Contents

5. TEST RUN

1. Preparing for Test Run

1. Preparing for Test Run

- **Before attempting to start the air conditioner, check the following.**

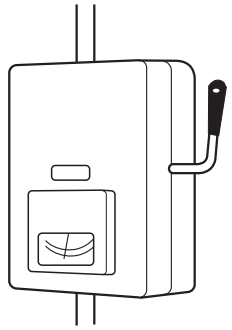
(1) All loose matter is removed from the cabinet especially steel filings, bits of wire, and clips.

(2) The control wiring is correctly connected and all electrical connections are tight.

(3) The protective spacers for the compressor used for transportation have been removed. If not, remove them now.

(4) The transportation pads for the indoor fan have been removed. If not, remove them now.

(5) The power has been connected to the unit for at least 5 hours before starting the compressor. The bottom of the compressor should be warm to the touch and the crankcase heater around the feet of the compressor should be hot to the touch.

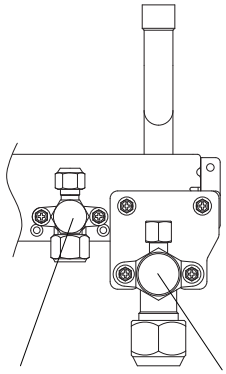


ON

(Power must be turned ON at least 5 hours before attempting test run)

Power mains switch

(6) Both the gas and liquid tube service valves are open. If not, open them now.



Liquid tube Gas tube

(7) Request that the customer be present for the test run. Explain the contents of the operating instructions, then have the customer actually operate the system.

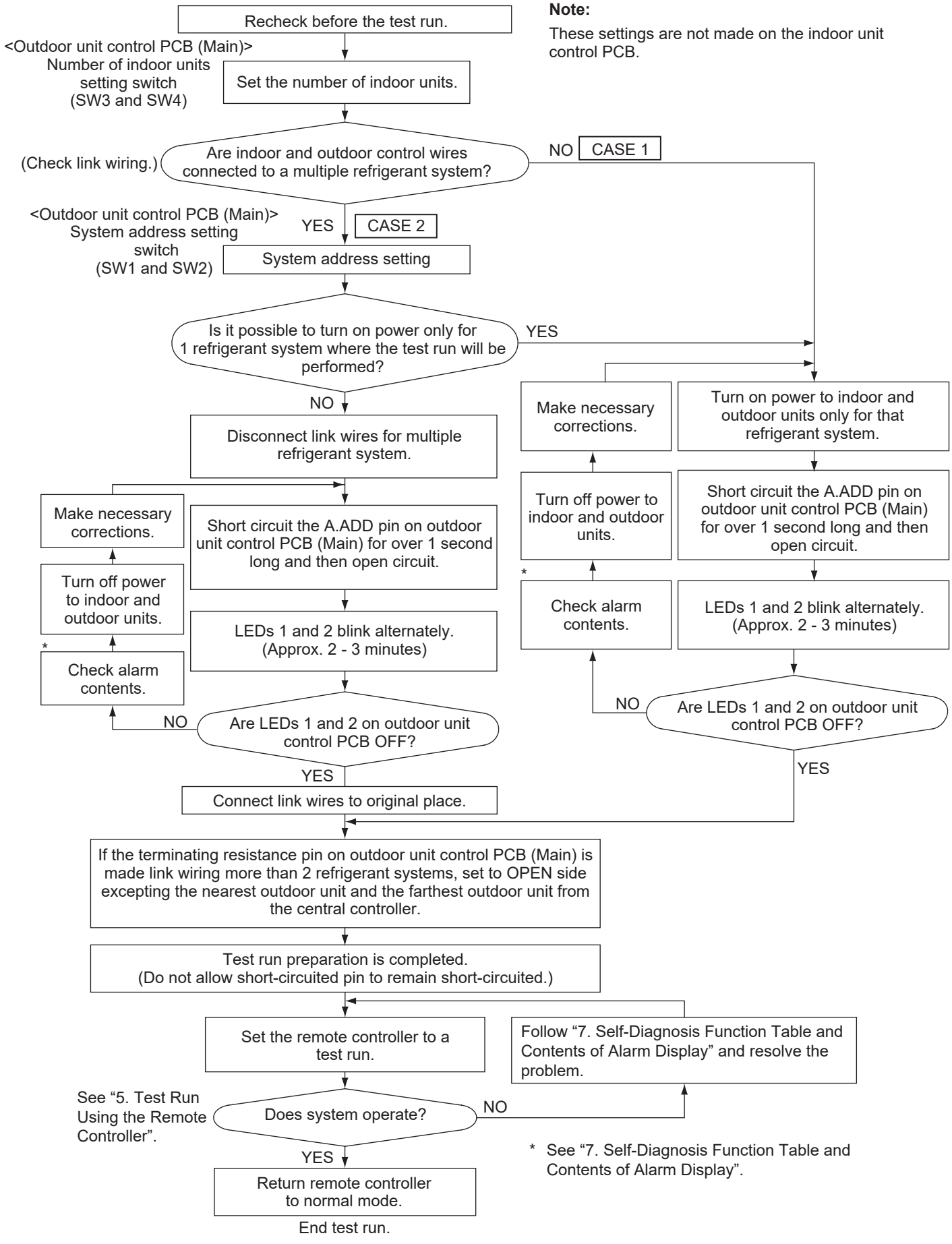
(8) Be sure to give the operating instructions and installation instructions to the customer.

(9) When replacing the outdoor unit control PCB, be sure to make all the same settings on the new outdoor unit control PCB as were in use before replacement.
The existing EEPROM is not changed, and is connected to the new outdoor unit control PCB.

5

2. Test Run Procedure

2. Test Run Procedure



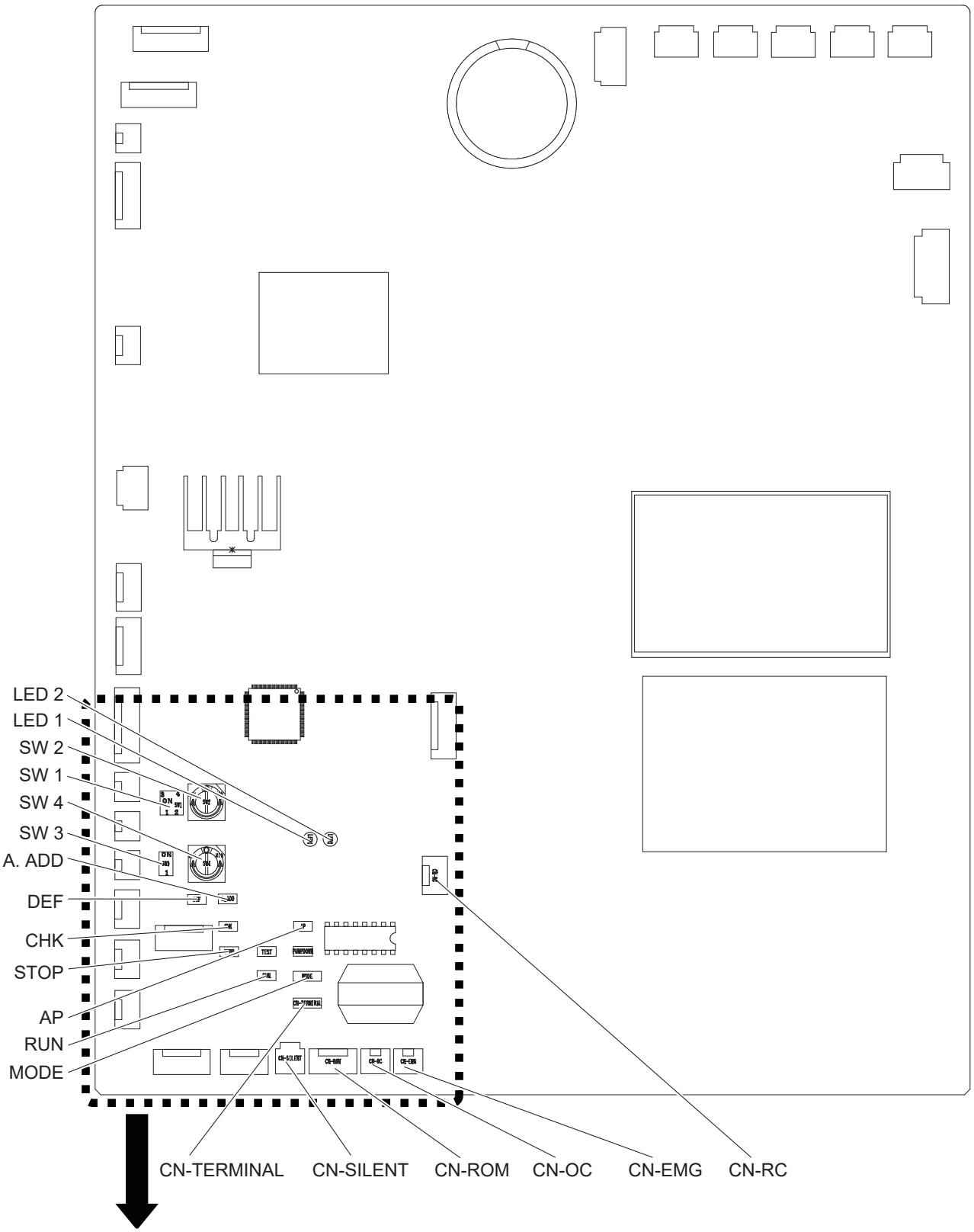
Note:
These settings are not made on the indoor unit control PCB.

* See “7. Self-Diagnosis Function Table and Contents of Alarm Display”.

5

3. Outdoor Unit Control PCB Setting

3. Outdoor Unit Control PCB Setting



For detailed drawing, see the page 5-5.

3. Outdoor Unit Control PCB Setting

● **Examples of the number of indoor units settings (SW3, SW4)**

Number of indoor units	Indoor unit setting (SW3) (1P DIP switch) 10	Indoor unit setting (SW4) (Rotary switch)
1 - 9 unit (factory setting : 1 unit)	OFF ON/OFF 	 Set to 1 - 9
10 - 16 unit	ON ON/OFF 	 Set to 0 - 6

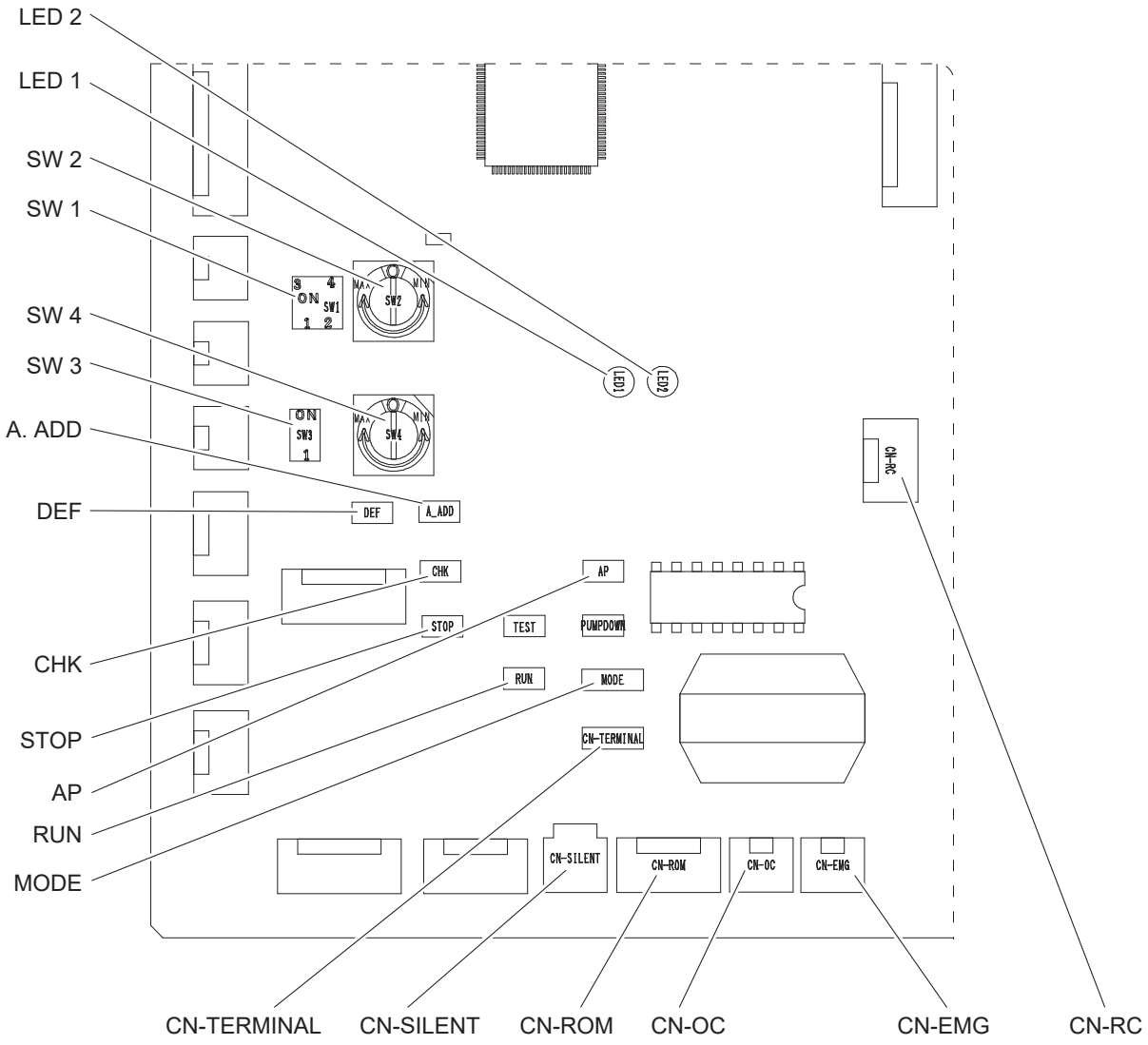
DO NOT exceed the maximum number of indoor units when making connections.
The indoor unit address setting should also be set less than “16”.
In the event of setting more than “17”, the communication cannot be made between the outdoor and indoor units.

● **Examples of refrigerant circuit address settings (required when link wiring is used) (SW1, SW2)**

System address No.	System address (SW1) (2P DIP switch) 10 20	System address (SW2) (Rotary switch)
System 1 (factory setting)	Both OFF ON/OFF 	 Set to 1
System 11	1 ON ON/OFF 	 Set to 1
System 21	2 ON ON/OFF 	 Set to 1
System 30	Both ON ON/OFF 	 Set to 0

5

3. Outdoor Unit Control PCB Setting



5

3. Outdoor Unit Control PCB Setting

● **Name and Function of Each Switch on Outdoor Unit Control PCB**

Function Switch	Remarks
MODE pin (3P, BLK)	Changes to cooling/heating mode. When in normal operation: When short circuited the COOL side, indoor unit operation in the same refrigerant system changes to all cooling mode. When short circuited the HEAT side, indoor unit operation in the same refrigerant system changes to all heating mode. When in auto address setting: Changes to heating mode with open-circuit.
A.ADD pin (2P, BLK)	Short circuited for over 1 second long → Auto address setting starts with open-circuit. If short circuit lasts for over 1 second long during auto address setting, the setting is interrupted.
CHK pin (2P, BLK)	When short circuited, test run begins. (If the remote controller is connected in test run mode, it is automatically cancelled after 1 hour.) Also, if short-circuit is cancelled, test run mode is cancelled.
RC plug (3P, BLU)	Connects to outdoor unit maintenance remote controller and content of alarm message will be checked.
RUN pin (2P, BLK)	When short circuited and pulse signal is given, all indoor units operate in the same refrigerant system.
STOP pin (2P, BLK)	When short circuited and pulse signal is given, all indoor units stop in the same refrigerant system. (When short circuited, operation cannot be performed by the indoor unit's remote controller.)
DEF pin (2P, BLK)	When the pin of the main unit is short-circuit in heating mode, defrosting operation is started. Even if short circuited, defrosting will not be activated immediately.
AP pin (2P, BLK)	Can be used when vacuuming the outdoor unit.
SILENT plug (2P, WHT)	Can be used when setting the outdoor unit fan in sound absorbing mode.

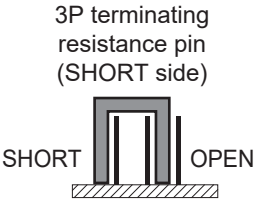
For details, refer to the Test Run Service Manual.

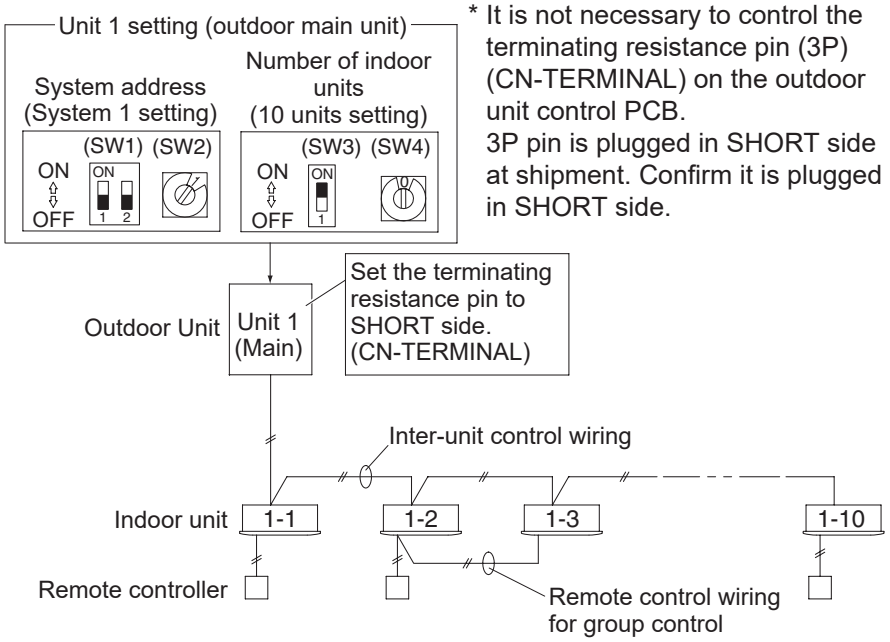
4. Auto Address Setting

4. Auto Address Setting

Example: Basic Wiring Diagram (1)

- **Case of no link wiring**
  (Inter-unit control wiring is not connected to a multiple system.)
  Indoor unit address setting is possible without starting the compressor.





* It is not necessary to control the terminating resistance pin (3P) (CN-TERMINAL) on the outdoor unit control PCB.
3P pin is plugged in SHORT side at shipment. Confirm it is plugged in SHORT side.

Case 1

Auto Address Control from Outdoor Unit

1. Check the refrigerant system's Address Setting Rotary switch (SW2) on outdoor unit control PCB (Main) to "1" and the Dip switch (SW1) to "0" (at shipment). ON / OFF
2. Regarding the setting of the number of indoor units connected to the outdoor unit, set the Dip switch (SW3) for setting the number of indoor units on outdoor unit control PCB (Main) connected to the outdoor unit to "1" and set the Rotary switch (SW4) to "0". ON / OFF
3. Turn on power to indoor and outdoor units.
4. Short circuit the A.ADD pin on outdoor unit control PCB (Main) for over 1 second long and open circuit.
   Communication for auto address setting begins.
   * To cancel, short circuit the A.ADD pin again for over 1 second long and then open circuit. The LED that indicates auto address setting goes out and the process is stopped. Be sure to perform auto address setting again.
   ⇩
   Auto address setting is completed when LEDs 1 and 2 on outdoor unit control PCB (Main) go out.
   ⇩
5. Remote control operation is now available.
   * When auto address setting is controlled by the remote controller, perform auto address setting by the remote controller after step 3 described above.

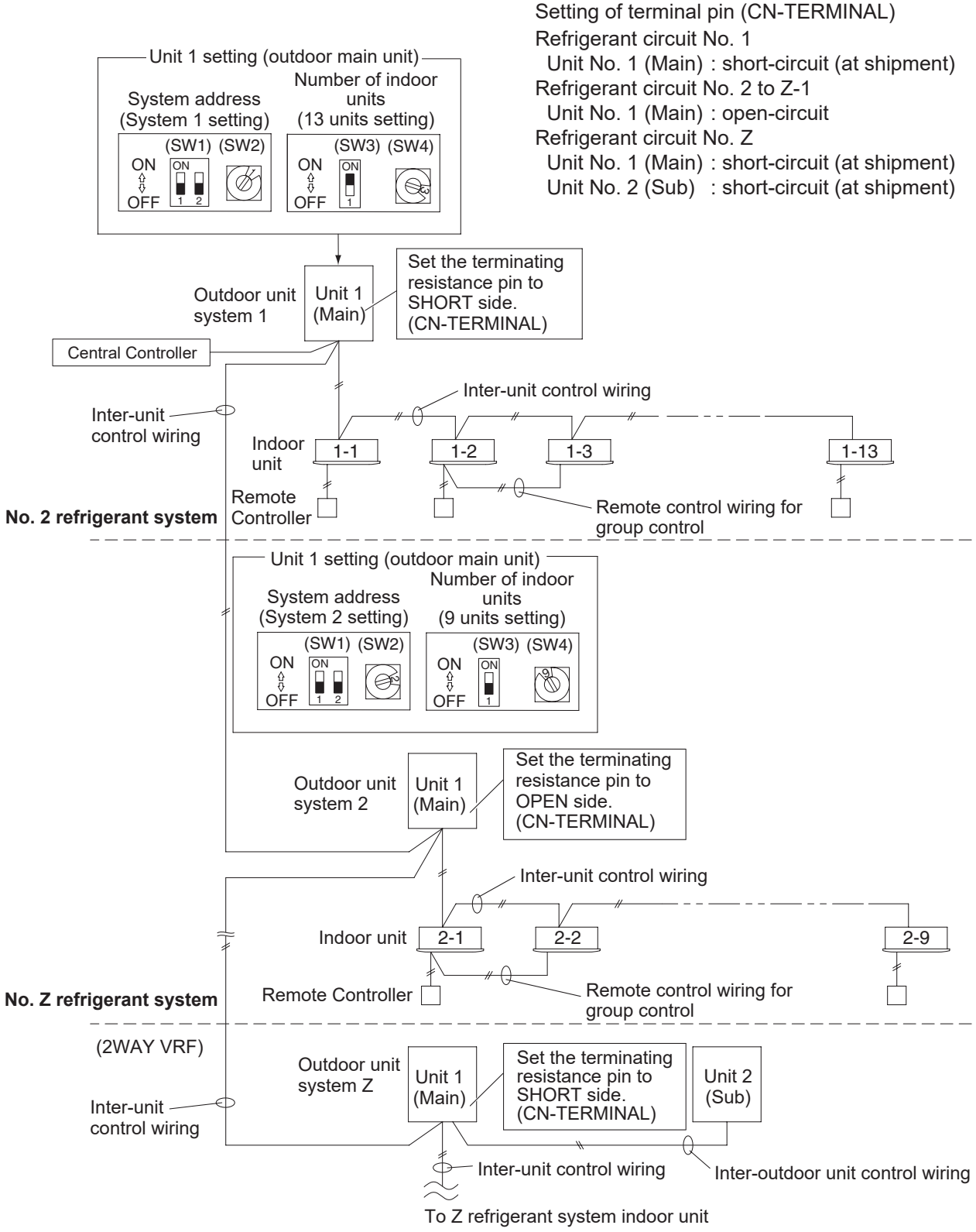
5

4. Auto Address Setting

Example: Basic Wiring Diagram (2)

- **Case of link wiring** * See “ATTENTION!” on page 5-25.

No. 1 refrigerant system



5

4. Auto Address Setting

- **Final check before operation**

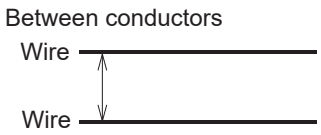
  Final check must be done under the conditions of inter-outdoor unit control wiring connected to the centralized control system and the resistor between conductors must be measured by a tester. Check if it is showing between 30Ω and 120Ω.

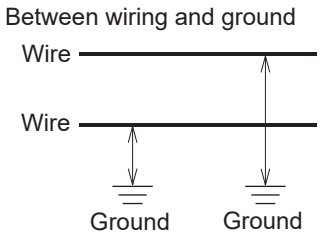
  If the resistance value is out of range, check adjustment of the termination resistor again. Even if it is out of range, the problem is caused by wiring.

  • Is the wiring connection properly completed?

  • Are there any scratches or deterioration on the coverage?

  • Measure between conductors and also between wiring and ground by 500 V mega-tester (insulation resistance meter).
  Make sure the mega-tester is showing more than 100MΩ.
  When measuring, remove both ends of the wiring from the terminal board.
  If not removed, it will be damaged.
  If it is less than 100MΩ, a new wiring connection should be made.





Case 2 **Auto Address Control for Multiple Linked Refrigerant System**

How to Control Auto Address Setting from Outdoor Unit

1. Check that the refrigerant system address Rotary switch (SW2) on outdoor unit control PCB (Main) in 1 refrigerant system is set to “1” and the Dip switch (SW1) is set to “0” (at shipment). ON ⇕ OFF 

2. Regarding the number of indoor units connected to the outdoor unit, set the Dip switch (SW3) for setting the number of indoor units on outdoor unit control PCB (Main) to “0” ON ⇕ OFF 

and set the Rotary switch (SW4) to “9”.
   Total of 9 units installation is made.
3. Turn on power to all indoor and outdoor units only for one refrigerant system or disconnect link wires for multiple refrigerant system.
4. Short circuit the A.ADD pin of outdoor main unit for over 1 second long and then open circuit.
   Communication for auto address setting begins.

   ⇩

   * To cancel, again short circuit the A.ADD pin for over 1 second long and then open circuit.
   LEDs 1 and 2 that indicate auto address setting is in progress go out and that process is stopped.
   Be sure to perform auto address setting again.

   Auto address setting is completed when the compressor stops and LEDs 1 and 2 on outdoor unit control PCB (Main) go out.

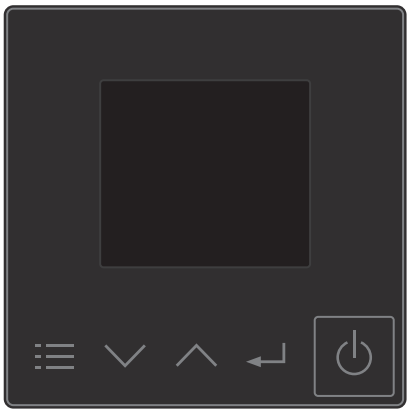
   ⇩
5. Remote control operation is now available.

   * When performing auto address setting by the remote controller, perform auto address setting by the remote controller after step 3.

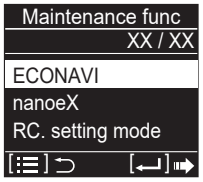
- See “Auto Address Setting from the Remote Controller” on page 5-10.

4. Auto Address Setting

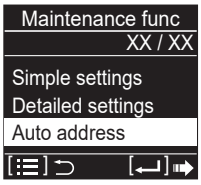
Auto Address Setting from the Remote Controller
Auto Address Setting from the Wired Remote Controller (CZ-RTC6 series)



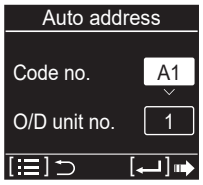
(1) Keep pressing the ☰, ∧ and ↵ buttons simultaneously for 4 or more seconds.
The “Maintenance func” screen appears on the LCD display.



(2) Press the ∨ or ∧ button to see each menu.
Select “Auto address” on the LCD display and press the ↵ button.

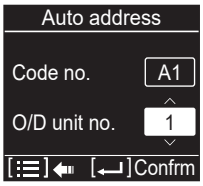


(3) The “Auto address” screen appears on the LCD display.
Select the “Code no.” to “A1” by pressing the ∨ or ∧ button.

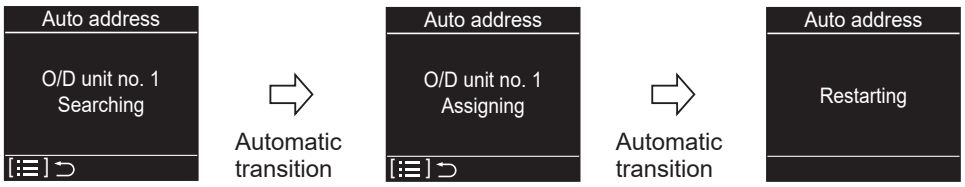


After selecting “Code no.”, press the ↵ button and proceed to Step (4).
If the ☰ button is pressed, proceed to Step (5).

(4) Select one of the “O/D unit no.” for auto address by pressing the ∨ or ∧ button.

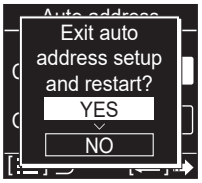


After selecting “O/D unit no.”, press the ↵ button.



Approximately 10 minutes are required.
When auto address setting is completed, the units return to normal stopped status.

(5) If the ☰ button is pressed under the display Step (3), the following display (Auto address-end screen) appears.
Then select “YES” by pressing the ∨ or ∧ button and press the ↵ button.



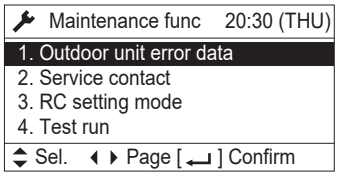
5

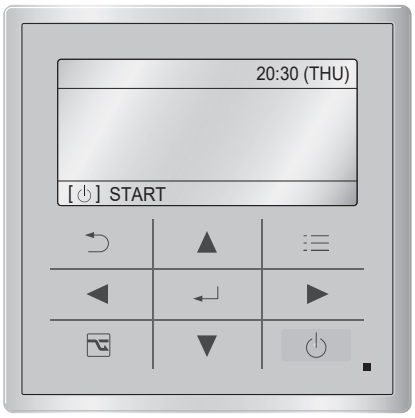
4. Auto Address Setting

Auto Address Setting from the High-spec Wired Remote Controller (CZ-RTC5B)

(1) Keep pressing the [↩], [↵] and [►] buttons simultaneously for 4 or more seconds.

The “Maintenance func” screen appears on the LCD display.

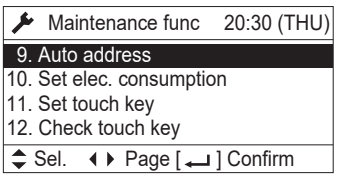




(2) Press the [▼] or [▲] button to see each menu.

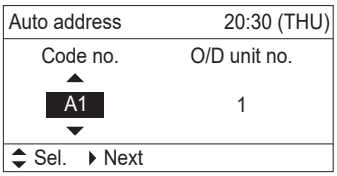
If you wish to see the next screen instantly, press the [◄] or [►] button.

Select “9. Auto address” on the LCD display and press the [↵] button.



(3) The “Auto address” screen appears on the LCD display.

Change the “Code no.” to “A1” by pressing the [▼] or [▲] button.



(4) Select the “O/D unit no.” by pressing the [◄] or [►] button.

Select one of the “O/D unit no.” by pressing the [▼] or [▲] button and press the [↵] button for auto address setting.

Approximately 10 minutes are required.

When auto address setting is completed, the units return to normal stopped status.

5

4. Auto Address Setting

Auto Address Setting* from the Remote Controller (CZ-RTC4)

* Auto address setting in Cooling mode cannot be done from the remote controller.

NOTE

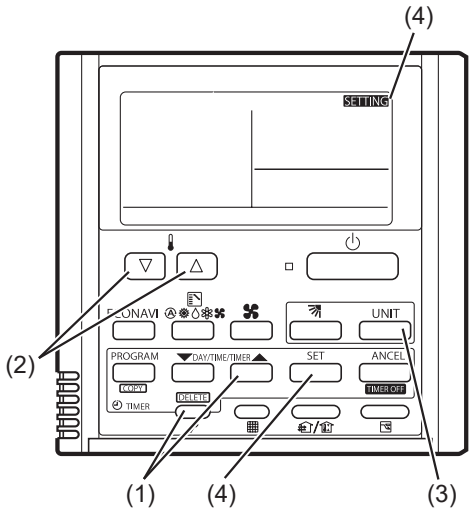
- Selecting each refrigerant system individually for auto address setting
- Auto address setting for each system: Item code “A1”

(1) Press the remote controller timer time button and button at the same time.
(Press and hold for 4 seconds or longer.)

(2) Next, press either the temperature setting ▽/△ button. (Check that the item code is “A1”.)

(3) Use either the UNIT button to set the system No. to perform auto address setting.

(4) Then press the SET button.
(Auto address setting for one refrigerant system begins.) (When auto address setting for one system is completed, the system returns to normal stopped status.)
<Approximately 10 minutes are required.>
(During auto address setting, “ SETTING ” is displayed on the remote controller.
This message disappears when auto address setting is completed.)



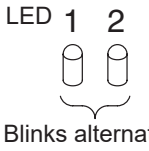
(5) Repeat the same steps to perform auto address setting for each successive system.

5

4. Auto Address Setting

Display During Auto Address Setting

- On the surface of outdoor unit control PCB



* Do not short circuit the A.ADD pin again during auto address setting.
LEDs 1 and 2 go out and address setting is interrupted.

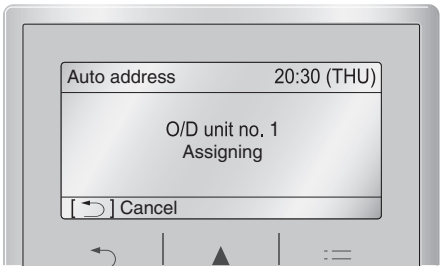
* When auto address setting is normally completed, both LEDs 1 and 2 go out.
In other cases, correct settings by referring to the following table and perform auto address setting again.

- Contents of LEDs 1 and 2 on outdoor unit control PCB
  ☼ : Illuminating
  ✷ : Blinking
  ● : Go out

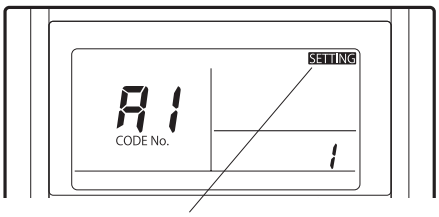
LED 1	LED 2	Contents of display
☼	☼	After turned on power (not during auto address setting), it is entirely impossible to communicate with the indoor unit in the system.
●	☼	After power is turned on (and auto address setting is not in progress), one or more indoor units are confirmed in that system; however, the number of indoor units does not match the number that was set. This status remains even if the indoor unit address (indoor EEPROM item code : 13) is set more than 13 indoor units. In this case, be sure to set the indoor unit address less than 12.
✷ Alternately	✷ Alternately	Under auto address setting
●	●	Auto address setting completed
✷ Simultaneously	✷ Simultaneously	There are inconsistencies between the number of indoor units and setting number of indoor units. (at the time of auto address setting)
✷ Alternately	✷ Alternately	See “7. Self-Diagnosis Function Table and Contents of Alarm Display”.

- Display of remote controller

CZ-RTC5B

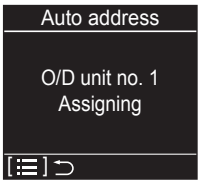


CZ-RTC4



Blinking “ SETTING ” indicator

CZ-RTC6 series



Request concerning recording the indoor/outdoor unit combination Nos.

After auto address setting has been completed, be sure to record them for future reference.

List the outdoor main unit system address and the addresses of the indoor units in that system in an easily visible location (next to the nameplate), using a permanent marking pen or similar means that cannot be abraded easily.

Example: (Outdoor) 1 - (Indoor) 1-1, 1-2, 1-3… (Outdoor) 2 - (Indoor) 2-1, 2-2, 2-3…

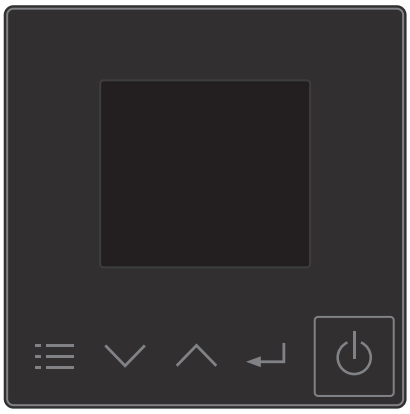
These numbers are necessary for later maintenance. Please be sure to indicate them.

4. Auto Address Setting

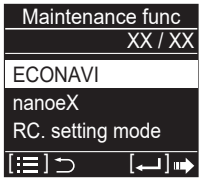
Checking the indoor unit addresses

Use the remote controller to check the indoor unit address.

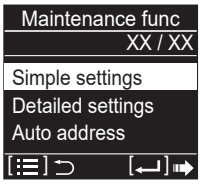
CZ-RTC6 series (Wired Remote Controller)



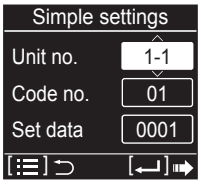
(1) Keep pressing the ☰, ∧ and ↵ buttons simultaneously for 4 or more seconds.
The “Maintenance func” screen appears on the LCD display.



(2) Press the ∨ or ∧ button to see each menu.
Select “Simple settings” on the LCD display and press the ↵ button.



(3) The “Simple settings” screen appears on the LCD display.
Select the “Unit no.” by pressing the ∨ or ∧ button for changes.
The indoor unit fan operates only at the selected indoor unit.



(4) Press the ☰ button and select “YES” to restart.

5

4. Auto Address Setting

CZ-RTC5B (High-spec wired remote controller)

(1) Keep pressing the ⮌ , ↵ and ▶ buttons simultaneously for 4 or more seconds.
The “Maintenance func” screen appears on the LCD display.

Maintenance func 20:30 (THU)
1. Outdoor unit error data
2. Service contact
3. RC setting mode
4. Test run
Sel. ◀ ▶ Page [↵] Confirm

(2) Press the ▼ or ▲ button to see each menu.
If you wish to see the next screen instantly, press the ◀ or ▶ button.
Select “7. Simple settings” on the LCD display and press the ↵ button.

Maintenance func 20:30 (THU)
5. Sensor info.
6. Servicing check
7. Simple settings
8. Detailed settings
Sel. ◀ ▶ Page [↵] Confirm

(3) The “Simple settings” screen appears on the LCD display.
Select the “Unit no.” by pressing the ▼ or ▲ button for changes.
The indoor unit fan operates only at the selected indoor unit.

Simple settings		20:30 (THU)
Unit no.	Code no.	Set data
1-1	01	0001
Sel. ▶ Next		

(4) Press the ⮌ button when “Unit no.” is selected, and then select “YES” and press ↵ button to return to normal remote controller mode.

5

4. Auto Address Setting

CZ-RTC4 (Timer remote controller)

(1) Press and hold the button and button for 4 seconds or longer (simple settings mode).

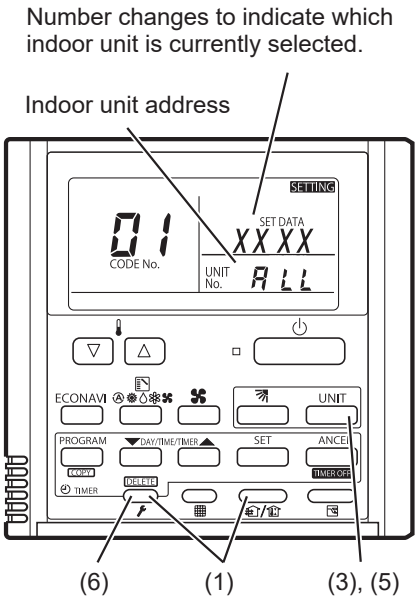
(2) “ALL” is displayed on the remote controller.

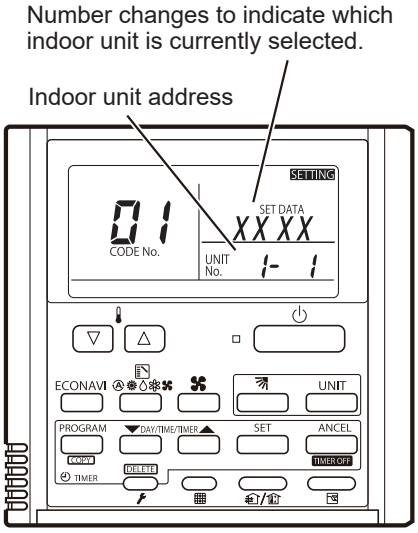
(3) Next, press the UNIT button.

(4) The address is displayed for 1 of the indoor units which is connected to the remote controller. Check that the fan of that indoor unit starts and that air is discharged.

(5) Press the UNIT button again and check the address of each indoor unit in sequence.

(6) Press the button again to return to normal remote controller mode.



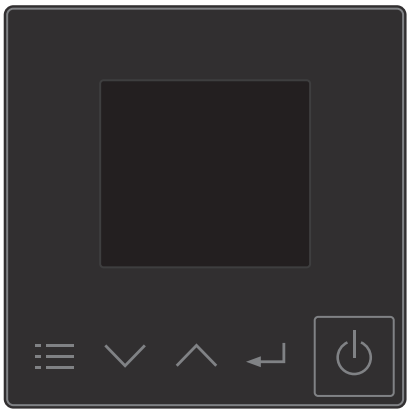


5

5. Test Run Using the Remote Controller

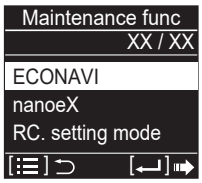
5. Test Run Using the Remote Controller

CZ-RTC6 series (Wired Remote Controller)

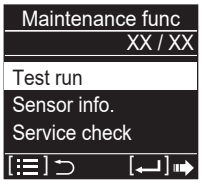


This mode places a heavy load on the machines. Therefore use it only when performing the test run.

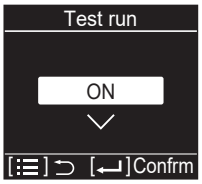
(1) Keep pressing the ☰, ∧ and ↵ buttons simultaneously for 4 or more seconds.
The “Maintenance func” screen appears on the LCD display.



(2) Press the ∨ or ∧ button to see each menu.
Select “Test run” on the LCD display and press the ↵ button.

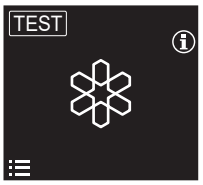


Change the display from “OFF” to “ON” by pressing the ∨ or ∧ button.
Then press the ↵ button.



(3) Press the ☰ button.
“TEST” will be displayed on the LCD display.

(4) Press the ⏻ button. Test run will be started.
Test run setting mode screen appears on the LCD display.



- The test run can be performed using the HEAT, COOL, or FAN operation mode.
- The temperature cannot be adjusted when in test run mode.
- If correct operation is not possible, a code is displayed on the remote controller LCD display. (See “7. Self-Diagnosis Function Table and Contents of Alarm Display” and correct the problem.)

(5) After the test run is completed, proceed from Step (1) and change to “OFF” at Step (2).

- To prevent continuous test run, this remote controller includes a timer function that cancels the test run after 60 minutes.

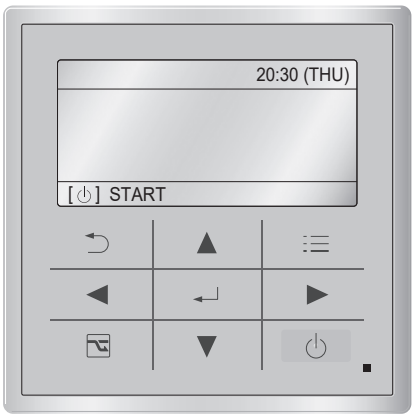
NOTE

- The outdoor units will not operate for approximately 3 minutes after the power is turned ON and after operation is stopped.

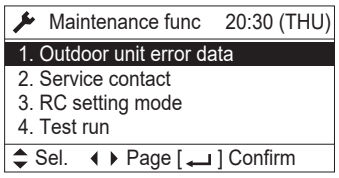
5. Test Run Using the Remote Controller

CZ-RTC5B (High-spec wired remote controller)

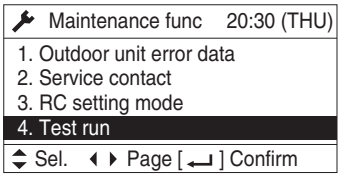
This mode places a heavy load on the machines. Therefore use it only when performing the test run.

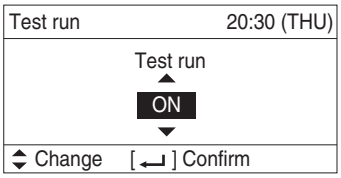


(1) Keep pressing the ↩ , ↵ and ▶ buttons simultaneously for 4 or more seconds.
The “Maintenance func” screen appears on the LCD display.

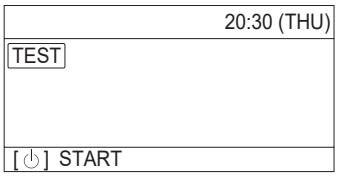


(2) Press the ▼ or ▲ button to see each menu.
If you wish to see the next screen instantly, press the ◀ or ▶ button.
Select “4. Test run” on the LCD display and press the ↵ button.
Change the display from “OFF” to “ON” by pressing the ▼ or ▲ button. Then press the ↵ button.

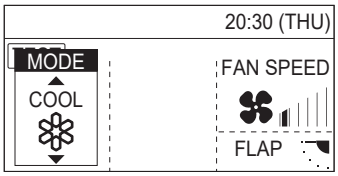




(3) Press the ↩ button. “TEST” will be displayed on the LCD display.



(4) Press the ⏻ button. Test run will be started.
Test run setting mode screen appears on the LCD display.



- The test run can be performed using the HEAT, COOL, or FAN operation mode.
- The temperature cannot be adjusted when in test run mode.
- If correct operation is not possible, a code is displayed on the remote controller LCD display. (See “7. Self-Diagnosis Function Table and Contents of Alarm Display” and correct the problem.)

(5) After the test run is completed, proceed from Step (1) and change to “OFF” at Step (2).

- To prevent continuous test run, this remote controller includes a timer function that cancels the test run after 60 minutes.

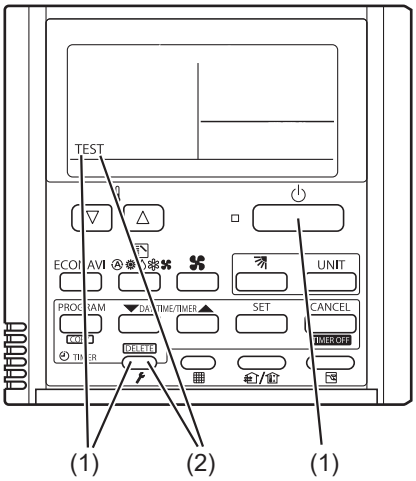
NOTE

- The outdoor units will not operate for approximately 3 minutes after the power is turned ON and after operation is stopped.

5. Test Run Using the Remote Controller

CZ-RTC4 (Timer remote controller)

This mode places a heavy load on the machines. Therefore use it only when performing the test run.



(1) Press the remote controller button for 4 seconds or longer.

Then press the button.

" TEST " appears on the LCD display while the test run is in progress.

- The test run can be performed using the HEAT, COOL, or FAN operation mode.
- The temperature cannot be adjusted when in test run mode.
- If correct operation is not possible, a code is displayed on the remote controller LCD display. (See "7. Self-Diagnosis Function Table and Contents of Alarm Display" and correct the problem.)

(2) After the test run is completed, press the button again.
Check that " TEST " disappears from the LCD display.

- To prevent continuous test run, this remote controller includes a timer function that cancels the test run after 60 minutes.

NOTE

- The outdoor units will not operate for approximately 3 minutes after the power is turned ON and after operation is stopped.

5

6. Caution for Pump Down
7. Self-Diagnosis Function Table and Contents of Alarm Display

6. Caution for Pump Down

Pump down means refrigerant gas in the system is returned to the outdoor unit.
Pump down is used when the unit is to be moved, or before servicing the refrigerant circuit.
(Refer to the Service Manual)

⚠ CAUTION

- **This outdoor unit cannot collect more than the rated refrigerant amount as shown by the nameplate on the back.**
- **If the amount of refrigerant is more than that recommended, do not conduct pump down.**
  In this case use another refrigerant collecting system.

7. Self-Diagnosis Function Table and Contents of Alarm Display

How to know LEDs 1 and 2 alarm display on outdoor unit control PCB

<table>
<tr><th>LED 1</th><th>LED 2</th><th>Contents of Alarm Display</th></tr>
<tr><td>☀</td><td>☀</td><td rowspan="2">Alarm display
After LED1 blinks M times, LED2 blinks N times.
This will be repeated.

<table>
<tr><th></th><th>Number of blinks</th><th>Type of alarm</th></tr>
<tr><td rowspan="6">M</td><td>1</td><td>Alarm J</td></tr>
<tr><td>2</td><td>Alarm P</td></tr>
<tr><td>3</td><td>Alarm H</td></tr>
<tr><td>4</td><td>Alarm E</td></tr>
<tr><td>5</td><td>Alarm F</td></tr>
<tr><td>6</td><td>Alarm L</td></tr>
</table>
N = number of alarm No.

For example: After LED1 blinks twice, LED2 blinks 17 times. This will be repeated.
The alarm shows “P17”.</td></tr>
<tr><td colspan="2">Alternately</td></tr>
</table>

(☀ : Blink) Connect the outdoor unit maintenance remote controller to the RC plug (3P, BLU) on outdoor unit control PCB (Main) and make confirmation.

■ Self-Diagnosis Function Table

- Cause and countermeasure against the symptom of auto address failure

Symptom	Cause and countermeasure
• When turning on power to the outdoor main unit, LEDs 1 and 2 illuminate or blink excluding going out. Auto address setting is not available.	See “Contents of Alarm Display” and make corrections.
• When auto address setting by the remote controller begins, the alarm display appears immediately.	
• When auto address setting by the remote controller begins, no display appears.	Are remote control wiring and inter-unit control wiring connected properly? Is indoor unit turned on power?

5

7. Self-Diagnosis Function Table and Contents of Alarm Display

- Auto address setting begins but finishes improperly.

Symptom	Cause and countermeasure
• Soon after a few seconds or after a few minutes, the alarm content is displayed on the remote controller.	See “Contents of Alarm Display” and make a correction.
• After a few minutes when auto address setting begins, the compressor may occasionally start and stop several times. LEDs 1 and 2 on outdoor unit control PCB show the display of auto address setting with blinking alternately but LEDs 1 and 2 do not indicate the completion of auto address setting (go out).	Are remote control wiring and inter-unit control wiring connected properly? Is indoor unit turned on power?

- If the alarm display “E15”, “E16” and “E20” appear after auto address setting began, check the following items.

Alarm display	Alarm contents
E15	Recognized number of indoor units at the time of auto address setting are fewer than that of indoor units set by SW3 and SW4 on outdoor unit control PCB (Main).
E16	Recognized number of indoor units at the time of auto address setting are more than that of indoor units set by SW3 and SW4 on outdoor unit control PCB (Main).
E20	Outdoor unit could not entirely receive serial communication signal from the indoor unit within 90 seconds after auto address setting began.

Check	E15	E16	E20
Have you forgotten to turn on power to indoor unit?	○		○
Are indoor and outdoor control wiring connected properly? (Check for incorrect wiring to open & short-circuit, terminal pin and remote control terminal.)	○	○	○
Are the number of the connecting indoor units set by SW3 and SW4 of outdoor unit control PCB (Main) connected properly?	○	○	
Is additional appropriate amount of refrigerant charge? (Compressor ON at the time of auto address setting)	○		
Is the refrigerant tubing connected properly? (Compressor ON at the time of auto address setting)	○	○	
Are E1 and E3 sensors of indoor unit normal? (Compressor ON at the time of auto address setting)	○		
Are there any wrong system address installed in indoor units caused by manual or incorrect auto address control?		○	

1) When auto address setting from outdoor unit control PCB (Main) or remote controller begins, “Under Setting” appears on the remote controller as for normal indoor units under the inter-unit control wirings and remote control wirings.
   LEDs 1 and 2 indicators on outdoor unit control PCB (Main) blink alternately.
2) If there is an error at the inter-unit control wiring of the remote controller when in the indoor unit group control, address setting may not occasionally be made although “under setting” is displayed.
3) Although the alarm “E15” and “E16” are displayed, addresses will be installed in the recognized indoor units. The installed addresses can be checked by the remote controller. See “Checking the indoor unit addresses”.

- When operating the remote controller after auto address setting completed (LEDs 1 and 2 indicators on outdoor unit control PCB (Main) go out), correct the symptom if the following alarms appear on the remote controller.

Remote control display	Cause
No display	Remote controller is not connected properly. (Power failure) When auto address setting was completed, the power of indoor unit was turned off.
E01	Remote controller is not connected properly. (Receiving failure from remote control) Indoor unit address was mistakenly controlled by undesired indoor unit remote controller. (Impossible to communicate with outdoor unit)
E02	Remote controller is not connected properly. (Impossible to communicate with indoor unit by remote controller)
P09	Connector of indoor unit ceiling panel is not connected properly.

If any other alarm appears on the display, refer to the Test Run Service Manual.

7. Self-Diagnosis Function Table and Contents of Alarm Display

- Alarm display can be checked by the outdoor maintenance remote controller. When operating, refer to the Test Run Service Manual.
  Alarm display can also be checked by number of blinking of LEDs 1 and 2 on outdoor unit control PCB.
  (See “How to know LEDs 1 and 2 alarm display on outdoor unit control PCB” under “7. Self-Diagnosis Function Table and Contents of Alarm Display”.

Remote control display	Alarm contents
C17	Indoor unit does not respond to central control equipment.
E01	Indoor unit does not respond to remote controller.
E02	Remote controller is having error in sending serial communication signal.
E03	Remote controller does not respond to indoor unit.
E04	Outdoor unit does not respond to indoor unit.
E06	Some indoor units do not respond to outdoor unit.
E08	Indoor unit address is duplicating.
E09	Two or more remote controllers are set as main on R1-R2 link.
E12	Auto Address failed to start.
E14	Two or more indoor units are set as main, in the group controlled indoor units.
E15	Fewer indoor units are found in Auto Addressing than the setting on outdoor unit control PCB.
E16	More indoor units are found in Auto Addressing than the setting on outdoor unit control PCB.
E18	No response from sub indoor to the main indoor unit in group control wiring.
E20	No indoor unit responded in Auto Addressing.
E31	Error in communication inside outdoor unit control box.
F01	Indoor unit heat exchanger liquid temperature sensor has failure. (E1)
F02	Indoor unit heat exchanger temperature sensor has failure. (E2)
F03	Indoor unit heat exchanger gas temperature sensor has failure. (E3)
F04	Compressor discharge temperature sensor has failure. (DISCH)
F06	Outdoor unit heat exchanger gas temperature sensor has failure. (EXG)
F07	Outdoor unit heat exchanger liquid temperature sensor has failure. (EXL)
F08	Outdoor temperature sensor has failure. (TO)
F10	Indoor suction air (room) temperature sensor has failure. (TA)
F11	Indoor discharge air temperature sensor has failure. (BL)
F12	Compressor inlet temperature sensor has failure. (SCT)
F14	Subcooling heat exchanger temperature sensor has failure. (SCG)
F16	High pressure sensor has failure. (HPS)
F17	Low pressure sensor has failure. (LPS)
F29	EEPROM on indoor unit control PCB has failure.
F31	EEPROM on outdoor unit control PCB has failure.
H01	Compressor primary current is overcurrent.
H02	PFC is overcurrent or VDC is overvoltage. (Single phase only)
H03	Compressor current sensor is disconnected or shorted.
H05	Compressor discharge temperature sensor is disconnected, shorted or misplaced. (DISCH)
H06	Low pressure sensor value is too low.
H31	Compressor HIC has failure. HIC is overcurrent or overheat. VDC is undervoltage or overvoltage.
J01	R32 refrigerant leakage detection sensor has failure.
J02	Life of refrigerant leak sensor in R32 refrigerant leakage detection sensor has expired.
J03	Indoor unit refrigerant leak sensor 1 has failure. (GAS1)
J04	Life of Indoor unit refrigerant leak sensor 1 has expired. (GAS1)
J05	Indoor unit refrigerant leak sensor 2 has failure. (GAS2)
J06	Life of indoor unit refrigerant leak sensors 1 and 2 has expired. (GAS1 and GAS2)
L01	Indoor unit address setting has error. (No main indoor unit in group control.)
L02	Indoor unit model does not match with the outdoor unit model. (Multi-split/mini-split)
L03	Two or more indoor units are set as main in group control.
L04	Duplicate system address setting on outdoor units.
L05	Two or more indoor units are set as priority indoor unit (priority indoor unit).
L06	Two or more indoor units are set as priority indoor unit (non-priority indoor unit).
L07	Group control wiring is detected for indoor unit set as individual control.

7. Self-Diagnosis Function Table and Contents of Alarm Display

Remote control display	Alarm contents
L08	Indoor unit address is not set.
L09	Capacity setting of indoor unit is not correct.
L10	Capacity setting of outdoor unit is not correct.
L13	Indoor unit model does not match with outdoor unit.
L17	Model mismatch between outdoor units.
L18	4-way valve has failure.
P01	Thermal protector for Indoor unit fan motor is activated.
P03	Compressor discharge temperature is too high.
P04	High pressure switch is activated.
P05	AC power supply has abnormal.
P08	Refrigerant leakage detection of indoor unit connected with the remote controller displaying this alarm.
P09	Connection to the panel of indoor unit is not good.
P10	Float switch of drain pan safety is activated.
P11	Drain pump failure or locked rotor.
P12	Indoor unit fan inverter protection control is activated.
P14	Refrigerant leakage detection of one of the indoor units connected to the outdoor unit.
P16	Compressor secondary current is overcurrent.
P20	Too high load in refrigerant circuit.
P22	Outdoor unit fan motor has failure.
P29	Compressor start failure. Compressor is missing phase or reverse phase.
P31	Other indoor unit in group control has an alarm.

- Contents of alarm display on remote controller
  For the remote controller, there are other alarm contents listed on the following table besides the alarm display on outdoor unit control PCB (Main).

Wired remote control display	Detected contents	
<E01>	Remote controller is detecting error signal from indoor unit.	Indoor unit does not respond to remote controller.
<E02>		Remote controller is having error in sending serial communication signal.
<<E03>>	Remote controller does not respond to indoor unit.	
E04	Remote controller is detecting error signal from outdoor unit.	Outdoor unit does not respond to indoor unit.
E08	Improper setting	Indoor unit address is duplicating.
<<E09>>		Two or more remote controllers are set as main on R1-R2 link.
E18	Indoor unit communication error in group control wiring	No response from sub indoor to the main indoor unit in group control wiring.
<<L02>>	Improper setting	Indoor unit model does not match with the outdoor unit model. (Multi-split/mini-split)
<L03>		Two or more indoor units are set as main in group control.
L07		Group control wiring is detected for indoor unit set as individual control.
L08		Indoor unit address is not set.
<<L09>>		Capacity setting of indoor unit is not correct.

7. Self-Diagnosis Function Table and Contents of Alarm Display

Wired remote control display	Detected contents	
<<F01>>	Indoor unit sensor has failure	Indoor unit heat exchanger liquid temperature sensor has failure. (E1)
<<F03>>		Indoor unit heat exchanger gas temperature sensor has failure. (E3)
<<F10>>		Indoor suction air (room) temperature sensor has failure. (TA)
<<F11>>		Indoor discharge air temperature sensor has failure. (BL)
<<P09>>	Connection to the panel of indoor unit is not good.	
<<P01>>	Activation of protective device for Indoor unit	Thermal protector for Indoor unit fan motor is activated.
<<P10>>		Float switch of drain pan safety is activated.
<<P11>>		Drain pump failure or locked rotor.
<<P12>>		Indoor unit fan inverter protection control is activated.
F29	EEPROM on indoor unit control PCB has failure.	

- The parentheses of << >> used in the table of alarm display does not affect anything the operation of other indoor units.
- The parentheses of < > used in the table of alarm display implies that there are two cases : according to the content of the symptom, some affect the operation of other indoor units and others do not affect anything.

Alarm messages displayed on system controller			
Serial communication errors Mis-setting	Error in transmitting serial communication signal	Indoor or main outdoor unit is not operating correctly. Mis-wiring of control wiring between indoor unit, main outdoor unit and system controller.	C05
	Error in receiving serial communication signal	Indoor or main outdoor unit is not operating correctly. Mis-wiring of control wiring between indoor unit, main outdoor unit and system controller. CN1 is not connected properly.	C06
Activation of protective device	Protective device of sub indoor unit in group control is activated.	When using wireless remote controller or system controller, in order to check the alarm message in detail, connect wired remote controller to indoor unit temporarily.	P30

NOTE

1. Alarm messages in << >> do not affect other indoor unit operations.
2. Alarm messages in < > sometimes affect other indoor unit operations depending on the fault.

7. Self-Diagnosis Function Table and Contents of Alarm Display

ATTENTION!

Adjustment of terminating resistance (pin) is necessary.

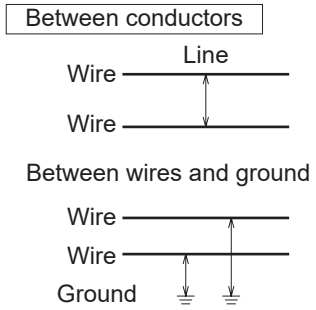
Communication failure will occur unless adjustment is made correctly.

- Terminating resistance (pin) is mounted on outdoor unit control PCB.
- When connecting central controller, interface or peripheral equipment, adjustment of terminating resistance (pin) is necessary. Although the connection is not made, confirmation is necessary for VRF systems.
- In the case of a refrigerant system, the terminating resistance (pin) for this inter-unit control wiring (S-LINK wiring) is one location (See “4. Auto Address Setting”).
  For 2 or more refrigerant systems, 2 locations should be valid (SHORT for VRF systems at shipment). See “4. Auto Address Setting”.
  In order to make 2 locations valid, let the terminating resistance (pin) of the nearest outdoor unit and the farthest outdoor unit be valid (SHORT side) from the location of central controller.
  In other refrigerant systems excepting 2 locations described above, make them invalid (OPEN side).
  It is prohibited making more than 3 locations of terminating resistance valid.
- Since the use of linking the sub outdoor units of VRF systems is not connected to the inter-unit control wiring, it is not necessary to make the terminating resistance invalid OPEN side.

Make final confirmation regarding the central controller or interface & inter-unit control wiring (S-LINK wiring) connected to the peripheral equipment.
Measure the line resistance with a tester and check whether the values are in the range of 30Ω - 120Ω.

If the resistance values are out of range, check again the terminating resistance.
Nevertheless, if the values are out of range, the problem comes from wiring.

- Is the connection properly made?
- Are there any scratches or damages on the coated surface?
- Measure the line, between wires and ground with the 500 V mega-tester (insulation resistance meter) and check the values are over 100MΩ.
- When measuring, be sure to remove both edges of the wire from the terminal board. If not removed, it will be damaged.
- If the line resistance is within 100MΩ, newly carry out the wiring work.



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