MITSUBISHI ELECTRIC

SPLIT-TYPE, HEAT PUMP AIR CONDITIONERS

TECHNICAL & SERVICE MANUAL

CITY MULTI Series   Wall Mounted   R410A

Indoor unit
[Model Name]   [Service Ref.]

PKFY-P24NKMU-E2   **PKFY-P24NKMU-E2R1.TH**

PKFY-P30NKMU-E2   **PKFY-P30NKMU-E2R1.TH**

Note:
• This manual describes only service data of the indoor units.

INDOOR UNIT

CONTENTS

PARTS CATALOG (OCB848)

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.

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1 PART NAMES AND FUNCTIONS

● **Indoor unit**
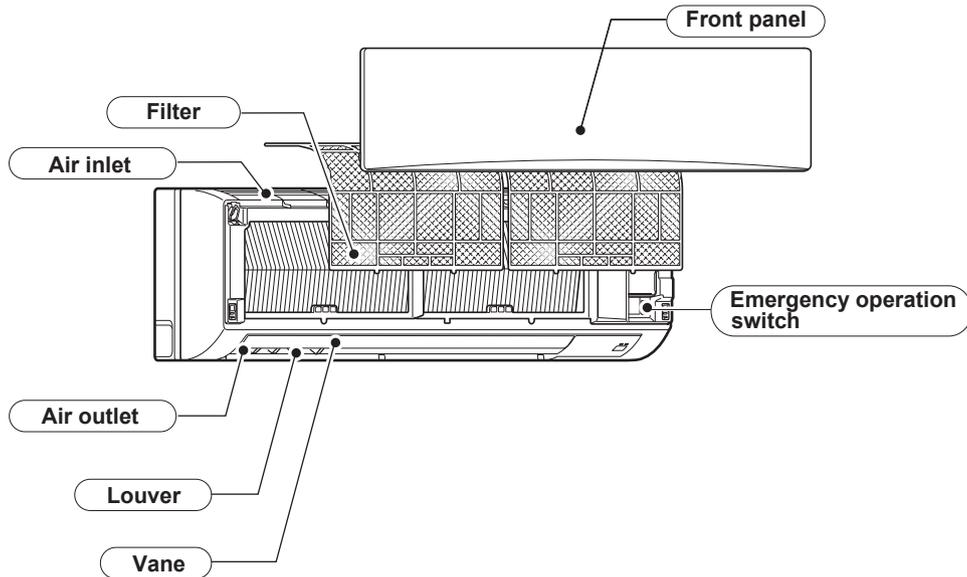
Refer to **"8-1. REMOTE CONTROLLER FUNCTIONS"** for details.

2 SPECIFICATION

2-1. Specifications

Item	Service Ref.			PKFY-P24NKMU-E2R1.TH	PKFY-P30NKMU-E2R1.TH
Power source				Single phase 208-230 V 60 Hz	
Cooling capacity (Nominal)	*1		kW	7.0	8.8
	*1		Btu/h	24,000	30,000
		Power input	kW	0.07	0.07
		Current input	A	0.50	0.50
Heating capacity (Nominal)	*2		kW	7.9	10.0
	*2		Btu/h	27,000	34,000
		Power input	kW	0.07	0.07
		Current input	A	0.50	0.50
External finish				Plastic, MUNSELL (1.0Y 9.2/0.2)	
External dimension H × W × D			mm	365 × 1170 × 295	
			in.	14-3/8" × 46-1/16" × 11-5/8"	
Net weight			kg (lbs)	21 (46)	
Heat exchanger				Cross fin (Aluminum fin and copper tube)	
Fan		Type × Quantity		Line flow fan × 1	
		External static press.	Pa	0	
			mmH$_2$O	0	
		Motor type		DC motor	
		Motor output	kW	0.069	
		Driving mechanism		Direct-drive	
		Airflow rate (Low-High)	m^3/min	16 - 26	20 - 26
			L/s	267 - 433	333 - 433
			cfm	570 - 920	710 - 920
Noise level (Low-High) (measured in anechoic room)			dB <A>	39 - 49	43 - 49
Insulation material				Polyethylene sheet	
Air filter				PP honeycomb	
Protection device				Fuse	
Refrigerant control device				LEV	
Connectable outdoor unit				R410A CITY MULTI	R410A CITY MULTI
Diameter of refrigerant pipe		Liquid	mm (in.)	ø9.52 (ø3/8") Flare	ø9.52 (ø3/8") Flare
		Gas	mm (in.)	ø15.88 (ø5/8") Flare	ø15.88 (ø5/8") Flare
Field drain pipe size			mm (in.)	I.D. 16mm (5/8")	
Standard attachment	Document Accessory			Installation Manual, Instruction Book	
Optional parts	External heater adapter			PAC-YU25HT	
Remarks	Installation			Details on foundation work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual.	

Note :

	*1 Nominal cooling conditions	*2 Nominal heating conditions
Indoor :	80°FDB/67°FWB (26.7°CDB/19.4°CWB)	70°FDB(21°CDB)
Outdoor :	95°FDB (35°CDB)	47°FDB/43°FWB (8.3°CDB/6.1°CWB)
Pipe length :	25 ft. (7.6 m)	25 ft. (7.6 m)
Level difference :	0 ft (0 m)	0 ft (0 m)

* Due to continuing improvement, above specification may be subject to change without notice.

Unit converter
kcal/h = kW × 860
Btu/h = kW × 3,412
cfm = m^3/min × 35.31
lb = kg/0.4536
*Above specification data is subject to rounding variation.

2-2. Electrical parts specifications

| Parts name / Service Ref.	Symbol	PKFY-P24NKMU-E2R1.TH	PKFY-P30NKMU-E2R1.TH
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 TH24	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 3.15 A	
Fan motor	MF	8-Pole Output 69 W RCOJ56-AM	
Vane motor (with limit switch)	MV	MSBPC20 DC12 V	
Linear expansion valve	LEV	EFM-40YGME DC 12 V	EFM-80YGME DC 12 V
Power supply terminal block	TB2	(L1, L2) 250 V 20 A	
Transmission terminal block	TB5	(M1, M2, S) 250 V 20 A	
MA remote controller terminal block	TB15	(1, 2) 250 V 10 A	

2-3. Sound levels

3.3 ft. (1m)

Measurement location

3.3 ft. (1m)
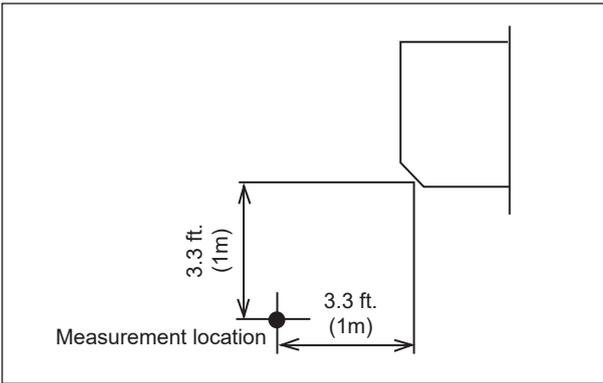
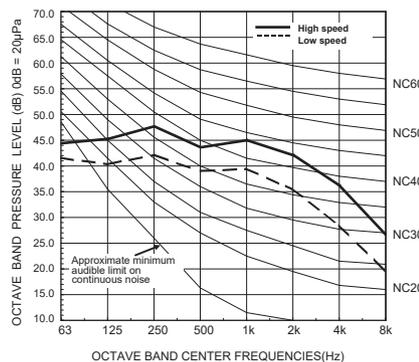|	Sound level at anechoic room : Low-High
Service Ref.	Sound level dB (A)
PKFY-P24NKMU-E2R1.TH	39 - 49
PKFY-P30NKMU-E2R1.TH	43 - 49

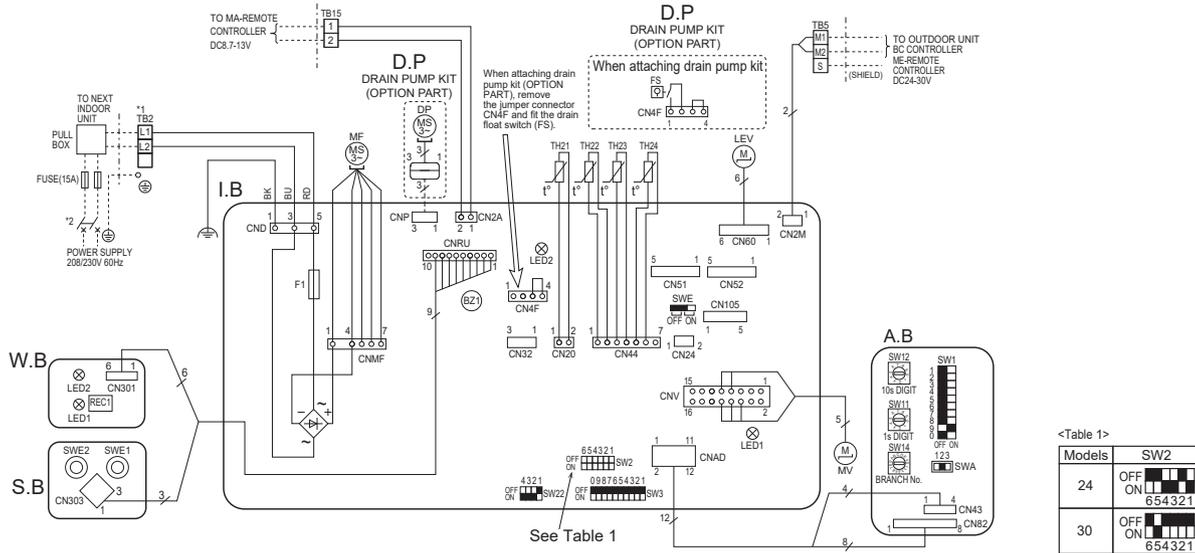* Measured in anechoic room.

2-4. NC curves

PKFY-P24NKMU-E2R1
External static pressure : 0 Pa
Power source : 208,230 V, 60 Hz
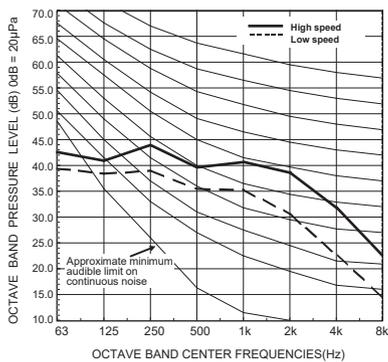
PKFY-P30NKMU-E2R1
External static pressure : 0 Pa
Power source : 208,230 V, 60 Hz

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3 | OUTLINES AND DIMENSIONS

Unit : in. (mm)

[LEGEND]

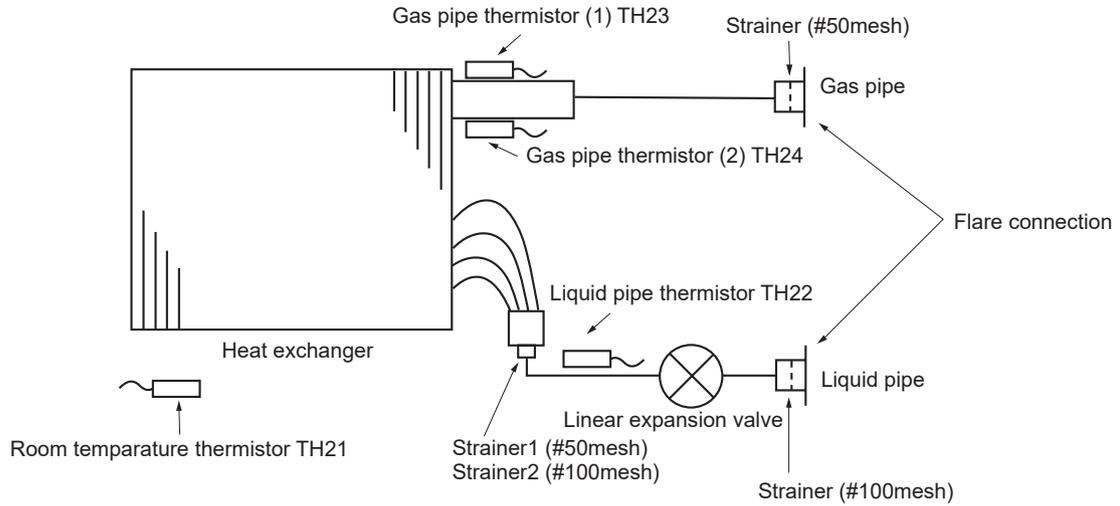| SYMBOL		NAME	SYMBOL		NAME
I.B	INDOOR CONTROLLER BOARD		TH23	THERMISTOR	PIPE TEMP. DETECTION / GAS1 (0°C/15kΩ,25°C/5.4kΩ)
CN32	CONNECTOR	REMOTE SWITCH			
CN51		CENTRALLY CONTROL	TH24		PIPE TEMP. DETECTION / GAS2 (0°C/15kΩ, 25°C/5.4kΩ)
CN52		REMOTE INDICATION			
CN105	IT TERMINAL		A.B	ADDRESS BOARD	
BZ1	BUZZER		SWA	SWITCH	FAN SPEED SELECTOR
F1	FUSE (T3.15AL 250V)		SW1		MODE SELECTION
SW2	SWITCH	CAPACITY CODE	SW11		ADDRESS SETTING 1s DIGIT
SW3		MODE SELECTION	SW12		ADDRESS SETTING 10s DIGIT
SW22		PAIR NO. SETTING	SW14		BRANCH No.
SWE		DRAIN PUMP(TEST MODE)	S.B	SWITCH BOARD	
LEV	LINEAR EXPANSION VALVE		SWE1	EMERGENCY OPERATION(HEAT)	
MF	FAN MOTOR		SWE2	EMERGENCY OPERATION(COOL)	
MV	VANE MOTOR		W.B	PCB FOR WIRELESS REMOTE CONTROLLER	
TB2	TERMINAL	POWER SUPPLY	LED1	LED(OPERATION INDICATOR : GREEN)	
TB5	BLOCK	TRANSMISSION	LED2	LED(PREPARATION FOR HEATING : ORANGE)	
TB15		MA-REMOTE CONTROLLER	REC1	RECEIVING UNIT	
TH21	THERMISTOR	ROOM TEMP. DETECTION (0°C/15kΩ, 25°C/5.4kΩ)	D.P	DRAIN PUMP KIT (OPTIONAL PARTS)	
			DP	DRAIN PUMP	
TH22		PIPE TEMP. DETECTION / LIQUID (0°C/15kΩ, 25°C/5.4kΩ)	FS	DRAIN FLOAT SWITCH	

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 are,
   ☐ : terminal block, ⊡ ⊡ ⊡ , ☐ :connector.
6. The setting of the SW2 dip switches differs in the capacity. for the detail, see Table 1.
7. The black square (■) in the wiring diagram indicates a switch position.

*1 Use copper supply wires.
   Utiliser des fils d'alimentation en cuivre.
*2 A disconnect should be required by local code.
   Se procurer un sectionneur conforme aux réglementations locales.

<Table 1>

Models	SW2
24	OFF/ON 654321
30	OFF/ON 654321

LED on indoor board for service

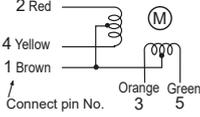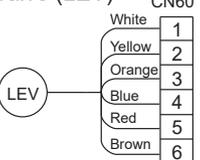| Mark	Meaning	Function
LED1	Main power supply	Main power supply (Indoor unit:208/230V 60Hz) Power on → lamp is lit
LED2	Power supply for MA-Remote controller	Power supply for MA-Remote controller on → lamp is lit

Gas pipe thermistor (1) TH23
Strainer (#50mesh)
Gas pipe
Gas pipe thermistor (2) TH24
Flare connection
Liquid pipe thermistor TH22
Heat exchanger
Room temparature thermistor TH21
Strainer1 (#50mesh)
Strainer2 (#100mesh)
Linear expansion valve
Liquid pipe
Strainer (#100mesh)

Unit : mm (in.)

Item \ Service Ref.	PKFY-P24NKMU-E2R1	PKFY-P30NKMU-E2R1
Gas pipe	⌀15.88 (5/8)	⌀15.88 (5/8)
Liquid pipe	⌀9.52 (3/8)	⌀9.52 (3/8)

6 TROUBLESHOOTING

6-1. HOW TO CHECK THE PARTS

Parts name	Checkpoints
Room temperature thermistor (TH21) Liquid pipe temperature thermistor (TH22) Gas pipe temperature thermistor (TH23 ,24)	Disconnect the connector then measure the resistance with a tester. (At the ambient temperature 50°F~86°F) Refer to 7-1-1.
Vane motor (MV)	Measure the resistance between the terminals with a tester. (Coil temperature 68°F)
Fan motor (MF)	Refer to 7-1-3.
Linear expansion valve (LEV)	Disconnect the connector then measure the resistance value with a tester. (Coil temperature 68°F)

Room temperature / Liquid pipe / Gas pipe thermistor

Normal	Abnormal
4.3 kΩ~9.6 kΩ	Open or short

Vane motor (MV)

2 Red
4 Yellow
1 Brown
Orange Green
Connect pin No.   3   5

Normal				Abnormal
1-2 Brown-Red	1-3 Brown-Orange	1-4 Brown-Yellow	1-5 Brown-Green	Open or short
250 Ω ± 7%				

Linear expansion valve (LEV) CN60

White	1
Yellow	2
Orange	3
Blue	4
Red	5
Brown	6

Normal				Abnormal
1-5 White-Red	2-6 Yellow-Brown	3-5 Orange-Red	4-6 Blue-Brown	Open or short
200 Ω ± 10%				

6-1-1. Thermistor

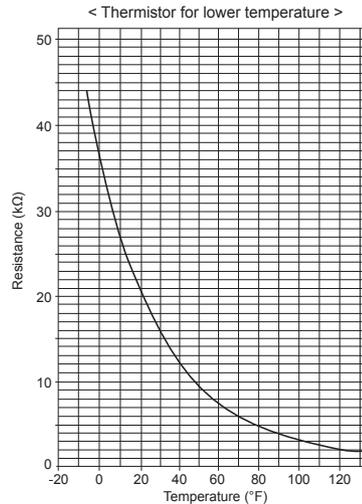<Thermistor characteristic graph>

Thermistors for lower temperature

Room temperature thermistor (TH21)
 Liquid pipe temperature thermistor (TH22)
 Gas pipe temperature thermistor (TH23) (TH24)

Thermistor R_0=15 kΩ ± 3%
 Fixed number of B=3480 ± 1%

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

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

< Thermistor for lower temperature >
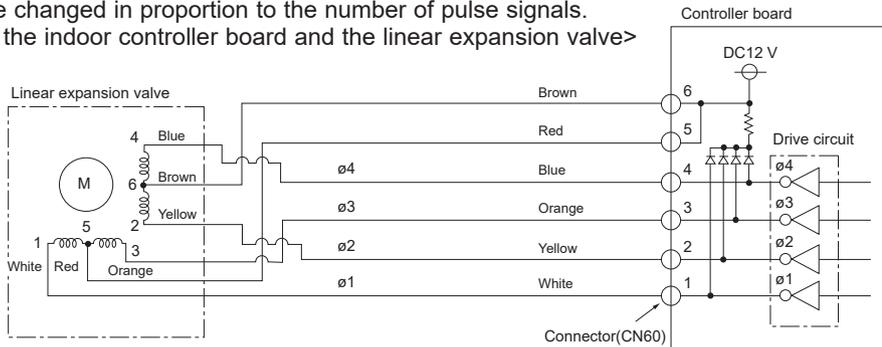

6-1-2. Liner expansion valve

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>

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<Output pulse signal and the valve operation>

Output (Phase)	Output			
	1	2	3	4
⌀1	ON	OFF	OFF	ON
⌀2	ON	ON	OFF	OFF
⌀3	OFF	ON	ON	OFF
⌀4	OFF	OFF	ON	ON

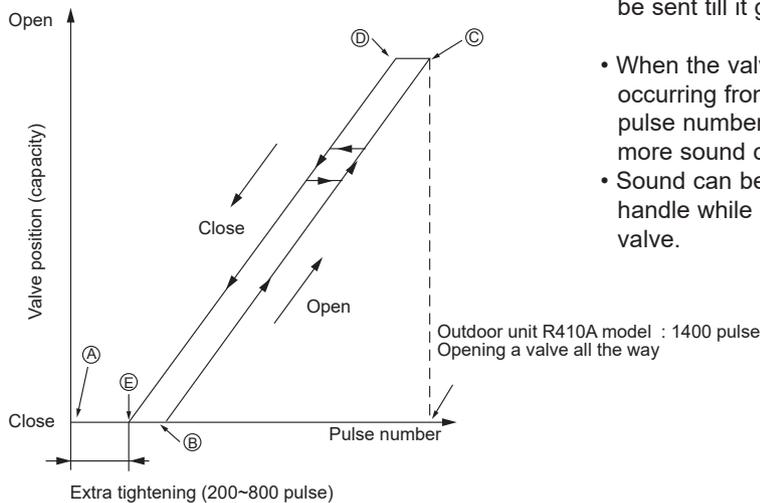The output pulse shifts in the following order.
Closing a valve : 1 → 2 → 3 → 4 → 1
Opening a valve : 4 → 3 → 2 → 1 → 4

Note:
- When linear expansion valve operation stops, all output phase 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 Ⓐ 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 Ⓔ 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.
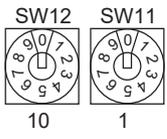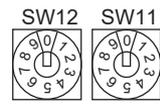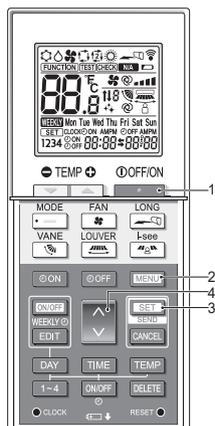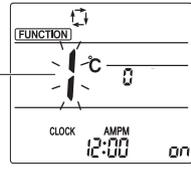
② Linear expansion valve operation

Extra tightening (200~800 pulse)

③ Trouble shooting

Symptom	Checkpoints	Countermeasures
Operation circuit failure of the micro processor	Disconnect the connector on the controller board, then connect LED for checking. 1kΩ LED 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) using a tester. It is normal if the resistance is in the range of 200 Ω ±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.

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6-1-3. DC Fan motor (fan motor/indoor controller circuit board)

Check method of DC fan motor (fan motor/indoor controller circuit 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 causes trouble of the indoor controller circuit board and fan motor.)

② Self check
Symptom : The indoor fan cannot turn around.

Wiring contact check
Contact of fan motor connector (CNMF)

Is there contact failure? —Yes→ Correct the wiring.

No

Power supply check (Remove the connector (CNMF))
Measure the voltage in the indoor controller circuit board.
TEST POINT ① : V_{DC} (between 1 (+) and 3 (-) of the fan connector): V_{DC} 294/325 VDC
TEST POINT ② : V_{CC} (between 4 (+) and 3 (-) of the fan connector): V_{CC} 15 VDC

Is the voltage normal? —No→ Indoor controller board fuse check.

Yes

Is the fuse normal? —No→ Replace the fuse.

Yes

Check the operation. —OK→ Complete.

NG

Replace indoor controller board.

Check the operation —OK→ Complete.

NG

Replace the defective fan motor.

Sensor signal check
Measure the voltage between CNMF ⑥ and ③ DC0 V and DC15 V in the indoor controller circuit board.

Does the voltage repeat DC0 V and DC15 V? —No→ Replace the defective fan motor.

Yes

Replace the indoor controller board.

Check the operation. —OK→ Complete.

NG

Replace the defective fan motor.

Check the operation —OK→ Complete.

NG

Replace the indoor controller board.

6-2. Function of Dip switch

Switch	Pole	Function	Operation by switch		Effective timing	Remarks
			ON	**OFF**		
SW1 Mode selection	1	Thermistor<Room temperature> position	Built-in remote controller	Indoor unit	Under suspension	Address board
	2	Filter clogging detection	Provide	Not provide		<Initial setting>
	3	Filter cleaning sign	2,500 hr	100 hr		
	4	Fresh air intake *2	Not effective	Not effective		NOTE: *1
	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		
	10	Power ON/OFF by breaker	Effective	Not effective		*2 It is impossible to intake the fresh air.

SW1-7 / SW1-8 table (Remarks *1):

SW1-7	SW1-8	Fan speed
OFF	OFF	Extra low
ON	OFF	Low
OFF	ON	Setting air flow
ON	ON	Stop

Switch	Pole	Function		Effective timing	Remarks
SW2 Capacity code switch	1~6	Models SW2 : P24 (ON/OFF 1 2 3 4 5 6), P30 (ON/OFF 1 2 3 4 5 6)		Before power supply ON	Indoor controller board

Switch	Pole	Function	Operation by switch		Effective timing	Remarks
			ON	**OFF**		
SW3 Function selection	1	Heat pump/Cool only	Cooling only	Heat pump	Under suspension	Indoor controller board
	2	Not used	—	—		
	3	Not used	—	—		
	4	Not used	—	—		<Initial setting>
	5	Vane horizontal angle	Second setting *1	First setting		
	6	Not used	—	—		*1 Second setting is same as first setting.
	7	Indoor linear expansion valve opening	Effective	Not effective		
	8	Heating 4 degree up	Not effective	Effective		
	9	Not used	—	—		
	0	Not used	—	—		

Switch		Operation by switch				Effective timing	Remarks

Switch	Operation by switch	Effective timing	Remarks
SW11 1s digit address setting SW12 10ths digit address setting — Rotary Switch	**How to set addresses** Example : If address is "3", remain SW12 (for over 10) at "0", and match SW11 (for 1 to 9) with "3". SW12 (10) SW11 (1)	Before power supply ON	**Address board** <Initial setting> SW12 SW11
SW14 Branch No. Setting — Rotary switch	SW14 **How to set branch numbers 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".		**Address board** <Initial setting> SW14
SW22 Function selection — Switch	(see table and instructions below)	Under operation or suspension	<Initial setting> (remote controller figure)
SWE Test run for Drain pump — Connector	Drain pump and fan are activated simultaneously after the connector SWE is set to ON and turn on the power. SWE OFF ON → SWE OFF ON The connector SWE is set to OFF after test run.	Under operation	<Initial setting> SWE OFF ON

SW22 Function selection details:

	Function	ON	OFF
1	–	–	–
2	–	–	–
3	Pair No. of wireless remote controller	Depends on SW22-3, 22-4	
4	Pair No. of wireless remote controller		

• To operate each indoor unit by each remote controller when installed 2 indoor units or more are near, Pair No. setting is necessary.
 ● Pair No. setting is available with the 4 patterns.
 ● Make setting for SW22-3, 22-4 of indoor controller board and the Pair No. of wireless remote controller.
• Pair No. setting is not set necessarily when operating it by one remote controller.
① Setting for indoor unit
 ● Set SW22-3, 22-4 on the indoor controller board according to the table below.
② Wireless remote controller pair number:
 ● Setting operation (Fig. 1 Ⓐ)
 1. Press the [ ] button ① to stop the air conditioner.
 2. Press the [MENU] button ②.
 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.)
 ● Pair No. changing operation (Fig. 2 Ⓑ)
 1. Press the [^] button ④.
 2. Each time the [^] button ④ is pressed, the pair No.0-3 changes.
 3. Press the [SET] button ③ to check the setting.
 4. Press the [MENU] button ②.

Indoor unit SW22		Pair No. of wireless remote controller	
SW22-3	SW22-4		
ON	ON	0	Initial setting
OFF	ON	1	–
ON	OFF	2	–
OFF	OFF	3–9	–

Fig. 1

Fig. 2

6-3. TEST POINT DIAGRAM

6-3-1. Indoor controller board

CN2M
M-NET transmission connecting wire
24 − 30 VDC (non-polar)

CN60
Linear expansion valve(LEV)
12 VDC pulse output

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

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

LED2
Power supply for
MA-Remote controller

CN4F
Drain float switch (FS) :
(OPTION)

CN32
Remote switch

CN2A
MA-Remote controller
connecting wire
①-②: 8.7 − 13 VDC (non-polar)

CNRU
Connect to SWITCH
BOARD (S.B) and PCB
FOR WIRELESS REMOTE
CONTROLLER (W.B)

CNP
Drain pump (DP) : (OPTION)
①-③: 12 VDC

CND
Power supply for indoor
controller board
③-⑤: 220 − 240 VAC

F1
Fuse
T3.15AL250V

CN105
IT Terminal

CNV
Vane motor (MV1,MV2)
12 VDC pulse output

LED1
Main power supply
(Indoor unit : 220 − 240 V)

CN24
External heater
12 VDC (1 : +)

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

CNAD
Connect to ADDRESS BOARD (A.B)

SWE
Test run (Drain pump and
indoor fan motor)

SW3
Function setting

SW2
Capacity setting

SW22
Pair No. setting for wireless
remote controller

CN20
Room temperature
thermistor (TH21)

CNMF
Connect to the Fan motor (MF)
①-④: 310 − 340 VDC
⑤-④: 15 VDC
⑥-④: 0 VDC (FAN stop)
1 − 6.5 VDC (FAN operation)

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

6-3-2. Wireless remote controller board

CN301
Connect to the
indoor controller
board (I.B)

BH00D078 Ⓐ
B
(Pb) Joints
LED2
LED1
R302
CN301
REC1
C301
R301
C302

6-3-3. Switch board

CN303
Connect to the
indoor controller
board (I.B)

SWE2
WH
CN303
FC
SWE1

6-3-4. Address board

SW1
Function setting

220V
(208V)
JP1
240V
(230V)
Ⓜ (Pb) Joints
SW5
機能切換
SWA
SWB
CN43
SW1
100の位　10の位　1の位
SWC
分岐 N
オフ SW14
SW12 ■こ アドレス SW11
① 標 ペア N
CN82

SW12
Address setting
10ths DIGIT

SW11
Address setting
1s DIGIT

SW14
Branch No.

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7 | DISASSEMBLY PROCEDURE

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

NOTE: Turn OFF the power supply before disassembly.
Be careful when removing heavy parts.

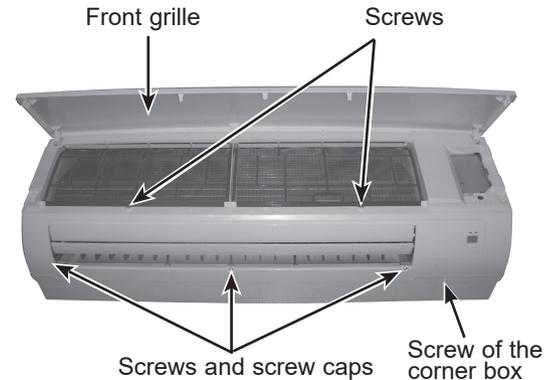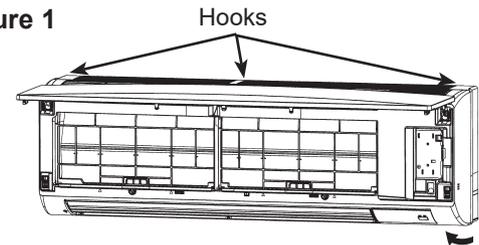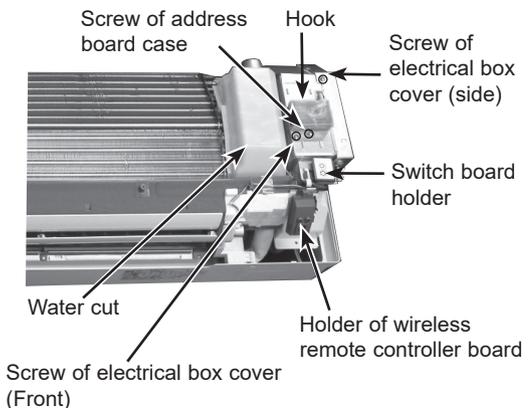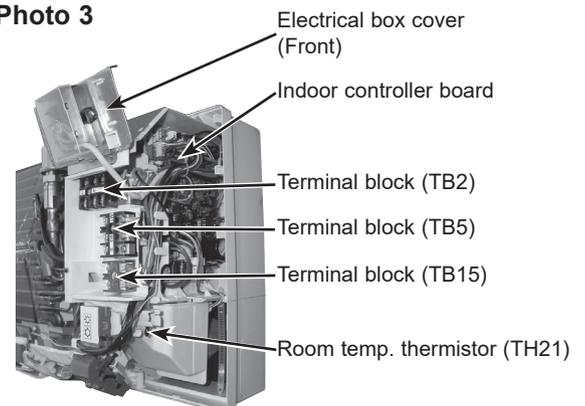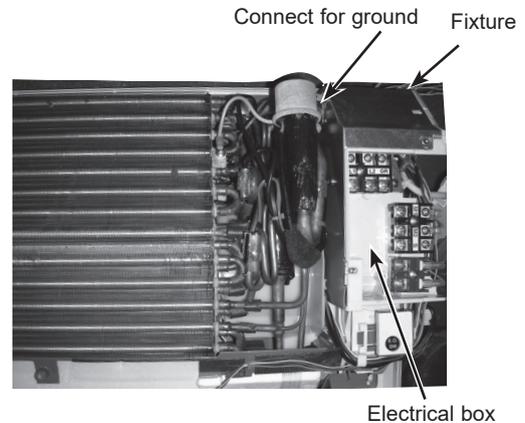| OPERATION PROCEDURE	PHOTOS/FIGURES
1. REMOVING THE PANEL (1) Press and unlock the knobs on both sides of the front grille and lift the front grille until it is level. Pull the hinges forward to remove the front grille. (See Photo 1) (2) Remove 3 screw caps of the panel. Remove 5 screws. (See Photo 1) (3) Unfix 3 hooks. (See Figure 1) (4) Hold the lower part of both ends of the panel and pull it slightly toward you, and then remove the panel by pushing it upward. (5) Remove the screw of the corner box. (See Photo 1) Remove the corner box.	**Photo 1** Front grille Screws Screws and screw caps Screw of the corner box **Figure 1** Hooks
2. REMOVING THE ADDRESS BOARD, THE INDOOR CONTROLLER BOARD, THE WIRELESS CONTROLLER BOARD (1) Remove the panel and the corner box. (Refer to procedure 1) (2) Remove the screw and hook of address board case. (See Photo 2) (3) Disconnect the connectors of address board. (4) Remove the front and side electrical box covers (each 1 screw). (5) Disconnect the connectors on the indoor controller board. (See Photo 3) (6) Remove the switch board holder and open the cover. (7) Pull out the indoor controller board toward you then remove the indoor controller board and switch board. (See Photo 3) (8) Remove the holder of wireless remote controller board. (9) Disconnect the connector of wireless remote controller board and remove the wireless remote controller board from the holder.	**Photo 2** Screw of address board case Hook Screw of electrical box cover (side) Switch board holder Water cut Holder of wireless remote controller board Screw of electrical box cover (Front) **Photo 3** Electrical box cover (Front) Indoor controller board Terminal block (TB2) Terminal block (TB5) Terminal block (TB15) Room temp. thermistor (TH21)

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OPERATION PROCEDURE	PHOTOS/FIGURES

3. REMOVING THE ELECTRICAL BOX

(1) Remove the panel and the corner box. (Refer to procedure 1)
(2) Remove the screw and hook of address board case.
(3) Remove the front and side electrical box covers (each 1 screw).
(4) Remove the transmission wiring of TB5, the power supply wiring of TB2 and the wiring of MA-remote controller (TB15).
(5) Disconnect the connectors on the indoor controller board.
(6) Disconnect the connector for ground wire.
(7) Remove the screw on lower side of the electrical box. (See Photo 5)
(8) Push up the upper fixture catch to remove the box, then remove it from the box fixture.

Photo 4

Connect for ground   Fixture

Electrical box

4. REMOVING THE NOZZLE ASSEMBLY (with VANE and VANE MOTOR) AND DRAIN HOSE

(1) Remove the panel and corner box. (Refer to procedure 1)
(2) Remove the electrical box covers. (Refer to procedure 2)
(3) Disconnect the vane motor connector (CN151 or CNV) on the indoor controller board.
(4) Pull out the drain hose from the nozzle assembly, and remove nozzle assembly. (See Photo 5)

Photo 5   (see the bottom)

Vane motor

Nozzle assembly

Drain hose   Screw of electrical box

5. REMOVING THE VANE MOTOR

(1) Remove the nozzle assembly. (Refer to procedure 4)
(2) Remove 2 screws of the vane motor unit cover, and pull out the vane motor unit.
(3) Remove 2 screws of the vane motor unit.
(4) Remove the vane motor from the vane motor unit.
(5) Disconnect the connector from the vane motor.

Photo 6

Screws of the vane motor unit

Screws of the vane motor unit cover

OPERATION PROCEDURE	PHOTOS/FIGURES

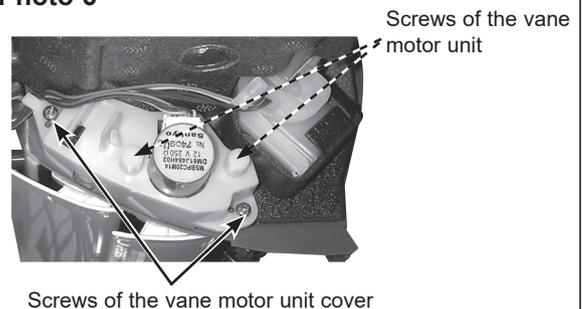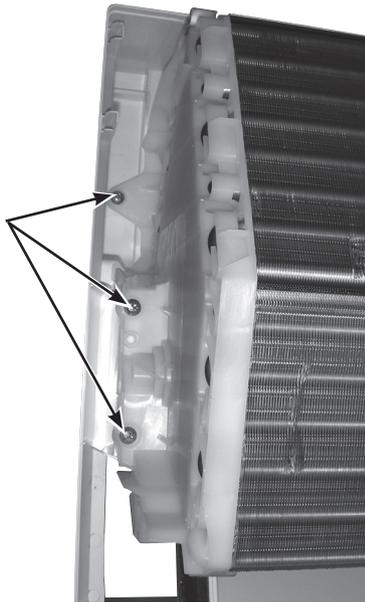**6. REMOVING THE INDOOR FAN MOTOR AND THE LINE FLOW FAN**

(1) Remove the panel and the corner box. (Refer to procedure 1)
(2) Remove the electrical box (Refer to procedure 2) and the nozzle assembly (Refer to procedure 4).
(3) Remove the water cut. (See Photo 2)
(4) Remove the screw fixing the line flow fan. (See Photo 8)
(5) Remove 5 screws fixing the motor bed. (See Photo 7)
(6) Remove the lead wire of pipe thermistor from the hook of motor bed. (See Photo 7)
(7) Remove the screw fixing motor band. (See Photo 7)
(8) Remove the motor bed together with fan motor and motor band.
(9) Remove 3 screws fixing the left side of the heat exchanger. (See Photo 9)
(10) Lift the heat exchanger, and pull out the line flow fan to the lower-left.

Photo 9

Screws of the left side of the heat exchanger

Photo 7

Screw of the motor band
Lead wire of pipe thermistor
Screws of the motor bed

Photo 8

Screw of the line flow fan

7. REMOVING THE LIQUID PIPE THERMISTOR AND GAS PIPE THERMISTOR

(1) Remove the panel and the corner box. (Refer to procedure 1)
(2) Remove the electrical box covers. (Refer to procedure 2)
(3) Remove the water cut. (See Photo 2)
(4) Remove the liquid pipe thermistor and gas pipe thermistors.
(5) Disconnect the connector (CN44 and CN2G) or (CN44) on the indoor controller board. (TH22 and TH23/CN44, TH24/CN2G)

Photo 10

Gas pipe thermistor
(TH23) (TH24) LEV Connect for ground

Liquid pipe thermistor (TH22)

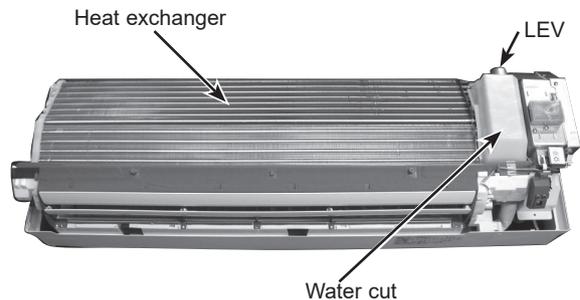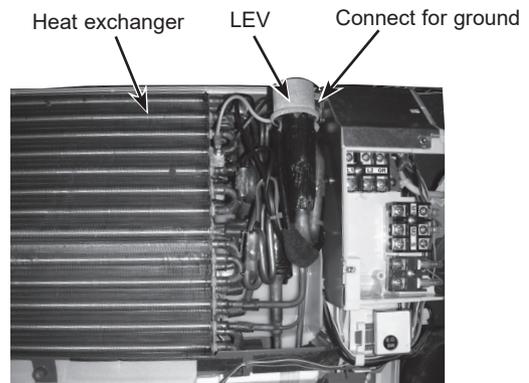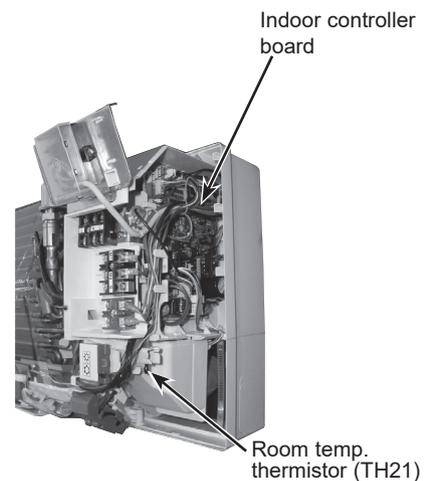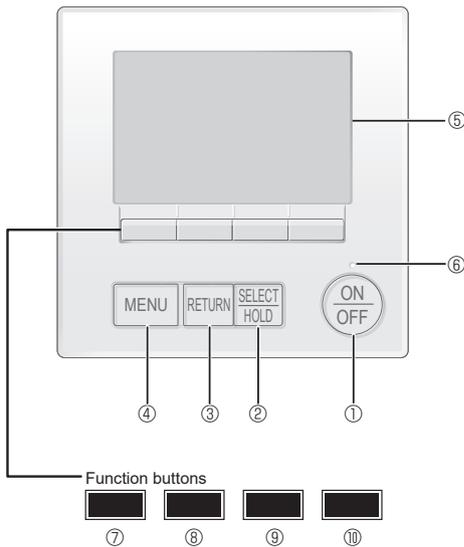| OPERATION PROCEDURE	PHOTOS/FIGURES
8. REMOVING THE HEAT EXCHANGER AND LEV (1) Remove the panel and the corner box. (Refer to procedure 1) (2) Remove the electrical box (Refer to procedure 3) and the nozzle assembly (Refer to procedure 4.). (3) Remove the water cut. (4) Remove the pipe thermistors (Refer to procedure 7). (5) Disconnect the connector (CN60) on the indoor controller board and the connector for ground wire. (6) Remove 3 screws fixing the left side of the heat exchanger. (See Photo 9) (7) Remove the heat exchanger with LEV.	**Photo 11** Heat exchanger LEV Water cut **Photo 12** Heat exchanger LEV Connect for ground
9. REMOVING THE ROOM TEMPERATURE THERMISTOR (1) Remove the panel and corner box. (Refer to procedure 1) (2) Remove the electrical box covers. (Refer to procedure 2) (3) Remove the room temperature thermistor. (4) Disconnect the connector (CN20) on the indoor controller board.	**Photo 13** Indoor controller board Room temp. thermistor (TH21)

8   REMOTE CONTROLLER

8-1. REMOTE CONTROLLER FUNCTIONS

<PAR-41MAA>

Controller interface

Function buttons ⑦ ⑧ ⑨ ⑩

The functions of the function buttons change depending on the screen.
Refer to the button function guide that appears at the bottom of the LCD for the functions they serve on a given screen.
When the system is centrally controlled, the button function guide that corresponds to the locked button will not appear.

Main display

Main menu

Menu screen

Function guide

① [ON/OFF] button

Press to turn ON/OFF the indoor unit.

② [SELECT] 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.
Menu screen: The button function varies with the screen.

⑧ Function button [F2]

Main display: Press to decrease temperature.
Main menu: Press to move the cursor left.
Menu screen: The button function varies with the screen.

⑨ Function button [F3]

Main display: Press to increase temperature.
Main menu: Press to move the cursor right.
Menu screen: The button function varies with the screen.

⑩ Function button [F4]

Main display: Press to change the fan speed.
Menu screen: The button function varies with the screen.

Display

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

<Full mode>
* All icons are displayed for explanation.

<Basic mode>

① Operation mode

② Preset temperature

③ Clock

④ Fan speed

⑤ Button function guide
Functions of the corresponding buttons appear here.

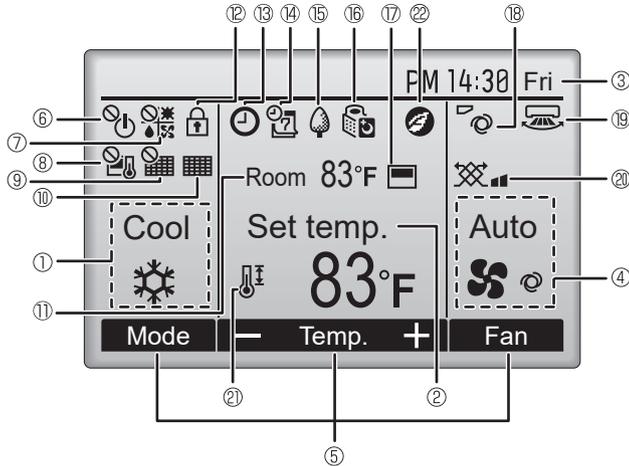### ⑥
Appears when the ON/OFF operation is centrally controlled.

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

⑫
Appears when the buttons are locked.

⑬
Appears when the On/Off timer, Night setback, or Auto-off timer function is enabled.

appears when the timer is disabled by the centralized control system.

⑭
Appears when the Weekly timer is enabled.

⑮
Appears while the units are operated in the energy saving mode.
(Will not appear on some models of indoor units)

⑯
Appears while the outdoor units are operated in the silent mode.

⑰
Appears when the built-in thermistor on the remote controller is activated to monitor the room temperature (⑪).

appears when the thermistor on the indoor unit is activated to monitor the room temperature.

⑱
Indicates the vane setting.

⑲ *1
Indicates the louver setting.

⑳
Indicates the ventilation setting.

㉑
Appears when the preset temperature range is restricted.

㉒ *1
Appears when an energy-saving operation is performed using a ″3D i-see Sensor″ function.

㉓ Centrally controlled
Appears for a certain period of time when a centrally-controlled item is operated.

㉔ Preliminary error display
A check code appears during the preliminary error.

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

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

Menu structure

```
Main menu
  │
  ├──► Operation
  │       ├──► Vane · Louver · Vent. (Lossnay)
  │       ├──► High power
  │       └──► Comfort
  │               ├──► Manual vane angle
  │               └──► 3D i-see Sensor
  │
  ├──► Timer menu
  │       ├──► Timer
  │       │       ├──► ON/OFF timer
  │       │       └──► Auto-OFF timer
  │       ├──► Weekly timer
  │       └──► OU silent mode
  │
  ├──► Energy saving
  │       ├──► Restriction
  │       │       ├──► Temp. range
  │       │       └──► Operation locked
  │       └──► Energy saving
  │               ├──► Auto return
  │               └──► Schedule
  │
  ├──► Initial setting menu
  │       ├──► Basic setting
  │       │       ├──► Main/Sub
  │       │       ├──► Clock
  │       │       │       ├──► Clock
  │       │       │       └──► Daylight saving time
  │       │       └──► Administrator password
  │       ├──► Display setting
  │       │       ├──► Main display
  │       │       ├──► Display details
  │       │       ├──► Contrast • Brightness
  │       │       └──► Language selection
  │       └──► Operation setting
  │               ├──► Auto mode
  │               └──► Setback mode
  │
Continue to the next page.
```

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

Maintenance menu

- **Error information**
- **Filter information**
- **Cleaning**
  - Auto descending panel
    - Descending operation
    - Descending adjustment

Service menu

- **Test run menu**
  - Test run
  - Drain pump test run

- **Maintenance information**
  - Model name input
  - Serial No. input
  - Dealer information input
  - Initialize maintenance info.

- **Settings menu**
  - Function setting
  - Lossnay

- **Check menu**
  - Error history
  - Diagnosis
    - Self check
    - Remote controller check

- **Other menu**
  - Maintenance password
  - Initialize remote controller
  - Remote controller information

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

Main menu list

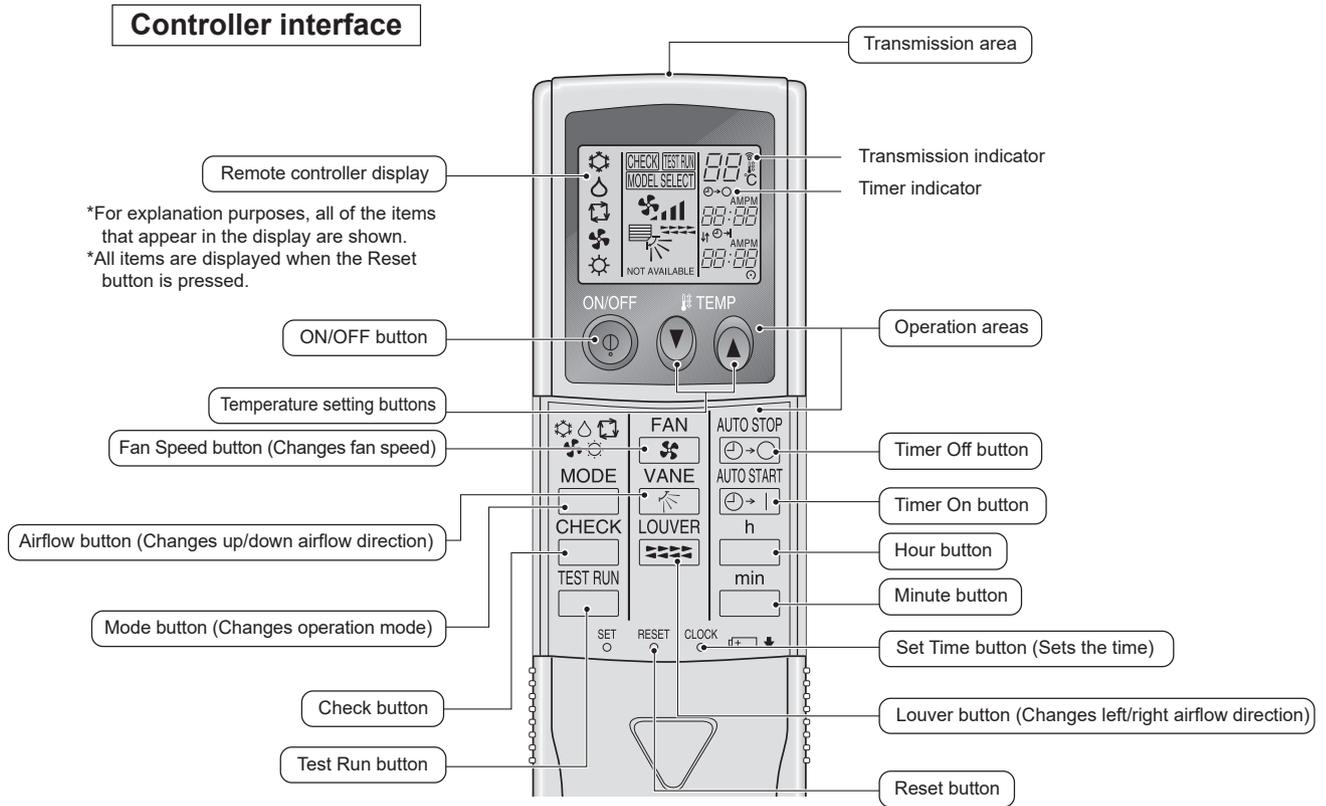| Main menu	Setting and display items		Setting details
Operation	Vane · Louver · Vent. (Lossnay)		**Use to set the vane angle.** • Select a desired vane setting. **Use to turn ON/OFF the louver.** • Select a desired setting from ″ON″ and ″OFF.″ **Use to set the amount of ventilation.** • Select a desired setting from ″Off,″ ″Low,″ and ″High.″
	High power [*3]		**Use to reach the comfortable room temperature quickly.** • Units can be operated in the High-power mode for up to 30 minutes.
	Comfort	Manual vane angle	**Use to fix each vane angle.**
		3D i-see Sensor	**Use to set the following functions for 3D i-see Sensor.** • Air distribution • Energy saving option • Seasonal airflow
Timer	Timer	ON/OFF timer [*1]	**Use to set the operation ON/OFF times.** • Time can be set in 5-minute increments.
		Auto-OFF timer	**Use to set the Auto-OFF time.** • Time can be set to a value from 30 to 240 in 10-minute increments.
	Weekly timer [*1, *2]		**Use to set the weekly operation ON/OFF times.** • Up to 8 operation patterns can be set for each day. (Not valid when the ON/OFF timer is enabled.)
	OU silent mode [*1, *3]		**Use to set the time periods in which priority is given to quiet operation of outdoor units over temperature control. Set the Start/Stop times for each day of the week.** •Select the desired silent level from ″Normal,″ ″Middle,″ and ″Quiet.″
Energy saving	Restriction	Temp. range [*2]	**Use to restrict the preset temperature range.** • Different temperature ranges can be set for different operation modes.
		Operation lock	**Use to lock selected functions.** • The locked functions cannot be operated.
	Energy saving	Auto return [*2]	**Use to get the units to operate at the preset temperature after performing energy saving operation for a specified time period.** • Time can be set to a value from 30 and 120 in 10-minute increments. (This function will not be valid when the preset temperature ranges are restricted.)
		Schedule [*1, *3]	**Set the start/stop times to operate the units in the energy saving mode for each day of the week, and set the energy saving rate.** • Up to 4 energy saving operation patterns can be set for each day. • Time can be set in 5-minute increments. • Energy saving rate can be set to a value from 0% or 50 to 90% in 10% increments.

[*1] Clock setting is required.
[*2] 2°F (1°C) increments.
[*3] This function is available only when certain outdoor units are connected.

Main menu	Setting and display items		Setting details
Initial setting	Basic setting	Main/Sub	When connecting 2 remote controllers, one of them needs to be designated as a sub controller.
		Clock	Use to set the current time.
		Daylight saving time	Set the daylight saving time.
		Administrator password	The administrator password is required to make the settings for the following items. • Timer setting • Energy saving setting • Weekly timer setting • Restriction setting • Outdoor unit silent mode setting • Night set back
	Display setting	Main display	Use to switch between ″Full″ and ″Basic″ modes for the Main display, and use to change the background colors of the display to black.
		Display details	Make the settings for the remote controller related items as necessary. **Clock:** The initial settings are ″Yes″ and ″24h″ format. **Temperature:** Set either Celsius (°C) or Fahrenheit (°F). **Room temp.:** Set Show or Hide. **Auto mode:** Set Auto mode display or Only Auto display.
		Contrast · Brightness	Use to adjust screen contrast and brightness.
		Language selection	Use to select the desired language.
	Operation setting	Auto mode	Whether or not to use Auto mode can be selected by using the button. This setting is valid only when indoor units with Auto mode function are connected.
		Setback mode	Whether or not to use the Setback mode can be selected by using the button. This setting is valid only when indoor units with the Setback mode function are connected.
Mainte-nance	Error information		Use to check error information when an error occurs. • Check code, error source, refrigerant address, model name, manufacturing number, contact information (dealer's phone number) can be displayed. (The model name, manufacturing number, and contact information need to be registered in advance to be displayed.)
	Filter information		Use to check the filter status. • The filter sign can be reset.
	Cleaning	Auto descending panel	Use to lift and lower the auto descending panel (Optional parts).
Service	Test run		Select ″Test run″ from the Service menu to bring up the Test run menu. • Test run • Drain pump test run
	Input maintenance info.		Select ″Input maintenance Info.″ from the Service menu to bring up the Maintenance information screen. The following settings can be made from the Maintenance Information screen. • Model name input • Serial No. input • Dealer information input • Initialize maintenance info.
	Settings	Function setting	Make the settings for the indoor unit functions via the remote controller as necessary.
		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″.
		Diagnosis	**Self check:** Error history of each unit can be checked via the remote controller. **Remote controller check:** When the remote controller does not work properly, use the remote controller checking function to troubleshoot the problem.
	Others	Maintenance password	Use to change the maintenance password.
		Initialize remote controller	Use to initialize the remote controller to the factory shipment status.
		Remote control-ler information	Use to display the remote controller model name, software version, and serial number.

<PAR-FL32MA>

Controller interface

Transmission area

Remote controller display

*For explanation purposes, all of the items that appear in the display are shown.
*All items are displayed when the Reset button is pressed.

Transmission indicator

Timer indicator

ON/OFF button

Operation areas

Temperature setting buttons

Fan Speed button (Changes fan speed)

Timer Off button

Timer On button

Airflow button (Changes up/down airflow direction)

Hour button

Minute button

Mode button (Changes operation mode)

Set Time button (Sets the time)

Check button

Louver button (Changes left/right airflow direction)
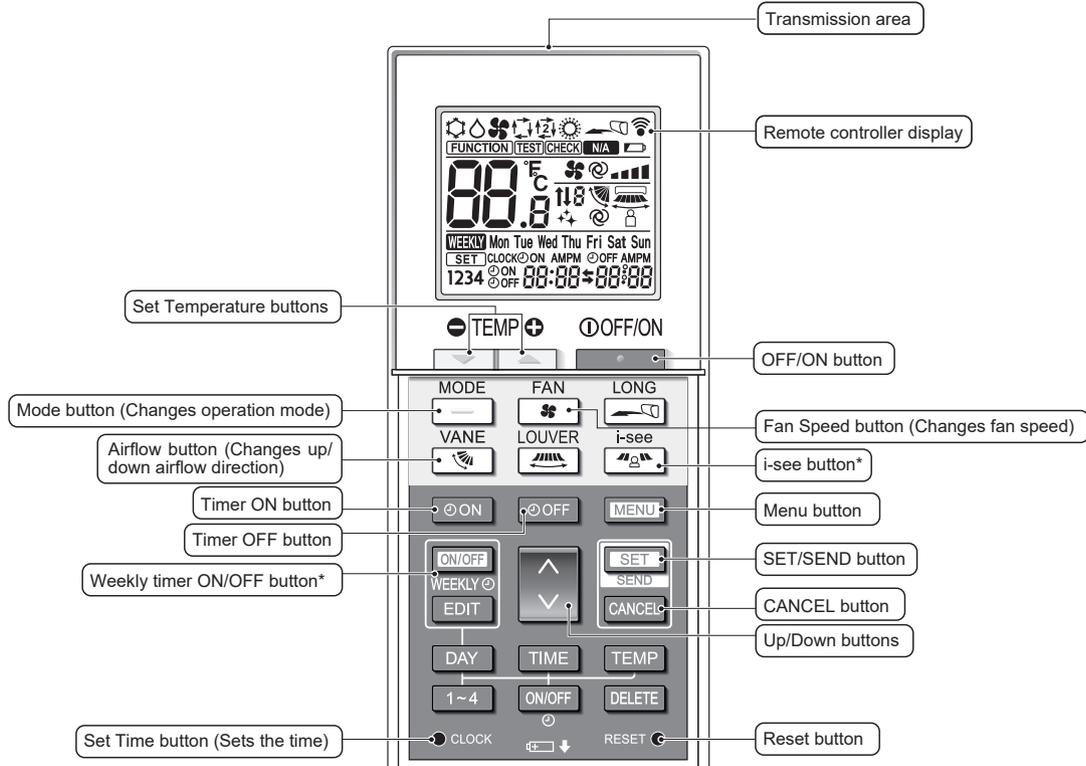
Test Run button

Reset button

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

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Controller interface

Transmission area

Remote controller display

FUNCTION TEST CHECK N/A

WEEKLY Mon Tue Wed Thu Fri Sat Sun
SET CLOCK ON AMPM OFF AMPM
1234 ON/OFF 88:88⇄88:88

Set Temperature buttons

⊖ TEMP ⊕   ① OFF/ON

OFF/ON button

MODE   FAN   LONG

Mode button (Changes operation mode)

Airflow button (Changes up/down airflow direction)

VANE   LOUVER   i-see

Fan Speed button (Changes fan speed)

i-see button*

Timer ON button — ⊙ ON   ⊙ OFF

Timer OFF button

Menu button — MENU

ON/OFF
WEEKLY ⊙   ∧
EDIT   ∨

Weekly timer ON/OFF button*

SET
SEND

SET/SEND button

CANCEL — CANCEL button

Up/Down buttons

DAY   TIME   TEMP
1~4   ON/OFF   DELETE

Set Time button (Sets the time) — CLOCK   RESET — Reset button

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

Display

Operation mode

❄ Cool	◊ Dry
❀ Fan	↻ Auto (single set point)
☀ Heat	↻2 Auto (dual set point)

Not available
Appears when a non-supported function is selected.

Battery replacement indicator
Appears when the remaining battery power is low.

Temperature setting
The units of temperature can be changed. For details, refer to the Installation Manual.

Fan speed setting

Auto
→❀◎ →❀ . →❀ .. →❀ ... →❀ ....

3D i-see Sensor (Air distribution)

Default   Direct   Indirect   When Direct or Indirect is selected, the vane setting is set to ″Auto″.

Vane setting

Step 1 Step 2 Step 3 Step 4 Step 5 Swing Auto

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8-2. ERROR INFORMATION

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

1. Check code, error unit, refrigerant address, date and time of occur-
   rence, model name, and serial number will appear.
   The model name and serial number will appear only if the informa-
   tion have been registered.

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

```
Error information      1/ 2
Error code      2502
Error unit      IU    1
Time Occurred 02/01  4:48
Model name
Serial No.
Reset error: Reset button
 ▼  Page  ▲            Reset
```

```
F1      F2      F3      F4    blinks
MENU  RETURN  SELECT         ON
              HOLD           OFF
```
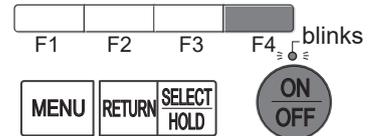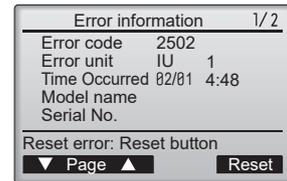
   Contact information (dealer's phone number) will appear if
   the information has been registered.

```
Error information      2/ 2
   Contact information
        Dealer
         Tel

Reset error: Reset button
 ▼  Page  ▲            Reset
```
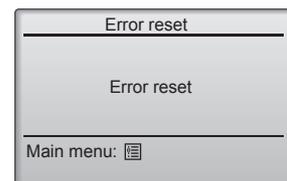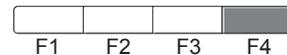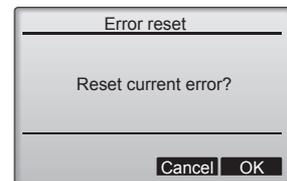
2. Press the [F4] button or the [ON/OFF] button to reset the
   error that is occurring.

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

```
Error information      1/ 2
Error code      2502
Error unit      IU    1
Time Occurred 02/01  4:48
Model name
Serial No.
Reset error: Reset button
 ▼  Page  ▲            Reset
```

```
F1      F2      F3      F4    blinks
MENU  RETURN  SELECT         ON
              HOLD           OFF
```

   Select "OK" with the [F4] button.

```
Error reset


   Reset current error?


            Cancel   OK
```

```
F1      F2      F3      F4
```

```
Error reset


      Error reset

Main menu: ▤
```
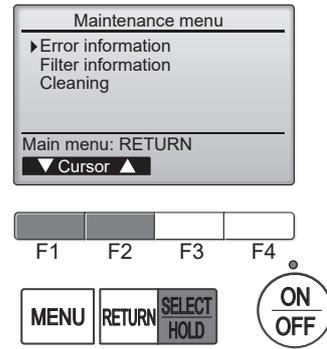
Navigating through the screens
• To go back to the Service menu .... [MENU] button

• **Checking the error information**

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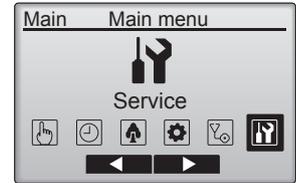Errors cannot be reset from this screen.

```
┌─────────────────────────────┐
│      Maintenance menu       │
│ ▶Error information          │
│  Filter information         │
│  Cleaning                   │
│                             │
│                             │
│ Main menu: RETURN           │
│  ▼ Cursor ▲                 │
└─────────────────────────────┘
```

```
┌────┬────┬────┬────┐
│    │    │    │    │
└────┴────┴────┴────┘
 F1   F2   F3   F4  •

┌──────┐┌──────┬──────┐  ┌──────┐
│ MENU ││RETURN│SELECT│  │  ON  │
│      ││      │ HOLD │  │ OFF  │
└──────┘└──────┴──────┘  └──────┘
```

8-3. SERVICE MENU

Maintenance password is required

1. Select ″Service″ from the Main menu, and press the [SELECT] button.

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

```
Main      Main menu
            ⎰⎱
          Service
 ✋  ⊙  ⬆  ⚙  ⊠  ⚒
      ◄        ►
```

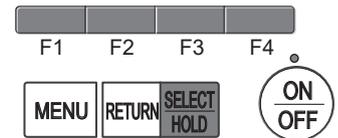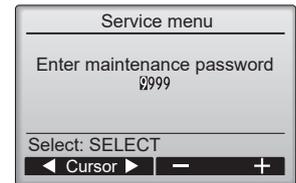2. When the Service menu is selected, a window will appear asking for the password.

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

   ▼

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

   ▼

   Then, press the [SELECT] button.

```
        Service menu

   Enter maintenance password
              9999

   Select: SELECT
    ◄ Cursor ►  │  ─    +
```

```
  F1      F2      F3      F4  •

 MENU  RETURN  SELECT    ON
               HOLD      OFF
```

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

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

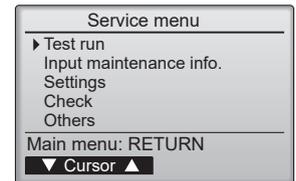3. If the password matches, the Service menu will appear.

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

   ▼

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

Navigating through the screens
• To go back to the Service menu ....[MENU] button

• To return to the previous screen..............[RETURN] button

```
        Service menu
 ▶ Test run
   Input maintenance info.
   Settings
   Check
   Others
 Main menu: RETURN
    ▼ Cursor ▲
```

   ▼

```
        Service menu

        Not available
      Please stop the unit.

   Return: RETURN
```
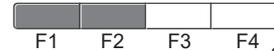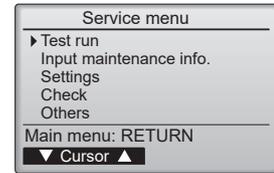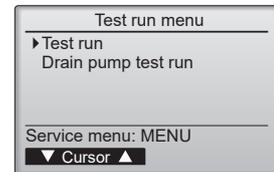
8-4. TEST RUN
8-4-1. PAR-41MAA

1. Select ″Service″ from the Main menu, and press the [SELECT] button.

▼

Select ″Test run″ with the [F1] or [F2] button, and press the [SELECT] button.

```
        Service menu
▶ Test run
  Input maintenance info.
  Settings
  Check
  Others
Main menu: RETURN
   ▼  Cursor  ▲
```

F1   F2   F3   F4

MENU RETURN SELECT/HOLD   ON/OFF

2. Select ″Test run″ with the [F1] or [F2] button, and press the [SELECT] button.

```
        Test run menu
▶ Test run
  Drain pump test run


Service menu: MENU
   ▼  Cursor  ▲
```

F1   F2   F3   F4

MENU RETURN SELECT/HOLD   ON/OFF

Test run operation

Press the [F1] button to go through the operation modes in the order of ″Cool and Heat″.
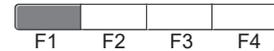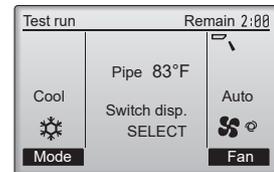
Cool mode: Check the cold air blows out.
Heat mode: Check the heat blows out.

Check the operation of the outdoor unit's fan.

▼

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

```
Test run          Remain 2:00
                   ⌐
            Pipe  83°F
Cool                        Auto
  ☼    Switch disp.    ≋ ◎
         SELECT
Mode                        Fan
```

F1   F2   F3   F4

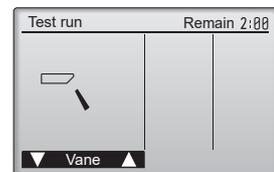MENU RETURN SELECT/HOLD   ON/OFF

Auto vane check

Check the auto vane with the [F1] [F2] buttons.

▼

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

▼

Press the [ON/OFF] button.

When the test run is completed, the ″Test run menu″ screen will appear.
The test run will automatically stop after 2 hours.
*The function is available only for the model with vanes.

```
Test run          Remain 2:00
   ⌐
      ╲

▼  Vane  ▲
```

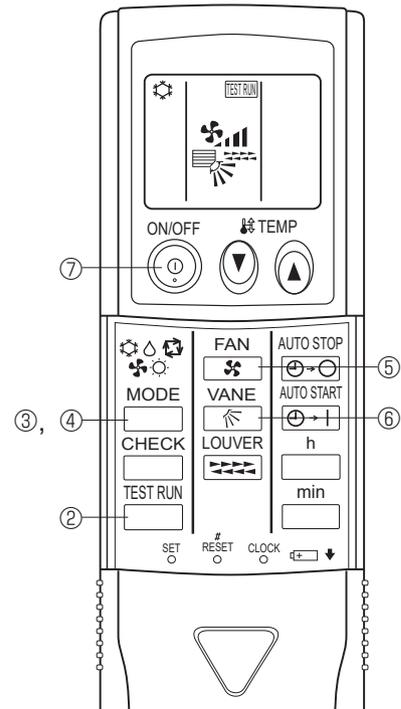F1   F2   F3   F4

MENU RETURN SELECT/HOLD   ON/OFF

8-4-2. PAR-FL32MA

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

1. Turn on the main power to the unit.
2. Press the ⬚ (TEST RUN) button twice continuously.
   (Start this operation from the status of remote controller display turned off.)

   A ⬚TEST RUN and current operation mode are displayed.
3. Press the ⬚ (MODE) (☀△♣☀▢) button to activate COOL☀ mode, then check whether cool air blows out from the unit.
4. Press the ⬚ (MODE) (☀△♣☀▢) button to activate HEAT☀ mode, then check whether warm air blows out from the unit.
5. Press the ⬚ (FAN) button and check whether strong air blows out from the unit.
6. Press the ⬚ (VANE) button and check whether the auto vane operates properly.
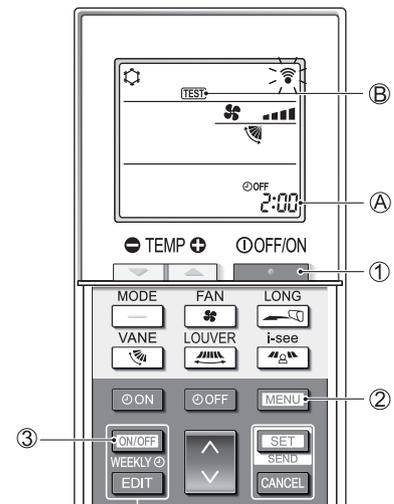7. Press the ON/OFF button to stop the test run.

Note:
• **Point the remote controller towards the indoor unit receiver while following steps** 2 **to** 7.
• **It is not possible to run in FAN, DRY or AUTO mode.**
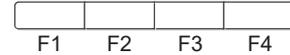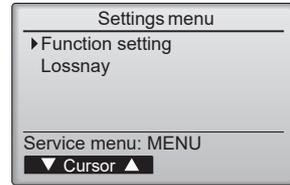
8-4-3. PAR-SL101A-E

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

8-5. FUNCTION SETTING

8-5-1. PAR-41MAA

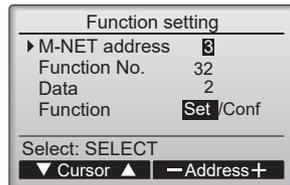1. Select ″Service″ from the Main menu, and press the [SELECT] button.

   ▼

   Select ″Setting″ from the Service menu, and press the [SELECT] button.

   ▼

   Select ″Function setting″, and press the [SELECT] button.

```
            Settings menu
  ▶Function setting
    Lossnay


  Service menu: MENU
  ▼ Cursor ▲
```

```
  F1      F2      F3      F4
```

```
  MENU   RETURN  SELECT    ON
                  HOLD     OFF
```

2. The Function setting screen will appear.
   Press the F1 or F2 button to move the cursor to one of the following: M-NET address, function setting number, or setting value. Then, press the F3 or F4 button to change the settings to the desired settings.
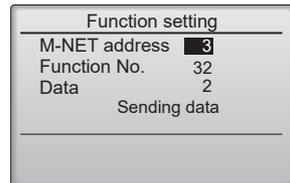
   ▼

   Once the settings have been completed, press the [SELECT] button.

   A screen will appear indicating that the settings information is being sent.
   To check the current settings of a given unit, enter the setting for its M-NET address and function setting number, select Conf for the Function, and press the [SELECT] button.
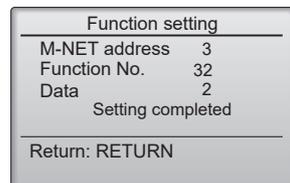
   A screen will appear indicating that the settings are being searched for.
   When the search is done, the current settings will appear.

   ▼

   When the settings information has been sent, a screen will appear indicating its completion.
   To make additional settings, press the [RETURN] button to return to the screen shown in the above step. Set the function numbers for other indoor units by following the same steps.

```
          Function setting
  ▶M-NET address     3
    Function No.     32
    Data             2
    Function       Set /Conf

  Select: SELECT
  ▼ Cursor ▲ | ─Address＋
```

```
          Function setting
  M-NET address      3
  Function No.      32
  Data              2
          Sending data


```

```
          Function setting
  M-NET address      3
  Function No.      32
  Data              2
          Setting completed

  Return: RETURN
```
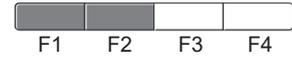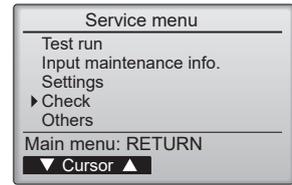
Note:
• Refer to the indoor unit Installation Manual for information about the factory settings of indoor units, function setting numbers, and setting values.
• Be sure to write down the settings for all functions if any of the initial settings has been changed after the completion of installation work.
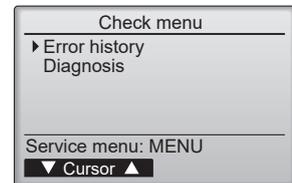
8-6. ERROR HISTORY

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

▼

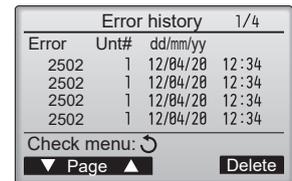Select "Check" with the F1 or F2 button, and press the [SELECT] button.

```
          Service menu
  Test run
  Input maintenance info.
  Settings
 ▶ Check
  Others
 Main menu: RETURN
  ▼ Cursor ▲
```

```
 F1      F2      F3      F4
                              ●
 MENU  RETURN  SELECT    ON
              HOLD       OFF
```

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

```
          Check menu
 ▶ Error history
   Diagnosis


 Service menu: MENU
  ▼ Cursor ▲
```

3. 16 error history records will appear.

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

```
        Error history    1/4
 Error   Unt#   dd/mm/yy
  2502    1   12/04/20  12:34
  2502    1   12/04/20  12:34
  2502    1   12/04/20  12:34
  2502    1   12/04/20  12:34
 Check menu: ↺
  ▼  Page  ▲          Delete
```

```
 F1      F2      F3      F4
                              ●
 MENU  RETURN  SELECT    ON
              HOLD       OFF
```

4. Deleting the error history

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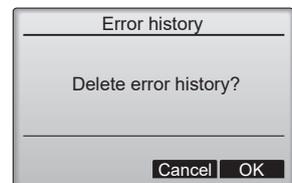A confirmation screen will appear asking if you want to delete the error history.

▼

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

▼

"Error history deleted" will appear on the screen.

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

```
          Error history


    Delete error history?


              Cancel   OK
```

▼

```
          Error history


      Error history deleted

 Check menu: RETURN
```

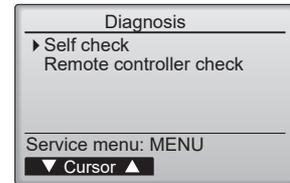## 8-7. SELF-DIAGNOSIS

8-7-1. PAR-41MAA

1. Select ″Service″ from the Main menu,
   and press the [SELECT] button.

   ▼

   Select ″Check″ from the Service menu,
   and press the [SELECT] button.

   ▼

   Select ″Diagnosis″ from the Check menu,
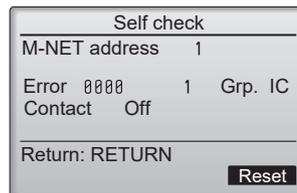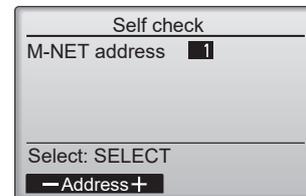   and press the [SELECT] button.

   ▼

   Select ″Self check″ with the F1 or F2 button,
   and press the [SELECT] button.

```
        Diagnosis
▸Self check
  Remote controller check


Service menu: MENU
 ▼ Cursor ▲
```

```
  F1     F2     F3     F4
```

```
MENU  RETURN  SELECT      ON
              HOLD        OFF
```
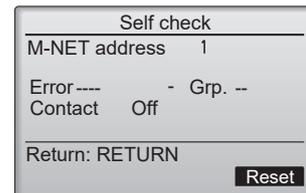
---

2. Select "Self check" from the Diagnosis menu, and press
   the [SELECT] button to view the Self check screen.

   ▼

   With the F1 or F2 button, enter the M-NET address,
   and press the [SELECT] button.

   ▼

   Error code, unit number, attribute, and indoor unit de-
   mand signal ON/OFF status at the contact will appear.
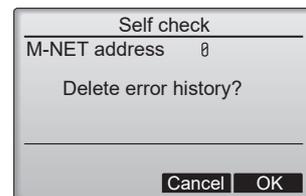   "-" will appear if no error history is available.

```
        Self check
M-NET address    1


Select: SELECT
  ─ Address ＋
```

When there is no error history

```
        Self check
M-NET address    1

Error 8888      1   Grp.  IC
Contact   Off

Return: RETURN
                      Reset
```

```
        Self check
M-NET address    1

Error ----      -   Grp.  --
Contact   Off

Return: RETURN
                      Reset
```
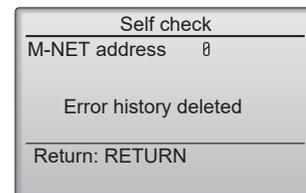
3. Resetting the error history

   Press the F4 button (Reset) on the screen that shows the error history.
   A confirmation screen will appear asking if you want to delete the error
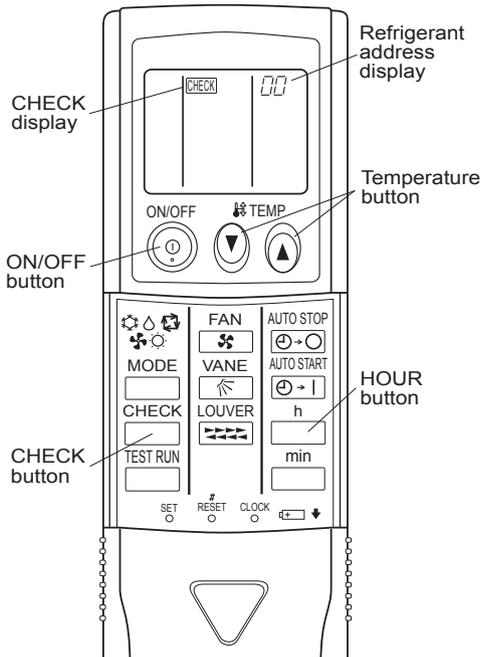   history.

   ▼

   Press the F4 button (OK) to delete the error history. If deletion fails,
   "Request rejected" will appear, and "Unit not exist" will appear if
   indoor units that are correspond to the entered address are not found.

```
        Self check
M-NET address    0

     Delete error history?



             Cancel    OK
```

```
        Self check
M-NET address    0

     Error history deleted

Return: RETURN
```

8-7-2. PAR-FL32MA

<Malfunction-diagnosis method at maintenance service>

CHECK display

Refrigerant address display

CHECK

Temperature button

ON/OFF

TEMP

ON/OFF button

MODE — FAN — AUTO STOP

VANE — AUTO START

CHECK — LOUVER — HOUR button

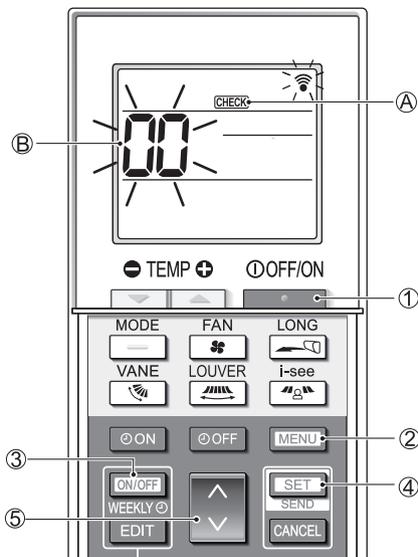CHECK button

TEST RUN — min

SET — RESET — CLOCK

[Procedure]
1. Press the CHECK button twice.
   • ″CHECK″ lights, and refrigerant address ″00″ blinks.
   • Check that the remote controller's display has stopped before continuing.

2. Press the TEMP ⓥ ⓐ buttons to select the refrigerant address of the indoor unit for self-diagnosis.
   • Set the address of the indoor unit that is to be self-diagnosed.

3. Point the remote controller at the sensor on the indoor unit and press the HOUR button.
   • If an air conditioner error occurs, the indoor unit's sensor emits an intermittent buzzer sound, the operation light blinks, and the check code is output.

4. Point the remote controller at the sensor on the indoor unit and press the ON/OFF button.
   • The check mode is cancelled.

8-7-3. PAR-SL101A-E

[Procedure]
1. Press the [　•　] button ① to stop the air conditioner.
   • If the weekly timer is enabled (WEEKLY is on), press the [ON/OFF WEEKLY] button ③ to disable it (WEEKLY is off).

2. Press the [MENU] button ② for 5 seconds.
   • CHECK Ⓐ comes on and the unit enters the self-check mode.

3. Press the [^ v] button⑤ to select the refrigerant address (M-NET address)Ⓑ of the indoor unit for which you want to perform the self-check.

4. Press the [SET] button④.
   • If an error is detected, the check code is indicated by the number of beeps from the indoor unit and the number of blinks of the OPERATION INDICATOR lamp.

5. Press the [　•　] button①.
   • CHECK Ⓐ and the refrigerant address (M-NET address) Ⓑ go off and the self-check is completed.

8-8. REMOTE CONTROLLER CHECK

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

1. Select ″Service″ from the Main menu,
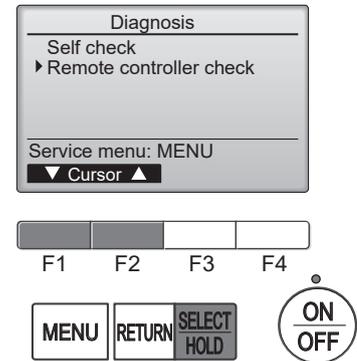   and press the [SELECT] button.

   ▼

   Select ″Check″ from the Service menu,
   and press the [SELECT] button.

   ▼

   Select ″Diagnosis″ from the Check menu,
   and press the [SELECT] button.

   ▼

   Select ″Remote controller check″ with the F1 or F2 button,
   and press the [SELECT] button.

```
          Diagnosis
  Self check
▶ Remote controller check


  Service menu: MENU
  ▼ Cursor ▲
```

```
  F1     F2     F3     F4
  MENU  RETURN  SELECT   ON
                HOLD     OFF
```
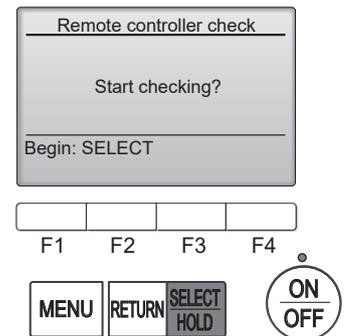
2. Select ″Remote controller check″ from the Diagnosis menu, and press the [SELECT] button to start the remote controller check and see the check results.

   ▼

   To cancel the remote controller check and exit the ″Remote controller check″ menu screen, press the [MENU] or the [RETURN] button.
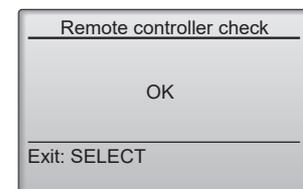
   ▼

   The remote controller will not reboot itself.

```
    Remote controller check


        Start checking?

  Begin: SELECT
```

```
  F1     F2     F3     F4
  MENU  RETURN  SELECT   ON
                HOLD     OFF
```

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

Remote controller check results screen

```
    Remote controller check


           OK

  Exit: SELECT
```

   ▼

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

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

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