

Model name:

BMS-CT5120UL

Contents

Precautions for safety	3
Introduction	5
1 Installation	7
2 Power and signal line connections	8
3 Settings	10
4 Trial operation	10

Precautions for safety

The following instructions must be observed.

- Carefully read these "Precautions for safety" before installation, and perform installation work safely.
- These precautions contain important information regarding safety.
- After installation work, carry out an operation trial to confirm that there are no problems, and explain to the customer how to operate and maintain the system. Ask the customer to keep this Installation Manual.

Expressions



Warning

Text set off in this manner indicates that failure to adhere to the directions in the warning could result in serious bodily harm (*1) 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 (*2) or damage (*3) to property if the product is handled improperly.

*1: Serious bodily harm indicates loss of eyesight, injury, burns, electric shock, bone fracture, poisoning, and other injuries which leave aftereffect and require hospitalization or long-term treatment as an outpatient.

*2: Bodily injury indicates injury, burns, electric shock, and other injuries which do not require hospitalization or long-term treatment as an outpatient.

*3: Damage to property indicates damage extending to buildings, household effects, domestic livestock, and pets.

Graphic symbols



Prohibited

"⊘" indicates prohibited items.

The actual contents of the prohibition are indicated by a picture or text placed inside or next to the graphic symbol.



Compulsory

"❗" indicates compulsory (mandatory) items.

The actual contents of the obligation are indicated by a picture or text placed inside or next to the graphic symbol.



Warning



- **Installation and reinstallation should be performed by your dealer or a qualified electrician**

Attempting to carry out installation work on your own, and doing so incorrectly, may result in electric shock or fire.

- **Electrical work must be performed by a qualified electrician 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.

- **Be sure to turn off the power before starting work**

Failure to do so may result in electric shock.



- **Do not modify the unit**

Doing so may result in excessive heat or fire.



- **Always connect to ground**

Improper grounding may result in an electric shock.

 Caution

- **Do not install in the following locations**

Locations where combustible gas may leak
Locations with high humidity or water
Dusty locations
Locations in direct sunlight and locations subject to high temperatures
Locations within 1 m from televisions or radios
Outdoors, under awnings, or other locations exposed to rain and dew
Locations exposed to outside air containing corrosive gases or salinity
Locations with frequent vibrations

- **Do not operate the touch panel with mechanical pencils or other pointed objects**



- **In installation work, use wiring with the correct ampacity**

Failure to do so may result in excessive heat or fire.

- **Use specified cables and connect them securely, and do not subject connecting terminals to external force**

Doing so may result in broken cables, excessive heat or fire.

- **Always install a circuit breaker on the primary side of the power supply**

- **Always turn off the power before inserting or removing a compact flash card**

Failure to do so may result in damage to data and files.

- **Clean the touch panel by wiping with an eyeglasses cleaner or other soft cloth**
To remove oil-based ink, wipe with a cloth that has been moistened with a neutral detergent and then wrung out, and finish by wiping with a soft, dry cloth
Do not use commercial OA cleaners, cleansers, or other liquid cleaners containing abrasives

Trademarks

- Compact flash and CF are trademarks of SanDisk Corporation.

Introduction

■ Overview

TOUCH SCREEN CONTROLLER for Air Conditioning Control System (hereafter TOUCH SCREEN CONTROLLER) consists of an operation section and a display section. It is equipped with an LCD display and touch panel, enabling functions such as monitoring of the status of air conditioners, setting changes, scheduled operation, error displays, automatic operation on fire alarms, and output of data for monthly reports.

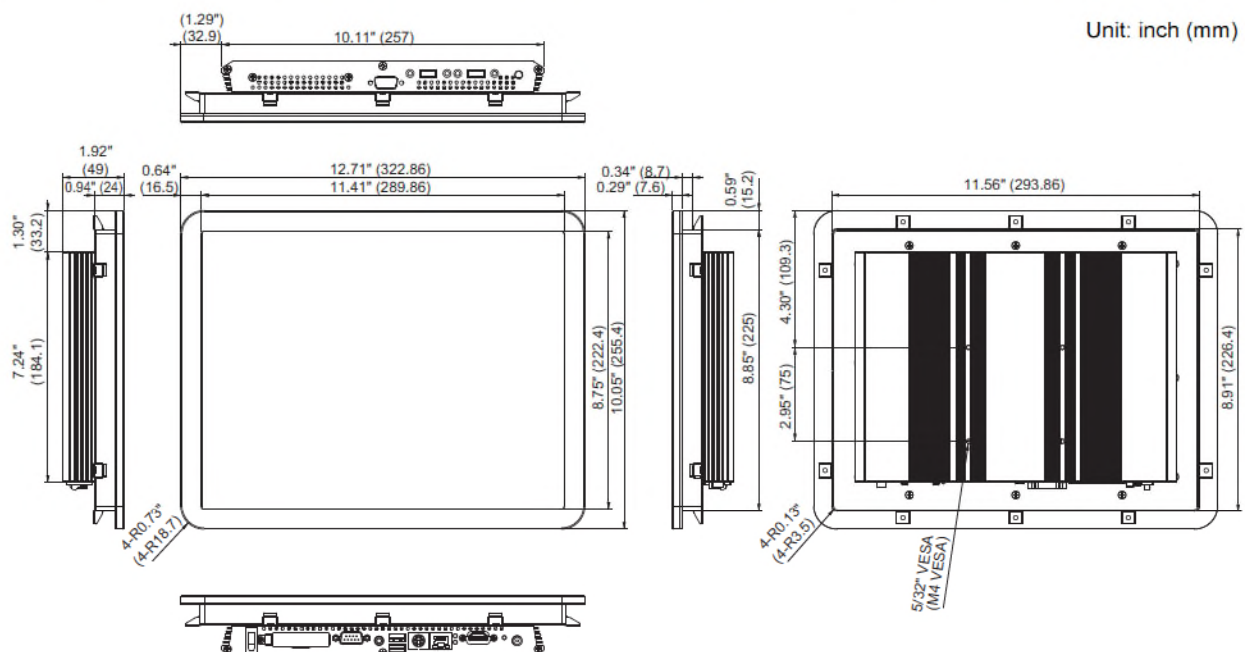
■ Included Items

Component	Qty	Remarks
TOUCH SCREEN CONTROLLER main unit	1	
Power adapter	1	TOUCH SCREEN CONTROLLER power supply (FSP060-DBAE1)
Compact flash card	1	Inserted into CF card slot when controller shipped from factory
RS-485 cable	1	Cable for connecting controller to relay interface or other device
Closed end connector	2	RS-485 cable crimp connector
Installation hardware	10	Hardware for fixing the panel when mounting it (holder, fixing screws, screw caps)
Screws	4	For fixing when mounting on a VESA standard stand (locally procured)
Screws (small)	2	Frame and top cover fixing screws (spare)
DVD-R	1	Manual and software
Installation Manual	1	This manual

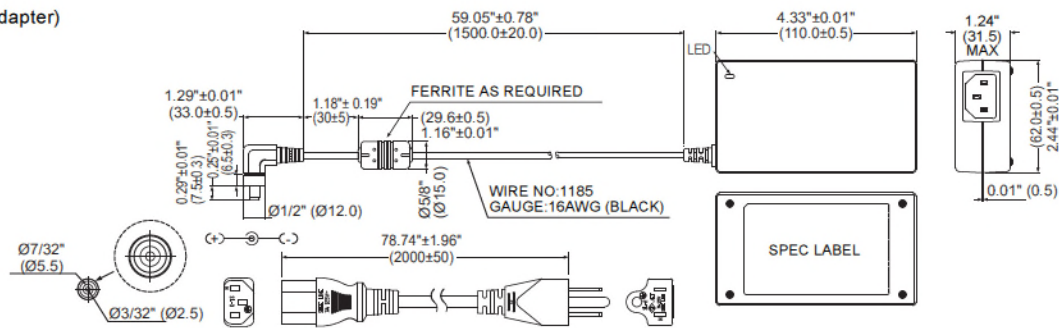
■ Specifications

Power supply	Rated voltage	120 V AC 60 Hz
	Energy consumption	28 W
Operating temperature range	32 to 104 °F (0 to 40 °C), 10 % to 90 % RH (no condensation)	
Storage temperature range	14 to 140 ° F (-10 to +60 °C)	
Dimensions	12.71" (W) x 10.07" (H) x 1.92 (D) inch (323 (W) x 256 (H) x 49 (D) mm)	
Weight	TOUCH SCREEN CONTROLLER: 7.5 lb (3.4 kg) Power adapter: 0.99 lb (0.45 kg)	

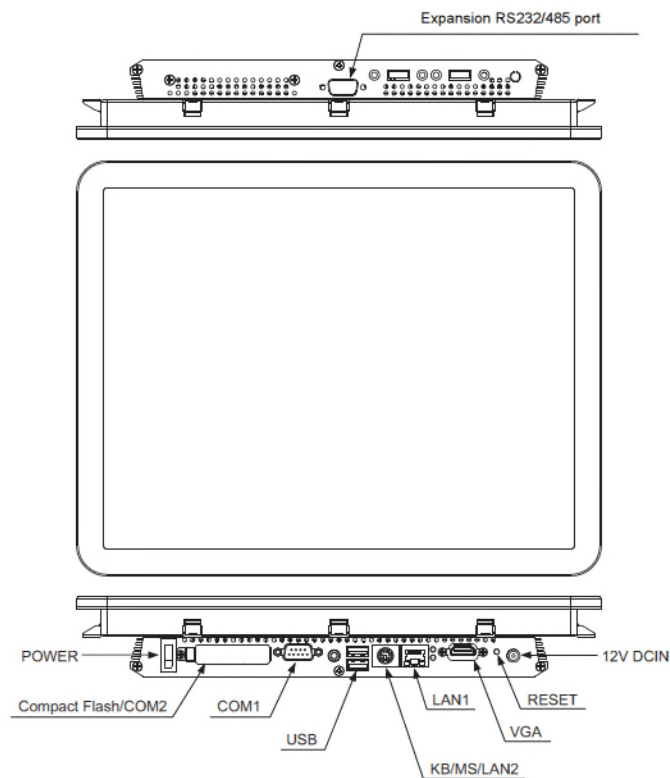
■ External dimensions (TOUCH SCREEN CONTROLLER main unit)



(Power adapter)



■ Component Names

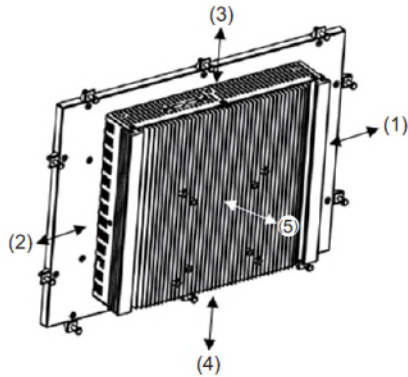


Name	Function
POWER	Power switch
Compact Flash/COM2	CF card slot, for inserting CF cards
COM1	Connect the supplied RS-485 cable
USB	(For service)
KB/MS/LAN2	(For service)
LAN1	For acquiring daily and monthly report data and controlling air conditioning on a PC.
VGA	(For service)
RESET	Reset switch
12V DCIN	Connect the power adapter
Expansion RS232/485 port	(For service)

1 Installation

■ Wiring and Maintenance Space

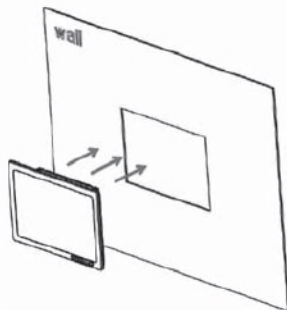
When installing, leave enough space for wiring and maintenance.



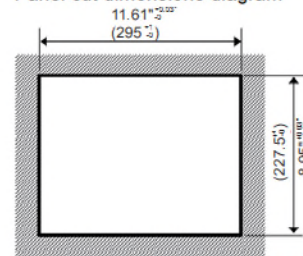
Location	Wiring, maintenance space
(1)	1.96" (50 mm)
(2)	1.96" (50 mm)
(3)	1.96" (50 mm)
(4)	3.14" (80 mm)
(5)	1.96" (50 mm)

■ Installation Method (Panel Mounting)

(1) Mount the main unit from the outer side of the panel.



Panel cut dimensions diagram

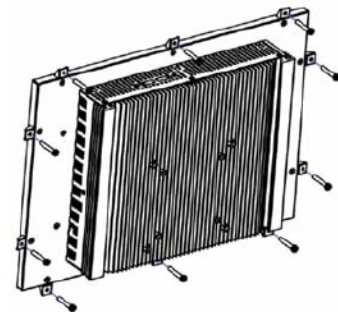
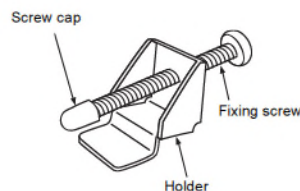
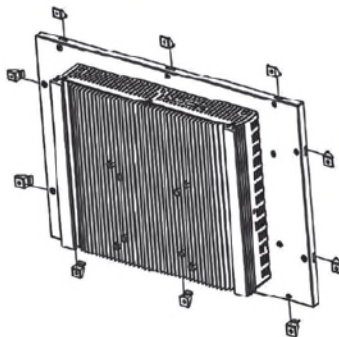


Panel thickness range 0.06" to 0.27" (1.6 to 7 mm)

NOTE

Use a panel with a thickness of 0.06" to 0.27" (1.6 to 7 mm)

(2) Fix the main unit by mounting the holder from the inside and securing it with screws. The screws may be damaged if they are tightened too forcefully.



Reference For tabletop installation using stand

Mount on a VESA standard 2.95" x 2.95" (75 x 75 mm) stand (locally procured).

2 Power and signal line connections

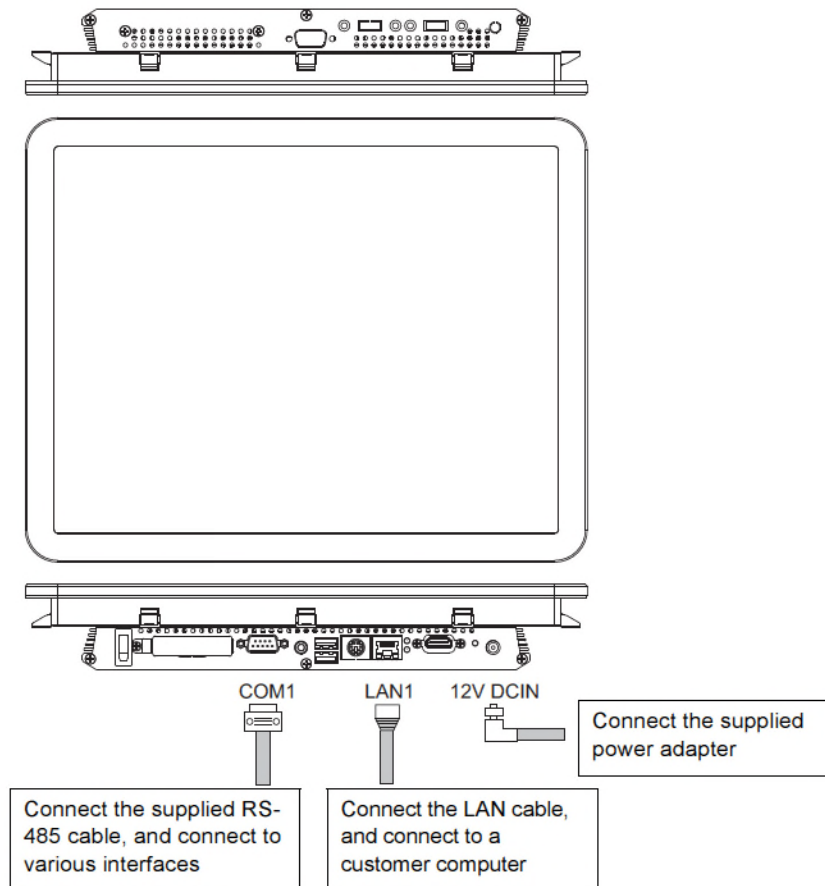
■ Cables

Use the following cable for signal line connections. (Locally procured)

No.	Signal line	Description	
		Type	2-core shield wire
1	For RS-485	Wire size	1.25 mm ² , 1600 ft (500 m) max. (total length)
		Length	
2	For ethernet	Type	LAN cable (higher than Category 5, UTP) The appropriate use of straight cable/cross cable should be done depending on your system used.
		Length	320 ft (100 m) max

■ Cable Connections

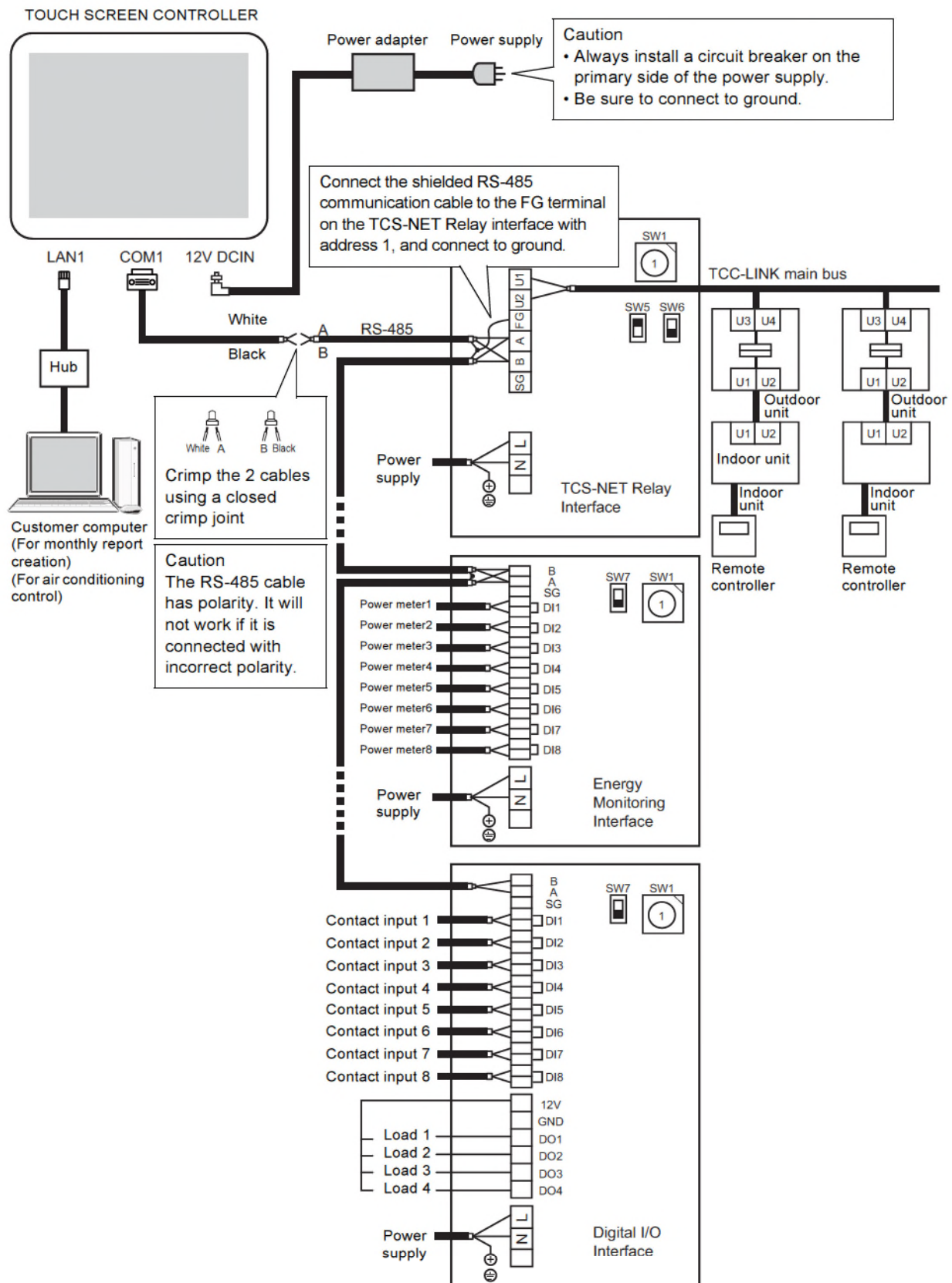
Connect the cables to the specified connectors.



NOTE

Always install a circuit breaker on the primary side of the power supply. Be sure to connect to ground.

■ Example of System Wiring Connections



Reference RS-485 terminator resistor settings

Terminator resistors must be set at both ends of the RS-485 communication line.

The RS-485 terminator resistor at one end, on the TOUCH SCREEN CONTROLLER side, was set at the factory.

The setting does not need to be changed.

Refer to the Installation Manual of the interface to set the RS-485 terminator resistor on the other end.

3 Settings

■ Saving Setting Files to a Compact Flash Card

Setting files are required to use the TOUCH SCREEN CONTROLLER.

Setting files created with the setting file creation software can be saved to the controller's compact flash card.

Contact a salesperson for creation of setting files and saving to the compact flash card.

4 Trial operation

Before trial

■ Saving Setting Files to a Compact Flash Card

Save setting files to the TOUCH SCREEN CONTROLLER's compact flash card.

■ Trial Operation Confirmation of Air Conditioners and Interfaces

Complete checks for trial operation of the air conditioners and interfaces and turn the devices on.

Trial Operation

■ Starting the TOUCH SCREEN CONTROLLER

Check the power supply of the TOUCH SCREEN CONTROLLER and the signal line connections, and then turn on the TOUCH SCREEN CONTROLLER power.

The TOUCH SCREEN CONTROLLER starts, and the air conditioning management screen is displayed.

■ Initialization

Initialize the system with setting files.

<Steps>

- (1) Tap the option icon of the controller.
- (2) Tap [System initialize] in the optional function list.
The System initialize screen is displayed.
Select "RELAY INTERFACE" and tap [OK].

■ Checking Communication with Interfaces

If communication with an interface cannot be established as specified in setting files, a communication error is displayed in the TOUCH SCREEN CONTROLLER.

Tap the [Alarm icon] to display Alarm List screen and check whether a communication error has occurred. (About 15 minutes is required to complete judgment on communication errors)

If a communication error occurs, the cause may be one of the following. Check whether any of these causes apply.

- The power is not on
- An interface address setting is wrong
- Communication between the TOUCH SCREEN CONTROLLER and the interface is not established
- Setting files are wrong

■ Checking Communication with Air Conditioners

If communication with an air conditioner cannot be established, a communication error is displayed in the TOUCH SCREEN CONTROLLER.

The display is a Alarm symbol on the TOUCH SCREEN CONTROLLER's group icon.

If a communication error occurs, the cause may be one of the following. Check whether any of these causes apply.

- The air conditioner power is not on
- The air conditioner address setting is wrong
- Communication between the TCS-NET Relay interface and the air conditioner is not established
- Communication between the TOUCH SCREEN CONTROLLER and the TCS-NET Relay interface is not established
- Setting files are wrong

TOSHIBA CARRIER CORPORATION

336 TADEHARA, FUJI-SHI, SHIZUOKA-KEN 416-8521 JAPAN

EH99570401