

TOSHIBA INSTALLATION MANUAL Model:TCB-PCIN4E

Output control board

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.

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.

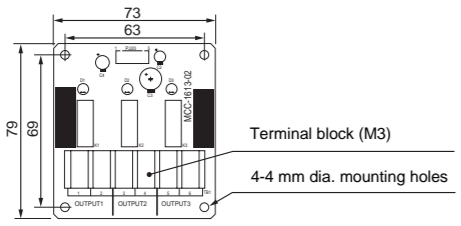
CAUTION Text set off in this manner indicates that failure to adhere to the directions in the caution could result in serious bodily injury or damage to property if the product is handled improperly.

- 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.

1 External View



2 Accessories

No.	Part Name	Q'ty
1	Connection cable 1 (for CN511)	1
2	Connection cable 2 (for CN514)	1
3	Support to fix the board	4
4	Wire clamp	1
5	Wire clamp fixing screw	1
6	Earth screws	2
7	Binding band A	4
8	Clamp filter	2
9	Binding band B	2

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 on the right.
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 fixing support at specified locations inside the electrical components box.
5. Connect the connector (PJ20 (green)) on the "Optional PCB" to the connector (CN511 (green) or CN514 (green)) on the "interface PCB" using the connector cable (provided). (See figure on right).
6. The cable (provided) is long. Tie it using the binding band.

[PCB Installation Position]

SMMS-i

(max. number installed: 2 pcs)

SMMS-i Connector Positions

SMMS, SHRM

(max. number installed: 1 pcs)

SMMS, SHRM Connector Positions

MINI-SMMS

(max. number installed: 1 pc)

MINI-SMMS Connector Positions

4 Wiring

SMMS-i

1. Tie the output wiring using the binding band A (7) at the position in the figure on the left. (7-a): Tie the output wiring together with other leads. (7-b): Tie the output wiring after passing the upper fixation hole on of the banding band.
2. Attach the clamp filter (8) to the output wiring and connection cable (1 or 2) as shown in the figure. Use binding band B (9) to fix the clamp filter (8) to the wirings.

* When more than one optional PC boards are installed, band all the connection cables and attach one clamp filter.

3. Fix the wire clamp (4) using the screw holes at location [A] in the figure on the left.

SMMS, SHRM

1. Pass the binding band A (7) through securing hole [B] shown in the figure on the left and tie the output wiring together with other wiring.
2. Fix the wire clamp (4) using the screw (5) holes at location [A] in the figure on the left.

MINI-SMMS

1. Tie the output wiring with the wire clamp (4).

5 Details of Operation, Electrical Wiring Diagram

CAUTION

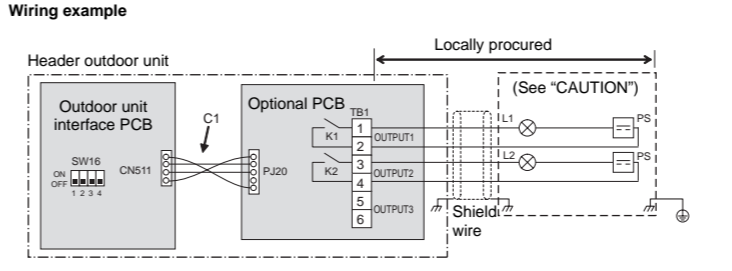
Output Relay (K1, K2, K3) Contact Specifications

- Output terminals (OUTPUT1, 2, 3) must satisfy the following electrical rating.
- When connecting a conductive load (e.g. relay coil) to loads K1, K2 and K3, insert a surge killer CR (for an AC power supply) or a diode for preventing back electromotive force (for a DC power supply) on the bypass circuit.

<Electrical Rating>
220-240 VAC, 10 mA or more, 1A or less
24 VAC, 10 mA or more, 1 A or less (non-conductive load)

Error / Operation output

- Functions**
The operation error indication PCB can output operation and error states by connecting to the interface PCB of outdoor units.
- Operation**
Operation output: The operation indication is output when even one of the indoor units in the system is operating.
- Error output: The error indication is output when an error has occurred on even one of the indoor units or outdoor units in the system.



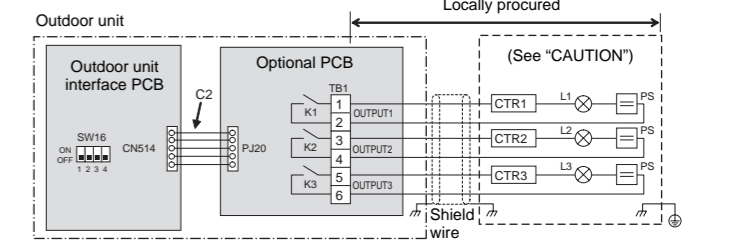
C1	Connector cable 1 (1)
CN511	Connector on interface side (green)
K1, K2	Relays
L1	Error indication Lamp
L2	Operation indication Lamp

OUTPUT1	Error output
OUTPUT2	Operation output
PJ20	Connector on optional PCB side
PS	Power supply unit
TB1	Terminal block

* Connect optional boards to the center outdoor unit.
* [OUTPUT3] is normally output when power is turned on.

Compressor Operation Output (This function is supported only on the SMMS-i.)

- Functions**
This function can be applied, for example, to the elapsed operation time count of each compressor mounted on an outdoor unit since the compressor in operation signal can be output externally.
- Operation**
During compressor operation, the relay of the output terminal corresponding to that compressor turns ON (closes) and turns OFF (opens) when compressor operation stops. As shown in the figure, the output terminals are "OUTPUT1", "OUTPUT2" and "OUTPUT3" from the left compressor facing the front of the outdoor unit.
- Wiring example**
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C2	Connector cable 2 (2)
CN514	Connector on interface side (green)
CTR1	Elapsed operation counter 1
CTR2	Elapsed operation counter 2
CTR3	Elapsed operation counter 3
K1, K2, K3	Relays
L1, L2, L3	Operation indication LEDs
OUTPUT1	Compressor 1 operation output terminal
OUTPUT2	Compressor 2 operation output terminal
OUTPUT3	Compressor 3 operation output terminal
PJ20	Connector on optional PCB side
PS	Power supply unit
TB1	Terminal block

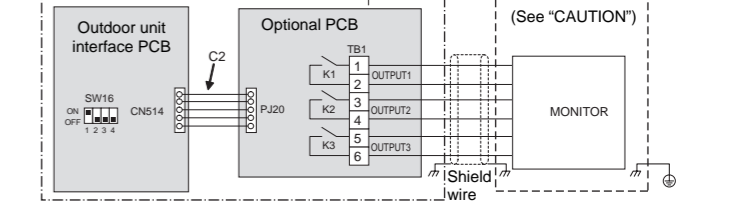
Operating Rate Output (This function is supported only on the SMMS-i.)

- Functions**
The operation state can be remotely checked since the system operating rate signal can be output externally.
- Operation**
As shown in the table, each of the output terminals turns ON (relay closes) and OFF (relay opens) according to the system operating rate.

Functions	SW16	OUTPUT1	OUTPUT2	OUTPUT3	Operating rate FA
System operating rate output	ON	OFF	OFF	OFF	FA=0%
	OFF	ON	OFF	OFF	0%<FA<20%
	bit 1 : ON	OFF	ON	OFF	20%<FA<35%
	bit 2 : OFF	ON	OFF	ON	35%<FA<50%
		OFF	OFF	ON	50%<FA<65%
		ON	OFF	ON	65%<FA<80%
		OFF	ON	ON	80%<FA<95%
		ON	ON	ON	95%<FA

OFF=relay open ON=relay closed

Wiring example



C2	Connector cable 2 (2)
CN514	Connector on interface side (green)
K1, K2, K3	Relays
MONITOR	Monitoring device
OUTPUT1	Output terminal for each function
OUTPUT2	Output terminal for each function
OUTPUT3	Output terminal for each function
PJ20	Connector on optional PCB side
TB1	Terminal block

* Connect optional boards to the center outdoor unit.