

# TOUCH SCREEN CONTROLLER for Air Conditioning Control System

**Model: BMS-TP0641ACE**  
**BMS-TP0641PWE**  
**BMS-TP5121ACE**  
**BMS-TP5121PWE**

- 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

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- 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.

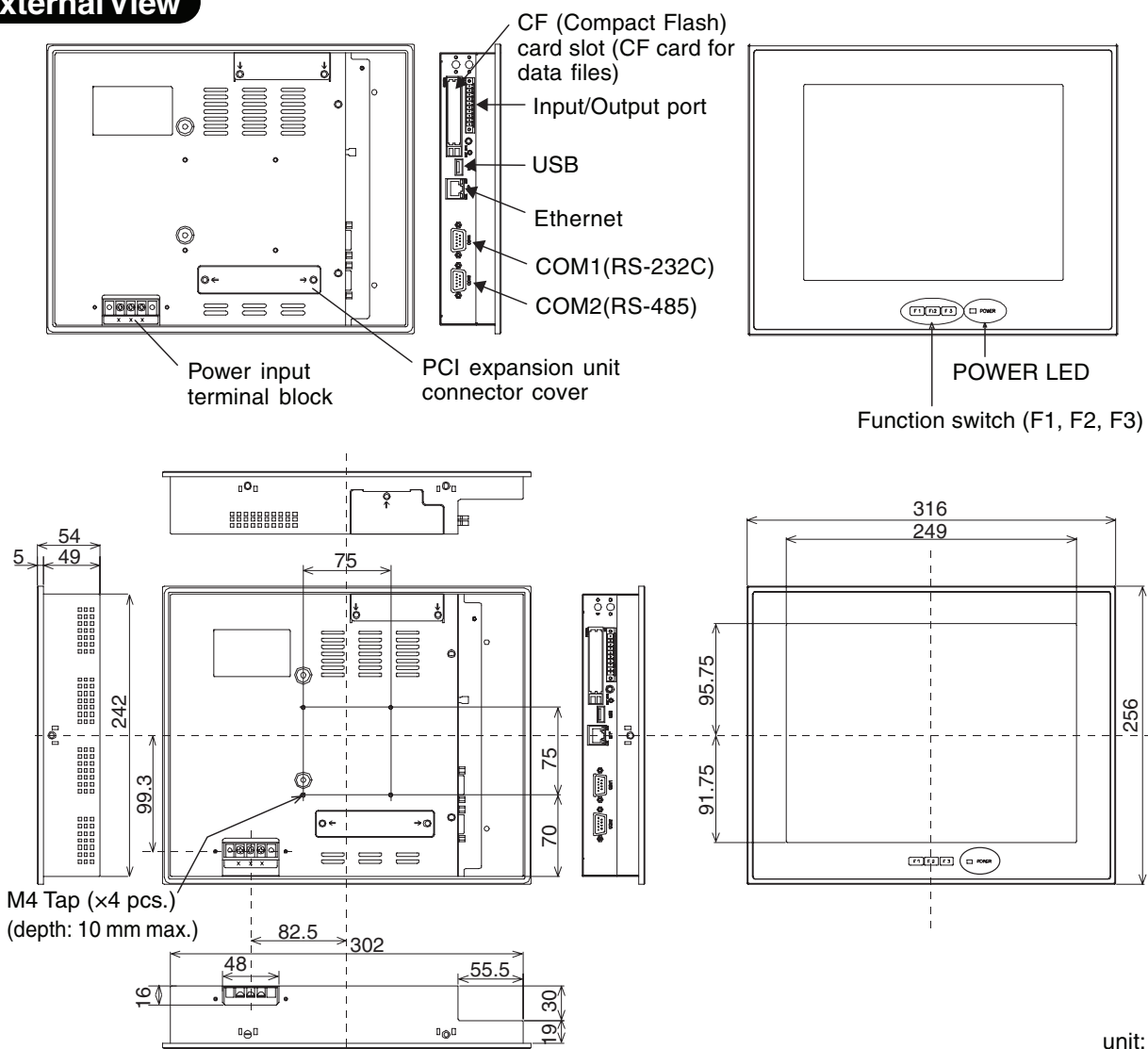
### ● Specifications

Power supply	100 - 240 VAC, 50/60Hz
Power consumption	50VA
Operating temperature/humidity	0°C to 50°C, 20% to 85% RH (no condensation)
Storage temperature	-10°C to +60°C
Dimensions	256 (H) × 316 (W) × 54 (D) mm
Mass	3.5kg

	BMS-TP0641ACE	BMS-TP0641PWE	BMS-TP5121ACE	BMS-TP5121PWE
Air conditioning control	○	○	○	○
Power distribution	×	○	×	○
Indoor units connected	Max. 64 units	Max. 64 units	Max. 512 units	Max. 512 units

○ : available  
× : Not available

### External View



unit: mm

# Before Installation

Check the following package contents.

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

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

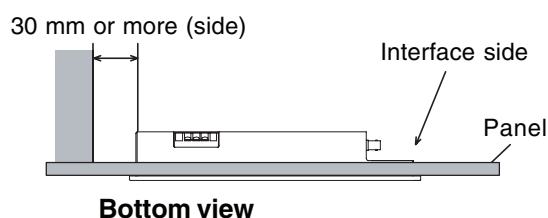
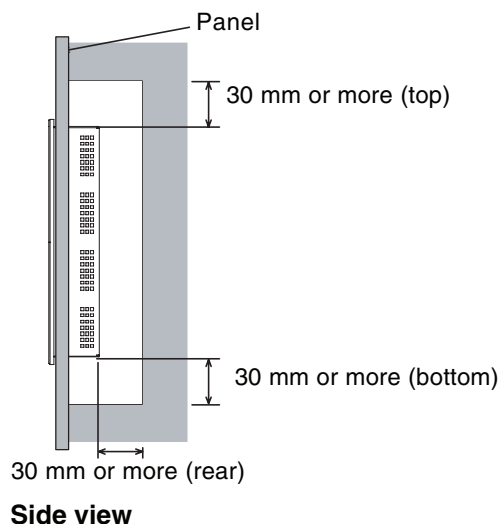
No.	Line	Description	
1	For RS-485	Type	2-core shield wire
		Wire size	1.25mm <sup>2</sup> , 500m max. (total length)
		Length	
2	For digital Input/Output connection	Type	2-core wire, 0.3mm <sup>2</sup> , 100m max
		Wire size	
		Length	
3	For Power	Type	H07 RN-F or 245IEC66
		Wire size	0.75mm <sup>2</sup> , 50 m max.

# 1 Installation

## Installation Space and Maintenance Space

Space 30mm or more in between the controller and surrounding objects.

Make space for service.



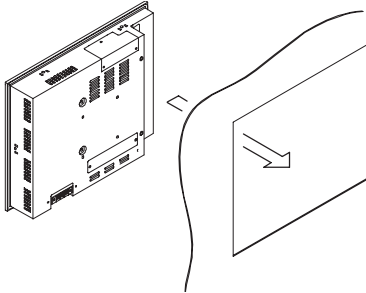
## Installation Method

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).

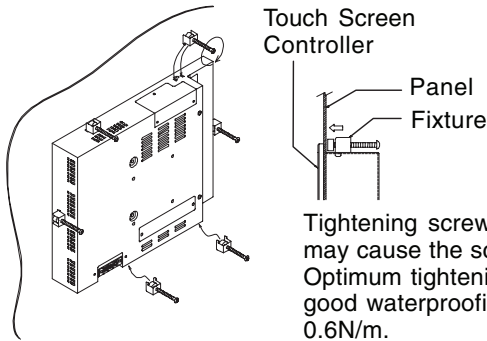
### (1) Panel Mount

How to install the fixture

1. Insert the controller from outside of the panel.

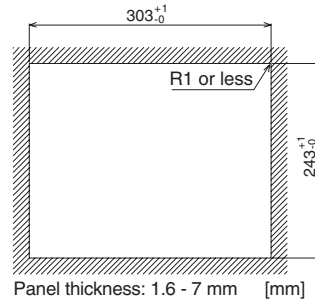


2. Insert the fixtures from inside of the panel.



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

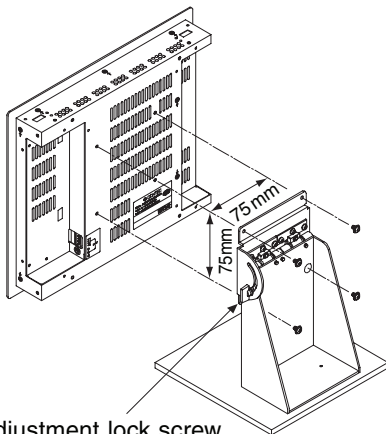
### Panel cut size



### REQUIREMENT

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

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



The angle adjustment lock screw. (Loosen the screw and adjust angle.)

### 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/>

China: <http://www.contec.sh.cn/>

### REQUIREMENT

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

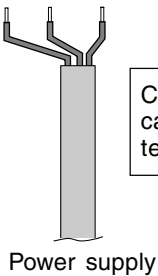
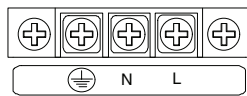
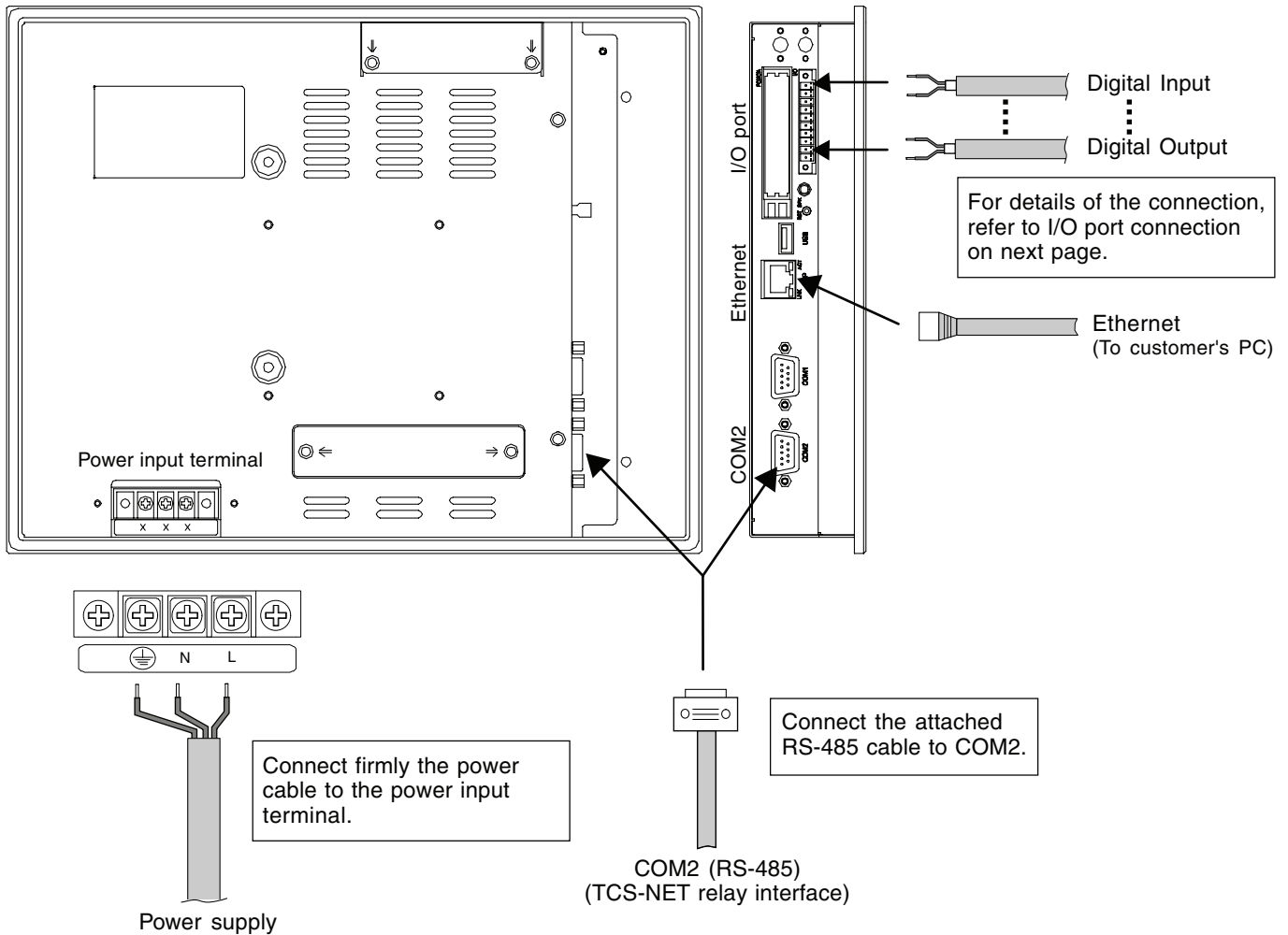
- Humid or wet place
- Dusty place
- Place exposed to direct sunlight
- Place where there is a TV set or radio within one meter
- Place exposed to rain (outdoors, under eaves, etc.)

# 2 Connection of Power cables/Earth wires/ Signal wires

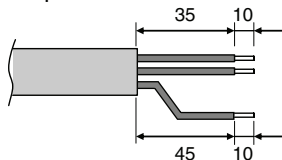
Connect cables to the connectors and terminals specified.

## REQUIREMENT

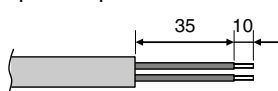
Power cable is not supplied for the Touch Screen Controller. Prepare a 3-pin power cable conforming to applicable safety standards. Be sure to connect the earth line earth of the power cable securely.



Length of stripped power cable



Length of stripped digital Input/Output connector wire



## CAUTION

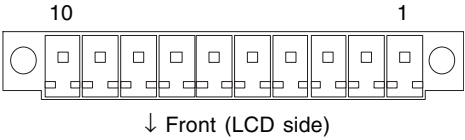
- Ensure to connect the breaker to the primary side of power.

# 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

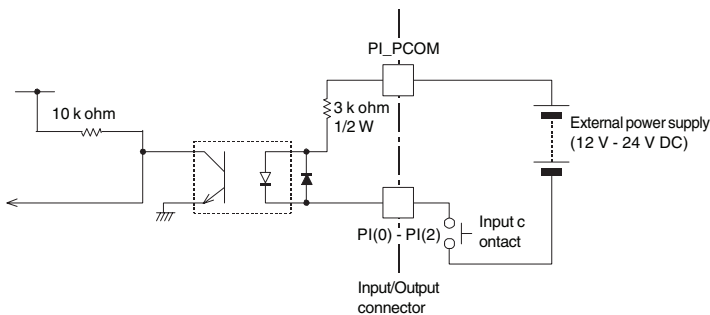


Pin No.	Signal name	Remarks
1	PI_PCOM	Input plus common
2	PI(0)	Input 0
3	PI(1)	Input 1
4	PI(2)	Input 2
5	P_PO(0)	Output 0+
6	N_PO(0)	Output 0-
7	P_PO(1)	Output 1+
8	N_PO(1)	Output 1-
9	P_PO(2)	Output 2+
10	N_PO(2)	Output 2-

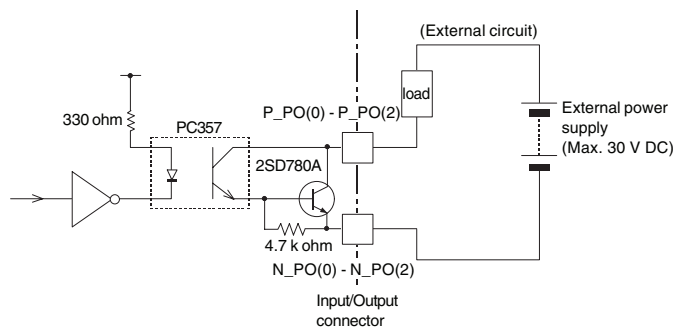
### Input/Output specifications

Input	Input type	Photo-coupler insulation
	Number of input	3
	Input resistance	3k ohm
Output	Output type	Open collector
	Number of output	3
	Output current	Max. 100mA (per 1 output)
	Output voltage	Less than 30V DC

(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.



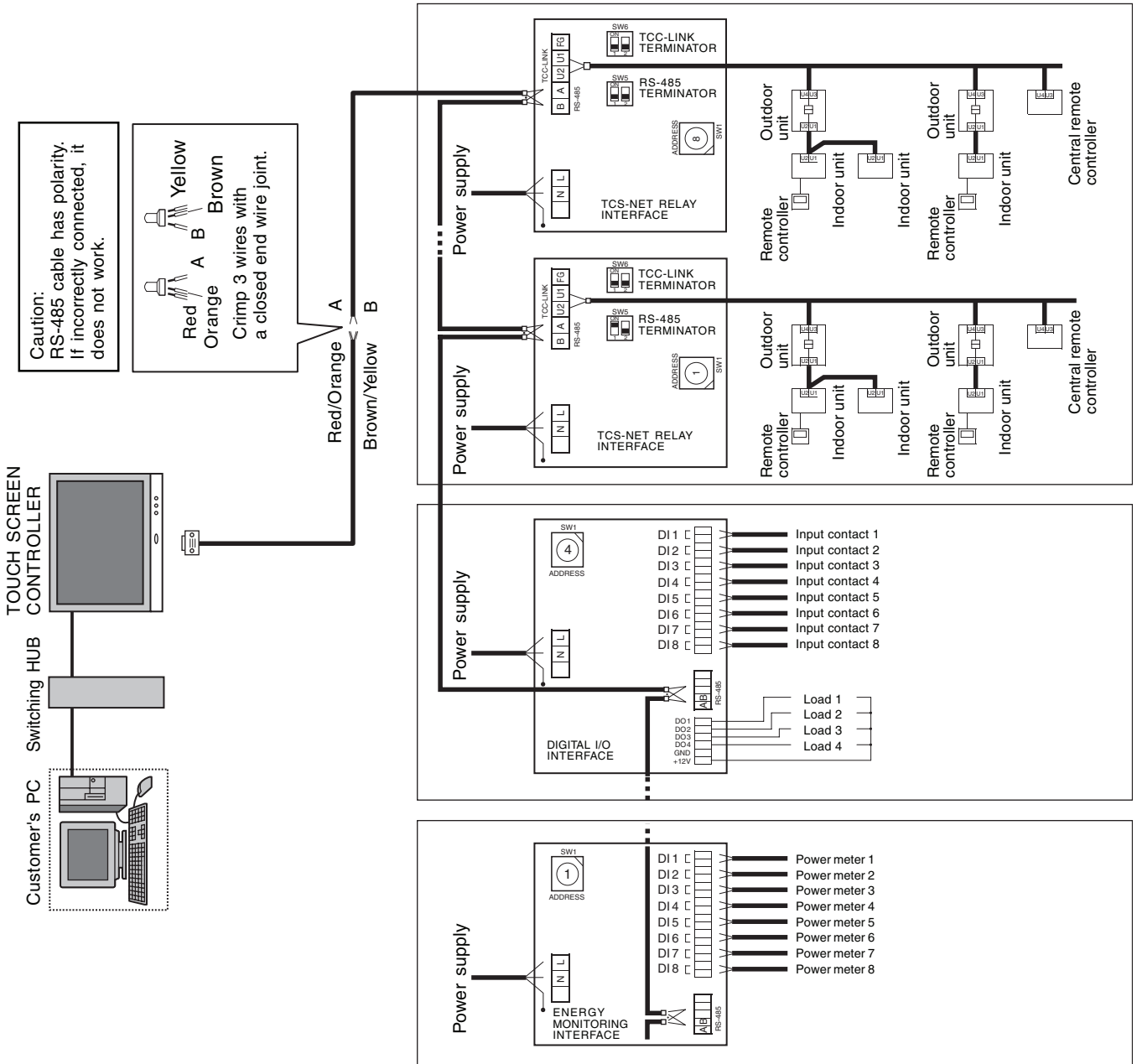
# 2 Connection of Power cables/Earth wires/ Signal wires (continued)

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

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## 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.

