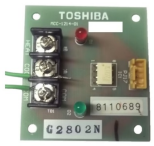

TOSHIBA TCB-PCMO4E External Master On-Off Control Board Installation Guide

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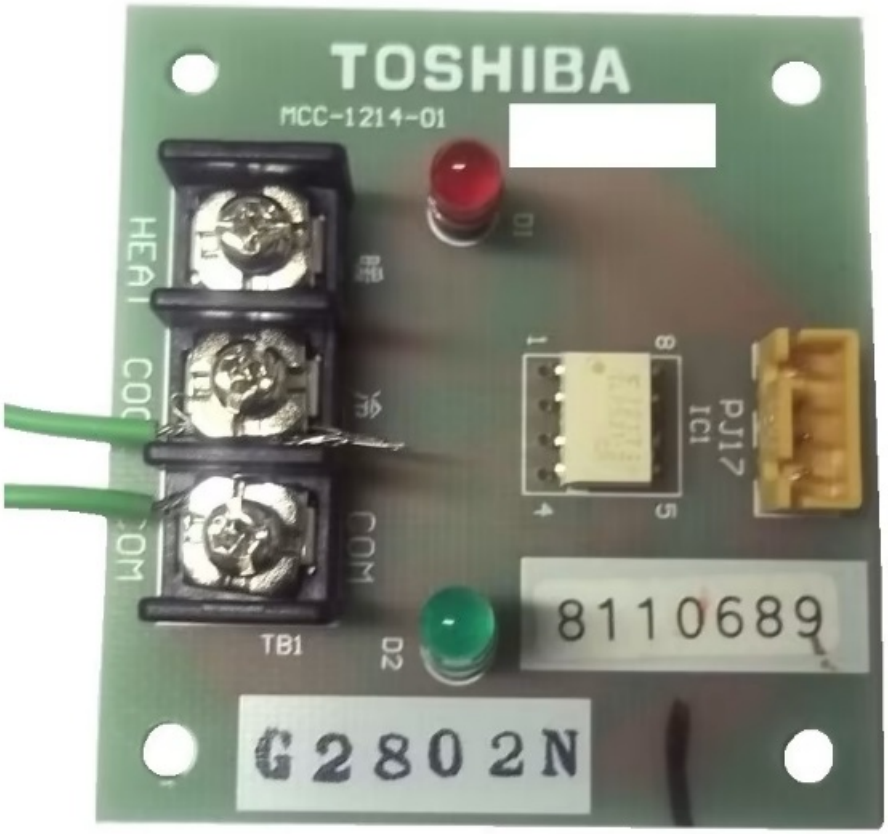


Product Information

Product Name: External master ON/OFF control board

Model: TCB-PCMO4E

Compatible Models: SMMS-u or SHRM-A

Manufacturer: TOSHIBA

Precautions for Safety

Please read the Installation Manual of the outdoor unit for safety precautions.

External View

Dimensions: 55.5mm x 45.5mm

NCC-1214

Terminal block (M3)

Accessories

No.	Part Name	Q'ty
1	Connection cable	1
2	Support to fix the board	4
3	Earth screw	2
4	Binding band A	4
5	Clamp filter (DIA. 20)	2
6	Binding band B	2
7	Clamp filter (DIA. 30)	1
8	Wire clip	1
9	Cable strap	3

Product Usage Instructions

Installation

1. Before starting installation work, ensure the power supply is turned OFF.
2. Install the optional PCB at the specified position inside the electrical components box as shown in the figure.
3. Use the fixing support to install the optional PCB at the specified location inside the electrical components box. There arefour mounting holes for the support to fix the board at specified locations.
4. Connect the connector (PJ17) on the optional PCB to the connector (CN513) on the interface PCB using the provided connection cable.
5. Tie the connection cable using binding band A.
6. Attach the clamp filter to the connection cable and attach another clamp filter to the input wiring. Use binding band B to fix the clamp filters to the wiring.
7. Band the redundant connection cable and tie them with binding band A.
8. Fix the connection cable and input wiring with wire clip and cable strap as shown in the figure.

Operation and Wiring Diagram

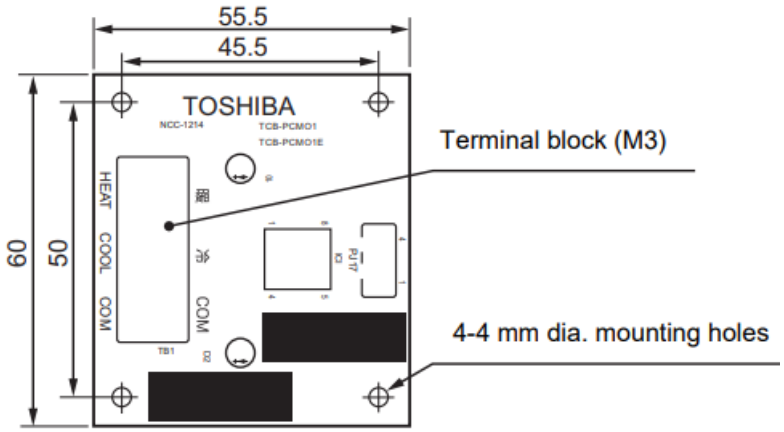
The external master ON/OFF control board allows batch operation or batch stop of indoor units connected to the outdoor unit. The operation is performed in the previously active mode.

To control the outdoor unit, connect the header unit (U1) to the outdoor unit interface PCB using the provided connection cable. Use the operation input switch (SW1) and stop input switch (SW2) for controlling.

When sending a batch-designated signal, turn off SW1 before sending the signal to perform batch operation on indoor units.

Precautions for Safety
As for the Precaution for Safety, please read the Installation Manual of outdoor unit.

External View



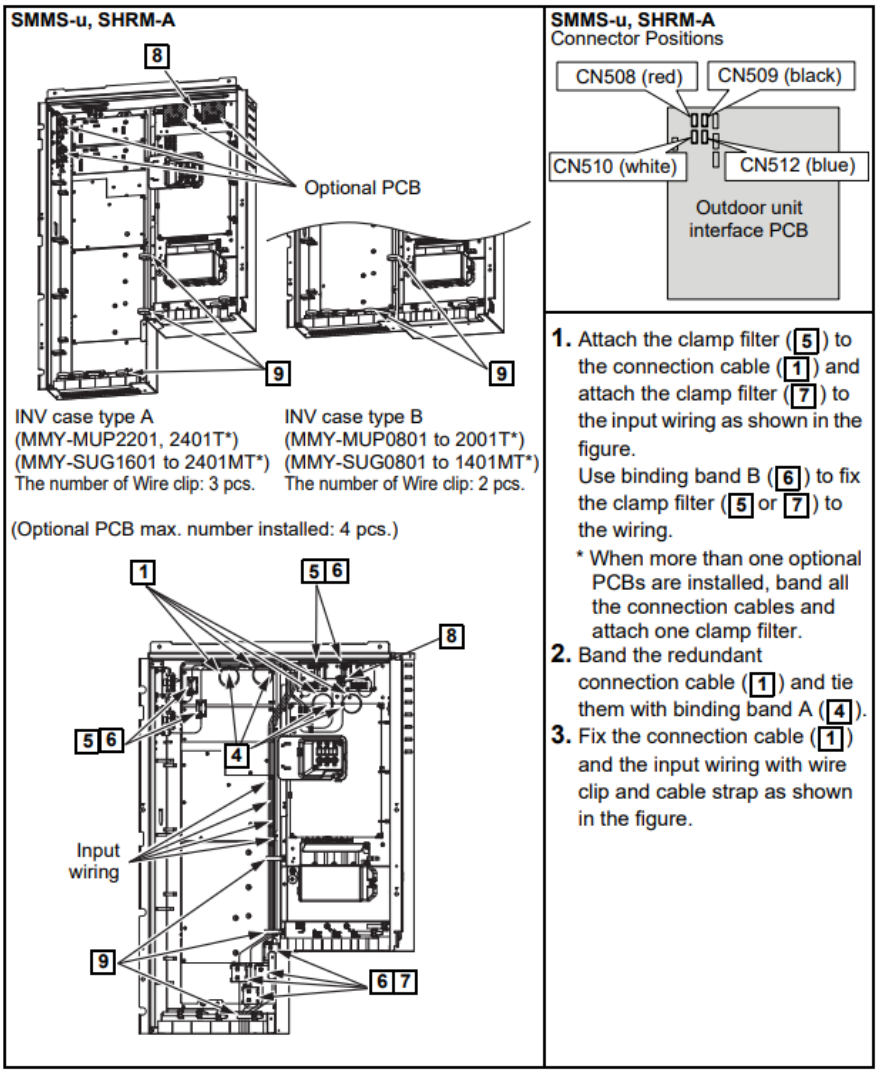
Accessories

No.	Part Name		Q'ty
1	Connection cable		1
2	Support to fix the board		4
3	Earth screw		2
4	Binding band A		4
5	Clamp filter (DIA. 20)	(DIA. 20) 	2
6	Binding band B		2
7	Clamp filter (DIA. 30)	(DIA. 30) 	1
8	Wire clip		1
9	Cable strap		3

Installation

1. Before starting installation work, be sure to turn the power supply OFF.
2. Install the “optional PCB” at the position on the electrical components box shown in the figure below.
3. Install the “optional PCB” at the specified location inside the electrical components box using the fixing support.
4. There are four mounting holes for the support to fix the board (2) at specified locations inside the electrical components box.
5. Connect the connector (PJ17) on the “optional PCB” to the connector (CN513) on the “interface PCB” using the connection cable (1) . (See figure on right.)
6. The cable (provided) is long. Tie it using the binding band A (4).

[PCB Installation Position] PCB: Printed Circuit Board



Details of Operation, Wiring Diagram

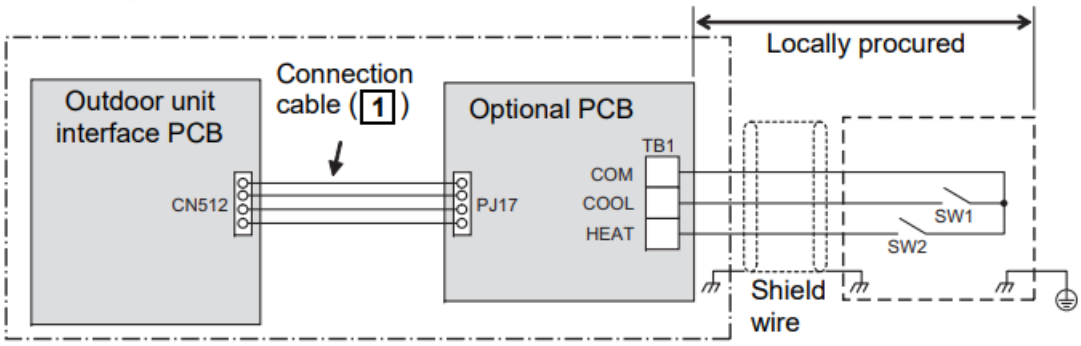
External master ON/OFF Control

- COM terminals have DC12 V output with a basic insulation.
  Use a switch (relay or photocoupler) insulated from the controller (locally procured) for SW1 or SW2.
- DC12 V has a current-limiting resistor of 3.3 Ω.
- For non-voltage contacts for each terminal, use a contact with minimum applicable load of DC12 V and 3 mA or less.

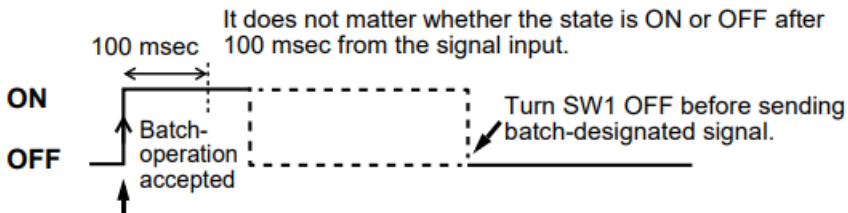
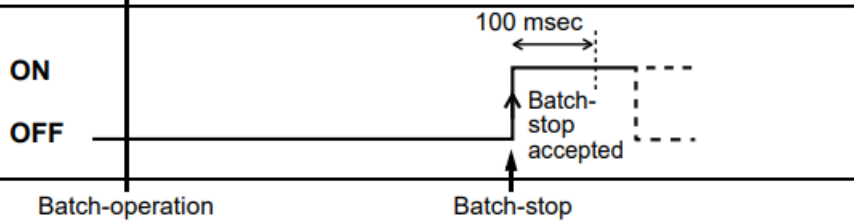
Model : SMMS-u, SHRM-A

Functions
Indoor units connected to the outdoor unit can be batch-operated or batch-stopped by connecting to the interface PCB of those outdoor units. Batch operation is performed in the previously active mode.

Operation
The outdoor unit connection is for the header unit (U1).



SW1: Operation input switch
SW2: Stop input switch

Terminal	Input Signal	Operation
COOL (SW1)		Batch-operates indoor units.
HEAT (SW2)		Batch-stops indoor units.

- Input signal is detected in the rising edge between OFF and ON of SW1/SW2 and the control is accepted in 100 msec from the edge.
- When COOL terminals (SW1 and SW2) are simultaneously turned ON, the control turned ON first is valid, and the control turned ON later is invalid.

CAUTION

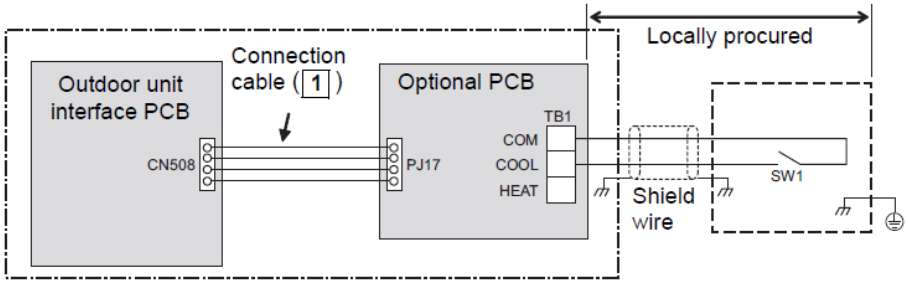
- Be sure to provide no-voltage pulse contacts for each terminal.
- Hold the ON state for at least 100 msec.
- Do not turn SW1 and SW2 ON simultaneously

Night operation (sound reduction) control

Model : SMMS-u, SHRM-A

Functions
The rotation speed of the compressor and fan can be restricted during input of the night time signal to reduce noise by connecting to the interface PCB of outdoor units.

Operation
The outdoor unit connection is for the header unit (U1).



SW1: Night time signal switch

Terminal	Input Signal	Operation
COOL (SW1)	ON OFF 	Night time control
	ON OFF 	Normal operation

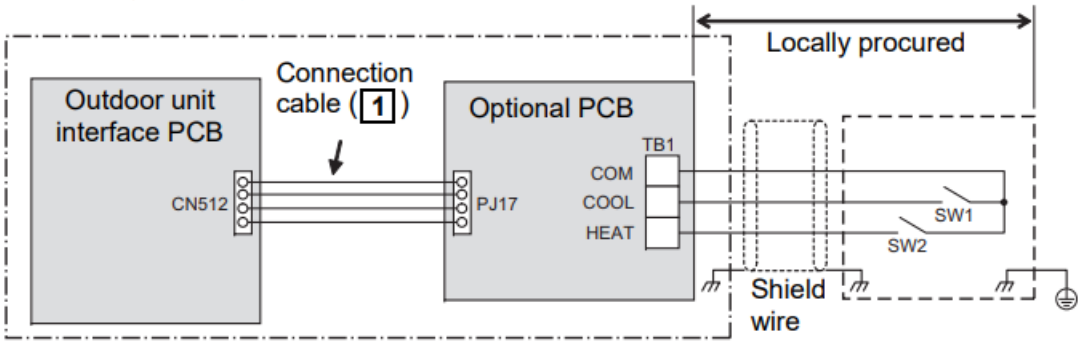
CAUTION
Be sure to provide no-voltage continuous contacts for each terminal.

Operation mode selection control

Model : SMMS-u, SHRM-A

Functions
The heating/cooling mode of the system can be selected by connecting to the interface PCB of outdoor units.

Operation
The outdoor unit connection is for the header unit (U1).



SW1: Cooling mode specified input switch
SW2: Heating mode specified input switch

Input Signal		Operation: Selected operation mode
Cooling (SW1)	Heating (SW2)	
OFF	OFF	Normal operation
ON	OFF	Cooling operation only allowed
OFF	ON	Heating operation only allowed

The statuses of indoor units operating in a mode other the selected operation mode can be switched by setting the outdoor DN Code of the header outdoor unit.
For setting the Outdoor DN Code (O.DN), refer to Owner's Manual of the outdoor unit.

<table>
<tr><th>Outdoor DN Code (O.DN)</th><th>Details of Processing</th></tr>
<tr><td>O.DN
[008] = 0
Factory default</td><td>Unallowed indoor units in a mode other than the PCB selection modes are not treated as priority (thermostat OFF state).
<table>
<tr><th rowspan="2">PCB selection mode</th><th colspan="2">Input Signal</th><th rowspan="2">Remote control</th><th rowspan="2">Operation State</th></tr>
<tr><th>COOL (SW1)</th><th>HEAT (SW2)</th></tr>
<tr><td rowspan="3">Normal</td><td rowspan="3">OFF</td><td rowspan="3">OFF</td><td>❄ or 💧</td><td rowspan="3">Follow the remote controller</td></tr>
<tr><td>☀</td></tr>
<tr><td>🌀</td></tr>
<tr><td rowspan="3">Cooling operation only allowed</td><td rowspan="3">ON</td><td rowspan="3">OFF</td><td>❄ or 💧</td><td>Follow the remote controller (Normal cooling operation)</td></tr>
<tr><td>☀</td><td>Thermostat OFF (Air blow operation at super-slow blow rate)</td></tr>
<tr><td>🌀</td><td>Follow the remote controller (Normal air blow operation)</td></tr>
<tr><td rowspan="3">Heating operation only allowed</td><td rowspan="3">OFF</td><td rowspan="3">ON</td><td>❄ or 💧</td><td>Thermostat OFF (Air blow operation at blow rate set on remote control)</td></tr>
<tr><td>☀</td><td>Follow the remote controller (Normal heating operation)</td></tr>
<tr><td>🌀</td><td>Follow the remote controller (Normal air blow operation)</td></tr>
</table></td></tr>
<tr><td>O.DN
[008] = 1</td><td>Only operation modes and air blow operation selected on the PCB can be selected on the remote controller.
When the input signal is turned ON, indoor units operated in a mode other than the PCB selection mode are forcibly switched to the PCB selection modes.
<table>
<tr><th rowspan="2">PCB selection mode</th><th colspan="2">Input Signal</th><th rowspan="2">Remote Control</th></tr>
<tr><th>COOL (SW1)</th><th>HEAT (SW2)</th></tr>
<tr><td>Normal</td><td>OFF</td><td>OFF</td><td>• ❄, 💧, ☀, or 🌀 can be selected</td></tr>
<tr><td>Forced switch to COOL</td><td>ON</td><td>OFF</td><td>• Only ❄, 💧, or 🌀 can be selected
• Indoor units in Heat mode are forcibly switched to the Cool mode</td></tr>
<tr><td>Forced switch to HEAT</td><td>OFF</td><td>ON</td><td>• Only ☀ or 🌀 can be selected
• Indoor units in Cool or Dry mode are switched to the Heat mode</td></tr>
</table></td></tr>
</table>

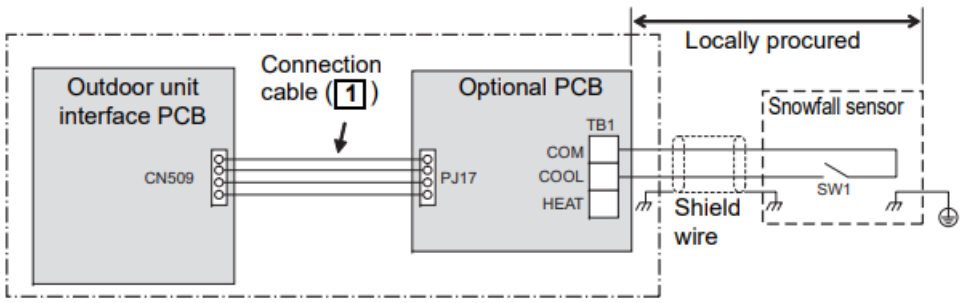
CAUTION
Be sure to provide no-voltage continuous contacts for each terminal. Snowfall Fan Control

Model : SMMS-u, SHRM-A

Functions
The outdoor unit fan operates at snowfall by connecting to the outdoor unit interface PCB.

Operation

Header outdoor unit

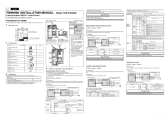


SW1: Snowfall detection switch (snowfall sensor)

Terminal	Input Signal	Operation
Cooling (SW1)	ON OFF	Snowfall fan control (Fan in outdoor unit operates.)
	ON OFF	Normal operation

CAUTION
Be sure to provide no-voltage continuous contacts for each terminal.

Documents / Resources

	TOSHIBA TCB-PCMO4E External Master On-Off Control Board [pdf] Installation Guide TCB-PCMO4E External Master On-Off Control Board, TCB-PCMO4E, External Master On-Off Control Board, Master On-Off Control Board, On-Off Control Board, Control Board, Board