# HITACHI
## Inspire the Next

# INSTALLATION MANUAL FOR PC-P2HTE

## 1. SAFETY SUMMARY

⚠ *DANGER*:
- DO NOT pour water into the remote controller (hereafter called "controller"). These products are equipped with electrical parts. If poured, it will cause a serious electrical shock.
- DO NOT operate switches by wet hand. It may cause an electrical shock.
- In case that the protective devices often function or the operation switches do not function well, turn OFF the main power supply and contact your service contractor of HITACHI.
- In case that other abnormalities are found, stop the system, turn OFF the main power supply and contact your service contractor of HITACHI.

⚠ *WARNING:*
- DO NOT perform installation work and electrical wiring connection by yourself.
  In case that a service work such as repair, maintenance, etc. is required, contact your service contractor of HITACHI.
- DO NOT modify the electrical wiring.  It may cause serious accidents.

## 2. INSTALLATION WORK

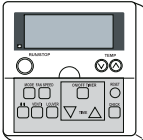### 2.1. SELECTION OF INSTALLATION PLACE

■ **Location of Remote Controller**

▪ Select a suitable place for handling and determine the installation place of the controller with the customer's acceptance.
▪ Especially in case that a remote control thermistor (C8) is used, pay attention to select the installation place.

*NOTE:*
> *For one remote controller, the maximum total length of the cable (including the signal wire between units) is 30 m when using 0.3 mm² cable and 500 m when using the cable thicker than 0.75 mm².*

### 2.2. BEFORE INSTALLATION
Check the contents and the number of the accessories in the packing.

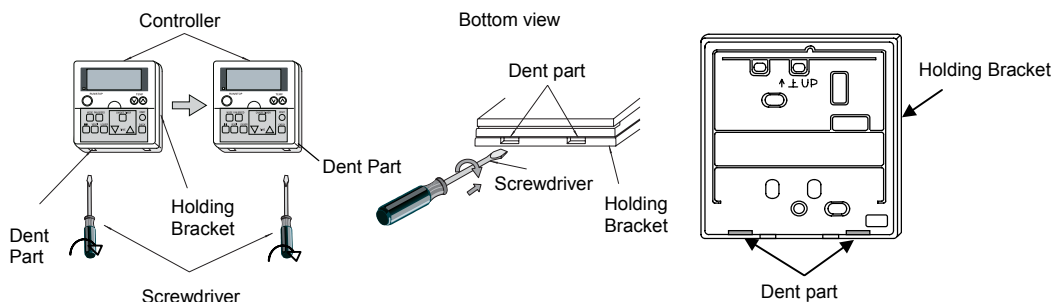| | | | |
|---|---|---|---|
|  |  |  |  |
| Remote Control Switch, for Operation Control | 2 screws M4x16L For fixing the Holding Bracket onto the wall | 1 Band. For fixing Cable to Ring Core | Ring Core. |

### 2.3. INSTALLATION SPACE

In case of installing the controllers in vertical line, keep a distance more than 50 mm between the controllers vertically.  If the distance is insufficient, the front cover of the controller can not open wide enough
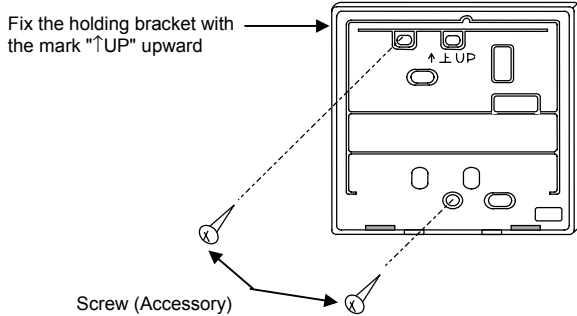


More than 50 mm
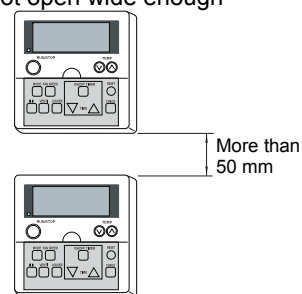
### 2.4. INSTALLATION PROCEDURE

1. Insert the edge of the flat head screwdriver into the dent parts at the bottom of the holding bracket, push and turn the screwdriver and remove the controller from the holding bracket as shown in the next figure.
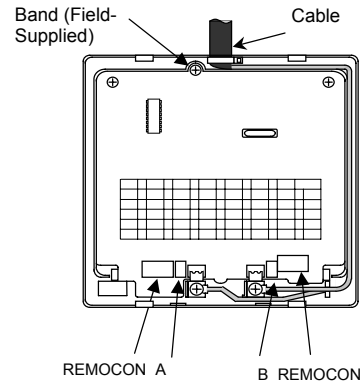


Controller

Bottom view

Dent part

Holding Bracket

Dent Part

Holding Bracket

Screwdriver

Holding Bracket

Dent Part

Screwdriver

↑ ⊥ UP

Dent part

2. Attach the controller to the holding bracket as follows.

### ■ In case of exposing Remote Control Cable.

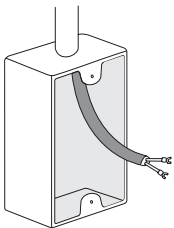1. Fix the holding bracket onto the wall as shown below

Fix the holding bracket with the mark "↑⊥UP" upward

↑⊥UP

Screw (Accessory)

### ■ When Using Switch Box.

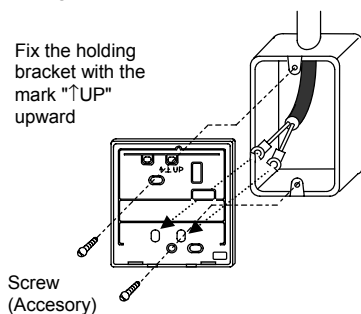❶.Run the cable into Field-Supplied JIS Box (JIS 8336 - 1998)

The following 5 types are available.
1. Switch Box for 1 Controller (without Cover)
2. Switch Box for 2 Controllers (without Cover)
3. Switch Box for 1 Controller (with Cover)
4. Switch Box for 2 Controllers (with Cover)
5. Outlet Box (with Cover)

Run the cable through the conduit tube in the wall.

❷.Fix the holding bracket to the switch box

Fix the holding bracket with the mark "↑⊥UP" upward

↑⊥UP

Screw (Accesory)

2. Attach the stopper to the cable at the inside of the draw-out hole.

Band (Field-Supplied)    Cable

REMOCON  A          B  REMOCON

3. Lead the cable with its sheath peeled through the groove

4. Peel the insulation at the end of the cable and clamp the M3 solderless terminals

❸.Peel the insulation at the end of the cable and clamp the M3 solderless terminals

REMOCON A          B REMOCON

Connect the terminals
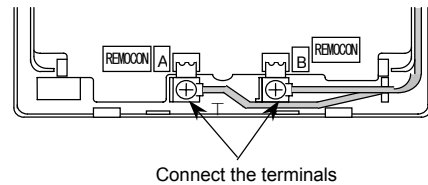
❹.Mounting procedures.

1
2
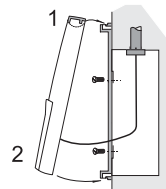
1. Insert the hooks of the controller to the holes on the top of the holding bracket.
2. Push the lower part toward the holding bracket.
3. When the click sound is heard, the controller is attached to the holding bracket and the mounting work is finished.
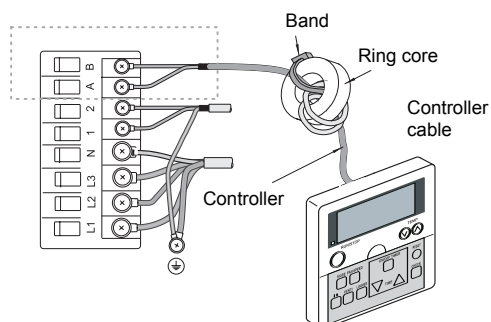
⚠ *CAUTION:*
*Pay attention so that the cable may not be slack. If the cable is slack as shown in the above figure, the cable cord (especially the naked part) may be clamped at the hole and it may cause a faulty operation.*

# 3. ELECTRICAL WIRING

## 3.1. STANDARD WIRING

Band
Ring core
Controller cable
Controller

⚠ *ATTENTION:*
- Attach the ring core (black) (accessory) when installing the unit.
- Insert the controller cable into the ring core 2 turns as shown in the right figure before connecting to the terminal board.
  If wiring is 0.75 mm$^2$ is necessary to peel the outside cover.
- Fix the cable by using the band (accessory)

⚠ *CAUTION:*

- Use the twist (shield) pair cable (2 x 0.75mm²) as transmitting wire cable for prevention of the malfunction (The total cable length is max. 500m). When the total cable length is within 30m, other type cable (more than 0.3mm²) can be used.
- Keep a distance more than 30 cm between the remote control cable and the transmission wire of Indoor units.
- In the case that multiple indoor units are controlled simultaneously, set the refrigerant cycle number and the address of Indoor units as indicated below.

Address of Indoor Units:

| Main unit | 1st unit | 2nd unit | 3rd unit |
|---|---|---|---|
|  |  |  |  |
| 4th unit | 5th unit | 6th unit | 7th unit |
|  |  |  |  |

| 8th unit | 9th unit | 10th unit | 11th unit |
|---|---|---|---|
|  |  |  |  |
| 12th unit | 13th unit | 14th unit | 15th unit |
|  |  |  |  |

# 4. CHECKING PROCEDURES

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.

⚠ *ATTENTION:*

*In case of the control by using two Remote controllers (Main & Sub), the test running shall be operated by the main controller.*

*NOTE:*

- The completion of the automatic address setting requires 3 to 5 minutes after turning ON the power supply.
- The total number of the connected units is indicated on the liquid crystal display.

**05** unit ← Example when 5 indoor Units are connected.
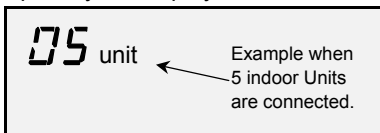
- In case that the indicated number is not correct, some abnormalities exist, incorrect wiring, the electric noise, etc.

- 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.
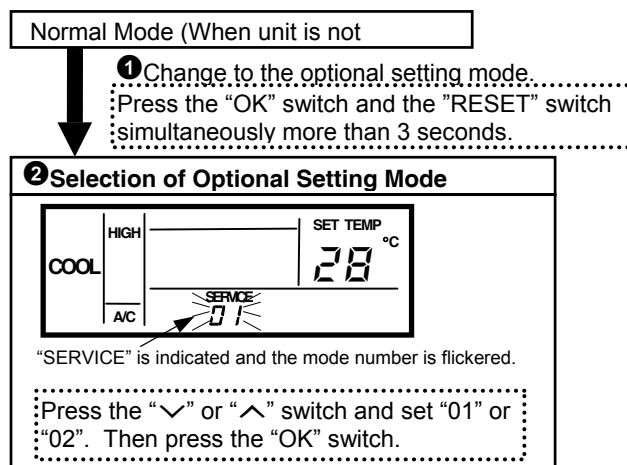
3. Canceling "Test Run" Mode

- When the unit is not operating, press the RESET switch.
- When the unit is operating, press the RUN/STOP switch.

⚠ *CAUTION:*

*The setting of the indoor unit number can not be performed by the controller.*
*In case of setting the unit number, refer to the item "Address of Indoor Unit" of Item 2 "Electrical Wiring for multiple units" and perform the setting.*

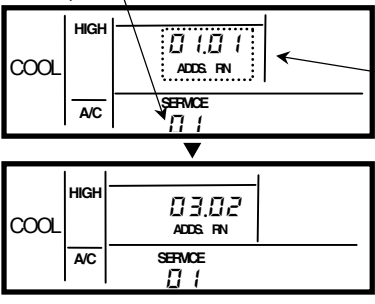# 5. OPTIONAL SETTING AND INPUT/OUTPUT SETTING OF INDOOR UNIT

## 5.1. OPTIONAL SETTING MODE

Normal Mode (When unit is not

❶ Change to the optional setting mode.
Press the "OK" switch and the "RESET" switch simultaneously more than 3 seconds.

❷ **Selection of Optional Setting Mode**

| | COOL | HIGH | | SET TEMP 28 °C |
|---|---|---|---|---|
| | | A/C | SERVICE 01 | |

"SERVICE" is indicated and the mode number is flickered.

Press the "∨" or "∧" switch and set "01" or "02".  Then press the "OK" switch.

## 5.2. SELECTION OF INDOOR UNIT

❸ **Selection of Indoor Unit for Optional Setting**

"01" stop flickers.

COOL  HIGH  A/C  `01.01`  ADDS. RN  SERVICE `01`

Select the indoor unit to set by pressing the "⌄" or "⌃" switch and press the "OK" switch.

The address of the indoor unit (ADDS) to set and the refrigerant cycle number (RN) are indicated by 0〜15. (The left figure shows the Number1 cycle and Number1 indoor unit.)

COOL  HIGH  A/C  `03.02`  ADDS. RN  SERVICE `01`

<Example>
When selecting Number2 cycle and Number3 indoor unit
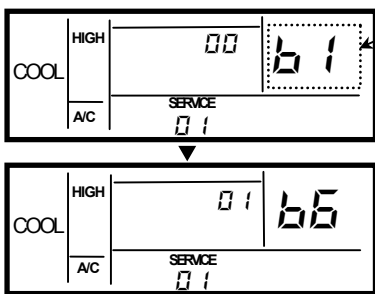
*NOTE:*
1. *In case that the both indications of the "ADDS." and "RN" show "AA", the same setting is performed to all the indoor units.*
2. *The address of indoor unit not connected is not indicated.*

## 5.3. CHANGING OF OPTIONAL FUNCTIONS AND SETTING CONDITIONS

### 5.3.1. OPTIONAL SETTING ITEMS

■ **Optional Setting Mode (Mode Number "01")**

❹ Selection of Optional Setting Items

COOL  HIGH  A/C  `00`  `b1`  SERVICE `01`

Item Code of Optional Setting

Select the item code by pressing △ or ▽ switch and press the "OK" switch.

COOL  HIGH  A/C  `01`  `b6`  SERVICE `01`

<Example>
When selecting b6 and set 01 (fixing temperature)

■ **Optional Setting Items**

| (A) Code | Items | Individual Setting Availability | (B) Setting Conditions |
|---|---|---|---|
| b1 | Cancel of Adjusting Set Temperature for Heating Operation | A | 00: Standard  01: Cancel |
| b2 | Circulator for Heating Operation | A | 00: Standard  01: Function |
| b3 | 3 Minutes Compressor OFF Guard | A | 00: Standard  01: Function |
| b4 | Period for Filter Sign | A | 00~04 *1) |
| b5 | Fixing Operation Mode | N | 00: Standard  01: Fixed |
| b6 | Fixing Setting Temperature | N | 00: Standard  01: Fixed |
| b7 | Fixing Cooling Operation | N | 00: Standard  01: Fixed |
| b8 | Automatic Cooling/Heating Operation | N | 00: Not Available  01: Available |
| b9 | Fixing Fan Speed | N | 00: Standard  01: Fixed |
| C1 | Not Prepared | — | Not Used |
| C2 | Not Prepared | — | Not Used |
| C3 | Not Prepared | — | Not Used |
| C4 | Drain Pump Operation in Heating | A | 00: Not Available  01: Available |
| C5 | Increasing Fan Speed | A | *2) |
| C6 | Increasing Fan Speed When Thermo-OFF in Heating | A | 00: Not Available  01: Available |
| C7 | Cancel of 3 Minutes Compressor OFF Guard | A | 00: Standard  01: Cancel |

ⓘ *NOTE:*
*1) 00: Standard; 01: 10 hours; 02: 1200 hours; 03: 2500 hours; 04: Not indication.
*2) For RPI:  00: Medium Static Pressure; 01: Hi Static Pressure; 02: Low Static Pressure
    For RCI, RCIM and RCD: 00: Normal; 01: Increasing speed 1; 02: Increasing speed 2

■ **Optional Setting Items (Cont.)**

| (A) Code | Items | Individual Setting Availability | (B) Setting Conditions |
|---|---|---|---|
| C8 | Remote Control Thermostat | A | 00: Not Available<br>01, 02: *3) |
| C9 | Not Prepared | - | Not Used |
| CA | Not Prepared | - | Not Used |
| Cb | Selection of Manual Stoppage Logic | N | 00: A Contact<br>01: B Contact |
| CC | Not Prepared | N | 00 |
| d1 | Power Supply ON/OFF 1 | A | 00: Not Available<br>01: Available |
| d2 | Not Prepared | - | Not Used |
| d3 | Power Supply ON/OFF 2 | A | 00: Not Available<br>01: Available |
| E1 | Ventilation Mode | A | 00~02 *4) |
| E2 | Operation To Increase Air Volume for Ventilation | A | 00: Not Available<br>01: Available |
| E3 | Not Prepared | - | Not Used |
| E4 | Cool Down/Warm Up Period (KPI and Econofresh) | A | 00~02 *5) |
| E5 | Not Prepared | - | Not Used |
| F1 | Not prepared | - | Not Used |
| F2 | Remote Control Main-Sub Setting | N | 00: Main<br>01: Sub |
| F3 | Not prepared | - | Not used |
| F4 |  |  |  |
| F5 |  |  |  |
| F6 |  |  |  |
| F7 |  |  |  |
| F8 | MODE LOCK | N | 00: Not Available<br>01: Available |
| F9 | TEMP LOCK | N | 00: Not Available<br>01: Available |
| FA | FAN LOCK | N | 00: Not Available<br>01: Available |
| Fb | Louver Lock | N | 00: Not Available<br>01: Available |
| Fc | Cooling Temperature Range Limit | N | 00~10 *6) |
| Fd | Heating Temperature Range Limit | N | 00~10 *7) |
| FE | Heating Automatic operation Temperature | N | 00:  5 °C<br>01: 10 °C<br>02: 15 °C |

ⓘ *NOTE:*

*3) 00: Not available; 01: Control Remote control switch thermistor; 02: Average by Indoor suction thermistor and Remote Control switch thermistor.

*4) For Econofresh:  00: Not available; 01/02:All fresh Air Mode
    For KPI: 00: Automatic ventilation; 01: Ventilation by total heat exchanger; 02: By pass ventilation.

*5) For Econofresh:  00: Not available; 01/02:$CO_2$ Sensor Mode
    For KPI: 00: Standard; 01: Minutes; 02: 60 Minutes.
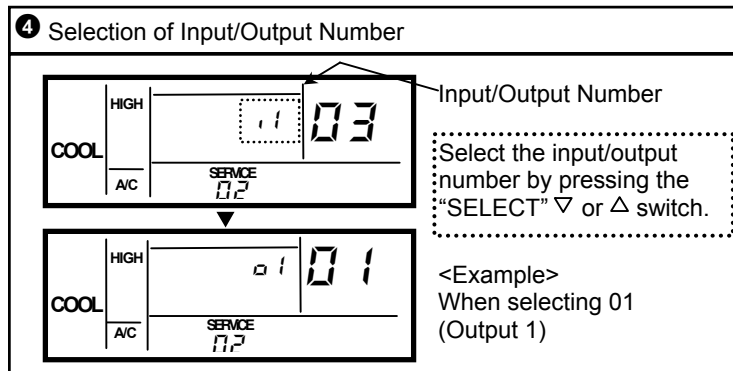
*6) 00: Standard, 01~10: Minimum Temperature +1~+10°C

*7) 00: Standard, 01~10: Maximum Temperature -1~ -10°C

E1~E5: For KPI only

### 5.3.2. INPUT/OUTPUT NUMBER

■ **Input/Output Setting Mode (Mode Number "02")**

❹ Selection of Input/Output Number

Input/Output Number

Select the input/output number by pressing the "SELECT" ▽ or △ switch.

<Example>
When selecting 01
(Output 1)

■ **Input and Output Setting Mode and Connector**

| Setting | | Port | Setting at Shipping | |
|---|---|---|---|---|
| Mode | Indication | | Setting Item | Indication |
| Input 1 | ⌐¹ | CN3 1-2 | Remote ON/OFF 1 | 03 |
| Input 2 | ⌐² | CN3 2-3 | Forbidding Remote Control after Manual Stoppage | 06 |
| Output 1 | ₒ¹ | CN7 1-2 | Operation | 01 |
| Output 2 | ₒ² | CN7 1-3 | Alarm | 02 |
| Output 3 | ₒ³ | CN8 1-2 | Thermo-ON for Heating | 06 |

| 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 | 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 |
| 08 | Not Set | Not Set |

⚠ *ATTENTION:*
*Write down the contents of the setting in the table printed on the holding bracket.*

## 6. TIMER OPERATION PROCEDURE

## 6.1. SETTING THE ACTUAL TIME AND DAY
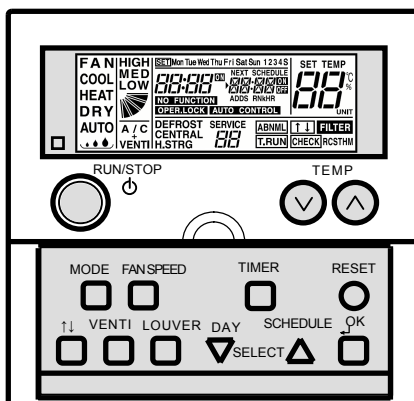
1. Press ▽ DAY switch more than 3 seconds to change the operation mode to actual time setting mode. SET is indicated and the day flickers. The days except the actual day are indicated.

2. Press ▽ DAY switch until the actual day flickers, then press OK switch. Selected day is indicated and "time" flickers.
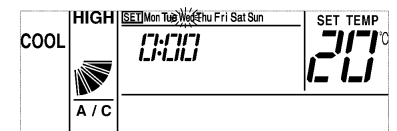
3. Press SELECT △▽ switch to adjust "Hour", and when adjusted press OK switch. "Hour" is indicated and "minutes" flickers.
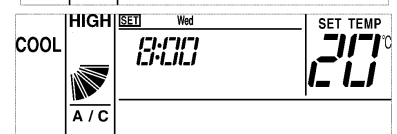
4. Press △▽ switch to adjust "minutes", and when adjusted press OK switch. The actual time setting mode is finished and changed to normal mode. "Minutes" is indicated and SET is lighted off. "Seconds" starts from zero.
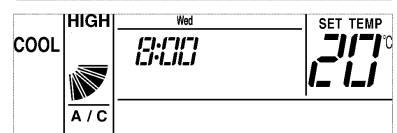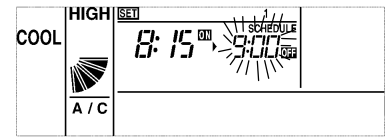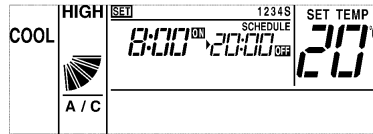
## 6.2. SETTING TIMER (PROGRAMMING)

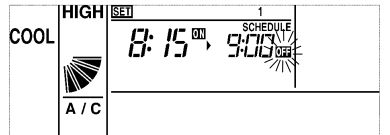1.Press TIMER switch. SET and SCHEDULE are indicated. Schedule Number "1" flickers and other numbers are indicated.

2.By pressing △schedule switch, schedule Number moves [1]→[2]→[3]→[4]→[S]→[1]→ ….

*In case of selecting [S], ON/OFF time and shift temperature can be set.

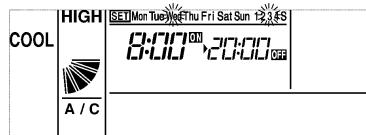*By pressing TIMER switch, SET and SCHEDULE are lighted off and changed to normal mode.

3.By pressing OK switch, selected schedule Number is indicated. Other schedule number are lighted off, and "Hour" of ON time for the selected schedule Number flickers.

4.Press SELECT △▽ switch to adjust "hour", and when adjusted press OK switch. "Hour" is indicated and "minutes" flickers.

5.Press SELECT △▽ switch to adjust "minutes", and when adjusted, press OK switch. "Minutes" is indicated and "hour" of OFF time flickers.

6.Set OFF time in the same way as that of ON time. After setting "minutes", OFF time is indicated. In case of selecting schedule number [1][2][3][4], the indication is changed to set the schedule Number shown in the 2. In case of selecting [S], see the chapter of setting shift temperature for details.

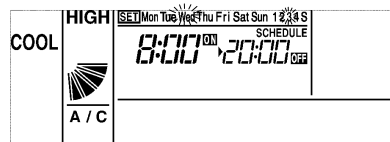7.By pressing TIMER switch, SET and SCHEDULE are lighted off and back to normal mode.
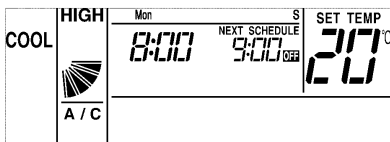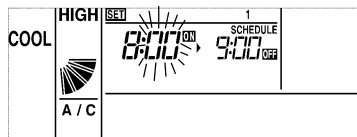
## 6.3. DETERMINE APPLICABLE SCHEDULE

1.Press TIMER switch more than 3 seconds and SET is indicated. All days and schedule Number are indicated.

2.Press ▽ DAY switch until the day to be set flickers. By pressing it, the day flickers [Mon]→[Tue]→…→[Sun]→[Mon~Sun]→ [Mon~Fri]→[Sat, Sun]→[Mon]…. In case of flickering various days, the same setting is applied to the days.

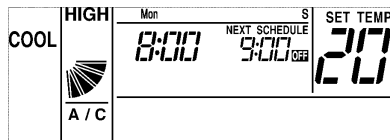3.Press △ SCHEDULE switch until schedule number to set flickers.

4.Press switch, and SCHEDULE is indicated, and then schedule number selected at item 3 is applied to the days set in item 2 . By pressing OK switch, switch valid/invalid and SCHEDULE lights ON/OFF is appeared.
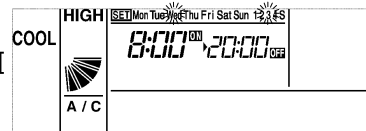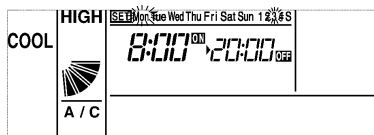
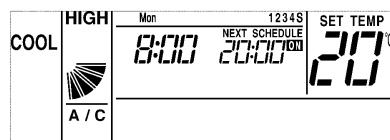5.Press TIMER switch and SET lights off, and back to normal mode.

## 6.4. TIMER CANCELLATION

In normal mode, press SELECT △switch simultaneously more than 3 seconds. NEXT SCHEDULE flickers. (All the timer cancellation)
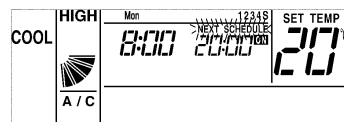
During the TIMER cancellation mode, press SELECT △switch simultaneously more than 3 seconds. NEXT SCHEDULE is indicated. (Timer activation)

## 6.5. SETTING OF SHIFT TEMPERATURE (ENERGY SAVING MODE)

Increase or decrease setting temperature ($\pm 3$ ºC or $\pm 5$ ºC) according to in ON time or OFF time. shift of temperature differs based on the operation mode. In case of "fan", "cooling" and "dry", from the shifting temperature: + shift. In case of "heating", from the setting temperature: - shift.

1. Perform the ON/OFF time setting operation of sub-chapter point 1 and 2, and then select "S" as a schedule number
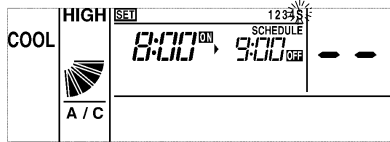
2. Perform the ON/OFF time setting operation of sub-chapter point 4 and 6, and set ON/OFF time. After setting ON/OFF time, setting temperature is indicated.
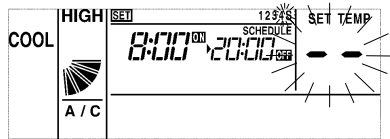
3. Select the temperature to shift by $\triangle \triangledown$ switch. "3" or "5" can be selected. In this time, if reset switch is pressed, shift temperature is not performed indicating "- -". By pressing TIMER switch, temperature is indicated and change to the schedule number selection.
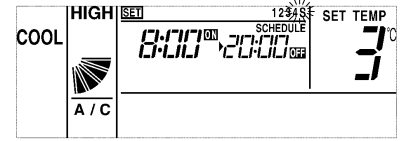
4. By pressing TIMER switch, SET and 「SCHEDULE」 light off and return to the normal mode.
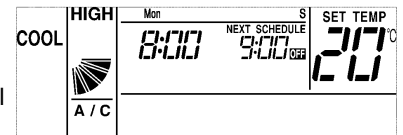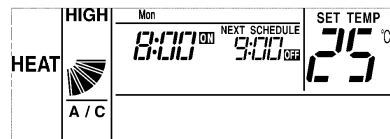
*ⓘ* NOTE:
   1. Setting temperature indication will be changed.
   2. Setting temperature from CS-NET or PSC-5S is normal range, from R.C.S. can be changed in a new range.

## 6.6. SETTING OF HEATING AUTOMATIC OPERATION (ANTI-FREEZE PROTECTION)

If room temperature is below a certain temperature[1]*, heating is operateed actumatically. In case of heating automatic operation, when room temperature reaches to setting temperature, operation is stopped.

1. In normal MODE, press switch to change operation mode more than 3 sec. Heating automatic operation setting is valid and ON is indicated at the right side of actual time. ON flickers during heating automatic operation.

Release
While heating automatic operation is valid, press MODE switch to change operation mode more than 3 sec in normal mode. Heating automatic operation setting is invalid, and ON at right side of actual time lights off.
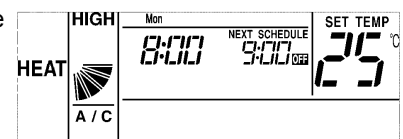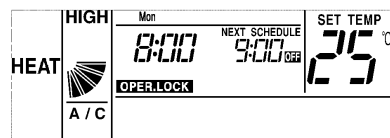
*ⓘ* NOTE:
   *[1] (5/10/15ºC) can be selected by optional setting.

## 6.7. METHOD OF OPERATION LOCK

To prevent incorrect switch operation, switch operation * can be locked.
*Switch to be invalid can be selected from "operation mode change", "temperature adjustment", "airflow" and "autolouver" by optional setting (F8~Fb) up to 4 items.

1. In normal mode, press $\triangledown \triangle$ SELECT switch simultaneously more than 3 sec. Operation lock is valid and OPER.LOCK is indicated. If locked switch is pressed during operation lock, OPER. LOCK flickers.

Release
While operation lock is valid, press $\triangledown \triangle$ SELECT switch simultaneously more than 3 sec in normal mode. Operation lock is invalid and OPER. LOCK lights off.
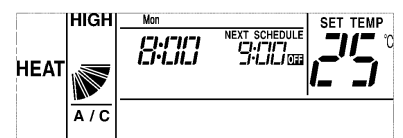
*ⓘ* NOTE:
   From CS-NET or sub-remote controller, setting can be changed.

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