

Gas leakage detector	Special gas leakage detector for HFC refrigerant F410A.				
Copper pipes		Thicknesses of Annealed Copper Pipes (R410A)			
It is necessary to use seamless of	opper pipes and it is desirable that the 1.40 mg/10m. Do not use copper pipes	Pipe outside diameter	Thickness		
when the "relations of variables start" were priced to the countries to supply passes source a college of the countries of the countries of the countries of the countries of the same of the countries of the cou		6.35 mm (1/4 in.)	0.80 mm		
		9.52 mm (3/8 in.)	0.80 mm		
		12.70 mm (1/2 in.)	0.80 mm		
		15.88 mm (5/8 in.)	1.00 mm		
	WITH PHATOR and all shown in the table.				

001999

STANDARD PARTS

Name and Shape	Q'ty	Application
Special rut A (large flange)	4	For suspending the indoor unit from ceiling
Special nut B (small flange)	4	
Coupler heat insulation (large)	,	For indoor side pipe joint (gas pipe)
Coupler heat insulation (small)	,	For indoor side pipe joint (liquid pipe)
Binder Garage	,	For fixing the remote controller cord
Remote controller	,	
Tapping screw (flush heads)	2	For installing the remote controller
Remote controller cord	1	For connecting the remote controller

OPTIONAL PARTS

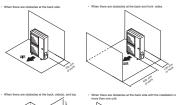


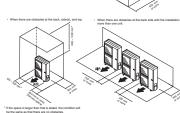
ELECTRICAL REQUIREMENT

Power supp	ly cord (mm²)	Connection cord (mm²)		Breaker capacity (A)	
MAX.	MIN.	MAX.	MIN.	Breaker capacity (A)	
4.0	2.5	2.5	1.0	20	
- Always use H03	RN-F or equivalen	to the connection	cord.		
Install all electrical works in accordance to the standard.					
Install the rison	nnert rievine with a	contact pap of at	least 3 mm in all		

Install the circuit breaker nearby the units. SELECTING THE MOUNTING POSITION



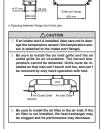




INSTALLATION PROCEDURE



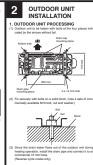
3 CONNECTING THE PIPE



CONNECTION PIPES
 Indoor unit
 (1) Detach the caps and plugs from:



















5. ADDITIONAL CHARGE

Refrigerant suitable for a piping length of 20 m is charged in the outdoor unit at the factory. When the piping is longer than 20 m, additional charging is

necessary For the additional amount, see the table below.

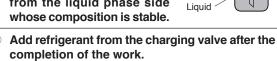
20 m None None	30 m 300 g 400 g	g/m 30 g/m 40 g/m
None	400 g	40 g/m
40m	50 m	g/m
600 g	900 g	30 g/m
800 a	1200 g	40 g/m
	800 g	

↑ CAUTION

When moving and installing the air conditioner, do not mix gas other than the specified refrigerant R410A inside the refrigerant cycle.

When charging the refrigerant R410A, always use an electronic balance for refrigerant charging (to measure the refrigerant by weight).

When charging the refrigerant, take into account the slight change in the composition of the gas and liquid phases, and always charge from the liquid phase side



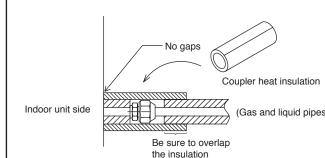
The maximum length of piping is 50 m. If the units are further apart than this, correct operation can not be guaranteed.

6. GAS LEAKAGE INSPECTION

⚠ CAUTION After connecting the piping, check the all joints for gas leakage with gas leak detector.

When inspecting gas leakage, always use the vacuum pump for pressure. Do not use nitro-

7. HEAT INSULATION ON THE PIPE JOINTS (INDOOR SIDE ONLY)



CAUTION

There should be no gaps between the insulation and the product.

POWER

↑ WARNING The rated voltage of this product is 400 V 3 ø 50 Hz. Before turning on, verify that the voltage is within the 342 V to 457 V range.

Always use a special branch circuit and install a special receptacle to supply power to the air con-

Use a special branch circuit breaker and receptacle matched to the capacity of the air conditioner. (Install in accordance with standard.)

safely and positively. Install a leakage special branch circuit breaker in accordance with the related laws and regulations and electric company standards.

Perform wiring work in accordance with stand-

ards so that the air conditioner can be operated

CAUTION

The power source capacity must be the sum of the air conditioner current and the current of other electrical appliances. When the current contracted capacity is insufficient, change the contracted capacity.

When the voltage is low and the air conditioner is difficult to start, contact the power company the voltage raised.

This air conditioner must be connected to a power source that has an electrical impedance of 0.16 Ω or less or has a supply current of 100 A or greater. If the power supply does not meet the specifications, contact the power company.

ELECTRICAL WIRING

!\ WARNING

Before starting work, check that power is not being supplied to the indoor unit and outdoor unit.

Match the terminal board numbers and connection cord colors with those of the outdoor unit. Erroneous wiring may cause burning of the elec-

Connect the connection cords firmly to the terminal board. Imperfect installation may cause a fire

Always fasten the outside covering of the connection cord with the cord clamp. (If the insulator is chafed, electric leakage may occur.)

Always connect the ground wire.

HOW TO CONNECT WIRING TO THE TERMINALS

A. For solid core wiring (or F-cable)

1) Cut the wire end with a wire cutter or wire-cutting pliers then strip the insulation to about 25 mm to expose the solid

2) Using a screwdriver, remove the terminal screw(s) on the terminal board. 3) Using pliers, bend the solid wire to form a loop suitable for

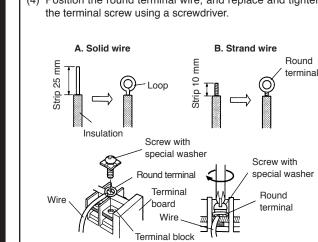
the terminal screw.) Shape the loop wire properly, place it on the terminal board and tighten securely with the terminal screw using a screw-

B. For strand wiring

) Cut the wire end with a wire cutter or wire-cutting pliers. then strip the insulation to about 10 mm to expose the strand

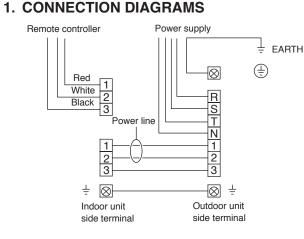
(2) Using a screwdriver, remove the terminal screw(s) on the

(3) Using a round terminal fastener or pliers, securely clamp a round terminal to each stripped wire end. Position the round terminal wire, and replace and tighter



Do not bundle the remote controller cord, or wire the remote controller cord in parallel, with the indoor unit

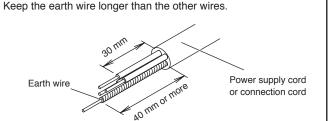
supply cord. It may cause erroneous operation.



A CAUTION

connection wire (to the outdoor unit) and the power

2. CONNECTION CORD PREPARATION



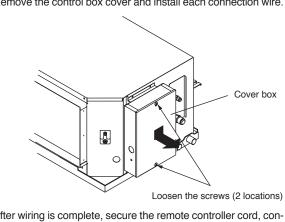
3. INDOOR UNIT

CAUTION

Use care not to mistake the power supply cord and connection wires when installing.

Install so that the wires for the remote controller will not come in contact with other connection wires.

(1) Remove the control box cover and install each connection wire



(2) After wiring is complete, secure the remote controller cord, connection cord, and power supply cord with the cord clamps. Install the control box cover.

4. OUTDOOR UNIT

0c

11

12

13

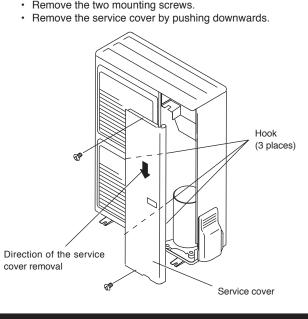
4 flash

6 flash

7 flash

CAUTION When connecting the power supply cord, make sure that the phase of the power supply matches with the phase of the terminal board. If the phases do not match, the compressor will rotate in reverse and will not be able to compress.

(1) Service cover removal · Remove the two mounting screws.



Error contents

Outdoor high pressure abnormal

emperature abnormal

ndoor fan abnormal

2. OUTDOOR UNIT LEDS

When a malfunction occurs in the out-

light to indicate the error. Refer to the

following table for the description of

each error according to the LEDs.

Heat & Cool model (reverse cycle) only

door unit, the LEDs on the circuit board

LED1 LED2 Error contents

2 flash Lighting Discharge temp. sensor error

Lighting Indoor unit error

flash Model abnormal or EEPROM abnormal

Lighting Power source connection error

Lighting Outdoor temp. sensor error

Lighting | Communication signal error

Lighting Discharge temp. abnormal

Lighting | Compressor temp. abnormal

However, for discharge pipe temperature abnormal and high pres-

sure abnormal, the LED lamp lights continuously for 24 hours, as

Lighting | High pressure abnormal

10 flash Lighting Compressor temp. sensor error

Dislighting No error. Protect operation

When the fault is cleared, the LED lamp goes off.

long as the power is not turned off.

Lighting | Heat exchanger temp. sensor error

Outdoor signal abnormal

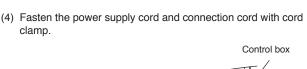
Outdoor EEPROM abnormal

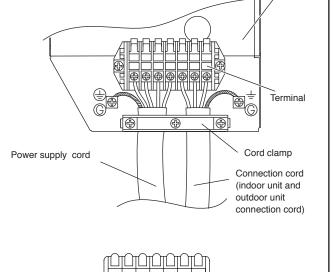
Discharge pipe temperature or compressor

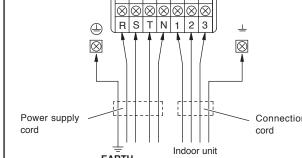
Remove the one mounting screw. · Remove the valve cover by sliding upward.

(2) Valve cover removal.

(3) Connect the power supply cord and the connection cord to terminal

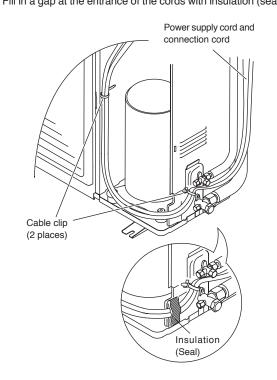


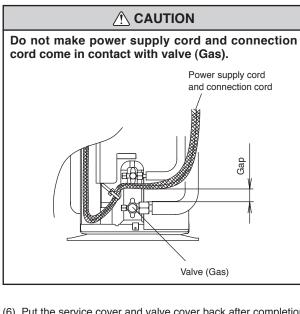




cable clip as shown in the figure. Fill in a gap at the entrance of the cords with insulation (seal).

(5) Power supply cord and connection cord should be fixed with





(6) Put the service cover and valve cover back after completion of the work.

REMOTE CONTROLLER SETTING

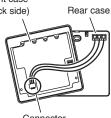
CAUTION In order to detect the room temperature correctly when using the sensor temperature sensor of the remote controller, do not install the remote controller in a place where it will be exposed to direct sunlight or directly below the air outlet of the indoor unit.

rate the remote controller from the source of the electromagnetic waves and use shielded cord.

PC board parts directly with your hands.

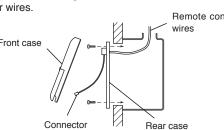
ler, remove the two screws indicated in the following figure and then remove the front case of the remote controller.

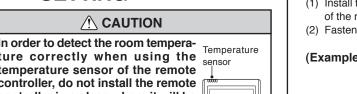




not removed and the front case hangs down. front case.

(2) Install the rear case to the wall, etc. with the two tapping

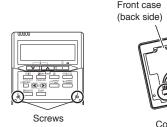


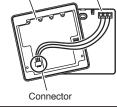


When installing the remote controller and cord near a source of electromagnetic waves, sepa-

Do not touch the remote controller PC board and

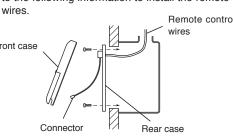
1. INSTALLING THE REMOTE CONTROLLER (1) Open the operation panel on the front of the remote control-





When installing the remote controller, remove the connector from the front case. The wires may break if the connector is When installing the front case, connect the connector to the

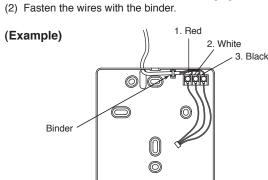
Refer to the following information to install the remote con



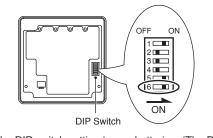
Install the remote controller wires so as not to be direct touched with your hand.

2. ROUTING THE REMOTE CONTROLLER

(1) Install the remote controller wires to the terminals on the top of the rear case as shown in the following figure.



3. SETTING THE DIP SWITCHES When using a battery (memory backup)

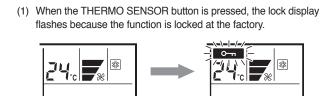


Change the DIP switch setting to use batteries. (The DIP switch is not set to use batteries at the factory.) Change DIP switch No. 6 from OFF to ON. If batteries are not used, all of the settings stored in memory will be deleted if there is a power failure.

4. SETTING THE ROOM TEMPERATURE DETECTION LOCATION

The detection location of the room temperature can be selected from the following three examples. Choose the detection location that is best for the installation location.

> A. Indoor unit setting (factory setting) The room temperature is detected by the indoor unit temperature



B. Remote controller setting

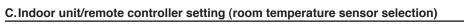
The room temperature is detected by the remote controller temperature sensor.

(1) Press the THERMO SENSOR button for 5 seconds or more to unlock the function. The thermo sensor display flashes and disappears when the function is unlocked.

(2) Press the THERMO SENSOR button. The thermo sensor display appears.

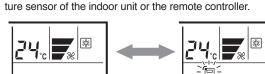
(3) Press the THERMO SENSOR button again for 5 seconds or more to lock the function. The thermo sensor display flashes and then remains on when the function is locked.

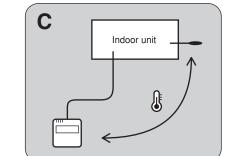
(4) Make sure that the function is locked.



The temperature sensor of the indoor unit or the remote controller can be used to detect the room temperature. (1) Press the THERMO SENSOR button for 5 seconds or more to

unlock the function. The thermo sensor display flashes and then disappears when the function is unlocked. (2) Press the THERMO SENSOR button to select the tempera-





i NOTES

If the function to change the temperature sensor is used as shown in examples A and B (other than example C), be sure to lock the detection location. If the function is locked, the lock display on will flash when the THERMO SENSOR button is pressed.

TEST RUN

CAUTION Supply power to the crankcase heater for at least 12 hours before the start of operation in winter

(1) Stop the air conditioner operation. Press the master control button and the fan control button multaneously for 2 seconds or more to start the test run.

[SELF-DIAGNOSIS] When the error indication "E:EE" is displayed, follow the following items to perform the self-diagnosis. "E:EE" indicates an error has

1. REMOTE CONTROLLER DISPLAY

(1) Stop the air conditioner operation.

Error code

(2) Press the set temperature buttons Λ/V simultaneously for 5 seconds or more to start the self-diagnosis. Refer to the following tables for the description of each error Unit number (usually 0)

Error code

seconds or more to stop the self-diagnosis.

(3) Press the start/stop button to stop the test run

(3) Press the set temperature buttons Λ / V simultaneously for 5

Error contents

00	Communication error (indoor unit —— remote controller)		
01	Communication error (indoor unit outdoor unit)		
02	Room temperature sensor open		
03	Room temperature sensor short-circuited		
04	Indoor heat exchanger temperature sensor open		
05	Indoor heat exchanger temperature sensor short-circuited		
06	Outdoor heat exchanger temperature sensor open		
07	Outdoor heat exchanger temperature sensor short-circuited		
80	Power source connection error		
09	Float switch operated		
A0	Outdoor temperature sensor open		
0b	Outdoor temperature sensor short-circuited		

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Discharge pipe temperature sensor or compress **METHODS** emperature sensor open ischarge pipe temperature sensor or compresso **↑** CAUTION emperature sensor short-circuited

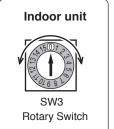
directly with your bare hands.

A number of indoor units can be operated at the same time using a single remote controller.

No. 2 No. 3

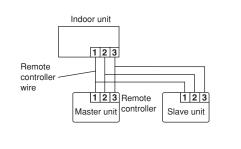
(2) Rotary switch setting (indoor unit) on the indoor unit circuit board.

(3) DIP switch setting (remote controller) Change DIP switch No. 3 on the remote controller from OFF Remote controller



Two separate remote controllers can be used to operate the

(1) Wiring method (indoor unit to remote controller)

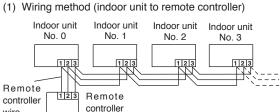


SPECIAL INSTALLATION

When setting the rotary switch and DIP switches, do not touch any other parts on the circuit board

1. GROUP CONTROL SYSTEM

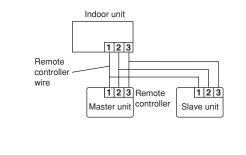
(1) Wiring method (indoor unit to remote controller)



Set the unit number of each indoor unit using the rotary switch The rotary switch is normally set to 0.

2. DUAL REMOTE CONTROLLERS (OPTIONAL)

DIP Switch



(2) DIP switch setting (remote controller) Set the remote controller DIP switch Nos. 1 and 2 according to the following table.

lumber of controllers 1 (Normal) 2 (Dual)

controllers

No. 1 No. 2 ON ON 2 (Dual)

3. CANCELING AUTO RESTART The auto restart function can be cancelled

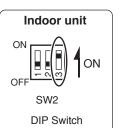
No. 1

ON

OFF

(1) DIP switch setting (indoor unit) Change the DIP switch (SW2-3) on the indoor unit circuit board from OFF to ON. The auto restart function will be canceled.

DIP-SW DIP-SW



DIP-SW

OFF

OFF

No. 2

Remote

controller

DIP Switch

[DIP-SWITCH SETTING]

· Indoor unit

	NO.	SW state		Detail	
	NO.	OFF	ON	Detail	
SW2	1	- *	_	Remote sensor setting	
DIP-	2	Edge *	Pulse	Control input setting	
Switch	3	Validity *	Invalidity	Auto restart setting	

		SW s		
	NO.	OFF	ON	Detail
	1		*	Dual remote
	2	*		controller setting
DIP-	3	One unit *	Multiple unit	Group control setting
Switch	4	Heat &Cool model	Cooling only model	Model setting
	5	Invalidity	Validity *	Auto changeover setting
	6	Invalidity *	Validity	Memory backup setting
*: Factory setting				

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