TOSHIBA
Leading Innovation

Service Manual

TOUCH SCREEN CONTROLLER for Air Conditioning Control System

Model name:

BMS-CT5121E

FILE No. A10-1513-1
Revision 1: Apr., 2023

Contents

Precautions for safety

The following instructions must be observed.

- Carefully read these "Precautions for Safety" before installation.
- These precautions contain important information regarding safety.
- Understand the following details (indications and symbols) before reading the body text, and follow the instructions.

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 (high and low temperature), electric shock, bone fracture, poisoning, and other injuries which leave after effects and injuries which 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
- **If you plan to attach the controller to a metal lath-covered, wire lath-covered or metal plated wooden structure, do not attach it to a wall, but instead install it in a control board or similar.**

Caution
- This device uses a lithium battery. Follow all local regulations when disposing of it.

Trademarks
- Compact flash and CF are trademarks of SanDisk Corporation.
- Ethernet is a trademark of Fuji Xerox Co., Ltd.

1 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 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.

■ Monitoring and controlling air conditioners

The TOUCH SCREEN CONTROLLER for Air Conditioning Control System (hereafter TOUCH SCREEN CONTROLLER) can turn on and off operations, change settings, monitor the operating status, settings, and the occurrence of errors of all the air conditioners.
The air conditioners can be classified by naming their level, unit, area, tenant, and floor. The air conditioners can be set individually or in batches according to area, tenant, or floor.
In addition, an optional Digital Input/Output Relay Interface makes it possible to gang control the air conditioners' demand alarm signals, fire alarm signals, and locking signals.

■ Scheduling operation of air conditioners

The TOUCH SCREEN CONTROLLER can schedule operations of all the air conditioners. A maximum of 20 settings can be done each day, and the air conditioners can be set to turn off in case people forget. The TOUCH SCREEN CONTROLLER can schedule operations by turning on, off, operation mode, temperature, enable or disable the local remote control, return back, save, and ventilation modes.
With the master schedule, it is possible to set weekly schedules, five special days, and monthly schedules for the upcoming year.

■ Power distribution system

The TOUCH SCREEN CONTROLLER can distribute power to each of the air conditioners. However, this is not based on the Measurement Act. The billing schedule can be set to total operating time and power distribution separately for in working hours and out of working hours.
However, the optional Energy Monitoring Relay Interface is required for power distribution.

■ Alarm list display

The TOUCH SCREEN CONTROLLER can display a list of current alarms. It can also show a history of past alarms.

2 Names and functions of main screens

2-1. Control screen

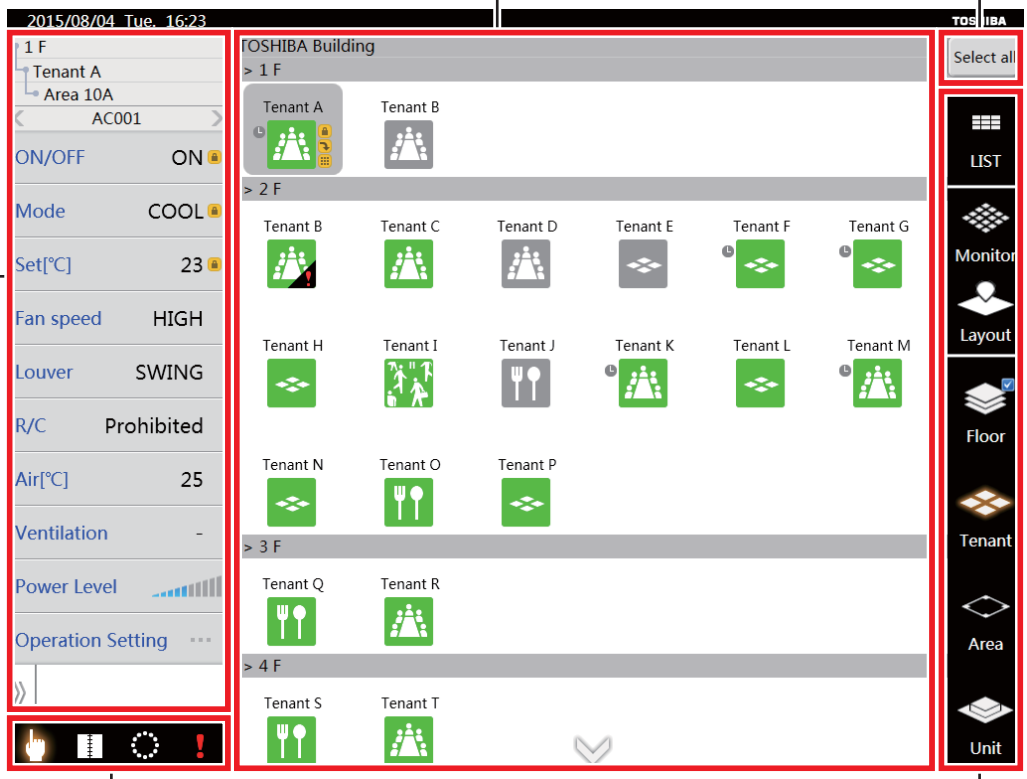
This screen allows you to set and check the operating status of the air conditioners.

Air conditioner status area
Shows the name of the level of air conditioners to display and change status of settings.

Group icon area
Shows the group icons of air conditioners for controlling the air conditioning. They are displayed in categories from the top level. It is possible to check the status of air conditioners by the colour and pattern of the icons. ->For details, see "2-3.Icon display".

Select all button
Selects all the icons shown in a group icon area.

[Control screen]



Menu icon area
Moves the screen to various functions.

Display switching icon area
Changes the classification of the displayed group icons.
* The [Layout] icon only appears when the layout screen is enabled.

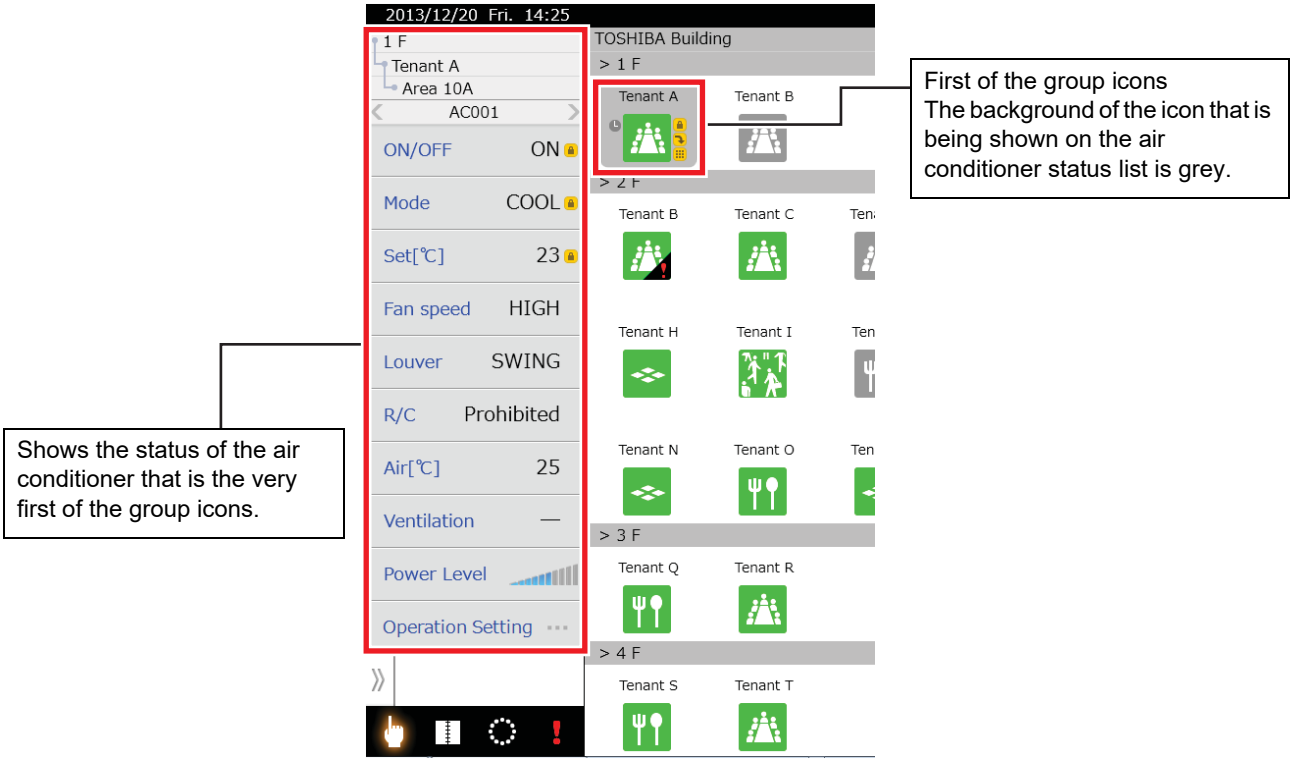
NOTE

Screensaver
If the screen is not touched for a long time (about 10 minutes), the LCD's backlight turns off.
If the screen is touched, the LCD's backlight turns on again.

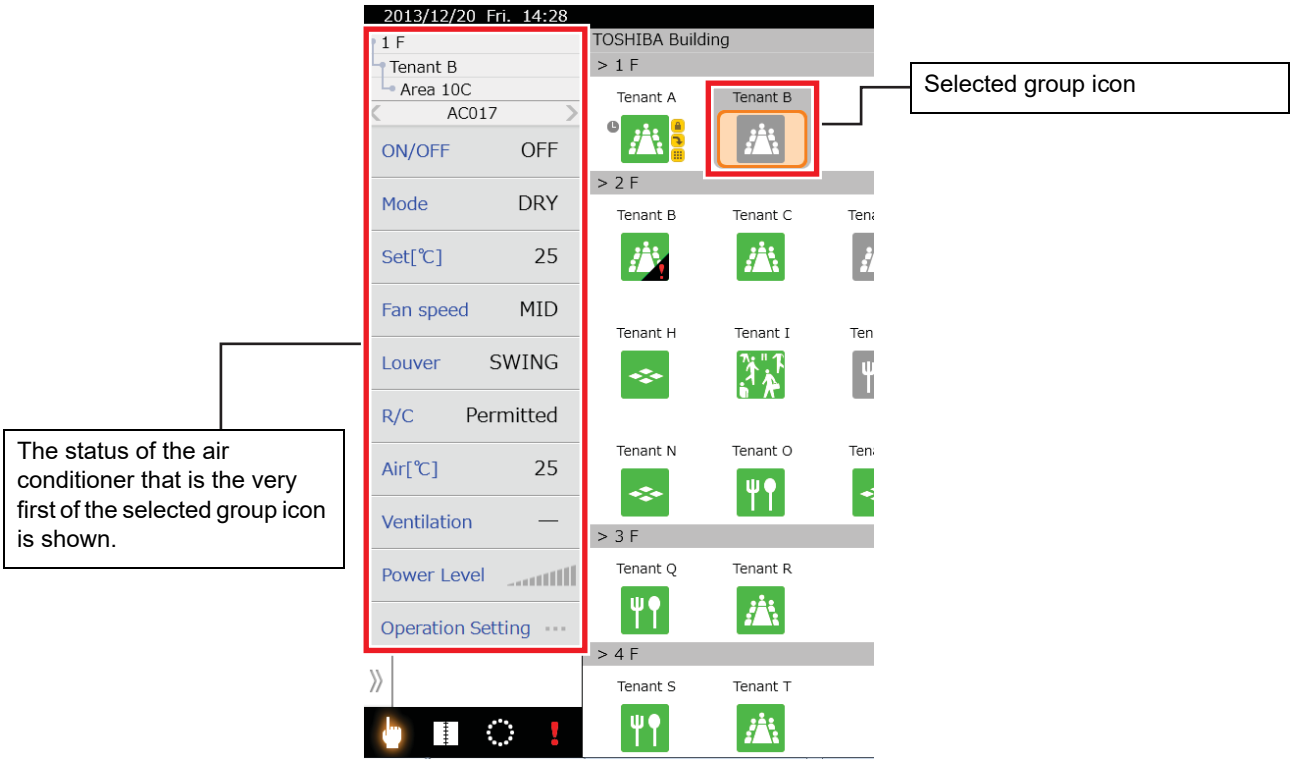
2-2. Air conditioner status area display

Shows the status of the air conditioner that is the first of the selected group icon. If no group icon is selected, the status of the air conditioner that is the very first of the displayed group icon is shown.

▼When a group icon is not selected



▼When a group icon is selected

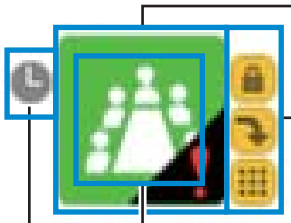


2-3. Icon display

This section describes the icon displays.

[1] Group icons

▼ Icons show floors, tenants, and areas individually



Icon status

: Indicates it is operating (red or green).

: Indicates it is not operating (grey).

: Indicates an alarm has occurred.

Indicator icons

: Indicates remote control operation is prohibited.

: Indicates forced thermo OFF.

: Indicates there is a filter sign.

Schedule icon

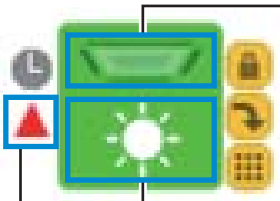
Indicates that a running schedule has been registered.

Group icon images

You can change the image to one you like on the icon settings screen.

...

▼ Icons that show individual units



Air conditioner type icon

: Indicates a cassette type.

: Indicates a duct type.

: Indicates a ceiling type.

: Indicates a high wall type.

: Indicates a floor standing type.

: Indicates Air to Air Heat Exchanger and fresh air type.

Air temperature level icons

: Indicates the air temperature is higher than the set temperature.

: Indicates the air temperature is lower than the set temperature.

Operation mode icons

: Indicates cooling.

: Indicates heating.

: Indicates fan.

: Indicates Drying.

: Indicates automatic operation.

▼ Icons when selected

Selected

Not selected

[2] Menu icons

▼Appearance and functions of menu icons

These icons display the various screens. Icons are orange when they appear on screen. The alarm icon flashes red when an alarm occurs.


Control screen


Running schedule screen


Option screen


Alarm List screen

[3] Display switching icons

▼Appearance and functions of display switching icons

These icons change the display of group icons. Icons that are on the screen that is currently displayed are orange.

- Screen switching


List screen


Monitor screen


Layout screen (TOUCH SCREEN CONTROLLER only)

- Level switching


Floor display


Tenant display

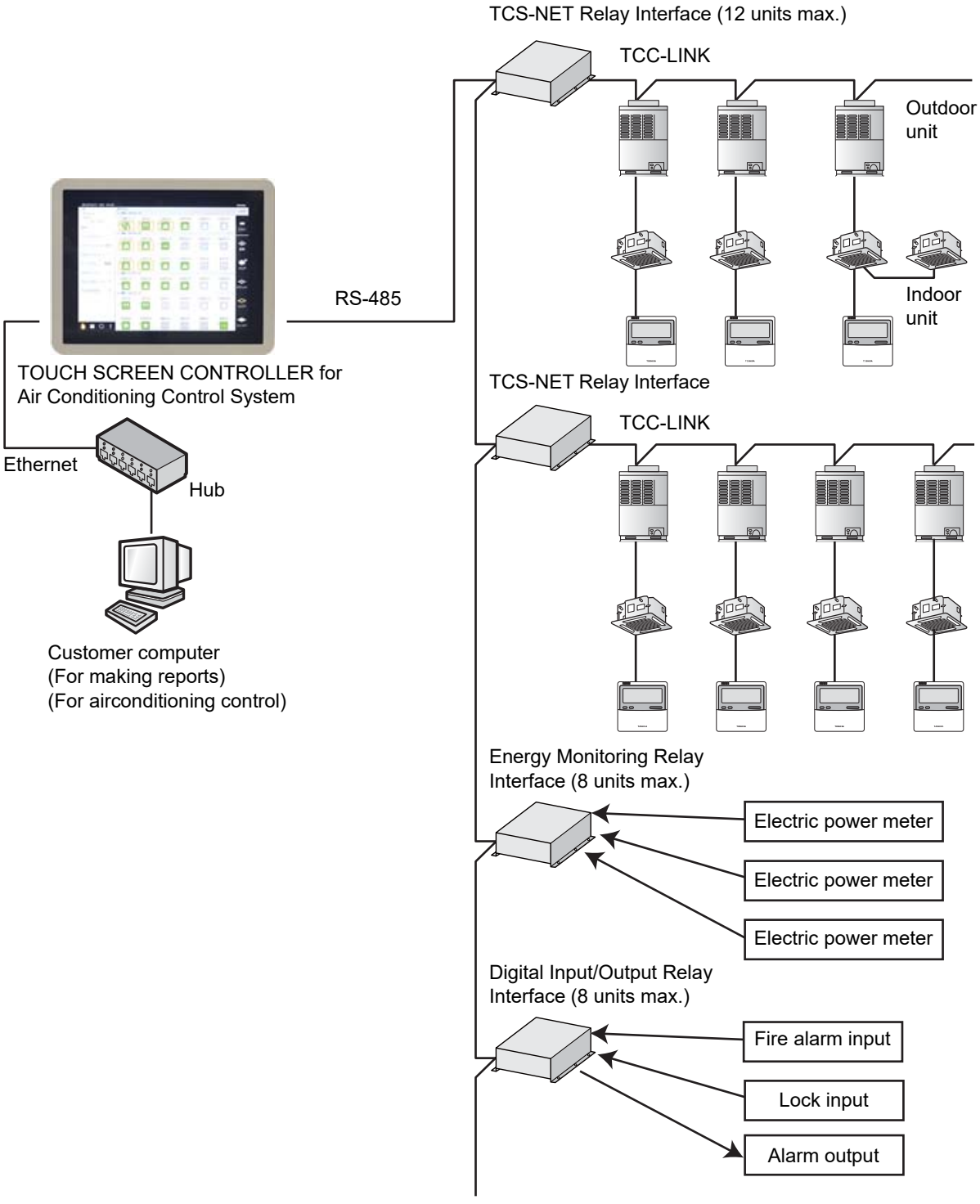

Area display


Unit display

CAUTION

The layout icon only appears when the layout screen is enabled.

3 System Configuration



System Equipment Configuration Table

Equipment name	Model name	Number of connected units	Remarks
Indoor unit	Model with TCC-LINK	Max. 512	—
TCS-NET Relay Interface	BMS-IFLSV4E	Max. 12	—
Energy Monitoring Relay Interface	BMS-IFWH5E	Max. 8	A maximum of 8 power meters can be connected to one unit
Digital Input/Output Relay Interface	BMS-IFDD03E	Max. 8	• A maximum of 8 lock, fire alarm, and demand inputs are available for one unit • 4 alarm outputs

Customer computer (For making reports and changing tenant names)	OS	Windows 7, Windows 8, or Windows 8.1, Windows10
For airconditioning control	OS Browser	Windows 8.1 Internet Explorer 11

CAUTION

- Microsoft .NET Framework may need to be installed on some PCs.
- IP address configuration for PC is necessary. (See 9-3-7.)

Communication Specifications

TCC-LINK	Topology	Bus
	Transmission medium	MVVS-1.25 mm^2/2.00 mm^2
	Transmission distance (total extension distance)	Max. 1000 m for 1.25 mm^2 (AWG16) Max. 2000 m for 2.00 mm^2 (AWG14)
	Number of nodes	Max. 100 (Total number of indoor units, outdoor units, central controllers, and interfaces)
	Transmission rate	9.6 kbps
	Polarity	No

RS-485	Topology	Bus
	Transmission medium	MVVS-1.25 mm^2
	Transmission distance (total extension distance)	Max. 500 m
	Number of nodes	Max. 32
	Transmission rate	115.2 kbps
	Polarity	Yes

Ethernet	Standard	10BASE-T/100BASE-TX (auto-sensing)
	Transmission rate	10 Mbps (10BASE-T) 100 Mbps (10BASE-TX)
	Transmission medium	10BASE-T: Category 3 or 5 100BASE-TX: Category 5 (*)
	Straight/crossover	Use a straight or crossover cable depending on the application.
	Transmission distance	Maximum segment length 100 m
	Connection	RJ-45 connector

(*) LAN cable: Unshielded twisted pair (UTP)

4 Function List

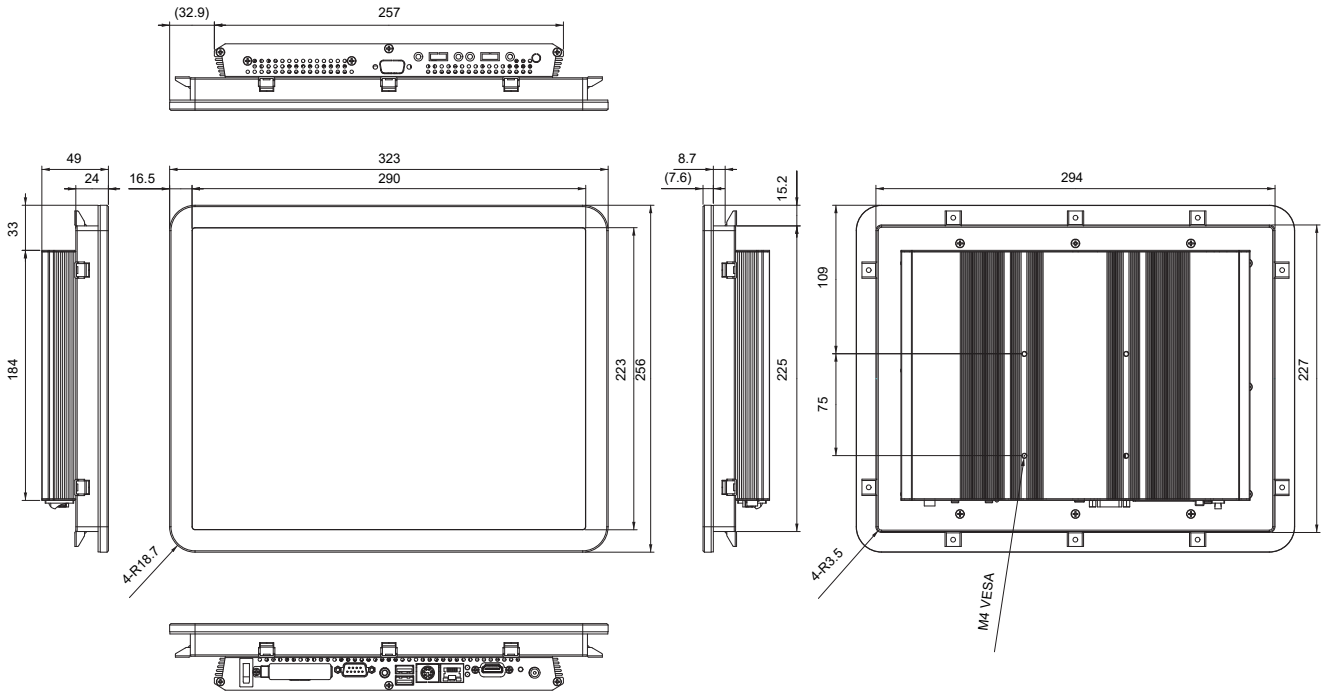
Function		Description
Indoor unit group control	3-level tree	3 levels: floor, tenant, and area
Indoor unit setting status display	ON/OFF	ON or OFF
	Operation Mode	Auto, Heat, Cool, Dry, Fan
	Set Temperature	Switches display between Celsius and Fahrenheit, 0.5°C / 1.0°C increment display
	Fan Speed	Extra high, High, Low, Auto
	Louver	Swing, Stop
	Local Operation Prohibition	Local prohibition display
	Alarm	Displays "!" for individual indoor unit icons
	Filter Sign	Displays the filter mark
	Reference Temperatures	Displays the control temperature and discharge temperature
	Return Back	ON, OFF
	Power Level	Displays the ratio
	Forced Thermo OFF	ON, OFF
	Save	ON, OFF
	Ventilation Mode	Normal, Air to Air Heat Exchanger, Auto, Operation
	Outdoor Demand	ON, OFF
Indoor Unit Operation	ON/OFF	Set for a group or individual indoor units
	Operation Mode	Set for a group or individual indoor units
	Set Temperature	Set for a group or individual indoor units * A temperature outside of the set temperature range for air conditioners can be input, but the specified set temperature will be limited to within the set temperature range for air conditioners before it is sent.
	Fan Speed	Set for a group or individual indoor units
	Louver	Set for a group or individual indoor units
	Filter Sign Reset	Set for indoor units displaying the filter sign
	Return Back	Set for a group or individual indoor units
	Save	Set 0%, 50%, Max., or Release
	Ventilation Mode	Set Normal, Air to Air Heat Exchanger, Auto, or Operation
	Local Operation Prohibition	Set for a group or individual indoor units
	Error Clear	Set for air conditioners where an alarm has occurred.
	Eco Temperature Shift	The set temperature is simultaneously shifted up by +2°C when cooling and down by -2°C when heating.
	Change Temperature Range	Set the high and low limits for the set temperature within the range of 18°C to 29°C in each operation mode
	Release Outdoor Demand	Set for releasing the outdoor demand schedule and demand interlocking

Function		Description
Execution Schedule	No. of Registrations	No. of indoor units
	Settable Period	7 days (1 week) including the day of setting
	No. of Set Points per Day	20
	Time Interval between Set Points	1 minute
	Settable Parameters	ON/OFF Operation mode Set Temperature Local Operation Prohibition Return Back Save Ventilation Mode
Master Schedule	No. of Registrations	32
	No. of Set Points per Day	20
	Time Interval between Set Points	1 minute
	Settable Parameters	ON/OFF Operation Mode Set Temperature Local Operation Prohibition Return Back Save Ventilation Mode
	No. of Schedule Patterns	Day of the week schedule: 7 Monday through Sunday patterns Specific day schedule: 5 patterns Set specific days in a year
	Schedule allocation unit	Indoor unit or group
Charging Schedule	No. of Registrations	32
	No. of Set Points per Day	10
	Time Interval between Set Points	1 minute
	Settable Parameters	Regular hours / irregular hours
	No. of Schedule Patterns	Day of the week schedule: 7 Monday through Sunday patterns Specific day schedule: 5 patterns Set specific days in a year
Outdoor Demand Schedule	No. of Registrations	32
	No. of Set Points per Day	10
	Time Interval between Set Points	1 minute
	Settable Parameters	Demand rate
	No. of Schedule Patterns	Day of the week schedule: 7 Monday through Sunday patterns Specific day schedule: 5 patterns Set specific days in a year

Function		Description
Check Code Display		Date/Time of Occurrence
		Alarm Code
		Alarm Content
		Unit
Alarm History		Date/Time of Occurrence
		Alarm Code
		Alarm Content
		Unit
Power Distribution	Retention Period	Daily report file saving period: 92 days Monthly report file saving period: 3 months Files before that period are automatically deleted
	Meter Reading Function	Automated Meter-Reading (up to two times)
		Manual Meter-Reading
Switch temperature display between Celsius and Fahrenheit		—
Set temperature - Switch between 1°C and 0.5°C increments		—
Lock Interlocking		Commands for stopping operation or prohibiting local operation upon input of a lock signal
Fire Alarm Interlocking		Command for prohibiting operation upon input of a fire alarm signal
Demand Interlocking		Command for forcibly turning off the thermo or stopping operation upon a demand alarm input
Icon Registration		Icons can be registered for the floor, tenant, area, and air conditioner
Daylight Savings Time Setting		Switches time display between daylight savings time and normal time
Change Operation Display Colours		The operation display colour can be switched between red and green
USB Memory Data Output		Outputs the daily and monthly report files, alarm history, and setup files
Password		Protect the settings and viewing with a password
Monitoring / controlling using a computer		• Indoor unit setting status display • Indoor Unit Operation • Execution Schedule • Master Schedule • Charging Schedule • Outdoor Demand Schedule • Check Code Display • Alarm History
Layout display	Number of floor layout	Maximum 32
	List display	4 sheets per screen
	Selected air-conditioner	Orange
	Non-selected air-conditioner	Blue
	Indoor unit operation	Possible
	Indoor unit position registration	Possible
Main unit graphical display	Operating time	Total value of selected air-conditioner
	Set temperature	Average value of selected air-conditioner
	Room temperature	Average value of selected air-conditioner
	Outdoor air temperature	Average value of selected air-conditioner
	Electric power	Total value of selected power meter
	Display by day and by month	Possible
Send alarm message	Transmission details	Date/Time of Occurrence
		Unit
		Alarm Code
		Alarm Content
	Transmission address	Maximum 5 cases
	Mail server	SMTP authentication response
Graphical display by PC (Data analyzer used)	Operating time	Total value of selected air-conditioner
	Set temperature	Average value of selected air-conditioner
	Room temperature	Average value of selected air-conditioner
	Outdoor air temperature	Average value of selected air-conditioner
	Electric power	Proportional value of selected air-conditioner

5 Product specifications

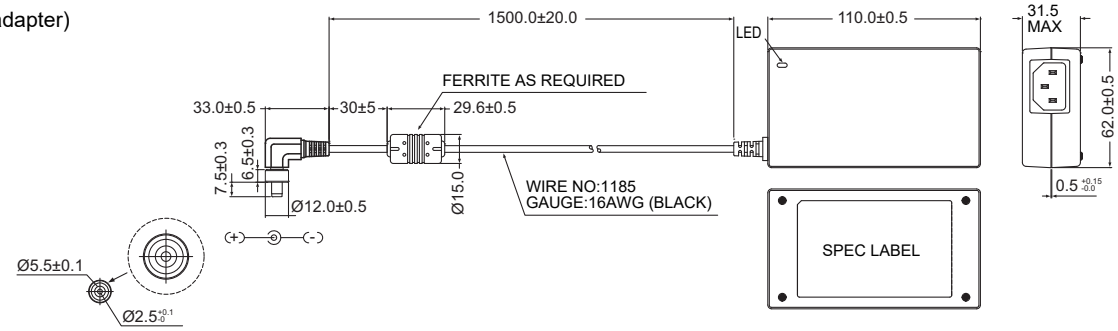
■ External dimensions (TOUCH SCREEN CONTROLLER main unit)



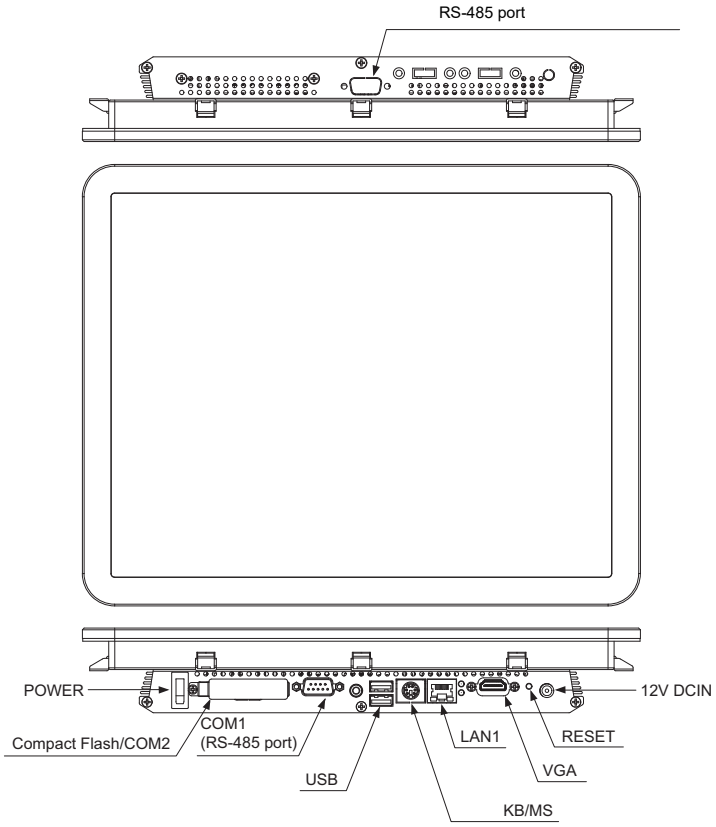
■ Specifications

Power supply	Rated voltage	220-240VAC 50/60Hz
	Energy consumption	28 W
Operating temperature range		0°C to 40°C, 10% to 90% RH (no condensation)
Storage temperature range		-10°C to +60°C
Dimensions		Width 323 x Height 256 x Depth 49 mm
Weight		TOUCH SCREEN CONTROLLER: 3.4 kg Power adapter: 0.3 kg

(Power adapter)



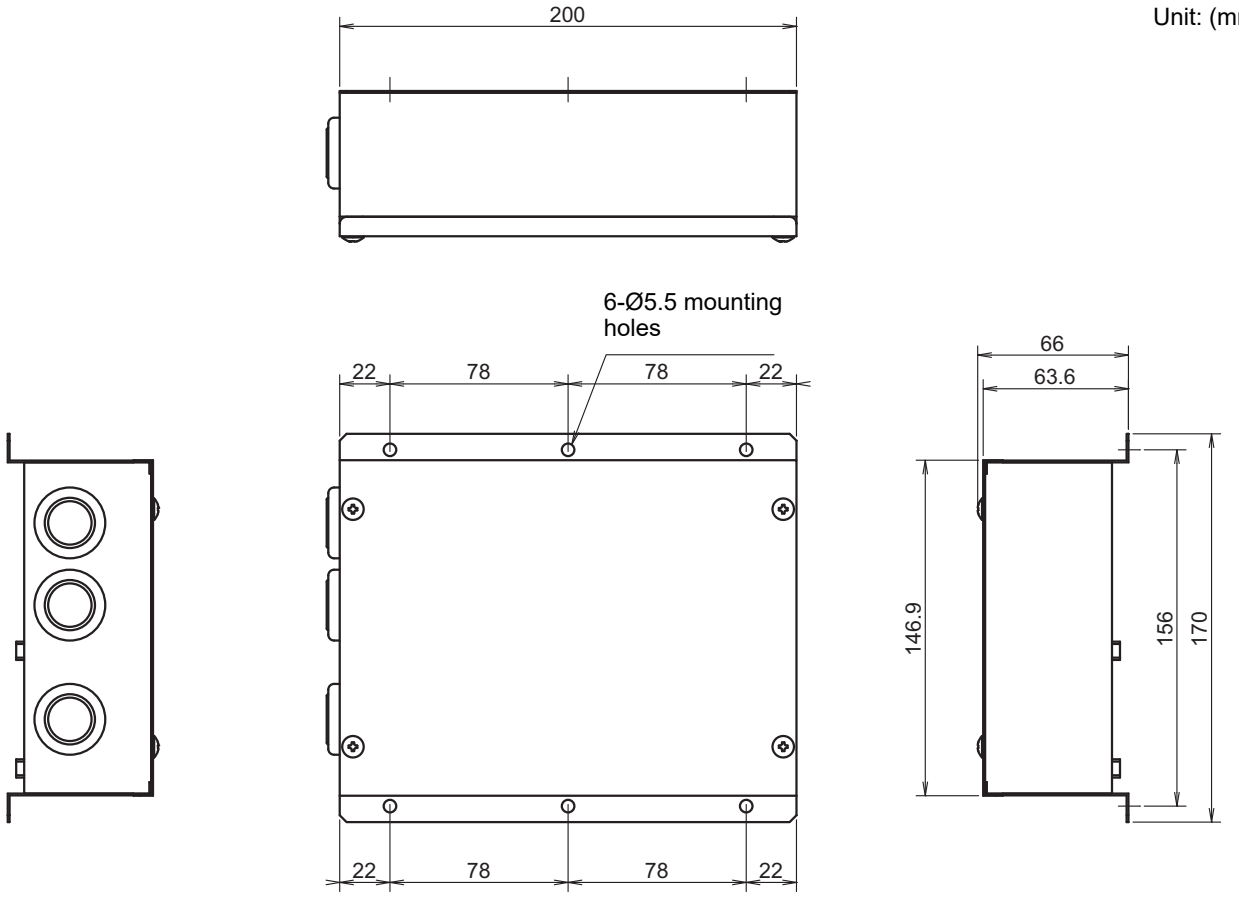
■ Component Names



Name	Function
POWER	Power switch
Compact Flash/COM2	CF card slot, for inserting CF cards
COM1 (RS-485 port)	Connect the supplied RS-485 cable
USB	(For service)
KB/MS	(For service)
LAN1	For acquiring daily and monthly report data by LAN communications
VGA	(For service)
RESET	Reset switch
12V DCIN	Connect the power adapter
RS-485 port	(For service)

BMS-IFLSV4E TCS-NET Relay Interface

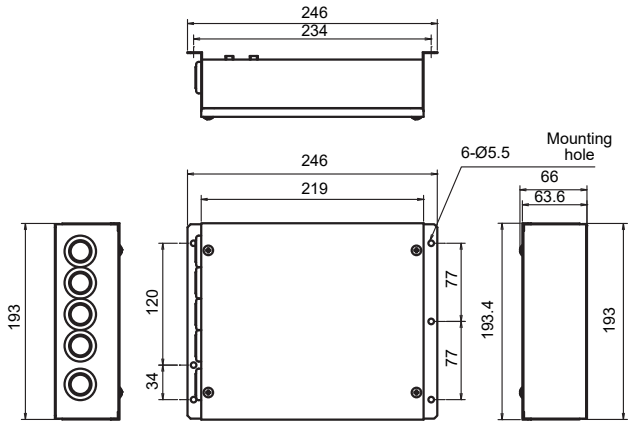
Unit: (mm)



Power supply	220 - 240 VAC, 50/60 Hz
Power consumption	3 W
Operating temperature/humidity	0 to 40 °C, 10 to 90 % RH (no condensation)
Storage temperature	-20 to +60 °C
Chassis material	Galvanized sheet metal 0.8 t (no coating)
Dimensions	66 (H) x 170 (W) x 200 (D) mm
Mass	1.1 kg

No.	Line	Description	
1	For TCC-LINK	Type	2-core shielded wires
		Wire size	1.25 mm^2, 1000 m max. 2.00 mm^2, 2000 m max.
		Length	(total length including air conditioner area)
2	For RS-485	Type	2-core shielded wires
		Wire size	1.25 mm^2, 500 m max.
		Length	(total length)
3	For power	Type	H07 RN-F or 245IEC66
		Wire size	0.75 mm^2, 50 m max.

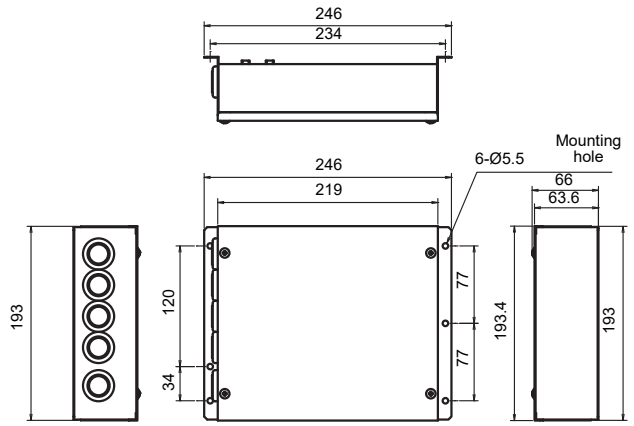
BMS-IFWH5E Energy Monitoring Relay Interface



Power supply	220 - 240 VAC 50/60 Hz
Energy consumption	3 W
Operating temperature/ humidity ranges	0 to 40°C, 10 to 90% RH (no condensation)
Storage temperature range	-20 to +60°C
External dimensions	66 (H) x 193 (W) x 246 (D) mm
Weight	1.35 kg

Power meter input	Input type	Photocoupler insulation input
	Number of inputs	8
	Input resistance	3 KΩ
	Input ON current	3.6 mA
	Input pulse condition	Power meter output pulse width 50 msec or more

BMS-IFDD03E Digital Input/Output Relay Interface

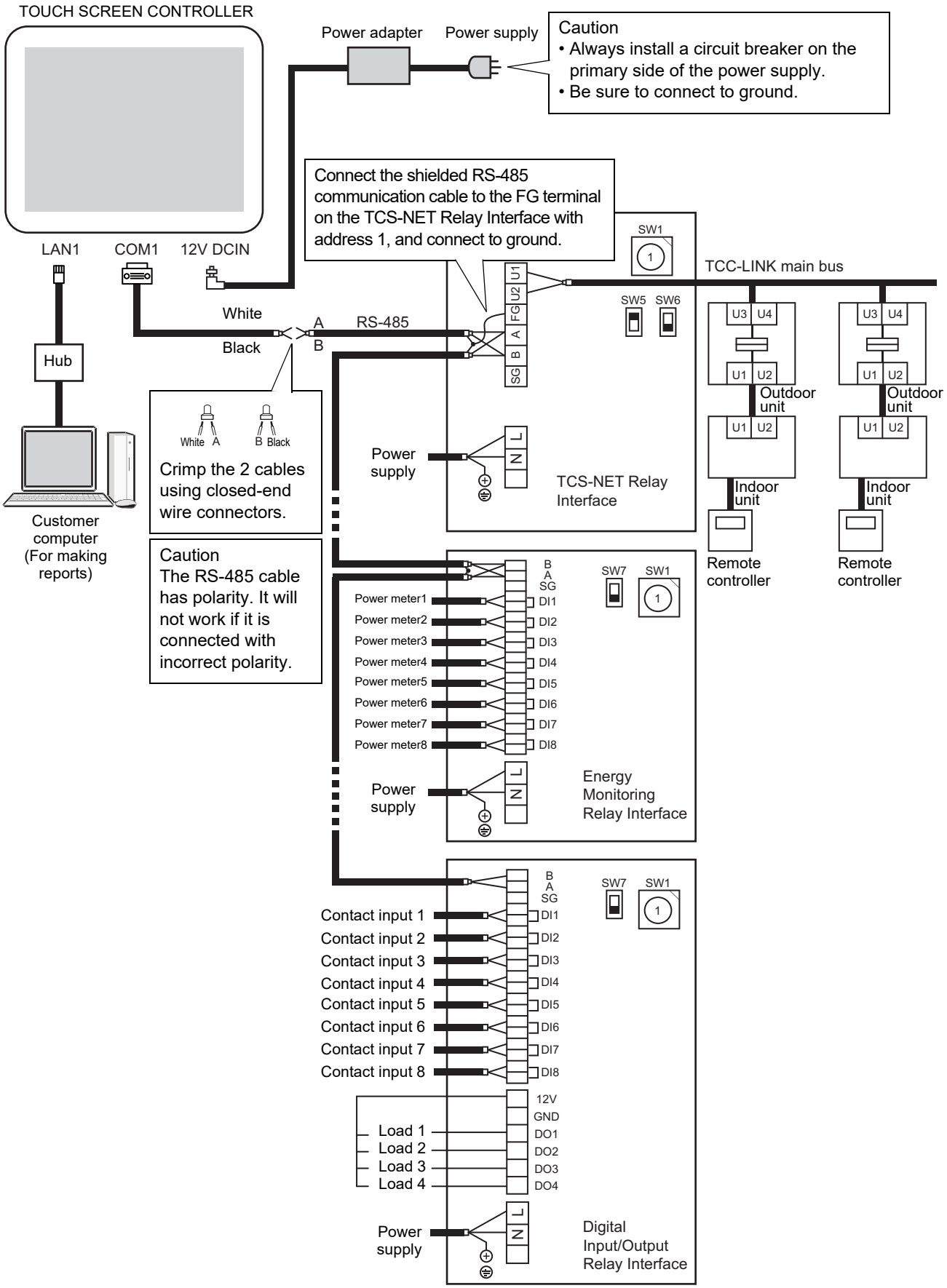


Power supply	220 - 240 VAC 50/60 Hz
Energy consumption	5 W
Operating temperature/ humidity ranges	0 to 40°C, 10 to 90% RH (no condensation)
Storage temperature range	-20 to +60°C
External dimensions	66 (H) x 193 (W) x 246 (D) mm
Weight	1.35 kg

Digital input	Input type	Photocoupler insulation input
	Number of inputs	8
	Input resistance	3 KΩ
	Input ON current	3.6 mA
Digital output	Output type	Open collector
	Number of outputs	4
	Output current	Max. 35 mA (per output)
	Output voltage	24 V DC or less
Digital output power supply	12 V DC 90 mA	

6 Installation

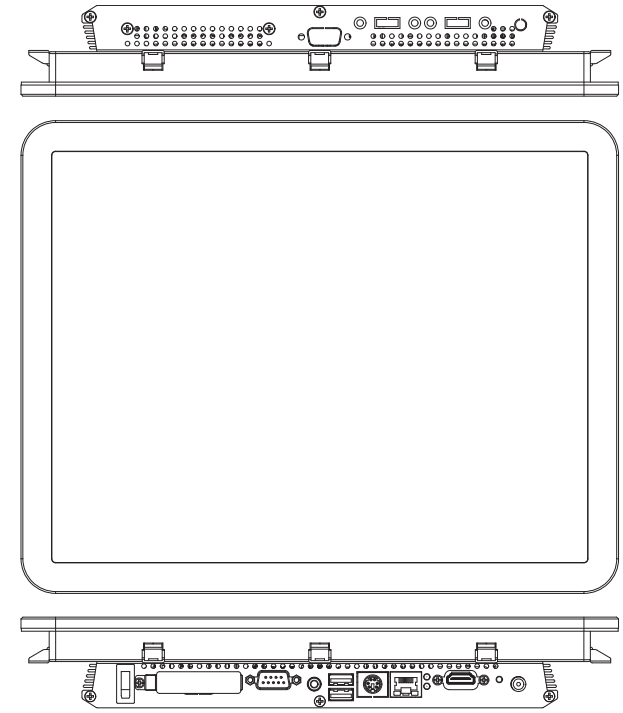
■ Example of System Wiring Connections



7 Power and signal line connections

■ Cable Connections

Connect the cables to the specified connectors.



CAUTION

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

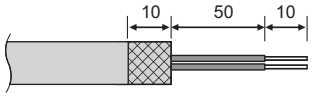
7-1. TCS-NET Relay Interface (BMS-IFLSV4E)

CAUTION

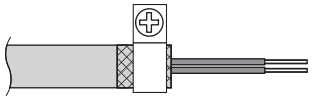
- The RS-485 cable has polarity (A, B). It will not work if it is connected with incorrect polarity.
- The TCC-LINK cable does not have polarity.

Connect the cable to the specified terminal on the terminal block.

RS-485 cable wire stripping length (address 1)

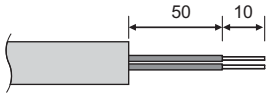


RS-485 cable fixing method (address 1)

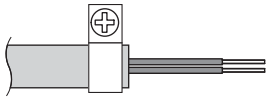


For the TCS-NET Relay Interface of address 1 (TCS-NET Relay Interface SW1=1) only, earth the RS-485 communication cable shield.
Fix the shield with a metal cable clamp and screw it to the chassis to earth it.

RS-485 (other than address 1) / TCC-LINK cable wire stripping length

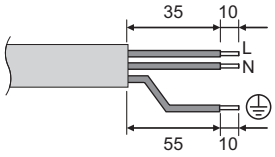


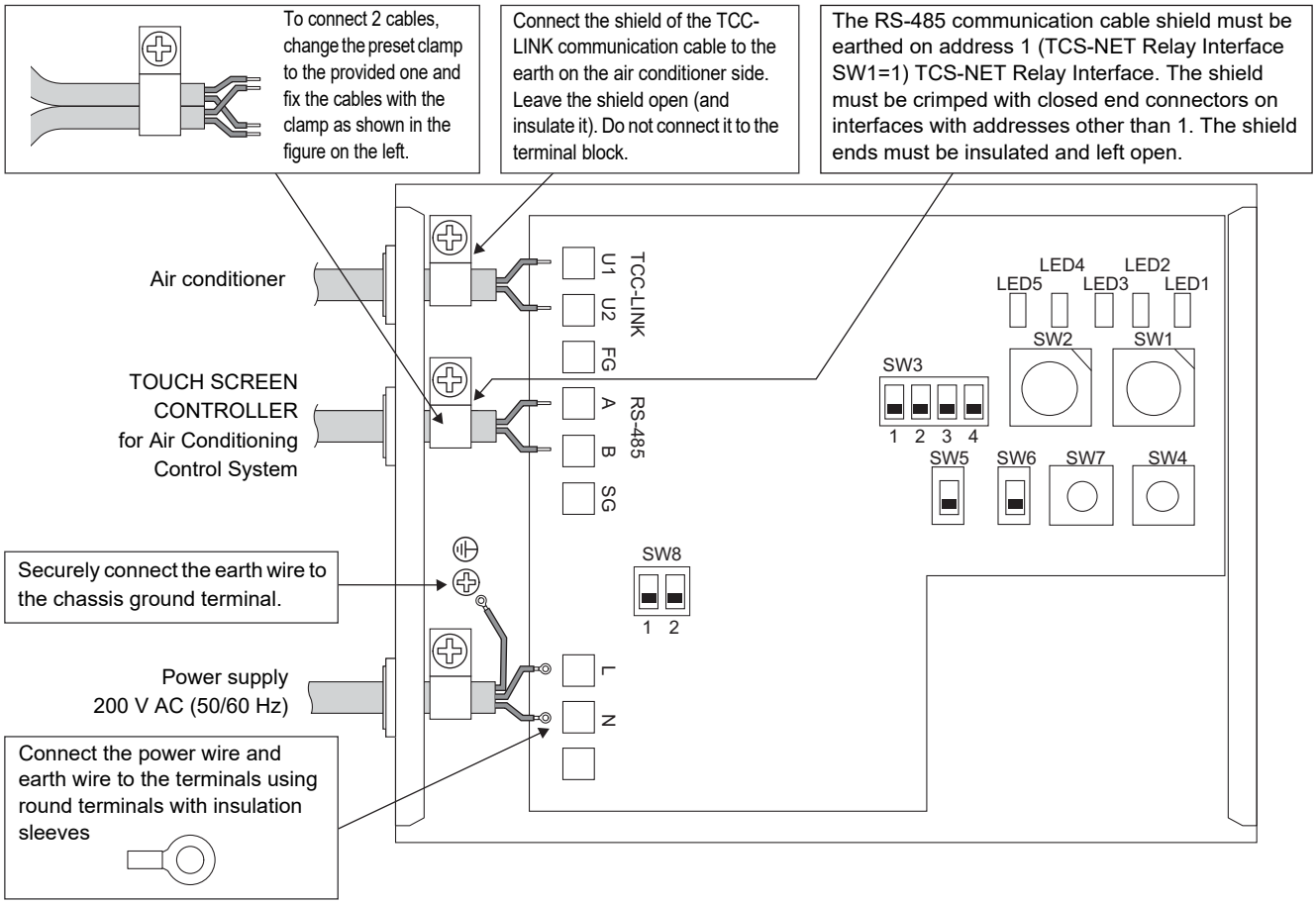
Cable fixing method



Do not ground the shield but fix it with a clamp. Leave the shielded wire open and insulate it.

Power cable wire stripping length





REQUIREMENT

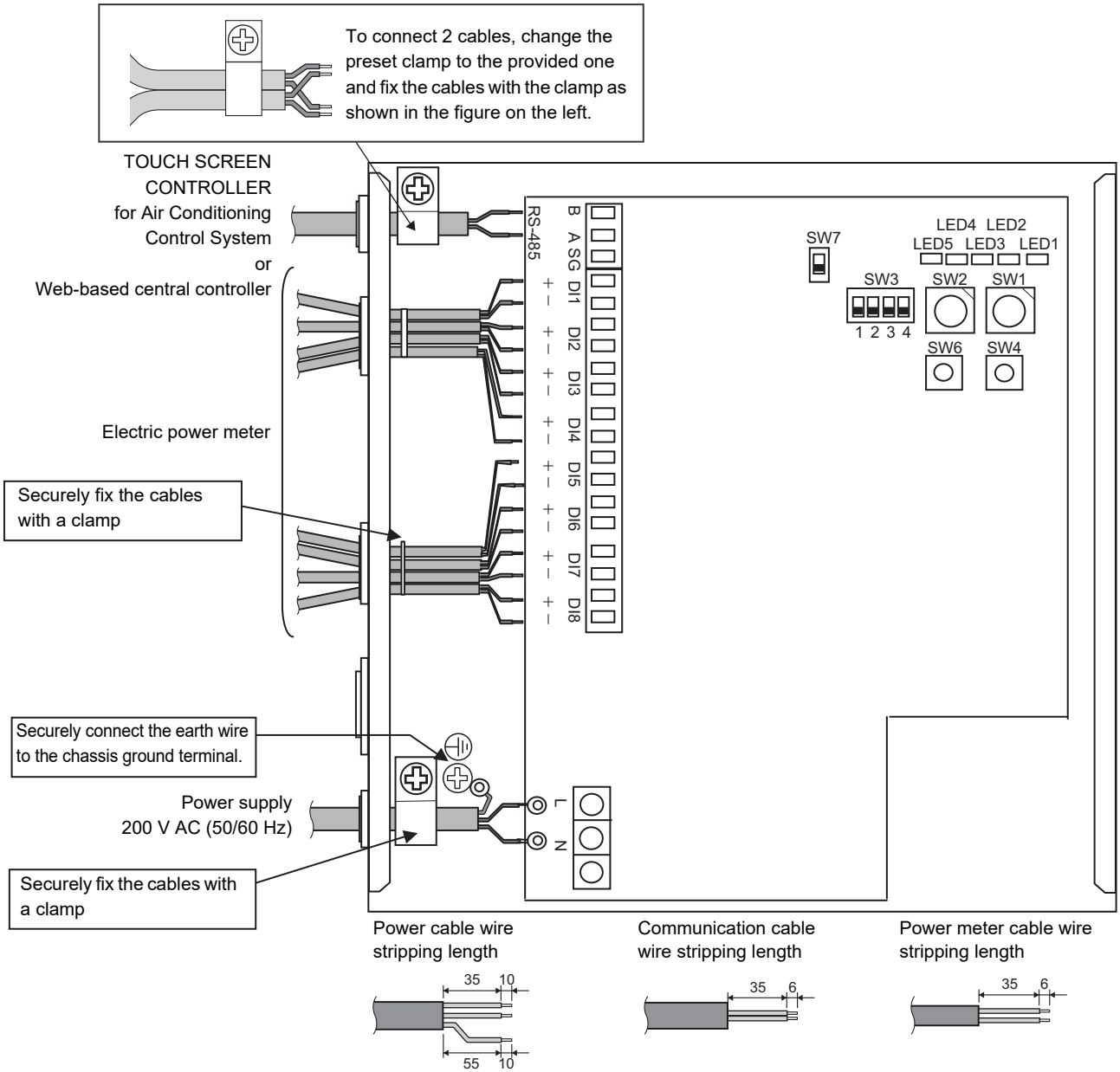
- Do not connect the device directly to the primary side of the power supply.
  Be sure to install a circuit breaker or all-pole isolating switch (with a contact breaking distance of at least 3 mm) on the primary side of the power supply.
- Fasten the screws to the terminal with torque of 0.5 Nm.

7-2. Energy Monitoring Relay Interface (BMS-IFWH5E)

CAUTION

- The RS-485 cable has polarity (A, B). It will not work if it is connected with incorrect polarity.

Connect the cable to the specified terminal on the terminal block.



Press the operation lever to open the clamp. Insert the cable and pull the lever back.
Make sure that the cable is fixed securely.

To connect two RS-485 communication cables to one terminal, crimp the two cables using the provided pin terminal and insert them into the terminal.

REQUIREMENT

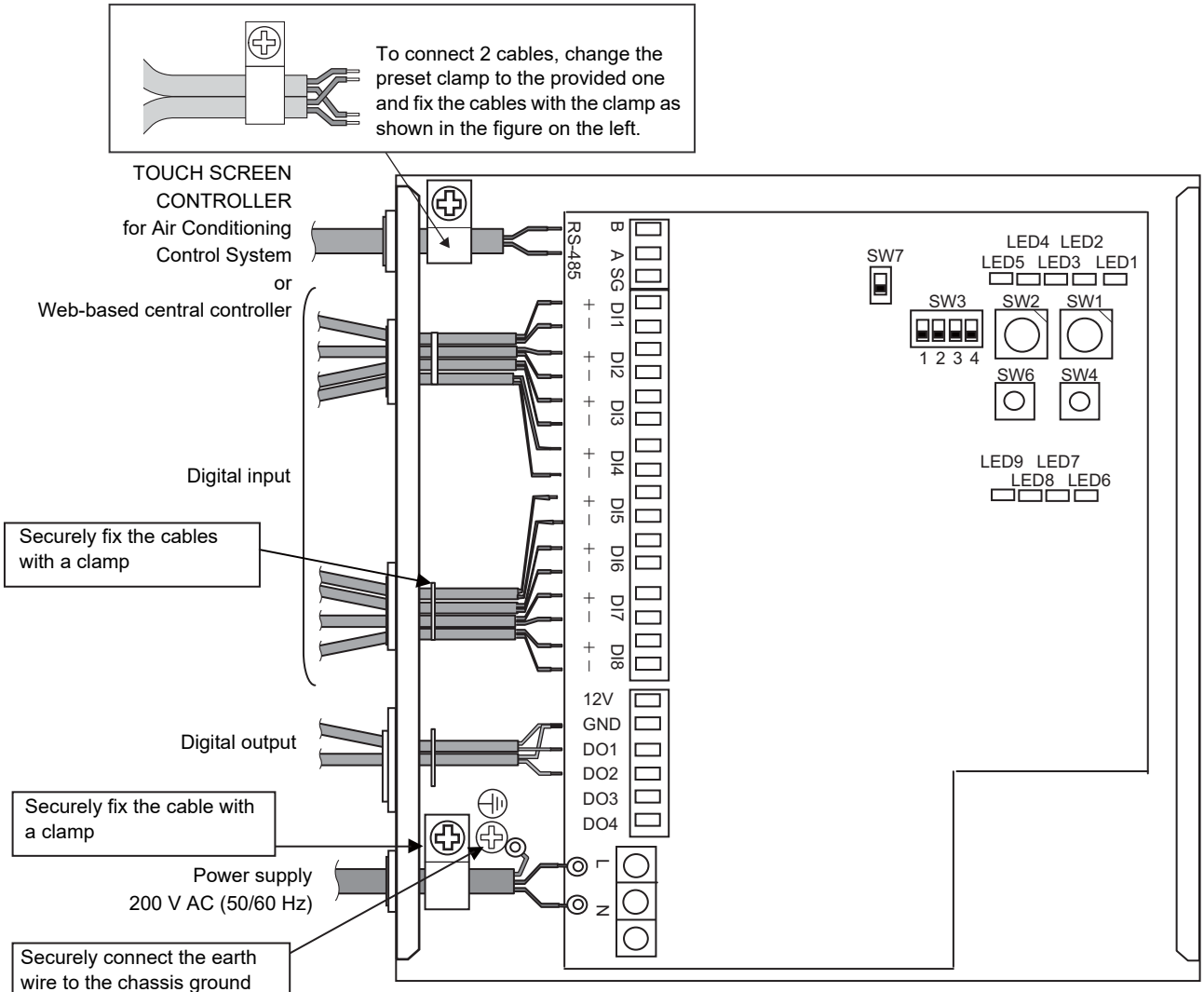
- Do not connect the device directly to the primary side of the power supply.
  Be sure to install a circuit breaker or all-pole isolating switch (with a contact breaking distance of at least 3 mm) on the primary side of the power supply.
- Fasten the screws to the terminal with torque of 0.5 Nm.

7-3. Digital Input/Output Relay Interface (BMS-IFDD03E)

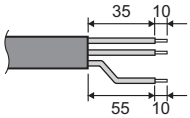
CAUTION

- The RS-485 cable has polarity (A, B). It will not work if it is connected with incorrect polarity.

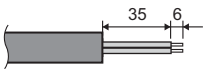
Connect the cable to the specified terminal on the terminal block.



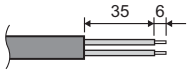
Power cable wire stripping length



Communication cable wire stripping length



Digital I/O cable wire stripping length



Press the operation lever to open the clamp.
Insert the cable and pull the lever back.
Make sure that the cable is fixed securely.

To connect two RS-485 communication cables to one terminal, crimp the two cables using the provided pin terminal and insert them into the terminal.

REQUIREMENT

- Do not connect the device directly to the primary side of the power supply.
  Be sure to install a circuit breaker or all-pole isolating switch (with a contact breaking distance of at least 3 mm) on the primary side of the power supply.
- Fasten the screws to the terminal with torque of 0.5 Nm.

8 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 your dealer for creation of setting files and saving to the compact flash card.

8-1. TCS-NET Relay Interface (BMS-IFLSV4E)

The following settings are necessary to use TCS-NET Relay Interface.

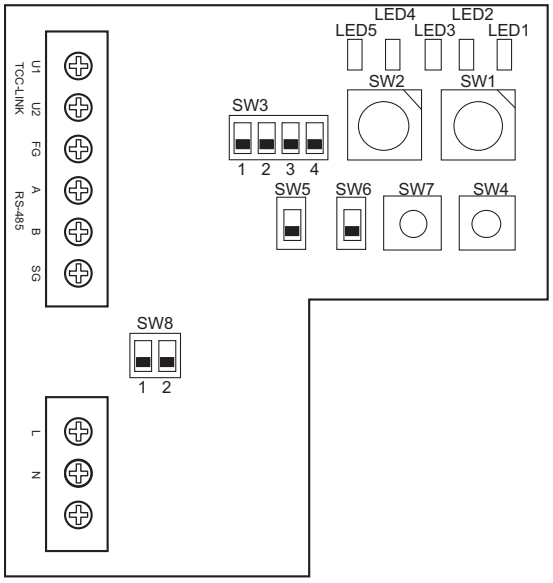
- SW1 TCS-NET Relay Interface address set switch
  When two or more TCS-NET Relay Interface are used, set a different address for SW1 to avoid address duplication.
  Assign addresses in an ascending order.

⚠ CAUTION

- **Set TCS-NET Relay Interface addresses according to the air conditioner address table.**
  For the TCS-NET Relay Interface whose address SW1=1, perform terminator resistor setting.
- **When the SW1 setting has been changed, push the reset switch SW7. The new address setting is read.**

- SW2 Test switch
- SW3 Test switch
- SW4 Test switch

  Not used during operation.
  Set these switches to zero (0) or “all OFF”.
- SW5 RS-485 terminator resistor select switch
  Set “120 ohm” only when the TCS-NET Relay Interface address SW=1, and set “open” for other TCS-NET Relay Interfaces.
- SW6 TCC-LINK terminator resistor select switch
  The TCC-LINK terminator resistor is set on the air conditioner side. Set SW6 to “open”.
- SW7 Reset switch
  When performing an address setting with SW1, push this reset switch after the address setting to read the set value.
- SW8 Test switch (Not used during operation. All OFF usually)



SW1	TCS-NET Relay Interface address set switch	
	1-C	TCS-NET Relay Interface address
	0, D-F	Not used
SW2	Test switch (0 usually)	
SW3	Test switch (all OFF usually)	
SW4	Test switch	
SW5	RS-485 terminator resistor select switch	
		
	120 ohm	Open
SW6	TCC-LINK terminator resistor select switch	
		
	100 ohm	Open
SW7	Reset switch	
SW8	Test switch (all OFF usually)	
LED1	Power indicator	
LED2	RS-485 communication status indicator	
LED3	TCC-LINK Communication status indicator	
LED4	TCC-LINK Communication error indicator	
LED5	Test indicator	

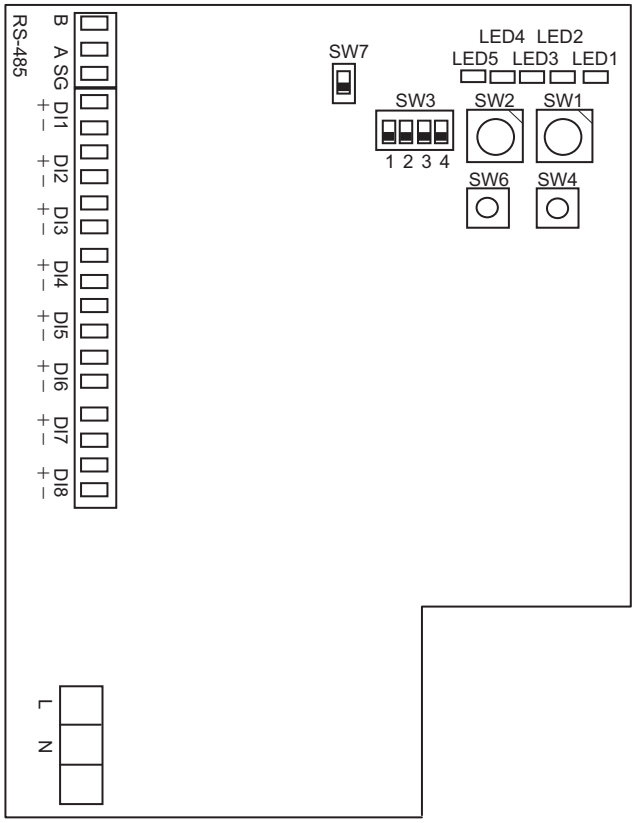
REQUIREMENT

- **RS-485 terminator resistor select switch SW5.**
  Set “120 ohm” only when the TCS-NET Relay Interface address SW=1, and set “open” for other TCS-NET Relay Interfaces.
- **The TCC-LINK terminator resistor is set on the air conditioner side. Set SW6 to “open”.**

8-2. Energy Monitoring Relay Interface (BMS-IFWH5E)

The following settings are required to use the Energy Monitoring Relay Interface.

Address setting	Address setting switches Set the address of the Energy Monitoring Relay Interface. When using two or more interfaces, set a different address for each interface to avoid duplicate addresses. Assign address numbers in order from smaller to larger.
RS-485 terminator resistor setting	Leave the switch open.

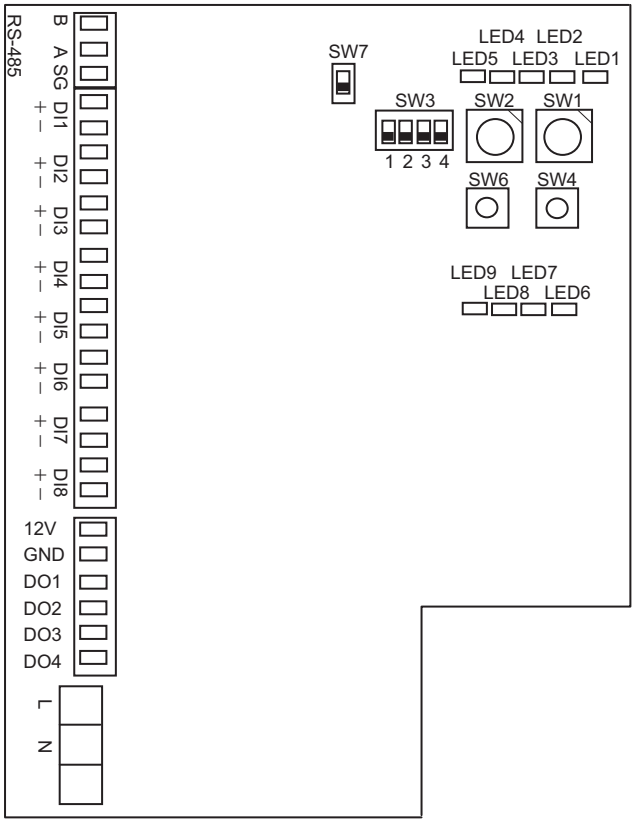


SW1	Address setting switch	
	1-8	Energy Monitoring Relay Interface address
	0, 9-F	Not used
SW2	Mode select switch (Normal: 0)	
SW3	Test switch (Normal: All off)	
SW4	Test switch	
SW6	Reset switch	
SW7	RS-485 terminator resistor select switch	
		
	120 Ω	Open
LED1	Power indicator	
LED2	RS-485 communication status indicator	
LED3	Not used	
LED4	Test indicator	
LED5	Test indicator	

8-3. Digital Input/Output Relay Interface (BMS-IFDD03E)

The following settings are required to use the Digital Input/Output Relay Interface.

Address setting	Address setting switch Set the address of the Digital Input/Output Relay Interface. Set a different address for each interface to avoid duplicate addresses. Assign address numbers in order from smaller to larger.
RS-485 terminator resistor setting	Leave the switch open.



SW1	Address setting switch	
	1-8	Digital Input/Output Relay Interface address
	0, 9-F	Not used
SW2	Mode select switch (Normal: 0)	
SW3	Test switch (Normal: All off)	
SW4	Test switch	
SW6	Reset switch	
SW7	RS-485 terminator resistor select switch	
		
	120 Ω	Open
LED1	Power indicator	
LED2	RS-485 communication status indicator	
LED3	Not used	
LED4	Test indicator	
LED5	Test indicator	
LED 6 to 9	Digital output indicator	

9 Troubleshooting

9-1. Check Code Display

9-1-1. "S01" Air conditioner - BMS communication error occurs.

No.	Cause	Action
1	Error with RS-485 communication between the TOUCH SCREEN CONTROLLER and TCS-NET Relay Interface.	Check method when a communication error has occurred (9-5-1.)
2	Error with TCC-LINK communication between the TCS-NET Relay Interface and air conditioner.	
3	The power of the TCS-NET Relay Interface or air conditioner is not on.	
4	Setup file input error.	

9-1-2. "E03" Indoor - remote control communication error occurs.

No.	Cause	Action
1	The local remote control is not connected.	To operate the local remote control while it is not connected (without remote control), set TCS-NET Relay Interface SW3 (4) to ON.

9-1-3. "S06" BMS-IFWH communication error occurs.

No.	Cause	Action
1	Error with RS-485 communication between the TOUCH SCREEN CONTROLLER and Energy Monitoring Relay Interface.	Check method when a communication error has occurred (9-5-3.)
2	The power of the Energy Monitoring Relay Interface is not on.	
3	Setup file input or address SW setting has not been performed.	

9-1-4. "S07" BMS-IFDD communication error occurs.

No.	Cause	Action
1	Error with RS-485 communication between the TOUCH SCREEN CONTROLLER and Digital Input/Output Relay Interface.	Check method when a communication error has occurred (9-5-2.)
2	The power of the Digital Input/Output Relay Interface is not on.	
3	Setup file input or address SW setting has not been performed.	

9-1-5. "S29" Setting file read error occurs.

No.	Cause	Action
1	Setting File was initialized using the old version of the setting file creation software.	Initialize Setting File using the latest version of the setting file creation software.
2	Setting file is corrupted and cannot be loaded.	
3	Setting File that was backed up from the old version TOUCH SCREEN CONTROLLER was restored.	Step 1: Use the latest version of the setting file creation software to update the TOUCH SCREEN CONTROLLER's software. Even if it has already been updated, update it again to recover the setting file that was deleted during the restoration. Step 2: Back up the TOUCH SCREEN CONTROLLER again. Store the recovered setting file on your computer.

9-1-6. Another check code appears. (Other than S01, S06, S07, or E03)

No.	Cause	Action
1	Problems detected on the air conditioner side.	1. Check the error indicator on the remote control or SMMS series outdoor unit board.
		2. Identify the failure location or check the components and wiring as described in the maintenance guide of the corresponding air conditioner.

9-2. Screen Display Problems

9-2-1. Floor, tenant, area, and air conditioner name display is not displaying correctly.

No.	Cause	Action
1	Setup file input error.	Check the setup file and correct any errors.

9-2-2. Mismatch with the operation status of the local remote control

No.	Cause	Action
1	Setup file input error.	Confirm that the address in the setup file matches the address set on the air conditioner. The address set on the air conditioner can be confirmed using the UNIT button on the local remote control. Correct the air conditioner address or setup file.

9-3. Other Problems

9-3-1. Local remote control does not work.

No.	Cause	Action
1	Local remote control is disabled.	To enable the local remote control, enable it on the TOUCH SCREEN CONTROLLER.

9-3-2. Air conditioners cannot be operated according to the on/off and other settings configured from the TOUCH SCREEN CONTROLLER. Settings are restored to the previous ones over time.

No.	Cause	Action
1	Communication with the air conditioners is not normal.	Check whether a communication error with the air conditioners was detected.
2	The address setting on the air conditioner differs from that in the setup file.	1. Press the "UNIT" button on the local remote control to check whether the address setting of the indoor unit matches that in the setup file.
		2. Check whether the address of the TCS-NET Relay Interface connected to the indoor unit matches that in the setup file.
3	The indoor unit is set as a follower.	Change the setting so that the header setting on the air conditioner matches that in the setup file.
4	Operation is set outside of the set temperature range or operation mode range set on the air conditioner.	1. Temperatures set outside of the set temperature range are set to the high limit or low limit within the set temperature range.
		2. If a setting outside of the operation mode range is set, the operation is not performed in the set operation mode. The operation is performed in the previous mode.

9-3-3. Set temperature is changed automatically.

No.	Cause	Action
1	The set temperature has been changed from the local remote control or another controller.	Check whether the air conditioner has been operated from the local remote control or another controller.

9-3-4. "Preparation" appears on the local remote control and the cooling or heating operation cannot be performed.

No.	Cause	Action
1	An option in [Operation mode restriction] is set.	Check whether a check mark is placed next to [HEAT, FAN] or [COOL, DRY, FAN] in [Operation mode restriction] on the option screen.

9-3-5. Calculation results of the power meter output from the report creation software are incorrect.

No.	Cause	Action
1	The controller cannot acquire the operation information of the air conditioners due to a communication error.	Check whether a communication error with the air conditioners has occurred.
2	The controller cannot acquire the electric power correctly.	1. Check whether a communication error with the Energy Monitoring Relay Interface has occurred.
		2. Check that pulses are input to the Energy Monitoring Relay Interface from the power meter.
3	It is more difficult to heat or cool the room compared to other rooms.	This power distribution system calculates the power distribution needed for each indoor unit based on its air conditioning capacity and distributes more electric power to a room if it is more difficult to heat or cool the room compared to other rooms even when operation is performed for the same amount of time.

9-3-6. Reports cannot be created.

No.	Cause	Action
1	Power distribution data has not been downloaded from the TOUCH SCREEN CONTROLLER.	Download it.

9-3-7. Power distribution data cannot be downloaded from the TOUCH SCREEN CONTROLLER.

No.	Cause	Action
1	The network settings on the PC are not configured for using the report creation software.	Configure the network settings on the PC. Set 192.168.2.*** as the IP address (*** is other than 80). Set 255.255.255.0 as the subnet mask.

9-3-8. There is no daily report file.

No.	Cause	Action
1	The power of the controller was off at the time of meter reading.	The daily report file of the day is not created if the power of the controller is off at the time of meter reading. The cumulative operating time and electric power are added to the daily report file of the following day, so the tally results in the specific term report are correct.

9-3-9. The control screen does not appear even after turning the controller off and on.

No.	Cause	Action
1	Power-related problems.	Checking power-related problems Step 1: Check that the PWR LED (on the 12 V DC IN side) on the controller's bottom is on. If it is not on → Continue checking power-related problems. (Go to Step 2) If it is on → Check the controller. Step 2: Check that 12 V DC is output from the power adapter. If 12 V DC is not output → Continue checking power-related problems. (Go to Step 3) If 12 V DC is output → Check the controller. Step 3: Check that 100 V AC is input to the power adapter. If 100 V AC is input → There may be a problem with the power adapter. Replace the power adapter and check whether the problem is resolved. If 100 V AC is not input → Input 100 V AC and check whether the problem is resolved.
2	Problems with the controller.	Checking the controller Step 1: Check the TOUCH SCREEN CONTROLLER display. If nothing appears (and the backlight is also off) → Disconnect the power adapter from the controller and turn off the power. Turn on the power again and check the TOUCH SCREEN CONTROLLER display. If still nothing appears, there may be a problem with the controller. Replace the controller and check whether the problem is resolved. If the backlight is on → Disconnect the power adapter from the controller and turn off the power. Turn on the power again and check the TOUCH SCREEN CONTROLLER display. If the backlight is on but nothing appears on the control screen, there may be a problem with the compact flash (CF) in the controller. Replace the CF (Step 2) and check whether the problem is resolved. Step 2: Replacing the CF 1. Prepare a replacement CF (service part). 2. Prepare the PC that was used to upload the setup file to the controller to be replaced. 3. Open the cover of the Compact Flash on the bottom of the controller, remove the inserted CF, and replace it with the replacement CF. 4. Turn on the power of the controller and confirm that "Cannot be started as there is no license" appears on the TOUCH SCREEN CONTROLLER screen. 5. Upload the license key from the setup file creation software with the restore operation and confirm that the controller can be started. 6. See the replacement procedure included in the replacement CF package for details.

9-3-10. Logon screen is not displayed.

No.	Cause	Solution
1	The controller is not turned on.	Turn on the controller.
2	The HUB is not turned on.	Turn on the HUB.
3	The LAN cable is not connected.	Check that the LAN cable is inserted into the controller and PC and connect them.
4	The same subnet is not set for the IP address of the controller and that of the PC.	Check the controller and PC IP addresses, and set the same subnet for them. For further details, refer to “Network Configuration Guide”.
5	The browser software is set to use the proxy server.	In setting the browser proxy server, add the controller IP address to the address that does not use the proxy server. For further details, refer to “Network Configuration Guide”.
6	The URL entered in the browser software is incorrect.	Check that the URL is http://the controller's IP address/amtc_web/logon/en-US, and correctly enter this URL.
7	The controller has frozen.	Turn off the controller and wait about 30 seconds. Turn it on again, then access from the browser software after 5 minutes.
8	The controller does not work.	1.Check that the controller and HUB are turned on. 2.Check that the LAN cable is connected. 3.Check that the LED of the controller LAN connector illuminates. * If the LED does not illuminate, the controller is defective. It needs to be repaired.
9	The PC is malfunctioning.	1.Restart the PC and check again if it works. 2.Replace the PC and check again if it works.
10	The LAN cable is defective.	Replace the LAN cable and check again if it works.

9-3-11. Unable to log on.

No.	Cause	Solution
1	The controller is being initialized during the startup process.	Close the browser once. Wait for 5 minutes and log on again.
2	The user name or password are incorrect. The dialog message, “You failed in login.” appears.	Enter correct user name and password.
3	No user name is entered. The dialog message, “Please input user name.” appears.	Enter a correct user name.
4	No password is entered. The dialog message, “Please input password.” appears.	Enter a correct password.
5	The same user name has already logged on. The dialog message, “The same user is logged already.” appears.	1.Use another user name to log on. 2.If the user logged on can be identified, ask the user to log off. 3.If neither of the above two is unavailable, turn off the controller to log off all the users.
6	The controller has frozen.	Turn off the controller and wait about 30 seconds. Turn it on again, then log on after 5 minutes.

9-3-12. Takes long time to display on Web Screen.

No.	Cause	Solution
1	The network is busy.	Connection via an intra-company LAN may slow the Web screen display due to a busy network. Use the system during off-peak hours of network use, or use a dedicated network to connect a PC with the controller.
		If a 10 BASE switching HUB is used, replace it with a 100 BASE switching HUB.
2	PC performance has degraded.	If some application programs are operating other than the browser, the PC performance may degrade. Close the operating applications other than the browser, and check if the PC performance improves.
		If the browser is used for a long time, the PC performance may degrades. Log off and log on again and check if the PC performance improves.
3	Trouble due to the browser.	The supported browsers are Internet Explorer 11. If a browser other than these browsers is used, the contents may not be displayed properly. Use one of the supported browsers to see the contents.
4	Other users are also accessing the controller.	If other users are performing schedule setting or other operation, the display switching may slow down. Wait for a while, and access to the controller again.
5	The controller is writing a file.	The controller regularly writes a file for electricity distribution. The display may slow down during the writing process.
6	The number of air-conditioners to be displayed is large.	If the number of air-conditioners to be displayed is large, it takes long time to display on Web screen. Select air-conditioner zones to reduce the number of air-conditioners to be displayed at once.

9-3-13. Improperly returns to the logon screen.

No.	Cause	Solution
1	The controller performance has degraded.	If the controller is accessed from a browser while the controller internal processing is in progress, the controller performance degrades. To prioritize controller internal processing (writing a file or giving instruction to an air conditioner), the system once stops the access from the browser. Log on again.

9-3-14. The buttons or other elements are not displayed.

No.	Cause	Solution
1	Trouble due to browsers.	The supported browsers are Internet Explorer 11. If a browser other than these browsers is used, the contents may not be displayed properly. Use one of the supported browsers to see the contents.
2	The controller performance has degraded.	If the controller is accessed from a browser while the controller internal processing is in progress, the controller performance degrades. To prioritize controller internal processing (writing a file or giving instruction to an air conditioner), the system once stops the access from the browser. At this time, the browser may fail to display buttons or other elements.
		The missing GUI elements can be displayed by refreshing the browser window. For Internet Explorer, click [View] and then [Refresh].
3	The network is busy.	Connection via an intra-company LAN may slow screen display due to a busy network, possibly causing the display failure of those elements. Use the system during off-peak hours of network use, or use a dedicated network to connect a PC with the controller.
		If a 10 BASE switching HUB is used, replace it with a 100 BASE switching HUB.
		The missing GUI elements can be displayed by refreshing the browser window. For Internet Explorer, click [View] and then [Refresh].
4	The PC performance has degraded.	If some application programs are operating other than the browser, the PC performance may degrade. Close the applications in operation other than the browser, and check if the PC performance improves.

9-3-15. The screen does not switch or takes long time to switch.

No.	Cause	Solution
1	Operating schedule is displayed and set.	If many operating schedules are displayed and set, switching the screen takes long time after the operating schedules are set. After selecting a zone of the air conditioner, perform “Change Operating Schedule” to reduce the number of operating schedules performed at a time, and then display and set the schedules.
2	The alarm history list is displayed.	If many alarms are to be displayed, the display takes long time. Wait for the list to be displayed without performing any operation.

9-3-16. The browser does not close.

No.	Cause	Solution
1	The communication with the controller is unavailable.	The browser takes some time to close. Wait for a while for the browser to close.
2	The PC is malfunctioning.	1.The browser takes some time to close. Wait for a while for the browser to close. 2.If it does not close after a while, start the task manager to exit the browser.

9-3-17. WEB screen display flickers

No.	Cause	Solution
1	The website of the touch screen controller has become an Internet zone.	After accessing the login screen at the website of the touch screen controller from IE, select IE Internet Options → Security → Local Intranet → Site → Detailed Settings → Add, and add the website of the touch screen controller to the local Intranet zone.

9-3-18. The message “Insufficient memory” is displayed

No.	Cause	Solution
1	Too much TOUCH SCREEN CONTROLLER internal memory used at one time.	1.Press the OK button in the dialog box and restart the application. 2.If the PC is connected to the Internet, try logging off.

9-3-19. Unable to download data from the TOUCH SCREEN CONTROLLER on the Data analyzer

No.	Cause	Solution
1	TOUCH SCREEN CONTROLLER is not powered on.	Power on the TOUCH SCREEN CONTROLLER.
2	HUB is not powered on.	Power on the HUB.
3	LAN cable is not connected.	Check that the TOUCH SCREEN CONTROLLER and PC are connected by LAN cable, and connect them if necessary.
4	IP address of TOUCH SCREEN CONTROLLER and IP address of PC are not set to the same subnet.	Check the IP address of the controller and the PC, and set both to the same subnet. See the Network Configuration Guide for details.
5	Proxy server is enabled.	In the proxy server settings under Internet Options, add the TOUCH SCREEN CONTROLLER IP address bypassing the proxy server. See the Network Configuration Guide for details.
6	TOUCH SCREEN CONTROLLER has frozen.	Power off the TOUCH SCREEN CONTROLLER. Power on the TOUCH SCREEN CONTROLLER again, and wait five minutes before accessing it again from the Data analyzer.
7	TOUCH SCREEN CONTROLLER is damaged.	1.Check that the TOUCH SCREEN CONTROLLER and HUB are both powered on. 2.Check that the LAN cable is connected. 3.Replace the LAN cable and repeat checks. 4.Check whether the LED on the LAN connector of the TOUCH SCREEN CONTROLLER is on. *If the LED on the LAN connector is not on, then the controller is damaged. Repairs will be required.
8	PC is inoperable.	1.Restart the PC and repeat checks. 2.Replace the PC and repeat checks.
9	LAN cable is faulty.	Replace the LAN cable and repeat check.

9-3-20. Failure to send a warning email or test email

No.	Cause	Solution
1	No connection between mail server and TOUCH SCREEN CONTROLLER.	1.Check that the HUB is powered on. 2.Check that the LAN cable is connected. 3.Replace the LAN cable and perform checks. 4.Check whether the LED on the LAN connector of the TOUCH SCREEN CONTROLLER is on.
2	Incorrect configuration of mail server settings file.	1.Check whether email can be sent from the server in the configuration of the email software on the PC. 2.Configure the settings file with the settings of the PC email server and check whether email can be sent. 3.Configure the settings file with correct email server settings and repeat checks.
3	Incorrect configuration of IP address settings for TOUCH SCREEN CONTROLLER.	1.Check whether email can be sent from the server in the configuration of the email software on the PC. 2.Configure the TOUCH SCREEN CONTROLLER with the IP address, subnet mask, and default gateway of the PC, and check that email can be sent with this configuration. 3.Configure the TOUCH SCREEN CONTROLLER with the correct IP address, subnet mask, and default gateway, and repeat the checks.
4	Mail server is inoperable.	Check whether email can be sent with the email software on the PC.

9-3-21. Failure to install software enclosed with the product.

No.	Cause	Solution
1	.NET Framework 4.6 cannot be installed on the PC	If the OS of your PC is Windows 7, update it to Windows 7 SP1. If the OS of your PC is Windows 8 or Window 8.1, update the version with Windows Update.

9-4. Function Inquiries

No.	Cause	Action
1	I wish to know how to create a setup file.	Please read the user's manual for the setup file creation software.
2	How many air conditioner units can be connected?	Up to 512 units can be connected. Up to 64 units can be connected to one TCS-NET Relay Interface.
3	Is it possible to turn on and off lighting devices, ventilators, and air conditioners from other manufacturers?	It is possible to do so by connecting them to a general-purpose device control interface.
4	Is it possible to use a central controller in conjunction with this system?	It is possible to use a central controller for 64/128 units/groups, ON-OFF controller, and schedule timer in conjunction with this system. It is not possible to use a Web-based central controller and Seemas in conjunction with this system.
5	Is it possible to use a BACnet system in conjunction with this system?	No.
6	Is it possible to use a LONwork system in conjunction with this system?	No.
7	Is it possible to use a remote monitoring system in conjunction with this system?	The models of the remote monitoring system need to be changed to the ones of this system.
8	Is it possible to connect AI-NETwork series devices?	No. Please use an air conditioning control system that supports the AI-NETwork series.
9	Is it possible to change the name of a tenant, etc.?	It is possible to change the name of a floor, tenant, and area using Tenant Name Change Software and Setup File Creation Software.
10	How many characters can be used for the name of a tenant, etc.?	Up to 33 two-byte characters can be input. However, the part that does not fit in the display area is not displayed.
11	How many alarm history items can be displayed?	Up to 5,120 latest items can be displayed.
12	For how many days is the power distribution data stored?	The daily report files are stored for 92 days, and the monthly report files for 3 months.
13	Is a special operation required to turn off the power of the TOUCH SCREEN CONTROLLER?	First press the power switch of the controller to shut it down and then turn off the power.
14	Does turning off the power of the TOUCH SCREEN CONTROLLER stop the air conditioners?	Turning off the power of the controller does not stop the air conditioners to which the local remote control or wireless adapter is connected. Doing so stops the air conditioners to which the local remote control or wireless adapter is not connected.
15	Is it possible to set a schedule individually for air conditioners?	Yes.
16	What is the billing schedule?	One day is divided into two time periods, regular hours and irregular hours, and power is distributed separately for regular hours and irregular hours. The billing schedule can be used, for example, if you want to charge only for operation during overtime hours.
17	Is it possible to stop all indoor-units at once?	Yes. However, it takes a few minutes for all the indoor units come to a stop.
18	Is it possible to monitor the operation status of the outdoor units?	No.
19	Is there a priority order for the setting operations for air conditioners?	The latter setting operation overrides the former.
20	Is it possible to connect indoor units without local remote control?	It is possible to connect them by setting TCS-NET Relay Interface SW3 (4) to ON.
21	Is it possible to delete the alarm history items?	It is possible to delete them using the initialization tool of the setup file creation software.
22	Is it possible to use all functions from a PC?	No. For a description of the functions that can be used from a PC, please refer to the section "Monitoring / controlling using a computer" in Chapter 4, "Function List" or the Owner's Manual.
23	Is it possible to display a ten-key pad on a PC screen?	No. Type in numbers from a PC keyboard.
24	Can the floor layout be displayed?	A floor image file must be created. Consult your dealer. Also, the created layout must be uploaded using configuration file creation software. See the instruction manual for the configuration file creation software for details.

9-5. Check Method when a Communication Error Has Occurred

9-5-1. "S01" Air conditioner - BMS communication error occurs.

Condition: The TOUCH SCREEN CONTROLLER could not acquire the operation information of air conditioners a certain period of time or longer.

Cause 1: Error with RS-485 communication between the TOUCH SCREEN CONTROLLER and TCS-NET Relay Interface
Cause 2: Error with TCC-LINK communication between the TCS-NET Relay Interface and air conditioner

(1) Checking RS-485 communication

Step 1: Display the alarm list screen. (Tap the alarm icon in the menu icons.)
Step 2: Check whether an "S02" BMS-IFLSV communication error appears in the alarm content.

If an "S02" BMS-IFLSV communication error appears:
Error with RS-485 communication between the TOUCH SCREEN CONTROLLER and TCS-NET Relay Interface
→ Continue checking RS-485 communication. (Go to Step 3)

If an "S02" BMS-IFLSV communication error does not appear:
RS-485 communication between the TOUCH SCREEN CONTROLLER and TCS-NET Relay Interface is normal.
→ Go to **Checking TCC-LINK communication**.

Step 3: Check that the RS-485 cable is connected to the COM1 port of the TOUCH SCREEN CONTROLLER.
Step 4: Check the power of the TCS-NET Relay Interface.
Step 5: Check whether the TCS-NET Relay Interface's RS-485 LED (green) flashes.

If it does not flash:
→ Continue checking RS-485 communication. (Go to Step 6)

If it flashes:
→ **Check the TCS-NET Relay Interface RS-485 transmission circuit**.

Step 6: Check whether the TCS-NET Relay Interface address and switch settings are correct.
Step 7: Check that the RS-485 cable is connected to the TCS-NET Relay Interface RS-485 terminal block.
Step 8: Check that the polarity A/B of the RS-485 cable is correct.
Step 9: Check that the RS-485 cable is not broken.
Step 10: Check that the terminator resistor is set.
Step 11: **Check the TOUCH SCREEN CONTROLLER's RS-485 transmission circuit**.

(2) Checking the TCS-NET Relay Interface RS-485 transmission circuit

Step 1: Disconnect the RS-485 cable from the TCS-NET Relay Interface.
Step 2: Start the TCS-NET Relay Interface in test mode 1 (SW2=1 reset).
Step 3: Check that communication waveforms are output between the TCS-NET Relay Interface RS-485 terminal blocks A and B.

If communication waveforms are not output:
→ TCS-NET Relay Interface RS-485 transmission circuit malfunction.
Replace the TCS-NET Relay Interface and check whether the problem is resolved.

Communication waveforms are output (approx. 2 to 3 V waveforms are output to the positive and negative sides of GND):
→ TOUCH SCREEN CONTROLLER RS-485 receiving circuit malfunction.
Replace the TOUCH SCREEN CONTROLLER and check whether the problem is resolved.

(3) Checking the TOUCH SCREEN CONTROLLER RS-485 transmission circuit

Procedure: Check that communication waveforms are output between RS-485 cables A and B.

If communication waveforms are not output:

→ TOUCH SCREEN CONTROLLER RS-485 transmission circuit malfunction.
Replace the TOUCH SCREEN CONTROLLER and check whether the problem is resolved.

Communication waveforms are output (approx. 2 to 3 V waveforms are output to the positive and negative sides of GND):

→ TCS-NET Relay Interface RS-485 receiving circuit malfunction.
Replace the TCS-NET Relay Interface and check whether the problem is resolved.

(4) Checking TCC-LINK communication

Step 1: Check the power of the indoor unit.
Step 2: Check the power of the SMMS series outdoor unit.
Step 3: Check that the TCC-LINK cable is connected to the TCS-NET Relay Interface TCC-LINK terminal block U1U2.
Step 4: Press the "UNIT" button on the local remote control to check whether the address setting of the indoor unit matches that in the setup file.
Step 5: Check that the address of the TCS-NET Relay Interface connected to the indoor unit matches that in the setup file.
Step 6: Check that the relay connector between terminals U1U2 and U3U4 is connected on the header unit of the SMMS series outdoor units.
Step 7: Check that the TCC-LINK cable is connected to the indoor unit's TCC-LINK terminal block.
Step 8: Check that the TCC-LINK cable is not broken.
Step 9: Check that the terminator resistor is set.

9-5-2. "S07" BMS-IFDD communication error occurs.

9-5-3. "S06" BMS-IFWH communication error occurs.

Condition: On the TOUCH SCREEN CONTROLLER, communication with the Digital Input/Output Relay Interface or Energy Monitoring Relay Interface is interrupted for a certain period of time or longer.

(1) Checking RS-485 communication

Step 1: Check that the RS-485 cable is connected to the COM1 port of the TOUCH SCREEN CONTROLLER.
Step 2: Check the power of the interface.
Step 3: Check whether the interface's RS-485 LED (green) flashes.

If it does not flash:
→ Continue checking RS-485 communication. (Go to Step 4)

If it flashes:
→ **Check the interface RS-485 transmission circuit**.

Step 4: Check whether the interface address and switch settings are correct.
Step 5: Check that the RS-485 cable is connected to the interface RS-485 terminal block.
Step 6: Check that the polarity A/B of the RS-485 cable is correct.
Step 7: Check that the RS-485 cable is not broken.
Step 8: Check that the terminator resistor is set.
Step 9: **Check the TOUCH SCREEN CONTROLLER's RS-485 transmission circuit**.

(2) Checking the interface RS-485 transmission circuit

Step 1: Disconnect the RS-485 cable from the interface.
Step 2: Start the interface in test mode 2 (SW2=2 reset).
Step 3: Check that communication waveforms are output between the interface RS-485 terminal blocks A and B.

If communication waveforms are not output:
→ Interface RS-485 transmission circuit malfunction.
Replace the interface and check whether the problem is resolved.

Communication waveforms are output (approx. 2 to 3 V waveforms are output to the positive and negative sides of GND):
→ TOUCH SCREEN CONTROLLER RS-485 receiving circuit malfunction.
Replace the TOUCH SCREEN CONTROLLER and check whether the problem is resolved.

(3) Checking the TOUCH SCREEN CONTROLLER RS-485 transmission circuit

Procedure: Check that communication waveforms are output between RS-485 cables A and B.

If communication waveforms are not output:
→ TOUCH SCREEN CONTROLLER RS-485 transmission circuit malfunction.
Replace the TOUCH SCREEN CONTROLLER and check whether the problem is resolved.

Communication waveforms are output (approx. 2 to 3 V waveforms are output to the positive and negative sides of GND):
→ Interface RS-485 receiving circuit malfunction.
Replace the interface and check whether the problem is resolved.

10 Checking Test Run

10-1. Check Items before Test Run

No.	Check item	Check box
1	Is electrical work (power and communication wiring work) completed?	
2	Is the polarity (A/B) for the RS-485 wiring correct?	
3	Is the setting of the TCC-LINK and RS-485 terminator resistors complete?	
4	If a custom device is connected, is the connection of the TCC-LINK adapter complete?	
5	Is the RS-485 cable connected to the TOUCH SCREEN CONTROLLER controller COM1?	
6	Is the address setting of air conditioners (indoor unit [DN=03, 12, 13, 14] and outdoor unit [outdoor unit control board SW13/14]) complete?	
7	Is the address setting of the general-purpose device interface complete?	
8	Is the creation of the setup file complete?	
9	Has the created setup file been uploaded to the TOUCH SCREEN CONTROLLER controller?	
10	Is the power of all devices on?	
When the power distribution function is used		
11	Is the report creation software installed?	
12	Is the setup of the network completed on a PC that has the report creation software installed?	

10-2. Procedure for Checking Test Run

10-2-1. Checking TOUCH SCREEN CONTROLLER controller operation

(1) Turn on the power of the TOUCH SCREEN CONTROLLER controller and check that the display is as specified in the setup file. (See 10-3-1.)
(2) Turn on the power and wait for 20 minutes, then display the TOUCH SCREEN CONTROLLER controller's alarm list screen and check that there is no communication error with the TCS-NET Relay Interface, Digital Input/Output Relay Interface, and Energy Monitoring Relay Interface. (See 10-3-2.)

10-2-2. Checking RS-485 communication

(1) Check that the connected TCS-NET Relay Interface's RS-485 (LED2 - green) flashes. (See 10-3-3.)

10-2-3. Checking TCC-LINK communication

(1) Check that the connected TCS-NET Relay Interface's TCC-LINK (LED3 - orange) flashes. (See 10-3-4.)

10-2-4. Checking air conditioner connection (counter test)

- Cautions
  (1) Perform setting operations and check the display separately on the TOUCH SCREEN CONTROLLER and local remote control.
  (2) Before starting the check procedure, determine the order of the air conditioners to be checked and the check procedure.
  (3) Check 1: Check that the unit name and operation status are identical on both the TOUCH SCREEN CONTROLLER and local remote control.
  (4) Check 2: Check that the local remote control settings are changed by the setting operations on the TOUCH SCREEN CONTROLLER.
  (5) Check 3: Check that the TOUCH SCREEN CONTROLLER settings are changed by restoring the settings to the previous ones on the local remote control.
  (6) Check the next air conditioner.

- Procedure
  (1) Determine the zone to be checked by selecting the floor, tenant, or area.
  (2) Tap the unit icon to display the air conditioners to be monitored in the selected zone.
  (3) Select the air conditioner to be checked to display the operation status in the air conditioner information area.
  (4) Check the installation position (floor name, tenant name, or area name). (See 10-3-5.)
  (5) Check that the operation status display is identical to that on the local remote control. (See 10-3-6. to 10-3-8.)
  (6) Perform operations such as ON/OFF from the TOUCH SCREEN CONTROLLER.
  (7) Check that the operation status display on the local remote control is synchronized with the operations from the TOUCH SCREEN CONTROLLER. (See 10-3-9. and 10-3-10.)
  (8) Perform operations such as ON/OFF from the local remote control.
  (9) Check that the operation status display on the TOUCH SCREEN CONTROLLER is synchronized with the operations from the local remote control. (See 10-3-11.)
  (10)Go to the next air conditioner and perform the same check procedure.

10-2-5. Checking Digital Input/Output Relay Interface Connection

Perform the checks if the Digital Input/Output Relay Interface is connected and the lock interlocking, fire alarm interlocking, or external error output is set.

- Checking lock interlocking operation
  (1) Display the alarm list screen and check that there are no BMS-IFDD communication errors. (See 10-3-12.)
  (2) Input a lock signal into the Digital Input/Output Relay Interface and check that the set air conditioner stops. (See 10-3-13.)

- Checking fire alarm interlocking operation
  (1) Display the alarm list screen and check that there are no BMS-IFDD communication errors. (See 10-3-12.)
  (2) Input a fire alarm signal into the Digital Input/Output Relay Interface and check that the fire alarm is displayed and the set air conditioner stops. (See 10-3-15. and 10-3-16.)

- Checking error external output
  (1) Display the alarm list screen and check that there are no BMS-IFDD communication errors. (See 10-3-12.)
  (2) Generate a communication error or similar and check that a contact output occurs from the set Digital Input/Output Relay Interface channel. (See 10-3-14.)

10-2-6. Checking the Energy Monitoring Relay Interface connection

Perform the check if the Energy Monitoring Relay Interface is connected and the power meter input name is set in the setup file.

(1) Display the alarm list screen and check that there are no BMS-IFWH communication errors. (See 10-3-17.)
(2) Use a pulse integration checking tool and check that pulses from the power meter are input to the Energy Monitoring Relay Interface. (See 10-3-18.)

10-2-7. Checking power distribution

(1) Run the air conditioner for a couple of hours while the TOUCH SCREEN CONTROLLER is operating.
(2) Perform a manual meter reading from a PC. [Option icon] →[Manual meter reading]→ [Execute]
(3) A file created by a manual meter reading appears in the meter reading file list.
(4) Install the report creation software and set up the device. (See the manual of the report creation software for details)
(5) Download the monthly report file using the report creation software.
(6) Check the output results of the created monthly report. (See 10-3-19.)

10-3. Troubleshooting during a Test Run

10-3-1. Display on the TOUCH SCREEN CONTROLLER is not as specified in the setup file.

No.	Cause	Action
1	The setup file has not been uploaded to the compact flash.	Upload the setup file again using the setup file creation software.
2	Setup file input error.	Check the details of the created setup file.

10-3-2. "S02" BMS-IFLSV communication error, "S06" BMS-IFWH communication error, or "S07" BMS-IFDD communication error occurs.

10-3-3. The interface RS-485 (LED2 - green) does not flash.

No.	Cause	Action
1	The power of the TCS-NET Relay Interface, Digital Input/Output Relay Interface, or Energy Monitoring Relay Interface is not on.	Check that the POWER LED (red) of each interface is on.
2	The RS-485 cable is not connected to the TOUCH SCREEN CONTROLLER's COM1 port.	Check the connection.
3	The cable is not connected to each interface's RS-485 terminal block.	
4	The polarity of the RS-485 cable is not correct.	Check the RS-485 cable connected to the TOUCH SCREEN CONTROLLER to make sure that each interface's white connector is connected to terminal A and black connector is connected to terminal B.
5	The RS-485 cable is broken.	Check the continuity of the RS-485 cable using a tester.
6	The terminator resistor is not set.	Use a tester and check that the termination resistance is about 60 Ω. (TOUCH SCREEN CONTROLLER termination resistance = 120 Ω, TCS-NET Relay Interface termination resistance = 120 Ω)
7	The interface address and switch settings are incorrect.	Check that the address (SW1) in the setup file matches that of the interface. Check that switches other than the interface address setting are set to 0 or OFF.
8	The TOUCH SCREEN CONTROLLER or interface RS-485 transmission and receiving circuits do not work properly.	1. Check that the interface RS-485 (LED2 - green) flashes. • If it flashes, the TOUCH SCREEN CONTROLLER RS-485 transmission circuit and the interface RS-485 receiving circuit are normal.
		2. Check the TOUCH SCREEN CONTROLLER RS-485 transmission circuit. • Check that communication waveforms are output between RS-485 cables A and B. (Approx. 2 to 3 V waveforms are output to the positive and negative sides of GND.) • If communication waveforms are not output, the TOUCH SCREEN CONTROLLER RS-485 transmission circuit does not work properly.
		3. Check the TCS-NET Relay Interface RS-485 transmission circuit. • Run test mode 1 in the TCS-NET Relay Interface (SW2=1 restart) and check the TCS-NET Relay Interface to make sure that communication waveforms are output between the RS-485 terminal blocks A and B. (Approx. 2 to 3 V waveforms are output to the positive and negative sides of GND.) • If communication waveforms are not output, the TCS-NET Relay Interface RS-485 transmission circuit does not work properly.
		4. Check the Digital Input/Output Relay Interface and Energy Monitoring Relay Interface RS-485 transmission circuits. • Run test mode 2 in the interface (SW2=2 restart) and check the interface to make sure that communication waveforms are output between the RS-485 terminal blocks A and B. (Approx. 2 to 3 V waveforms are output to the positive and negative sides of GND.) • If communication waveforms are not output, the interface RS-485 transmission circuit does not work properly.
9	Cable is too long or too thin.	Replace the communication cable with a cable of the specified length and diameter.
10	Noise is superimposed on the signals of the communication cable.	Check the waveforms between the RS-485 communication cables A and B. If noise is superimposed, identify the noise source and remove it.

10-3-4. The TCS-NET Relay Interface TCC-LINK (LED3 - orange) does not flash.

No.	Cause	Action
1	The air conditioner power is not on.	Turn on the power of the air conditioner that is connected to the TCS-NET Relay Interface.
2	The indoor unit power is on, but there are some SMMS series outdoor units whose power is not on.	Turn on the power of all SMMS series outdoor units.
3	The cable is not connected to the TCS-NET Relay Interface TCC-LINK terminal block.	Check the connection.
4	The cable is not connected to the indoor unit TCC-LINK terminal block.	
5	The relay connector between terminals U1U2 and U3U4 is not connected on the header unit of the SMMS series outdoor units.	
6	The TCC-LINK cable is broken.	Check the continuity of the TCC-LINK cable using a tester.
7	The terminator resistor is not set.	Use a tester and check that the termination resistance is about 120 Ω.
8	Cable is too long or too thin.	Replace the communication cable with a cable of the specified length and diameter.
9	Noise is superimposed on the signals of the communication cable.	Check the waveforms between TCC-LINK U1 and U2. If noise is superimposed, identify the noise source and remove it.

10-3-5. The air conditioner installation position differs from the display (floor name, tenant name, or area name).

No.	Cause	Action
1	The floor name, tenant name, or area name under the indoor unit tab in the setup file has been input incorrectly.	Check the setup file and input the correct name.

10-3-6. "S01" Air conditioner - BMS communication error occurs.

No.	Cause	Action
1	The address setting of the indoor unit differs from that in the setup file.	Press the "UNIT" button on the local remote control to check whether the address setting of the indoor unit matches that in the setup file.
		Check whether the address of the TCS-NET Relay Interface connected to the indoor unit matches that in the setup file.

10-3-7. "E03" Indoor - remote control communication error occurs.

No.	Cause	Action
1	The local remote control is not connected.	To operate the local remote control while it is not connected (without remote control), set TCS-NET Relay Interface SW3 (4) to ON.

10-3-8. Alarms other than "S00," "S01," or "E03" are generated.

No.	Cause	Action
1	Problems detected on the air conditioner side.	Check the error indicator on the local remote control or SMMS series outdoor unit board to identify the problem location.

10-3-9. Changes in the settings on the TOUCH SCREEN CONTROLLER are not reflected in the local remote control.

10-3-10. The TOUCH SCREEN CONTROLLER operation status display returns to the display before the change.

No.	Cause	Action
1	The indoor unit is set as a follower.	Check the header address on the remote control and check whether the address matches that in the setup file.
2	The address setting of the indoor unit differs from that in the setup file.	Press the "UNIT" button on the local remote control to check whether the address setting of the indoor unit matches that in the setup file.
		Check whether the address of the TCS-NET Relay Interface connected to the indoor unit matches that in the setup file.

10-3-11. Changes in the settings on the local remote control are not reflected on the TOUCH SCREEN CONTROLLER. It takes time for them to be reflected.

No.	Cause	Action
1	If a large number of units are connected, it takes time for the operation status to be acquired.	Wait for 2 or 3 minutes for the operation status to be reflected.

10-3-12. BMS-IFDD communication error appears on the TOUCH SCREEN CONTROLLER.

No.	Cause	Action
1	The interface address setting in the setup file is not correct.	Check that the address in the setup file matches that of the interface. • The address of the Digital Input/Output Relay Interface with a communication error appears in the device display of the BMS-IFDD communication error in the alarm list. The first digit at the end indicates the interface address.

* Other problems are the same as in Troubleshooting 10-3-2. and 10-3-3..

10-3-13. Inputting a lock signal does not stop the air conditioner.

No.	Cause	Action
1	The lock signal has not been input into the Digital Input/ Output Relay Interface.	Run the test mode in the Digital Input/Output Relay Interface (SW2=3 restart) and check the interface LED to make sure that the lock signal has been input. (The details are described in the Digital Input/Output Relay Interface user's manual "4. Test Run, Checking digital I/O connection.)
2	The lock input definition in the setup file is not correct.	Check that the lock input definition in the setup file matches the address and channel of the interface into which the lock signal has been input.
3	The indoor unit tab in the setup file is not correct.	Check that the lock input name under the indoor unit tab is set correctly.

* Other problems are the same as in Troubleshooting 10-3-9. and 10-3-10..

10-3-14. An error external output is not output from the Digital Input/Output Relay Interface.

No.	Cause	Action
1	The error external output definition in the setup file is not correct.	• Check that the error external output definition in the setup file matches the address and channel of the interface that is connected. • Check the output channel by seeing which of the interface LEDs 6 to 9 (green) is on.

10-3-15. Inputting a fire alarm signal does not display the fire alarm.

No.	Cause	Action
1	The fire alarm signal has not been input into the Digital Input/Output Relay Interface.	Run the test mode in the Digital Input/Output Relay Interface (SW2=3 restart) and check the interface LED to make sure that the lock signal has been input. (The details are described in the Digital Input/Output Relay Interface user's manual "4. Test Run, Checking digital I/O connection.)
2	The fire alarm input definition in the setup file is not correct.	Check that the fire alarm input definition in the setup file matches the address and channel of the interface into which the fire alarm signal has been input.

10-3-16. Inputting a fire alarm signal does not stop the air conditioner.

No.	Cause	Action
1	The indoor unit tab in the setup file is not correct.	Check that the fire alarm input name under the indoor unit tab is set correctly.

* Other problems are the same as in Troubleshooting 10-3-2. and 10-3-3..

10-3-17. A BMS-IFWH communication error appears on the TOUCH SCREEN CONTROLLER.

No.	Cause	Action
1	The interface address setting in the setup file is not correct.	• Check that the address in the setup file matches that of the interface. • The Energy Monitoring Relay Interface address with a communication error appears in the device display of the BMS-IFWH communication error in the alarm list. The first digit at the end indicates the interface address.

* Other problems are the same as in Troubleshooting 10-3-2. and 10-3-3..

10-3-18. The accumulated pulse value does not change.

No.	Cause	Action
1	Pulse signals have not been input to the Energy Monitoring Relay Interface from the power meter.	Run the test mode in the Energy Monitoring Relay Interface (SW2=3 restart) and check the interface LED to make sure that signals are input from the power meter. (The details are described in the Energy Monitoring Relay Interface user's manual "4. Test Run, Checking power meter connection".)
2	Pulses are not output from the power meter.	
3	Power meter settings in the setup file are not correct.	Check that the power meter settings in the setup file match the address and channel of the Energy Monitoring Relay Interface that is connected.

10-3-19. Monthly reports cannot be created.

No.	Cause	Action
1	Power distribution data has not been downloaded from the TOUCH SCREEN CONTROLLER.	Download it.

10-3-20. Power distribution data cannot be downloaded from the TOUCH SCREEN CONTROLLER.

No.	Cause	Action
1	The network settings on the PC are not configured for using the report creation software.	Configure the network settings on the PC. Set 192.168.2.*** as the IP address (*** is other than 80). Set 255.255.255.0 as the subnet mask.

10-3-21. Power distribution results are not correct.

No.	Cause	Action
1	A communication error with the air conditioner has occurred. Power distribution regards the period when a communication error with the air conditioner is occurring to be downtime.	Perform the check again after the communication error with the air conditioner is removed.
2	The power accumulation results are not correct.	Same as Troubleshooting 10-3-17. and 10-3-18..
3	The connection between the power meter and air conditioner does not match that in the setup file.	Check the power meter input name under the indoor unit tab and outdoor unit (SMMS series) tab in the setup file.

11 Service Component List

No.	Component name	Component code	Outline	Qty
1	Compact flash card	4316V580	Specialized Compact flash card containing Touch Screen Controller software	1
2	Power adaptor	4316V581	Power adaptor for the Touch Screen Controller	1

Owner's Manual

TOSHIBA
Leading Innovation

Owner's Manual

TOUCH SCREEN CONTROLLER for Air Conditioning Control System

Model

BMS-CT5121E

English

Contents

1 Precautions for safety

The following instructions must be observed.

- The product and this manual are provided with important safety notices to ensure safe use and protect the user and other people from hazards and preclude damage to property.
  Be sure that you fully understand the following contents (expressions and graphic symbols) and read this manual carefully. Always observe the precautions.
- Keep this Manual at accessible place for future reference.

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.
 Caution	"△" indicates caution items. The actual contents of the caution are indicated by a picture or text placed inside or next to the graphic symbol.

⚠ Warning

 Ask professional	**Ask your dealer or a professional for installation of your system.** Installation requires specialized knowledge. If you install your system yourself, fire, electric shock or injury may be caused.
 Disassembly prohibited	**Do not disassemble, alter, repair or relocate the system alone.** This may cause fire, electric shock or injury. Ask your dealer for repair or relocation.
 Compulsory	**Power OFF in the event of an alarm (odor, etc.).** Failure to do so may cause fire or electric shock. Ask your dealer for repair.

⚠ Caution

 Compulsory	**Before cleaning the unit, be sure to stop operation and turn OFF the power.** Failure to do so may cause electric shock or injury.
 Prohibited	**Do not touch any button with wet fingers.** This may cause electric shock.

2 Main functions

■ Monitoring and controlling air conditioners

The TOUCH SCREEN CONTROLLER for Air Conditioning Control System (hereafter TOUCH SCREEN CONTROLLER) can turn on and off operations, change settings, monitor the operating status, settings, and the occurrence of errors of all the air conditioners.
The air conditioners can be classified by naming their level, unit, area, tenant, and floor. The air conditioners can be set individually or in batches according to area, tenant, or floor.
In addition, an optional Digital Input/Output Relay Interface makes it possible to gang control the air conditioners' demand alarm signals, fire alarm signals, and locking signals.

■ Scheduling operation of air conditioners

The TOUCH SCREEN CONTROLLER can schedule operations of all the air conditioners. A maximum of 20 settings can be done each day, and the air conditioners can be set to turn off in case people forget. The TOUCH SCREEN CONTROLLER can schedule operations by turning on, off, operation mode, temperature, enable or disable the local remote control, return back, save, and ventilation modes.
With the master schedule, it is possible to set weekly schedules, five special days, and monthly schedules for the upcoming year.

■ Power distribution system

The TOUCH SCREEN CONTROLLER can distribute power to each of the air conditioners. However, this is not according to calculation methods. The billing schedule can be set to total operating time and power distribution separately for in working hours and out of working hours.
However, the optional Energy Monitoring Relay Interface is required for power distribution.

■ Alarm list display

The TOUCH SCREEN CONTROLLER can display a list of current alarms. It can also show a history of past alarms.

3 Names and functions of main screens

3-1. Control screen

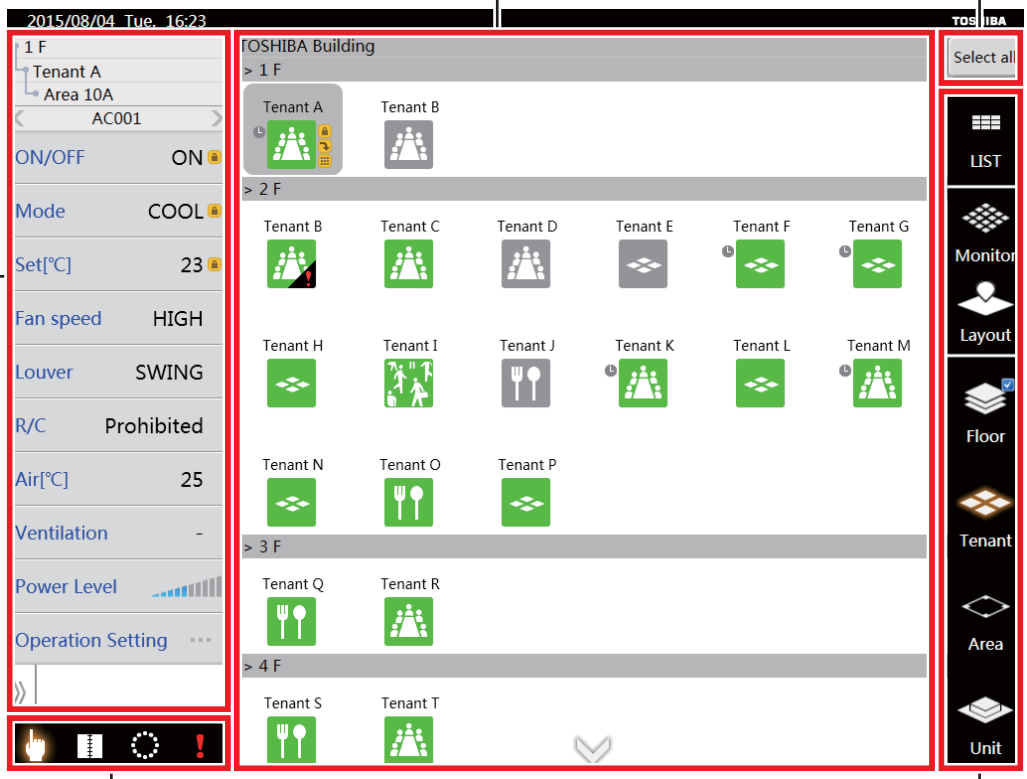
This screen allows you to set and check the operating status of the air conditioners.

Air conditioner status list
Shows the name of the level of air conditioners to display and change status of settings.

Group icon area
Shows the group icons of air conditioners for controlling the air conditioning. They are displayed in categories from the top level. It is possible to check the status of air conditioners by the colour and pattern of the icons. ->For details, see "3-3.Icon display".

Select all button
Selects all the icons shown in a group icon area.

[Control screen]



Menu icon area
Moves the screen to various functions.

Display switching icon area
Changes the classification of the displayed group icons.
* The [Layout] icon only appears when the layout screen is enabled.

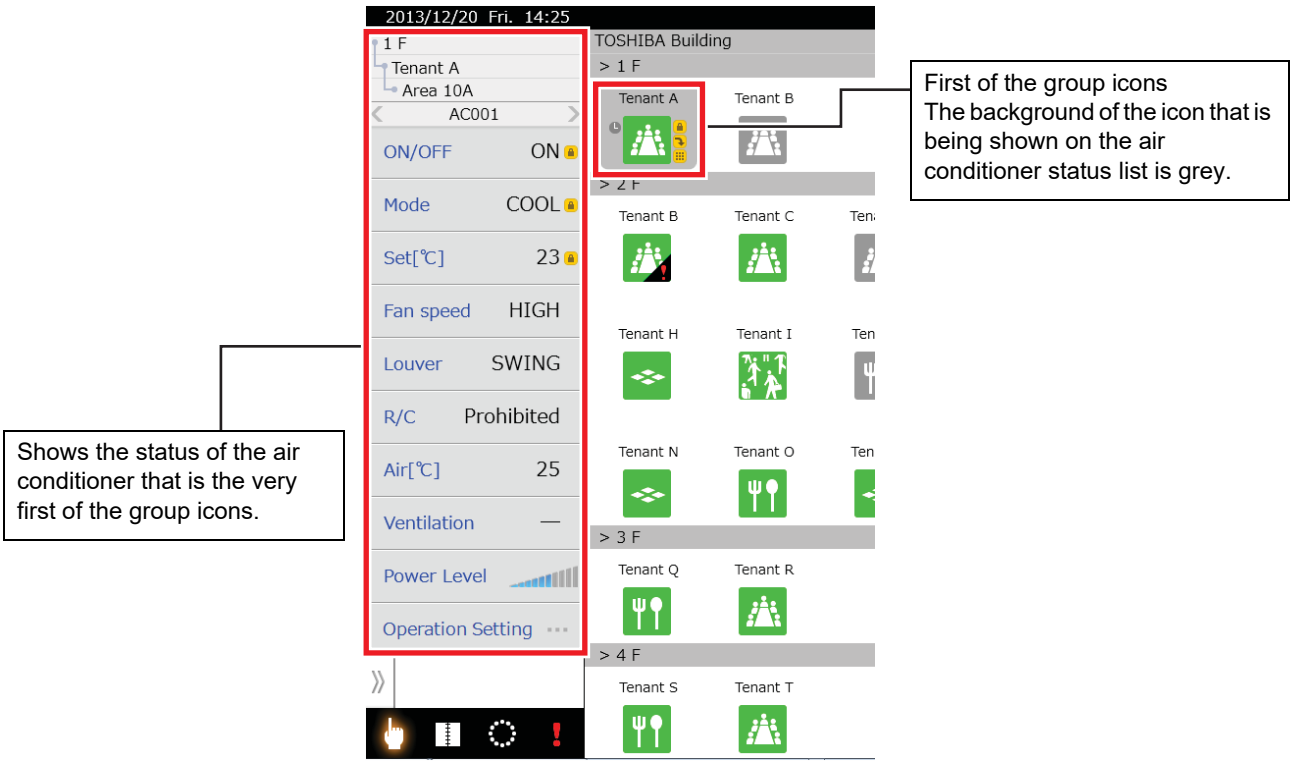
NOTE

Screensaver
If the screen is not touched for a long time (about 10 minutes), the LCD's backlight turns off.
If the screen is touched, the LCD's backlight turns on again.

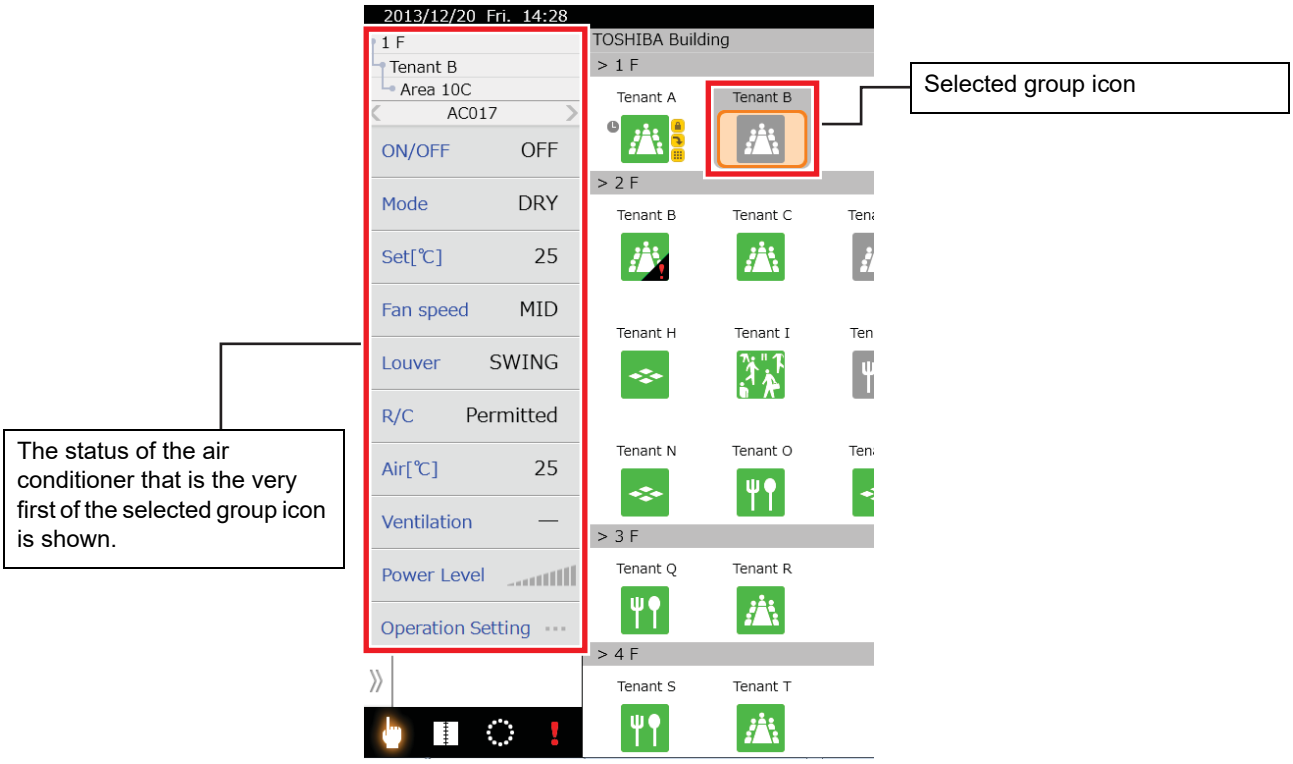
3-2. Air conditioner status list display

Shows the status of the air conditioner that is the first of the selected group icon. If no group icon is selected, the status of the air conditioner that is the very first of the displayed group icon is shown.

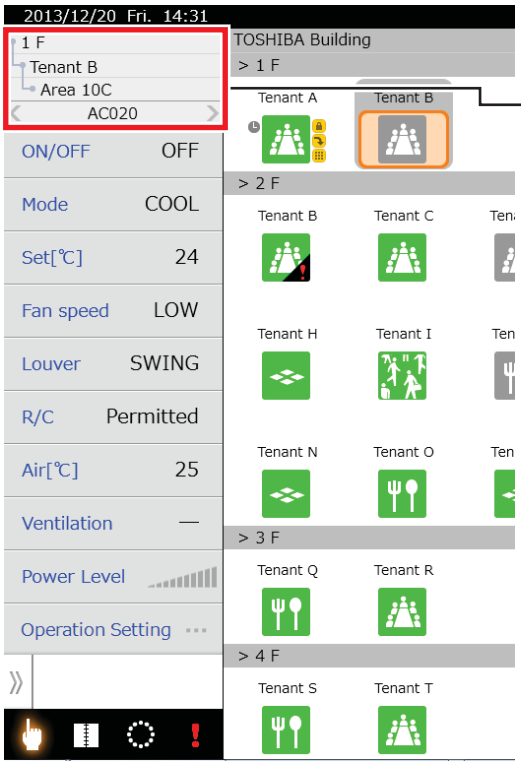
▼ When a group icon is not selected



▼ When a group icon is selected

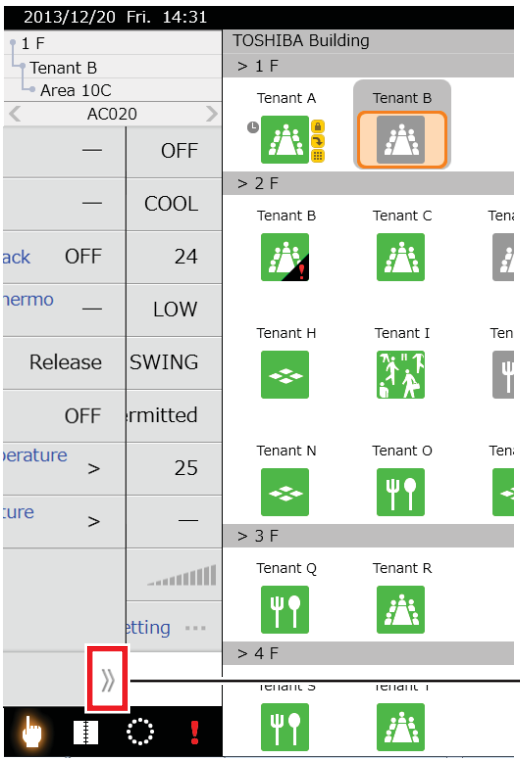


▼ Changing the air conditioner that is shown on the air conditioner status list



Flicking the name of the level on the air conditioner status list moves the air conditioner into the selected group icon.
Right to left flick: Moves to the next air conditioner
Left to right flick: Moves to the previous air conditioner

▼ Showing advanced items on the air conditioner status list



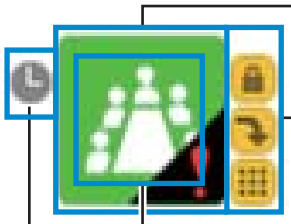
Dragging the Advanced tag on the air conditioner list shows advanced functions.

3-3. Icon display

This section describes the icon displays.

[1] Group icons

▼ Icons show floors, tenants, and areas individually



Icon status

: Indicates it is operating (red or green).

: Indicates it is not operating (grey).

: Indicates an alarm has occurred.

Indicator icons

: Indicates remote control operation is prohibited.

: Indicates forced thermo OFF.

: Indicates there is a filter sign.

Schedule icon

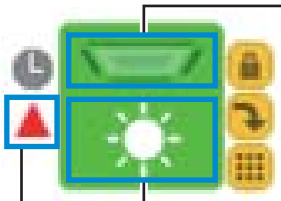
Indicates that a running schedule has been registered.

Group icon images

You can change the image to one you like on the icon settings screen.

...

▼ Icons that show individual units



Air conditioner type icon

: Indicates a cassette type.

: Indicates a duct type.

: Indicates a ceiling type.

: Indicates a high wall type.

: Indicates a floor standing type.

: Indicates Air to Air Heat Exchanger and fresh air type.

Operation mode icons

: Indicates cooling.

: Indicates heating.

: Indicates fan.

: Indicates Drying.

: Indicates automatic operation.

Air temperature level icons

: Indicates the air temperature is higher than the set temperature.

: Indicates the air temperature is lower than the set temperature.

▼ Icons when selected

Selected

Not selected

[2] Menu icons

▼ Appearance and functions of menu icons

These icons display the various screens. Icons are orange when they appear on screen. The alarm icon flashes red when an alarm occurs.


Control screen


Running schedule screen


Option screen


Alarm List screen

[3] Display switching icons

▼ Appearance and functions of display switching icons

These icons change the display of group icons. Icons that are on the screen that is currently displayed are orange.

- Screen switching


List screen


Monitor screen


Layout screen (TOUCH SCREEN CONTROLLER only)

- Level switching


Floor display


Tenant display


Area display


Unit display

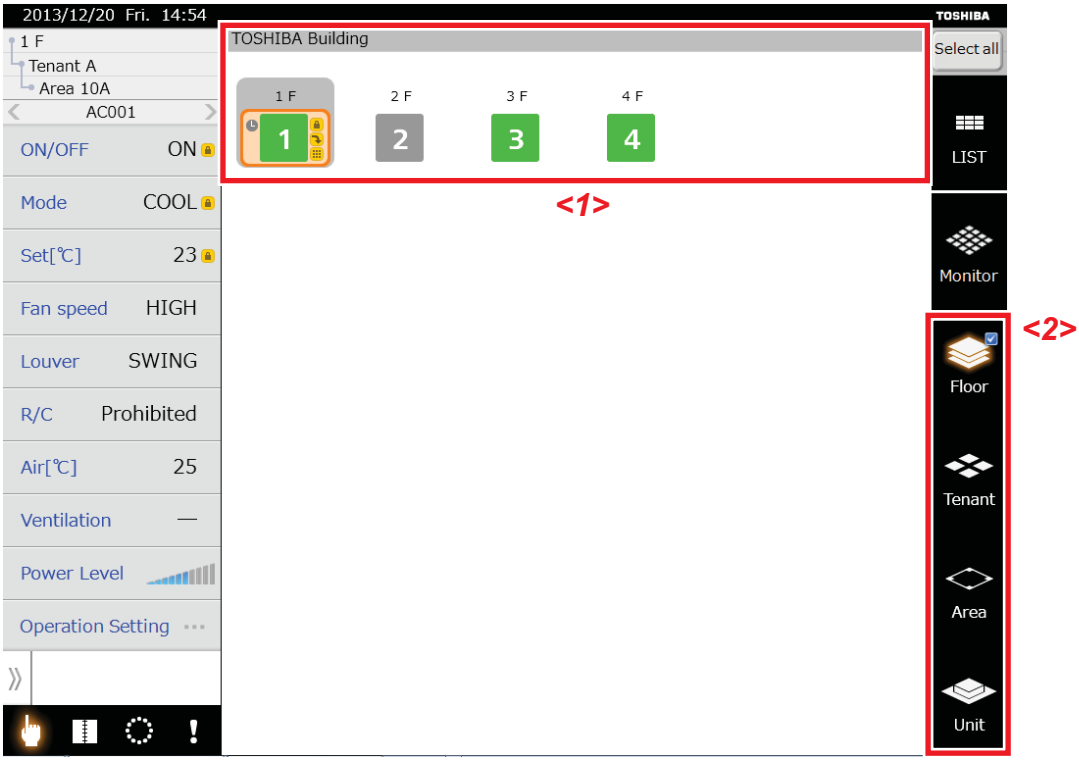
CAUTION

The layout icon only appears when the layout screen is enabled.

4 How to operate

4-1. Moving levels

[Control screen]



[1] Moving to a lower level on the control screen

(1) Using the display switching icon to move
Tap the group icon **<1>** (more than one can be selected) you want to move to a lower level, then tap the display switching icon **<2>** of the level to which you want to move.

(2) Long tapping to move (TOUCH SCREEN CONTROLLER only)
Long tap a group icon, to move it under the group icon you long tapped.

[2] Moving to an upper level on the control screen

Tap the display switching icon of the upper level to move to the upper level.

CAUTION

If a level is skipped, such as from a floor to an area, then you cannot move to the skipped level. Return to the highest level and then move to it.

4-2. Changing air conditioner settings

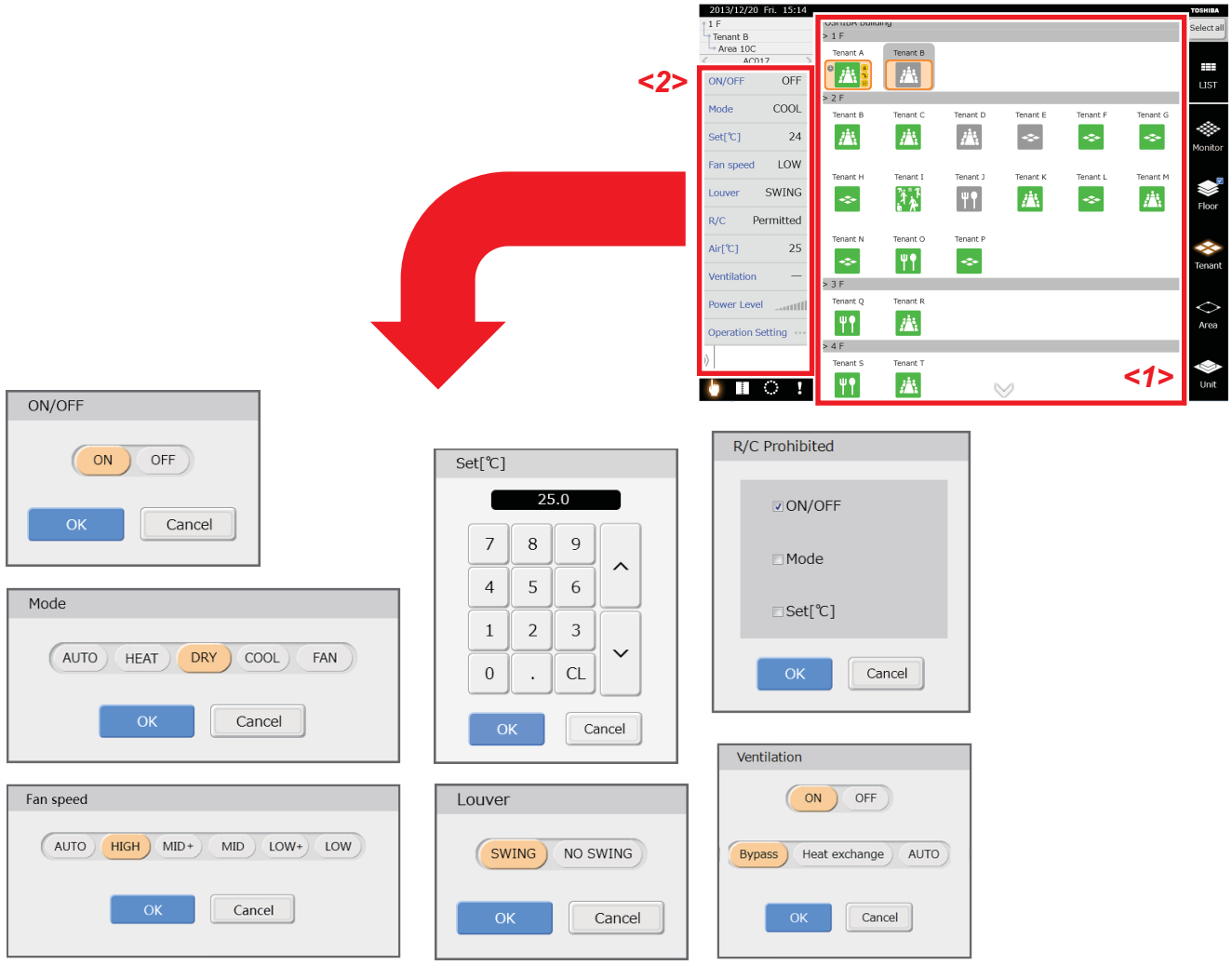
You can change the settings and turn on or off the air conditioner. You can change the air conditioner's settings from the control screen.
If "-" appears on the air conditioner status list, that function cannot be used, so you cannot set it even if you tap it.

▼ You can set air conditioners in the following groupings.

- Set all air conditioners in a batch
- Set air conditioners by floor in a batch
- Set air conditioners by tenant in a batch
- Set air conditioners by area in a batch
- Set air conditioners individually

[1] Changing individual settings of air conditioners on the control screen

You can turn air conditioners on or off, change the operation mode, set temperatures, fan speeds, louvers, and ventilation, and remote control prohibited.



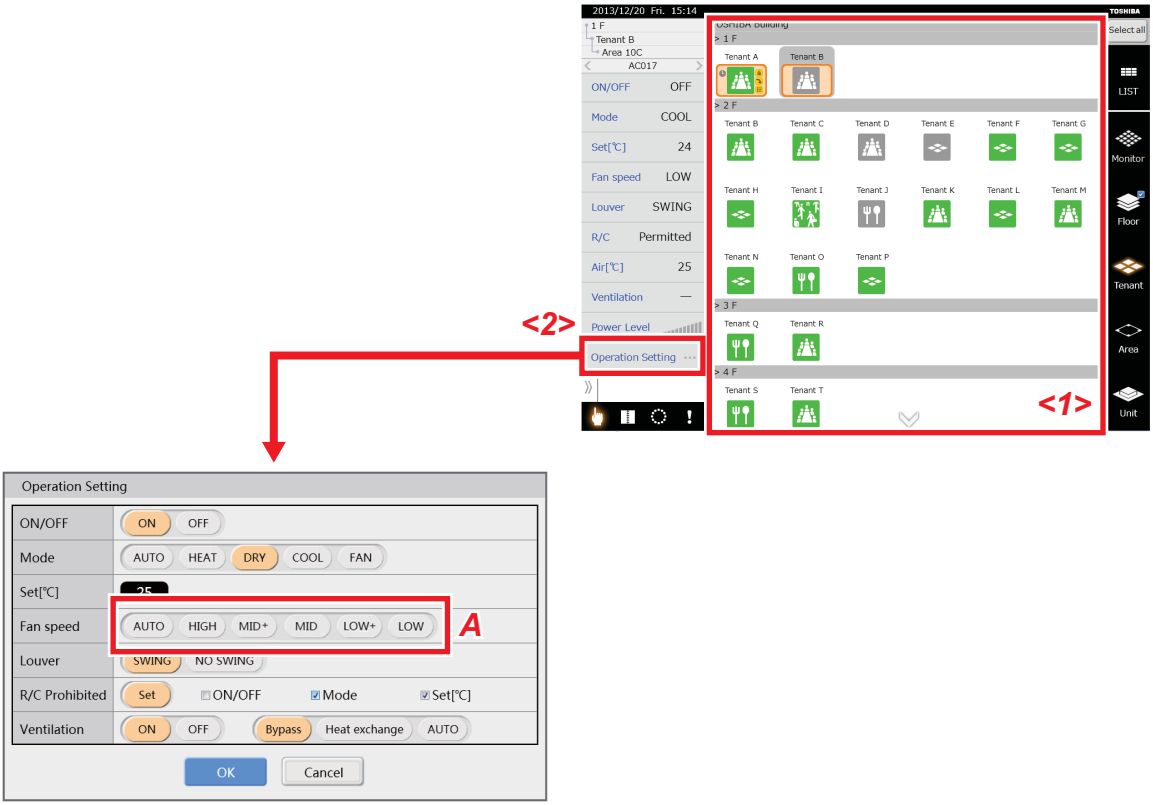
(1) Move to another level and tap the group icon **<1>** that you want to set. (More than one can be selected)
(2) Tap the item that you want to change on the "Air conditioner status list" **<2>**.
The screen for changing settings appears.
(3) Set the changes and tap the [OK] button.
The settings are applied to the air conditioners in the group icon that was selected in (1).

CAUTION

Power level shows the performance status of the air conditioner that is operating in 10 steps. The more bars are lit, the stronger the operation.
Air temperature and power level are indicators only, they cannot be set.
Some functions cannot be used, depending on the model of the air conditioner. Refer to the Owner's Manual for each air conditioner.

[2] Changing multiple settings of air conditioners on the control screen

You can turn air conditioners on or off, change the operation mode, set temperatures, fan speeds, louvers, and ventilation, and remote control prohibited in batches.



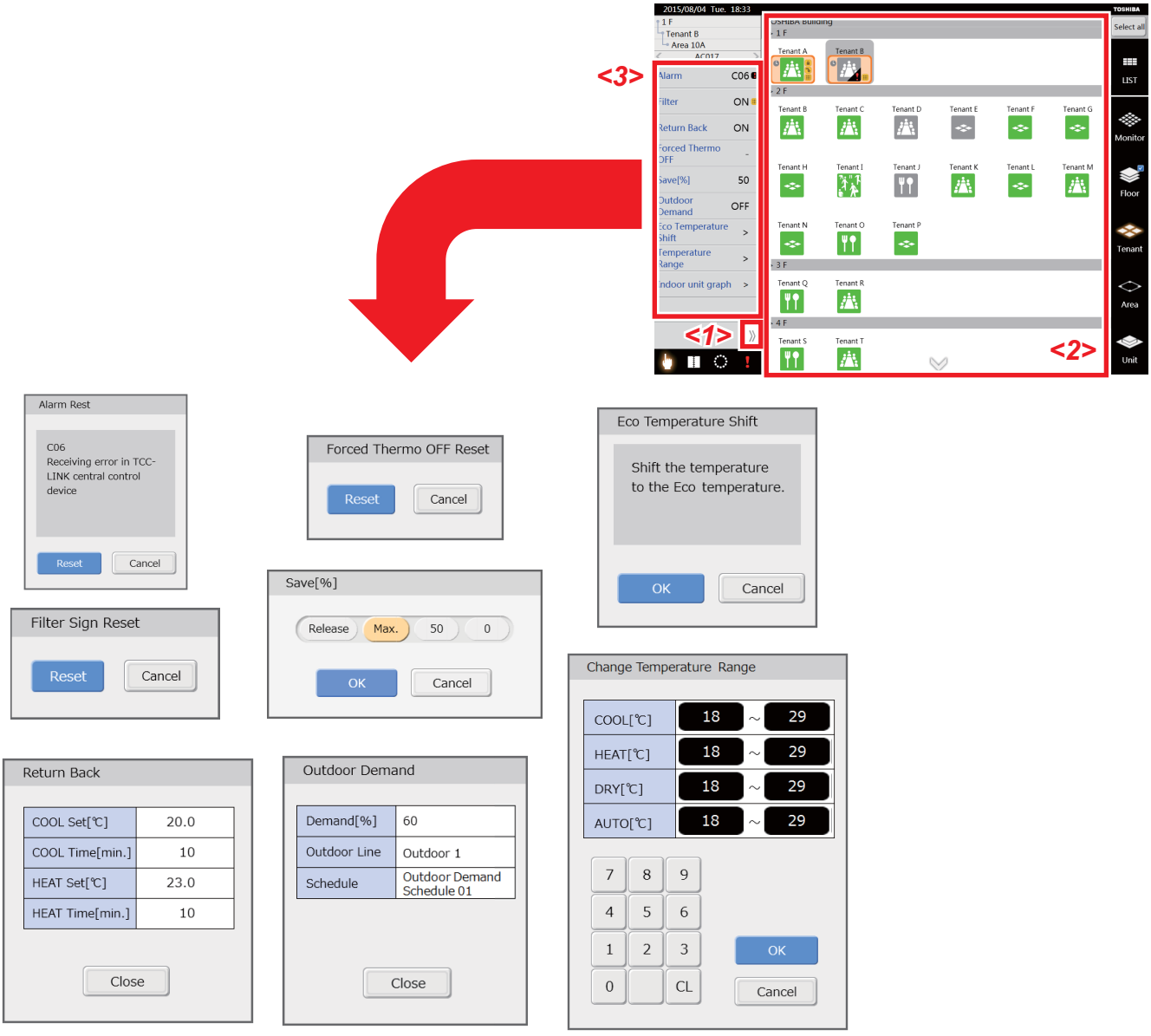
(1) Move to another level and tap the group icon **<1>** that you want to set. (More than one can be selected)
(2) Tap [Operation Setting] on the "Air conditioner status list" **<2>**.
The Operation Setting screen appears.
(3) Set the changes and tap the [OK] button.
The settings are applied to the air conditioners in the group icon that was selected in (1).

CAUTION

Unset items are not set to the air conditioners. (See ***A***)
To clear a setting that is selected, tap the selected item again.

[3] Changing the advanced functions of air conditioners on the control screen

You can open the advanced list by sliding the Advanced tag <1>. You can change the set temperature range, the eco temperature shift, save, filter sign reset, alarm reset, and forced thermo OFF reset. You can only check the settings of Return Back and Outdoor Demand. If advanced functions are not operating or registered, "-" appears.



(1) Move to another level and tap the group icon <2> that you want to set. (More than one can be selected)
(2) Tap what you want to change on the "Advanced list" <3>.
The screen for settings appears.
(3) Set the changes and tap the [OK], [Reset] button.
The settings are applied to the air conditioners in the group icon that was selected in (1).

■ About advanced functions

▼ Alarm Reset
Transmits an error clear signal and eliminates error signals.

▼ Filter Sign Reset
Transmits a filter sign clear signal and clears the filter sign.

▼ Return Back
If a temperature is set that is lower (when cooling) or higher (when heating) than the Return Back temperature, which has been set in advance, then the setting is automatically returned to the temperature set for the Return Back temperature after a certain period of time. You can check the time and temperature of the Return Back setting.

▼ Reset Forced Thermo OFF
Clears the status of air conditioners that have had Forced Thermo OFF done to them by the demand signal from the Digital Input/Output Relay Interface.

▼ Save
Operates the air conditioners with suppressed performance. Settings are shown below.
Release: No power saving
Max: 99 - 50 % power saving
50: 50 % power saving
0: Thermo off

▼ Outdoor Demand
You can check the outdoor demand schedule, outdoor line, outdoor demand ratio set for the outdoor units that are connected.

▼ Eco Temperature Shift
The set temperatures are shifted in a batch by ±2 °C.
Example: +2 °C during cooling, -2 °C during heating

▼ Change Temperature Range
Set the upper and lower limits of the temperature for each mode (COOL, HEAT, DRY, AUTO).

NOTE
If you use wireless remote controller, wireless remote controller may set a temperature outside the set temperature range specified by the Unit.

4-3. Schedule settings

The TOUCH SCREEN CONTROLLER can schedule operations of the air conditioners.

▼ The following settings can be set for scheduled operations.

ON / OFF, operation mode, set temperature, operation of remote control prohibited / permitted, return back, save, and ventilation mode.

▼ Glossary of schedule settings

- Master Schedule: Schedule assigned to air conditioners
- Operating Schedule: Schedule up to one week from the present that is assigned to each air conditioner
- Weekly pattern: Schedule for one week
- Special Day pattern: Schedule that is different from the weekly pattern
- Monthly settings: Sets the daily operations for special day patterns

▼ Procedure for setting scheduled operations

(1) Creation of a master schedule

Creates a weekly pattern.

Creates monthly settings and creates schedules for special days if special day patterns are required.

(2) Registration of a master schedule

Schedules are set by registering a master schedule used for each air conditioner.

You can check the content of a schedule that is set in the Operating Schedule settings screen.

(3) Changes to schedules

You can change a schedule from the operating schedule settings screen.

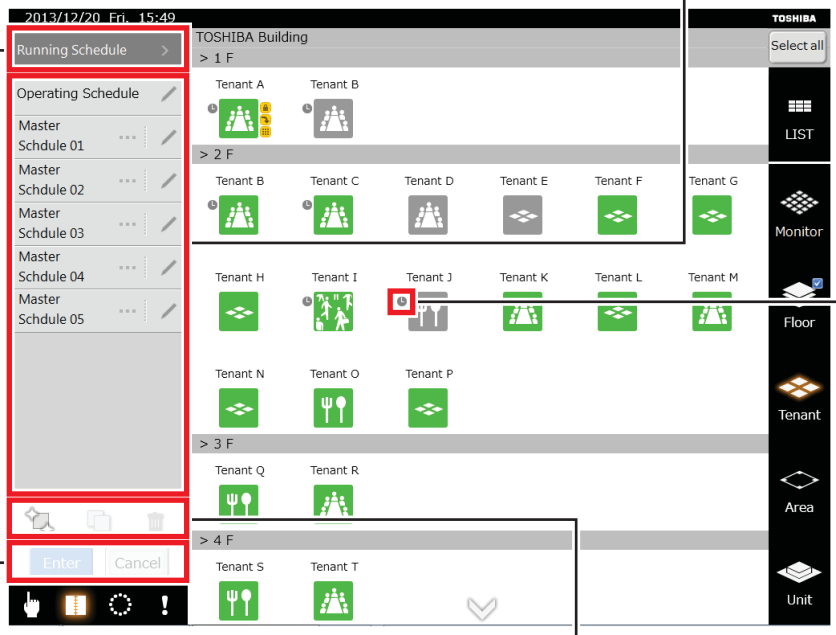
Schedule title

Switches between the running schedule and the billing schedule.

Schedule list

Shows the operating schedule and the master schedule.

[Running Schedule screen]



Schedule icon

Appears if a running schedule has been registered.

Master schedule registration operating area

Enabled when a master schedule is selected.

->For details, see "4-3.[6]Registering new master schedules in the Running Schedule screen".

Enter : Registers a master schedule for the selected air conditioner.

Cancel : Unselects a selected air conditioner.

Master schedule operating area

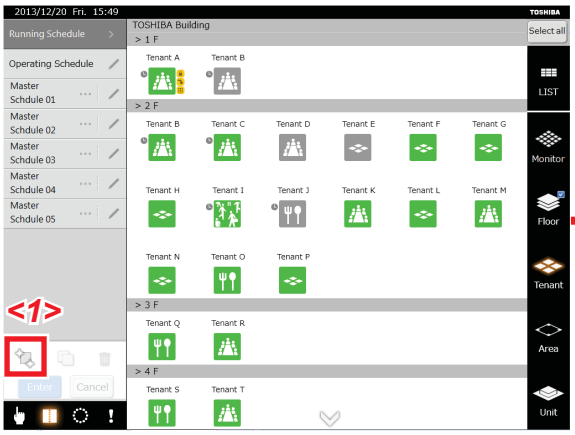
: Creates new master schedules.

: Copies master schedules.

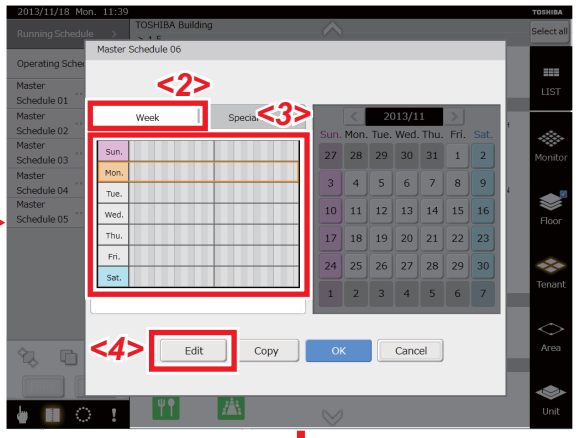
: Deletes master schedules.

[1] Creating new master schedules in the Running Schedule screen

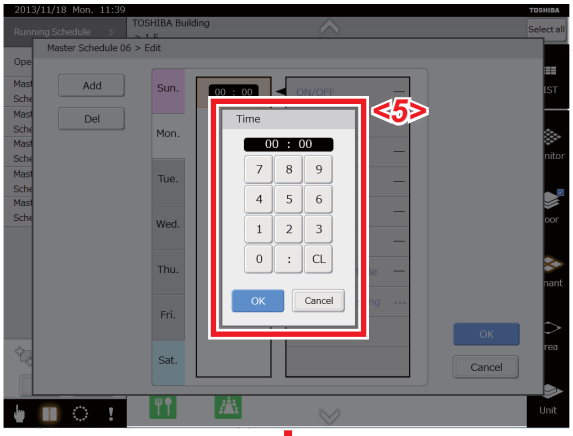
[Running Schedule screen]



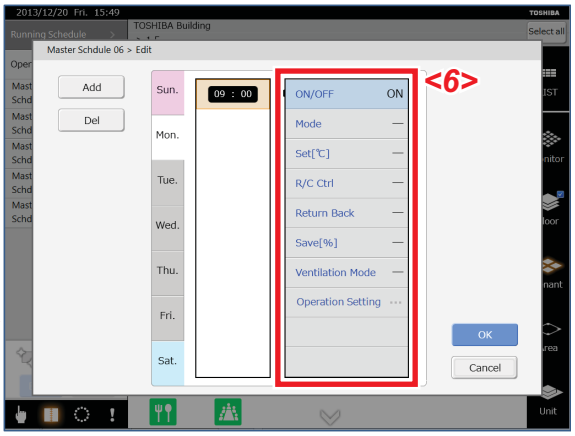
[Master Schedule Weekly Pattern Settings screen]



[Schedule Setup screen]

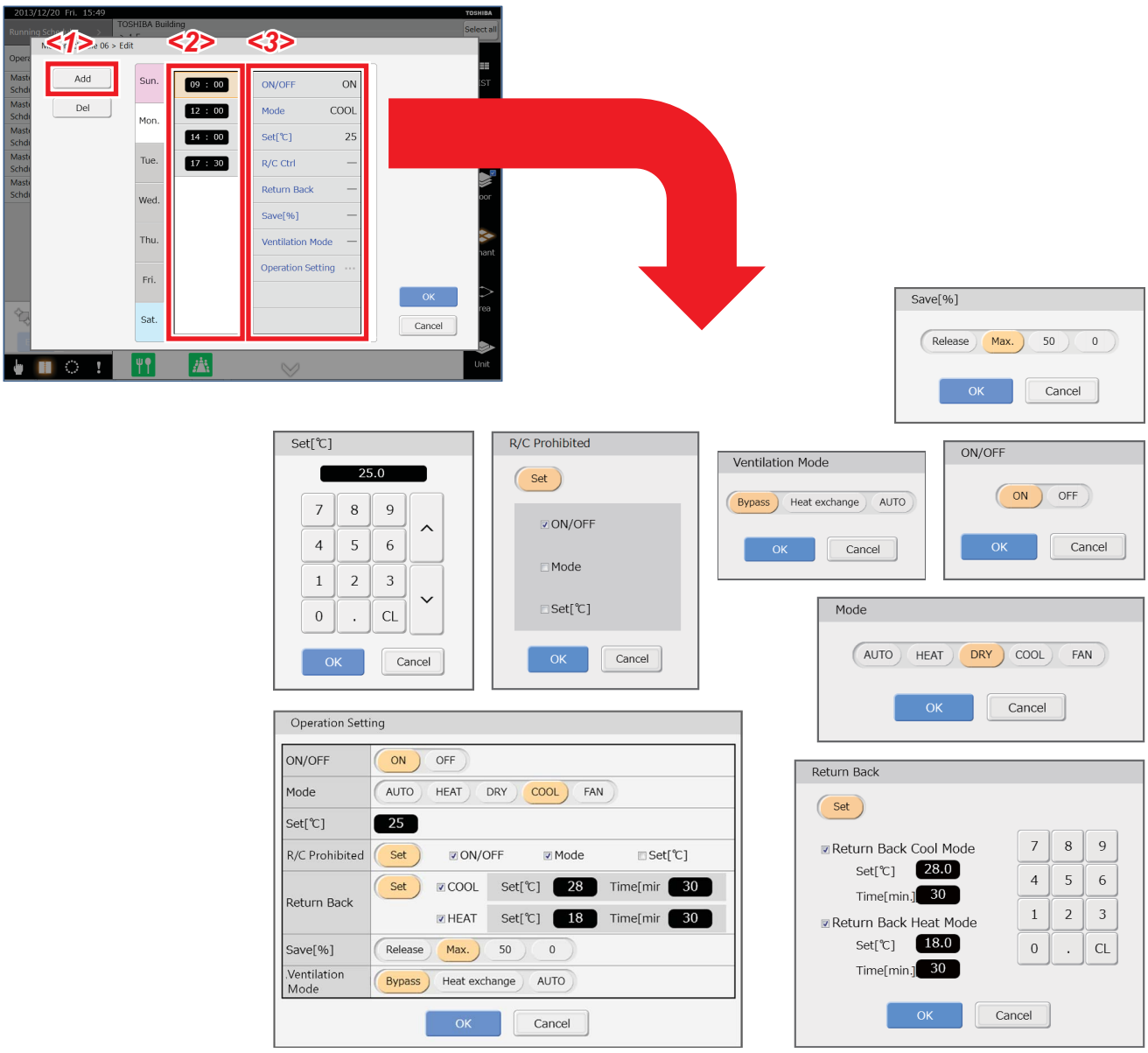


[Master Schedule Detailed Settings screen]



(1) Tap the [Create New] icon **<1>**.
The Master Schedule Weekly Pattern Settings screen appears.
(2) Tap the [Week] tab **<2>**.
(3) Tap the day **<3>** that you want to set.
(4) Tap the [Edit] button **<4>**.
The screen for setting the time appears.
(5) Set the "Schedule Time" **<5>**.
Tap the [OK] button to add the scheduled time to the Master Schedule Detailed Settings screen.
(6) Tap what you want to change on the "Operations list" **<6>**.
The screen for changing settings appears.
(7) Set the changes and tap the [OK] button.
The changes are reflected in the Master Schedule Detailed Settings screen.
(8) Tap the [OK] button in the Master Schedule Detailed Settings screen.
The changes are reflected in the Master Schedule Weekly Pattern Settings screen.
(9) Tap the [OK] button in the Master Schedule Weekly Pattern Settings screen to create a new master schedule.

[2] Creating schedules in the Master Schedule Detailed Settings screen



▼ Add

(1) Tap the [Add] button **<1>**.
The screen for setting the time appears.

(2) Set the schedule time.
Tap the [OK] button to add a new time to the "Time list" **<2>**.

▼ Change

(1) Tap the schedule that you want to change on the "Time list" **<2>**.
The schedule is highlighted and the "Operations list" **<3>** for the set times appears.

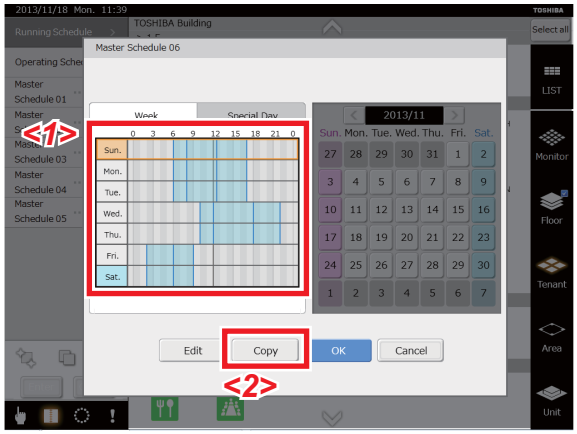
(2) Tap the item that you want to change on the schedule or "Operations list" **<3>**.

(3) Set the changes and tap the [OK] button.

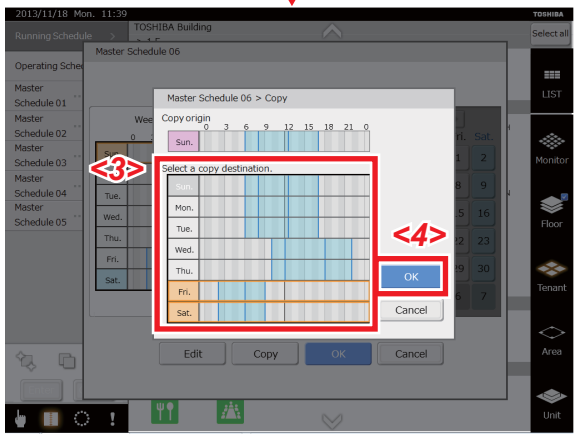
[3] Copying daily schedule in the Master Schedule Weekly Pattern Settings screen

The setup details completed for the day can be copied to other days.

[Master Schedule Weekly Pattern Settings screen]



[Copy screen]

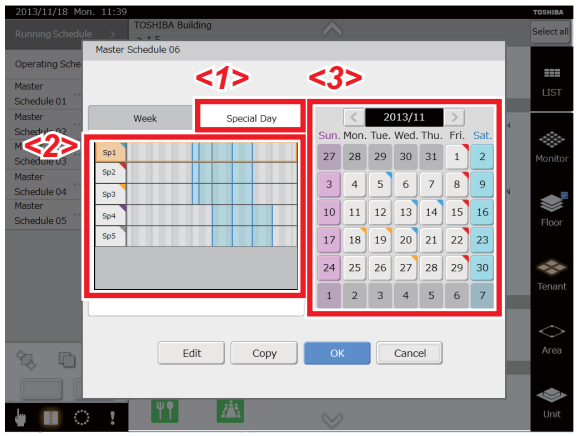

<3>
<4>
Select a copy destination.
OK
Cancel

(1) Tap the day to copy <1>.
(2) Tap the [Copy] button <2>.
The screen for copying appears.
(3) Tap the place to copy to <3>. (More than one can be selected)
(4) Tap the [OK] button <4>.
The Master Schedule Weekly Pattern Settings screen appears and the schedule has been copied to it.

[4] Setting special days in the Master Schedule Special Day Pattern Settings screen

Sets days that are special days and creates schedules for special days.

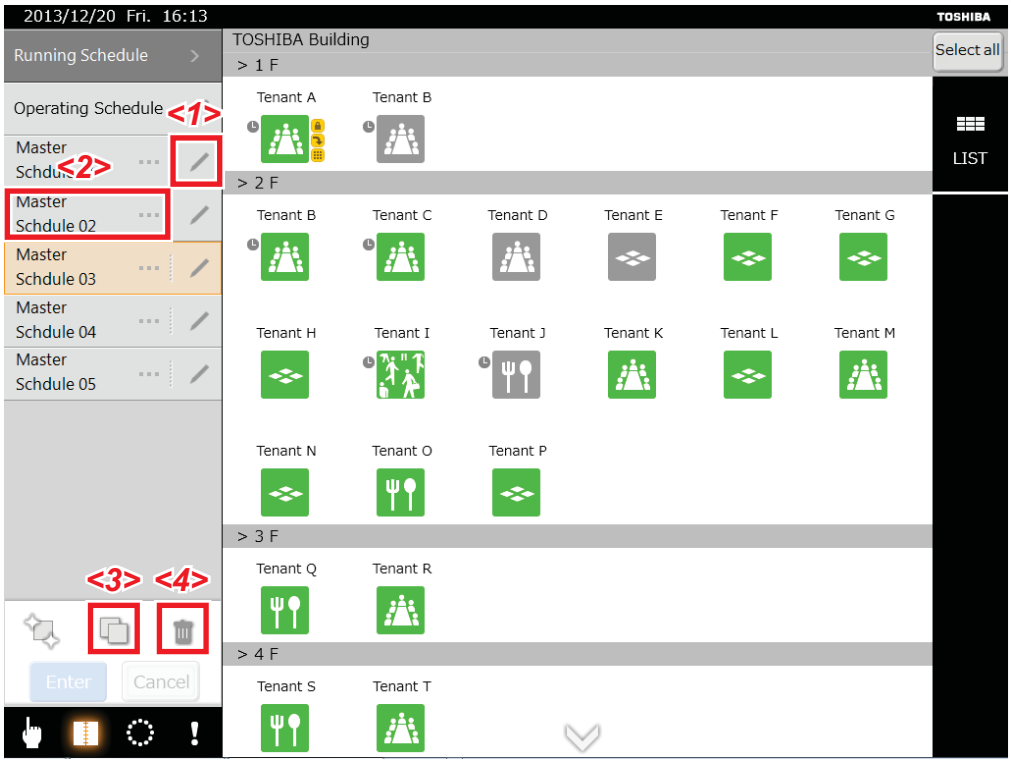
[Master Schedule Special Day Pattern Settings screen]



(1) Tap the [Special Day] tab <1>.
The setting procedure is the same as the weekly pattern.
(2) Do monthly settings.
Tap the special day <2> to set.
(3) Tap the [Calendar] < > button <3> for the month and year you want to set to select them.
(4) Tap the date on the calendar <3> that you want to set as a special day.
It appears the same colour as a special day.

[5] Changing, copying, and deleting master schedules in the Running Schedule screen

[Running Schedule screen]



▼ Changing a master schedule

(1) Tap the [Edit] icon **<1>** for the name of the master schedule you want to edit.
The Master Schedule Weekly Pattern Settings screen appears.

(2) Edit the master schedule in the same way you created it.

▼ Copying a master schedule

(1) Tap the "Master schedule name" **<2>** for the one to copy.

(2) Tap the [Copy] icon **<3>**.
The copied master schedule is created.

▼ Deleting a master schedule

(1) Tap the "Master schedule name" **<2>** for the one to delete.

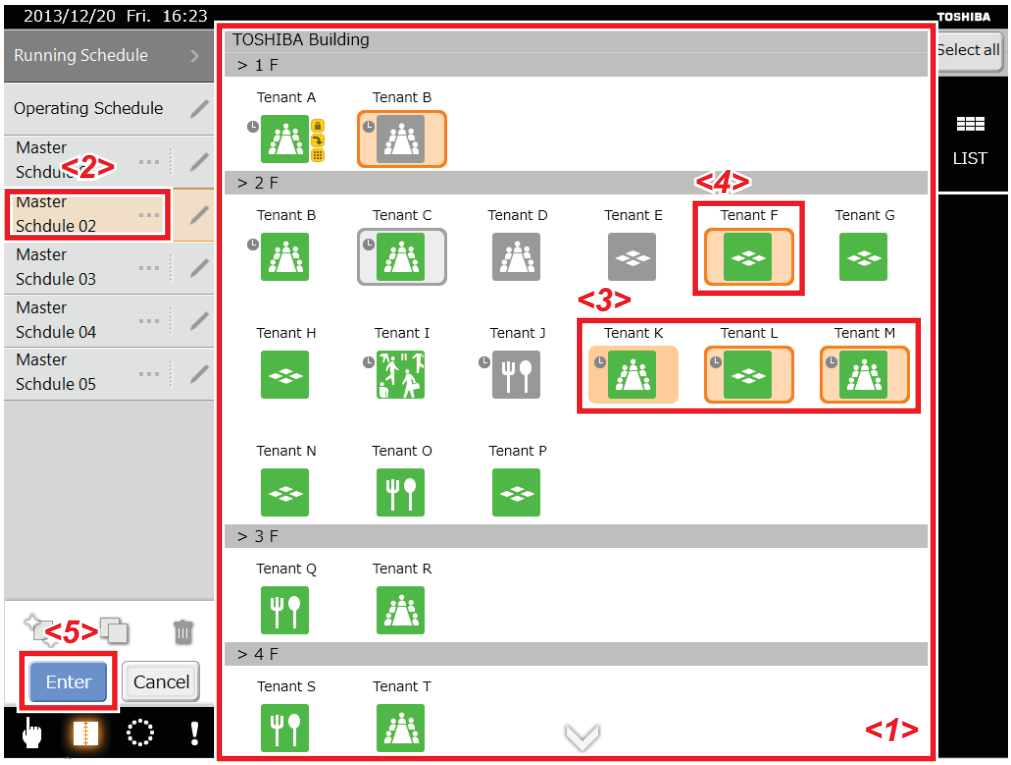
(2) Tap the [Delete] icon **<4>**.
The confirmation screen appears.

(3) Tap the [OK] button.
The master schedule is deleted.

[6] Registering new master schedules in the Running Schedule screen

Schedules are set by registering a master schedule to an air conditioner.

[Running Schedule screen]



(1) Do "Level Shift" <1> to a level on which there is a group icon you want to register.
(2) Tap the master schedule name <2> you want to register.
The system enters the schedule registration mode, and you cannot shift levels. The group Icon <3> to which the selected master schedule was registered is highlighted so you can confirm the current registration status.
(3) Tap the group icon that you want to register.
The selection frame of the group icon <4> that you tapped flashes.
(4) Tap the [Enter] button <5>.
The selection frame of the group icon lights, the schedule icon appears, and registration is finished.

▼ Condition of icons in schedule registration mode


A schedule has been registered.


Schedules have been registered to some air conditioners.


A different schedule has been registered.


A schedule has not been registered.

▼ Condition of icons in schedule registration mode, registered or deleted

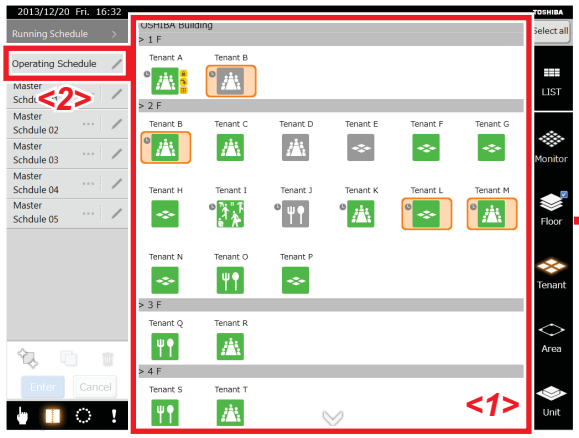

Register schedules. (Frame flashes)


Reset schedules. (grey)

[7] Confirming and changing the content of schedules registered in the Running Schedule screen

You can confirm and change the content of a schedule that is registered for each air conditioner up to a week from the present.

[Running Schedule screen]



[Operating Schedule Settings screen]

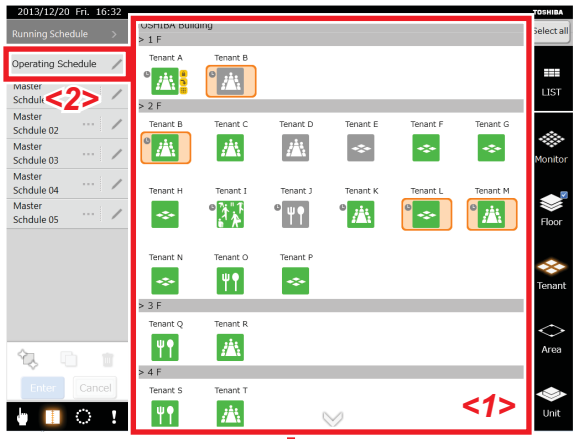
[Operating Schedule Detailed Settings screen]

(1) Tap the group icon <1> for the schedule that you want to confirm or change.
(2) Tap [Operating Schedule] <2>.
The Operating Schedule Settings screen appears.
(3) Tap the [Date] tab <3> for the schedule that you want to confirm or change.
(4) Tap the "Air Conditioner" <4> for the schedule details that you want to confirm or change.
(5) Tap the [Edit] button <5>.
The Operating Schedule Detailed Settings screen appears.
(6) Tap the time <6> and the setting contents <7> that you want to confirm or change.
Changing the schedule turns the colour of the air conditioner's name and the schedule gauge to pink on the Operating Schedule Settings screen.
The procedure to create a schedule is the same as for the master schedule.

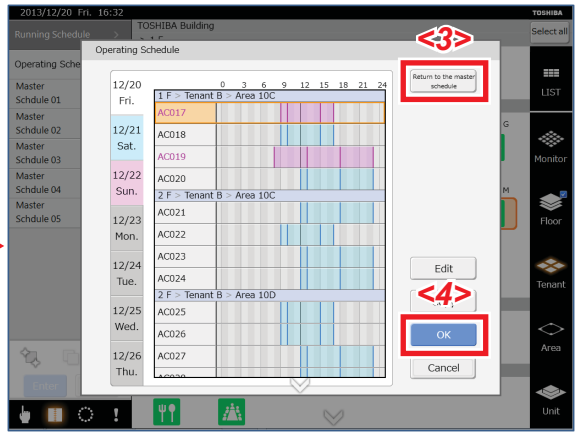
[8] Returning the content of the changes to the operating schedule to the master schedule

Air conditioners that have a changed schedule appear pink in the Operating Schedule Detailed Settings screen. Return this schedule to the settings of the master schedule.

[Running Schedule screen]



[Operating Schedule Settings screen]



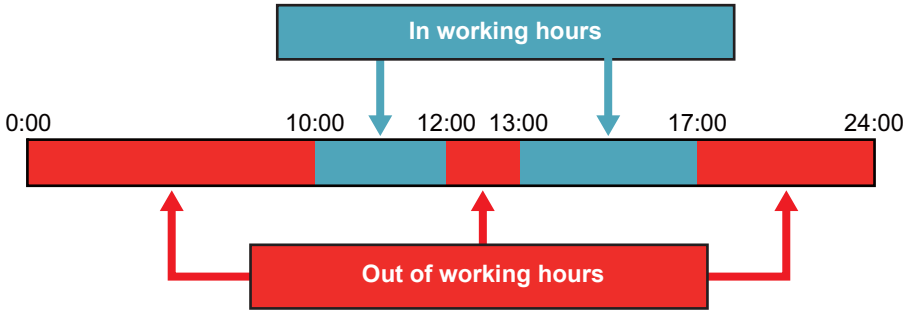
(1) Tap the group icon <1> for the operating schedule you want to return to the master schedule.
(2) Tap [Operating Schedule] <2>.
The Operating Schedule Settings screen appears.
(3) Tap the [Return to the Master Schedule] button <3>.
The confirmation screen appears.
(4) Tap the [OK] button.
Return all the edited content of the operating schedule to the master schedule. (Names that were pink and gauges return to black or blue.)
(5) Tap the [OK] button <4> to confirm.

4-4. Billing Schedule settings

The billing schedule can be set to total operating time and power distribution separately for in working hours and out of working hours.

▼ The periods for in working hours can be set for the billing schedule.

Example: If 10:00 to 12:00 and 13:00 to 17:00 are set as in working hours in the billing schedule, then the periods for in working hours and out of working hours for one day are shown below.



▼ Procedure for setting the billing schedule

(1) Create a billing schedule

Creates a weekly pattern.

Creates monthly settings and creates schedules for special days if special day patterns are required.

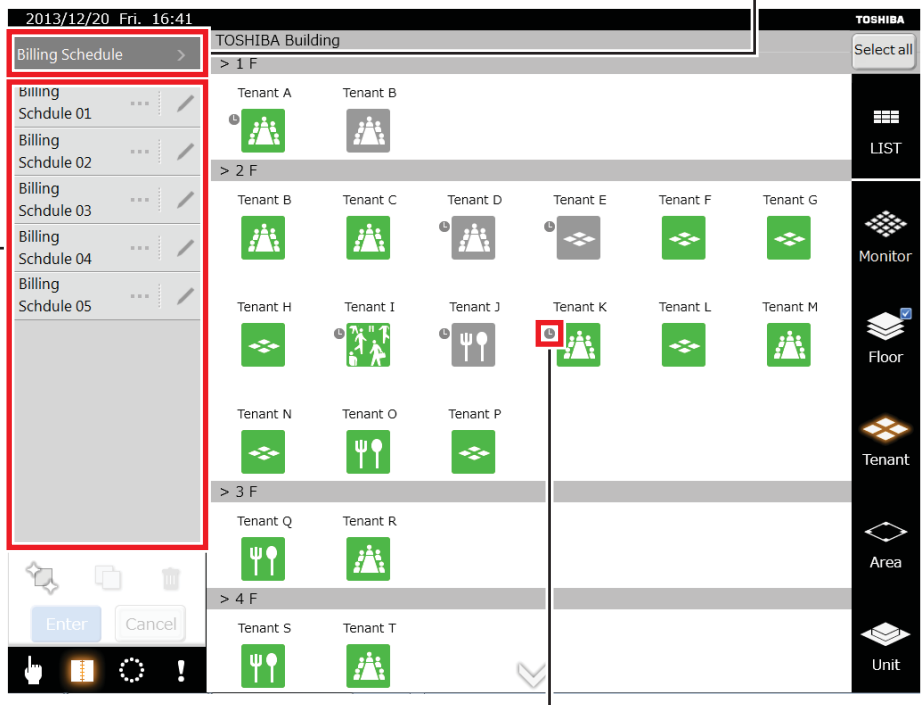
(2) Register the billing schedule

Billing schedules are set by registering a billing schedule used for each air conditioner.

Schedule list
Shows the list of billing schedules.

Schedule title
Switches between the Running Schedule and the Billing Schedule.

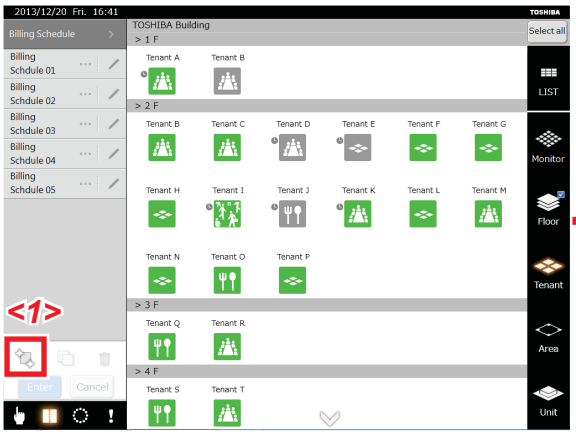
[Billing Schedule screen]



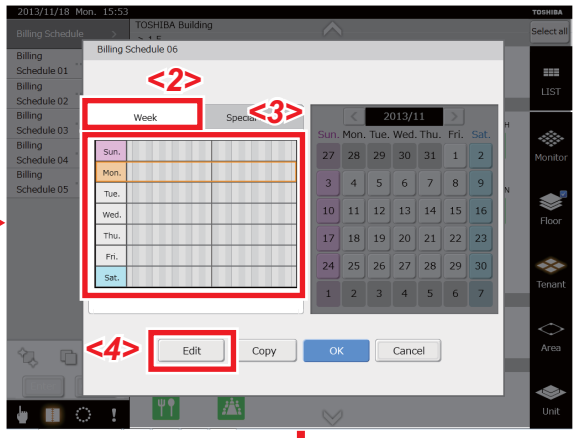
Schedule icon
Appears if a billing schedule has been registered.

[1] Creating new billing schedules in the Billing Schedule screen

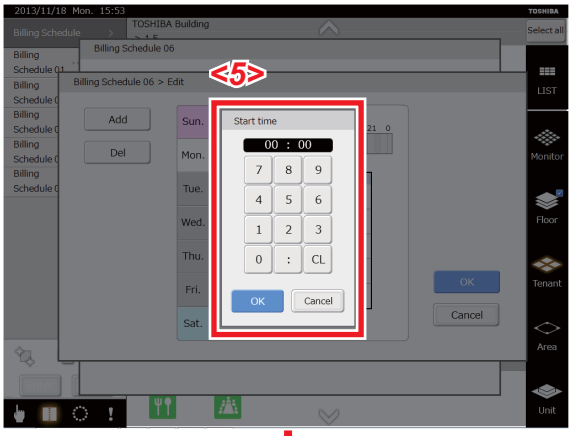
[Billing Schedule screen]



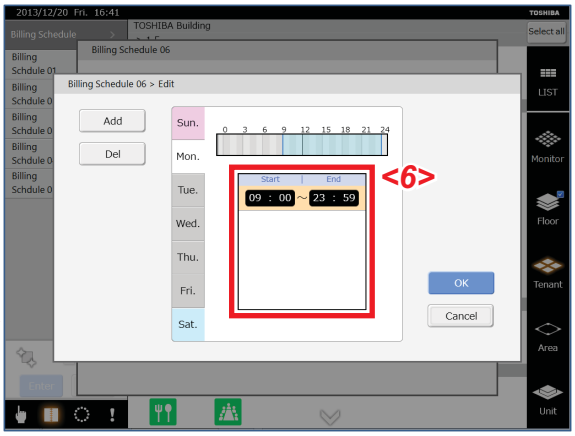
[Billing Schedule Weekly Pattern Settings screen]



[Schedule Setup screen]

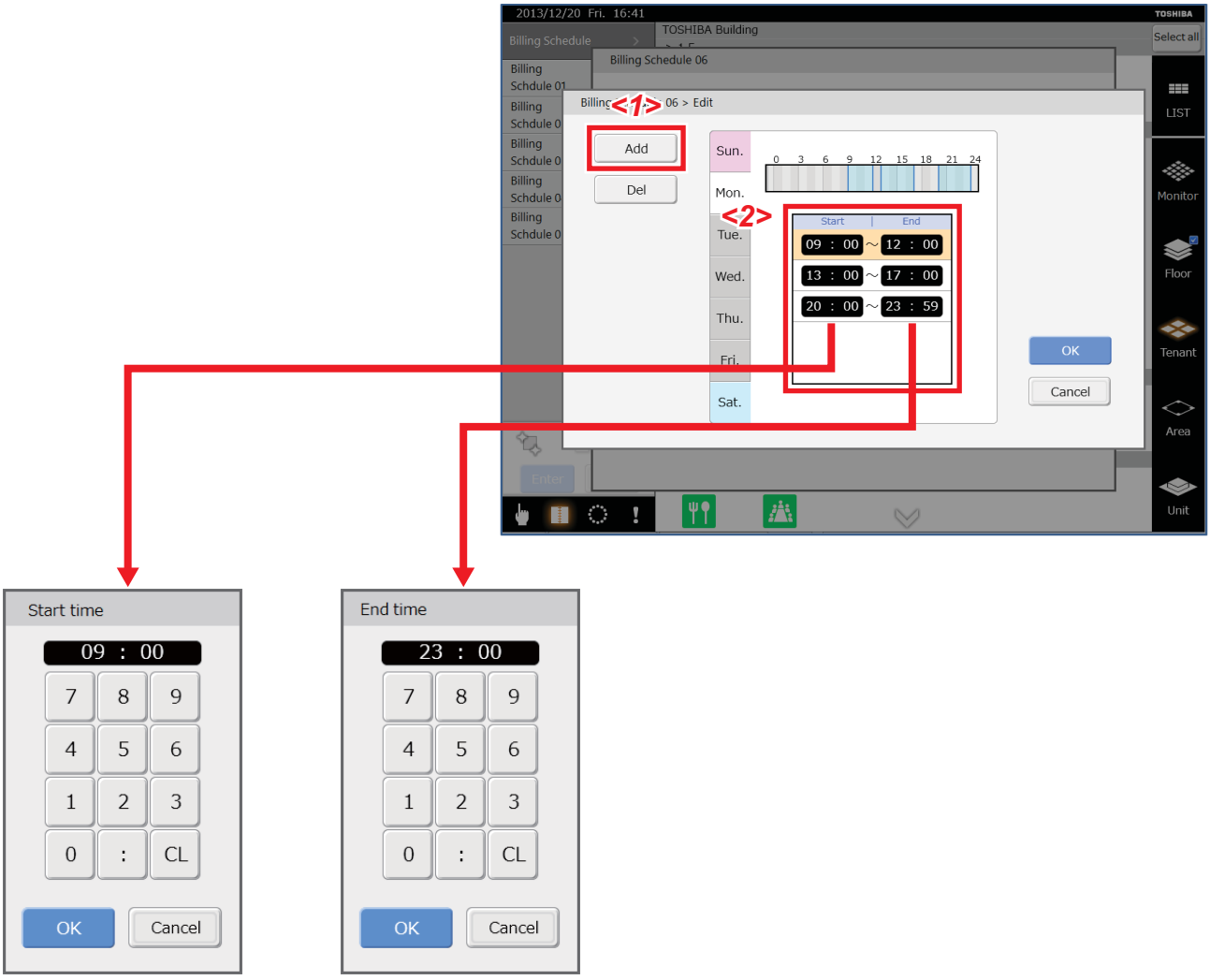


[Billing Schedule Detailed Settings screen]



(1) Tap the [Create New] button **<1>**.
The Billing Schedule Weekly Pattern Settings screen appears.
(2) Tap the [Week] tab **<2>**.
(3) Tap the day **<3>** that you want to set.
(4) Tap the [Edit] button **<4>**.
The screen for setting the Start time for normal time appears.
(5) Set the "Start time" **<5>**.
Tap the [OK] button to add the start time to the Billing Schedule Detailed Settings screen.
(6) Tap the end time in "Normal Time Period list" **<6>**.
The screen for setting the end time for normal time appears.
(7) Set the end time and tap the [OK] button.
The end time is added to the Billing Schedule Detailed Settings screen.
(8) Tap the [OK] button in the Billing Schedule Detailed Settings screen.
The settings are reflected in the Billing Schedule Weekly Pattern Settings screen.
(9) Tap the [OK] button in the Billing Schedule Weekly Pattern Settings screen.
A new billing schedule is created.

[2] Creating schedules in the Billing Schedule Detailed Settings screen



▼ Add
(1) Tap the [Add] button <1>.
The screen for setting the time to start normal time appears.
(2) Set the "Start time".
Tap the [OK] button to add a new time to the "Normal Time Period list" <2>.

▼ Change
(1) Tap the period that you want to change on the "Normal Time Period list" <2>.
The period is highlighted.
(2) Tap the time that you want to change.
The screen for setting the time appears.
(3) Set the time and tap the [OK] button.

The following items are the same as for the master schedule.

[3] Copying daily schedule in the Billing Schedule Weekly Pattern Settings screen

[4] Setting special days in the Billing Schedule Special Day Pattern Settings screen

[5] Changing, copying, and deleting billing schedules in the Billing Schedule screen

[6] Registering billing schedules in the Billing Schedule screen

4-5. Setting outdoor demand schedule

The schedule can be managed for the demand function of the air conditioner (outdoor) according to the peak hour by 90 - 0%.

▼ The content that can be set in the outdoor demand schedule is the outdoor demand rate.

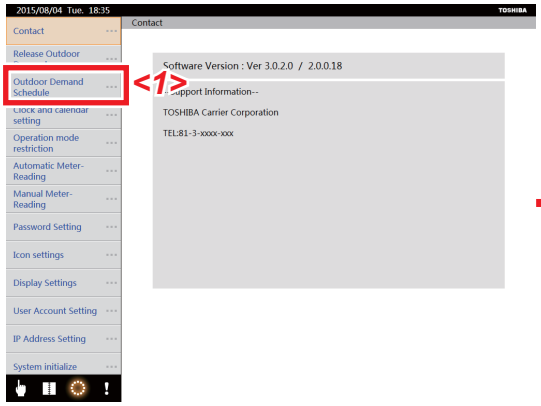
▼ Procedure for setting outdoor demand schedule

(1) Creating outdoor demand schedule
Creates a weekly pattern.
Creates monthly settings and creates schedules for special days if special day patterns are required.

(2) Registering outdoor demand schedule
Register a created demand schedule to the outdoor line to perform scheduled running of the outdoor demand.

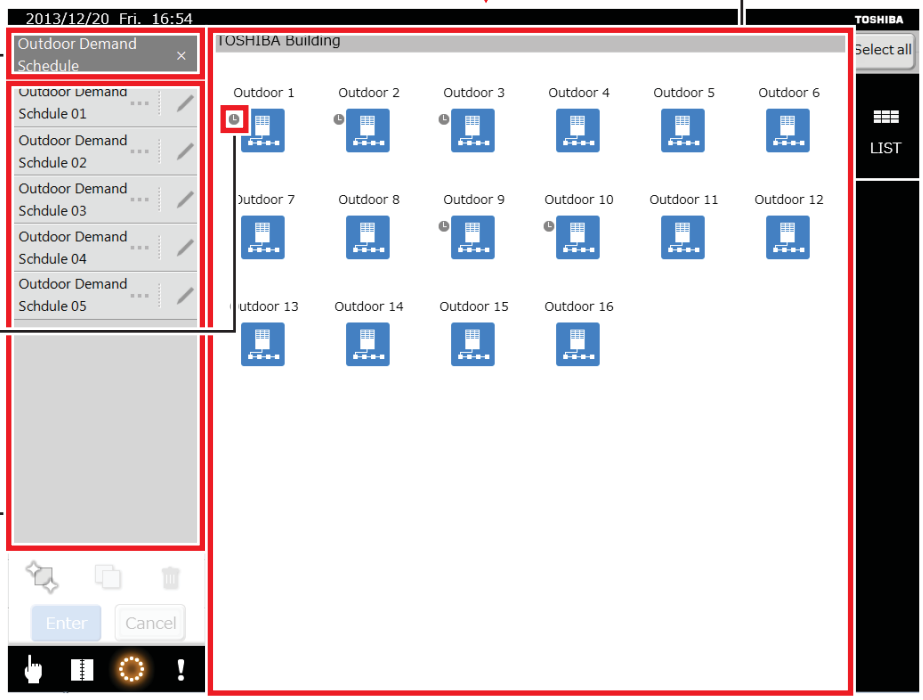
[1] Opening the Outdoor Demand Schedule screen

[Option screen]



Outdoor line icon area
Each outdoor line is shown by an icon.

[Outdoor Demand Schedule screen]



Schedule title
Returns to the option screen.

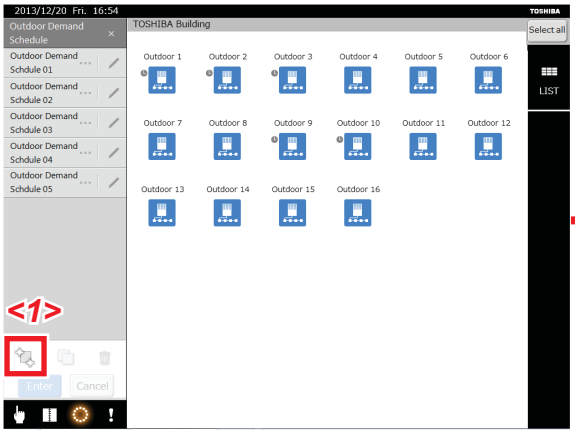
Schedule icon
Appears if an outdoor demand schedule has been registered.

Schedule list
Shows the list of outdoor demand schedules.

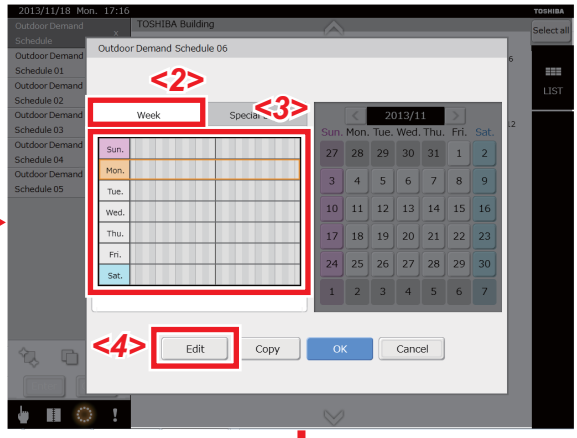
Tap the [Outdoor Demand Schedule] <1> in the option screen.
The Outdoor Demand Schedule screen appears.

[2] Creating new outdoor demand schedules in the Outdoor Demand Schedule screen

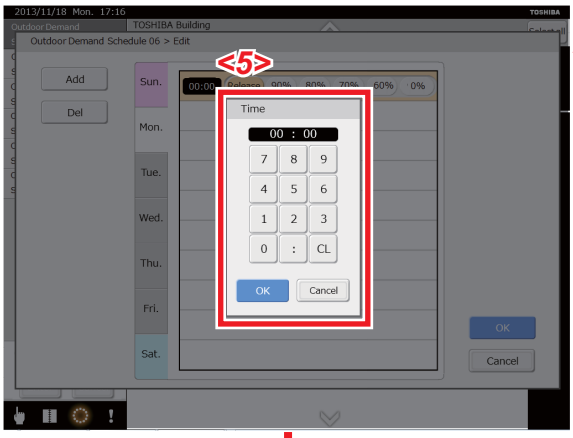
[Outdoor Demand Schedule screen]



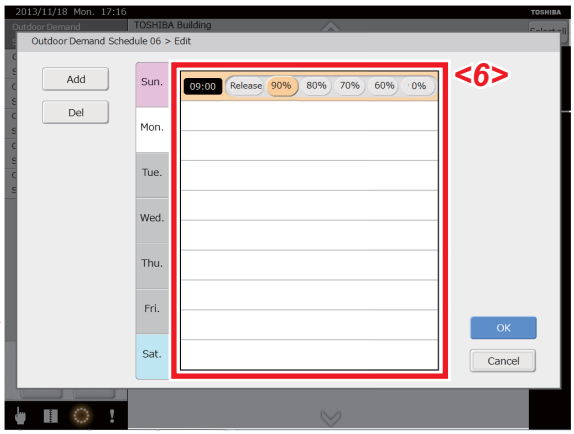
[Outdoor Demand Schedule Weekly Pattern Settings screen]



[Schedule Setup screen]

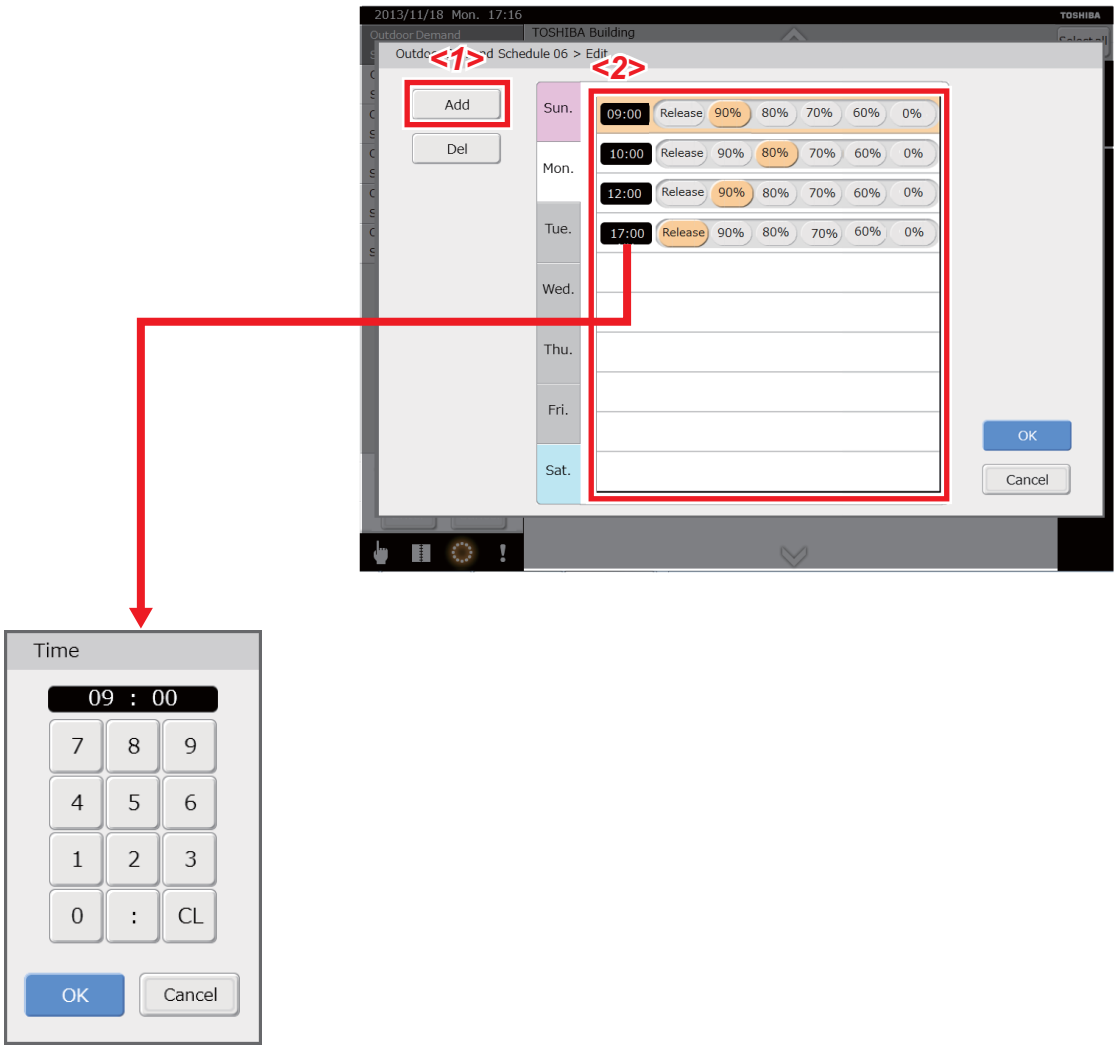


[Outdoor Demand Schedule Detailed Settings screen]



(1) Tap the [Create New] icon **<1>**.
The Outdoor Demand Schedule Weekly Pattern Settings screen appears.
(2) Tap the [Week] tab **<2>**.
(3) Tap the day **<3>** that you want to set.
(4) Tap the [Edit] button **<4>**.
The screen for setting the time appears.
(5) Set the "Schedule Time" **<5>**.
Tap the [OK] button to add the scheduled time to the Outdoor Demand Schedule Detailed Settings screen.
(6) Select a demand rate **<6>**.
(7) Tap the [OK] button.
The changes are reflected in the Outdoor Demand Schedule Weekly Pattern Settings screen.
(8) Tap the [OK] button in the Outdoor Demand Schedule Weekly Pattern Settings screen to create a new outdoor demand schedule.

[3] Creating schedules in the Outdoor Demand Schedule Detailed Settings screen



▼ Add
(1) Tap the [Add] button **<1>**.
The screen for setting the time appears.
(2) Set the time.
Tap the [OK] button to add a new time to the "Operations list" **<2>**.

▼ Change
(1) Tap the schedule that you want to change on the "Operations list" **<2>**.
The schedule is highlighted.
(2) Tap the schedule and select demand rate or change time.

The following items are the same as for the Master Schedule.

[4] Copying daily schedule in the Outdoor Demand Schedule Weekly Pattern Settings screen

[5] Setting special days in the Outdoor Demand Schedule Special Day Pattern Settings screen

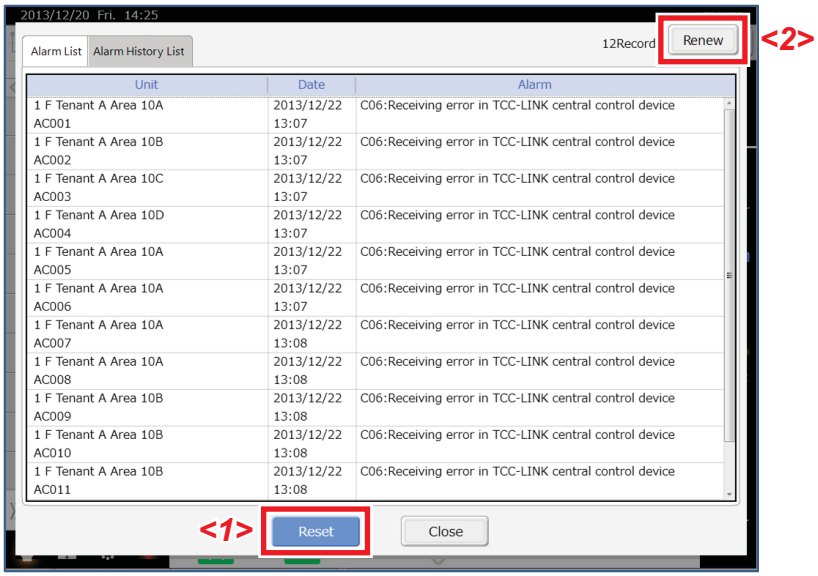
[6] Changing, copying, or deleting Outdoor Demand Schedules in the Outdoor Demand Schedule screen

[7] Registering outdoor demand schedules in the Outdoor Demand Schedule screen

4-6. Alarm List and Alarm History List screen

[1] Alarm List screen

Tapping the alarm icon in the menu opens the Alarm List screen. A list of current errors is displayed. Displays the name of the air conditioner, date the error occurred, and a description of the error.

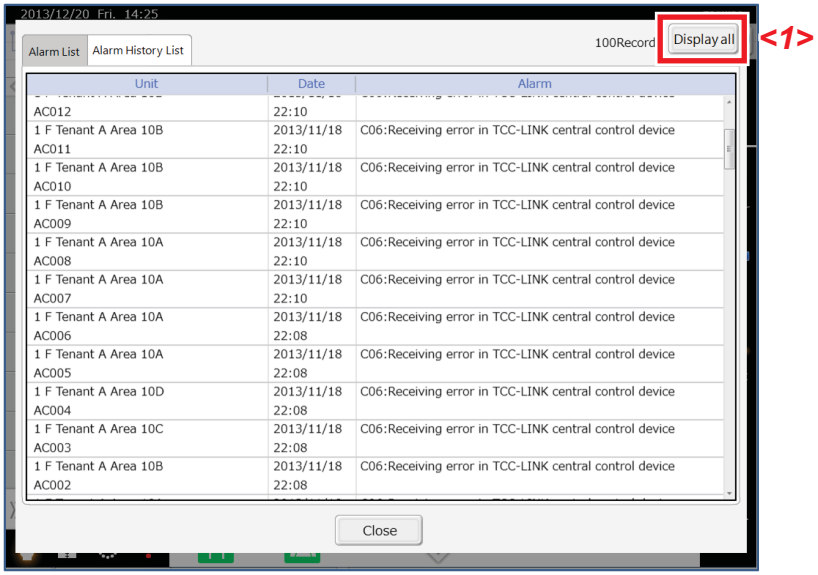


Resetting the error
Tapping the [Reset] button *<1>* sends a clear error signal to the air conditioner.

Displaying new alarms
Tap the [Renew] button *<2>* to renew the screen and display the latest alarms.

[2] Alarm History List screen

Tapping the [Alarm History List] tab in the Alarm List screen opens the Alarm History List screen. It can show a history of past alarms. Displays the name of the air conditioner, date the error occurred, and a description of the error.



Displaying the entire alarm history
Tap the [Display all] button *<1>*.
The entire alarm history is displayed. A maximum of 5120 items.

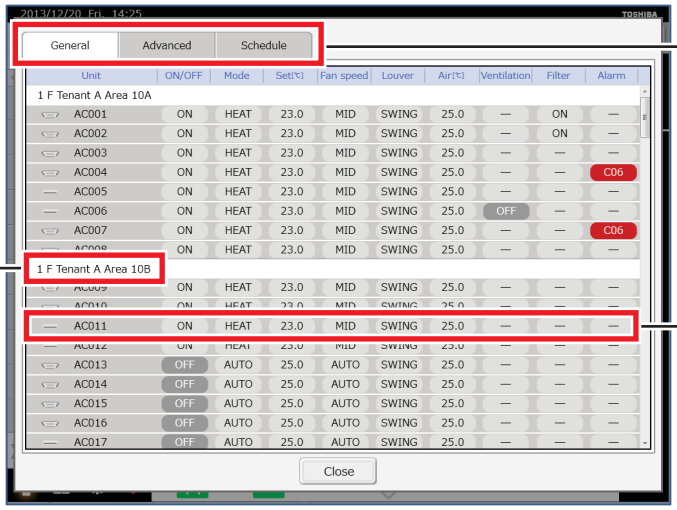
4-7. List display

By tapping the list icon in the display switch icon area, you can check the set schedule and the operating status of the selected air conditioner in the list. Or, in the outdoor demand schedule screen, display the name of the air conditioner that is connected to the selected outdoor line.

Level name
Shows the floors, tenants, and area names of the air conditioners.

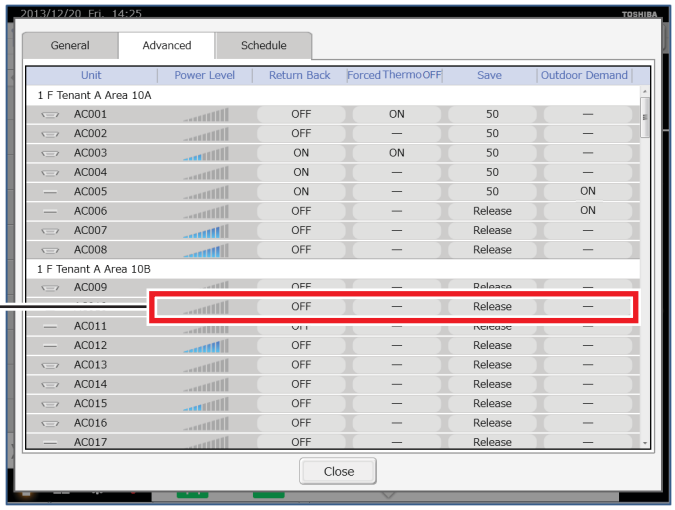
Tab
General : Changes to the [General] tab.
Advanced : Changes to the [Advanced] tab.
Schedule : Changes to the [Schedule] tab.

[List display screen] ([General] tab)



Air conditioner status
Shows the operating status and air conditioner's name.

[List display screen] ([Advanced] tab)



Power Level
Displays the performance status of the running air conditioner in 10 steps. The more bars are lit, the stronger the operation.

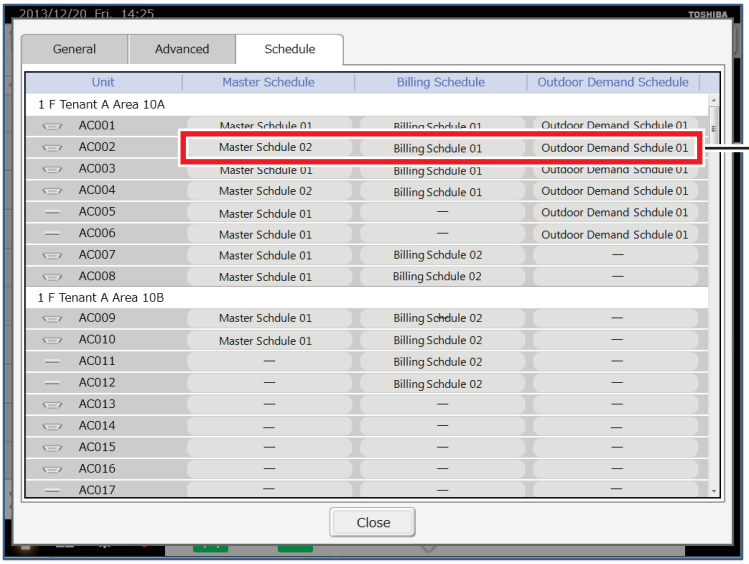
Return Back
Displays "ON" while Return Back is set.

Forced Thermo OFF
Displays "ON" while Forced Thermo OFF is set.

Save
Displays "Release", "Max", "50", "0".

Outdoor Demand
Displays "ON" while Outdoor Demand is set.

[List display screen] ([Schedule] tab)

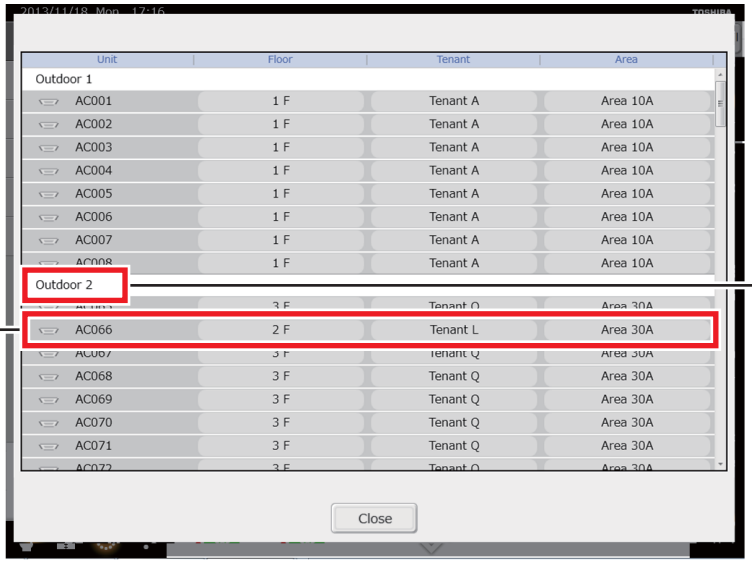


Master Schedule
Displays the name of registered master schedules.

Billing Schedule
Displays the name of registered billing schedules.

Outdoor Demand Schedule
Displays the name of outdoor demand schedules registered to outdoor units that are connected.

[List display screen] (moves from the Outdoor Demand Schedule screen)



Name of indoor unit
Displays the level name and name of indoor units connected to outdoor units.

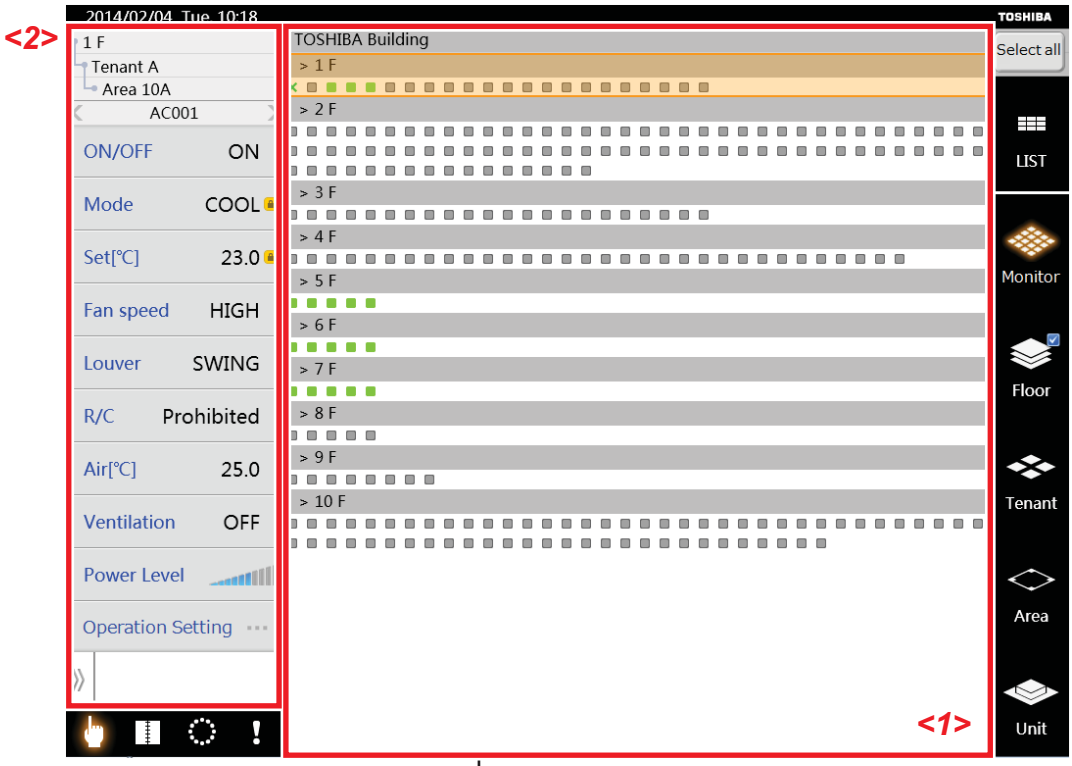
Name of outdoor line
Displays the name of the outdoor unit.

4-8. Monitor screen

Tapping the [Monitor] icon in the display switching icon area opens the Monitor screen. You can check the operating status of many air conditioners in a single screen. It is also possible to change the status of air conditioners.

[1] Changing the settings of air conditioners on the Monitor screen

[Monitor screen]



Unit icon area

Shows the status of air conditioners.

- : Indicates it is operating (red or green).
- : Indicates it is not operating (grey).
- : Indicates an alarm has occurred.

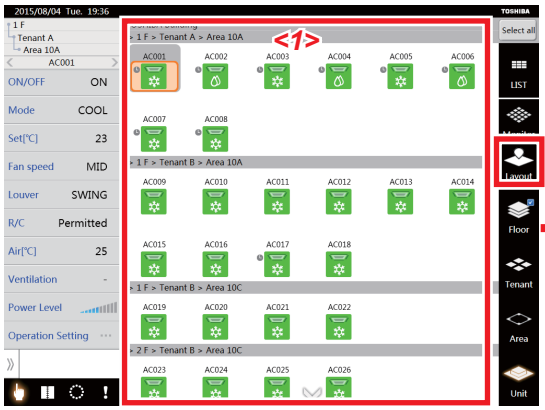
(1) Tap the unit icon group **<1>** that you want to set.
All the levels to which that unit belongs are highlighted.
(2) Change the air conditioner settings in the same way as "4-2.Changing air conditioner settings" from the "Air conditioner status list" **<2>**.

4-9. Layout screen (TOUCH SCREEN CONTROLLER only)

You must create a separate image file of layouts. (Paid service)
You can display unit icons on the layout diagram so that you know the position of the air conditioners. Tapping the layout icon in the display switching icon area opens the layout screen.

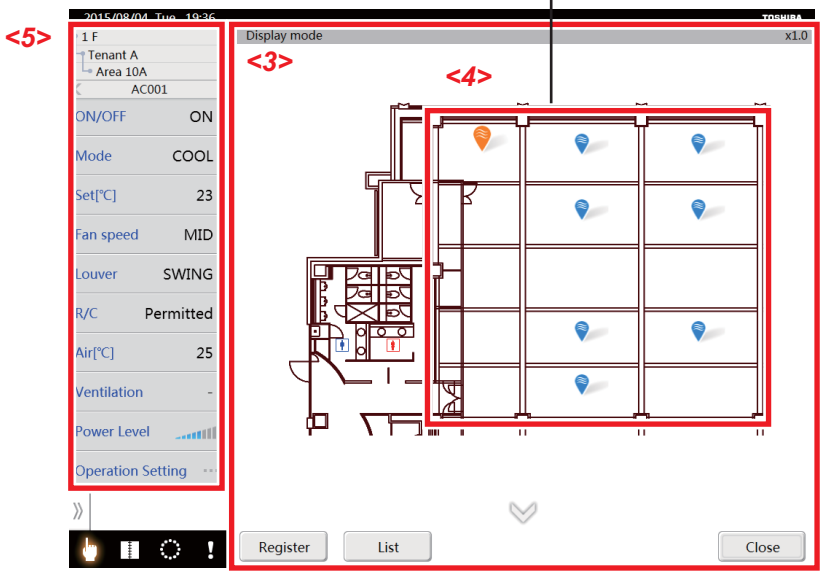
[1] Checking the position of air conditioners

[Control screen]



Unit icon display on the layout screen
: Selected
: Not selected

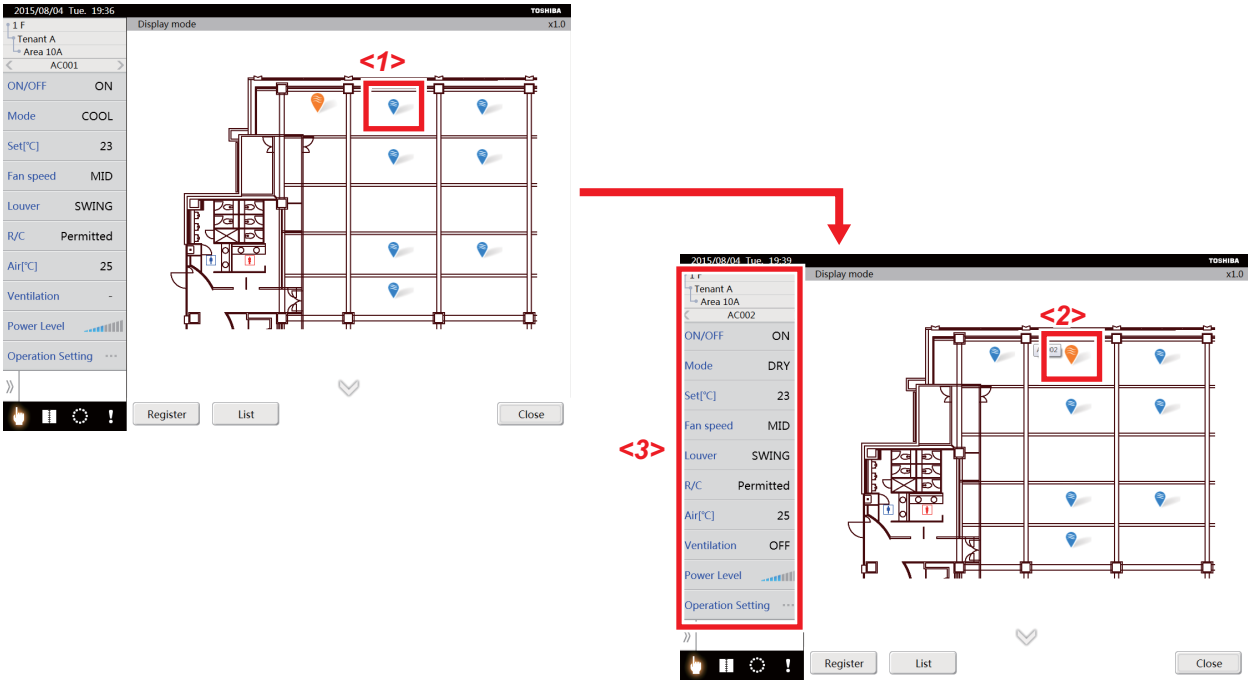
[Layout screen]



(1) On the control screen, select the group icon **<1>** for the position you want to confirm.
(2) Tap the [Layout] icon **<2>**.
The layout screen **<3>** in which the selected group icon is installed appears.
The air conditioner appears as a Unit icon **<4>**.

* The location where the air conditioner is installed is displayed in the air conditioner status list **<5>** that appears on the layout screen, even when multiple group icons are selected.

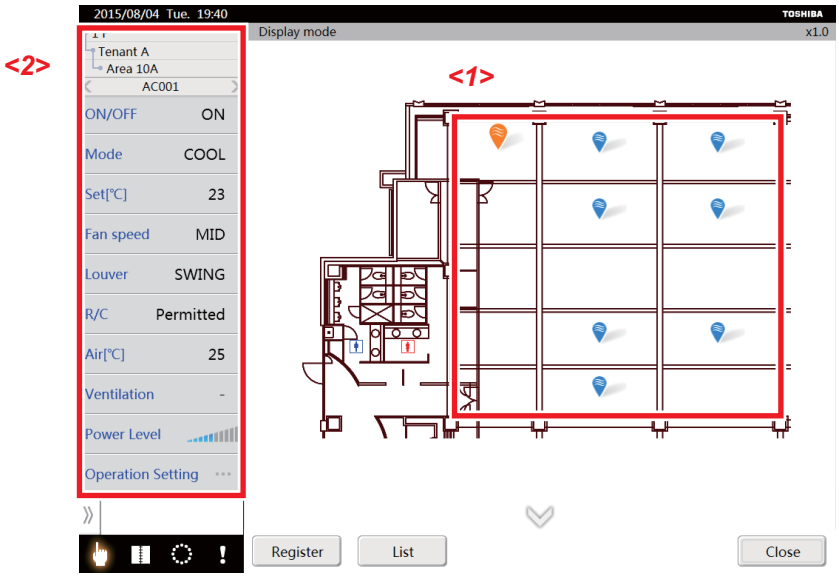
[2] Selecting the air conditioner on the layout screen



Tap the Unit icon <1> for the air conditioner that you want to select.
Only the unit icon <2> you tapped is selected and the air conditioner status list <3> is renewed.

* You cannot select multiple unit icons.

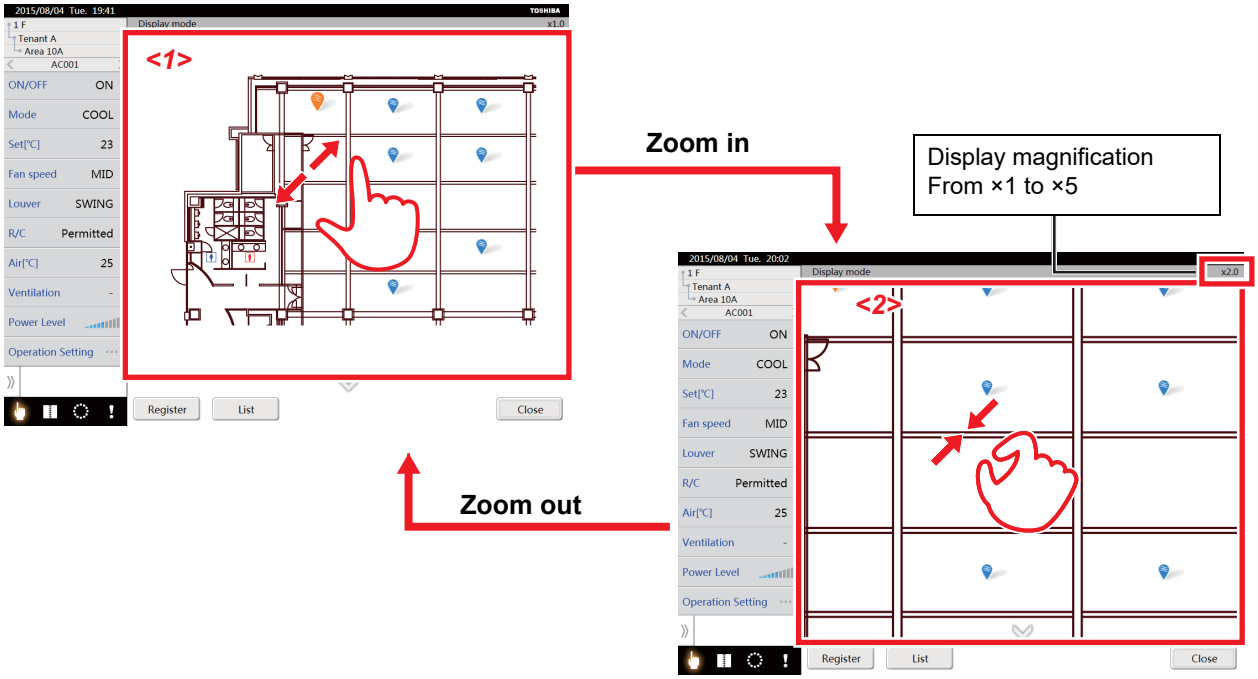
[3] Changing the settings of air conditioners on the layout screen



(1) Tap the Unit icon <1> for the air conditioner that you want to set. Only the unit icon you tapped is selected.
(2) Change the air conditioner settings in the same way as "4-2.Changing air conditioner settings" from the "Air conditioner status list" <2>.

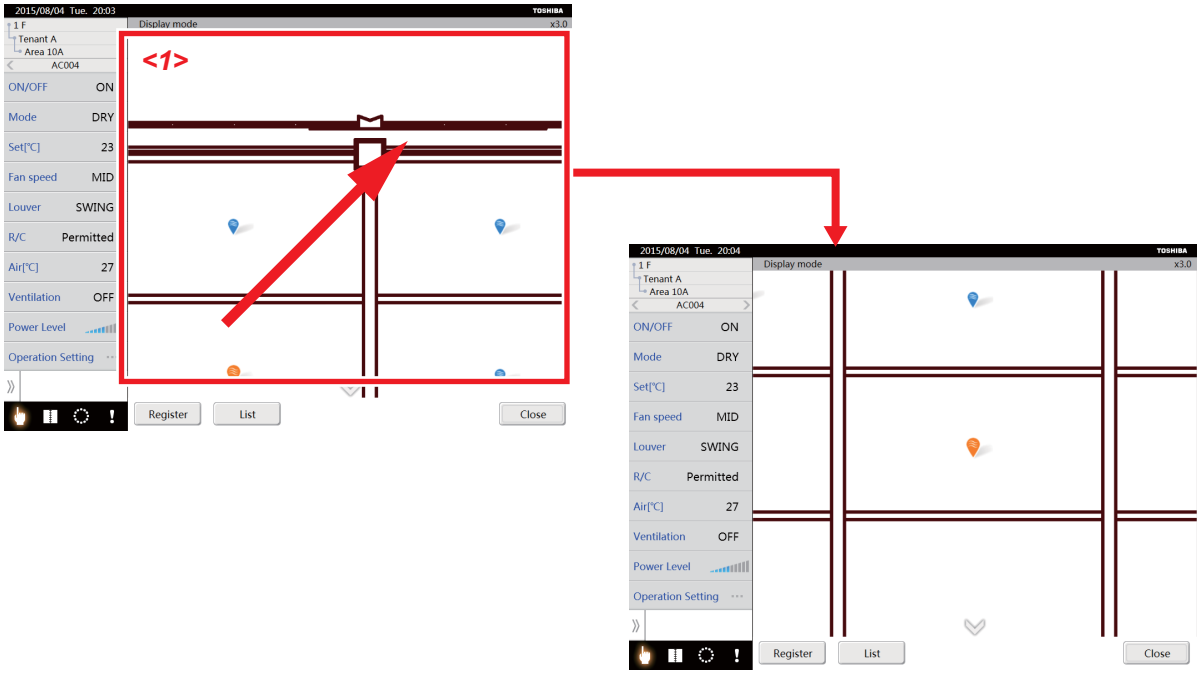
* You cannot change the settings of multiple air conditioners all at once.

[4] Zooming in and out of the layout diagram



▼ Zoom in
Pinch out **<1>** within the layout diagram. You can zoom in up to 5 times normal size.
▼ Zoom out
Pinch in **<2>** within the layout diagram. This zooms out the zoomed in layout diagram.

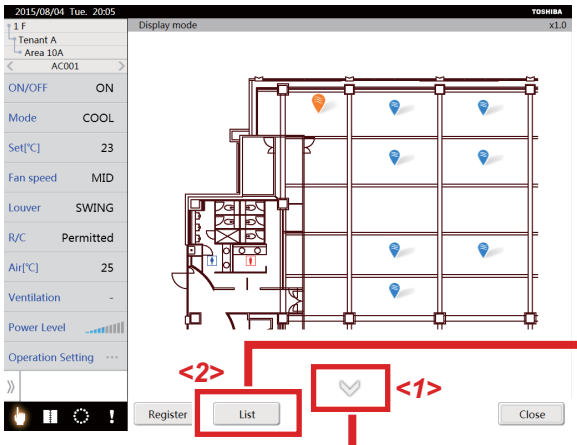
[5] Moving the position of the display of a zoomed in layout diagram



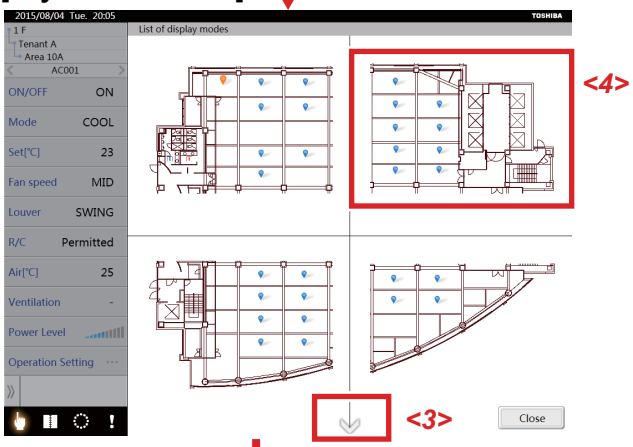
Swipe **<1>** within the layout diagram. You can move the position of the display.

[6] Moving to other layout diagrams

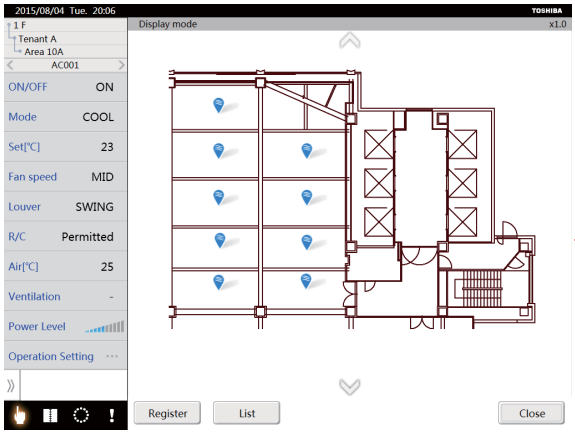
[Layout screen]



[Layout list screen]



[Layout screen]



▼ Move from the layout screen
Tap the arrow button **<1>**.
This moves you to the next layout diagram.
* You can move to the next layout diagram by swiping up when the diagram is not zoomed in.

▼ Move from the layout list screen
(1) Tap the [List] button **<2>**.
The layout list screen appears.
(2) An arrow button **<3>** is displayed if there are more than five screens. Tapping the arrow button **<3>** will move you to the next page.
* Swiping up will also move you to the next page.
(3) If there is a layout diagram **<4>** that you want to display, tap that diagram.
This moves you to the layout diagram that you tapped.

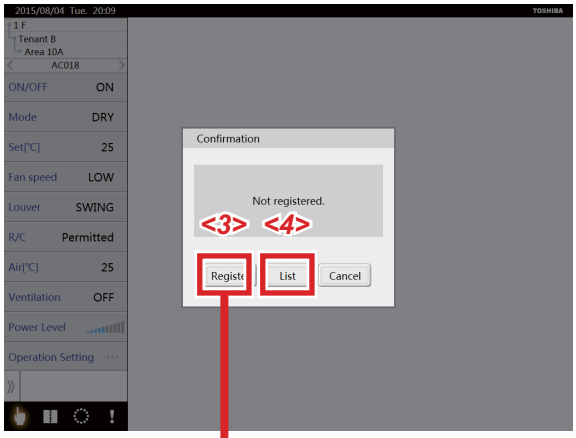
[7] Registering the air conditioner in the layout diagram

[7-1] Changing to layout registration mode from the control screen

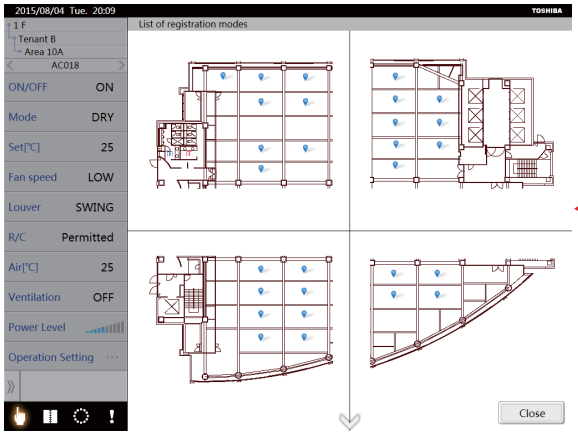
[Control screen]

The air conditioner that is displayed in the air conditioner status list is registered when multiple group icons are selected.

[Registration confirmation screen]



[Layout list registration screen]

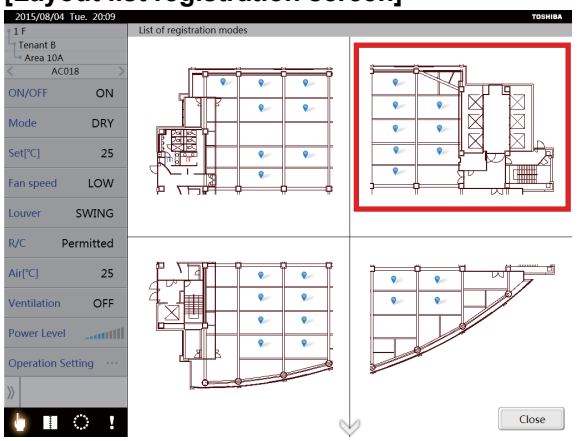


(1) Tap the Group icon **<1>** of the layout diagram that you want to register.
(2) Tap the [Layout] button **<2>**.
The registration confirmation screen appears if the selected air conditioner is not registered in the layout diagram.
(3) Tap the [Register] button **<3>**.
The layout list registration screen appears and the system enters registration mode.

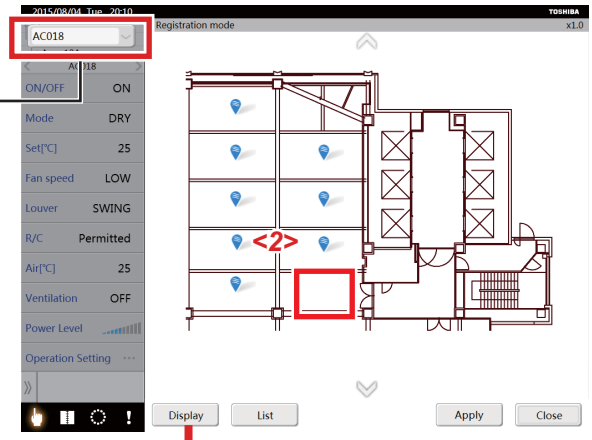
* Tapping the [List] button **<4>** displays the layout list screen.

[7-2] Registering the air conditioner to the layout diagram from layout registration mode

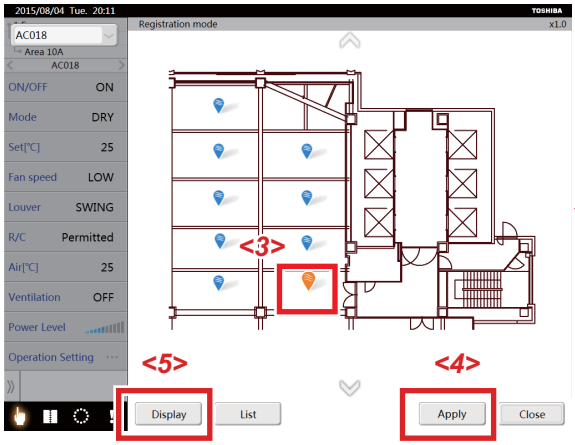
[Layout list registration screen]



[Layout registration screen]



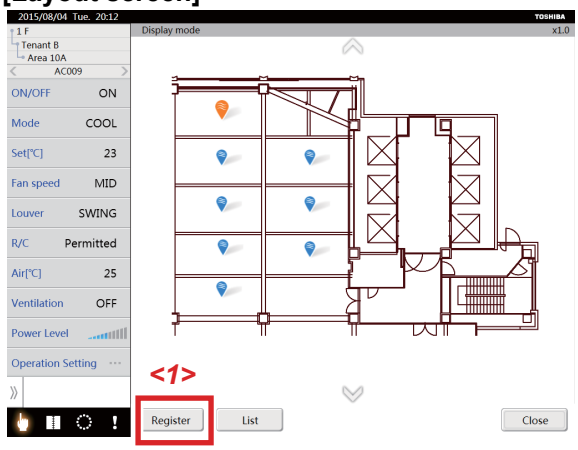
The name of the air conditioner to register appears.



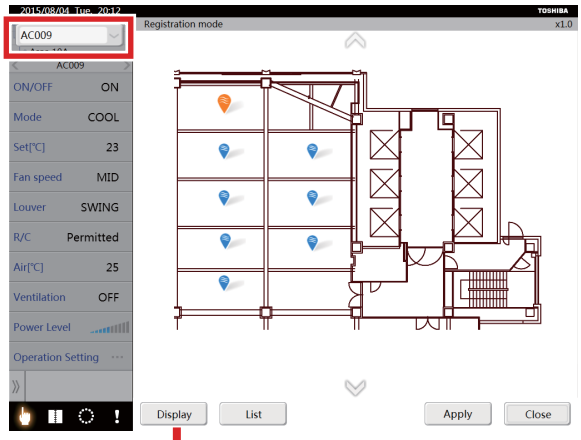
(1) Tap the layout diagram that you want to register **<1>**.
The layout registration screen appears.
(2) Long tap the layout position that you want to register **<2>**.
(3) The Unit icon **<3>** is displayed as flashing.
(4) Tapping the [Apply] button **<4>** lights the unit icon and the air conditioner is registered on the layout diagram.
(5) Tapping the [Display] button **<5>** ends registration mode.

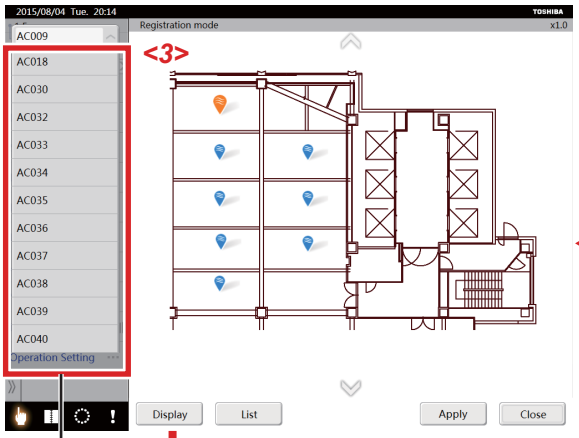
[7-3] Changing to layout registration mode with the layout screen

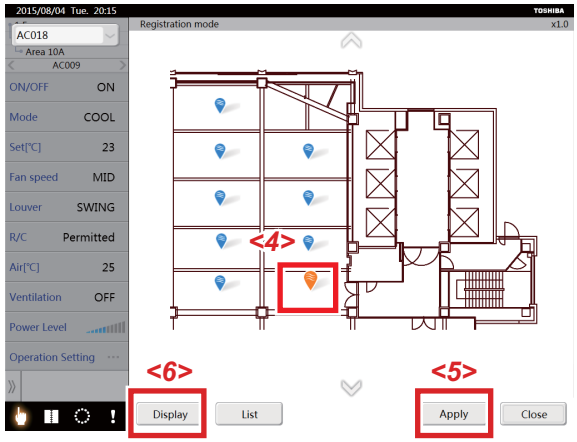
[Layout screen]



[Layout registration screen]





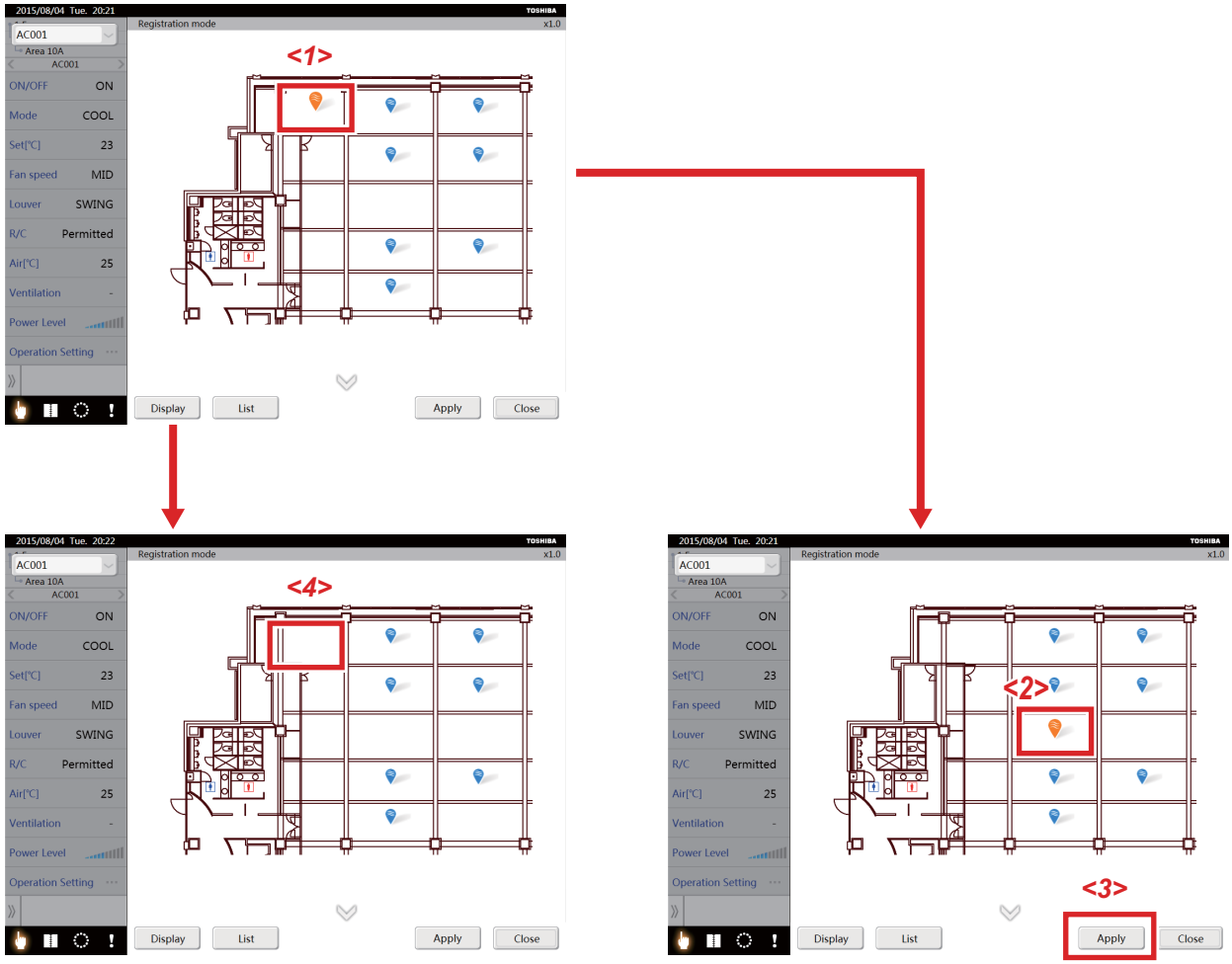


The names of air conditioners that are already registered do not appear.

(1) Tap the [Register] button **<1>**.
This moves you to the layout registration screen.
(2) Tap "Air conditioner name" **<2>**.
The list of air conditioner names is displayed.
(3) From the "List of air conditioner names" **<3>**, select the name of the air conditioner that you want to register.
(4) Long tap the layout position that you want to register **<4>** to display the unit icon as flashing.
(5) Tapping the [Apply] button **<5>** lights the unit icon and the air conditioner is registered on the layout diagram.
(6) You can register air conditioners consecutively in the layout diagram by repeating steps 2 through 5.
(7) Tapping the [Display] button **<6>** shows the layout screen.

[8] Changing and clearing the air conditioner registration of the layout diagram

[Layout registration screen]



▼ Change
(1) Tap the Unit icon <1> that you want to change.
The unit icon is selected.
(2) Long tap the position to change <2>.
The unit icon is moved and displayed as flashing.
(3) Tapping the [Apply] button <3> lights the unit icon and the air conditioner is registered on the layout diagram.

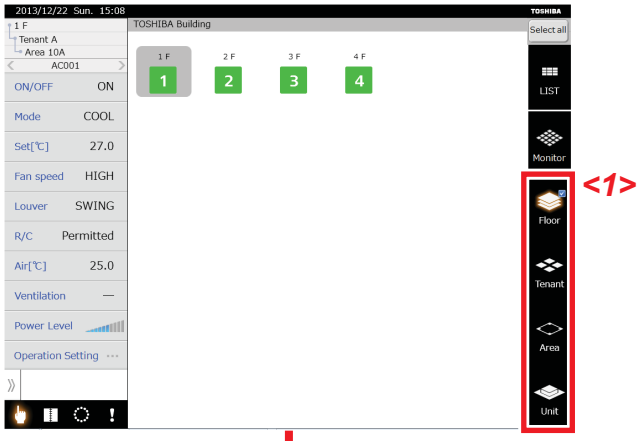
▼ Clear
(1) Long tap the Unit icon <1> that you want to clear.
(2) The Unit icon <4> disappears.

4-10. Changing the top level

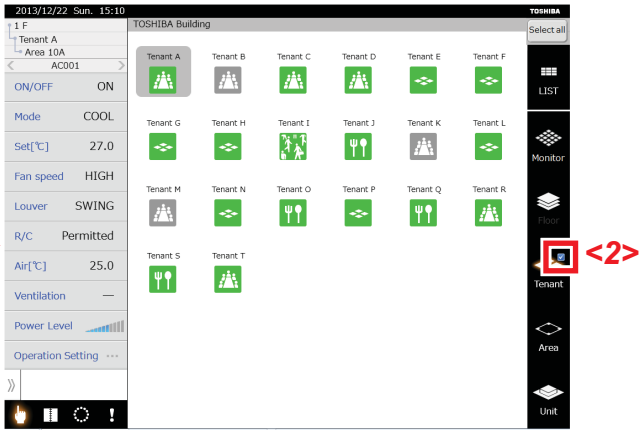
By long tapping the [Floor], [Tenant], [Area], or [Unit] icon on the display switch icon, you can change the top level to floor, tenant, area, or unit. Floor is normally selected for the top level. If the top level is below tenant, it is not possible to move to a level higher than the top level. (Example: If the top level is area, it is not possible to tap the floor/tenant icon.)

[1] Changing the top level on the control screen

[Control screen] (separate display for each floor)



[Control screen] (separate display for each tenant)



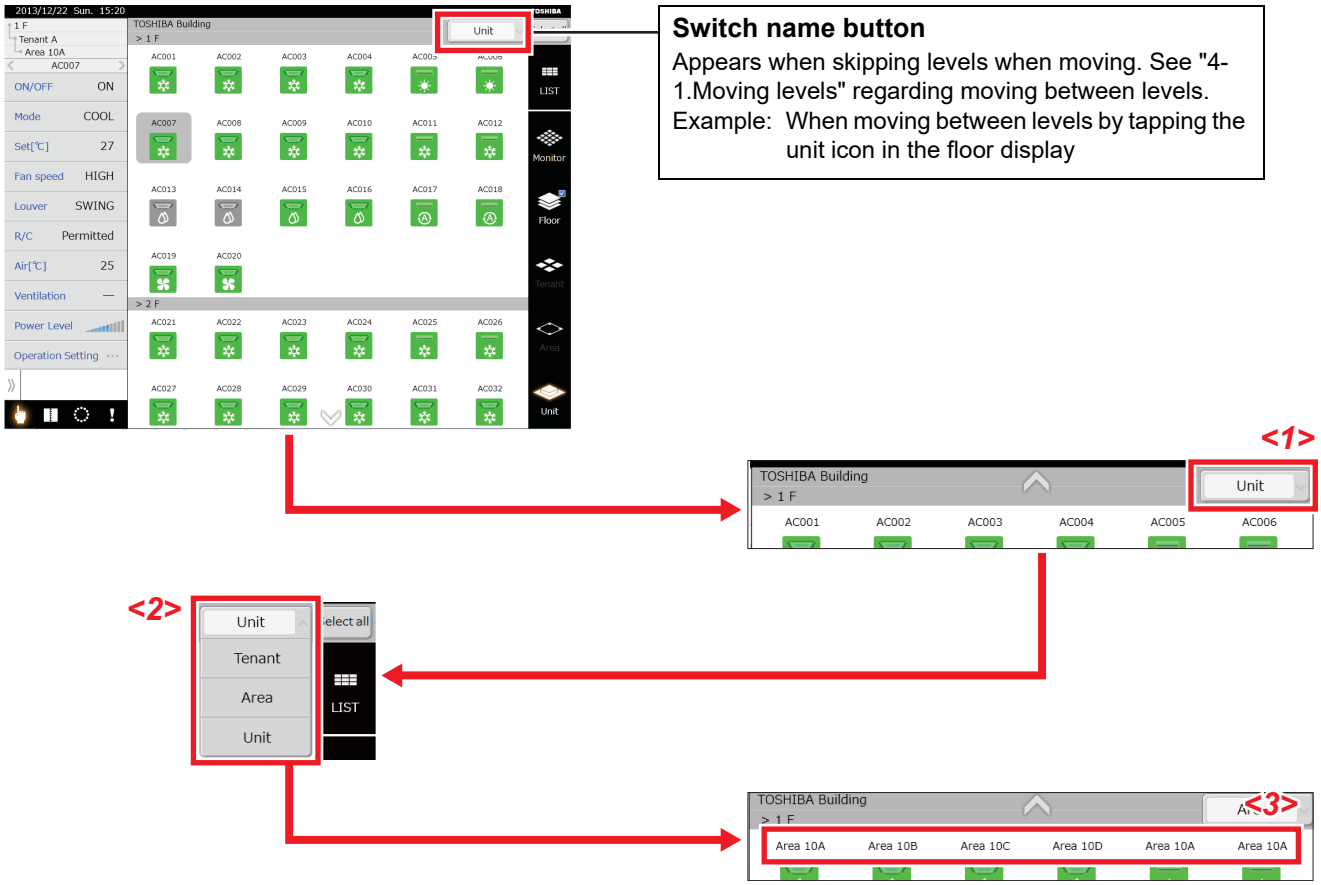
(1) Long tap any one of the [Display Switch (level switch)] icons **<1>**.
(2) Moves to the level for which the top level mark **<2>** was long-tapped and that level becomes the top level.

4-11. Switching the display of the unit names

You can switch the display from air conditioner name to upper level name if the unit display skips a level such as from floor display to unit display. By using this function, you can check the names of the levels of all the air conditioners at one time.

[1] Switching unit names in the control screen

[Per floor unit display]



Switch name button

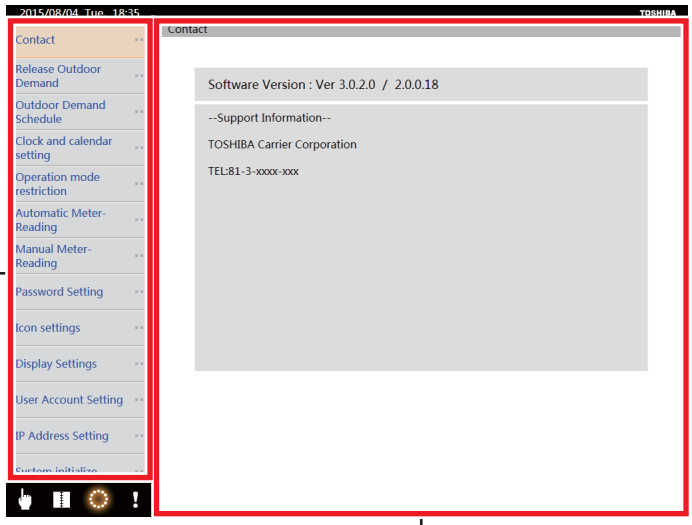
Appears when skipping levels when moving. See "4-1.Moving levels" regarding moving between levels.

Example: When moving between levels by tapping the unit icon in the floor display

(1) Tap the [Switch name] icon **<1>**.
The list of level names is displayed.
(2) Tap the level name **<2>** that you want to display. (Example: Tap an area name)
(3) Unit name changes to the level name **<3>** selected in (2). (Example: Changes to area name)

4-12. Option screen

Tapping the option icon in the menu icon area opens the option screen. You can do system settings, such as date and time settings and support information and settings related to the air conditioners, such as Outdoor Demand Schedule settings (see "4-5.Setting outdoor demand schedule") and Operation mode restriction.



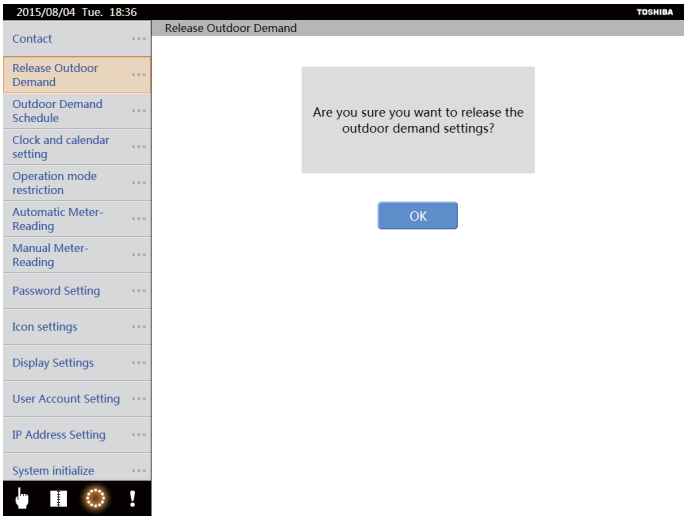
Optional functions list
Each function is shown in the list. The functions can be used by selecting them.
Swiping scrolls the list.

Optional function screen
Tapping a function in the list opens that function's screen.

[1] Settings related to air conditioners

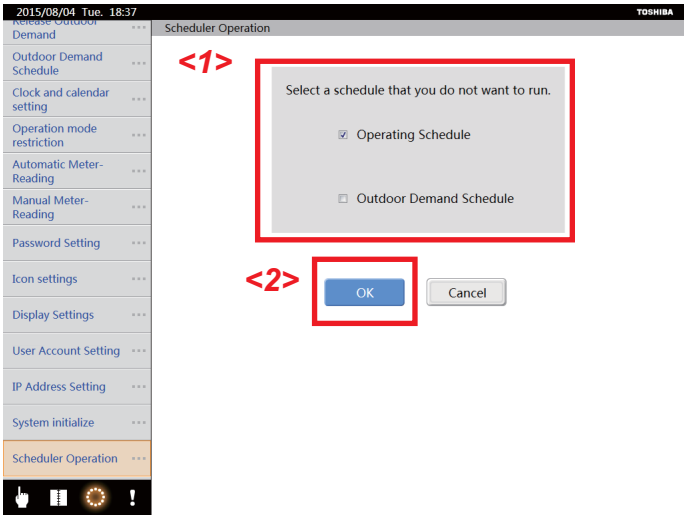
[1-1] Release Outdoor Demand

Tap the [OK] button to release demand for all the outdoor units.



[1-2] Disabling schedules

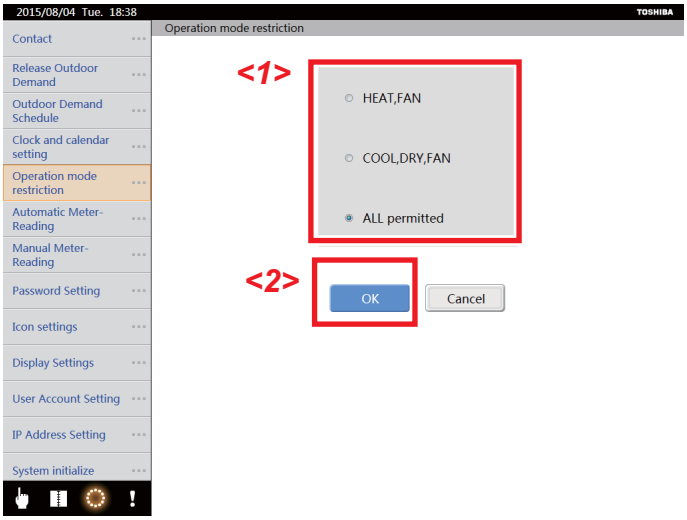
You can set whether to operate an outdoor demand schedule or operating schedule.



(1) Select the "Schedule" <1> that you will not operate.
(2) Tap the [OK] button <2> to apply the setting.

[1-3] Operation mode restriction

This is used only when the system's operation modes are limited to cooling (COOL, DRY, or FAN) or heating (HEAT or FAN). Use it to prohibit heating or cooling with multiple air conditioners.

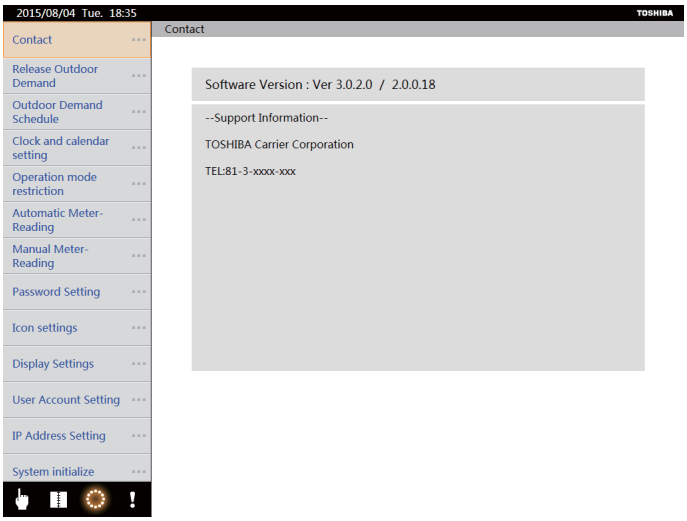


(1) Select [HEAT,FAN], [COOL,DRY,FAN] or [All Permitted] <1>.
(2) Tap the [OK] button <2> to apply the setting.

[2] System settings

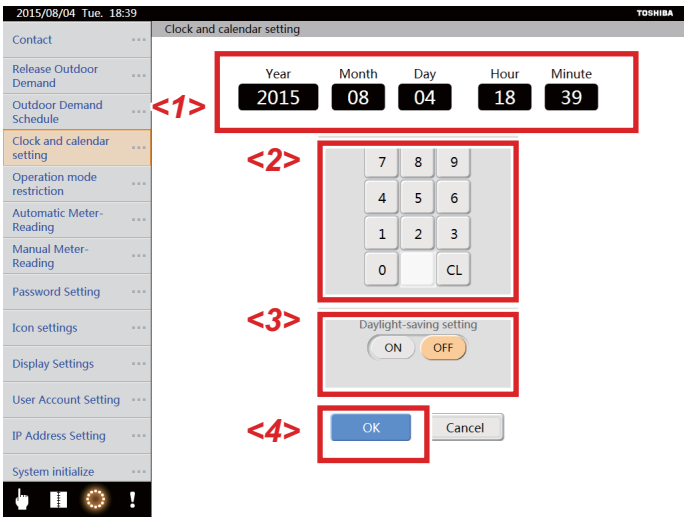
[2-1] Contact information

Shows the versions of the software and contact information.



[2-2] Clock and calendar setting

You can set the clock and calendar. You can also set the clock for daylight savings time.



▼ When daylight savings time is set

Setting the clock and calendar

(1) Tap the year, month, date, hour, or minute **<1>** that you want to change.
(2) Enter a new value **<2>**.
(3) Tap the [OK] button **<4>** to apply the setting.

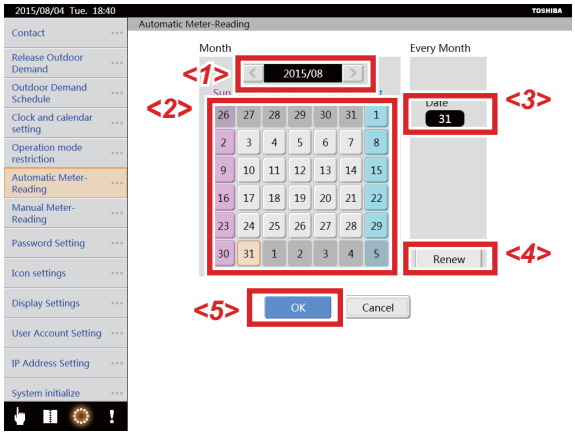
Setting daylight savings time

(1) Tap the [ON] button under [Daylight-saving setting] **<3>**. The time setting advances one hour.
(2) Tap the [OK] button **<4>** to apply the setting.
A daylight savings time mark appears near the clock when daylight savings time is set.

Tap the [OFF] button under [Daylight-saving setting] to set the clock back one hour. (Daylight savings time is cleared)

[2-3] Automatic Meter-Reading

Use this setting if you want to add or change automatic meter reading days. The initial values for the settings are set in the settings files.



Setting for each month individually

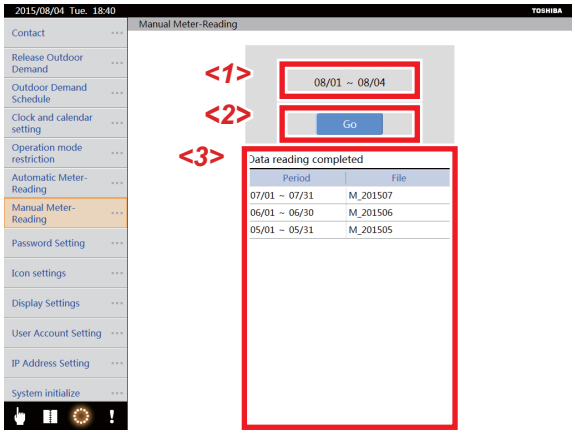
(1) Select the month <1> to change or set.
(2) Tap the date <2> that you want to change.
(3) Tap the [OK] button <5> to apply the settings.
To change the meter reading date, tap the date that is clear the setting, it will no longer be highlighted.

Batch setting all months together

(1) Tap the date <3> that you want to batch set.
The Date screen appears.
(2) Set the date to set.
(3) Tap the [Renew] button <4>. The date selected in (2) is highlighted in all the months.
(4) Tap the [OK] button <5> to apply the settings.

[2-4] Manual Meter-Reading (TOUCH SCREEN CONTROLLER only)

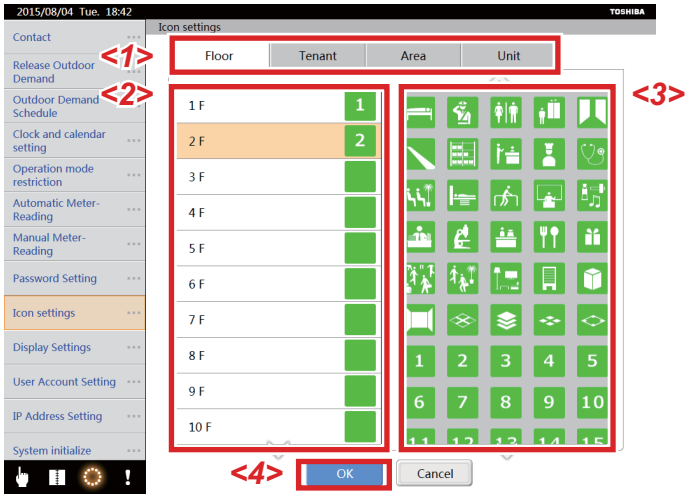
Use this setting if you want to do provisional totalling before the date that the meter is read automatically. The period from the last meter reading until the current date appears in [Data reading in progress] <1>. Operating time and power distribution are reset, and new calculations start after totalling.



Tap the [Go] button <2>.
Totalling is done, and the file is added to "Meter reading file list" <3>.

[2-5] Icon settings (TOUCH SCREEN CONTROLLER only)

You can set the images that appear for group icons.

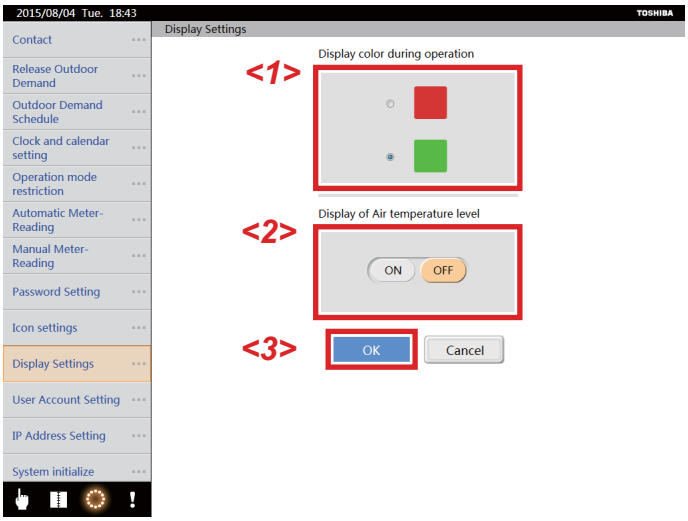


Setting the icons for each level name

(1) Tap the [Name] tab of the level <1> that you want to change.
(2) Tap the name that you want to change on the "Name list" <2>.
(3) Tap the icon that you want to register on the "Icon list" <3>.
(4) Repeat operations (1) to (3) to set icons for each level name.
(5) Tap the [OK] button <4> to apply the setting.

[2-6] Display Settings (TOUCH SCREEN CONTROLLER only)

You can set whether the Air temperature level is displayed and the colour of icons that indicate air conditioners are operating.



Setting the colour displayed during operations

(1) Tap the [Colour] <1> that you want to set.
(2) Tap the [OK] button <3> to apply the setting.

Displaying the Air temperature level

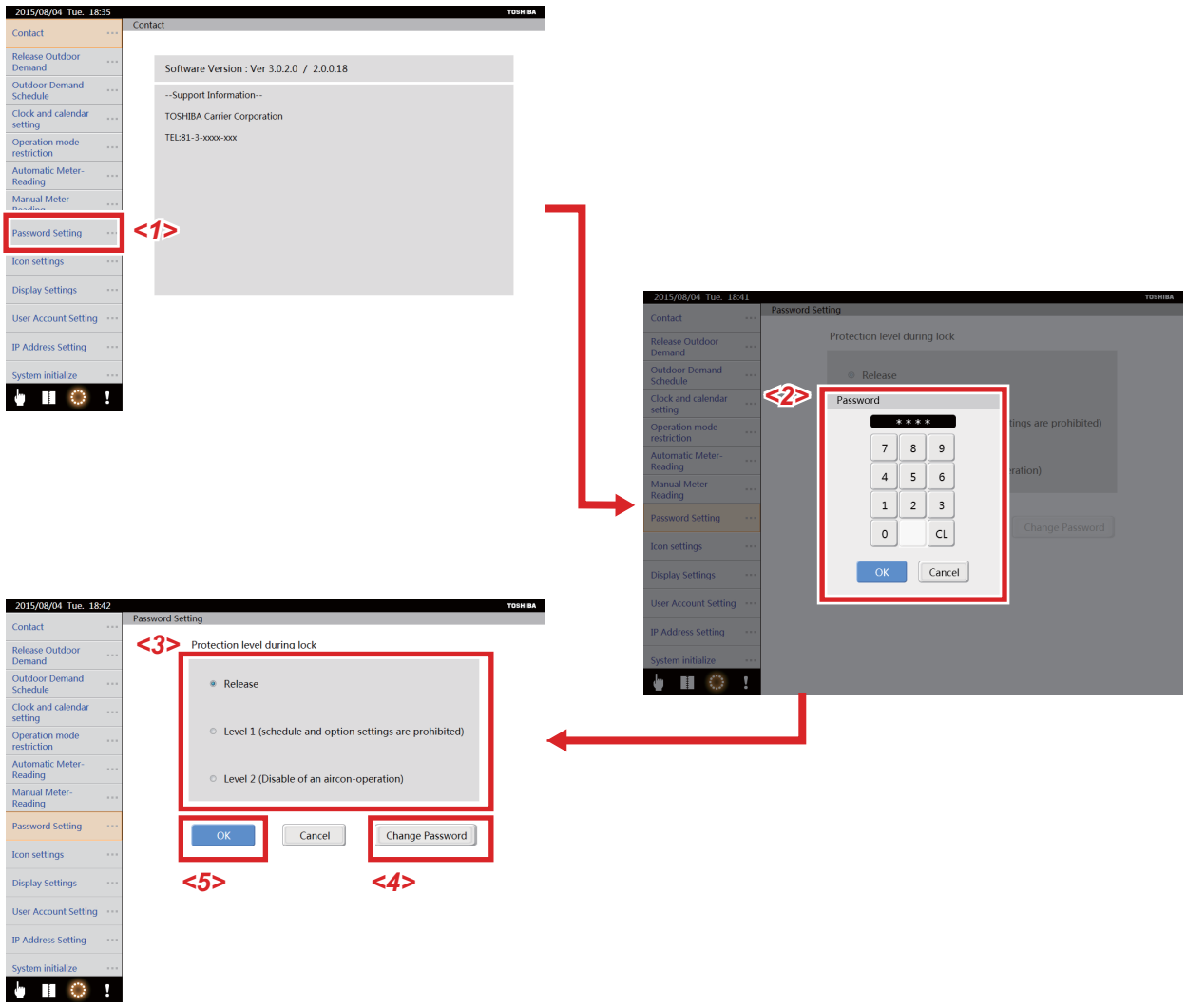
(1) Tap the [ON] button for [Display of Air temperature level] <2>.
(2) Tap the [OK] button <3> to apply the setting.

Tap the [OFF] button for the Air temperature level display to not display the Air temperature level.

[2-7] Password Setting (TOUCH SCREEN CONTROLLER only)

Input a password and use it to prevent people from operating the air conditioner, or checking or setting schedules or option icons until the system is unlocked.

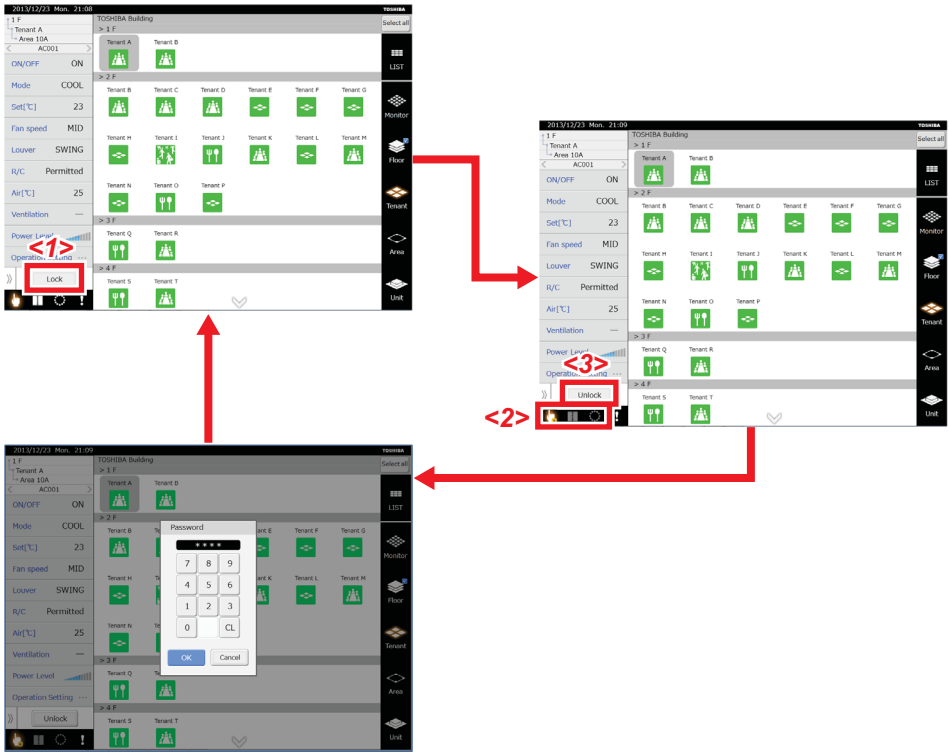
▼ Setting limits on operations



(1) Tap [Password setting] **<1>**.
The Password Input **<2>** screen appears.
(2) Enter a four digit password. The initial default settings is set to 1048.
(3) Set the [Protection level during lock] **<3>**.
Release: Do not limit functions with the password.
Level 1: Prevent setting and checking operations done with the [Schedule] and [Option] icons.
Level 2: Prevent setting and checking operations done with the [Schedule] and [Option] buttons and operations to set air conditioners.
(4) If you want to change the password, tap the [Change password] button **<4>**.
The Password Input screen opens. Enter any four digit password. When you tap the [OK] button a screen for re-entering the password appears, enter the password again.
(5) Tap the [OK] button **<5>** to apply the settings.

▼ Limiting operations and clearing limits on operations on the control screen

When operation limits are set, the [Unlock/Lock] button <1> appears on the control screen. This button limits operations and clears the limits on operations.

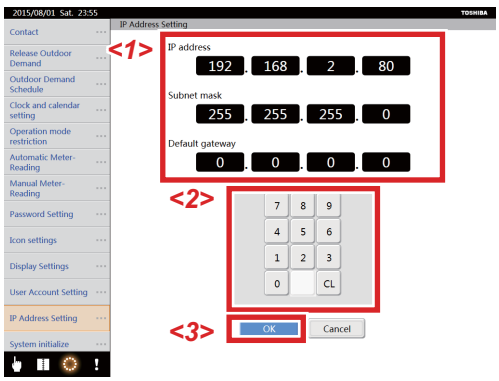


(1) The [Lock] button <1> is on the control screen when it opens.
(2) Tap the [Lock] button <1> or do no operations for five minutes.
It becomes impossible to do the operations at the level set in the password setting screen. (Refer to the menu icon display <2>)
(3) Tap the [Unlock] button <3>.
The Password input screen appears. Enter the password that was set and tap the [OK] button.
The [Unlock] button becomes the [Lock] button, and operation limits are released. However, note that if the wrong password is input three times, the password cannot be entered again for 30 minutes.

[2-8] IP Address Setting (TOUCH SCREEN CONTROLLER only)

This is used to set the TOUCH SCREEN CONTROLLER IP address. The controller is restarted if the settings are changed.
The default settings are as follows.

- IP address: 192.168.2.80
- Subnet mask: 255.255.255.0
- Default gateway: 0.0.0.0 (not set)



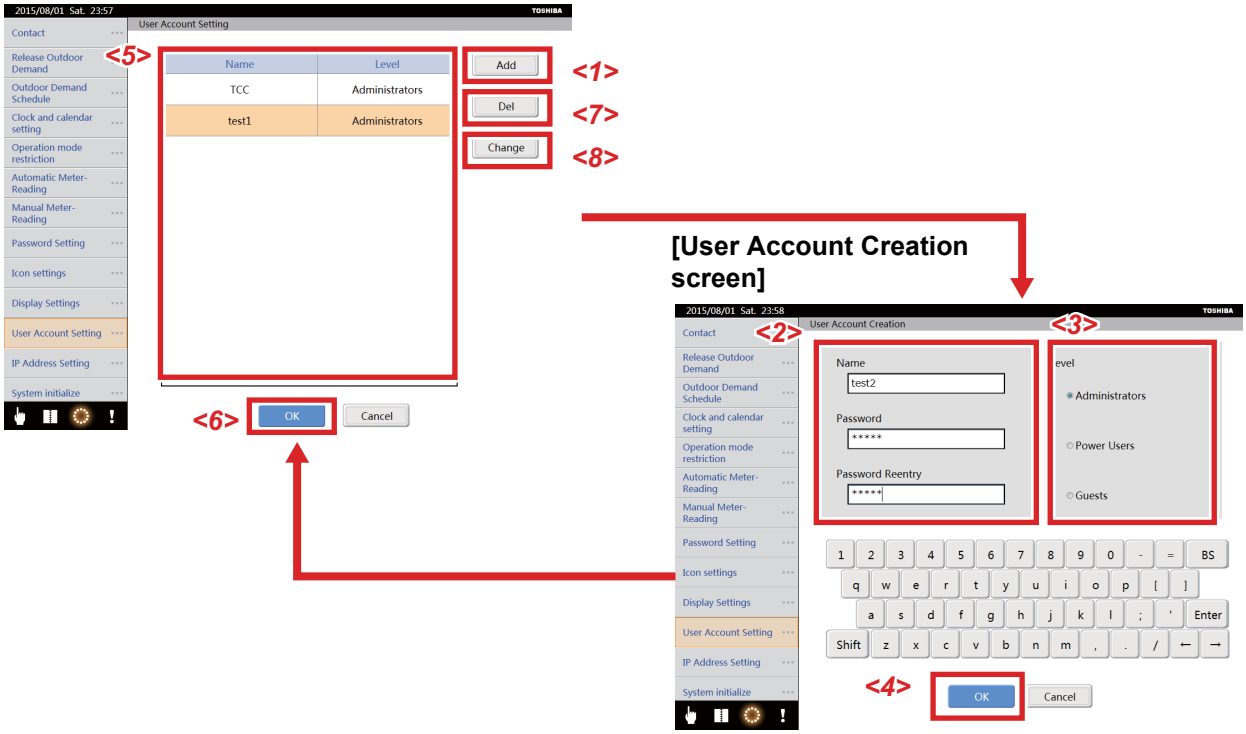
(1) Tap the address that you wish to change <1>.
(2) Enter the new value <2>.
(3) Tap the [OK] button <3>.
A confirmation screen appears.
(4) Tap the [OK] button. The TOUCH SCREEN CONTROLLER restarts, and the new IP address is set.

[2-9] User Account Setting (TOUCH SCREEN CONTROLLER only)

This is used to set up user accounts.
A user account is required to use your computer to monitor and control air conditioners via the TOUCH SCREEN CONTROLLER. Access levels can be set to limit the operations possible.
* There are three access levels.
  Administrators: Administrators can perform all operations possible from a computer.
  Power users: Power users cannot change or confirm settings using the [Schedule] and [Options] icons.
  Guests: Guests cannot change or confirm settings using the [Schedule] and [Option] buttons, and cannot perform operations to set air conditioners.

▼ Adding/deleting/changing a user account

[User Account Setting screen]



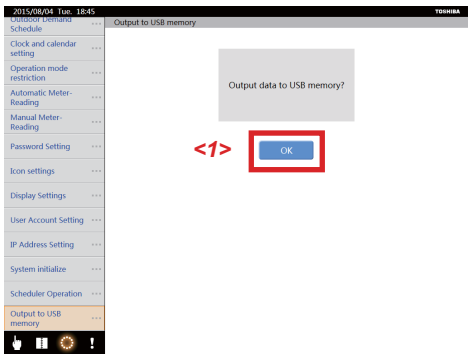
▼ Adding a user account
(1) Tap the [Add] button **<1>**.
The User Account Creation screen appears.
(2) Enter a user name, password, and then the password again **<2>**.
You can enter between 1 and 24 characters.
(3) Select the "Access level" **<3>**.
(4) Tap the [OK] button **<4>**.
(5) The newly created user is added to the User account list **<5>**.
(6) Tap the [OK] button **<6>** to confirm.

▼ Deleting a user account
(1) Tap the user you wish to delete from the User account list **<5>**.
(2) Tap the [Del] button **<7>**.
(3) The User account list **<5>** is updated.
(4) Tap the [OK] button **<6>** to confirm.

▼ Changing a user account
(1) Tap the user you wish to change in the User account list **<5>**.
(2) Tap the [Change] button **<8>**.
The User Account Creation screen appears.
(3) Enter a new password, and then the same password again **<2>**. You can enter between 1 and 24 characters. The user name cannot be changed.
(4) Select the “Access level” **<3>**.
(5) Tap the [OK] button **<4>**.
(6) The user appears on the User account list **<5>**.
(7) Tap the [OK] button **<6>** to confirm.

[2-10] Output to USB memory (TOUCH SCREEN CONTROLLER only)

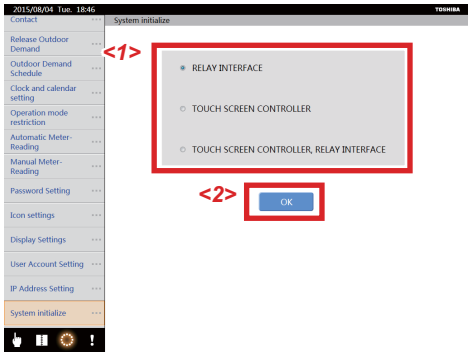
This is used to output alarm data and data for power distribution to a USB memory that is connected.



(1) Connect a USB memory to the USB port.
(2) Tap the [OK] button **<1>** to output the alarm files, and monthly and daily reports to the USB memory.
(3) The [OK] button **<1>** is enabled, when the process is complete, remove the USB memory.

[2-11] System initialize (TOUCH SCREEN CONTROLLER only)

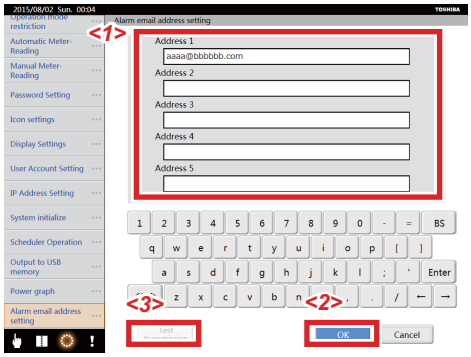
Restarts and resets the selected machine.



(1) Select the machine **<1>** to reset.
(2) Tap the [OK] button **<2>** to reset the selected machine.

[2-12] Alarm email address setting (TOUCH SCREEN CONTROLLER only)

When abnormalities occur, the name of the air conditioner, the time and date of the abnormalities, and information about the abnormalities are sent to the email addresses set as recipients.



▼ Setting addresses
(1) Enter your email address in [Address] **<1>**. (Maximum of 5 addresses)
(2) Tap the [OK] button **<2>** to apply the settings.

▼ Test transmission
(1) The [Test transmission] button **<3>** is enabled when the addresses are set, so tap it.
* A test email is transmitted to the email address that is set.

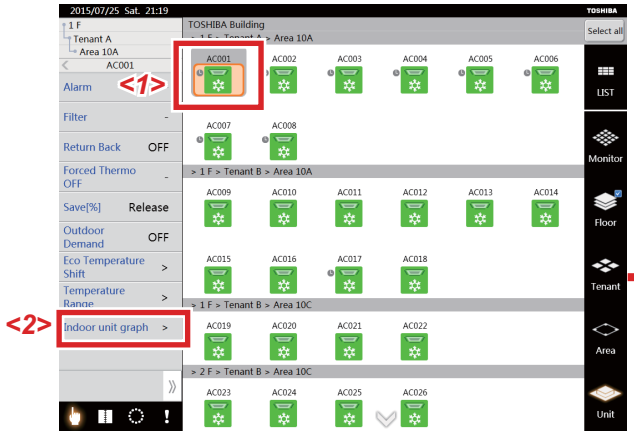
4-13. Indoor unit graph screen (TOUCH SCREEN CONTROLLER only)

Display graphs for the outdoor temperature, indoor temperature, set temperature, and operating time of the air conditioner you selected.
When multiple air conditioners are selected, each value is as shown below.

- Operating time: the total value for the selected air conditioner
- Set temperature, indoor temperature, and outdoor temperature: the average value for the selected air conditioner

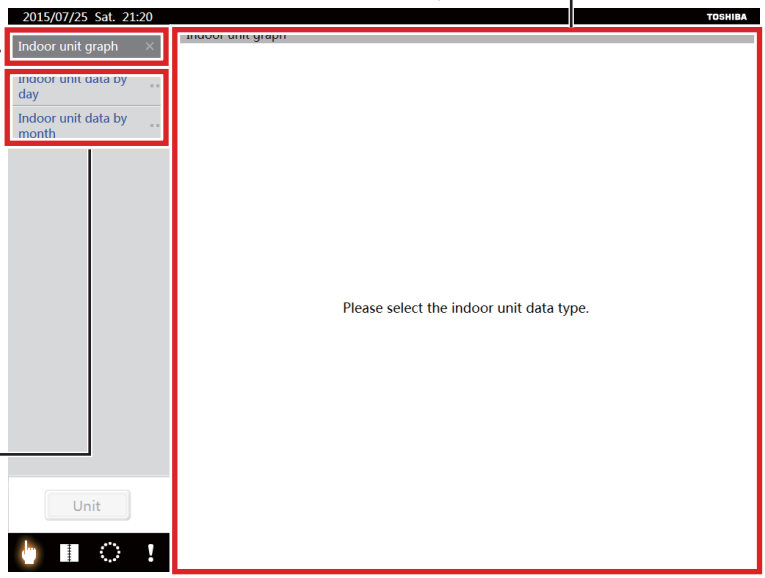
[1] Displaying the indoor unit graph screen

[Control screen]



Display area of the graph
Displays the graph selected in the graph list.

[Indoor unit graph screen]



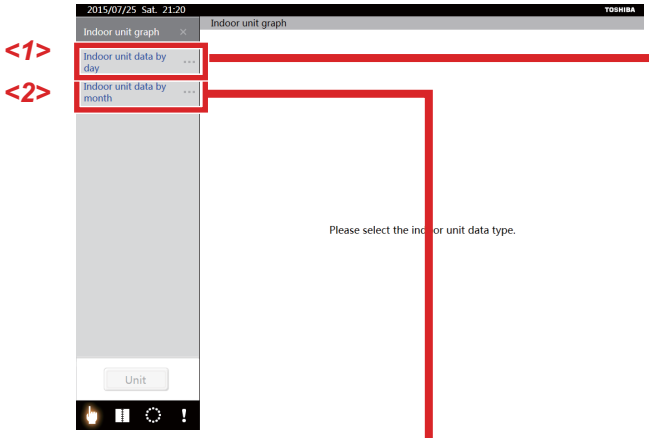
Title
Returns to the control screen.

Graph list
Displays the list of indoor unit graphs.

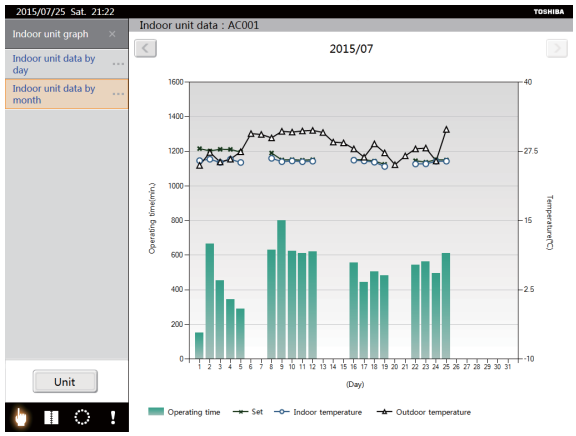
(1) Tap the Group icon <1> that you want to display as a graph. (More than one can be selected)
(2) Tap the [Indoor unit graph] <2> of the advanced items for the air conditioner status list.
The Indoor unit graph screen appears.

[2] Displaying the indoor unit graph

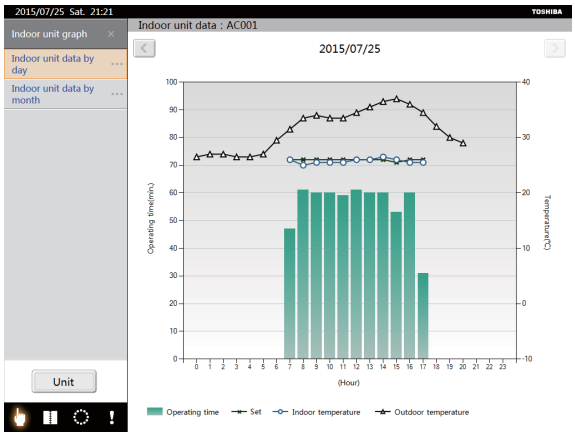
[Indoor unit graph screen]



[Indoor unit graph by month screen]



[Indoor unit graph by day screen]

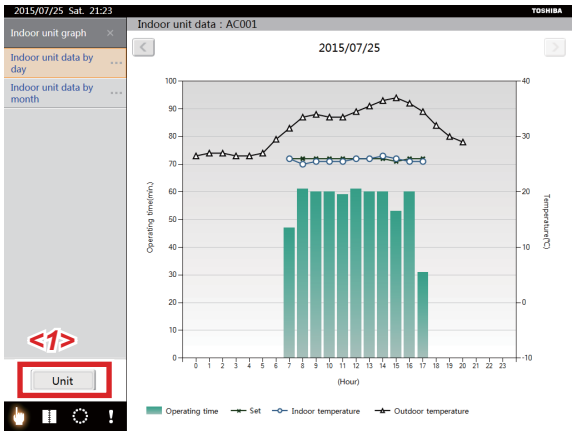


▼ Indoor unit graph by day
Tap [Indoor unit data by day] **<1>**.
The indoor unit graph by day appears.
▼ Indoor unit graph by month
Tap [Indoor unit data by month] **<2>**.
The indoor unit graph by month appears.

* When multiple air conditioners are selected, the operating time is a total value and the set temperature, indoor temperature, and outdoor temperature are average values.

[3] Displaying the graphs of other indoor units

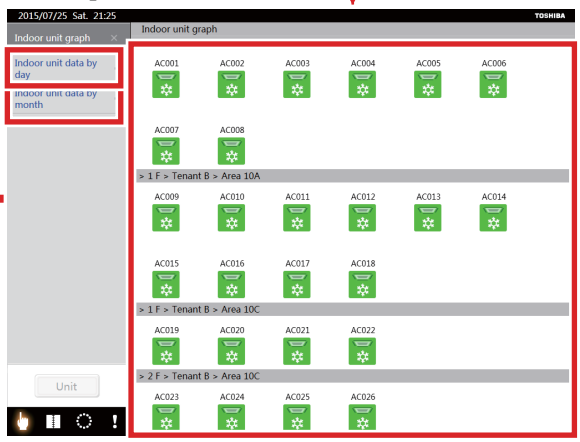
[Indoor unit graph by day screen]



<3>

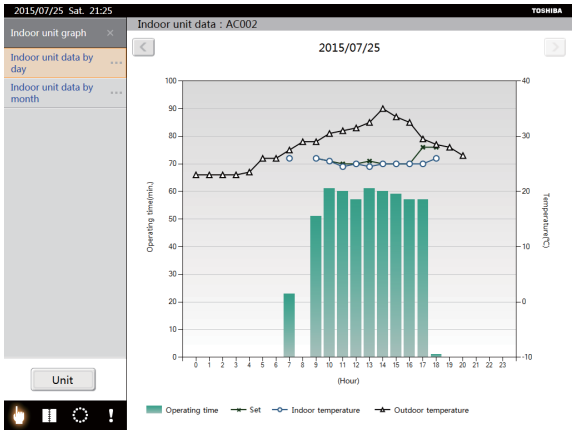
<4>

[Group icon selection screen]



<2>

[Indoor unit graph by day screen]



When indoor unit data by day is selected

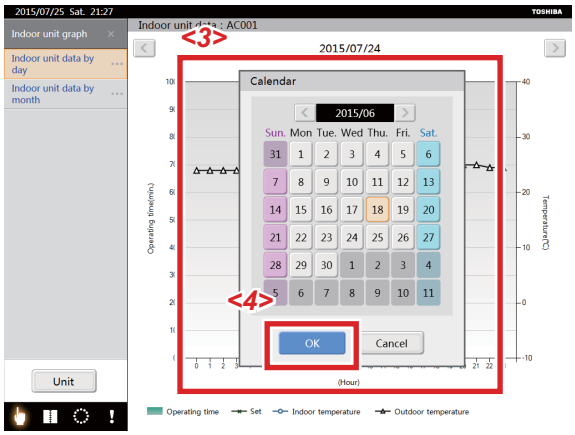
(1) Tap the [Unit] button **<1>**.
The screen changes to the group selection screen.
(2) From the Unit display of the icon **<2>**, select the group icon that you want to make into a graph.
(3) Tap [Indoor unit data by day] **<3>**. (When you want to display by month, tap [Indoor unit data by month] **<4>**.)
The indoor unit graph of the selected icon appears.

* When multiple air conditioners are selected, the operating time is a total value and the set temperature, indoor temperature, and outdoor temperature are average values.

[4] Displaying graphs of other dates

[Indoor unit graph by day screen]

[Calendar screen]



▼ Display graphs of other dates by using the arrow button

(1) Tapping the arrow button **<1>** displays the graph of another date. The units that can be changed are as follows.
Indoor unit graph by the day: moves the graph by daily units.
Indoor unit graph by the month: moves the graph by monthly units.

▼ Display graphs of other dates by using the calendar

(1) Tap [Day] **<2>**.
The calendar appears.

(2) Select the day or month from the calendar **<3>**. The units that can be selected are as follows.
Indoor unit graph by the day: can be selected by daily units.
Indoor unit graph by the month: can be selected by monthly units.

(3) Tapping the [OK] button **<4>** displays the graph for the selected day or month.

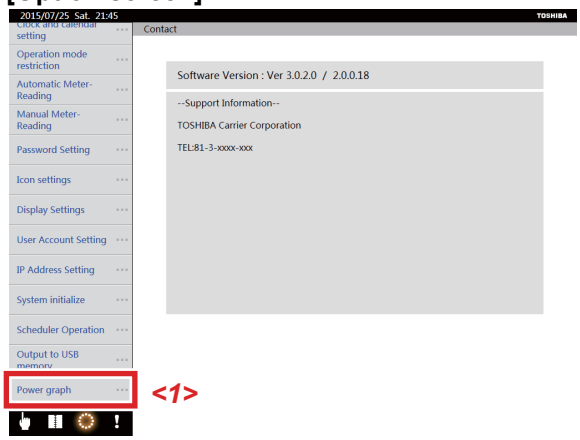
* You can display graphs for every 2 years.

4-14. Power graph screen (TOUCH SCREEN CONTROLLER only)

Display the power measured by the electricity meter in a graph.

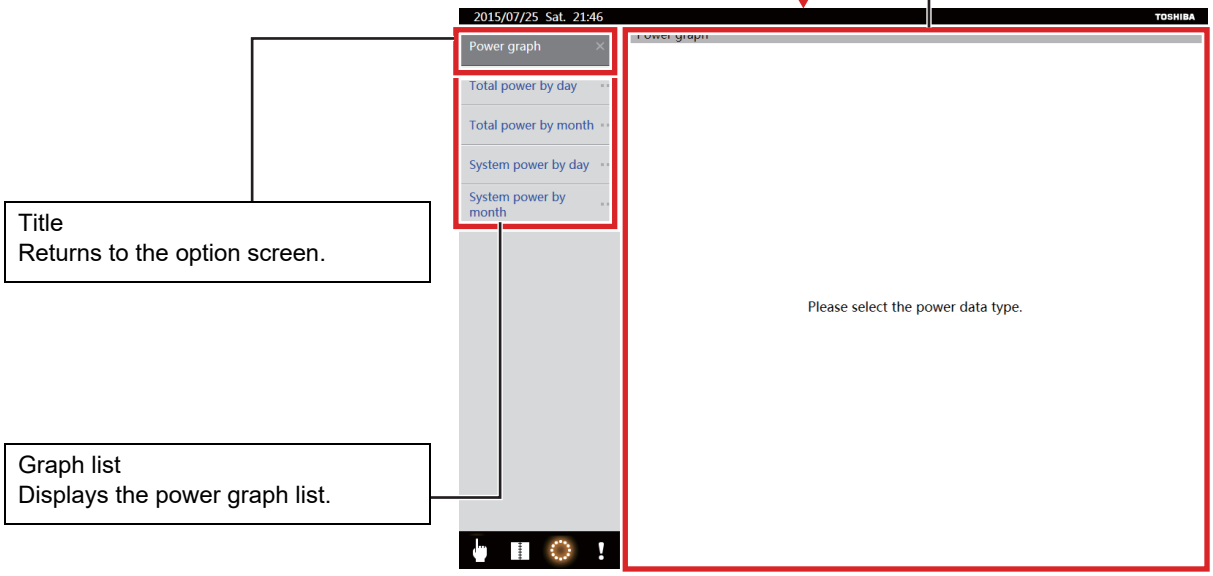
[1] Displaying the power graph screen

[Option screen]



Display area of the graph
Displays the graph selected in the graph list.

[Power graph screen]



Title
Returns to the option screen.

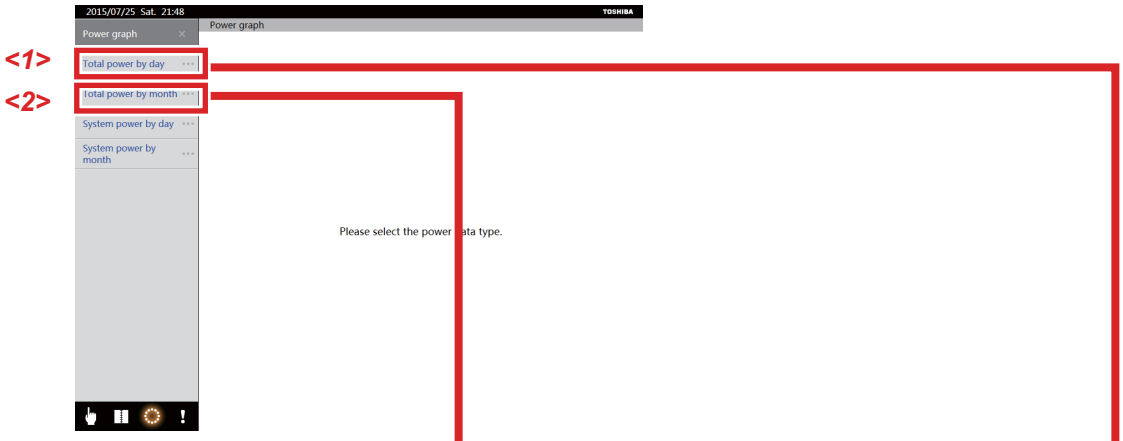
Graph list
Displays the power graph list.

Tap [Power graph] **<1>** in the option screen.
The power graph screen appears.

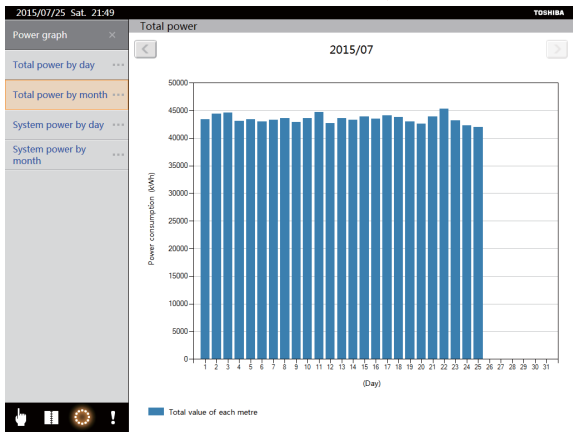
[2] Displaying the total power graph

The total values from the connected electricity meter are displayed as a graph.

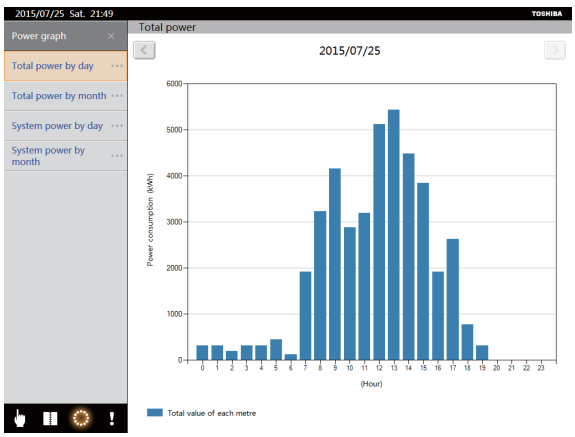
[Power graph screen]



[Total power graph by month screen]



[Total power graph by day screen]

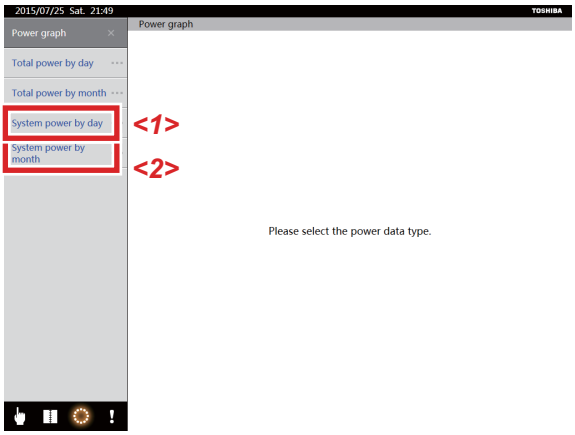


▼ Total power graph by day
Tap [Total power by day] **<1>**.
The total power graph by day screen appears.

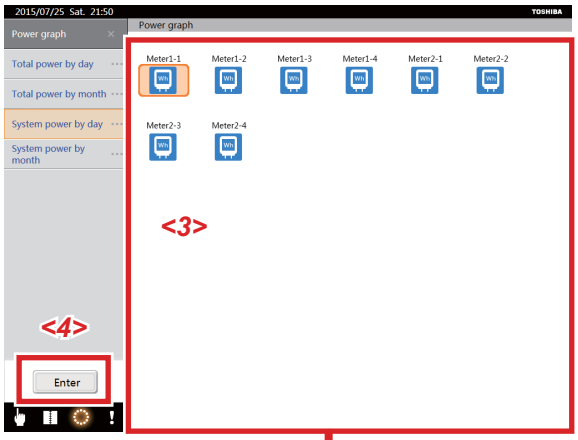
▼ Total power graph by month
Tap [Total power by month] **<2>**.
The total power graph by month screen appears.

[3] Displaying the system power graph

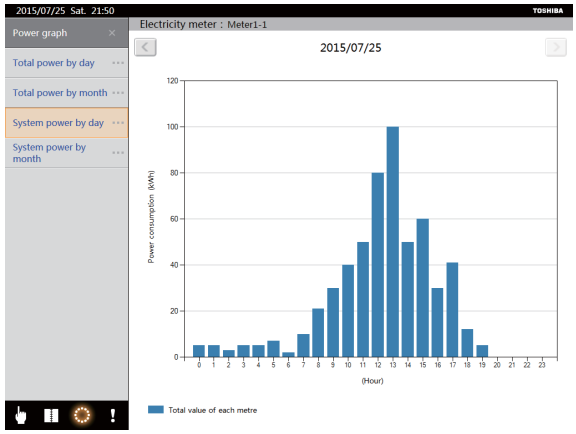
[Power graph screen]



[Electricity meter selection screen]



[System power graph by day screen]

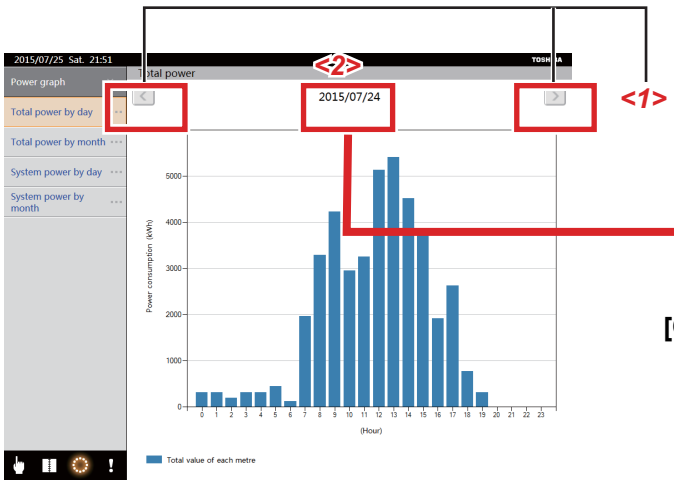


(1) Tap [System power by day] **<1>**. (When you want to display by month, tap [System power by month] **<2>**.)
The electricity meter icon appears.
(2) Select the Electricity meter icon **<3>** that you want to make into a graph. (More than one can be selected)
(3) Tap the [Enter] button **<4>**.
The system power graph is displayed.

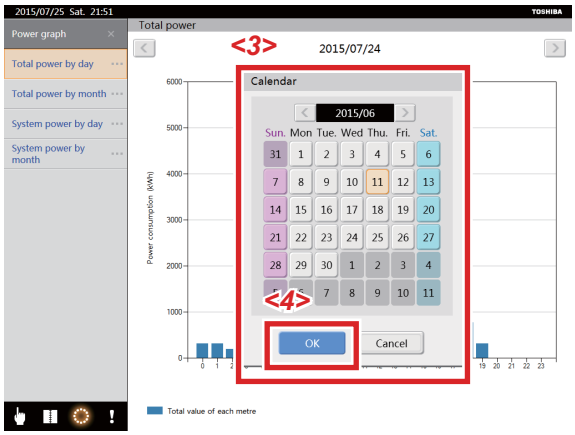
* When multiple electricity meters are selected, it is a total value of the selected electricity meters.

[4] Displaying graphs of other dates

[Total power graph by day screen]



[Calendar screen]



▼ Display the past by using the arrow button

(1) Tapping the arrow button **<1>** displays the graph of another date. The units that can be changed are as follows.
Total power graph by day/system power graph by day: moves the graph by daily units.
Total power graph by month/system power graph by month: moves the graph by monthly units.

▼ Display the past by using the calendar

(1) Tap [Day] **<2>**.
The calendar appears.

(2) Select the day or month from the calendar **<3>**. The units that can be selected are as follows.
Total power graph by day/system power graph by day: can be selected by daily units
Total power graph by month/system power graph by month: can be selected by monthly units

(3) Tapping the [OK] button **<4>** displays the graph for the selected day or month.

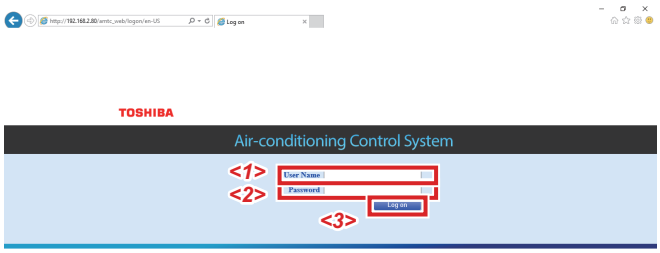
* You can display graphs for every 2 years.

5 Monitoring/controlling using a computer

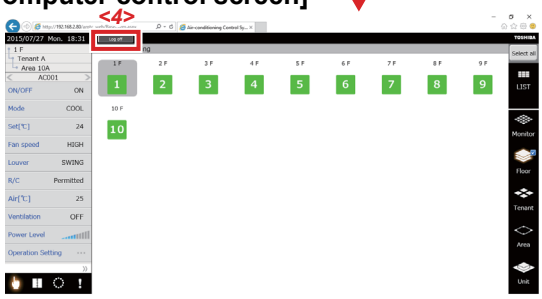
You can use your computer to monitor and control air conditioners via the TOUCH SCREEN CONTROLLER. This section explains operations that differ from those performed using the TOUCH SCREEN CONTROLLER.
*Refer to the network connection guide for information on how to connect the computer and TOUCH SCREEN CONTROLLER.
The display may be slowed down if the number of group icons is large.

5-1. Log on/Log off

[Log on screen]



[Computer control screen]



▼ Log on

Make a note of the user name and password set in "[2-9]User Account Setting (TOUCH SCREEN CONTROLLER only)" in 4-12.Option screen.

(1) Open your browser and connect to the TOUCH SCREEN CONTROLLER.
A log on screen appears.
(2) Enter your [User name] **<1>**.
(3) Enter your [Password] **<2>**.
(4) Click the [Log on] button **<3>**.
The computer control screen appears.
*Up to 2 users can be logged on.
The system will automatically log off at 1 am to protect the TOUCH SCREEN CONTROLLER. Log on again if you want to continue to monitor and control the system from a PC.

▼ Log off

(1) Click the [Log off] button **<4>**.
The browser will return to the log on screen.

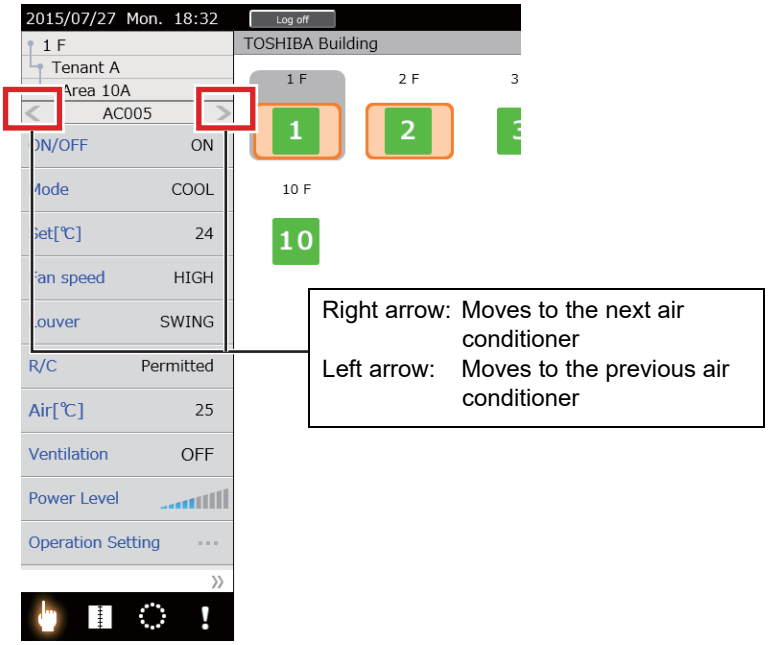
NOTE

* The screen configuration and operations that can be performed after logging on are fundamentally the same as on the TOUCH SCREEN CONTROLLER. For operation procedures, refer to [4. How to operate]. However, as some of the screens and operations differ, be sure to read the following information.

5-2. Air conditioner status list display

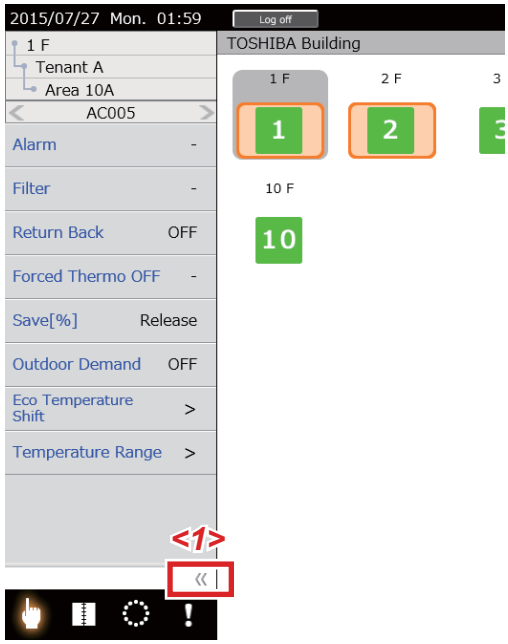
▼ Changing the air conditioner that is shown on the air conditioner status list

The "flick" gesture has been replaced by arrow buttons. Click the arrow buttons to move between the air conditioners in the selected group icon.



▼ Showing advanced items on the air conditioner status list

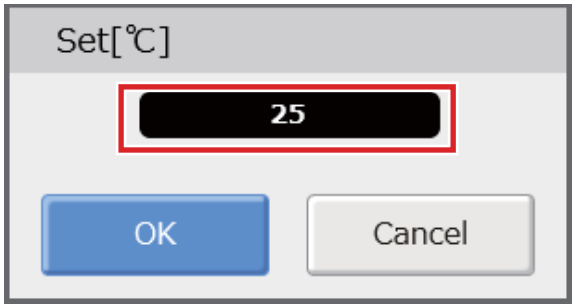
The "Advanced tag" has changed to an [Advanced] button <1>. Click the [Advanced] button <1> to turn the advanced display on or off.

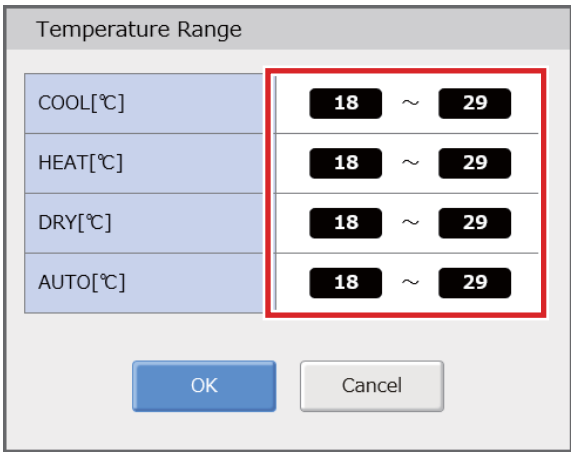


5-3. Entering numbers

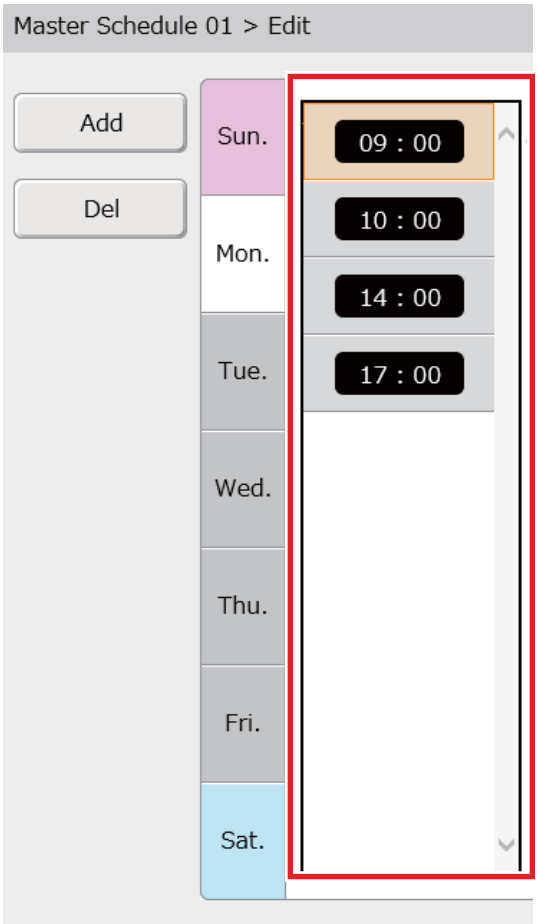
Numbers are entered directly from the computer for things such as the set temperature and schedule times. For this reason, the number input button and number input screens (e.g. screen for setting the time) are not included.

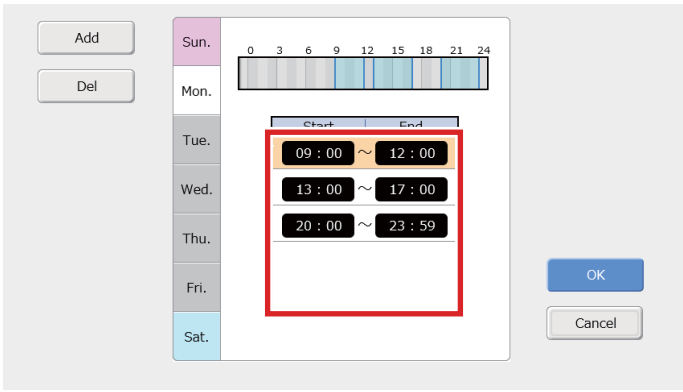
▼ Examples of screens that do not have a number input button

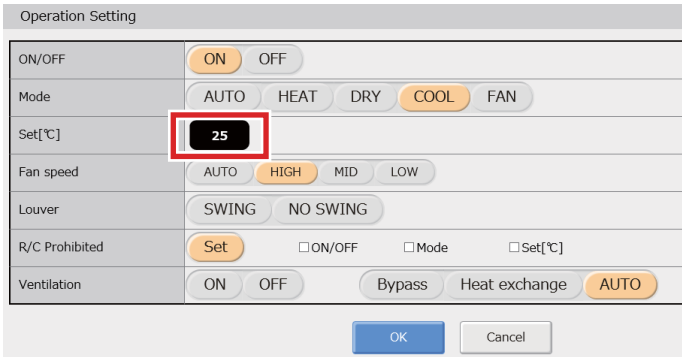




▼ Examples of screens that do not have a number input screen





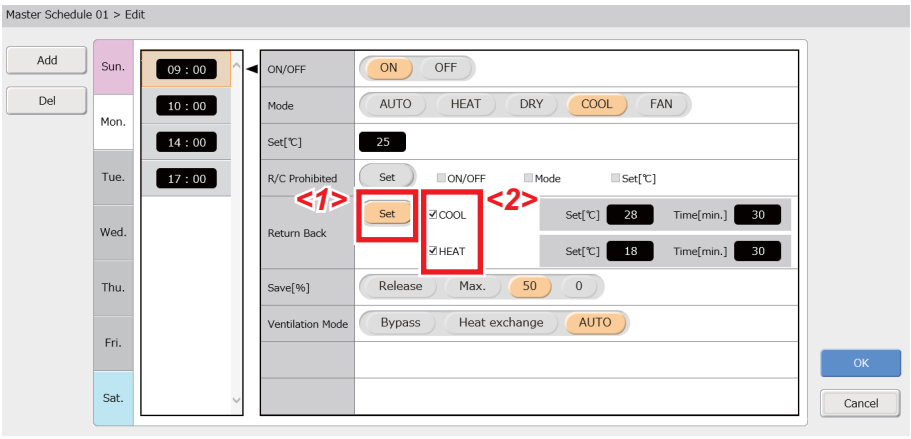


5-4. Schedule detailed settings screen display

The settings displayed on the Master Schedule Detailed Settings screen and Operating Schedule Detailed Settings screen are different. All settings for each time in the schedule can be changed at the same time.

* To release the return back function, clear the check box <2> while [Set] <1> is selected.

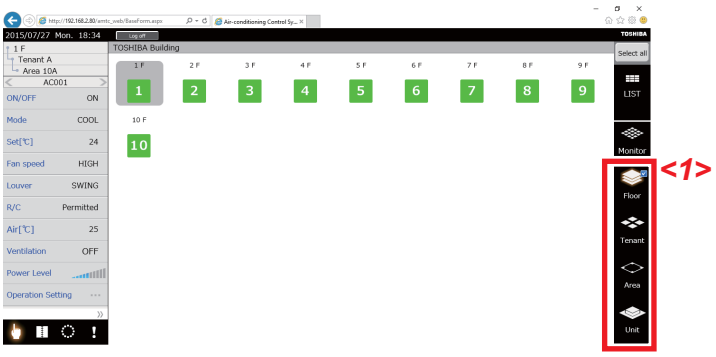
[Master Schedule Detailed Settings screen]



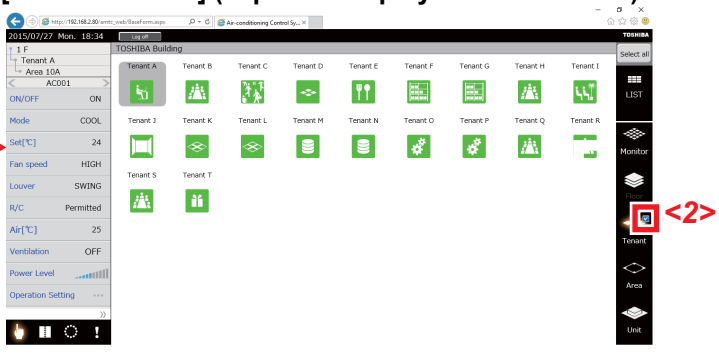
5-5. Changing the top level

The "long tap" gesture has been replaced by right clicking. You can change the top level to floor, tenant, area, or unit by right clicking the [Floor], [Tenant], [Area], or [Unit] icon in the display switch icons.

[Control screen] (separate display for each floor)



[Control screen] (separate display for each tenant)

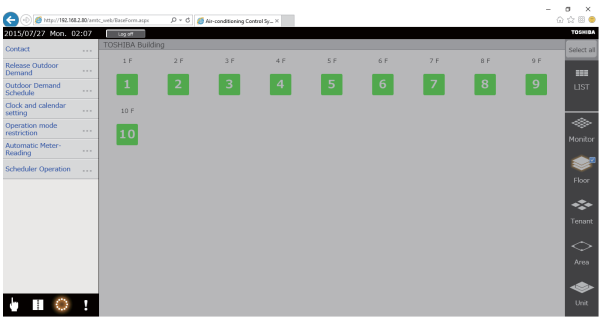


(1) Right click one of the [Display switch] icons <1>.
(2) The top level mark <2> moves to the level that was right clicked, and that level becomes the top level.

5-6. Option screen display

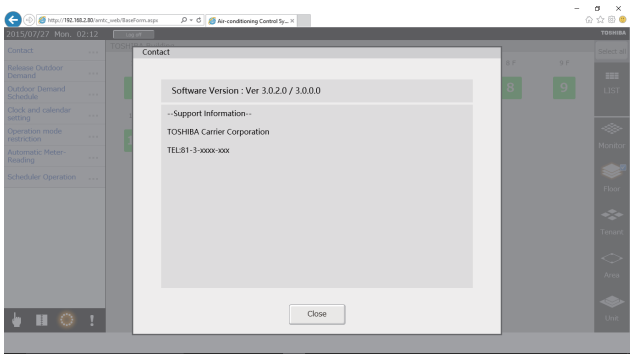
Each function on the option screen now has a dialog box.

[Option screen]

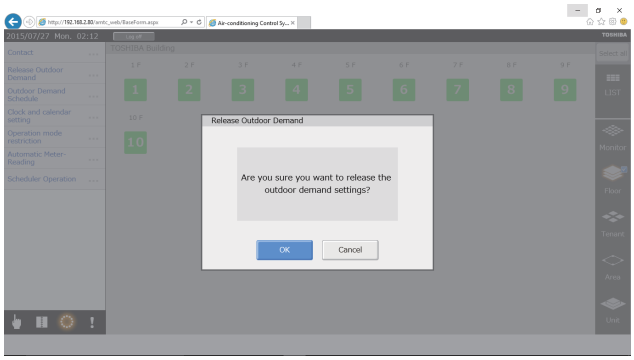


▼ Each function on the Option screen

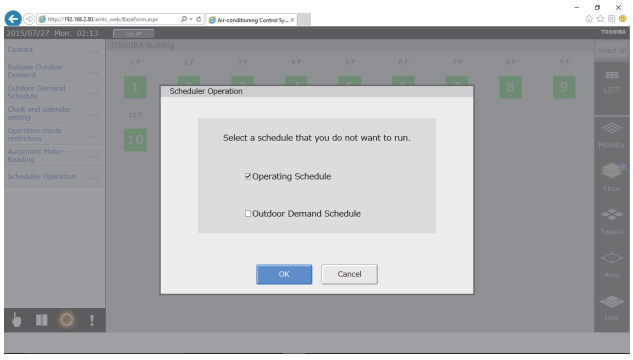
[Contact Information screen]



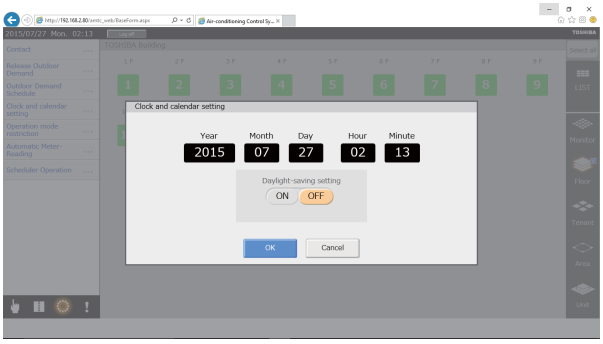
[Release Outdoor Demand screen]



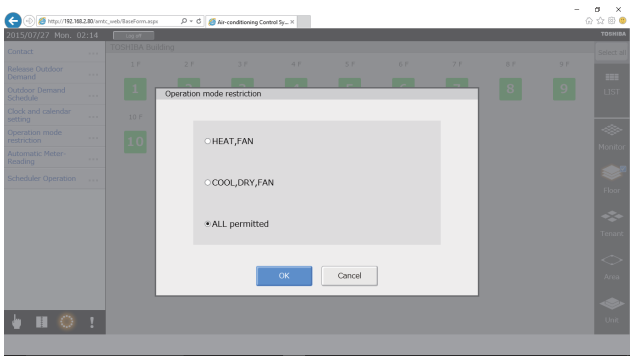
[Scheduler Operation screen]



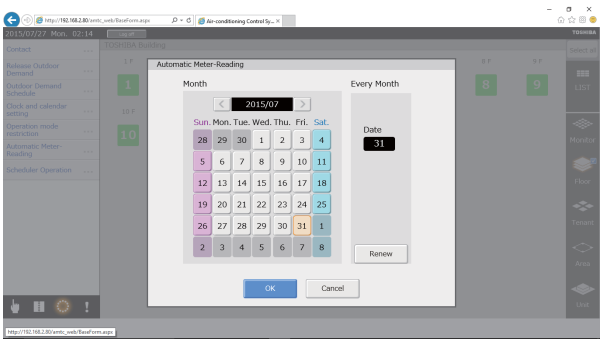
[Clock and Calendar Settings screen]



[Operation Mode Restriction screen]



[Automatic Meter-Reading screen]



6 Important information

■ Extracting monthly report data and power distribution data

Use the Report Creation Software provided to create reports from monthly report data and power distribution data.
Refer to the Owner's Manual of the Report Creation Software for data extraction and operating procedures.

■ Troubleshooting

Nothing appears on the screen	Has the backlight gone out? →Tap the screen. The backlight turns on, and the screen contents appear.
Operations cannot be performed even when the screen is tapped.	Turn the power off and then on again.
The scheduler does not work even if a schedule is set.	Is only the master schedule set? Is the schedule setting disabled?
The remote control does not work.	Has operation of the remote control been prohibited?
Cooling/Heating cannot be performed during the storage operation at night.	Is a heater (or cooler) on the same refrigerant line operating? Is the local remote control set so the operation mode cannot be changed? Is a heater (or cooler) selected in the selected operation mode range?

■ Contact your dealer

- To change the names of the floors, tenants, areas, or refrigerant lines
- To install more air conditioners
- To output a power distribution report

Installation Manual

TOSHIBA
Leading Innovation

Installation Manual

TOUCH SCREEN CONTROLLER for Air Conditioning Control System

Model name:

BMS-CT5121E

English

Contents

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

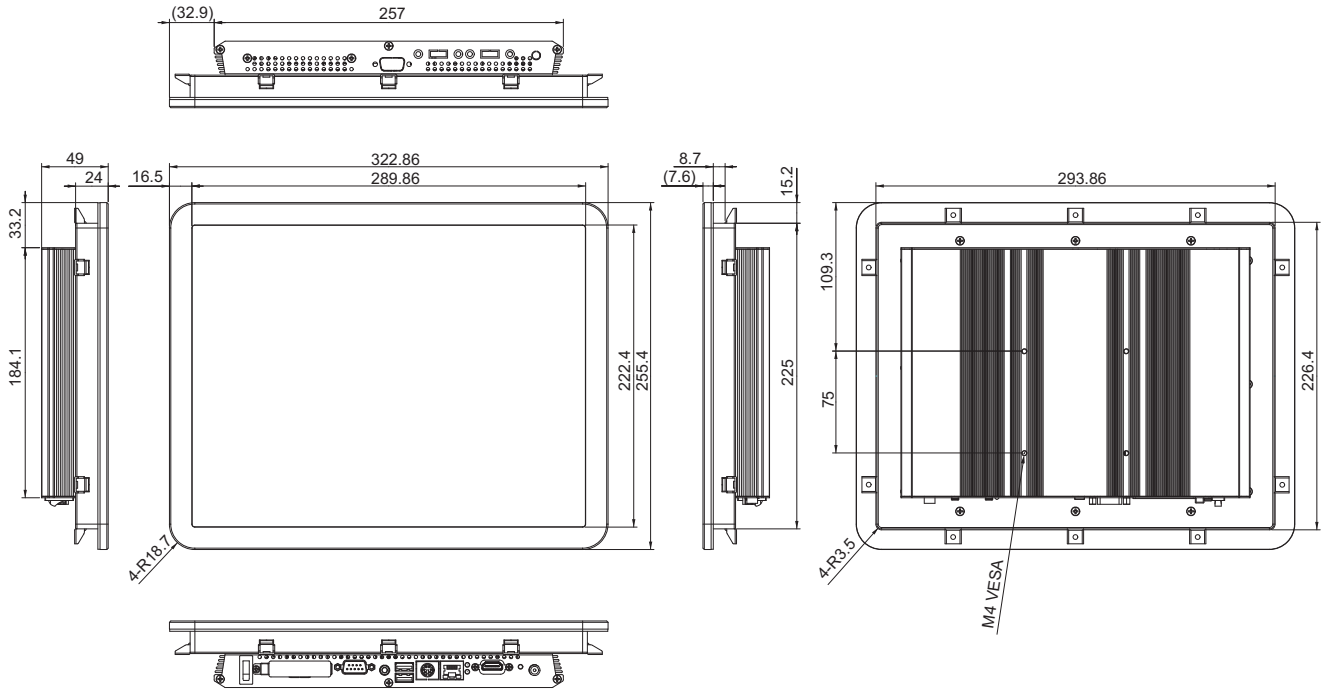
Component	Qty	Remarks
TOUCH SCREEN CONTROLLER main unit	1	
Power adapter	1	TOUCH SCREEN CONTROLLER power supply (*1)
Compact flash card	1	Inserted into CF card slot when controller shipped from factory
RS-485 cable	1	Cable for connecting controller to TCS-NET Relay Interface or other device
Closed end 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

*1: FSP060-DBAE1 or FSP060-DIBAN2 included.

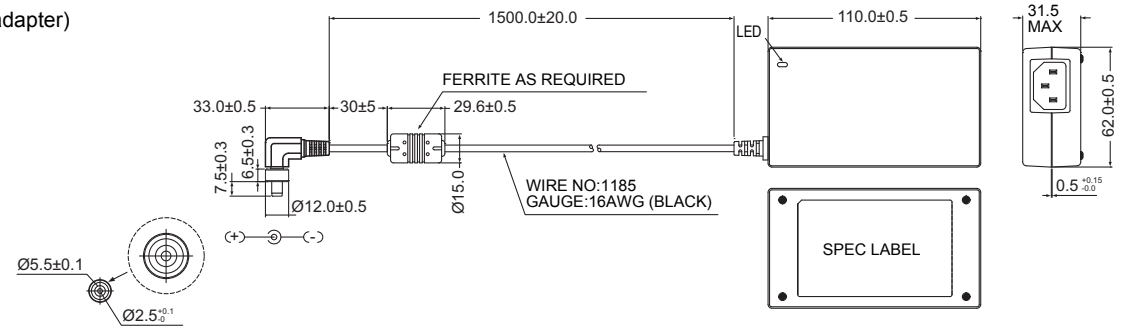
■ Specifications

Power supply	Rated voltage	220-240VAC 50/60Hz
	Energy consumption	28 W
Operating temperature range		0°C to 40°C, 10% to 90% RH (no condensation)
Storage temperature range		-10°C to 60°C
Dimensions		Width 323 x Height 256 x Depth 49 mm
Weight		TOUCH SCREEN CONTROLLER: 3.4 kg Power adapter: 0.3 kg

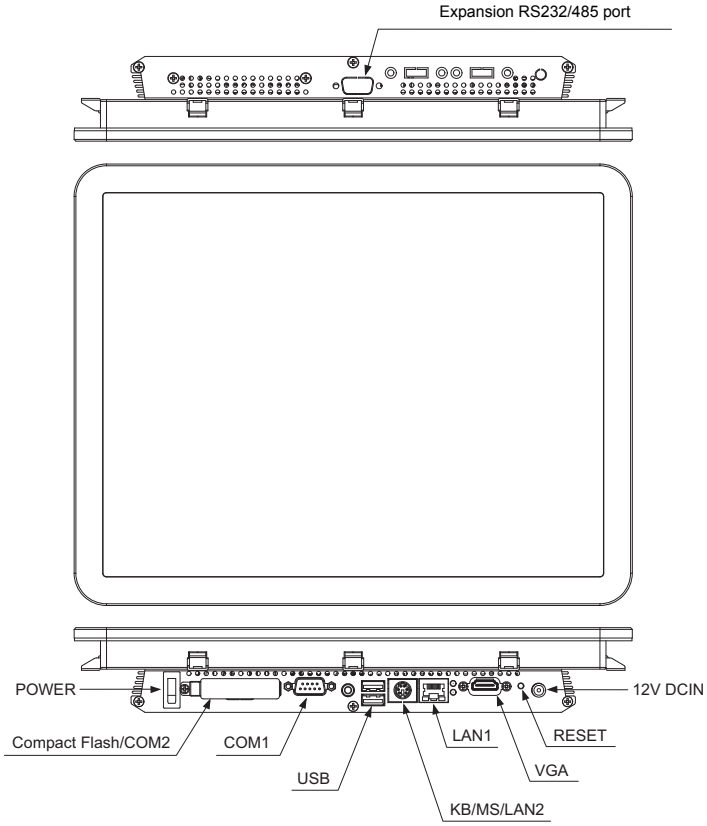
■ External dimensions (TOUCH SCREEN CONTROLLER main unit)



(Power adapter)



■ Component Names

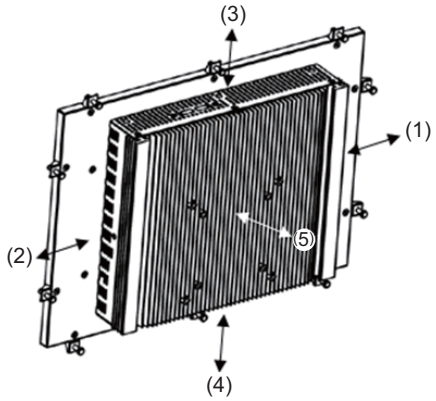


Name	Function
POWER	Power switch
Compact Flash/COM2	CF card slot, for inserting CF cards
COM1	Connect the supplied RS-485 cable
USB	(For service)
KB/MS/LAN2	(For service)
LAN1	For acquiring daily and monthly report data by LAN communications
VGA	(For service)
RESET	Reset switch
12V DCIN	Connect the power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

1 Installation

■ Wiring and Maintenance Space

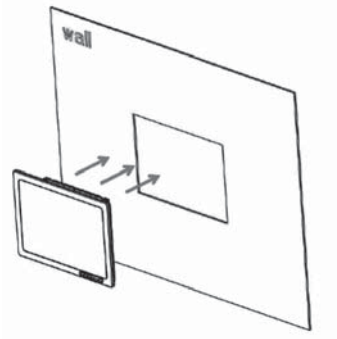
When installing, leave enough space for wiring and maintenance.



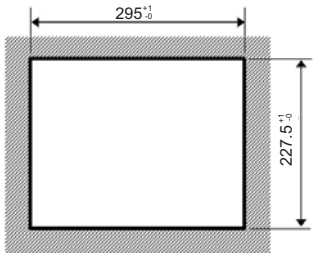
Location	Wiring, maintenance space
(1)	50 mm
(2)	50 mm
(3)	50 mm
(4)	80 mm
(5)	50 mm

■ Installation Method (Panel Mounting)

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



Panel cut dimensions diagram

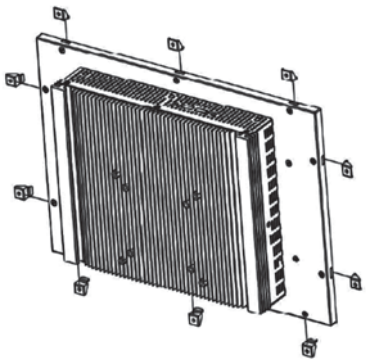


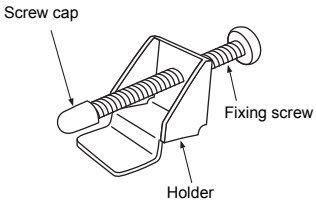
Panel thickness range 1.6 mm to 7 mm [mm]

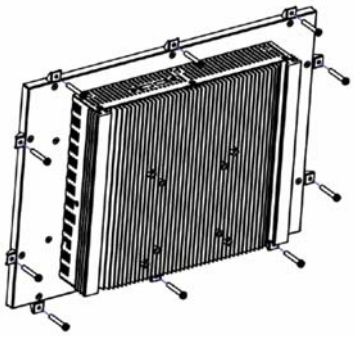
NOTE

Use a panel with a thickness of 1.6 mm 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 75 mm x 75 mm stand (locally procured).

2 Power and signal line connections

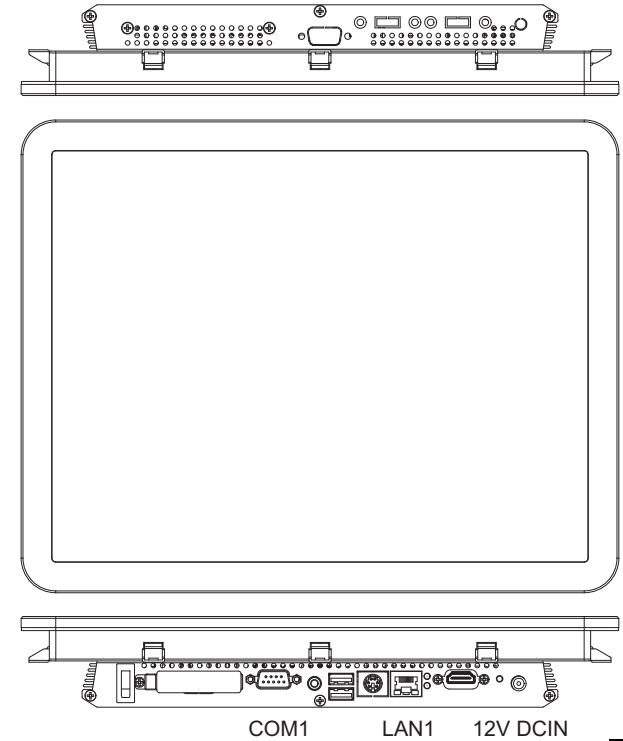
■ Cables

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

No.	Signal line	Description	
1	For RS-485	Type	2-core shield wire
		Wire size	1.25 mm^2, 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	100 m max

■ Cable Connections

Connect the cables to the specified connectors.



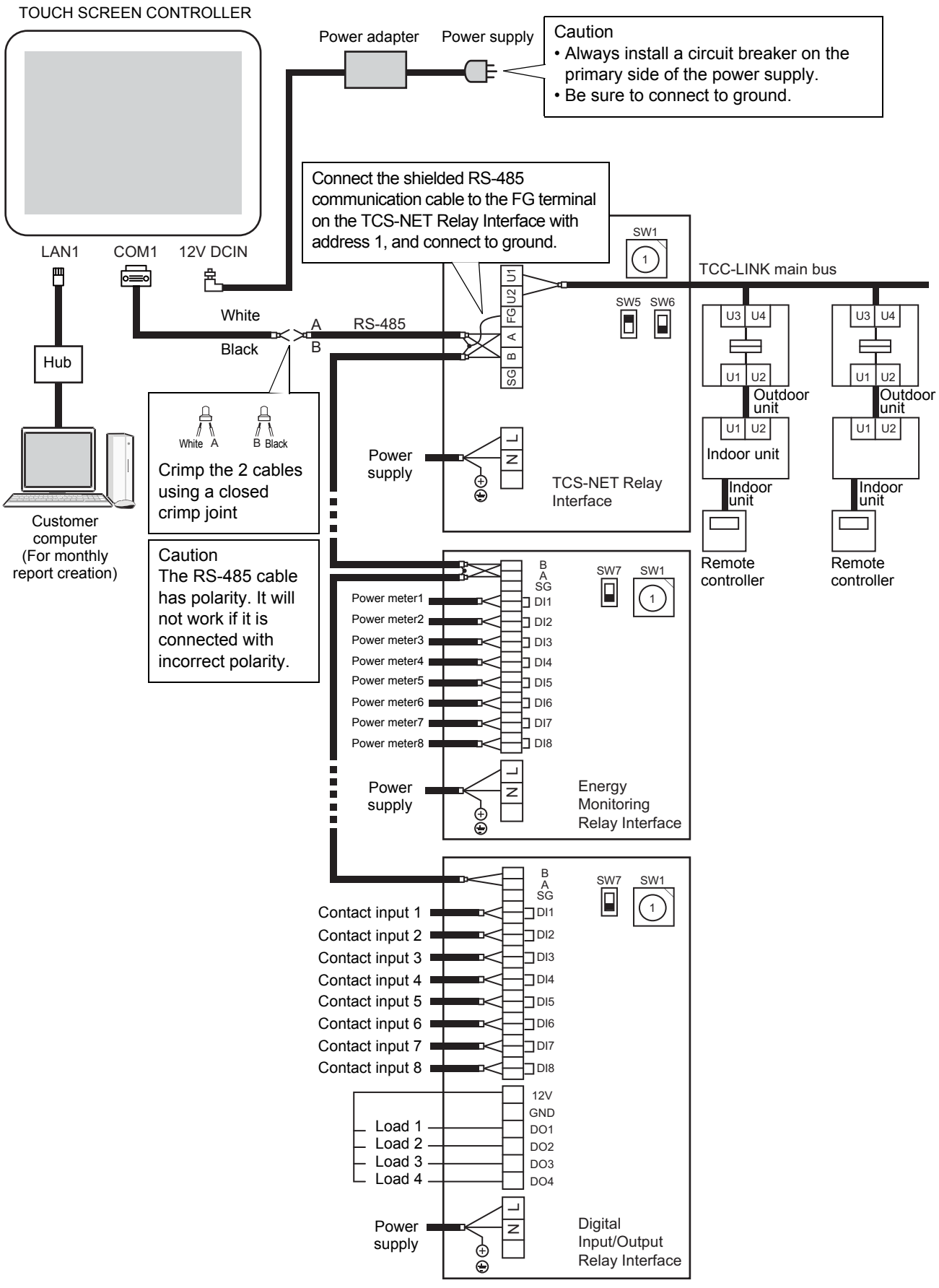
NOTE

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

REQUIREMENT

Power cable is not supplied for the TOUCH SCREEN CONTROLLER. Insert a three core power cord applicable to the standard of the country you use. Be sure to connect the earth line of the power cable securely.

■ 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 your dealer 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 "TCS-NET 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

Network Configuration Guide

TOSHIBA
Leading Innovation

Network Configuration Guide

TOUCH SCREEN CONTROLLER for Air Conditioning Control System

Model name:

BMS-CT5121E

English

Prohibited

Never connect the TOUCH SCREEN CONTROLLER for Air Conditioning Control System to the Internet.
We assume no responsibility for any problems resulting from connection to the Internet.
Only local area connection is allowed for the TOUCH SCREEN CONTROLLER for Air Conditioning Control System.

This guide describes the setting procedure for connecting the TOUCH SCREEN CONTROLLER for Air Conditioning Control System to your personal computer (abbreviated to "PC" hereinafter) via the network.
PC operation to monitor and control air conditioners is detailed in the Owner's Manual.

1. System configuration of PC

The PC to be connected must meet the following system configuration conditions so that the TOUCH SCREEN CONTROLLER for Air Conditioning Control System operates normally.

<Operating system>

- Windows 8.1
- Windows 10

<Hardware>

- Screen resolution 1366 × 768 pixels or more

<Browser>

- Internet Explorer 11

2. Connecting LAN cable

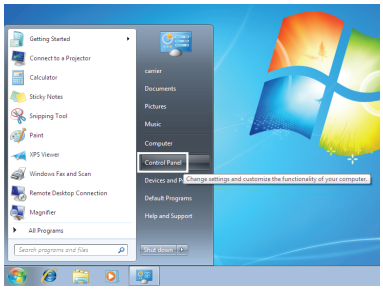
Connect the LAN cable to the LAN1 connector on the TOUCH SCREEN CONTROLLER.

3. Client PC settings

3-1. Setting IP address

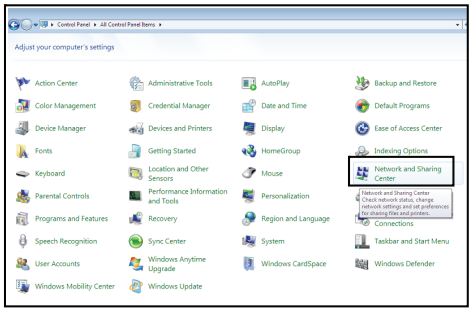
1) Log on to the system with the PC administrator's account.
2) Click [Start] -> [Control Panel]. (Fig.1)

Fig.1



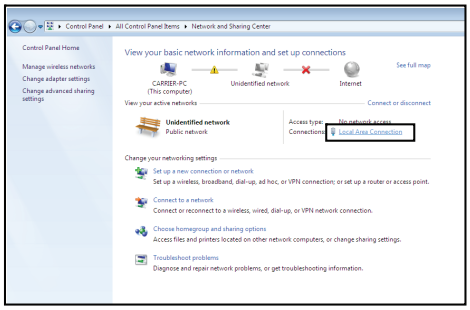
3) Click [Network and Sharing Center]. (Fig.2)

Fig.2



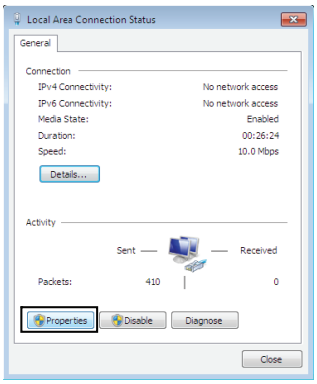
4) Click "Local Area Connection" of View your active networks. (Fig.3)

Fig.3



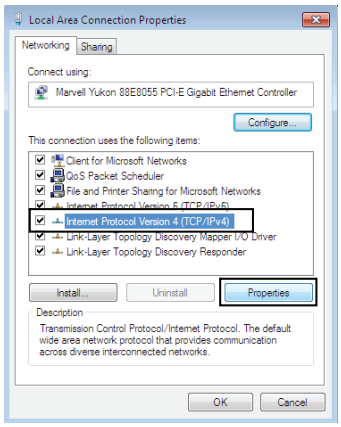
5) Click [Properties] in the Local Area Connection Status window. (Fig.4)

Fig.4



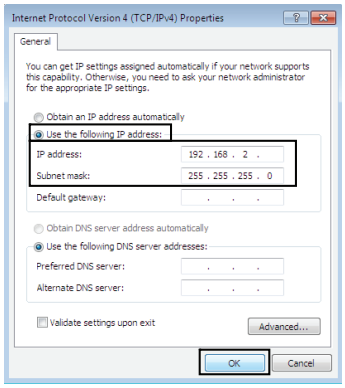
6) Select the “Internet Protocol Version 4 (TCP/IPv4)” checkbox, and click [Properties]. (Fig.5)

Fig.5



7) Select the “Use the following IP address:” radio button, and set as follows:
IP address: 192.168.2.*** (***: Excluding 80)
Subnet mask: 255.255.255.0.
Then click [OK]. (Fig.6)

Fig.6



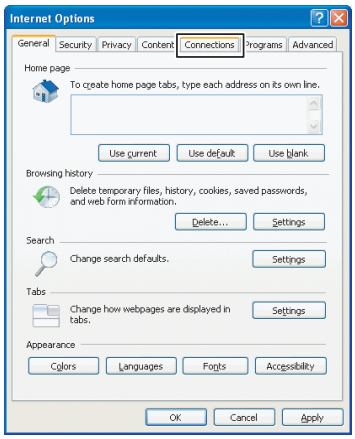
8) Close all the windows.

3-2. Setting browser

<Internet Explorer>

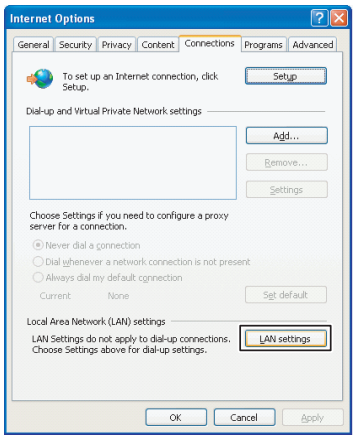
1) Start Internet Explorer.
2) Click the [Tools] button.
3) Choose “Internet Options” from the pull-down menu.
4) Click the “Connections” tab. (Fig.1)

Fig.1



5) Click [LAN settings]. (Fig.2)

Fig.2



6) Clear the “Use a proxy server for your LAN” checkbox (Fig.3) or select the “Bypass proxy server for local addresses” checkbox (Fig.4), and then click [Advanced].

Fig.3

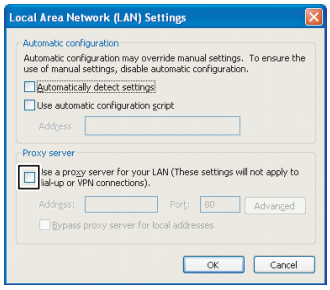
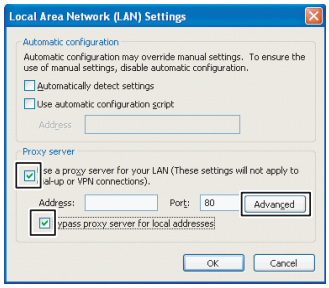
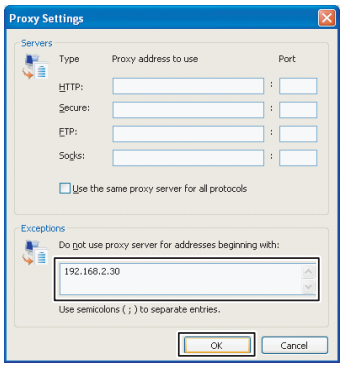


Fig.4



Add “192.168.2.80” to the “Do not use proxy server for addresses beginning with:” field. (Fig.5)

Fig.5



7) Select a URL by language and type it into the address bar to connect to the TOUCH SCREEN CONTROLLER for Air Conditioning Control System (Web type air conditioning control system).
Table 1

English	http://192.168.2.80/amtc_web/logon/en-US
German	http://192.168.2.80/amtc_web/logon/de-DE
Italian	http://192.168.2.80/amtc_web/logon/it-IT
French	http://192.168.2.80/amtc_web/logon/fr-FR
Spanish	http://192.168.2.80/amtc_web/logon/es-ES
Chinese	http://192.168.2.80/amtc_web/logon/zh-CN
Portuguese	http://192.168.2.80/amtc_web/logon/pt-PT
Turkish	http://192.168.2.80/amtc_web/logon/tr-TR
Russian	http://192.168.2.80/amtc_web/logon/ru-RU
Greek	http://192.168.2.80/amtc_web/logon/el-GR
Dutch	http://192.168.2.80/amtc_web/logon/nl-NL
Czech	http://192.168.2.80/amtc_web/logon/cs-CZ
Croatian	http://192.168.2.80/amtc_web/logon/hr-HR
Polish	http://192.168.2.80/amtc_web/logon/pl-PL

Revision record

Number	The contents of modification	Chapter	Date
First issue	—	—	Feb., 2016
Revision 1	Updated Owner's Manual	—	Apr., 2023

TOSHIBA CARRIER CORPORATION
336 TADEHARA, FUJI-SHI, SHIZUOKA-KEN 416-8521 JAPAN