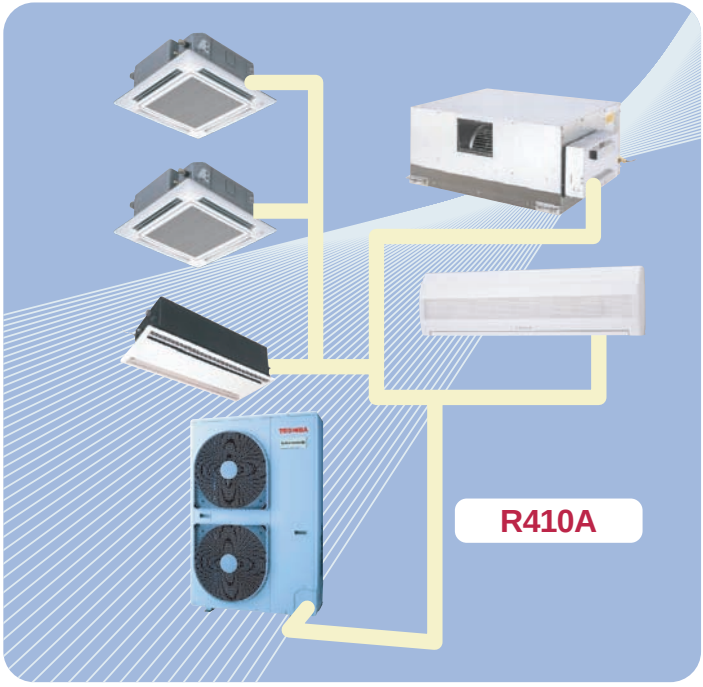
TOSHIBA

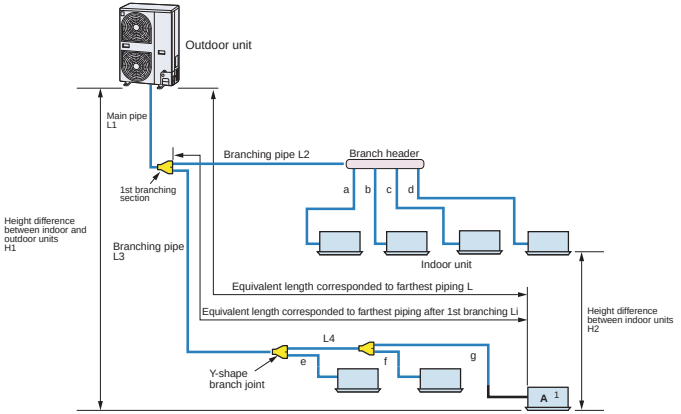
FILE NO : A06-007

Quick reference

Mini-Super Modular Multi



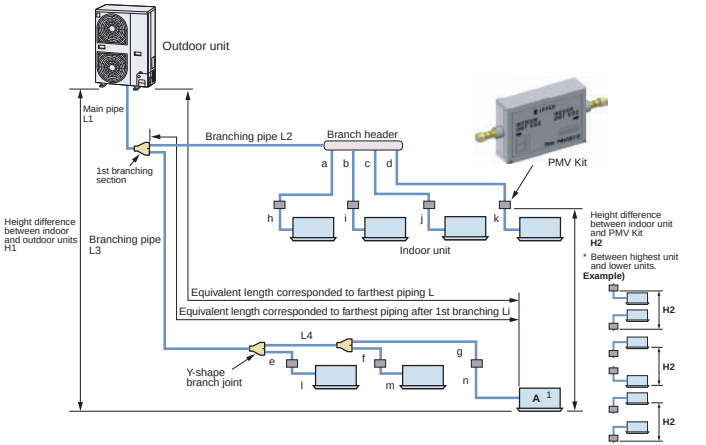
Allowable length/height difference of refrigerant piping



			Allowable value	Piping section
Piping Length	Total extension of pipe (Liquid pipe, real length)		180 m	L1 + L2 + L3 + L4 + a + b + c + d + e + f + g
	Furthest piping length L (*1)	Real length	100 m	L1 + L3 + L4 + g
		Equivalent length	125 m	
	Max. equivalent length of main pipe		65 m	L1
	Equivalent length of furthest piping from 1st branching Li (*1)		35 m	L3 + L4 + g
	Max. real length of indoor unit connecting pipe		15 m	a, b, c, d, e, f, g
Height Difference	Height between indoor and outdoor units H1	Upper outdoor unit	30 m	———
		Lower outdoor unit	20 m	———
	Height between indoor units H2		15 m	———

*1 : Furthest indoor unit from 1st branch to be named “A”.

Allowable length/height difference of refrigerant piping for quiet places (with PMV Kit)

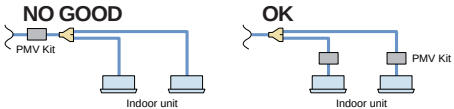


			Allowable value	Piping section
Piping Length	Total extension of pipe (Liquid pipe, real length)		150 m	L1 + L2 + L3 + L4 + a + b + c + d + e + f + g + h + I + j + k+ l + m + n
	Furthest piping length L (*1)	Real length	65 m	L1 + L3 + L4 + g + n
		Equivalent length	80 m	
	Max. equivalent length of main pipe		50 m	L1
	Equivalent length of furthest piping from 1st branching Li (*1)		15 m	L3 + L4 + g + n
	Max. real length of indoor unit connecting pipe		15 m	a + h, b + i, c + j, d + k, e + l, f + m. g + n
	Real length between PMV KIT and indoor unit		2 m or more below 10 m	h, i, j, k, l, m, n
Height Difference	Height between indoor and outdoor units H1	Upper outdoor unit	30 m	———
		Lower outdoor unit	20 m	———
	Height between indoor unit and PMV kit H2		15 m	———

*1 : Furthest indoor unit from 1st branch to be named “A”.

Note)

Do not connect two or more indoor units to one PMV Kit. Arrange one indoor unit and one PMV Kit set to 1 by 1.



Addition of refrigerant

After vacuuming work, exchange the vacuum pump with the refrigerant bomb and then start the additional charging work of refrigerant.

Calculating the amount of additional refrigerant required

When the system is charged with refrigerant at the factory, the amount of refrigerant needed for the pipes on site is not included. Calculate the additional amount required, and add that amount to the system.

Additional refrigerant charge amount is calculated from size of liquid pipe at site and its real length.

Additional refrigerant charge amount at site R (kg) = **Real length of liquid pipe** × **Additional refrigerant charge amount per liquid pipe 1m (Table 1)** + **Compensation by outdoor HP (Table 2)**

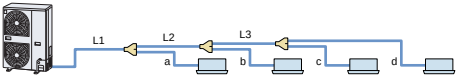
Table 1

Pipe dia. at liquid side	Ø6.4	Ø9.5
Additional refrigerant amount/1m (kg)	0.025	0.055

Table 2

Outdoor unit capacity type	0401 type	0501 type	0601 type
Compensation by outdoor HP (kg)	–0.8	–0.4	0

Example : (0501 type)



L1	Ø9.5 : 10m	L2	Ø9.5 : 10m	L3	Ø9.5 : 5m	a	Ø9.5 : 3m
b	Ø6.4 : 3m	c	Ø6.4 : 4m	d	Ø6.4 : 5m		

Additional charge amount R (kg)

= (Lx × 0.025kg/m) + (Ly × 0.055kg/m) + (–0.4kg)
= (12 × 0.025kg) + (28 × 0.055kg) + (–0.4kg)
= 1.44kg

Lx : Real total length of liquid pipe Ø6.4 (m)
Ly : Real total length of liquid pipe Ø9.5 (m)

Note)

If the additional refrigerant amount indicates a negative result from the calculation, use air conditioner without the adding of any additional refrigerant.

Charging of refrigerant

- Keeping valve of the outdoor unit closed, be sure to charge the liquid refrigerant into service port at liquid side.
- If the specified amount of refrigerant cannot be charged, open fully valves of outdoor unit at liquid and discharge/suction gas sides, operate the air conditioner in COOL mode under condition that valve at suction gas side is a little returned to close side, and then charge refrigerant into service port at suction gas side. In this time, choke the refrigerant slightly by operating valve of the bomb to charge liquid refrigerant. The liquid refrigerant may be charged suddenly, therefore be sure to charge refrigerant gradually.
- When refrigerant leaks and refrigerant shortage occurs in the system, recover the refrigerant in the system and re-charge refrigerant newly up to the correct level.

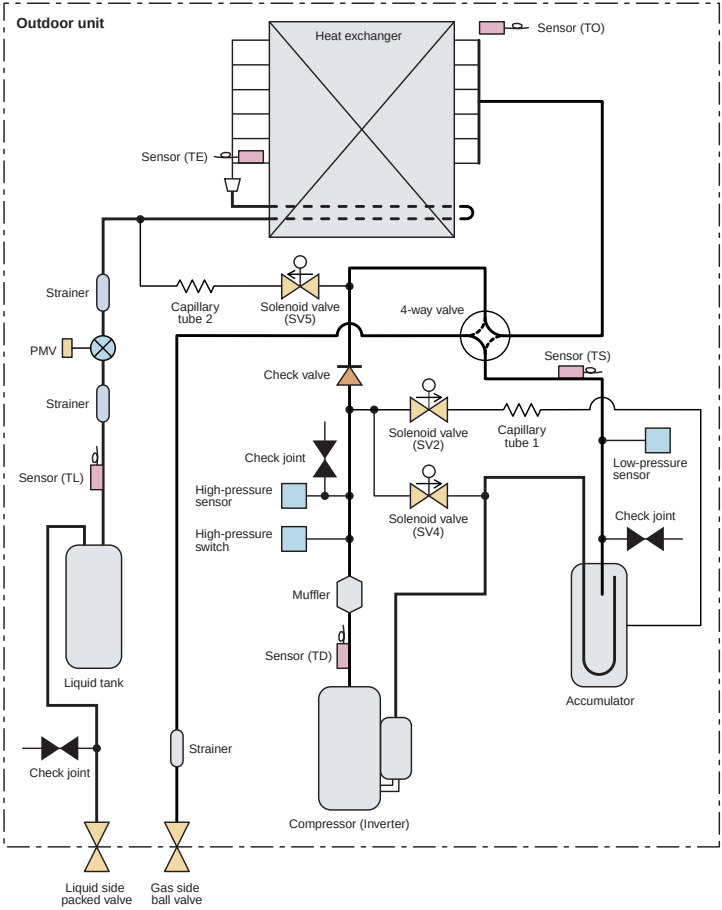
REQUIREMENT

Entry of refrigerant charge amount

- Complete the refrigerant record column found on the wiring diagram, with detail of the additional refrigerant amount and name of service engineer at the time of installation.
- The total amount of refrigerant refers to the shipment charge plus any additional refrigerant at the time of installation. The refrigerant amount at shipment is indicated on the unit name plate.

Refrigerant Cycle Diagram

Model : MCY-MAP0401/0501/0601HT, MCY-MAP0401/0501/0601HT2D



Explanation of Functional Parts

Functional part name		Functional outline	Connector
Solenoid valve	SV2	1) Low-pressure release function 2) High-pressure release function 3) Gas balance function during off time 4) Hot gas bypass into accumulator	CN312 (White)
	SV4	1) High-pressure release function 2) Low-pressure release function	CN311 (Blue)
	SV5	1) Preventive function for high-pressure rising in heating operation	CN310 (White)
Capillary tube	1	ID : Ø1.5, Length : 200 mm	
	2	ID : Ø2.2, Length : 100 mm	
4-way valve		1) Cooling/heating exchange 2) Reverse defrost	CN317 (Blue)
PMV (Pulse motor valve)		1) Super heat control function 2) Sub-cool adjustment function in cooling operation	CN300 (White)
Temp. sensor	TD	1) Protection of compressor discharge temp. Used for release	CN502 (White)
	TS	1) Controls super heat in heating operation	CN504 (White)
	TE	1) Controls defrost in heating operation 2) Controls outdoor fan in heating operation	CN505 (Green)
	TL	1) Detects under cool in cooling operation	CN521 (White)
	TO	1) Detects outside temperature	CN507 (Yellow)
High-pressure sensor		1) Detects high-pressure and controls compressor capacity 2) Detects high-pressure in cooling operation and controls the fan in low ambient cooling operation	CN501 (Red)
Low-pressure sensor		1) Detects low-pressure in cooling operation and controls compressor capacity 2) Detects low-pressure in heating operation and controls the super heat	CN500 (White)
Compressor case heater		1) Prevents liquid accumulation to compressor	CN316 (White)
Accumulator case heater		1) Prevents liquid accumulation to accumulator	CN321 (Red)

Wired remote controller display	Check code name
E01	Communication error between indoor and remote controller (Detected at remote controller side)
E02	Remote controller sending error
E03	Communication error between indoor and remote controller (Detected at indoor side)
E04	Indoor/outdoor communication circuit error (Detected at indoor side)
E06	Decreased number of indoor units
—	Indoor/outdoor communication circuit error (Detected at outdoor side) [E07]
E08	Duplicated indoor addresses
E09	Duplicated master remote controllers
E10	Communication error between indoor P.C. board assembly
E12	Automatic address start error
E15	No corresponding indoor unit during automatic address
E16	No. of connected indoor units / Capacity over
E18	Communication error between indoor header and follower units
E19	Outdoor unit quantity error
E20	Other line unit connected during automatic address
E23	Communication sending error
E25	Duplicated outdoor follower address setup
E31	IPDU communication error
F01	Indoor TCJ sensor error
F02	Indoor TC2 sensor error
F03	Indoor TC1 sensor error
F04	TD1 sensor error
F06	TE1 sensor error
F07	TL sensor error
F08	TO sensor error
F10	Indoor TA sensor error
F12	TS1 sensor error
F13	TH sensor error
F15	Outdoor temp sensor miscabling (TE1, TL)
F16	Outdoor pressure sensor miscabling (Pd, Ps)
F23	Ps sensor error
F24	Pd sensor error
F29	Indoor other error
F31	Outdoor EEPROM error
H01	Compressor breakdown
H02	Compressor error (lock)

Wired remote controller display	Check code name
H03	Current detection circuit system error
H04	Compressor 1 case thermo operation
H06	Low-pressure protective operation
L03	Duplicated indoor center units
L04	Duplicated outdoor line address
L05	Duplicated indoor units with priority (Displayed on indoor unit with priority)
L06	Duplicated indoor units with priority (Displayed on the unit other than indoor unit with priority)
L07	Group line in individual indoor unit.
L08	Indoor group / address unset
L09	Indoor capacity unset
L10	Outdoor capacity unset
L20	Duplicated central control addresses
L29	IPDU quantity error
L30	Interlock in indoor unit from outside
—	Extended IC (Integrated Circuit) error (Detected at outdoor unit side) [L31]
P01	Indoor fan motor error
P03	Discharge temp TD1 error
P04	Actuation of high-pressure SW
P07	Heat sink overheat error
P10	Indoor overflow error
P12	Indoor fan motor error
The standard ducted unit air conditioner utilizes a direct current (DC) indoor fan motor that features current limiting protection. In the event power is not isolated prior to service, the protective control circuit will activate and stop the unit operating. The check code "P12"will be displayed on the remote controller- once service work has been completed, this code can be cleared by switching off then on the electrical isolation device of the indoor unit and pressing the operation stop button on the remote controller to reset the system.	
P13	Outdoor liquid back detection error
P15	Gas leak detection (TS1 condition) Gas leak detection (TD condition)
P17	Discharge temp TD2 error
P19	4-way valve operation error
P20	High-pressure protective operation
P22	Outdoor fan IPDU error
P26	G-Tr short-circuit protection error
P29	Compressor position detection circuit error
P31	Other indoor error (Group follower unit error)

07 Switch (SW08) Set Up of The Outdoor Unit

When using the outdoor unit under the following conditions, it is necessary to set up DIP switch on the outdoor unit interface P.C. board.

Cautions

When anyone of the following condition is applied, set up DIP switch.

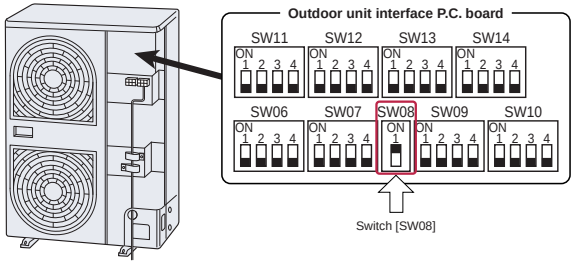
1. When using PMV Kit in the Mini-SMMS system
2. When using the indoor unit under high humidity condition

[Reference]

Indoor side : 27°C dry bulb temperature
24°C wet bulb temperature
Operation time 4 hours or more.

1 Setup method

- Turn on DIP switch [SW08] on the interface P.C. board of the outdoor unit.



Check at Main Power-ON

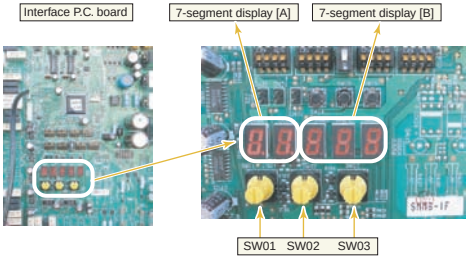
After turning on the main power of the indoor units and outdoor unit in the refrigerant line to be executed with a test operation, check the following items in outdoor and each indoor unit.

(After turning on the main power, be sure to check in order of indoor unit outdoor unit.)

If the power supply of the outdoor unit has been firstly turned on, [E19] appears on the 7-segment display on the interface P.C. board until the power supply of the indoor unit is turned on. However it is not an error.

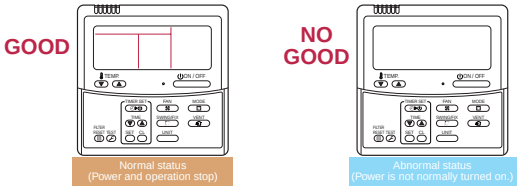
<Check on outdoor unit>

1. Check that all the rotary switches, SW01, SW02, and SW03 on the interface P.C. board of the outdoor unit are set up to "1".
2. If other error code is displayed on 7-segment [B], remove the cause of trouble referring to "**Troubleshooting**".
3. **Check that [L08] is displayed on 7-segment display [B]** on the interface P.C. board of the outdoor unit.
   (L08: Indoor address unset up)
   (If the address setup operation has already finished in service time, etc, the above check code is not displayed, and only [U1] is displayed on 7-segment display [A].)



<Check on indoor unit>

1. Display check on remote controller (In case of wired remote controller)
   Check that a frame as shown in the following left figure is displayed on LC display section of the remote controller.



If a frame is not displayed as shown in the above right figure, the power of the remote controller is not normally turned on. Therefore check the following items.

- Check power supply of indoor unit.
- Check wiring between indoor unit and remote controller.
- Check whether there is cutoff of cable around the indoor control P.C. board or not, and check connection failure of connectors.
- Check failure of transformer for the indoor microcomputer.
- Check indoor control P.C. board failure.

Address Setup

After power-ON, set up the indoor address from the interface P.C. board of the outdoor unit.
(The address setup operation cannot be performed by power-ON only.)

Cautions

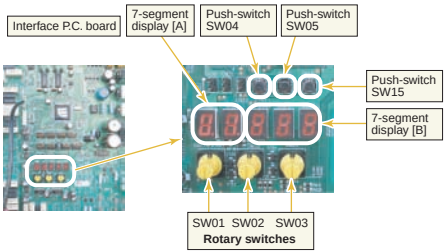
1. It requires approx. 5 minutes usually for 1 line to automatically set up address.
   However in some cases, it may require maximum 10 minutes.
2. It is unnecessary to operate the air conditioner for address setup.
3. Manual address setup is also available besides automatic setup.
   Automatic address: Setup from SW15 on the interface P.C. board of the outdoor unit
   Manual address: Setup from the wired remote controller.
   (For details, refer to section "**Address setup procedure**")

Address Setup and Check Procedure

Procedure	Item	Operation and check contents
1	Indoor unit power-ON	Turn on power of indoor unit in refrigerant line to which address is set up.
2	Outdoor unit power-ON	Turn on power of all the outdoor units in refrigerant line to which address is set up.
3	7-segment display check	Check that [L08] is displayed on 7-segment display [B] on the interface P.C. board of the outdoor unit in the system to which address is set up.
4	Address setup start	Confirm the corresponding items in "**Address setup procedure**", and then set up address according to the operation procedure. (Be sure that the setup operation may differ in group control or central control.) **Note)** Address cannot be set up if switches are not operated.
5	Display check after setup	• After address setup, [U1] [ ] are displayed in 7-segment display section. • If an error code is displayed in 7-segment display [B], remove the cause of trouble referring to **"Troubleshooting"**.
6	System information check after setup	Using 7-segment display function, check the system information of the scheduled system. (This check is executed on the interface P.C. board of the outdoor unit.)

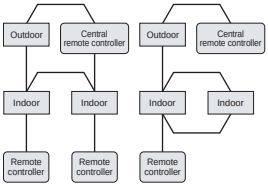
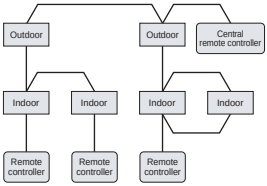
	Rotary switch setup			7-segment display	
	SW01	SW02	SW03	[A]	[B]
System capacity	1	2	3	[No. of HP]	[HP]
No. of connected outdoor unit	1	3	3	[Connected No. of units]	[P]
No. of connected indoor units	1	4	3	[Connected No. of units]	

After the above checks, return rotary switches SW01, SW02, SW03 to 1/1/1.



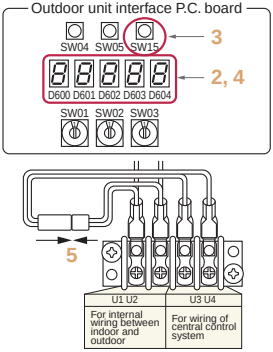
Automatic Address Setup

Without central control : To the address setup procedure 1
With central control : To the address setup procedure 2
(However, go to the procedure 1 when the central control is performed in a single refrigerant line.)

(Example)	In case of central control in a single refrigerant line	In case of central control over refrigerant lines
Address setup procedure	**To procedure 1**	**To procedure 2**
Cable systematic diagram		

<Address setup procedure 1>

1. Turn on power of indoor/outdoor units.
   (In order of indoor Outdoor)
2. After approx. 1 minute, check that U. 1. L08 (U. 1. flash) is displayed in 7-segment display section on the interface P.C. board of the outdoor unit.
3. Push SW15 to start the setup of the automatic addressing. (Max. 10 minutes for 1 line (Usually, approx. 5 minutes))
4. When the count Auto 1 Auto 2 Auto 3 is displayed in 7 segment display section, and it changes from U. 1. - - - (U. 1. flash) to U. 1. - - - (U. 1. light), the setup finished.
5. **When performing an automatic address setup on a single refrigerant line with central control, connect relay connected between [U1, U2] and [U3, U4] terminals.**



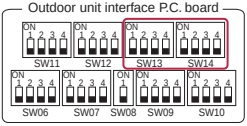
REQUIREMENT

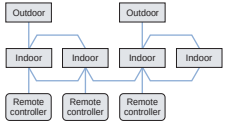
- When a group control is performed over the multiple refrigerant lines, be sure to turn on the power supplies of all the indoor units connected in a group at the time of address setup.
- If turning on the power for each refrigerant line to set up address, a header indoor unit is set for each line. Therefore, an alarm code “L03” (Duplicated header indoor units) is output in operation after address setup. In this case, change the group address from the wired remote controller for only one outdoor unit is set up.

<Address setup procedure 2>

1. Using SW13 and 14 on the interface P.C. board of the outdoor unit in each system, set up the address for each system. (At shipment from factory: Set to Address 1)

Note) Be careful not to duplicate addresses with the other refrigerant line.



(Example)	Group control over multiple refrigerant lines
Cabling systematic diagram	

Line address switch on outdoor interface P.C. board

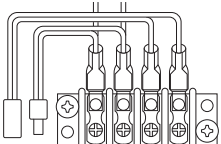
(O: Switch ON, ✕ : Switch OFF)

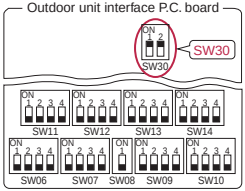
Line address	SW13 1	SW13 2	SW13 3	SW13 4	SW14 1	SW14 2	SW14 3	SW14 4
1				✕	✕	✕	✕	✕
2				✕	○	✕	✕	✕
3				✕	✕	○	✕	✕
4				✕	○	○	✕	✕
5				✕	✕	✕	○	✕
6				✕	○	✕	○	✕
7				✕	✕	○	○	✕
8				✕	○	○	○	✕
9				✕	✕	✕	✕	○
10				✕	○	✕	✕	○
11				✕	✕	○	✕	○
12				✕	○	○	✕	○
13				✕	✕	✕	○	○
14				✕	○	✕	○	○

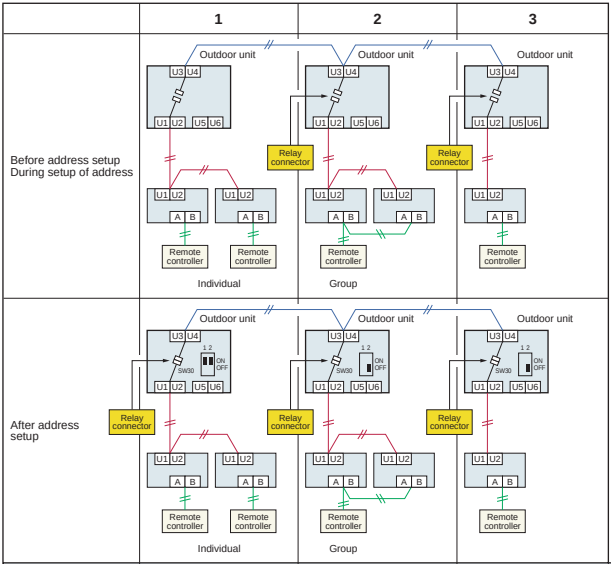
Line address	SW13 1	SW13 2	SW13 3	SW13 4	SW14 1	SW14 2	SW14 3	SW14 4
15				✕	✕	○	○	○
16				✕	○	○	○	○
17				○	✕	✕	✕	✕
18				○	○	✕	✕	✕
19				○	✕	○	✕	✕
20				○	○	○	✕	✕
21				○	✕	✕	○	✕
22				○	○	✕	○	✕
23				○	✕	○	○	✕
24				○	○	○	○	✕
25				○	✕	✕	✕	○
26				○	○	✕	✕	○
27				○	✕	○	✕	○
28				○	○	○	✕	○

: Is not used for setup of system address. (Do not change setup.)

2. Check that the relay connectors between [U1, U2] and [U3, U4] terminals are not connected in all the outdoor units to which the central control is connected. (At shipment from factory: Connector not connected)
3. Turn on power of indoor/outdoor. **(In order of indoor outdoor)**
4. After approx. 1 minute, check that 7-segment display is U.1.L08 (U.1. flash) on the interface P.C. board of the outdoor unit.
5. **Push SW15 to start the setup of automatic addressing.** (Max. 10 minutes for 1 line (Usually, approx. 5 minutes))
6. When the count Auto 1 Auto 2 Auto 3 is displayed in 7-segment display section, and it changes from U.1. - - - (U. 1 flash) to U. 1. - - - (U. 1. light) , the setup finished.
7. Procedure 4. to 6. are repeated in other refrigerant lines.
8. When address setup has finished in all the sysem, turn off SW30-2 on the interface P.C. boards of the lines connected to the identical central control except a line with least line address number. (Terminator resistors of the wires in the central control line of indoor/ outdoor are unified.)
9. Connect the relay connector between [U1U2] and [U3U4] terminals of the outdoor unit for each refrigerant line.
10. Then set up the central control address. (For the central control address setup, refer to the Installation manual of the central control devices.)







Outdoor interface P.C. board	Outdoor unit	Outdoor unit	Outdoor unit	Setup at shipment from factory
SW13, 14 (Refrigerant line address)	1	2	3	1
SW30-2 Terminal-end resistance of indoor/outdoor communication line/central control communication line	ON	OFF after address setup	OFF after address setup	ON
Relay connector	Connect short after address setup	Connect short after address setup	Connect short after address setup	Open

Indoor side (Automatic setup)

Refrigerant line address	1	1	2	2	3
Indoor unit address	1	2	1	2	1
Group address	0	0	1	2	0

Note

Never connect a relay connector until address setup for all the refrigerant lines has been completed ; otherwise address cannot be correctly set up.

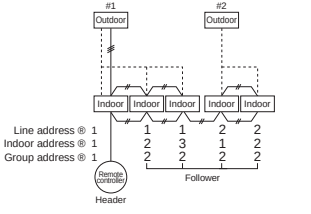
Manual address setup from remote controller

In case to decide an address of the indoor unit prior to finish of indoor wiring work and unpracticed outdoor wiring work
(Manual setup from remote controller)

Arrange one indoor unit and one remote controller set to 1 by 1.

Turn on the power.

(Wiring example in 2 lines)



In the above example, under condition of no inter-unit wire of the remote controller, set the address after individual connecting of the wired remote controller.

Group address

Individual : 0000
Header unit : 0001
Follower unit: 0002
} In case of group control

Operation procedure

1 ® *2* ® *3* ® *4* ® *5* ® *6* ®
7 ® *8* ® *9* ® *10* ® *11* **End**

1 **Push simultaneously SET + CL + TEST buttons for 4 seconds or more.**
LCD changes to flashing.

(Line address)

2 **Using the setup temp. ▼ / ▲ buttons, set *12* to the item code.**

3 **Using the timer time ▼ / ▲ buttons, set up the line address.**
(Match it with the line address on the interface P.C. board of the outdoor unit in the identical refrigerant line.)

4 **Push SET button.**
(OK when display goes on.)

(Indoor address)

5 **Using the setup temp. ▼ / ▲ buttons, set *13* to the item code.**

6 **Using the timer time ▼ / ▲ buttons, set up the indoor address.**

7 **Push SET button.**
(OK when display goes on.)

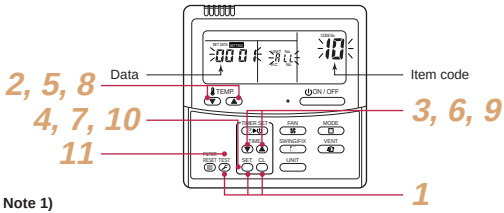
(Group address)

8 **Using the setup temp. ▼ / ▲ buttons, set *14* to the item code.**

9 **Using the timer time ▼ / ▲ buttons, set Individual = *0000*, Header unit = *0001*, Follower unit = *0002*.**

10 **Push SET button.**
(OK when display goes on.)

11 **Push TEST button.**
Setup operation finished.
(Status returns to normal stop status.)



Note 1)

When setting the line address from the remote controller, do not use address 29 and 30.

The address 29 and 30 cannot be set up in the outdoor unit.
Therefore if they are incorrectly set up, a check code [E04] (Indoor/outdoor communication circuit error) is output.

Clearance of address (Return to status (Address undecided) at shipment from factory)

Method 1

An address is individually cleared from a wired remote controller.

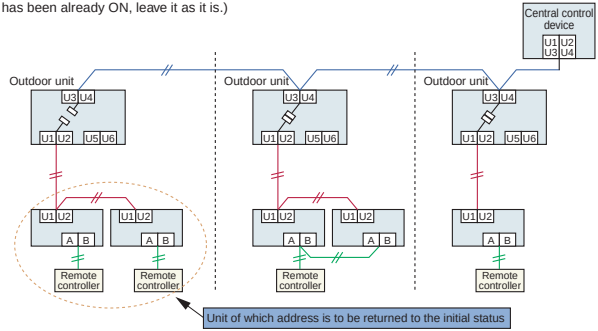
"0099" is set up to line address, indoor address, and group address data from the remote controller.

(For the setup procedure, refer to the abovementioned address setup from the remote controller.)

Method 2

Clear the indoor addresses in the same refrigerant line from the outdoor unit.

1. Turn off the power of the refrigerant line to be returned to the status at shipment, and change the outdoor unit to the following status.
   1) Remove the relay connector between [U1U2] and [U3U4].
      (If it has been already removed, leave it as it is.)
   2) Turn on SW30-2 on the interface P.C. board of the outdoor unit if it is OFF.
      (If it has been already ON, leave it as it is.)



2. Turn on the indoor/outdoor power of which address is to be cleared. After approx. 1 minute, check that "U.1. - - -" is displayed, and then execute the following operation on the interface P.C. board of the outdoor unit of which address is to be cleared in the refrigerant line.

SW01	SW02	SW03	SW04	Address which can be cleared
2	1	2	After checking that "A.d.buS" is displayed on 7-degment display, and then push SW04 for 5 seconds or more.	Line + Indoor + Group address
2	2	2	After checking that "A.d.nEt" is displayed on 7-degment display, and then push SW04 for 5 seconds or more.	Central address

3. After "A.d. c.L." has been displayed on 7-degment display, return SW01/SW02/SW03 to 1/1/1.
4. When the address clearing has correctly finished, "U.1.L08" is displayed on 7-degment display after a while. If "A.d. n.G." is displayed on 7-degment display, there is a possibility which is connected with the other refrigerant line. Check again the relay connector between [U1U2] and [U3U4] terminals.

   Note) Be careful that the other refrigerant line address may be also cleared if clearing operation is not correctly executed.
5. After clearing of the address, set up an address again.

Troubleshooting in Test Operation

If the phenomena appear, such as a check code is output or the remote controller is not accepted in power-ON after cabling work or in address setup operation, the following causes are considered.

1 A check Code is Displayed on the Remote Controller

Check code displayed on remote controller	Outdoor unit 7-segment display	Cause	Countermeasures
E04	E19-00	Outdoor power is formerly turned on.	Turn on the power again. (In order of Indoor Outdoor)
		There is none of outdoor terminator resistor. (After address setup)	Check SW30 bit 2 of the outdoor unit. No connection between multiple refrigerant lines: SW30 bit 20N Connection between multiple refrigerant lines: SW30 bit 2 of the connected outdoor unit is turned on only in one line.
		After address was decided, all the indoor units do not correctly response after power-ON in outdoor unit.  SW30	Check and modifies disconnection of indoor/ outdoor communication line. (Communication line the leading indoor unit) Check influence of communication noise.
	L08	Address setup error • Only line addresses of the connected indoor units are undefined. • The outdoor line address and the line addresses in all indoor units do not match. • The indoor addresses are duplicated. (Units except those displaying E04 are duplicated.) • A header unit is not set up in a group. (Except group displaying E04)	Set up address again.
	E08-XX	Duplication of indoor addresses. (Address No in which sub-code of the check code are duplicated)	Set up address again.
	E07	There is none of outdoor terminal resistance, or there are two or more resistances. (After address setup, when terminal resistance setup is changed after power-ON.)  SW30	Check SW30 bit 2 of the outdoor unit. No connection between multiple refrigerant lines: SW30 bit 20N Connection between multiple refrigerant lines: SW30 bit 2 of the connected outdoor unit is turned on only in one line.
		Transmission circuit error at interface side (P.C. board failure)	Replace the interface P.C. board.
	E06	After address setup, communication from all the indoor units interrupted under condition that a normal operation can be performed. (Default : This error code is undetectable. ( )	Check and correct disconnection of indoor/outdoor communication line.(Communication line between outdoor unit and the leading indoor unit) Check influence of communication noise.
E16	E16-XX	Exceeded No of connected indoor units or exceeded capacity.	Adjust No of connected indoor units or capacity.
E25	E25	Duplication of outdoor addresses. (Only when outdoor address was manually set up)	Do not use a manual setup for outdoor address.
L04	L04	Duplication of outdoor line addresses • Line address setup error, occurred after connection between U_1, U_2 and U_3, U_4 connectors	Modify line address setup of the outdoor unit between lines. (Set up SW 13 and 14 on the interface P.C. board.)
L05 ( )	L06	Duplicated of indoor units with priority	The Heat Recovery Multi is not set up on priority.
L06 ( )		There are two or more indoor units set up with priority.	
L08	L08	Address setup error • Only indoor addresses of all the connected indoor units are undefined.	Set up address again.

( ) [L05]: Displayed on the indoor unit set up with priority.
[L06]: Displayed on the indoor unit except one set up with priority.
When you need to detect “E06” error, turn on a dip switch 09-bit 4.

2 Operation from remote controller is not accepted and a check code is displayed on 7-segment display of the interface P.C. board of the outdoor unit.

Remote controller status	7-segment display of outdoor unit	Cause	Countermeasures
No response	L08	Line addresses and indoor addresses of all the connected indoor units are unset.	Set up addresses.
		There is no outdoor unit of group control.	Set up group address.
	E19-00	Indoor unit power is not turned on.	Turn on the power again. (In order of indoor outdoor)
		Indoor/outdoor communication line is not correctly connected to the outdoor unit. (Indoor/outdoor cannot communicate before address setup.)	Correct wiring.
		There is none of outdoor terminator resistor, or there are two or more resistances. (Before address setup)	Check SW30 bit 2 of the outdoor unit. No connection between multiple refrigerant lines: SW30 bit 2 0N. Connection between multiple refrigerant lines: SW30 bit 2 of the connected outdoor unit is turned on only in one line.
	E20-01	Address setup is performed with connecting indoor/outdoor communication line.	Correct wiring.
		Address setup is performed under condition of connecting between multiple refrigerant lines.	Correct wiring.

3 There is no display of a check code on 7-segment display on the interface P.C. board of the outdoor unit though there is indoor unit which does not accept the operation from the remote controller.

Remote controller status	7-segment display of outdoor unit	Cause	Countermeasures
No response	None	Communication line is not connected between indoor and outdoor.	Modify wiring.
		Line and indoor addresses are unset. (Unit which does not response to remote controller)	Set up address.
		The power of the header unit of the group is not turned on in indoor group control. (Unit which does not response to remote controller)	Turn on the power.
		Group address is set up to follower unit in the individual control. (Unit which does not response to remote controller)	Set [0] to group address in case of individual control.
No display on remote controller (No line is output.)	None	The power is not turned on. (Unit which is not displayed on remote controller)	Turn on the power.
		Remote controller is not connected with cable. (Unit which is not displayed on remote controller)	Correct wiring.
		Miscabling of remote controller (Unit which is not displayed on remote controller)	Correct wiring.
		Remote controller communication circuit error (Unit which is not displayed on remote controller) If 230V is incorrectly applied to the remote controller terminal, the remote controller communication circuit fails.	Remove FASTON terminal connected to remote controller terminals (A/B), and check the voltage. If voltage is not applied, replace P.C. board. (15 to 18V usually)

4 In check for No. of connected Indoor units after address setup, diminished No. of connected units displayed. (There are outdoor/indoor units which do not operate in a test operation.)

Status	Cause	Countermeasures
Number of connected is short.	Miswiring of communication line unconnected cable. (Address setup operation has finished without recognition of miswired follower unit.)	After modification of wiring, set up address again and check No. of the connected outdoor units.
Number of connected indoor units is short.	Miswiring of communication line between indoor units or unconnected cable. (Address setup operation has finished without recognition of miswired indoor unit.)	After modification of wiring, set up address again and check No. of the connected indoor units.
Number of outdoor units connected to group is short in group operation from remote controller.	Remote controller is not connected with wire. Miscabling of remote controller	Using the main remote controller connected to a group, start a test operation, specify the unit which does not operate (Unit unconnected to group), and then check wiring.
	Remote controller communication circuit error If 230V is incorrectly applied to the remote controller terminal, the remote controller communication circuit fails.	Using the main remote controller connected to a group, start a test operation, specify the unit which does not operate (Unit unconnected to group). Remove Fasten receptacle connected to remote controller terminals (A/B), and check the voltage. If voltage is not applied, replace P.C. board. (15 to18V in normal time)

Monitor Function of Remote Controller Switch

When using a remote controller with the model name RBC-ATM21E, the following monitor functions can be used.

Calling of display screen

[Contents]

The temperature or the operation status of the remote controller, indoor unit, or each sensor of the outdoor unit can be known by calling up the service monitor mode from the remote controller.

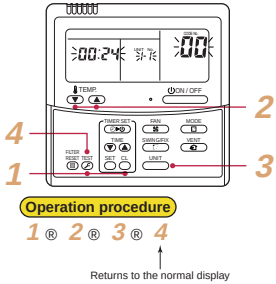
[Procedure]

1 **Push CL + TEST buttons simultaneously for 4 seconds or more to call up the service monitor mode. The service monitor goes on, and temperature of the item code 00 is firstly displayed.**

2 **Push the temperature setup ▼ / ▲ buttons to select the item number (Item code) to be monitored.**
For displayed codes, refer to the table below.

3 **Push UNIT button to change the item to one to be monitored. Then monitor the indoor unit and sensor temperature or operation status in the corresponding refrigerant line.**

4 **Pushing TEST button returns the display to the normal display.**



	Item code	Data name	Unit	Display format
Indoor unit data (NOTE 2)	00	Room temp (During control)	°C	
	01	Room temp (Remote controller)	°C	
	02	Indoor suction temp (TA)	°C	× 1
	03	Indoor coil temp (TCJ)	°C	× 1
	04	Indoor coil temp (TC2)	°C	× 1
	05	Indoor coil temp (TC1)	°C	× 1
	06	Indoor discharge temp (Tf) (Note 1)	°C	× 1
	08	Indoor PMV opening	pulse	× 1/10
System data	0A	No. of connected indoor units	unit	
	0b	Total HP of connected indoor units	HP	× 10
	0C	No. of connected indoor units	unit	
	0d	Total HP of outdoor units	HP	× 10

	Item code	Data name	Unit	Display format
Outdoor unit individual data (NOTE 4, 5)	10	Compressor 1 discharge temp (Td1)	°C	× 1
	(11)	Compressor 2 discharge temp (Td2)	°C	× 1
	12	High-pressure sensor detention pressure (Pd)	MPa	× 100
	13	Low-pressure sensor detention pressure (Ps)	MPa	× 100
	14	Suction temp (TS)	°C	× 1
	15	Outdoor heat exchanger temp (TE)	°C	× 1
	16	Temp at liquid side (TL)	°C	× 1
	17	Outside ambient temp (TO)	°C	× 1
	18	Low-pressure saturation temp (TU)	°C	× 1
	19	Compressor 1 current (I1)	A	× 10
	(1A)	Compressor 2 current (I2)	A	× 10
	1b	PMV1 + 2 opening	pulse	× 1/10
	1d	Compressor 1, 2 ON/OFF	—	(Note 3)
	1E	Outdoor fan mode	—	0 to 31
	1F	Outdoor unit HP	HP	× 1

(Note 1) Only a part of indoor unit types is installed with the discharge temperature sensor. This temperature is not displayed for other types.

(Note 2) When the units are connected to a group, data of the header indoor unit only can be displayed.

(Note 3) 01 : Compressor 1 only is ON. 10 : Compressor 2 only is ON. 11 : Both compressor 1 and 2 are ON.

(Note 4) The item codes are described as the example of the header unit.

(Note 5) The upper digit of an item code represents the outdoor unit number.

Confirmation of indoor unit address and position by using the remote controller

Confirmation of indoor unit address and position by using the remote controller

[Confirmation of indoor unit address and the position]

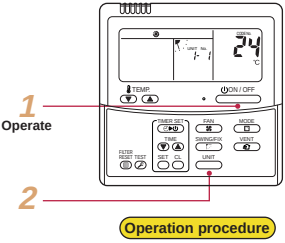
1. When you want to know the indoor address though position of the indoor unit itself can be recognized;

<Procedure> (Operation while the air conditioner operates)

1 **If it stops, push** ⏻ON / OFF **button.**

2 **Push** UNIT **button.**

The unit No. 1-1 is displayed on the LCD. (Disappears after several seconds) The displayed unit No indicates the line address and indoor address. (If there is other indoor unit connected to the same remote controller (Group control unit), other unit No. is displayed every pushing UNIT button.)



2. When you want to know position of the indoor unit using the address

- To confirm the unit numbers in a group control;

<Procedure> (Operation while the air conditioner stops)

The indoor unit numbers in a group control are successively displayed, and the corresponding indoor fan is turned on. (Operation while the air conditioner stops)

1 **Push** VENT + TEST **buttons simultaneously for 4 seconds or more.**

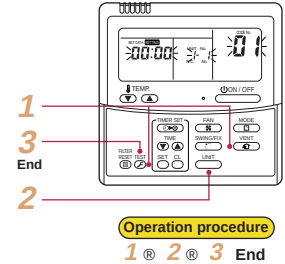
- Unit No. ALL is displayed.
- The fans of all the indoor units in a group control are turned on.

2 **Every pushing** UNIT **button, the indoor unit numbers in the group control are successively displayed.**

- The firstly displayed unit No. indicates the address of the header unit.
- Only fan of the selected indoor unit is turned on.

3 **Push** TEST **button to finish the procedure.**

All the indoor units in group control stop.



- **To confirm all the unit numbers from an arbitrary wired remote controller;**

<Procedure> (Operation while the air conditioner stops)

The indoor unit No. and position in the same refrigerant line can be confirmed.
An outdoor unit is selected, the indoor unit numbers in the same refrigerant line are successively displayed, and then its indoor unit fan is turned on.

1 **Push the timer time ▼ + TEST buttons simultaneously for 4 seconds or more.**
Firstly, the line 1, **item code** RC (Address Change) is displayed. (Select outdoor unit.)

2 **Using UNIT + SWING/FIX buttons, select the line address.**

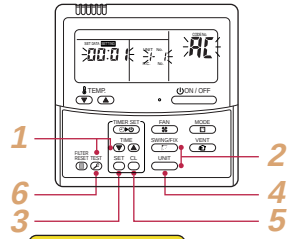
3 **Using SET button, determine the selected line address.**
- The indoor unit address, which is connected to the refrigerant pipe of the selected outdoor unit is displayed and the fan is turned on.

4 **Every pushing UNIT button, the indoor unit numbers in the identical pipe are successively displayed.**
- Only fan of the selected indoor unit operates.

[To select another line address]

5 **Push CL button to return to procedure 2).**
- The indoor address of another line can be successively confirmed.

6 **Push TEST button to finish the procedure.**



Operation procedure

1 ® 2 ® 3 ®
4 ® 5 ® 6 ® End

Change of indoor address from remote controller

Change of indoor address from remote controller

Change of indoor address from wired remote controller

- **To change the indoor address in individual operation (Wired remote controller : Indoor unit = 1 : 1) or group control** (When the setup operation with automatic address has finished, this change is available.)

<Procedure> (Operation while air conditioner stops)

1 **Push simultaneously SET + CL + TEST buttons for 4 seconds or more.**
(The firstly displayed unit No. indicates the header unit in group control.)

2 **In group control, select an indoor unit No. to be changed by UNIT button.**
(The fan of the selected indoor unit is turned on.)

3 **Using the setup temp. ▼ / ▲ buttons, set 13 to the item code.**

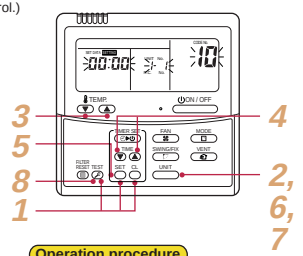
4 **Using the timer time ▼ / ▲ buttons, change the displayed setup data to a data which you want to change.**

5 **Push SET button.**

6 **Using the UNIT button, select the unit No. to be changed at the next time. Repeat the procedure 4 to 6 and change the indoor address so that it is not duplicated.**

7 **After the above change, push UNIT button to confirm the changed contents.**

8 **If it is acceptable, push TEST button to finish confirmation.**



Operation procedure

1 ® 2 ® 3 ® 4 ®
5 ® 6 ® 7 ® 8 End

- **To change all the indoor addresses from an arbitrary wired remote controller;**
  (When the setup operation with automatic address has finished, this change is available.)

Contents :

Using an arbitrary wired remote controller, the indoor unit address can be changed for each same refrigerant line

Change the address in the address check/change mode.

<Procedure> (Operation while air conditioner stops)

1 **Push the timer time ▼ + TEST buttons simultaneously for 4 seconds or more.**
Firstly, the line 1, **item code** RC (Address Change) is displayed.

2 **Using UNIT + SWING/FIX buttons, select the line address.**

3 **Push SET button.**
- The indoor unit address, which is connected to the refrigerant pipe of the selected outdoor unit is displayed and the fan is turned on.
  First the current indoor address is displayed on the setup data. (Line address is not displayed.)

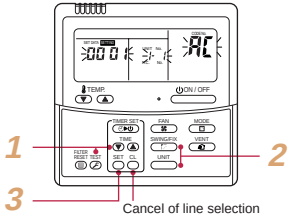
4 **The indoor address of the setup data moves up/down by the timer time ▼ / ▲ buttons.**
Change the setup data to a new address.

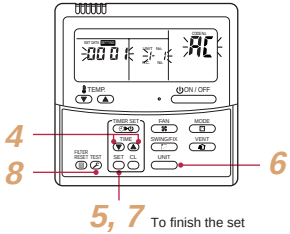
5 **Push SET button to determine the setup data.**

6 **Every pushing UNIT button, the indoor unit numbers in the identical pipe are successively displayed. Only fan of the selected indoor unit operates.**
Repeat the procedure **4** to **6** and change all the indoor addresses so that they are not duplicated.

7 **Push SET button.**
(All the displays on LCD go on.)

8 **Push TEST button to finish the procedure.**





Operation procedure

1 ® **2** ® **3** ® **4** ® **5** ® **6** ® **7** ® **8** **End**

Here, if the unit No is not called up, the outdoor unit in this line does not exist.
Push CL button, and then select a line according to procedure **2**.

Error Clearing Function

1. Clearing from the main remote controller

[Error clearing in outdoor unit]

Error of the outdoor unit is cleared by the unit of one refrigerant circuit system to which the indoor units operated by the remote controller. (Error of the indoor unit is not cleared.)

For clearing errors, the service monitor function of the remote controller is used.

<Method>

1 **Change the mode to service monitor mode by pushing + buttons simultaneously for 4 seconds or more.**

2 **Using / buttons, set "FF" to item code.**

The display in Section A in the following figure is counted with interval of 5 seconds as "0005" "0004" "0003" "0002" "0001" "0000".

When the count arrives "0000", the error is cleared.

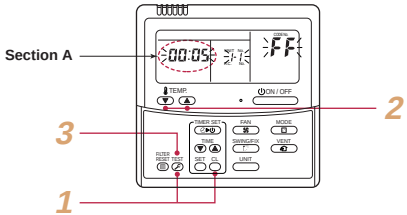
However, counting from "0005" is repeated on the display.

3 **When button is pushed, the status returns to the normal status.**

Operation procedure

1 ® 2 ® 3

The status returns to the normal status.



[Error clearing in indoor unit]

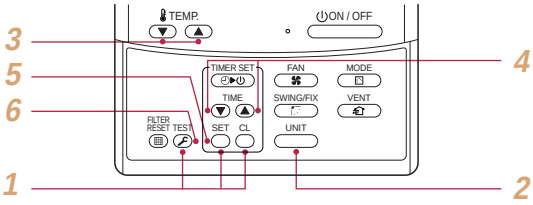
Error in the indoor unit is cleared by ON / OFF button on the remote controller.

(Only error of the indoor unit connected with operating remote controller is cleared.)

Indoor Unit

<Setup of Selecting Function in Indoor Unit> (Be sure to Execute Setup by a Wired Remote Controller)

<Procedure> Execute the setup operation while the unit stops.



1 Push SET, CL, and TEST buttons simultaneously for 4 seconds or more.

The firstly displayed unit No. indicates the master indoor unit address in the group control.

In this time, the fan of the selected indoor unit is turned on.

2 Every pushing UNIT button, the indoor unit numbers in the group control are successively displayed. In this time, the fan of the selected indoor unit only is turned on.

3 Specify the item code (DN) using the setup temperature ▼ and ▲ buttons.

4 Select the setup data using the timer time ▼ and ▲ buttons.

(When selecting the DN code to "33", change the temperature indication of the unit from "°C" to "°F" on the remote controller.)

5 Push SET button. (OK if display goes on.)

- To change the selected indoor unit, return to procedure 2.
- To change the item to be set up, return to procedure 3.

6 Pushing TEST button returns the status to normal stop status.

TYPE

Item code [10]

Setup data	Type	Abbreviated Model name	
0000	1-way Air Discharge Cassette	MMU-AP	SH
0001	4-way Air Discharge Cassette	MMU-AP	H
0002	2-way Air Discharge Cassette	MMU-AP	WH
0003	1-way Air Discharge Cassette (Compact type)	MMU-AP	YH
0004	Concealed Duct Standard	MMD-AP	BH
0005	Slim Duct	MMD-AP	SPH, SH
0006	Concealed Duct High Static Pressure	MMD-AP	H
0007	Under Ceiling	MMC-AP	H
0008	High Wall	MMK-AP	H
0010	Floor Standing Cabinet	MML-AP	H
0011	Floor Standing Concealed	MML-AP	BH
0013	Floor Standing	MMF-AP	H
0014	Compact 4-way Air Discharge Cassette	MMU-AP	MH
~	—		

Indoor unit capacity

Item code [11]

Setup data	Model
0001	007
0003	009
0005	012
0007	015
0009	018
0011	024
0012	027
0013	030
0015	036
0017	048
(0018)	(056)
(0021)	(072)
(0023)	(096)
~	—

Table: Function selecting item code (DN)
(Items necessary to perform the applied control at the local site are described.)

DN	Item	Description	At shipment
01	Filter display delay timer	0000 : None 0001 : 150H 0002 : 2500H 0003 : 5000H 0004 : 10000H	According to type
02	Dirty state of filter	0000 : Standard 0001 : High degree of dirt (Half of standard time)	0000 : Standard
03	Central control address	0001 : No.1 unit to 0064 : No.64 unit 0099 : Unfixed	0099 : Unfixed
04	Specific indoor unit priority	0000 : No priority 0001 : Priority	0000 : No priority
06	Heating temp shift	0000 : No shift 0001 : +1°C 0002 : +2°C to 0010 : +10°C (Up to +6 recommended)	0002 : +2°C (Floor type 0000: 0°C)
0d	Existence of [AUTO] mode	0000 : Provided 0001 : Not provided (Automatic selection from connected outdoor unit)	0001 : Not provided
0E	Follows operation mode of the header unit	0000 : Does not follow 0001 : Follows	0000 : Not provided
0F	Cooling only	0000 : Heat pump 0001 : Cooling only (No display of [AUTO] [HEAT])	0000 : Heat pump
10	Type	0000 : (1-way air discharge cassette) 0001 : (4-way air discharge cassette) to 0037	According to model type
11	Indoor unit capacity	0000 : Unfixed 0001 to 0034	According to capacity type
12	Line address	0001 : No.1 unit to 0030 : No.30 unit	0099 : Unfixed
13	Indoor unit address	0001 : No.1 unit to 0064 : No.64 unit	0099 : Unfixed
14	Group address	0000 : Individual 0001 : Header unit of group 0002 : Follower unit of group	0099 : Unfixed
19	Louver type (Adjustment of air direction)	0000 : Not provided 0001 : Swing only 0004 : [4-way Air Discharge Cassette type] and [Under Ceiling type]	According to type
1E	Temp difference of [AUTO] mode selection COOL HEAT, HEAT COOL	0000 : 0 deg to 0010 : 10 deg (For setup temperature, reversal of COOL/HEAT by ± (Data value)/2)	0003 : 3 deg (T±±1.5)
28	Automatic restart of power failure	0000 : None 0001 : Restart	0000 : None
29	Operation condition of humidifier	0000 : Usual 0001 : Condition ignored (Detection control for heat exchanger temperature)	0000 : Usual
2A	Selection of option/error input (CN70)	0000 : Filter input 0001 : Alarm input (Air washer, etc.) 0002 : None	0002 : None
2E	HA terminal (CN61) select	0000 : Usual 0001 : Leaving-ON prevention control	0000 : Usual (HA terminal)
30	Automatic elevating grille	0000 : Unavailable 0001 : Available	0000 : Unavailable
31	Ventilating fan control	0000 : Unavailable 0001 : Available	0000 : Unavailable
32	TA sensor selection	0000 : Body TA sensor 0001 : Remote controller sensor	0000 : Body TA sensor
33	Temperature unit select	0000 : °C (at factory shipment) 0001 : °F	0000 : °C
40	Drain pump control	0000 : None 0001 : Pump ON 0002 : None 0003 : Pump OFF	0003 : Pump OFF 0000 : Standard
5d	High ceiling selection (Air volume selection)		

Indoor unit type		Item	Set up data				
			0	1	2	3	6
4-way Air Discharge Cassette	MMU-AP 1H	High ceiling	Standard	High ceiling (1)	—	High ceiling (3)	—
		Filter	Standard	Super long life filter	—	High efficiency filter	—
Compact 4-way Air Discharge Cassette	MMU-AP 1MH	High ceiling	Standard	—	High ceiling (2)	High ceiling (3)	—
1-way Air Discharge Cassette	MMU-AP 2SH	High ceiling	Standard	High ceiling (1)	—	High ceiling (3)	—
Concealed Duct Standard	MMU-AP 1BH	External static pressure	40Pa	70Pa	—	100Pa	20Pa
Slim Duct	MMU-AP 1SPH	External static pressure	10Pa	20Pa	—	35Pa	50Pa

60	Timer set (Wired remote controller)	0000 : Available (Operable) 0001 : Unavailable (Operation prohibited)	0000 : Available
62	Anti-ceiling smudging control	0000 : Clear	4- way Air Discharge Cassette type only

1 Function to Start/Stop (ON/OFF) Indoor Unit from Outdoor Unit

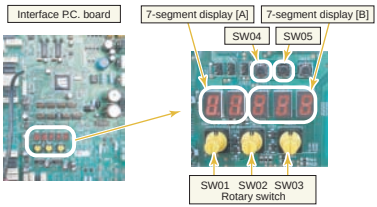
The following functions enables the start and stop of the indoor units using the switches on the interface P.C. board.

No.	Function	Outline	Setup/Release	7-segment display
1	Cooling test operation	Changes the mode of all the connected indoor units collectively to cooling test operation. Note) Control operation same as test operation for remote controller.	[Setup] Push SW04 for 2 seconds or more with SW01"2", SW02"5", SW03"1". [Release] Return SW01, SW02, SW03 to "1".	Section A [C] Section B [–C]
2	Heating test operation	Changes the mode of all the connected indoor units collectively to heating test operation. Note) Control operation same as test operation for remote controller.	[Setup] Push SW04 for 2 seconds or more with SW01"2", SW02"6", SW03"1". [Release] Return SW01, SW02, SW03 to "1".	Section A [H] Section B [–H]
3	Batch start	Starts all the connected indoor units collectively. Note) The contents follow the setup of remote controller.	[Setup] Push SW04 for 2 seconds or more with SW01"2", SW02"7", SW03"1". [Release] Return SW01, SW02, SW03 to "1".	Section A [CH] Section B [11] [11] is displayed on Section B for 5 seconds.
	Batch stop	Stops all the connected indoor units collectively.	[Setup] Push SW05 for 2 seconds or more with SW01"2", SW02"7", SW03"1". [Release] Return SW01, SW02, SW03 to "1".	Section A [CH] Section B [00] [00] is displayed on Section B for 5 seconds.
4	Individual start	Starts the specified indoor unit. Notes) • Control operation same as test. • The other indoor units keep existing status.	[Setup] Push SW04 for 2 seconds or more set SW01 "16" and set SW02 and SW03 to address No. (1 to 64) to be started. [Release] Return SW01, SW02, SW03 to "1".	Section A [ ] Section B [ ] Section A: Displays the corresponding indoor address. Section B: Displays [11] for 5 seconds from operation-ON.
	Individual stop	Stops the specified indoor unit. Note) The other indoor units keep existing status.	[Setup] Push SW05 for 2 seconds or more set SW01 "16" and set SW02 and SW03 to address No. (1 to 64) to be stopped. [Release] Return SW01, SW02, SW03 to "1".	Section A [ ] Section B [ ] Section A: Displays the corresponding indoor address. Section B: Displays [00] for 5 seconds from operation-OFF.
	Individual test operation	Operates the specified indoor unit. Note) The other indoor units keep existing status.	[Setup] Push SW04 for 10 seconds or more set SW01 "16" and set SW02 and SW03 to address No. (1 to 64) to be operated. [Release] Return SW01, SW02, SW03 to "1".	Section A [ ] Section B [ ] Section A: Displays the corresponding indoor address. Section B: Displays [FF] for 5 seconds from test operation-ON.

Note 1) This start/stop function only sends the command signals from the outdoor unit to the indoor unit, such as start, stop, operation mode, etc.

Once it does not resend the signals even if the indoor unit does not follow the sent signals.

Note 2) The above controls are not available when an error has caused the system to stop.



2 Data display of system information

SW01	SW02	SW03	Display contents				
1	1	3	Refrigerant name	Displays refrigerant name.	A		B
				Model with refrigerant R410A		r4	10A
				Model with refrigerant R407C		r4	07C
	2		System capacity	A	[4] to [6] : 4 to 6HP		
				B	[HP]		
	3		Total capacity of indoot units	A	[i. .]		
				B			
	4		No. of connected indoor units/ No. of units with cooling thermo ON	A	[0] to [10] : 0 to 10 units (No. of connected units)		
				B	[C0] to [C10] : 0 to 10 units (No. of units with cooling thermo ON)		
	5		No. of connected indoor units/ No. of units with heating thermo ON	A	[0] to [10] : 0 to 10 units (No. of connected units)		
				B	[H0] to [H10] : 0 to 10 units (No. of units with heating thermo ON)		
	6		Compressor command correction amount	A	Data is displayed with hexadecimal notation		
				B			
	7		Release control	A	Normal time : [r], During release control: [r1]		
				B	—		
	8		—	A	—		
				B	—		
	9		—	A	—		
				B			
	10		Refrigerant/oil recovery operation	A	During sending of cooling refrigerant oil recovery signal : [C1]. Normal time : [C]		
				B	During sending of heating refrigerant oil recovery signal : [H1]. Normal time : [H]		
	11		Automatic address	A	[Ad]		
				B	Automatic addressing : [FF], Normal time : [ ]		
	12		Demand operation	A	[dU]		
				B	Normal time : [ ], In 50% to 90% : [50 to 90] When controlling by communication line input : [E50 to E90]		
	13		Optional control (P.C. board input)	Displays optioned control status		A	B
				Operation mode selection : In heating with priority (Normal)		–.	. . .
					Priority on cooling	c.	. . .
					Heating only	H.	. . .
					Cooling only	C.	. . .
					Priority on No. of operating indoor units	n.	. . .
					Priority on specific indoor unit	U.	. . .
				External master ON/OFF control		.....	. . .
					Start input	.1.	. . .
					Stop input	.0.	. . .
				Night operation (Sound reduction) : Normal		. .	.... . .
					Operation input	. .	1. . .
				Snow fan operation : Normal		. .	..... .
					Operation input	. .	.1. .
	14		Option control (BUS line input)	Same as above			
	15		Unused				
	16		—	A	—		
				B	—		

mark: Indicates none on display

3 Data display of outdoor unit information

SW01	SW02	SW03	Display contents				
1	1	1	Error data	A	Displays outdoor unit number: [U1] to [U4]		
				B	Displays check code (Latest code only is displayed.) There is no check code: [– – –] There is sub-code: Check code [ ] for 3 seconds, sub-code [–] for 1 second alternately		
			<SW04> push function : Fan of unit with error only drives. 7-segment A: [E1] <SW04 + SW05> push function : Fan of normal unit only drives. 7-segment A: [E0] <SW05> push function : Interruption of fan operation function				
	2		—	A	—		
				B	—		
	3		Operation mode	A	Stop: [ ] Normal cooling: [C], Normal heating: [H], Normal defrost: [J]		
				B	—		
	4		Outdoor unit HP	A	4HP: [4], 5HP: [5], 6HP: [6]		
				B	[HP]		
	5		Compressor operation command	A	Compressor operation command is displayed. Data display with Hexadecimal notation: [00 to FF]		
				B	[ ]		
			<SW04> push function : Inverter frequency is exchanged to decimal notation. 7-segment display (A/B) : [* *] [* * H] (Normal display by pushing <SW05>)				
	6		Outdoor fan step	A	[FP]		
				B	Step 0 to 31: [0 to 31]		
	7		—	A	—		
				B	—		
	8		—	A	—		
				B	—		
	9		Control valve output data	Displays control output status of solenoid valve		A	B
				4-way valve: ON		H. 1	… … …
				4-way valve: OFF		H. 0	… … …
	10			SV2: ON / SV5: OFF		2. 1	… 5. 0
				SV2: OFF / SV5: ON		2. 0	… 5. 1
	11			SV41: ON / SV42: OFF		4. 1	… … …
				SV41: OFF / SV42: ON		4. 0	… … …
	12			— …		…	… … …
	13			— …		…	… … …
	14		PMV opening	Displays opening data (Decimal) (Total opening)			. P
	15		—	—			
	16		—	A	—		
				B	—		

4 Data display of outdoor cycle

SW01	SW02	SW03	Display contents					
1	1	2	Pd pressure data	Pd pressure (MPaG) is displayed with decimal data. (MPaG: Approx. 1/10 value of kg/cm^{2}G data)		A	B
						P d.	.
	2		Ps pressure data	Ps pressure (MPaG) is displayed with decimal data.		P S.	.
	3		PL pressure conversion data	Estimated pressure of liquid line (MPaG) is displayed with decimal data.		P L.	.
	4		TD sensor data	Temperature sensor data (°C) is displayed with decimal notation.	Symbol	t d	
					Data		.
	5		TS sensor data	• Symbol display for 1 sec. and data display for 3 sec. are alternately displayed.	Symbol	t S	
					Data		.
	6		TE sensor data	• Data is displayed in [ ].	Symbol	t E	
				• Negative data is displayed as [–].	Data		.
	7		TL sensor data		Symbol	tL	
					Data		.
	8		TO sensor data		Symbol	tO	—
					Data	—	—
	9		—		Symbol		
					Data		.
	10		—		Symbol		
					Data		.
	11		—		Symbol		
					Data		.
	12		—		Symbol		
					Data		.
	13		—		Symbol		
					Data		.
	14		—		Symbol		
					Data		.
	15		—	A	—		
				B	—		
	16		—	A	—		
				B	—		

5 Data display of indoor unit information

SW01	SW02	SW03	Display contents		
4	1 to 16	1 to 3	Receiving status of indoor BUS communication	B	Receiving time: [… … 1], Not received: [… … …]
5			Indoor check code	B	No check code: [– – –]
6			Indoor capacity (HP) horse power	B	0. 2, 0. 5, 0. 8, … 1, 1. 2, 1. 7, … 2, 2. 5, … 3, 3. 2, … 4, … 5, … 6, … 8, 1 0, 1 6, 2 0
7			Indoor request command (S code)	B	Data is displayed with Hexadecimal notation [… … 0 to … … F] : Heating
8			Indoor PMV opening data	B	Data is displayed with Decimal notation
9			Indoor TA sensor data	B	Data is displayed with Decimal notation
10			Indoor TF sensor data	B	Data is displayed with Decimal notation
11			Indoor TCJ sensor data	B	Data is displayed with Decimal notation
12			Indoor TC1 sensor data	B	Data is displayed with Decimal notation
13			Indoor TC2 sensor data	B	Data is displayed with Decimal notation

NOTE) Indoor address No. is chosen by changing SW02 and SW03.

SW03	SW02	Indoor address	7-segment display A
1	1 to 16	SW02 setup number	[01] to [16]
2	1 to 16	SW02 setup number + 16	[17] to [32]
3	1 to 16	SW02 setup number + 32	[33] to [48]

6 Outdoor EEPROM check code display

* The latest check code written in EEPROM on each outdoor unit is displayed.
(It is used when confirming the check code after power supply has been reset.)

Set SW01 to 03 as shown in the following table and the push SW04 for 5 seconds or more to display an check code.

SW01	SW02	SW03	Display contents	7-segment display	
				A	B
1	1	16	The latest check code of the outdoor unit 1 (U1)	E. r	1. – –

7 Service support function list

SW01	SW02	SW03	7-segment display [A]	Function contents
2	1	1	[J C]	Refrigerant circuit and control communication line check function (Cooling operation)
	2		[J H]	Refrigerant circuit and control communication line check function (Heating operation)
	3		[P]	Indoor PMV forced full open function
	4		[A 1]	Indoor remote controller discriminating function
	5		[C]	Cooling test operation function
	6		[H]	Heating test operation function
	7		[C H]	Indoor collective start/stop (ON/OFF) function
	16		[E r]	Error clear function

2	1 to 16	3	[H r]	Solenoid valve forced open/close function
		4 to 5	[F d]	Fan forced operation function
		15	[t o]	Outside temp sensor manual adjustment function

16	1 to 9	1	[01] to [16]	Indoor No. 1 to 9 unit	Indoor individual start/stop (ON/OFF) function

8 Pulse Motor Valve (PMV) Forced Open/Close Function in Indoor Unit

This function is provided to fully open or close forcibly the PMV for 2 minutes in all indoor units, using the switch operation on the interface P.C. board of the outdoor unit.

This function is also used to open the PMV fully when turning off the power and executing an operation, for example, vacuuming.

Operation

[Open fully]

Set the switch SW01 on the interface P.C. board of the outdoor unit to [2], SW02 to [3], SW03 to [1] and push SW04 for 2 seconds or more. (Display shown on 7-segment display for 2 minutes as follows.) [P] [FF]

[Close fully]

Set the switch on the interface P.C. board of the outdoor unit SW01 to [2], SW02 to [3], SW03 to [1] and push SW05 for 2 seconds or more. (Display shown on 7-segment display for one minute as follows.) [P] [00]

[Clear]

After 2 minutes (1 minutes for “Close fully”) have passed when setup has finished, the PMV automatically returns to the normal operation.

9 Pulse Motor Valve (PMV) Forced Open Fully/Close fully Function in Outdoor Unit

This function is provided to fully open or close fully the PMV used in the outdoor unit for 2 minutes.

[Open fully]

Short-circuit CN30 on the interface P.C. board of the outdoor unit.

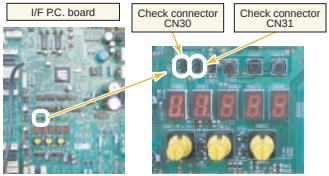
[Close fully]

Short-circuit CN31 on the interface P.C. board of the outdoor unit.

[Clear]

After 2 minutes, the opening returns to the normal operation.

Be sure to remove the short circuit after confirmation.



10 Solenoid Valve Forced Open/Close Function in Outdoor Unit

This function is provided to forcibly open/close each solenoid valve mounted in the outdoor unit by use of the switches provided on the outdoor unit interface P.C. board. This function confirms the operation of each solenoid valve.

[Operation]

1. On the interface P.C. board set SW01 to [2], SW02 to [1] and SW03 to [3].
2. Confirm [H,r] is displayed on the 7-segment display [B]. Push switch SW04 for 2 seconds or more.
3. Confirm [2] is displayed on the 7-segment display - this indicates that solenoid SV2 has been switched on.
4. Each solenoid can be operated by selecting the appropriate SW02 position as shown in the table below.
   (ON/OFF output pattern of each solenoid valve is as below.)

Note 1) Be aware that there is a 5 second delay in the operation of the selected solenoid valve after SW02 has been set.

Note 2) The mark [○] in the table indicates the selected solenoid valve is forced on.

Note 3) The mark [—] in the table indicates the selected solenoid mode will depend on the specifications of the air conditioner.

Note 4) The mark [×] in the table indicates the selected solenoid valve has been turned off.

Note 5) The case heater relay output operates both compressor and accumulator heaters.

SW01	SW02	SW03	7-segment display[B]	Operation pattern of solenoid valve			Compressor and accumulator heater
				SV2	SV4	SV5	
2	1	3	[2]	○	—	—	○
	2		[4]	—	○	—	○
	3		[5]	—	—	○	○
	15		[OFF]	×	×	×	×
	16		[ALL]	○	○	○	○

[Clear]

Return settings on SW01, SW02, and SW03 to (1/1/1) on the Interface P.C. board.

Note) Ensure this function is cleared to return the air conditioner to normal operation.

11 Fan Operation Check in Outdoor Unit

This function is provided to check the fan operation on the interface P.C. board in the outdoor unit. The frequency of the fan speed can be controlled.

Therefore utilize this function to check the operation or abnormal sound in the fan system.

Note) Do not use this function during operation of the compressor. It may damage the compressor.

[Operation]

1. Set the switch on the interface P.C. board of the outdoor unit SW01 to [2], SW02 to [1], SW03 to [4].
2. When [F. d] is displayed in 7-segment display [A], keep pushing the switch SW04 for 2 seconds or more.
3. From when fan step [31] is displayed in 7-segment display [B], the fan starts operation. (Max. step operation)
4. After then, 7-segment display [B] and the fan step are changed by changing the setup number of the switches SW02 and SW03. (Output pattern of the fan is as follows.)

SW01	SW02	SW03	7-segment display [B]	Fan step
2	1	4	[31]	31
	2		[30]	30
	3		[29]	29
	4		[28]	28
	5		[27]	27
	6		[26]	26
	7		[25]	25
	8		[24]	24
	9		[23]	23
	10		[22]	22
	11		[21]	21
	12		[20]	20
	13		[19]	19
	14		[18]	18
	15		[17]	17
	16		[16]	16

SW01	SW02	SW03	7-segment display [B]	Fan step
2	1	5	[15]	15
	2		[14]	14
	3		[13]	13
	4		[12]	12
	5		[11]	11
	6		[10]	10
	7		[9]	9
	8		[8]	8
	9		[7]	7
	10		[6]	6
	11		[5]	5
	12		[4]	4
	13		[3]	3
	14		[2]	2
	15		[1]	1
	16		[0]	0

[Clear]

This function is cleared by one of the following operations.

1. When SW01 setting number was changed to other number.
2. Push-switch SW05 was pushed for 2 seconds or more.

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