TOSHIBA INSTALLATION MANUAL Model:TCB-PCUC1E

Application control kit

Precautions for safety

- Read these “Precautions for safety” carefully before installation work.
- The precautions described below include important items regarding safety. Observe them without fail.Understand the following details (indications and symbols) before reading the body text, and follow the instructions.

The meanings of indications

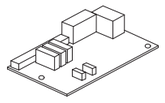
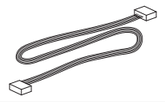
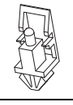
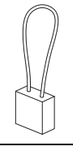
⚠ WARNING	Text set off in this manner indicates that failure to adhere to the directions in the warning could result in serious bodily harm or loss of life if the product is handled improperly.
⚠ CAUTION	Text set off in this manner indicates that failure to adhere to the directions in the caution could result in serious bodily injury or damage to property if the product is handled improperly.

- After completion of installation, perform trial operation to check for any problems. Explain method of use and maintenance to the customer by following the descriptions in the manual. Ask customer to keep this manual at accessible place for future reference.

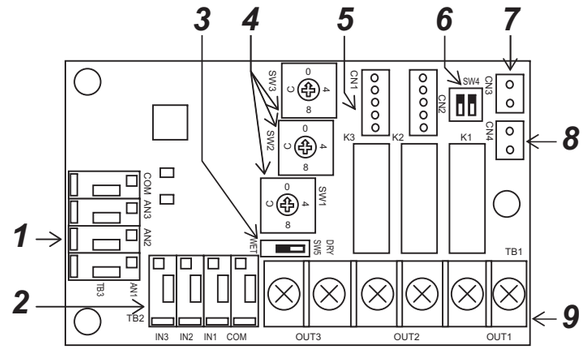
⚠WARNING

- **Only a qualified installer or qualified service person is allowed to do installation work. If installation is carried out by an unqualified individual, fire or electric shock may result.**
- **Perform installation work reliably according to this Installation Manual. Incomplete installation may cause electric shock, fire or abnormal operation.**
- **Electrical work must be performed by a qualified installer or qualified service person in accordance with this Installation Manual. The work must satisfy all local, national and international regulations. Inappropriate work may result in electric shock or fire.**
- **Connect the specified wires firmly and clamp them securely so that external force applied to the wires does not affect the connector pins. Improper wire connection or clamping may result in fire or malfunction.**
- **Do not disassemble, modify, repair or move the product yourself. Doing so may cause fire, electric shock, injury or water leaks.**
- **Ask a qualified installer or qualified service person to do any repairs or to move the product.**

Accessories

No.	Accessories	Shape	Q'ty
(1)	Application control kit		1
(2)	Connector assembly		1
(3)	Card edge spacer		3
(4)	Short plug		1
(5)	Installation Manual		1

Nomenclature and functions



1 External analog input terminal (TB3)
Changes air flow, operating mode, and temperature settings depending on resistance value from 0 to 140 Ω.
Do not apply voltage or current to this terminal.

2 External digital input terminal (TB2)
Connect for external error input or prohibition of local input.

3 External digital input
Switch for voltage ON (WET) and voltage OFF (DRY)
(Factory default: Voltage OFF (DRY))

4 Switch for setting signal output (Factory default: 0)
Adjust to signal that you want to extract and set the switch.

5 Connector for connecting to indoor circuit board (CN1)
Use the transmission cable provided with this connector to connect to the circuit board in the indoor unit.
(Indoor unit side: Red (CN521). On this control kit: Red (CN1).)

6 Switch for function select (SW4) (Factory default: OFF)
Bit 1: Switches inversion of output logic of signal output 3 (OUT3)
Bit 2: Not used (do not set)

7 FILTER connector (CN3)
Attach the short plug provided if connecting a humidifier to the TB1 terminal.

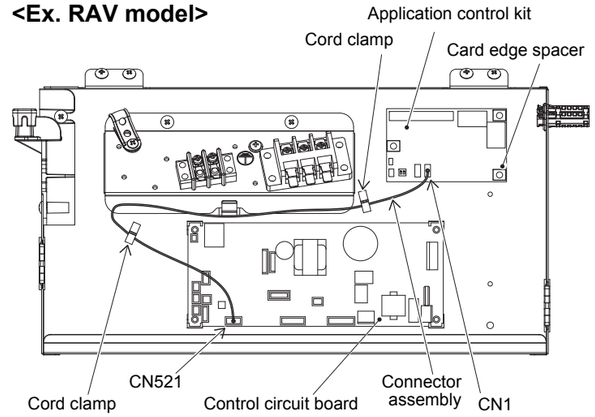
8 EXCT connector (CN4)
Can thermo. OFF by shorting this connector.

9 Signal output terminal block (TB1)
Connect when extracting output signal.

Installation procedure

■ Ceiling Type (RAV-SM***7CTP* MMC-AP***7HP*)

<Ex. RAV model>



1 Use the card edge spacers (3 pcs) provided with the electrical control box to install the application control kit.

2 Use the connector assembly provided to connect CN1 on the application control kit and CN521 on the indoor control circuit board, then run the wires and fix it in place with two cord clamps.

CODE No. (DN) setting

■ Wired remote controller setting (RBC-AMT32E)

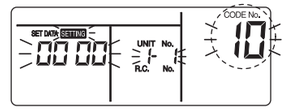
Change the settings while the air conditioner is not working. **(Stop the air conditioner before making settings.)**

⚠CAUTION

Set only the CODE No. shown in the following table: Do NOT set any other CODE No. If a CODE No. not listed is set, it may not be possible to operate the air conditioner or other trouble with the product may result.

1 Push and hold the “TEST” + “SET” + “CL” buttons for over 4 seconds and then after a short time the display flashes as shown in the diagram.
Check that the CODE No. displayed is [10].
- If the CODE No. is anything except [10], push the “TEST” button, clear the display, and redo the procedure from the beginning.
(Remote control operations cannot be received for about 1 minute after pushing the “TEST” button)
(When doing group control, the first indoor unit number displayed is the header unit.)

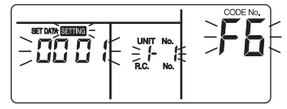
The indoor unit numbers under group control are displayed in order each time the “UNIT LOUVER” button is pushed, so you can select the indoor unit whose settings you want to change.
When this is done, the fan and horizontal louvers of the selected indoor unit operate, so you can confirm the position of the indoor unit whose settings you want to change.



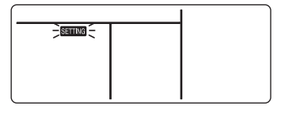
(*The display varies for different models of indoor unit)

2 Specify the CODE No. [F6] with the temperature setting “▼” and “▲” buttons.

3 Use the timer setting “▼” and “▲” buttons to set [0000] → [0001]



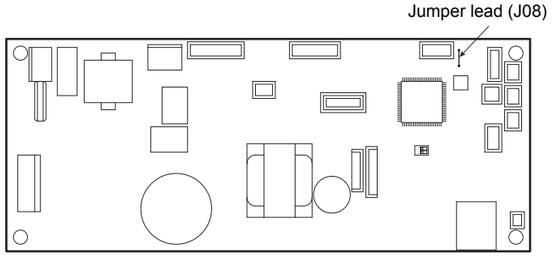
4 Push the “TEST” button (settings are fixed).
Pushing the “TEST” button turns off the display, and it goes into normal stop mode. (“SETTING” flashes and remote control operations cannot be received for about 1 minute after pushing the “TEST” button)
- If remote control operations cannot be received after more than 1 minute after pushing the “TEST” button, the address settings may be wrong. If this is the case, start at step 1 to change the settings again and redo the automatic address settings.



Wireless remote controller setting

There is a procedure to cut the jumper lead (J08) of the indoor unit P.C. board and set it when using the wireless remote controller, but you must be careful because once it is set it cannot be undone.
(To undo it, use a soldering iron on the J08 part and connect it with the jumper lead.)

▼ Example: Indoor unit P.C. board (MCC-1643)



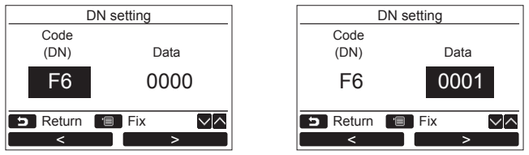
CODE No. (DN) setting

■ Lite-Vision plus remote controller (RBC-AMS51E*)

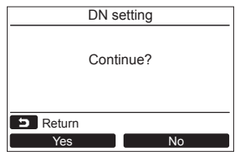
Perform the advanced settings for the air conditioner.
Carry out the setting operation while the indoor unit is stopped. (Turn off the air conditioning unit before starting the setting operation.)

1 Push the [MENU] button to display the menu screen.

2 Push and hold the [MENU] button and the [∨] button at the same time to display the "Field setting menu".
Push and hold the buttons for more than 4 seconds.



3 Push the [∧] / [∨] button to select "5. DN setting" on the "Field setting menu" screen, then push the "Set" [F2] button.
The fan and louver of the indoor unit operate. When the group control is used, the fan and louver of the selected indoor unit operate.
Move the cursor to select "DN code" with the "< " [F1] button, then set "F6" with the [∧] / [∨] button.
Move the cursor to select "data" with the "> " [F2] button, then set "0001" with the [∧] / [∨] button.



4 Push the [MENU] button to set the other DN codes. After "Continue?" is displayed on the screen, push the "Yes" [F1] button.

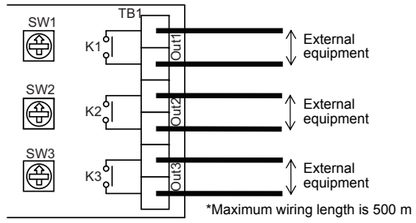
5 Push the "No" [F2] button to finish the setting operation. "⧖" appears on the screen for a while, then the screen returns to the "Field setting menu" screen.
Pushing the "No" [F2] button displays the unit selection screen when the group control is used. Push the [CANCEL] button on the unit selection screen to finish the setting operation. "⧖" appears on the screen for a while, then the screen returns to the "Field setting menu" screen.

6 Push the [CANCEL] button to return.

<Signal output terminal: TB1>

The following signal outputs are extracted from "OUT1", "OUT2", and "OUT3".
It is possible to change the signal outputs with SW1, SW2, and SW3.

*** Always turn off the power to the indoor unit before setting the signal outputs.**
Note that even if you set the signal outputs, the settings do not change if the power to the indoor unit is ON.



<Connectable load>
30 VDC/1 A or less
277 VAC/1 A or less

*Maximum wiring length is 500 m

SW1, 2, and 3 settings	Signal output
0	No output (default)
1	Cool dry output
2	Heat output
3	Defrost output
4	Fan output (indoor unit fan ON)
5	Thermo. ON output
6	Ventilation output
7	Operation output
8	Alarm output
9	Humidify output *1
A	Heater output
B	Actual compressor on output
C	Actual fan status output
D	Filter sign output
E	Demand response output
F	Not used

*1 Attach the short plug provided to CN3 if using humidify output.
*2 Only signal output 3 (OUT3) can change relay (K3) contacts from A contact to B contact by switching the relay output reverse switch (SW4(bit 1)) from OFF to ON.
• A contact: Relay is ON when there is signal output
• B contact: Relay is OFF when there is signal output
(Relay is ON when there is no signal output)
Always turn off the power to the air conditioner before doing the settings because the SW4 settings also are not changed even if the settings are changed while the power is ON.

⚠CAUTION

Keep input signal wires and other signal wires away from power supply lines that are 220-240 VAC.

<External digital input terminal: TB2>

The following controls can be done by inputting signals to the external digital input terminal.

▼ IN1: External error input

The air conditioner system stops and check code "L30: Indoor unit external interlock error" is displayed on the wired remote controller when an external error is input.

▼ IN2: Prohibition of local input

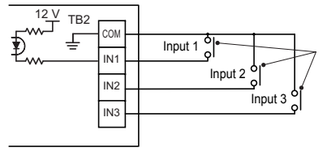
is displayed on the wired remote controller and operations cannot be started or stopped from the wired remote controller during prohibition of local input.
It is also possible to release local prohibition from the central remote controller.
(Most recent input is given priority.)

▼ IN3: Not used

* Do the wiring as shown to the right for input of either "Voltage ON: WET" or "Voltage OFF: DRY".

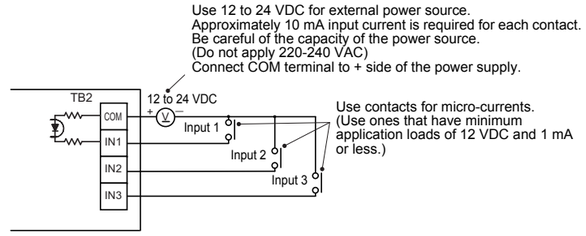
"Voltage OFF" input

Set the input switch (SW5) to the "Voltage OFF: DRY" side.
(Factory default: Voltage OFF (DRY) side)



"Voltage ON" input

Set the input switch (SW5) to the "Voltage ON: WET" side.
(Factory default: Voltage OFF (DRY) side)



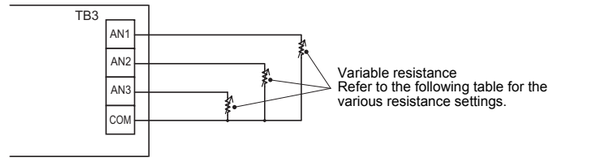
<Wiring specifications>
Wire type: Sheathed vinyl cord, single strand
Wire thickness: 1.25 to 2.00 mm^2 (prep 9 to 10 mm of the tips of wires)
Total wire length: Max 70 m
* If you use twisted strand wires, connect a pin terminator.

⚠CAUTION

Separate power lines when wiring to prevent misoperations.

<External analog input terminal: TB3>

It is possible to change the indoor unit's operation mode (AN1), set temperature (AN2), and blower setting (AN3) by connecting a variable resistor to the analog input terminal.
* When both the wired remote controller and the central controller are used, the most recent setting has priority.



Do not apply voltage or current to AN1, AN2, AN3, or COM.

<Operation mode: AN1>

Operation switching	External resistance (Ω)
Stop	30
Blower	60
Cool	90
Warm	120

<Set temperature: AN2>

Set temperature (°C)	External resistance (Ω)
17	10
18	20
19	30
20	40
21	50
22	60
23	70
24	80
25	90
26	100
27	110
28	120
29	130
30	140

<Blower setting: AN3>

Blower setting	External resistance (Ω)
Auto	30
Fast	60
High	90
Low	120

<Wiring specifications>
Wire type: Sheathed vinyl cord, single strand
Wire thickness: 1.25 to 2.00 mm^2 (prep 9 to 10 mm of the tips of wires)
Total wire length: Max 70 m
* If you use twisted strand wires, connect a pin terminator.

⚠CAUTION

Separate power lines when wiring to prevent misoperations.

Other functions

▼ FILTER(CN3)

Install the short plug provided to CN3 if connecting a humidifier.

▼ EXCT(CN4)

Can thermo. OFF by shorting this connector.
Use contacts for micro-currents when using external contacts.
(Use ones that have minimum application loads of 12 VDC and 1 mA or less.)

LED display

▼ Power LED (LD1) [Red]

Lights when running and power is supplied.
Normally lighted, but flashes if a transmission error occurs on the indoor unit P.C. board.

▼ Regular operation LED (LD2) [Green]

Lights when transmission with indoor unit P.C. board is established and operation is regular.