

# AT-50B

## CENTRALISED SYSTEM CONTROLLER



### AT-50B centralised system controller

The new AT-50B centralised controller clearly belongs to the family of new Mitsubishi Electric control systems (AE-200, PAR-40MAA), with a gloss finish, glass-effect front panel and a modern, elegant design making it the ideal controller for residential applications.

The AT-50B features a backlit 5" touch screen allowing the user to monitor, configure and manage up to 50 indoor units or groups viewable in grid, list or group mode. Two programmable function buttons settable by the user for direct access to a choice of functions intended specifically for saving energy and ensuring that the VRF CITY MULTI functions correctly.

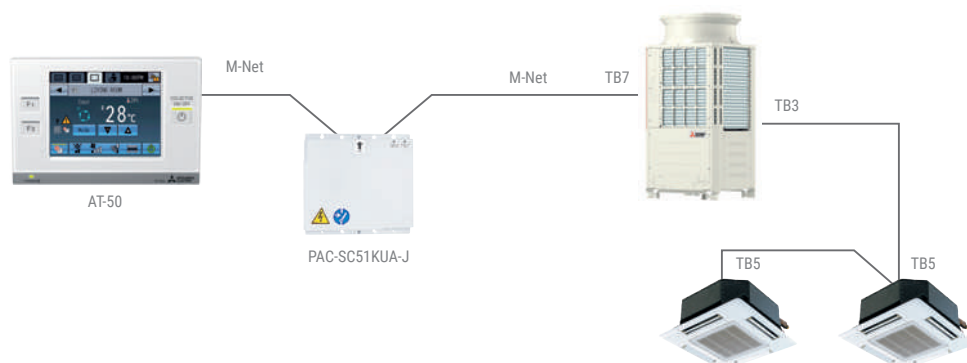
- 5" backlit LCD touch screen.
- Usable to manage 50 groups of up to 50 indoor units.
- Individual or collective group control, with groups displayed in grid, list or group format.

- Dual Setpoint function
- Two weekly timers (for seasonal switching) and one daily timer.
- Simple connection with single non-polarised two-core wire.
- ME M-Net addressing technology.
- Two function buttons programmable to access any of a choice of functions (Night Set-back, weekly timer setting, switch operating mode, adjustable temperature range restriction, local restrictions).
- Recommended for controlling a single system.
- The PAC-SC51KUA external power supply is needed for controlling more than one system.

### Technical specifications

MODEL	DIMENSIONS (L X H X W)	WEIGHT	ELECTRIC POWER SUPPLY	M-NET UNIT POWER CONSUMPTION
AT-50B	180 x 120 x 30 mm	500 g	17-32 VDC (M-Net connection)	4 M-Net unit

#### ARCHITECTURE



## Key Technologies

								
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FUNCTIONS	DESCRIPTION	SETTING	DISPLAY
ON/OFF	Switches air conditioning units on and off. The LED on the Collective ON/OFF button lights when one or more unit is in use and extinguishes when all the units are off.	○	○
Operating mode	Switches between the different operating modes available, which depend on the units installed. Air conditioning units: Cool./Dehum./Auto(*)/Vent./Heat. Lossnay units: Heat recovery/Bypass/Auto Air-Water units (PWFY): Heat., ECO Heat., Hot Water, Antifreeze, Cool. *Auto mode only available for CITY MULTI R2 and WR2 units	○	○
Temperature settings	Used to modify temperature settings. The settable temperature range depends on the model of indoor unit installed.	○	○
Enable/disable local operations	The following remote control functions may be disabled from specific settings on the centralised controller: ON/OFF, select operating mode, set temperature, fan speed, air flow direction, reset filter indicator lamp.	○	○
Error	The LED on the Collective ON/OFF button flashes in the event of an error on the AT-50B controller unit or any of the units or control units it controls. In the event of an error relative to indoor or LOSSNAY units, the icon for the relative group appears in the HOME screen. The error code may be viewed and reset from the Status List screen.	×	□○
Ventilation (independent)	Switches between Bypass/Heat recovery/Auto modes for the Lossnay unit.	○	○
Ventilation (interlocked)	The Lossnay ventilation unit starts automatically when the relative interlocked indoor unit starts.	○	○
Settable temperature range restrictions	Limits for the user settable temperature range may be defined for a group for cooling, heating and auto modes. This function is not available with the MA controller. Availability depends on the model of indoor unit installed.	○	○
External inputs/outputs (emergency shut-off etc.)	Allows the following activities to be configured and monitored by using an optional adapter for external input and output signals (PAC-YT51HAA, purchasable separately): Input: Level signal: "ON/OFF", "Emergency shut-off". Impulse signal: "ON/OFF", "Enable/disable local remote control". Output: "ON/OFF", "Error/Normal"	○	○
Weekly/daily schedule	Lets the user programme a weekly schedule for each group. Up to 16 of the following event types may be set in a schedule: ON/OFF, select mode, set temperature, set fan speed, set air direction, enable/disable local operations. Up to 12 schedules are available for the Weekly Schedule timer mode. Up to 5 schedules are programmable for Daily Schedule timer mode.	○	○

○ Each group □ Each unit ○ Collective × Not available



# WEB Server centralised controllers

The management and supervision technology used for VRF CITY MULTI systems is based on continuously evolving solutions borrowed directly from the Internet.

## Ethernet - A global standard

Ethernet is the most widely used local area data communication network technology in the world. The key advantages of this communication technology are its low costs and simplicity of installation and operation. Conceived originally for connecting PCs only, over time, the Ethernet network has grown to become the most widely used means for connecting not only other office devices (printers, fax machines, scanners, photocopiers), but also for connecting a multitude of other devices and transmitting a wide variety of different types of signal, from audio and video signals to, in the case of Mitsubishi Electric applications, data for WEB Server 3D centralised controllers.

The main reason for choosing this technology is that it makes it possible to use an existing single wired network extending throughout the entire building.

A network connecting a geographically limited area is denominated LAN (Local Area Network). A LAN network is often limited locally to a single site. The term WAN (Wide Area Network) indicates a set of devices or LAN networks connected over an extended geographic area. These may often be connected either by telephone line or with other forms of connection (such as broadband ADSL, fibre optic lines or satellite link). One of the largest existing WAN networks is the internet.

## What is a WEB Server?

The primary function of a WEB Server device is to deliver web pages in response to requests from network clients. This means being capable of delivering HTML documents and all other types of additional content which may be included in these document, such as images, styles and JavaScripts.

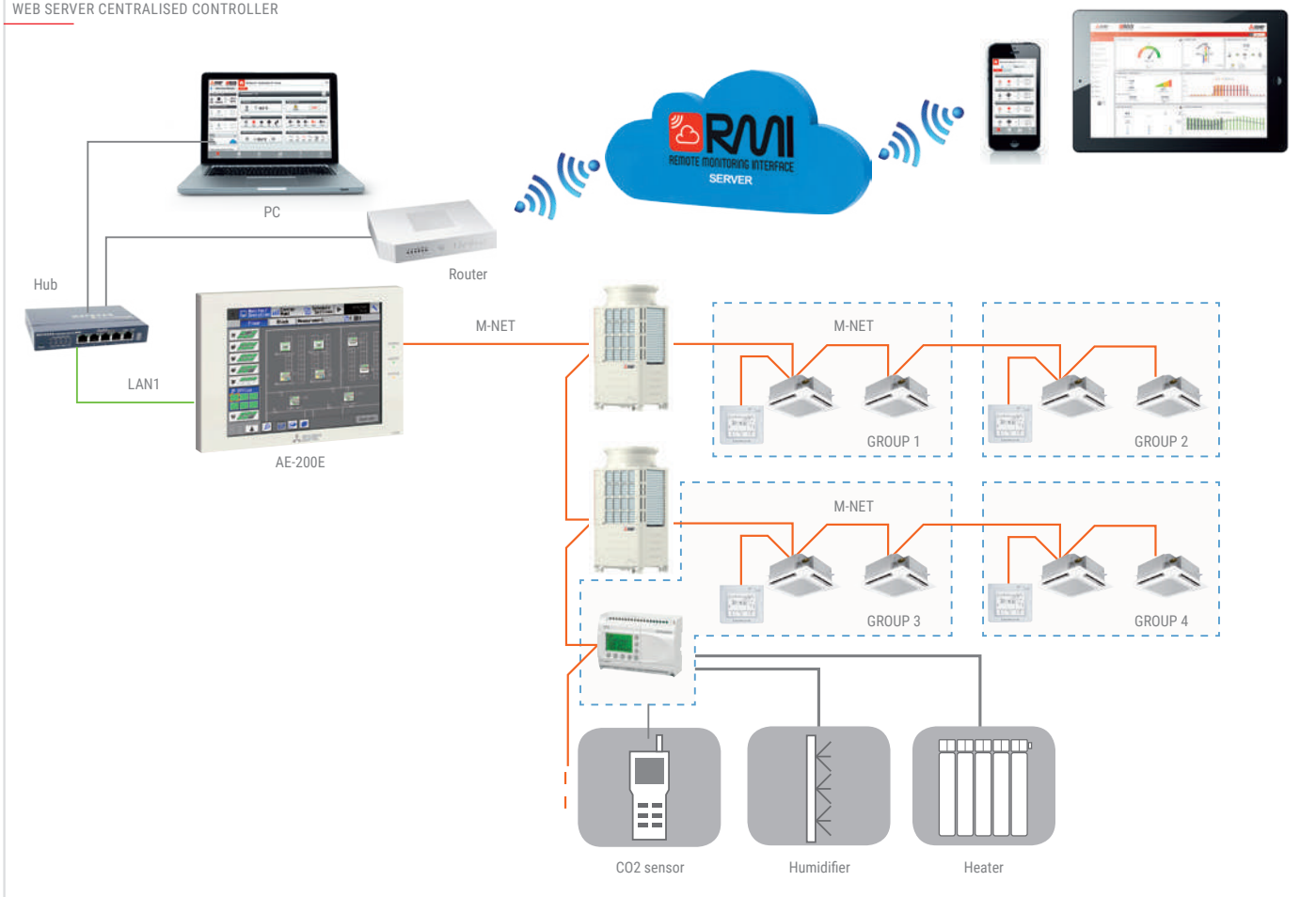
A client, which may simply be a standard web browser such as Internet Explorer®, initiates communication by sending an HTTP request to the Web server. The Web server then responds by delivering the requested content. This means that it is not necessary to install any additional software on the client, which may therefore be any PC (not necessarily dedicated to this application) with internet access.

Mitsubishi Electric WEB Server centralised controllers use Ethernet as the data link protocol for LAN (Local Area Network), via a specific RJ-45 connection indicated for use with the TCP/IP suite of internet protocols.

To enable this communication, an IP network address must be assigned to each WEB Server centralised controller connected to the network.



## WEB SERVER CENTRALISED CONTROLLER



## Web Browser monitoring and control functions

WEB Server centralised controllers make it possible to monitor and manage the operating parameters of all the indoor units in the installation from any PC on the same local network (LAN or Wi-Fi network of controller) via a web browser.

From this screen, the administrator may also check for malfunctioning indoor units and prevent units from being unintentionally left running for prolonged periods of time.

## WEB BROWSER MONITORING AND CONTROL FUNCTIONS





## Management, functional and monitoring capabilities of new Mitsubishi Electric controller systems

WEB Server centralised controllers support the management, operational and monitoring capabilities of all the new functions offered by the new PAR-U02MEDA remote controller. Information concerning occupancy, light levels, relative humidity in the indoor space and dual setpoints etc. is accessible directly from the display and via the WEB.



## Integrated management of impulse meters

WEB Server centralised controllers are capable of acquiring the output signals from wall or electrical cabinet mounted digital impulse consumption meters. With the centralised controller, it is now possible to monitor the consumption of the installation with any electric power (WHM), water, and gas consumption meters and calorimeters producing an impulse type output signal.

Up to 4 digital meters may be connected to each individual centralised controller. The administrator may monitor the status of the meters connected to each controller and:

- View real time consumption values
- View consumption graphs
- Export consumption billing data in CSV format for consumption apportioning (CHARGE).

## CHARGE consumption metering and apportioning system

The Charge consumption monitoring and apportioning system may be used to meter the consumption of electric power, thermal power and water for air conditioning, air and/or water heating and domestic hot water production with a Mitsubishi Electric VRF CITY MULTI system, and calculate individual usage values.

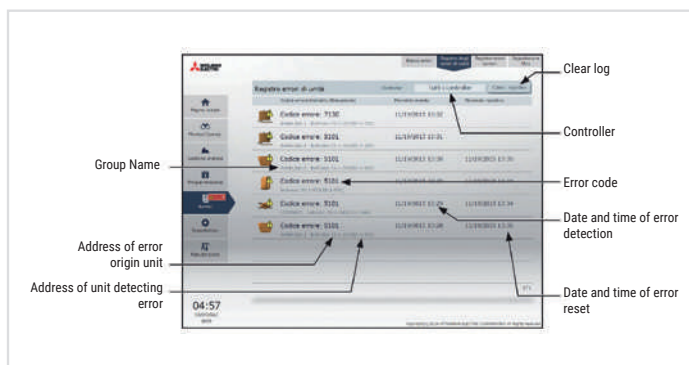
The AE-200 and EW-50 CHARGE systems use proprietary Mitsubishi Electric calculation and apportioning methods. This consumption apportioning method indicates the consumption parameters of each user as percentages of the total consumption of the system. Consumption values, as percentages and kWh, may be calculated separately for:

- Indoor units
- Ecodan HWS Hydronic Modules
- Ecodan ATW Hydronic Modules

See paragraph relative to Technical Services for more information.

## Unit error log

The unit error log displays a list of the last 64 unit errors for each AE-200/ EW-50, complete with the date and time of detection of the error, the error code and the address of the unit from which the error originated.



## Error list

List of currently active errors.



## RMI Ready



WEB Server centralised controllers perform the crucial role of acquiring and monitoring data via the M-Net data transmission bus linking all the components of the VRF CITY MULTI, Mr. Slim or Residential system. A router (available as wired ADSL or 3G Mobile versions) creates a secure, protected communication channel with the RMI Server. The modular flexibility of the RMI Server makes it possible to store enormous volumes of data, which is acquired, processed and archived for access from portable devices.

This infrastructural complexity, combined with superior processing, management and security capabilities, is encapsulated in an extremely user friendly concept, to help users optimise the energy usage of their systems.

## BACnet® connection

WEB Server centralised controllers may be connected directly to a home automation system using the BACnet® protocol. These units have two ethernet cable ports, for connection respectively to the local LAN network dedicated to the air conditioning system and the LAN network of the BMS. This makes it possible to integrate the Mitsubishi Electric installation in a home automation system without the addition of a dedicated interface board.



