MITSUBISHI ELECTRIC

LIVING ENVIRONMENTAL SYSTEMS

Changes for the Better

MELCloud READY

Centralised WEB Server controls for VRF CITY MULTI and HVRF systems
Hydronic VRF

AE-C400(X)
EW-C50(X)

AE-C400(X)
EW-C50(X)

CENTRALISED WEB SERVER CONTROL

AE-C400(X)

Improved visibility, simple operation and optimal comfort

All under one control

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

The AE-C400(X) features a 12.1-inch colour LCD display that offers excellent visibility.
It features a flat glass capacitive touch screen panel for a fast and accurate response.

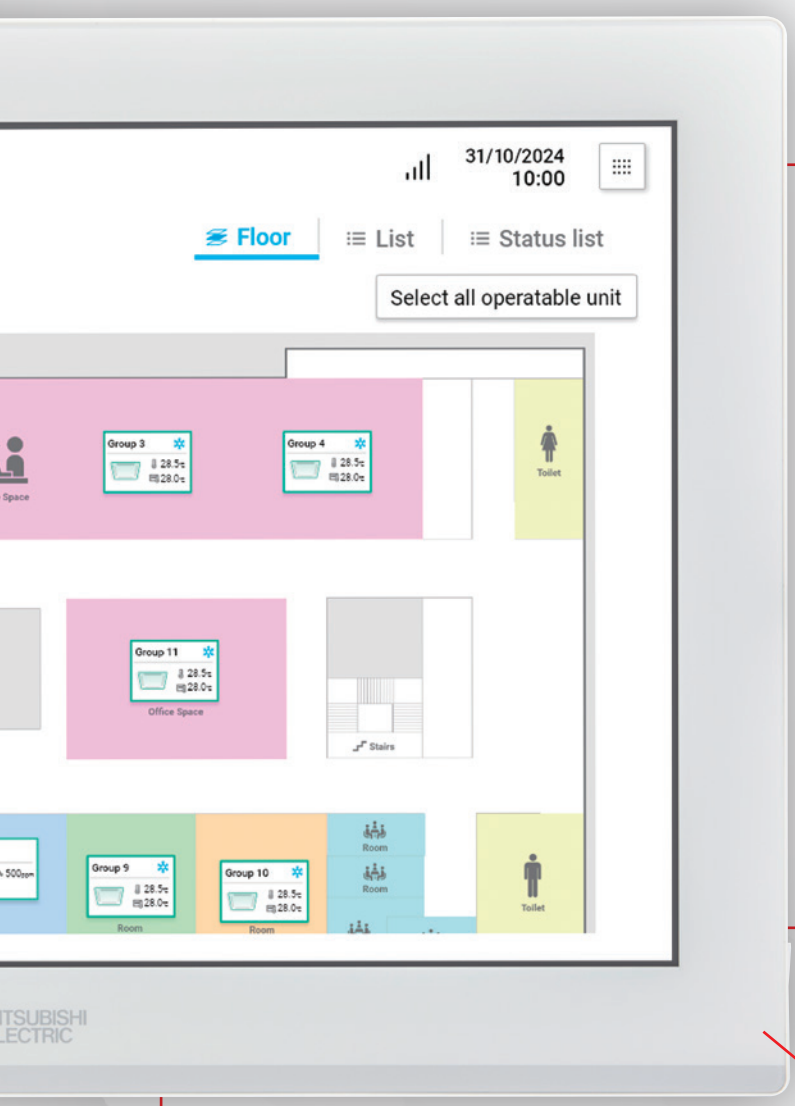
Air conditioners can be monitored and managed remotely

Air conditioners can be monitored and managed remotely from a web browser* on a personal computer by connecting it to the Internet via a modem or router VPN with a LAN connection. Up to 2000 internal units can be controlled from the web browser.

You can control up to 400 indoor units.

The AE-C400(X) can control up to 50 indoor units.
By connecting additional AE-C400(X) or EW-C50(X), up to 400 indoor units can be controlled.

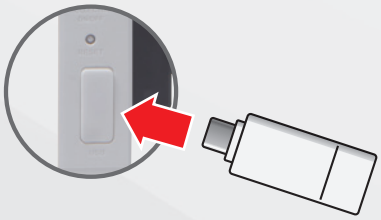
* For Windows, Microsoft® Edge or Google Chrome is required. For Macintosh, Safari 7 is required.
Windows and Microsoft® Edge are registered trademarks of Microsoft Corporation in the United States and other countries.



Enables energy management of air conditioners*.

The energy consumption* and operating time of air conditioners are displayed on the AE-C400(X). They can be used to check the utilisation of the air conditioner and the effect of energy-saving control.

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



The detailed settings of the direction and speed of the air flow can be recorded in annual and weekly programmes.

In addition to an annual schedule, it is possible to set up five schemes of weekly programming by season, specifying start and stop times, temperature, direction and speed of airflow in each schedule.

MELCloud READY

Each VRF / HVRF system is connectable to the Cloud

CENTRALISED WEB SERVER CONTROL

EW-C50(X)

Improved visibility, simple operation and optimal comfort
All under one control

Air conditioners can be monitored and managed remotely.

Air conditioners can be monitored and managed remotely from a web browser* on a personal computer by connecting it to the Internet via a modem or VPN router with a LAN connection.

Up to 2000 internal units can be controlled from the web browser.

Up to 400 indoor units can be controlled.

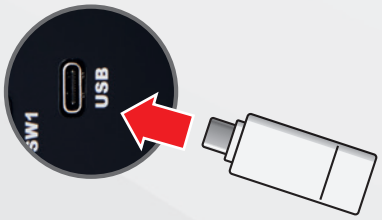
In addition to annual programming, five weekly programming schemes can be set per season, specifying start and stop times, temperature, airflow direction and speed in each schedule.

* 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.

It enables the energy management of air conditioners*.

The energy consumption* and operating time of air conditioners are displayed on the EW-C50 via WEB browser*. They can be used to check air conditioner utilisation and the effect of savings control energy.

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



Detailed settings of airflow direction and speed can be recorded in annual and weekly programmes.

In addition to an annual schedule, it is possible to set up five schemes of weekly programming by season, specifying start and stop times, temperature, direction and speed of airflow in each schedule.

MELCloud READY

Each VRF / HVRF system is connectable to the Cloud

INDEX

Centralised web server controls
AE-C400(X) / EW-C50(X)

CENTRALISED WEB SERVER CONTROLS

AE-C400(X) / EW-C50(X)

Centralised controller with a large colour LCD display

12.1-INCH LCD COLOUR TOUCH SCREEN PANEL WITH BACKLIGHTING

The 12.1-inch high-resolution colour LCD display improves visibility. The panel is equipped with backlighting to enable operation in dark environments. It can be operated by lightly touching the screen with a finger.

CENTRALISED CONTROL VIA A WEB BROWSER

Air conditioners can be managed and monitored using a personal computer, tablet or smartphone connected to the Internet via a LAN connection, as conveniently as a web page.

OPERATION/MONITORING SCREEN

The AE-C400(X) features a new graphical user interface* with a revamped icon design for clearer visual operation. It also offers a unified display on both the LCD display and the Web Browser, enabling consistent operation on both interfaces.

MONITORING SCREEN (PERSONAL COMPUTER AND TABLET)

MONITORING SCREEN (SMARTPHONE)

From smartphones, air conditioners can only be operated from group units.

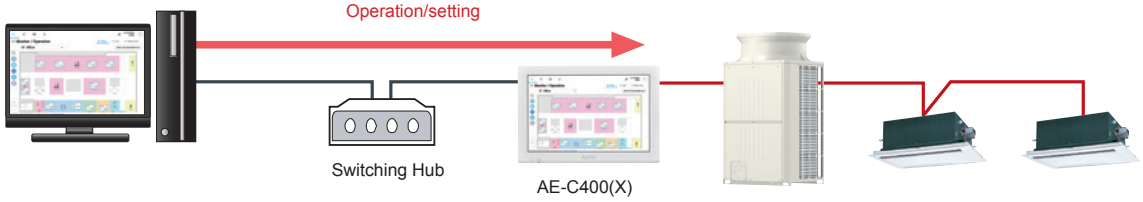
* In the case of Windows, Microsoft® Edge or Google Chrome is required. In the case of Macintosh, Safari 7 is required
Windows and Microsoft® Edge are registered trademarks of Microsoft Corporation in the United States and other countries. iPad and Safari are registered trademarks of Apple Inc. in the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

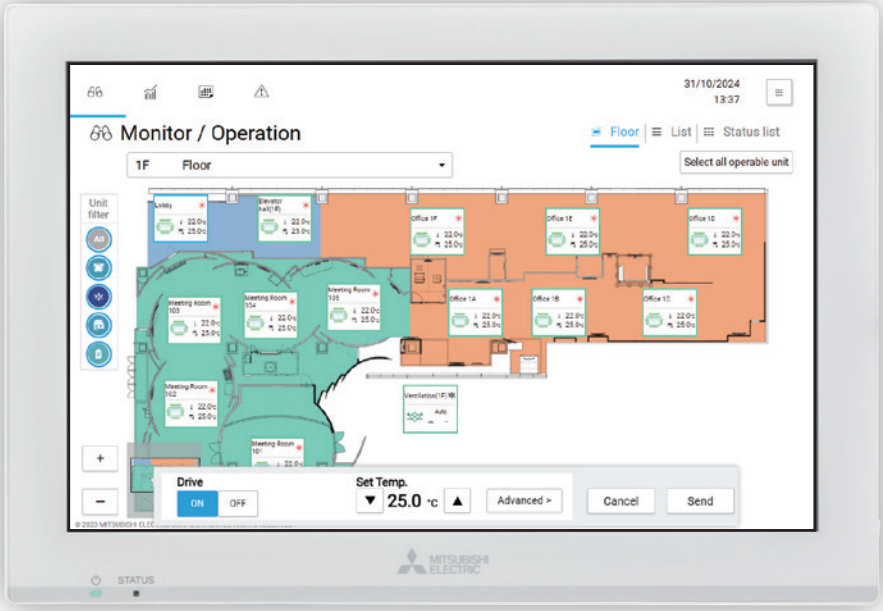
VISUALISATION OF GRAPHIC PLANS

Air conditioners can be managed and monitored using the air conditioner icons on the floor plan image* displayed on the AE-C400(X) or via Web Browser.

* The creation of plans and graphics is at the discretion of the end user, for further details please contact the office.

NEW

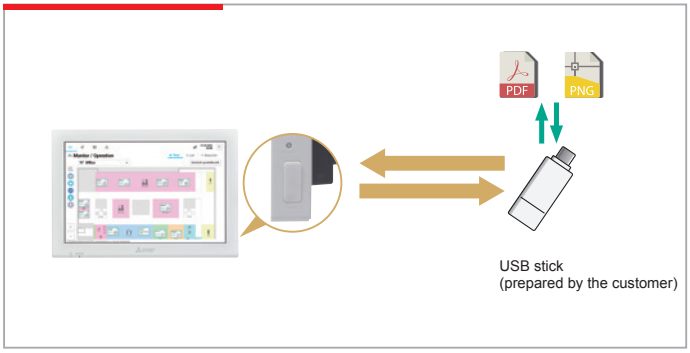




There are no restrictions on colour specifications and support for various file formats, including JPEG and PNG.

DATA INPUT/OUTPUT TO/FROM C-TYPE USB PORT

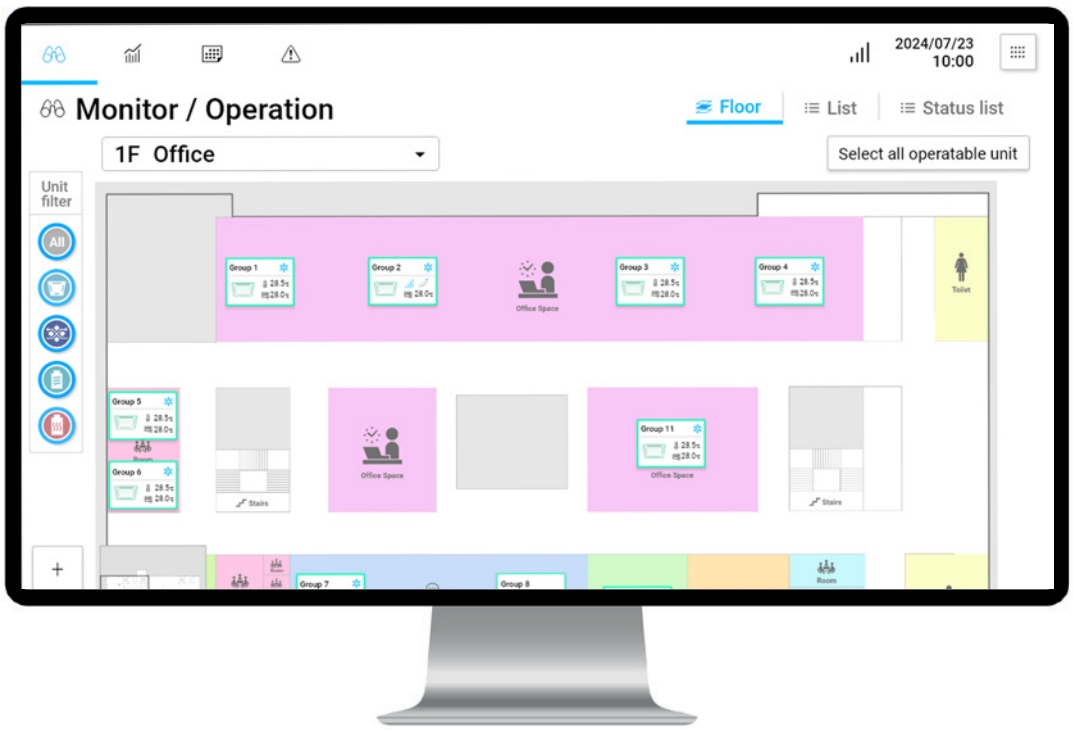
Initial set-up and energy management data can be sent to a USB stick*1.
Similarly, plant layout data (PDF or PNG) and setting data can be retrieved from the USB stick and entered into the AE-C400(X).



DARK MODE (ONLY VIA WEB BROWSER)

A black background option* has been added for the Web Browser function. Users can switch between the settings according to their preferences.

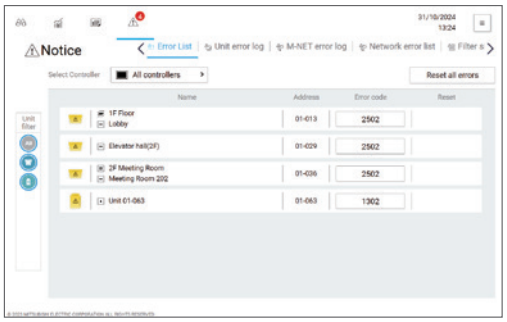
*To display in dark mode, add '?colour= dark' to the end of the URL in the web browser. (example: https://(IP address)/control?colour=dark)



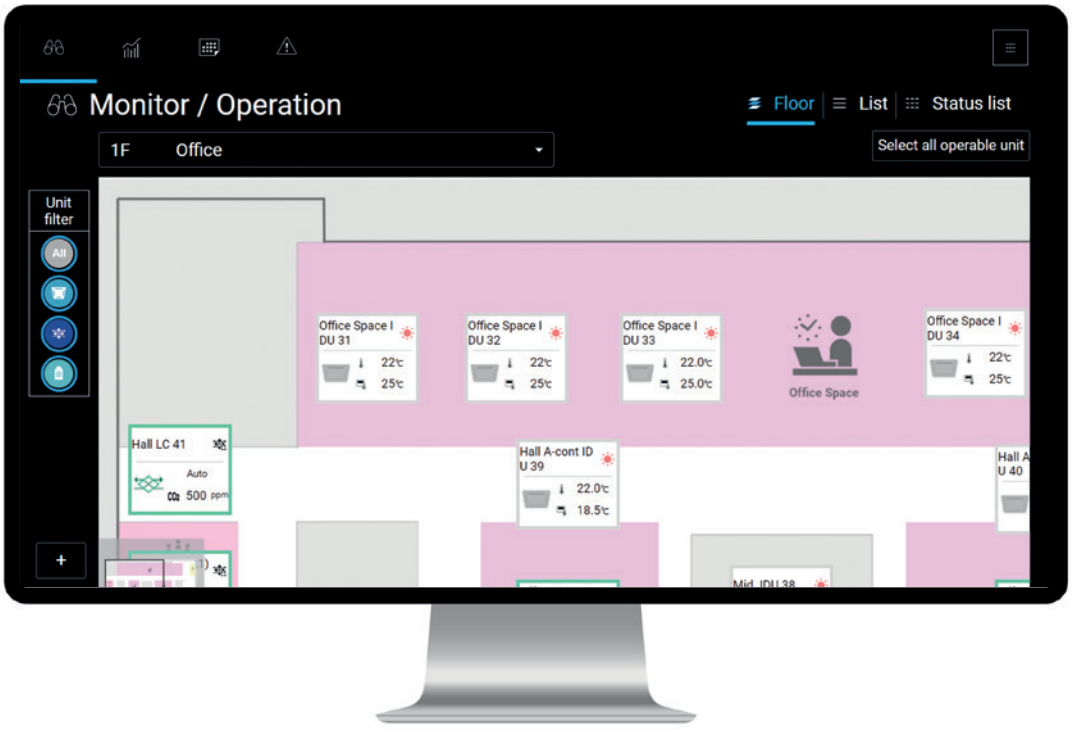
standard mode

ALARMS LIST

You can view the indoor units in alarm status. Touch the button of an alarm code to display the error details.



NEW



dark mode
(Only via WEB Browser)

CENTRALISED WEB SERVER CONTROLS

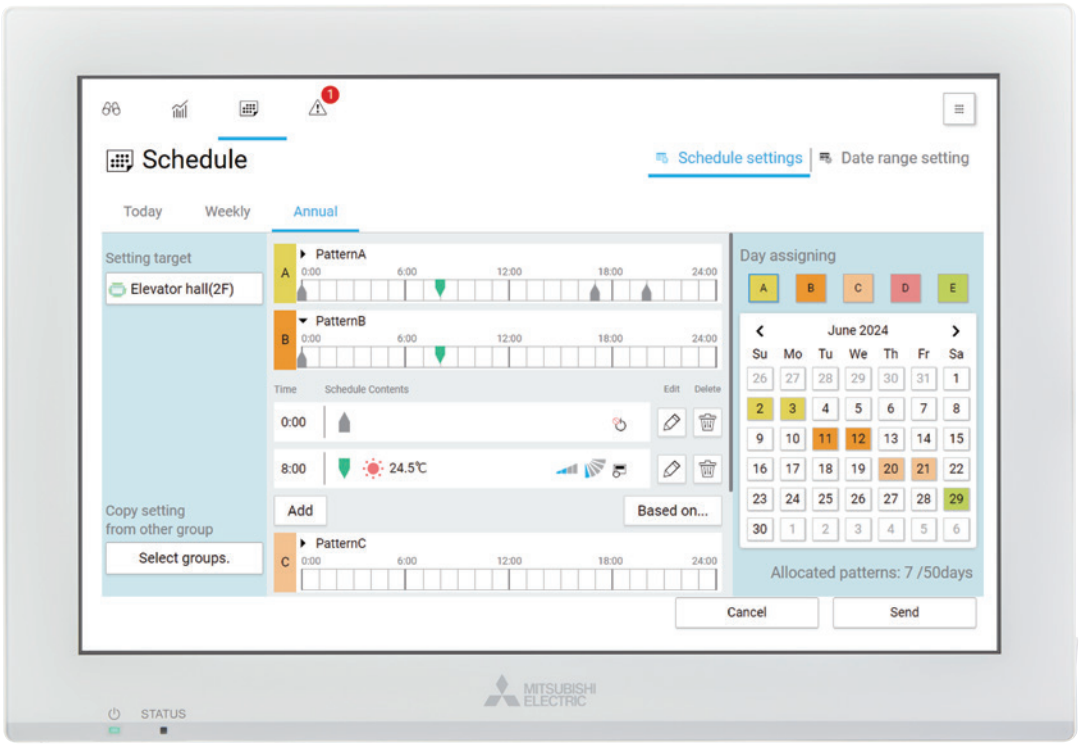
AE-C400(X) / EW-C50(X)

Programming functions

WEEKLY AND ANNUAL PROGRAMMING

Programming function

The scheduling function simplifies centralised control, allowing you to set climate control programmes according to the season. Daily, weekly and yearly programmes can be created to adjust the temperature effortlessly. You can set up to 24 different events per day to perfectly suit your needs.

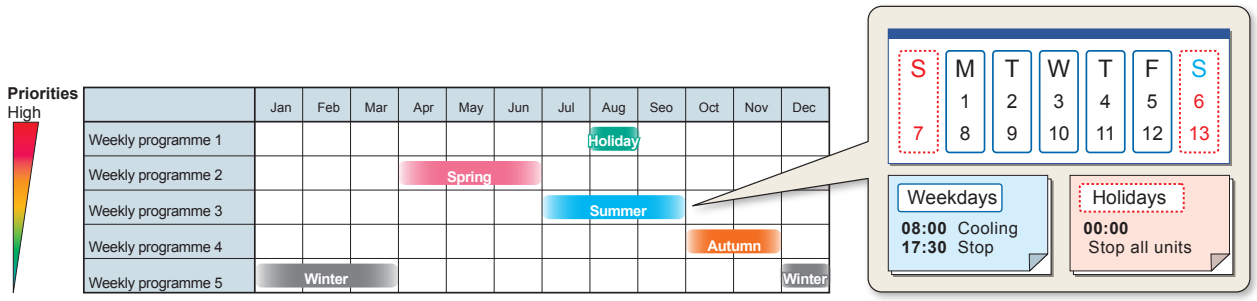


PROGRAMMING FUNCTION

Planning settings	• Setting time (in 1-minute increments) • Stopping Operation • Modes of operation • Set temperature • Air direction • Remote control prohibited
Regular planning	
Optimal start-up programme	

WEEKLY PROGRAMME

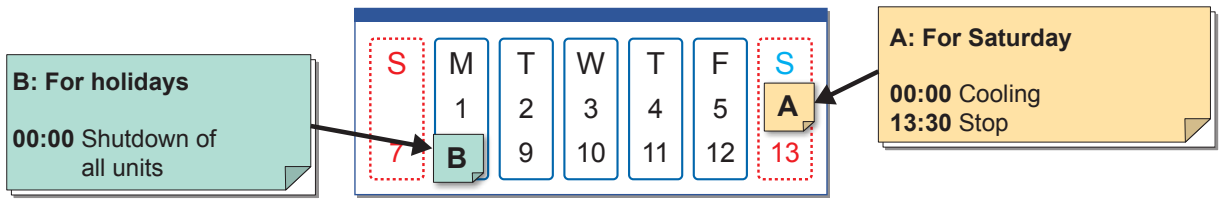
Weekly scheduling allows you to set different times for each day of the week. You can create up to 5 schedules and easily switch between them depending on the season or a specific period, such as spring, summer, autumn, winter or long holidays. Set these times in advance to suit your seasonal needs.



For example, weekly schedules for spring, summer, autumn, winter and long holidays

ANNUAL PROGRAMME

Annual scheduling allows settings for holidays and special days, in addition to weekly scheduling. Up to 50 days can be scheduled in a 24-month period, using up to 5 different operating schedules. These settings take precedence over weekly scheduling, so there is no need to change the weekly settings.



For example, annual programmes for holidays, such as public holidays and anniversaries foundation of the company

DAILY PROGRAMME

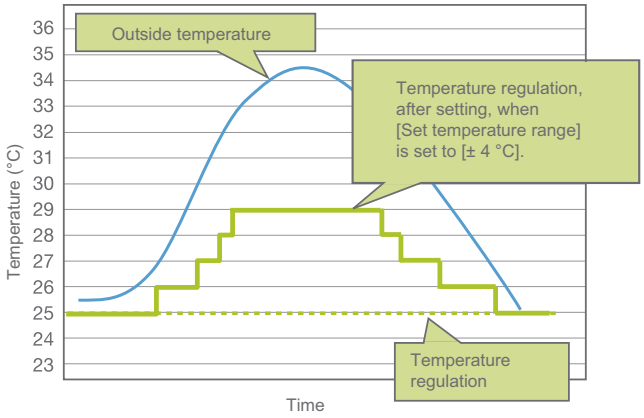
When an unexpected change occurs, it is possible to set a schedule for that day only. This daily schedule takes precedence over weekly and annual schedules, allowing you to adapt to sudden changes without altering existing weekly or annual schedules.

For example, adding an air-conditioning operation programme for Saturday afternoon to the original Saturday schedule to accommodate an emergency meeting scheduled for the afternoon.

SLIDING TEMPERATURE

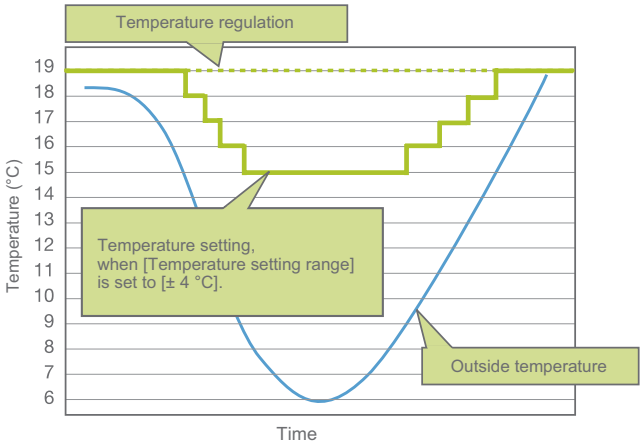
Based on the difference between the set temperature and the outside temperature, the set temperature can be adjusted automatically. This adjustment of the indoor unit, e.g. placed at the entrance of a building, avoids abrupt temperature changes to the detriment of people, with possible risk of thermal shock.

'COOLING' AND 'DEHUMIDIFICATION' MODES



Outdoor temperature conditions	Temperature adjustment after setting
Outside temperature ≥ Temperature control + 1,5 °C	Temperature regulation + 1 °C
Outside temperature ≥ Temperature control + 4,5 °C	Temperature regulation + 2 °C
Outside temperature ≥ Temperature control + 6,5 °C	Temperature regulation + 3 °C
Outside temperature ≥ Temperature control + 7,5 °C	Temperature regulation + 4 °C

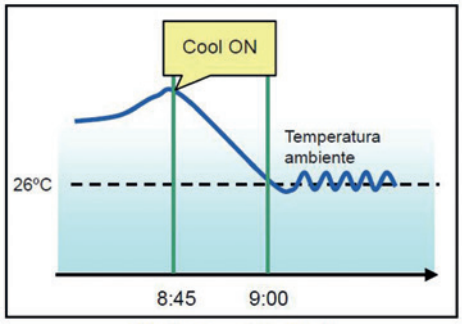
'HEATING' MODE



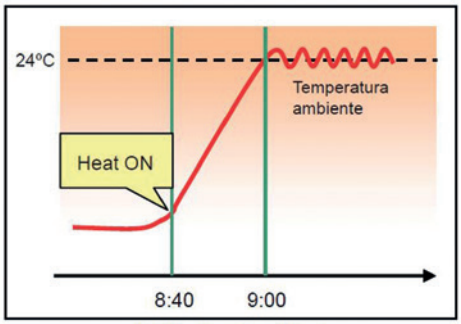
Outdoor temperature conditions	Temperature adjustment after setting
Outside temperature ≥ Temperature control - 4,0 °C	Temperature regulation + 1 °C
Outside temperature ≥ Temperature control - 6,0°C	Temperature regulation + 2 °C
TOutside temperature ≥ Temperature control - 8,0 °C	Temperature regulation + 3 °C
Outside temperature ≥ Temperature control - 10,0 °C	Temperature regulation + 4 °C

OPTIMISED START-UP

The ‘Optimised Start’ function acts automatically, even at the individual group level, anticipating the switch-on in order to achieve the comfort conditions as required by the time schedule.
The centralised controls in the self-learning function store the setpoint settings of the hourly programming, the daily room temperature, and the setpoint attainment history during the previous days, and process these to calculate the pre-ignition time with respect to the hourly programming, from a minimum of 5 minutes to a maximum of 60 minutes. The ‘Optimised Start’ function is active in both heating and cooling mode.



Operating mode: Cool - Start time: 9:00
Temperature setting: 26°C



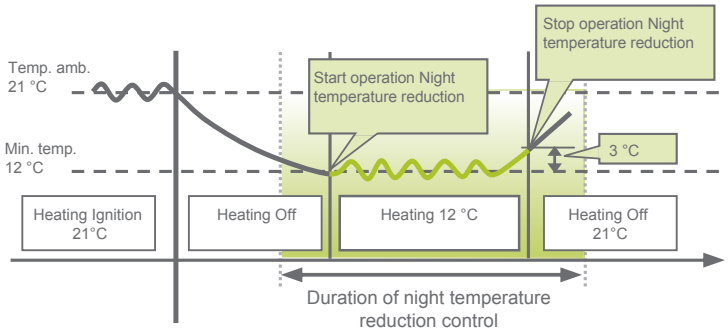
Operating mode: Heat - Start time: 9:00
Temperature setting: 24°C

The ‘Optimised Start’ and ‘Night Setback’ (or ‘Maintenance Temperature’) functions are perfectly integrated and complement each other. Having the room at a maintenance temperature and anticipating the switch-on time with respect to the time schedule ensures maximum comfort for the occupants exactly when required by the time schedule.

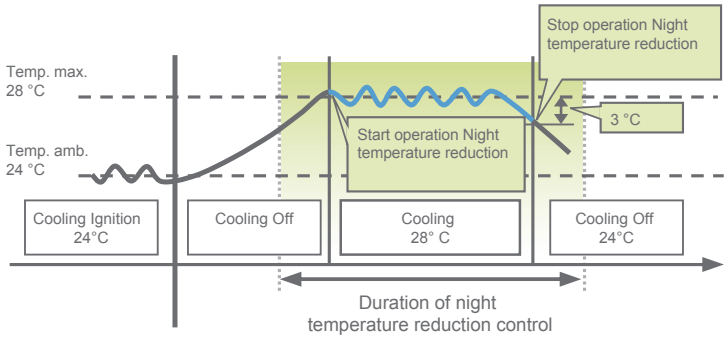
NIGHT SET-BACK CONTROL - TEMPERATURE MAINTENANCE

This function starts the heating when the monitored group stops and the room temperature drops beyond the programmed lower limit. It also controls cooling when the monitored group stops and the room temperature rises above the programmed upper limit. The Night Set-back Control function is not available if operation and temperature setting are changed from the remote control.

WHEN THE TEMPERATURE DROPS BELOW THE MINIMUM TEMPERATURE (HEATING MODE)



WHEN THE TEMPERATURE EXCEEDS MAXIMUM TEMPERATURE (COOLING MODE)



If the room temperature is measured at the intake of the indoor unit, the temperature cannot be accurate when the indoor unit is stationary. In this case, provide a remote sensor (PAC-SE41TS-E) or move the temperature acquisition using the integrated sensor to the remote control.

CENTRALISED WEB SERVER CONTROLS

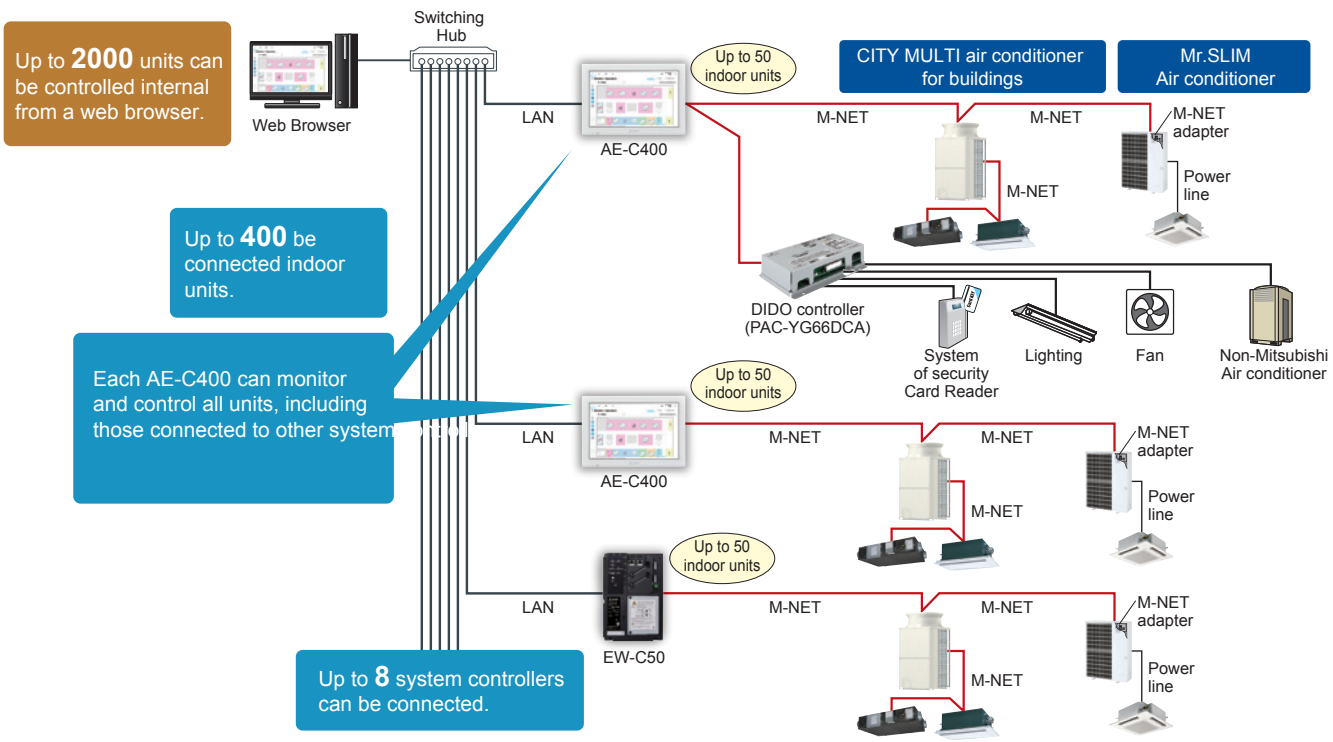
AE-C400(X) / EW-C50(X)

Centralised control function: up to 2000 indoor units

SYSTEM CONFIGURATION DIAGRAM

One AE-C400(X)/EW-C50(X) can control up to 50 indoor units.
By connecting additional AE-C400(X) or EW-C50(X), up to 400 indoor units can be controlled.

NEW

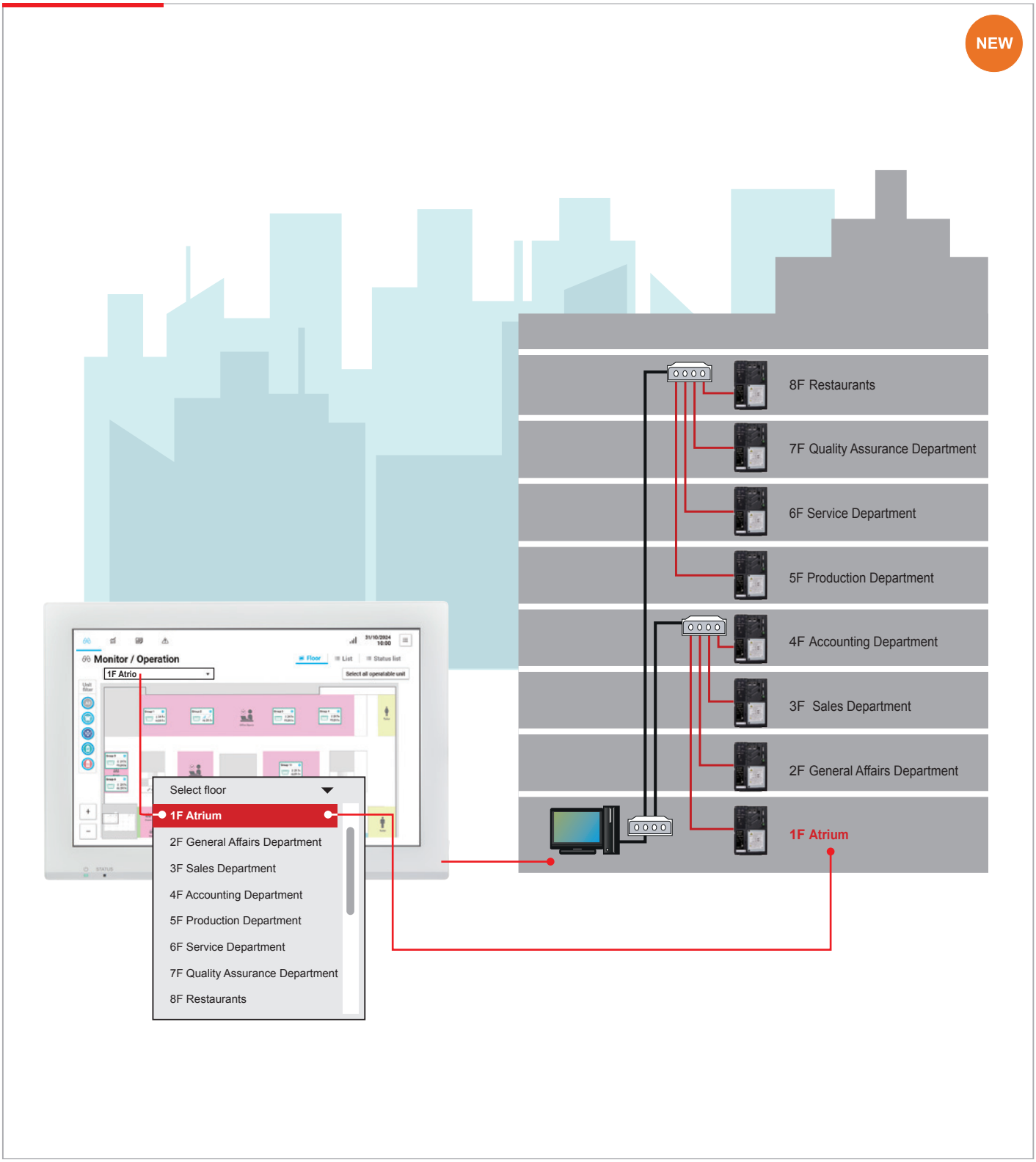


* Ad esempio, un Impianto con 400 unità interne può essere configurato con 1 AE-C400(X) abbinato a 7 EW-C50.

EXAMPLES OF USE

INTEGRATED CONTROL OF AN ENTIRE BUILDING (UP TO 2000 INDOOR UNITS)

The comprehensive management browser allows monitoring and control of up to 2,000 indoor units connected to up to 40 AE-C400(X)/ EW-C50(X) controllers. Thanks to the floor layout setting, visibility is improved, enabling more intuitive operation.



CENTRALISED WEB SERVER CONTROLS

AE-C400(X) / EW-C50(X)

Connection function to the centralised BACnet monitoring system®

BACNET CONNECTION® (BACnet licence required)®

MAIN FEATURES

The controllers can be connected to the central monitoring unit via BACnet.®
When indoor units are monitored and managed by the central monitoring unit, the AE-C400(X)/EW-C50(X) can be connected to the central monitoring unit via the open BACnet protocol® by registering the licence (BACnet connection®) in the controllers.

It is possible to produce energy consumption figures attributed to air conditioners.
The electrical energy consumed by the air conditioners (outdoor and indoor units) is divided between the groups according to the operating conditions of the indoor units, and the results can be displayed.

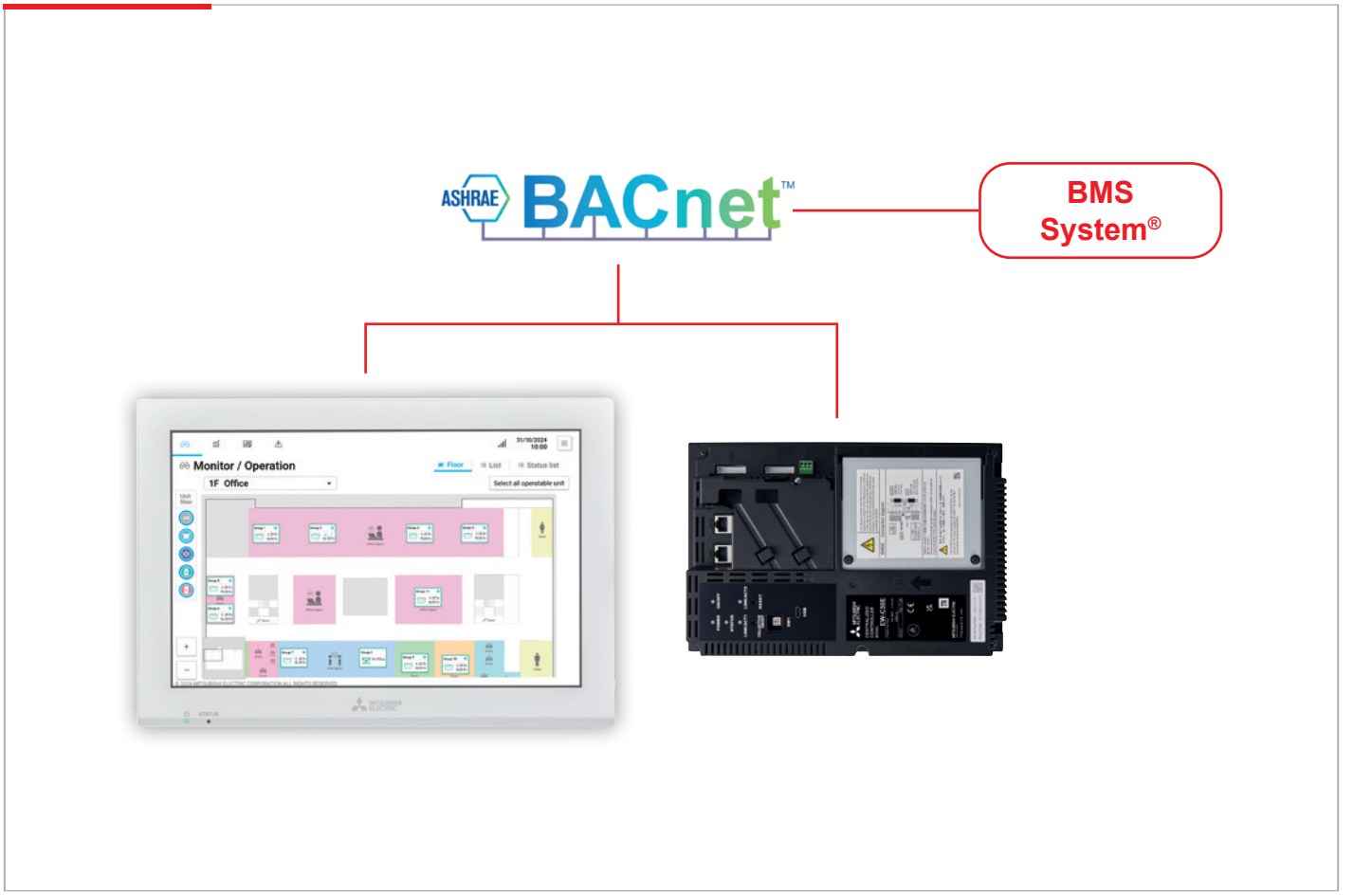
Breakdown of consumption*.
The consumption breakdown can be used to calculate the air conditioning tariff from the central monitoring unit.

*The MELCLoud Commercial Charge function must be activated
**Contact Mitsubishi Electric Italy for package activation

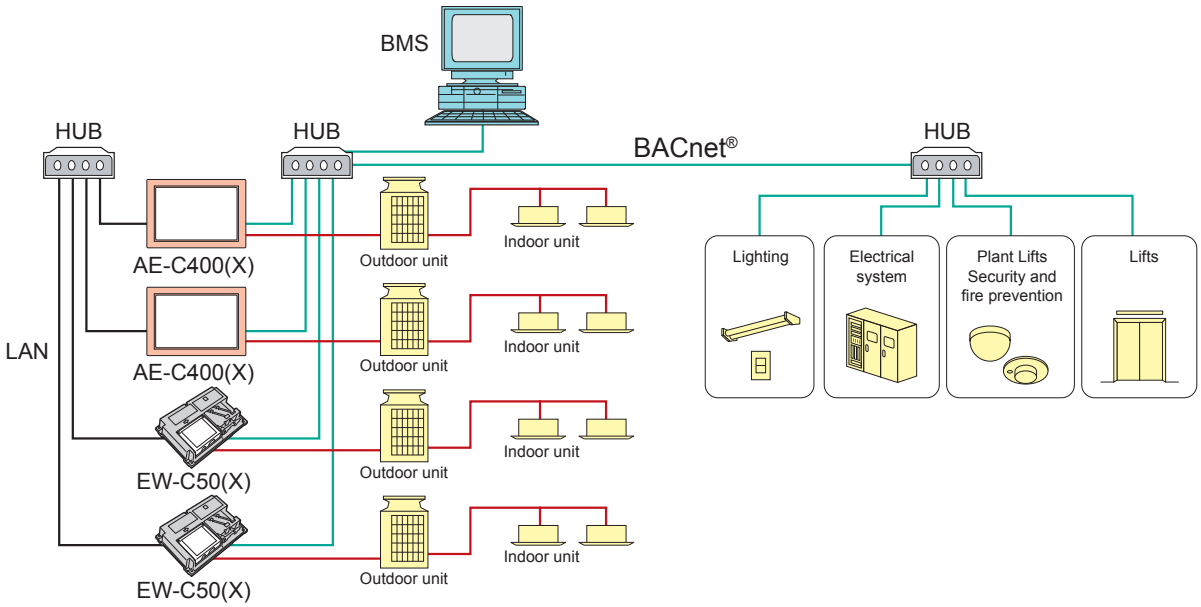
BACnet Standard .®
AE-C400(X) and EW-C50(X) comply with the following BACnet standard .®
• ISO 16484-5 (ANSI/ASHRAE 135-2010)
(They also comply with ANSI/ASHRAE 135-2004 and ANSI/ASHRAE 135-2008).

BACnet devices .®
Each of the AE-C400(X) and EW-C50(X) controllers functions as a device on BACnet®, and up to 50 indoor units can be connected to each device.

BACnet Pin .®
A BACnet licence is required for each AE-C400(X) and EW-C50(X) centralised controller®



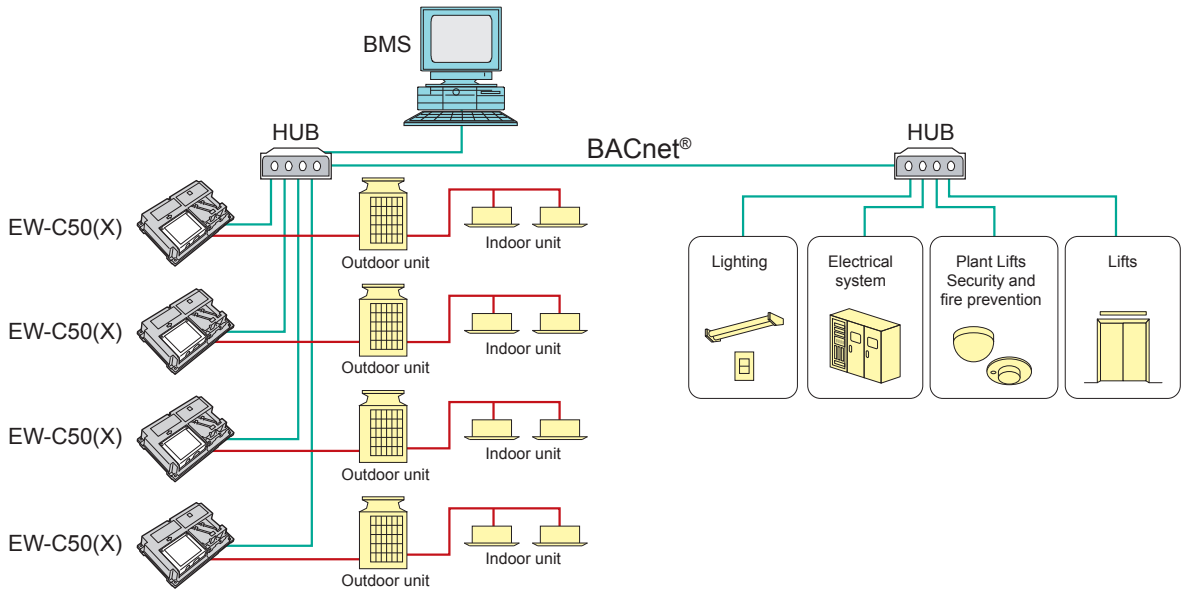
CONFIGURATION FOR MONITORING AND OPERATION OF AIR CONDITIONERS ON LCD SCREENS IN CENTRALISED SYSTEMS. MONITORING UNIT AND AE-C400(X)



SYSTEM CONFIGURATION
(examples)

CONFIGURATION FOR MONITORING AND OPERATION OF AIR CONDITIONERS BY THE CENTRAL MONITORING UNIT

(Air conditioners are not monitored or controlled by the AE-C400(X) LCD screens).



CENTRALISED WEB SERVER CONTROLS

AE-C400(X) / EW-C50(X)

Monitoring energy consumption

AE-C400(X) ENERGY CONSUMPTION DISPLAY

The energy consumption and operating time of air conditioners can be clearly displayed

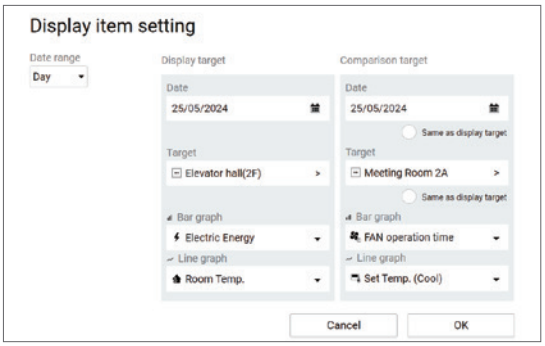
GRAPH DISPLAY FUNCTION

The AE-C400(X) is equipped with an energy management function as standard. Thanks to this function, it is possible to understand the current state of use of the air conditioners and to check the effect of energy-saving measures.

- Data from one area in different terms can be compared.
- It is possible to compare data from two areas in the same period.
- The effect of energy-saving measures can be verified.
- Energy management data for the last 24 months (daily or monthly data) or the last 5 years (annual data) can be stored as of today.
- Energy management data (from the last 5 years) can be sent to a USB stick or a personal computer.

GRAPH DISPLAY SCREEN

DISPLAY SETTING SCREEN



Display Contents

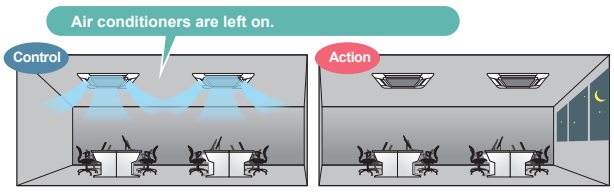
Example of bar graph elements	• Electricity target • Energy consumption*1 • Fan running time	• Ignition time (cooling/heating/total) • Calculated values*1 (electricity, etc.)
Example of line graph entries	• Internal temperature • Setting the heating temperature	• Set cooling temperature • Measured values*2 (outdoor temperature, humidity, etc.)

*1. The amount of electricity must be entered into the AE-C400(X) via the PI controller or Modbus watt-hour meter.
*2. The analogue signals must be entered by the AI controller.

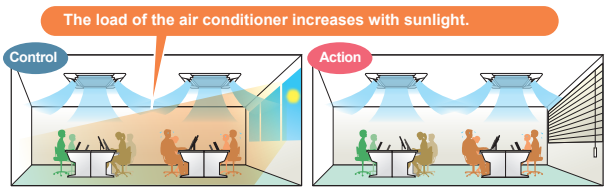
Display period

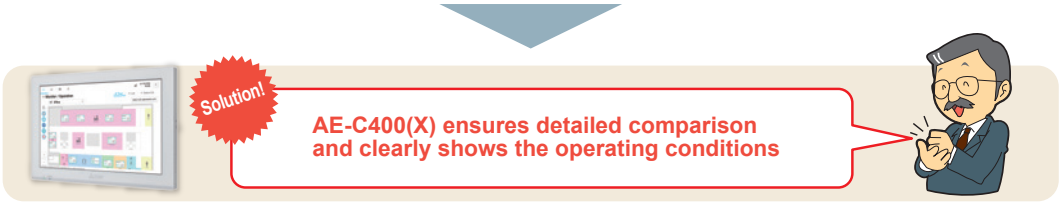
Daily (hourly chart for 24 hours), monthly (daily chart for 31 days) and yearly (monthly chart for 1 year)

When air conditioners are left on



When the load of the air conditioner is increased by external factors (sunlight)



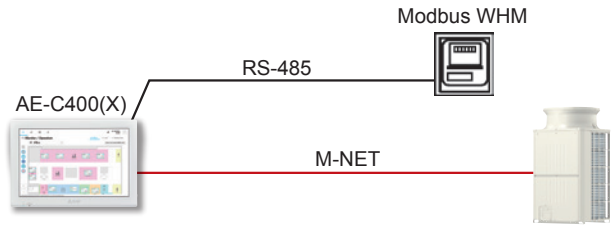


METHOD OF MEASURING ELECTRICAL ENERGY

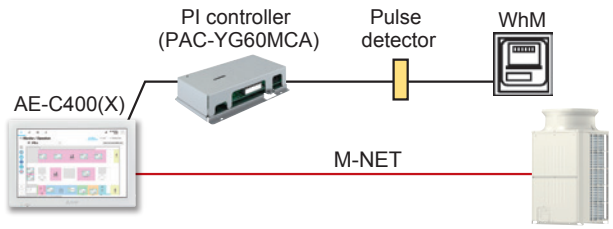
There are two ways to input power consumption into the AE-C400(X)/EW-C50(X): direct input via Modbus WHM or pulse input via a PI controller

The electrical energy fed into the AE-C400(X)/EW-C50(X) can be used for the following purposes.
- Electricity to be distributed for energy management (electricity consumed by outdoor units)
- Electricity for demand level forecasting (demand electricity)
- Electrical energy to be distributed for the charging function (electrical energy consumed by outdoor and indoor units)

DIRECT ENTRANCE TO THE MAIN UNIT



PULSE INPUT THROUGH A MORE



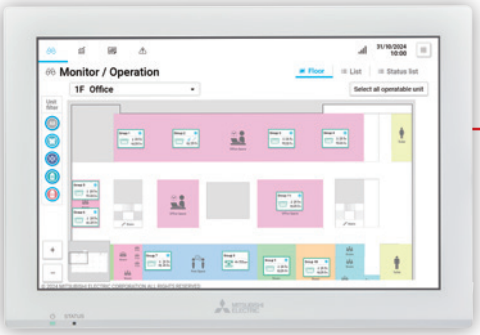
Notes on configuration.
- When inputting pulses of electricity into the AE-C400(X)/EW-C50 (X) for the charging function or power level prediction, power the AE-C400(X)/EW-C50 (X) from an uninterruptible power supply to avoid input errors in the event of a power failure (power supply for 5 minutes or more).
- When using the charge function, the input must be made via pulse input via the PI controller (PAC-YG60MCA). The charge function cannot be used with Modbus watt-hour meters.
- Up to 4 Modbus WHMs can be included in one AE-C400(X)/EW-C50 (X) set.
- For information on the types of Modbus WHM that can be connected, please refer to the Instruction Manual.

WITH ENERGY SAVING/PEAK CUT CONTROL FUNCTION

More efficient energy management can be realised in combination with other functions.
- The 30-minute average power history and peak cutoff control level are displayed graphically.
- Data can be sent to a USB flash drive as a CSV file.

With charging function (licence option)
- Data can be sent to a USB flash drive as a CSV file.

NEW



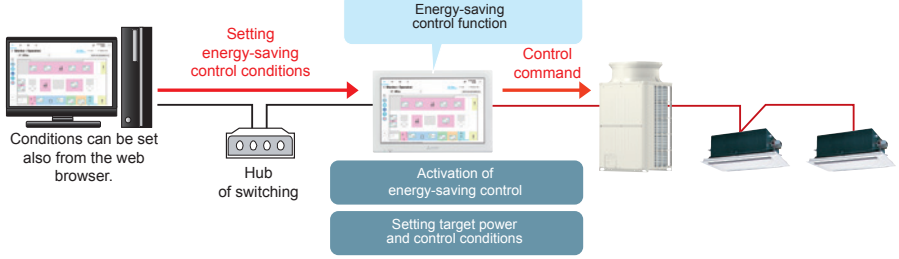
The USB can be inserted directly into the side slot. Data can be collected easily.

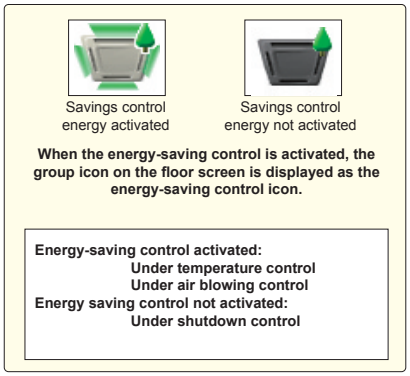
AE-C400(X) / EW-C50 (X)

Energy-saving function

ENERGY-SAVING CONTROL FUNCTION

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

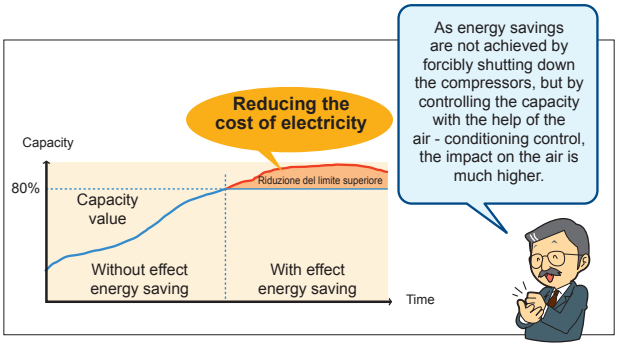




CONTROL COMMAND

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 to 27°C. **• Fan control (thermos OFF)*** Example) If the energy-saving control is enabled during operation for cooling at 25°C, the operating capacity will be forcibly set to 0%. The temperature displayed on the remote controllers will be kept at 25°C. **• Temperature control (±2°C)**
Controllo dell'unità esterna	**• Saving control of the upper capacity limit (50/60/70/80/90%)*.** Example) The upper limit value is specified to keep the maximum capacity value of the outdoor unit within 80%. The values displayed on the remote controls are not changed.



* This function cannot be used for some air conditioner models. * For detailed information on models, please contact the sales department.

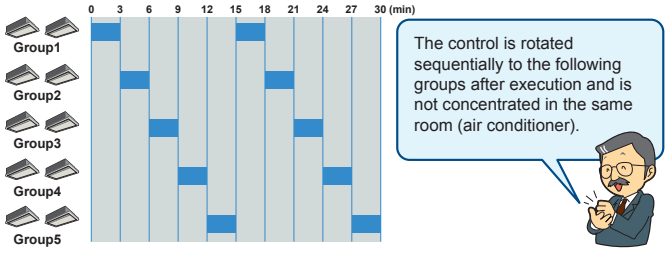
ROTATION INTERVALS

Control is implemented with balanced rotation to avoid controlling only 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 corresponds to 3 minutes and the control is rotated in 30 minutes.

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



① Number of rotation times

The 3-minute control is repeated twice (= 6 min/3min) for a 6-minute control.

② Rotation cycle

The rotation cycle in 30 minutes is 15 minutes (= 30 min/2 times) based on the number of rotation times determined in ①.

③ Rotation range

Based on 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 to the nearest whole number).

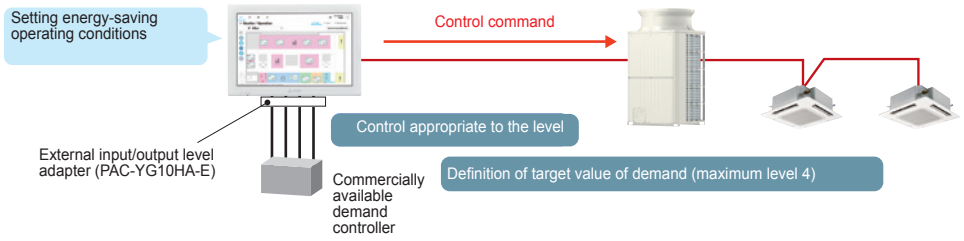
- When using the rotation control for indoor units during heating operation, it takes time to restart operation to avoid the feeling of cold air and the indoor units may not show their capacity for some time after restarting operation.
- When the energy saving control is used for heating, to avoid insufficient capacity, it is recommended to use the capacity saving control for outdoor units (energy saving without compressor shutdown).
- A setting of 3 minutes is recommended.

ENERGY SAVING/PEAK CUT CONTROL FUNCTION

It offers systematic control of energy savings through demand management. To use the energy-saving/peak-cutting control function, demand levels, power quantity or power pulses must be entered into the controller.

ENERGY SAVING/PEAK CUT CONTROL FUNCTION (EXTERNAL CONTACT INPUT)

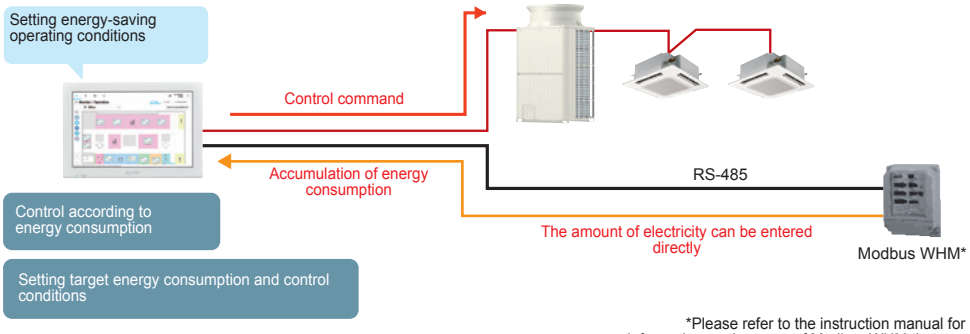
Detailed demand control can be achieved by using a commercially available demand controller.



ENERGY-SAVING/PEAK-CUTTING CONTROL FUNCTION (MODBUS WATT-HOUR METER)

NEW

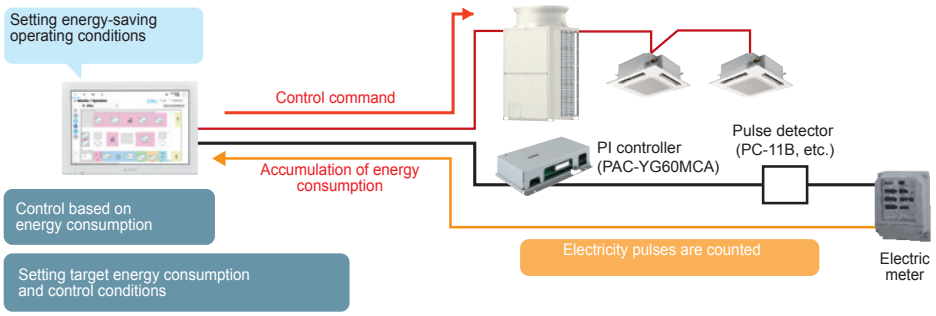
Detailed demand control can be realised by entering the amount of electricity directly from a Modbus watt-hour meter to the controller.



*Please refer to the instruction manual for information on the types of Modbus WHM that can be connected.

ENERGY-SAVING/PEAK-CUTTING CONTROL FUNCTION (PI REGULATOR INPUT)

Detailed demand control can be realised with pulse input via an optional PI controller.

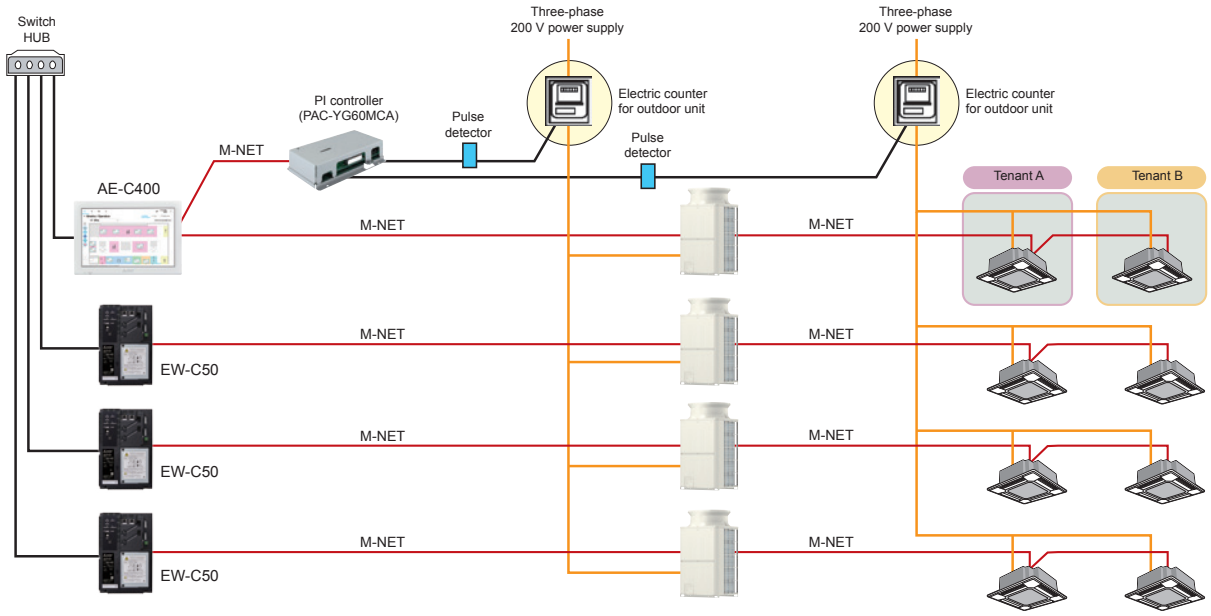


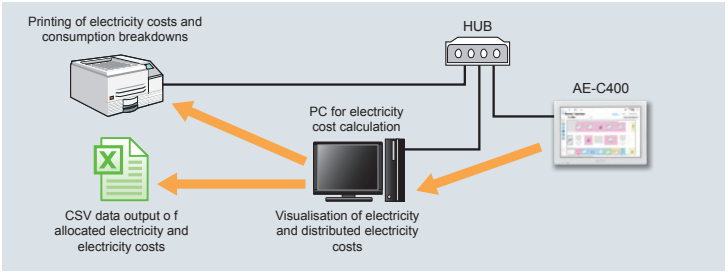
CENTRALISED WEB SERVER CONTROLS

AE-C400(X) / EW-C50(X)

Charge apportioning function

CHARGE FUNCTION (CHARGE LICENCE REQUIRED WITH MELCloud Commercial)





A PC is used to calculate electricity costs.
(It is not necessary to be permanently connected to the AEC400. The tariff calculation tool must be installed, but other software can also be used on the computer).

Notes on configuration

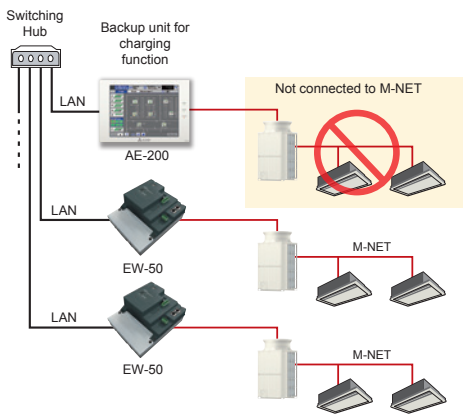
- When using the charge function, the input must be made via a pulse input through the PI controller (PAC-YG60MCA). The charge function cannot be used with Modbus watt-hour meters.
- Electricity pulses for distribution must be fed into each AE-C400(X) and EW-C50(X) system.

* MELCloud Commercial charge function activated

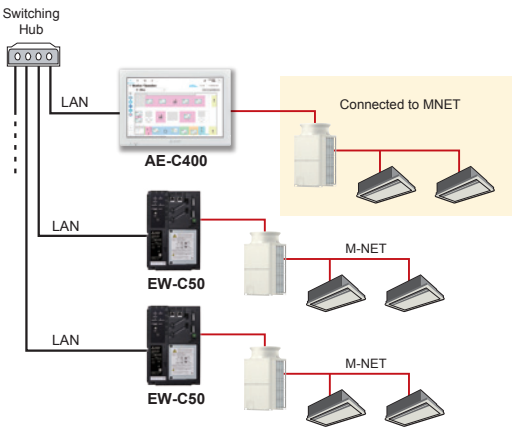
THE CHARGE FUNCTION DOES NOT REQUIRE A BACKUP CONTROLLER

When using the charge function, the conventional AE-200 system requires a dedicated backup controller not connected to M-Net, while the AE-C400(X) system does not require a backup controller. Reducing the number of required system controllers results in reduced system costs.

CONVENTIONAL AE-200 SYSTEM



AE-C400(X) CONVENTIONAL SYSTEM




31/03/2024
13.56
Energy Management
Usage Status
Ranking
Target Value
Peak Cut
CSV output
03/2024
1F Office
03/2024
2F Office
Electric Power
Outdoor Temp.
Electric Power
Outdoor Temp.
Change
1F Office
Electric Power
Outdoor Temp.
2F Office
Electric Power
Outdoor Temp.
12:00 - 13:00
32℃
55%
30min

CENTRALISED WEB SERVER CONTROLS

AE-C400(X) / EW-C50(X)

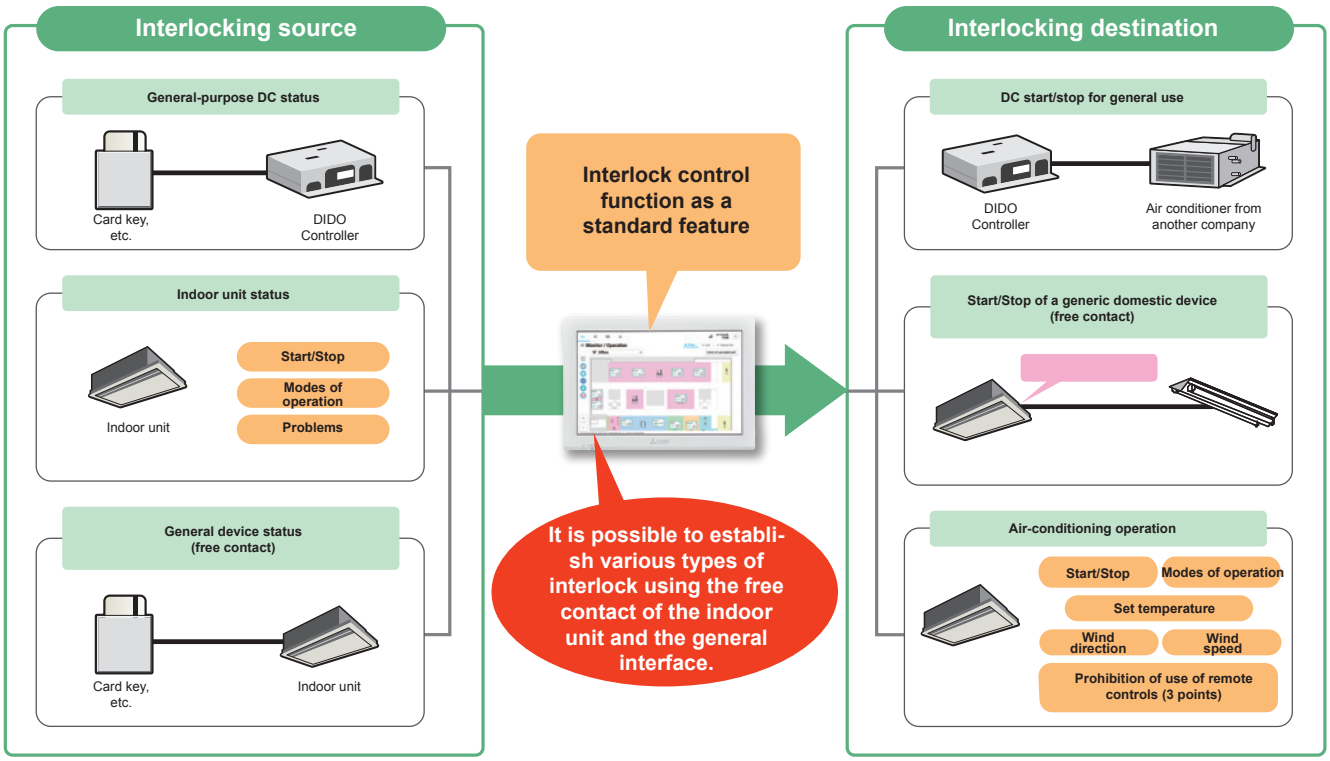
Interlock control function

INTERLOCK OPERATING DIAGRAM

Interlocks with air-conditioning, ventilation and general-purpose devices can be set* by using the DIDO controller input contact state changes (PAC-YG66DCA) and the start/stop state of the indoor unit as input conditions for the interlock source.

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

INTERLOCKING CONTROL IN A WIDE RANGE OF AIR CONDITIONING, VENTILATION AND GENERAL PURPOSE DEVICES



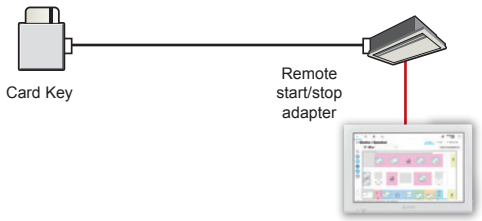
Examples of the use of interlock control	
Interlocking between card key and air conditioners	The air conditioning units are switched on and off by inserting and removing the card key.
Safety interlocking	• The representative indoor unit is stopped by a safety signal (last output signal). All air conditioners are stopped using this representative indoor unit as an interlock source. • The safety release signal generated by the first person to enter the room starts the target ventilation equipment.
Changing modes	The air-conditioning mode is switched by an external contact.
Interlocking with ventilation equipment	Ventilation equipment from other manufacturers is started at the same time as the operation of an indoor unit.
Interlocking between air conditioners	When an indoor unit is out of service, an auxiliary air conditioner is started.
Interlocking with lighting equipment	The on/off status of lighting equipment is controlled together with the on / off status of an indoor unit.

* Do not use this function for controls related to disaster prevention (opening and closing fire dampers, etc.). Do not use it for life-critical applications in particular

CARD KEY INTERLOCKING IN HOTELS

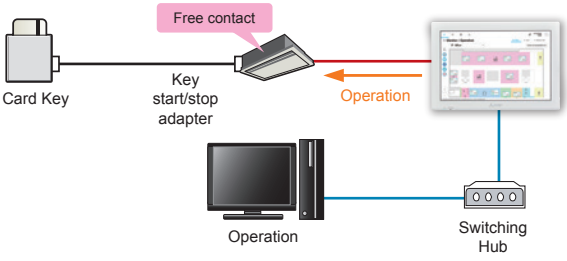
Without interlock control function

When the magnetic key is inserted, the air conditioning turns on.
When the magnetic key is removed, the air conditioning turns off.

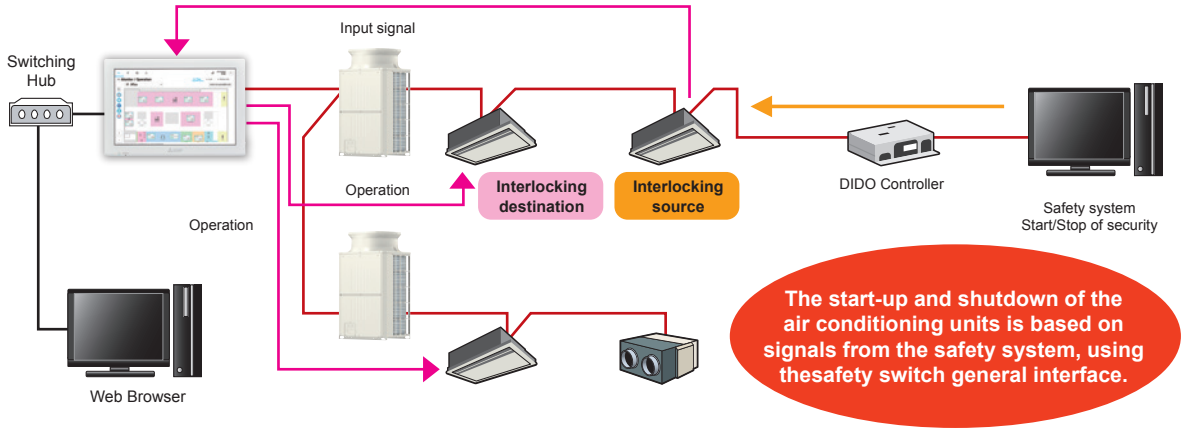


With interlock control function

When the magnetic key is inserted, the air conditioning turns on.
When the magnetic key is removed, the air conditioning turns off.



SECURITY LOCK IN THE TENANT'S BUILDING



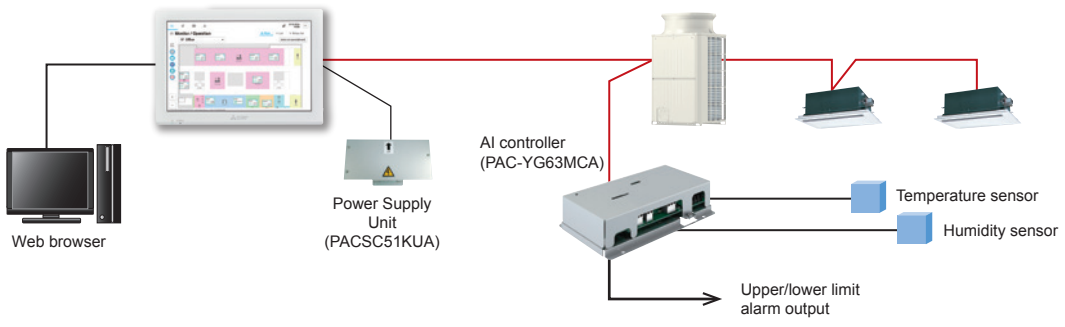
- **Prevention of forgetting to switch off air conditioners**
  The safety start signal is sent to the DIDO controller. → All internal units are stopped.

- **Waste prevention in the operation of air conditioners**
  Security is released by the first person to enter the room. → To avoid waste in the operation of air conditioners, only LOSSNAY is switched on.

Air conditioners to be operated for 24 hours a day can be excluded from the range of safety interlocks

TEMPERATURE AND HUMIDITY CAN BE MONITORED BY THE AI CONTROLLER (PAC-YG63MCA)

Analogue information from commercially available temperature and humidity sensors can be measured by the AI controller (PAC-YG63MCA) and retrieved in the AE-C400(X). This allows temperature and humidity to be monitored and recorded on the AE-C400(X) and personal computers. When the temperature or humidity is above or below the upper or lower limit, an alarm (relay output) can also be issued from the AI controller.



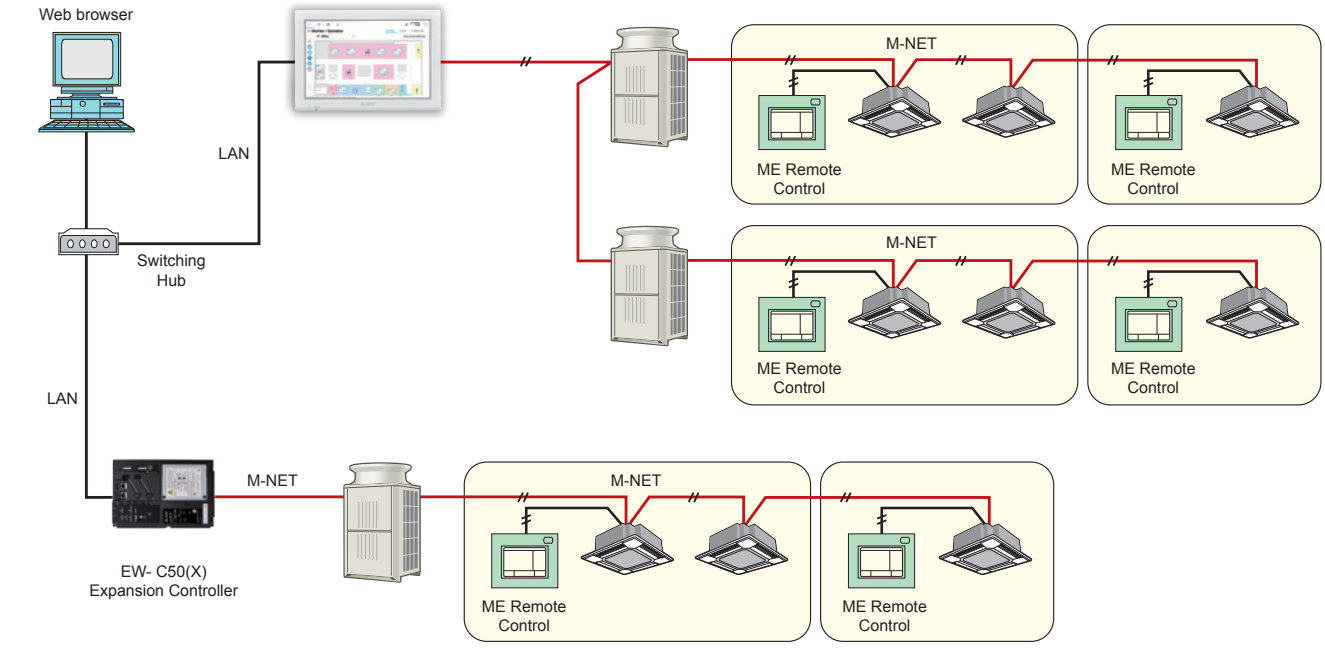
CENTRALISED WEB SERVER CONTROLS

AE-C400(X)

AE-C400(X) technical specifications

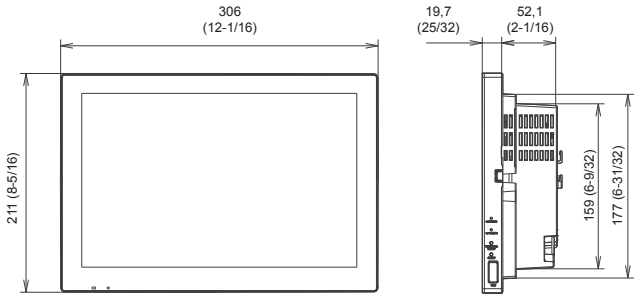
AE-C400(X)/EW-C50(X) CENTRALISED AIR CONDITIONING CONTROL SYSTEM

EXAMPLE OF SYSTEM CONFIGURATION



DIMENSIONS

AE-C400(X) controller



Unità: mm (in)

Table of specifications

Article		Technical Specifications
Power supply	Evaluation	100-240 VAC ±10%, 50/60 Hz, single-phase
Energy 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)
Environmental 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%-90% RH (without condensation)
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 recessed, the controller protrudes 19.7 mm (25/32 in) from the wall or metal control box.
Weight		2.9 kg (7 lbs)
Installation conditions		Indoor only * This controller must be used in an indoor environment or equivalent.

Functions* Functions and specifications are subject to change

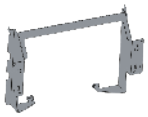
Article	Description	Operations	Display
Number of controllable units	Up to 50 units/50 groups		
ON/OFF	ON and OFF operation for air conditioners and general equipment. (PAC-YG66DCA is required for general equipment operation).	○ ◎ △ ●	○ ◎
Modes of operation	Switches between operating modes depending on the air conditioner. Climate control: Cool/Dry/Auto(*)/Ventilate/Heat LOSSNAY Units: Heat Recovery/Bypass/Auto CAHV, CRHV, air-water units (PWFY): heating, ECO heating, hot water, antifreeze, cooling(**) * Auto mode is reserved for the CITY MULTI R2 and WR2 series. ** PWFY only	○ ◎ △ ●	○
Temperature setting	Cold/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 temperature range depends on the air-conditioning unit. [ ] when using the average temperature on PDFY, PEFY-VML/VMR/VMS/VMH by setting DipSW7-1 to ON. However, PEFY-P-VMH-E-F is excluded.	○ ◎ △ ●	○
Setting the fan speed	Models with 4 airflow speed settings: Hi/Mid-2/Mid-1/Low Models with 3 airflow speed settings: Hi/Mid/Low Models with 2 airflow speed settings: High/Low The fan speed setting (including the Auto function) varies depending on the model.	○ ◎ △ ●	○
Setting the airflow direction	Airflow direction angles, 4 or 5 angles Oscillation, Auto (slit cannot be set)	○ ◎ △ ●	○
Programming operation	Weekly programming can be set up by groups according to the daily operating pattern	○ ◎ △ ●	○
Allow/prohibit local operation	Inhibits the operation of each function of the local remote control individually. (ON/OFF, Operating mode, Set temperature, Reset filter mark, Air direction*, Fan speed*, Timer*) * This function depends on the model.	○ ◎ △ ●	○
Indoor unit intake temperature	Measures the suction temperature of the indoor unit only when it is running	×	○
Alarm	When an error is occurring on a conditioning unit, the affected unit and the error code are displayed.	×	□ ◎
Performing the test	It works with air-conditioning units in test operation mode	○ ◎ △ ●	○
Ventilation blockage	The ventilation unit (LOSSNAY) can automatically start its operation when the operation of the interlocked indoor unit starts	○ ◎ △ ●	○
External input/output	Using the optional external input/output adapter (PAC-YG10HA-E), you can set and monitor how much continued. Input: By level signal: “Batch ON/OFF”, “Batch emergency stop”. Via pulse signal: “Batch ON/OFF”, “Enable/disable local remote control” Output: “ON/OFF”, “Error/Normal”.	◎	◎
Energy Management	Bar graph: Indoor unit electricity, FAN running time, thermostat switch-on time (TOTAL, cooling, heating) can be displayed every hour, day and month. Line graph: Outside temperature, room temperature, set temperature (heating, cooling) input from PAC-YG63MCA and temperature from AHC.	×	□ ○ ●

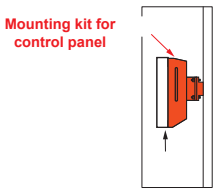
Each unit: □ Each group: ○ Each block: ● Each floor: △ Collective: ◎ Not available: ×

OPTIONAL PARTS AE-C400(X)

MOUNTING KIT FOR CONTROL PANEL PAC-YK96TK

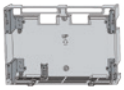
The AE-C400(X) can be installed in a control panel using the bracket and DIN rail mounts contained in the mounting kit.

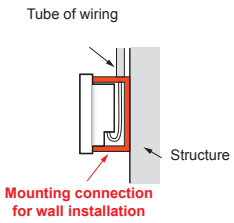




MOUNTING CONNECTION FOR WALL INSTALLATION PAC-YK92TB

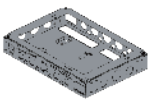
The AE-C400(X) can be installed on a non-drillable wall (e.g. a concrete wall) using a assembly.

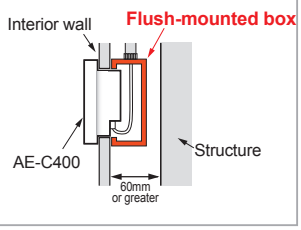




ELECTR UIT FLUSH-MOUNTING BOX PAC-YK94UTB

The AE-C400(X) can be installed inside the wall through t h e use of a box recessed for electric circuit





CENTRALISED WEB SERVER CONTROL

EW-C50(X)

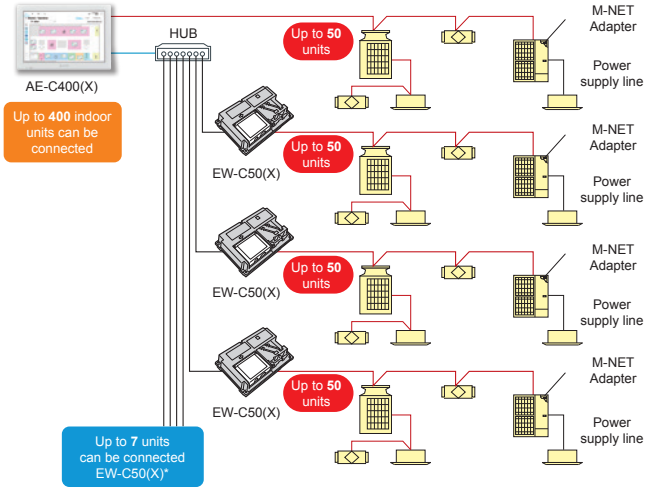
Technical Specifications EW-C50(X)

EW-C50(X) CENTRALISED AIR-CONDITIONING CONTROL SYSTEM.

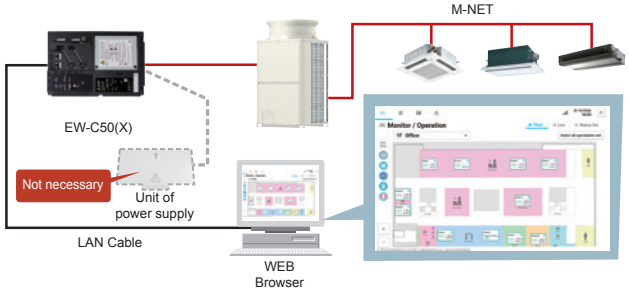
Can be used as an expansion controller for AE-C400(X)
When 7 sets of EW-C50s are connected to the AE-C400(X), up to 400 indoor units can be managed and monitored by the AE-C400(X).

EW-C50(X) without LCD screen

Air conditioners can only be managed and monitored with the EW-C50 using a personal computer, tablet or smartphone.
Without the AE-200, air conditioners can only be monitored and managed with this controller using the browser software*1 of a personal computer. They can be monitored and managed remotely via the Internet, and air conditioners in some buildings can be managed simultaneously*.2



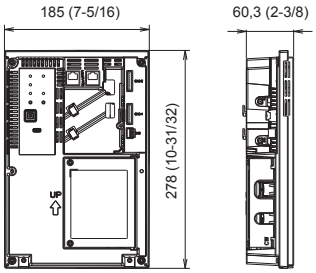
*When not using the AE-C400(X)'s M-NET, up to 8 sets of EW-C50(X)s can be connected.



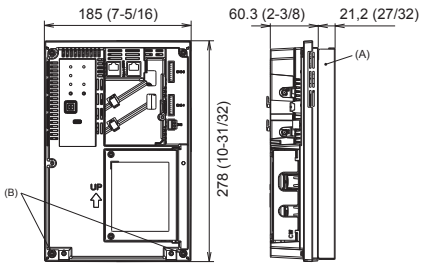
*1. In the case of Windows, Microsoft® Edge or Google Chrome is required. In the case of Macintosh, Safari 7 is required. Windows and Microsoft® Edge are registered trademarks of Microsoft Corporation in the United States and other countries. iPad and Safari are registered trademarks of Apple Inc. in the United States and other countries. Google Chrome is a registered trademark of Google Inc.
*2. Company and product names in the text may be trademarks or registered trademarks of their respective companies. When connecting the EW-C50 to the Internet, avoid connecting it directly to the Internet. Connect it through a router or similar device equipped with a VPN function to ensure security

DIMENSIONS

(Specifications) (technical)
(EW-) (C50)



Installation on a panel inside a metal control box



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

Article		Specifiche tecniche
Power supply	Evaluation	100-240 VAC ±10%, 50/60 Hz, single-phase
Energy 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)
Environmental 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%-90% RH (without condensation)
Exterior		Body: electro-galvanised sheet steel Lid: 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 installation frame)
Weight		1.9 kg (5 lbs)
Installation conditions		In the metal control box installed inside

Functions* Functions and specifications are subject to chan

Article	Description	Setting the Display	Display
ON/OFF	Activates or deactivates air conditioners and equipment in general.	◎	◎
Switching the operating mode	Switches to cold, dry, automatic, fan or hot operation. * Depending on the unit, some modes are not available	◎	○
Setting the room temperature	The temperature can be set in the following range. Values within the brackets refer to average temperature indoor units. * Depending on the model, the set temperature range varies. · Cooling/drying: 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 (double set point) [Cold] Same as the temperature range set for the Cold mode. [Heat] Same as the temperature range set for Heat mode. · Setback (double set point) [Cold] Same as the temperature range set for the Cold mode. [Heat] Same as t h e temperature range set for Heat mode.	◎	○
Set the temperature in 0.5°C increments	The temperature can be set and displayed in 0.5°C increments. * With some unit combinations, the temperature is set in 1°C increments.	◎	○
Setting the fan speed	The fan speed can be set to 4 levels, 3 levels, 2 levels or automatic. * Available fan speeds vary depending on the unit.	◎	○
Setting air direction	Fixed oscillation in five levels or automatic air direction can be set. * Available air directions vary depending on the unit.	◎	○
Prohibition of local remote control operation	It is possible to disable the ability to use the local remote control to start or stop, the operating mode, temperature setting, filter sign reset, wind speed and direction, and timer operation. * In the Lossnay group, only the ON/OFF and filter reset can be deactivated. * Disabling of fan speed, air direction and timer operation can be set for models AT-50B, PAR-41MAA, PAR-U02MEDA and PAC-YT52CRA.	◎	○
Room temperature display	Displays the suction temperature of the indoor unit.	-	○
Error Display	Displays the content of the current error together with the address	-	◎
Programming operation	Today/weekly/season/yearly Content of settings: ON/OFF, operating mode, set temperature, local remote control deactivation, air/ventilation direction	◎	○
Energy Management	Displays energy consumption* or hours of operation. * Requires an optional part.	-	◎
Fan operation (alone)	Group operations are only possible for Lossnay free-form units. * The operating mode of the above unit includes automatic ventilation, heat exchange and normal ventilation.	◎	○
Fan operation (interlocked)	Free-standing Lossnay units and indoor units can be linked together and run together. * At this point the air volume can be managed, but the ventilation mode cannot be selected.	◎	○
External input (timer connection, emergency stop input, etc.).	Using a level signal or pulse signal, the following can be input. Level signal: Emergency stop input, Batch ON/OFF and request input. Pulse signal: Batch ON/OFF or Disable/Enable operation. * Requires an external power supply and an external I/O adapter sold separately (PAC-YG10HA-E). Of the above inputs, only one can be selected.	□	-
External output (exit by error, exit by operation)	Using the level signal, the ON/OFF and Error/Normal signals are emitted. * Requires an external power supply and external I/O adapter sold separately (PAC-Y- G10HAE).	-	□
Web browsers	Monitoring/operation, failure, filter sign monitoring, programme setting, interlocked control setting (option), energy - saving control setting (option), energy-saving peak reduction setting (option), temperature range limitation setting, other	◎ *1	◎ *1
Resetting the filter	Resetting the filter mark	○	○
Connectable position	Centralised system transmission line: Connectable Recommended Internal and external transmission line: Connectable	-	-

Per group or multiple groups: ◎ Group: ○ Batch only: □

* Functions and specifications vary depending on the connected equipment and model.
* Electricity can be split proportionally with the EW-C50(X) alone. The power splitting function, however, requires an AE-C400(X).

■ Connectable equipment: Direct expansion free plan air conditioner Inverter air conditioner for structure
Installation air conditioner (model with AW control can be connected using an M-control compatible indoor unit) A Control Mr. Slim (can be connected using an M-NET adapter or a special outdoor unit)
Kirigamine air conditioner (Requires system control interface or M-NET control interface)
Lossnay/Lossnay free plan with heating and humidification
Independent humidification unit *2
Environmental measurement controller, metric measurement controller, general interface

■ Notes
*1. Some entries do not support the setting and display of multiple groups.
*2. Use only those items for which the unit has the function.

CENTRALISED WEB SERVER CONTROLS

AE-C400(X) / EW-C50(X)

Ready for MELCloud Commercial function

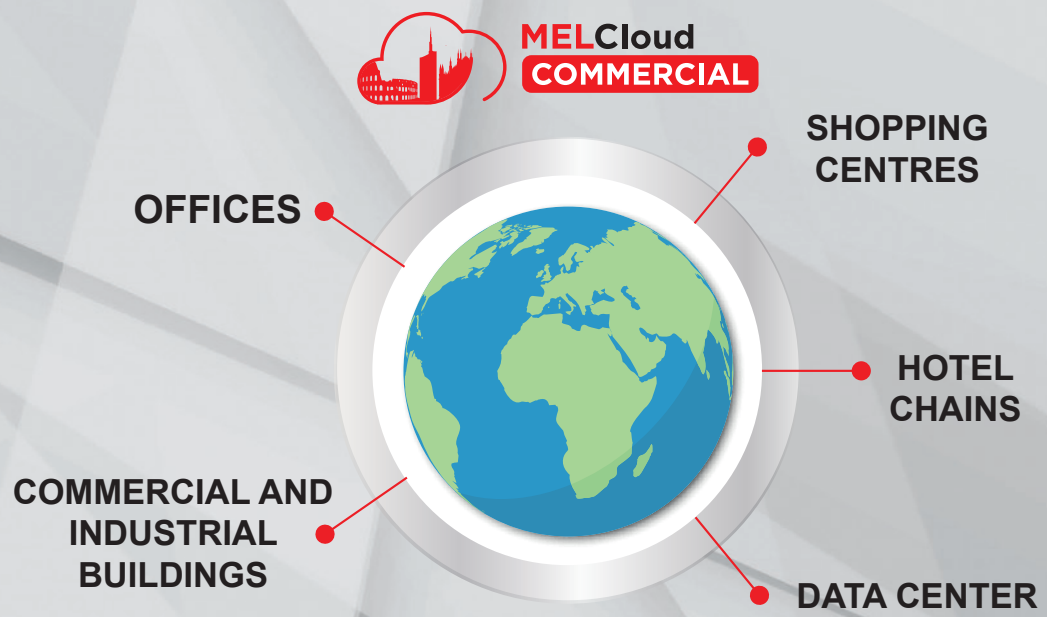
What is MELCloud COMMERCIAL

MELCloud Commercial is the remote control for the Mitsubishi Electric air-conditioning system. Leveraging cloud technology, **MELCloud Commercial** enables **remote management, energy monitoring** and **maintenance** of Mitsubishi Electric Climate **Solutions** accessible from PCs, Tablets and Smartphones

Manage and control your building in the cloud

The Internet of Things (or IoT) is a revolution that started a few years ago. The growing number of devices connected to the Internet offers us more and more services and information in our daily lives.

We have developed a solution to connect our systems to a cloud platform, offering real added value to all stakeholders involved in the design, construction, operation and maintenance of a building.



MELCloud COMMERCIAL, control in the palm of your hand wherever you are

Connection

LAN
RJ45

Multisite
Management

Designer

Energy
Management
Platform

Owner
building

DESIGN OFFICE
ENERGY MANAGER
DESIGNER
MELCloud
COMMERCIAL

Maintainers

Building
manager

Installers

Why MELCloud?

The **MELCloud Commercial** solution is able to inform you about the electricity consumption of your building.

It is also important to know that our equipment can account for up to **60% of a building's electricity consumption**.

Our **MELCloud Commercial** platform will allow you to find out how electricity is being used, set the temperature, view errors and alarms, etc... so you have the tools to **OPTIMIZE** your building's energy consumption.

The offer is applicable to existing and new Mitsubishi Electric systems.

CENTRALISED WEB SERVER CONTROLS

AE-C400(X) / EW-C50(X)

Home automation systems, more properly BACS

BACS - BUILDING & AUTOMATION CONTROL SYSTEM LEGISLATIVE DECREE NO. 48/2020

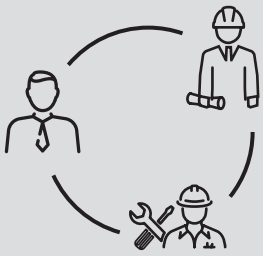
A technological solution in line with European legislation, designed to improve the energy efficiency of buildings.

The user experience and the condition of the system, together with the technology BACS (Class B or higher - EN 15232), still represent concrete tools for monitoring, remote control and optimisation of consumption.

OBLIGATION TO REDUCE THE FINAL ENERGY CONSUMPTION OF ALL BUILDINGS WITH PERIODIC INDICATIVE TARGETS FOR 2030, 2040 AND 2050.

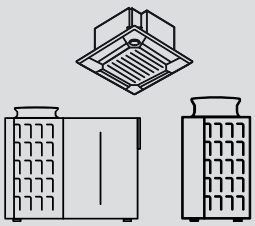
Installation of **BACS** systems with the **50%** Ecobonus

THE PUBLIC AFFECTED BY THE 'BACS' DECREE



Building owners, developers, architects project managers builders and operators.

WHAT IS IT AIMED AT?



It clearly concerns the regulation and management of air conditioning, heating, air conditioning and room ventilation systems.

GOAL

Implementing automation and control systems, management and supervision systems for non-residential buildings, automatic regulation systems in heating and cooling systems in control systems.

CENTRALISED WEB SERVER CONTROLS

AE-C400(X) / EW-C50 (X)

MELCloud Commercial is suitable for all types of buildings and customers

OFFICES

Controlling and controlling the Mitsubishi Electric system remotely also makes it possible to know the status of the system and to avoid using it when not necessary. These activities are necessary to reduce both consumption and CO_2 emissions.

HOTEL CHAINS

Remote diagnostics enables time-saving and more effective intervention in the event of faults, reducing room downtimes. According to statistics, in the hotel sector, electricity consumption in a hotel represents an important percentage of overall consumption. The ability to monitor consumption allows costs and CO_2 emissions to be reduced.

SERVICE AND FACILITY COMPANIES

MelCloud Commercial offers remote management and maintenance services in the cloud, using Maintenance Tool. This technology allows a reduction of operating costs and an optimisation of service efficiency, and can be combined with MELIS maintenance programmes, helping to pre serve the value of the building and improve service quality.

SHOPPING CENTRE

Melcloud Commercial allows you to effectively and intelligently manage and monitor your commercial building.

EDIFICI RESIDENZIALI

Remote control by residents allows for the ideal climate without wasting energy independently for each household.

DATA CENTER

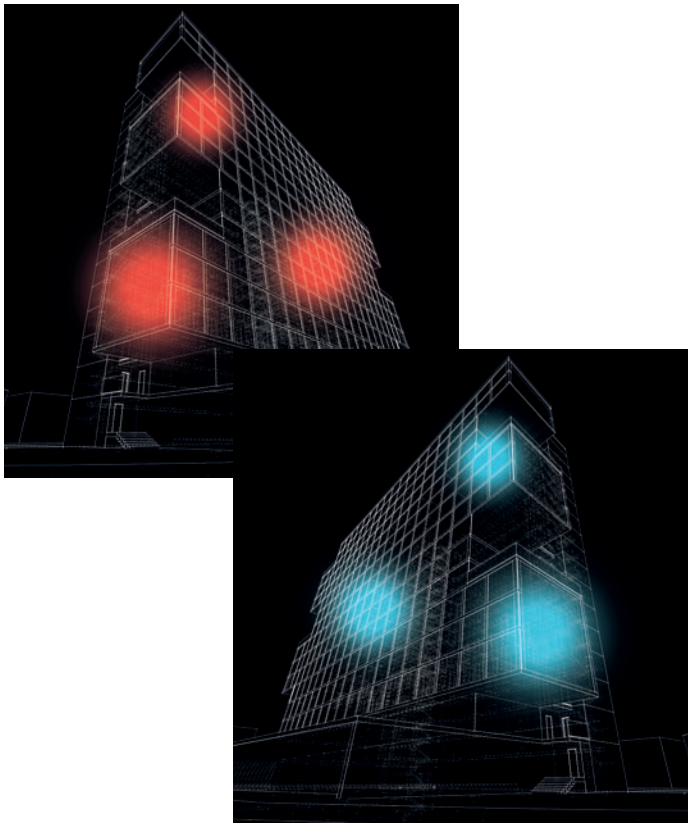
Remote diagnostics allow monitoring of all machine parameters of the Mitsubishi Electric system, avoiding possible system blockages.

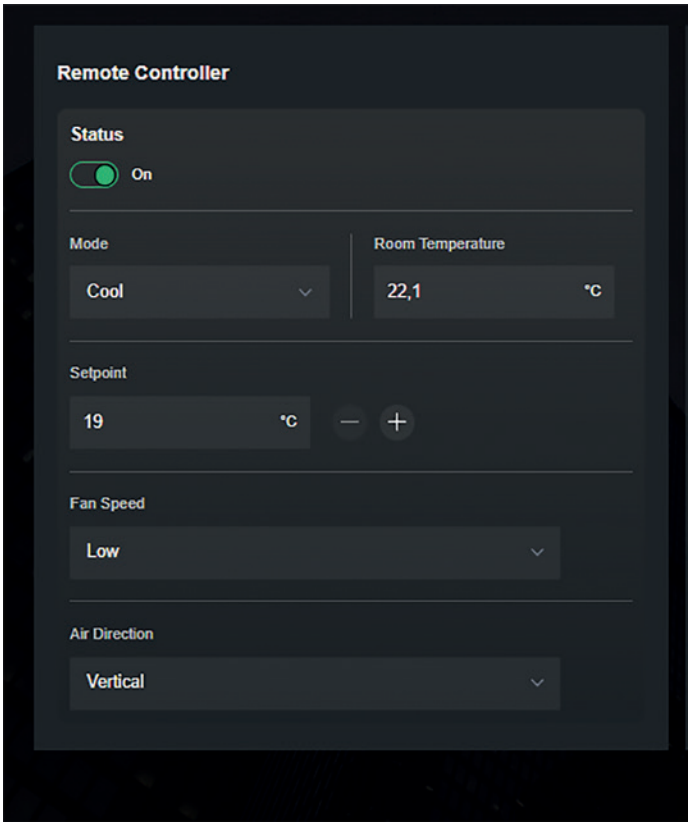
INDUSTRIALE

Remote diagnostics makes it possible to speed up the assessment of faults and to reduce intervention times so as to avoid slowing down production processes.

MELCLOUD COMMERCIAL - MANAGEMENT AND OPERATION

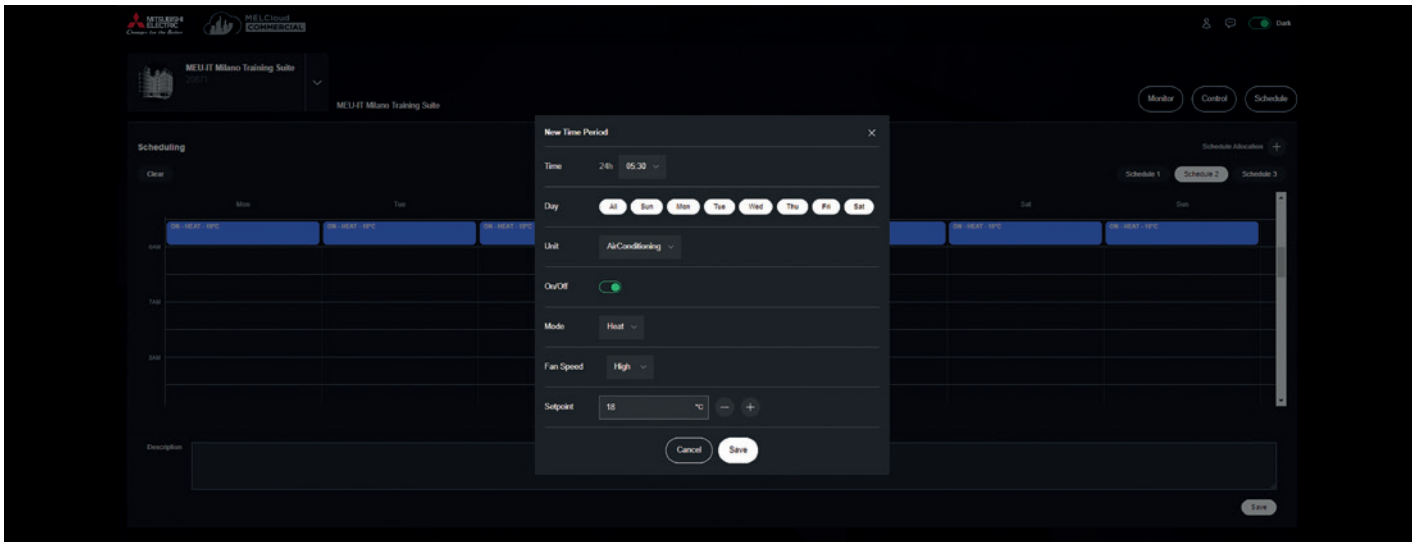
It manages your buildings intelligently by changing the operating mode of your units and instantly setting temperatures directly from your smartphone or tablet.





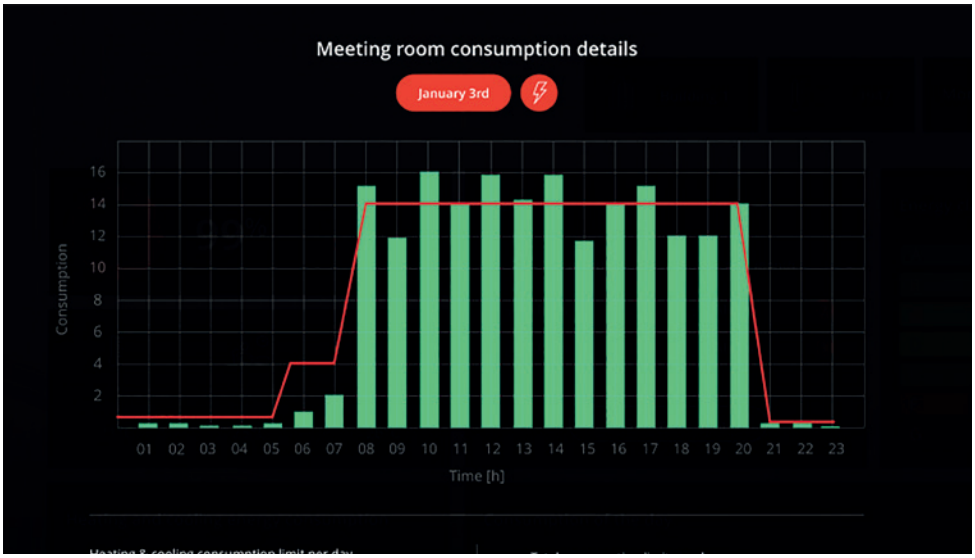
Scheduling/schedule:

To increase energy efficiency and optimise your installations, **set time slots** for your heating, air conditioning, ventilation and **Mitsubishi Electric** brand appliances.



MELCLOUD COMMERCIAL - ENERGY MONITORING

The energy dashboard developed on the **MELCloud Commercial** platform allows you to monitor the energy performance of your building in real time. It displays the consumption of electricity, water and gas, produced by the entire building, and calculates with the unique formula developed by Mitsubishi Electric how much each user and flat owner within their building or condominium has consumed.



MELCLOUD COMMERCIAL - MAINTENANCE AND SERVICE

MELCloud Commercial enables detailed monitoring of the overall performance of your products through a convenient platform. This monitoring provides valuable technical information to your maintenance teams, enabling them to stay one step ahead in performance management.

MELCloud COMMERCIAL

Mitsubishi Electric's unique cloud-based control system:

- Remote management of your VRF and HVRF systems;
- Monitoring and saving energy consumption;
- Reporting and maintenance of malfunctions.

For more information contact the
toll-free number: **800 20 80 70**
or write to **attivazione.melcloud@meeclima.it**

MITSUBISHI ELECTRIC

LIVING ENVIRONMENTAL SYSTEMS

Mitsubishi Electric Europe B.V. Italian Branch
Via Energy Park, 14
20871 Vimercate (MB)
Tel: +39 039 60531

The equipment described in this catalogue contain fluorinated HFC gasses with a GWP >1.
Installation of those equipment must be executed by professional installer based on EU reg. 303/2008 and 517/2014

BROCHURE AE-C400(X) EW-C50(X) (EXPORT)
E-2506289

E-2506289

https://les.mitsubishielectric.it/en/