• Thank you very much for purchasing the TOSHIBA Touch Screen Controller.
• Please read this manual carefully beforehand for proper installation of the controller.

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Precautions for Safety

- Read these "Precautions for Safety" carefully before installation.
- The precautions described below include important items regarding safety. Observe them without fail.
- After the installation work, perform a trial operation to check for any problem. Follow the Owner's Manual to explain how to use and maintain the unit to the customer. Ask the customer to keep this Installation Manual together with the Owner's Manual.

⚠️ WARNING ⚠️

- Ask an authorized dealer or qualified installation professional to install or reinstall the Touch Screen Controller. Improper installation may result in electric shock or fire.
- Turn off the main power supply switch or breaker before attempting any electrical work. Make sure all power switches are off. Failure to do so may cause electric shock.
- Perform installation work properly according to this Installation Manual. Improper installation may result in electric shock or fire.
- Do not modify the unit. Any modification may cause a malfunction, resulting in overheating or fire.

⚠️ CAUTION ⚠️

Upon customer's approval, install the Touch Screen Controller at a place which satisfies the following conditions.
- Place where the Touch Screen Controller can be installed securely.
- Place which can reserve a sufficient service space for safe maintenance or check.
- Place where CF (Compact Flash) card can be removed easily.
- Place which provides sufficient space for connecting/checking the terminals of interface, Input-Output ports, etc.

Avoid the following places.
- Places where a device generating high frequency (inverter, non-utility generator, medical apparatus, or communication equipment) is installed. (A bad influence may generated by malfunction of the controller, control error, or noise may affect such equipment.)
- Perform wiring correctly in accordance with specified the current capacity. Failure to do so may result in short-circuiting, overheating, or fire.
- Connect the specified cables for the terminals securely to prevent external forces from affecting them. Failure to do so may result in disconnection, overheating, or fire.
### Introduction

#### Applications/Functions/Specifications

##### Applications/Functions

The Touch Screen Controller is equipped with the LCD display and the touch panel and has various functions such as operation control, operation status monitoring, scheduled operation, and error code display of up to 64 or 512 indoor units.

##### Specifications

<table>
<thead>
<tr>
<th></th>
<th>BMS-TP0641ACE</th>
<th>BMS-TP0641PWE</th>
<th>BMS-TP5121ACE</th>
<th>BMS-TP5121PWE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply</td>
<td>100 - 240 VAC, 50/60Hz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power consumption</td>
<td>50VA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating temperature/humidity</td>
<td>0°C to 50°C, 20% to 85% RH (no condensation)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-10°C to +60°C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>256 (H) × 316 (W) × 54 (D) mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mass</td>
<td>3.5kg</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

##### External View

- **Power input terminal block**
- **PCI expansion unit connector cover**
- **CF (Compact Flash) card slot (CF card for data files)**
- **Input/Output port**
- **USB**
- **Ethernet**
- **COM1(RS-232C)**
- **COM2(RS-485)**
- **POWER LED**
- **Function switch (F1, F2, F3)**

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Unit: mm
### Before Installation

Check the following package contents.

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Quantity</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Touch Screen Controller</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Fixture</td>
<td>6</td>
<td>For fixing the unit at panel mount</td>
</tr>
<tr>
<td>3</td>
<td>CF(compact flash) for data file</td>
<td>1</td>
<td>It is inserted in the CF card slot of controller at shipment. (For data file)</td>
</tr>
<tr>
<td>4</td>
<td>CF adapter</td>
<td>1</td>
<td>It is inserted in the CF card slot of controller at shipment.</td>
</tr>
<tr>
<td>5</td>
<td>Simple stand</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Triangle thread screw (M4 x 8, Ni)</td>
<td>1</td>
<td>For simple stand</td>
</tr>
<tr>
<td>7</td>
<td>Card cover</td>
<td>1</td>
<td>For preventing CF(compact flash) from coming out</td>
</tr>
<tr>
<td>8</td>
<td>Triangle thread screw (M3 x 6, Ni)</td>
<td>1</td>
<td>For card cover</td>
</tr>
<tr>
<td>9</td>
<td>RS-485 cable</td>
<td>1</td>
<td>For connecting controller and TCS-NET Relay Interface</td>
</tr>
<tr>
<td>10</td>
<td>Installation Manual</td>
<td>1</td>
<td>This manual</td>
</tr>
</tbody>
</table>

Use the following materials to connect the signal lines and power lines. (procured on site)

<table>
<thead>
<tr>
<th>No.</th>
<th>Line</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>For RS-485</td>
<td>Type 2-core shield wire</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wire size 1.25mm², 500m max. (total length)</td>
</tr>
<tr>
<td>2</td>
<td>For digital Input/Output connection</td>
<td>Type 2-core wire, 0.3mm², 100m max</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wire size H07 RN-F or 245IEC66</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wire size 0.75mm², 50 m max.</td>
</tr>
</tbody>
</table>

### 1 Installation

#### Installation Space and Maintenance Space

Space 30mm or more in between the controller and surrounding objects. Make space for service.
**Installation Method**

Two installation methods are provided. One is the panel mount with the fixture. The other is the desk top installation using the CONTEC stand (procured on site).

(1) **Panel Mount**

How to install the fixture

1. Insert the controller from outside of the panel.

2. Insert the fixtures from inside of the panel.

   ± Tightening screws excessively may cause the screws to break. Optimum tightening torque for good waterproofing effect is 0.6N/m.

   ![Panel cut size diagram]

   Panel cut size

   Panel thickness: 1.6 - 7 mm

   [mm]

   303.2

   243.2

   R1 or less

   Panel thickness: 1.6 - 7 mm

(2) **Desk Top Installation using the CONTEC stand (procured on site)**

**For reference**

**Display stand (not supplied with the controller)**

Use the CONTEC stand (model: IPC-SND-03). For details of the stand, visit the CONTEC web site.

   Europe: [http://www.contec-europe.com/](http://www.contec-europe.com/)

   China: [http://www.contec.sh.cn/](http://www.contec.sh.cn/)

**REQUIREMENT**

Use a panel (procured on site) of thickness 1.6-7 mm.

**REQUIREMENT**

Do not install the unit in any of the following places.

- Humid or wet place
- Dusty place
- Place exposed to direct sunlight
- Place where there is a TV set or radio within one meter
- Place exposed to rain (outdoors, under eaves, etc.)
**2 Connection of Power cables/Earth wires/Signal wires**

Connect cables to the connectors and terminals specified.

**REQUIREMENT**

Power cable is not supplied for the Touch Screen Controller. Prepare a 3-pin power cable conforming to applicable safety standards. Be sure to connect the earth line earth of the power cable securely.

**CAUTION**

- Ensure to connect the breaker to the primary side of power.
2 Connection of Power cables/Earth wires/Signal wires (continued)

I/O Port Connection

The I/O Port is used to control air conditioners by interlocking them with electric lock signals and fire alarm signals, and to transmit air conditioner failures to other devices.

### I/O Port

![I/O Port Diagram](image)

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Signal name</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PI_PCOM</td>
<td>Input plus common</td>
</tr>
<tr>
<td>2</td>
<td>PI(0)</td>
<td>Input 0</td>
</tr>
<tr>
<td>3</td>
<td>PI(1)</td>
<td>Input 1</td>
</tr>
<tr>
<td>4</td>
<td>PI(2)</td>
<td>Input 2</td>
</tr>
<tr>
<td>5</td>
<td>P_PO(0)</td>
<td>Output 0+</td>
</tr>
<tr>
<td>6</td>
<td>N_PO(0)</td>
<td>Output 0-</td>
</tr>
<tr>
<td>7</td>
<td>P_PO(1)</td>
<td>Output 1+</td>
</tr>
<tr>
<td>8</td>
<td>N_PO(1)</td>
<td>Output 1-</td>
</tr>
<tr>
<td>9</td>
<td>P_PO(2)</td>
<td>Output 2+</td>
</tr>
<tr>
<td>10</td>
<td>N_PO(2)</td>
<td>Output 2-</td>
</tr>
</tbody>
</table>

### Input/Output specifications

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input type</td>
<td>Photo-coupler insulation</td>
</tr>
<tr>
<td>Number of input</td>
<td>3</td>
</tr>
<tr>
<td>Input resistance</td>
<td>3k ohm</td>
</tr>
<tr>
<td>Output type</td>
<td>Open collector</td>
</tr>
<tr>
<td>Number of output</td>
<td>3</td>
</tr>
<tr>
<td>Output current</td>
<td>Max. 100mA (per 1 output)</td>
</tr>
<tr>
<td>Output voltage</td>
<td>Less than 30V DC</td>
</tr>
</tbody>
</table>

(1) The example of input circuit is shown below. It is electrically insulated by the photo-coupler.

(2) The example of output circuit is shown below. It is electrically insulated by the photo-coupler.
The example of the system wiring connection is shown below.

**Terminator Resistor Setting**

- RS-485 terminator resistor

The terminator resistors of RS-485 are set at both ends of communication cable. The RS-485 terminator resistor (at one end) of the Touch Screen Controller is set at shipment. No setting is needed.

The setting of the Touch Screen Controller is done at shipment. No setting is required.
3 Trial Operation

Before Trial operation

Setting File Creation
The setting file is necessary to use the Touch Screen Controller. Please inquire of your local sales office about it. The setting file will be copied to the Compact Flash card inserted in the CF slot of the Touch Screen Controller.

Trial Operations of Air Conditioner and Each Interface
Confirm the trial operations of the air conditioner and the each interface. And turn on the power of each device.

Trial operation

Start-up of the Touch Screen Controller
Connect the power cable, earth wire and signal wire of the Touch Screen Controller. Insert the compact flash containing the setting file in the CF slot and turn on the power. The initial screen appears.

Initialization
It is necessary to initialize the system to make the setting file effective.
Operational Procedure
(1) Press the [MENU] button. The menu screen appears.
(2) Press the [SYSTEM RESET] button on the menu screen. The message to confirm the operation appears. Press [Yes] to execute. Then, the system re-starts up.

Confirmation of Communication with Each Interface
When the communication with the interface listed on the setting file is disconnected, the communication error is displayed on the Touch Screen Controller. Press the [Alarm List] button to confirm whether the communication error occurs or not. (Communication error judging time: Approx. 15 minutes)

The suspected causes of the communication error will be as follows.
- The interface is not powered.
- The address setting of the interface is incorrect.
- The communication between the Touch Screen Controller and the interface is disconnected.
- The setting file is incorrect.

Confirmation of Communication with Air Conditioner
When the communication with the air conditioner is disconnected, the communication error is displayed on the Touch Screen Controller. The frame of air conditioner button on the screen is displayed orange.

The suspected causes of the communication error will be as follows.
- The air conditioner is not powered.
- The address setting of the air conditioner is incorrect.
- The communication between the TCS-NET relay interface and the air conditioner is disconnected.
- The communication between the Touch Screen Controller and the TCS-NET relay interface is disconnected.
- The setting file is incorrect.