, installation of this product is necessary when cooling operation is to be performed in outdoor temperature of -5℃ or lower (down to -15℃).

Note the followings when installing this guide:
1) Be sure not to use "upward discharge" in a place where snowing is possible. Snow may accumulate in the guard, which could damage the fan, etc.
2) Attaching this unit will decrease the performance (by 2-3%) and increase noise from outdoor unit (by approx. 1-2 dB).
3) Do not use "upward discharge" when there are any obstacles at the back and on both sides of outdoor unit (air is taken in from top of unit): This could cause a short cycle.
4) To eliminate the influence of external wind, be sure to install the unit with its back facing to wall.
5) Do not install this unit in a place where wind directly blows to the back of the unit.

How to Use / How to Install

Package air-conditioner Optional parts
Installation Manual for Air Guide

Always observe for safety

- Carefully read this section 「Always observe for safety」, and securely install the optional parts.
- Be sure to observe the cautions described here: They include critical contents for safety.
- The following indications show the classifications for danger, and possible consequences following incorrect handling.

⚠WARNING	Incorrect handling could lead to death or serious injury.
⚠CAUTION	Incorrect handling could lead to injury or damage to house and household articles.

- After installation, perform a test run and make sure that there is no abnormality, and ask your customer to keep this installation sheet with the instruction manual at all times. Also ask the customer to transfer these manuals to a new user if the user changes.

⚠WARNING

Ask the dealer or specialist for installation.
- If installed incorrectly by user, water leak, electric shock, fire, etc. could result.

Carefully install the panel according to this installation sheet.
- Incorrect installation could cause water leak, electric shock, fire, etc.

Before performing installation (moving) and electrical work

⚠CAUTION

Do not place polyethylene bags in reach of young children.
- Putting them over the head will block breathing passages, which could result in suffocation.

If electrical work is necessary, use only specified electric wires adapted with current capacity.
- Use of unsuitable wire could cause electric leak, overheating or fire.

Securely apply heat-insulation to refrigerant pipe so that no condensation occurs.
- If heat-insulation is inadequate, condensation could occur on the surface of pipes and dewdrops could accumulate on ceiling, floor or important goods.

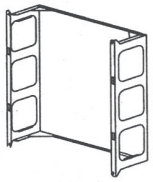
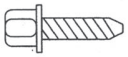
Securely perform drain piping work according to the installation manual so that no condensation occurs.
- If piping work is incorrect, water leak may occur and ceiling, furniture, etc may get wet.

This Air Guide prevents reverse rotation of outdoor unit fan when it enters low speed rotation mode with fan controller being operated. It is also used for protection of fan when strong winds, such as in a typhoon, wind blowing through tall buildings, etc., directly strike the at air outlet.
In addition, installation of this product is necessary when cooling operation is to be performed in outside-air temperature of −5℃ or lower (down to −15℃).
Pay attention to the following points when installing this product:
1) To eliminate the effects of external wind, be sure to install this unit with back surface facing wall side.
2) Do not install this unit in orientation or site where wind directly blows at the back of the unit.
3) Installing of this product will reduce the capacity of the unit (approx. 2 or 3%) and increase the noise of outdoor unit (approx. 1 or 2dB).
4) Do not use this product where there is any obstacle at either side or above the outdoor unit (discharged air will be blocked). This may cause a short cycle.

When 2-fan type outdoor unit is used, note that two sets of this product will be necessary.

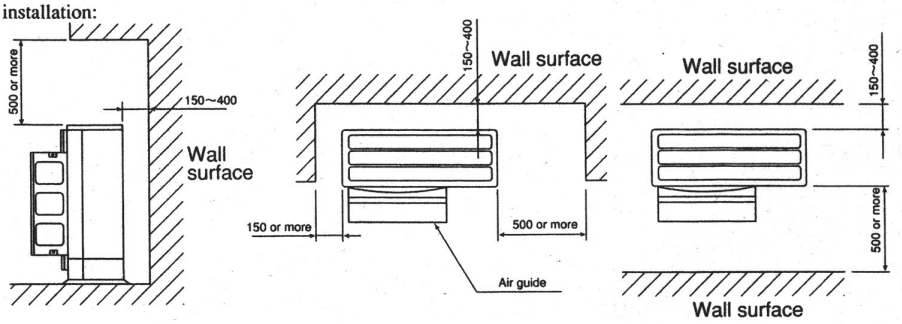
1 Checking parts

Make sure that all the following parts, in addition to this manual, are in this box:

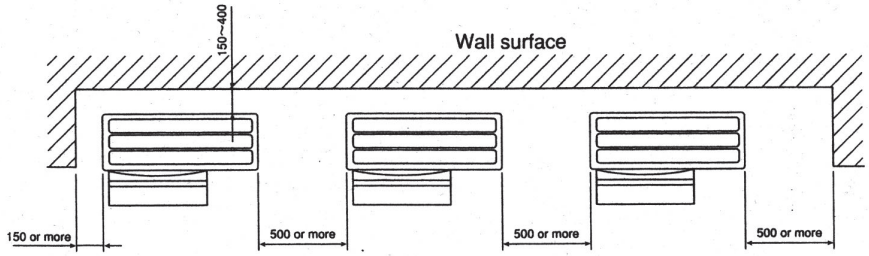
①Air Guide	1	②Mounting screw 5×15	4	③Washer	4	④Spring washer	4
							

2 Requirements of space for installation

(1) One unit installation:

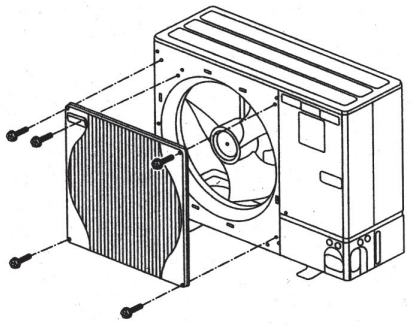


(2) Multiple unit installation: ※Installation of multiple units in series must be no more than five units.

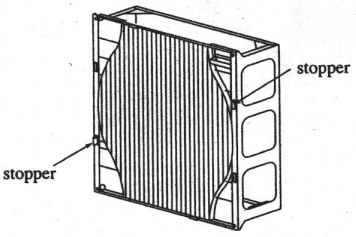


3 Installation procedure

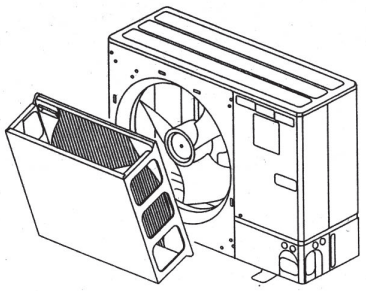
(1) Remove the fan guard fixing screws (five screws on circumference), and then remove the fan guard.



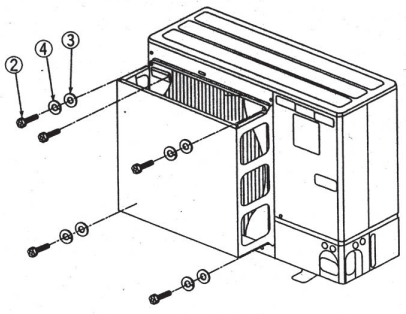
(2) Insert the fan guard stoppers into the square holes on the air guide.



(3) Insert the stoppers (four locations) of the fan guard into the installation holes on the outdoor unit.



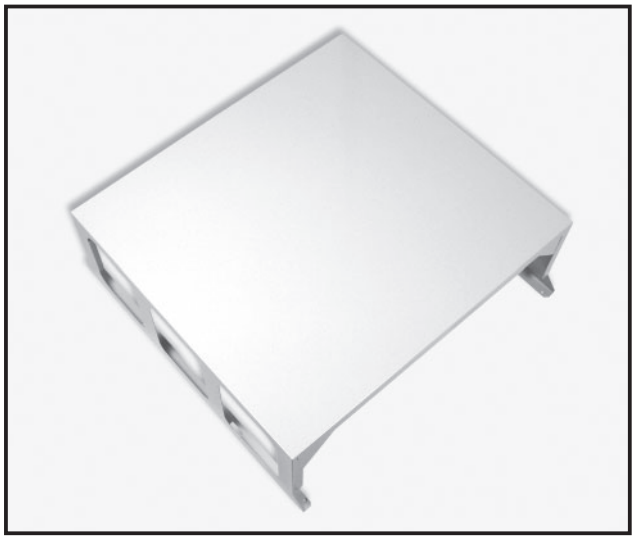
(4) Install the air guide on the outdoor unit using washers (3), spring washers (4) and screws (2).
* Use existing screws for handle section.



Air Protect Guide

PAC-SH95AG-E

Photo



Descriptions

Enables operation even when the outside temperature is low.
Protect the unit from cold wind.

Applicable Models

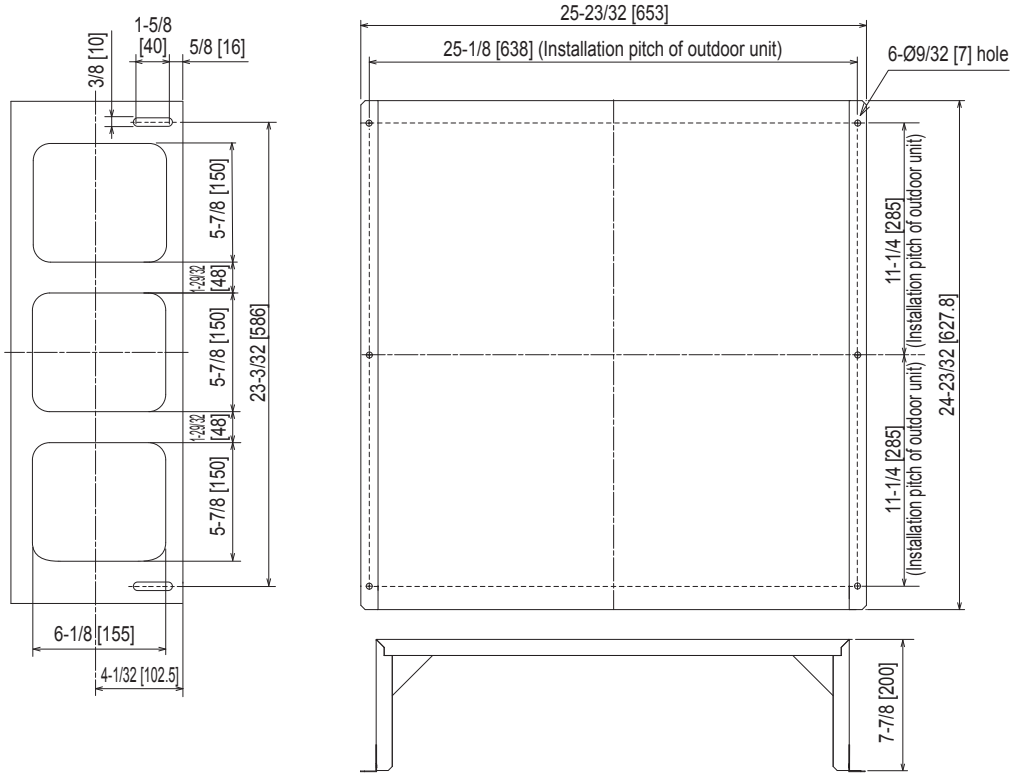
- PUY-AK36/42/48/60NL
- PUZ-AK36/42/48/60NL
- SUZ-AK48/60NL
- PUZ-AK24/30/36/42/48NLHZ
- SUZ-AK24/30/36/48NLHZ

Specifications

Exterior	Color (Munsell)	Ivory (3.0Y 7.8/1.1)
	Surface treatment	Acrylic resin coating
	Material	Alloy hot-dip zinc-coated carbon steel sheet
Weight		3.5kg
Accessory name x Qty. <Material/Surface treatment>		Washer faced screw (M5x15) x 4 <Iron wire (SWCH18A)/Zinc nickel plated>

Dimensions

Unit: inch [mm]



⚠ CAUTION

* Air Guide prevents reverse rotation of outdoor unit fan when it enters low speed rotation mode with fan controller being operated. It is also used for protection of fan when strong winds, such as a typhoon, wind blowing through tall buildings, etc., directly strike the air outlet. In addition, installation of this product is necessary when cooling operation is to be performed in outdoor temperature of -5℃ or lower (down to -15℃).

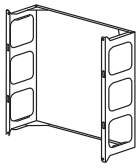
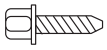
Note the followings when installing this guide:

1) Be sure not to use "upward discharge" in a place where snowing is possible. Snow may accumulate in the guard, which could damage the fan, etc.
2) Attaching this unit will decrease the performance (by 2-3%) and increase noise from outdoor unit (by approx. 1-2 dB).
3) Do not use "upward discharge" when there are any obstacles at the back and on both sides of outdoor unit (air is taken in from top of unit): This could cause a short cycle.
4) To eliminate the influence of external wind, be sure to install the unit with its back facing to wall.
5) Do not install this unit in a place where wind directly blows to the back of the unit.

How to Use / How to Install

1 Checking parts

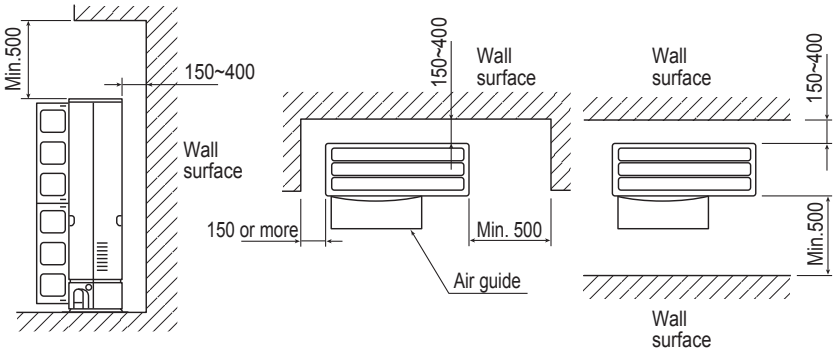
Make sure that all the following parts, in addition to this manual, are in this box:

①Air Guide	1	②Mounting screw (5×15)	6	③Washer	6	④Spring washer	6
							

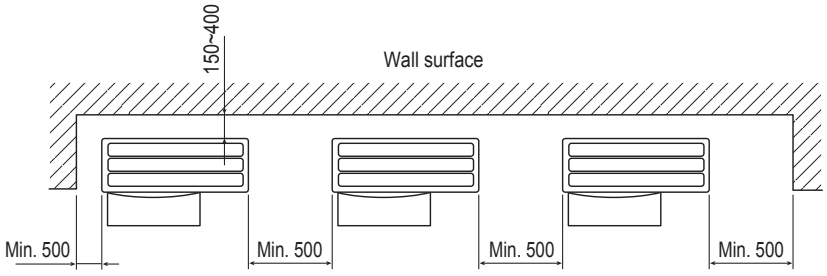
2 Requirements of space for installation

(Unit : mm)

(1)One unit installation

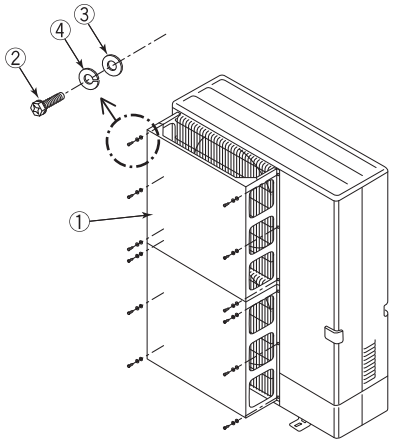


(2)Multiple unit installation : Installation of multiple units in series must be no more than 5 units.



3 Installation procedure

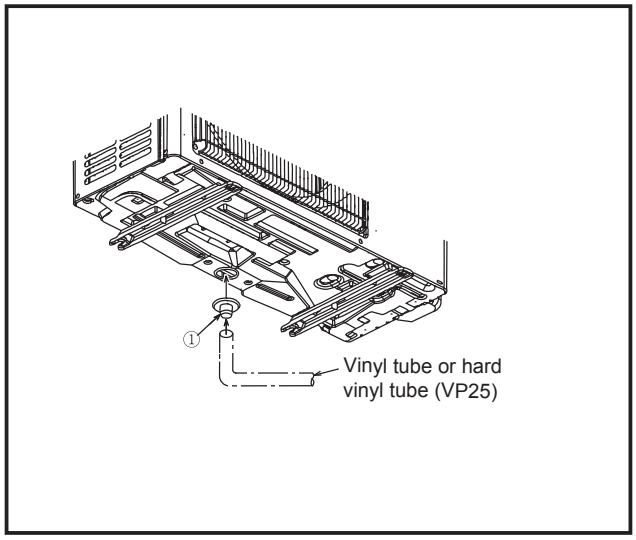
(1)Install the air guide ① on the outdoor unit using washers ③, spring washers ④ and screws ②.



Drain Socket

PAC-SJ08DS-E

Figure



Descriptions

Cap the unnecessary holes on the outdoor unit (bottom) and centralize the drainage when using a drain pipe.

Applicable Models

- PUY-AK12/18NL
- PUZ-AK12/18NL

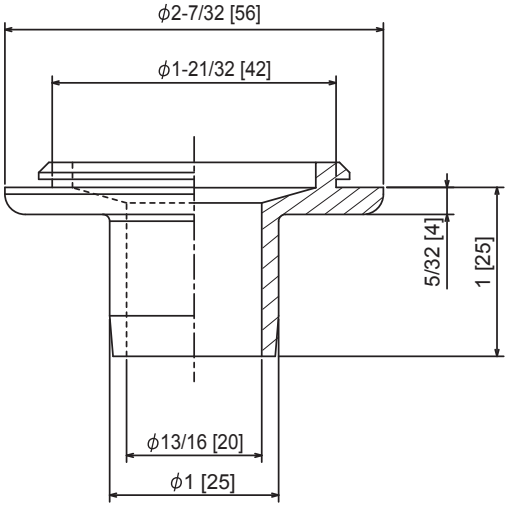
Specifications

Drain pipe	PVC VP-25 or vinyl hose (ID: 25mm)
Operating conditions	No freezing allowed (Never to be used in cold climates)
Material	EPT rubber
Component	Drain socket x 1

Dimensions

Unit: inch [mm]

Drain socket



The outdoor unit is provided with several holes for drainage at the bottom to ma
easier. The drain socket is used to close the unnecessary holes and centralize
when using the drain tube at the installation place.
Do not to use the drain socket in cold areas. The drain tube can be frozen.
※ Condensation could drop through the part fitting holes in the bottom of the ou
Use the centralized drain pan to completely prevent condensation dropping.

1. Accessory

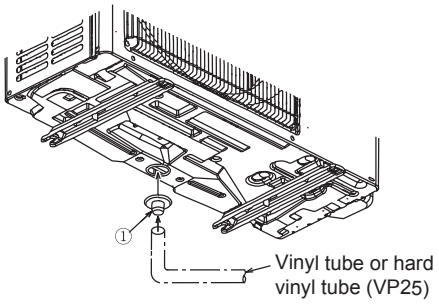
①Drain socket••••••••••••1 pc



Be aware that the part shown to the left is put in the package together with the installation manual.

2. Installation procedure ☆**Prepare the adhesive in the field.**

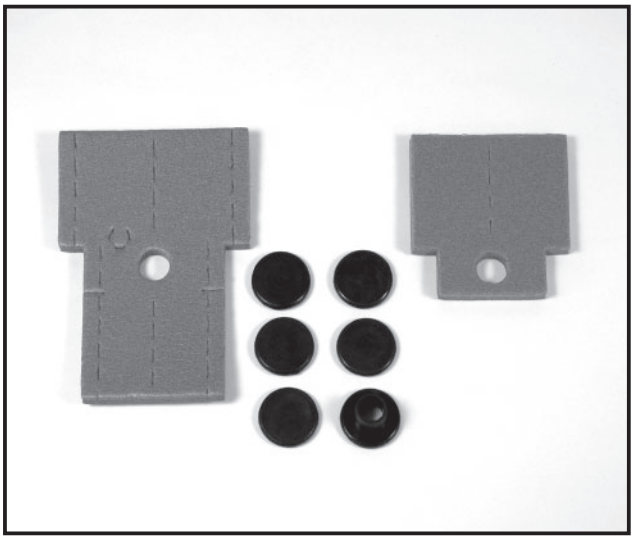
(1) Glue the drain socket ① to the hole that is used to the drainage at the bottom of the unit with the glue (Prepare in the field).
(2) Insert a vinyl tube of which inner diameter 25 mm available commercially or a hard vinyl tube VP25 to the drain socket ①.



Drain Socket

PAC-SG61DS-E

Photo



Descriptions

Cap the unnecessary holes on the outdoor unit (bottom) and centralize the drainage when using a drain pipe.

Applicable Models

- PUY-AH24/30NL
- PUZ-AH24/30NL
- PUY-AK36/42/48/60NL
- PUZ-AK36/42/48/60NL
- SUZ-AK48/60NL
- PUZ-AK24/30/36/42/48NLHZ
- SUZ-AK24/30/36/48NLHZ

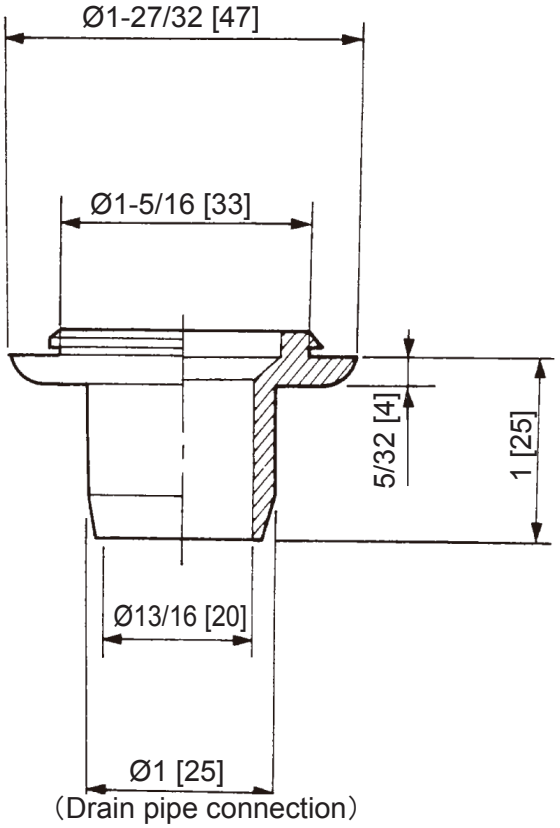
Specifications

Drain pipe	PVC VP-25 or vinyl hose (ID: 25mm)
Operating conditions	No freezing allowed (Never to be used in cold climates)
Material	EPT rubber
Component	Drain socket x 1, Drain cap x 5 Heat insulator x 2 (1 large and 1 small insulator), Band x 8

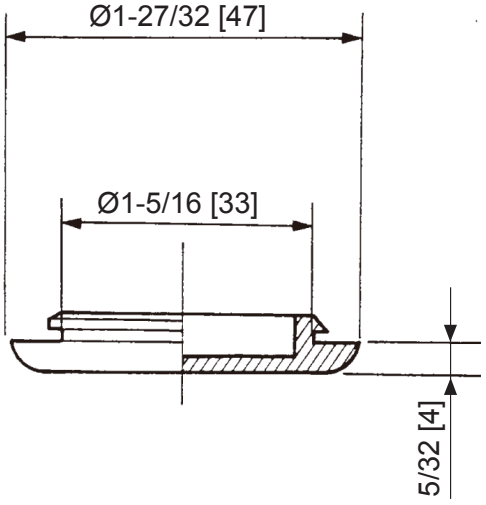
Dimensions

Unit: inch [mm]

Drain socket



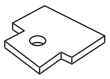
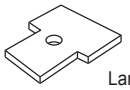
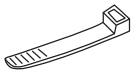
Drain cap



How to Use / How to Install

1 Accessory

Make sure that the following parts are put in the package.

①Drain socket ····· 1 pcs	②Drain cap ····· 5 pcs	
		
③Insulation part (for liquid pipe) ···· 1 pc	④Insulation part (for gas pipe) ····· 1 pc	⑤Band ····· 8 pcs
 Small size	 Large size	

2. Installation method for drain unit ☆Prepare the adhesive in the field.

(1) Glue the drain socket ① to the hole that is used to centralize the drainage among several holes at the bottom of the unit with the glue (Prepare in the field).

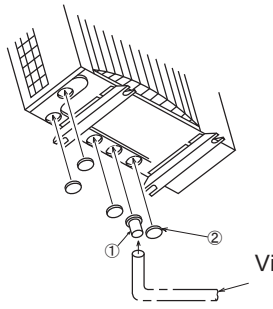
(2) Glue the drain caps ② to close all the other unnecessary holes with the glue (Prepare in the field).

〈Note〉 Apply the glue securely, as the glue (Prepare in the field) will work as seal to prevent water from leaking.

〈Note〉 Use the adhesive for the rubber and metal.

〈Recommended product〉 Supper X series made by CEMEDINE CO., Ltd.

(3) Insert a vinyl tube of which inner diameter 25 mm available commercially or a hard vinyl tube VP25 to the drain socket ①.



3. Installation method for insulation parts

Install the insulation parts to stop valve of the outdoor unit.

※The insulation parts should be installed after the tube has been connected to the unit.

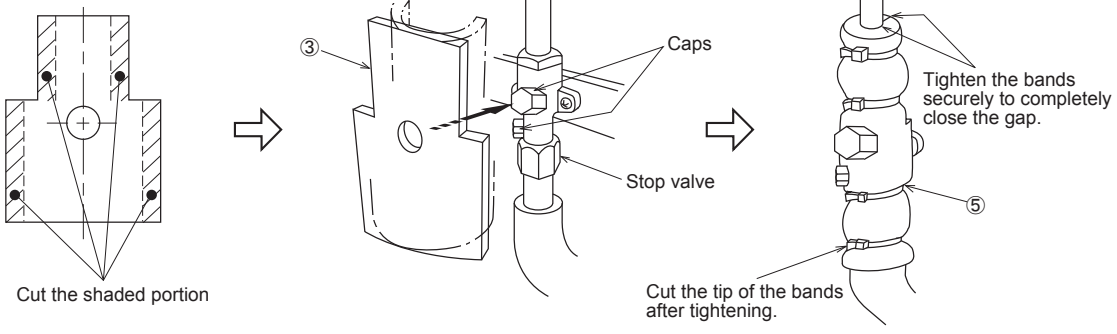
※Some units are provided with a check valve near stop valve. In this case, cut the insulation parts ③ and ④ so that they will fit the stop valve properly.

(1) Install the insulation part ③ with 2 holes to the liquid pipe side so that the holes fit the valve caps and cover the stop valve entirely.

(2) Fix the insulation part ③ securely with bands ⑤.

Install the other insulation part ④ to the gas pipe side with the same procedure.

・Cut both ends of the insulation part ⑤ for gas tube side for the model RP71 or less.



Centralized Drain Pan

PAC-SG63DP-E

Photo



Descriptions

A drain pan for the drain water generated from the outdoor unit.

Applicable Models

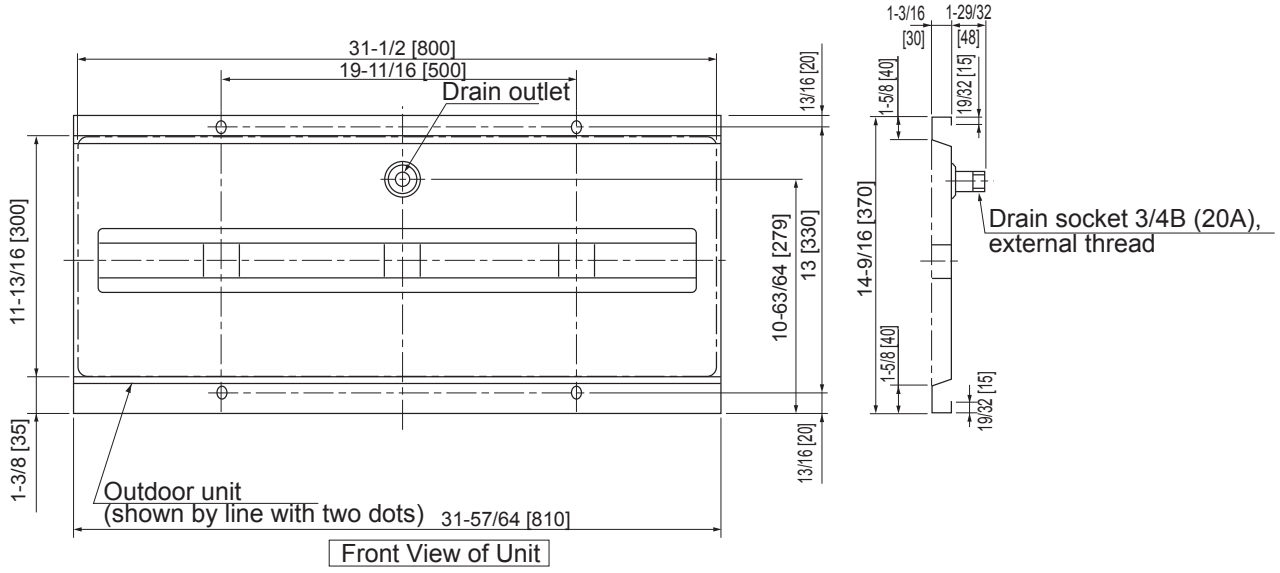
- PUY-AK12/18NL
- PUZ-AK12/18NL

Specifications

Drain outlet size		R3/4 screw (20A)
Exterior	Color (Munsell)	Ivory (3.0Y 7.8/1.1)
	Surface treatment	Acrylic resin coating
	Material	Alloy hot-dip zinc-coated carbon steel sheet (t1.6)
Weight		6.3kg
Mounting bolt (locally prepared)		M10 (or W3/8), length: 48 mm or less extrusion from drain pan's under surface

Dimensions

Unit: inch [mm]

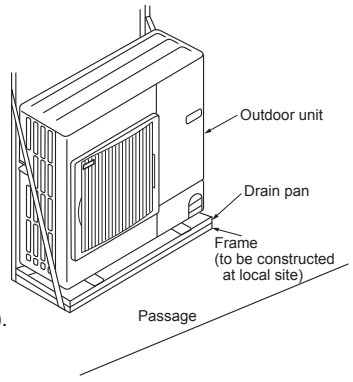


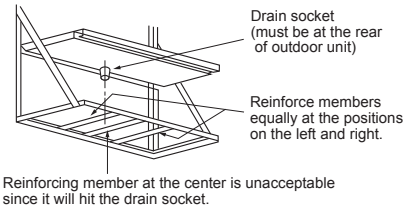
How to Use / How to Install

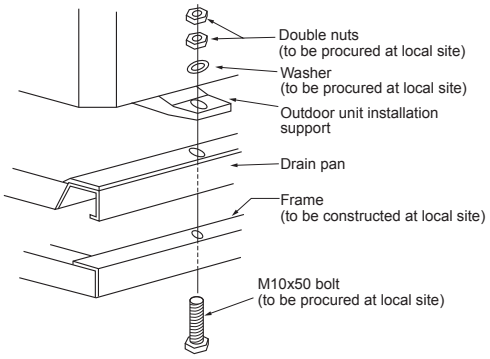
1 Installation Method

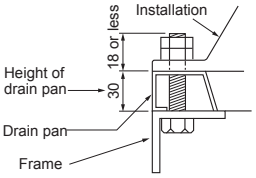
(1) When installing on installation frame

1) The installation frame must have structure and strength that can sufficiently support the outdoor unit and drain pan. Securely install the outdoor unit and drain pan so that they cannot fall or drop as a result of earthquake, strong wind, etc.
2) The drain socket of drain pan is at the center in the longitudinal direction. When constructing the installation frame, be careful that no part of the frame interferes with the socket.
3) The drain pan is tightened with the outdoor unit. Punch approx. ϕ13 holes in the installation frame at pitches to install the outdoor unit.
4) Fix the frame, drain pan and outdoor unit together to join them firmly (at the 4 points). The bolt length must be no more than 60 mm.



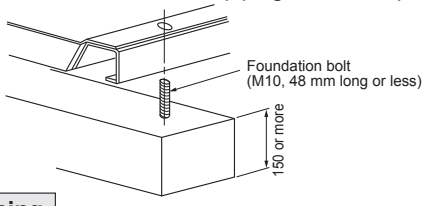


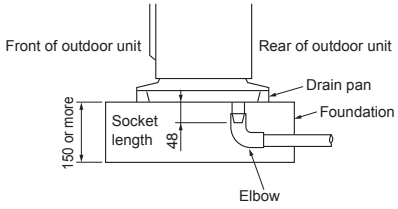




(2) When installing on foundation

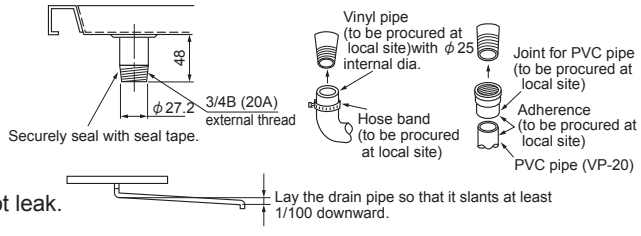
- Since concentrated drain disposal is necessary, make the foundation at least 150 mm high measured from the ground as shown in the figure below.
  If it is less than 150 mm, drain piping will not be possible because the drain socket protrudes 48 mm.





2 Drain Piping

(1) When connecting steel pipe:
Connect 3/4B internally threaded pipe.
(2) When connecting vinyl pipe (soft):
Use a ϕ25 mm internal dia. pipe, and fix the connected section with a hose band, etc.
(3) When connecting PVC pipe (hard):
Use VP-20 and connect with a joint for PVC pipe.
※In all cases, seal the socket threaded section securely with a seal tape, etc., and make sure that water does not leak.

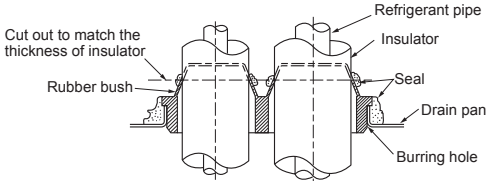


3 Refrigerant Piping

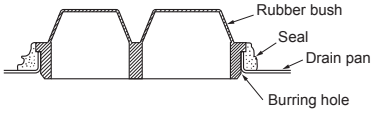
※For PAC-SG64DP-E only

- The refrigerant pipe can be laid in from four directions: front, right, rear and bottom. When laying, be sure to perform the following:

(1) Piping from the bottom:
Cut out the rubber bush to match the thickness of refrigerant pipe insulator. Pass the refrigerant pie through the rubber bush and fit it into the burring hole. Seal it with adhesive that is equivalent to Cemedyne 366 (to be procured at local site) to prevent water leak.



(2)Piping from other directions:
Block the burring hole of the bottom piping section in the drain pan with rubber bush. Seal it with adhesive that is equivalent to Cemedyne 366 (to be procured at local site) to prevent water leak.



Centralized Drain Pan

PAC-SG64DP-E

Photo



Descriptions

A drain pan for the drain water generated from the outdoor unit.

Applicable Models

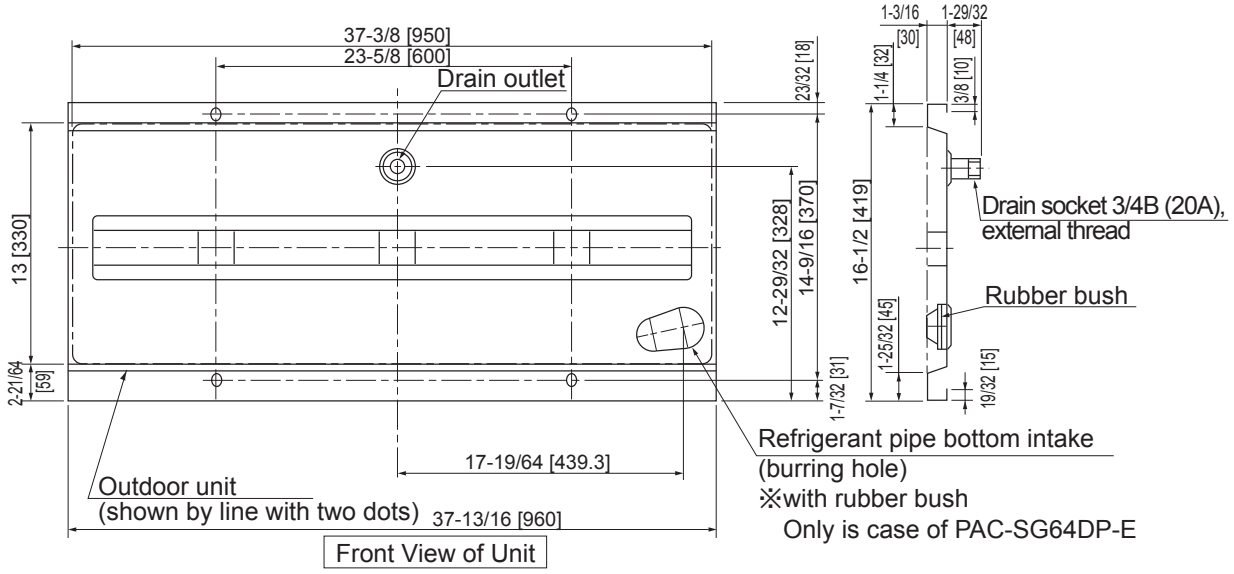
- PUY-AH24/30NL
- PUZ-AH24/30NL

Specifications

Drain outlet size		R3/4 screw (20A)
Exterior	Color (Munsell)	Ivory (3.0Y 7.8/1.1)
	Surface treatment	Acrylic resin coating
	Material	Alloy hot-dip zinc-coated carbon steel sheet (t1.6)
Weight		7.8kg
Mounting bolt (locally prepared)		M10 (or W3/8), length: 60 mm or less extrusion from drain pan's under surface

Dimensions

Unit: inch [mm]

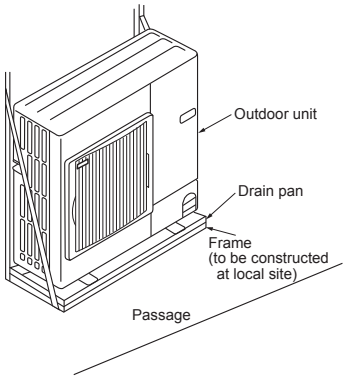


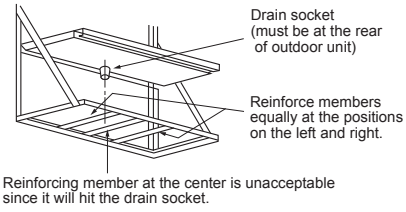
How to Use / How to Install

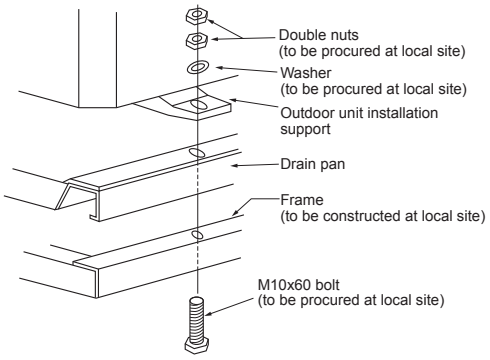
1 Installation Method

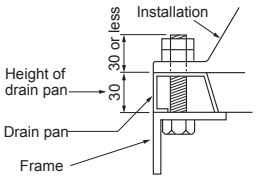
(1) When installing on installation frame

1) The installation frame must have structure and strength that can sufficiently support the outdoor unit and drain pan. Securely install the outdoor unit and drain pan so that they cannot fall or drop as a result of earthquake, strong wind, etc.
2) The drain socket of drain pan is at the center in the longitudinal direction. When constructing the installation frame, be careful that no part of the frame interferes with the socket.
3) The drain pan is tightened with the outdoor unit. Punch approx. ϕ13 holes in the installation frame at pitches to install the outdoor unit.
4) Fix the frame, drain pan and outdoor unit together to join them firmly (at the 4 points). The bolt length must be no more than 60 mm.



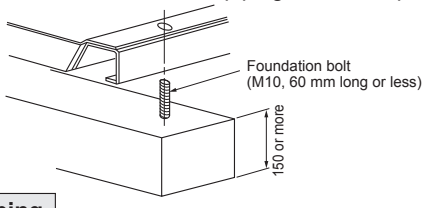


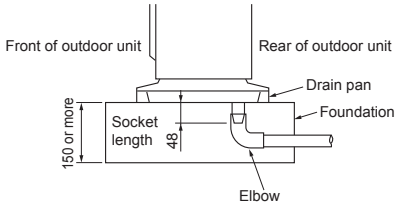




(2) When installing on foundation

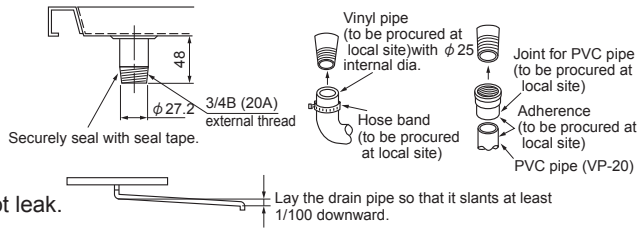
- Since concentrated drain disposal is necessary, make the foundation at least 150 mm high measured from the ground as shown in the figure below.
  If it is less than 150 mm, drain piping will not be possible because the drain socket protrudes 48 mm.





2 Drain Piping

(1) When connecting steel pipe:
Connect 3/4B internally threaded pipe.
(2) When connecting vinyl pipe (soft):
Use a ϕ25 mm internal dia. pipe, and fix the connected section with a hose band, etc.
(3) When connecting PVC pipe (hard):
Use VP-20 and connect with a joint for PVC pipe.
※In all cases, seal the socket threaded section securely with a seal tape, etc., and make sure that water does not leak.



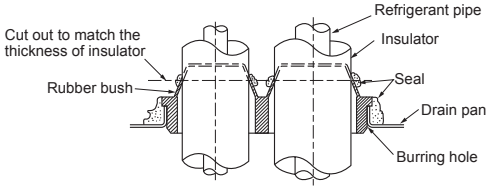
3 Refrigerant Piping

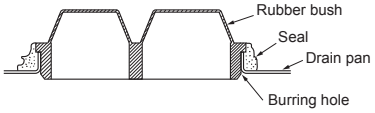
※For PAC-SG64DP-E only

- The refrigerant pipe can be laid in from four directions: front, right, rear and bottom. When laying, be sure to perform the following:

(1) Piping from the bottom:
Cut out the rubber bush to match the thickness of refrigerant pipe insulator. Pass the refrigerant pie through the rubber bush and fit it into the burring hole. Seal it with adhesive that is equivalent to Cemedyne 366 (to be procured at local site) to prevent water leak.

(2)Piping from other directions:
Block the burring hole of the bottom piping section in the drain pan with rubber bush. Seal it with adhesive that is equivalent to Cemedyne 366 (to be procured at local site) to prevent water leak.





Centralized Drain Pan

PAC-SH97DP-E

Photo



Descriptions

A drain pan for the drain water generated from the outdoor unit.

Applicable Models

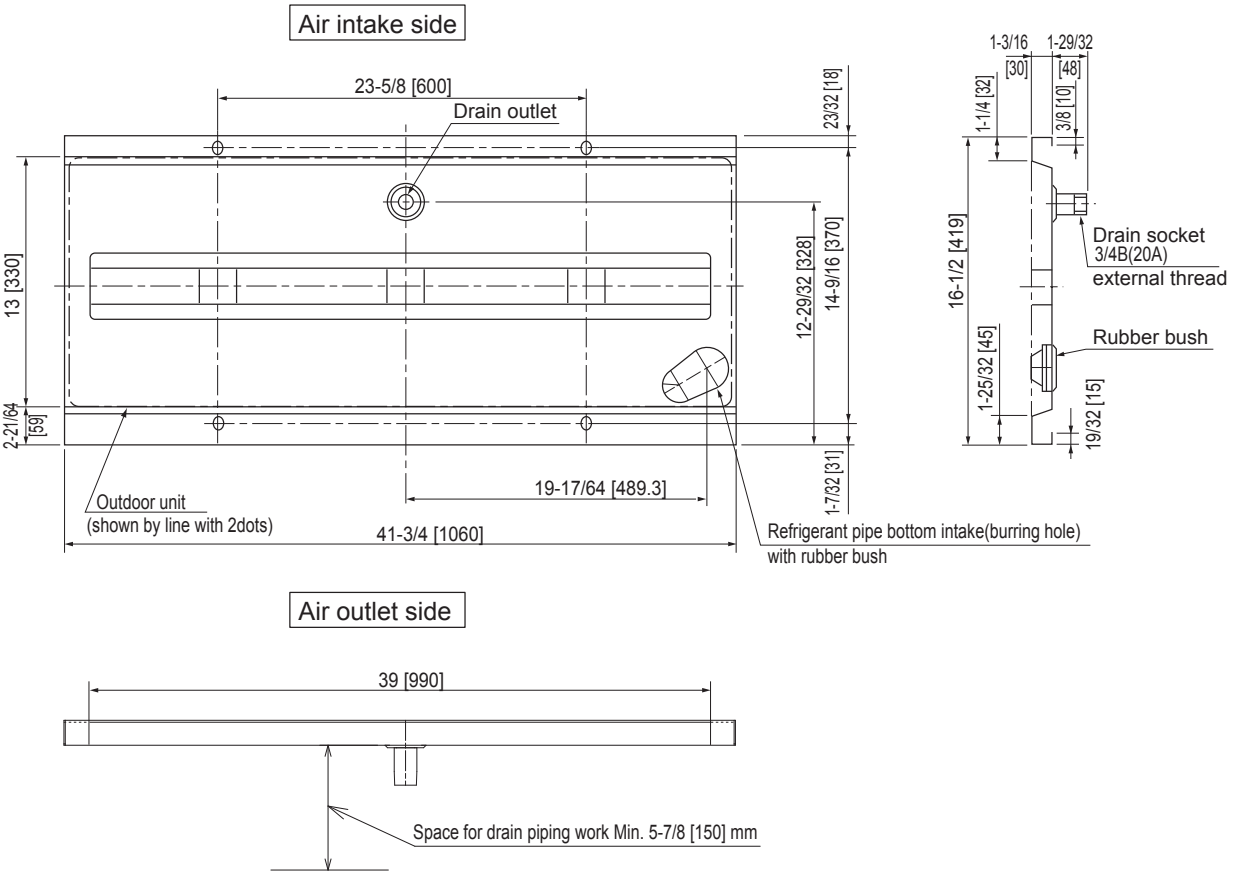
- PUY-AH24/30NL
- PUZ-AH24/30NL
- PUY-AK36/42/48/60NL
- PUZ-AK36/42/48/60NL
- SUZ-AK48/60NL
- PUZ-AK24/30/36/42/48NLHZ
- SUZ-AK24/30/36/48NLHZ

Specifications

Drain outlet size		R3/4 screw (20A)
Exterior	Color (Munsell)	Ivory (3.0Y 7.8/1.1)
	Surface treatment	Acrylic resin coating
	Material	Alloy hot-dip zinc-coated carbon steel sheet (t1.6)
Weight		8.8kg
Mounting bolt (locally prepared)		M10 (or W3/8), length: 60 mm or less extrusion from drain pan's under surface

Dimensions

Unit: inch [mm]

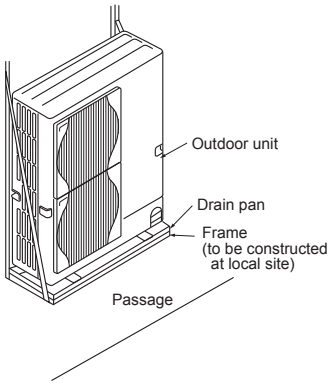


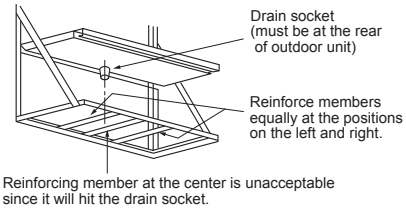
How to Use / How to Install

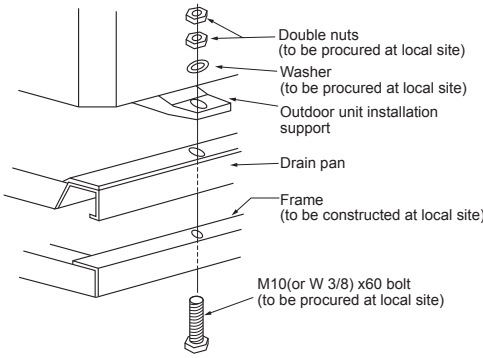
1 Installation Method

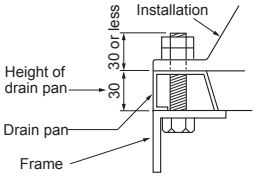
(1) When installing on installation frame

1) The installation frame must have structure and strength that can sufficiently support the outdoor unit and drain pan. Securely install the outdoor unit and drain pan so that they cannot fall or drop as a result of earthquake, strong wind, etc.
2) The drain socket of drain pan is at the center in the longitudinal direction. When constructing the installation frame, be careful that no part of the frame interferes with the socket.
3) The drain pan is tightened with the outdoor unit. Punch approx. ϕ13 holes in the installation frame at pitches to install the outdoor unit.
4) Fix the frame, drain pan and outdoor unit together to join them firmly (at the 4 points). The bolt length must be no more than 60 mm.



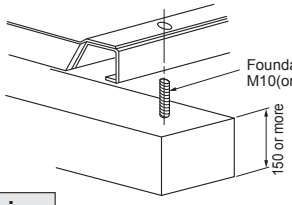


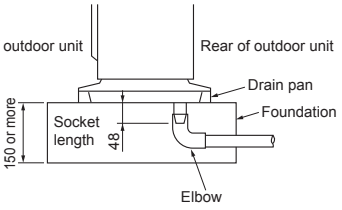




(2) When installing on foundation

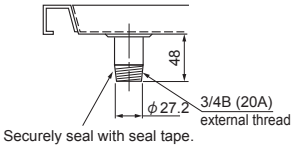
- Since concentrated drain disposal is necessary, make the foundation at least 150 mm high measured from the ground as shown in the figure below.
  If it is less than 150 mm, drain piping will not be possible because the drain socket protrudes 48 mm.

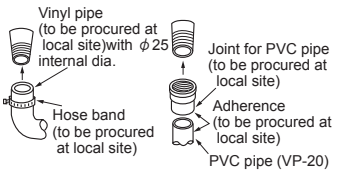


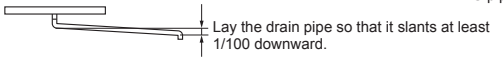


2 Drain Piping

(1) When connecting steel pipe:
Connect 3/4B internally threaded pipe.
(2) When connecting vinyl pipe (soft):
Use a ϕ25 mm internal dia. pipe, and fix the connected section with a hose band, etc.
(3) When connecting PVC pipe (hard):
Use VP-20 and connect with a joint for PVC pipe.
※In all cases, seal the socket threaded section securely with a seal tape, etc., and make sure that water does not leak.



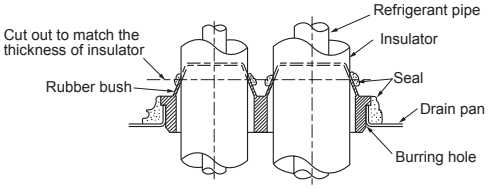




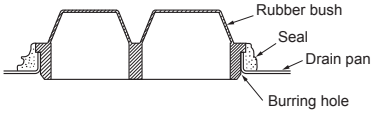
3 Refrigerant Piping

- The refrigerant pipe can be laid in from four directions: front, right, rear and bottom. When laying, be sure to perform the following:

(1) Piping from the bottom:
Cut out the rubber bush to match the thickness of refrigerant pipe insulator. Pass the refrigerant pie through the rubber bush and fit it into the burring hole. Seal it with adhesive that is equivalent to Cemedyne 366 (to be procured at local site) to prevent water leak.



(2)Piping from other directions:
Block the burring hole of the bottom piping section in the drain pan with rubber bush. Seal it with adhesive that is equivalent to Cemedyne 366 (to be procured at local site) to prevent water leak.



M-NET Converter

PAC-SJ96MA-E

Descriptions

A-control Mr. SLIM models can be connected to "M-NET" through optional M-NET converter so that they can be monitored / controlled effectively and meticulously.

Applicable Models

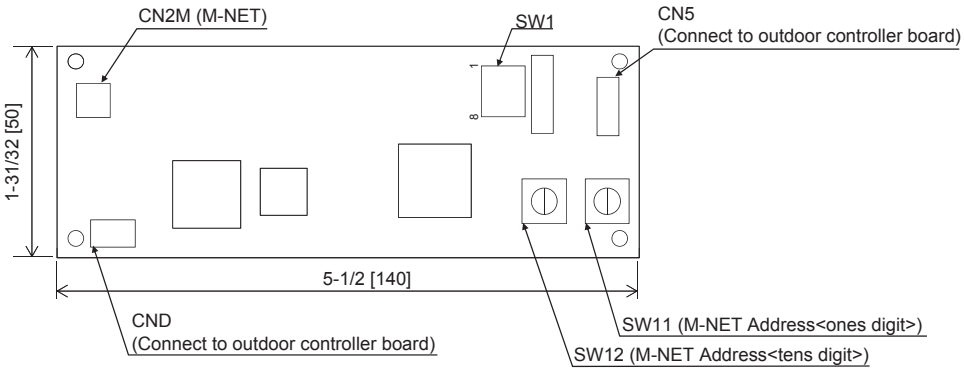
- PUY-AK12/18NL
- PUZ-AK12/18NL

Specifications

Power	Supplied from control board
Power consumption	0.6W (at 5V DC, 12V DC)
Operating conditions	Mounted inside the electrical utility box of outdoor unit. (Temperature: -20 to 60℃ , humidity: 90% or less (no condensation))
Weight	0.3kg

Dimensions

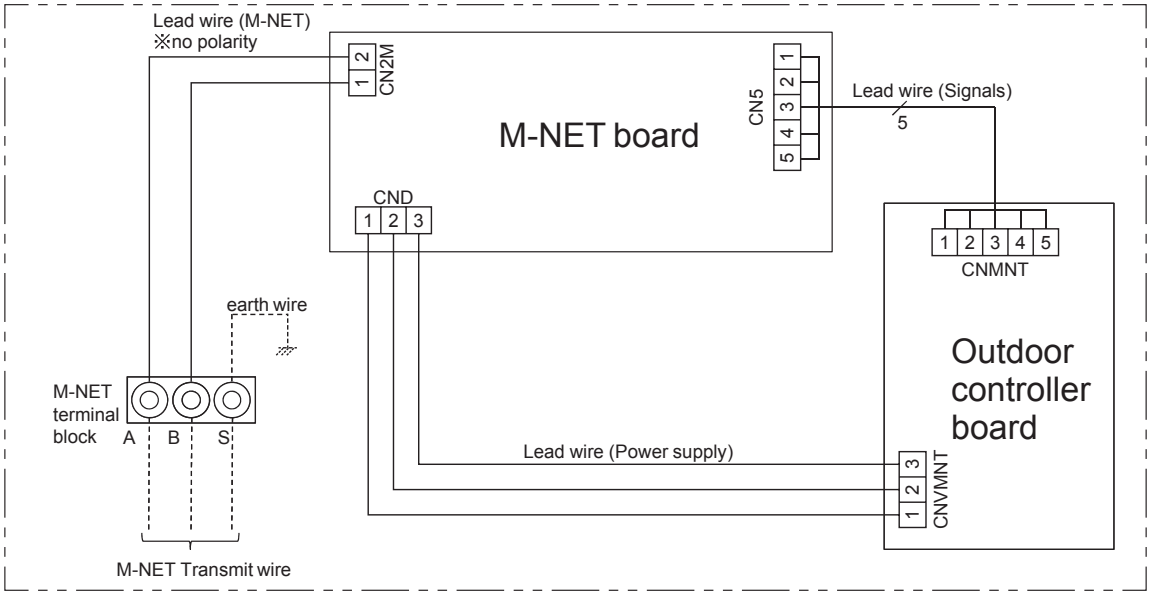
Unit: inch [mm]



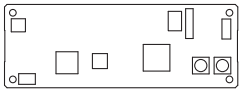
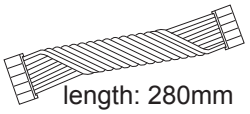
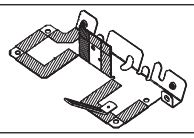
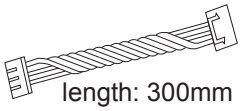
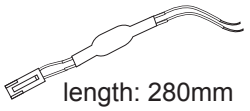
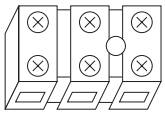
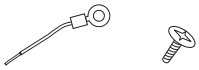
How to Use / How to Install

1. Wiring diagram

The electrical box of outdoor unit.



2. Parts list

No.	Description	Figure	Q'ty	No.	Description	Figure	Q'ty
①	M-NET board (with insulation sheets and supports)		1	⑦	Lead wire (5 wires) for signals	 length: 280mm	1
②	Mounting plate (M-NET board)		1	⑧	Lead wire (3 wires) for power supply	 length: 300mm	1
③	Screw (M4×8)		2	⑨	Lead wire (M-NET)	 length: 280mm	1
④	Terminal block (M-NET)		1	⑩	Earth wire and screw (M4×8)		1 each
⑤	Terminal screw (M3×20)		1	⑪	Cable tie		2
⑥	Label		1				

3. Switch setting

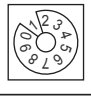
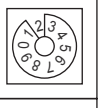
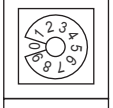
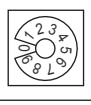
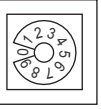
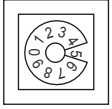
■ M-NET address setting

Make M-NET setting and refrigerant address setting on only outdoor unit.
There is no address settings for outdoor unit and remote controller like City Multi system.
The M-NET address setting for taking into centralized control system should be done only to the outdoor unit.
The address set number should be 1-50 same as for City Multi indoor unit and make set in order of number for the same group.

	A control slim	City Multi (M-NET)
Indoor unit	—	1~50
Outdoor unit	1~50	51~100
Remote controller	—	101~150
System controller	201~250	
Group remote controller	201~250	

The setting should be done by rotary switches SW11 (ones digit) and SW12 (tens digit) on M-NET board of the outdoor unit. (Factory settings are all zero.)

[Example]

M-NET address No.		1	2	~	50
Switch setting	SW11 (ones digit)				
	SW12 (tens digit)				

M-NET Converter

PAC-SJ95MA-E

Descriptions

A-control Mr. SLIM models can be connected to "M-NET" through optional M-NET converter so that they can be monitored / controlled effectively and meticulously.

Applicable Models

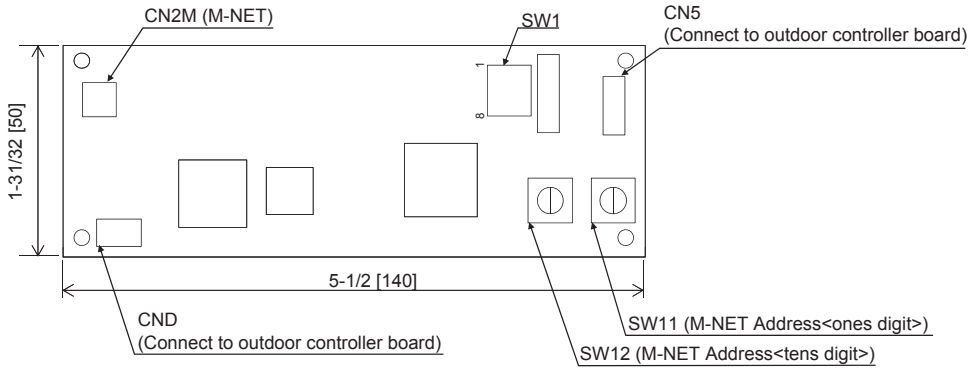
- PUY-AH24/30NL
- PUZ-AH24/30NL
- PUY-AK36/42/48/60NL
- PUZ-AK36/42/48/60NL
- SUZ-AK48/60NL
- PUZ-AK24/30/36/42/48NLHZ
- SUZ-AK24/30/36/48NLHZ

Specifications

Power	Supplied from control board
Power consumption	0.6W (at 5V DC, 12V DC)
Operating conditions	Mounted inside the electrical utility box of outdoor unit. (Temperature: -20 to 60℃ , humidity: 90% or less (no condensation))
Weight	0.3kg

Dimensions

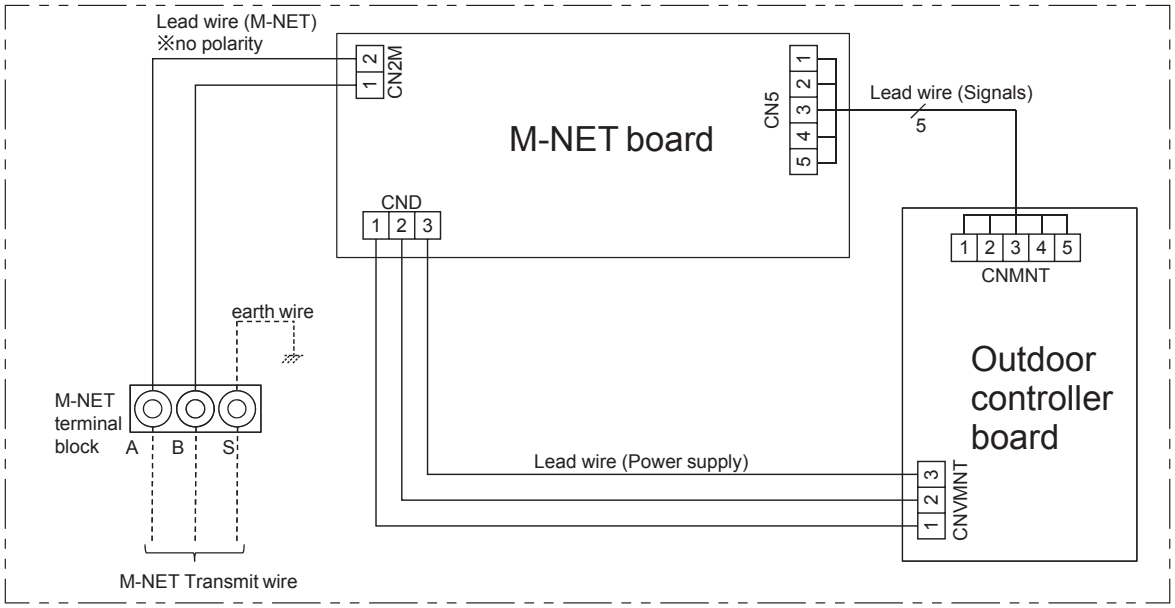
Unit: inch [mm]



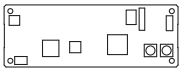
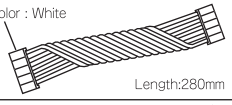
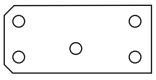
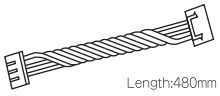
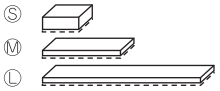
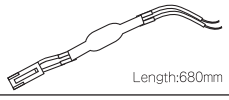
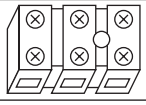
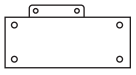
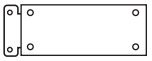
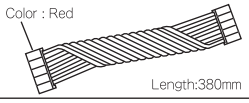
How to Use / How to Install

1. Wiring diagram

The electrical box of outdoor unit.



2. Parts List

No.	Description	Figure	Q'ty	No.	Description	Figure	Q'ty
①	M-NET board (with insulation sheets and supports)		1	⑨	Lead wire-B (5 wires)		1
②	Plate (For mounting circuit board)		1	⑩	Lead wire-C (3 wires)		1
③	Insulation sheets Ⓢ, Ⓜ, Ⓛ		Ⓢ 1 Ⓜ 1 Ⓛ 1	⑪	Lead wire-D (2 wires)		1
④	Screw (M4×8)		2	⑫	Ground wire and screw (M4×8)		1each
⑤	Terminal block (M-NET)		1	⑬	Pull tight		2
⑥	Terminal screw (M3x20)		1	⑭	Plate 2 (For mounting circuit board)		1
⑦	Label		1	⑮	Plate 3 (For mounting circuit board)		1
⑧	Lead wire-A (5 wires)		1				

3. Switch setting

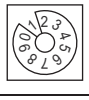
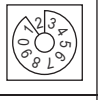
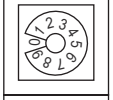
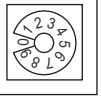
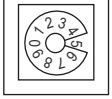
■ M-NET address setting

Make M-NET setting and refrigerant address setting on only outdoor unit.
There is no address settings for outdoor unit and remote controller like City Multi system.
The M-NET address setting for taking into centralized control system should be done only to the outdoor unit.
The address set number should be 1-50 same as for City Multi indoor unit and make set in order of number for the same group.

	A control slim	City Multi (M-NET)
Indoor unit	—	1~50
Outdoor unit	1~50	51~100
Remote controller	—	101~150
System controller	201~250	
Group remote controller	201~250	

The setting should be done by rotary switches SW11 (ones digit) and SW12 (tens digit) on M-NET board of the outdoor unit. (Factory settings are all zero.)

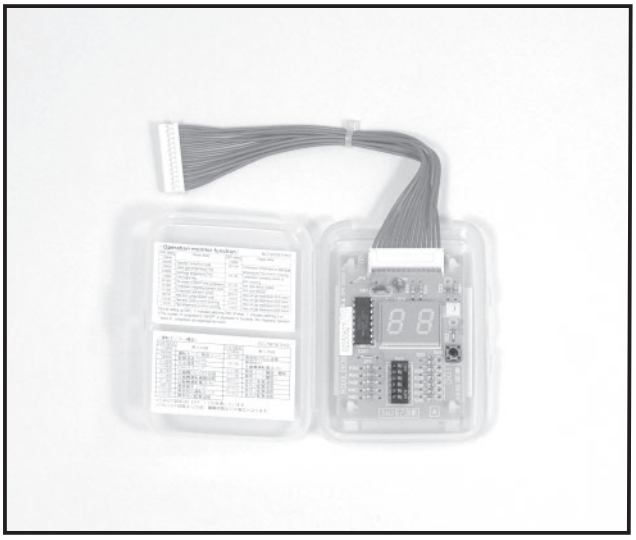
[Example]

M-NET address No.		1	2	~	50
Switch setting	SW11 (ones digit)				
	SW12 (tens digit)				

Control / Service Tool

PAC-SK52ST

Photo



Descriptions

This item is used to display operation and self-diagnosis state.

Applicable Models

- PUY-AK12/18NL
- PUZ-AK12/18NL
- PUY-AH24/30NL
- PUZ-AH24/30NL
- PUY-AK36/42/48/60NL
- PUZ-AK36/42/48/60NL
- SUZ-AK48/60NL
- PUZ-AK24/30/36/42/48NLHZ
- SUZ-AK24/30/36/48NLHZ

Specifications

Power	5V DC (supplied from outdoor unit control board)
Temperature	-20 to 60℃, Humidity: 90% RH or less (no condensation)
External dimensions	69 (W) x 91 (H) x 27 (D) (mm), excluding lead wires
Weight	0.05kg

How to Use / How to Install

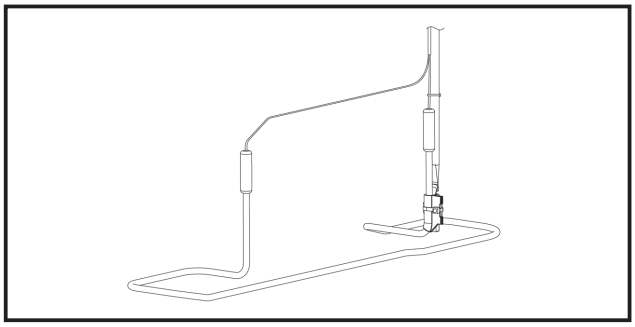
- Notes on Use
  - Before installing / removing a control / service tool, make sure that the main power to this unit is turned OFF.
  - The connector for control / service tool has a lock. Connection / removal of the connector must be dine with the locking lever pressed.

- How to Use
  1. Connect the control / service tool connector to the [CNM] connector on the outdoor unit control board.
  2. Operating the control / service tool's DIP switch "SW2" causes "LED1" to display the operation state and inspection code description using 2-digit value and symbols. "SW2" setting varies with the unit to be connected. For details of the display content, refer to the appropriate service handbook.
  3. After the control / service tool has been used, remove it from the outdoor unit control board.

Base Heater

PAC-SK62BH-E

Figure



Descriptions

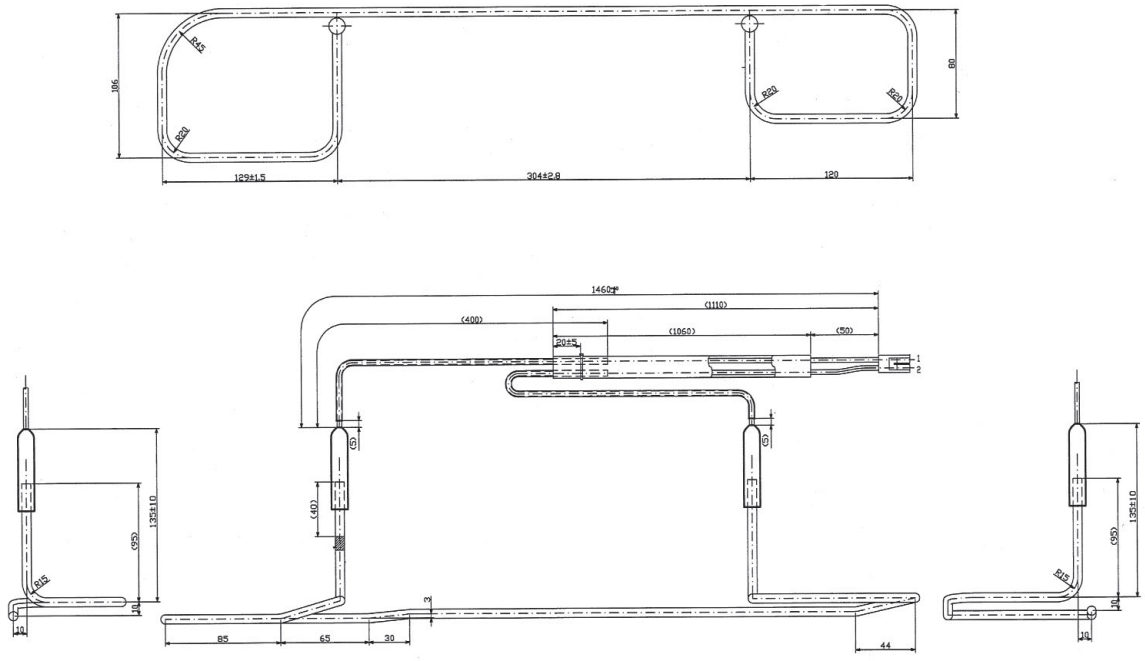
- This product is designed for prevention of ice on the bottom of the outdoor unit heat exchanger and the clogged drain hole caused by freezing in severe winter.
- To drain properly, a drain socket and a concentrated drain pan are not allowed to be used with this product.

Applicable Models

■ PUZ-AH24/30NL

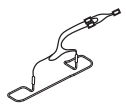
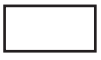
Dimensions

Unit: inch [mm]



Specifications

Components

① Base heater	1	② Base heater support	1	③ Screws 4×10	4	④ Cable ties	3	⑤ Fasteners	2	⑥ Spec label	1
						 required: 2 spare: 1		 required: 1 spare: 1			

How to Use / How to Install

1 Preparation

It is easier to mount the base heater before installing the outdoor unit.
• Make sure that the main power supply to the unit is OFF.
• Do not lose the removed screws. Many screws will be removed to install the base heater.
• Eliminate dust, dirt, etc.

2 Preparation for mounting the base heater

Before mounting the base heater, follow the procedures below to remove some parts from the outdoor unit.

❶ Removal of service panel
Remove 3 screws on the front. Slide the service panel downward to remove it.

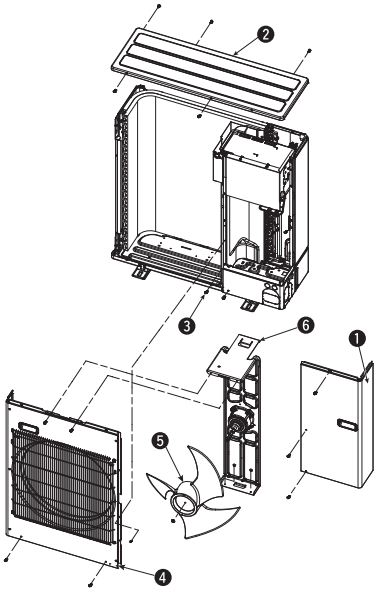
❷ Removal of top panel
Remove 2 screws on the front and 3 screws on the back. Lift the top panel up to remove it.

❸ Removal of cover panel
Remove 2 screws for the cover panel.

❹ Removal of front panel
Remove 5 screws on the front. Slide the front panel upward, and pull it toward you.

❺ Removal of fan
Remove the mounting nut for the fan. Pull the fan toward you to remove it.

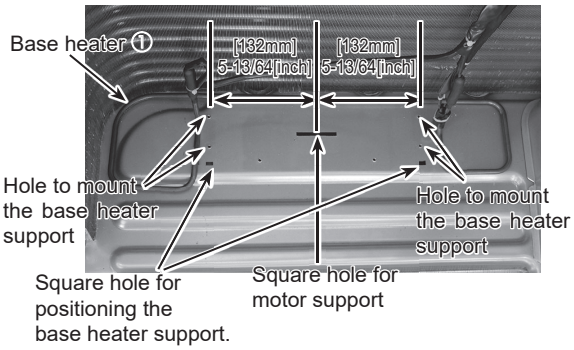
❻ Removal of motor support
Disconnect the connector of the fan motor, and remove 2 screws for the motor support. Lift motor support up to remove it.



4 Mounting the base heater

❶ Temporarily place the base heater ① on the base so that the square hole for the motor support on the base comes to the center of the base heater ①.
<Photo 1>

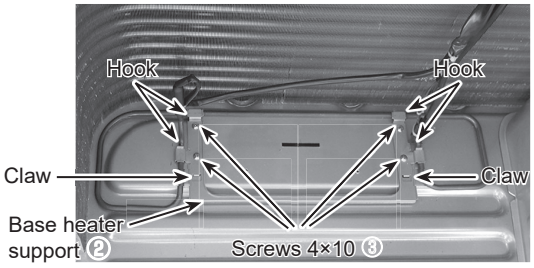
<Photo 1>



5 Mounting the base heater support

Place the base heater support ② as shown in the right photo.
- Insert the 2 claws on the base heater support into the square holes on the base. <Photo 2>
- Fix the base heater with the 4 hooks on the base heater support. <Photo 2>
- Fix them with the screws 4×10 ③. <Photo 2>

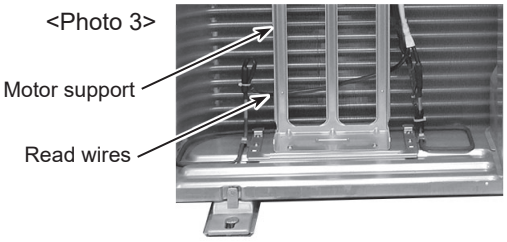
<Photo 2>



6 Mounting the motor support

Mount the motor support.
- Pass the lead wires through the back of the motor support. <Photo 3>
- Make sure that the lead wires are not caught between the bottom of the motor support and the base.
- Fix the motor support with 2 screws.

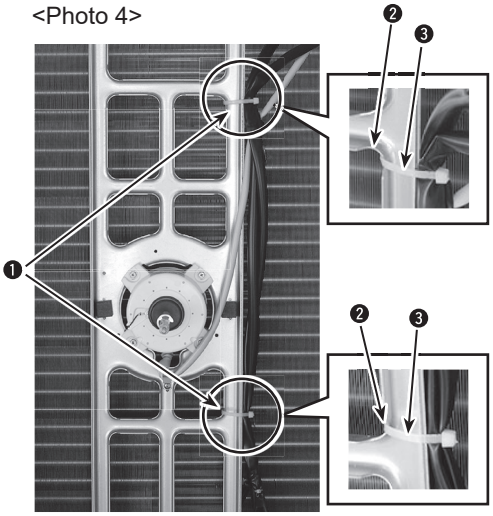
<Photo 3>



7 Securing the lead wires

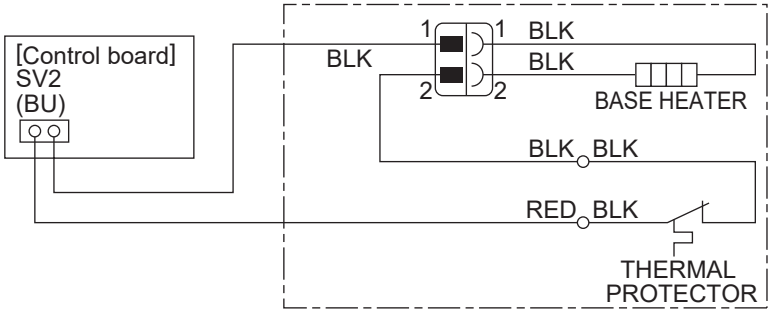
❶ Fix the lead wires of the base heater to the motor support with the cable tie ④ at the position shown in the photo 4.
❷ Cable ties should be tied at the corners of the motor support so that they do not shift after bundling.
❸ Pass the lead wires through the cable clip on top of the separator and point it at the electrical box.
- Secure the lead wires so they will not interfere with the propeller fan.

<Photo 4>



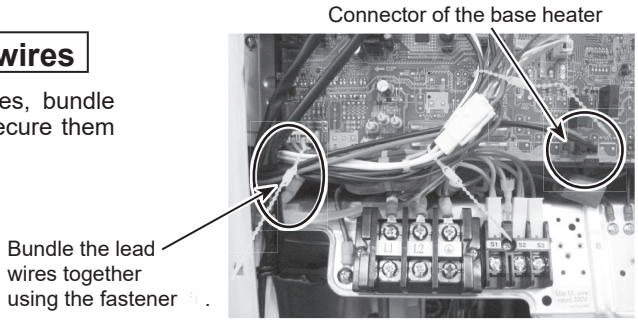
8 Connecting the lead wires

Connect the lead wires according to the following wiring diagram.



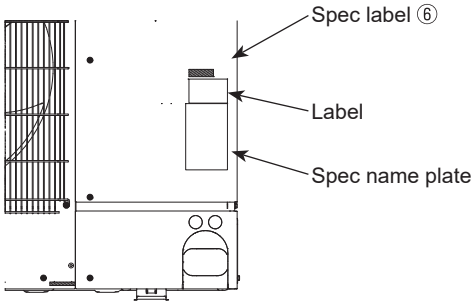
9 Securing the lead wires

After connecting the lead wires, bundle the lead wires together and secure them with the fastener ⑤.



10 Attaching the spec label

Attach the spec label ⑥ above the label on the service panel.



11 Reinstallation

Make sure that the installation of the base heater and connections of the lead wires have been completed according to this installation sheet.
Install the removed parts in the reverse order of removal.

- Tighten the propeller fan with a torque of 5.7±0.3N•m[4.2±0.2ft-lbs](57±3kgf•cm).
- Rotate the propeller fan and make sure that the base heater and the lead wires do not interfere with the movement of propeller fan.

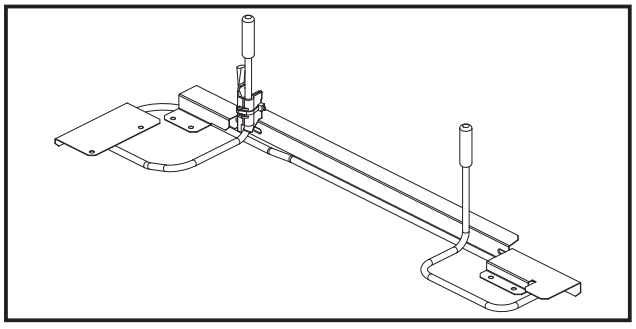
⚠WARNING

Mount the outer panels securely. Incomplete installation may result in electric shock and fire caused by dust, water, etc.

Base Heater

PAC-SL11BH-E

Figure



Descriptions

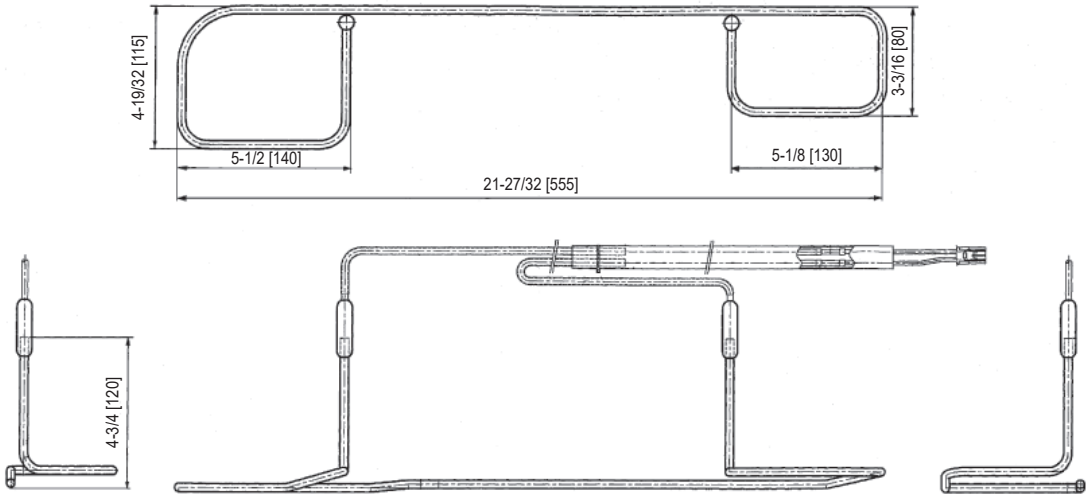
- This product is designed for prevention of ice on the bottom of the outdoor unit heat exchanger and the clogged drain hole caused by freezing in severe winter.
- To drain properly, a drain socket and a concentrated drain pan are not allowed to be used with this product.

Applicable Models

- PUZ-AK36/42/48/60NL
- SUZ-AK48/60NL

Dimensions

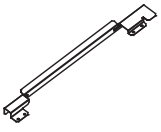
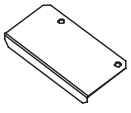
Unit: inch [mm]



Specifications

Components

This package includes the following parts besides this installation sheet.

① base heater	1	② heater supports	2	③ screws 4×10	8	④ cable tie	2	⑤ fasteners	2
									
⑥ spec label	1	⑦ base heater cover(1) *	1	⑧ base heater cover(2) *	1				
									

* Used solely with the outdoor unit mounted with a two-row heat exchanger.

How to Use / How to Install

1 Preparation

It is easier to mount the base heater before installing the outdoor unit.
- Make sure that the main power supply to the unit is OFF.
- Do not lose the removed screws. Many screws will be removed to install the base heater.
- Eliminate dust, dirt, etc.

2 Preparation for mounting the base heater

Before mounting the base heater, follow the procedures below to remove some parts from the outdoor unit.

❶ Removal of service panel
Remove 3 screws on the front. Slide the service panel downward to remove it.

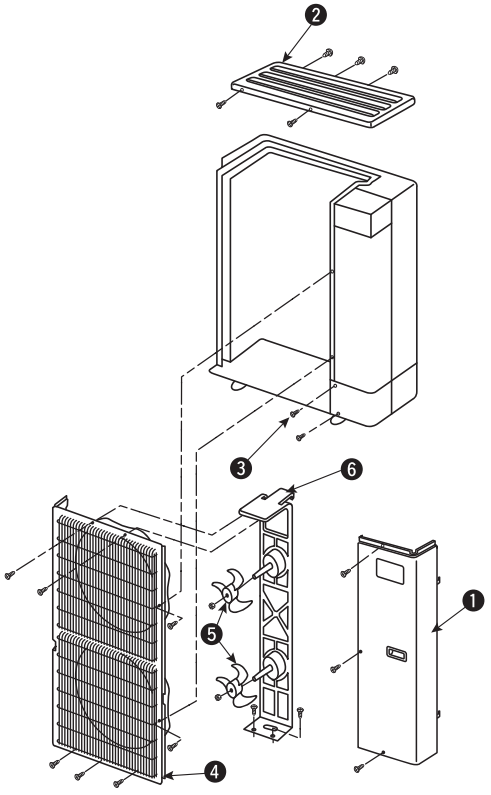
❷ Removal of top panel
Remove 2 screws on the front and 3 screws on the back. Lift the top panel up to remove it.

❸ Removal of screws for cover panel
Remove 2 screws for the cover panel.

❹ Removal of front panel
Remove 7 screws on the front. Slide the front panel upward, and pull it toward you.

❺ Removal of fan
Remove the mounting screws for the fan. Pull the fan toward you to remove it.

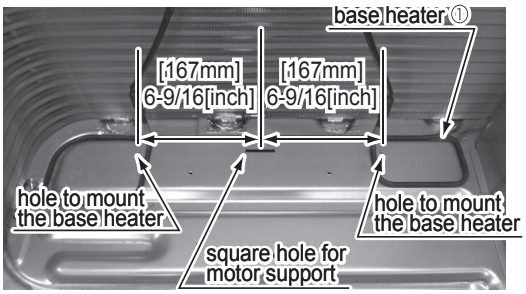
❻ Removal of motor support
Disconnect the connector of the fan motor, and remove 2 mounting screws for the motor support. Slightly pull the motor support toward you and lift it up to remove it.



3 Mounting the base heater

❶ Temporarily place the base heater ① on the base so that the square hole for the motor support on the base comes to the center of the base heater ①. (See photo below.)

❷ Fix the base heater ① with the heater supports ② and the screws 4×10 ③.

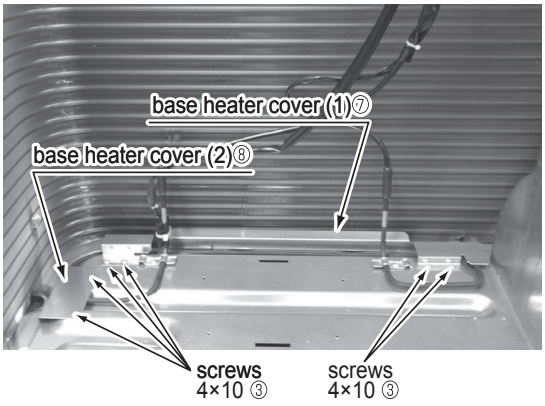




4 Mounting the base heater cover

Place the base heater covers ⑦, ⑧ as shown in the right photo.
Fix them with the screws 4×10 ③.

- Make sure to install the base heater covers ⑦, ⑧ in the outdoor unit mounted with a two-row heat exchanger. The base heater covers ⑦, ⑧ cannot be installed in the outdoor unit mounted with a three-row heat exchanger.



5 Mounting the base heater support

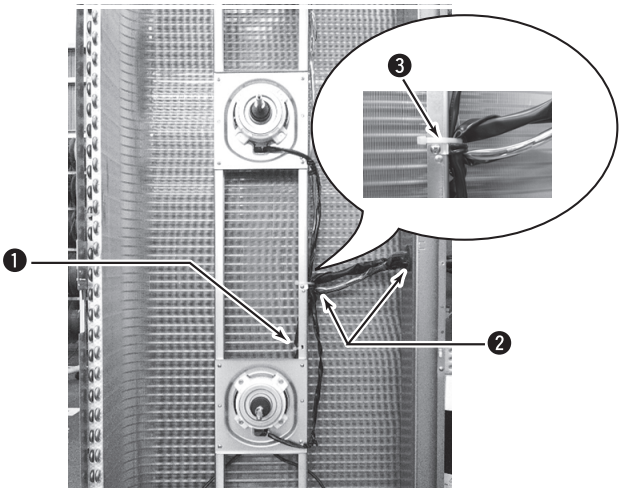
Mount the motor support.

- Make sure that the lead wire is not caught between the bottom of the motor support and the base.

6 Securing the lead wires

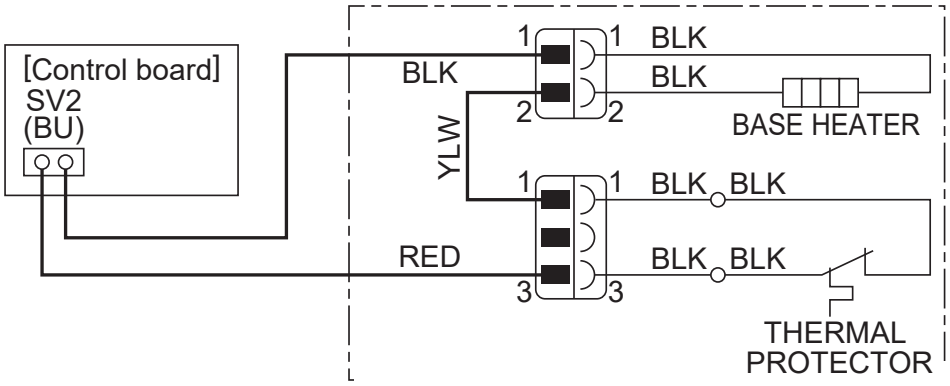
❶ Fix the lead wires of the base heater to the motor support with a cable tie ④ at the position shown in the picture.
❷ Bundle the lead wires of the base heater and the fan motor together with clamps.
❸ Fix the lead wires with a cable tie ④.
❹ Pass the lead wires through the circular hole on the separator toward the electrical box.

- Secure the lead wires so they will not interfere with the propeller fan.



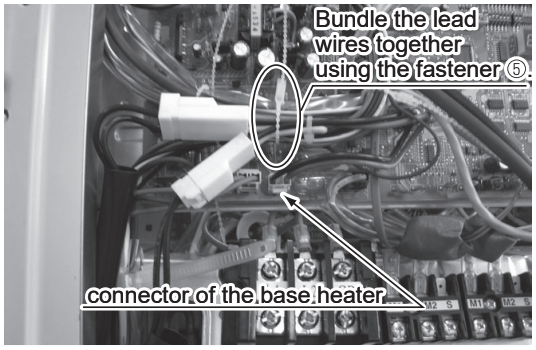
Wiring diagram

Connect the lead wires according to the following wiring diagram.



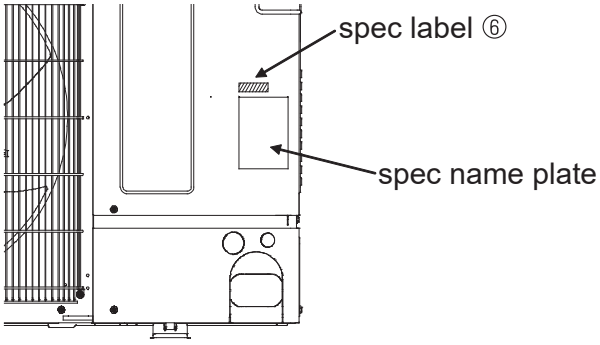
7 Securing the lead wires

After connecting the lead wires, bundle the extra lead wires together and secure them with the fastener ⑤.



8 Attaching the spec label

Attach the spec label ⑥ above the spec name plate on the service panel.



9 Reinstallation

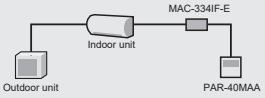
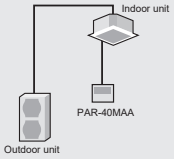
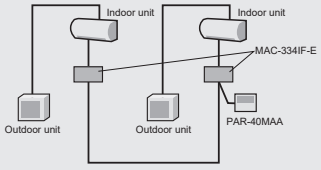
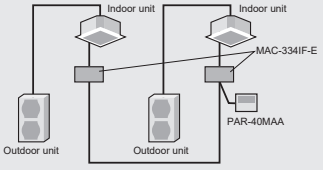
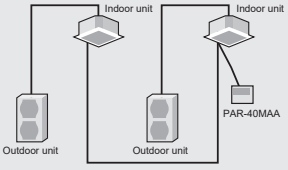
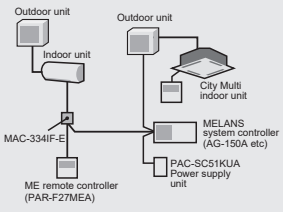
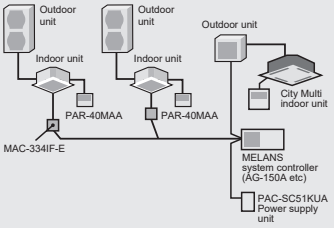
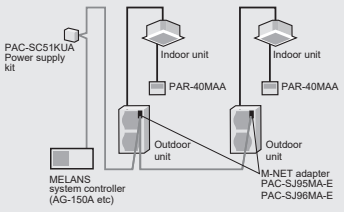
Make sure that the installation of the base heater and connections of the lead wires have been completed according to this installation sheet.
Install the removed parts in the reverse order of removal.

- Tighten the propeller fan with a torque of 5.7±0.3N•m[4.2±0.2ft-lbs](57±3kgf•cm).
- Rotate the propeller fan and make sure that the base heater and the lead wires do not interfere with the movement of propeller fan.

⚠WARNING

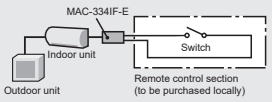
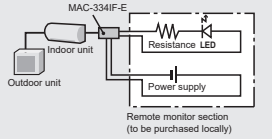
Mount the outer panels securely. Incomplete installation may result in electric shock and fire caused by dust, water, etc.

T8-1.MAJOR SYSTEM CONTROL

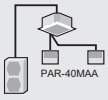
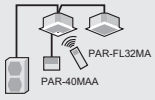
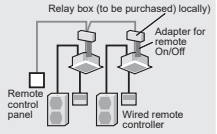
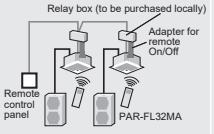
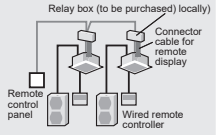
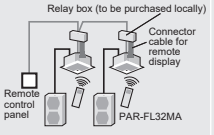
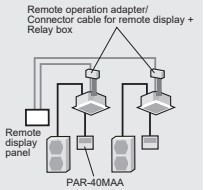
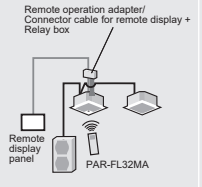
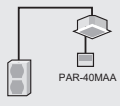
	System Examples		
Indoor Unit	M Series Indoor Unit	S Series	P Series Indoor Unit
Outdoor Unit	M Series and MXZ Series Outdoor	S Series and MXZ Series Outdoor	P Series Outdoor
PAR-40MAA Control **PAR-42MAAUB Control**			
Details	• Wired remote controller can be connected to indoor unit	Standard equipment (for indoor units compatible with wired remote controllers)	
Major Optional Parts Required	• MAC-334IF-E (Interface) • PAR-40MAA (Wired remote controller)	• PAR-40MAA (Wired remote controller)	
System Group Control			
Details	• One remote controller can control plural air conditioners with the same settings simultaneously. • One remote controller can control up to 16 refrigerant systems. (When connected to a MXZ unit, MAC-334IF-E is counted as one system.) • Up to two remote controller can be connected.		
Major Optional Parts Required	• MAC-334IF-E (Interface) • PAR-40MAA (Wired remote controller)		• PAR-40MAA (Wired remote controller)
M-NET Connections			
Details	• Group of air conditioners can be controlled by MELANS system controller (M-NET). Note: When connecting to M-NET, the reduction control for the power failure automatic recovery does not operate and it will take 3 minutes to restart.		
Major Optional Parts Required	• MAC-334IF-E (M-NET Interface) • MELANS System controller • PAC-SC51KUA (power supply unit)		• PAC-SJ19MA-E/PAC-SF83M/PAC-SJ95MA-E/ PAC-SJ96MA-E (M-NET converter) • MELANS System controller • PAC-SC51KUA (power supply unit)

T8-2.OTHERS

For M Series Indoor Units (New A-control Models Only)

	System Examples	Connection Details	Control Details	Major Optional Parts Required
1 Remote On/Off Operation • Air conditioner can be started/ stopped remotely. (1 and 2 can be used in combination)		Connect the interface to the air conditioner. Then connect the locally purchased remote controller to the terminal in the interface.	On/Off operation is possible from a remote location.	• **MAC-334IF-E** (Interface) • Parts for circuit such as relay box, lead wire, etc. (to be purchased locally)
2 Remote Display of Operation Status • The On/Off status of air conditioners can be confirmed remotely. (1 and 2 can be used in combination)		Connect the interface to the air conditioner. Then connect the locally purchased remote controller to the terminal in the interface.	The operation status (On/Off) or error signals can be monitored from a remote location.	• **MAC-334IF-E** (Interface) • Parts for circuit to be purchased locally (DC power source needed) • External power source (12V DC) is required when using MAC-334IF-E.

For P Series and S Series Indoor Units

	System Examples		Details	Major Optional Parts Required
	Wired remote controller	Wireless remote controller		
A 2-remote Controller Control With two remote controllers, control can be performed locally and remotely from two locations.	 * Set "Main" and "Sub" remote controllers. (Example of 1 : 1 system)	 * When using wired and wireless remote controllers (Example of Simultaneous Twin)	• Up to two remote controllers can be connected to one group. • Both wired and wireless remote controllers can be used in combination.	• Wired Remote Controller **PAR-40MAA** • Wireless Remote Controller **PAR-FL32MA** • Wireless Remote Controller Kit for PCA **PAR-SL93B-E**
B Operation Control by Level Signal Air conditioner can be started/ stopped remotely. In addition, On/Off operation by local remote controller can be prohibited/permitted.	 (Example of 1 : 1 system x 2)	 (Example of 1 : 1 system x 2)	• Operation other than On/Off (e.g., adjustment of temperature, fan speed, and airflow) can be performed even when remote controller operation is prohibited. • Timer control is possible with an external timer.	• Adapter for remote On/Off **PAC-SE55RA-E** • Relay box (to be purchased locally) • Remote control panel (to be purchased locally)
C Operation Control by Pulse Signal	 (Example of 1 : 1 system x 2)	 (Example of 1 : 1 system x 2)	• The pulse signal can be turned On/Off. • Operation/emergency signal can be received at a remote location.	• Connector cable for remote display **PAC-SA88HA-E / PAC-725AD-E (10 pcs. x PAC-SA88HA-E)** • Relay box (to be purchased locally) • Remote control panel (to be purchased locally)
D Remote Display of Operating Status Operating status can be displayed at a remote location.	 (Example of 1 : 1 system)	 (Example of Simultaneous Twin)	• Operation/emergency signal can be received at a remote location (when channeled through the **PAC-SF40RM-E**→ no-voltage signal, when channeled through the **PAC-SA88HA-E**→ DC 12V signal).	• Remote display panel (to be purchased locally) • Connector cable for remote display **PAC-SA88HA-E / PAC-725AD-E (10 pcs. x PAC-SA88HA-E)** • Relay box (to be purchased locally) • Remote operation adapter **PAC-SF40RM-E** *Unable to use with wireless remote controller
E Timer Operation Allows On/Off operation with timer *For control by an external timer, refer to B Operation Control by Level Signal.	 (Example of 1 : 1 system)		• **Weekly Timer:** On/Off and up to 8 pattern temperatures can be set for each calendar day. (Initial setting) • **On/Off Timer:** On/Off can be set once each within 72 hr in intervals of 5-minute units. • **Auto-off Timer:** Operation will be switched off after a certain time elapse. Set time can be changed from 30 min. to 4 hr. at 10 min. intervals. *Simple Timer and Auto-off Timer cannot be used at the same time.	Standard functions of **PAR-40MAA**

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