

PUZ-AK42NLHZ
PUZ-AK48NLHZ
SUZ-AK48NLHZ

If they are short-circuited, it means that they are broken.
Measure the resistance in the following points (connectors, etc.).

- 1 Check diode circuit

R1 - P1 S1 - P1 R1 - N1 S1 - N1

R2 - P4 S2 - P4 R2 - N4 S2 - N4

2 Check PFC circuit

P2 - L1, P2 - L2, P2 - L3, N2 - L1, N2 - L2, N2 - L3

3 Check inverter circuit

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

Note: The marks **R**, **S**, **L1**, **L2**, **L3**, **P1**, **P2**, **P3**, **N1**, **N2**, **N3**, **U**, **V** and **W** shown in the diagram are not actually printed on the board.



Outdoor noise filter circuit board

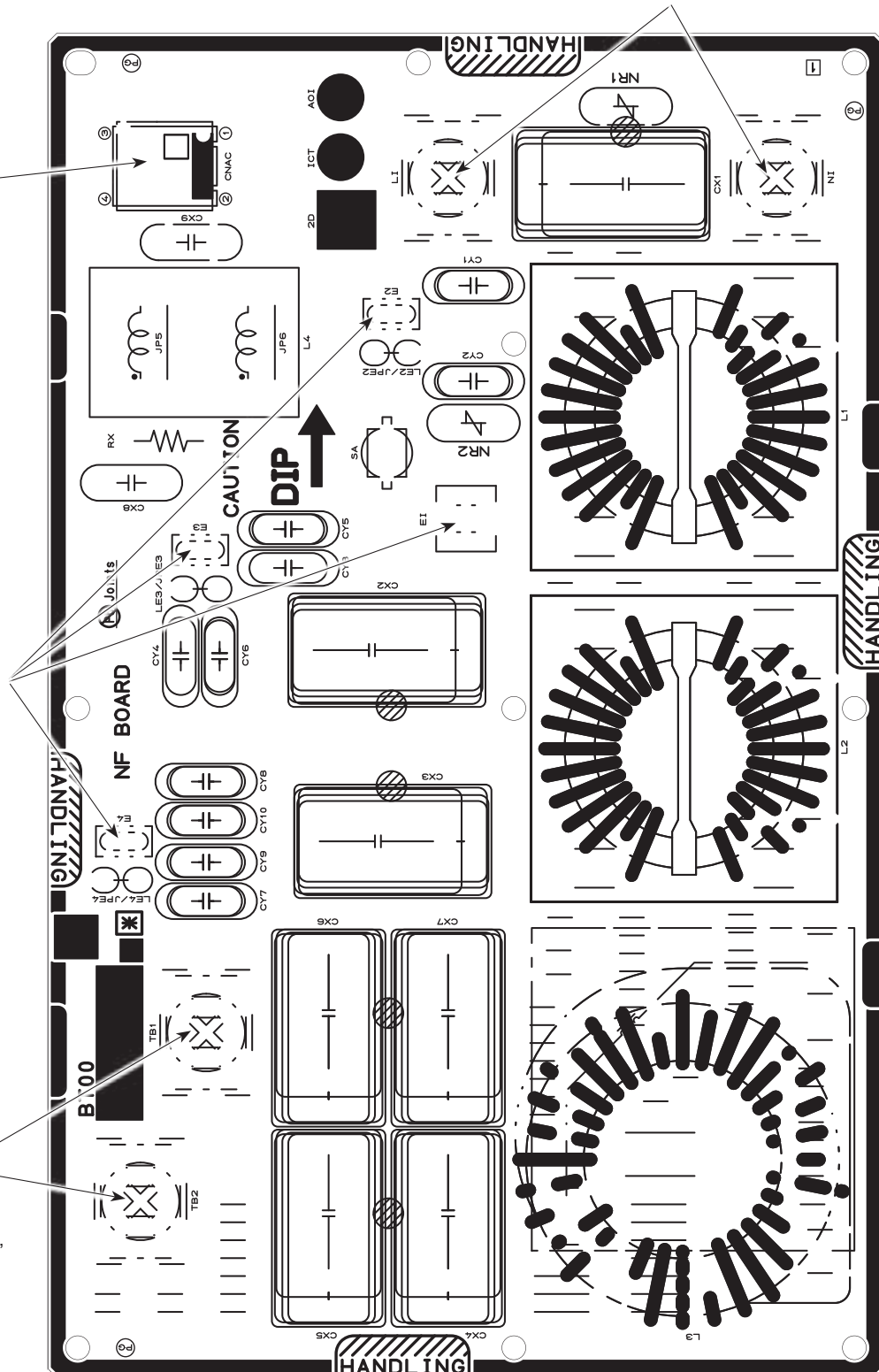
PUZ-AK42NLHZ
PUZ-AK48NLHZ
SUZ-AK48NLHZ

CNAC
208/230 VAC
Connect to outdoor
controller circuit board
(CNAC)

E1, E2, E3, E4
Connect to electrical
parts box

TB1, TB2
POWER SUPPLY
Voltage of 208/230 VAC
(Connect to outdoor
power circuit board (TB3,
TB4))
M6 2.8 ± 0.2 N·m

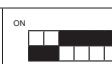
LI, NI
POWER SUPPLY
Voltage of 208/230 VAC is input
(Connect to terminal block (TB1))
M6 2.8 ± 0.2 N·m



10-9. FUNCTIONS OF SWITCHES, CONNECTORS AND JUMPERS

(1) Switch functions

The black square (■) indicates a switch position.

Type of switch	Switch	No.	Function	Action by switch operation		Effective timing		
				ON	OFF			
DIP Switch	SW1	1	Manual defrost *1	Start	Normal	When compressor is operating in heating operation. *1		
		2	Abnormal history clear	Clear	Normal	Off or operating		
		3	Refrigerant address setting	 0	 1	 2	 3	When power supply is ON
		4		 4	 5	 6	 7	
		5		 8	 9	 10	 11	
		6		 12	 13	 14	 15	
	SW4	1	Test run	Operating	OFF	Under suspension		
		2	Test run mode setting	Heating	Cooling			
	SW8	1	Use of existing pipe	Used	Not used	Always		
		2	No function	—	—	—		
		3	Separate indoor/ outdoor unit power supplies	Used	Not used	When power supply ON		
	Push switch	SWP		Pump down	Start	Normal	Under suspension	

*1 Manual defrost should be done as follows;

① Change the SW1-1 on the outdoor controller board from OFF to ON.

② Manual defrost will start by the above operation ① if all of the following conditions are satisfied.

- Heat mode setting
- 10 minutes have passed since the compressor started operating or the previous manual defrost finished.
- Pipe temperature is less than or equal to 46°F [8°C].

Manual defrost will finish if certain conditions have been satisfied.

Manual defrost can be done if the above conditions have been satisfied when SW1-1 is changed from OFF to ON.

After SW1-1 is changed from OFF to ON, there is no problem if SW1-1 is left ON or changed to OFF again.

This depends on the service conditions.

Continue to the next page.



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

*2 "Power failure automatic recovery" can be set by either remote controller or this DIP SW. If one of them is set to ON, "Auto recovery" activates. Please set "Auto recovery" basically by remote controller because all units do not have DIP SW. Please refer to the indoor unit installation manual.

*3 Please do not use SW7-3-6 usually. Trouble might be caused by the usage condition.

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

(2) Function of connector

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

<Display function of inspection for outdoor unit>

The blinking patterns of both LED1(green) and LED2(red) indicate the types of abnormality when it occurs.

Types of abnormality can be indicated in details by connecting an optional part "A-Control Service Tool (PAC-SK52ST)" to the connector CNM on the outdoor controller board.

Display

(1)Normal condition

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

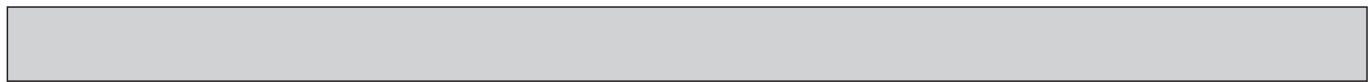
(2)Abnormal condition

Indication		Error			
Outdoor controller board		Contents	Check code*	Inspection method	Detailed reference page
LED1 (Green)	LED2 (Red)				
1 blinking	2 blinking	Connector(63H) is open.	F5	① Check if connector (63H and TRS) on the outdoor controller board is not disconnected. ② Check continuity of pressure switch (63H)/Thermal protector (TRS) by multimeter.	p.50
	4 blinking	Abnormality of indoor controller board	Fb	① Replace indoor controller board.	**
	5 blinking	Refrigerant sensor error	FH	① Check the connectors of the refrigerant sensor.	p.46
		Refrigerant leakage	FL	① Check the indoor unit to detect the part where refrigerant leaks.	p.46
2 blinking	1 blinking	Miswiring of indoor/outdoor unit connecting wire, excessive number of indoor units (4 units or more)	—	① Check if indoor/outdoor connecting wire is connected correctly. ② Check if 4 or more indoor units are connected to outdoor unit.	p.38 (EA)
		Miswiring of indoor/outdoor unit connecting wire (converse wiring or disconnection)	—	③ Check if noise entered into indoor/outdoor connecting wire or power supply.	p.37 (Eb)
		Startup time over	—	④ Re-check error by turning off power, and on again.	p.40 (EC)
	2 blinking	Indoor/outdoor unit communication error (signal receiving error) is detected by indoor unit.	E6	① Check if indoor/outdoor connecting wire is connected correctly. ② Check if noise entered into indoor/outdoor connecting wire or power supply.	**
		Indoor/outdoor unit communication error (transmitting error) is detected by indoor unit.	E7	③ Check if noise entered into indoor/outdoor controller board.	**
		Indoor/outdoor unit communication error (signal receiving error) is detected by outdoor unit.	—	④ Re-check error by turning off power, wait 10 minutes and on again.	p.45 (E8)
		Indoor/outdoor unit communication error (transmitting error) is detected by outdoor unit.	—		p.45 (E9)
	3 blinking	Remote controller signal receiving error is detected by remote controller.	E0	① Check if connecting wire of indoor unit or remote controller is connected correctly.	p.43
		Remote controller transmitting error is detected by remote controller.	E3	② Check if noise entered into transmission wire of remote controller.	p.44
		Remote controller signal receiving error is detected by indoor unit.	E4	③ Re-check error by turning off power, and on again.	p.38
		Remote controller transmitting error is detected by indoor unit.	E5		p.44
	4 blinking	Error code is not defined.	EF	① Check if remote controller is MA remote controller(PAR-21MAA). ② Check if noise entered into transmission wire of remote controller. ③ Check if noise entered into indoor/outdoor connecting wire. ④ Re-check error by turning off power, and on again.	p.39
		Abnormal if a connection of indoor unit and outdoor unit using different refrigerant is detected.	EE	Check if indoor/outdoor unit combination is authorized.	p.45
		Abnormality of refrigerant circuit	PL	① Be sure to replace 4-way valve. ② Check refrigerant pipes for disconnection or leakage. ③ After the recovery of refrigerant, vacuum dry the whole refrigerant circuit. ④ Refer to "10-5. HOW TO CHECK THE PARTS". ⑤ Check refrigerant circuit for operation.	p.43

*Error code displayed on remote controller

**Refer to service manual for indoor unit.

Continue to the next page.



Indication		Error			
Outdoor controller board		Contents	Check code*	Inspection method	Detailed reference page
LED1 (Green)	LED2 (Red)				
2 blinking	5 blinking	Float switch connector open (FS)	P4	① Check if connector (CN4F) on indoor controller board is not disconnected. ② Measure resistance value among terminals on drain pump using a multimeter. ③ Check if drain pump works. ④ Check drain function.	**
	5 blinking	Serial communication error <Communication between outdoor controller board and outdoor power board> <Communication between outdoor controller board and M-NET P.C. board>	Ed	① Check if connector (CN4) on outdoor controller board and outdoor power board is not disconnected. ② Check if there is poor connection of connector on outdoor controller board (CNMNT and CNVMNT). ③ Check M-NET communication signal.	p.40
		Communication error of M-NET system	A0-A8		p.47 -p.50
3 blinking	1 blinking	Abnormality of Discharge temperature (TH4) and Comp. surface temperature (TH33)	U2	① Check if stop valves are open. ② Check if connectors (TH4, TH33, LEV-A, and LEV-B) on outdoor controller board are not disconnected. ③ Check if unit is filled with specified amount of refrigerant. ④ Measure resistance values among terminals on indoor valve and outdoor linear expansion valve using a multimeter.	p.38
		Abnormality of superheat due to low discharge temperature	U7		p.40
	2 blinking	Abnormal high pressure (63H operated)/High compressor temperature (TRS operated)	U1	① Check if indoor/outdoor units have a short cycle on their air ducts. ② Check if connector (63H) (63L) on outdoor controller board is not disconnected. ③ Check if heat exchanger and filter is not dirty. ④ Measure resistance values among terminals on linear expansion valve using a multimeter. ⑤ Check if stop valves are open. ⑥ Check if unit is filled with specified amount of refrigerant.	p.38
		Abnormal low pressure (Low pressure switch 63L worked.)	UL		p.42
	3 blinking	Abnormality of outdoor fan motor rotational speed	U8	① Check the outdoor fan motor. ② Check if connector (TH3) on outdoor controller board is disconnected.	p.40
		Protection from overheat operation (TH3)	Ud		p.41
	4 blinking	Compressor overcurrent breaking (Startup locked)	UF	① Check if stop valves are open. ② Check looseness, disconnection, and converse connection of compressor wiring. ③ Measure resistance values among terminals on compressor using a multimeter. ④ Check if outdoor unit has a short cycle on its air duct.	p.41
		Compressor overcurrent breaking	UP		p.42
		Abnormality of current sensor (P.B.)	UH		p.41
		Abnormality of power module	U6		p.39
	5 blinking	Open/short of discharge thermistors (TH4) (TH33)	U3	① Check if connectors (TH3, TH4, TH6, TH7, TH8, TH32, and TH33) on outdoor controller board connector (CN6) on outdoor power board are not disconnected. ② Measure resistance value of outdoor thermistors.	p.39
		Open/short of outdoor thermistors (TH3, TH32, TH6, TH7 and TH8)	U4		p.39
	6 blinking	Abnormality of heatsink temperature	U5	① Check if indoor/outdoor units have a short cycle on their air ducts. ② Measure resistance value of outdoor thermistor (TH8).	p.39
	7 blinking	Abnormality of voltage	U9	① Check looseness, disconnection, and converse connection of compressor wiring. ② Measure resistance value among terminals on compressor using a multimeter. ③ Check if power supply voltage decreases.	p.40

*Error code displayed on remote controller

**Refer to service manual for indoor unit.

Continue to the next page.



Indication		Error			
Outdoor controller board		Contents	Check code*	Inspection method	Detailed reference page
LED1 (Green)	LED2 (Red)				
4 blinking	1 blinking	Abnormality of room temperature thermistor (TH1)	P1	① Check if connectors (CN20, CN21, CN29 and CN44) on indoor controller board are not disconnected. ② Measure resistance value of indoor thermistors.	**
		Abnormality of pipe temperature thermistor /Liquid (TH2)	P2		**
		Abnormality of pipe temperature thermistor/Condenser-Evaporator	P9		**
	2 blinking	Abnormality of drain sensor (DS) Indoor drain overflow protection	P4	① Check if connector (CN31) on indoor controller board is not disconnected. ② Measure resistance value of indoor thermistors. ③ Measure resistance value among terminals on drain-up machine using a multimeter. ④ Check if drain-up machine works. ⑤ Check drain function.	**
			P5		**
	3 blinking	Freezing (cooling)/overheating (heating) protection	P6	① Check if indoor unit has a short cycle on its air duct. ② Check if heat exchanger and filter are not dirty. ③ Measure resistance value on indoor and outdoor fan motors. ④ Check if the inside of refrigerant piping is not clogged.	**
	4 blinking	Abnormality of pipe temperature	P8	① Check if indoor thermistors(TH2 and TH5) are not disconnected from holder. ② Check if stop valve is open. ③ Check converse connection of extension pipe. (for plural unit connection) ④ Check if indoor/outdoor connecting wire is connected correctly.(for plural unit connection)	**
	5 blinking	Indoor fan motor trouble	Pb	① Check the winding of an indoor unit fan motor.	**
—	—	Abnormality of remote controller board	E1 E2	① Replace remote controller.	p.44

*Error code displayed on remote controller

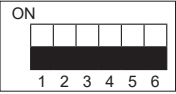
**Refer to service manual for indoor unit.

<Outdoor unit operation monitor function>

When optional part "A-Control Service Tool(PAC-SK52ST)" is connected to outdoor controller board(CNM)

By controlling SW2 on the 'A-Control Service Tool', a 2-digit number or code is displayed on the digital indicator LED1 to indicate the operating status and the meaning of the error code.

Operation indicator SW2: Change self-diagnostic indicators

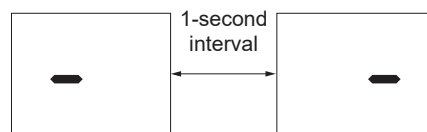
SW2 setting	Display detail	Explanation for display	Unit
			

<Digital indicator LED1 working details>

(Be sure that 1 to 6 on SW2 are set to OFF.)

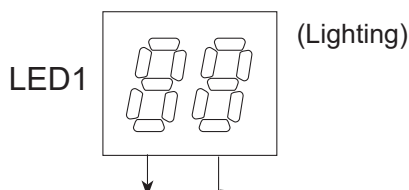
(1) When the power supply turns ON

The displays blink alternately. Wait for 4 minutes at the longest.

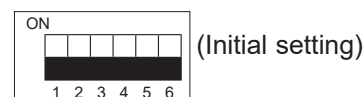


(2) When the display lights (Normal operation)

① Operation mode display



SW2



The tens digit: Operation mode

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

The ones digit: Relay output

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

② Display during error postponement

Postponement code is displayed when compressor stops due to the work of protection device.

Postponement code is displayed while error is being postponed.

(3) When the display blinks

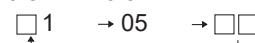
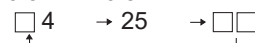
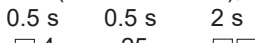
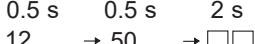
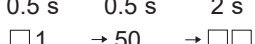
Inspection code is displayed when compressor stops due to the work of protection devices.

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

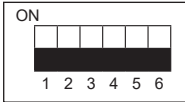
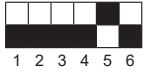
Display	Contents to be inspected (During operation)
U1	Abnormal high pressure (63H operated)/High compressor temperature (TRS operated)
U2	Abnormal high discharge temperature, shortage of refrigerant
U3	Open/short circuit of comp. surface thermistor (TH33) and discharge temperature thermistor (TH4)
U4	Open/short of outdoor unit thermistors (TH3, TH32, TH6, TH7 and TH8)
U5	Abnormal temperature of heatsink
U6	Abnormality of power module
U7	Abnormality of superheat due to low discharge temperature
U8	Abnormality in outdoor fan motor
Ud	Overheat protection
UF	Compressor overcurrent interruption (When Comp. locked)
UH	Current sensor error
UL	Abnormal low pressure(63L worked)
UP	Compressor overcurrent interruption
P1~P8	Abnormality of indoor units
PL	Abnormal refrigerant circuit
A0~A7	Communication error of M-NET system

Display	Contents to be inspected (When power is turned on)
F5	63H connector (yellow) is open. /TRS connector is open.
E8	Indoor/outdoor communication error (Signal receiving error) (Outdoor unit)
E9	Indoor/outdoor communication error (Transmitting error) (Outdoor unit)
EA	Miswiring of indoor/outdoor unit connecting wire, excessive number of indoor units (4 units or more)
Eb	Miswiring of indoor/outdoor unit connecting wire (converse wiring or disconnection)
EC	Startup time over
E0~E7	Communication error except for outdoor unit

The black square (■) indicates a switch position.

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

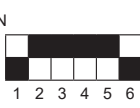
The black square (■) indicates a switch position.

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

The black square (■) indicates a switch position.

SW2 setting	Display detail	Explanation for display	Unit												
ON 	The number of connected indoor units	0 to 4 (The number of connected indoor units are displayed.)	Unit												
ON 	Capacity setting display	Displayed as an outdoor capacity code <table><tr><th>Capacity</th><th>Code</th></tr><tr><td>AK24NLHZ</td><td>11</td></tr><tr><td>AK30NLHZ</td><td>14</td></tr><tr><td>AK36NLHZ</td><td>20</td></tr><tr><td>AK42NLHZ</td><td>25</td></tr><tr><td>AK48NLHZ</td><td>28</td></tr></table>	Capacity	Code	AK24NLHZ	11	AK30NLHZ	14	AK36NLHZ	20	AK42NLHZ	25	AK48NLHZ	28	Code display
Capacity	Code														
AK24NLHZ	11														
AK30NLHZ	14														
AK36NLHZ	20														
AK42NLHZ	25														
AK48NLHZ	28														
ON 	Outdoor unit setting information	- The tens digit (Total display for applied setting) <table><tr><th>Setting details</th><th>Display details</th></tr><tr><td>H•P/Cooling only</td><td>0: H•P 1: Cooling only</td></tr><tr><td>Single phase/3-phase</td><td>0: Single phase 2: 3-phase</td></tr></table> - The ones digit <table><tr><th>Setting details</th><th>Display details</th></tr><tr><td>Defrosting switch</td><td>0: Normal 1: For high humidity</td></tr></table> (Example) When heat pump, 3-phase and defrosting (normal) are set up, “20” is displayed.	Setting details	Display details	H•P/Cooling only	0: H•P 1: Cooling only	Single phase/3-phase	0: Single phase 2: 3-phase	Setting details	Display details	Defrosting switch	0: Normal 1: For high humidity	Code display		
Setting details	Display details														
H•P/Cooling only	0: H•P 1: Cooling only														
Single phase/3-phase	0: Single phase 2: 3-phase														
Setting details	Display details														
Defrosting switch	0: Normal 1: For high humidity														
ON 	Indoor pipe temperature/Liquid (TH2 [1]) Indoor 1 -38 to 190	-38 to 190°F [-39 to 88°C] (When the temperature is 0°F [-17°C] or less, “–” and temperature are displayed alternately.)	°F [°C]												
ON 	Indoor pipe temperature/Cond./Eva. (TH5 [1]) Indoor 1 -38 to 190	-38 to 190°F [-39 to 88°C] (When the temperature is 0°F [-17°C] or less, “–” and temperature are displayed alternately.)	°F [°C]												
ON 	Indoor pipe temperature/Liquid (TH2 [2]) Indoor 2 -38 to 190	-38 to 190°F [-39 to 88°C] (When the temperature is 0°F [-17°C] or less, “–” and temperature are displayed alternately.)	°F [°C]												
ON 	Indoor pipe temperature/Cond./Eva. (TH5 [2]) Indoor 2 -38 to 190	-38 to 190°F [-39 to 88°C] (When the temperature is 0°F [-17°C] or less, “–” and temperature are displayed alternately.)	°F [°C]												
ON 	Indoor room temperature (TH1) 46 to 102	Indoor room temperature (TH1) 46 to 102°F [8 to 39°C]	°F [°C]												

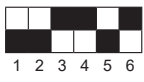
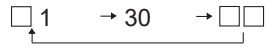
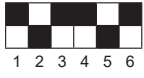
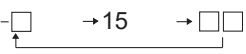
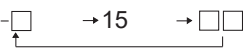
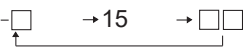
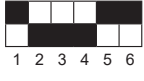
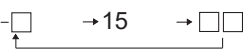
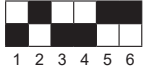
The black square (■) indicates a switch position.

SW2 setting	Display detail	Explanation for display	Unit																		
ON 	Indoor setting temperature 62 to 86	62 to 86°F [17 to 30°C]	°F [°C]																		
ON 	Outdoor pipe temperature/2-phase pipe (TH6) -58 to 194	-58 to 194°F [-50 to 90°C] (When the temperature is 0°F [-17°C] or less, “-” and temperature are displayed alternately.)	°F [°C]																		
ON 	Outdoor ambient temperature (TH7) -58 to 194	-58 to 194°F [-50 to 90°C] (When the temperature is 0°F [-17°C] or less, “-” and temperature are displayed alternately.)	°F [°C]																		
ON 	Outdoor heat sink temperature (TH8) -40 to 392	-40 to 392°F [-40 to 200°C] (When the temperature is 0°F [-17°C] or less, “-” and temperature are displayed alternately.) (When the thermistor detects 100°F [37°C] or more, hundreds digit, tens digit, and ones digit are displayed alternately.)	°F [°C]																		
ON 	Discharge superheat. SHD 32 to 491 [Cooling = TH4 or TH33 – TH6] [Heating = TH4 or TH33 – TH5]	32 to 491°F [0 to 255°C] (When the temperature is 100°F [37°C] or more, hundreds digit, tens digit, and ones digit are displayed alternately.)	°F [°C]																		
ON 	Number of defrost cycles 0 to FFFE	0 to FFFE (in hexadecimal notation) (When more than FF in hex (255 in decimal), the number is displayed in order of 16 ³ 's and 16 ² 's, and 16 ¹ 's and 16 ⁰ 's places. (Example) When 5000 cycles; 0.5 s 0.5 s 2 s □ 9 → C4 → □ □ ↑ 0.5 s	2 cycles																		
ON 	Input current of outdoor unit	0 to 500 (When it is 100 or more, hundreds digit, tens digit, and ones digit are displayed alternately.)	0.1 A																		
ON 	LEV-B opening pulse	0 to 500 (When it is 100 pulse or more, hundreds digit, tens digit, and ones digit are displayed alternately.)	Pulse																		
ON 	U9 error detail history (latest)	<table><tr><th>Description</th><th>Display</th></tr><tr><td>Normal</td><td>00</td></tr><tr><td>Overvoltage error</td><td>01</td></tr><tr><td>Undervoltage error</td><td>02</td></tr><tr><td>Input current sensor error</td><td>04</td></tr><tr><td>Abnormal power synchronous signal</td><td>08</td></tr><tr><td>PFC error</td><td>10</td></tr><tr><td>(Overvoltage/Undervoltage/Overcurrent)</td><td></td></tr><tr><td>Input voltage sensor error</td><td>80</td></tr></table> * Display examples for multiple errors: Overvoltage (01) + Undervoltage (02) = 03 Undervoltage (02) + Power sync signal error (08) = 0A	Description	Display	Normal	00	Overvoltage error	01	Undervoltage error	02	Input current sensor error	04	Abnormal power synchronous signal	08	PFC error	10	(Overvoltage/Undervoltage/Overcurrent)		Input voltage sensor error	80	Code display
Description	Display																				
Normal	00																				
Overvoltage error	01																				
Undervoltage error	02																				
Input current sensor error	04																				
Abnormal power synchronous signal	08																				
PFC error	10																				
(Overvoltage/Undervoltage/Overcurrent)																					
Input voltage sensor error	80																				

The black square (■) indicates a switch position.

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

The black square (■) indicates a switch position.

SW2 setting	Display detail	Explanation for display	Unit
ON 	LEV-C opening pulse on error occurring 0 to 480	0 to 480 (When it is 100 pulse or more, hundreds digit, tens digit and ones digit are displayed by turns.) Example: When 130 pulse; 0.5 s 0.5 s 2 s 	Pulse
ON 	Indoor room temperature (TH1) on error occurring 46 to 102	46 to 102°F [8 to 39°C]	°F [°C]
ON 	Indoor pipe temperature/Liquid (TH2) on error occurring -38 to 190	-38 to 190°F [-39 to 88°C] (When the temperature is 32°F [0°C] or less, “-” and temperature are displayed alternately.) (Example) When -15°F [-26°C]; 0.5 s 0.5 s 2 s 	°F [°C]
ON 	Indoor pipe temperature/Cond./Eva. (TH5) on error occurring -38 to 190	-38 to 190°F [-39 to 88°C] (When the temperature is 32°F [0°C] or less, “-” and temperature are displayed alternately.) (Example) When -15°F [-26°C]; 0.5 s 0.5 s 2 s 	°F [°C]
ON 	Outdoor pipe temperature/2-phase (TH6) on error occurring -58 to 194	-58 to 194°F [-50 to 90°C] (When the temperature is 32°F [0°C] or less, “-” and temperature are displayed alternately.) (Example) When -15°F [-26°C]; 0.5 s 0.5 s 2 s 	°F [°C]
ON 	Outdoor ambient temperature (TH7) on error occurring -58 to 194	-58 to 194°F [-50 to 90°C] (When the temperature is 32°F [0°C] or less, “-” and temperature are displayed alternately.) (Example) When -15°F [-26°C]; 0.5 s 0.5 s 2 s 	°F [°C]
ON 	Outdoor heat sink temperature (TH8) on error occurring -40 to 392	-40 to 392°F [-40 to 200°C] (When the temperature is 0°F [-17°C] or less, “-” and temperature are displayed alternately.) (When the temperature is 100°F [37°C] or more, hundreds digit, tens digit, and ones digit are displayed alternately.)	°F [°C]

The black square (■) indicates a switch position.

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

The black square (■) indicates a switch position.

SW2 setting	Display detail	Explanation for display	Unit																
ON 123456	Controlling status of compressor operating frequency	The following code will be a help to know the operating status of unit. The tens digit <table><tr><th>Display</th><th>Compressor operating frequency control</th></tr><tr><td>1</td><td>Primary current control</td></tr><tr><td>2</td><td>Secondary current control</td></tr></table> The ones digit (In this digit, the total number of activated control is displayed) <table><tr><th>Display</th><th>Compressor operating frequency control</th></tr><tr><td>1</td><td>Preventive control for excessive temperature rise of discharge temperature</td></tr><tr><td>2</td><td>Preventive control for excessive temperature rise of condensing temperature</td></tr><tr><td>4</td><td>Frost prevention control</td></tr><tr><td>8</td><td>Preventive control for excessive temperature rise of heatsink</td></tr></table> (Example) The following controls are activated. Primary current control Preventive control for excessive temperature rise of condensing temperature Preventive control for excessive temperature rise of heat sink LED 18	Display	Compressor operating frequency control	1	Primary current control	2	Secondary current control	Display	Compressor operating frequency control	1	Preventive control for excessive temperature rise of discharge temperature	2	Preventive control for excessive temperature rise of condensing temperature	4	Frost prevention control	8	Preventive control for excessive temperature rise of heatsink	Code display
Display	Compressor operating frequency control																		
1	Primary current control																		
2	Secondary current control																		
Display	Compressor operating frequency control																		
1	Preventive control for excessive temperature rise of discharge temperature																		
2	Preventive control for excessive temperature rise of condensing temperature																		
4	Frost prevention control																		
8	Preventive control for excessive temperature rise of heatsink																		
ON 123456	Pipe temperature/Suction (TH32) -58 to 194	-58 to 194°F [-50 to 90°C] (When the coil thermistor detects 0°F [-17°C] or below, “-” and temperature are displayed alternately.) (Example) When -10°F [-23°C]; 0.5 s 0.5 s 2 s -□ → 15 → □□	°F [°C]																
ON 123456	Indoor pipe temperature/Liquid (TH2 [4]) Indoor 4 -38 to 190	-38 to 190°F [-39 to 88°C] (When the temperature is 0°F [-17°C] or less, “-” and temperature are displayed alternately.)	°F [°C]																
ON 123456	Indoor pipe temperature / Cond./Eva. (TH5 [4]) Indoor 4 -38 to 190	-38 to 190°F [-39 to 88°C] (When the temperature is 0°F [-17°C] or less, “-” and temperature are displayed by turns.) When there is no indoor unit, “00” is displayed.	°F [°C]																

11-1. SMOOTH MAINTENANCE

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

11-2. GUIDE FOR OPERATION CONDITION

Checkpoints

Enter the temperature differences between ⑤, ④, ⑦, and ⑧ into the graph given below.

Operation state is determined according to the plotted areas on the graph.

For data measurements, set the fan speed to [Hi] before activating maintenance mode.

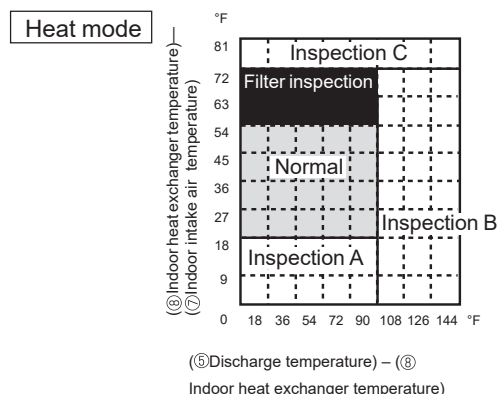
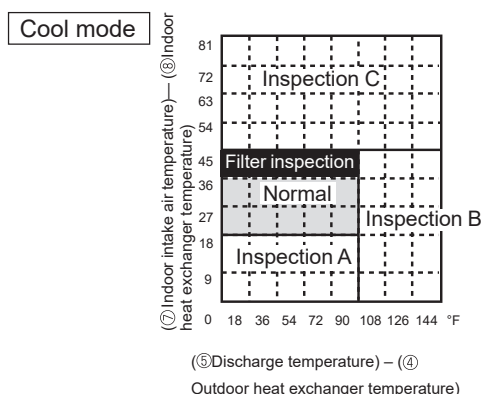
Inspection item		Result	
Power supply	Terminal block	Breaker	Good
		Outdoor Unit	Good
	Indoor Unit	Good	Retightened
		Good	Retightened
Compressor	(Insulation resistance)		MΩ
	(Voltage)		V
	① Accumulated operating time		Time
	② Number of ON/OFF times		Times
Outdoor unit	③ Current		A
	Temperature	④ Refrigerant/heat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

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

Classification	Item	Result	
Cool	Inspection	Is "000" displayed stably in Display ① on the remote controller?	Stable Unstable
	Temperature difference	((⑤ Discharge temperature) - (④ Outdoor heat exchanger temperature)) ((⑦ Indoor intake air temperature) - (⑧ Indoor heat exchanger temperature))	°F °F
Heat	Inspection	Is "000" displayed stably in Display ① on the remote controller?	Stable Unstable
	Temperature difference	((⑤ Discharge temperature) - (⑧ Indoor heat exchanger temperature)) ((③ Indoor heat exchanger temperature) - (⑦ Indoor intake air temperature))	°F °F

Note:

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



Result

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

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

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

12-1. UNIT FUNCTION SETTING BY THE REMOTE CONTROLLER

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

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

<Table 1> Function selections

Function	Settings	Mode No. Wired remote controller (RF thermistor)	Setting No.	•: Initial setting (when sent from the factory)	Remarks
Power failure automatic recovery	Not available	01 (101)	1		The setting is applied to all the units in the same refrigerant system.
	Available		2	•	
Indoor temperature detection	Average data from each indoor unit	02 (-)	1	•	
	Data from the indoor unit with remote controllers		2		
	Data from main remote controllers		3		
LOSSNAY connectivity	Not supported	03 (103)	1	•	
	Supported (indoor unit does not intake outdoor air through LOSSNAY)		2		
	Supported (indoor unit intakes outdoor air through LOSSNAY)		3		
Power supply voltage	230 V	04 (104)	1	•	
	208 V		2		
Frost prevention temperature	36°F [2°C] (Normal)	15 (115)	1	•	
	37°F [3°C]		2		
Humidifier control	When the compressor operates, the humidifier also operates.	16 (116)	1		
	When the fan operates, the humidifier also operates.		2	•	
Change of defrosting control	Standard	17 (117)	1	•	
	For high humidity		2		

<Table 2> Meaning of "Function setting"

Mode02: Indoor temperature detecting

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

12-2. SELECTING FUNCTIONS USING THE REMOTE CONTROLLER

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

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

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

13-2. REQUEST CODE LIST

Certain indoor/outdoor combinations do not have the request code function; therefore, no request codes are displayed.

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

Request code	Request content	Description (Display range)	Unit	Remarks
50	Indoor unit-Control state	Refer to 13-2-1. Detail Contents in Request Code.	-	
51	Outdoor unit-Control state	Refer to 13-2-1. Detail Contents in Request Code.	-	
52	Compressor-Frequency control state	Refer to 13-2-1. Detail Contents in Request Code.	-	
53	Outdoor unit-Fan control state	Refer to 13-2-1. Detail Contents in Request Code.	-	
54	Actuator output state	Refer to 13-2-1. Detail Contents in Request Code.	-	
55	Error content (U9)	Refer to 13-2-1. Detail Contents in Request Code.	-	
56				
57				
58				
59				
60	Signal transmission demand capacity	0-255	%	
61	Contact demand capacity	Refer to 13-2-1.Detail Contents in Request Code.	-	
62	External input state (silent mode, etc.)	Refer to 13-2-1.Detail Contents in Request Code.	-	
63				
64				
65				
66				
67				
68				
69				
70	Outdoor unit-Capacity setting display	Refer to 13-2-1.Detail Contents in Request Code.	-	
71	Outdoor unit-Setting information	Refer to 13-2-1.Detail Contents in Request Code.	-	
72				
73	Outdoor unit-SW1 setting information	Refer to 13-2-1.Detail Contents in Request Code.	-	
74	Outdoor unit-SW2 setting information	Refer to 13-2-1.Detail Contents in Request Code.	-	
75				
76	Outdoor unit-SW4 setting information	Refer to 13-2-1.Detail Contents in Request Code.	-	
77	Outdoor unit-SW5 setting information	Refer to 13-2-1.Detail Contents in Request Code.	-	
78	Outdoor unit-SW6 setting information	Refer to 13-2-1.Detail Contents in Request Code.	-	
79	Outdoor unit-SW7 setting information	Refer to 13-2-1.Detail Contents in Request Code.	-	
80	Outdoor unit-SW8 setting information	Refer to 13-2-1.Detail Contents in Request Code.	-	
81	Outdoor unit-SW9 setting information	Refer to 13-2-1.Detail Contents in Request Code.	-	
82				
83				
84	M-NET adapter connection (presence/absence)	"0000": Not connected "0001": Connected	-	
85				
86				
87				
88				
89	Display of execution of replace/wash operation	"0000": Not connected "0001": Connected	-	
90	Outdoor unit-Microprocessor version information	Examples) Ver 5.01 → "0501"	Ver	
91	Outdoor unit-Microprocessor version information (sub No.)	Auxiliary information (displayed after version information) Examples) Ver 5.01 A000 → "A000"	-	
92				
93				
94				
95				
96				
97				
98				
99				
100	Outdoor unit-Error postponement history 1 (latest)	Displays postponement code. (" - - " is displayed if no postponement code is present)	Code	
101	Outdoor unit-Error postponement history 2 (previous)	Displays postponement code. (" - - " is displayed if no postponement code is present)	Code	
102	Outdoor unit-Error postponement history 3 (second to last)	Displays postponement code. (" - - " is displayed if no postponement code is present)	Code	

Request code	Request content	Description (Display range)	Unit	Remarks
103	Error history 1 (latest)	Displays error history. (" - - " is displayed if no history is present.)	Code	
104	Error history 2 (second to last)	Displays error history. (" - - " is displayed if no history is present.)	Code	
105	Error history 3 (third to last)	Displays error history. (" - - " is displayed if no history is present.)	Code	
106	Abnormal thermistor display (TH3/TH6/TH7/TH8)	3: TH3 6: TH6 7: TH7 8: TH8 0: No thermistor error	Sensor number	
107	Operation mode at time of error	Displayed in the same way as request code "0".	-	
108	Compressor-Operating current at time of error	0-50	A	
109	Compressor-Accumulated operating time at time of error	0-9999	10 hours	
110	Compressor-Number of operation times at time of error	0-9999	100 times	
111	Discharge temperature at time of error	-4-422	°F	
112	Outdoor unit - Liquid pipe 1 temperature (TH3) at time of error	-58-194	°F	
113				
114	Outdoor unit-2-phase pipe temperature (TH6) at time of error	-58-194	°F	
115	Outdoor suction pipe temperature (TH32) at time of error	-58-194	°F	
116	Outdoor unit-Ambient temperature (TH7) at time of error	-58-194	°F	
117	Outdoor unit-Heat sink temperature (TH8) at time of error	-40-392	°F	
118	Discharge super heat (SHd) at time of error	0-327	°F	
119	Subcooling (SC) at time of error	0-255	°F	
120	Compressor-Operating frequency at time of error	0-255	Hz	
121	Outdoor unit at time of error • Fan output step	0-25	Step	
122	Outdoor unit at time of error • Fan 1 speed (Only for air conditioners with DC fan)	0-9999	rpm	
123	Outdoor unit at time of error • Fan 2 speed (Only for air conditioners with DC fan)	0-9999	rpm	"0" is displayed if the air conditioner is a single-fan type.
124				
125	LEV (A) opening at time of error	0-500	Pulses	
126	LEV (B) opening at time of error	0-500	Pulses	
127	LEV (C) opening at time of error	0-500	Pulses	
128				
129				
130	Thermo ON time until operation stops due to error	0-999	Minutes	
131				
132	Indoor - Liquid pipe temperature at time of error	-38-190	°F	Average value of all indoor units is displayed if the air conditioner consists of 2 or more indoor units (twin).
133	Indoor-Cond./Eva. pipe temperature at time of error	-38-190	°F	Average value of all indoor units is displayed if the air conditioner consists of 2 or more indoor units (twin).
134	Indoor at time of error • Intake air temperature <Thermostat judge temperature>	-38-190	°F	
135				
136				
137				
138				
139				
140				
~				
146				
147				
148				
149				
150	Indoor-Actual intake air temperature	-38-190	°F	
151	Indoor - Liquid pipe temperature	-38-190	°F	
152	Indoor-Cond./Eva. pipe temperature	-38-190	°F	

Request code	Request content	Description (Display range)	Unit	Remarks
153				
154	Indoor-Fan operating time (After filter is reset)	0-9999	1 hour	
155	Indoor-Total operating time (Fan motor ON time)	0-9999	10 hours	
156				
157	Indoor fan output value (Sj value)	0-255 Fan control data	-	For indoor fan phase control
158	Indoor fan output value (Pulsation ON/OFF)	"00 *** ** indicates fan control data.	-	For indoor fan pulsation control
159	Indoor fan output value (duty value)	"00 *** ** indicates fan control data.	-	For indoor DC brushless motor control
160				
161				
162	Indoor unit-Model setting information	Refer to 13-2-1. Detail Contents in Request Code.	-	
163	Indoor unit-Capacity setting information	Refer to 13-2-1. Detail Contents in Request Code.	-	
164	Indoor unit-SW3 information	Undefined	-	
165	Wireless pair No. (indoor control board side) setting	Refer to 13-2-1. Detail Contents in Request Code.	-	
166	Indoor unit-SW5 information	Undefined	-	
167				
~				
189				
190	Indoor unit-Microprocessor version information	Examples) Ver 5.01 → "0501"	Ver	
191	Indoor unit-Microprocessor version information (sub No.)	Auxiliary information (displayed after version information) Examples) Ver 5.01 A000 → "A000"	-	
192				
~				
764				
765	Stable operation (Heat mode)	This request code is not provided to collect data. It is used to fix the operation state.		
766	Stable operation (Cool mode)	This request code is not provided to collect data. It is used to fix the operation state.		
767	Stable operation cancellation	This request code is not provided to collect data. It is used to cancel the operation state that has been fixed by request codes "765" and "766".		

13-2-1. Detail Content in Request Code

Request code

Ref.address 004
Request code 004
0156

Request: SELECT
▼ Cursor ▲ — +

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

Operation state (Request code: "0")

Data display

□ □ C 4

Relay output state

Operation mode

Operation mode

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

Relay output state

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

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

Data display

□ * □ * □ *

Unit No. 4 state

Unit No. 3 state

Unit No. 2 state

Unit No. 1 state

Operation mode

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

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

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

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

Data display

0 0 * *

Frequency control state 2

Frequency control state 1

Frequency control state 1

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

Frequency control state 2

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

Fan control state (Request code: "53")

Data display

0	0	*	*
---	---	---	---

└─ Fan step correction value by heatsink temperature overhear prevention control

└─ Fan step correction value by cool condensation temperature overhear prevention control

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

Actuator output state (Request code: "54")

Data display

0	0	*	*
---	---	---	---

└─ Actuator output state 1

└─ Actuator output state 2

Actuator output state 1

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

Actuator output state 2

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

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

Data display

0	0	*	*
---	---	---	---

└─ Error content 1

└─ Error content 2

●: Detected

Error content 1

Display	Overvoltage error	Undervoltage error	L1-phase open error	Power synchronizing signal error
0				
1	●			
2		●		
3	●	●		
4			●	
5	●		●	
6		●	●	
7	●	●	●	
8				●
9	●			●
A		●		●
b	●	●		●
C			●	●
d	●		●	●
E		●	●	●
F	●	●	●	●

Error content 2

●: Detected

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

Contact demand capacity (Request code: "61")

Data display

0	0	0	*
---	---	---	---

Setting content

Setting content

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

External input state (Request code: "62")

Data display

0	0	0	*
---	---	---	---

Input state

●: Input position

Input state

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

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

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

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

Data display

0	0	*	*
---	---	---	---

Setting information 1

Setting information 2

Setting information 1

Display	Defrost mode
0	Standard
1	For high humidity

Setting information 2

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

Outdoor unit switch setting display (SW1 to SW9, except SW3) Request codes: "73 to 81"

0: Switch OFF 1: Switch ON

SW1, SW2, SW6, SW7						Data display
1	2	3	4	5	6	
0	0	0	0	0	0	00 00
1	0	0	0	0	0	00 01
0	1	0	0	0	0	00 02
1	1	0	0	0	0	00 03
0	0	1	0	0	0	00 04
1	0	1	0	0	0	00 05
0	1	1	0	0	0	00 06
1	1	1	0	0	0	00 07
0	0	0	1	0	0	00 08
1	0	0	1	0	0	00 09
0	1	0	1	0	0	00 0A
1	1	0	1	0	0	00 0b
0	0	1	1	0	0	00 0C
1	0	1	1	0	0	00 0d
0	1	1	1	0	0	00 0E
1	1	1	1	0	0	00 0F
0	0	0	0	1	0	00 10
1	0	0	0	1	0	00 11
0	1	0	0	1	0	00 12
1	1	0	0	1	0	00 13
0	0	1	0	1	0	00 14
1	0	1	0	1	0	00 15
0	1	1	0	1	0	00 16
1	1	1	0	1	0	00 17
0	0	0	1	1	0	00 18
1	0	0	1	1	0	00 19
0	1	0	1	1	0	00 1A
1	1	0	1	1	0	00 1B
0	0	1	1	1	0	00 1C
1	0	1	1	1	0	00 1D
0	1	1	1	1	0	00 1E
1	1	1	1	1	0	00 1F
0	0	0	0	0	1	00 20
1	0	0	0	0	1	00 21
0	1	0	0	0	1	00 22
1	1	0	0	0	1	00 23
0	0	1	0	0	1	00 24
1	0	1	0	0	1	00 25
0	1	1	0	0	1	00 26
1	1	1	0	0	1	00 27
0	0	0	1	1	1	00 28
1	0	0	1	1	1	00 29
0	1	0	1	1	1	00 2A
1	1	0	1	1	1	00 2B
0	0	1	1	1	1	00 2C
1	0	1	1	1	1	00 2D
0	1	1	1	1	1	00 2E
1	1	1	1	1	1	00 2F
0	0	0	0	0	1	00 30
1	0	0	0	0	1	00 31
0	1	0	0	0	1	00 32
1	1	0	0	0	1	00 33
0	0	1	0	0	1	00 34
1	0	1	0	0	1	00 35
0	1	1	0	0	1	00 36
1	1	1	0	0	1	00 37
0	0	0	1	1	1	00 38
1	0	0	1	1	1	00 39
0	1	0	1	1	1	00 3A
1	1	0	1	1	1	00 3B
0	0	1	1	1	1	00 3C
1	0	1	1	1	1	00 3D
0	1	1	1	1	1	00 3E
1	1	1	1	1	1	00 3F

0: Switch OFF 1: Switch ON

SW5				Data display
1	2	3	4	
0	0	0	0	00 00
1	0	0	0	00 01
0	1	0	0	00 02
1	1	0	0	00 03
0	0	1	0	00 04
1	0	1	0	00 05
0	1	1	0	00 06
1	1	1	0	00 07
0	0	0	1	00 08
1	0	0	1	00 09
0	1	0	1	00 0A
1	1	0	1	00 0b
0	0	1	1	00 0C
1	0	1	1	00 0d
0	1	1	1	00 0E
1	1	1	1	00 0F

0: Switch OFF 1: Switch ON

SW8			Data display
1	2	3	
0	0	0	00 00
1	0	0	00 01
0	1	0	00 02
1	1	0	00 03
0	0	1	00 04
1	0	1	00 05
0	1	1	00 06
1	1	1	00 07

0: Switch OFF 1: Switch ON

SW4, SW9		Data display
1	2	
0	0	00 00
1	0	00 01
0	1	00 02
1	1	00 03

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

Data display

0	0	*	*
---	---	---	---



See the table on the right.

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

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

Data display

0	0	*	*
---	---	---	---



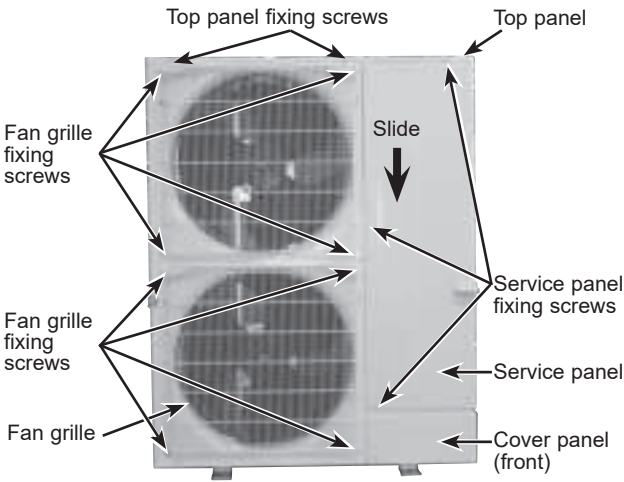
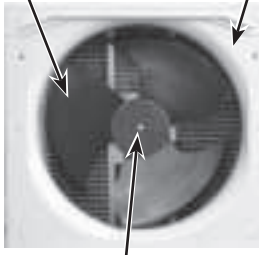
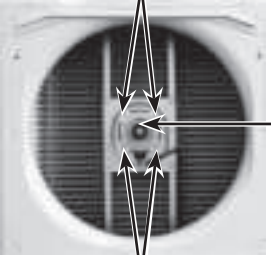
See the table on the right.

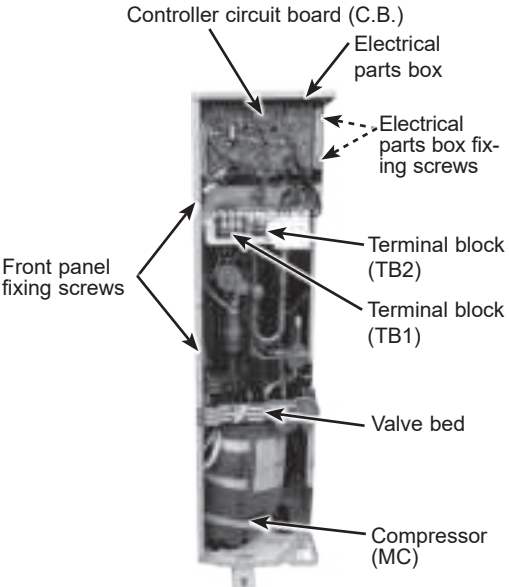
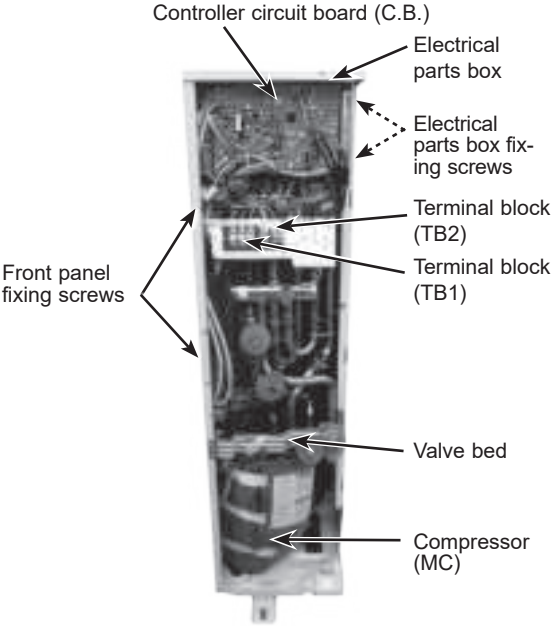
Display	Pair No. setting state
00	No. 0
01	No. 1 J41 disconnected
02	No. 2 J42 disconnected
03	No. 3 J41, J42 disconnected

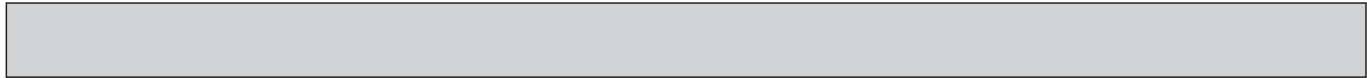
—————> : Indicates the visible parts in the photos/figures.

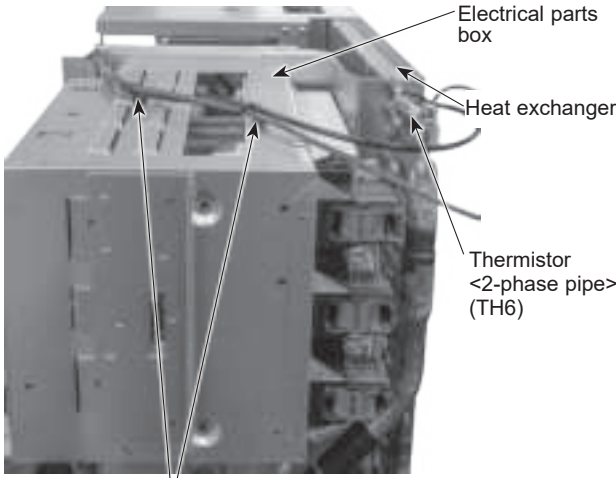
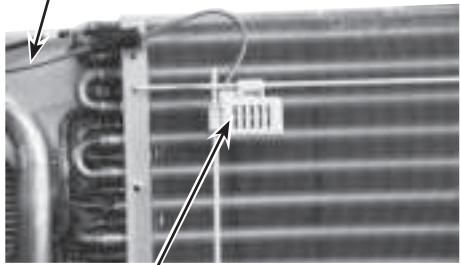
-----> : Indicates the invisible parts in the photos/figures.

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

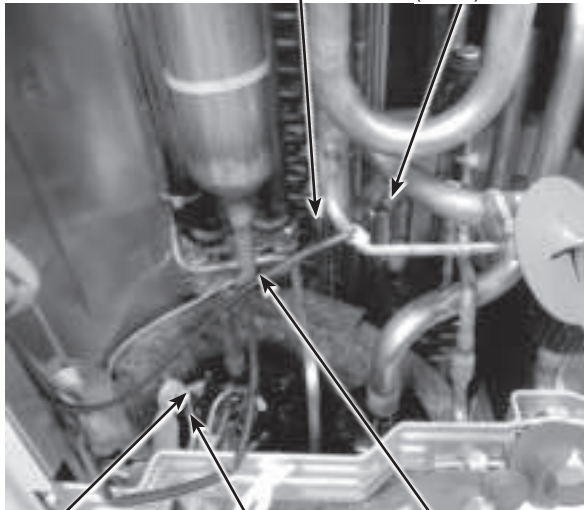
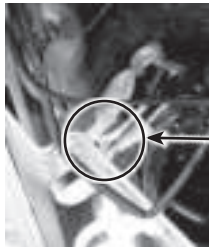
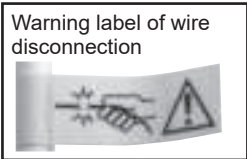
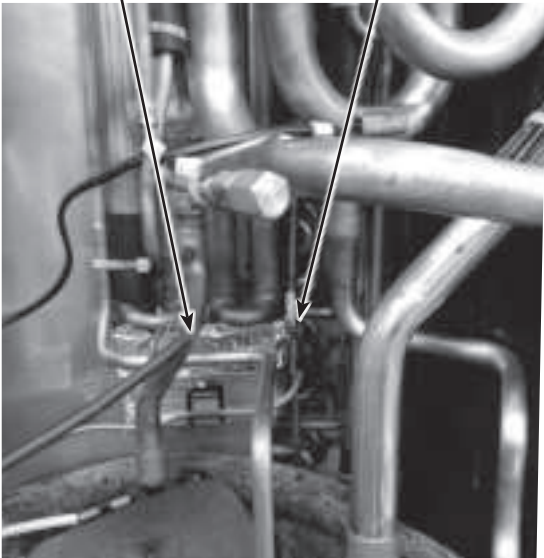
PROCEDURE	PHOTOS/FIGURES
1. Removing the service panel and top panel (1) Remove the 3 service panel fixing screws (5 × 12) and slide the hook on the right downward to remove the service panel. (2) Remove the screws (2 for front, 3 for rear/5 × 12) of the top panel and remove it.	Photo 1 
2. Removing the fan motor (MF1, MF2) (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Remove the 4 fan grille fixing screws (5 × 12) from each grille and remove it. (See Photo 1) (4) Remove a nut (for right handed screw of M6) to detach the propeller. (See Photo 2) (5) Disconnect the connectors, CNF1, CNF2 on controller circuit board in the electrical parts box. (6) Remove the 4 fan motor fixing screws (5 × 20) to detach the fan motor. (See Photo 3) (7) When attaching the fan motor, make sure to route the cable through the hook below the fan motor and fix firmly with the clamp.	Photo 2  Photo 3 

PROCEDURE	PHOTOS/FIGURES
3. Removing the electrical parts box (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Disconnect the indoor/outdoor connecting wire and the power supply wire from the terminal block. (4) Disconnect the connector CNF1, CNF2, SV2, LEV-A, LEV-B, and LEV-C on the controller circuit board. <Symbols on the board> • CNF1, CNF2: Fan motor • LEV-A, LEV-B, LEV-C: LEV • SV2: Base Heater (5) Disconnect the pipe-side connections of the following parts. • Thermistor <Liquid>(TH3) • Thermistor <Discharge>(TH4) • Thermistor <2-phase pipe>(TH6) • Thermistor <Ambient>(TH7) • Thermistor <Suction> (TH32) • Thermistor <Comp. surface> (TH33) • Thermal protector (TRS) • High pressure switch (63H) • 4-way valve coil (21S4) (6) Remove the terminal cover and disconnect the compressor lead wire. (7) Loosen the clamp for lead wires on the separator. (8) Remove 2 electrical parts box fixing screws (4 × 10) and detach the electrical parts box by pulling it upward. The electrical parts box is fixed with 2 hooks on the left and 1 hook on the right.	Photo 4 AK24/30/36  AK42/48 



PROCEDURE	PHOTOS/FIGURES
4. Removing the thermistor <2-phase pipe> (TH6) and thermistor <Ambient>(TH7) (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Disconnect the connectors TH7/6 (red) on the controller circuit board in the electrical parts box. Loosen fasteners for lead wires in the electrical parts box. (4) Loosen the clamp for lead wires in the rear of the electrical parts box. (5) Pull out the thermistor <2-phase pipe> (TH6) and the thermistor <Ambient> (TH7) from the sensor holder. Note: When replacing the thermistor <2-phase pipe> (TH6) or the thermistor <Ambient> (TH7), replace it together.	Photo 5  Electrical parts box Heat exchanger Thermistor <2-phase pipe> (TH6) Clamps Photo 6  Lead wire of thermistor <Ambient> (TH7) Sensor holder

PROCEDURE	PHOTOS/FIGURES
5. Removing the thermistor <Discharge> (TH4) (1) Remove the service panel. (See Photo 1) (2) Disconnect the connector TH4 (white) on the controller circuit board in the electrical parts box. Loosen fasteners for lead wires in the electrical parts box. (3) Loosen clamps for the lead wire on the separator (See Photo 7). (4) Pull out the thermistor <Discharge> (TH4) from the sensor holder.	Photo 7 AK24/30/36 Thermistor <Discharge> (TH4) Separator Clamp Compressor (MC)
	AK42/48 Thermistor <Discharge> (TH4) Separator Clamp Compressor (MC)

PROCEDURE	PHOTOS/FIGURES
6. Removing the thermistor <Liquid> (TH3), thermistor <Suction> (TH32), thermistor <Comp. surface> (TH33), and thermal protector (TRS) (1) Remove the service panel. (See Photo 1) (2) Disconnect the connectors, TH3 (white) and TH32 (black), TH33 (yellow) on the controller circuit board in the electrical parts box. (3) Loosen fasteners for lead wires in the electrical parts box. Cut the band connecting the 63H lead wire and the lead wire of the thermal protector in the electrical parts box, and disconnect the relay connector of the thermal protector (TRS). (4) Loosen the clamps for the lead wires on the separator (See Photo 7). Loosen the clamp and the cable strap for lead wires on the bottom of the electrical parts box. (Note that this procedure is only for removing TH3.) (5) Loosen the clamp for the lead wire for TH3 and TH32. (6) Pull out the thermistor <Liquid> (TH3), thermistor <Suction> (TH32), thermistor <Comp. surface> (TH33). Instead of holding the lead wires, hold the thermistor body when removing and installing the shell thermistor. See "Warning label of wire disconnection" .(See Photo 8) (7) Remove the damper and pull out the thermal protector (TRS) from the holder. (See Photo 8)	Photo 8 AK24/30/36  Thermistor <Liquid> (TH3) Thermistor <Suction> (TH32) Thermal protector (TRS) Thermistor <Comp. surface> (TH33) Clamp (for TH3)
	 Warning label of wire disconnection AK42/48  Warning label of wire disconnection  Thermistor <Discharge> (TH4) Thermistor <Liquid> (TH3) Thermistor <Suction> (TH32) Thermistor <Liquid> (TH3) Thermal protector (TRS) Thermistor <Comp. surface> (TH33) Clamp (for TH3)

PROCEDURE

7. Removing the 4-way valve coil (21S4), and linear expansion valve coil (LEV-A, LEV-B, LEV-C)

- (1) Remove the service panel. (See Photo 1)
- (2) Remove the top panel. (See Photo 1)
- (3) Remove the electrical parts box. (See Photo 4)

Removing the 4-way valve coil

- (4) Remove the 4-way valve coil fixing screw (See Photo9).
- (5) Remove the 4-way valve coil by sliding the coil toward you. Loosen the clamp for lead wires on the separator. Loosen the fasteners and the cable strap for lead wires in the electrical parts box.
- (6) Disconnect the connector 21S4 (green) on the controller circuit board in the electrical parts box.

Removing the linear expansion valve coil

- (4) Loosen a fastener for lead wires.
- (5) Remove the linear expansion valve coil by sliding the coil upward. Loosen the clamp for lead wires on the separator. Loosen a fastener for lead wires in the electrical parts box.
- (6) Disconnect the connectors, LEV-A (white), LEV-B (red), and LEV-C (blue) on the controller circuit board in the electrical parts box.

8. Removing the 4-way valve

- (1) Remove the service panel. (See Photo 1)
- (2) Remove the top panel. (See Photo 1)
- (3) Remove the electrical parts box. (See Photo 4)
- (4) Remove the 2 cover panel front fixing screws (5 × 12) and remove the cover panel front. (See Photo 1)
- (5) Remove the 2 cover panel rear fixing screws (5 × 12) and remove the cover panel rear.
- (6) Remove the 3 valve bed fixing screws (4 × 10) and 4 stop valve fixing screws (5 × 16), then remove the valve bed.
- (7) Remove 3 side panel (R) fixing screws (5 × 12) in the rear of the unit then remove the side panel (R).
- (8) Remove the 4-way valve coil.
- (9) Recover refrigerant.
- (10) Remove the welded part of the 4-way valve.

Note 1: Recover refrigerant without spreading it in the air.

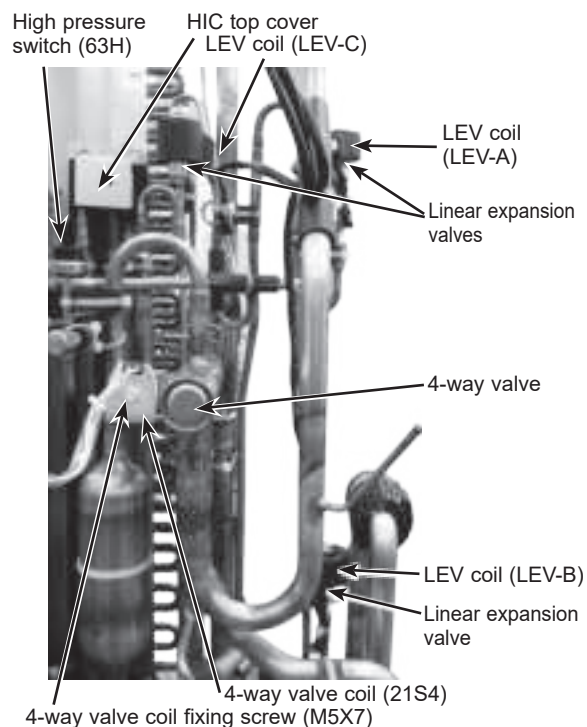
Note 2: The welded part can be removed easily by removing the right side panel.

Note 3: When installing the 4-way valve, cover it with a wet cloth to prevent it from heating (250°F [120°C] or more), then braze the pipes so that the inside of pipes are not oxidized.

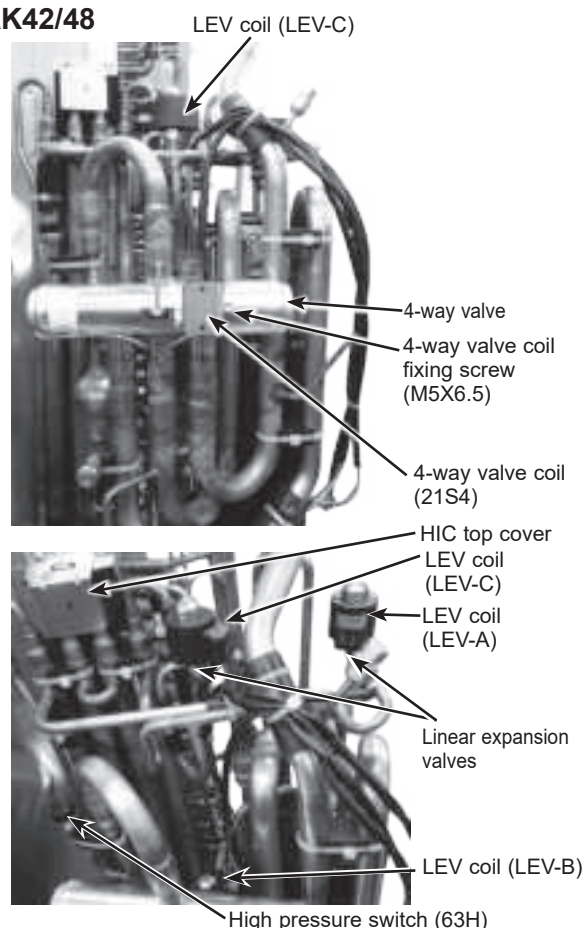
Note 4: Be careful not to expose the fusible plug to the braze torch flame or transfer heat to it; protect the fusible plug with a wet cloth when necessary (fusible plug breaks at 158°F [70°C]).

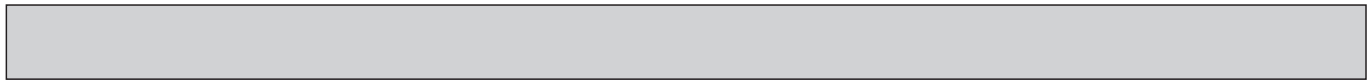
PHOTOS/FIGURES

Photo 9
AK24/30/36



AK42/48





PROCEDURE	PHOTOS/FIGURES
9. Removing linear expansion valve (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Remove the electrical parts box. (See Photo 4) (4) Remove the cover panel front. (Refer to procedure 8) (5) Remove the cover panel rear. (Refer to procedure 8) (6) Remove the valve bed. (Refer to procedure 8) (7) Remove the side panel (R). (Refer to procedure 8) (8) Remove the linear expansion valve coil. (9) Recover refrigerant. (10) Remove the welded part of linear expansion valve. Note 1: Recover refrigerant without spreading it in the air. Note 2: The welded part can be removed easily by removing the right side panel. Note 3: When installing the linear expansion valve, cover it with a wet cloth to prevent it from heating (250°F [120°C] or more), then braze the pipes so that the inside of pipes are not oxidized. Note 4: Be careful not to expose the fusible plug to the braze torch flame or transfer heat to it; protect the fusible plug with a wet cloth when necessary (fusible plug breaks at 158°F [70°C]).	Photo 10 AK24/30/36  AK42/48 

PROCEDURE

10. Removing the HIC&LEV ASSY

- (1) Remove the service panel. (See Photo 1)
- (2) Remove the top panel. (See Photo 1)
- (3) Remove the electrical parts box. (See Photo 4)
- (4) Remove the 2 cover panel front fixing screws (5 × 12) and remove the cover panel front. (See Photo 1)
- (5) Remove the 2 cover panel rear fixing screws (5 × 12) and remove the cover panel rear.
- (6) Remove the 3 valve bed fixing screws (4 × 10) and the 4 stop valve fixing screws (5 × 16), and then remove the valve bed.
- (7) Remove the 3 side panel (R) fixing screws (5 × 12) in the rear of the unit, and then remove the side panel (R).
- (8) Remove the 4-way valve coil.
- (9) Recover refrigerant.
- (10) Remove the welded part of the 4-way valve assy. (See Photo 11)
- (11) Remove 1 (4 × 10) HIC top cover (See Photo 9) fixing screw and remove the HIC top cover.
- (12) Remove the welded part of HIC&LEV ASSY.

Note: When installing the HIC&LEV ASSY, cover the fusible plug with a wet cloth to prevent it from heating (158°F [70°C] or more), then braze the pipes so that the inside of pipes are not oxidized.

11. Removing the high pressure switch (63H)

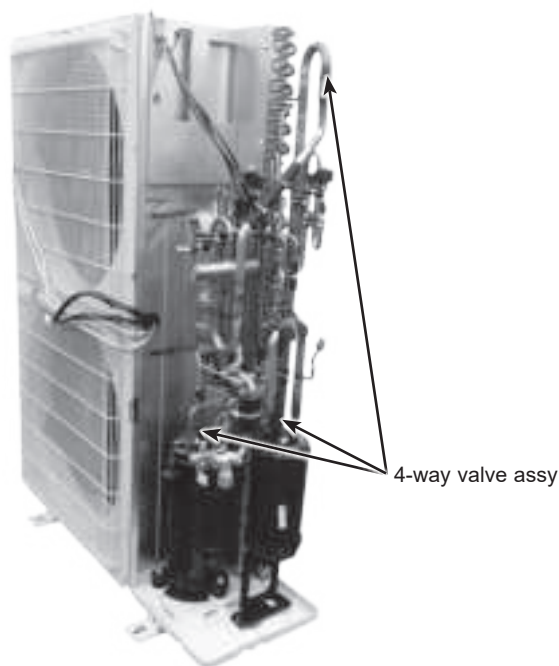
- (1) Remove the service panel. (See Photo 1)
- (2) Remove the top panel. (See Photo 1)
- (3) Remove the electrical parts box. (See Photo 4)
- (4) Remove the cover panel front. (Refer to procedure 8)
- (5) Remove the cover panel rear. (Refer to procedure 8)
- (6) Remove the valve bed. (Refer to procedure 8)
- (7) Remove the side panel (R). (Refer to procedure 8)
- (8) Pull out the lead wire of high pressure switch (63H).
- (9) Recover refrigerant.
- (10) Remove the welded part of high pressure switch (63H).

Note : When installing the high pressure switch, cover it with a wet cloth to prevent it from heating (210°F [100°C] or more), then braze the pipes so that the inside of pipes are not oxidized.

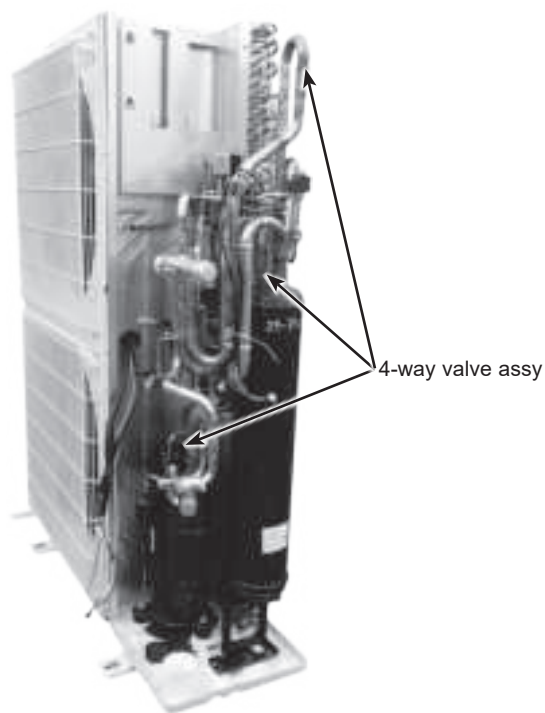
PHOTOS/FIGURES

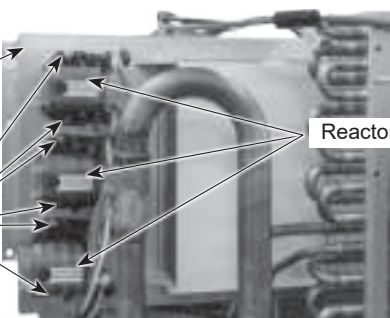
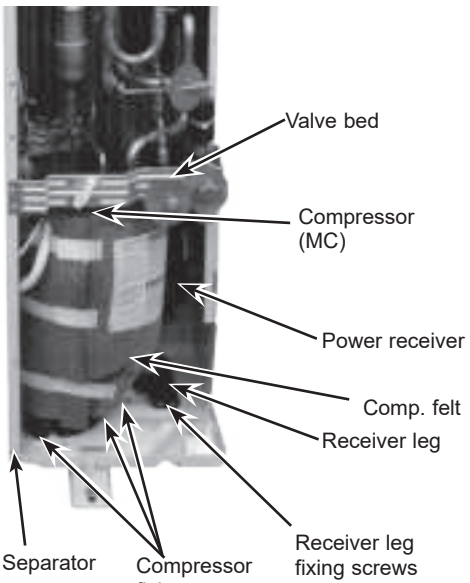
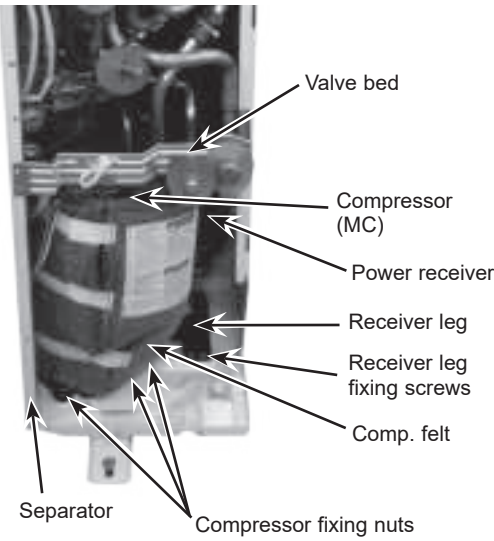
Photo 11

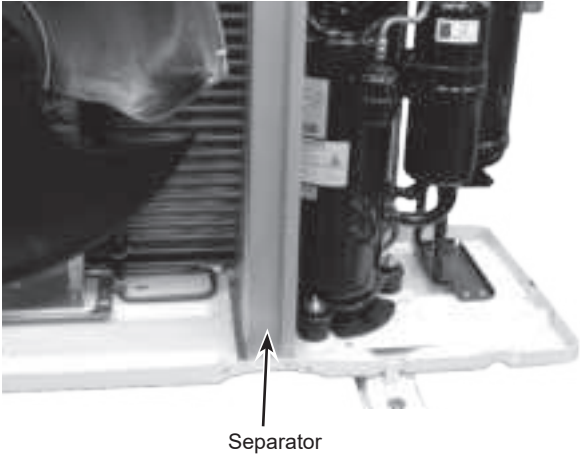
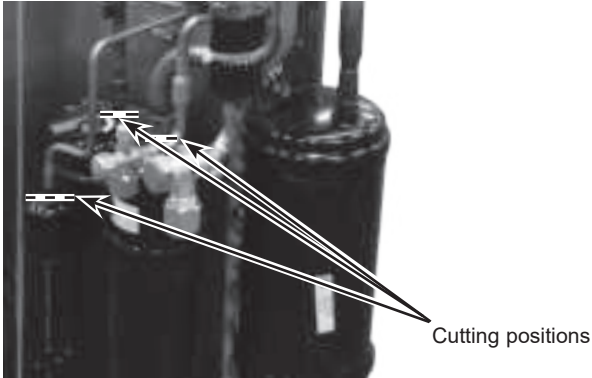
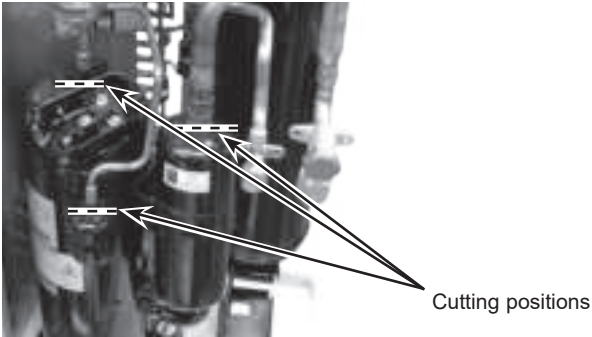
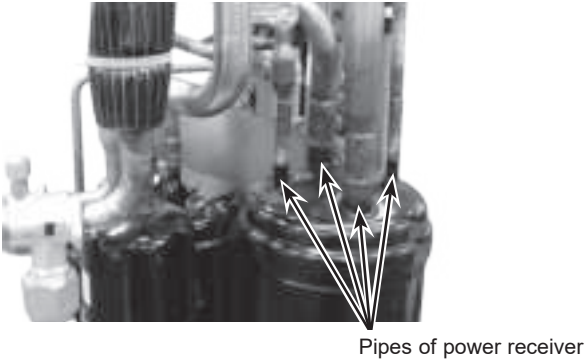
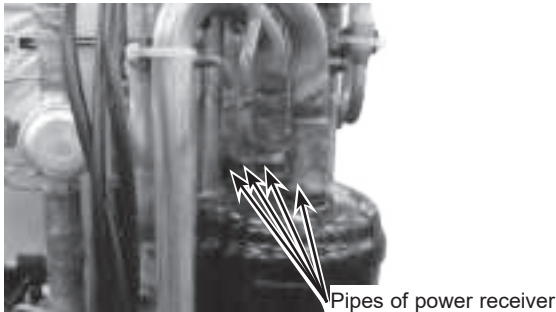
AK24/30/36

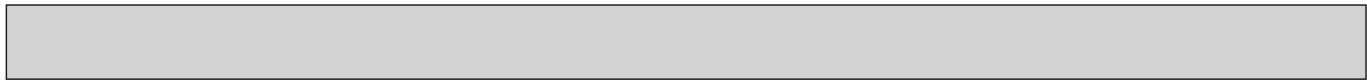


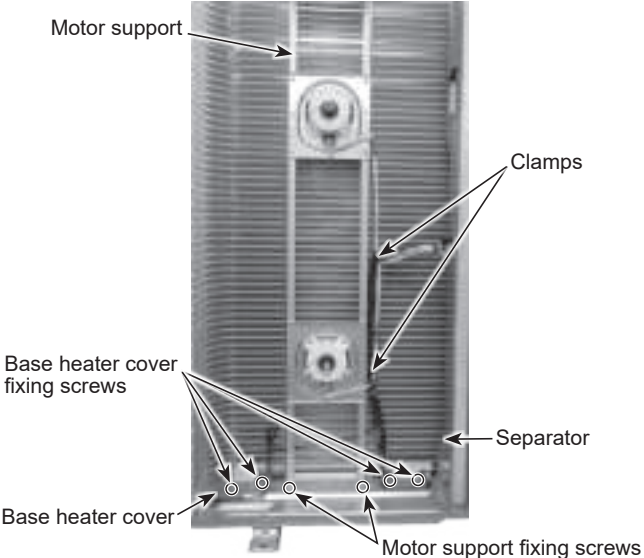
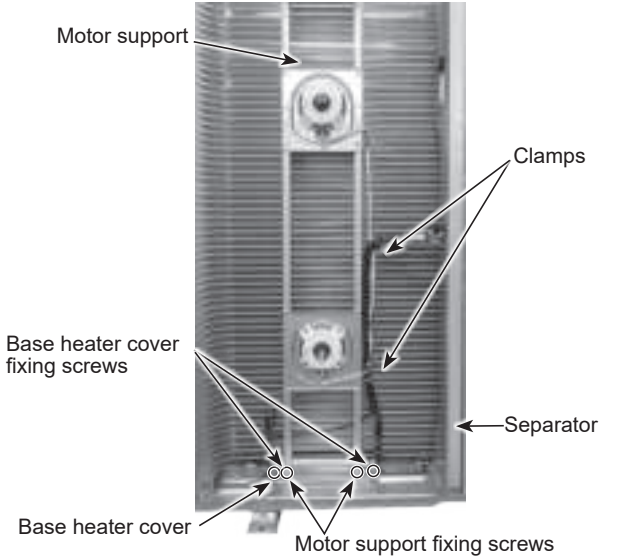
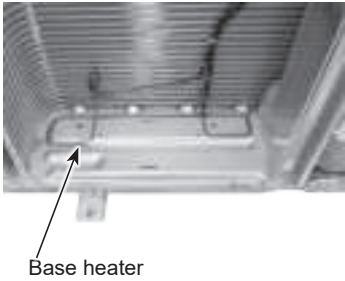
AK42/48



PROCEDURE	PHOTOS/FIGURES
12. Removing the reactor (DCL) (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Remove the electrical parts box. (See Photo 4) (4) Remove the 6 reactor fixing screws (4 × 10) and remove the reactors. Note 1: The reactor and capacitor is attached to the rear of the electrical parts box. Note 2: The 3 pieces of reactors to be replaced must have the same color of sticker. (Green, Orange, or Blue)	Photo 12  Electrical parts box Reactor fixing screws Reactors (DCL)
13. Removing the compressor (MC) (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Remove the screws on the front panel (2 screws on the top, 3 screws on the bottom, and 2 screws on the right). Then slide the front panel upward for removal. (4) Remove the electrical parts box. (See Photo 4) (5) Remove the cover panel front. (Refer to procedure 8) (6) Remove the cover panel rear. (Refer to procedure 8) (7) Remove the valve bed. (Refer to procedure 8) (8) Remove the side panel (R). (Refer to procedure 8) (9) Remove 1 separator fixing screws (4 × 10) and move the separator to the fan side. Make sure that the separator is not in contact with the fan. (See Photo 14) (10) Remove the comp. felt for the compressor. (11) Recover refrigerant. (12) Remove the welded pipe of compressor inlet and outlet then remove the compressor. (See Photo 15) (To install the compressor, tilt the outdoor unit backward so that the inlet and outlet pipes are facing upward. This allows you to easily connect the unit to the compressor.) (13) Remove the 3 points of the compressor fixing nut using a spanner or an adjustable wrench. (14) Remove the welded pipe of the compressor inlet and outlet and then remove the compressor. Note: Recover refrigerant without spreading it in the air.	Photo 13 AK24/30/36  Valve bed Compressor (MC) Power receiver Comp. felt Receiver leg Receiver leg fixing screws Compressor fixing nuts Separator AK42/48  Valve bed Compressor (MC) Power receiver Receiver leg Receiver leg fixing screws Comp. felt Compressor fixing nuts Separator

PROCEDURE	PHOTOS/FIGURES
Photo 14  Separator	Photo 15 AK24/30/36  Cutting positions AK42/48  Cutting positions
14. Removing the power receiver (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Remove the electrical parts box. (See Photo 4) (4) Remove the cover panel front. (Refer to procedure 8) (5) Remove the cover panel rear. (Refer to procedure 8) (6) Remove the valve bed. (Refer to procedure 8) (7) Remove the side panel (R). (Refer to procedure 8) (8) Recover refrigerant. (9) Remove the 4 welded pipes of power receiver inlet and outlet. (See Photo 16) (10) Remove 2 receiver leg fixing screws (4 × 10) (See Photo 13) Note: Recover refrigerant without spreading it in the air.	Photo 16 AK24/30/36  Pipes of power receiver AK42/48  Pipes of power receiver

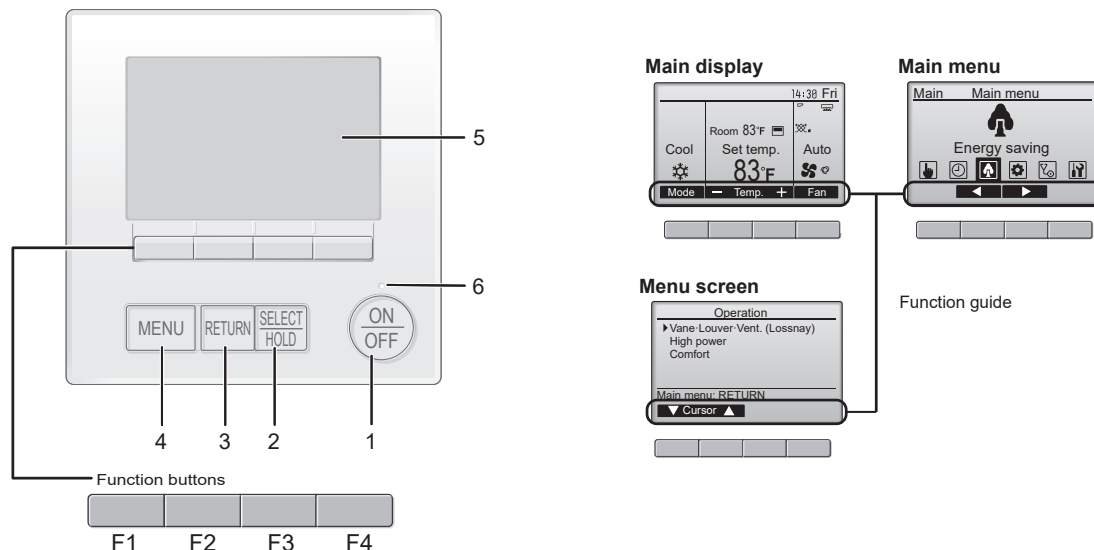


PROCEDURE	PHOTOS/FIGURES
16. Removing the base heater (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Remove the upper 2 screws (5 × 12) fixing the motor support, the lower 3 screws (5 × 12) fixing the base and the 2 screws (4 × 10) fixing the separator to detach the front panel. (See Photo 1) (4) Remove a nut (for right handed screw of M6) to detach the propeller. (See Photo 2) (5) Remove all of the following connectors from controller circuit board; <Diagram symbol in the connector housing> • Fan motor (CNF1, CNF2) • Base heater (SV2) Pull out the disconnected wire from the electrical parts box. (See Photo 4) (6) Loosen the wire clamps on the side of the motor support and separator. (7) Remove the 2 motor support fixing screws (5 x 12), then remove the motor support with fan motor still attached. (See Photo 17) (8) For AK24/30/36 Remove the 4 base heater cover fixing screws (4 x 10), then remove the base heater cover. For AK42/48 Remove the 2 base heater support fixing screws (4 x 10), then remove the base heater support. (9) Remove the base heater. (See Photo 18) Note: 1. Tighten the propeller fan with a torque of 5.7 ± 0.3 N·m [4.2 ± 0.2 ft = lbs] 2. Rotate the propeller fan and make sure that the base heater and the lead wires do not interfere with the movement of the propeller fan.	Photo 17 AK24/30/36  AK42/48  Photo 18 

15-1. Remote controller functions

15-1-1. PAR-42MAAUB

Controller interface



Note:

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

- [ON/OFF] button**
Press to turn ON/OFF the indoor unit.
 - [SELECT/HOLD] button**
Press to save the setting.
When the main menu is displayed, pressing this button will enable/disable the [HOLD] function.
 - [RETURN] button**
Press to return to the previous screen.
 - [MENU] button**
Press to open the main menu.
 - Backlit LCD**
Operation settings will appear.
When the backlight is off, pressing any button, except for the [ON/OFF] button, turns the backlight on, and it will stay lit for a certain period of time depending on the screen.
 - ON/OFF lamp**
This lamp lights up in green while the unit is in operation. It blinks while the remote controller is starting up or when there is an error.
- F1: Function button 1**
Main display: Press to change the operation mode.
Menu screen: The button function varies depending on the screen.
- F2: Function button 2**
Main display: Press to decrease temperature.
Main menu: Press to move the cursor left.
Menu screen: The button function varies depending on the screen.
- F3: Function button 3**
Main display: Press to increase temperature.
Main menu: Press to move the cursor right.
Menu screen: The button function varies depending on the screen.
- F4: Function button 4**
Main display: Press to change the fan speed.
Menu screen: The button function varies depending on the screen.

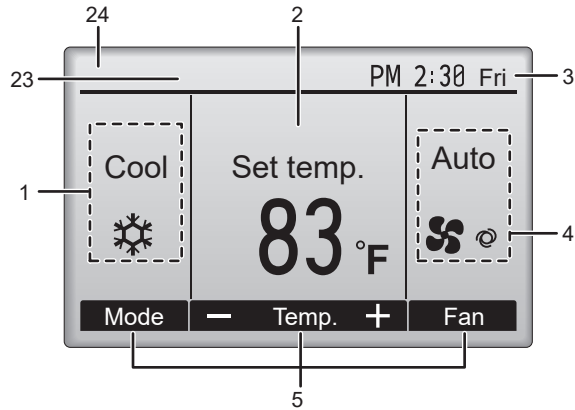
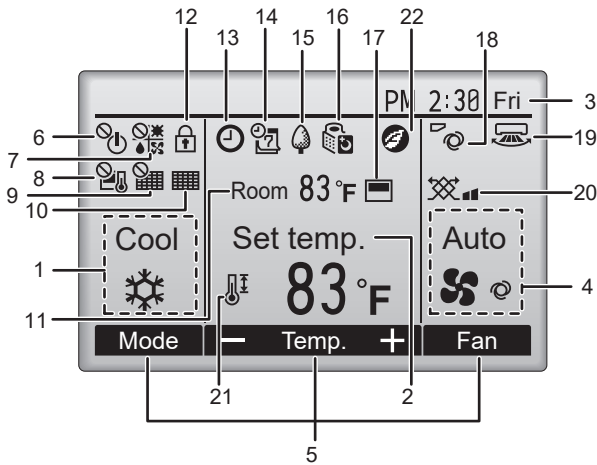
Display

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

■ [Full] mode

All icons are displayed for explanation.

■ [Basic] mode



Note:

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

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

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

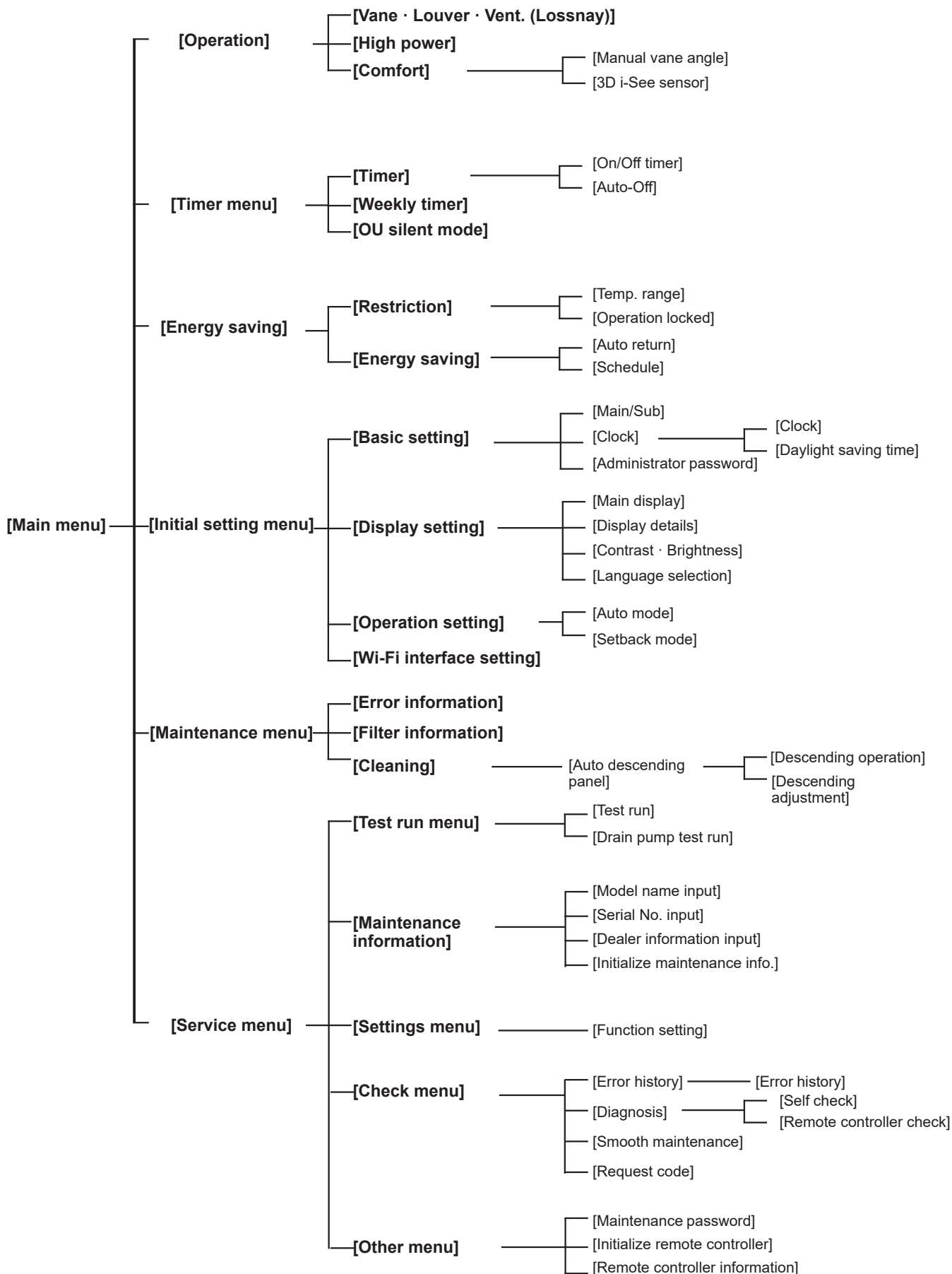
Menu structure

Press [MENU] button.

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

Note:

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



Main menu list

[Main menu]	Setting and display items		Setting details
[Operation]	[Vane · Louver · Vent. (Lossnay)]		Use to set the vane angle. • Select a desired vane setting. Use to turn on/off the louver. • Select a desired setting from [On] and [Off]. Use to set the amount of ventilation. • Select a desired setting from [Off], [Low], and [High].
	[High power] *3		Use to reach the comfortable room temperature quickly. • Units can be operated in the High-power mode for up to 30 minutes.
	[Comfort]	[Manual vane angle]	• Use to fix each vane angle. Horizontal air direction • Sets the horizontal airflow direction (vane) of each unit.
		[3D i-See sensor]	Use to set the following functions for 3D i-See sensor. • Air distribution • Energy saving option • Seasonal airflow
[Timer]	[Timer]	[On/Off timer] *1	Use to set the operation ON/OFF times. • Time can be set in 5-minute increments.
		[Auto-Off]	Use to set the Auto-Off time. • Time can be set to a value from 30 to 240 in 10-minute increments.
	[Weekly timer] *1, *2		Use to set the weekly operation ON/OFF times. • Up to 8 operation patterns can be set for each day. (Not valid when [On/Off timer] is enabled.)
	[OU silent mode] *1, *3		Use to set the time periods in which priority is given to quiet operation of outdoor units over temperature control. Set the Start/Stop times for each day of the week. • Select the desired silent level from normal, middle, and quiet.
[Energy saving]	[Restriction]	[Temp. range] *2	Use to restrict the preset temperature range. • Different temperature ranges can be set for different operation modes.
		[Operation locked]	Use to lock selected functions. • The locked functions cannot be operated.
	[Energy saving]	[Auto return] *2	Use to get the units to operate at the preset temperature after performing energy saving operation for a specified time period. • Time can be set to a value from 30 and 120 in 10-minute increments. (This function will not be valid when the preset temperature ranges are restricted.)
		[Schedule] *1, *3	Set the start/stop times to operate the units in the energy saving mode for each day of the week, and set the energy saving rate. • Up to 4 energy saving operation patterns can be set for each day. • Time can be set in 5-minute increments. • Energy saving rate can be set to a value from 0% or 50 to 90% in 10% increments.
[Initial setting]	[Basic setting]	[Main/Sub]	When connecting 2 remote controllers, one of them needs to be designated as a sub controller.
		[Clock]	Use to set the current time.
		[Daylight saving time]	Set the daylight saving time.
		[Administrator password]	The administrator password is required to make the settings for the following items. • [Timer] setting • [Energy saving] setting • [Weekly timer] setting • [Restriction] setting • [OU silent mode] setting
	[Display setting]	[Main display]	Use to switch between [Full] and [Basic] modes for the main display, and use to change the background colors of the display to black.
		[Display details]	Make the settings for the remote controller related items as necessary. [Clock]: The initial settings are [Yes] and [24h] format. [Temperature]: Set to either celsius (°C) or fahrenheit (°F). [Room temp.]: Set to Show or Hide. Auto mode: Set Auto mode display or Only Auto display.
		[Contrast · Brightness]	Use to adjust screen contrast and brightness.
		[Language selection]	Use to select the desired language.
	[Operation setting]	[Auto mode]	Whether or not to use [Auto mode] can be selected by using the button. This setting is valid only when indoor units with [Auto mode] function are connected.
		[Setback mode]	Whether or not to use [Setback mode] can be selected by using the button. This setting is valid only when indoor units with [Setback mode] function are connected.
[Maintenance]	[Error information]		Use to check error information when an error occurs. • Check code, error source, refrigerant address, model name, manufacturing number, contact information (dealer's phone number) can be displayed. (The model name, manufacturing number, and contact information need to be registered in advance to be displayed.)
	[Filter information]		Use to check the filter status. • The filter sign can be reset.
	[Cleaning]	[Auto descending panel]	Use to lift and lower the auto descending panel (Optional parts).

[Main menu]	Setting and display items		Setting details
[Service]	[Test run]		Select [Test run] from [Service menu] to bring up the [Test run menu]. • [Test run] • [Drain pump test run]
	[Input maintenance info.]		Select [Input maintenance Info.] from [Service menu] to bring up [Maintenance information] screen. The following settings can be made from [Maintenance information] screen. • [Model name input] • [Serial No. input] • [Dealer information input] • [Initialize maintenance info.]
	[Settings]	[Function setting]	Make the settings for the indoor unit functions via the remote controller as necessary.
	[Check]	[Error history]	Display the error history and execute [Delete error history?].
		[Diagnosis]	[Self check]: Error history of each unit can be checked via the remote controller. [Remote controller check]: When the remote controller does not work properly, use the remote controller checking function to troubleshoot the problem.
		[Smooth maintenance] *3	Use to display the maintenance data of indoor/outdoor units.
		[Request code] *3	Use to check operation data such as thermistor temperature and error information.
	[Others]	[Maintenance password]	Use to change the maintenance password.
		[Initialize remote controller]	Use to initialize the remote controller to the factory shipment status.
		[Remote controller information]	Use to display the remote controller model name, software version, and serial number.

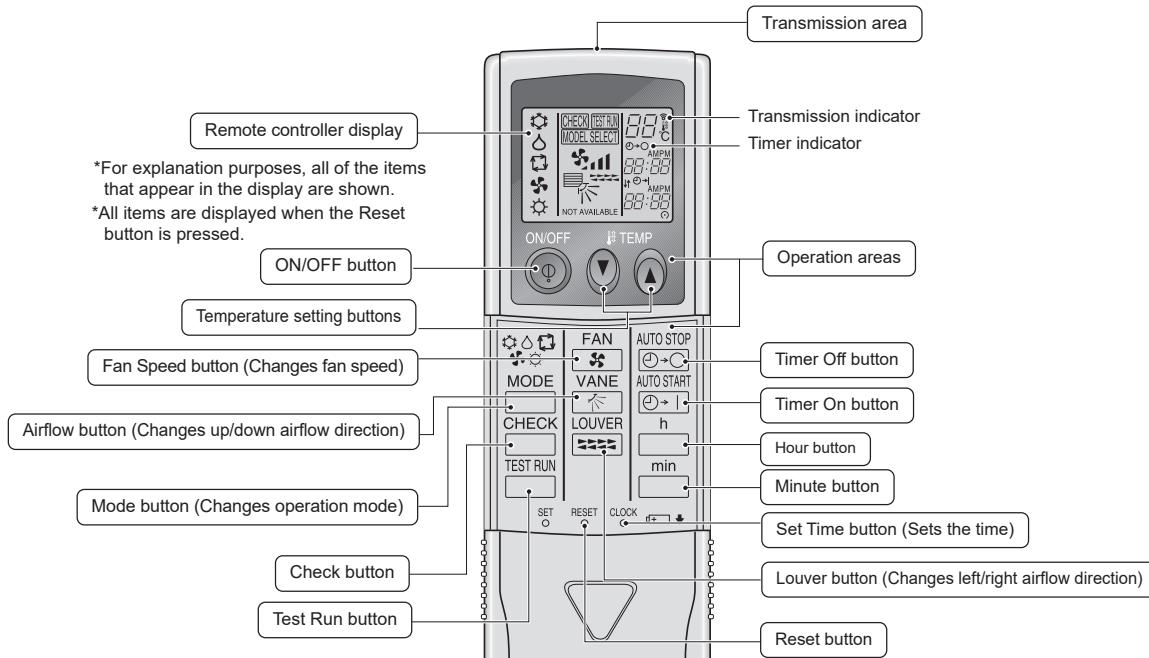
*1. Clock setting is required.

*2. 1°C (2°F) increments.

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

15-1-2. PAR-FL32MA

Controller interface

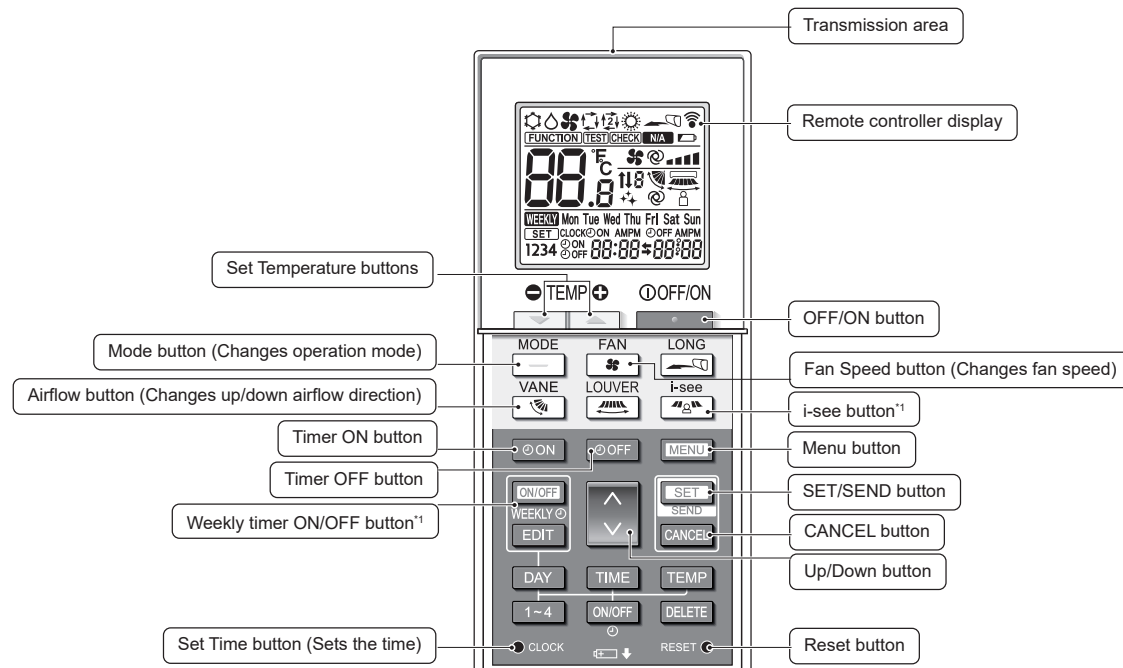


Instructions for use

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

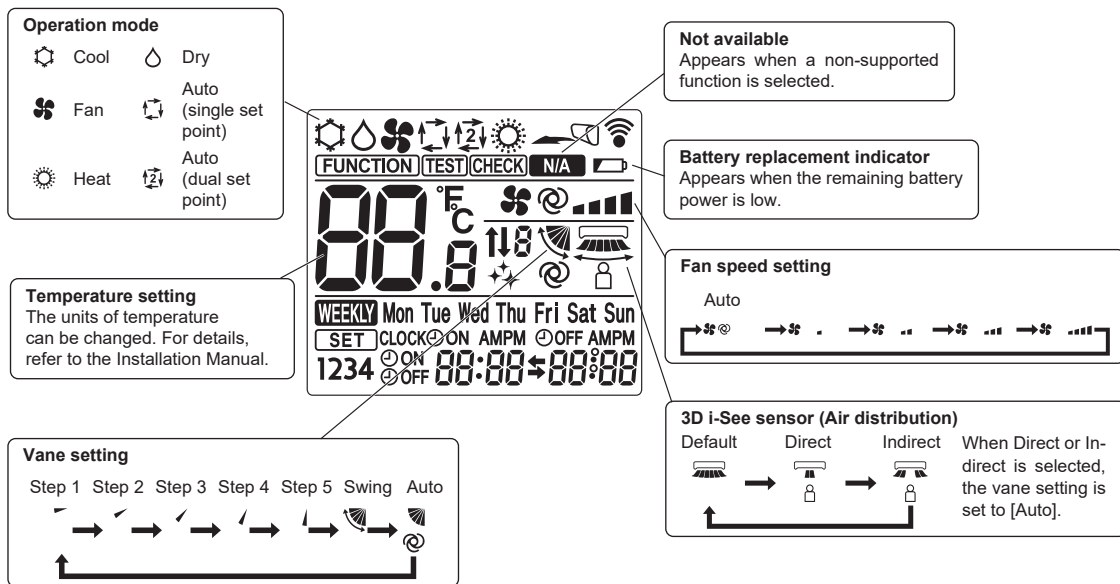
15-1-3. PAR-SL101A-E

Controller interface



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

Display



15-2. [Error information]

Operating instructions

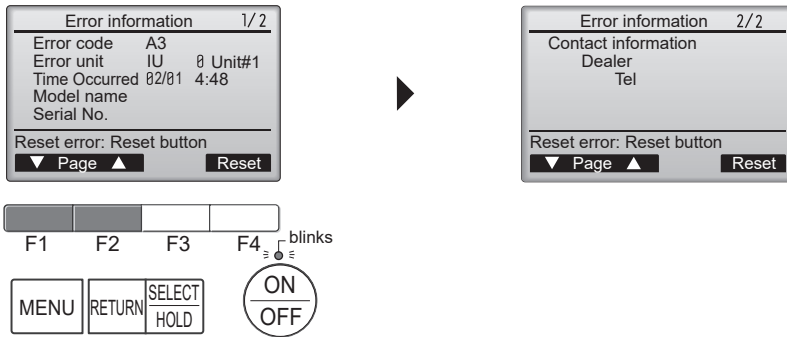
■ How to check the error information when an error occurs

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

1. Check the error information

Check code, error unit, refrigerant address, date and time of occurrence, model name, and serial number will appear. The model name and serial number will appear only if the information has been registered.

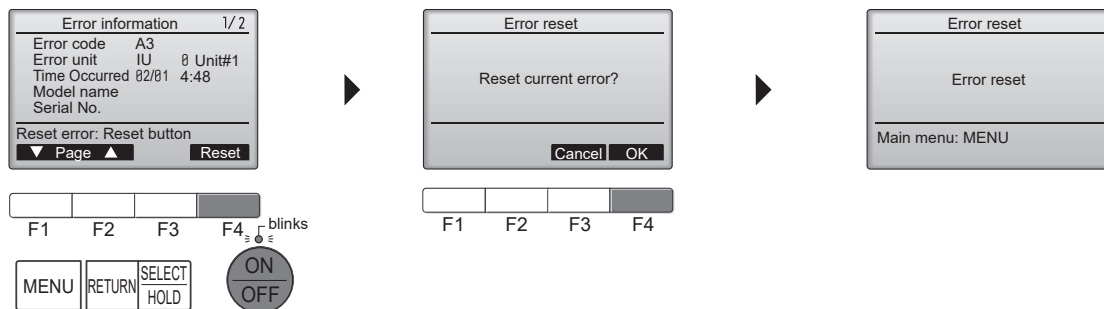
- Press F1 or F2 button to go to the next screen.
- Contact information (dealer's phone number) will appear if the information has been registered.



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

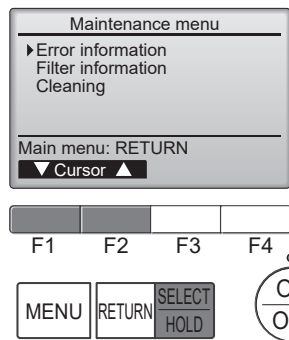
Note:

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



■ How to check the error information later

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



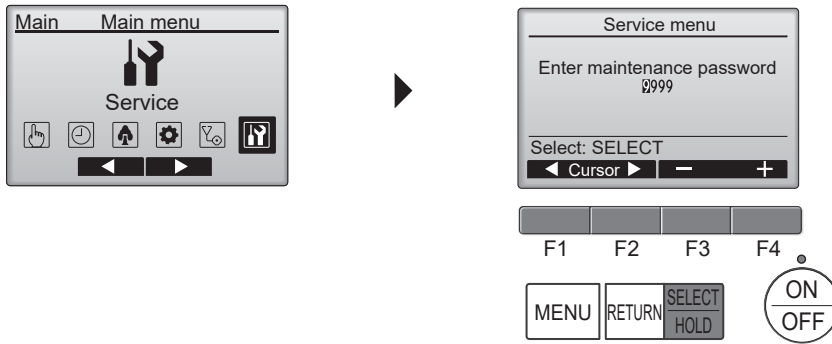
15-3. [Service menu]

Note:

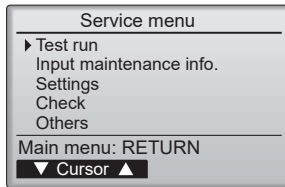
- Maintenance password is required to set each item in the service menu.

Operating instructions

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



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



Notes:

- The initial maintenance password is "9999". Change the default password as necessary to prevent unauthorized access. Have the password available for those who need it.
- If you forget your maintenance password, you can initialize the password to the default password "9999" by pressing and holding F1 button for 10 seconds on the maintenance password setting screen.
- Air conditioning units need to be stopped depending on the item you want to set. Remote controller might not be used when the system is centrally controlled. The following screen will appear in this case.



Notes:

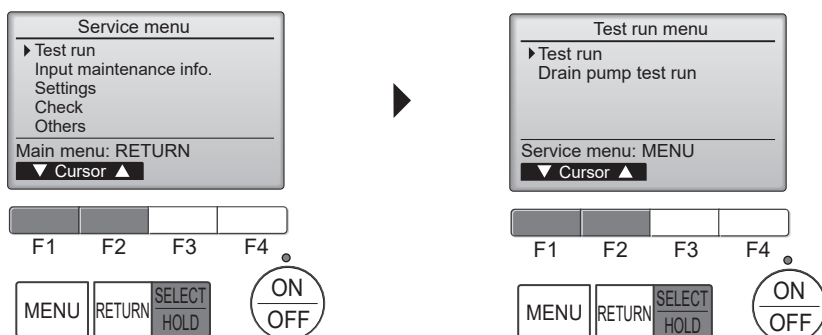
- To go back to [Service menu], press [MENU] button.
- To return to the previous screen, press [RETURN] button.

15-4. [Test run]

15-4-1. PAR-42MAAUB

Operating instructions

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



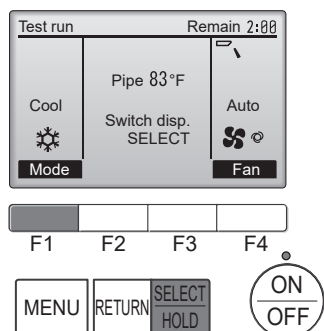
■ Test run operation

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

Cooling mode: Check the cold air blows out.

Heating mode: Check the heat blows out.

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

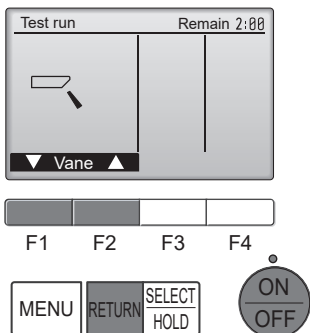


■ Auto vane check

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

Notes:

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



15-4-2. PAR-FL32MA

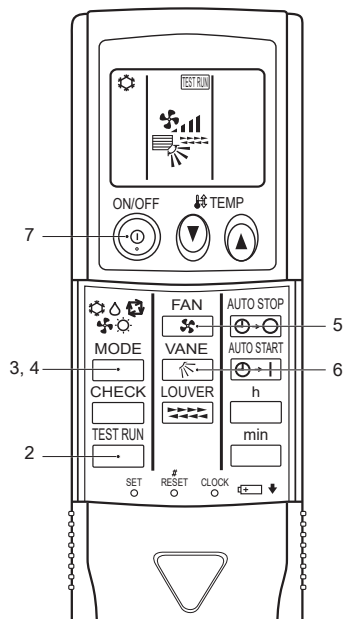
Measure an impedance between the power supply terminal block on the outdoor unit and ground with a 500 V Megger and check that it is equal to or greater than 1.0 MΩ.

Operating instructions

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

Notes:

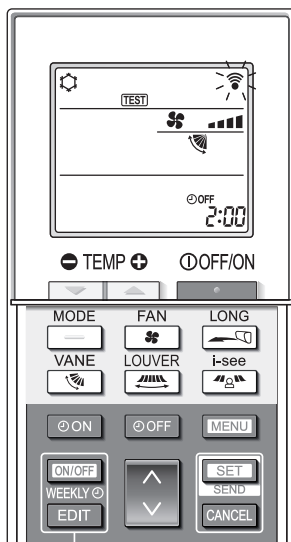
- Point the remote controller towards the indoor unit receiver to perform steps 2 to 7.
- It is not possible to run in the fan, the dry or the auto mode.



15-4-3. PAR-SL101A-E

Operating instructions

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



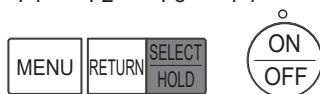
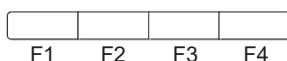
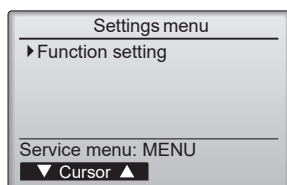
15-5. [Function setting]

15-5-1. PAR-42MAAUB

Operating instructions

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

[Function setting] screen will appear.

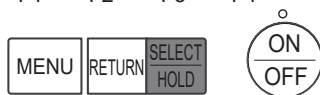
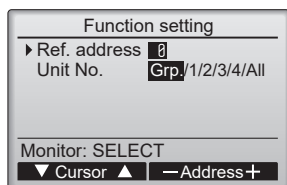


2. Set the indoor unit refrigerant addresses and indoor numbers

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

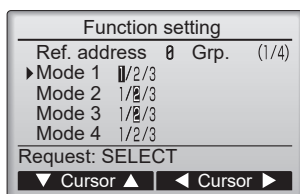
Note: Checking the indoor unit No.

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



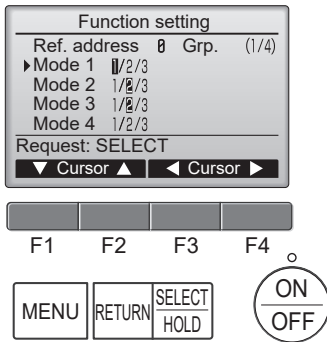
3. Check the current settings

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



4. Change the current settings

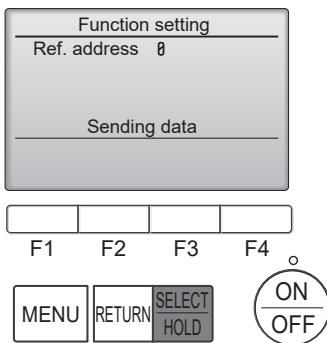
- Use F1 or F2 button to move the cursor to select the mode number, and change the setting number with F3 or F4 button.



5. Complete the function settings

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

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



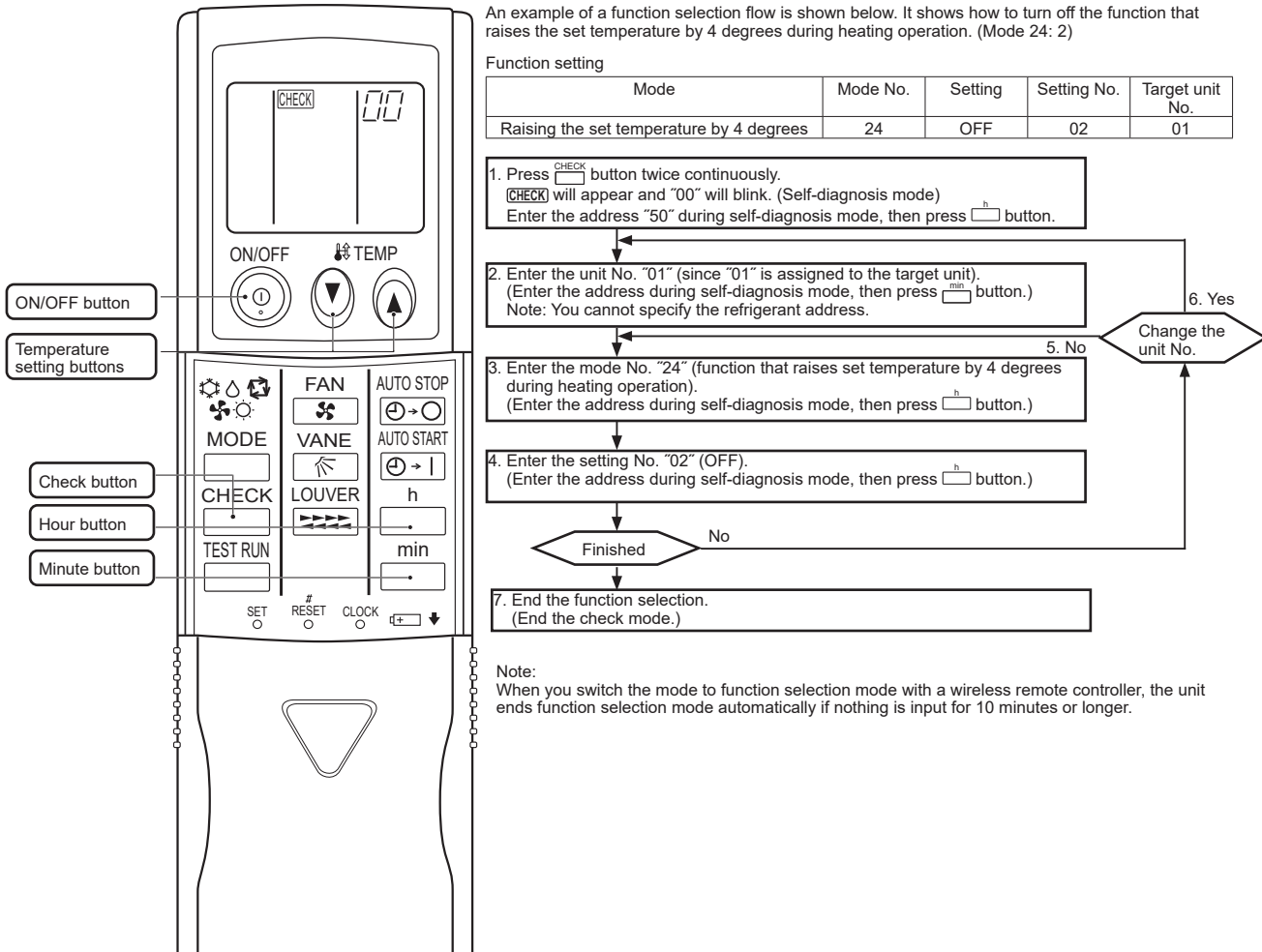
Notes:

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

15-5-2. PAR-FL32MA

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

An example of function selection flow



Operating instructions

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

Notes:

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

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

Notes:

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

4. Select the setting number.

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

Notes:

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

5. Repeat steps 3 and 4 to make other function setting on the same unit.

6. Repeat steps 2 to 4 to change the unit and make function settings on it.

7. Complete the function settings

- Press  button.

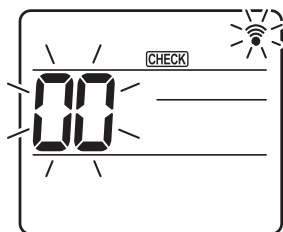
Note:

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

15-5-3. PAR-SL101A-E**Operating instructions**

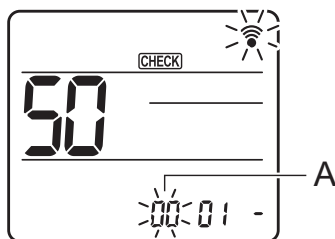
1. Go to the function select mode.

- Press  button for 5 seconds. (Start this operation from the status of remote controller display turned off.)
 appears on the display and "00" blinks.
- Press  button to enter "50".
- Direct the wireless remote controller toward the receiver of the indoor unit and press  button.



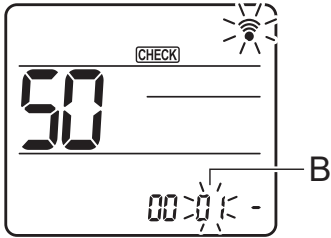
2. Set the unit number.

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

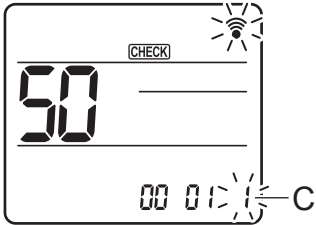


3. Select a mode

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



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



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

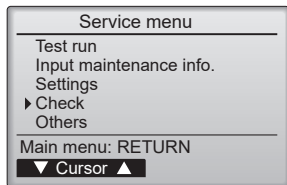
Note:

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

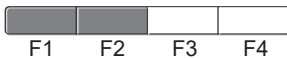
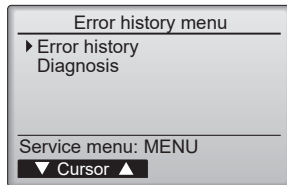
15-6. [Error history]

Operating instructions

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



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



- 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	
E4	0-1	12/04/20	12:34
E4	0-1	12/04/20	12:34
E4	0-1	12/04/20	12:34
E4	0-1	12/04/20	12:34

Check menu: RETURN
 ▼ Page ▲ Delete

- Delete the error history.
 - Press F4 button [Delete].
A confirmation screen will appear asking if you want to delete the error history.
 - Press F4 button [OK] to delete the history.
[Error history deleted] will appear on the screen.
 - Press [RETURN] button to go back to [Check menu] screen.

Error history

Delete error history?

Cancel OK



Error history

Error history deleted

Check menu: RETURN

15-7. Self-diagnosis

15-7-1. PAR-42MAAUB

Operating instructions

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

Diagnosis

▶ Self check
Remote controller check

Service menu: MENU
 ▼ Cursor ▲

F1 F2 F3 F4

MENU RETURN SELECT
HOLD

ON
OFF

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

Self check

Ref. address 0

Select: SELECT
 -Address+



Self check

Ref. address 0

Error P4 Unt # 1 Grp.IC

Return: RETURN Reset

<Error history is shown.>

Self check

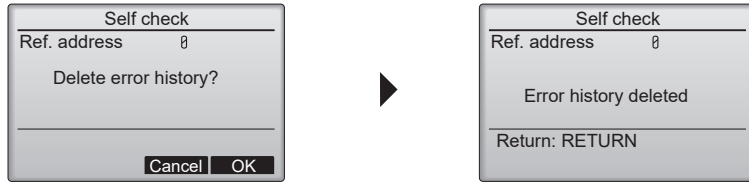
Ref. address 0

Error -- Unt# - Grp. --

Return: RETURN Reset

<When there is no error history.>

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



Notes:

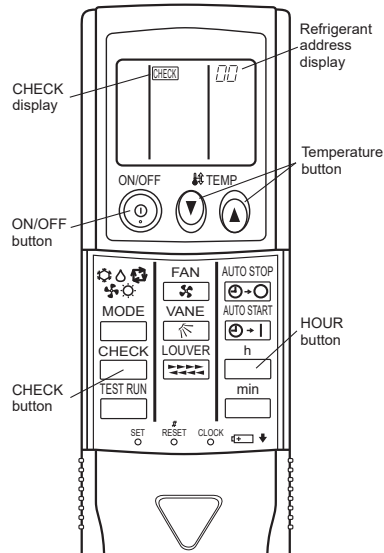
- To go back to [Service menu], press [MENU] button
- To return to the previous screen, press [RETURN] button

15-7-2. PAR-FL32MA

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

Operating instructions

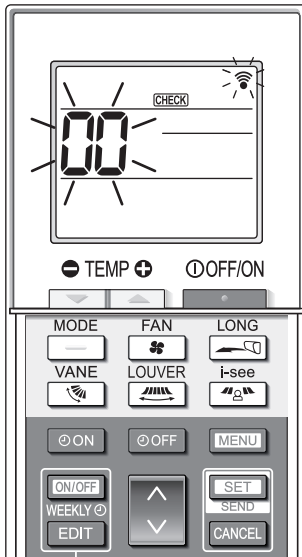
1. Press  button twice.
 appears, and the refrigerant address "00" blinks.
Make sure that the remote controller's display has stopped before continuing.
2. Press   buttons to select the refrigerant address of the indoor unit for self-diagnosis.
Set the address of the indoor unit that is to be self-diagnosed.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



15-7-3. PAR-SL101A-E

Operating instructions

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

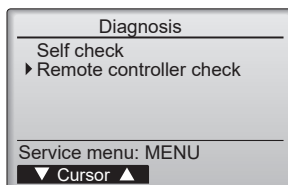


15-8. [Remote controller check]

Operating instructions

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

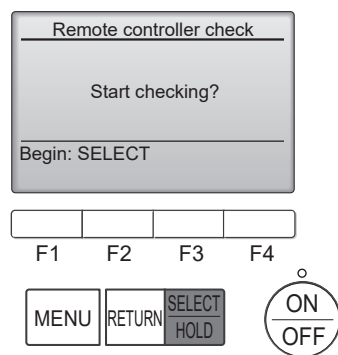
1. Go to [Remote controller check] screen.
 - Select [Service] from [Main menu], and press [SELECT] button.
 - Select [Check] from [Service menu], and press [SELECT] button.
 - Select [Diagnosis] from [Check menu], and press [SELECT] button.
 - Select [Remote controller check] with F1 or F2 button, and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



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

Notes:

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



3. Check the result of the remote controller check.
See the following descriptions for each result:

[OK]:

- The remote controller has no problem. Check other parts to find problems.

[E3], [6832]:

- There is noise on the transmission line, or the indoor unit or another remote controller is faulty. Check the transmission line and the other remote controllers.

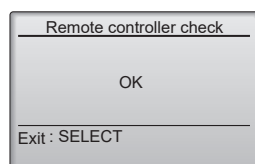
[NG] (ALL0, ALL1):

- Send-receive circuit fault. The remote controller needs to be replaced.

[ERC]:

- The number of data errors is the discrepancy between the number of bits in the data transmitted from the remote controller and that of the data that was actually transmitted over the transmission line. If data errors are found, check the transmission line for external noise interference.

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



Remote controller check results screen

Note:

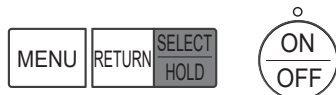
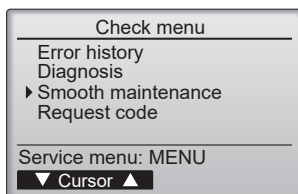
- Check the remote controller display and see if anything is displayed (including lines). Nothing will appear on the remote controller display if the correct voltage (8.5 – 12 VDC) is not supplied to the remote controller. If this is the case, check the remote controller wiring and indoor units.

15-9. [Smooth Maintenance]

Operating instructions

1. Go to [Smooth maintenance] screen.

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



2. Set the refrigerant address and the stable mode.

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

Note:

- Stable mode will take approx. 20 minutes.

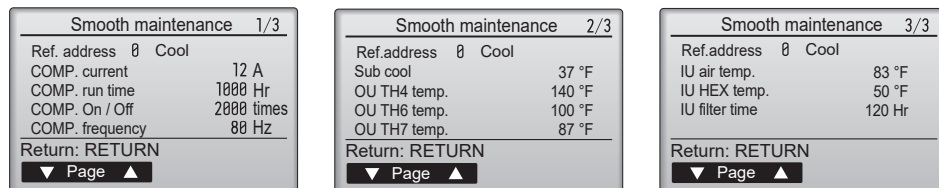


3. The operation data will appear.

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

Note:

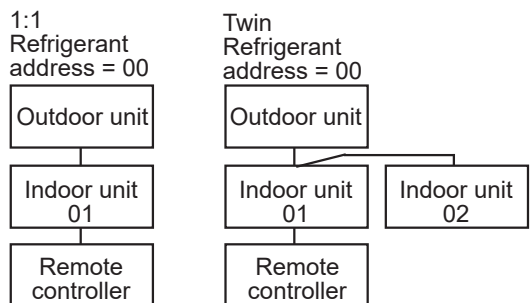
- To go back to [Service menu], press [MENU] button
- To return to the previous screen, press [RETURN] button



■ Refrigerant address

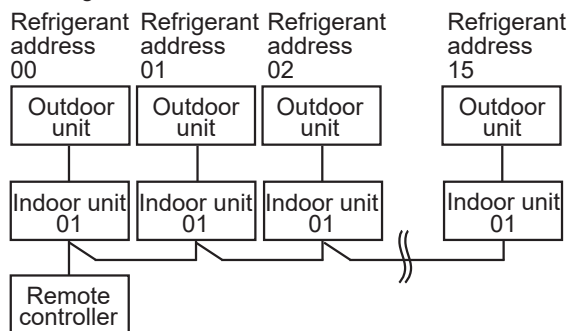
- Single refrigerant system

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



- Multi refrigerant system (group control)

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

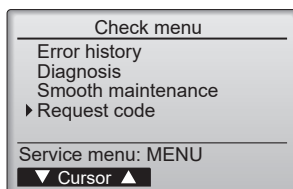


15-10. [Request code]

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

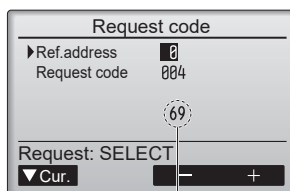
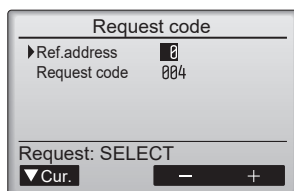
1. Go to [Request code] screen.

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



2. Set the refrigerant address and the request code.

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



Request code: 004
Discharge temperature: 69°F

mitsubishi electric corporation

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

MANUEL DE SERVICE R454B

N° OCH870
ÉDITION RÉVISÉE-A

[Nom du modèle]

PUZ-AK24NLHZ

PUZ-AK30NLHZ

PUZ-AK36NLHZ

PUZ-AK42NLHZ

PUZ-AK48NLHZ

SUZ-AK24NLHZ

SUZ-AK30NLHZ

SUZ-AK36NLHZ

SUZ-AK48NLHZ

[Réf. service]

PUZ-AK24NLHZ-U1
PUZ-AK30NLHZ-U1
PUZ-AK36NLHZ-U1
PUZ-AK42NLHZ-U1
PUZ-AK48NLHZ-U1
SUZ-AK24NLHZ-U1
SUZ-AK30NLHZ-U1
SUZ-AK36NLHZ-U1
SUZ-AK48NLHZ-U1

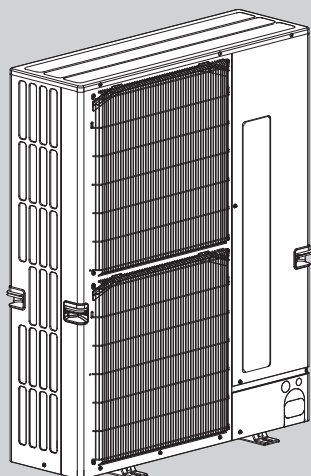
Remarque :

- Ce manuel décrit les données de service des appareils extérieurs uniquement.

Révision :

- Certaines descriptions ont été modifiées dans l'ÉDITION RÉVISÉE-A.

OCH870 n'est plus en vigueur.



PUZ-AK24NLHZ

PUZ-AK30NLHZ

PUZ-AK36NLHZ

PUZ-AK42NLHZ

PUZ-AK48NLHZ

SUZ-AK24NLHZ

SUZ-AK30NLHZ

SUZ-AK36NLHZ

SUZ-AK48NLHZ

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CATALOGUE DE PIÈCES (OCB870)

MANUEL D'ENTRETIEN DE L'APPAREIL INTÉRIEUR

Nom du modèle	Réf. service	Manuel de service n° Catalogue de pièces n°
PLA-AE12/18/24/30/36/42/48NL	PLA-AE12/18/24/30/36/42/48NL-U1	OCH856 OCB856
PCA-AK24/30/36/42NL	PCA-AK24/30/36/42NL-U1	OCH860 OCB860
PKA-AK24/30/36NL	PKA-AK24/30/36NL-U1	OCH859 OCB859
PEAD-AA12/18/24/30/36/42NL	PEAD-AA12/18/24/30/36/42NL-U1	HWE24030 BWE024030
PAA-AA/BA/CA18/24/30/36/42NL	—	MD-2025-K010
PVA-AA24/30/36/42/48NL	PVA-AA24/30/36/42/48NL-U1	
SVZ-AP24/30/36/48NL	SVZ-AP24/30/36/48NL-U1	

SIGNIFICATION DES SYMBOLES AFFICHÉS SUR L'APPAREIL

	AVERTISSEMENT (Risque d'incendie)	Cet appareil utilise un réfrigérant inflammable. Si le réfrigérant fuit et entre en contact avec du feu ou une pièce chauffante, il crée un gaz nocif et il y a un risque d'incendie.
	Lisez attentivement les INSTRUCTIONS D'INSTALLATION avant d'utiliser l'appareil.	
	Le personnel d'entretien est tenu de lire attentivement les INSTRUCTIONS D'INSTALLATION et le MANUEL D'INSTALLATION avant d'utiliser l'appareil.	
	Vous trouverez de plus amples informations dans les INSTRUCTIONS D'INSTALLATION, le MANUEL D'INSTALLATION, etc.	

2-1. VEILLEZ TOUJOURS À LA SÉCURITÉ

Avant d'accéder au bornier, tous les circuits d'alimentation doivent être déconnectés.

Préparation avant le service de réparation.

- Préparez les outils appropriés.
- Préparez les protections adéquates.
- Prévoyez une ventilation adéquate.
- Après avoir arrêté le fonctionnement du climatiseur, coupez le disjoncteur d'alimentation.
- Laissez le condensateur se décharger avant d'effectuer des travaux sur les composants électriques.

Précautions à prendre lors du service de réparation.

- N'effectuez pas les travaux concernant les composants électriques avec des mains mouillées.
- Ne versez pas d'eau dans les composants électriques.
- Ne touchez pas le réfrigérant.
- Ne touchez pas les zones chaudes ou froides pendant le cycle de réfrigération.
- Lorsque la réparation ou l'inspection du circuit doit être effectuée sans couper le courant, faites très attention à ne pas toucher les pièces sous tension.
- Lors de l'ouverture ou de la fermeture de la vanne à des températures inférieures au point de congélation, le réfrigérant peut jaillir de l'espace entre la tige et le corps de la vanne, ce qui peut entraîner des blessures.
- Ce modèle est équipé d'un bouchon fusible. Le bouchon fusible fonctionne lorsque la température dépasse 158°F [70°C], et il y a un risque d'accidents ou de catastrophes, comme l'éjection de métal en fusion ou la fuite de réfrigérant. Lorsque vous retirez le tuyau de réfrigérant, veillez à ne pas exposer le bouchon fusible à la flamme du chalumeau à braser et à ne pas lui transmettre de chaleur.

2-2. PRÉCAUTIONS RELATIVES AU NOUVEAU RÉFRIGÉRANT

Précautions pour les appareils utilisant le réfrigérant R454B

Utilisez des tuyaux de réfrigérant neufs.

En cas d'utilisation des tuyaux existants pour le R22, R410A, faites attention à ce qui suit :

- Veillez à nettoyer les tuyaux et à vous assurer que l'intérieur est propre.
- Remplacez l'écrou évasé par celui fourni avec ce produit. Utilisez un tuyau nouvellement évasé.
- Évitez d'utiliser des tuyaux minces.

Assurez-vous que l'intérieur et l'extérieur du tuyau de réfrigérant sont propres et ne contiennent pas de contaminants comme du soufre, des oxydes, de la saleté, des particules de rasage, etc., qui sont dangereux pour le cycle de réfrigérant. En outre, utilisez des tuyaux dont l'épaisseur est spécifiée.

La contamination à l'intérieur du tuyau de réfrigérant peut entraîner la détérioration de l'huile réfrigérante, etc.

Stockez la tuyauterie à utiliser à l'intérieur pendant l'installation et gardez les deux extrémités de la tuyauterie scellées jusqu'au moment du brasage. (Laissez les coudes, etc., dans leur emballage.)

Si des saletés, de la poussière ou de l'humidité pénètrent dans le cycle du réfrigérant, cela peut entraîner une détérioration de l'huile réfrigérante ou un dysfonctionnement du compresseur.

L'huile réfrigérante appliquée sur les raccords évasés et à bride doit être de l'huile ester, de l'huile éther ou de l'huile alkylbenzène en petite quantité.

La pénétration d'une grande quantité d'huile minérale peut entraîner la détérioration de l'huile réfrigérante, etc.

Chargez le réfrigérant à partir de la phase liquide du cylindre de réfrigérant.

Si le réfrigérant est chargé à partir de la phase gazeuse, un changement de composition peut se produire dans le réfrigérant et l'efficacité sera réduite.

N'utilisez pas de réfrigérant autre que R454B.

Si un autre réfrigérant (R22, R410A, etc.) est utilisé, le chlore présent dans le réfrigérant peut entraîner une détérioration de l'huile réfrigérante, etc.

Utilisez une pompe à vide équipée d'un clapet antiretour.

L'huile de la pompe à vide peut retourner dans le cycle du réfrigérant, ce qui peut entraîner une détérioration de l'huile réfrigérante, etc.

Utilisez les outils suivants, spécialement conçus pour le réfrigérant R454B.

Les outils suivants sont nécessaires pour utiliser le réfrigérant R454B.

Outils pour R454B	
Collecteur à jauge	Outil d'évasement
Tuyau flexible de charge	Jauge de réglage de la taille
Détecteur de fuite de gaz	Adaptateur de pompe à vide
Clé dynamométrique	Échelle électronique de charge de réfrigérant

Manipulez les outils avec précaution.

Si des saletés, de la poussière ou de l'humidité pénètrent dans le cycle du réfrigérant, cela peut entraîner une détérioration de l'huile réfrigérante ou un dysfonctionnement du compresseur.

N'utilisez pas de cylindre de charge.

Si un cylindre de charge est utilisé, la composition du réfrigérant changera et l'efficacité sera réduite.

Ventilez la pièce en cas de fuite de réfrigérant pendant le fonctionnement. Si le réfrigérant entre en contact avec une flamme, des gaz toxiques se dégagent.

Utilisez uniquement le réfrigérant spécifié.

N'utilisez jamais un réfrigérant autre que celui spécifié. Vous risqueriez de provoquer un éclatement, une explosion ou un incendie lors de l'utilisation, de l'entretien ou de la mise au rebut de l'appareil. Le réfrigérant adéquat est spécifié dans les manuels et sur les étiquettes fournies avec nos produits. Nous ne sommes pas responsables des défaillances mécaniques, des dysfonctionnements du système, des pannes de l'appareil ou des accidents causés par le non-respect des instructions.

[1] Avertissement pour le service

- (1) Ne modifiez pas l'appareil.
- (2) Pour les travaux d'installation et de déplacement, suivez les instructions du manuel d'installation et utilisez des outils et des composants de tuyauterie spécialement conçus pour être utilisés avec le réfrigérant spécifié dans le manuel d'installation de l'appareil extérieur.
- (3) Demandez à un revendeur ou à un technicien agréé d'installer, de déplacer et de réparer l'appareil.
- (4) Le raccord des tuyaux de réfrigérant doit être accessible pour l'entretien.
- (5) Si le climatiseur est installé dans une petite pièce ou une pièce fermée, des mesures doivent être prises pour éviter que la concentration de réfrigérant dans la pièce ne dépasse la limite de sécurité en cas de fuite. Si le réfrigérant fuit et que la limite de concentration est dépassée, il peut en résulter un risque de manque d'oxygène dans la pièce.
- (6) Éloignez les appareils à gaz, les radiateurs électriques et les autres sources de feu (sources d'inflammation) de l'endroit où l'installation, la réparation et les autres travaux sur le climatiseur seront effectués.
Si le réfrigérant entre en contact avec une flamme, des gaz toxiques se dégagent.
- (7) Lors de l'installation, du déplacement ou de l'entretien du climatiseur, utilisez uniquement le réfrigérant spécifié (R454B) pour charger les conduites de réfrigérant.
Ne le mélangez avec aucun autre réfrigérant et empêchez l'air de rester dans les conduites.
Si de l'air est mélangé avec le réfrigérant, cela peut provoquer une surpression anormale dans la conduite de réfrigérant et risque d'entraîner une explosion ou d'autres situations dangereuses.
- (8) Une fois l'installation terminée, vérifiez qu'il n'y a pas de fuites de réfrigérant. Si le réfrigérant fuit dans la pièce et entre en contact avec la flamme d'un appareil de chauffage ou d'une cuisinière portable, des gaz toxiques se dégagent.
- (9) N'utilisez pas d'alliage de soudure à basse température pour le brasage des tuyaux de réfrigérant.
- (10) Lorsque vous effectuez des travaux de brasage, veillez à ventiler suffisamment la pièce. Assurez-vous qu'il n'y a pas de matériaux dangereux ou inflammables à proximité.
Si vous effectuez le travail dans une pièce fermée, une petite pièce ou un endroit similaire, assurez-vous qu'il n'y a pas de fuites de réfrigérant avant d'effectuer le travail.
Si le réfrigérant fuit et s'accumule, il peut s'enflammer ou des gaz toxiques peuvent être libérés.
- (11) N'installez pas l'appareil dans des endroits où le réfrigérant peut s'accumuler ou dans des endroits mal ventilés, comme un demi sous-sol ou un endroit creux à l'extérieur. Le réfrigérant est plus lourd que l'air et a tendance à s'échapper de la source de la fuite.
- (12) Ne faites usage d'aucun moyen visant à accélérer le processus de dégivrage ou à nettoyer autre que ceux recommandés par le fabricant.
- (13) L'appareil doit être stocké dans une pièce qui ne contient pas de sources de feu en cours de fonctionnement (par exemple, flamme nue, appareil de gaz ou radiateur électrique en cours de fonctionnement).
- (14) Ne percez pas et ne brûlez pas l'appareil.
- (15) Sachez que les réfrigérants peuvent ne pas avoir d'odeur.
- (16) La tuyauterie de réfrigérant doit être protégée contre les dommages physiques.
- (17) L'installation de la tuyauterie doit être gardée au minimum.
- (18) Les réglementations nationales sur les gaz doivent être respectées.
- (19) Tous les joints de champ doivent être accessibles pour inspection avant d'être recouverts ou enfermés.
- (20) Veillez à ce que les ouvertures de ventilation nécessaires ne soient pas obstruées.
- (21) L'entretien doit être effectué uniquement selon les méthodes recommandées par le fabricant.
- (22) L'appareil doit être stocké dans un endroit bien ventilé où la taille de la pièce correspond à la surface spécifiée pour le fonctionnement.
- (23) Les opérations de service, d'entretien et de réparation doivent être effectuées par des techniciens agréés possédant les qualifications requises.
- (24) Veillez à assurer une ventilation appropriée afin d'éviter toute inflammation. En outre, veillez à prendre des mesures de prévention des incendies afin qu'il n'y ait pas d'objets dangereux ou inflammables dans la zone environnante.

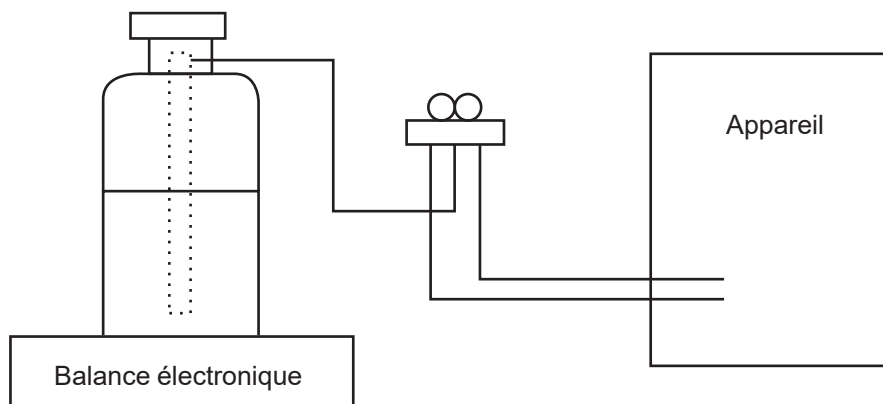
[2] Précautions à prendre pour l'entretien

- (1) Effectuez l'entretien après avoir récupéré la totalité du réfrigérant restant dans l'appareil.
- (2) Ne laissez pas le réfrigérant s'échapper dans l'air.
- (3) Après avoir effectué l'entretien, chargez le cycle avec la quantité spécifiée de réfrigérant.
- (4) Si de l'humidité ou des corps étrangers ont pénétré dans la tuyauterie de réfrigérant pendant l'entretien, veillez à les éliminer.

[3] Charge supplémentaire de réfrigérant

En cas de chargement directement à partir du cylindre

- (1) Vérifiez que le cylindre de R454B disponible sur le marché est du type à siphon.
- (2) Le chargement doit être effectué avec le cylindre du siphon placé verticalement. (Le réfrigérant est chargé à partir de la phase liquide.)



[4] Précautions à prendre pour l'appareil utilisant le réfrigérant R454B

Les procédures de travail de base sont les mêmes que pour les appareils conventionnels utilisant le réfrigérant R410A. Toutefois, portez une attention particulière aux points suivants.

(1) Informations sur l'entretien

(1-1) Vérifications dans la région

Avant de commencer à travailler sur des systèmes contenant des FLAMMABLE REFRIGERANTS, des vérifications de sécurité sont nécessaires pour s'assurer que le risque d'inflammation est réduit au minimum. Pour les réparations des systèmes de réfrigération, les points (1-3) à (1-7) doivent être remplis avant d'effectuer des travaux sur les systèmes.

(1-2) Procédure de travail

Les travaux doivent être entrepris dans le cadre d'une procédure contrôlée afin de réduire au minimum le risque de présence de gaz ou de vapeurs inflammables pendant l'exécution des travaux.

(1-3) Zone de travail générale

Tout le personnel d'entretien et les autres personnes travaillant dans la zone locale doivent être informés de la nature des travaux effectués.

Le travail dans des espaces confinés doit être évité. La zone autour de l'espace de travail doit être délimitée. Assurez-vous que les conditions à l'intérieur de la zone ont été rendues sûres par le contrôle des matériaux inflammables.

(1-4) Vérification de la présence de réfrigérant

La zone doit être contrôlée à l'aide d'un détecteur de réfrigérant approprié avant et pendant les travaux, afin de s'assurer que le technicien est conscient de l'existence d'atmosphères potentiellement toxiques ou inflammables. Assurez-vous que l'équipement de détection des fuites utilisé est adapté à l'utilisation de tous les réfrigérants applicables, c'est-à-dire qu'il ne produit pas d'étincelles, qu'il est correctement scellé ou qu'il est intrinsèquement sûr.

(1-5) Présence d'un extincteur

Si un travail à chaud doit être effectué sur l'équipement de réfrigération ou toute partie associée, un équipement d'extinction d'incendie approprié doit être disponible à portée de main.

Disposez d'un extincteur à poudre ou à CO₂ à proximité de la zone de chargement.

(1-6) Pas de sources d'inflammation

Aucune personne effectuant des travaux en rapport avec un REFRIGERATING SYSTEM impliquant la mise à nu d'une tuyauterie ne doit utiliser de sources d'allumage susceptibles d'entraîner un risque d'incendie ou d'explosion. Toutes les sources d'inflammation possibles, y compris la cigarette, doivent être suffisamment éloignées du site d'installation, de réparation, d'enlèvement et d'élimination, au cours desquels du réfrigérant peut éventuellement être libéré dans l'espace environnant. Avant le début des travaux, la zone autour de l'équipement doit être examinée pour s'assurer qu'il n'y a pas de risques d'inflammabilité ou d'inflammation. Des panneaux [No Smoking] (Interdiction de fumer) doivent être apposés.

(1-7) Zone ventilée

Assurez-vous que la zone est à l'air libre ou qu'elle est correctement ventilée avant de pénétrer dans le système ou d'effectuer un travail à chaud. Une certaine ventilation doit être maintenue pendant la durée des travaux. La ventilation doit permettre de disperser en toute sécurité tout réfrigérant libéré et, de préférence, de l'expulser dans l'atmosphère.

(1-8) Vérifications de l'équipement de réfrigération

Lorsque des composants électriques sont remplacés, ils doivent être adaptés à l'usage prévu et répondre aux spécifications correctes. Les directives de service et d'entretien du fabricant doivent être respectées à tout moment. En cas de doute, consultez le département technique du fabricant pour obtenir de l'aide.

Les contrôles suivants s'appliquent aux installations utilisant des FLAMMABLE REFRIGERANTS :

- la CHARGE DE RÉFRIGÉRANT réelle est fonction de la taille de la pièce dans laquelle les pièces contenant du réfrigérant sont installées;
- les dispositifs de ventilation et les sorties fonctionnent correctement et ne sont pas obstrués;
- le marquage de l'équipement reste visible et lisible. Les marquages et les panneaux illisibles doivent être corrigés;
- les tuyaux ou composants de réfrigération sont installés dans un endroit où ils ne risquent pas d'être exposés à une substance susceptible de corroder les composants contenant du réfrigérant, à moins que ces composants ne soient constitués de matériaux intrinsèquement résistants à la corrosion ou qu'ils ne soient protégés de manière appropriée contre la corrosion.

Suite à la page suivante.

(1-9) Vérifications des appareils électriques

La réparation et l'entretien des composants électriques comprennent les vérifications de sécurité initiales et les procédures d'inspection des composants. S'il existe une défaillance susceptible de compromettre la sécurité, aucune alimentation électrique ne doit être connectée au circuit tant que le problème n'a pas été résolu de manière satisfaisante. Si la défaillance ne peut être corrigée immédiatement, mais qu'il est nécessaire de poursuivre l'opération, une solution temporaire adéquate doit être utilisée. Cette situation doit être signalée au propriétaire de l'équipement afin que toutes les parties soient informées.

Les contrôles de sécurité initiaux doivent comprendre :

- que les condensateurs sont déchargés : cette opération doit être effectuée de manière sûre afin d'éviter tout risque d'étincelle;
- qu'aucun composant ou câblage électrique sous tension n'est exposé pendant la charge, la récupération ou la vidange du système;
- qu'il y a continuité de la mise à la terre.

(2) Réparation des composants scellés

Les composants électriques scellés doivent être remplacés.

(3) Réparation des composants intrinsèquement sûrs

Les composants intrinsèquement sûrs doivent être remplacés.

(4) Câblage

Reportez-vous au point 6.1 du manuel d'installation.

(5) Détection des réfrigérants inflammables

Reportez-vous au point 4.4 du manuel d'installation.

(6) Enlèvement et évacuation

Reportez-vous au point 1.2 du manuel d'installation.

(7) Procédures de charge

Reportez-vous au point 4.4 du manuel d'installation.

(8) Déclassement

Avant d'effectuer cette procédure, il est indispensable que le technicien connaisse parfaitement l'appareil et tous ses détails. Il est recommandé de veiller à ce que tous les réfrigérants soient récupérés en toute sécurité. Avant l'exécution de la tâche, un échantillon d'huile et de réfrigérant est prélevé au cas où une analyse serait nécessaire avant la réutilisation du réfrigérant récupéré. Il est essentiel que le courant électrique soit disponible avant le début des travaux.

a. Familiarisez-vous avec l'équipement et son fonctionnement.

b. Isolez le système électriquement.

c. Avant d'entamer la procédure, assurez-vous de ce qui suit :

- un équipement de manutention mécanique est disponible, si nécessaire, pour manipuler les cylindres de réfrigérant;
- tous les équipements de protection individuelle sont disponibles et utilisés correctement;
- le processus de récupération est supervisé à tout moment par une personne compétente;
- l'équipement de récupération et les cylindres sont conformes aux normes appropriées.

d. Videz le système de réfrigérant, si possible.

e. Si un vide n'est pas possible, fabriquez un collecteur afin que le réfrigérant puisse être retiré des différentes parties du système.

f. Assurez-vous que le cylindre se trouve sur la balance avant de procéder à la récupération.

g. Démarrez la machine de récupération et utilisez-la conformément aux instructions.

h. Ne remplissez pas excessivement les cylindres (pas plus de 80 % du volume de liquide).

i. Ne dépassez pas la pression de service maximale du cylindre, même temporairement.

j. Lorsque les bouteilles ont été correctement remplies et que le processus est terminé, assurez-vous que les bouteilles et l'équipement sont rapidement retirés du site et que toutes les vannes d'isolation de l'équipement sont fermées.

k. Le réfrigérant récupéré ne doit pas être chargé dans un autre REFRIGERATING SYSTEM avant d'avoir été nettoyé et contrôlé.

(9) Étiquetage

L'équipement doit porter une étiquette indiquant qu'il a été mis hors service et vidé de son réfrigérant. L'étiquette est datée et signée. Pour les appareils contenant des FLAMMABLE REFRIGERANTS, assurez-vous que l'équipement porte une étiquette indiquant qu'il contient un FLAMMABLE REFRIGERANTS.

(10) Récupération

Reportez-vous au point 1.2 du manuel d'installation.

[5] Outils de service

Utilisez les outils de service ci-dessous comme outils exclusifs pour le réfrigérant R454B.

N°	Nom de l'outil	Caractéristiques techniques
①	Collecteur à jauge	· Uniquement pour R454B
		· Utilisez les spécifications des raccords existants.
		· Utilisez une pression latérale de haute tension égale ou supérieure à 5,3 MPa (768,7 psi).
②	Tuyau flexible de charge	· Uniquement pour R454B
		· Utilisez une pression de 5,09 MPa (738,2 psi) ou plus.
③	Balance électronique	—
④	Détecteur de fuite de gaz	· Utilisez le détecteur pour : R134a, R407C, R410A ou R454B
⑤	Adaptateur pour le contrôle de l'inversion du flux	· Fixez-la sur la pompe à vide.
⑥	Base de la charge de réfrigérant	—
⑦	Cylindre de réfrigérant	· Uniquement pour R454B
		· Dessus du cylindre (rose)
⑦	Cylindre de réfrigérant	· Cylindre avec siphon
		—
⑧	Équipement de récupération de réfrigérant	—

2-3. PRÉCAUTIONS À PRENDRE POUR LES TRAVAUX DE TUYAUTERIE DE RÉFRIGÉRANT

Le nouveau réfrigérant R454B est adopté pour les séries d'inverseurs de remplacement. Bien que la tuyauterie de réfrigérant R454B soit la même que celle du R22/R410A, des outils spécifiques sont nécessaires pour ne pas mélanger les différents types de réfrigérants. En outre, la pression de service du R454B étant 1,6 fois plus élevée que celle du R22, les dimensions des sections évasées et des écrous évasés sont différentes.

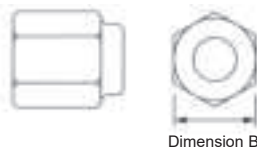
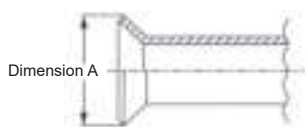
1. Épaisseur des tuyaux

La pression de travail du R454B étant plus élevée que celle du R22, veillez à utiliser une tuyauterie de réfrigérant dont l'épaisseur est indiquée ci-dessous. (N'utilisez jamais de tuyaux de 7/256 po [0,7 mm] ou moins.)

Dimensions nominales (en pouces)	Diamètre extérieur (en mm)	Épaisseur : en (mm)	
		R454B/R410A	R22
1/4	6,35	1/32 (0,8)	1/32 (0,8)
3/8	9,52	1/32 (0,8)	1/32 (0,8)
1/2	12,70	1/32 (0,8)	1/32 (0,8)
5/8	15,88	5/128 (1,0)	5/128 (1,0)
3/4	19,05	5/128 (1,0)	5/128 (1,0)

2. Dimensions de la coupe d'évasement et de l'écrou évasé

Les molécules composant le réfrigérant HFC sont plus petites que les réfrigérants conventionnels. De plus, R454B est un réfrigérant qui présente un risque de fuite plus élevé, car sa pression de service est plus élevée que celle des autres réfrigérants. Par conséquent, pour améliorer l'étanchéité et l'intensité de l'air, la dimension de l'évasement du tuyau en cuivre pour R454B a été spécifiée séparément des dimensions pour les autres réfrigérants, comme indiqué ci-dessous. La dimension B de l'écrou évasé pour R454B a été partiellement modifiée pour augmenter la résistance comme indiqué ci-dessous. Réglez correctement le tuyau en cuivre en vous référant aux dimensions de l'évasement du tuyau en cuivre pour R454B ci-dessous. Pour les tuyaux de 1/2 et 5/8 de pouce, la dimension B change. Utilisez la clé dynamométrique correspondant à chaque dimension.



Dimensions de coupe de l'évasement

Dimensions nominales (en pouces)	Diamètre extérieur (en mm)	Dimension A (° _{0.4})	
		R454B/R410A (en pouces [mm])	R22 (en mm)
1/4	6,35	11/32-23/64 [9,1]	9,0
3/8	9,52	1/2-33/64 [13,2]	13,0
1/2	12,70	41/64-21/32 [16,6]	16,2
5/8	15,88	49/64-25/32 [19,7]	19,4
3/4	19,05	59/64-15/16 [24,0]	23,3

Dimensions de l'écrou évasé

Dimensions nominales (en pouces)	Diamètre extérieur (en mm)	Dimension B	
		R454B/R410A (en pouces [mm])	R22 (en mm)
1/4	6,35	43/64 [17,0]	17,0
3/8	9,52	7/8 [22,0]	22,0
1/2	12,70	1-3/64 [26,0]	24,0
5/8	15,88	1-9/64 [29,0]	27,0
3/4	19,05	1-27/64 [36,0]	36,0

3. Outils pour R454B (Le tableau suivant indique si les outils conventionnels peuvent être utilisés ou non.)

Outils et matériaux	Utilisation	Outils R454B	Les outils R22 peuvent-ils être utilisés?	Les outils R410A peuvent-ils être utilisés?
Collecteur à jauge	Purge d'air, charge de réfrigérant et vérification du fonctionnement	Outil exclusif pour R454B	×	○
Tuyau flexible de charge		Outil exclusif pour R454B	×	○
Détecteur de fuite de gaz	Vérification des fuites de gaz	Outil pour réfrigérant HFC	×	○
Équipement de récupération de réfrigérant	Récupération de réfrigérant	Outil exclusif pour R454B	×	○
Cylindre de réfrigérant	Charge de réfrigérant	Outil exclusif pour R454B	×	×
Huile appliquée	Appliquer à la section évasée	Huile d'ester, huile d'éther et huile d'alkylbenzène (quantité minimale)	×	Huile d'ester, huile d'éther : ○ Huile d'alkylbenzène : quantité minimale
Chargeur de sécurité	Prévention des dysfonctionnements du compresseur lors de la charge de réfrigérant grâce à la pulvérisation du réfrigérant liquide	Outil exclusif pour R454B	×	○
Vanne de charge	Prévention de l'échappement du gaz lorsque vous détachez le tuyau flexible de charge	Outil exclusif pour R454B	×	○
Pompe à vide	Séchage sous vide et purge d'air	Les outils pour d'autres réfrigérants peuvent être utilisés s'ils sont équipés d'un dispositif de contrôle de l'inversion du flux	△ (Utilisable si équipé d'un adaptateur pour flux inversé)	△ (Utilisable si équipé d'un adaptateur pour flux inversé)
Outil d'évasement*	Travaux d'évasement de la tuyauterie	Les outils pour d'autres réfrigérants peuvent être utilisés en ajustant la dimension de l'évasement	△ (Utilisable en ajustant la dimension de l'évasement)	△ (Utilisable en ajustant la dimension de l'évasement)
Machine à plier	Pour plier les tuyaux	Des outils pour d'autres réfrigérants peuvent être utilisés	○	○
Coupe-tuyau*	Coupez les tuyaux	Des outils pour d'autres réfrigérants peuvent être utilisés	○	○
Soudeur et bouteille d'azote	Souder les tuyaux	Des outils pour d'autres réfrigérants peuvent être utilisés	○	○
Échelle de charge de réfrigérant	Charge de réfrigérant	Des outils pour d'autres réfrigérants peuvent être utilisés	○	○
Jauge à vide ou jauge à vide de thermistance et vanne à vide	Vérifiez le degré de vide. (La vanne à vide empêche le reflux de l'huile et du réfrigérant vers la jauge à vide à thermistance)	Des outils pour d'autres réfrigérants peuvent être utilisés	○	○
Cylindre de charge	Charge de réfrigérant	Outil exclusif pour R454B	×	×

× : Préparez un nouvel outil. (Utilisez le nouvel outil comme outil exclusif pour R454B.)

△ : Les outils pour d'autres réfrigérants peuvent être utilisés sous certaines conditions.

○ : Les outils pour d'autres réfrigérants peuvent être utilisés.

* Suivez les instructions ci-dessous pour éviter que les composants abrasifs contenus dans le papier sablé et les outils de coupe ne pénètrent dans le circuit de réfrigérant, car ces composants peuvent provoquer des défaillances du compresseur et des vannes.

- Pour ébavurer les tuyaux, utilisez un alésoir ou d'autres outils d'ébavurage, et non du papier sablé.
- Pour couper les tuyaux, utilisez un coupe-tuyau et non une meuleuse ou d'autres outils utilisant des matériaux abrasifs.
- Lorsque vous coupez ou ébavurez des tuyaux, ne laissez pas de copeaux de coupe ou d'autres corps étrangers pénétrer dans les tuyaux.
- Si des copeaux de coupe ou d'autres corps étrangers pénètrent dans les tuyaux, essayez-les de l'intérieur des tuyaux.

2-4. Surface minimale d'installation

■ Appareils intérieurs

Lorsque l'appareil intérieur est installé dans une pièce dont la surface au sol est égale ou supérieure à A_{min} , chargez une quantité appropriée de réfrigérant M (réfrigérant chargé en usine + réfrigérant ajouté localement) conformément au tableau ci-dessous.

* Pour connaître la quantité de réfrigérant chargée en usine, reportez-vous à la plaque signalétique ou au manuel d'installation.

Pour connaître la quantité à ajouter localement, reportez-vous au manuel d'installation.

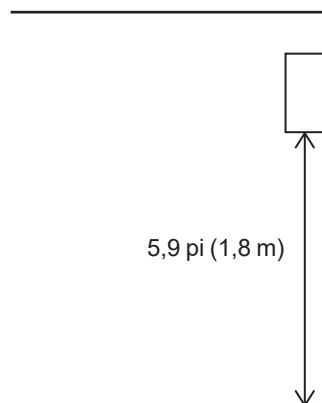
* Pour les systèmes à conduits desservant une ou plusieurs pièces, déterminez d'abord la quantité de réfrigérant du système, puis reportez-vous au manuel d'installation de l'appareil intérieur pour connaître la restriction de surface minimale de chaque pièce.

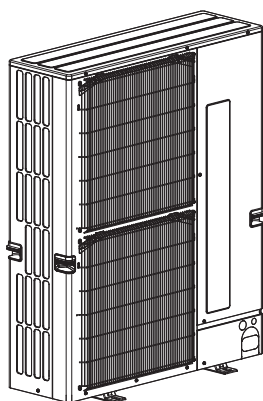
La hauteur de montage de l'appareil intérieur doit être supérieure ou égale à 5,9 pi (1,8 m) par rapport au sol, à l'exclusion des plafonds encastrés (PEAD), des centrales de traitement d'air multipositions (PVA/SVZ) et des bobines A (PAA).

* Il existe des restrictions concernant la hauteur d'installation pour chaque modèle, lisez donc le manuel d'installation de l'appareil en question.

<Tableau de charge des réfrigérants>

M		A_{min}	
[kg]	[lb, oz]	[m²]	[pi²]
2,0	4 6	7,5	81
2,5	5 8	9,3	101
3,0	6 9	11,2	121
3,5	7 11	13,0	140
4,0	8 13	14,9	161
4,5	9 14	16,7	180
4,6	10 2	17,1	185
4,7	10 5	17,5	189
4,8	10 9	17,8	192
4,9	10 12	18,2	196
5,0	11 0	18,6	201
5,1	11 3	18,9	204
5,2	11 7	19,3	208
5,3	11 10	19,7	213
5,4	11 14	20,0	216
5,5	12 2	20,4	220
5,6	12 5	20,8	224
5,7	12 9	21,2	229
5,8	12 12	21,5	232
5,9	13 0	21,9	236
6,0	13 3	22,3	241
6,1	13 7	22,6	244
6,2	13 10	23,0	248
6,3	13 14	23,4	252
6,4	14 1	23,8	257
6,5	14 5	24,1	260
6,6	14 8	24,5	264
6,7	14 12	24,9	269
6,8	14 15	25,2	272
6,9	15 3	25,6	276
7,0	15 6	26,0	280
7,1	15 10	26,3	284
7,2	15 13	26,7	288
7,3	16 1	27,1	292





PUZ-AK24NLHZ
PUZ-AK30NLHZ
PUZ-AK36NLHZ
PUZ-AK42NLHZ
PUZ-AK48NLHZ
SUZ-AK24NLHZ
SUZ-AK30NLHZ
SUZ-AK36NLHZ
SUZ-AK48NLHZ

SYSTÈME SANS CHARGE

LE RÉFRIGÉRANT PRÉCHARGÉ EST FOURNI POUR LA LONGUEUR DE LA TUYAUTERIE À L'EXPÉDITION.

Maximum 100 pi, 30 m

Le circuit de réfrigérant avec détendeur linéaire (LEV) et le récepteur d'alimentation contrôlent toujours le niveau optimal de réfrigérant, quelle que soit la longueur de la tuyauterie. Le travail supplémentaire de chargement du réfrigérant lors de l'installation est souvent à l'origine de problèmes. Ceci est complètement éliminé par le système sans charge. Ce système unique améliore la qualité et la fiabilité du travail. Il permet également d'accélérer le temps d'installation.

Remarque :

Réfléchissez bien à l'emplacement de l'appareil intérieur lorsque la longueur des tuyaux est inférieure à 25 pi (7,5 m) , car il peut y avoir des bruits intermittents pendant le fonctionnement normal qui seraient perceptibles dans des environnements très silencieux.

Réf. service			PUZ-AK24NLHZ-U1	PUZ-AK30NLHZ-U1	PUZ-AK36NLHZ-U1
Alimentation électrique	Phase		Simple		
	Fréquence		60 Hz		
	Tension		208/230 V		
Entrée de l'onduleur		A	16	19	
MCA		A	24	29	
MOCP		A	39	48	
Taille du disjoncteur		A	25	30	
Finition externe			Munsell 3Y 7,8/1,1		
Échangeur thermique			Bobine à ailettes (Anneau)		
Méthode de dégivrage			Cycle inversé		
Élément chauffant du carter		kW	—		
Compresseur			Hermétique		
	Modèle		MRK36FFGMC		
	Sortie moteur	kW	2,7		
	Type de démarreur		Onduleur		
Ventilateur	Ventilateur (entraînement) × n°		Ventilateur à hélice × 2		
	Sortie moteur du ventilateur	kW	0,074 + 0,074		
		HP	0,0992 + 0,0992		
	Débit d'air	CFM	3 740		
		m³/min	106		
Niveau de pression acoustique	Refroidissement	dB	52		
	Chauffage	dB	53		
Dispositifs de protection			Commutateur HP		
			Enveloppe comp. thermo		
Dimension	W	pouces	41-11/32		
	D	pouces	63/64+12-63/64		
	H	pouces	52-43/64		
	W	mm	1 050		
	D	mm	25 + 330		
	H	mm	1 338		
Poids		lb	231		
		kg	105		
Réfrigérant			R454B		
			Chargé	lb	9+14/16
kg	4,5				
	Contrôle		Détendeur linéaire		
	Huile chargée	Modèle	Ester (RM68EH)		
		oz	45		
		L	1,4		
Tuyau de réfrigérant	Taille du tuyau OD liquide	pouces	3/8		
		mm	9,52		
	Taille du tuyau OD gaz	pouces	5/8		
		mm	15,88		
	Méthode de connexion - Intérieur		Évasé		
	Méthode de connexion - Extérieur		Évasé		
	Différence de hauteur IU-OU	pi	Maximum 100		
		m	Maximum 30		
	Longueur de la tuyauterie	pi	Maximum 165	Maximum 245	
m		Maximum 50	Maximum 75		

Réf. service			PUZ-AK42NLHZ-U1	PUZ-AK48NLHZ-U1
Alimentation électrique	Phase		Simple	
	Fréquence		60 Hz	
	Tension		208/230 V	
Entrée de l'onduleur		A	26	
MCA		A	35	
MOCP		A	60	
Taille du disjoncteur		A	40	
Finition externe			Munsell 3Y 7,8/1,1	
Échangeur thermique			Bobine à ailettes (Anneau)	
Méthode de dégivrage			Cycle inversé	
Élément chauffant du carter		kW	—	
Compresseur			Hermétique	
	Modèle		MRK53FFJMC-L	
	Sortie moteur	kW	3,7	
	Type de démarreur		Onduleur	
Ventilateur	Ventilateur (entraînement) × n°		Ventilateur à hélice × 2	
	Sortie moteur du ventilateur	kW	0,200 + 0,200	
		HP	0,2682 + 0,2682	
	Débit d'air	CFM	4 020	
		m³/min	114	
Niveau de pression acoustique	Refroidissement	dB	60	
	Chauffage	dB	62	
Dispositifs de protection			Commutateur HP	
			Enveloppe comp. thermo	
Dimension	W	pouces	41-11/32	
	D	pouces	63/64+12-63/64	
	H	pouces	52-43/64	
	W	mm	1 050	
	D	mm	25 + 330	
	H	mm	1 338	
Poids		lb	271	
		kg	123	
Réfrigérant			R454B	
	Chargé	lb	11+7/16	
		kg	5,2	
	Contrôle		Détendeur linéaire	
	Huile chargée	Modèle	Ester (RM68EH)	
		oz	60	
		L	1,9	
Tuyau de réfrigérant	Taille du tuyau OD liquide	pouces	3/8	
		mm	9,52	
	Taille du tuyau OD gaz	pouces	5/8	
		mm	15,88	
	Méthode de connexion - Intérieur		Évasé	
	Méthode de connexion - Extérieur		Évasé	
	Différence de hauteur IU-OU	pi	Maximum 100	
		m	Maximum 30	
Longueur de la tuyauterie	pi	Maximum 245		
	m	Maximum 75		



Réf. service			SUZ-AK24NLHZ-U1	SUZ-AK30NLHZ-U1	SUZ-AK36NLHZ-U1	SUZ-AK48NLHZ-U1
Alimentation électrique	Phase		Simple			
	Fréquence		60 Hz			
	Tension		208/230 V			
Entrée de l'onduleur		A	16	19	26	
MCA		A	24	29	35	
MOCP		A	39	48	60	
Taille du disjoncteur		A	25	30	40	
Finition externe			Munsell 3Y 7,8/1,1			
Échangeur thermique			Bobine à ailettes (Anneau)			
Méthode de dégivrage			Cycle inversé			
Élément chauffant du carter		kW	—			
Compresseur			Hermétique			
	Modèle		MRK36FFGMC			MRK53FFJMC-L
	Sortie moteur	kW	2,7			3,7
	Type de démarreur		Onduleur			
Ventilateur	Ventilateur (entraînement) × n°		Ventilateur à hélice × 2			
	Sortie moteur du ventilateur	kW	0,074 + 0,074			0,200 + 0,200
		HP	0,0992 + 0,0992			0,2682 + 0,2682
	Débit d'air	CFM	3 880			4 020
		m³/min	110			114
Niveau de pression acoustique	Refroidissement	dB	52			60
	Chauffage	dB	53			62
Dispositifs de protection			Commutateur HP			
			Enveloppe comp. thermo			
Dimension	W	pouces	41-11/32			
	D	pouces	63/64+12-63/64			
	H	pouces	52-43/64			
	W	mm	1 050			
	D	mm	25 + 330			
	H	mm	1338			
Poids		lb	231			271
		kg	105			123
Réfrigérant			R454B			
	Chargé	lb	9+14/16			11+7/16
		kg	4,5			5,2
	Contrôle		Détendeur linéaire			
	Huile chargée	Modèle	Ester (RM68EH)			
		oz	45			60
		L	1,4			1,9
	Tuyau de réfrigérant	Taille du tuyau OD liquide	pouces	3/8		
mm			9,52			
Taille du tuyau OD gaz		pouces	5/8			
		mm	15,88			
Méthode de connexion - Intérieur		Évasé				
Méthode de connexion - Extérieur		Évasé				
Différence de hauteur IU-OU		pi	Maximum 100			
		m	Maximum 30			
Longueur de la tuyauterie		pi	Maximum 165	Maximum 245		
		m	Maximum 50	Maximum 75		

5-1. CHARGE DE REMPLISSAGE DU RÉFRIGÉRANT (R454B : oz, kg)

Réf. service	Longueur de la tuyauterie (dans un sens)																								Chargé en usine
	50 pi	60 pi	70 pi	80 pi	90 pi	100 pi	110 pi	120 pi	130 pi	140 pi	150 pi	160 pi	165 pi	170 pi	180 pi	190 pi	200 pi	210 pi	220 pi	230 pi	240 pi	245 pi			
	15 m	18 m	21 m	24 m	27 m	30 m	33 m	37 m	40 m	43 m	46 m	49 m	50 m	52 m	55 m	58 m	61 m	64 m	67 m	70 m	73 m	75 m			
PUZ-AK24NLHZ-U1	158	158	158	158	158	158	164	170	176	182	188	194	197	-	-	-	-	-	-	-	-	-	-	158	
	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz										oz		
	4,5	4,5	4,5	4,5	4,5	4,5	4,7	4,8	5,0	5,2	5,4	5,5	5,6										4,5		
	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg										kg		
PUZ-AK30NLHZ-U1	158	158	158	158	158	158	164	170	176	182	188	194	197	200	200	200	200	200	200	200	200	200	158		
	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz		
	4,5	4,5	4,5	4,5	4,5	4,5	4,7	4,8	5,0	5,2	5,4	5,5	5,6	5,7	5,7	5,7	5,7	5,7	5,7	5,7	5,7	5,7	4,5		
	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg		
PUZ-AK36NLHZ-U1	158	158	158	158	158	158	164	170	176	182	188	194	197	200	200	200	200	200	200	200	200	200	158		
	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz		
	4,5	4,5	4,5	4,5	4,5	4,5	4,7	4,8	5,0	5,2	5,4	5,5	5,6	5,7	5,7	5,7	5,7	5,7	5,7	5,7	5,7	5,7	4,5		
	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg		
PUZ-AK42NLHZ-U1	183	183	183	183	183	183	189	195	201	207	213	219	222	225	231	237	243	249	255	257	257	257	183		
	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz		
	5,2	5,2	5,2	5,2	5,2	5,2	5,4	5,5	5,7	5,9	6,1	6,2	6,3	6,4	6,6	6,7	6,9	7,1	7,2	7,3	7,3	7,3	5,2		
	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg		
PUZ-AK48NLHZ-U1	183	183	183	183	183	183	189	195	201	207	213	219	222	225	231	237	243	249	255	257	257	257	183		
	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz		
	5,2	5,2	5,2	5,2	5,2	5,2	5,4	5,5	5,7	5,9	6,1	6,2	6,3	6,4	6,6	6,7	6,9	7,1	7,2	7,3	7,3	7,3	5,2		
	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg		
SUZ-AK24NLHZ-U1	158	158	158	158	158	158	164	170	176	182	188	194	197	-	-	-	-	-	-	-	-	-	158		
	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz										oz		
	4,5	4,5	4,5	4,5	4,5	4,5	4,7	4,8	5,0	5,2	5,4	5,5	5,6										4,5		
	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg										kg		
SUZ-AK30NLHZ-U1	158	158	158	158	158	158	164	170	176	182	188	194	197	200	200	200	200	200	200	200	200	200	158		
	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz		
	4,5	4,5	4,5	4,5	4,5	4,5	4,7	4,8	5,0	5,2	5,4	5,5	5,6	5,7	5,7	5,7	5,7	5,7	5,7	5,7	5,7	5,7	4,5		
	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg		
SUZ-AK36NLHZ-U1	158	158	158	158	158	158	164	170	176	182	188	194	197	200	200	200	200	200	200	200	200	200	158		
	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz		
	4,5	4,5	4,5	4,5	4,5	4,5	4,7	4,8	5,0	5,2	5,4	5,5	5,6	5,7	5,7	5,7	5,7	5,7	5,7	5,7	5,7	5,7	4,5		
	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg		
SUZ-AK48NLHZ-U1	183	183	183	183	183	183	189	195	201	207	213	219	222	225	231	237	243	249	255	257	257	257	183		
	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz		
	5,2	5,2	5,2	5,2	5,2	5,2	5,4	5,5	5,7	5,9	6,1	6,2	6,3	6,4	6,6	6,7	6,9	7,1	7,2	7,3	7,3	7,3	5,2		
	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg		

5-2. DONNÉES TECHNIQUES DU COMPRESSEUR

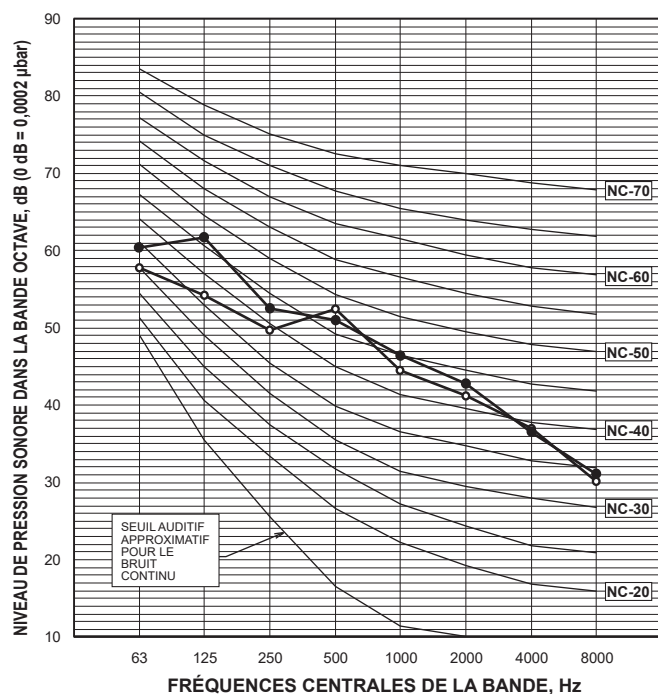
Température de bobinage à 68°F [20°C]

Réf. service		PUZ-AK24NLHZ-U1 SUZ-AK24NLHZ-U1	PUZ-AK30NLHZ-U1 SUZ-AK30NLHZ-U1	PUZ-AK36NLHZ-U1 SUZ-AK36NLHZ-U1	PUZ-AK42NLHZ-U1	PUZ-AK48NLHZ-U1 SUZ-AK48NLHZ-U1
Modèle de compresseur		MRK36FFGMC			MRK53FFJMC-L	
Résistance au bobinage (Ω)	U - V	0,44			0,49	
	U - W	0,44			0,49	
	W - V	0,44			0,49	

5-3. COURBES DU CRITÈRE DE BRUIT

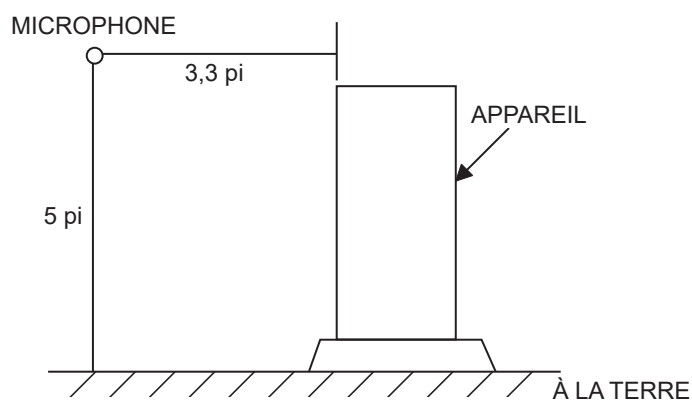
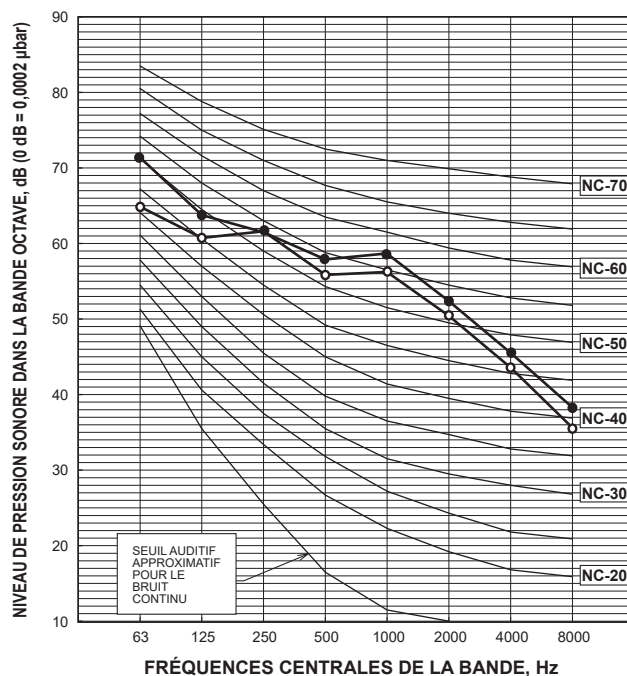
PUZ-AK24NLHZ
PUZ-AK30NLHZ
PUZ-AK36NLHZ
SUZ-AK24NLHZ
SUZ-AK30NLHZ
SUZ-AK36NLHZ

MODE	dBnps	LIGNE
REFROIDISSEMENT	52	○—○
CHAUFFAGE	53	●—●



PUZ-AK42NLHZ
PUZ-AK48NLHZ
SUZ-AK48NLHZ

MODE	dBnps	LIGNE
REFROIDISSEMENT	60	○—○
CHAUFFAGE	62	●—●



5-4. DONNÉES DE FONCTIONNEMENT STANDARD

Correspondance représentative			PLA-AE24NL		PLA-AE30NL		PLA-AE36NL	
Mode			REFROIDISSEMENT	CHAUFFAGE	REFROIDISSEMENT	CHAUFFAGE	REFROIDISSEMENT	CHAUFFAGE
Total	Capacité	Btu/h	24 000	28 000	30 000	34 000	36 000	40 000
	Entrée	W	1 490	1 780	2 130	2 140	2 620	2 570
Circuit électrique	Modèle de l'appareil intérieur		PLA-AE24NL		PLA-AE30NL		PLA-AE36NL	
	Phase		Simple					
	Cycle		60 Hz					
	Tension		208/230 V					
	Courant		0,49 A		0,59 A		0,98 A	
	Modèle d'appareil extérieur		PUZ-AK24NLHZ		PUZ-AK36NLHZ		PUZ-AK36NLHZ	
	Phase		Simple					
	Cycle		60 Hz					
	Tension		208/230 V					
	Courant		6,06 A	7,33 A	8,67 A	8,71 A	10,56 A	10,32 A
Circuit de réfrigérant	Pression de refoulement	psi	339	314	381	333	366	335
	Pression d'aspiration	psi	158	116	148	117	148	115
	Température de refoulement	°F	134	141	173	168	143	158
	Température de condensation	°F	105	99	116	106	111	103
	Température d'aspiration	°F	56	37	60	49	52	41
	Réf. Longueur de la tuyauterie	pi	25	25	25	25	25	25
	Pression de refoulement	Mpa	2,34	2,17	2,62	2,29	2,52	2,31
	Pression d'aspiration	Mpa	1,09	0,80	1,02	0,81	1,02	0,80
	Température de refoulement	°C	56,4	60,6	78,1	75,5	61,7	69,9
	Température de condensation	°C	40,8	37,4	46,9	41,2	43,8	39,7
	Température d'aspiration	°C	13,4	2,9	15,8	9,2	11,1	4,8
	Réf. Longueur de la tuyauterie	m	7,6	7,6	7,6	7,6	7,6	7,6
Côté intérieur	Température de l'air d'arrivée D.B.	°F	80	70	80	70	80	70
	Température de l'air d'arrivée W.B.	°F	67	60	67	60	67	60
	Température de l'air de refoulement D.B.	°F	58	101	55	106	57	102
Côté extérieur	Température de l'air d'arrivée D.B.	°F	95	47	95	47	95	47
	Température de l'air d'arrivée W.B.	°F	75	43	75	43	75	43
Côté intérieur	Température de l'air d'arrivée D.B.	°C	26,7	21,1	26,7	21,1	26,7	21,1
	Température de l'air d'arrivée W.B.	°C	19,4	15,6	19,4	15,6	19,4	15,6
	Température de l'air de refoulement D.B.	°C	14,3	38,3	12,7	40,9	13,7	38,8
Côté extérieur	Température de l'air d'arrivée D.B.	°C	35,0	8,3	35,0	8,3	35,0	8,3
	Température de l'air d'arrivée W.B.	°C	23,9	6,1	23,9	6,1	23,9	6,1
SHF			0,79	-	0,76	-	0,76	-
BF			0,12	-	0,02	-	0,10	-

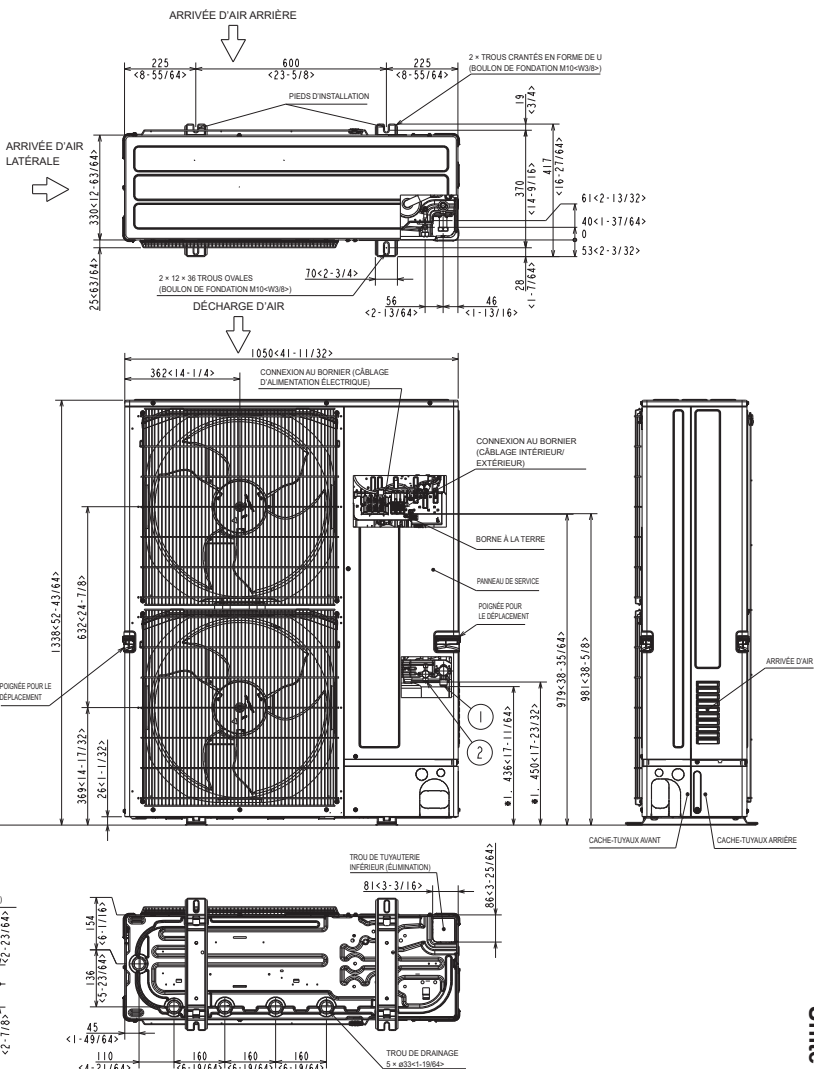
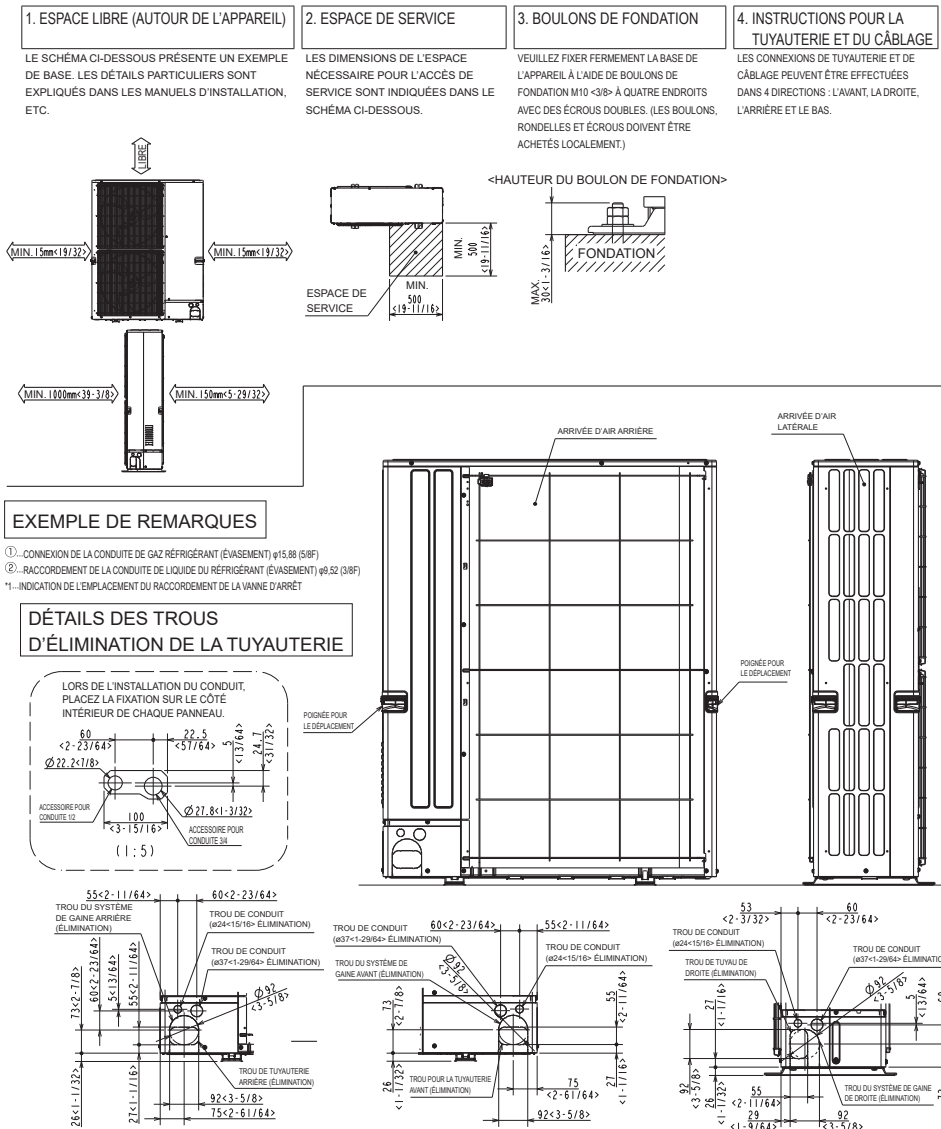
Correspondance représentative			PLA-AE42NL		PLA-AE48NL	
Mode			REFROIDISSEMENT	CHAUFFAGE	REFROIDISSEMENT	CHAUFFAGE
Total	Capacité	Btu/h	42 000	54 000	48 000	60 000
	Entrée	W	3 530	4 350	4 560	5 190
Circuit électrique	Modèle de l'appareil intérieur		PLA-AE42NL		PLA-AE48NL	
	Phase		Simple			
	Cycle		60 Hz			
	Tension		208/230 V			
	Courant		1,05 A		1,05 A	
	Modèle d'appareil extérieur		PUZ-AK42NLHZ		PUZ-AK48NLHZ	
	Phase		Simple			
	Cycle		60 Hz			
	Tension		208/230 V			
	Courant		14,30 A	17,86 A	18,95 A	21,70 A
	Circuit de réfrigérant	Pression de refoulement	psi	348	388	361
Pression d'aspiration		psi	132	116	122	113
Température de refoulement		°F	167	187	150	167
Température de condensation		°F	110	118	110	118
Température d'aspiration		°F	51	39	43	38
Réf. Longueur de la tuyauterie		pi	25	25	25	25
Pression de refoulement		Mpa	2,40	2,67	2,49	2,82
Pression d'aspiration		Mpa	0,91	0,80	0,84	0,78
Température de refoulement		°C	74,7	86,1	65,8	75,1
Température de condensation		°C	43,1	47,6	43,3	47,9
Température d'aspiration		°C	10,4	3,9	6,0	3,1
Réf. Longueur de la tuyauterie		m	7,6	7,6	7,6	7,6
Côté intérieur		Température de l'air d'arrivée D.B.	°F	80	70	80
	Température de l'air d'arrivée W.B.	°F	67	60	67	60
	Température de l'air de refoulement D.B.	°F	55	112	53	118
Côté extérieur	Température de l'air d'arrivée D.B.	°F	95	47	95	47
	Température de l'air d'arrivée W.B.	°F	75	43	75	43
Côté intérieur	Température de l'air d'arrivée D.B.	°C	26,7	21,1	26,7	21,1
	Température de l'air d'arrivée W.B.	°C	19,4	15,6	19,4	15,6
	Température de l'air de refoulement D.B.	°C	12,7	44,6	11,7	47,5
Côté extérieur	Température de l'air d'arrivée D.B.	°C	35,0	8,3	35,0	8,3
	Température de l'air d'arrivée W.B.	°C	23,9	6,1	23,9	6,1
SHF			0,74	-	0,67	-
BF			0,14	-	0,14	-

Correspondance représentative			SVZ-AP24NL		SVZ-AP30NL		SVZ-AP36NL		SVZ-AP48NL								
Mode			REFROIDISSEMENT	CHAUFFAGE	REFROIDISSEMENT	CHAUFFAGE	REFROIDISSEMENT	CHAUFFAGE	REFROIDISSEMENT	CHAUFFAGE							
Total	Capacité	Btu/h	23 800	28 000	28 000	34 000	36 000	40 000	48 000	60 000							
	Entrée	W	2 030	2 690	2 150	2 910	3 410	3 620	4 560	5 190							
Circuit électrique	Modèle de l'appareil intérieur		SVZ-AP24NL		SVZ-AP30NL		SVZ-AP36NL		SVZ-AP48NL								
	Phase		Simple														
	Cycle		60 Hz														
	Tension		208/230 V														
	Courant		1,40 A		1,70 A		2,70 A		1,05 A								
	Modèle d'appareil extérieur		SUZ-AK24NLHZ		SUZ-AK30NLHZ		SUZ-AK36NLHZ		SUZ-AK48NLHZ								
	Phase		Simple														
	Cycle		60 Hz														
	Tension		208/230 V														
	Courant		7,60 A		10,51 A		8,01 A		11,31 A		12,53 A		13,46 A		18,95 A		21,70 A
Circuit de réfrigérant	Pression de refoulement		psi	351	403	358	367	357	392	361	409						
	Pression d'aspiration		psi	141	121	153	118	139	113	122	113						
	Température de refoulement		°F	147	191	155	159	154	183	150	167						
	Température de condensation		°F	107	116	108	112	112	118	110	118						
	Température d'aspiration		°F	48	49	58	38	49	39	43	38						
	Réf. Longueur de la tuyauterie		pi	25	25	25	25	25	25	25	25						
	Pression de refoulement		Mpa	2,42	2,78	2,47	2,53	2,46	2,70	2,49	2,82						
	Pression d'aspiration		Mpa	0,97	0,83	1,06	0,82	0,96	0,78	0,84	0,78						
	Température de refoulement		°C	63,8	88,3	68,3	70,5	67,9	83,7	65,8	75,1						
	Température de condensation		°C	41,9	46,6	42,3	44,2	44,2	48,1	43,3	47,9						
	Température d'aspiration		°C	9,1	9,7	14,3	3,1	9,5	4,0	6	3,1						
	Réf. Longueur de la tuyauterie		m	7,6	7,6	7,6	7,6	7,6	7,6	7,6	7,6						
Côté intérieur	Température de l'air d'arrivée D.B.		°F	80	70	80	70	80	70	80	70						
	Température de l'air d'arrivée W.B.		°F	67	60	67	60	67	60	67	60						
	Température de l'air de refoulement D.B.		°F	57	109	58	106	55	109	53	118						
Côté extérieur	Température de l'air d'arrivée D.B.		°F	95	47	95	47	95	47	95	47						
	Température de l'air d'arrivée W.B.		°F	75	43	75	43	75	43	75	43						
Côté intérieur	Température de l'air d'arrivée D.B.		°C	26,7	21,1	26,7	21,1	26,7	21,1	26,7	21,1						
	Température de l'air d'arrivée W.B.		°C	19,4	15,6	19,4	15,6	19,4	15,6	19,4	15,6						
	Température de l'air de refoulement D.B.		°C	13,7	42,5	14,5	41,0	12,7	42,5	11,7	47,5						
Côté extérieur	Température de l'air d'arrivée D.B.		°C	35,0	8,3	35,0	8,3	35,0	8,3	35	8,3						
	Température de l'air d'arrivée W.B.		°C	23,9	6,1	23,9	6,1	23,9	6,1	23,9	6,1						
SHF			0,71	-	0,79	-	0,70	-	0,67	-							
BF			0,21	-	0,04	-	0,21	-	0,14	-							

Unité : mm <po>

OCH870A

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PUZ-AK24NLHZ PUZ-AK30NLHZ PUZ-AK36NLHZ
SUZ-AK24NLHZ SUZ-AK30NLHZ SUZ-AK36NLHZ

[LÉGENDE]

SYMBÔLE	NOM	SYMBÔLE	NOM	SYMBÔLE	NOM
TB1	Bornier <Alimentation électrique>	TH7	Thermistance <Ambiant>	SW4	Commuteur <Commuteur de fonction>
TB2	Bornier <Intérieur/Extérieur>	TH8	Thermistance <Dissipateur de chaleur>	SW5	Commuteur <Commuteur de fonction, Sélection de modèle>
MC	Moteur pour compresseur	TH32	Thermistance <Aspiration>	SW6	Commuteur <Sélection de modèle>
MF1, MF2	Moteur du ventilateur	TH33	Thermistance <Surface de comp.>	SW7	Commuteur <Commuteur de fonction>
21S4	Électrovanne <Vanne à 4 voies>	LEV-A, LEV-B, LEV-C	Détendeur linéaire	SW8	Commuteur <Commuteur de fonction>
63H	Pressostat haute pression	DCL1, DCL2, DCL3	Réacteur	SW9	Commuteur <Commuteur de fonction>
TRS	Protecteur thermique	P. B.	Carte de circuit d'alimentation	SWP	Commuteur <Aspiration>
BH	Chauffage de base	C. B.	Carte de circuit du contrôleur	CNM	Connecteur <Connexion pour option>
THP	Protecteur thermique	F1, F2	Fusible <T10AL250V>	CN31	Connecteur <Fonctionnement d'urgence>
TH3	Thermistance <Liquide>	F3, F4	Fusible <T6.3AL250V>	CNDM	Connecteur <Connexion pour option>
TH4	Thermistance <Décharge>	SW1	Commuteur <Dégivrage manuel, Réinitialisation de l'enregistrement de l'historique des défauts, Adresse du réfrigérant>	SV2	Chauffage de base
TH6	Thermistance <Tuyau 2 phases>			LED1, LED2	LED <Indicateurs Inspection Fonctionnement>

