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## 2. INDIVIDUAL REMOTE CONTROLS

### 2.1. PC-ART

#### 2.1.1. General data

##### 2.1.1.1. Selection advantages

◆ **General features:**

- Excellent display thanks to a large LCD screen and a simple indication and reading function for programme variables and possible alarms.
- Excellent air-conditioning control thanks to the weekly timer option, allowing the users to adjust the A/C unit settings to operate on a one-week basis.
- Built-in self-diagnostic function. A warning system indicates any malfunction or problem by triggering an alarm code with detailed information about the alarm.
- All indoor unit functions can be selected and adjusted using the remote control.
- Up to 16 indoor units can be controlled on the same operation mode.
- This remote incorporates a thermistor on the bottom right hand side which allows the user better adjust the desired room temperature, thanks to the installation of a sensor closer to the air-conditioned area.

##### 2.1.1.2. Maintenance advantages

◆ **Alarm codes**

There are 45 alarm codes for identifying and easily locating any fault or problem in the unit. The alarms are classified into groups to facilitate maintenance procedures.

◆ **Test run from the remote control**

Auto-diagnostic:

Quick diagnostics function for controller cards, cards in connected indoor units and cards in outdoor units (PCBs) using the LCD screen.

Remote control data storage:

The remote control stores all information on the status of the units at the time when the last system alarm was triggered, allowing the user to easily ascertain the cause of the alarm and resolve the problem.

The remote control memory stores all of the pre-configured information of both the remote control and the connected units.

Optional function settings:


- Various optional functions on the indoor units (IU) can be activated or deactivated using the remote control, for example:


- Calibration phase shift of 4°C in heating mode (see Optional functions list, point *b f*).
- Fan speed.
- Thermostat, etc.

- Several indoor units (IU) can be adjusted at the same time or their configuration can be changed after installation.

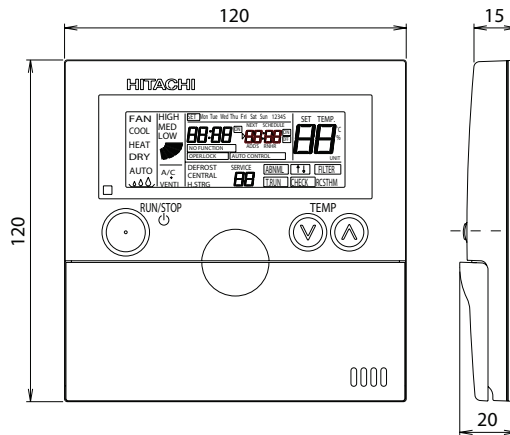
## 2.1.2. Installation

### 2.1.2.1. Safety summary

	<b>DANGER OF ELECTRIC SHOCK</b>
<ul style="list-style-type: none"> <li>- DO NOT handle the remote control with wet hands.</li> <li>- DO NOT spill water on the remote control. This may cause an electric shock.</li> <li>- If the safety devices are activated too frequently or the buttons do not work properly, turn off the unit at the mains and contact your HITACHI service provider.</li> <li>- In the event of other incidents of an electrical nature, turn off the system, switch it off at the mains and contact your HITACHI service provider.</li> </ul>	

	<b>CAUTION</b>
<ul style="list-style-type: none"> <li>- DO NOT install the indoor unit, outdoor unit, remote control or any wiring in the following locations:                         <ul style="list-style-type: none"> <li>- Where there are oil vapours and the oil is dispersed.</li> <li>- In the proximity of hot water or heat sources or in sulphuric environments.</li> <li>- In locations prone to the generation, accumulation, leakage or flow of flammable gas.</li> <li>- Close to the sea (saline atmospheres).</li> <li>- In acidic or alkaline environments.</li> <li>- Within the reach of children.</li> <li>- Directly in front of the air-conditioning system outlet.</li> </ul> </li> <li>- To avoid electromagnetic compatibility problems, DO NOT install the indoor unit, outdoor unit, remote control or any wiring within 3m of strong sources of electromagnetic radiation (e.g. waves generated by medical equipment). If the system should be installed in a location where electromagnetic waves are produced, protect the remote control and wiring by covering them with the steel casing and passing the cable through the metal duct.</li> <li>- If electrical noise should be generated at the indoor unit power source, install a noise filter.</li> </ul>	

### 2.1.2.2. Dimensional data




◆ **Installation site selection**

Take note of the maximum admissible cable length between units and the control as well as between the units themselves, as shown in the following table:





Cable section	0.3 mm <sup>2</sup>	≥ 0.75 mm <sup>2</sup>
Cable length	30 m	500 m

**2.1.2.3. Components list**

◆ **Prior to installation**

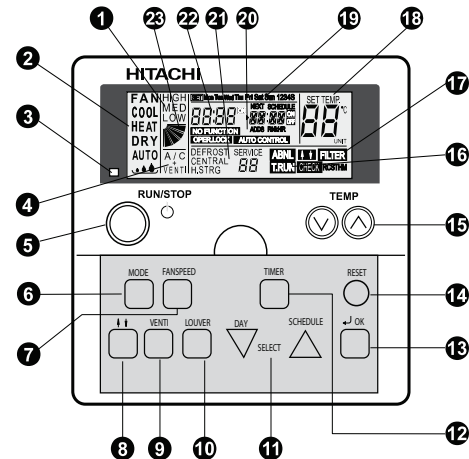
	<b>NOTE</b>
<p>Unpack the unit and check that:</p> <ul style="list-style-type: none"> <li>- The package contains all the components (see next table).</li> <li>- All components are in perfect condition.</li> </ul> <p>Otherwise, contact the manufacturer.</p>	

Check the content and the number of accessories in the package. This package contains the following parts:

Name	Quant.	Comments
Remote control 	1	For controlling system operation
M4x16L screws 	2	For fixing the bracket to the wall
Cable tie 	1	For attaching the cable to the ring core
Ring core 	1	For securing the cables

### 2.1.2.4. Description of the parts

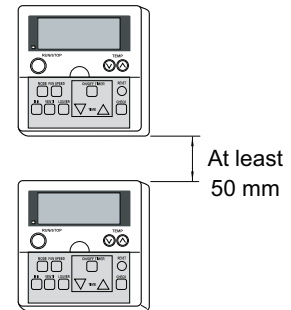
- ❶ Fan speed indicator:  
Indicates the fan speed selected: HIGH, MED or LOW
- ❷ Operation mode indicator:  
Indicates the operation mode selected: FAN, COOL, HEAT, DRY or AUTO
- ❸ Run indicator (green LED)
- ❹ Ventilation indicator:  
Indicates whether the total heat exchanger has been selected\*.  
(\*see: Ventilation mode procedure)  
A/C                    air conditioning only  
VENTI                total heat exchanger only  
A/C + VENTI        if both are selected
- ❺ RUN/STOP button
- ❻ MODE button
- ❼ FAN SPEED button
- ❽ Panel up and down operation button
- ❾ VENTI button (ventilator operation)
- ❿ LOUVER button (oscillating louver operation)
- ⓫ SELECT (DAY/SCHEDULE) buttons
- ⓬ ON/OFF TIMER button (starts/stops timer).  
(Used to activate or deactivate the timer function)
- ⓭ OK button
- ⓮ RESET button (resets filter)  
After cleaning the air filter, press the RESET button.  
The FILTER message will disappear and the next filter cleaning time will be set.  
It can also be used to exit the check mode and the optional function configuration mode.
- ⓯ TEMP buttons (temperature setting)
- ⓰ T.RUN indicator (test run indicator)  
OK indicator  
These indications are displayed during TEST RUN and OK operations.
- ⓱ ABNML indicator (alarm)  
FILTER indicator  
Panel up/down indicator
- ⓲ SET TEMP indicator (temperature setting)
- ⓳ 1234S indicator (schedule number setting).  
Mon, Tue... Sun indicator (indicates the weekday).
- ⓴ Indicates the start/stop time for each of the units.  
Time indicator (indicates the scheduled time)  
NO FUNCTION indicator (indicates when a key has no function)  
OPER LOCK indicator (keys locked)  
ADDS indicator (indoor units)  
RN HR: RN indicator (refrigerant cycle number) and HR (hours of service)
- ⓵ SERVICE indicator (service mode: indicates a switch to special functions)  
CENTRAL indicator  
DEFROST indicator
- ⓶ Time indicator.
- ⓷ Louver indicator.



Model: PC-ART

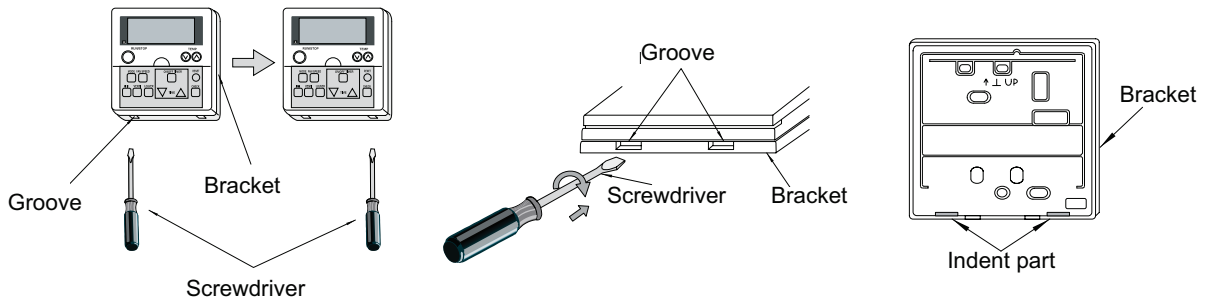
### 2.1.2.5. Installation space

If several control units are to be installed in a vertical position, leave a distance of at least 50 mm between them to allow the front cover to be opened and to insert the tool for removing the control from its housing.



### 2.1.2.6. Installation procedure

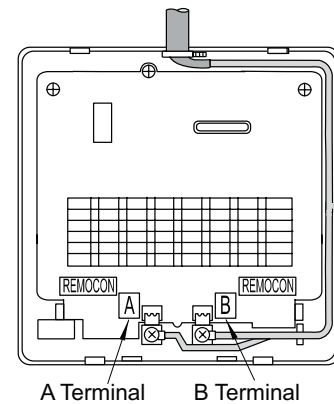
1. Using a flat-head screwdriver, separate the control unit bracket from the front section as indicated.



2. Place the control unit in the housing, as indicated below (2 examples):

◆ **In cases where the remote control cable is exposed.**

- Secure the bracket to the wall using the 2 screws provided.
- Insert the cable through the hole in the control unit. A hole can be made in the top centre and top left hand side (at the top in the image).
- Strip the cable insulation and connect to terminals A and B.



◆ **If using an electric control box.**

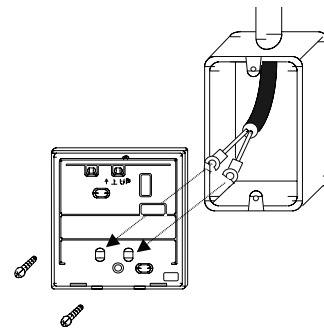
There are different types of electrical boxes available on the market that can be used for this installation, for example:

- Electrical box for one control unit (with or without cover.)
- Electrical box for 2 control units (with or without cover.)
- Other types of box

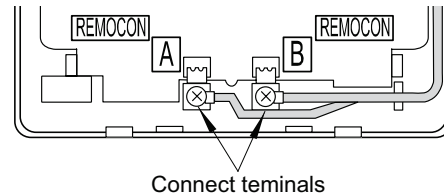
1. Pass the cable through the wall duct.

2. Pass the cable through the electrical box.
3. To secure the bracket to the box, make sure you leave the necessary length of cable, taking into account the height of terminals A and B.

**CAUTION**  
 Make sure the cable is not loose and that the length is correct. If it is left loose, it may become pinched when the control unit is fitted to the bracket, possibly causing an operational fault.



4. Strip the cable insulation and connect to terminals A and B.



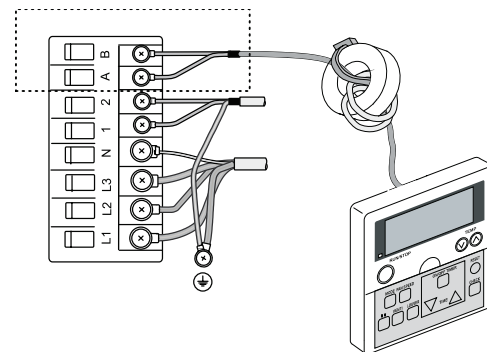
5. Control unit assembly procedure
  - Insert the hooks on the control unit into the holes on top of the bracket.
  - Push the bottom part of the unit towards the bracket.
  - A click sound indicates that the control unit is secured to the bracket and the assembly procedure is complete.

### 2.1.2.7. Electrical wiring

**CAUTION**  
 For operational and safety purposes, fit the ring core "attachment" when installing the unit.


- Wind the remote control cable around the ring core twice, as shown beside, before connecting it to the indoor unit terminal board.
- If the cable measures 0.75mm<sup>2</sup> or more, the outer insulation must be stripped (only on the part to be wound), otherwise you will not be able to wind the cable around the ring core.
- Secure the cable using the cable tie (accessory).


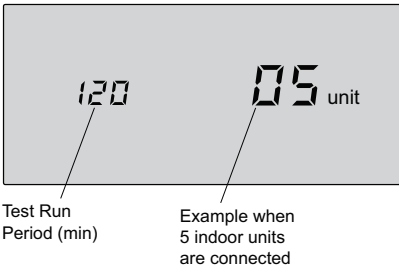
This diagram shows an example of a standard connection, with the cable connected to terminals A and B.




### 2.1.2.8. Checking procedure

1. Turn ON the power supply for all the indoor units.
2. Set the "TEST RUN" mode by pressing the "MODE" and "OK" switch simultaneously for more than 3 seconds.

	<b>ATTENTION</b>
<p><i>In case of the control by using two Remote controllers (Main &amp; Sub), the test running shall be operated by the main controller.</i></p>	


	<b>NOTE</b>
<ul style="list-style-type: none"> <li>- The completion of the automatic address setting requires 3 to 5 minutes after turning ON the power supply.</li> <li>- The total number of the connected units is indicated on the liquid crystal display.</li> </ul>	
	
<p><i>- In case that the indicated number is not correct, some abnormalities exist, incorrect wiring, the electric noise, etc.</i></p>	

- Turn OFF the power supply and correct the wiring after checking the following points; (Do not repeat turning ON and OFF within 10 seconds.)
  - Power Supply for Indoor Unit is Not Turned ON or Incorrect Wiring.
  - Incorrect Connection of Connecting Cable between Indoor Units or Incorrect Connection of Controller Cable.
  - Incorrect Setting of Rotary Switch (The setting is overlapped.) on the Indoor Units PCB.
  - Check to ensure that the "Test Run" mode is not set.
  - Set the required Test Run period by pressing ▽ and △ (Min. 10 minutes to Max. 600 minutes).
3. Canceling "Test Run" Mode.
- When the unit is not operating, press the RESET switch.
  - When the unit is operating, press the RUN/STOP switch.

	<b>CAUTION</b>
<p><i>When "00" is indicated, the auto address function may be performing. Cancel the "Test Run" mode and set it again.</i></p>	

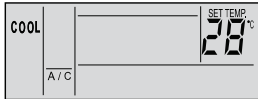
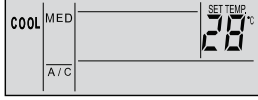



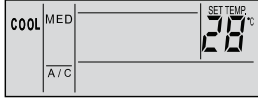





## 2.1.3. Operation














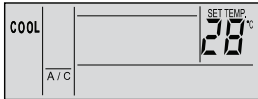
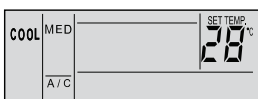



	<b>NOTE</b>
<ul style="list-style-type: none"> <li>- If the LOW fan speed is selected and the outdoor temperature is above 21 °C, the compressor will be overloaded when the system is used in heating mode. The fan speed must therefore be set to HIGH or MEDIUM as the safety devices may activate.</li> <li>- When the system is started after being out of use for more than 3 months, we recommend that the system is checked by the service provider.</li> <li>- If the system is not going to be used for a long period of time, turn it off at the mains. Otherwise it will continue to consume electricity, since the oil heater remains on even when the compressor is off.</li> </ul>	

### 2.1.3.1. Operation mode selection procedure



#### ◆ Procedure for operation in cooling, heating, dehumidifying and ventilation modes

<ul style="list-style-type: none"> <li>• <b>Switch on the power.</b> Two vertical lines are displayed on the LCD display together with the A/C or VENTI indications.</li> <li>• <b>Press the MODE button.</b> By pressing this button repeatedly, the indicator will change from COOL to HEAT, DRY and FAN modes (or from COOL to DRY and FAN in cooling only models). (The figure shows the system status when COOL mode is selected).</li> </ul>					
<ul style="list-style-type: none"> <li>• <b>Press the RUN/STOP button.</b> The run indicator will light up (green). The system will start up automatically.</li> </ul>					
<table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: center;"><b>NOTE</b></th> </tr> </thead> <tbody> <tr> <td colspan="2"> <i>Setting the temperature, fan speed and louver direction: Once this setting is made it is stored in the memory and therefore does not need to be set again every day. To change this setting, refer to the "II. Procedure for setting the temperature, fan speed and louver direction" section.</i> </td> </tr> </tbody> </table>			<b>NOTE</b>	<i>Setting the temperature, fan speed and louver direction: Once this setting is made it is stored in the memory and therefore does not need to be set again every day. To change this setting, refer to the "II. Procedure for setting the temperature, fan speed and louver direction" section.</i>	
	<b>NOTE</b>				
<i>Setting the temperature, fan speed and louver direction: Once this setting is made it is stored in the memory and therefore does not need to be set again every day. To change this setting, refer to the "II. Procedure for setting the temperature, fan speed and louver direction" section.</i>					
<ul style="list-style-type: none"> <li>• <b>Turn off (STOP)</b> Press the RUN/STOP button again. The run indicator (green) will go off. The system will stop automatically.</li> </ul>					
<table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: center;"><b>NOTE</b></th> </tr> </thead> <tbody> <tr> <td colspan="2"> <i>The fan may run for a further two minutes or so after stopping the system in heating mode.</i> </td> </tr> </tbody> </table>			<b>NOTE</b>	<i>The fan may run for a further two minutes or so after stopping the system in heating mode.</i>	
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<i>The fan may run for a further two minutes or so after stopping the system in heating mode.</i>					

#### ◆ Procedure for setting the temperature, fan speed and louver direction.

<table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: center;"><b>NOTE</b></th> </tr> </thead> <tbody> <tr> <td colspan="2"> <ul style="list-style-type: none"> <li>- If the OK button is pressed for more than three seconds in operation mode, the unit will switch to check mode (CHECK).</li> <li>- In check mode (CHECK), by pressing the OK button once the user can view the different variables using the TEMP  or  buttons.</li> <li>- To return to operation mode, press and hold OK for more than three seconds and then press OK twice.</li> </ul> </td> </tr> </tbody> </table>			<b>NOTE</b>	<ul style="list-style-type: none"> <li>- If the OK button is pressed for more than three seconds in operation mode, the unit will switch to check mode (CHECK).</li> <li>- In check mode (CHECK), by pressing the OK button once the user can view the different variables using the TEMP  or  buttons.</li> <li>- To return to operation mode, press and hold OK for more than three seconds and then press OK twice.</li> </ul>	
	<b>NOTE</b>				
<ul style="list-style-type: none"> <li>- If the OK button is pressed for more than three seconds in operation mode, the unit will switch to check mode (CHECK).</li> <li>- In check mode (CHECK), by pressing the OK button once the user can view the different variables using the TEMP  or  buttons.</li> <li>- To return to operation mode, press and hold OK for more than three seconds and then press OK twice.</li> </ul>					
<ul style="list-style-type: none"> <li>• <b>Setting the temperature</b> Set the temperature by pressing the TEMP  or  buttons. The temperature increases by 1°C when the  button is pressed (max. 30°C). The temperature decreases by 1°C when the  button is pressed (min. 19°C for Cool, Dry and Fan modes; minimum 17°C for Heat mode) (The figure shows the temperature set to 28°C).</li> </ul>					
<ul style="list-style-type: none"> <li>• <b>Setting the fan speed</b> Press the FAN SPEED button. By pressing the FAN SPEED button repeatedly, the indicator will switch from HIGH to MED and LOW. The unit is designed and sized for optimum operation with the fan set to HIGH. (The figure shows the MED speed setting.)</li> </ul>					
<table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: center;"><b>NOTE</b></th> </tr> </thead> <tbody> <tr> <td colspan="2"> <i>In DRY mode, the fan speed changes automatically to LOW and cannot be changed (although the indicator will still show the current setting).</i> </td> </tr> </tbody> </table>			<b>NOTE</b>	<i>In DRY mode, the fan speed changes automatically to LOW and cannot be changed (although the indicator will still show the current setting).</i>	
	<b>NOTE</b>				
<i>In DRY mode, the fan speed changes automatically to LOW and cannot be changed (although the indicator will still show the current setting).</i>					

• **Setting the louver direction**

1. Pressing the LOUVER button starts the louver. The louver oscillates at approximately 70° from the horizontal to vertical position. When the “” symbol moves, this indicates that the louver is oscillating.
2. When the louver oscillation function is not required, press the SWING LOUVER button again. The oscillator will stop (although not immediately, as indicated in point 3) at the angle indicated by the direction of the “” symbol.
3. By commanding the louver to move to a specific position, it will move from the initial position to vertical and will then rise again to the horizontal position, before finally moving to the position indicated by the user.

• **Fixed position**

For cooling mode, the air outlet angle can be set to one of 5 different positions. In heating mode, it can be set to one of 7 positions.

• **Automatic oscillation position**

The louver position indicators will move continuously according to the oscillation of the louver.



**NOTE**

- In heating mode, the louver angle changes automatically.
- There is a phase shift between the actual angle of the louver and that indicated on the LCD screen. When the SWING LOUVER button is pressed, the louver does not stop immediately. It will move and oscillate again before stopping.
- To find out the exact louver angles, check the corresponding catalogue for the unit installed.

◆ **Ventilation mode procedure**



**NOTE**

*This function is only available when the total heat exchanger is connected\*. When carrying out the following procedures without the total heat exchanger connected, the NO FUNCTION indication will flash for 5 seconds.*

*\*Total heat exchanger: When adjusting the temperature, the indoor unit will release air from inside the room and replace it with air from outside. To adjust the air from outside to the temperature setting inside the room, it is passed through the total heat exchanger. The air pre-treated (pre-conditioned) in this heat exchanger is routed to the indoor unit where it is conditioned and then circulated into the room.*

• **Ventilation**

Press VENTI button

By pressing this button repeatedly, the indicator changes from A/C to VENTI and A/C+VENTI.

(The figure shows the A/C + VENTI setting).




**NOTE**

- If the system mode is changed to VENTI during individual air conditioning system operation, the system will switch off.
- If the system mode is changed A/C during individual operation of the total heat exchanger, it will switch off.




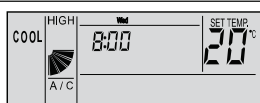






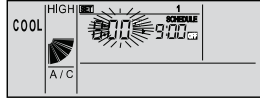
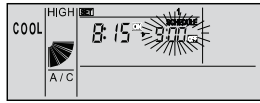


◆ **Automatic COOL/HEAT mode procedure**

Automatic COOL/HEAT mode must be configured as an optional function.  
This function allows the system to be switched automatically to COOL/HEAT mode based on the difference between the temperature setting and the temperature of the suction air. If the intake air exceeds the temperature setting by 3°C, the system will switch to COOL mode and, if it is 3°C less than the temperature setting, the system will switch to HEAT mode.

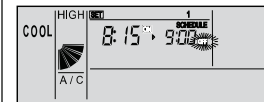
	<b>NOTE</b>
<ul style="list-style-type: none"> <li>- If the heating function is set to LOW, the overload protection devices will often shut-off the system. When this happens, set the fan speed to HIGH or MED (medium).</li> <li>- If the outdoor temperature is above 21°C, the system will not operate in heating mode.</li> </ul>	

◆ **Timer function procedure**

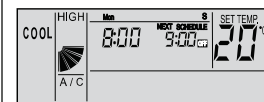
<b>• Setting the current date and time</b>					
1. Press the SELECT DAY ▼ button for at least 3 seconds to change from operation mode to the current day setting mode. SET will be displayed and the day will flash. All of the days of the week are displayed.					
2. Press the SELECT DAY ▼ button until the current day is flashing and press OK. All the days will disappear except the selected day, and the time will start to flash.					
3. Press SELECT DAY/SCHEDULE ▲ ▼ to move the "hour" up and down; once set, press OK. The "hour" will stop and the "minutes" will start to flash.					
4. Press SELECT DAY/SCHEDULE ▲ ▼ again to set the "minutes" and, once set, press OK again. The current time setting mode will end and the system will return to operation mode. The "minutes" will be displayed and SET will turn off. The "seconds" will start to count from zero.					
<b>• Setting the timer schedules</b>					
1. Press the TIMER button. SET will be displayed and the first schedule number "1" will flash. The rest of the schedule numbers will remain fixed.					
<table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: center;"><b>NOTE</b></th> </tr> </thead> <tbody> <tr> <td colspan="2">Pressing and holding the TIMER button for more than 3 seconds activates the weekday timer schedule setting. (See point VI).</td> </tr> </tbody> </table>			<b>NOTE</b>	Pressing and holding the TIMER button for more than 3 seconds activates the weekday timer schedule setting. (See point VI).	
	<b>NOTE</b>				
Pressing and holding the TIMER button for more than 3 seconds activates the weekday timer schedule setting. (See point VI).					
2. By pressing the SELECT SCHEDULE ▲ button, the schedule number will change in sequence: [1]*[2]*[3]*[4]*[S]*[1]*...., - By selecting [S], the user can set the on/off time and the temperature change as a means of saving energy (check the section on setting the temperature change). - By pressing the TIMER button, SET and SCHEDULE are turned off and the system switches to operation mode.					
3. Pressing the OK button indicates the selected schedule number. The other schedule numbers will switch off and the switch-on "hour" for the selected program will flash.					
4. Press SELECT DAY/SCHEDULE ▲ ▼ to adjust the "hour" and, once set, press OK. The "hour" will stop and the "minutes" will start to flash.					
5. Press the SELECT DAY/SCHEDULE ▲ ▼ button to adjust the "minutes" and, once set, press OK. The "minutes" will remain fixed and the switch-off "hour" will flash.					

6. Set the switch-off time by following the same procedure as the switch-on time. The schedule will be stored in the memory and all the available schedule will reappear (1, 2, 3, 4, S).

**NOTE**  
Repeat from step 2 onwards to adjust the other schedule settings.



7. By pressing the TIMER button, SET and SCHEDULE are turned off and the system switches to operation mode.



◆ **Assigning timer schedules to the days of the week.**

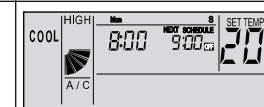
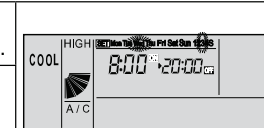
1. Press the TIMER button for more than 3 seconds and SET will appear. All the days of the week will be displayed along with the schedule numbers (as explained in the previous point).

2. Press the DAY ▼ button until the desired day appears. When pressed, the days of the week will flash: [Mon]→[Tue]→... →[Sun]→[Mon~Sun]→[Mon~Fri]→[Sat, Sun]→[Mon]... If several days flash, the same setting will apply to all of these days.

3. Press the SCHEDULE ▲ button until the desired schedule number flashes.

4. Press OK; the schedule number selected in step 3 applies to the days set in step 2. Pressing OK will either activate or deactivate the schedule. If it is activated, the word SCHEDULE will be displayed above the switch-off time.

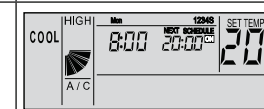
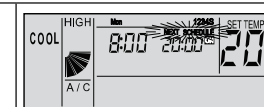
5. Press the TIMER button; the system will exit the programming mode (SET will switch off) and return to operation mode.



◆ **Cancelling the timer**

In operation mode, press and hold DAY/SCHEDULE ▲ ▼ simultaneously for at least 3 seconds. NEXT SCHEDULE will flash. (The entire timer setting is cancelled)

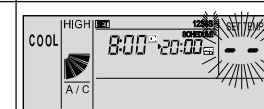
In timer cancellation mode, press and hold DAY/SCHEDULE ▲ ▼ simultaneously for at least 3 seconds. NEXT SCHEDULE will appear. (Timer activation)

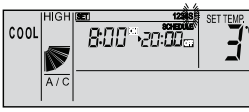
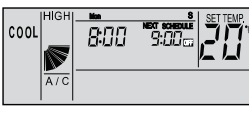


◆ **Setting the temperature change (energy-saving mode).**

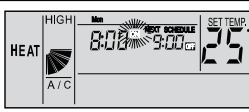
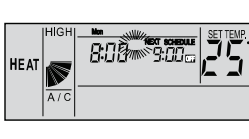
1. Follow the switch-on/switch-off setting procedure in steps 1 and 2 of the "Setting the timer schedules" section and select program "S".

2. Follow the switch-on/switch-off setting procedure in steps 4, 5 and 6 in the "Setting the timer schedules" section and set the switch-on/switch-off time. This will bring up the setting temperature.

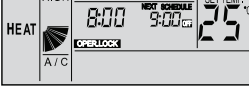
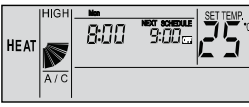


<p>3. Select the temperature change using the TEMP buttons (▲ ▼). At this point, if the RESET button is pressed, the temperature change will not be set and "- -" will be displayed.</p>	
<p>4. By pressing the TIMER button, SET and SCHEDULE are turned off and the system switches to operation mode.</p>	
<p><b>NOTE</b></p> <ol style="list-style-type: none"> <li>Carrying out this operation will change the temperature setting indicator.</li> <li>The increase or decrease of the set temperature during the scheduled time (<math>\pm 3\text{ }^{\circ}\text{C}</math> or <math>\pm 5\text{ }^{\circ}\text{C}</math>) will vary depending on the operation mode. <ul style="list-style-type: none"> <li>If operating in "ventilation", "cooling" or "dehumidifying" mode, the temperature variation is + .</li> <li>If operating in "heating" mode, the temperature variation is - .</li> </ul> </li> </ol>	


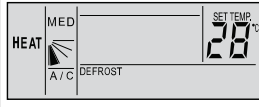
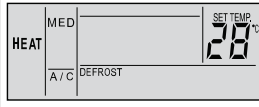

◆ **Automatic heating operation (freeze protection)**

<p><b>• Activation</b> In operation mode, press the MODE button for at least 3 seconds. Automatic heating operation is activated and ON will appear to the right of the current time. ON will flash continuously during automatic heating operation.</p>	
<p><b>• Cancellation</b> During automatic heating operation, press the MODE button for at least 3 seconds to change to the operation mode. The automatic heating operation is switched off and the ON indication to the right of the current time will disappear.</p>	
<p><b>NOTE</b></p> <p>If the room temperature drops below a certain level*, the heating will switch on automatically. In this case, when the room reaches the temperature setting, the system will switch off.</p> <p>* The user may select (5/10/15 °C) through an optional setting (see Optional function list, option FE).</p>	


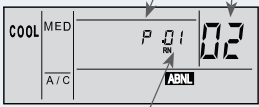



◆ **Operating lock procedure**

<p>To avoid any incorrect use of the buttons, they can be locked (see below).</p>	
<p><b>• Activation</b> In operation mode, press the SELECT ▲ ▼ buttons simultaneously for at least 3 seconds. The operation lock will be activated and OPER.LOCK will be displayed if a button is pressed during this time, OPER. LOCK will flash.</p>	
<p><b>• Cancellation</b> While system operation is locked, press the SELECT ▲ ▼ buttons simultaneously for at least 3 seconds to return to operation mode. The operation lock will be cancelled and OPER.LOCK goes off.</p>	
<p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>The button to be locked can be selected in "change operation mode", "temperature setting", "air flow" and "automatic louver" through an optional setting (F8~Fb) indicated in Optional functions list.</li> <li>This setting can be changed from a second remote control.</li> </ul>	

◆ **Indications in normal conditions**

<p>• <b>Thermostat Stoppage</b> When the thermostat of the unit is off, the fan speed changes to LOW and the indicator will not change. (Heating mode only.)</p>	
<p>• <b>Defrost</b> When the system is running in defrost mode, the DEFROST indication will appear. The fan of the indoor unit will slow down or stop (as selected). The louver will stop in the horizontal position at 35°. However, the indicator on the LCD screen will remain on. (The figure shows the system status when set to DEFROST.)  When the unit stops during defrost mode, the run indicator (green) will switch off. However, the system will continue to display DEFROST and the unit will start-up once the defrost mode is complete.</p>	 
<p>• <b>Filter</b> Clogged filter: The FILTER indication will appear when the time programmed in function b4 (see Optional function list) expires, indicating that it needs to be cleaned. Clean the filter: Press the RESET button after cleaning. The FILTER sign will turn off.</p>	

◆ **Indications in abnormal conditions**

<p>• <b>Abnormal condition</b> The run indicator (green) will flash. The ALARM indicator will be displayed on the LCD screen. The screen will also indicate the number of the indoor unit, the alarm code and the model code. If several indoor units are connected, these indications will be displayed for each one, one at a time. Note down the indications and contact your HITACHI service provider.</p> <p>• <b>Power failure</b> All on-screen indications will disappear. When the unit stops due to a power failure, it will not restart automatically, even when the power is restored. In the event of a power failure lasting no more than 2 seconds, the unit will restart automatically.</p> <p>• <b>Electrical noise</b> There may be cases when all of the display indications are off and the unit is stopped. This is because the microcomputer has switched on to protect the unit from electrical noise.</p>	<div style="text-align: center;"> <p>Indoor unit number</p>  </div> <div style="text-align: center;"> <p>Alternate indication every second</p> <p>Model Code</p> <p>Alarm code</p>  <p>Number of connected indoor units</p> </div> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th colspan="2">Model number</th> </tr> <tr> <th>Indication</th> <th>Model</th> </tr> </thead> <tbody> <tr> <td>H</td> <td>Heat pump</td> </tr> <tr> <td>P</td> <td>Inverter</td> </tr> <tr> <td>F</td> <td>Multiple</td> </tr> <tr> <td>Ɔ</td> <td>Cooling only</td> </tr> <tr> <td>E</td> <td>Other</td> </tr> <tr> <td>b</td> <td>IVX, individual operation</td> </tr> <tr> <td>l</td> <td>KPI</td> </tr> </tbody> </table>	Model number		Indication	Model	H	Heat pump	P	Inverter	F	Multiple	Ɔ	Cooling only	E	Other	b	IVX, individual operation	l	KPI
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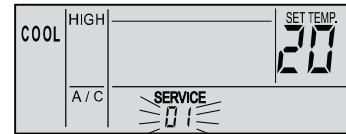
## 2.1.4. Optional functions

### 2.1.4.1. Command functions

The remote control changes the optional setting mode with the following procedures.  
The optional functions are programmed using the remote control.

#### • Programming and setting mode

Check that the unit is off, press and hold the remote control buttons "OK" and "RESET" simultaneously for at least 3 seconds and the control will change to the field setting mode. Once the mode is changed, the unit will display the "SERVICE" indication, with the number "01" flash below it.



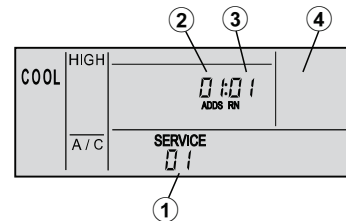
#### • Optional setting mode. Selecting SERVICE 01

In programming and setting mode (mentioned above), press either "TEMP ⬆" or "TEMP ⬇" and the number flashing beneath the "SERVICE" indication will change (01 ↔ 02). Set the flashing number to "01", press "OK" and the remote control will switch to optional setting mode.

#### • Selecting the indoor unit

a. In optional setting mode, selecting SERVICE 01 will change the indicator on the remote control display, as shown in the following diagram.

- ① Indication "01" will be activated.
- ② The address of the indoor unit on which the optional function is to be set is indicated in the timer setting hour indication section, with "ADDS" appearing below.
- ③ The refrigerant cycle number of the outdoor unit on which the optional function is to be set is indicated in the timer setting hour indication section, with "RN" appearing below.
- ④ The setting temperature indication is deactivated.



b. At the point mentioned above (a), press either "TEMP ⬇" or "TEMP ⬆" on the remote control in order to change the indoor unit on which you wish to set the optional function.

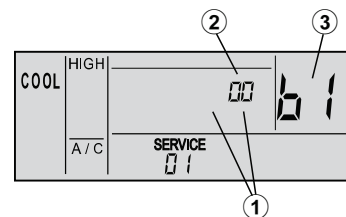
NOTE
<ul style="list-style-type: none"> <li>- The indoor unit can be selected from among those connected to the remote control.</li> <li>- If the indication for both the address and the refrigerant cycle is "AA", the settings for all indoor units are the same.</li> </ul>

c. After selecting the indoor unit, press "OK" and the remote control will switch to optional setting mode.

#### • Changing optional functions and setting conditions

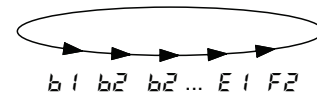
a. In optional setting mode, the indication on the control display will change, as shown below.

- ① The indications "ADDS" and "RN" will be deactivated.
- ② The setting condition of the optional function is indicated in the timer setting hour indication sections.
- ③ The optional function number is indicated in the setting temperature indication section.



b. Press either "SELECT ▲" or "SELECT ▼" and the optional function indication will change, as shown below.

When pressing "SELECT ▲"



When pressing "SELECT ▼"



c. Press "OK" and the setting condition of the optional function will change, as shown.



• **Selecting a different indoor unit**

If you press "TEMP Ⓢ" or "TEMP Ⓣ" when in the optional setting mode, the condition of the remote control change so that the indoor unit may be selected to set the optional function, as described above.

• **Returning from optional function setting mode to operation mode**

Press the "RESET" button to store the optional function setting and return to operation mode.

**2.1.4.2. Optional functions list**

Items	Optional Function	Individual Setting	Setting Condition	Contents
b1	Removal of Heating Temperature Compensation	○	00	Standard (Set Temp. +4°C)
			01	Removal (Set Temp.)
			02	Set Temp. +2°C (*1)
b2	Circulator Function at Heating Thermo-OFF	○	00	Not Available
			01	Available
b3	3 Minutes OFF Guard Compressor	○	00	Not Available
			01	Available
b4	Period for Filter Sign	○	00	Standard
			01	100 hours
			02	1,200 hours
			03	2,500 hours
			04	No Indication
b5	Fixing of Operation Mode	✕	00	Not Available
			01	Available
b6	Fixing of Setting Temperature	✕	00	Not Available
			01	Available
b7	Fixing Cooling Operation	✕	00	Not Available
			01	Available
b8	Automatic COOL/HEAT Operation	✕	00	Not Available
			01	Available
b9	Fixing Fan Speed	✕	00	Not Available
			01	Available
bA	Not Prepared	✕	"-.-" Fixed	Not Used
bb	Cooling Temperature Compensation	○	00	Standard (No Compensation)
			01	Set Temp. -1°C
			02	Set Temp. -2°C
bC	Not Prepared	-	00	Not Used
			01	(Use as 00 conditions)
bd	Not Prepared	-	00	Not Used
			01	(Use as 00 conditions)
bE	Not Prepared	-	00	Not Used
			01	(Use as 00 conditions)
C1	Not Prepared	-	00	Not Used
			01	(Use as 00 conditions)
C2	Not Prepared	-	"-.-" Fixed	Not Used
			00	Not Used
C3	Not Prepared	○	00	Not Used
			01	(Use as 00 conditions)

Items	Optional Function	Individual Setting	Setting Condition	Contents
C4	Drain pump in heating mode	○	00	Not available
			01	Available
C5	Static pressure selection (RPI)	○	00	Average static pressure (factory set)
			01	High static pressure
			02	Low static pressure
	Increased Fan Speed (RCI, RCIM, RCD)		00	Normal
			01	Speed increase 1
C6	Increasing Fan Speed	○	00	Not Available
			01	Available
C7	Canceling 3 Minutes Compressor Guard.	○	00	Available
			01	Available
C8	Thermistor of Remote Control Switch	○	00	Control by Indoor Suction Thermistor
			01	Control by Thermistor of Remote Control Switch
			02	Control by Average Value of Indoor Suction Thermistor and Thermistor of Remote Control Switch
C9	Not Prepared	-	"-.-" Fixed	Not Used
CA	Not Prepared	-	"-.-" Fixed	Not Used
Cb	Selection of Forced Stoppage Logic	✕	00	Forced Stoppage Input: A Contact
			01	Forced Stoppage Input: B Contact
CC	Not Prepared	✕	00	Not Used
			01	(Use as 00 conditions)
Cd	Not Prepared	○	00	Not Used
			01	(Use as 00 conditions)
CE	Not Prepared	-	00	Not Used
			01	(Use as 00 conditions)
CF	Change of Louver Swing Angle	○	00	Standard (7 Steps)
			01	Draft Prevention (5 Steps)
			02	High Ceiling (5 Steps) (*2)
d1	Power Supply ON/OFF 1	○	00	Not Available
			01	Available
d2	Not Prepared	-	"-.-" Fixed	Not Used
			00	Not Available
d3	Power Supply ON/OFF 2	○	00	Not Available
			01	Available




Items	Optional Function	Individual Setting	Setting Condition	Contents
d4	Prevention for Cooling Discharge Air Temp. Decrease	○	00	Not Available
			01	Available
d5	Prevention for Heating Discharge Air Temp. Decrease	○	00	Not Available
			01	Available
d6	Room Temp. Control for Energy Saving	○	00	Not Available
			01	Available
d7	Not Prepared	○	00-07	Not Used (Use as 00 conditions)
E1	KPI: Ventilation mode	○	00	Automatic Ventilation
			01	Ventilation with Total Heat Exchanger
			02	Ventilation with Bypass (No Total Heat Exchange)
			00	Not Available
	Econofresh: all fresh mode		01/02	All fresh mode
E2	KPI: Increasing Air Supply Volume	○	00	Not Available
			01	Available
	Econofresh: Enthalpy Sensor		00	Not Available
	01		Available	
E3	Not Prepared	○	00	Not Used
			01	(Use as 00 conditions)
			02	Standard
E4	KPI: Pre-cooling / Pre-Heating period	○	00	Standard
			01	30 minutes
			02	60 minutes
	Econofresh: gas sensor		00	Standard
	01/02		CO <sub>2</sub> Sensor	
E5	Not Prepared	○	00	Not Used
			01	(Use as 00 conditions)
E6	Indoor Fan Operation Time After Cooling Operation Stoppage	○	00	Not Available
			01	60 min.
			02	120 min.
E7	Not Prepared	-	00	Not Used
			01	(Use as 00 conditions)
E8	Fan Operation Control at Heating Thermo-OFF	○	00	Not Available
			01	Available
E9	Not Prepared	-	00	Not Used
			01	(Use as 00 conditions)
EA	Not Prepared	○	00	Not Used
			01	(Use as 00 conditions)
Eb	Fan Operation Control at Cooling Thermo-OFF	○	00	Not Available
			01	LOW
			02	SLOW
EC	Forced Thermo-ON Stoppage at Cooling	○	00	Not Available
			01	Available
Ed	Not Prepared	○	00	Not Used
			01	(Use as 00 conditions)
EE	Automatic Fan Speed Control	○	00	Not Available
			01	Available
F1	Automatic Timer OFF Setting	x	00	Function not valid
			01	1 h
			02	2 h
			03	3 h
			04-24	(04-24) h
			0A	0.5 h
			0B	1.5 h
			01	Slave
F2	Main and secondary remote control Setting	x	00	Master
			01	Slave
F3	Automatic Temperature Setting Release	x	00	Not available
			01	Available
F4	Automatic Release Time	x	00	30 minutes (Factory setting)
			01	15 minutes
			02	60 minutes
			03	90 minutes

Items	Optional Function	Individual Setting	Setting Condition	Contents
F5	Automatic Cooling Temperature Release	x	19	19°C
			20	20°C
			21-24	(21-24) °C
			25	25°C (Factory setting)
			26-28	(26-28) °C
			29	29°C
			30	30°C
F6	Automatic Heating Temperature Release	x	19	19°C
			20	20°C
			21-24	(21-24) °C
			25	25°C (Factory setting)
			26-28	(26-28) °C
			29	29°C
30	30°C			
F7	Prevention of Operation Stoppage due to Remote Control Operating Error	x	00	Not Available
			01	Available
F8	Lock Function for Operation Mode Selection	x	00	Not Available
			01	Available (Factory-Setting)
F9	Lock Function for Temperature Setting	x	00	Not Available
			01	Available (Factory-Setting)
FA	Lock Function for Fan Speed Selection	x	00	Not Available
			01	Available (Factory-Setting)
Fb	Lock Function for Swing Louver Operation	x	00	Not Available
			01	Available (Factory-Setting)
FC	Cooling Lower Limit for Setting Temperature (*3)	x	00	Standard
			01	Lower Limit +1°C
			02	Lower Limit +2°C
			...	...
			09	Lower Limit +9°C
			10	Lower Limit +10°C
Fd	Heating Upper Limit for Setting Temperature (*4)	x	00	Standard
			01	Upper Limit -1°C
			02	Upper Limit -2°C
			...	...
			09	Upper Limit -9°C
			10	Upper Limit -10°C
FE	Not Prepared	-	00	Not Used
			01	(Use as 00 condition)
			02	(Use as 00 condition)
FF	Lock Function for Timer	x	00	Not Available
			01	Available (Factory-setting)
H1	Maintenance alarm	○	00	Show
			01	Hide
H2	No automatic control indication	○	00	Show
			01	Hide
H3	Operation mode change restriction (*4)	○	00	Operation mode change off (hide operation mode) (factory setting)
			01	Operation mode set by the central control unit + "FAN" mode
			02	Unlimited operation
H4	Ventilation changeover (total heat exchanger only)	○	00	Air conditioning only
			01	Ventilation only
			02	Air conditioning + Ventilation
H5	Central control available after forced stoppage.	○	00	Off
			01	On

○: Allow individual setting.

x: Setting is used for all the outdoor units

-: Not used


	<b>NOTE</b>
<p>*1: The "02" setting may not be available according to the type of indoor unit.            *2: 00: Standard (7-step operation), 01: Draft Prevention (lower 2 steps cutoff), 02: High ceiling (upper 2 steps cut off)            *3: Applicable to fan, cooling and dry operation modes.            *4: Applicable to heating operation mode.</p> <ul style="list-style-type: none"> <li>- After at least 3 minutes from the power ON, change the optional setting.</li> <li>- When changing "CF" setting (change of louver swing range), restore the power supply or allow the louver to make one complete swing fully in the auto swing mode to apply the optional setting.</li> <li>- The optional settings are different according to the indoor and outdoor unit models. Check to ensure that the unit has the optional setting or not.</li> <li>- Record the setting conditions for each optional setting in the "Setting" column of the table.</li> </ul>	

**Table B Input and Output number display and connectors**

Input number display		Port	Factory Setting		Setting
Input / Output	Indication		Setting Item	Indication	
Input1	, 1	CN3 1-2	Remote ON/OFF 1 (level)	03	
Input2	, 2	CN3 2-3	Forbidding Remote Control after Manual Stoppage	06	
Output1	o 1	CN7 1-2	Operation	01	
Output2	o 2	CN7 1-3	Alarm	02	
Output3	o 3	CN8 1-2	Thermo-ON for Heating	06	

**Table C Input and Output settings and display codes**

Indication	Input	Output
00	Not set	Not set
01	Room Thermostat (for Cooling)	Operation
02	Room Thermostat (for Heating)	Alarm
03	Remote ON/OFF 1 (level)	Cooling
04	Remote ON/OFF 2 (Operation)	Thermo-ON for Cooling
05	Remote ON/OFF 2 (Stoppage)	Heating
06	Forbidding Remote Control after Manual Stoppage	Thermo-ON for Heating
07	Remote Cooling / Heating Change	Total Heat Exchanger

	<b>NOTE</b>
<ul style="list-style-type: none"> <li>- After at least 3 minutes from the power ON, change the optional setting.</li> <li>- Record the setting conditions for each input and output in the "Setting" column of the table.</li> </ul>	

### 2.1.4.3. Remote control optional functions


#### b1 Removal of Heating Temperature Compensation (due to Uneven Heat Load).

This function is used when the temperature settings of the remote control switch and the suction air temperature of the indoor unit are required to be equal.

This is useful when the thermistor at the suction side of an indoor unit is removed and installed in another place..


#### Setting Temperature for Room Temperature Control at Heating

Setting Condition	Actual Control Temperature
00 (Standard)	Remote Control Switch Setting Temperature (Indicated Value) +4°C
01	Remote Control Switch Setting Temperature (Indicated Value)
02	Remote Control Switch Setting Temperature (Indicated Value) +2°C

	NOTE
	- The setting temperature upper limit after compensation is as follows: Inverter Multi Unit: 34°C

#### b2 Circulator Function at Heating Thermo-OFF

In case that the fan speed is changed to "LOW" tap at heating Thermo-OFF, the room air may stratify because warm air stagnates near the ceiling. In this case, it is recommended that the circulator function explained below is utilized. The function keeps the fan speed at thermo-OFF at the same level as thermo-ON. In this case, air movement in the room will be kept on the same level as thermo-ON, ensuring a homogenous air distribution. In case that an Auto Louver is equipped, this operation will be also activated when the heating is turned thermo-OFF.


	NOTE
	- Perceptions of coolness, heat and air flow are subject to personal tastes and behaviors. It is therefore recommended to discuss this with customers thoroughly and then to set the unit accordingly.

#### b3 Enforced 3 Minutes Minimum Operation Time of Compressor

This function is used to guard the compressor. When this function is valid, the operation is prevented the compressor frequency starts and stops in short intervals. By setting this function, the mode of a minimum 3 minutes operation will be added.

Refer to Item (C7) to cancel this function. Even if this function is set as invalid, "3 Minutes Guard for Compressor Protection" function is still available.

The functions of enforced 3 minutes minimum operation and minimum 3 minutes stoppage are valid when factory shipping

	NOTE
	- When the safety device is activated or the "RUN/STOP" switch is pressed, the compressor is stopped immediately.

#### b4 Change of Filter Cleaning Time

The period for filter sign indication is set for each indoor unit model when shipping.

The filter sing is indicated according to the filter cleaning time (Factory-Setting).

However, this filter cleaning time can be changed depending on the condition of the filter as shown in the table below

	Period for Filter Sign Indication			
	Approx. 100 hrs.	Approx. 1,200 hrs.	Approx. 2,500 hrs.	No Indication
In Case of 4-Way Cassette Type	○	⊙	○	○
Liquid Crystal Display on Remote Control Switch	01 b4	02 b4 or 00 b4 *	03 b4	04 b4

⊙: Factory-Setting

○: Change Setting Period

\* : In case of RPK model, the factory setting is 200 hrs.

#### b5 Fixing of Operation Mode

This function is used when operation mode changes are not required.

When this function is valid, the operation mode which has been set cannot be changed by the remote control switch.

**b6 Fixing of Setting Temperature**

This function is used when setting temperature changes are not required.

When this function is valid, the setting temperature which has been set cannot be changed by the remote control switch.

**b7 Fixing of Operation as Exclusive Cooling Unit**

This function is used when exclusive cooling operation is required.

This function invalidates the heating operation and the automatic COOL/HEAT operation, as the operation of exclusive cooling unit.

**b8 Automatic COOL/HEAT Operation**

This function is used to operate the unit with changing cooling and heating operation automatically (same operation mode for indoor units in the same refrigerant cycle).

This function is invalid when the outdoor unit is cooling only model or the function of "Fixing of Operation as Exclusive Cooling Unit" is valid.

**b9 Fixing of Fan Speed**

This function is used to fix the fan speed. When this function is valid, the fan speed is not changed by the remote control switch.


**bA Not Prepared**

**bb Cooling Setting Temperature Compensation**

This function is used to provide the longer cooling operation time. When this function is valid, Thermo-ON/OFF is controlled under the lower temperature conditions than the setting temperature (indicated value) of the remote control switch.

Setting Temperature for Room Temperature Control at Cooling

Setting Condition	Actual Control Temperature
00 (Standard)	Remote Control Switch Setting Temperature (Indicated Value)
01	Remote Control Switch Setting Temperature (Indicated Value) -1°C
02	Remote Control Switch Setting Temperature (Indicated Value) -2°C

	<b>NOTE</b>
- The setting temperature lower limit after compensation is 19°C	

**bC Not Prepared**

**bD Not Prepared**

**bE Not Prepared**

**c1 Not Prepared**

**c2 Not Prepared**

**c3 Not Prepared**

**c4 Drain pump in heating mode**

This function is used to activate the drain pump in heating mode (when the humidifier is installed).

**c5 Static pressure selection (RPI) / Increasing fan speed (RCD, RCI, RCIM)**

For RPI units, this function is used to change the static pressure.

For RCD, RCI and RCIM units, this function is used to increased the fan speed on the indoor units installed in high ceilings.

**c6 Hi Speed at Heating Thermo-OFF**

This function is used to increase the fan speed when thermo-OFF in heating operation with the function (C5). (The fan speed is not increased when thermo-OFF in heating operation at the function (C5) setting.)

**㊦ Canceling of Enforced 3 Minutes Minimum Operation Time of Compressor**

“Enforced 3 Minutes Minimum Operation Time of Compressor” described in the item (b3) is the standard function. This function is used to cancel the “Enforced 3 Minutes Minimum Operation Time of Compressor” function.

**㊧ Thermistor of Remote Control Switch**

This function is used to control the unit by the built-in thermistor of the remote control switch (remote control thermistor) instead of the thermistor for suction air.

Set this function at “01” or “02” when utilizing this function.

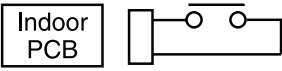
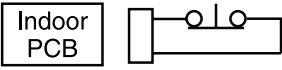
However, even when this function is set at “01” or “02”, the detecting temperature is abnormal due to the failure of the remote control thermistor, etc., the thermistor to be used is changed to the thermistor for suction air of the indoor unit automatically.

**㊨ Not Prepared**

**㊩ Not Prepared**

**㊪ Selection of Forced Stoppage Logic**

This function is used to select the logic of the contact for forced stoppage signal input. The setting condition and the logic of the contact are as shown below.

Setting Condition	Logic of contact	Sequence	Activation	
			Contact “Open”	Contact “Close”
00	A Contact		Normal	Forced Stoppage
01	B Contact		Forced Stoppage	Normal

**㊫ Not Prepared**

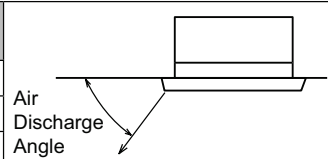
**㊬ Not Prepared**


**㊭ Not Prepared**

**㊮ Change of Louver Swing Angle**

This function is used to the change louver swing angle.

Setting Condition	Louver Swing Angle (Air Discharge Angle)	Purpose
00	Approx. 30° to 60°	Standard Operation
01	Approx. 30° to 50°	Draft Prevention
02	Approx. 40° to 60°	For High Ceiling



	<b>CAUTION</b>
- Never change the setting without turning OFF the power.	

**㊯ Not Prepared**

**㊰ Not Prepared**


**㊱ Power Supply ON/OFF 2 (Restarting Function After Power Failure)**

This function is used to start the unit operation again automatically when the power supply is recovered after the power failure over 2 seconds.

The standard unit is started operation again automatically with all the same operating conditions such as operation mode, etc. in case of the power failure within 2 seconds.

(The compressor is started operation again after three minutes guard in addition to 2 seconds power failure as a maximum.)

When this function is used in the condition that there is no person to operate the unit, provide the system with monitoring for disaster prevention

	<b>NOTE</b>
<p>- In case of the power failure during the unit stoppage, the unit remains stopped after recovering the power supply. When the compressor does not reach fixed temperature, the system may not restart automatically after turning on the power supply by hot-start control.</p> <p>- *Hot-start Control: The control program that cannot operate if fixed temperature is not being supplied after the power is turned ON.</p>	

**d4 Prevention for Cooling Discharge Air Temperature Decrease**

This function is used to change Thermo-ON/OFF conditions at cooling operation and prevent discharge air temperature decrease. In the result, the perception of cold draft is eliminated.

<Thermo-OFF Conditions>

- (a) Cooling Operation (including Dry Operation) and
- (b) Indoor air discharge temp. <11°C has been kept for 3 minutes.  
(Thermo-OFF when discharge air temperature is low.)

<Thermo-ON Conditions>

- (a) Indoor discharge air temp. >13°C and
- (b) Thermo-ON depends on indoor discharge air temperature.  
(Not Thermo-ON when discharge air temperature is low.)

**d5 Prevention for Heating Discharge Air Temp. Decrease**

This function is used to prevent discharge air temperature decrease by lowering actual fan speed than the indications on the remote control switch.

Indications on Remote Control Switch	Actual Fan Speed
HIGH	MEDIUM
MEDIUM	LOW
LOW	LOW

**d6 Room Temperature Control for Energy Saving**

When outdoor temperature air thermistor is detecting that the air-conditioning load is low from the outdoor temperature. This function is used to automatically save energy.

**d7 Not Prepared**

**E i Ventilation Mode (KPI) / All fresh mode (Econofresh)**

**Ventilation Mode (KPI)**

This function is used to set the ventilation mode of the total heat exchanger. The setting condition and the ventilation mode are as shown below.

Setting Condition	Ventilation Mode	Contents
00	Automatic Ventilation	Selecting effective ventilation mode (Total Heat Exchanging Ventilation or Bypass Ventilation) for energy saving by detecting the temperature difference between the outdoor temperature and the room temperature.
01	Total Heat Exchanging Ventilation	The heat exchanging is performed continuously when the total heat exchanger is operated.
02	Bypass Ventilation	The heat exchanging is not performed continuously when the total heat exchanger is operated.

**All fresh mode (Econofresh)**

This function is able to open the outdoor air damper. The setting condition is showing below.

Setting Condition	All fresh control	Contents of parts
00	Not available	The outdoor damper is fully closed.
01	Available	The outdoor damper is fully open.
02	Available	The outdoor damper is fully open.

## E2 Increasing Air Supply Volume (KPI) / Enthalpy Sensor (Econofresh)

### Increasing Air Supply Volume (KPI)

This function is used to increase the supply air volume with the one-step high tap of the fan motor for supply air during operation of the total heat exchanger, make the room pressure higher than the surrounded room with the increased supply air volume and prevent the polluted air and smell from entering into the room. The setting air flow mode by remote control switch and the actual air flow of the total heat exchanger when setting this function are as shown below.

Setting Air Flow Mode by Remote Control Switch	Air Flow of Total Heat Exchanger
LOW	MED
MED	HIGH
HIGH	HIGH

### Enthalpy Sensor (Econofresh)

This function is used to set the enthalpy sensor input. The setting condition is showing next

Setting Condition	Enthalpy Sensor	Contents of parts
00	Not available	The enthalpy sensor is not available
01	Available	The enthalpy sensor is available



#### NOTE

- In case that the setting air flow mode by the remote control switch is "HIGH", the air flow of the total heat exchanger is "HIGH" even when this function is set.

## E3 Not Prepared

## E4 Pre-cooling and Pre-heating Period (KPI) / Gas sensor (Econofresh)

### Pre-cooling and Pre-heating Period (KPI)

This function is used to delay the start-up of the total heat exchanger operation. The setting condition and the delaying period of operation start-up are as shown below.

Setting Condition	Delaying Period of Operation Start-Up
00	0 minutes
01	30 minutes
02	60 minutes

### Gas sensor (Econofresh)

This function is used to set the gas sensor input. The setting condition is showing below

Setting Condition	Gas Sensor	Contents of parts
00	Not available	The gas sensor input is not available
01	Available	The gas sensor input is available
02	Available	The gas sensor input is available

## E5 Not Prepared

## E6 Indoor Fan Operation Time After Cooling Operation Stoppage

This function is used to prevent dew condensation "SLOW" indoor fan operation (for 60 minutes or 120 minutes depending on the setting) while cooling operation is stopped. Additionally, it is effective to prevent fangs or abnormal odor.

**E7 Not Prepared**

**E8 Fan Operation Control at Heating Thermo-OFF**

This function is used to prevent the perception of cold draft by reducing indoor fan speed at heating thermo-OFF.

Setting Condition	Fan Operation at Thermo-OFF
00	LOW
01	SLOW

**E9 Not Prepared**

**EA Not Prepared**

**Eb Fan Operation Control at Cooling Thermo-OFF**

This function is used to control odor diffusion and humidity level indoor fan speed at cooling thermo-OFF.

Setting Condition	Fan Operation at Thermo-OFF
00	Operation at Setting Fan Speed
01	LOW
02	SLOW

**EC Forced Thermo-ON Stoppage at Cooling**

This function is used to stop operation by forced thermo-ON when cooling operation is stopped.

It is effective to prevent abnormal odor because the heat exchanger is kept in the clean condition such as the heat exchanger is rinsed with drain water.

**Ed Not Prepared**

**EE Automatic Fan Speed Control**

This function is used to economize the operation. The fan speed is automatically controlled when the room temperature is near the setting temperature.

**F1 Automatic OFF Timer Setting**

This function is used to set the OFF timer function automatically when the unit is started by the remote control switch. During operation with the automatic OFF timer setting function, the cancellation of the OFF timer and the changing of the setting period for OFF timer can not be performed.

However, the OFF timer function is canceled when the unit is stopped. When the unit is operated again after stoppage, the setting period for OFF timer is set by the optional setting.

The setting condition and the setting period for OFF timer are as shown below.

Setting Condition	Setting Period for OFF Timer
00	Function Invalid
01	1 hour
02	2 hours
03	3 hours
Omitted 04 to 21	⋮
22	22 hours
23	23 hours
24	24 hours
0A	0.5 hour
0B	1.5 hours



**NOTE**

- This function is not available when controlled by the remote control connecting with CS-NET or 7-day Timer.

**F2 Remote Control Master-Slave Setting**

This function is used when two remote control switches are installed in one system.

Set one remote control switch to "Master" 00, another remote control switch to "Slave" 01.

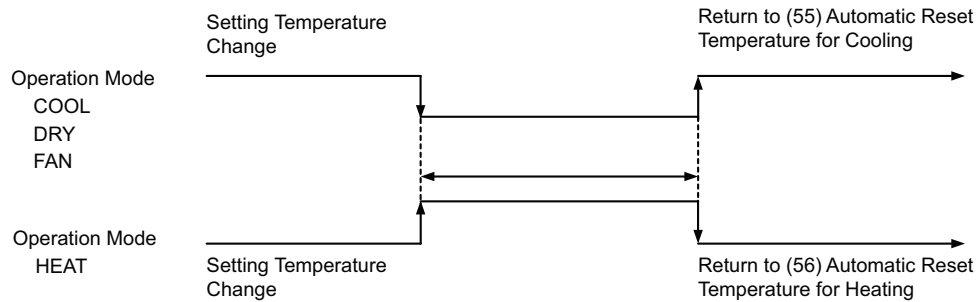


### F3 Automatic Reset of Setting Temperature

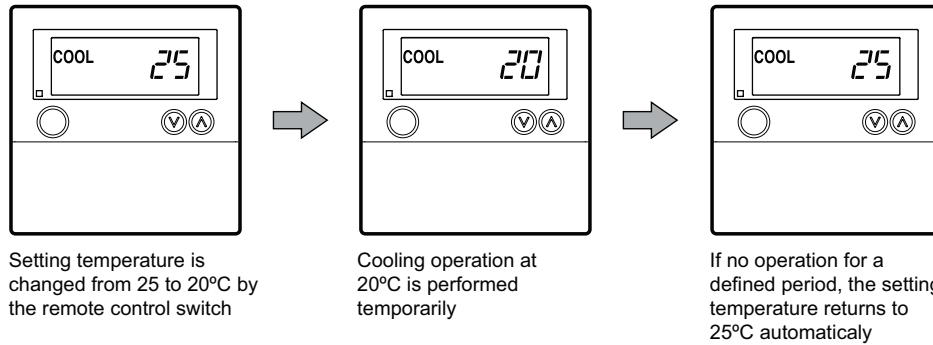
This function is used to economize the operation. When this function is valid, the setting temperature is automatically returned to the Automatic Reset Temperature for Cooling/Heating (55/56) as following condition. If no change for certain period of Automatic Reset Time (54) since setting temperature was changed.

It is effective to optimize the setting temperature and provide energy saving.

However, the setting temperature is not automatically restarted in case that "Automatic COOL/HEAT Operation" mode, or "Prohibiting Operation by Remote Control Switch" is set at the central control equipment.



Example: Automatic Reset Temperature for Cooling is 25°C



### F4 Automatic Reset Time

This function is used to set the automatic reset time with the setting temperature.

The setting conditions and automatic reset time are as follows:

Setting Condition	Automatic Reset Time of Setting Temperature
00	30 minutes (Factory-Setting)
01	15 minutes
02	60 minutes
03	90 minutes

### F5 Automatic Reset Temperature for Cooling

This function is used to set the automatic reset temperature for FAN/COOL/DRY operation.

The setting conditions and the automatic reset temperature for cooling are as follows:

Setting Condition	Setting Temperature for Automatic Reset
19	19°C
20	20°C
Omitted 21 to 24	⋮
25	25°C (Factory-Setting)
Omitted 26 to 28	⋮
29	29°C
30	30°C

**F5 Automatic Reset Temperature for Heating**

This function is used to set the automatic reset temperature for HEAT operation.

The setting conditions and the automatic reset temperature for heating are as follows:

Setting Condition	Setting Temperature for Automatic Reset
17	17°C
18	18°C
Omitted 19 and 20	⋮
21	21°C (Factory-Setting)
Omitted 22 to 28	⋮
29	29°C
30	30°C

**F7 Operation Stoppage Prevention by Remote Control Switch Operational Error**

This function is used to prevent the careless operational stoppage caused by remote control switch operational error.

When this function is valid, operation is stopped by pressing "RUN/STOP" switch on the remote control switch for more than 3 seconds. However, no change with operation method.

**Operation Lock**

Five operation lock functions are available as shown below.

These functions are utilized to restrict each switch operation from the remote control switch.

When these functions are valid, the operation is prevented from operational error or tampering.

All operation lock functions are valid ("01" setting) when factory shipping.

Each switch operation is not available by pressing  $\Delta$  and  $\nabla$  switches simultaneously for more than 3 seconds when this function is set as "01". At this time "OPER. LOCK" is indicated at the remote control switch. If  $\Delta$  and  $\nabla$  switches are pressed simultaneously for more than 3 seconds during "OPER. LOCK" is indicated, "OPER. LOCK" indication is turned off and each switch operation is available.

This function is to restrict the operations of the remote control switch only. If operation is performed from the central control equipment, the command from the central control is adopted.

**F8 Lock function for operation mode selection.**

This function is utilised when operation mode changes must to be blocked.

When this function is valid, the operation mode cannot be changed.

**F9 Lock function for temperature setting.**

This function is utilised when setting temperature changes must to be blocked.

When this function is valid, the setting temperature cannot be changed.

**FA Lock function for fan speed selection.**

This function is utilised when fan speed changes must to be blocked.

When this function is valid, the fan speed cannot be changed.

**Fb Lock function for swing louver selection.**

This function is utilised when swing louver selection must to be blocked.

When this function is valid, the swing louver selection cannot be changed.

**FC Cooling Lower Limit for Setting Temperature**

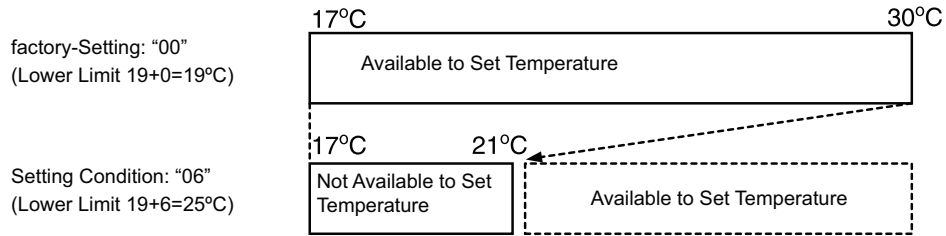
This function is used to limit the lowest setting temperature for FAN/COOL/DRY operations.

When this function is valid, it provides the adequate cooling operation and energy-saving effect.

The setting conditions and the cooling lower limit for the setting temperature are as follows:

Example:

Setting Temperature at Remote Control Switch



Setting Condition	Details	Setting Temperature Lower Limit (FAN/COOL/DRY) *
00	Standard Value	19°C
01	Lower Limit +1°C	20°C
02	Lower Limit +2°C	21°C
Omitted 03 to 08	⋮	⋮
09	Lower Limit +9°C	28°C
10	Lower Limit +10°C	29°C

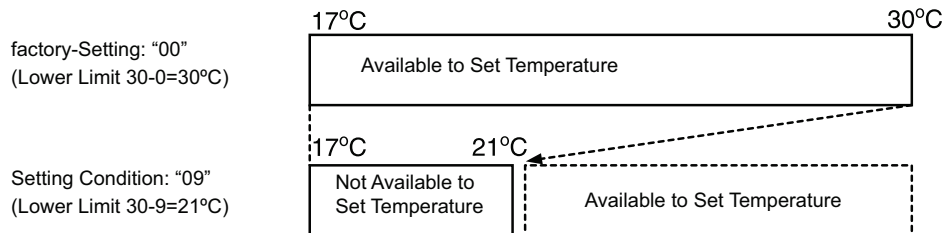
\* In case of Standard Unit

#### Fd Heating Upper Limit for Setting Temperature

This function is used to limit the highest setting temperature for HEAT operation. When this function is valid, it provides the adequate heating operation and energy-saving effect. The setting conditions and the heating upper limit for the setting temperature are as follows:

Example

Setting Temperature at Remote Control Switch



Setting Condition	Details	Setting Temperature Upper Limit (HEAT) *
00	Standard Value	30°C
01	Upper Limit -1°C	29°C
02	Upper Limit -2°C	28°C
Omitted 03 to 08	⋮	⋮
09	Upper Limit -9°C	21°C
10	Upper Limit -10°C	20°C

\* In case of Standard Unit

**FE Not Prepared**

**FF Lock function for ON/OFF timer.**

This function is utilised when activation of timer must to be blocked.  
When this function is valid, timer cannot be activated or deactivated.

**H1 Maintenance alarm.**

This function is used in order to display or not the maintenance alarm.  
When this function is "01", maintenance alarm will not be displayed.

**H2 No automatic control indication.**

This function is used in order to display or not the no automatic control indication.  
When this function is "01", no automatic control indication will not be displayed.

**H3 Operation mode change restriction.**

This function is used in order to configure restrictions about the operation mode change action.  
When this function is "00", the operation mode change is disabled.  
When this function is "01", the operation mode change is only allowed from central control unit and mode FAN.  
When this function is "02", there are no restrictions.

**H4 Ventilator changeover.**

This function is only available with total heat exchanger.  
The function is used in order to configure the changeover.  
When this function is "00", the ventilation changeover works with air conditioning only.  
When this function is "01", the ventilation changeover works with ventilation only.  
When this function is "02", the ventilation changeover works with air conditioning and ventilation.

**H5 Central control available after forced stoppage.**

This function is used in order allow the central control when unit is forced to stop.  
When this function is "01", the central control is available.

## 2.1.5. Remote control optional accessories

### 2.1.5.1. Remote control cable (PRC-10E1~PRC-30E1)

Optional cable for remotes PC-P1HE, PC-ART, PSC-A64S, PC-P5H and PC-ARH/N/D/Z

During installation, connect and solder a twisted remote control cable (0.75 mm<sup>2</sup> X 2 wires) or use an optional extension wire for the remote control.

For more information on this cable, see the following table:

Model	Length (m)	Cable type	Specifications
PRC-10E1	10	TPC	
PRC-15E1	15	TPC	
PRC-20E1	20	TPC	
*PRC-30E1	30	TPC	

Cable colour	A	B
	Black	White

\*: Made to order.  
TPC: Twisted pair cable

### 2.1.5.2. 3-pin connector cord

Optional connector for central controls.


This connector is used when a remote on/off device is connected, or when signals are received from printed circuit boards in indoor and outdoor units. A set includes five 3-pin connector cords.

Model	Application	Comments	Specifications
PCC-1A	Optional functions of the outdoor unit PCB	JST XARP-3 connector If a long cable is required, connect and solder the field supply cables (0.5 mm <sup>2</sup> ).	Connector ("XARP-3" of JST) 300 mm (approx.)

## 2.1.6. Maintenance and repair

### 2.1.6.1. Abnormal transmission between the remote control and indoor unit

In this case, the LED run indicator located at the bottom left of the screen will flash every 2 seconds.

	<b>DANGER OF ELECTRIC SHOCK</b>
<i>Before analysing these problems, the system must be switched off at the mains.</i>	

Problem	Cause	Check point	Action
Disconnection or inadequate contact of the remote control cable.	Cabling problem	Check the cable and the connections.	Repair or connect the cable.
Remote control fault.	Different causes	Check remote control using the self-check mode *1.	Replace the remote control, if faulty.
PCB fault (on the indoor unit and remote control).	Wire disconnected from PCB	Check connectors.	Connect wires correctly.
	PCB fault	Check PCB using the self-check mode *2.	Change the PCB, if faulty.

\*1: See section Remote control self-checking procedure.

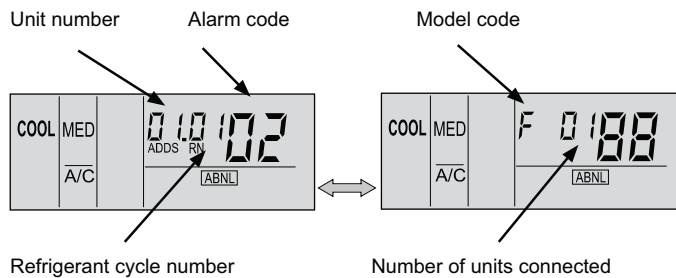
\*2: See section Checking procedure for each main component.

### 2.1.6.2. Troubleshooting procedure for units connected to the remote control

Possible causes:

- The remote control cable is broken.
- Remote control cable contact failure.
- Remote control plate failure.
- If the LED run indicator flashes 5 times for 5 seconds, the display will show the unit number and alarm code.

- Note down the code (see table) and request assistance from your distributor.



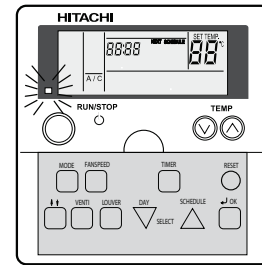
Model number	
Indication	Model
H	Heat pump
P	Inverter
F	Multiple
℄	Cooling only
E	Other
b	IVX, individual operation
L	KPI

The Alarm code corresponds to the alarm that is happening on the unit.  
Refer to the Service Manual of the unit to know the meaning of the alarm code.

### 2.1.6.3. Troubleshooting on check mode


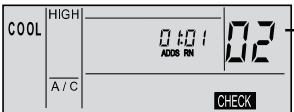
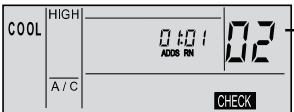
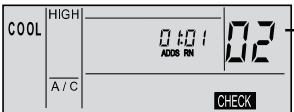


Use the OK button on the remote control in the following cases:

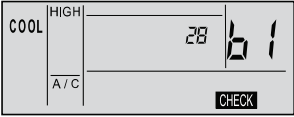
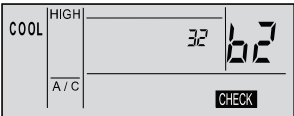


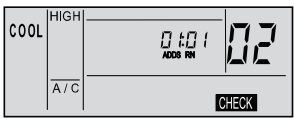
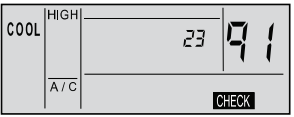
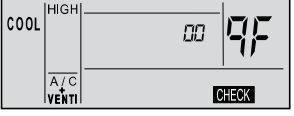

1. When the LED run indicator is flashing.
2. To monitor the cause of the problem after a system restart due to a stoppage with RUN indicator flashing.
3. To perform checks during normal operation or stoppage.
4. To monitor the inlet air and discharge air temperatures.



Check modes	
Check mode 1:	Indicating the current data.
Check mode 2:	Indicating the data saved immediately before the fault.

Step No.	Check modes
----------	-------------

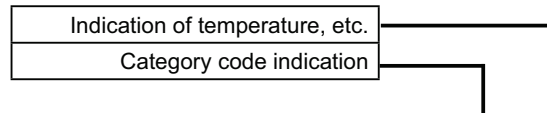
Normal mode				
1	<p>Press the  button for at least 3 seconds</p> <ul style="list-style-type: none"> <li>- The indication will be delayed since the transmission between the remote control and the indoor unit takes around 10 seconds.</li> <li>- All data may be displayed as "FF", "-1" or "255". These temporary values generated by the software do not affect the functions of the device at all.</li> </ul> <p>(The alarm code may also be displayed as "FF").</p>			
2	<table border="0"> <tr> <td style="vertical-align: top;"> <p>Unit number and alarm code displayed</p> </td> <td style="text-align: center;">  </td> <td style="vertical-align: top;"> <p>Alarm code identifying the last fault that occurred on the indicated unit. Number of the connected unit or of the unit for which the check mode was previously set.</p> <p>ADDS: Number of the indoor unit of cycle no. ** RN: No. ** Refrigerant cycle no. **</p> </td> </tr> </table>	<p>Unit number and alarm code displayed</p>		<p>Alarm code identifying the last fault that occurred on the indicated unit. Number of the connected unit or of the unit for which the check mode was previously set.</p> <p>ADDS: Number of the indoor unit of cycle no. ** RN: No. ** Refrigerant cycle no. **</p>
<p>Unit number and alarm code displayed</p>		<p>Alarm code identifying the last fault that occurred on the indicated unit. Number of the connected unit or of the unit for which the check mode was previously set.</p> <p>ADDS: Number of the indoor unit of cycle no. ** RN: No. ** Refrigerant cycle no. **</p>		
3	<p>For the next 7 seconds.</p> <p>7-second interval for checking another unit.</p> <p>Forwards: Press  to increase from 00 to 01 to 02 ...</p> <p>Backwards: Press  to reduce from 15 to 14 to 13</p>			

Check mode 1		
4	After 7 seconds	 <p>Press "⏪" to view the next set of data.</p>  <p>Press "⏩" to view the previous set of data.</p>
5	Press and hold the button  for at least 3 seconds to enter check mode 2	If we continue in check mode 1, steps 6 and 7 are a repetition of steps 2 and 3.
<p> <b>NOTE</b></p> <p><i>From check mode 1, the user may only enter check mode 2 - the check mode cannot be switched off</i></p>		
6	Unit number and alarm code displayed	 <p>Press "⏪" to view the next set of data. Press "⏩" to view the previous set of data.</p>
7	After 7 seconds	<p>7-second interval for checking another unit.</p> <p>Forwards: Press "⏪" to increase from 00 to 01 to 02 ...</p> <p>Backwards: Press "⏩" to reduce from 15 to 14 to 13</p>
Check mode 2		
9	 	<p>Press "⏪" to view the next set of data.</p> <p>Press "⏩" to view the previous set of data.</p> <p>- In check mode 2, the user can access data from the first three units connected in sequence to a remote control.</p>
10	Check mode switched off	Press and hold the button  for at least 3 seconds.




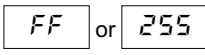



◆ **Content of check mode 1**


By pressing “” consecutively, the following indications will be displayed.



Step No.	Temperature indication		
1	Indoor unit temperature setting (°C).	b1	22
2	Indoor unit air inlet temperature (°C).	b2	20
3	Indoor unit discharge air temperature (°C).	b3	55
4	Indoor unit heat exchanger liquid piping temperature (°C).	b4	20
5	Remote sensor temperature (°C). - This is only displayed when connected to a remote sensor. The display normally shows "--". The RPK series cannot connect to a remote sensor. The indication is therefore "--".	b5	25
6	Outdoor unit ambient temperature (°C).	b6	10
7	Indoor unit heat exchanger refrigerant gas piping temperature (°C).	b7	25
8	Outdoor unit evaporating temperature during heating (°C).	b8	02
9	Control information. - Displays internal remote control information. For the SET-FREE unit, this indication shows the number of compressors running.	b9	--
10	Discharge gas refrigerant temperature in top of compressor chamber (°C). - (Example) When several compressors are running, the average temperature of 2 compressors is given. - If the temperature exceeds 126°C, the indication will read "126".	bA	41
11	Remote control thermostat temperature.	bB	23

 <b>NOTE</b>	
<b>• Possible abnormal conditions</b>	
TEMPERATURE INDICATION	FAULT
	Open circuit on any thermistor except 129
	Open circuit in compressor discharge thermistor
	Short-circuit in any thermistor except 127
	Short-circuit in compressor discharge thermistor
Check that the PCB is not reading the thermistor incorrectly. Consult the "PCB self-checking procedure using the remote control" section	
During transitory periods, such as on start-up, the "--" or "00" indicator may appear for a limited time.	

Step No.	Microcomputer input/output indication																
12	Indoor unit microcomputer input/output.	E1 4															
13	Outdoor unit microcomputer input/output.	E2 -															
	<table border="1"> <thead> <tr> <th>PCB relay</th> <th>Part name</th> </tr> </thead> <tbody> <tr> <td>YH2</td> <td>Relay for drain pump (MD) and/or dew heater (EHW).</td> </tr> <tr> <td>Y52H</td> <td>Relay for electric heater (CEH).</td> </tr> <tr> <td>Y211</td> <td rowspan="2">4-way valve relay.</td> </tr> <tr> <td>Y212</td> </tr> <tr> <td>Y52C1</td> <td>Compressor relay.</td> </tr> <tr> <td>Y52C2</td> <td rowspan="2">Solenoid valve relay.</td> </tr> <tr> <td>Y20A</td> </tr> <tr> <td>Y20B</td> </tr> </tbody> </table>	PCB relay	Part name	YH2	Relay for drain pump (MD) and/or dew heater (EHW).	Y52H	Relay for electric heater (CEH).	Y211	4-way valve relay.	Y212	Y52C1	Compressor relay.	Y52C2	Solenoid valve relay.	Y20A	Y20B	
PCB relay	Part name																
YH2	Relay for drain pump (MD) and/or dew heater (EHW).																
Y52H	Relay for electric heater (CEH).																
Y211	4-way valve relay.																
Y212																	
Y52C1	Compressor relay.																
Y52C2	Solenoid valve relay.																
Y20A																	
Y20B																	
	<p><i>Symbols with the letter Y are relays on the indoor/outdoor unit PCB plate.</i></p>																

Step No.	Unit stoppage cause indication	
14	Cause of the stoppage.	<div style="display: inline-block; border: 1px solid black; padding: 2px;">d1</div> <div style="display: inline-block; border: 1px solid black; padding: 2px; margin-left: 10px;">01</div>
Codes:		
00	Operation stopped, power switched off.	
01	Thermostat switched off (see bottom section point 1).	
02	Alarm (see bottom note section point 2).	
03	Freeze protection, overheating protection	
05	Instantaneous power failure in the outdoor unit, reset (see bottom note section, point 3) ).	
06	Instantaneous power failure in the indoor unit, reset (see bottom note section, point 4) ).	
07	Cooling process stopped due to a low outdoor temperature, heating process stopped due to a high outdoor temperature.	
08	Compressor quantity changeover, stoppage.	
09	4-way valve changeover stoppage request (FX only).	
10	Stoppage request, forced stoppage.	
11	Retry due pressure rate reduction.	
12	Retry due to increased low pressure.	
13	Retry due increased high pressure.	
14	Retry due to abnormal current in the constant speed compressor.	
15	Retry due to abnormal high temperature of the discharge gas, excessively low suction pressure.	
16	Retry due to reduced overheating of the discharge gas.	
17	Retry due to inverter disconnection.	
18	Retry due to voltage reduction.	
19	Expansion valve opening change protection.	
20	Indoor unit operation mode changeover (see bottom note section point 5).	
21	Forced thermostat deactivation when deactivated on another indoor unit.	
22	Hot-start after 4 hours with outdoor unit on.	
24	Thermostat off during energy-saving mode.	
	<b>NOTE</b>	
<p>1. <i>Explanation of terms:</i>  <i>Thermostat on:</i> A condition where the indoor unit requests compressor activation.  <i>Thermostat off:</i> A condition where the indoor unit does not request compressor activation.</p> <p>2. Although the stoppage is caused by an "alarm", it does not always indicate "02".</p> <p>3. If the transmission between the control printed circuit boards of the inverter and the control is not made within 30 seconds, a stoppage will occur due to cause d1-05 and alarm code "04" may be displayed.</p> <p>4. If the transmission between the indoor and outdoor units is not made within 3 minutes, the indoor units will stop. In this case, the stoppage is due to cause d1-06 and alarm code "03" may be displayed.</p> <p>5. The FSN system will read 20 when different modes are selected for indoor units.</p>		

Step No.	Abnormal operation occurrence counter	
15	Abnormal operation occurrence counter	E1 01
16	Indoor unit instantaneous power failure occurrence counter.	E2 00
17	Remote control to indoor unit transmission error occurrence counter.	E3 00
18	Abnormal inverter operation occurrence counter.	E4 00
<p>- Counts up to 99. - For counts above "99", it will always read "99".</p>		
<p><b>i</b> <b>NOTE</b></p> <p><i>If a transmission error lasts for more than 3 minutes, one occurrence is added to the counter. - Stored data can be deleted by following the instructions given in section "PCB self-checking procedure using the remote control".</i></p>		

Step No.	Indication of automatic swing louver status	
19	Swing louver sensor.	F1 00
<p>- 00 : Normal - FF : Abnormal</p>		

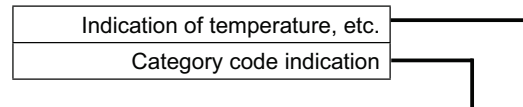
Step No.	Compressor pressure/frequency indicator	
20	Discharge pressure (high) (x 0.1 MPa).	H1 18
21	Suction pressure (low) (x 0.01 MPa).	H2 04
22	Control information: Indicates internal remote control information. It has no specific meaning.	H3 44
23	Operating frequency (Hz): The total frequency is indicated when several compressors are running at once.	H4 44

Step No.	Indoor unit capacity indication																																
24	Indoor unit capacity.	J1	08																														
<p>The indoor unit capacity is indicated as shown in the following table:</p> <p><b>Indoor unit capacity code</b></p> <table border="1"> <thead> <tr> <th>Indication code</th> <th>Equivalent capacity in (HP)</th> </tr> </thead> <tbody> <tr><td>06</td><td>0.8</td></tr> <tr><td>08</td><td>1</td></tr> <tr><td>10</td><td>1.3</td></tr> <tr><td>13</td><td>1.5</td></tr> <tr><td>14</td><td>1.8</td></tr> <tr><td>16</td><td>2</td></tr> <tr><td>18</td><td>2.3</td></tr> <tr><td>20</td><td>2.5</td></tr> <tr><td>26</td><td>3</td></tr> <tr><td>32</td><td>4</td></tr> <tr><td>40</td><td>5</td></tr> <tr><td>48</td><td>6</td></tr> <tr><td>64</td><td>8</td></tr> <tr><td>80</td><td>10</td></tr> </tbody> </table>				Indication code	Equivalent capacity in (HP)	06	0.8	08	1	10	1.3	13	1.5	14	1.8	16	2	18	2.3	20	2.5	26	3	32	4	40	5	48	6	64	8	80	10
Indication code	Equivalent capacity in (HP)																																
06	0.8																																
08	1																																
10	1.3																																
13	1.5																																
14	1.8																																
16	2																																
18	2.3																																
20	2.5																																
26	3																																
32	4																																
40	5																																
48	6																																
64	8																																
80	10																																
25	<p>Outdoor unit code: "n" indicates the total number of indoor units. n = 1 ~ 9, A, b, C, d, E, F, U (10) (11) (12) (13) (14) (15) (16)</p>	J2	Fn																														
26	<p>Refrigerant cycle number: - J3: 01 ~ 16 (Refrigerant cycle number, configured with indoor unit DSW5 DipSwitch), decimal indication:</p>	J3	01																														
27	<p>Refrigerant cycle number: - J4: 00 ~ 0F (Refrigerant cycle number, configured with indoor unit DSW5 DipSwitch), hexadecimal indication (16 numbers).</p>	J4	00																														
Step No.	Compressor pressure/frequency indicator																																
28	Indoor unit expansion valve opening.	L1	20																														
29	<p>Outdoor unit MV1 expansion valve opening. - For models with no expansion valve, the same value will appear on both MV2 and MV1</p>	L2	99																														
30	<p>Outdoor unit MV2 expansion valve opening. - For models with no expansion valve, the same value will appear on both MV2 and MV1</p>	L3	99																														
31	<p>Outdoor unit MVB expansion valve opening. - FXN only.</p>	L4	00																														
Step No.	Estimated electrical current indication																																
32	<p>Compressor current. - The total current is indicated when several compressors are running at once. For the inverter compressor, the operating current from the primary side of the inverter is indicated.</p>	P1	25																														
33	Go back to step 1, temperature indication.																																

◆ **Content of check mode 2**

When more than three indoor units are connected to one remote control, only the most recent data from the three first indoor units connected in sequence will be shown.

Pressing “▲” on the TEMP button takes you to the next screen, while pressing “▼” on the same button takes you to the previous screen.



Step No.	Temperature indication		
1	Indoor unit air inlet temperature in the thermistor (°C).	91	23
2	Indoor unit discharge air temperature in thermistor (°C).	92	50
3	Indoor unit heat exchanger liquid piping temperature (freeze protection) (°C).	93	25
4	Outdoor temperature (°C).	94	12
5	Indoor unit heat exchanger gas piping temperature (°C).	95	25
6	Evaporating temperature in heating mode (°C).	96	03
7	Control information - Indicates internal remote control information. It has no specific meaning.	97	--
8	Temperature of the discharge gas in the top of compressor chamber (°C). - When two components are running simultaneously, the average temperature is given.	98	45

<b>NOTE</b>											
<p>• Possible abnormal conditions</p> <table border="1"> <thead> <tr> <th>TEMPERATURE INDICATION</th> <th>FAULT</th> </tr> </thead> <tbody> <tr> <td>--</td> <td>Open circuit on any thermistor except 129</td> </tr> <tr> <td>129</td> <td>Open circuit in compressor discharge thermistor</td> </tr> <tr> <td>FF or 255</td> <td>Short-circuit in any thermistor except 129</td> </tr> <tr> <td>127</td> <td>Short-circuit in compressor discharge thermistor</td> </tr> </tbody> </table> <p><i>Check that the PCB is not reading the thermistor incorrectly. Consult the "PCB self-checking procedure using the remote control" section</i></p>		TEMPERATURE INDICATION	FAULT	--	Open circuit on any thermistor except 129	129	Open circuit in compressor discharge thermistor	FF or 255	Short-circuit in any thermistor except 129	127	Short-circuit in compressor discharge thermistor
TEMPERATURE INDICATION	FAULT										
--	Open circuit on any thermistor except 129										
129	Open circuit in compressor discharge thermistor										
FF or 255	Short-circuit in any thermistor except 129										
127	Short-circuit in compressor discharge thermistor										
<p><i>During transitory periods, such as on start-up, the "--" or "00" indicator may appear for a limited time.</i></p>											

Step No.	Compressor pressure/frequency indicator	
9	Control information - Displays internal remote control information. - For the SET-FREE unit, this indication shows the number of compressors running.	
10	Temperature of the discharge gas in the top of compressor chamber (°C). - (Example) When several compressors are running, the average temperature of 2 compressors is given.	
11	Remote control thermostat temperature - Indicates internal remote control information. - It has no specific meaning.	
12	Operating frequency (Hz) - The total frequency is indicated when several compressors are running at once.	
Step No.	Indication of the expansion valve opening	
13	Indoor unit expansion valve opening.	
14	Outdoor unit MV1 expansion valve opening.	
Step No.	Estimated electrical current indication	
15	Compressor operating current - The total value is indicated when several compressors are running at once.	
16	Go back to step 1, temperature indication.	

#### 2.1.6.4. Checking procedure for each main component

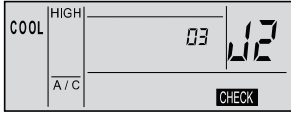
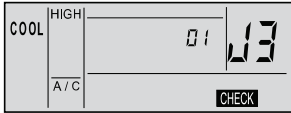
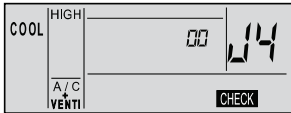
##### ◆ PCB self-checking procedure using the remote control

Use the following troubleshooting procedure to check the PCB in both indoor and outdoor units.

Step No.	Action required	Image
1	Stop the machine by pressing the Run/Stop button.	
2	PCB check mode: Press and hold both buttons for 3 seconds.	
3	Indication of the number of the outdoor unit (RN) and indoor unit (ADDS) to which the remote control is connected.	e.g.: Indication of unit no. "01" 
4	After 7 seconds: Automatic PCB operation check.	

(continued on next page)

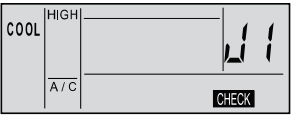

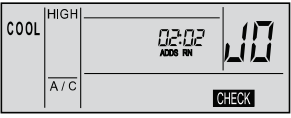
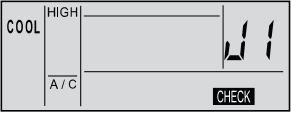
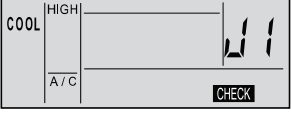
(continued from the previous page)

Step No.	Action required	
5	After 5 seconds (maximum 30s in the event of a transmission failure between the indoor and outdoor units): The display will indicate a maximum of 3 types of FAULTS.	
<b>Types of abnormal condition</b>		
	Abnormal operation condition (1)	
	After 1 second Abnormal operation condition (2)	
	After 1 second Abnormal operation condition (3)	
Codes:		
Indication	Condition	
00	Normal	
Abnormal condition (open circuit, short-circuit, etc.) on a circuit for:		
01	Air inlet temperature thermistor	<b>Indoor unit PCB</b>
02	Discharge air temperature thermistor	
03	Liquid piping temperature thermistor	
04	Abnormal remote thermistor	
05	Liquid piping temperature thermistor	
06	Remote sensor	
08	Transmission from central station	
0A	EEPROM	
0b	Zero-cross input fault	
EE	Transmission from indoor units during check	
07	Transmission from outdoor unit	<b>Outdoor unit PCB</b>
F4	Fan inlet internal thermostat fault	
F5	PSW input fault	
F6	PSH protection signal detection circuit	
F7	Phase detection	
F8	Transmission from inverter	
FA	High pressure sensor	
Fb	Discharge gas temperature thermistor of the compressor	
FC	Low pressure sensor	
Fd	Heat exchanger evaporation temperature thermistor	
FF	Ambient air temperature thermistor	

(continued on next page)



(continued from the previous page)

Step No.	Action required	Image
6	Press OK button	
7	If there is another unit. Next unit self-check indication.	
8	e.g.: Indication of unit n° "2".	
9	After 7 seconds.	
10	From 1 to 5 seconds.	
11	After 1 second.	→ 13 → 14 → 12 →
12	Press RESET button	Switch off PCB check mode
<p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>- If this condition persists and alarm code "11" is not displayed, this means that none of the indoor units have been connected to the remote control. Check the wiring between the remote control and the indoor unit.</li> <li>- During this troubleshooting procedure, the following PCB parts cannot be checked. <ul style="list-style-type: none"> <li>- Indoor unit PCB: Relay circuit, DIP switch, option circuit, ventilation circuit, protection circuit</li> <li>- Outdoor unit PCB: Relay circuit, DIP switch, option circuit.</li> </ul> </li> <li>- If this system troubleshooting procedure is run through the central station, the central station indication may change during the procedure. Please note that this is normal.</li> <li>- After this troubleshooting procedure is complete, the memory of the meter storing the abnormal conditions described above will be erased.</li> </ul>		

To carry out the previous check using a wireless remote control with a receiver built into an indoor wall type unit, use the following procedure:

1. Switch off the power source.
2. Disconnect connector (CN25) on PWB(M).
3. Connect the PC-ART.
4. Switch on the power.

Once check is complete, switch off the power source again and reconnect the connectors as they were before the check.

### 2.1.6.5. Remote control self-checking procedure

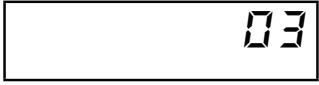


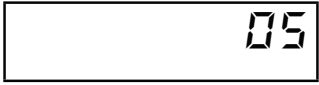
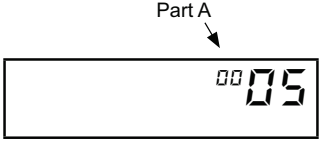


When to use the OK button:

1. When the remote control displays an operating fault.
2. For periodic maintenance checks.

Step No.	Action required																			
1	Switch on the power source.																			
2	Press the following three buttons simultaneously. (The buttons may be pressed when the system is running)	TEMP MODE ▲ ▼ □																		
3	The LCD screen will change, as shown below.																			
	<table border="1"> <thead> <tr> <th>No.</th> <th>LCD indication</th> <th>Indication period (seconds)</th> </tr> </thead> <tbody> <tr> <td>1 ↓</td> <td> </td> <td>For 1 second</td> </tr> <tr> <td>2 ↓</td> <td> </td> <td>For 1 second</td> </tr> <tr> <td>3 ↓</td> <td> </td> <td>For 1 second</td> </tr> <tr> <td>4 ↓</td> <td> </td> <td>For 1 second</td> </tr> <tr> <td>5 ↓</td> <td> </td> <td>For 3 seconds</td> </tr> </tbody> </table>	No.	LCD indication	Indication period (seconds)	1 ↓		For 1 second	2 ↓		For 1 second	3 ↓		For 1 second	4 ↓		For 1 second	5 ↓		For 3 seconds	
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	1 ↓		For 1 second																	
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4 ↓		For 1 second																		
5 ↓		For 3 seconds																		
To delete EEPROM memory only, press the three following buttons simultaneously during the LCD screen changes.		TEMP MODE ▲ ▼ □      Go to <input type="text" value="11"/>																		
4	Once the LCD screen has changed, the RUN indicator will flash twice.																			
5	The LCD screen will change, as shown below. Press all buttons (13), one at a time. Each time the button is pressed, the indication number shown in part (A) of the following diagram will increase by one. - The check cannot proceed to the next step until all the buttons are pressed.																			
<p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>- The buttons may be pressed in any order.</li> <li>- If two or more switches are pressed at once, the action is not valid and is therefore not registered.</li> </ul>																				

(continued on next page)

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Step No.	Action required	Image
6	The LCD will change, as shown below: The remote control will begin to check the transmission circuit automatically. - If there is an abnormal condition on the transmission circuit, the LCD screen will remain as shown in the diagram on the right, and the check will not proceed to the next step.	
7	The LCD screen will change, as shown below: The temperature detected by the remote control thermostat is indicated in part (A) of the following diagram:	
	<p> <b>NOTE</b></p> <p><i>If the "--" or "FF" indicators are displayed in part "A", the remote control thermostat is faulty.</i></p>	
8	The LCD screen will change, as shown below.  If the RESET button is pressed or no buttons are pressed for 15 seconds, all data in the remote control EEPROM memory will be erased. At this point, the number is indicated in part (A) as shown below. When the number "05" appears, the EEPROM memory is faulty. If the number indicated in part (A) is "05", the check will not proceed to the next component.	  
9	The LCD screen will change, as shown below. After a few seconds, the remote control will restart automatically.	
10	Erasing the EEPROM memory (from step No. 3). The LCD screen will change as shown below, and the remote control will erase the EEPROM memory automatically.	
11	After a few seconds, the LCD screen will change, as shown below. The remote control will restart automatically. In this case, the system will not start to run automatically.	