MITSUBISHI ELECTRIC

SPLIT-TYPE, HEAT PUMP AIR CONDITIONERS

March 2018

No. OCH604
REVISED EDITION-A

# TECHNICAL & SERVICE MANUAL

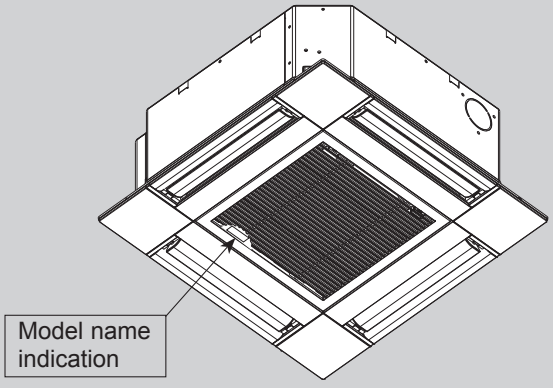
## Series PLFY Ceiling Cassettes R410A

| Indoor unit [Model Name] | [Service Ref.] |
|---|---|
| PLFY-P05NFMU-E | PLFY-P05NFMU-E.TH |
| PLFY-P08NFMU-E | PLFY-P08NFMU-E.TH |
| PLFY-P12NFMU-E | PLFY-P12NFMU-E.TH |
| PLFY-P15NFMU-E | PLFY-P15NFMU-E.TH |
| PLFY-P18NFMU-E | PLFY-P18NFMU-E.TH |

Revision:
- Modified in "4.4-WAY AIR FLOW SYSTEM" in REVISED EDITION-A.
- Some descriptions have been modified.

- OCH604 is void.

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




INDOOR UNIT

CONTENTS

1. SAFETY PRECAUTION·····2
2. PARTS NAMES AND FUNCTIONS·····4
3. SPECIFICATIONS·····12
4. 4-WAY AIR FLOW SYSTEM·····14
5. OUTLINES AND DIMENSIONS·····16
6. WIRING DIAGRAM·····17
7. REFRIGERANT SYSTEM DIAGRAM·····18
8. TROUBLESHOOTING·····19
9. DISASSEMBLY PROCEDURE·····27

PARTS CATALOG (OCB604)

# 1 SAFETY PRECAUTION

## CAUTIONS RELATED TO NEW REFRIGERANT

**Cautions for units utilizing refrigerant R410A**

**Do not use the existing refrigerant piping.**

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

**Use "low residual oil piping"**

If there is a large amount of residual oil (hydraulic oil, etc.) inside the piping and joints, deterioration of the lubricant will result.

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

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

**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 in a gas phase, composition change may occur in refrigerant and the efficiency will be lowered.

**Do not use refrigerant other than R410A.**

If other refrigerant (R22, 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 R410A refrigerant.**

The following tools are necessary to use R410A refrigerant.

| Tools for R410A | |
|---|---|
| Gauge manifold | Flare tool |
| Charge hose | Size adjustment gauge |
| Gas leak detector | Vacuum pump adaptor |
| Torque wrench | Electronic refrigerant charging scale |
| Micron gauge | |

**Handle tools with care.**

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

**Do not use a charging cylinder.**

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

**Use the specified refrigerant only.**

**Never use any refrigerant other than that specified.**
Doing so may cause a burst, an explosion, or fire when the unit is being used, serviced, or disposed of.
Correct refrigerant is specified 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.

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

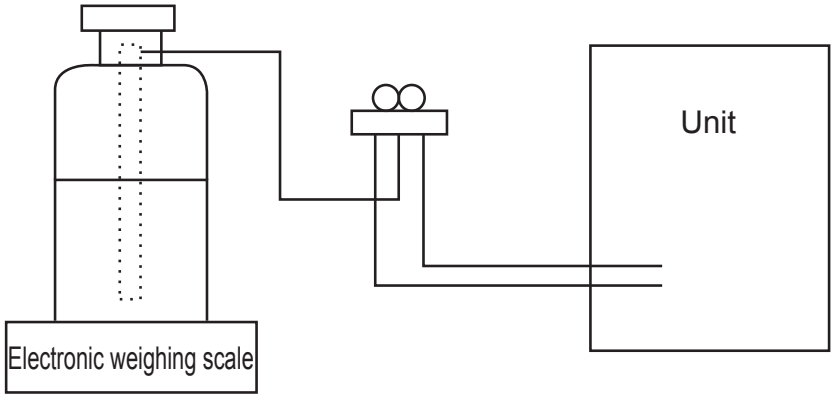
## [1] Cautions for service

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

## [2] Additional refrigerant charge

**When charging directly from cylinder**

· Check that cylinder for R410A on the market is a syphon type.
· Charging should be performed with the cylinder of syphon standing vertically. (Refrigerant is charged from liquid phase.)



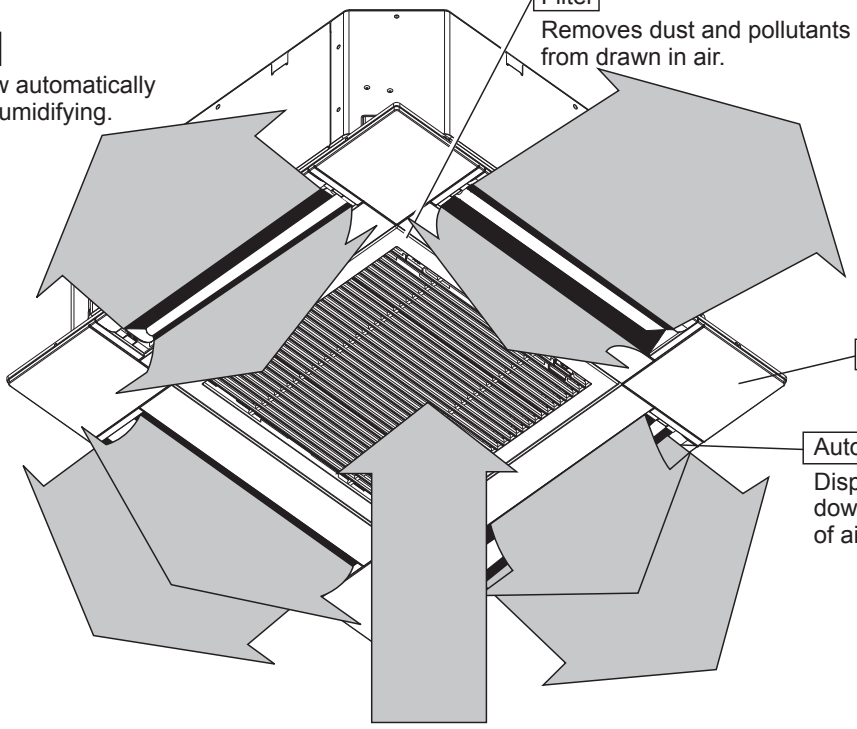

## [3] Service tools

**Use the below service tools as exclusive tools for R410A refrigerant.**

| No. | Tool name | Specifications |
|---|---|---|
| ① | Gauge manifold | · Only for R410A |
| | | · Use the existing fitting specifications. (UNF1/2) |
| | | · Use high-tension side pressure of 5.3MPa·G or over. |
| ② | Charge hose | · Only for R410A |
| | | · Use pressure performance of 5.09MPa·G or over. |
| ③ | Electronic weighing scale | —— |
| ④ | Gas leak detector | · Use the detector for R134a, R407C or R410A. |
| ⑤ | Adaptor for reverse flow check | · Attach on vacuum pump. |
| ⑥ | Refrigerant charge base | —— |
| ⑦ | Refrigerant cylinder | · Only for R410A · Top of cylinder (Pink)<br>· Cylinder with syphon |
| ⑧ | Refrigerant recovery equipment | —— |
| ⑨ | Micron gauge | —— |

# 2 PARTS NAMES AND FUNCTIONS

## 2-1. Indoor Unit




## 2-2. Wired Remote Controller <PAR-32MAA> <PAC-YT53CRAU>

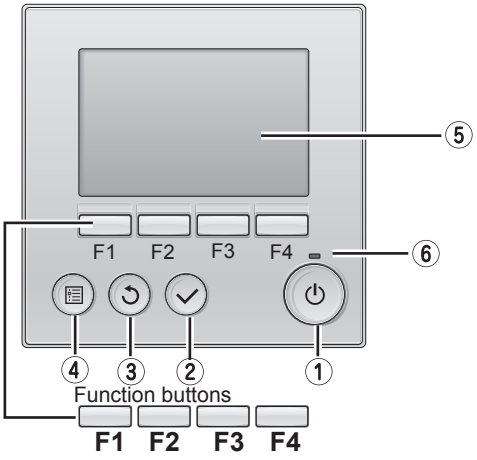
### Wired remote controller function

The functions which can be used are restricted according to each model.

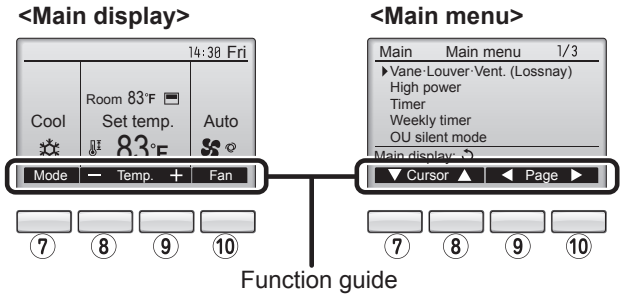
○ : Supported ✕ : Unsupported

| | Function | | PAR-32MAA | | PAC-YT53CRAU |
|---|---|---|---|---|---|
| | | | Slim | City multi | |
| Body | Product size H × W × D | (mm) (inch) | (120 × 120 × 19) (4-3/4 ×4-3/4 ×3/4) | | (120 × 70 × 14.5) (4-3/4 × 2-3/4× 9/16) |
| | LCD | | Full Dot LCD | | Partial Dot LCD |
| | Backlight | | ○ | | ○ |
| Energy-saving | Energy-saving operation schedule | | ○ | ✕ | ✕ |
| | Automatic return to the preset temperature | | ○ | | ✕ |
| Restriction | Setting the temperature range restriction | | ○ | | ○ |
| Function | Operation lock function | | ○ | | ○ |
| | Weekly timer | | ○ | | ✕ |
| | ON/OFF timer | | ○ | | ✕ |
| | High Power | | ○ | ✕ | ✕ |
| | Manual vane angle | | ○ | | ✕ |

## 2-2-1. Wired Remote Controller <PAR-32MAA>




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 button

Press to save the setting.

### ③ RETURN button

Press to return to the previous screen.

### ④ MENU button

Press to bring up the Main menu.

### ⑤ Backlit LCD

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

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

### ⑥ ON/OFF lamp

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

### ⑦ Function button F1

Main display : Press to change the operation mode.
Main menu : Press to move the cursor down.

### ⑧ Function button F2

Main display : Press to decrease temperature.
Main menu : Press to move the cursor up.

### ⑨ Function button F3

Main display : Press to increase temperature.
Main menu : Press to go to the previous page.

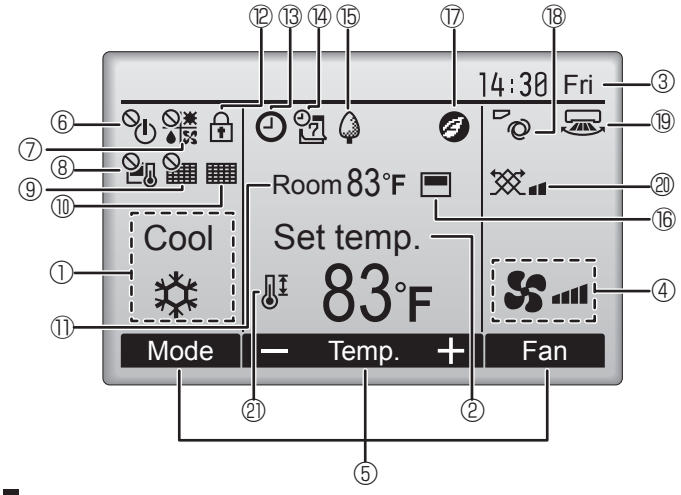
### ⑩ Function button F4

Main display : Press to change the fan speed.
Main menu : Press to go to the next page.

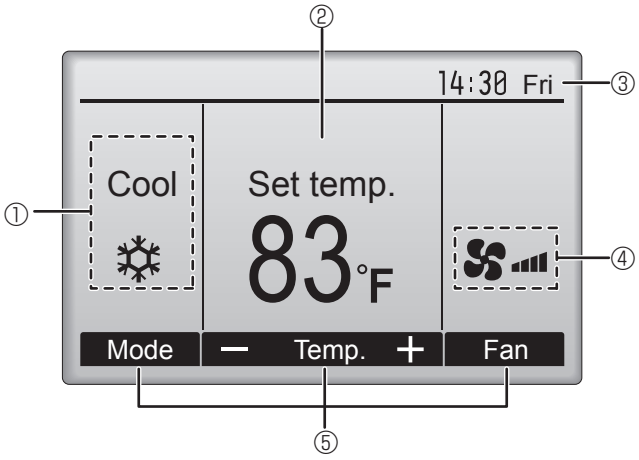
**The main display can be displayed in 2 different modes: "Full" and "Basic".**
**The initial setting is "Full". To switch to the "Basic" mode, change the setting on the Main display setting.**

## <Full mode>

All icons are displayed for explanation.




## <Basic mode>




### ① Operation mode

Indoor unit operation mode appears here.

### ② Preset temperature

Preset temperature appears here.

### ③ Clock (See the Installation Manual.)

Current time appears here.

### ④ Fan speed

Fan speed setting appears here.

### 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

Indicates when filter needs maintenance.

### ⑪ Room temperature (See the Installation Manual.)

Current room temperature appears here.

### ⑫

Appears when the buttons are locked.

### ⑬

Appears when the On/Off timer or Night setback function is enabled.

### ⑭

Appears when the Weekly timer is enabled.

### ⑮

Appears while the units are operated in the energy-save mode.

### ⑯

Appears when the built-in thermistor on the remote controller is activated to monitor the room temperature.
appears when the thermistor on the indoor unit is activated to monitor the room temperature.

### ⑰

Appears when the units are operated in the energy-save mode with 3D i-see Sensor.

### ⑱

Indicates the vane setting.

### ⑲

Indicates the louver setting. (This function is not available on this unit.)

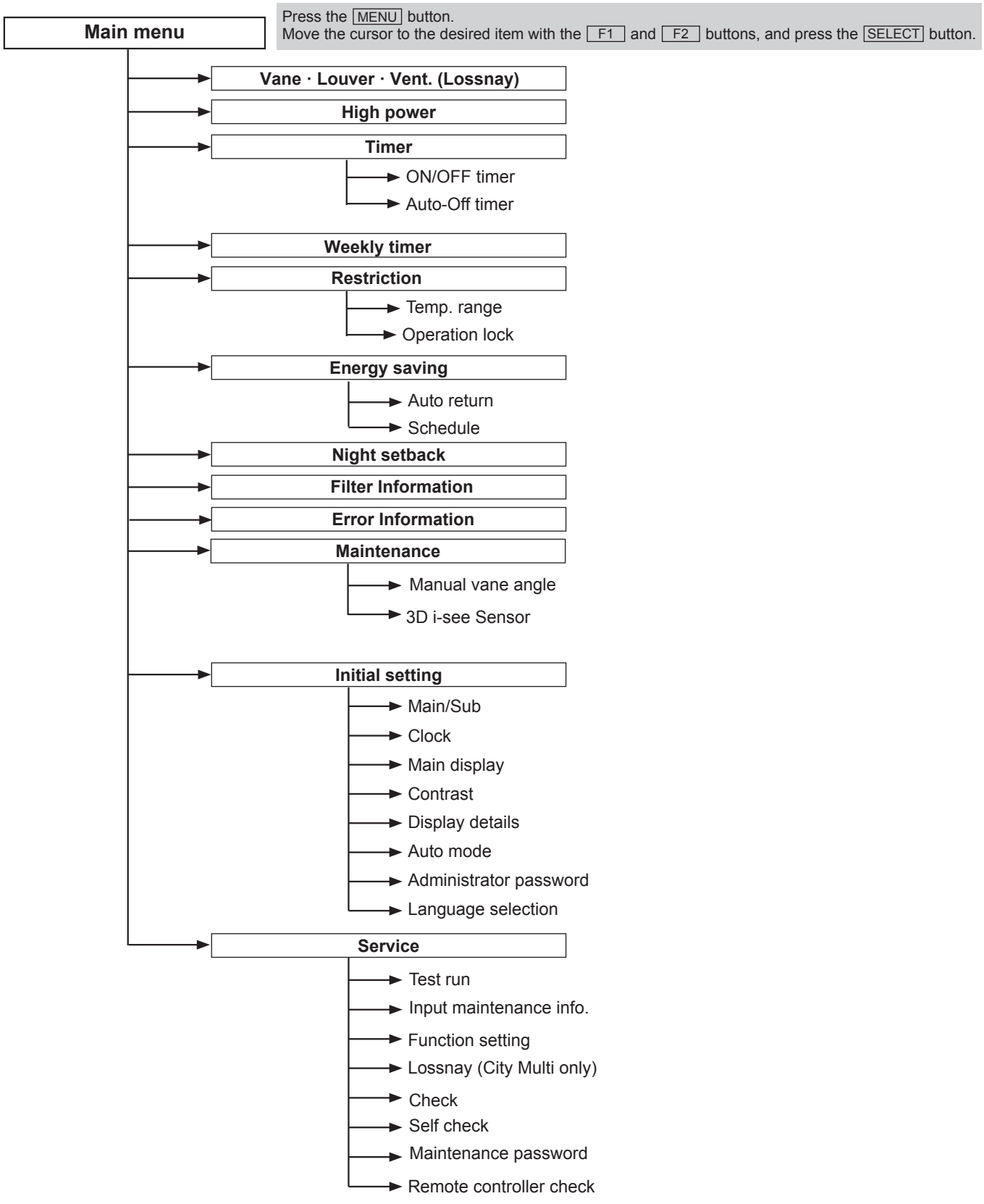
### ⑳

Indicates the ventilation setting.

### ㉑

Appears when the preset temperature range is restricted.

**Most settings (except ON/OFF, mode, fan speed, temperature) can be made from the Menu screen.**




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

**Main menu list**

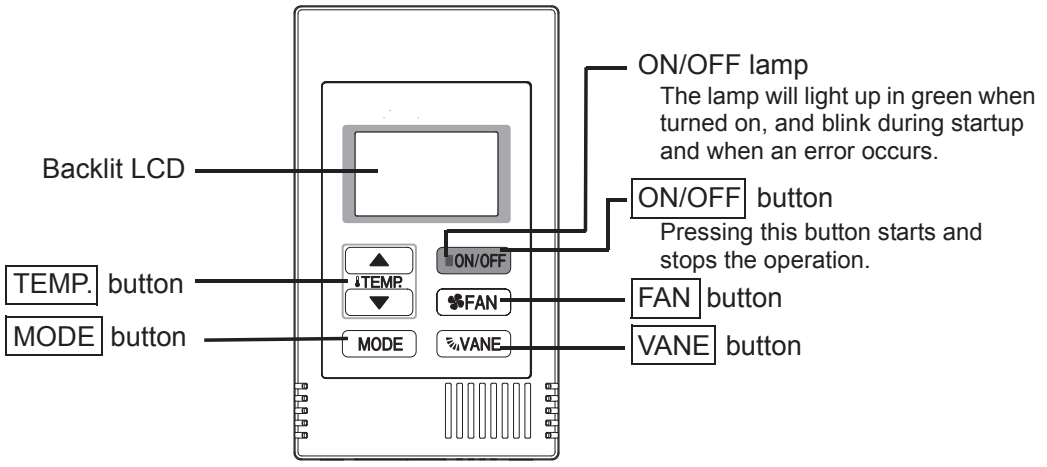
| Setting and display items | | Setting details |
|---|---|---|
| **Vane · Louver · Vent. (Lossnay)** | | **Use to set the vane angle.**<br>• Select a desired vane setting from 5 different settings.<br>**Use to turn ON/OFF the louver.**<br>• Select a desired setting from "ON" and "OFF."<br>**Use to set the amount of ventilation.**<br>• Select a desired setting from "Off," "Low," and "High." |
| **High power** | | **Use to reach the comfortable room temperature quickly.**<br>• Units can be operated in the High-power mode for up to 30 minutes. |
| **Timer** | **ON/OFF timer*** | **Use to set the operation ON/OFF times.**<br>• Time can be set in 5-minute increments. |
| | **Auto-Off timer** | **Use to set the Auto-Off time.**<br>• Time can be set to a value from 30 to 240 in 10-minute increments. |
| **Weekly timer*** | | **Use to set the weekly operation ON/OFF times.**<br>• Up to 8 operation patterns can be set for each day.<br>(Not valid when the ON/OFF timer is enabled.) |
| **Restriction** | **Temp. range** | **Use to restrict the preset temperature range.**<br>• Different temperature ranges can be set for different operation modes. |
| | **Operation lock** | **Use to lock selected functions.**<br>• The locked functions cannot be operated. |
| **Energy saving** | **Auto return** | **Use to get the units to operate at the preset temperature after performing energy-save operation for a specified time period.**<br>• Time can be set to a value from 30 and 120 in 10-minute increments.<br>(This function will not be valid when the preset temperature ranges are restricted.) |
| | **Schedule*** | **Set the start/stop times to operate the units in the energy-save mode for each day of the week, and set the energy-saving rate.**<br>• Up to 4 energy-save operation patterns can be set for each day.<br>• Time can be set in 5-minute increments.<br>• Energy-saving rate can be set to a value from 0% or 50 to 90% in 10% increments. |
| **Night setback*** | | **Use to make Night setback settings.**<br>• Select "Yes" to enable the setting, and "No" to disable the setting. The temperature range and the start/stop times can be set. |
| **Filter information** | | **Use to check the filter status.**<br>• The filter sign can be reset. |
| **Error information** | | **Use to check error information when an error occurs.**<br>• Check code, error source, refrigerant address, unit model, manufacturing number, contact information (dealer's phone number) can be displayed.<br>(The unit model, manufacturing number, and contact information need to be registered in advance to be displayed.) |
| **Maintenance** | **Manual vane angle** | **Use to set the vane angle for each vane to a fixed position.** |
| | **3D i-see Sensor** | **Use to set the following functions for 3D i-see Sensor.**<br>• Air distribution • Energy saving option • Seasonal airflow |
| **Initial setting** | **Clock** | **Use to set the current time.** |
| | **Main display** | **Use to switch between "Full" and "Basic" modes for the Main display.**<br>• The initial setting is "Full." |
| | **Contrast** | **Use to adjust screen contrast.** |
| | **Language selection** | **Use to select the desired language.** |

Continue to the next page

| Setting and display items | | Setting details |
|---|---|---|
| | **Input maintenance** | **Select "Input maintenance Info." from the Service menu to bring up the Maintenance information screen.**<br>**The following settings can be made from the Maintenance Information screen.**<br>• Model name input • Serial No. input • Dealer information input |
| | **LOSSNAY setting** | **This setting is required only when the operation of City Multi units is interlocked with LOSSNAY units.** |
| | **Check** | **Error history:** Display the error history and execute delete error history. |
| | **Self check** | **Error history of each unit can be checked via the remote controller.** |
| | **Maintenance password** | **Use to change the maintenance password.** |
| | **Remote controller check** | **When the remote controller does not work properly, use the remote controller checking function to troubleshoot the problem.** |

## 2-2-2. Wired Remote Controller <PAC-YT53CRAU>

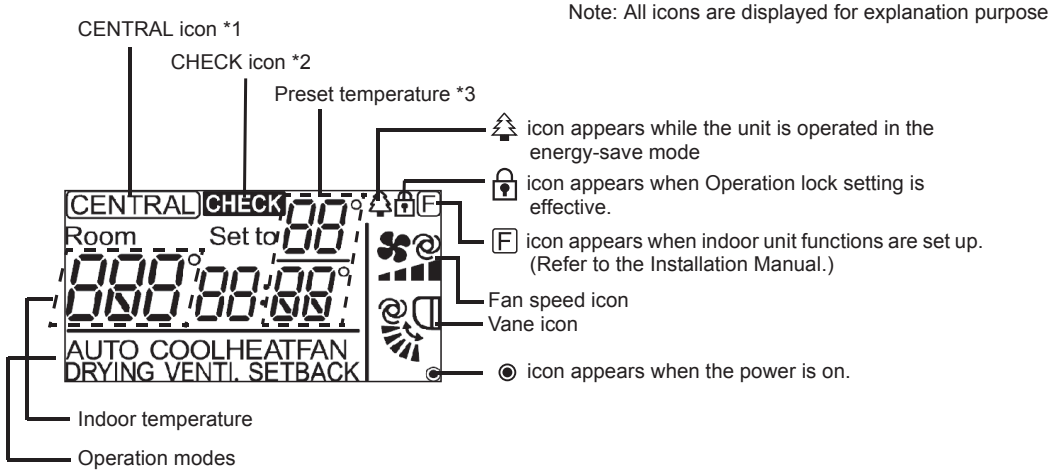
**Note:**
**The phrase "Wired remote controller" in this manual refers only to the PAC-YT53CRAU.**
**If you need any information for the other remote controller, please refer to either the installation manual or initial setting manual which are included in remote controller's box.**




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.

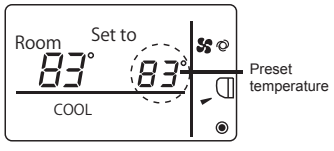
*2 CHECK icon

For City Multi, when an error occurs, power indicator will blink, and unit address (3 digits) and check code (4 digits) will blink.
Check the error status, stop the operation, and consult your dealer.

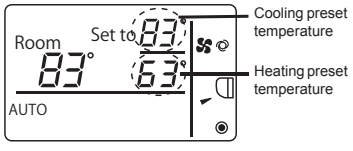
*3 Preset temperature

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

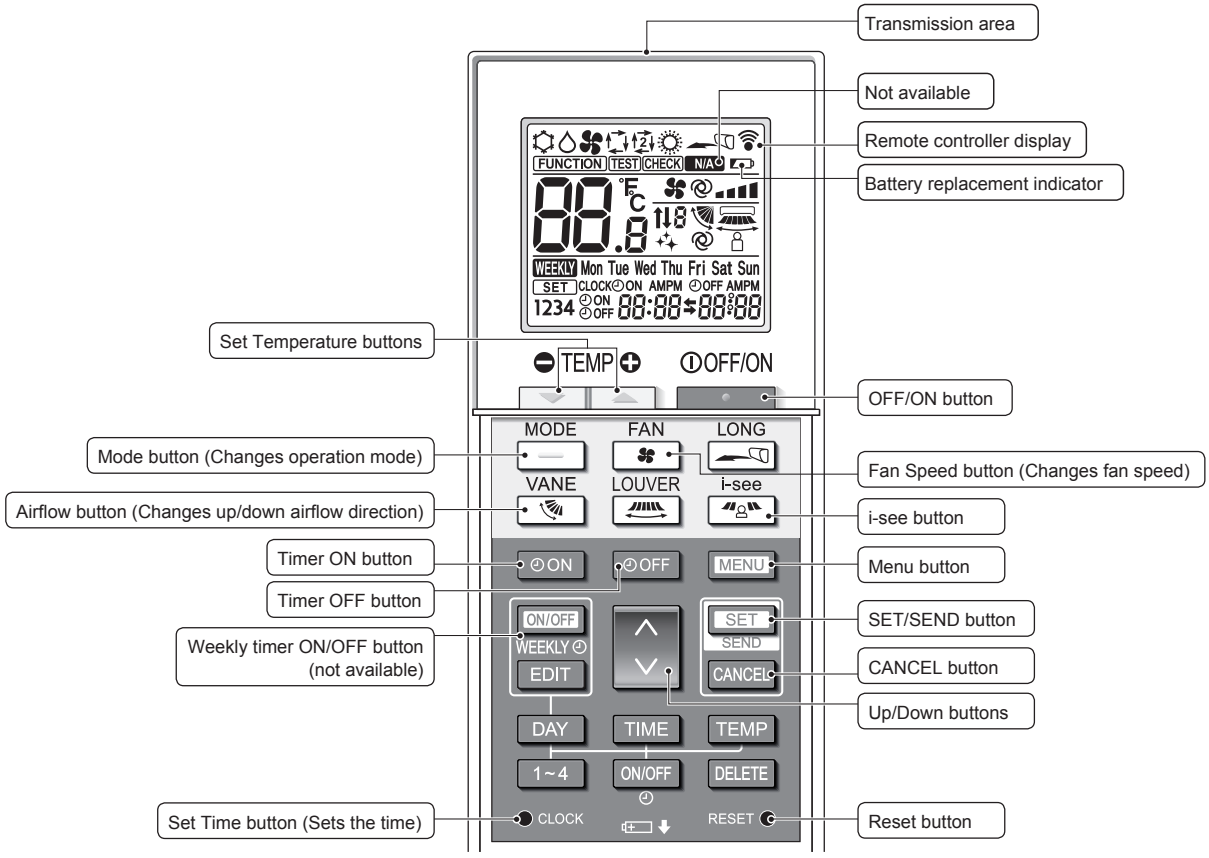
In COOL, DRYING, HEAT, or AUTO (single set point) modes

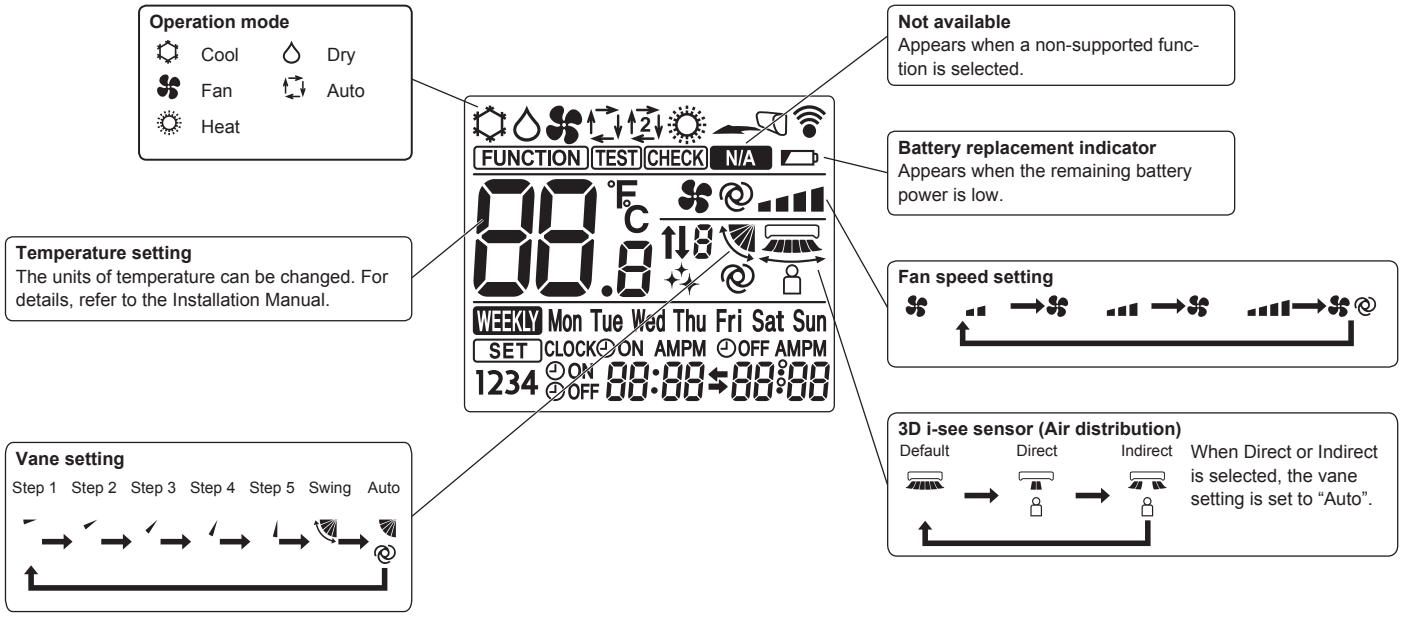



In AUTO (dual set point) or SETBACK modes



## 2-3. Wireless remote controller



# 3 SPECIFICATIONS

## 3-1. SPECIFICATIONS

| Service Ref. | | | PLFY-P05NFMU-E.TH | PLFY-P08NFMU-E.TH | PLFY-P12NFMU-E.TH | PLFY-P15NFMU-E.TH | PLFY-P18NFMU-E.TH |
|---|---|---|---|---|---|---|---|
| power source | | | single phase, 208/230V, 60 Hz | | | | |
| cooling capacity *1 | | kW | 1.4 | 2.3 | 3.5 | 4.3 | 5.2 |
| | *1 | BTU/h | 5,000 | 8,000 | 12,000 | 15,000 | 18,000 |
| | Power input | kW | 0.02 | 0.02 | 0.02 | 0.03 | 0.04 |
| | Current input | A | 0.19 | 0.22 | 0.23 | 0.28 | 0.40 |
| Heating capacity *3 | | kW | 1.6 | 2.6 | 3.9 | 4.9 | 5.8 |
| | *3 | BTU/h | 5,600 | 9,000 | 13,500 | 17,000 | 20,000 |
| | Power input | kW | 0.02 | 0.02 | 0.02 | 0.03 | 0.04 |
| | Current input | A | 0.14 | 0.17 | 0.18 | 0.23 | 0.35 |
| External finish | | | Galvanized steel sheet | | | | |
| External dimension H × W × D | | mm | 208×570×570 | | | | |
| | | in | 8-3/16"×22-7/16"×22-7/16" | | | | |
| Net weight | | kg (lb) | 13.1 (28.9) | 13.1 (28.9) | 14.2(31.3) | 14.2(31.3) | 14.2(31.3) |
| Decoration panel | model | | SLP-18FAU | | | | |
| | External finish | | Munsell 1.0Y 9.2/0.2 | | | | |
| | Dimension H × W × D | mm | 10 × 625 × 625 | | | | |
| | | in | 13/32"×24-19/32"×24-19/32" | | | | |
| | Net weight | kg (lb) | 2.4(5.3) | | | | |
| Heat exchanger | | | Cross fin (Aluminum fin and copper tube) | | | | |
| FAN | Type | | Turbo fan × 1 | | | | |
| | External static pressure | | 0 Pa (0 $mmH_2O$) | | | | |
| | Motor type | | DC motor | | | | |
| | Motor output | kW | 0.05 | | | | |
| | Driving mechanism | | Direct driven | | | | |
| | Airflow rate | $m^3$/min | 6.5-7.5-8.0 | 6.5-8.0-9.0 | 7.0-8.0-9.5 | 7.5-9.0-11.0 | 9.0-11.0-13.0 |
| | | L/s | 108-125-133 | 108-133-150 | 117-133-158 | 125-150-183 | 150-183-217 |
| | | cfm | 230-265-280 | 230-280-315 | 245-280-335 | 265-315-390 | 315-390-460 |
| Noise level (Low-Mid-High) (measured in anechoic room) | | dB <A> | 26-28-30 | 26-30-33 | 26-30-34 | 28-33-39 | 33-39-43 |
| Insulation material | | | PS | | | | |
| Air filter | | | PP honeycomb fabric (long life type) | | | | |
| Protection device | | | Fuse | | | | |
| Refrigerant control device | | | LEV | | | | |
| Connectable outdoor unit | | | R410A CITY MULTI | | | | |
| Diameter of refrigerant pipe | Liquid | mm (in) | ø6.35 (ø1/4") Flare | | | | |
| | Gas | mm (in) | ø12.7 (ø1/2") Flare | | | | |
| Field drain pipe size | | mm (in) | O.D. 32 mm (1-1/4") (PVC pipe VP-25 connectable) | | | | |
| Standard attachment | | | Installation manual, Instruction book | | | | |
| Remark | Optional parts | | Decoration panel : SLP-18FAU, SLP-18FAEU<br>*PLFY-P NFMU-E should be used together with decoration panel. | | | | |
| | 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 condition | *2 Nominal heating condition |
|---|---|
| indoor : 27˚CDB/19˚CWB (81˚FDB/66˚FWB) | 20˚CDB (68˚FDB) |
| Outdoor : 35˚CDB (95˚FDB) | 7˚CDB/6˚CWB (45˚FDB/43˚FWB) |
| Pipe length : 7.5m (24-9/16 ft) | 7.5 m (24-9/16 ft) |
| Level difference : 0m (0 ft) | 0 m (0 ft) |

Notes:
1. Nominal conditions *1 and *2 are subject to JIS B8615-1.
2. Due to continuing improvement, above specification may be subject to change without notice.

| Unit converter |
|---|
| kcal= kW × 860<br>BTU/h =3,412<br>cfm = K/min × 35.31<br>lb = kg/0.4536 |

## 3-2. ELECTRICAL PARTS SPECIFICATIONS

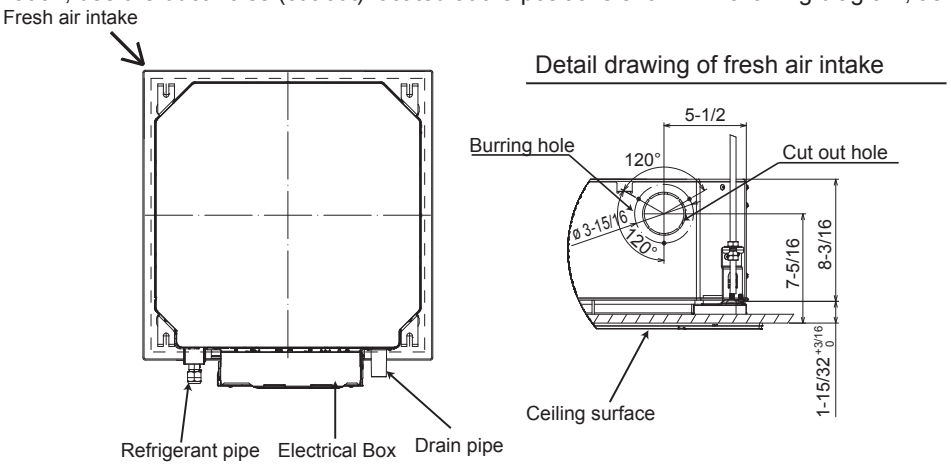
| Parts name \ Service ref. | Symbol | PLFY-P05NFMU-E.TH | PLFY-P08NFMU-E.TH | PLFY-P12NFMU-E.TH | PLFY-P15NFMU-E.TH | PLFY-P18NFMU-E.TH |
|---|---|---|---|---|---|---|
| Thermistor (Room temperature detection) | TH21 | Resistance 30°F/15.8Ω, 50°F/9.6Ω, 70°F/6.0Ω, 80°/4.8Ω, 90°F/3.9Ω, 100°F/3.2Ω | | | | |
| Thermistor (Pipe temperature detection/Liquid) | TH22 | Resistance 30°F/15.8Ω, 50°F/9.6Ω, 70°F/6.0Ω, 80°/4.8Ω, 90°F/3.9Ω, 100°F/3.2Ω | | | | |
| Thermistor (Pipe temperature detection/Gas) | TH23 | Resistance 30°F/15.8Ω, 50°F/9.6Ω, 70°F/6.0Ω, 80°/4.8Ω, 90°F/3.9Ω, 100°F/3.2Ω | | | | |
| Fuse (Indoor controller board) | FUSE | 250V 6.3A | | | | |
| Fan motor | MF | OUTPUT 50 W | | | | |
| Vane motor | MV | MSBPC20M32 (green label)/MSBPC20M33 (blue label)<br>DC12V 300Ω/phase | | | | |
| Drain pump | DP | PMD-12D13ME<br>INPUT 3W (DC 13V) 24 ℓ /Hr | | | | |
| Drain float switch | FS | Open/short detection | | | | |
| Linear expansion valve [coil] | LEV | DC12V Stepping motor drive, Port dimension $\phi$5.2 (0–2000pulse)<br>EDM-40YGME | | | | |
| Power supply terminal block | TB2 | (L1, L2) Rated to 330V 30A* | | | | |
| Transmission terminal block | TB5 | (M1, M2, S) Rated to 250V 20A* | | | | |
| MA remote controller terminal block | TB15 | (1, 2) Rated to 250V 10A* | | | | |

* Refer to WIRING DIAGRAM for the supplied voltage.

# 4 4-WAY AIR FLOW SYSTEM

## 4-1. FRESH AIR INTAKE (Location for installation)

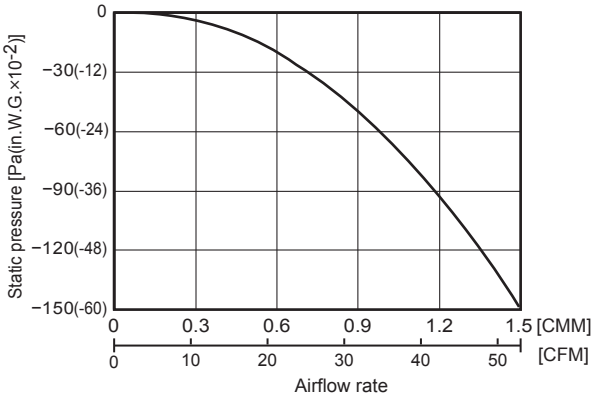
At the time of installation, use the duct holes (cut out) located at the positions shown in following diagram, as and when required.



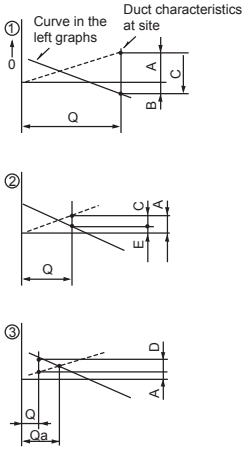

## 4-2. FRESH AIR INTAKE AMOUNT & STATIC PRESSURE CHARACTERISTICS

**PLFY-P05NFMU-E.TH PLFY-P08NFMU-E.TH PLFY-P12NFMU-E.TH**
**PLFY-P15NFMU-E.TH PLFY-P18NFMU-E.TH**

**Taking air into the unit**




How to read curves

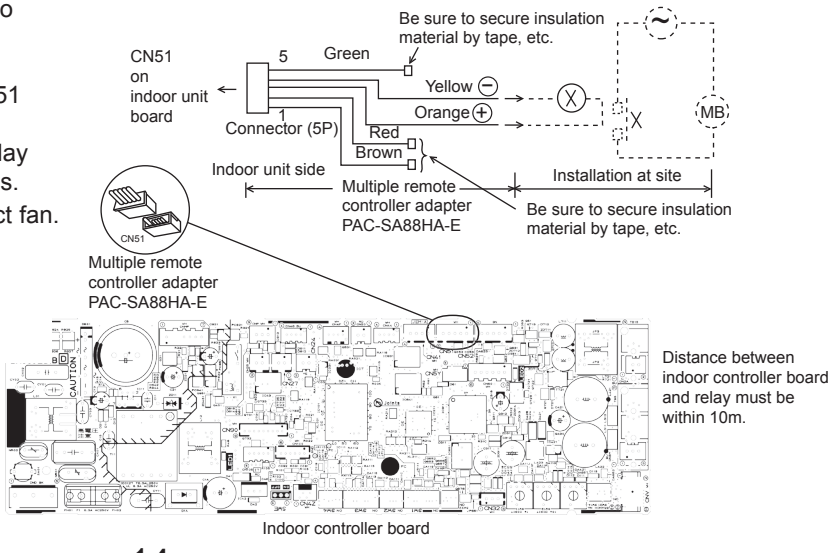



Q···Designed amount of fresh air intake <CMM (CFM)>
A···Static pressure loss of fresh air intake duct system with air flow amount Q <Pa (in.W.G.×10-2)>
B···Forced static pressure at air conditioner inlet with air flow amount Q <Pa (in.W.G.×10-2)>
C···Static pressure of booster fan with air flow amount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

**NOTE: Fresh air intake amount should be 10% or less of whole air amount to prevent dew dripping.**

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

• Whenever the indoor unit operates, 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 wires.
MB: Electromagnetic switch power relay for duct fan.
X: Auxiliary relay
(For 12 V DC, coil rating: 1.0 W or below)

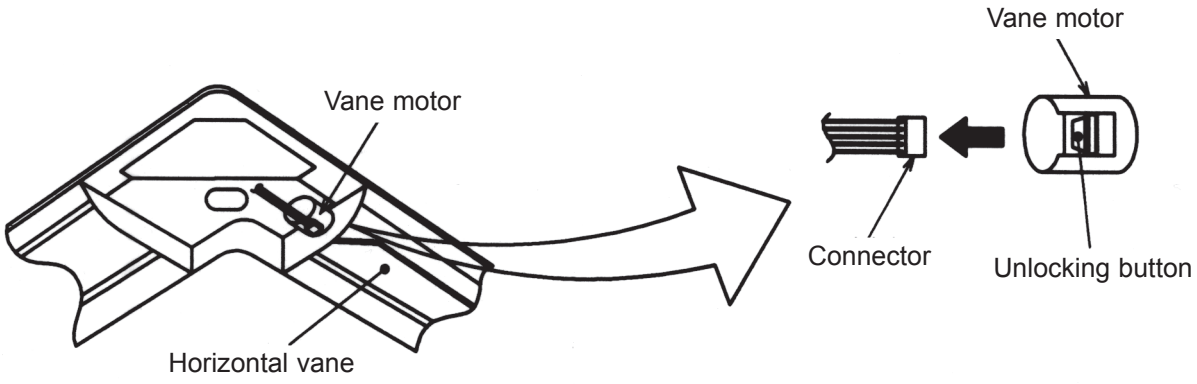


## 4-4. FIXING HORIZONTAL VANE

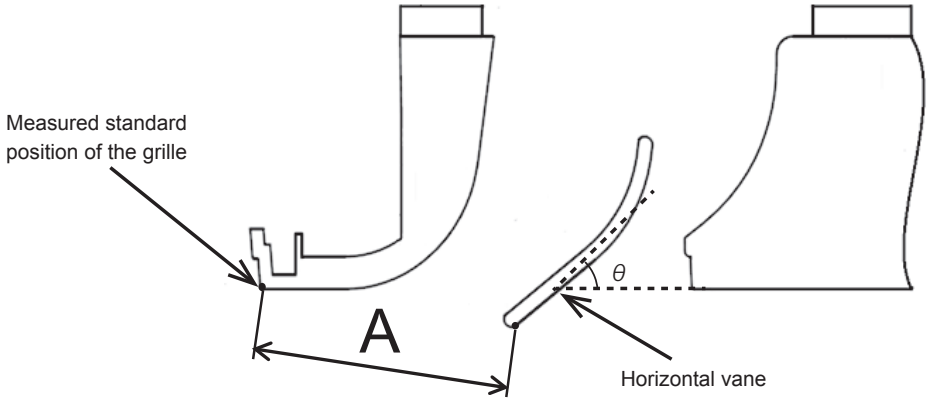
Horizontal vane of each air outlet can be fixed according to the environment where it is installed.

**Setting procedures**

1) Turn off a main power supply (Turn off a breaker).
2) Disconnect the vane motor connector of the direction of the arrow with pressing the unlocking button as shown in figure below.
   Insulate the disconnected connector with the plastic tape.




3) Set the vertical vane of the air outlet by hand slowly within the range in the table below.




<Set range>

| **Standard of horizontal position** | Angle θ = 21° (Horizontal) | Angle θ = 24° | Angle θ = 39° | Angle θ = 42° | Angle θ = 45° (Downward) |
|---|---|---|---|---|---|
| **Dimension A inch (mm)** | 1-17/32 (39) | 1-39/64 (41) | 1-27/32(47) | 1-57/64(48) | 1-57/64(49) |

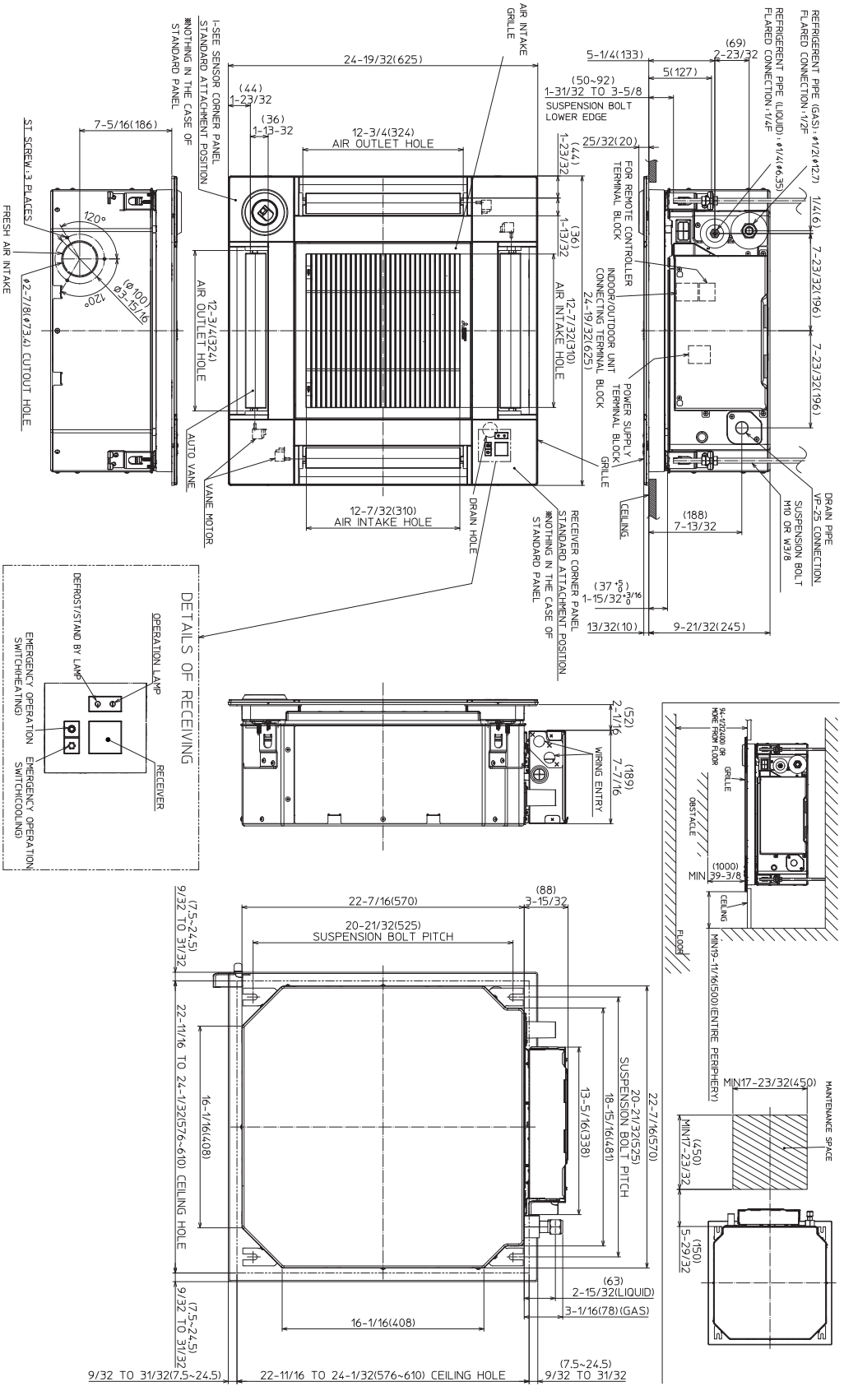
Note: Dimension between 1-17/32 (39) and 1-57/64(49) can be arbitrarily set.

| **Caution** | Do not set the dimension out of the range. |
|---|---|
| ⚠ | Erroneous setting could cause dew drips or malfunction of unit. |

# 5 OUTLINES AND DIMENSIONS

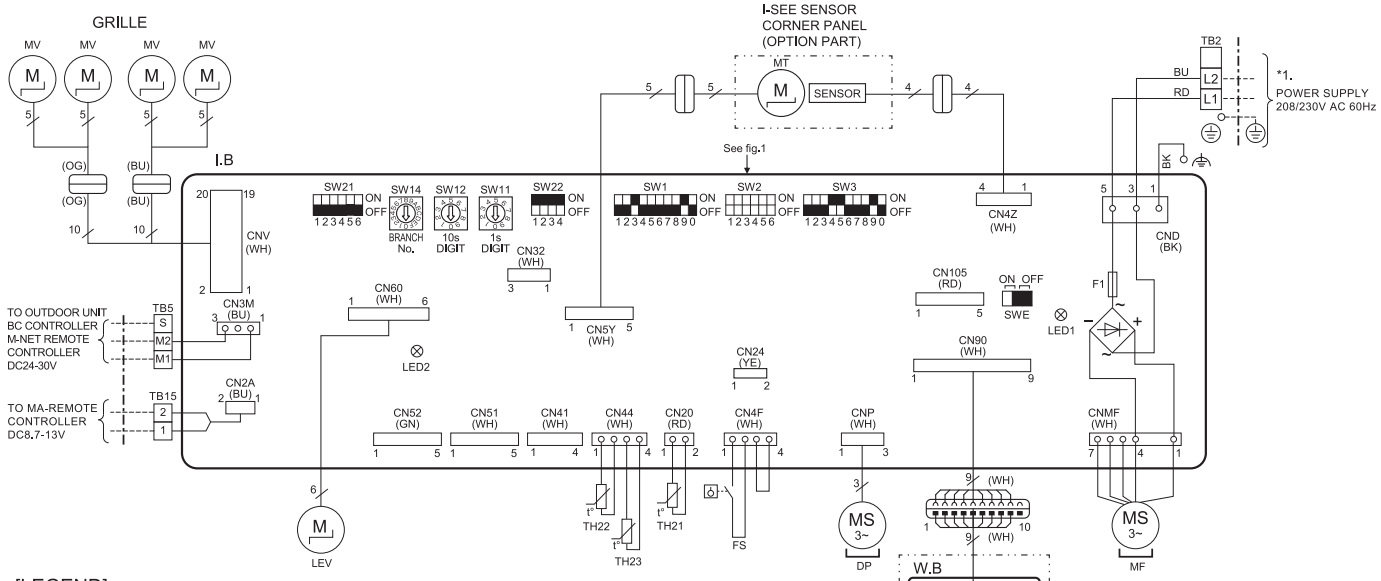
**PLFY-P05NFMU-E.TH** **PLFY-P08NFMU-E.TH** **PLFY-P12NFMU-E.TH**
**PLFY-P15NFMU-E.TH** **PLFY-P18NFMU-E.TH**

Unit: inch(mm)



# 6 WIRING DIAGRAM

**PLFY-P05NFMU-E.TH** **PLFY-P08NFMU-E.TH** **PLFY-P12NFMU-E.TH**
**PLFY-P15NFMU-E.TH** **PLFY-P18NFMU-E.TH**




[LEGEND]

| SYMBOL | NAME |
|---|---|
| I.B | INDOOR CONTROLLER BOARD |
| CN24 | EXTERNAL HEATER |
| CN32 | REMOTE SWITCH |
| CN41 | HA TERMINAL-A |
| CN51 | CENTRALLY CONTROL |
| CN52 | REMOTE INDICATION |
| CN105 | IT TERMINAL |
| F1 | FUSE (UL 6.3A 250V AC) |
| LED1 | POWER SUPPLY (I.B) |
| LED2 | POWER SUPPLY (MA-REMOTE CONTROLLER) |
| SW1 | MODE SELECTION |
| SW2 | CAPACITY CODE |
| SW3 | MODE SELECTION |
| SW11 | ADDRESS SETTING ONES DIGIT |
| SW12 | ADDRESS SETTING TENS DIGIT |
| SW14 | BRANCH No. |
| SW21 | CEILING HEIGHT SELECTOR |
| SW22 | PAIR NO. SETTING |
| SWE | DRAIN PUMP(TEST MODE) |
| DP | DRAIN PUMP |
| LEV | LINEAR EXPANSION VALVE |
| MF | FAN MOTOR |
| MV | VANE MOTOR |
| FS | FLOAT SWITCH |
| TB2 | TERMINAL BLOCK: POWER SUPPLY |
| TB5 | TERMINAL BLOCK: TRANSMISSION |
| TB15 | TERMINAL BLOCK: MA-REMOTE CONTROLLER |
| TH21 | ROOM TEMP. THERMISTOR |
| TH22 | PIPE TEMP. THERMISTOR/LIQUID |
| TH23 | PIPE TEMP. THERMISTOR/GAS |
| OPTION PART | |
| W.B | WIRELESS REMOTE CONTROLLER BOARD |
| BZ | BUZZER |
| LED1 | OPERATION (GREEN) |
| LED2 | STAND BY (ORANGE) |
| RU | RECEIVING UNIT |
| SW1 | EMERGENCY OPERATION(HEAT) |
| SW2 | EMERGENCY OPERATION(COOL) |
| MT | I-SEE SENSOR MOTOR |

<fig.1>

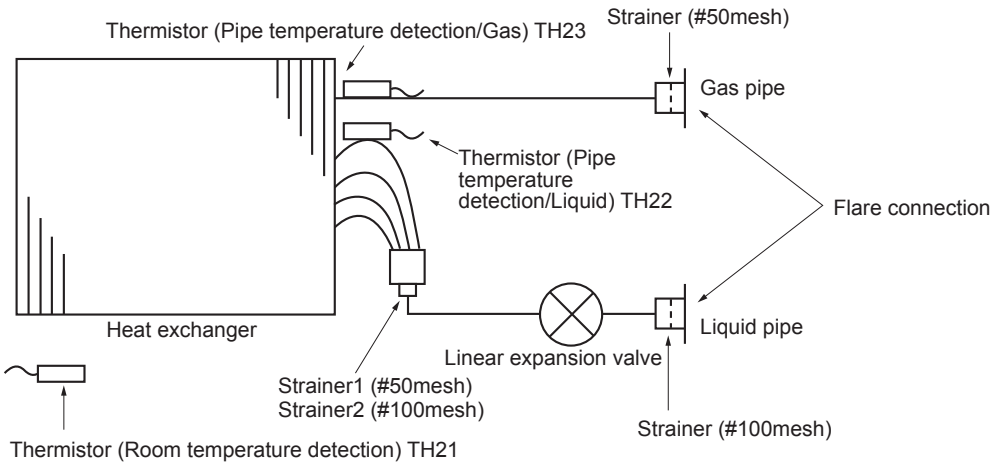
| MODELS | SW2 | MODELS | SW2 |
|---|---|---|---|
| P05 | ON OFF 123456 | P15 | ON OFF 123456 |
| P08 | ON OFF 123456 | P18 | ON OFF 123456 |
| P12 | ON OFF 123456 | | |

The black square (■) indicates a switch position.

Notes:
1.At servicing for outdoor unit,always follow the wiring diagram of outdoor unit.
2.In case of using MA-Remote controller, please connect to TB15.
(Remote controller wire is non-polar.)
3.In case of using M-NET, please connect to TB5. (Transmission line is non-polar.)
4.Symbol [S]of TB5 is the shield wire connection.
5.Symbols used in wiring diagram above are, □□□: terminal block, □ ○○○ : connector.
6.The setting of the SW2 dip switches differs in the capacity. For the detail, refer to the fig.1.
7.Make sure to turn off the indoor and the outdoor units before replacing indoor controller board.
*1. Use copper supply wires.
Utilisez des fils d'alimentation en cuivre.

# 7 REFRIGERANT SYSTEM DIAGRAM

**PLFY-P05NFMU-E.TH** **PLFY-P08NFMU-E.TH** **PLFY-P12NFMU-E.TH**
**PLFY-P15NFMU-E.TH** **PLFY-P18NFMU-E.TH**




Unit: inch (mm)

| | |
|---|---|
| Gas pipe | $\phi$1/2(12.7) |
| Liquid pipe | $\phi$1/4(6.35) |

# 8 TROUBLESHOOTING

## 8-1. COUNTERMEASURES FOR ERROR DURING TEST RUN

If a problem occurs during test run, a code number will appear on the remote controller (or LED on the outdoor unit), and the air conditioning system will automatically cease operating.

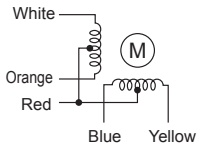
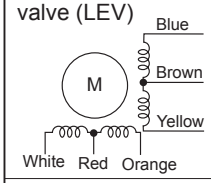
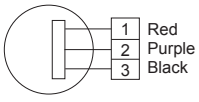
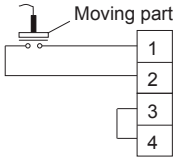
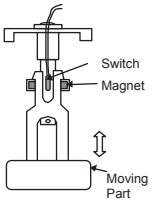
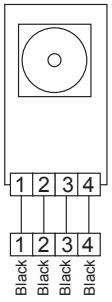
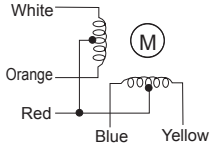
Refer to the connected outdoor unit service manual in order to determine the nature of the abnormality and apply corrective measure.

| Check code | Trouble | Detected Unit | | | Remarks |
|---|---|---|---|---|---|
| | | Indoor | Outdoor | Remote Controller | |
| 0403 | Serial communication error | | ○ | | Outdoor unit Multi controller board ~ Power board communication trouble |
| 1102 | Compressor temperature | | ○ | | Check delay code 1202 |
| 1300 | Low pressure | | ○ | | |
| 1302 | High pressure | | ○ | | Check delay code 1402 |
| 1500 | Superheat due to low discharge temperature | | ○ | | Check delay code 1600 |
| 1501 | Refrigerant shortage | | ○ | | Check delay code 1601 |
| | Closed valve in cooling mode | | ○ | | Check delay code 1501 |
| 1508 | 4-way valve trouble in heating mode | | ○ | | Check delay code 1608 |
| 2500 | Water leakage | ○ | | | |
| 2502 | Drain over flow protection | ○ | | | |
| 2503 | Drain sensor abnormality | ○ | | | |
| 4100 | Compressor current interruption (locked compressor) | | ○ | | Check delay code 4350 |
| 4114 | Fan motor error | ○ | | | |
| 4210 | Compressor overcurrent interruption | | ○ | | |
| 4220 | Undervoltage/overvoltage/PAM error/L1open phase/power synchronization signal error | | ○ | | Check delay code 4320 |
| 4230 | Heat Sink temperature | | ○ | | Check delay code 4330 |
| 4250 | Power module | | ○ | | Check delay code 4350 |
| 4400 | Fan trouble | | ○ | | Check delay code 4500 |
| 5101 | Air inlet thermistor (TH21) open/short | ○ | | | |
| | Compressor temperature thermistor (TH4) open/short | | ○ | | Check delay code 1202 |
| 5102 | Liquid pipe temperature thermistor (TH22) open/short | ○ | | | |
| | Suction pipe temperature thermistor (TH6) open/short | | ○ | | Check delay code 1211 |
| 5103 | Gas pipe temperature thermistor (TH23) open/short | ○ | | | |
| 5105 | Outdoor liquid pipe temperature thermistor (TH3) open/short | | ○ | | Check delay code 1205 |
| 5106 | Ambient thermistor (TH7) open/short | | ○ | | Check delay code 1221 |
| 5109 | HIC pipe temperature thermistor (TH2) open/short | | ○ | | Check delay code 1222 |
| 5110 | Heat Sink temperature thermistor (TH8) open/short | | ○ | | Check delay code 1214 |
| 5201 | High pressure sensor (63HS) | | ○ | | Check delay code 1402 |
| 5202 | Low pressure sensor (63LS) | | ○ | | Check delay code 1400 |
| 5701 | Contact failure of drain float switch | ○ | | | |
| 6600 | Duplex address error | ○ | ○ | ○ | Only M-NET Remote controller is detected. |
| 6602 | Transmission processor hardware error | ○ | ○ | ○ | Only M-NET Remote controller is detected. |
| 6603 | Transmission bus BUSY error | ○ | ○ | ○ | Only M-NET Remote controller is detected. |
| 6606 | Signal communication error with transmission processor | ○ | ○ | ○ | Only M-NET Remote controller is detected. |
| 6607 | No ACK error | ○ | | ○ | Only M-NET Remote controller is detected. * |
| 6608 | No response frame error | ○ | | ○ | Only M-NET Remote controller is detected. * |
| 6831 | MA communication receive error (no receive signal) | ○ | | ○ | Only MA Remote controller is detected. |
| 6832 | MA communication send error | ○ | | ○ | Only MA Remote controller is detected. |
| 6833 | MA communication send error | ○ | | ○ | Only MA Remote controller is detected. |
| 6834 | MA communication receive error | ○ | | ○ | Only MA Remote controller is detected. |
| 7100 | Total capacity error | | ○ | | |
| 7101 | Capacity code error | ○ | ○ | | |
| 7102 | Connecting excessive number of units | | ○ | | |
| 7105 | Address setting error | | ○ | | |

Note:
When the outdoor unit detects No ACK error/No response error, an object indoor unit is treated as a stop, and not assumed to be abnormal.
*Abnormality for PWFY series

## 8-2. HOW TO CHECK THE PARTS

**PLFY-P05NFMU-E.TH PLFY-P08NFMU-E.TH PLFY-P12NFMU-E.TH**
**PLFY-P15NFMU-E.TH PLFY-P18NFMU-E.TH**

<table>
<tr><th>Parts name</th><th>Check points</th></tr>
<tr><td>Thermistor (TH21)<br>(Room temperature detection)<br>Thermistor (TH22)<br>(Pipe temperature detection/Liquid)<br>Thermistor (TH23)<br>(Pipe temperature detection/Gas)</td><td>Disconnect the connector then measure the resistance with a tester.<br>(At the ambient temperature 10 to 30℃)<br><table><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 “8-2-1. Thermistor Characteristic Graph”.</td></tr>
<tr><td>Vane motor (MV)<br>
</td><td>Measure the resistance between the terminals with a tester.<br>(At the ambient temperature 20 to 30℃)<br><table><tr><th colspan="4">Normal</th><th>Abnormal</th></tr><tr><td>Red–Yellow</td><td>Red–Blue</td><td>Red–Orange</td><td>Red–White</td><td rowspan="2">Open or short</td></tr><tr><td colspan="4">300 Ω</td></tr></table></td></tr>
<tr><td>Linear expansion valve (LEV)<br>
</td><td>Disconnect the connector then measure the valve resistance with a tester.<br><table><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">200Ω ±10%</td></tr></table>Refer to “8-2-2. Linear Expansion Valve”.</td></tr>
<tr><td>Drain pump (DP)<br>
</td><td>① Check if the drain float switch works properly.<br>② Check if the drain pump works and drains water properly in cooling operation.<br>③ If no water drains, confirm that the check code 2502 will not be displayed 10 minutes after the operation starts.<br>Note: The drain pump for this model is driven by the control board and is a DC volt motor, so it is not possible to measure the resistance between the terminals.<br><br>Normal<br>Red–Black: Input 13 V DC → The pump starts to rotate.<br>Purple–Black: Abnormal (check code 2502) if it outputs 0–13 V square wave (5 pulses/rotation), and the number of rotation is not normal.</td></tr>
<tr><td>Drain float switch (FS)<br>
</td><td>Measure the resistance between the terminals with a tester.<br><table><tr><th>State of moving part</th><th>Normal</th><th>Abnormal</th></tr><tr><td>UP</td><td>Short</td><td>Other than short</td></tr><tr><td>DOWN</td><td>Open</td><td>Other than open</td></tr></table>
</td></tr>
<tr><td>i-see sensor *<br>
</td><td>Turn the power ON while the i-see sensor connector is connected to the CN4Z on indoor controller board. A communication between the indoor controller board and i-see sensor board is made to detect the connection.<br><br>Normal: When the operation starts, the motor for i-see sensor is driven to rotate the i-see sensor.<br>Abnormal: The motor for i-see sensor is not driven when the operation starts.<br><br>Note: The voltage between the terminals cannot be measured accurately since it is pulse output.</td></tr>
<tr><td>i-see sensor motor *<br>
</td><td>Measure the resistance between the terminals with a tester.<br>(At the ambient temperature 20 to 30°C)<br><table><tr><th colspan="4">Normal</th><th>Abnormal</th></tr><tr><td>Red–Yellow</td><td>Red–Blue</td><td>Red–Orange</td><td>Red–White</td><td rowspan="2">Open or short</td></tr><tr><td colspan="4">250 Ω</td></tr></table></td></tr>
</table>

* i-see sensor is available with optional “i-see sensor corner panel” (SLP-18FAEU).

### 8-2-1. Thermistor Characteristic Graph

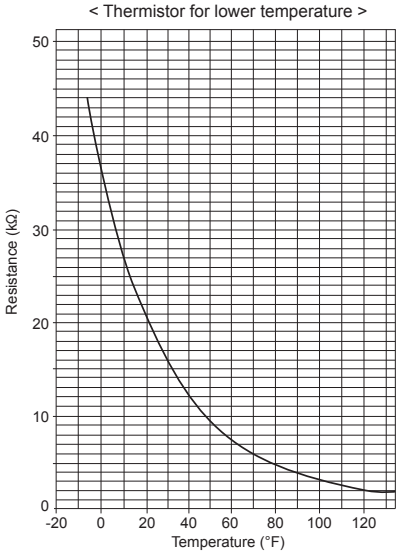
<Thermistor characteristic graph>

| | |
|---|---|
| Thermistor for lower temperature | Room temperature detection thermistor (TH21)<br>Pipe temperature detection thermistor/liquid (TH22)<br>Pipe temperature detection thermistor/gas (TH23) |

Thermistor $R_0$=15 kΩ ± 3%
Fixed number of B=3480 ± 2%

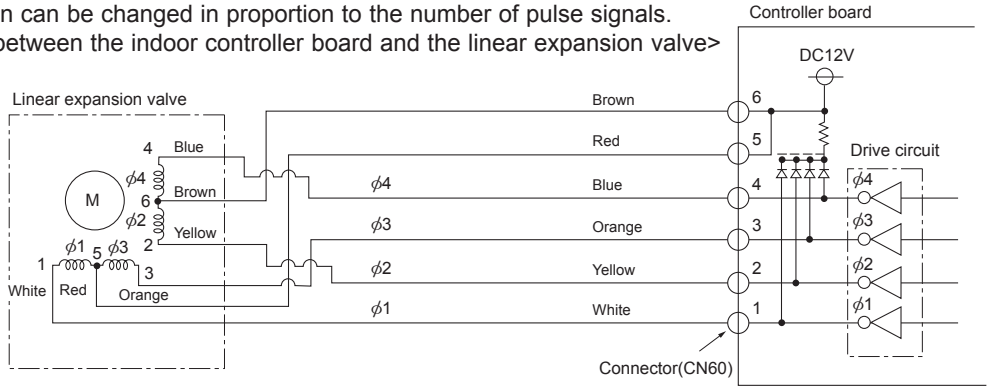
$$Rt=15\exp\{3480(\frac{1}{273+(t-32)/1.8}-\frac{1}{273})\}$$

| | |
|---|---|
| 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 |




### 8-2-2. Linear Expansion Valve

① Operation summary of the linear expansion valve
• Linear expansion valves open/close through the use of a 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 order of connector numbers is different at the controller board side from the LEV side, see the colors of lead wires to check the numbers.

**<Output pulse signal and the valve operation>**

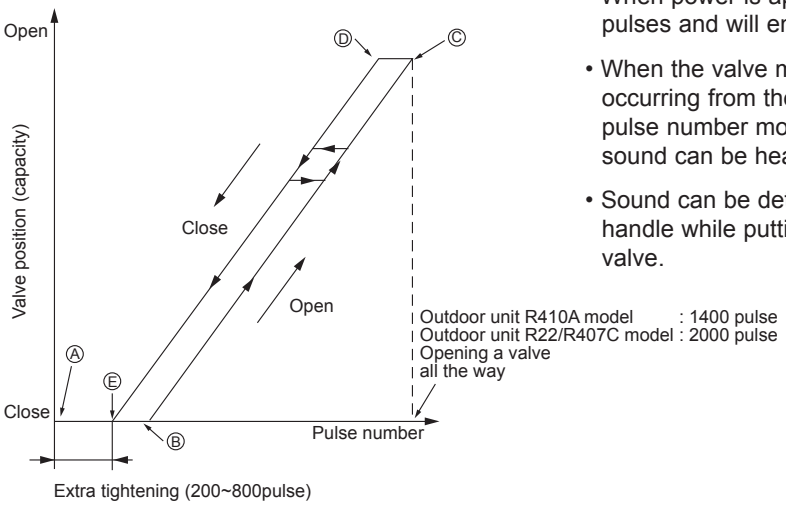
| Output (Phase) | Output | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| $\phi$1 | ON | OFF | OFF | ON |
| $\phi$2 | ON | ON | OFF | OFF |
| $\phi$3 | OFF | ON | ON | OFF |
| $\phi$4 | OFF | OFF | ON | ON |

Closing a valve : 1 → 2 → 3 → 4 → 1
Opening a valve : 4 → 3 → 2 → 1 → 4

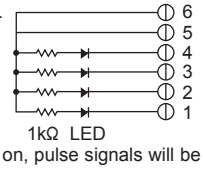
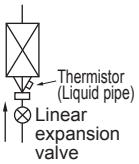
The output pulse shifts in above order.

- 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 power is applied valve drives in the closed direction 2200 pulses and will end at Ⓐ. This is done to define 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 Ⓔ to Ⓐ 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 be 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 200Ω ±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 leaks, 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. |

### 8-2-3. DC Fan Motor (Fan Motor/Indoor Controller Board)

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

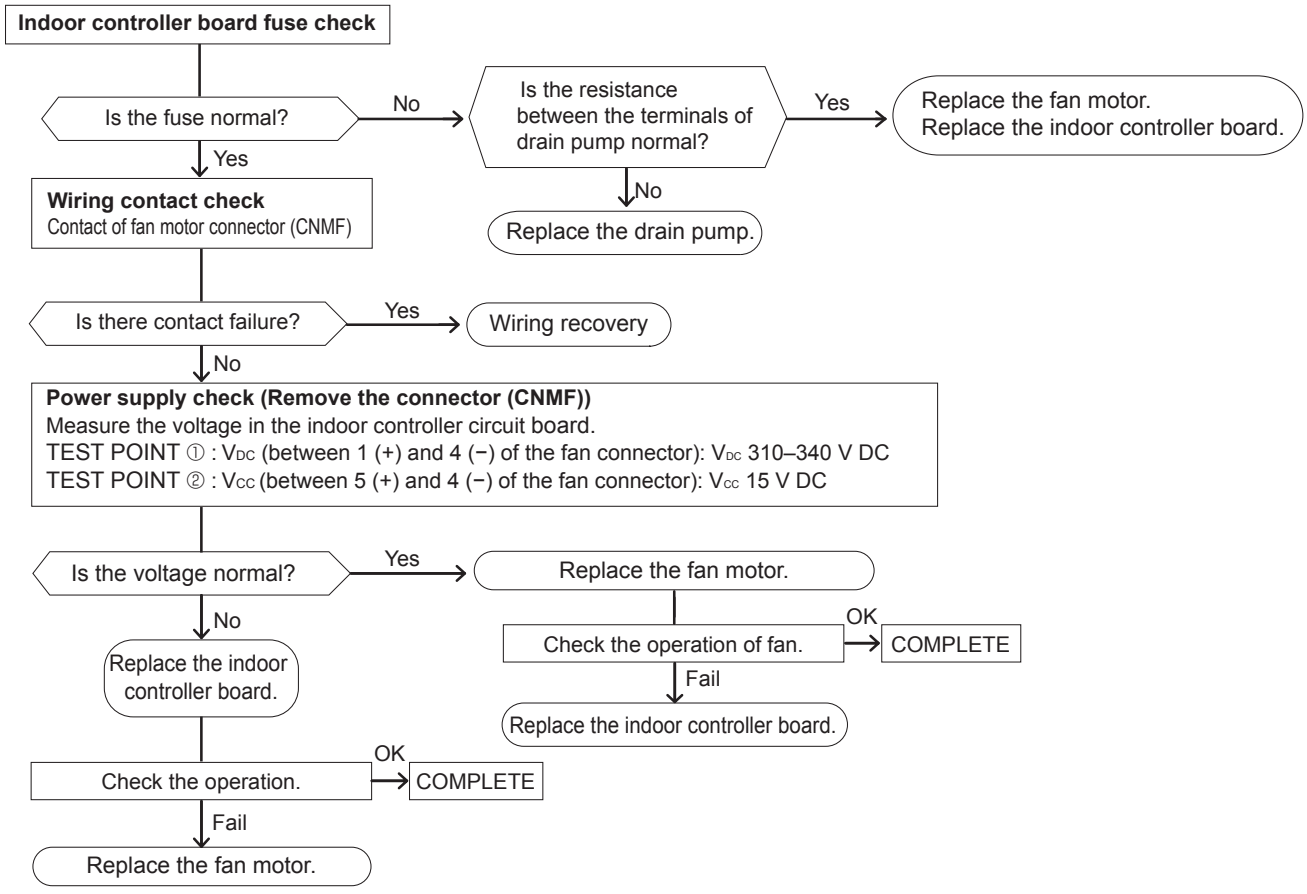
① Notes

· High voltage is applied to the connecter (CNMF) for the fan motor. Pay attention to the service.

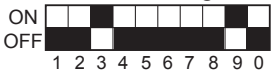
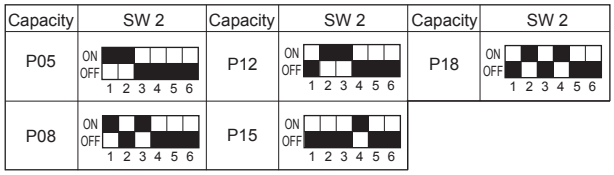
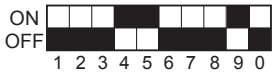
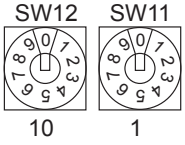
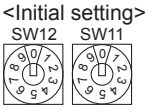
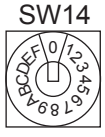
· Do not pull out the connector (CNMF) for the motor with the power supply on.
(It will damage the indoor controller board and fan motor)

② Self check

Conditions : The indoor fan cannot turn around.



## 8-3. FUNCTION OF DIP SWITCH

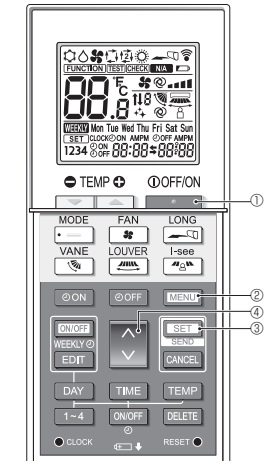
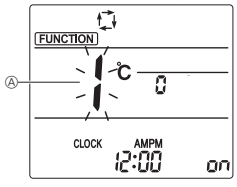
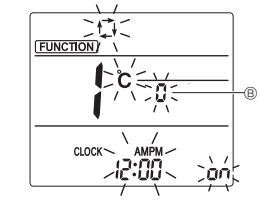
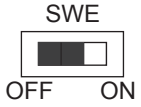
| Switch | Pole | Function | Operation by switch | | Effective timing | Remarks |
|---|---|---|---|---|---|---|
| | | | ON | OFF | | |
| SW1 Function Selection | 1 | Thermistor <Room temperature detection> position | Built-in remote controller | Indoor unit | Under suspension | Indoor controller board <Initial setting>  |
| | 2 | Filter clogging detection | Provided | Not provided | | |
| | 3 | Filter cleaning | 2,500h | 100h | | |
| | 4 | Fresh air intake | Effective | Not effective | | |
| | 5 | Remote indication switching | Thermo ON signal indication | Fan output indication | | |
| | 6 | — | — | — | | |
| | 7 | Air flow set in case of Heat thermo OFF | Low *1 | Extra low *1 | | |
| | 8 | | Setting air flow *1 | Depends on SW1-7 | | |
| | 9 | Auto restart function | Effective | Not effective | | |
| | 0 | Power ON/OFF | Effective | Not effective | | |
| SW2 Capacity code setting | 1–6 |  | | | Before power supply ON | Indoor controller board <Initial setting> Set for each capacity. |
| SW3 Function setting | 1 | Heat pump/Cooling only | Cooling only | Heat pump | Under suspension | Indoor controller board <Initial setting> Set for each capacity.  |
| | 2 | — | — | — | | |
| | 3 | — | — | — | | |
| | 4 | Setting i-See sensor installation position | Setting pattern ③ | Setting pattern ① | | |
| | 5 | Vane horizontal angle | Second setting | First setting | | |
| | 6 | — | — | — | | |
| | 7 | Indoor linear expansion valve opening | Effective | Not effective | | |
| | 8 | Heat 4 degrees up | Not effective | Effective | | |
| | 9 | — | — | — | | |
| | 0 | — | — | — | | |
| SW11 1s digit address setting<br>SW12 10s digit address setting | Rotary switch |  | Address setting should be done when M-NET remote controller is being used. | | Before power supply ON | Indoor controller board <Initial setting>  |
| SW14 Branch No. setting | Rotary switch |  | This is the switch to be used when the indoor unit is operated with R2 series outdoor unit as a set. With other than R2 series outdoor unit leave at 0. | | | Indoor controller board <Initial setting>  |

*1 Refer to the <Table A> below.

<Table A>

| SW1-7 | SW1-8 | |
|---|---|---|
| OFF | OFF | Extra low |
| ON | OFF | Low |
| OFF | ON | Setting air flow |
| ON | ON | stop |

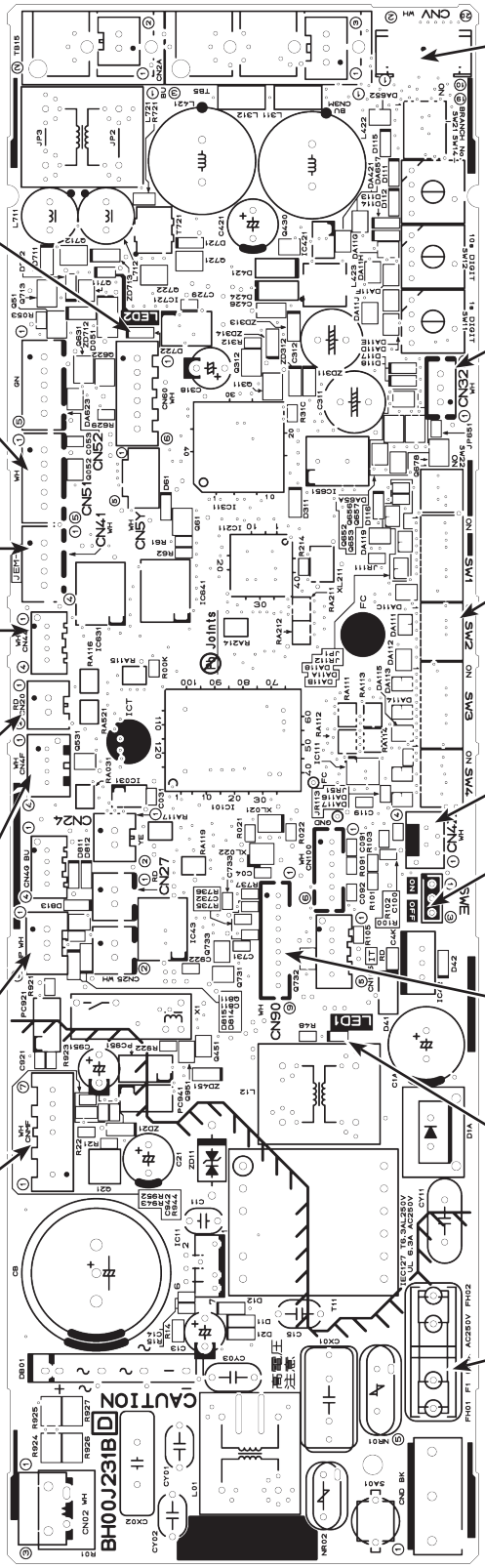
Continue to the next page

<table>
<tr><th>Switch</th><th>Pole</th><th>Function</th><th colspan="2">Operation by switch<br>ON / OFF</th><th>Effective timing</th><th>Remarks</th></tr>
<tr><td rowspan="6">SW21<br>Function selection</td><td>1</td><td rowspan="2">Setting ceiling height</td><td colspan="2" rowspan="2">Depends on SW21-1, SW21-2</td><td rowspan="6">Under operation or suspension</td><td rowspan="6"><Initial setting><br><br></td></tr>
<tr><td>2</td></tr>
<tr><td>3</td><td>—</td><td colspan="2">—</td></tr>
<tr><td>4</td><td>—</td><td colspan="2">—</td></tr>
<tr><td>5</td><td>—</td><td colspan="2">—</td></tr>
<tr><td>6</td><td>—</td><td colspan="2">—</td></tr>
<tr><td colspan="7"><table>
<tr><th></th><th>SW21-1</th><th>SW21-2</th><th>Height</th></tr>
<tr><td>Silent</td><td>—</td><td>ON</td><td>8.2 ft [2.5 m]</td></tr>
<tr><td>Standard</td><td>OFF</td><td>OFF</td><td>8.9 ft [2.7 m] (default setting)</td></tr>
<tr><td>High</td><td>ON</td><td>OFF</td><td>9.8 ft [3.0 m]</td></tr>
</table></td></tr>
<tr><td>SW22<br>Function selection</td><td>Jumper</td><td colspan="3"><table>
<tr><th></th><th>Function</th><th>ON</th><th>OFF</th></tr>
<tr><td>1</td><td>—</td><td>—</td><td>—</td></tr>
<tr><td>2</td><td>—</td><td>—</td><td>—</td></tr>
<tr><td>3</td><td>Pair No. of wireless remote controller</td><td colspan="2" rowspan="2">Depends on SW22-3, 22-4</td></tr>
<tr><td>4</td><td>Pair No. of wireless remote controller</td></tr>
</table>
• To operate each indoor unit by each remote controller when installed 2 indoor units or more are near, Pair No. setting is necessary.<br>
●Pair No. setting is available with the 4 patterns (Setting patterns A to D).<br>
●Make setting for J41, J42 of indoor controller board and the Pair No. of wireless remote controller.<br><br>
• You may not set it when operating it by one remote controller.<br>
Setting for indoor unit<br>
●Cut jumper wire J41, J42 on the indoor controller board according to the table below.<br><br>
Wireless remote controller pair number:<br>
●Setting operation (Fig. 1 Ⓐ)<br>
1. Press the [ ] button ① to stop the air conditioner.<br>
2. Press the [MENU] button ②.<br>
3. Check that function No."1" is displayed, and then press the [SET] button ③. The Screen display setting screen will be displayed. (Fig. 2.)<br><br>
●Pair No. changing operation (Fig. 2 Ⓑ)<br>
1. Press the [△▽] button ④.<br>
2. Each time the [△▽] button ④ is pressed, the pair No.0–3 changes.<br>
3. Press the [SET] button ③ to check the setting.<br>
4. Press the [MENU] button ②.<br><br>
<table>
<tr><th colspan="2">Indoor unit SW22</th><th rowspan="2">Pair No. of wireless remote controller</th><th rowspan="2"></th></tr>
<tr><th>SW22-3</th><th>SW22-4</th></tr>
<tr><td>ON</td><td>ON</td><td>0</td><td>Initial setting</td></tr>
<tr><td>OFF</td><td>ON</td><td>1</td><td>—</td></tr>
<tr><td>ON</td><td>OFF</td><td>2</td><td>—</td></tr>
<tr><td>OFF</td><td>OFF</td><td>3–9</td><td>—</td></tr>
</table></td><td>Under operation or suspension</td><td><Initial setting><br><br><br><br><br>Fig. 1<br><br><br>Fig. 2</td></tr>
<tr><td>SWE<br>Test run for Drain pump</td><td>Connector</td><td colspan="3">Drain pump and fan are activated simultaneously after the connector SWE is set to ON and turn on the power.<br><br><br>The connector SWE is set to OFF after test run.</td><td>Under operation</td><td><Initial setting><br><br></td></tr>
</table>

## 8-4. TEST POINT DIAGRAM

### Indoor controller board

**PLFY-P05NFMU-E.TH PLFY-P08NFMU-E.TH PLFY-P12NFMU-E.TH**
**PLFY-P15NFMU-E.TH PLFY-P18NFMU-E.TH**

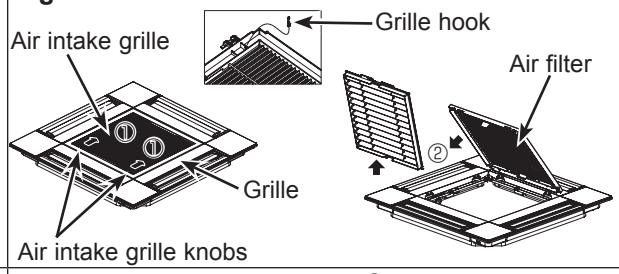
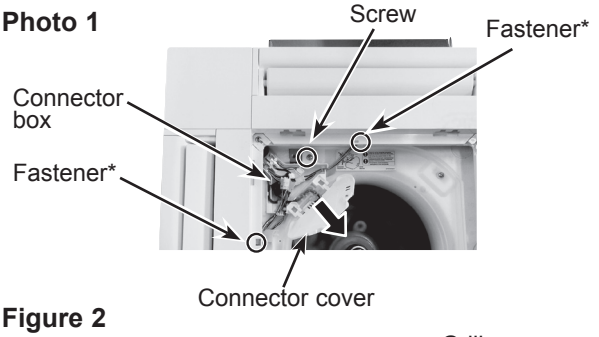
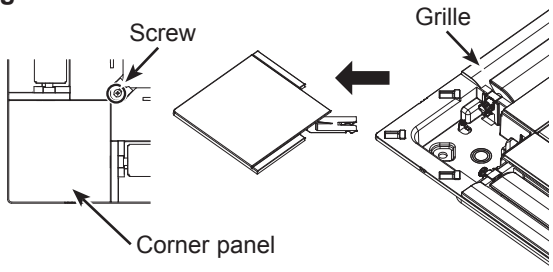
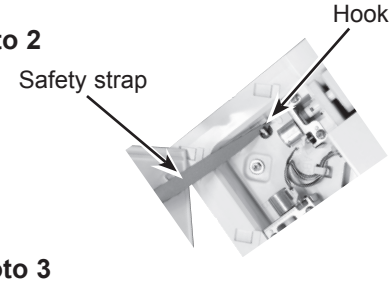
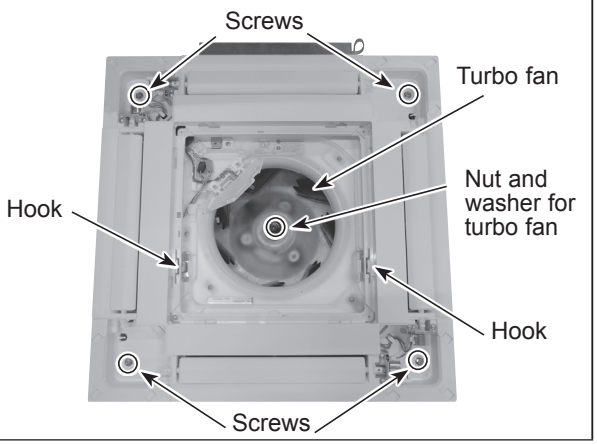


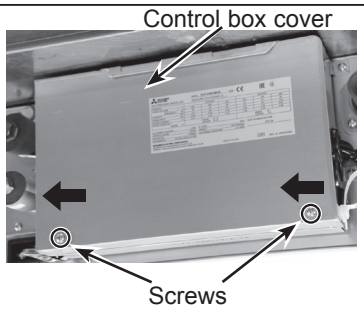
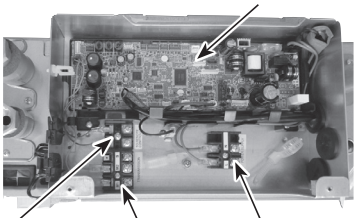
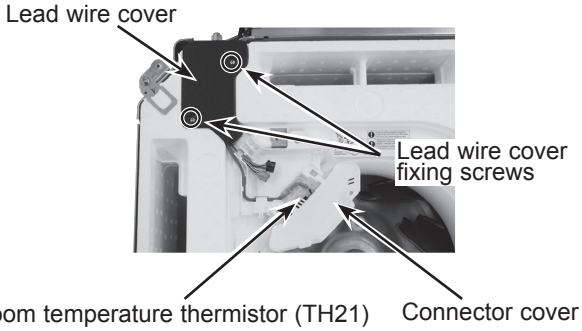
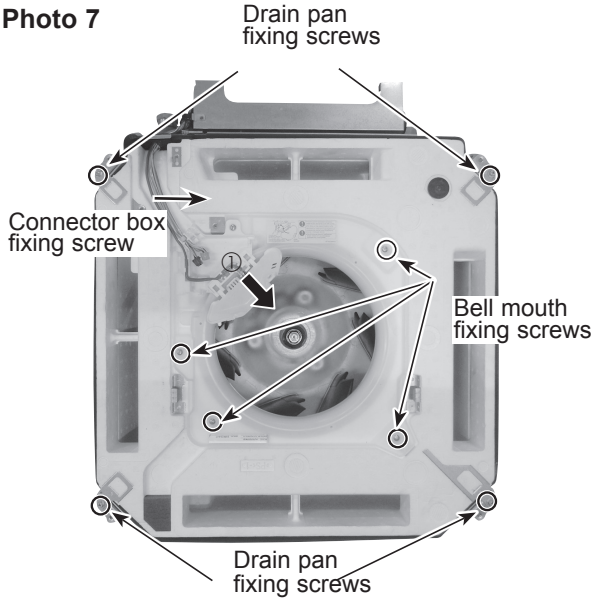

Note: The voltage range of 12 V DC in this page is between 11.5 to 13.7 V DC.

# 9 DISASSEMBLY PROCEDURE

**PLFY-P05NFMU-E.TH PLFY-P08NFMU-E.TH PLFY-P12NFMU-E.TH**
**PLFY-P15NFMU-E.TH PLFY-P18NFMU-E.TH**

Be careful when removing heavy parts.

| OPERATING PROCEDURE | PHOTOS/FIGURES |
|---|---|
| **1. Removing the air intake grille and air filter**<br>(1) Slide the knob of air intake grille to the direction of the arrow ① to open the air intake grille.<br>(2) Remove the grille hook from the panel to prevent the grille from dropping.<br>(3) Slide the hinge of the intake grille to the direction of the arrow ② and remove the air filter. | **Figure 1**<br><br> |
| **2. Removing the panel**<br>(1) Remove the air intake grille. (Refer to procedure 1)<br><br>**Connector box (See Photo 1)**<br>(2) Remove the screw of the connector cover.<br>(3) Slide the connector cover to the direction of the arrow to open the cover.<br>(4) Disconnect all the connectors, then pull out the connectors that are coming from panel side from the connector box.<br><br>**Corner panel (See Figure 2 and Photo 2)**<br>(5) Loosen the screw from the corner of the corner panel.<br>(6) Slide the corner panel as indicated by the arrow.<br>(7) Remove the safety strap from the hook, then remove the corner panel from the panel.<br>(The safety strap is not equipped for the signal receiver panel and i-See sensor corner panel.)<br>(8) Remove the fastener (*), then remove the corner panel.<br><br>**Panel (See Photo 3)**<br>(9) Remove the 4 screws.<br>(10) Unlatch the 2 hooks.<br><br>* Fastener is only for the signal receiver and i-See sensor corner panel. | **Photo 1**<br><br><br>**Figure 2**<br><br><br>**Photo 2**<br><br><br>**Photo 3**<br><br> |

| OPERATING PROCEDURE | PHOTOS/FIGURES |
|---|---|
| **3. Removing the electrical parts**<br>(1) Loosen the 2 screws on the control box cover.<br>(2) Slide the control box cover as indicated by the arrow to remove.<br><Electrical parts in the control box><br>• Indoor controller board (I.B)<br>• Terminal block (TB2)<br>• Terminal block (TB5)<br>• Terminal block (TB15) | **Photo 4**<br><br><br>**Photo 5**<br><br> |
| **4. Removing the room temperature thermistor (TH21)**<br>(1) Remove the panel. (Refer to procedure **2**)<br>**Room temperature thermistor (TH21) (See Photo 6)**<br>(2) Remove the 2 lead wire cover fixing screws. (See Photo 6)<br>(3) Open the lead wire cover, then remove the connector cover from the connector box.<br>(4) Remove the band that fixes the room temperature thermistor (TH21) to the connector box.<br>(5) Remove the room temperature thermistor (TH21) from the connector box.<br>(6) Remove the connector (CN20) from the indoor controller board, and disconnect the room temperature thermistor (TH21).<br>Note: When fixing the thermistor, make sure to fix it to the connector box using a band. | **Photo 6**<br><br> |
| **5. Removing the drain pan**<br>(1) Remove the panel. (Refer to procedure **2**)<br>(2) Remove the room temperature thermistor (TH21). (Refer to procedure **4**)<br>**Connector box (See Photo 7)**<br>(3) Remove the connector box fixing screw.<br>(4) Slide the connector box as indicated by the arrow ①, then remove the claw from bell mouth.<br>**Bell mouth (See Photo 7)**<br>(5) Remove the 4 bell mouth fixing screws, then remove the bell mouth.<br>**Drain pan (See Photo 7)**<br>(6) Remove the 4 drain pan fixing screws, then remove the drain pan. | **Photo 7**<br><br> |

## OPERATING PROCEDURE

**6. Removing the pipe temperature thermistor/liquid (TH22) and pipe temperature thermistor/gas (TH23)**

(1) Remove the panel. (Refer to procedure **2**)
(2) Remove the room temperature thermistor (TH21). (Refer to procedure **4**)
(3) Remove the drain pan. (Refer to procedure **5**)

**Pipe temperature thermistor/liquid (TH22) and pipe temperature thermistor/gas (TH23) (See Photo 8)**

(4) Remove the control box cover. (Refer to procedure **3**)
(5) Disconnect the thermistor connectors from the CN44 on the indoor controller board.
(6) Cut the band fixing the thermistor connectors to the fan motor cable.
(7) Remove the thermistors from the holders on heat exchanger.

Note:
When re-attaching the thermistor connectors to the fan motor cable, make sure to put the fixed band into the groove. (See Photo 8-1)

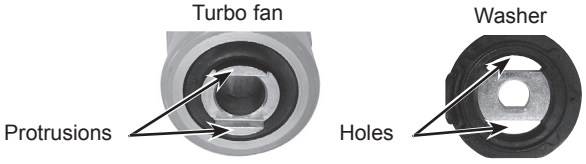
**7. Removing the fan motor (MF)**

(1) Remove the panel. (Refer to procedure **2**)
(2) Remove the room temperature thermistor (TH21). (Refer to procedure **4**)
(3) Remove the drain pan. (Refer to procedure **5**)

**Turbo fan (See Photo 3)**

(4) Remove the nut and washer from the turbo fan.
(5) Remove the turbo fan from the motor shaft.

Notes:
- When assembling, make sure that the protrusions on the turbo fan fit into the holes on the washer.
- Tightening torque for the nut: 4.5 ± 0.5 Nm




**Fan motor (See Photo 9)**

(6) Remove the control box cover. (Refer to procedure **3**)
(7) Disconnect the fan motor cable from the CNMF on the indoor controller board.
(8) Remove the 2 motor lead cover fixing screws, then remove the motor lead cover.
(9) Loosen the 3 clamps fixing the fan motor cable.
(10) Cut the band.
(11) Remove the 3 nuts and washers, then remove the fan motor.
(12) Remove the 3 motor mounts.

Notes:
1. When re-attaching the motor mount, make sure that the thicker end faces the motor shaft. (See Photo 10-1)
2. When re-attaching the turbo fan, make sure that the tightening torque for nuts is 5 N·m or lower.

## PHOTOS/FIGURES

**Photo 8**

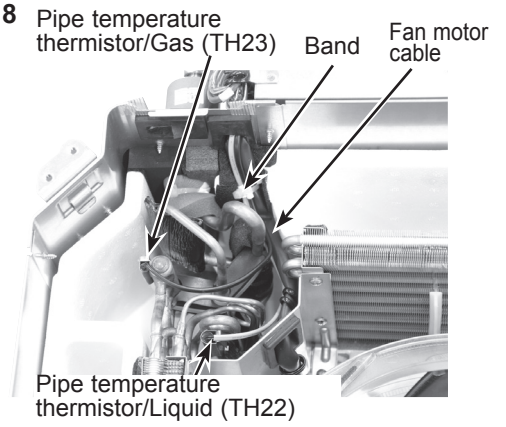



**Photo 8-1**

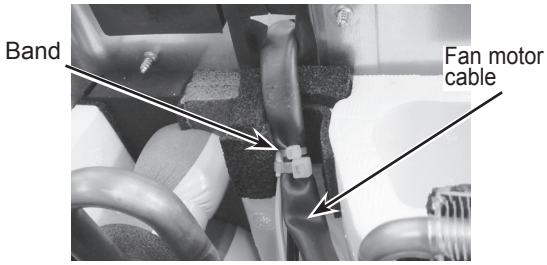



**Photo 9**

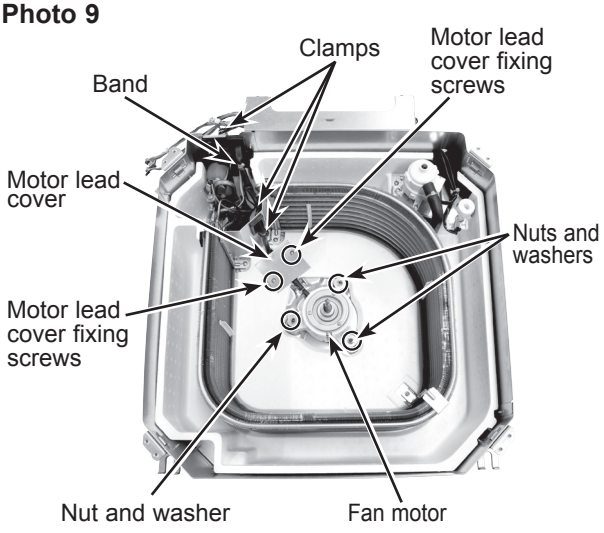
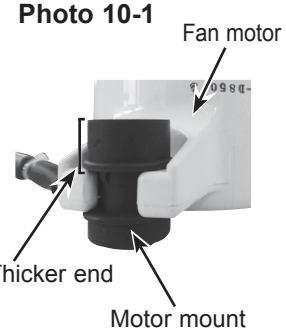
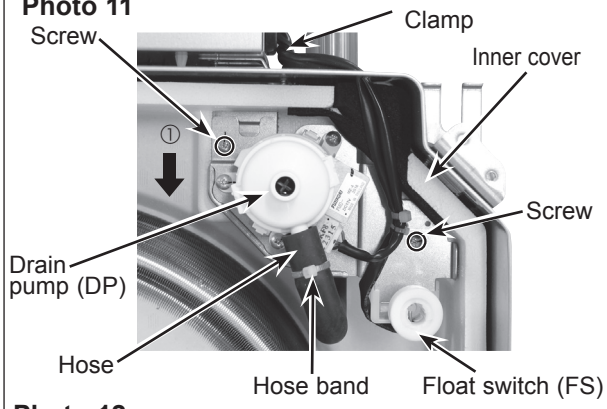
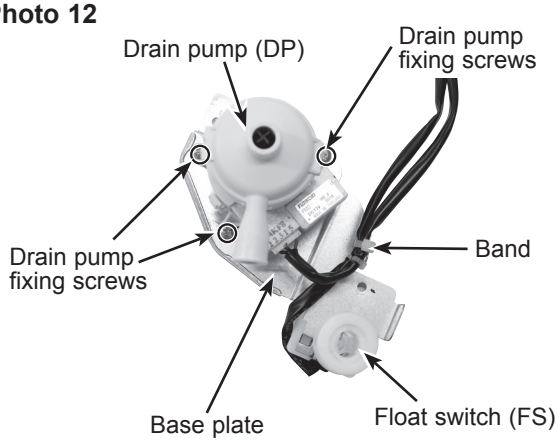
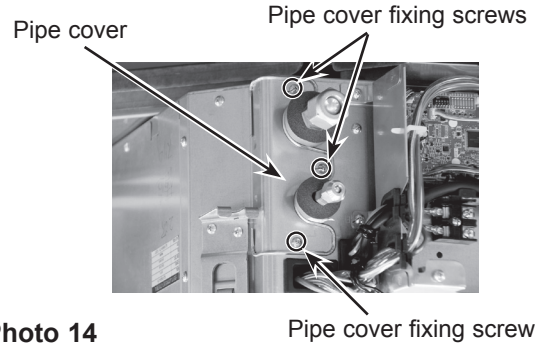
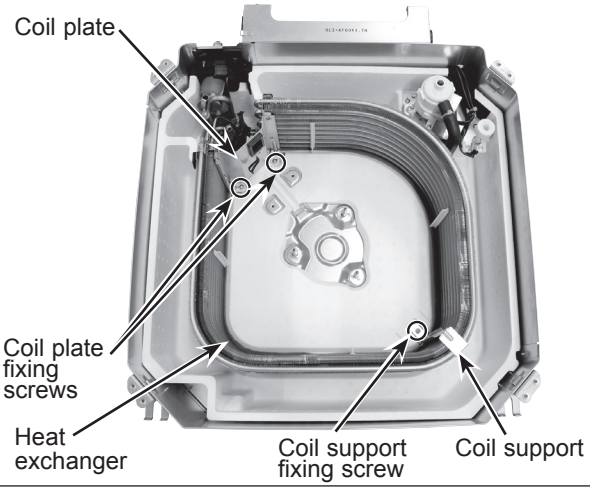



**Photo 10**




**Photo 10-1**



| OPERATING PROCEDURE | PHOTOS/FIGURES |
|---|---|
| **8. Removing the drain pump (DP) and float switch (FS)**<br>(1) Remove the panel. (Refer to procedure **2**)<br>(2) Remove the room temperature thermistor (TH21). (Refer to procedure **4**)<br>(3) Remove the control box cover. (Refer to procedure **3**)<br>(4) Remove the drain pan. (Refer to procedure **5**)<br><br>**Drain pump (See Photo 11 and 12)**<br>(5) Disconnect the drain pump connector from the CNP and float switch connector from CN4F on the indoor controller board.<br>(6) Loosen the clamp fixing the connectors on the side of the control box.<br>(7) Cut the hose band and release the hose.<br>(8) Remove the 2 screws fixing the drain pump and float switch to the inner cover.<br>(9) Slide the base plate of the drain pump and float switch as indicated by the arrow ① to remove.<br>(10) Cut the band. (See Photo 12)<br>(11) Remove the 3 drain pump fixing screws, then remove the drain pump. (See Photo 12)<br><br>Notes:<br>1. When re-attaching the drain pump, make sure to use a band to fix the connector to the base plate.<br>2. Do not give a shock to the float switch. Otherwise it can cause damage or malfunction. | **Photo 11**<br><br><br>**Photo 12**<br><br> |
| **9. Removing the heat exchanger**<br>(1) Remove the panel. (Refer to procedure **2**)<br>(2) Remove the room temperature thermistor (TH21). (Refer to procedure **4**)<br>(3) Remove the drain pan. (Refer to procedure **5**)<br>(4) Remove the turbo fan and fan motor. (Refer to procedure **7**)<br><br>**Heat exchanger (See Photo 13 and 14)**<br>(5) Remove the 3 pipe cover fixing screws to remove the pipe cover.<br>(6) Remove the 2 coil plate fixing screws.<br>(7) Remove the coil support fixing screw, then remove the coil support.<br>(8) Remove the heat exchanger. | **Photo 13**<br><br><br>**Photo 14**<br><br> |

CITY MULTI

MITSUBISHI ELECTRIC CORPORATION

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

©Copyright 2018 MITSUBISHI ELECTRIC CORPORATION
Issued: Mar. 2018 No. OCH604 REVISED EDITION-A
Published in Dec. 2017 No. OCH604
Made in Japan

Specifications are subject to change without notice.