

TECHNICAL & SERVICE MANUAL

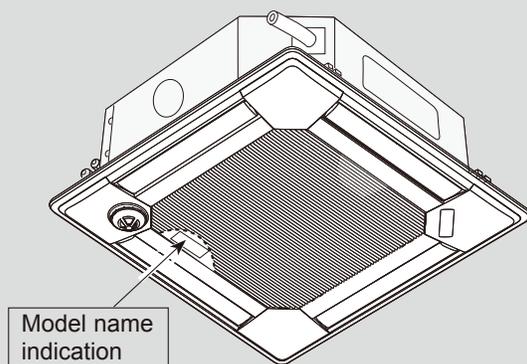
CITY MULTI Series Ceiling Cassettes R410A

Indoor unit
[Model Name]
[Service Ref.]

PLFY-P08NBMU-E2	PLFY-P08NBMU-E2
PLFY-P12NBMU-E2	PLFY-P12NBMU-E2
PLFY-P15NBMU-E2	PLFY-P15NBMU-E2
PLFY-P18NBMU-E2	PLFY-P18NBMU-E2
PLFY-P24NBMU-E2	PLFY-P24NBMU-E2
PLFY-P30NBMU-E2	PLFY-P30NBMU-E2
PLFY-P36NBMU-E2	PLFY-P36NBMU-E2

Notes:

- This manual describes service data of the indoor units only.
- RoHS compliant products have <G> mark on the spec name plate.



INDOOR UNIT

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PARTS CATALOG (OCB579)

CITY MULTI

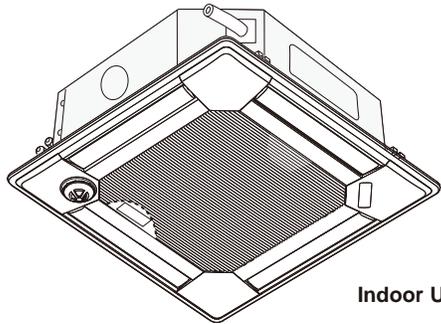
Use the specified refrigerant only

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.



Indoor Unit

Models

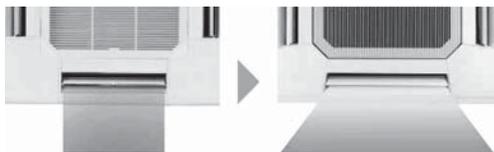
PLFY-P08NBMU-E2
 PLFY-P12NBMU-E2
 PLFY-P15NBMU-E2
 PLFY-P18NBMU-E2
 PLFY-P24NBMU-E2
 PLFY-P30NBMU-E2
 PLFY-P36NBMU-E2

Cooling capacity / Heating capacity

8,000 / 9,000 BTU/h
 12,000 / 13,500 BTU/h
 15,000 / 17,000 BTU/h
 18,000 / 20,000 BTU/h
 24,000 / 27,000 BTU/h
 30,000 / 34,000 BTU/h
 36,000 / 40,000 BTU/h

1. WIDE AIRFLOW

The new wide shape vane capable of wide angle air supply provides comfort even at the corners of a room regardless of cooling and heating operation. A reduction in the air speed by 20% compared to the conventional product eliminates uncomfortable draft sensation for friendly air conditioning.

**2. WAVE AIRFLOW SYSTEM (HEATING MODE)**

The wave airflow system has 4 vanes where each vane runs independently. Repeating of horizontal and down blows with a time lag allows the conditioned warm air to be distributed even to room corners thus preventing uneven room temperature distribution.

Operation image of "Wave Airflow"

**3. AUTOMATIC AIR SPEED ADJUSTMENT MODE**

The automatic air speed adjustment mode is provided in addition to the 4 air speed stages of "High/Medium 1/Medium 2/ Low." Air speed can be changed freely in accordance with a difference between the set temperature and the room temperature. The automatic air speed adjustment mode presents quick cooling of a room with the high mode, such as at the starting up of cooling operation, for example. After the room temperature is stabilized, the low mode will be applied by automatic switching to keep your comfort.

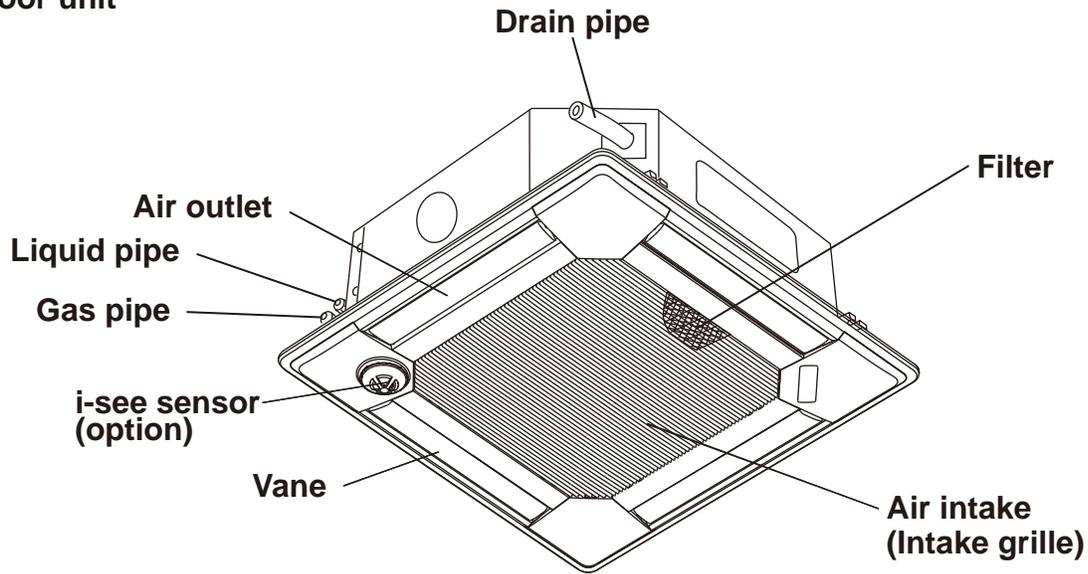
**4. i-see Sensor (OPTIONAL CORNER PANEL)**

The i-see sensor is a radiation temperature sensor originated from Mitsubishi's new technology. In order to create a really comfortable space in shops and offices, it is essential to control the temperature near the floor where occupants/visitors gather. The i-see sensor measures the infrared rays generated from the surrounding wall and floor surface at an angle of 360° and the infrared ray energy is computed to convert it into the value of temperature. In addition, the floor temperature at distant spots (radiation temperature) is also measured to supply the optimum airflow to realize comfort which was never experienced in the past.

2

PARTS NAMES AND FUNCTIONS

• Indoor unit

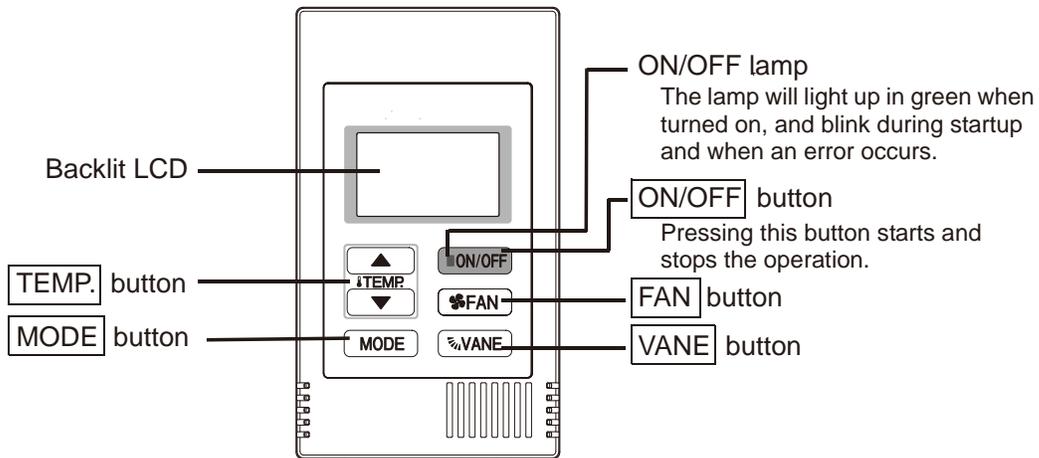


• Wired remote controller

Note:

The phrase "Wired remote controller" in this manual refers only to the PAC-YT53CRAU.

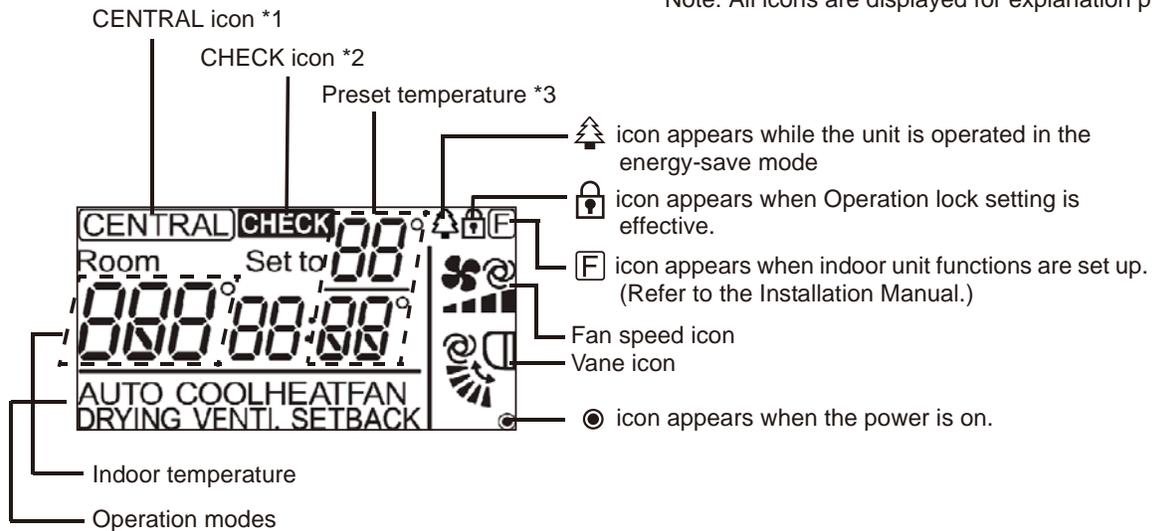
If you need any information for the other remote controller, please refer to either the installation manual or initial setting manual which are included in remote controller's box.



Note: To set the functions that are not available on this controller (PAC-YT53CRAU) such as Louver, use the centralized controller.

Display section

Note: All icons are displayed for explanation purpose



*1 **CENTRAL** icon

Appears when one of the following local operations is prohibited: ON/OFF; operation mode; preset temperature; fan speed; vane.

*2 **CHECK** icon

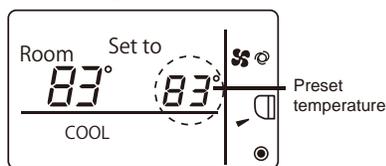
For City Multi, when an error occurs, power indicator will blink, and unit address (three digits) and error code (four digits) will blink.

Check the error status, stop the operation, and consult your dealer.

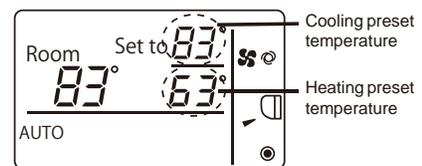
*3 Preset temperature

* Centigrade or Fahrenheit is selectable. Refer to the Installation Manual for details.

In COOL, DRYING, HEAT, or
AUTO (single set point) modes



In AUTO (dual set point) or
SETBACK modes



3

SPECIFICATIONS

3-1. SPECIFICATIONS

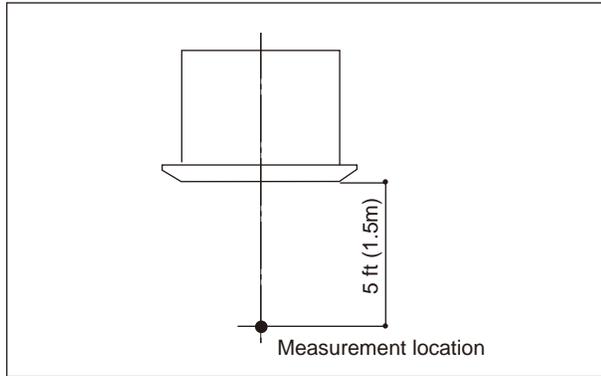
Service Ref.		PLFY-P08NBMU-E2	PLFY-P12NBMU-E2	PLFY-P15NBMU-E2	PLFY-P18NBMU-E2		
Power source		1-Phase 208-230 V, 60 HZ					
Cooling capacity (Nominal)	*1 BTU/h	8,000	12,000	15,000	18,000		
	*1 kW	2.3	3.5	4.4	5.3		
	Power input	kW	0.03	0.03	0.03	0.04	
	Current input	A	0.31	0.31	0.31	0.33	
Heating capacity (Nominal)	*2 BTU/h	9,000	13,500	17,000	20,000		
	*2 kcal/h	2.6	4.0	5.0	5.9		
	Power input	kW	0.02	0.02	0.02	0.03	
	Current input	A	0.24	0.24	0.24	0.26	
External finish		Galvanized steel sheet					
External dimension H × W × D		in	10-3/16 × 33-3/32 × 33-3/32	10-3/16 × 33-3/32 × 33-3/32	10-3/16 × 33-3/32 × 33-3/32	10-3/16 × 33-3/32 × 33-3/32	
		mm	258 × 840 × 840	258 × 840 × 840	258 × 840 × 840	258 × 840 × 840	
Net weight		lb [kg]	51 [23]	51 [23]	51 [23]	51 [23]	
Decoration panel		Model	PLP-40BAU	PLP-40BAU	PLP-40BAU	PLP-40BAU	
		External finish	MUNSELL (6.4Y 8.9/0.4)				
Dimension H × W × D		in	1-3/8 × 37-13/32 × 37-13/32	1-3/8 × 37-13/32 × 37-13/32	1-3/8 × 37-13/32 × 37-13/32	1-3/8 × 37-13/32 × 37-13/32	
		mm	35 × 950 × 950	35 × 950 × 950	35 × 950 × 950	35 × 950 × 950	
Net weight		lb [kg]	13 [6]	13 [6]	13 [6]	13 [6]	
Heat exchanger		Cross fin					
FAN		Type × Quantity	Turbo fan × 1	Turbo fan × 1	Turbo fan × 1	Turbo fan × 1	
External static press.		in. WG	0.000 (208 V)	0.000 (208 V)	0.000 (208 V)	0.000 (208 V)	
		Pa	0	0	0	0	
		in. WG	0.000 (208 V)	0.000 (230 V)	0.000 (230 V)	0.000 (230 V)	
		Pa	0	0	0	0	
		Motor type	DC motor				
Motor output		kW	0.050	0.050	0.050	0.050	
Driving mechanism		Direct drive					
Air flow rate		cfm	494-530-548-565	494-530-548-565	494-530-548-565	494-530-565-636	
		m ³ /min	14.0-15.0-15.5-16.0	14.0-15.0-15.5-16.0	14.0-15.0-15.5-16.0	14.0-15.0-16.0-18.0	
		L/s	233-250-258-267	233-250-258-267	233-250-258-267	233-250-267-300	
Noise level (Low-Mid2-Mid1-High) (measure on anechoic room)		dB <A>	27-29-30-31 (208-230 V)	27-29-30-31 (208-230 V)	28-29-30-31 (208-230 V)	28-30-31-32 (208-230 V)	
		dB <A>	—	—	—	—	
		dB <A>	—	—	—	—	
Insulation material		PS					
Air filter		PP honeycomb (long life filter, anti-bacterial type)					
Protection device		Fuse					
Refrigerant control device		LEV					
Connectable outdoor unit		R410, CITY MULTI					
Diameter of refrigerant pipe (O.D.)		Liquid	in [mm]	1/4 [6.35] Flare	1/4 [6.35] Flare	1/4 [6.35] Flare	1/4 [6.35] Flare
		Gas	in [mm]	1/2 [12.7] Flare	1/2 [12.7] Flare	1/2 [12.7] Flare	1/2 [12.7] Flare
Field drain pipe size		in [mm]	O.D 1-1/4 [32]	O.D 1-1/4 [32]	O.D 1-1/4 [32]	O.D 1-1/4 [32]	
Standard attachment		Document, accessory	Installation Manual, Instruction Book				
Optional parts		Air outlet shutter plate	PAC-SH51SP-E	PAC-SH51SP-E	PAC-SH51SP-E	PAC-SH51SP-E	
		High efficiency filterelement	PAC-SH59KF-E	PAC-SH59KF-E	PAC-SH59KF-E	PAC-SH59KF-E	
		Multi-function casement	PAC-SH53TM-E	PAC-SH53TM-E	PAC-SH53TM-E	PAC-SH53TM-E	
Remarks		Installation	Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual.				
*1 Nominal cooling conditions		*2 Nominal heating conditions		Unit converter			
Indoor: 80°F D.B./67°F W.B [26.7°C D.B./19.4°C W.B]		70°F D.B. [21.1°C D.B.]		kcal/h = kW × 860			
Outdoor: 95°F D.B. [35°C D.B.]		47°F D.B./43°F W.B [8.3°C D.B./6.1°C W.B]		BTU/h = kW × 3,412			
Pipe length: 25 ft [7.6m]		25 ft [7.6m]		cfm = m ³ /min × 35.31			
Level difference: 0 ft [0 m]		0 ft [0 m]		lb = kg/0.4536			
Note: Due to continuing improvement, above specification may be subject to change without notice.							
Above specification data is subject to rounding variation.							



Service Ref.		PLFY-P24NBMU-E2	PLFY-P30NBMU-E2	PLFY-P36NBMU-E2	
Power source		1-Phase 208–230 V, 60 HZ			
Cooling capacity (Nominal)	*1 BTU/h	24,000	30,000	36,000	
	*1 kW	7.0	8.8	10.5	
	Power input kW	0.05	0.05	0.09	
	Current input A	0.47	0.50	0.87	
Heating capacity (Nominal)	*2 BTU/h	27,000	34,000	40,000	
	*2 kcal/h	7.9	10.0	11.7	
	Power input kW	0.04	0.04	0.08	
	Current input A	0.40	0.43	0.80	
External finish		Galvanized steel sheet			
External dimension H × W × D		in	11-3/4 × 33-3/32 × 33-3/32	11-3/4 × 33-3/32 × 33-3/32	
		mm	298 × 840 × 840	298 × 840 × 840	
Net weight		lb [kg]	60 [27]	60 [27]	
Decoration panel	Model	PLP-40BAU	PLP-40BAU	PLP-40BAU	
	External finish		MUNSELL (6.4Y 8.9/0.4)		
	Dimension H × W × D	in	1-3/8 × 37-13/32 × 37-13/32	1-3/8 × 37-13/32 × 37-13/32	1-3/8 × 37-13/32 × 37-13/32
		mm	35 × 950 × 950	35 × 950 × 950	35 × 950 × 950
	Net weight		lb [kg]	13 [6]	13 [6]
Heat exchanger		Cross fin			
FAN	Type × Quantity		Turbo fan × 1	Turbo fan × 1	
	External static press.	in. WG	0.000 (208 V)	0.000 (208 V)	
		Pa	0	0	
		in. WG	0.000 (230 V)	0.000 (230 V)	
	Pa	0	0		
	Motor type		DC motor		
	Motor output	kW	0.050	0.050	
	Driving mechanism		Direct drive		
	Air flow rate	cfm	565-636-706-777	565-636-706-777	777-883-989-1,059
		m ³ /min	16.0-18.0-20.0-22.0	16.0-18.0-21.0-23.0	22.0-25.0-28.0-30.0
L/s		267-300-333-367	267-300-333-367	367-417-467-500	
Noise level (Low-Mid2-Mid1-High) (measure on anechoic room)	dB <A>	28-31-34-37 (208–230 V)	28-32-35-37 (208–230 V)	35-38-41-43 (208–230 V)	
	dB <A>	—	—	—	
	dB <A>	—	—	—	
Insulation material		PS			
Air filter		PP honeycomb (long life filter, anti-bacterial type)			
Protection device		Fuse			
Refrigerant control device		LEV			
Connectable outdoor unit		R410, CITY MULTI			
Diameter of refrigerant pipe (O.D.)	Liquid	in [mm]	3/8 [9.52] Flare	3/8 [9.52] Flare	
	Gas	in [mm]	5/8 [15.88] Flare	5/8 [15.88] Flare	
Field drain pipe size		in [mm]	O.D 1-1/4 [32]	O.D 1-1/4 [32]	
Standard attachment	Document, accessory				
Optional parts	Air outlet shutter plate		PAC-SH51SP-E	PAC-SH51SP-E	
	High efficiency filterelement		PAC-SH59KF-E	PAC-SH59KF-E	
	Multi-function casement		PAC-SH53TM-E	PAC-SH53TM-E	
Remarks	Installation	Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual.			
*1 Nominal cooling conditions Indoor: 80°F D.B./67°F W.B [26.7°C D.B./19.4°C W.B] Outdoor: 95°F D.B. [35°C D.B.] Pipe length: 25 ft [7.6m] Level difference: 0 ft [0 m]		*2 Nominal heating conditions 70°F D.B. [21.1°C D.B.] 47°F D.B./43°F W.B [8.3°C D.B./6.1°C W.B] 25 ft [7.6m] 0 ft [0 m]		Unit converter kcal/h = kW × 860 BTU/h = kW × 3,412 cfm = m ³ /min × 35.31 lb = kg/0.4536	
Note: Due to continuing improvement, above specification may be subject to change without notice.				Above specification data is subject to rounding variation.	

3-2. SOUND LEVEL

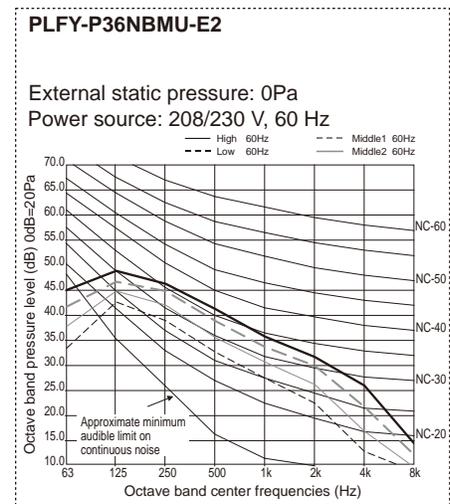
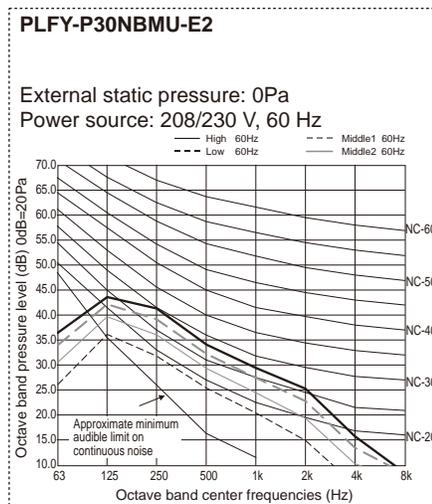
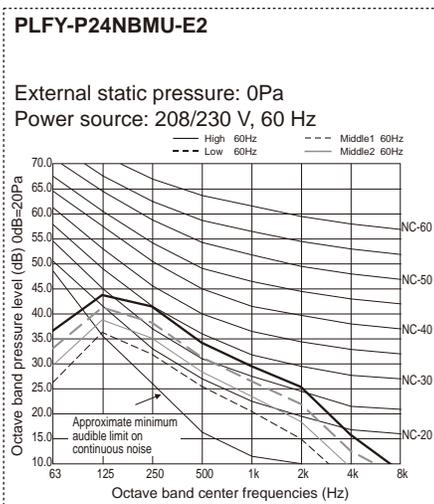
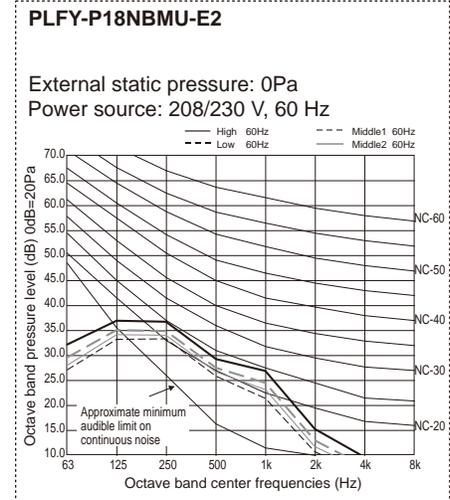
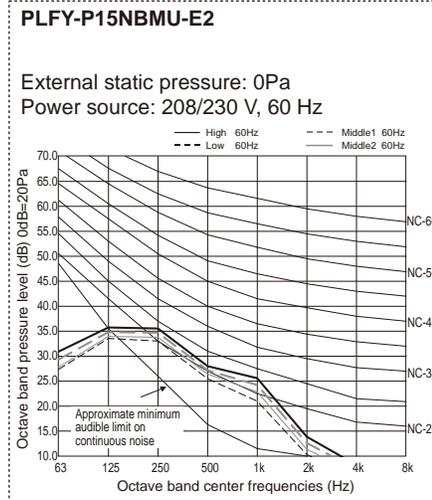
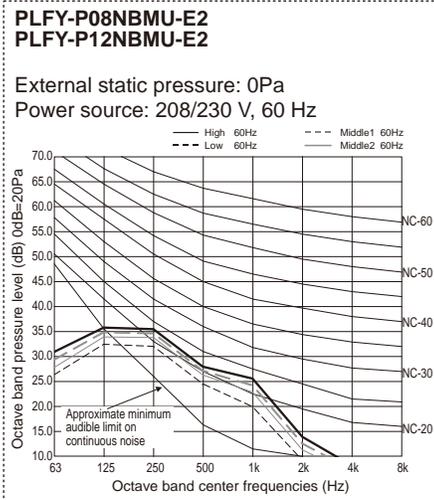
PLFY-P-NBMU-E



Sound level at anechoic room : Low-Mid2-Mid1-High

	Sound level dB (A)
PLFY-P08NBMU-E2 PLFY-P12NBMU-E2	27-28-29-31
PLFY-P15NBMU-E2	27-28-30-31
PLFY-P18NBMU-E2	28-29-30-32
PLFY-P24NBMU-E2	28-30-32-34
PLFY-P30NBMU-E2	30-32-35-37
PLFY-P36NBMU-E2	35-38-41-43

3-3. NC CURVES



3-4. ELECTRICAL PARTS SPECIFICATIONS

Service Ref. Parts name	Symbol	PLFY-P08NBMU-E2	PLFY-P12NBMU-E2	PLFY-P15NBMU-E2	PLFY-P18NBMU-E2	PLFY-P24NBMU-E2	PLFY-P30NBMU-E2	PLFY-P36NBMU-E2	
Room temperature thermistor	TH21	Resistance 30°F/15.8 kΩ, 50°F/9.6 kΩ, 70°F/6.0 kΩ, 80°F/4.8 kΩ, 90°F/3.9 kΩ, 100°F/3.2 kΩ							
Liquid pipe thermistor	TH22	Resistance 30°F/15.8 kΩ, 50°F/9.6 kΩ, 70°F/6.0 kΩ, 80°F/4.8 kΩ, 90°F/3.9 kΩ, 100°F/3.2 kΩ							
Gas pipe thermistor	TH23	Resistance 30°F/15.8 kΩ, 50°F/9.6 kΩ, 70°F/6.0 kΩ, 80°F/4.8 kΩ, 90°F/3.9 kΩ, 100°F/3.2 kΩ							
Fuse (Indoor controller board)	FUSE	250 V, 6.3A							
Fan motor	MF	8-pole OUTPUT 50W						8-pole OUTPUT, 120W	
Vane motor	MV	MSBPC20M04 12 V DC, 300Ω/phase							
Drain pump	DP	PLD-12230ME-1 INPUT 12/10.8W 24 ℓ /Hr							
Drain float switch	FS	Open/short detection							
Linear expansion valve	LEV	12 V DC Stepping motor drive port dimension ϕ 3.2 (0–2000pulse) EDM-40YGME					12 V DC Stepping motor drive port dimension ϕ 5.2 (0–2000pulse) EDM-80YGME		
Power supply terminal block	TB2	(L1, L2, GR) 330 V, 30 A							
Transmission terminal block	TB5	(M1, M2, S) 250 V, 20 A							
MA remote controller terminal block	TB15	(1, 2) 250 V, 10 A							

4

4-WAY AIR FLOW SYSTEM

4-1. PLACEMENT OF THE AIR OUTLETS

- For this grille, the blowout direction comes in 11 patterns.

Also, by setting the remote controller to the appropriate settings, you can adjust the air flow and speed. Select the settings from Table 1 according to the location in which you want to install the unit.

1) Decide on the pattern of the airflow direction.

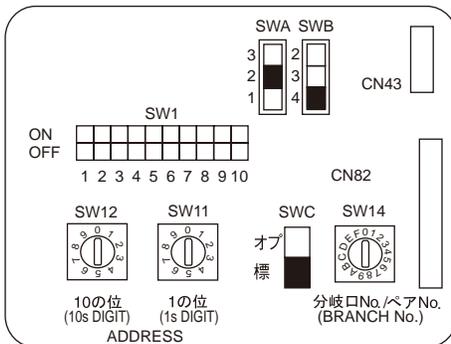
<Table 1>

	4-direction	3-direction	2-direction
Blowout direction pattern	Pattern 1 Initial setting 	Pattern 4 One air outlet fully closed 	Pattern 6 2 air outlet fully closed

Note: For 3 and 2-direction settings, please use the air outlet shutter plate (option).

2) According to the number of air outlets and height of the ceiling to install the unit, be sure to set up the switches (SWA, SWB) on the address board to the appropriate setting.

- Correspondence of ceiling heights to numbers of air outlets



PLFY-P08/12/15/18/24/30NBMU-E2

SWB	SWA	①	②	③
		Silent	Standard	High ceiling
④	4 direction	8.2 ft [2.5 m]	8.9 ft [2.7 m]	11.5 ft [3.5 m]
③	3 direction	8.9 ft [2.7 m]	9.8 ft [3.0 m]	11.5 ft [3.5 m]
②	2 direction	9.8 ft [3.0 m]	10.8 ft [3.3 m]	11.5 ft [3.5 m]

PLFY-P36NBMU-E2

SWB	SWA	①	②	③
		Silent	Standard	High ceiling
④	4 direction	8.9 ft [2.7 m]	10.5ft [3.2m]	14.8ft [4.5m]
③	3 direction	9.8 ft [3.0 m]	11.8ft [3.6m]	14.8ft [4.5m]
②	2 direction	10.8 ft [3.3 m]	13.1ft [4.0m]	14.8ft [4.5m]

4-2. BRANCH DUCT HOLE AND FRESH AIR INTAKE HOLE

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

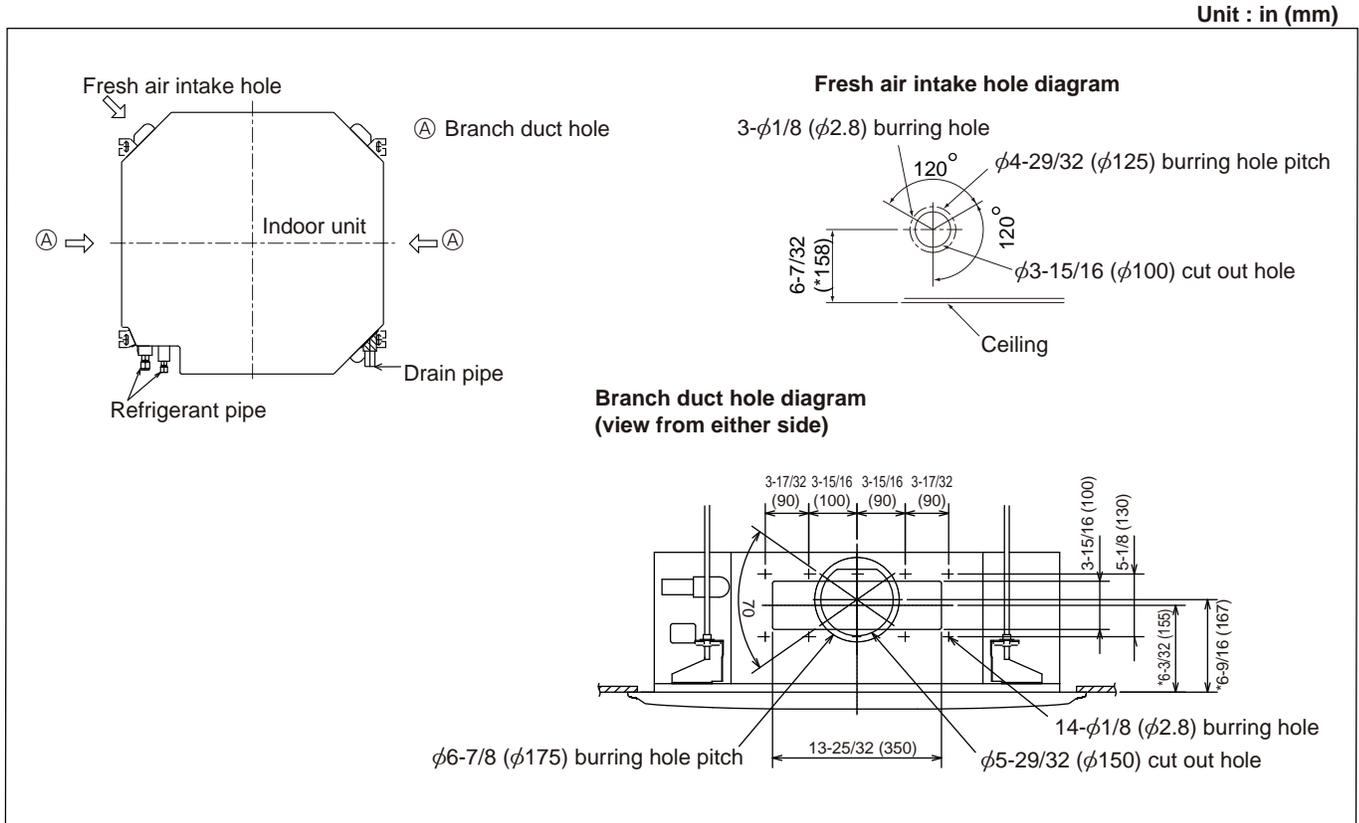
Note:

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

When installing the optional multi function casement, add 5-5/16" (135 mm) to the dimensions marked on the figure.

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

Otherwise, condensation and dripping may occur.



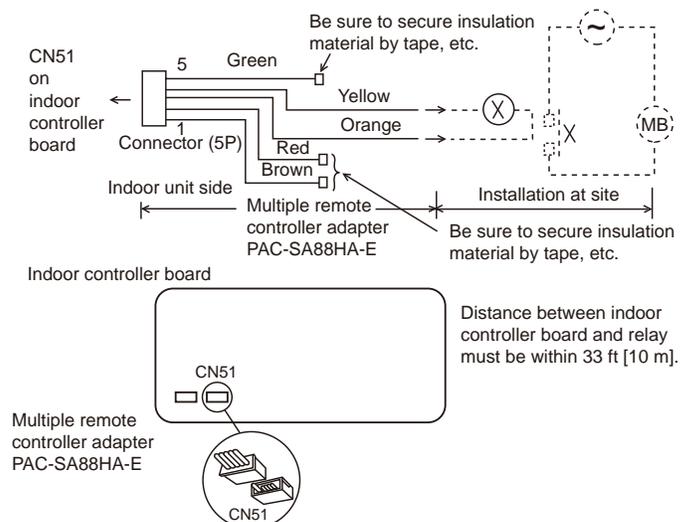
4-3. OPERATION IN CONJUNCTION WITH DUCT FAN (Booster fan)

• Whenever the indoor unit is operating, the duct fan also operates.

- (1) Connect the optional multiple remote controller adapter (PAC-SA88HA-E) to the connector CN51 on the indoor controller board.
- (2) Drive the relay after connecting the 12 V DC relay between the Yellow and Orange connector lines.

MB: Electromagnetic switch power relay for duct fan.

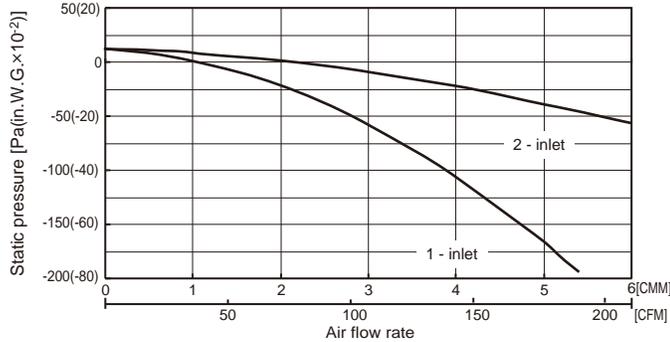
X: Auxiliary relay (For 12 V DC, coil rating: 1.0W or smaller)



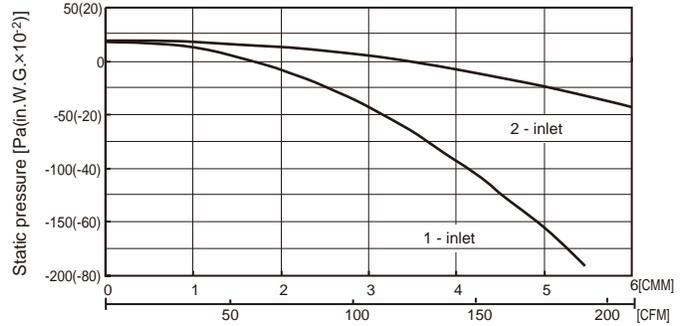
4-4. FRESH AIR INTAKE AMOUNT & STATIC PRESSURE CHARACTERISTICS

1 PLFY-P08/12/18NBMU-E2

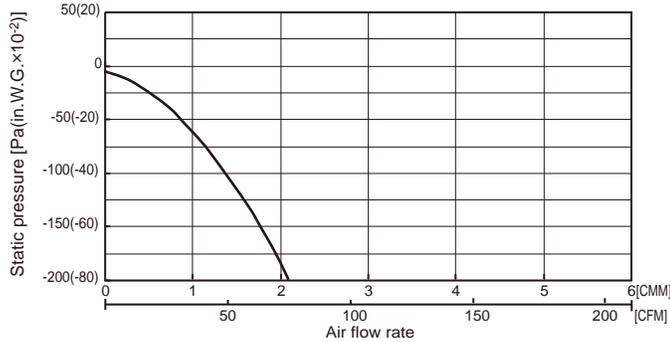
Multifunction casement + High efficiency filter



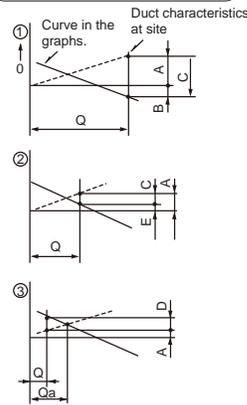
Multifunction casement + Standard filter



Taking air into the unit



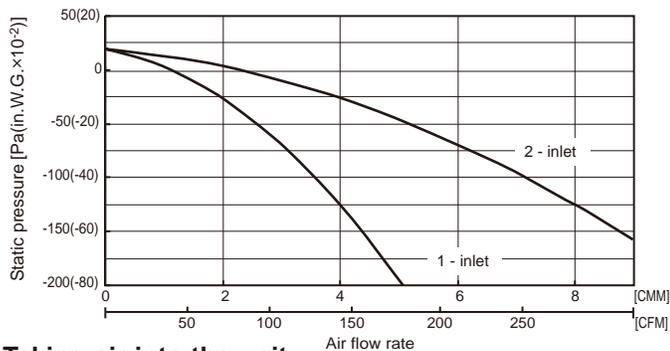
How to read curves



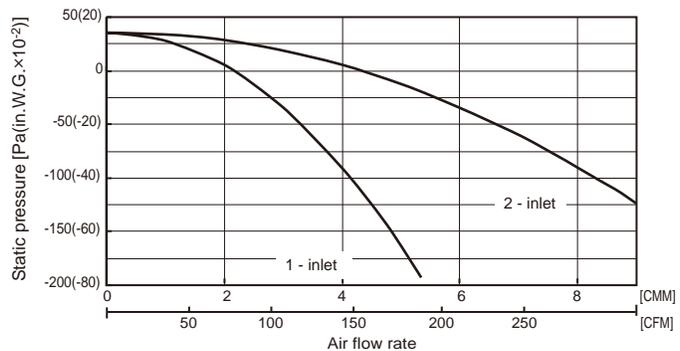
- Q...Designed amount of fresh air intake <CMM (CFM)>
- A...Static pressure loss of fresh air intake duct system with air flow amount Q <Pa (in.W.G. x 10⁻²)>
- B...Forced static pressure at air conditioner inlet with air flow amount Q <Pa (in.W.G. x 10⁻²)>
- C...Static pressure of booster fan with air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

2 PLFY-P24/30/36NBMU-E2

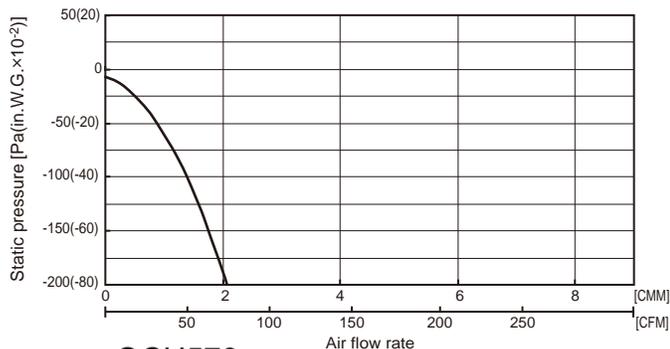
Multifunction casement + Standard filter



Multifunction casement + High efficiency filter



Taking air into the unit



OCH579

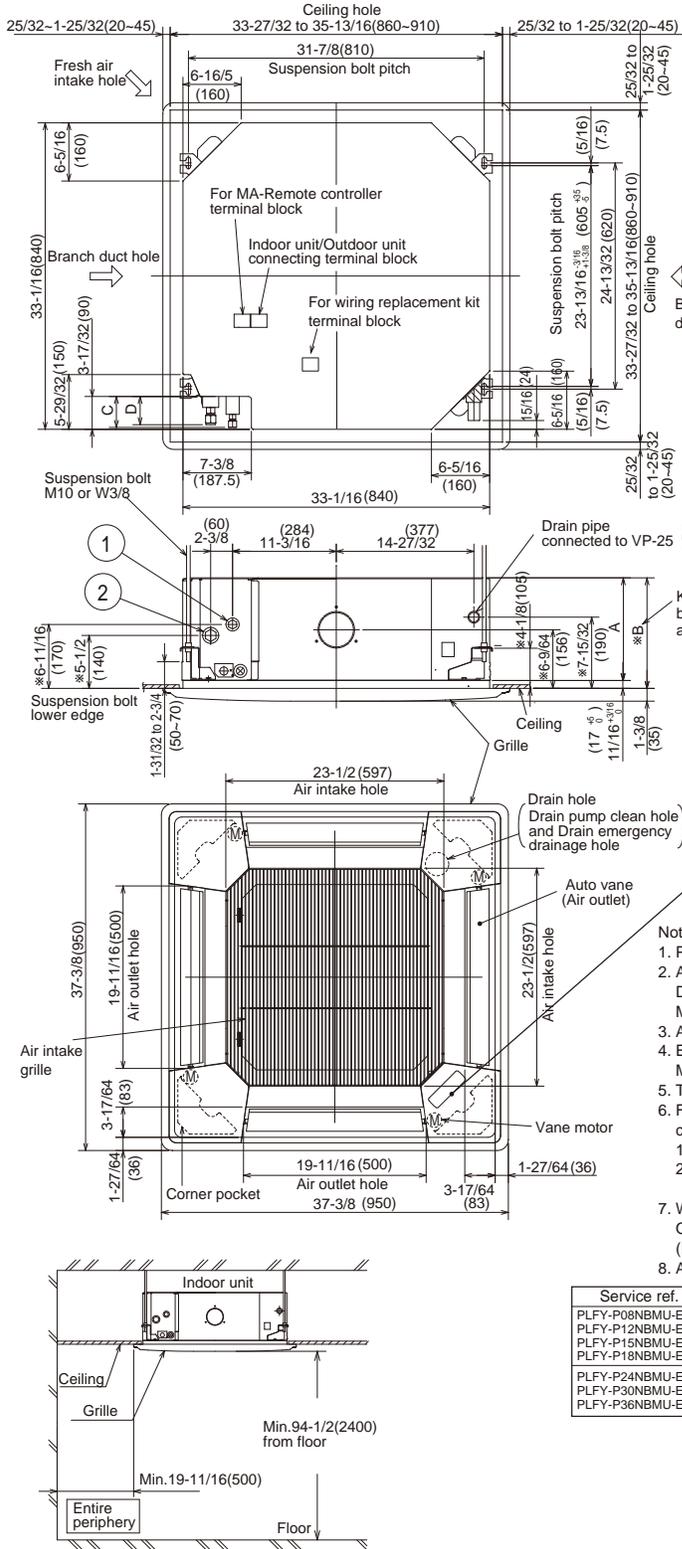
PLFY-P08NBMU-E2
PLFY-P24NBMU-E2

PLFY-P12NBMU-E2
PLFY-P30NBMU-E2

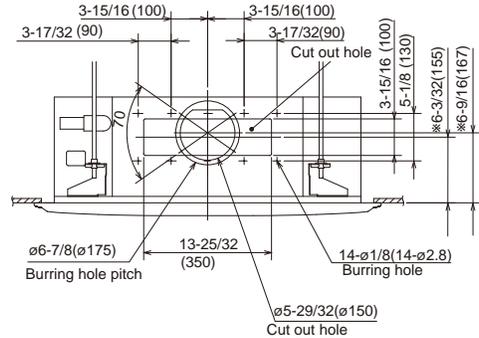
PLFY-P15NBMU-E2
PLFY-P36NBMU-E2

PLFY-P18NBMU-E2

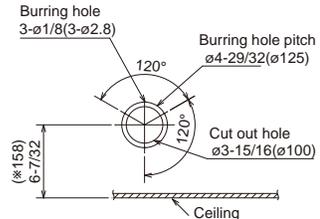
Unit: in (mm)



Detail connecting of branch duct (Both aspects)



Detail drawing of fresh air intake hole



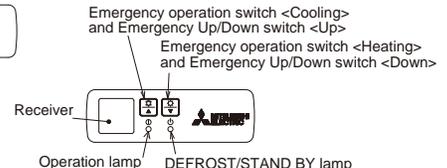
Keep 25/64(10) to 19/32(15) between unit ceiling and ceiling slab.

In case of standard grille



In case of Auto grille

In case of wireless remote controller



Note:

- Please choose the Grille from a standard grille.
- As for drain pipe, please use VP-25 (O.D. ϕ 1-1/4(ϕ 32) PVC TUBE.) Drain pump is included. Max. lifting height is 70-7/18 (850mm) from the ceiling.
- As for suspension bolt, please use M10 or W3/8. (Procured at local site)
- Electrical box may be removed for the service purpose. Make sure to slack the electrical wire little bit for control/power wires connection.
- The height of the indoor unit is able to be adjusted with the grille attached.
- For the installation of the optional high efficiency filter or optional multi-functional casement.
 - Add 5-5/16"(135mm) to the dimensions *marked on the figure.
 - The optional high efficiency filter becomes optional multi-functional casement and concomitant use.
- When installing the branch ducts, be sure to insulate adequately. Otherwise condensation and dripping may occur. (It becomes the cause of dew drops/water dew.)
- As for necessary installation/service space, please refer to the left figure.

Service ref.	①	②	A	B	C	D
PLFY-P08NBMU-E2	Refrigerant pipe-- ϕ 6.35	Refrigerant pipe -- ϕ 12.7				
PLFY-P12NBMU-E2	Flared connection--1/4F	Flared connection --1/2F	9-1/2 (241)	10-3/16 (258)	3-5/32 (80)	2-29/32 (74)
PLFY-P15NBMU-E2						
PLFY-P18NBMU-E2						
PLFY-P24NBMU-E2	Refrigerant pipe-- ϕ 9.52	Refrigerant pipe -- ϕ 15.88				
PLFY-P30NBMU-E2	Flared connection--3/8F	Flared connection --5/8F	11-1/16 (281)	11-3/4 (298)	3-11/32 (85)	3-1/32 (77)
PLFY-P36NBMU-E2						

7

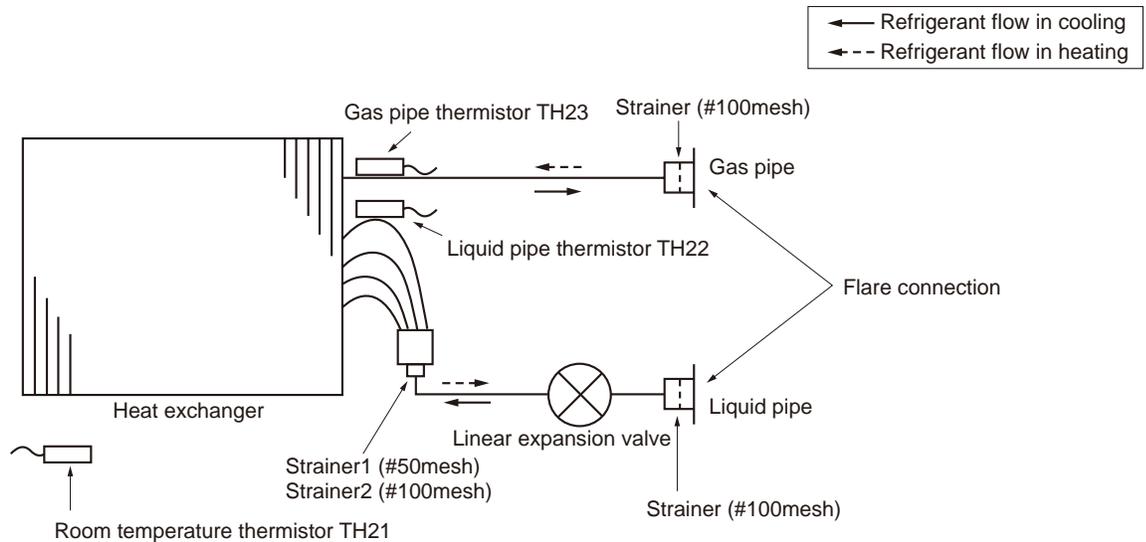
REFRIGERANT SYSTEM DIAGRAM

PLFY-P08NBMU-E2
PLFY-P24NBMU-E2

PLFY-P12NBMU-E2
PLFY-P30NBMU-E2

PLFY-P15NBMU-E2
PLFY-P36NBMU-E2

PLFY-P18NBMU-E2

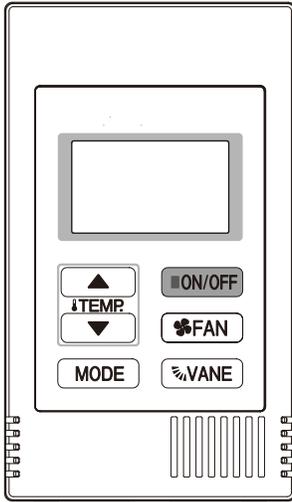


Unit: in [mm]

Model	PLFY-P08/12/15NBMU-E2	PLFY-P18NBMU-E2	PLFY-P24/30NBMU-E2	PLFY-P36NBMU-E2
Gas pipe	$\phi 1/2$ [12.7]	$\phi 1/2$ [12.7] $\phi 5/8$ [15.88]	$\phi 5/8$ [15.88]	$\phi 5/8$ [15.88] $\phi 3/4$ [19.05]
Liquid pipe	$\phi 1/4$ [6.35]	$\phi 1/4$ [6.35] $\phi 3/8$ [9.52]	$\phi 3/8$ [9.52]	$\phi 3/8$ [9.52]

INDOOR UNIT CONTROL

8-1. COOL OPERATION



<How to operate>

- ① Press POWER ON/OFF button.
- ② Press the operation MODE button to display COOL.
- ③ Press the TEMP. button to set the desired temperature.

NOTE: The set temperature changes 2°F when the  or  button is pressed one time. Cooling 67 to 87°F

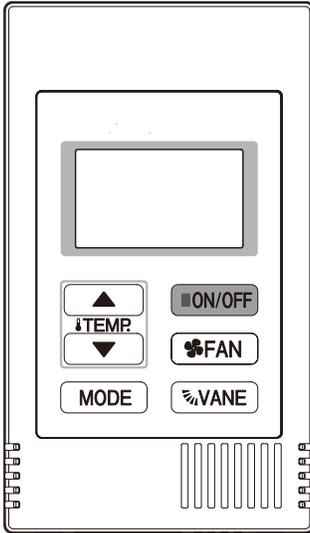
Control modes	Control details	Remarks				
1. Thermostatic control function	1-1. Determinating thermostatic control function (Function to prevent restarting for 3 minutes) <ul style="list-style-type: none"> • Room temperature \geq desired temperature + 2°F ...Thermo-ON • Room temperature \leq desired temperature ...Thermo-OFF 					
	1-2. Anti-freezing control Detected condition : When the liquid pipe temp. (TH22) is 32°F or less in 16 minutes from compressors start up, anti-freezing control starts and the thermo OFF. Released condition : The timer which prevents reactivating is set for 3 minutes, and anti-freezing control is cancelled when any one of the following conditions is satisfied. <ol style="list-style-type: none"> ① Liquid pipe temp. (TH22) turns 50°F or above. ② The condition of the thermo OFF has become complete by thermostat, etc. ③ The operation modes became mode other than COOL. ④ The operation stopped. 					
2. Fan	By the remote controller setting (switch of 4 speeds+Auto) <table border="1" style="margin: 10px auto;"> <thead> <tr> <th>Type</th> <th>Fan speed notch</th> </tr> </thead> <tbody> <tr> <td>4 speeds + Auto type</td> <td>[Low], [Med2], [Med1], [High], [Auto]</td> </tr> </tbody> </table> When [Auto] is set, fan speed is changed depending on the value of: Room temperature - Desired temperature	Type	Fan speed notch	4 speeds + Auto type	[Low], [Med2], [Med1], [High], [Auto]	
Type	Fan speed notch					
4 speeds + Auto type	[Low], [Med2], [Med1], [High], [Auto]					

Continue to the next page



Control modes	Control details	Remarks
3. Drain pump	<p>3-1. Drain pump control</p> <ul style="list-style-type: none"> •Always drain pump ON during the COOL and DRY mode operation. (Regardless of the thermo ON/OFF) •When the operation mode has changed from the COOL or DRY to the others (including Stop), OFF the control after the drain pump ON for 3 minutes. <p>Float switch control</p> <ul style="list-style-type: none"> • Float switch control judges whether the sensor is in the air or in the water by turning the float switch ON/OFF. In the water: Detected that the float switch is ON for 15 seconds. In the air : Detected that the float switch is OFF for 15 seconds. 	
4. Vane (up/down vane change)	<p>(1) Initial setting: Start at COOL mode and horizontal vane.</p> <p>(2) Vane position: Horizontal → Downward A → Downward B → Downward C → Downward D → Swing → Auto</p> <p>(3) Restriction of the downward vane setting When setting the downward vane A, B, C or D in [Med1], [Med2] or [Low] of the fan speed notch, the vane changes to horizontal position after 1 hour has passed.</p>	· "ONLY 1 Hr" appears on the wired remote controller.

8-2. DRY OPERATION



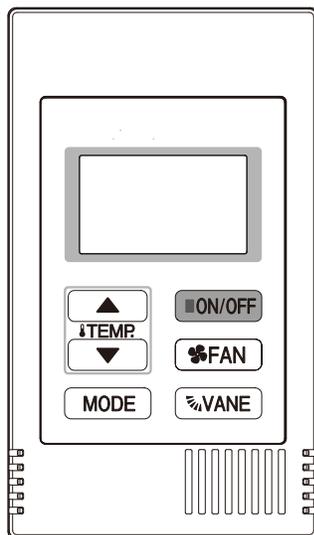
<How to operate>

- ① Press POWER ON/OFF button.
- ② Press the operation MODE button to display DRY.
- ③ Press the TEMP. button to set the desired temperature.

NOTE: The set temperature changes 2°F when the ∇ or \triangle button is pressed one time. Dry 67 to 87°F

Control modes	Control details	Remarks																															
1. Thermostatic control function	<p>1-1. Determinating thermostatic control function (Function to prevent restarting for 3 minutes) Setting the Dry thermo by the thermostat signal and the room temperature (TH21). Dry thermo-ON Room temperature \geq desired temperature + 2°F Dry thermo-OFF Room temperature \leq desired temperature</p> <table border="1"> <thead> <tr> <th rowspan="2">Room temperature</th> <th colspan="2">3 minutes passed since starting operation</th> <th rowspan="2">Dry thermo ON time (min)</th> <th rowspan="2">Dry thermo OFF time (min)</th> </tr> <tr> <th>Thermostat signal</th> <th>Room temperature (T1)</th> </tr> </thead> <tbody> <tr> <td rowspan="4">Over 64°F</td> <td rowspan="4">ON</td> <td>T1 \geq 83°F</td> <td>9</td> <td>3</td> </tr> <tr> <td>83°F > T1 \geq 79°F</td> <td>7</td> <td>3</td> </tr> <tr> <td>79°F > T1 \geq 75°F</td> <td>5</td> <td>3</td> </tr> <tr> <td>75°F > T1</td> <td>3</td> <td>3</td> </tr> <tr> <td></td> <td>OFF</td> <td>Unconditional</td> <td>3</td> <td>10</td> </tr> <tr> <td>Less than 64°F</td> <td colspan="4">Dry thermo OFF</td> </tr> </tbody> </table>	Room temperature	3 minutes passed since starting operation		Dry thermo ON time (min)	Dry thermo OFF time (min)	Thermostat signal	Room temperature (T1)	Over 64°F	ON	T1 \geq 83°F	9	3	83°F > T1 \geq 79°F	7	3	79°F > T1 \geq 75°F	5	3	75°F > T1	3	3		OFF	Unconditional	3	10	Less than 64°F	Dry thermo OFF				
	Room temperature		3 minutes passed since starting operation				Dry thermo ON time (min)	Dry thermo OFF time (min)																									
Thermostat signal		Room temperature (T1)																															
Over 64°F	ON	T1 \geq 83°F	9	3																													
		83°F > T1 \geq 79°F	7	3																													
		79°F > T1 \geq 75°F	5	3																													
		75°F > T1	3	3																													
	OFF	Unconditional	3	10																													
Less than 64°F	Dry thermo OFF																																
	<p>1-2. Frozen prevention control No control function</p>																																
2. Fan	<p>Indoor fan operation controlled depends on the compressor conditions.</p> <table border="1"> <thead> <tr> <th>Dry thermo</th> <th colspan="2">Fan speed notch</th> </tr> </thead> <tbody> <tr> <td>ON</td> <td colspan="2">[Low]</td> </tr> <tr> <td rowspan="2">OFF</td> <td>Excluding the following</td> <td>Stop</td> </tr> <tr> <td>Room temp. < 64°F</td> <td>[Low]</td> </tr> </tbody> </table> <p>Note: Remote controller setting is not acceptable.</p>	Dry thermo	Fan speed notch		ON	[Low]		OFF	Excluding the following	Stop	Room temp. < 64°F	[Low]																					
Dry thermo	Fan speed notch																																
ON	[Low]																																
OFF	Excluding the following	Stop																															
	Room temp. < 64°F	[Low]																															
3. Drain pump	Same control as COOL operation																																
4. Vane (up/down vane change)	Same control as COOL operation																																

8-3. FAN OPERATION

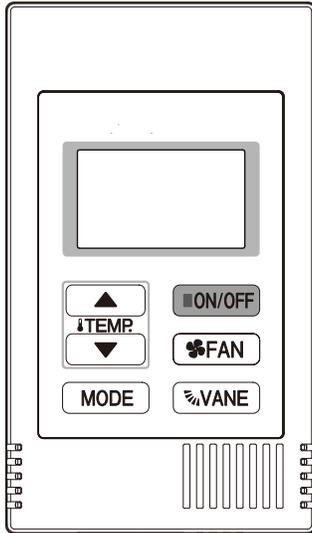


<How to operate>

- ① Press POWER ON/OFF button.
- ② Press the operation MODE button to display FAN.

Control modes	Control details	Remarks				
1. Fan	<p>Set by remote controller.</p> <table border="1"> <thead> <tr> <th>Type</th> <th>Fan speed notch</th> </tr> </thead> <tbody> <tr> <td>4 speeds + Auto type</td> <td>[Low], [Med2], [Med1], [High], [Auto]</td> </tr> </tbody> </table> <p>When [Auto] is set, fan speed becomes [Low].</p>	Type	Fan speed notch	4 speeds + Auto type	[Low], [Med2], [Med1], [High], [Auto]	
Type	Fan speed notch					
4 speeds + Auto type	[Low], [Med2], [Med1], [High], [Auto]					
2. Drain pump	<p>2-1. Drain pump control The drain pump turns ON for the specified amount of time when any of the following conditions is met:</p> <ol style="list-style-type: none"> ① ON for 3 minutes after the operation mode is switched from COOL or DRY to another operation mode (FAN). ② ON for 6 minutes after the float switch is submerged in the water when the float switch control judges the sensor is in the water. <p>2-2. Float switch control</p> <ul style="list-style-type: none"> • Float switch control judges whether the sensor is in the air or in the water by turning the float switch ON/OFF. <p>In the water : Detected that the float switch is ON for 15 seconds. In the air : Detected that the float switch is OFF for 15 seconds.</p>	<p>• Same control as COOL operation</p>				
3. Vane (up/down vane change)	Same as the control performed during the COOL operation, but with no restriction on the vane's downward blow setting					

8-4. HEAT OPERATION



<How to operate>

- ① Press POWER ON/OFF button.
- ② Press the operation MODE button to display HEAT.
- ③ Press the TEMP. button to set the desired temperature.

NOTE: The set temperature changes 2°F when the ∇ or Δ button is pressed one time. Heating 63 to 83°F.

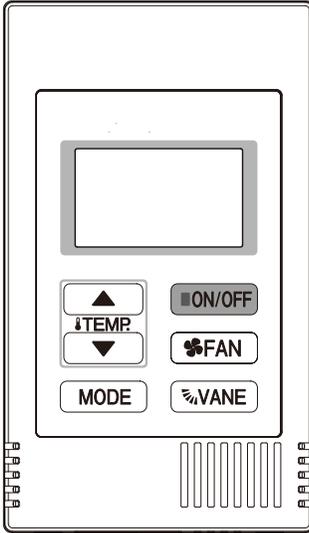
Control modes	Control details	Remarks				
1. Thermostatic control function	<p>1-1. Determinating thermostatic control function (Function to prevent restarting for 3 minutes)</p> <ul style="list-style-type: none"> • Room temperature \leq desired temperature -2°F ...Thermo-ON • Room temperature \geq desired temperature ...Thermo-OFF 					
2. Fan	<p>By the remote controller setting (switch of 4 speeds+Auto)</p> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Type</th> <th>Fan speed notch</th> </tr> </thead> <tbody> <tr> <td>4 speeds + Auto type</td> <td>[Low], [Med2], [Med1], [High], [Auto]</td> </tr> </tbody> </table> <p>When [Auto] is set, fan speed is changed depending on the value of: Desired temperature - Room temperature Give priority to under-mentioned controlled mode</p> <p>2-1. Hot adjust mode 2-2. Preheating exclusion mode 2-3. Thermo OFF mode (When the compressor off by the thermostat) 2-4. Cool air prevention mode (Defrosting mode)</p> <p>2-1. Hot adjust mode The fan controller becomes the hot adjuster mode for the following conditions.</p> <ol style="list-style-type: none"> ① When starting the HEAT operation ② When the thermostat function changes from OFF to ON. ③ When release the HEAT defrosting operation <div style="text-align: center;"> </div> <p>A: Hot adjust mode starts. B: 5 minutes have passed since the condition A or the indoor liquid pipe temperature turned 95°F or more. C: 2 minutes have passed since the condition A. (Terminating the hot adjust mode)</p>	Type	Fan speed notch	4 speeds + Auto type	[Low], [Med2], [Med1], [High], [Auto]	<p>*1 "STAND BY" will be displayed during the hot adjust mode.</p>
Type	Fan speed notch					
4 speeds + Auto type	[Low], [Med2], [Med1], [High], [Auto]					

Continue to the next page



Control modes	Control details	Remarks
2. Fan	2-2. Preheating exclusion mode When the condition changes the auxiliary heater ON to OFF (thermostat or operation stop, etc), the indoor fan operates in [Low] mode for 1 minute.	<ul style="list-style-type: none"> · This control is same for the model without auxiliary heater.
	2-3. Thermo OFF mode When the thermostat function changes to OFF, the indoor fan operates in [Extra low].	
	2-4. Heat defrosting mode The indoor fan stops.	
3. Drain pump	3-1. Drain pump control The drain pump turns ON for the specified amount of time when any of the following conditions is met: ① ON for 3 minutes after the operation mode is switched from COOL or DRY to another operation mode (FAN). ② ON for 6 minutes after the float switch is submerged in the water when the float switch control judges the sensor is in the water.	
	3-2. Float switch control <ul style="list-style-type: none"> • Float switch control judges whether the sensor is in the air or in the water by turning the float switch ON/OFF. In the water: Detected that the float switch is ON for 15 seconds. In the air : Detected that the float switch is OFF for 15 seconds. 	<ul style="list-style-type: none"> · Same control as COOL operation
4. Vane control (Up/down vane change)	(1) Initial setting: OFF → HEAT...[last setting] When the last setting is [Swing] ... [Downward D] When changing the mode from exception of HEAT to HEAT operation ...[Downward D] (2) Vane position: Horizontal →Downward A →Downward B →Downward C→Downward D→Swing→Auto ↑ (3) Restriction of vane position ① The vane is horizontally fixed for the following modes. (The control by the remote controller is temporally invalidated and control by the unit.) <ul style="list-style-type: none"> •Thermo OFF •Hot adjust [Extra low] mode •Heat defrost mode 	

8-5. AUTO OPERATION [AUTOMATIC COOL/HEAT CHANGE OVER OPERATION]



<How to operate>

- ① Press POWER ON/OFF button.
 - ② Press the operation MODE button to display AUTO.
 - ③ Press the TEMP. button to set the desired temperature.
- NOTE:** The set temperature changes 2°F when the  or  button is pressed one time. Automatic 67 to 83°F

Control modes	Control details	Remarks
1. Initial value of operation mode	HEAT mode for room temperature < Desired temperature COOL mode for room temperature \geq Desired temperature	
2. Mode change	(1) HEAT mode \rightarrow COOL mode Room temperature \geq desired temperature + 3°F or 3 minutes have passed. (2) COOL mode \rightarrow HEAT mode Room temperature \leq desired temperature - 3°F or 3 minutes have passed.	
3. COOL mode	Same control as cool operation	
4. HEAT mode	Same control as heat operation	

8-6. WHEN UNIT IS STOPPED CONTROL MODE

Control modes	Control details	Remarks
1. Drain pump	1-1. Drain pump control The drain pump turns ON for the specified amount of time when any of the following conditions is met: ① ON for 3 minutes after the operation mode is switched from COOL or DRY to another operation mode (FAN). ② ON for 6 minutes after the float switch is submerged in the water when the float switch control judges the sensor is in the water.	
	1-2. Float switch control • Float switch control judges whether the sensor is in the air or in the water by turning the float switch ON/OFF. In the water : Detected that the float switch is ON for 15 seconds. In the air : Detected that the float switch is OFF for 15 seconds.	• Same control as COOL operation

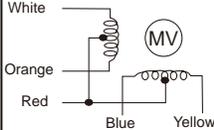
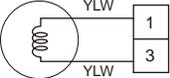
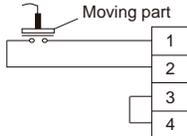
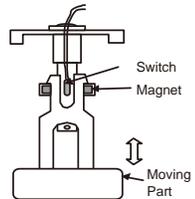
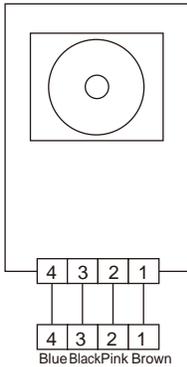
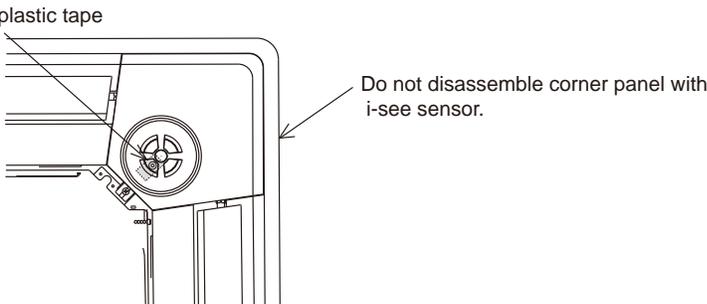
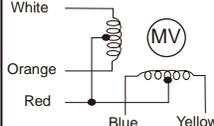
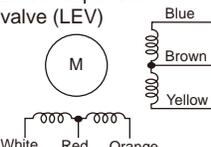
9-1. HOW TO CHECK THE PARTS

**PLFY-P08NBMU-E2
PLFY-P24NBMU-E2**

**PLFY-P12NBMU-E2
PLFY-P30NBMU-E2**

**PLFY-P15NBMU-E2
PLFY-P36NBMU-E2**

PLFY-P18NBMU-E2

Parts name	Check points														
Room temperature thermistor (TH21) Liquid pipe thermistor (TH22) Gas pipe thermistor (TH23)	Disconnect the connector then measure the resistance with a tester. (At the ambient temperature 50 to 86°F) <table border="1" style="margin-top: 10px;"> <tr> <th>Normal</th> <th>Abnormal</th> </tr> <tr> <td>4.3 to 9.6 kΩ</td> <td>Open or short</td> </tr> </table> Refer to "9-1-1. Thermistor".	Normal	Abnormal	4.3 to 9.6 kΩ	Open or short										
Normal	Abnormal														
4.3 to 9.6 kΩ	Open or short														
Vane motor (MV) 	Measure the resistance between the terminals with a tester. (At the ambient temperature of 68 to 86°F) <table border="1" style="margin-top: 10px;"> <tr> <th>Connector</th> <th>Normal</th> <th>Abnormal</th> </tr> <tr> <td>Red - Yellow</td> <td rowspan="4">300 Ω</td> <td rowspan="4">Open or short</td> </tr> <tr> <td>Red - Blue</td> </tr> <tr> <td>Red - Orange</td> </tr> <tr> <td>Red - White</td> </tr> </table>	Connector	Normal	Abnormal	Red - Yellow	300 Ω	Open or short	Red - Blue	Red - Orange	Red - White					
Connector	Normal	Abnormal													
Red - Yellow	300 Ω	Open or short													
Red - Blue															
Red - Orange															
Red - White															
Drain pump (DP) (Option) 	Measure the resistance between the terminals with a tester. (Winding temperature 68°F) <table border="1" style="margin-top: 10px;"> <tr> <th>Normal</th> <th>Abnormal</th> </tr> <tr> <td>290 Ω</td> <td>Open or short</td> </tr> </table>	Normal	Abnormal	290 Ω	Open or short										
Normal	Abnormal														
290 Ω	Open or short														
Drain float switch (FS) (Option) 	Measure the resistance between the terminals using a tester. <table border="1" style="margin-top: 10px;"> <tr> <th>State of moving part</th> <th>Normal</th> <th>Abnormal</th> </tr> <tr> <td>UP</td> <td>Short</td> <td>Other than short</td> </tr> <tr> <td>DOWN</td> <td>Open</td> <td>Other than open</td> </tr> </table> 	State of moving part	Normal	Abnormal	UP	Short	Other than short	DOWN	Open	Other than open					
State of moving part	Normal	Abnormal													
UP	Short	Other than short													
DOWN	Open	Other than open													
i-see sensor (Option) 	Turn on the indoor unit with black plastic tape on the outside of the i-see sensor controller board. With electricity being turned on, measure the power voltage between connectors with a tester. The i-see sensor rotates, and pull out the connector of motor for the i-see sensor.  <p style="margin-top: 10px;">i-see sensor (At the ambient temperature of 50 to 104°F)</p> <table border="1" style="margin-top: 10px;"> <tr> <th>i-see sensor connector</th> <th>Normal</th> <th>Abnormal</th> </tr> <tr> <td>②(-)-④(+)</td> <td>1.857-3.132 V DC</td> <td>Other than the normal</td> </tr> <tr> <td>①(+)-②(-)</td> <td>0.939-1.506 V DC</td> <td>Other than the normal</td> </tr> </table> <p>NOTE : Be careful when handling static electricity.</p>	i-see sensor connector	Normal	Abnormal	②(-)-④(+)	1.857-3.132 V DC	Other than the normal	①(+)-②(-)	0.939-1.506 V DC	Other than the normal					
i-see sensor connector	Normal	Abnormal													
②(-)-④(+)	1.857-3.132 V DC	Other than the normal													
①(+)-②(-)	0.939-1.506 V DC	Other than the normal													
i-see sensor motor (MT) (Option) 	Measure the resistance between the terminals with a tester. (At the ambient temperature of 68 to 86°F) <table border="1" style="margin-top: 10px;"> <tr> <th>Connector</th> <th>Normal</th> <th>Abnormal</th> </tr> <tr> <td>Red - Yellow</td> <td rowspan="4">250 Ω</td> <td rowspan="4">Open or short</td> </tr> <tr> <td>Red - Blue</td> </tr> <tr> <td>Red - Orange</td> </tr> <tr> <td>Red - White</td> </tr> </table>	Connector	Normal	Abnormal	Red - Yellow	250 Ω	Open or short	Red - Blue	Red - Orange	Red - White					
Connector	Normal	Abnormal													
Red - Yellow	250 Ω	Open or short													
Red - Blue															
Red - Orange															
Red - White															
Linear expansion valve (LEV) 	Disconnect the connector then measure the resistance valve with a tester. <table border="1" style="margin-top: 10px;"> <tr> <th colspan="4">Normal</th> <th>Abnormal</th> </tr> <tr> <td>White-Red</td> <td>Yellow-Brown</td> <td>Orange-Red</td> <td>Blue-Brown</td> <td rowspan="2">Open or short</td> </tr> <tr> <td colspan="4" style="text-align: center;">200Ω ±10%</td> </tr> </table> Refer to "9-1-2. Linear expansion valve".	Normal				Abnormal	White-Red	Yellow-Brown	Orange-Red	Blue-Brown	Open or short	200Ω ±10%			
Normal				Abnormal											
White-Red	Yellow-Brown	Orange-Red	Blue-Brown	Open or short											
200Ω ±10%															

9-1-1. Thermistor

<Thermistor characteristic graph>

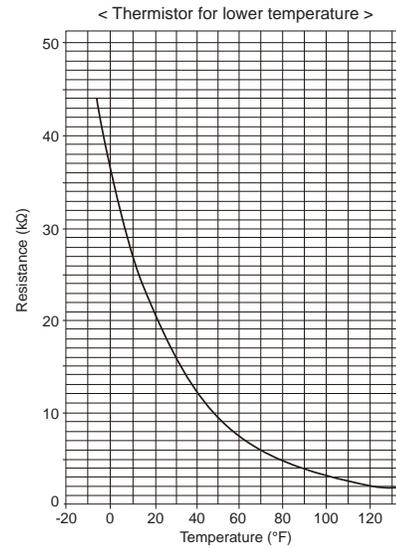
Thermistor for lower temperature

Room temperature thermistor (TH21)
Liquid pipe temperature thermistor (TH22)
Gas pipe temperature thermistor (TH23)

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

$$R_t = 15 \exp \left\{ 3480 \left(\frac{1}{273 + (t-32)/1.8} - \frac{1}{273} \right) \right\}$$

30°F	15.8 kΩ
50°F	9.6 kΩ
70°F	6.0 kΩ
80°F	4.8 kΩ
90°F	3.9 kΩ
100°F	3.2 kΩ

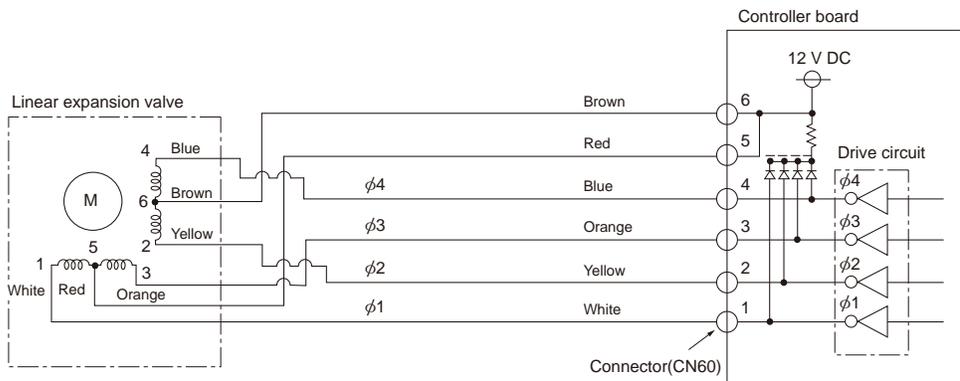


9-1-2. Linear expansion valve

① Operation summary of the linear expansion valve

- Linear expansion valve open/close through stepping motor after receiving the pulse signal from the indoor controller board.
- Valve position can be changed in proportion to the number of pulse signals.

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



Note : Since the number of the connector at the controller board side and the relay connector are different, follow the color of the lead wire.

<Output pulse signal and the valve operation>

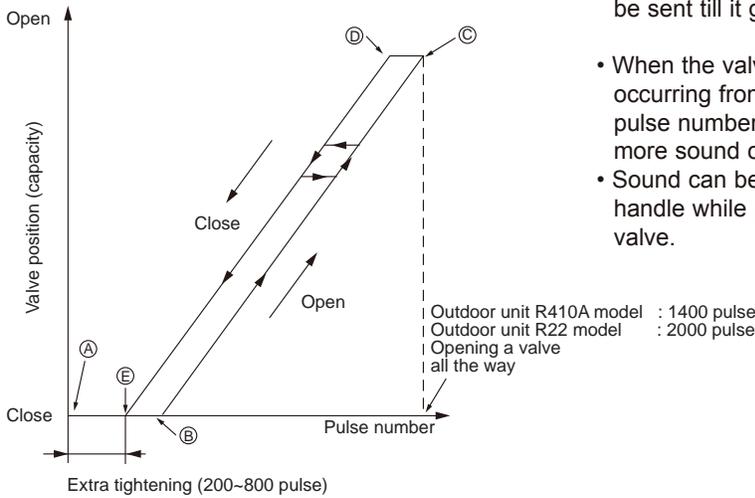
Output (Phase)	Output			
	1	2	3	4
φ1	ON	OFF	OFF	ON
φ2	ON	ON	OFF	OFF
φ3	OFF	ON	ON	OFF
φ4	OFF	OFF	ON	ON

Closing a valve : 1 → 2 → 3 → 4 → 1
 Opening a valve : 4 → 3 → 2 → 1 → 4
 The output pulse shifts in above order.

Note:

- When linear expansion valve operation stops, all output phases become OFF.
- At phase interruption or when phase does not shift in order, motor does not rotate smoothly and motor will lock and vibrate.
- When the switch is turned on, 2200 pulse closing valve signal will be sent till it goes to point A in order to define the valve position.
- When the valve moves smoothly, there is no sound or vibration occurring from the linear expansion valves, however, when the pulse number moves from E to A or when the valve is locked, more sound can be heard than in a normal situation.
- Sound can be detected by placing the ear against the screw driver handle while putting the screw driver tip to the linear expansion valve.

② Linear expansion valve operation



③ Troubleshooting

Symptom	Check points	Countermeasures
Operation circuit failure of the micro processor	Disconnect the connector on the controller board, then connect LED for checking. When power is turned on, pulse signals will output for 10 seconds. There must be some defects in the operation circuit if the LED does not light while the signals are output or keeps lighting even after the signals stop.	Exchange the indoor controller board at drive circuit failure.
Linear expansion valve mechanism is locked.	Motor will idle and make a ticking noise when the motor is operated while the linear expansion valve is locked. This ticking sound is the sign of the abnormality.	Exchange the linear expansion valve.
Short or breakage of the motor coil of the linear expansion valve	Measure the resistance between each coil (white-red, yellow-brown, orange-red, blue-brown) with a tester. It is normal if the resistance is in the range of 150Ω ±10%.	Exchange the linear expansion valve.
Valve does not close completely.	To check the linear expansion valve, operate the indoor unit in fan mode and at the same time operate other indoor units in cooling mode, then check the pipe temperature <liquid pipe temperature> of the indoor unit by the outdoor multi controller board operation monitor. During fan operation, linear expansion valve is closed completely and if there is any leaking, detecting temperature of the thermistor will go lower. If the detected temperature is much lower than the temperature indicated in the remote controller, it means the valve is not closed all the way. It is not necessary to exchange the linear expansion valve, if the leakage is small and not affecting normal operation.	If large amount of refrigerant is leaked, exchange the linear expansion valve.
Wrong connection of the connector or contact failure	Check the color of lead wire and missing terminal of the connector.	Disconnect the connector at the controller board, then check the continuity.

9-1-3. DC Fan motor (fan motor/indoor controller board)

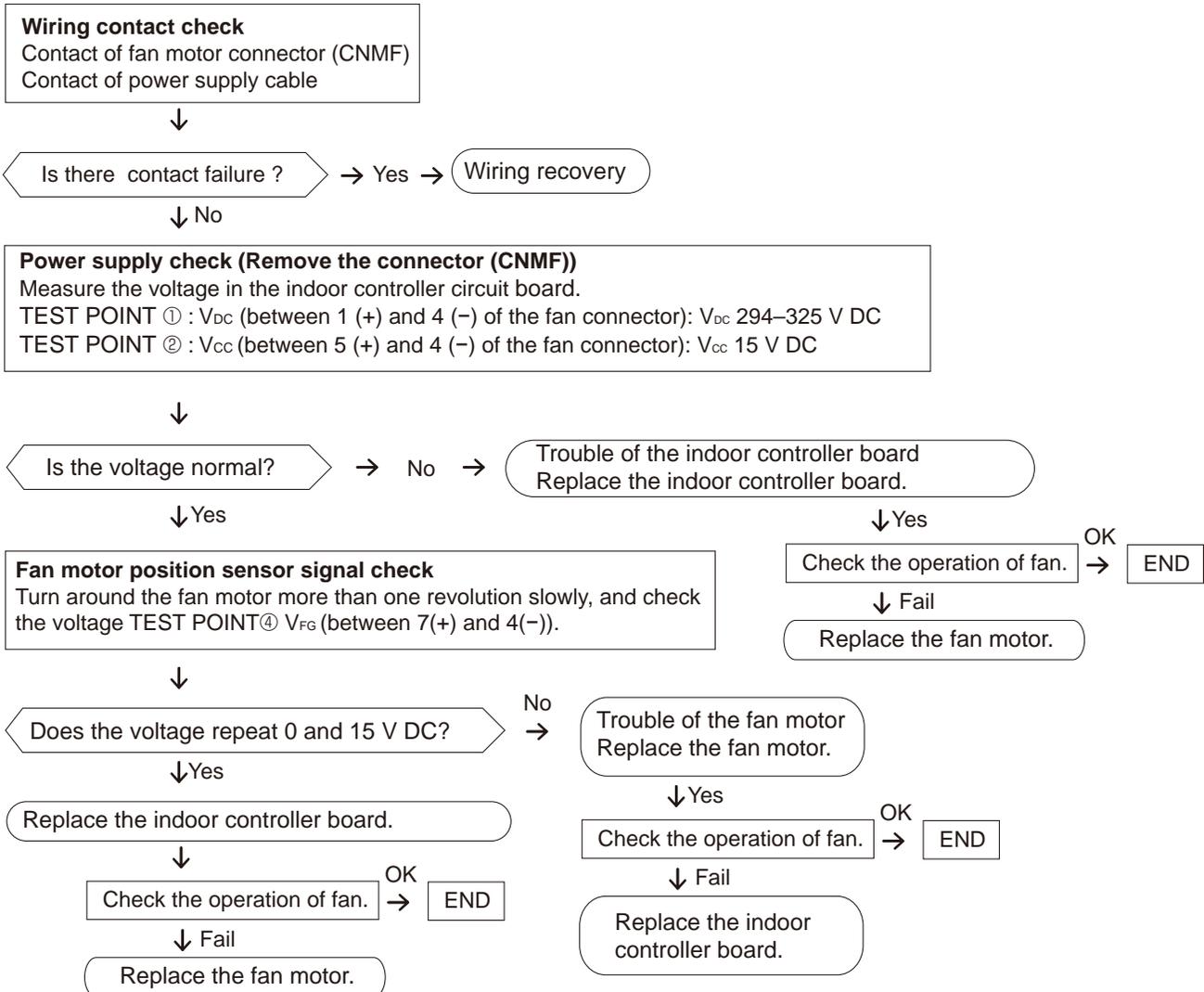
Check method of indoor fan motor (fan motor/indoor controller board)

① Notes

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

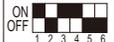
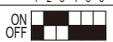
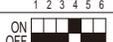
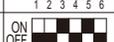
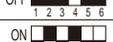
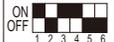
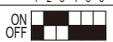
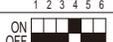
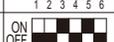
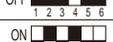
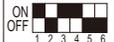
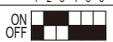
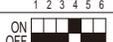
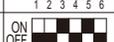
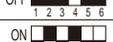
② Self check

Conditions : The indoor fan cannot rotate.



9-2. FUNCTION OF DIP SWITCH

The black square (■) indicates a switch position.

Switch	Pole	Function	Operation by switch		Effective timing	Remarks																			
			ON	OFF																					
SW1 Function setting	1	Thermistor <Room temperature detection> position	Built-in remote controller	Indoor unit	Under suspension	<div style="border: 1px solid black; padding: 2px;">Address board</div> <p><Initial setting></p>  <p>*1 Fan operation at Heating mode *2 Heat thermo-ON is operating. *3</p> <table border="1" style="font-size: small;"> <tr> <td>SW1-7</td> <td>SW1-8</td> <td></td> </tr> <tr> <td>OFF</td> <td>OFF</td> <td>Extra low</td> </tr> <tr> <td>ON</td> <td>OFF</td> <td>Low</td> </tr> <tr> <td>OFF</td> <td>ON</td> <td>Setting air flow</td> </tr> <tr> <td>ON</td> <td>ON</td> <td>Stop</td> </tr> </table>	SW1-7	SW1-8		OFF	OFF	Extra low	ON	OFF	Low	OFF	ON	Setting air flow	ON	ON	Stop				
	SW1-7	SW1-8																							
	OFF	OFF	Extra low																						
	ON	OFF	Low																						
	OFF	ON	Setting air flow																						
	ON	ON	Stop																						
	2	Filter clogging detection	Provided	Not provided																					
	3	Filter cleaning	2,500 hr	100 hr																					
	4	Fresh air intake	Effective	Not effective																					
	5	Switching remote display	Thermo ON signal display	Indicating fan operation ON/OFF																					
6	Humidifier control	Always operated while the heat in ON*1	Operated depends on the condition*2																						
7	Air flow set in case of Heat thermo-OFF	Low*3	Extra low*3																						
8	Auto restart function	Setting air flow*3	Depends on SW1-7																						
9	Power ON/OFF by breaker	Effective	Not effective																						
SW2 Capacity code setting	1-6	<table border="1" style="font-size: x-small; width: 100%;"> <thead> <tr> <th>MODEL</th> <th>SW2</th> <th>MODEL</th> <th>SW2</th> </tr> </thead> <tbody> <tr> <td>PLFY-P08NBMU-E2</td> <td></td> <td>PLFY-P24NBMU-E2</td> <td></td> </tr> <tr> <td>PLFY-P12NBMU-E2</td> <td></td> <td>PLFY-P30NBMU-E2</td> <td></td> </tr> <tr> <td>PLFY-P15NBMU-E2</td> <td></td> <td>PLFY-P36NBMU-E2</td> <td></td> </tr> <tr> <td>PLFY-P18NBMU-E2</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MODEL	SW2	MODEL	SW2	PLFY-P08NBMU-E2		PLFY-P24NBMU-E2		PLFY-P12NBMU-E2		PLFY-P30NBMU-E2		PLFY-P15NBMU-E2		PLFY-P36NBMU-E2		PLFY-P18NBMU-E2						<div style="border: 1px solid black; padding: 2px;">Indoor controller board</div> <p><Initial setting></p> <p>Set for each capacity.</p>
		MODEL	SW2	MODEL	SW2																				
		PLFY-P08NBMU-E2		PLFY-P24NBMU-E2																					
		PLFY-P12NBMU-E2		PLFY-P30NBMU-E2																					
PLFY-P15NBMU-E2		PLFY-P36NBMU-E2																							
PLFY-P18NBMU-E2																									
1	Heat pump/Cooling only	Cooling only	Heat pump																						
2	Louver/Humidifier	Available	Not available																						
3	Vane	Available	Not available																						
SW3 Function setting	4	Vane swing function in heating (wave-flow)	Available	Not available	Under suspension	<div style="border: 1px solid black; padding: 2px;">Indoor controller board</div> <p><Initial setting></p>  <p>Note :</p> <p>*4 SW3-5,6 *5 Please do not use SW-3-9,10 as trouble might be caused by the usage condition.</p>																			
	5	Vane horizontal angle ①	Second setting*4	First setting*4																					
	6	Vane horizontal angle ②	Third setting*4	Depends on SW3-5																					
	7	Changing the opening of linear expansion valve	Effective	Not effective																					
	8	Sensible temperature correction	Not effective	Effective																					
	9	Superheat setting temperature*5	—	—																					
	10	Sub cool setting temperature*5	—	—																					
SW4 Model Selection (Setting for PLFY series)	1-5				Before power supply ON	<div style="border: 1px solid black; padding: 2px;">Indoor controller board</div>																			

SW3-5	SW3-6	Vane setting	Initial setting	Setting	Vane position
OFF	OFF	Set up ①	●	Standard	Standard
ON	OFF	Set up ②		Less draft *	Upward position than the standard
OFF	ON	Set up ③		Less smudging	Downward position than the standard
ON	ON	unused		—	—

* Be careful of the smudge on ceiling.

The black square (■) indicates a switch position.

Switch	Pole	Operation by switch	Effective timing	Remarks																
SWA Ceiling height selector	1-3	<p>Note: Ceiling height can be changed depending on SWB setting.</p> <p>PLFY-P08/12/15/18/24/30NBMU-E2</p> <table border="1"> <thead> <tr> <th>SWA \ SWB</th> <th>① Silent</th> <th>② Standard</th> <th>③ High ceiling</th> </tr> </thead> <tbody> <tr> <td>④ 4 direction</td> <td>8.2 ft [2.5 m]</td> <td>8.9 ft [2.7m]</td> <td>11.5 ft [3.5 m]</td> </tr> <tr> <td>③ 3 direction</td> <td>8.9 ft [2.7 m]</td> <td>9.8 ft [3.0 m]</td> <td>11.5 ft [3.5 m]</td> </tr> <tr> <td>② 2 direction</td> <td>9.8 ft [3.0 m]</td> <td>10.8 ft [3.3 m]</td> <td>11.5 ft [3.5 m]</td> </tr> </tbody> </table>	SWA \ SWB	① Silent	② Standard	③ High ceiling	④ 4 direction	8.2 ft [2.5 m]	8.9 ft [2.7m]	11.5 ft [3.5 m]	③ 3 direction	8.9 ft [2.7 m]	9.8 ft [3.0 m]	11.5 ft [3.5 m]	② 2 direction	9.8 ft [3.0 m]	10.8 ft [3.3 m]	11.5 ft [3.5 m]	Under operation or suspension	<p>Address board</p> <p><Initial setting></p>
SWA \ SWB	① Silent	② Standard	③ High ceiling																	
④ 4 direction	8.2 ft [2.5 m]	8.9 ft [2.7m]	11.5 ft [3.5 m]																	
③ 3 direction	8.9 ft [2.7 m]	9.8 ft [3.0 m]	11.5 ft [3.5 m]																	
② 2 direction	9.8 ft [3.0 m]	10.8 ft [3.3 m]	11.5 ft [3.5 m]																	
SWB Discharge outlet number selector	3	<p>PLFY-P36NBMU-E2</p> <table border="1"> <thead> <tr> <th>SWA \ SWB</th> <th>① Silent</th> <th>② Standard</th> <th>③ High ceiling</th> </tr> </thead> <tbody> <tr> <td>④ 4 direction</td> <td>8.9 ft [2.7 m]</td> <td>10.5 ft [3.2 m]</td> <td>14.8 ft [4.5 m]</td> </tr> <tr> <td>③ 3 direction</td> <td>9.8 ft [3.0 m]</td> <td>11.8 ft [3.6 m]</td> <td>14.8 ft [4.5 m]</td> </tr> <tr> <td>② 2 direction</td> <td>10.8 ft [3.3 m]</td> <td>13.1 ft [4.0 m]</td> <td>14.8 ft [4.5 m]</td> </tr> </tbody> </table>	SWA \ SWB	① Silent	② Standard	③ High ceiling	④ 4 direction	8.9 ft [2.7 m]	10.5 ft [3.2 m]	14.8 ft [4.5 m]	③ 3 direction	9.8 ft [3.0 m]	11.8 ft [3.6 m]	14.8 ft [4.5 m]	② 2 direction	10.8 ft [3.3 m]	13.1 ft [4.0 m]	14.8 ft [4.5 m]	<p>Address board</p> <p><Initial setting></p>	
SWA \ SWB	① Silent	② Standard	③ High ceiling																	
④ 4 direction	8.9 ft [2.7 m]	10.5 ft [3.2 m]	14.8 ft [4.5 m]																	
③ 3 direction	9.8 ft [3.0 m]	11.8 ft [3.6 m]	14.8 ft [4.5 m]																	
② 2 direction	10.8 ft [3.3 m]	13.1 ft [4.0 m]	14.8 ft [4.5 m]																	
SWC Option selector	2	<p>② オプ (Option) ① 標 (Standard)</p> <p>When attaching the optional high performance filter elements (multi function casement) to the unit, be sure to attach it to the option side in order to prevent the airflow reducing.</p>	<p>Address board</p> <p><Initial setting></p>																	
SW11 1s digit address setting SW12 10s digit address setting	Rotary switch	<p>How to set address Example : If address is "3", remain SW12 (for over 10) at "0", and match SW11 (for 1 to 9) with "3".</p>	Before power supply ON	<p>Address board</p> <p><Initial setting></p>																
SW14 Branch No. setting	Rotary switch	<p>How to set branch number SW14 (Series R2 only) Match the indoor unit's refrigerant pipe with the BC controller's end connection number Remain other than series R2 at "0".</p>		<p>Address board</p> <p><Initial setting></p>																



Switch	Pole	Operation by switch	Effective timing	Remarks																											
J41, J42 Wireless remote controller Pair No.	Jumper	<ul style="list-style-type: none"> To operate each indoor unit by each remote controller when installed 2 indoor units or more are near, Pair No. setting is necessary. ① Pair No. setting is available with the 4 patterns (Setting patters A to D). ② Make setting for J41, J42 of indoor controller board and the Pair No. of wireless remote controller. <ul style="list-style-type: none"> You may not set it when operating it by one remote controller. ① Setting for indoor unit Jumper wire J41, J42 on the indoor controller board are cut according to the table below. ② Wireless remote controller Pair No.: Setting operation <ol style="list-style-type: none"> Press the SET button (using a pointed implement). Check that the remote controller's display has stopped before continuing. MODEL SELECT blinks, and the model No. (3 digits) appears (steadily-lit). Press the MINUTE button twice. The pair number appears flashing. Press the TEMP (M) (A) buttons to select the pair number to set. Press the SET button (using a pointed implement). The set Pair No. is displayed (steadily-lit) for 3 seconds, then disappears. <table border="1" style="margin: 10px auto;"> <thead> <tr> <th rowspan="2">Setting pattern</th> <th colspan="2">Indoor controller Jumper wire</th> <th rowspan="2">Pair No. of wireless remote controller*</th> <th rowspan="2"></th> </tr> <tr> <th>J41</th> <th>J42</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>—</td> <td>—</td> <td>0</td> <td>Initial setting</td> </tr> <tr> <td>B</td> <td>Cut</td> <td>—</td> <td>1</td> <td>—</td> </tr> <tr> <td>C</td> <td>—</td> <td>Cut</td> <td>2</td> <td>—</td> </tr> <tr> <td>D</td> <td>Cut</td> <td>Cut</td> <td>3</td> <td>—</td> </tr> </tbody> </table> <p>*Pair No.4–9 of wireless remote controller is setting pattern D.</p>	Setting pattern	Indoor controller Jumper wire		Pair No. of wireless remote controller*		J41	J42	A	—	—	0	Initial setting	B	Cut	—	1	—	C	—	Cut	2	—	D	Cut	Cut	3	—	Under operation or suspension	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin-bottom: 10px;">Indoor controller board</div> <p style="text-align: center;"><Initial setting> Pattern A</p>
Setting pattern	Indoor controller Jumper wire			Pair No. of wireless remote controller*																											
	J41	J42																													
A	—	—	0	Initial setting																											
B	Cut	—	1	—																											
C	—	Cut	2	—																											
D	Cut	Cut	3	—																											
SWE Test run for Drain pump	Connector	<p>Drain pump and fan are activated simultaneously after the connector SWE is set to ON and turn ON the power.</p> <div style="text-align: center;"> </div> <p>The connector SWE is set to OFF after test run.</p>	Under operation	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin-bottom: 10px;">Indoor controller board</div> <p style="text-align: center;"><Initial setting></p> <div style="text-align: center;"> </div>																											

9-3. TEST POINT DIAGRAM

9-3-1. Indoor controller board

PLFY-P08NBMU-E2
PLFY-P24NBMU-E2

PLFY-P12NBMU-E2
PLFY-P30NBMU-E2

PLFY-P15NBMU-E2
PLFY-P36NBMU-E2

PLFY-P18NBMU-E2

CN4Y
i-See sensor

CN60
Linear expansion valve (LEV) output
12 V DC pulse output

CN6Y
i-see sensor motor output
12 V DC pulse output

CN52
Remote indicator
①-②: Status lamp 12 V DC (①: +)
Fan motor output (SW1-5 OFF)
Thermostat ON (SW1-5 ON)
①-③: Cooling/Dry status lamp
12 V DC (①: +)
①-④: Heating status lamp
12 V DC (①: +)

CN51
Centrally control
①-②: Control signal
12 V DC pulse input (①: +)
③-④: Operation indicator
12 V DC (③: +)
③-⑤: Malfunction indicator
12 V DC (③: +)

CN44
Pipe temperature thermistor
①-②: Liquid (TH22)
③-④: Gas (TH23)

CN4F
Drain float switch (FS)

CN20
Room temperature thermistor (TH21)

CN24
External heater
12 V DC (①: +)

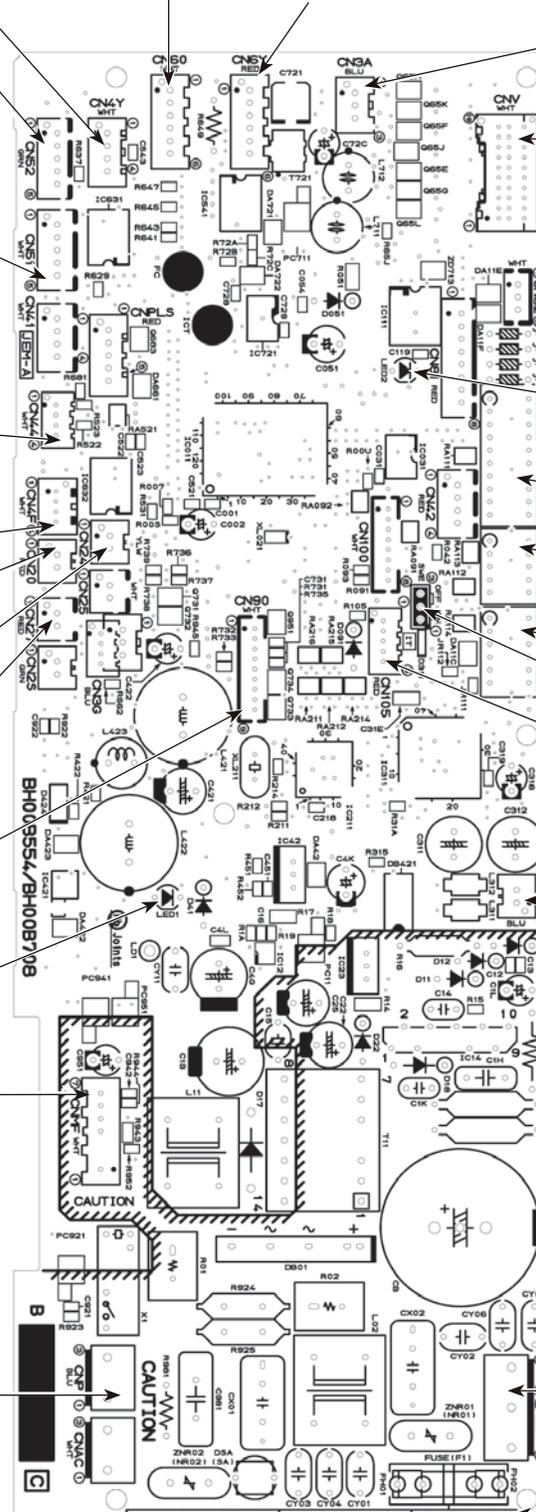
CN27
Damper signal output
12 V DC (①: +)

CN90
Connect to the wireless remote controller board (W.B)

LED1
Main power supply
(Indoor unit: 208-230V)

CNMF
Connect to the fan motor (MF)
①-③: 310-340 V DC
⑤-④: 15 V DC
⑥-④: 0-6 V DC
⑦-④: 0 or 15 V DC (Stop)
7.5 V DC (Operation)
(12 V DC pulse)

CNP
Drain pump output (DP)
①-③: 208-230 V AC



CN3A
Connect to the terminal block (TB15)
(MA-Remote controller connecting wire)
①-③: 8.7-13 V DC (Pin① (+))

CNV
Vane motor output
12 V DC pulse

CN32
Remote switch

Jumper wire J41, J42
Pair No. setting for wireless remote controller

LED2
Power supply for MA-Remote controller

SW3
Function setting

SW4
Model selection

SW2
Capacity setting

SWE
Test run (Drain pump)

CN105
IT Terminal

CN2M
Connect to the terminal block (TB5)
(M-NET transmission connecting wire)
24-30 V DC (non-polar)

CND
Power supply for indoor controller board
③-⑤: 208-230 V AC

FUSE
6.3 A, 250 V

Note: The voltage range of 12 V DC in this page is between 11.5 to 13.7 V DC.

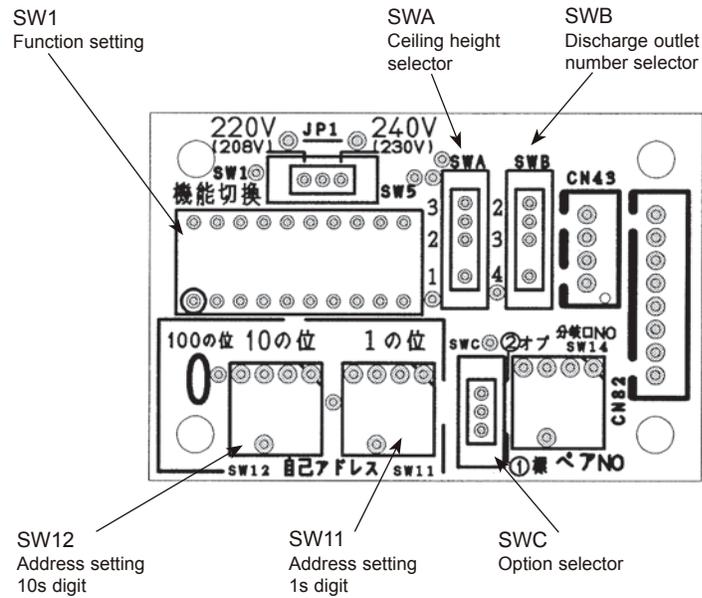
9-3-2. Circuit board

PLFY-P08NBMU-E2
PLFY-P24NBMU-E2

PLFY-P12NBMU-E2
PLFY-P30NBMU-E2

PLFY-P15NBMU-E2
PLFY-P36NBMU-E2

PLFY-P18NBMU-E2



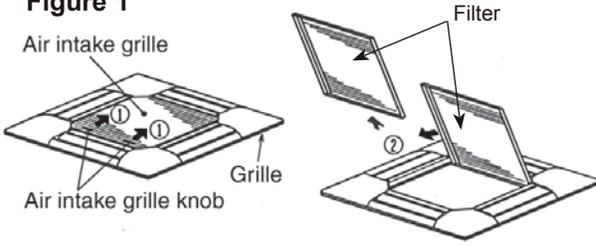
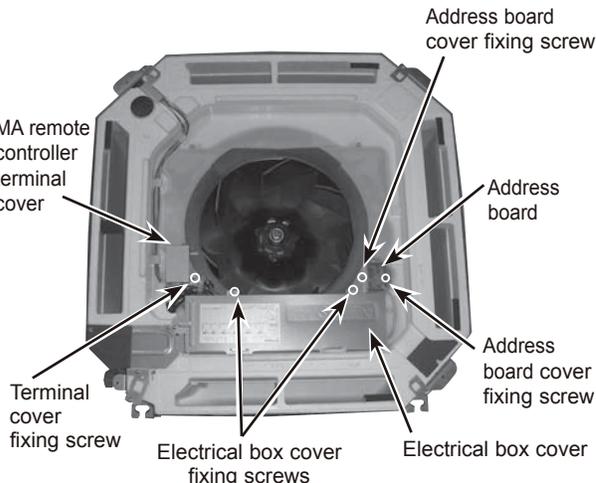
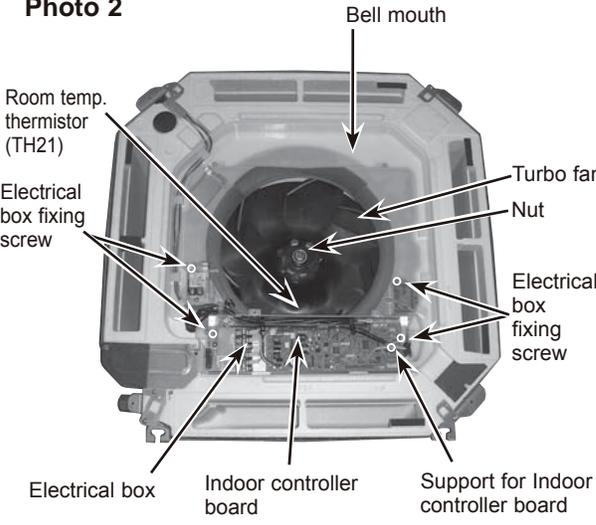
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PLFY-P12NBMU-E2
PLFY-P30NBMU-E2

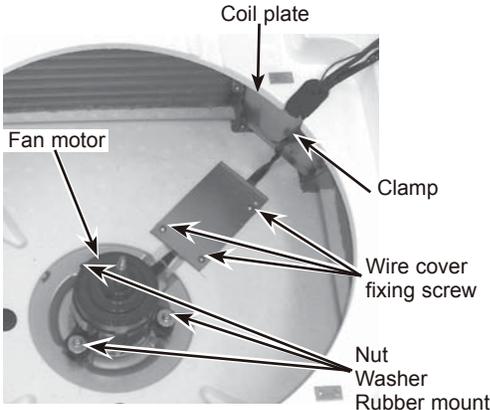
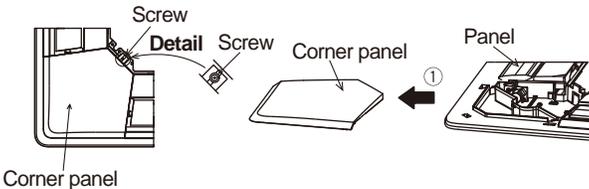
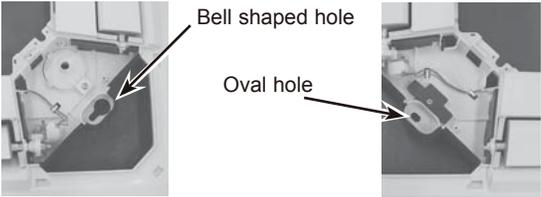
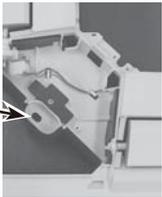
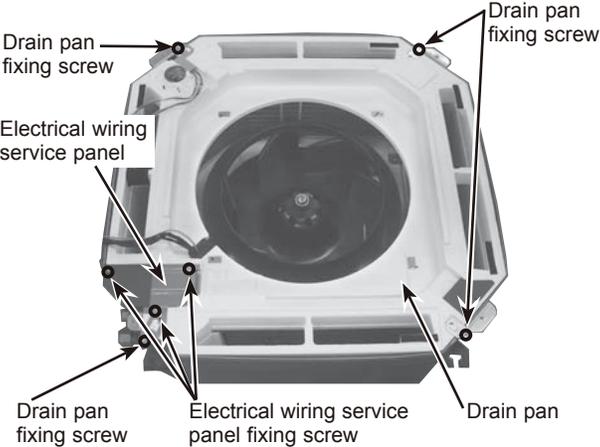
PLFY-P15NBMU-E2
PLFY-P36NBMU-E2

PLFY-P18NBMU-E2

Be careful when removing heavy parts.

OPERATING PROCEDURE	PHOTOS & ILLUSTRATIONS
<p>1. Removing the air intake grille</p> <p>(1) Slide the knob of air intake grille toward the arrow ① to open the air intake grille.</p> <p>(2) Remove drop prevention hook from the panel.</p> <p>(3) Slide the shaft in the hinge to the direction of the arrow ② and remove the air intake grille.</p>	<p>Figure 1</p> 
<p>2. Removing the room temperature thermistor (TH21)</p> <p>(1) Remove the air intake grille and the filter. (See Figure 1)</p> <p>(2) Remove the 2 screws from the electrical box cover.</p> <p>(3) Disconnect the connector CN20 (Red) from the indoor controller board.</p> <p>(4) Remove the room temperature thermistor.</p>	<p>Photo 1</p> 
<p>3. Removing the address board (A.B)</p> <p>(1) Remove the air intake grille and the filter. (See Figure 1)</p> <p>(2) Remove the 2 screws from the address board cover.</p> <p>(3) Disconnect the connectors CN43 (RED/4P) and CN82 (RED/8P).</p> <p>(4) Slide and remove the address board.</p>	<p>Photo 2</p> 
<p>4. Removing the indoor controller board (I.B)</p> <p>(1) Remove the air intake grille and the filter. (See Figure 1)</p> <p>(2) Remove the 2 screws from the electrical box cover.</p> <p>(3) Disconnect the connectors :</p> <ul style="list-style-type: none"> CNMF (White/7P) for fan motor CN44 (White/4P) for thermistor (TH22/TH23) CNP (Blue/3P) for drain pump CN4F (White/4P) for float switch CND (Black/5P) for earth and TB2 CNV (White/20P) for vane motor CN81, CN42 (Red/8P, 4P) for address board CN2M (Blue/2P) for TB5 CN3A (Blue/3P) for TB15 <p>(4) Remove the 6 supports from indoor controller board.</p> <p>(5) Remove the indoor controller board.</p>	
<p>5. Removing the electrical box</p> <p>(1) Remove the air intake grille and the filter. (See Figure 1)</p> <p>(2) Remove the 2 screws from the electrical box cover.</p> <p>(3) Disconnect the connectors. (Refer to procedure 4)</p> <p>(4) Remove 4 electrical box fixing screws and remove 2 hooks.</p> <p>(5) Pull the electrical box.</p> <p><Electrical parts in the electrical box></p> <ul style="list-style-type: none"> Indoor controller board Terminal block (TB2) (TB5) 	



OPERATING PROCEDURE	PHOTOS & ILLUSTRATIONS
<p>6. Removing the fan and fan motor (MF)</p> <ol style="list-style-type: none">(1) Remove the electrical box. (See Photo 2)(2) Remove the bell mouth (3 screws). (See Photo 2)(3) Remove the turbo fan nut.(4) Pull out the turbo fan.(5) Remove the wire cover (3 screws).(6) Remove 2 wiring clamps.(7) Disconnect the connector of the fan motor (CNMF).(8) Remove the 3 nuts and washers and rubber mounts of the fan motor.	<p>Photo 3</p> 
<p>7. Removing the panel</p> <ol style="list-style-type: none">(1) Remove the air intake grille and the filter. (See Figure 1)(2) Disconnect the connector CNV (White/20P). <p>Corner panel (See Figure 2)</p> <ol style="list-style-type: none">(3) Remove the corner screw.(4) Slide the corner panel to the direction of the arrow ①, and remove the corner panel. <p>Panel (See Photo 4, 5)</p> <ol style="list-style-type: none">(5) Remove the 2 screws from the panel which fixes to the oval holes.(6) Rotate the panel a little to come to the bell shaped hole where the screw is large and remove the panel.	<p>Figure 2</p>  <p>Photo 4</p>  <p>Photo 5</p> 
<p>8. Removing the drain pan</p> <ol style="list-style-type: none">(1) Remove the air intake grille and the filter. (See Figure 1)(2) Remove the 2 screws from the electrical box cover.(3) Disconnect the connectors. (Refer to procedure 4)(4) Remove the panel. (See Photo 4, 5)(5) Remove the electrical wiring service panel (3 screws).(6) Remove the electrical box. (See Photo 2)(7) Remove the bell mouth. (See Photo 2)(8) Remove the 4 screws and pull out the drain pan. <p>Notes:</p> <ol style="list-style-type: none">1. Pull out the left and right of the pan gradually.2. Be careful not to crack or damage the pan.	<p>Photo 6</p> 

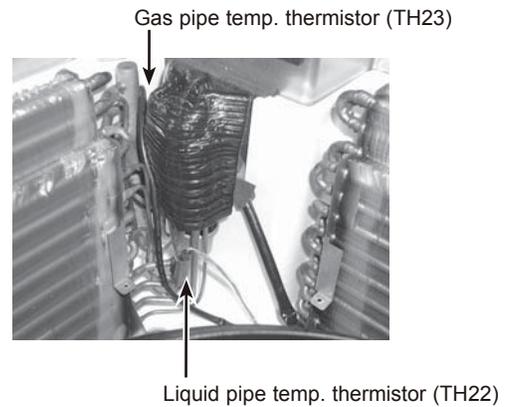
OPERATING PROCEDURE

PHOTOS

9. Removing the liquid pipe temperature thermistor (TH22) and gas pipe temperature thermistor (TH23)

- (1) Remove the drain pan. (See Photo 6)
- (2) Remove the turbo fan. (Refer to procedure 6)
- (3) Remove the 2 wiring clamps. (See Photo 3)
- (4) Remove the coil plate (2 screws).
- (5) Remove the thermistors which are inserted into the holders installed to the thin copper pipe.
- (6) Disconnect the 4-pin white connector (CN44).

Photo 7



10 Removing the drain pump (DP) and float switch (FS)

- (1) Remove the drain pan. (See Photo 6)
- (2) Cut the hose band and remove the hose.
- (3) Remove the drain pump assembly (3 screws and 2 hooks).
- (4) Remove the drain pump (3 screws).
- (5) Remove the float switch (2 screws).

Photo 8

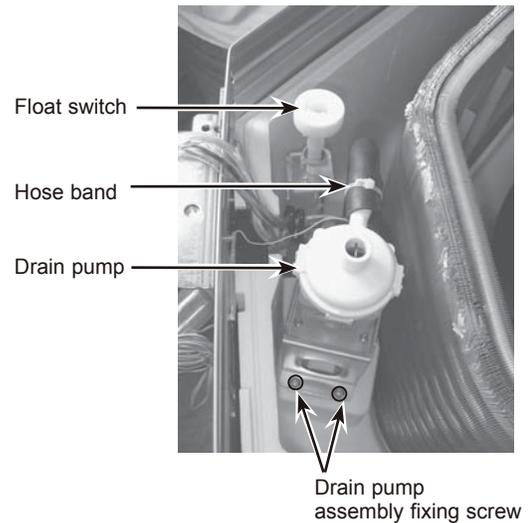
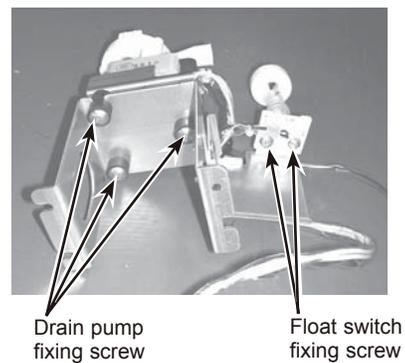
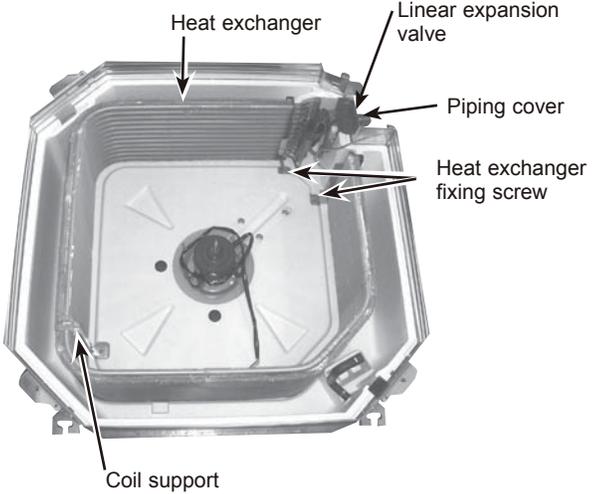


Photo 9





OPERATING PROCEDURE	PHOTOS
<p>11. Removing the heat exchanger</p> <ol style="list-style-type: none">(1) Remove the drain pan. (See Photo 6)(2) Remove the 3 screws of the piping cover, and pull out piping cover.(3) Remove the 2 screws of coil plate.(4) Remove the 2 screws of the coil.(5) Remove the screw of the coil support.(6) Pull out the heat exchanger.	<p>Photo 10</p>  <p>Heat exchanger</p> <p>Linear expansion valve</p> <p>Piping cover</p> <p>Heat exchanger fixing screw</p> <p>Coil support</p>

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HEAD OFFICE : TOKYO BLDG., 2-7-3, MARUNOUCHI, CHIYODA-KU TOKYO 100-8310, JAPAN
