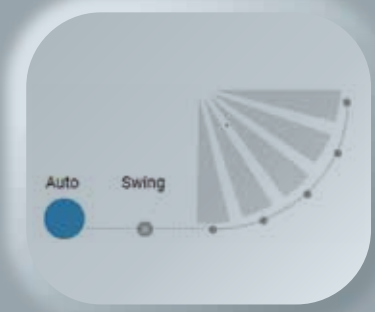
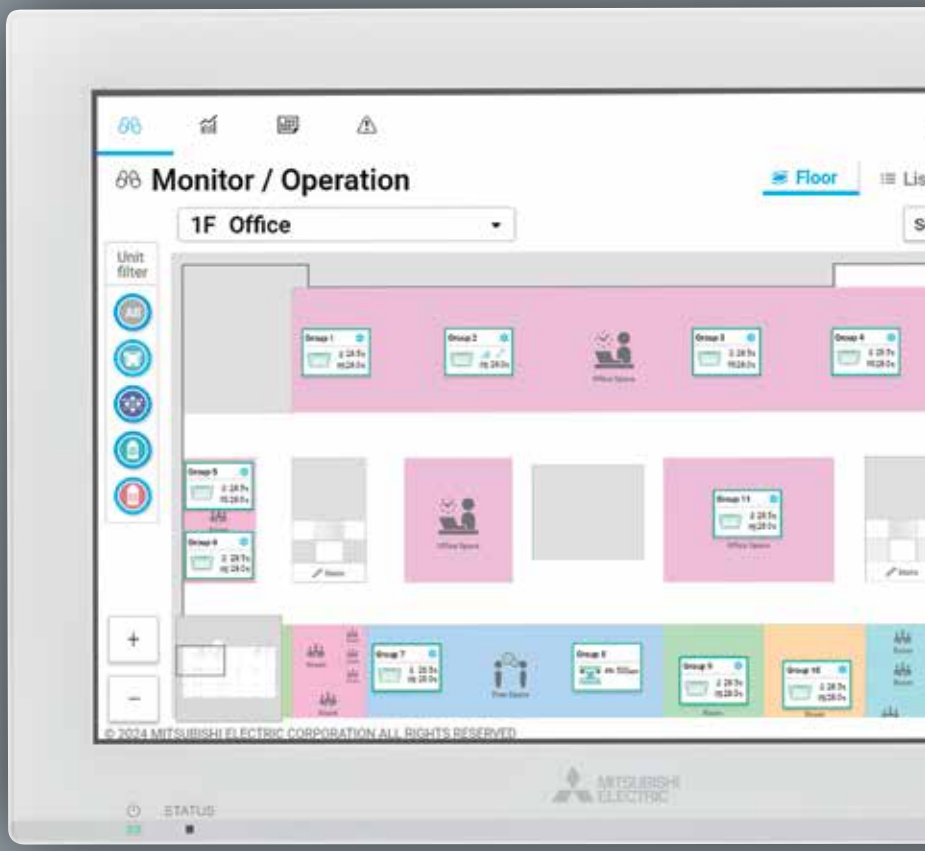
MITSUBISHI ELECTRIC

Heating and Cooling

Centralized Controller AE-C400

Enhanced Visibility, Effortless Use, and Optimal Comfort – All Under One Control





Centralized controller with 12.1-in color LCD touch panel

AE-C400

CITY MULTI

Enhanced Visibility, Optimal Comfort – All

Mounted with a colour LCD touch panel with excellent visibility and operability

The AE-C400 features a 12.1-in colour LCD display that provides excellent visibility. It has a flat-glass, capacitive touch panel for quick and precise response.

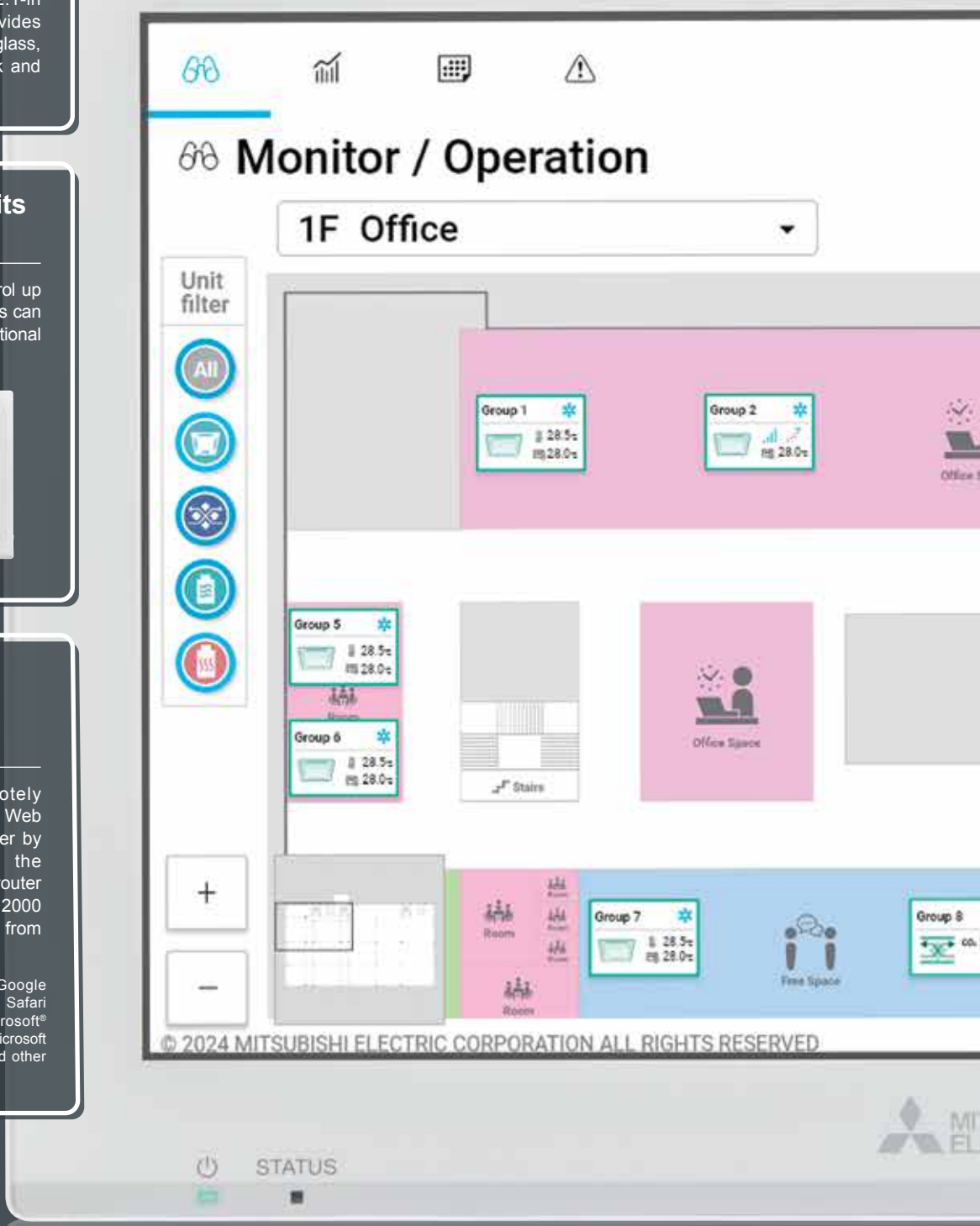
Up to 400 indoor units can be controlled

One AE-C400/EW-C50 can control up to 50 indoor units. Up to 400 units can be controlled by connecting additional AE-C400 or EW-C50.

Indoor units can be monitored and operated remotely

Fan coil units can be remotely monitored and operated from a Web browser* on a personal computer by connecting the computer to the Internet via a modem or VPN router using a LAN connection. Up to 2000 indoor units can be controlled from Web browser.

* For Windows, Microsoft® Edge or Google Chrome is required. For Macintosh, Safari 7 is required. Windows and Microsoft® Edge are registered trademarks of Microsoft Corporation in the United States and other countries.



Effortless Use, and Under One Control

Enables energy management of HVAC systems*

The power consumption* and operating time of units are displayed on the AE-C400. They can be used to check unit usage and the effect of energy-saving control.

* Electric energy input is required.

Detailed airflow direction and speed settings can be registered in annual and weekly schedules

In addition to an annual schedule, five patterns of weekly schedules can be set per season, specifying start and stop times, temperature, and airflow direction and speed in each schedule.

USB can be directly inserted in the side slot. Data can be collected easily.

AE-C400

Centralized controller with a large colour LCD touch panel

12.1-in colour LCD touch panel with backlight

A 12.1-in high resolution colour LCD improves visibility.
The panel has a backlight to enable operations in a dark room.
It can be operated by lightly touching the screen with a finger.

Centralized control from a Web browser

System can be operated and monitored using a personal computer, tablet, or smartphone connected to the Internet by LAN at the same convenience as visiting a Web page.

Operation/monitoring screen

The AE-C400 features a new GUI* with a revamped icon design for clearer visual operation. Additionally, it provides a unified display across both the LCD and Web browser, allowing for consistent operation on either interface.

*Graphical User Interface

● Monitoring screen (personal computer and tablet)

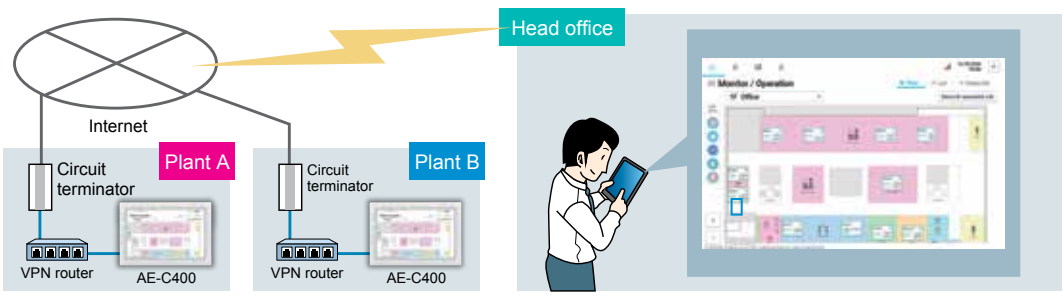
● Monitoring screen (smartphone)

From smartphones, indoor units can be operated by group units only

* The initial setting tool is required to make initial settings.
* On a system incorporating only the EW-C50, floor layouts can be registered using the initial setting tool. The plan view creating function is optional.
* Indoor units are centrally controlled using a Web browser on a personal computer, but the personal computer can be used for other purposes.
* In the case of Windows, Microsoft® Edge or Google Chrome is required. In the case of Macintosh, Safari 7 is required. Windows and Microsoft® Edge are registered trademarks of Microsoft Corporation in the United States and other countries.
  iPad and Safari are registered trademarks of Apple Inc. in the United States and other countries. Google Chrome is a registered trademark of Google Inc.

● Monitoring via the Internet

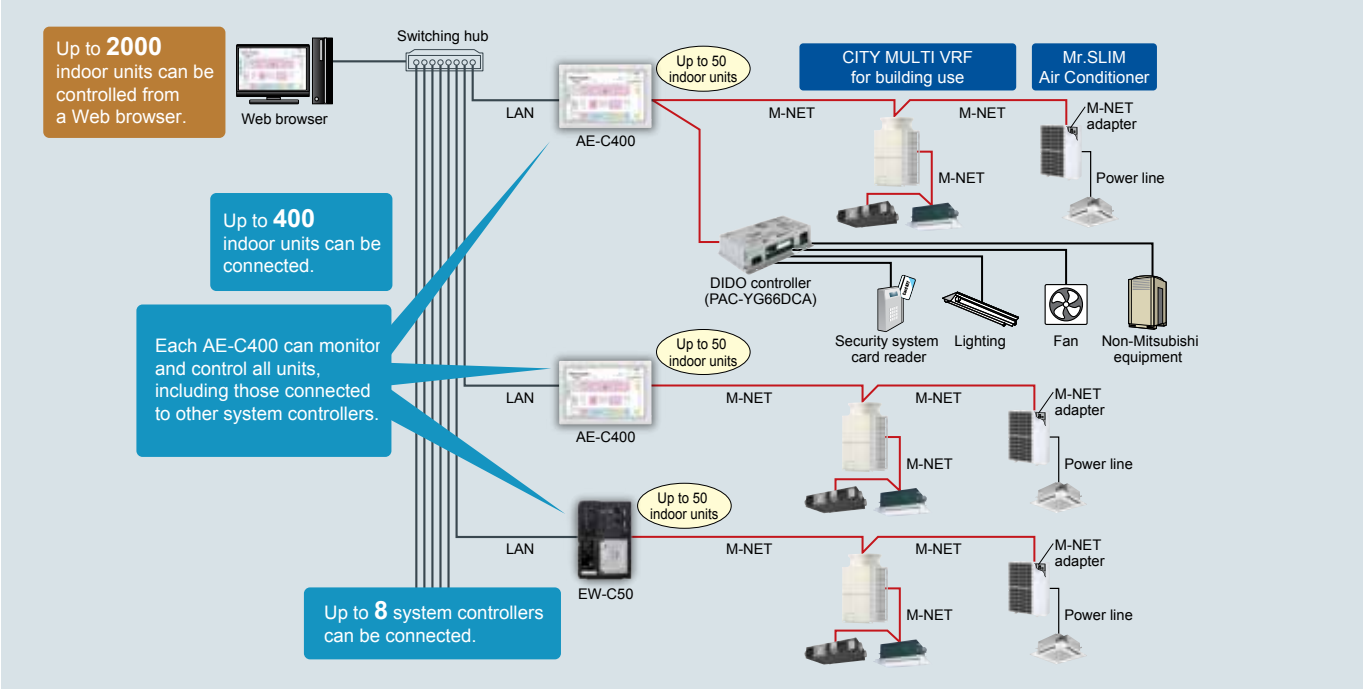
A tablet can be used to remotely operate indoor units and monitor energy usage and any issues.



* A network administrator should be consulted in advance.
* When connecting the AE-C400/EW-C50 to the Internet, use a VPN router for security.
* It is necessary to create an account with an Internet provider.

System configuration image

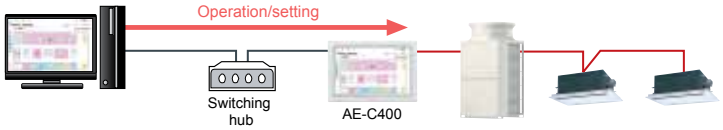
One AE-C400/EW-C50 can control up to 50 indoor units. Up to 400 units can be controlled by connecting additional AE-C400 or EW-C50.



Centralized control by floor plan image

Systems can be operated and monitored using the unit icons on the floor plan image* displayed on the AE-C400 or via the Web browser. On the AE screen, up to 10 floors (with 1 section each) can be registered. On the Web browser, up to 40 floors (with 1 section each) can be registered.

* The floor plan image function is optional.



There are no restrictions on colour specifications and support for various file formats, including JPEG and PNG.

Data input/output from/to USB port type C

Setting data (initial setting) and energy management data can be output to a USB flash drive*1. Likewise, the floor plan image data and setting data can be retrieved from the USB flash drive and input to the AE-C400.

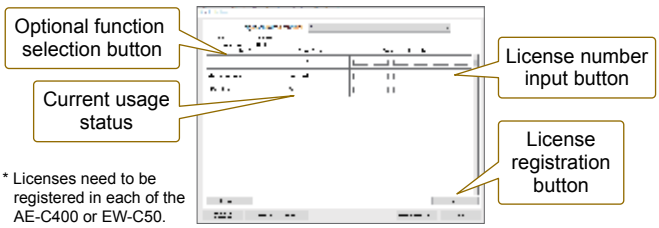
Dark mode (Web browser only)

A black background option has been added for the Web browser. Users can switch between settings to suit their preferences. To display in dark mode, add "?colour = dark at the end of the Web browser's URL
(ex) https://(IP address)/control?colour=dark

Error display

A list of units in trouble can be displayed. Touch an error code button to display error details.

License registration screen



* Licenses need to be registered in each of the AE-C400 or EW-C50.

Detailed weekly and annual schedules can be set with the AE-C400

Systems can be easily controlled by using the scheduling function

Scheduling function

The scheduling function simplifies climate control by allowing you to set up air conditioning schedules based on the season. You can create weekly and annual schedules for effortless temperature adjustments. Up to 24 different events can be set per day to perfectly match your needs.

Schedule setting items

Schedule Settings	•Set Time (In 1-Minute Increments) •Stop Operation •Operation Mode •Set Temperature •Air Direction •Remote Control Prohibited
Regular Schedule	
Optimal Startup Schedule	

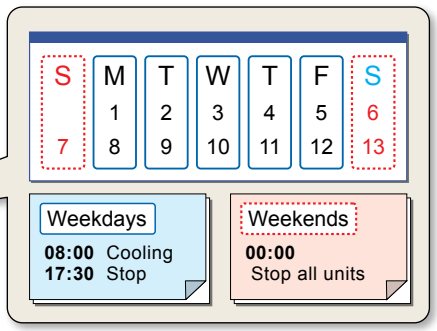
Weekly schedule

The weekly schedule allows you to set different times for each day of the week. You can create up to 5 schedules and easily switch between schedules based on the season or specific period such as spring, summer, autumn, winter, or long vacations. Set these schedules in advance to match your seasonal needs.

e.g., Weekly schedules for spring, summer, autumn, winter, and long holidays

Priority high

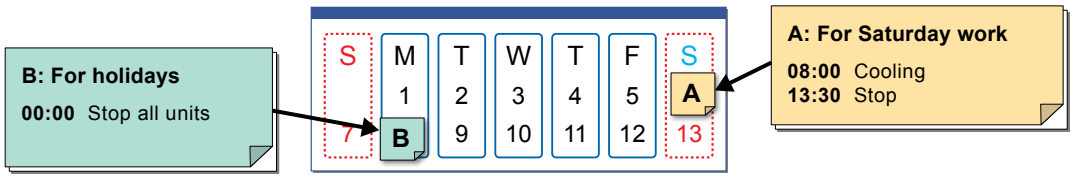
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Weekly Schedule1								Holiday				
Weekly Schedule2				Spring								
Weekly Schedule3							Summer					
Weekly Schedule4										Autumn		
Weekly Schedule5	Winter											Winter



Annual schedule

The annual schedule allows you to make settings for holidays and special days, aside from your weekly schedule. You can program up to 50 days within a 24-month period, using up to 5 different operational patterns. These settings take precedence over the weekly schedule, so you won't need to make changes to your weekly settings.

e.g., Annual schedules for holidays such as public holidays and company founding anniversaries



Daily schedule

When an unexpected change occurs, you can set up a schedule for just that day. This daily schedule takes precedence over both the weekly and annual schedules, allowing you to accommodate sudden adjustments without altering your existing weekly or annual settings.

e.g., Adding an air conditioning operation schedule for Saturday afternoon to the original Saturday schedule to accommodate an emergency meeting that has been scheduled for the afternoon

Various functions of AE-C400 improve energy saving performance and comfort.

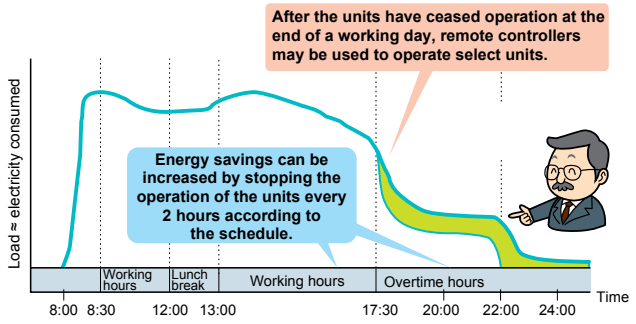
Energy-saving operation utilizing the schedule function

Utilization of schedule function of AE-C400

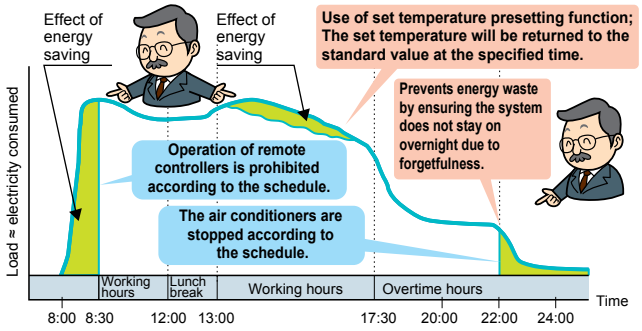
AE-C400 includes a daily, weekly, seasonal and annual schedule function as standard. If all units are shut off at the end of a work day, it is possible to prevent energy waste caused by workers forgetting to turn off.

Energy-saving air conditioning can be realized by setting the daily operation pattern. Failure to turn off can be prevented by inputting the quitting time.

For saving electricity during overtime hours



For saving electricity frequently throughout the day



Convenient functions to improve energy saving performance and comfort

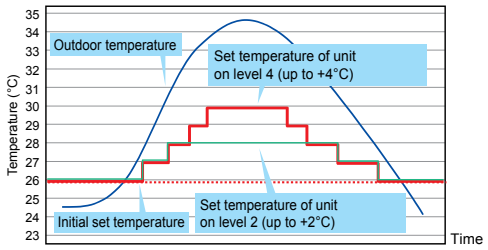
Energy saving effect

Operation according to outdoor temperature

During the cooling or heating season, the air conditions are controlled to reduce the difference between outdoor temperature and indoor temperature (around the entrance) and avoid physical effects of sudden temperature change. This function is also effective in saving energy. The control according to the outdoor temperature can be set for each group.

* Thermometers and AI controller (PAC-YG63MCA) are required.

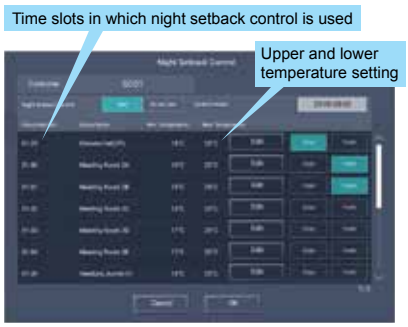
Any of the set temperature change levels 1 (1°C) to 4 (4°C) can be set for each unit.

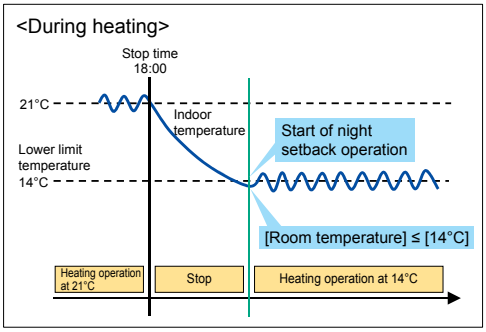


Improved comfort

Night setback function

This function is designed to automatically operate units to keep the room temperature within a certain range when the temperature becomes higher or lower than the preset upper or lower limit.

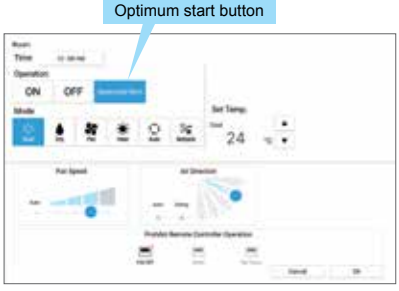




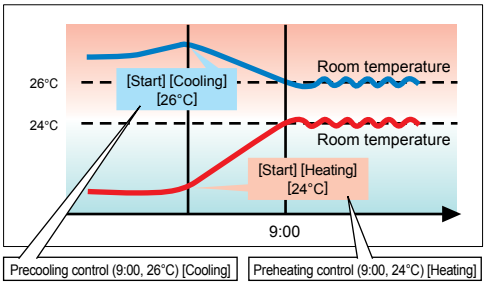
Optimum start control function

This function is used to start units 5 to 60 minutes before the set time so that the set temperature can be obtained at the set time.

The optimum start can be scheduled by setting the temperature and time on the schedule setting screen.



Units are started before the set time so that the room temperature reaches 24°C (26°C) at 9:00.



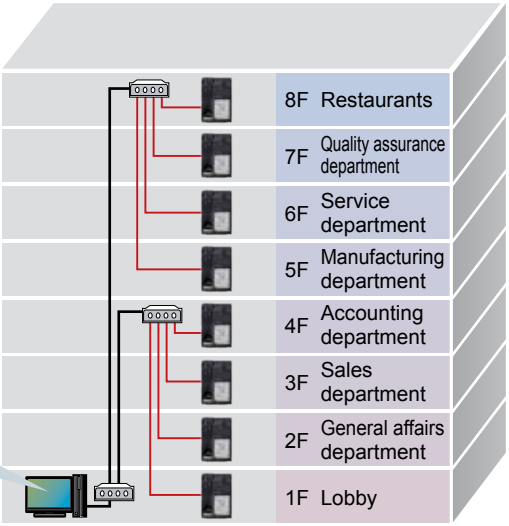
Integrated centralized control function

Up to 2000 indoor units can be integrally controlled

Usage examples

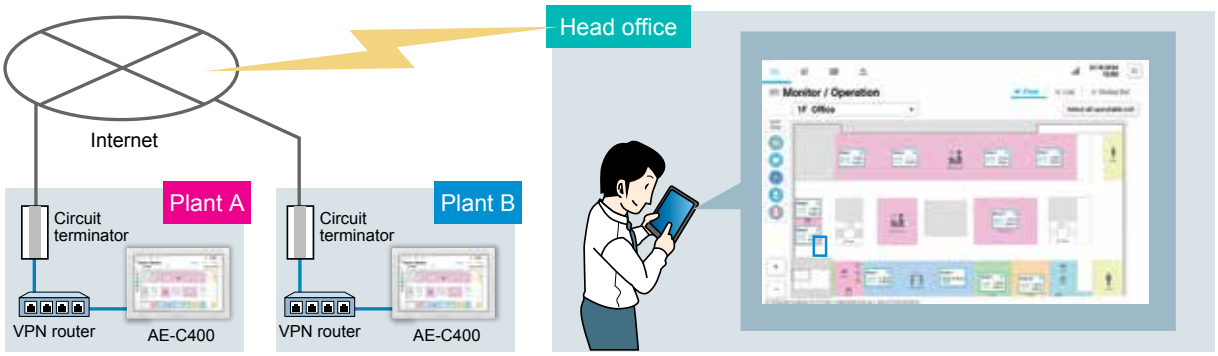
Integrated control of an entire building (up to 2000 indoor units)

The comprehensive management browser allows the monitoring and control of up to 2,000 indoor units connected to a maximum of 40 AE-C400/EW-C50 controllers. By setting up floor layouts, visibility is enhanced, enabling more intuitive operation.



Internet connection

Monitor the operating conditions of the system, along with the energy usage and potential issues from remote locations.

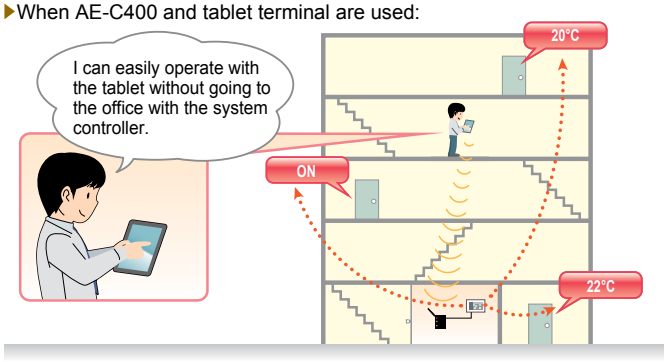


* Consult with the network administrator in advance.
* When connecting AE-C400/EW-C50 via the Internet, use a VPN router to ensure the security.
* It is necessary to establish an account with an Internet provider.

With use of tablet (example)

With AE-C400, you can monitor and operate the units from the tablet.

▶When AE-C400 and tablet terminal are used:



With AE-C400, you can monitor and operate the units from the tablet.

▶ With only AE-C400:

▶ With AE-C400 + tablet terminal:

from a Web browser.

Function list

* The functions and specifications are subject to change.

Function		Details	LCD/PC/tablet			Smart phone
			Building manager	Tenant manager	General user	
Monitor/Operation screen	Floor layout screen	The operating state of the air conditoners is displayed on the floor layout.	✓	—	—	—
	List screen	The operating state of the unit is displayed in list format.	✓	✓	✓	✓
	Status list screen	The number and status (On/Off/Error) of units are displayed for each floor.	✓	—	—	—
	Advanced	The units can be operated.	✓	✓	✓	✓
Energy management	Energy Use Status	The power consumption, outdoor temperature and operation time can be displayed in bar graphs or line graphs for comparison.	✓	✓	—	—
	Energy management table*1	The results of apportionment of energy consumption to energy management blocks, meters, indoor units and outdoor units are displayed.	✓	—	—	—
	Peak-Cut	The peak-cut control level and average electric power is displayed.	✓	—	—	—
Schedule functions	Schedule settings*2	It is possible to set the weekly schedule based on the day-of-the-week pattern (for each season), annual schedule and daily schedule for the units in each group, in each block, on each floor or all units collectively.	✓	✓	—	—
	Date range setting	The periods for weekly schedules 1 to 5 can be set.	✓	—	—	—
Notice	Error list	The addresses of units showing error codes or issues detected are displayed.	✓	—	—	—
	Unit error log/Communication error log	The AE-C400 can display up to 500 errors per system. (250 unit errors and 250 communication errors)	✓	—	—	—
	Filter sign	A list of units showing filter sign on is displayed.	✓	—	—	—

*1: The table can be displayed only when the charge license has been registered.
*2: The tenant management users cannot set the weekly schedule for each season.

[User classification]

	Administrator	Tenant	General user
Accessible units	All	Air conditioners specified by administrator	

BACnet® connection function

AE-C400/EW-C50 can be connected to the centralized

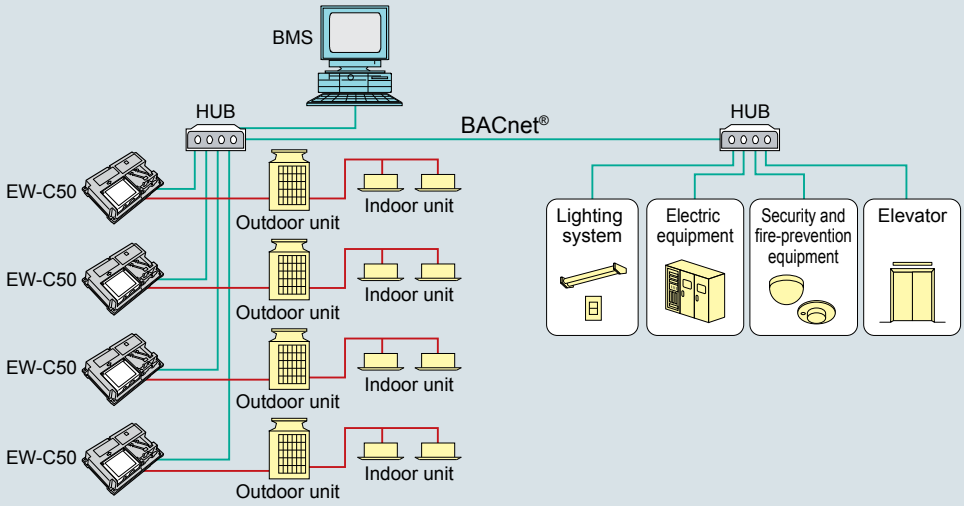
BACnet® connection (The BACnet license is required.)

Major features

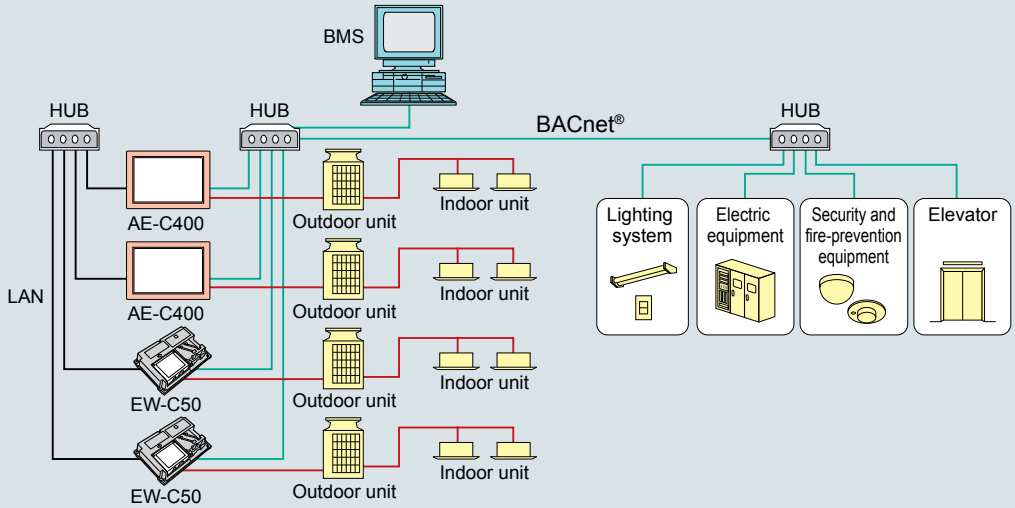
- **The controllers can be connected to the centralized monitoring unit through BACnet®.**
  When units are monitored and operated by the centralized monitoring unit, AE-C400/EW-C50 can be connected to the centralized monitoring unit through the open-protocol BACnet® by registering the license (BACnet® connection) in the controllers.
- **Amounts of power consumption apportioned to units can be outputted.**
  Electric energy consumed by units (outdoor units and indoor units) is apportioned to the groups according to the operating conditions of the indoor units, and the results can be output.
  (The charge license must be registered.)
  The apportioned power consumption can be used for calculation of unit charge by the centralized monitoring unit.
- **BACnet® standard**
  AE-C400 and EW-C50 conform to the following BACnet® standard.
  • ISO 16484-5 (ANSI/ASHRAE 135-2010)
  (They conform also to ANSI/ASHRAE 135-2004 and ANSI/ASHRAE 135-2008.)
- **BACnet® devices**
  Each of the controllers AE-C400 and EW-C50 works as a device on the BACnet®, and up to 50 indoor units can be connected to each device.

System configuration (example)

- **Configuration for monitoring and operation of units by the centralized monitoring unit (example)**
  (Units are not monitored or operated on LCD screens of AE-C400)



- **Configuration for monitoring and operation of units on LCD screens of the centralized monitoring unit and AE-C400 (example)**



monitoring unit through BACnet®.

Function list

* The functions and specifications are subject to change.

The following items can be transferred between the centralized monitoring unit and BACnet®.

✓: Function provided

Item	Description	Indoor unit	OA processing unit (IC attribute)	OA processing unit (FU attribute)	LOSSNAY not interlocked	State monitoring	Setting/operation
Start/stop	The units in each group can be started and stopped. It is possible to monitor the state (started or stopped) of the units in each group.	✓	✓		✓	✓	✓
Operation mode	The operation modes (cooling, heating, fan, auto or drying) of the units in each group can be set. The operation modes (cooling, heating, fan, auto or drying) of the units in each group can be monitored.	✓	✓			✓	✓
Air speed	The air speeds (low, high, medium 2, medium 1 or auto) of the units in each group can be set. The air speeds (low, high, medium 2, medium 1 or auto) of the units in each group can be monitored.	✓	✓		✓	✓	✓
Air flow direction	The air flow directions (horizontal, downward 60%, downward 80%, downward 100% or swing) of the units in each group can be set. The air flow directions (horizontal, downward 60%, downward 80%, downward 100% or swing) of the units in each group can be monitored.	✓				✓	✓
Indoor temperature	The current value of room temperature of each group can be monitored. The past log (*4) can be read out.	✓	✓			✓	✓
Set temperature	The temperature for the units in each group can be set, and the setting can be read out (in 0.5°C steps). Some of the four temperature settings (indoor temperature, cooling temperature, heating temperature and auto 1 temperature) are used depending on the use and setting of the dual auto mode.	✓	✓			✓	✓
Filter sign	The filter signs of the units in each group can be monitored.	✓	✓		✓	✓	
Filter sign reset	The filter signs of the units in each group can be reset.	✓	✓		✓		✓
Prohibition of remote controller operations	The operations of the units in each group from the remote controller can be enabled or disabled. It is possible to monitor whether the operations of the units in each group from the remote controller are enabled or disabled. (The operations for start/stop, operation mode, set temperature and filter sign reset can be prohibited.)	✓	✓		✓	✓	✓
Emergency stop	It is possible to stop the units in each group or all units and disable the operations (start/stop) of the units in each group or all units from the remote controller.	✓	✓		✓		✓
Ventilation mode	The ventilation modes (heat exchange, normal or auto) of the units in each group can be set. The ventilation modes (heat exchange, normal or auto) of the units in each group can be monitored.		✓		✓	✓	✓
Night purge	The night purge state (stopped or started) of the units in each group can be monitored.		✓		✓	✓	
Thermo ON/OFF	The thermos ON/OFF state of the units in each group can be monitored.	✓	✓			✓	
Communication state	It is possible to monitor whether or not the M-NET communication among the units in each group is normally performed. When the state changes, a notification can be received.	✓	✓		✓	✓	
Alarm signal	It is possible to monitor whether or not the units in each group are normally running. When the state changes, a notification including an error code can be received.	✓	✓		✓	✓	
Error code	The error codes (classified into 9 kinds of codes) of the units in each group can be monitored. When the state changes, a notification can be received.	✓	✓		✓	✓	
System alarm signal	The system error state can be monitored. When the state changes, a notification including an error code can be received.					✓	
Power distribution and billing support function *1 *2	The current value of electric energy on the electricity meter connected to the pulse input of PI controller can be monitored. The past log (*4) can be read out.					✓	✓
	When an electricity meter is connected, the current value of the electric energy (consumed by indoor and outdoor units) apportioned to each group/each interlocked unit (*3) by the power distribution and billing support function of AE-C400 can be monitored. The past log (*4) can be read out. When an electricity meter is not connected, the current value of the apportionment parameter (consumed by outdoor units) apportioned to each group by the power distribution and billing support function of AE-C400 can be monitored. The past log (*4) can be read out.	✓	✓	✓	✓	✓	✓

*1: To use the function, the charge license is required. The charge information cannot be read out from BACnet®.
*2: To use the function, an electricity meter is required.
*3: The interlocked unit refers to the OA processing unit set in the energy management block.
*4: The default values for log collection cycle are one minute (indoor temperature) and one day (values other than indoor temperature).
To use a collection cycle other than the default values, it is necessary to set the cycle on the building management system. The collection cycle setting units and ranges are one minute and 1 minute to 1 day (indoor temperature) and 30 minutes and 30 minutes to 1 day (temperatures other than indoor temperature).

AE-C400 can monitor power consumption and operating time.

Visualization of energy consumption by the indoor units on easy-to-see display

The power consumption and operating time of the units can be clearly displayed.

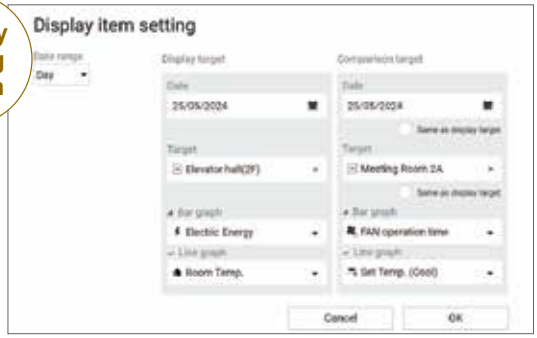
Graph display function

AE-C400 comes standard with an energy management function. With this function, you can understand the current status of usage of the indoor units and verify the effect of energy saving measures.

- The data of an area in different terms can be compared.
- The data of two areas in the same term can be compared.
- The effect of energy saving measures can be verified.
- The energy management data for the past 24 months (daily or monthly data) or the past 5 years (annual data) from the present can be retained.
- The energy management data (for the past 5 years) can be output to a USB flash drive or a personal computer.

Graph display screen

Display setting screen



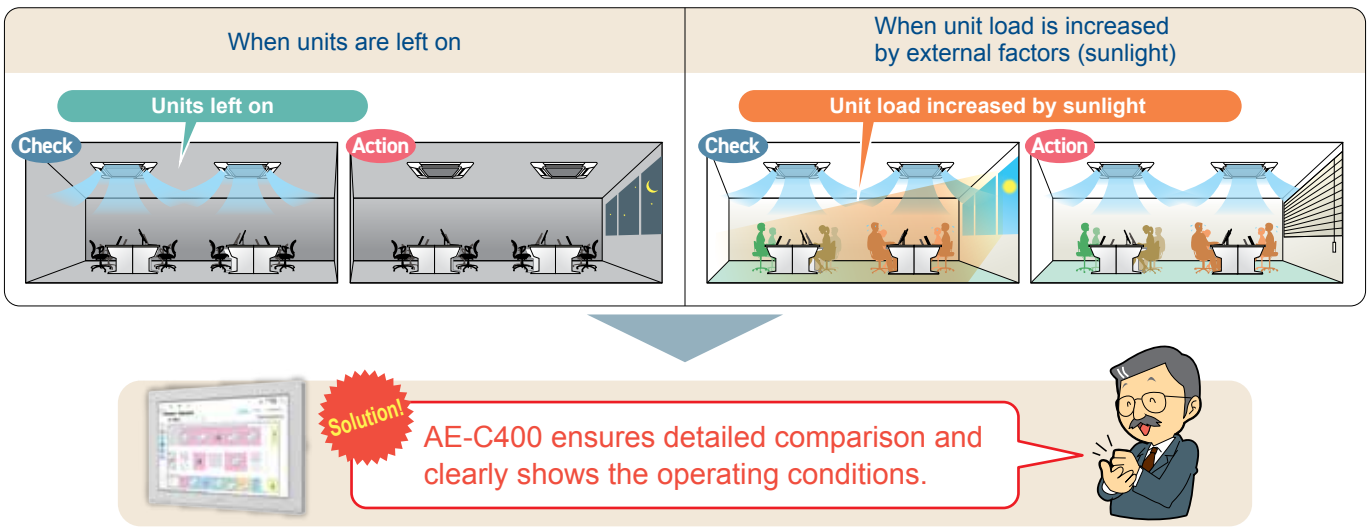
Contents of display

Example of bar graph items	• Target electric energy • Power consumption*1 • Fan operation time	• Thermo ON time (cooling/heating/total) • Calculated values*1 (electric energy, etc.)
Example of line graph items	• Indoor temperature • Set cooling temperature	• Set heating temperature • Measured values*2 (outdoor temperature, humidity, etc.)

*1. It is necessary to input the amount of electric enegy to AE-C400 through PI controller or Modbus watt-hour meter.
*2. Analog signals must be input from the AI controller.

Display period

Daily (hourly graph for 24 hours), monthly (daily graph for 31 days) and annual (monthly graph for 1 year)



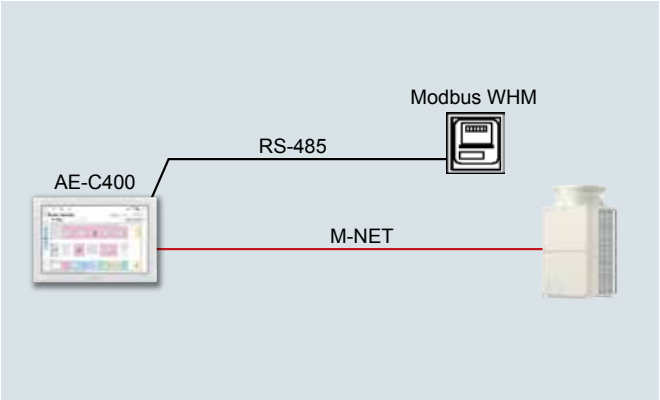
Electric energy input method

There are two ways to input electric energy consumption to the AE-C400/EW-C50: direct input from Modbus WHM or pulse input through a PI controller.

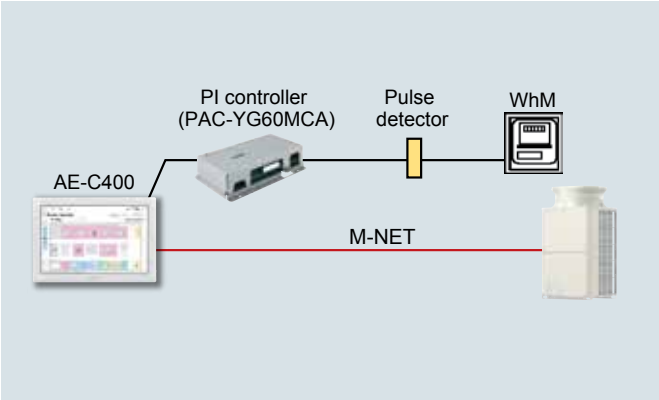
The electric energy that is input to the AE-C400/EW-C50 can be used for the following purposes:

- **Electric energy to be apportioned for energy management (electric energy consumed by outdoor units)**
- **Electric energy for prediction of demand level (demand electric energy)**
- **Electric energy to be apportioned for charge function (electric energy consumed by outdoor and indoor units)**

Direct input to main unit



Pulse input through a PI controller



Notes on configuration

- When inputting electric energy pulses to the AE-C400/EW-C50 for charge function or demand level prediction, supply power to the AE-C400/EW-C50 from a UPS to prevent input errors should a power failure occur (supply for 5 minutes or more).
- When using the charge function, input must be made by pulse input through the PI controller (PAC-YG60MCA). The charge function cannot be used with Modbus watt-hour meters.
- Up to 4 Modbus WHM can be input to one set of AE-C400/EW-C50.
- For information on the types of Modbus WHM that can be connected, please refer to the Instruction Book.

More efficient energy management can be realized in combination with other functions

With the energy-saving/peak-cut control function

- The history of 30-minute average power and peak-cut control level are graphically displayed.
- Data can be output to a USB flash drive as a CSV file.

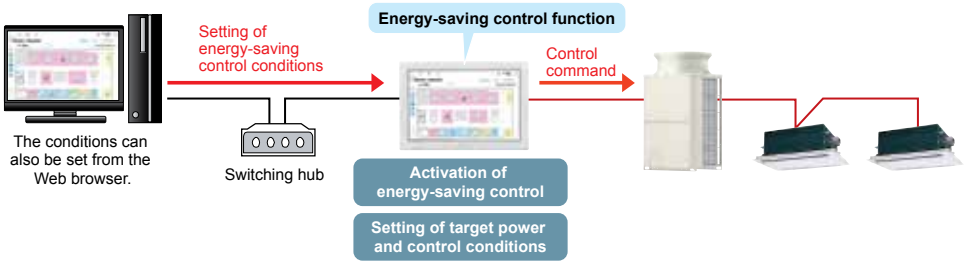
With the charge function (license option)

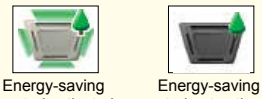
- Data can be output to a USB flash drive as a CSV file.

Reliable energy-saving functions of AE-C400/EW-C50

Energy-saving control function

When the energy-saving control function is activated, the set temperature will change automatically and energy is saved without compromising comfort. The conditions can be set on the AE-C400.





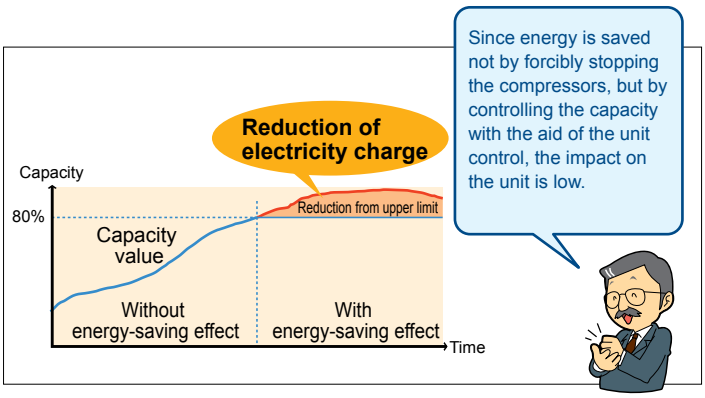
When energy-saving control is activated, the group icon on the floor screen is displayed as the energy-saving control icon.

Energy-saving control activated:
Under temperature control
Under air blowing control
Energy-saving control not activated:
Under stop control

Control menu 1 Control command

Detailed energy-saving control is implemented to maintain the indoor environment.

Indoor unit control	**•Temperature control (±2°C)** Example) If the energy-saving control is enabled during operation for cooling at 25°C, the set temperature will be increased by +2°C and changed to 27°C. The temperature displayed on the remote controllers will be changed. **•Fan control (thermos OFF)*** Example) If the energy-saving control is enabled during operation for cooling at 25°C, the operation capacity will be forcibly set to 0%. The temperature displayed on the remote controllers will be kept at 25°C. **•Stop control**
Outdoor unit control	**•Capacity upper limit saving control (50/60/70/80/90%)*** Example) The upper limit value is specified to keep the maximum value of the outdoor unit capacity within 80%. The values displayed on the remote controllers will not be changed.



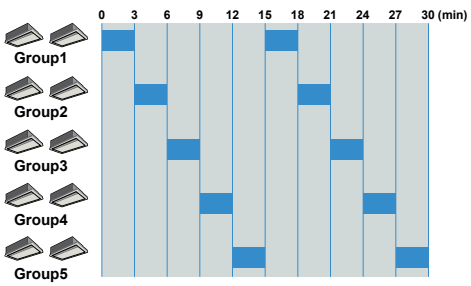
* This function cannot be used for some models of air conditioners.
* Please contact the sales office for detailed information on the models.

Control menu 2 Intervals of rotation

The control is implemented with a balanced rotation to avoid control only in the same room for a long time.

•Specify the units to be controlled, and set the energy-saving control time.
Set the control time, 0, 3, 6, 9, 15 or 30 minutes (arbitrarily set), in 30 minutes. One slot is 3 minutes, and the control is rotated in 30 minutes.

[When one block has 5 groups and the indoor units are exposed to energy-saving control for 6 minutes]



①Number of times of rotation
3-minute control is repeated twice (= 6 min/3min) for 6-min control.

②Rotation cycle
The rotation cycle in 30 minutes is 15 minutes (= 30 min/2 times) according to the number of rotations determined in①.

③Rotation interval
According to the rotation cycle determined in ②, the rotation interval between groups in the block is 3 minutes (= 15 min/5 groups). (If the value cannot be divided, round it off to the nearest whole number.)

The control is rotated sequentially to the following groups after execution and is not concentrated in the same room (indoor unit).

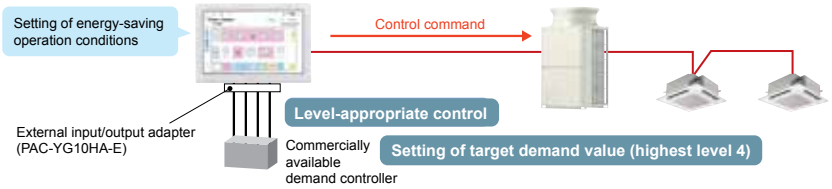
- When the rotation control is used for indoor units during heating operation, it takes time to restart the operation to prevent sense of cold air, and the indoor units may not show their capacity for a certain time after the restart of operation.
- When the energy-saving control is used for heating, to avoid insufficient capacity, it is recommended to use the capacity saving control for outdoor units (energy saving without stopping the compressors).
- Setting of 3 minutes is recommended.

Energy-saving/peak-cut control function

Delivers systematic energy-saving control through demand management. To use the energy-saving/peak-cut control function, demand levels, electric energy amount, or power pulses need to be input to the controller.

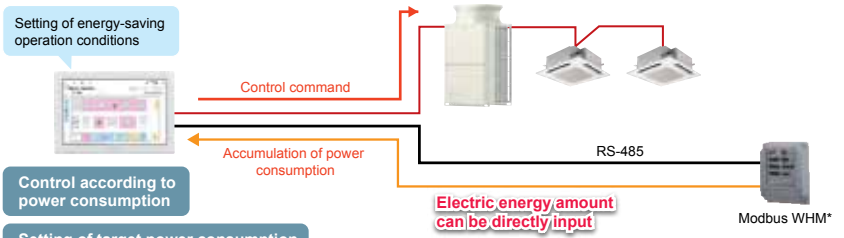
Energy-saving/peak-cut control function (External contact input)

Detailed demand control can be realized by using a commercially available demand controller.



Energy-saving/peak-cut control function (Modbus watt-hour meter) NEW

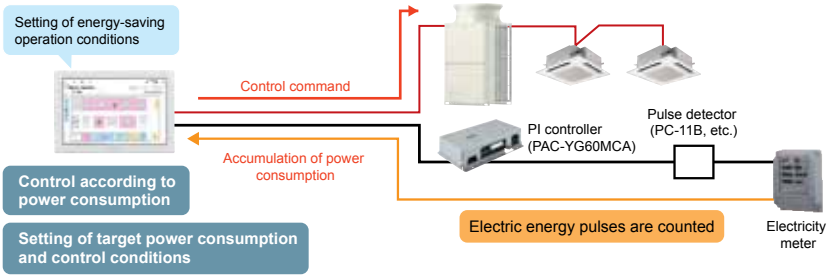
Detailed demand control can be realized by inputting the amount of electric energy directly from a Modbus watt-hour meter to the controller.



*For information on the types of Modbus WHM that can be connected, please refer to the Instruction Book.

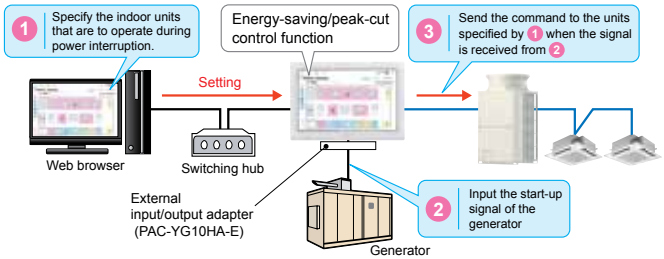
Energy-saving/peak-cut control function (PI controller input)

Detailed demand control can be realized by pulse input via an optional PI controller.



Applications When the generator is started, the units will operate in energy-saving mode.

System configuration



Peak cut function

	Outdoor unit operation	Indoor unit operation
Normal operation	100% operation	Unit operation
Generator-powered operation	Upper capacity limits (from 60% to 90%) can be set for each outdoor unit.	Fan RUN/STOP, or 2°C higher than set temperature.

*The function for the outdoor and/or indoor units can be set separately or simultaneously.

Image of room during normal operation

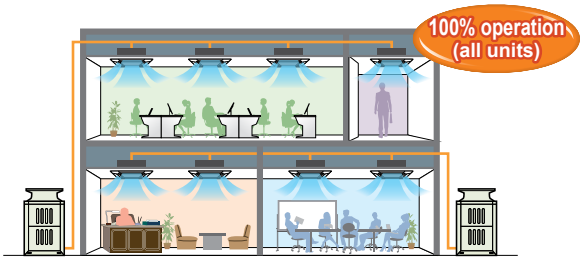
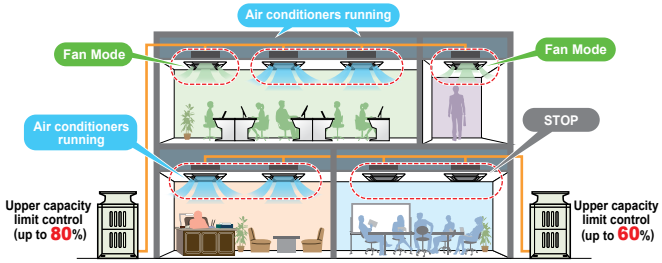


Image of room during generator-powered operation



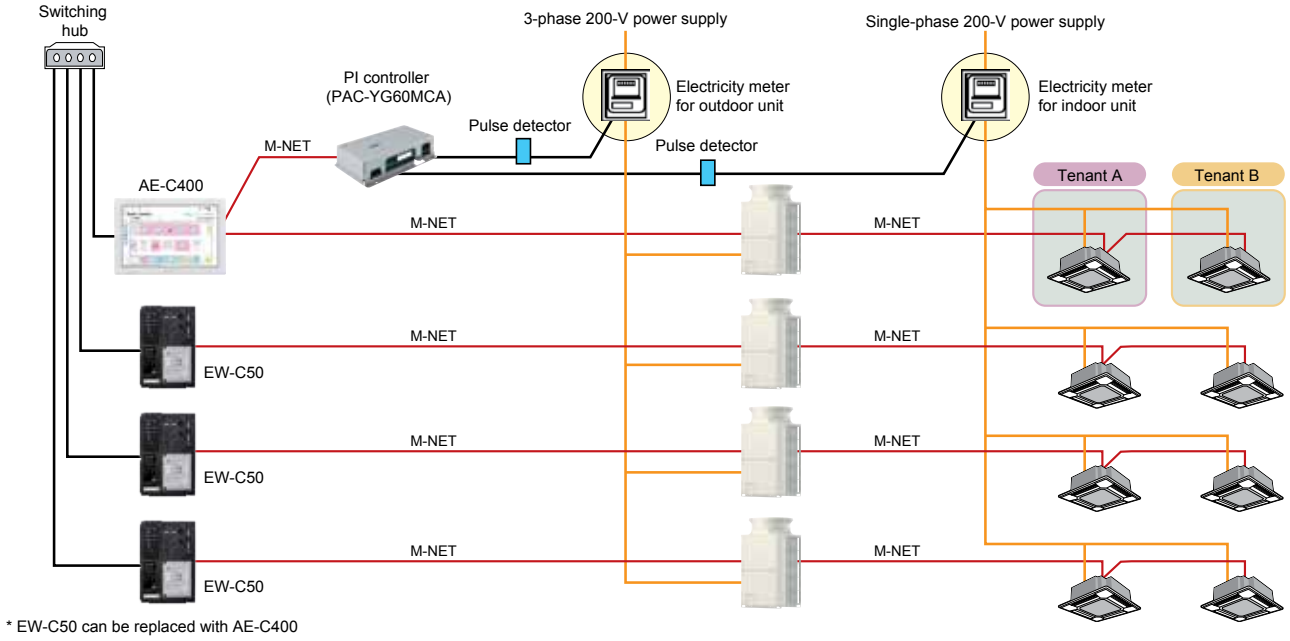
Charge function

AE-C400 supports proportionment of power consumption

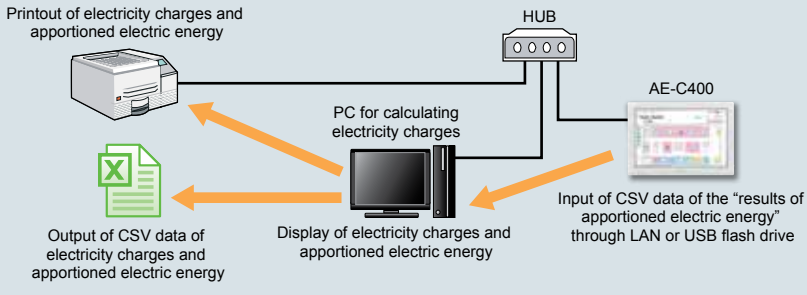
Charge function (The charge license is required.)

Recommended

● Example of system configuration for apportionment by AE-C400



* EW-C50 can be replaced with AE-C400



A PC is used to calculate electricity charges. (It does not need to be constantly connected to the AE-C400. The charge calculation tool must be installed, but other software can also be used on the computer.)

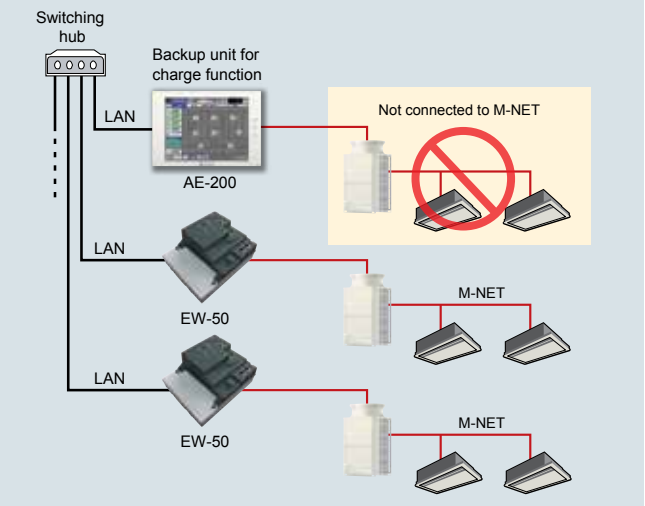
Notes on configuration

- When using the charge function, input must be made by pulse input through the PI controller (PAC-YG60MCA). The charge function cannot be used with Modbus watt-hour meters.
- Electric energy pulses for apportionment must be input to each system of AE-C400 and EW-C50.

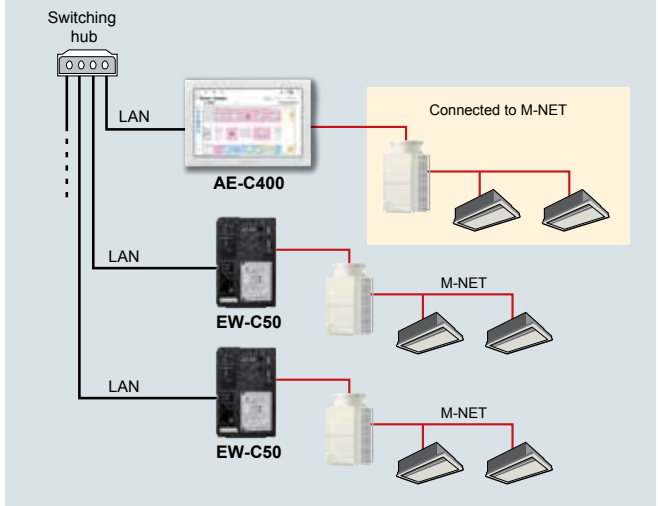
The charge function requires no backup controller

When using the charge function, the conventional AE-200 system requires a dedicated backup controller that is not connected to M-Net, but the AE-C400 system does not require a backup controller. Reducing the number of required system controllers leads to lower system costs.

● Conventional AE-200 system



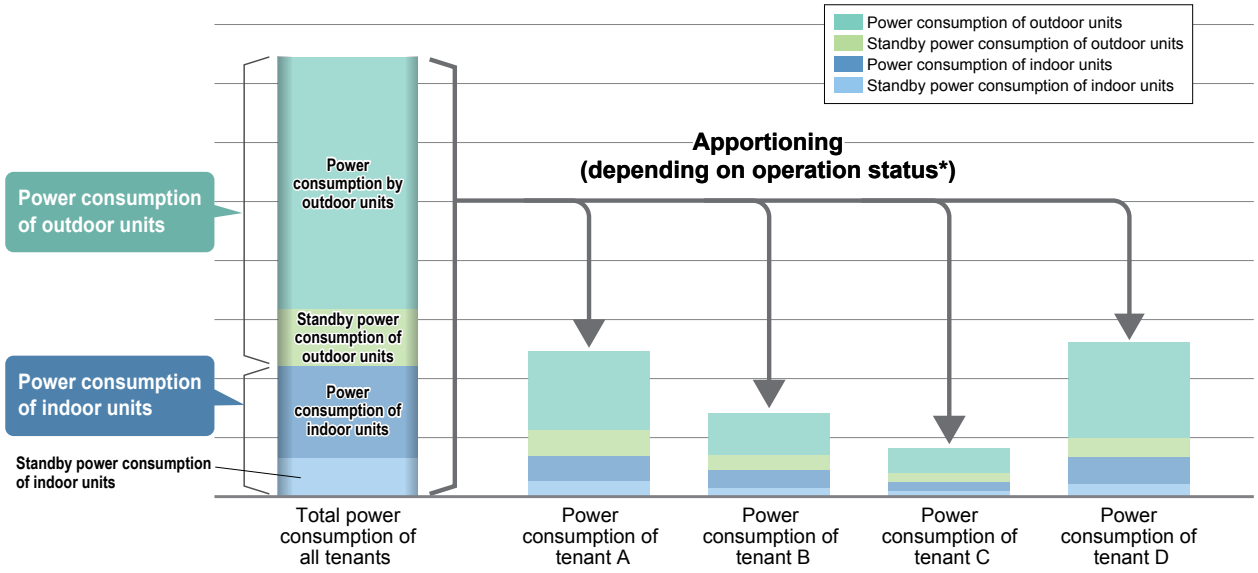
● AE-C400 system



according to operation results of indoor units.

Image of electricity apportioning

Based on the operating status of each tenant's indoor unit, the total power consumption of all tenants (including the amount of power used by outdoor units and their standby power and the amount of power used by indoor units and their standby power) is apportioned to each tenant's power consumption.



* When total consumption of outdoor and indoor units is apportioned proportionally

Support for charging for indoor unit

Information on operation of indoor units in minutes can be obtained by registering the charge license (option) in AE-C400. Electric energy can be apportioned according to the results of operation of indoor units to support charging for indoor unit.

* The calculation system for the support for charging for indoor unit cannot be used for trading or explanation defined by the Measurement Act (based on measurement). The billing support function for indoor unit is designed to support the apportionment by our unique method. Use the function after understanding its features.

Number	Data	Description	Tenant A	Tenant B
1	Reference data for apportionment	One of the following three modes is selected as the apportionment method, and the reference data (time) for apportionment is calculated based on the information on the operation of indoor units.	①An example of calculation in the case of capacity save amount is shown.	
		①Capacity save amount: Approximate value of amount of refrigerant used by indoor unit obtained by counting the capacity save amount (100 to 0%) every minute and dividing the integrated value by 100. [Example] 8:1: 100%, 8:2: 0%, … 8:30: 100% (100 + 0 + …100)/100 = capacity save amount for 30 min	15 min	18 min
		②Thermo ON time: Thermo ON time is integrated.	(20 min)	(23 min)
		③Fan operation time: The time during which the fan is operating is integrated.	(25 min)	(30 min)
2	Cooling capacity	The cooling capacity of each indoor unit has been determined for each model name.	4.5 kW	5.6 kW
3	Electric energy for outdoor unit	Power consumption by outdoor unit measured by electricity meter.	1.2 kWh (30 min)	
4	Electricity charge	Unit price of 1 kWh of electricity. * Five kinds of unit price can be set for each time slot. In this example, one kind of unit price is used for time slot 1.	30 yen/kWh	

Shown below is the method for apportioning the electric energy consumed by outdoor units for 30 minutes when the capacity save amount is selected as the apportionment mode.

* Although the standby electricity consumed by outdoor units and electric energy consumed by indoor units can be apportioned, these values are omitted in this explanation.

Concept of billing by apportionment to outdoor units

The charge is apportioned to each tenant based on **1. reference data for apportionment** (① capacity save amount), **2. cooling capacity** and **3. electric energy consumed by outdoor unit.**

	Capacity save amount for 30 min		Cooling capacity of indoor unit		Apportionment coefficient		Electric energy consumed by outdoor unit for 30 min					Electricity charge
Tenant A	15	×	4.5kW	=	67.5	⇒	1.2kWh	×	67.5	/	168.3	× 30 yen/kWh = 14.4 yen
Tenant B	18	×	5.6kW	=	100.8	⇒		×	100.8	/	168.3	× 30 yen/kWh = 21.6 yen

Sum total of apportionment coefficients 168.3

Interlock control function

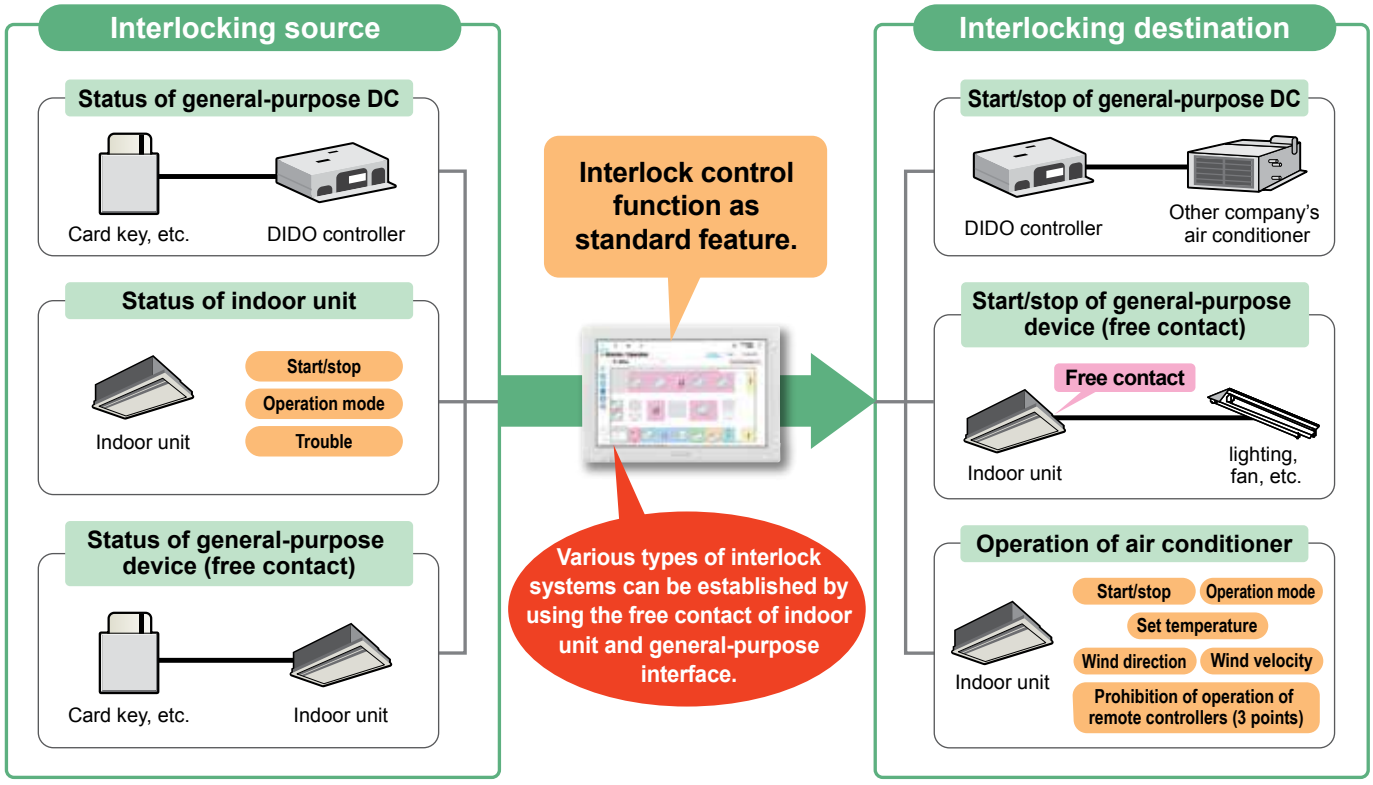
AE-C400 can provide, operate and monitor the interlocks with

Interlock control is realized by using an indoor unit as an interlocking source.

Interlocks with 3rd party heating, cooling, ventilation, and general-purpose devices. Ventilation and general-purpose devices can be set* using the changes in status of input contact of the DIDO controller (PAC-YG66DCA) and the start/stop status of indoor unit as input conditions of the interlocking source.

* Set the interlocks on the browser screen. * However, interlocks cannot be provided between controllers.

● Interlock control in wide range of 3rd party heating, cooling, ventilation, and general-purpose devices.



● Examples of use of interlock control

Interlock between card key and air conditioners	The air conditioners are turned on and off by inserting and removing the card key.
Security interlock	• The representative indoor unit is stopped by a security signal (last exit signal). All indoor units are stopped by using this representative indoor unit used as the interlocking source. • The security release signal generated by the first person entering the room starts the target ventilation equipment.
Mode change	The unit mode is switched by an external contact.
Interlock with ventilation equipment	Other manufacturer's ventilation equipment is started in conjunction with operation of an indoor unit.
Interlock among units	When an indoor unit is out of order, an auxiliary equipment is started.
Interlock with lighting equipment	The ON/OFF state of lighting equipment is controlled in conjunction with the ON/OFF state of an indoor unit.

* Do not use this function for control relating to disaster prevention (to open and close fire shutters, etc.). Do not use it particularly for life-critical applications.

general-purpose devices and monitor the temperature and humidity.

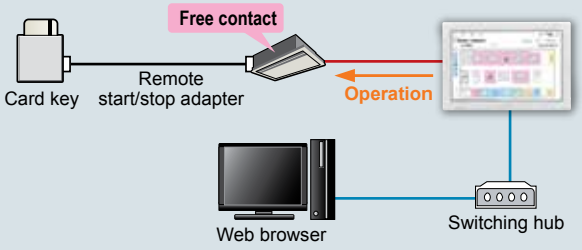
● Interlock with card key in hotel

Without interlock control function

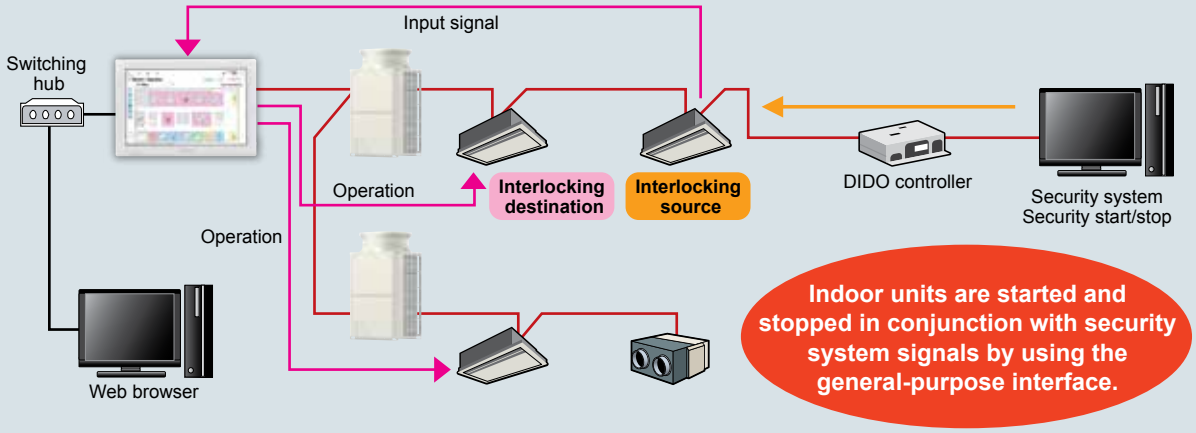
When the card key is inserted, the indoor unit is turned on.
When the card key is removed, the indoor unit is turned off.

With interlock control function

When the card key is inserted, the indoor unit is turned on.
When the card key is removed, the indoor unit is turned off.



● Security interlock in tenant building



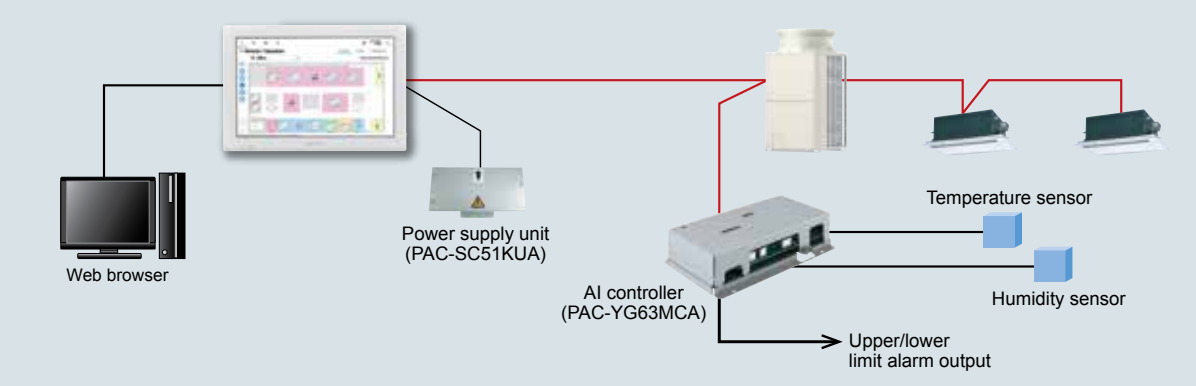
● Prevention of forgetting to turn off system
The security start signal is input to the DIDO controller. → All indoor units are stopped.

● Prevention of unnecessary operation of units
The security is released by the first person entering the room. → Only LOSSNAY is turned on to prevent unnecessary operation of the units.

It is possible to stop system operation for 24 hours from the range of security interlock.

The temperature and humidity can be monitored by the AI controller.

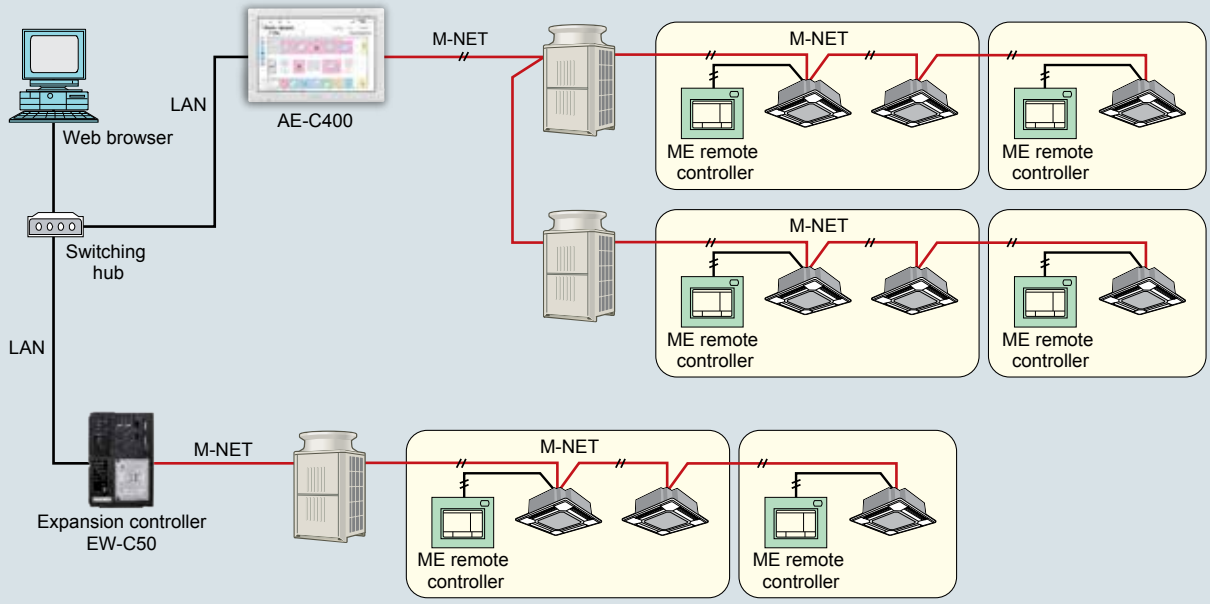
Analog information in commercially available temperature and humidity sensors can be measured by the AI controller (PAC-YG63MCA) and retrieved to AE-C400. This allows for monitoring and recording of the temperature and humidity on AE-C400 and personal computers. When the temperature or humidity is higher or lower than the upper or lower limit, an alarm can be output (relay contact output) also from the AI controller.



Specifications

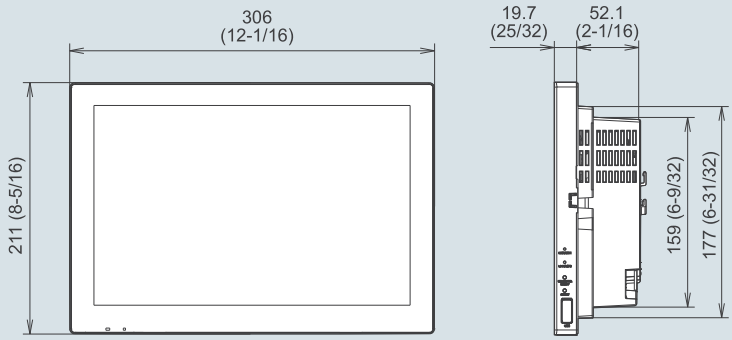
Centralized Air Conditioning Control System AE-C400 Basic specifications

Example of system configuration



Outline drawing

Unit: mm (in)



Specification table

Item		Specifications
Power supply	Rating	100-240 VAC ±10%, 50/60 Hz, single phase
Power consumption		22 W
LAN1, LAN2		100BASE-TX
RS-485		For connecting a watt-hour meter (Modbus-RTU)
External input/output	Input	Photocoupler input (4 inputs x 2)
	Output	Transistor output (2 outputs x 2) (sink type)
Ambient conditions	Operating temperature range	0°C to +40°C (+32°F to +104°F)
	Storage temperature range	-20°C to +60°C (-4°F to +140°F)
	Humidity	30% to 90% RH (non-condensing)
Exterior		PC+ABS-GF10 (Munsell 1.0Y 9.2/0.2)
External dimensions	W × H × D	306 × 211 × 71.8 mm (12-1/16 × 8-5/16 × 2-27/32 in) When embedded, the controller protrudes from the wall or the metal control box by 19.7 mm (25/32 in).
Weight		2.9 kg (7 lbs)
Installation conditions		Indoor only * This controller is for use in an indoor or equivalent environment.

Functions * The functions and specications are subject to change.

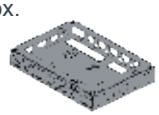
□: Each unit ○: Each group ●: Each block △: Each floor ◎: Collective ×: Not available

Item	Description	Operations	Display
Controllable number of unit	Up to 50 units/50 groups		
ON/OFF	ON and OFF operation for the air conditioning units and general equipment. (To operate general equipment, PAC-YG66DCA is required.)	○◎△●	○◎
Operation mode	Switches between several operation modes depending on the air conditioning unit. Air conditioning unit : Cool/Dry/Auto(*)/Fan/Heat LOSSNAY unit : Heat Recovery/Bypass/Auto CAHV, CRHV, Air To Water (PWFY) units : Heating, Heating ECO, Hot Water, Anti-freeze, Cooling(**) * Auto mode is for CITY MULTI R2 and WR2 series only. ** Only PWFY	○◎△●	○
Temperature setting	Cool/Dry : 19°C (67°F) -35°C (95°F) [14°C (57°F) -30°C (87°F)] Heat : 4.5°C (40°F) -28°C (83°F) [17°C (63°F) -28°C (83°F)] Auto : 19°C (67°F) -28°C (83°F) [17°C (63°F) -28°C (83°F)] The range of temperature depends on the air conditioning unit. [ ] in case of using middle-temperature on PDFY, PEFY-VML/VMR/VMS/VMH-by setting DipSW7-1 to ON. Yet, PEFY-P-VMH-E-F is excluded.	○◎△●	○
Fan speed setting	Models with 4 air fl ow speed settings : Hi/Mid-2/Mid-1/Low Models with 3 air fl ow speed settings : Hi/Mid/Low Models with 2 air fl ow speed settings : Hi/Low Fan speed setting (including Auto) varies depending on the model.	○◎△●	○
Air flow direction setting	Air fl ow direction angles, 4-angles or 5-angles Swing, Auto (Louver cannot be set)	○◎△●	○
Schedule operation	Weekly schedule can be set by groups based on daily operation pattern.	○◎△●	○
Permit/prohibit local operation	Individually prohibits operation of each local remote controller function. (ON/OFF, Operation mode, Set temperature, Filter sign reset, Air Direction*, Fan Speed*, Timer*) * This function depends on the model.	○◎△●	○
Indoor unit intake temperature	Measures the intake temperature of the indoor unit only when the indoor unit is operating.	×	○
Error	When an error is currently occuring on an air conditioning unit, the afflicated unit and the error code are displayed.	×	□◎
Test run	This operates air conditioning units in test run mode.	○◎△●	○
Ventilation interlock	The ventilation unit (LOSSNAY) is able to automatically start its operation when operation of the interlocked indoor unit starts.	○◎△●	○
External input/output	By using optional external input/output adapter (PAC-YG10HA-E) you can set and monitor the following. Input : By level signal : "Batch ON/OFF", "Batch emergency stop" By pulse signal : "Batch ON/OFF", "Enable/disable local remote controller" Output : "ON/OFF", "Error/Normal"	◎	◎
Energy Management	Bar Graph : Indoor unit Electric Energy, FAN operation time, Thermo-ON time (TOTAL, Cooling, Heating) can be displayed hourly, daily and monthly. Line Graph : Outdoor temp., Room temp., Set temp. (Heating, Cooling) input from PAC-YG63MCA and temp. from AHC.	×	□○●

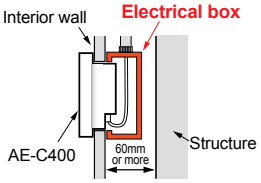
Optional parts for the AE-C400

Electrical box PAC-YK94UTB

The AE-C400 can be installed embedded in the wall by using an electrical box.



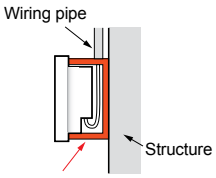
Cross-sectional image of installation



Mounting attachment for wall-surface installation PAC-YK92TB

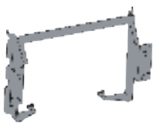
The AE-C400 can be installed on an undrillable wall (e.g., concrete wall) by using a mounting attachment.

Cross-sectional image of installation

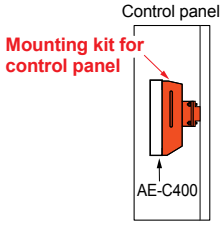


Mounting kit for control panel PAC-YK96TK

The AE-C400 can be installed in a control panel by using the bracket and DIN rail attachments in the mounting kit.



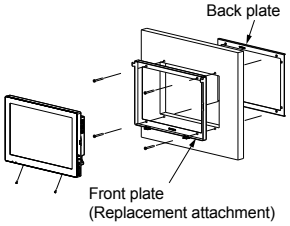
Cross-sectional image of installation



Replacement attachment PAC-YK91RF

The AE-C400 can replace older models (AE-50/200) without changing the wall holes by using a replacement attachment.

Cross-sectional image of installation



EW-C50 suitable for remote control from personal computer! Usable as expansion controller for AE- C400

Centralized air conditioning control system EW-C50

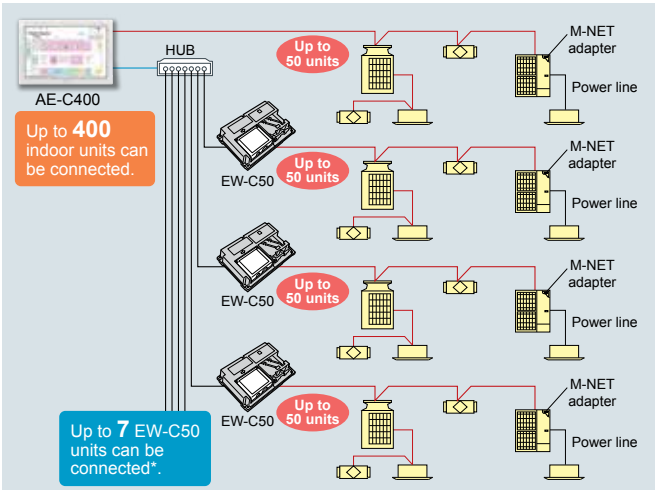
Flexibly applicable to centralized control in large- to small-scale buildings

Major features

EW-C50 without LCD screen

- **Usable as expansion controller for AE-C400**

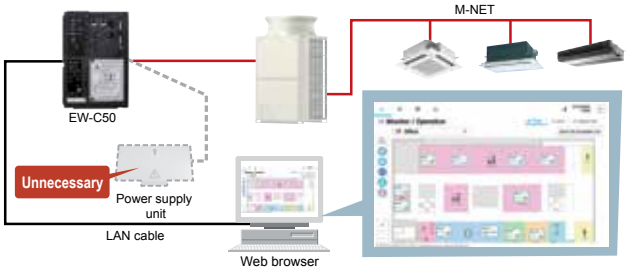
  When 7 sets of EW-C50 are connected to AE-C400, up to 400 indoor units can be operated and monitored by AE-C400.



* When the M-NET of AE-C400 is not used, up to 8 sets of EW-C50 can be connected.

- **Units can be operated and monitored only with EW-C50 by using a personal computer, tablet or smartphone.**

  Without AE-200, units can be monitored and operated only with this controller by using the browser software*1 of a personal computer. They can be monitored and operated remotely by using the Internet, and the units in some buildings can be operated simultaneously.*2

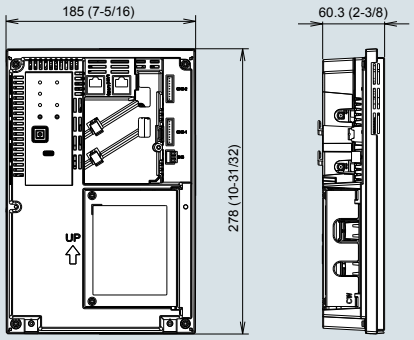


*1. In the case of Windows, Microsoft® Edge or Google Chrome is required.
In the case of Macintosh, Safari 7 is required.
Windows and Microsoft® Edge are registered trademarks of Microsoft Corporation in the United States and other countries.
iPad and Safari are registered trademarks of Apple Inc. in the United States and other countries.
Google Chrome is a registered trademark of Google Inc.

*2. The company names and product names in the text may be trademarks or registered trademarks of their respective companies.
When connecting EW-C50 via the Internet, avoid connecting it directly to the Internet. Connect it through a router or the like provided with the VPN function to ensure the security.

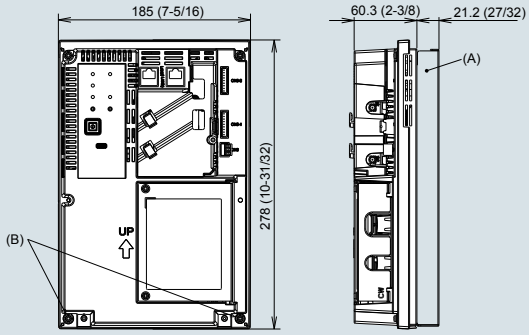
- **Outline drawing**

[1] Controller



[2] Installation on a panel inside a metal control box

Unit: mm (in)



(A) Installation frame (supplied part D-12)
(B) controller mounting hole

Specification table

Item		Specifications
Power supply	Rating	100-240 VAC ±10%, 50/60 Hz, single phase
Power consumption		15 W
LAN1, LAN2		100BASE-TX
RS-485		For connecting a watt-hour meter (Modbus-RTU)
External input/output	Input	Photocoupler input (4 inputs x 2)
	Output	Transistor output (2 outputs x 2) (sink type)
Ambient conditions	Operating temperature range	-10°C to +55°C (+14°F to +131°F)
	Storage temperature range	-20°C to +60°C (-4°F to +140°F)
	Humidity	30% to 90% RH (non-condensing)
Exterior		Body: Electrogalvanized steel sheet Cover: PC+ABS
External dimensions	W × H × D	185 × 278 × 60.3 mm (7-5/16 × 10-31/32 × 2-3/8 in) (185 × 278 × 81.5 mm (7-5/16 × 10-31/32 × 3-7/32 in) when installed on the installation frame)
Weight		1.9 kg (5 lbs)
Installation conditions		In the metal control box installed indoors

Function * The functions and specications are subject to change.

◎: By group or multiple groups ○: By group □: Batch only

Item	Description	Setting Display	Display
ON/OFF	Switches to ON or OFF air conditioners and general equipment.	◎	◎
Operation mode switching	Switches to cool, dry, auto, fan, or heat operation. * Depending on the unit, some modes are not available.	◎	○
Room temperature setting	The temperature can be set in the following range. The values inside the parenthesis are for indoor units for medium temperature. * Depending on the model, the setting temperature range differs. · Cooling/dry : 19°C to 35°C (4.5°C to 30°C) · Heating : 17°C to 28°C (17°C to 28°C) · Auto (single set point): 19°C - 28°C · Auto (dual set points) [Cool] Same as the set temp. range for Cool mode. [Heat] Same as the set temp. range for Heat mode. · Setback (dual set points) [Cool] Same as the set temp. range for Cool mode. [Heat] Same as the set temp. range for Heat mode.	◎	○
Set temperature 0.5°Cincrements	The temperature can be set and displayed in 0.5°C increments. * With some unit combinations, the temperature is set in 1°C increments.	◎	○
Fan speed setting	The fan speed can be set to 4 levels, 3 levels, 2 levels or automatic. * Available fan speeds differ depending on the unit.	◎	○
Air direction setting	Fixed swing in five levels or auto air direction can be set. * Available air directions differ depending on the unit.	◎	○
Prohibition of local remote controller operation	It is possible to disable the ability to use to local remote controller to run or stop, the operation mode, set temperature, filter sign reset, wind speed, wind direction and timer operation. * In the Lossnay group, only ON/OFF and filter reset can be disabled. * Disabling of the fan speed, air direction, and timer operation can be set for the AT-50B, PAR-41MAA, PAR-U02MEDA, and PAC-YT52CRA models.	◎	○
Room temperature display	Displays the suction temperature of the indoor unit.	–	○
Error display	Displays the current error content together with the address.	–	◎
Schedule operation	Today/weekly/weekly by season/yearly Setting content: ON/OFF, operation mode, set temperature, disable local remote controller, air direction/fan	◎	○
Energy management	Displays the power consumption* or operating hours. * Requires an optional part.	–	◎
Ventilator operation (solo)	Group operation can be possible for free plan Lossnay units only. * The above group operation mode includes auto ventilation, heat exchange, and normal ventilation.	◎	○
Ventilator operation (interlocked)	Free plan Lossnay units and indoor units can be interlocked and operated together. * At this point, air volume can be operated but the ventilation mode cannot be selected.	◎	○
External input (timer connection, emergency stop input, etc.)	Using a level signal or pulse signal, it is possible to input the following. Level signal: Emergency Stop Input, Batch ON/OFF, and Demand Input. Pulse signal: Batch ON/OFF or Operation Disable/Enable * Requires an external power supply and separately sold external I/O adapter (PAC-YG10HA-E). Of the above inputs, only one input can be selected.	□	–
External output (error output, operation output)	Using the level signal, ON/OFF and Error/Normal are output. * Requires an external power supply and separately sold external I/O adapter (PAC-YG10HA-E).	–	□
Web browser	Monitor/operation, failure, filter sign monitoring, schedule setting, interlocked control setting (option), energy saving control setting (option), energy saving peak cut setting (option), set temperature range restrictions, other	◎*1	◎*1
Filter reset	Filter sign reset	○	○
Connectable location	Centralized system transmission line: Connectable Recommended Indoor and outdoor transmission line: Connectable	–	–

* The functions and specifications differ depending on the connected equipment and model.
* Electric energy can be proportionally divided using the EW-C50 alone.

■Connectable equipment: Free plan direct expansion system air conditioner
Inverter air conditioner for facility
Package air conditioner for facility (the AW control model can be connected using an M control compatible indoor unit)
A Control Mr. Slim (Can be connected using an M-NET adapter or special outdoor unit)
Kirigamine room air conditioner (Requires a system control interface or M-NET control interface)
Free plan Lossnay/Lossnay with heating and humidification
Independent humidification unit *2
Environmental measuring controller, metering measurement controller, general interface

■Notes
*1. Some items do not support the multi group setting and display.
*2. Use only items for which the unit has the function.

Related members

Related software and components

PI controller PAC-YG60MCA

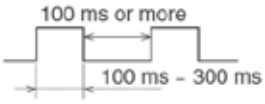
Applicable to billing support system and energy-saving control system

Product size :
120 (H) ×200 (W) × 45 (D) mm

Major features

Up to 4 units of Pulse-input measuring instruments (watt-hour meter, gas meter, water meter, and calorimeter) are connectable to PI controller and accumulate the amount based on the pulse unit designated from the AE-C400/EW-C50. AE-C400/EW-C50 monitors the current value of the PI Controller regularly (in 1 minute interval).
The current value can be displayed on AE-C400 LCD, AE-C400/EW-C50 Web browser.

Table of functions and specifications

Item	Rating and specification			
Power supply	24 VDC±10%: 5 W			Screw terminal block (M3) *3
Interface	M-NET communication	17 to 30 VDC *1		Screw terminal block (M3) *3
	Non-voltage a-contact input	Number of contacts: 4 Pulse signal: a-contact Pulse width: 100 ms to 300 ms (Idle period until next pulse: 100 ms or more) Rated voltage: 24 VDC Rated current: 1 mA or less *2		Screwless terminal block
Environment conditions	Temperature	Operating temperature range	0 to 40°C [32°F to 104°F]	
		Storage temperature range	-20 to 60°C [-4°F to 140°F]	
	Humidity	30 to 90%RH (no condensation)		
Dimensions	200 (W) × 120 (H) × 45 (D) mm / 7 7/8 (W) × 4 3/4 (H) × 1 25/32 (D) in			
Weight	0.6 kg [1 3/8 lbs.]			
Time backup during power failure	In the event of power failure or shut-off, the internal capacitor will continue to track time for approximately one week. (The internal capacitor takes about 24 hours to fully charge; a replacement battery is not necessary.)			
Installation environment	Inside a metal control panel (indoors) * Use this product in a hotel, a business office environment or similar environment.			

*1: Supply electric power from a power unit for the transmission line or an outdoor unit. Furthermore, the power consumption factor of M-NET circuitry of this device is “1/4” (equivalent to one ME Remote Controller).
*2: Supply electric power from the main unit to the contacts of the meters.
*3: M3 is the size of the screw on the terminal block (ISO metric screw thread). The number indicates the screw diameter (mm).

DIDO controller PAC-YG66DCA

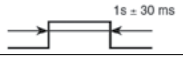
Control of general-purpose equipment with M-Net

Product size :
120 (H) ×200 (W) × 45 (D) mm

Major features

The DIDO Controller have Max. 6 sets of contact input/output terminals and can monitor and operate ON/OFF/Malfunction of up to 6 general equipments.
The general equipments can be monitored or operated from AE-C400 LCD, AE-C400/EW-C50 Web browser.
Also, Run/Stop schedule of the general equipments can be set.
DIDO Controller has 6 contact points per M-NET address. But one contact is equivalent for one indoor unit. So if all six contact points are used, it will take up 6 M-NET address.

Table of functions and specifications

Item	Rating and specification					
Power supply	24 VDC±10%: 5 W					Screw terminal block (M3) *8
Interface	M-NET communication			17 to 30 VDC *1		Screw terminal block (M3) *8
	Standard	Output *2	ON/OFF, (ON) *3	Non-voltage relay contact (2)	Applied load MAX: 24 VDC, 5 W **MIN: 5 VDC, 2 mW** * AC loads cannot be connected.	Screw terminal block (M3.5) *8
				Transistor (2)	24 VDC 40 mA or less *5	Screwless terminal block
			(OFF) *3	Non-voltage relay contact (2)	Applied load MAX: 24 VDC, 5 W MIN: 5 VDC, 2 mW * AC loads cannot be connected.	Screw terminal block (M3.5) *8
				Transistor (2)	24 VDC 40 mA or less *4	Screwless terminal block
		Input	ON/OFF Error/Normal	Non-voltage a contact (2 each)	24 VDC 1 mA or less *5	Screwless terminal block
	Expansion	Output	ON/OFF, (ON) *3 (OFF) *3	Transistor (4 each)	24 VDC 40 mA or less *4	9 pin connector
		Input	ON/OFF Error/Normal	24 VDC input (4 each)	24 VDC 1 mA or less *6	9 pin connector
	Output pulse width			1 s ± 30 ms		
Interlock function	Interlock M-NET devices and output contacts according to status of input contacts.*7					
Environment conditions	Temperature			Operating temperature range	0 to 40°C [32°F to 104°F]	
				Storage temperature range	-20 to 60°C [-4°F to 140°F]	
	Humidity			30 to 90%RH (no condensation)		
Dimensions	200 (W) × 120 (H) × 45 (D) mm / 7 7/8 (W) × 4 3/4 (H) × 125/32 (D) in					
Weight	0.6 kg [1 3/8 lbs.]					
Time backup during power failure	In the event of power failure or shut-off, the internal capacitor will continue to track time for approximately one week. (The internal capacitor takes about 24 hours to fully charge; a replacement battery is not necessary.)					
Installation environment	Inside a metal control panel (indoors) * Use this product in a hotel, a business office environment or similar environment.					

*1: Supply electric power from a power unit for the transmission line or an outdoor unit. Further more,the power consumption factor of M-NET circuitry of this device is “1/4” (equivalent to one ME Remote Controller).
*2: Non-voltage Relay contact or transistor is available for output. Only one can be used at a time.
*3: ( ) is in the case of a pulse.
*4: The output is open collector type. Power must be supplied from an external power source to the output circuit of this device.
*5: Power is supplied from this device to the external contacts.
*6: Power must be supplied from an external power source.
*7: Interlock control is performed from the Maintenance Tool. For details, refer to the operation manual for the Maintenance Tool.
*8: M3 and M3.5 are sizes of the screw on the terminal block (ISO metric screw thread). The number indicates the screw diameter (mm).

AI controller PAC-YG63MCA

Values measured by commercially available temperature and humidity sensors can be introduced into M-NET communication.

Product size :
120 (H) ×200 (W) × 45 (D) mm

Major features

AI controller has 2 ports and can control temperature or humidity.
AE-C400/EW-C50 monitors the status of the AI-controller regularly (in 1-minute interval) and keeps the measured data.
Also, when the value exceeds preset upper or lower limit, or recovers. AE-C400/EW-C50 sends alarm e-mail which includes the trend data for the last 10mins (in 1-minute interval) before the occurrence or recovery.
Temperature/Humidity can be displayed on AE-C400 LCD, AE-C400/EW-C50 Web browser.

Table of functions and specifications

Item	Rating and specification						
Power supply	24 VDC±10%: 5 W						Screw terminal block (M3) *4
Interface	M-NET communication			17 to 30 VDC			Screw terminal block (M3) *4
	Input	Ch	Sensor	Measurement target	Measurement range	Measurement error	External connection method
		Ch1	Pt100 (3-wire system)	Temperature	-30 to 60°C [-22 to 140°F]	±0.3%FS ±0.1°C (0.18°F) *2 [at 25°C (77°F)]	Screwless terminal block (3 poles)
			Analog 4 to 20 mADC	Temperature/ humidity	(Set by system controller)	±0.5%FS ±0.1°C (0.18°F) *2 ±0.5%FS ±0.1%RH [at 25°C (77°F)]	Screwless terminal block (2 poles)
			Analog 1 to 5 VDC				
			Analog 0 to 10 VDC				
		Ch2	Analog 4 to 20 mADC	Temperature/ humidity	(Set by system controller)	±0.5%FS ±0.1°C (0.18°F) *2 ±0.5%FS ±0.1%RH [at 25°C (77°F)]	Screwless terminal block (2 poles)
			Analog 1 to 5 VDC				
			Analog 0 to 10 VDC				
	Output	Upper/lower limit alarm interlock output (non-voltage contact)		Applied load MAX: 24 VDC, 5 W MIN: 5 VDC, 2 mW * AC loads cannot be connected.			Screw terminal block (M3.5) *4
Interlock function	Interlock M-NET devices according to measurement data values. *3						
Environment conditions	Temperature			Operating temperature range	0 to 40°C [32°F to 104°F]		
				Storage temperature range	-20 to 60°C [-4°F to 140°F]		
	Humidity			30 to 90%RH (no condensation)			
Dimensions	200 (W) × 120 (H) × 45 (D) mm / 7 7/8 (W) × 4 3/4 (H) × 12 5/32 (D) in						
Weight	0.6 kg [1 3/8 lbs.]						
Time backup during power failure	In the event of power failure or shut-off, the internal capacitor will continue to track time for approximately one week. (The internal capacitor takes about 24 hours to fully charge; a replacement battery is not necessary.)						
Installation environment	Inside a metal control panel (indoors) * Use this product in a hotel, a business office environment or similar environment.						

*1: Configure the dip switch settings for the analog input method to use while referring to “9. Dip Switch Functions”.
*2: The measurement error for the system includes the measurement error for this unit, sensor, and wiring.
a%FS (full scale) = a% × ([measurement range’s upper limit value] - [lower limit value])
*3: Settings for the interlock function are performed from the Maintenance Tool. For details, refer to the operation manual for the Maintenance Tool.
*4: M3 and M3.5 are sizes of the screw on the terminal block (ISO metric screw thread). The number indicates the screw diameter (mm).

Power supply unit for transmission line PAC-SC51KUA

Unit for supplying power to related components

- For connection of remote controllers and system controllers to the transmission line for centralized control, the power supply unit for transmission line (PAC-SC51KUA) is recommended. (Except AE-C400, EW-C50, BM adapter

Specification table

Item	Specifications		
Electrical requirements	Rated input voltage and current	100-240VAC ±10%; 0.8A - 0.4A 50Hz/60Hz Single-phase	
	Fuse: 250VAC 6.3A Time-delay type (IEC127-2 S.S.5)		
Output voltage/current	M-NET	23.0 - 32.0VDC	
Environmental conditions	Temperature	Operating range	-10 to +55ºC / +14 to +131ºF
		Storage range	-20 to +60ºC / -4 to +140ºF
	Humidity	30~90%RH (No condensation)	
Dimensions	169 (H) × 271 (W) × 72 (D) mm (6-11/16 [H] × 10-11/16 [W] × 2-7/8 [D] in.)		
Weight	1.4 kg (3-1/8 lbs.)		
Installation Environment	In the metal control panel * This unit is designed for a business office or similar environment.		

⚠Warning

■ Do not use refrigerant other than the type indicated in the manuals provided with the unit and on the nameplate.
- Doing so may cause the unit or pipes to burst, or result in explosion or fire during use, during repair, or at the time of disposal of the unit.
- It may also be in violation of applicable laws.
- MITSUBISHI ELECTRIC CORPORATION cannot be held responsible for malfunctions or accidents resulting from the use of the wrong type of refrigerant.

■ Our air-conditioning equipments and heat pumps contain a fluorinated greenhouse gas, including R410A, R32, etc.

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