MITSUBISHI ELECTRIC
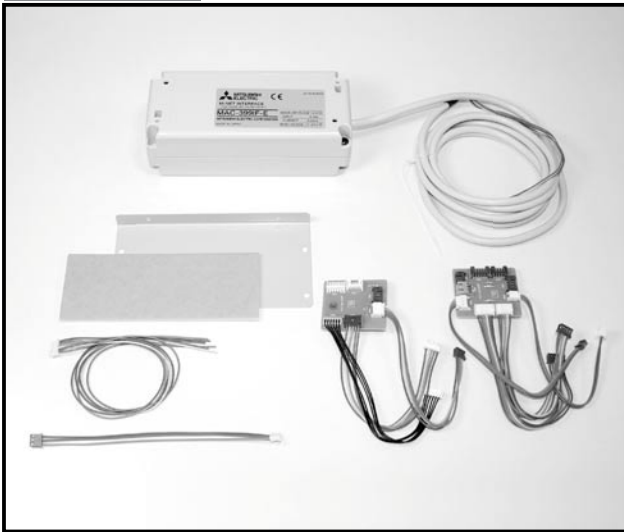
M-NET Interface

CE

MAC-399IF-E

Photo

Descriptions

Enables centralized and individual control of M series and S series models with new -A control using M-NET.
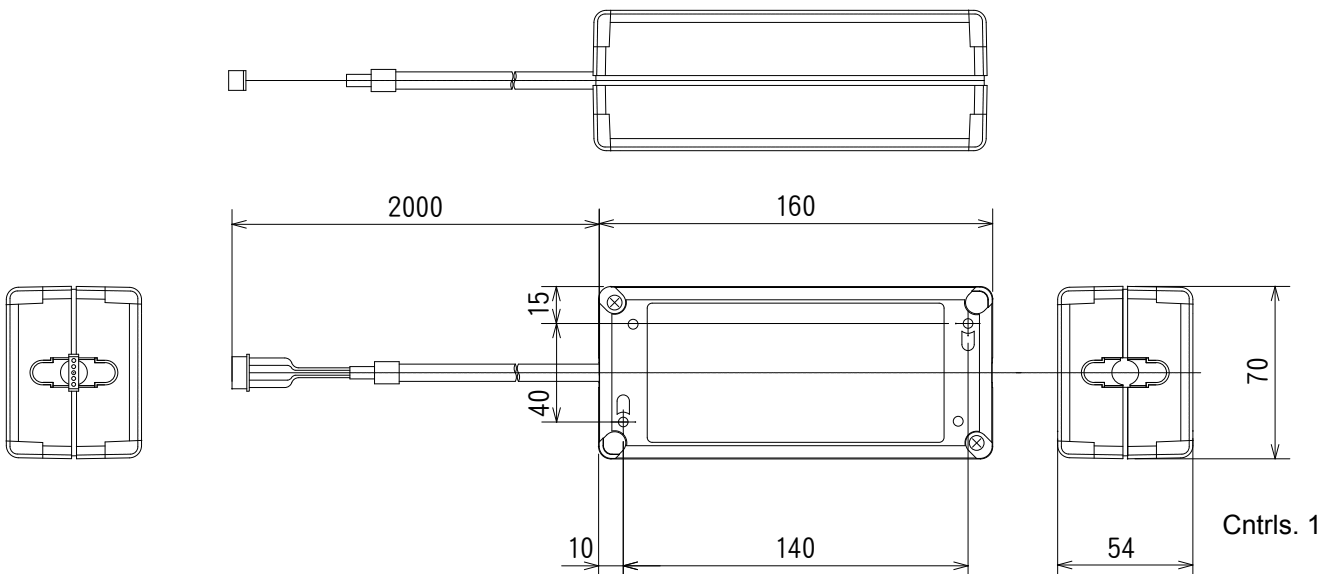
Applicable Models

- MSZ-A09/12/15/17/24/NA
- MSY-A15/17/24NA
- SEZ-KD**NA
- SLZ-KA
- MSZ-FD09/12NA
- MSZ-GE09/12/15/18NA
- MSZ/Y-D30/36NA

- MSZ/Y-GA24NA

Specifications

Power	12VDC (supplied from indoor unit)
Operating conditions	Indoor only (ambient temperature: 0 to 40℃, no condensation)
Indoor unit connecting cable	Dedicated 5-wire cable
Weight	350g (including indoor unit connecting cable)

Outline and Dimensions

Unit : mm

2000   160

15

40

70

10   140   54

Cntrls. 1

Contents

1. Safety Instructions

- Read all Safety Instructions before using this device.
- This manual contains important safety information. Be sure to comply with all instructions.
- After installing the Interface, provide this Installation Manual to the user.
  Instruct users to store their room air conditioner Instruction Manual and Warranty in a safe location.

⚠ Warning

(Improper handling may have serious consequences, including injury or death.)

■ **Users should not install the Interface on their own.**
Improper installation may result in fire, electric shock, or damage/water leaks if the Interface unit falls. Consult the dealer from whom you purchased the unit or professional installer.

■ **The Interface should be securely installed in accordance with the enclosed Installation Instructions.**
Improper installation may result in fire, electric shock, or damage/water leaks if the Interface unit falls.

■ **The unit should be mounted in a location that can support its weight.**
If installed in an area that cannot support the unit, the Interface unit could fall and cause damage.

■ **Securely attach the electrical component cover to the Interface unit.**
If the electrical component cover of the Interface unit is not securely attached, dust or water penetration could occur, resulting in a fire or electric shock.

■ **Mitsubishi components or other designated components must be used for installation.**
Improper installation may result in fire, electric shock, or damage/water leaks if the Interface unit falls.

■ **When performing electrical work, adhere to the technical standards regarding electrical equipment and the interior wiring standards, follow the instructions provided in the Instruction Manual, and be sure to use a dedicated circuit.**
Inadequate circuit capacity or improper installation could result in a fire or electric shock.

---

2. Before Installation

2.1. How to Use the M-NET Interface

> ⚠ **Caution**
>
> **When using a packaged air conditioner (city-multi) system remote controller, you cannot register packaged air conditioners and room air conditioners in the same group. In this case, register the Packaged and room air conditioner in different groups.**

■ Functions

Centralized and individual management of M/P/S series using M-NET(*).

* A type of packaged air conditioner control (city-multi)

■ Related Products Sold Separately

• ME Remote Controller   PAR-F27MEA
• Centralized Controller   G-50A
• System Remote Controller   PAC-SF44SRA
• ON/OFF Remote Controller   PAC-YT40ANRA
• Schedule Timer (M-NET)   PAC-YT34STA
• Power supply unit   PAC-SC50KUA

■ Sample of System Configuration (only M/S series outdoor-unit)

Sample configuration of a system using a centralized controller
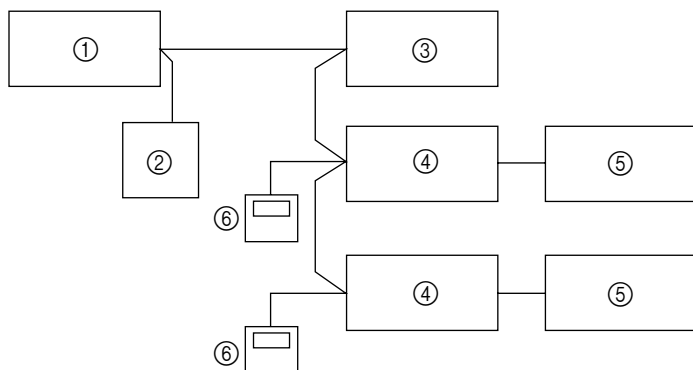
① Centralized controller (M-NET)
② Power supply unit
③ Packaged air conditioner system
④ M-NET Interface
⑤ Indoor unit
⑥ ME Remote Controller

* The number of units that can be connected to the centralized controller (G-50A) is max. 50, including packaged and room air conditioners. The wiring from the M-NET Interface to the centralized controller can have a maximum length of 500 m. The wiring from the M-NET Interface to the ME Remote Controller can have a maximum length of 10 m.
For details, see the MELANS Catalog and the instruction manuals for the Centralized Controller and ME Remote Controller.

2.2. Accessory

Before installing the device, make sure you have all the necessary parts.

■ Accessory

❶	Interface unit (with 5-core connecting cable)	1
❷	Mounting brackets	1
❸	Screws for mounting ❷ 3.5×12	4
❹	Cushioning material (with adhesive)	1
❺	Cord clamp for mounting (small)	2
❻	Mounting cord clamp (large)	2
❼	Screws for mounting ❺ and ❻ 3.5×12	2
❽	Screw for mounting ❺ and ❻ 4×10 * Use this when mounting cord clamp to and around M series.	1
❾	Screw for mounting ❺ and ❻ 4×16 * Use this when mounting cord clamp together with the parts of M series.	1
❿	Cable ties	4
⓫	Fasteners (for joining the lead wires)	5
⓬	Cord clamp for wiring	5
⓭	Screws for mounting ⓬ 3.5×12	5
⓮	Interface case mounting screws 3.5×12	2

■ Items to Prepare at the Installation Site

Ⓐ	Connection wiring (centralized controller) Shield wiring CVVS/CPEVS
Ⓑ	Connection wiring (for connecting the ME Remote Controller) Remote control wires (2-core sheath wire 0.3 mm²)
Ⓒ	Related parts sold separately * Prepare the necessary number of parts sold separately as needed for your system.

* CPEVS; PE insulated PVC jacketed shielded communication cable
* CVVS; PVC insulated PVC jacketed shielded control cable
   PE: Polyethylene   PVC: Polyvinyl chloride
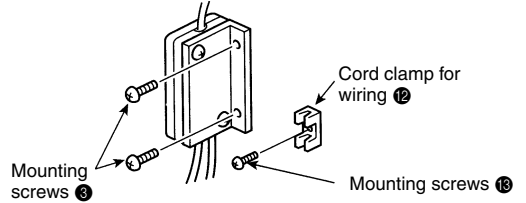
3. Mounting the M-NET Interface Unit

The M-NET Interface unit should be placed in a location where the 5-core connecting cable from the interface can reach an indoor unit. Do not extend the 5-core connecting cable. This will cause the device to malfunction.
Mount the interface unit securely to a pillar or wall using 2 or more screws.

■ When Using Wall Mounting Brackets ❷

**1** Attach the wall mounting brackets ❷ to the interface unit ❶ using 2 mounting screws ❸.

Interface unit ❶

Wall mounting brackets ❷
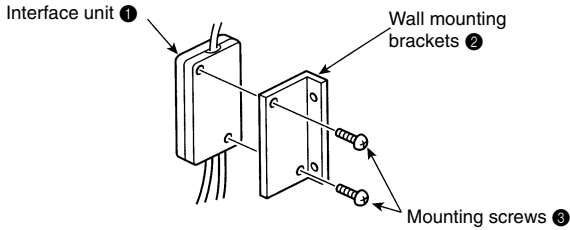
Mounting screws ❸

2 Mount the unit to a pillar or wall using 2 mounting screws ❸.

Cord clamp for wiring ⓬

Mounting screws ❸

Mounting screws ⓭

■ When Mounting Directly to a Wall

Mount the interface unit ❶ case to the wall using the mounting screws ❸.

Interface case mounting screws ⓮

Mounting screws ❸
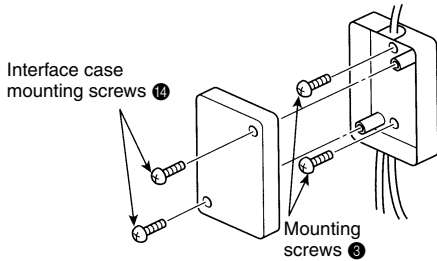
*   When mounting the interface unit ❶ using a cushioning material ❹, be sure to mount it in a location where it will not fall.

Interface unit ❶

Cushioning material ❹
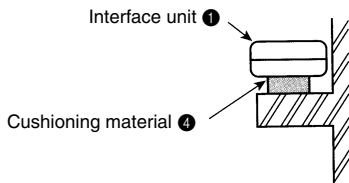
When mounting the interface unit ❶ inside a ceiling or wall, install an access door to facilitate maintenance.

When the interface unit ❶ is mounted above an indoor unit, it should be positioned 40 mm or more away from the unit to ensure that ceiling grills can be removed.

40 mm or more

Attach the 5-core connecting cable of the interface unit ❶ here. Store extra 5-core connecting cable in the ductwork space behind the indoor unit.
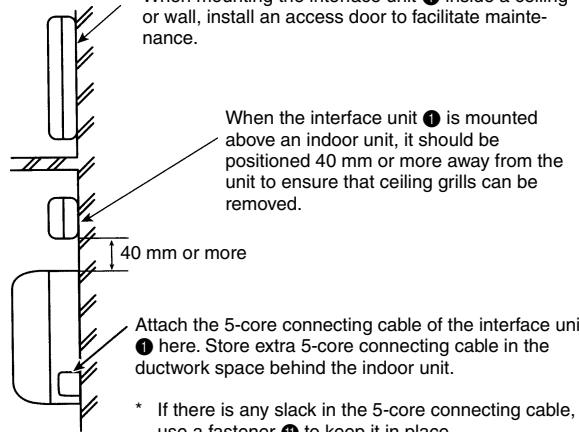
*   If there is any slack in the 5-core connecting cable, use a fastener ⓫ to keep it in place.

4. Setting the Switches

If the system is not configured correctly, the unit will not function properly. You may be unable to control the functions of the indoor unit from the System Controller/ME Remote Controller or functions not available on the indoor unit could appear on the System Controller/ME Remote Controller display. You should therefore ensure that the system is properly configured before connecting the power supply.
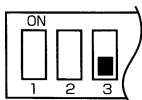
■ SW500 No. 1, No. 2 - Not in use
These should be set to OFF (if set to ON, the device will not communicate properly with the System Controller).

■ SW500 No. 3 - Power On/Off Settings
This setting indicates whether the indoor unit should be turned off or on when power is supplied to the indoor unit or M-NET Interface.
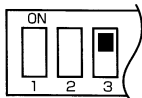
Turn on with power   No
[Unit remains off when the power is supplied.]
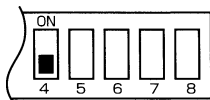
Turn on with power   Yes
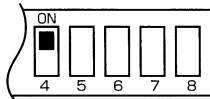[Unit turns on when the power is supplied.]

■ SW500 No. 4 - Availability of purifier or fan mode
If there is no "Purifier" button on the wireless remote control, and if the word "Fan" does not appear when the "Mode" button is pressed, the purifier and fan modes are not available (set to OFF).

Does not have a purifier or fan mode

Has a purifier or fan mode

■ SW500 No. 5–No. 8 - M series Function Check

SW500	Function description	How to check a function	OFF	ON
No. 5	Availability of automatic operation mode (a mode that allows the air conditioner to determine whether to select cooling or heating).	If "Auto" is not displayed when you push the "Mode" button on the wireless remote control, the auto operation mode is not available (OFF).	Does not have an auto operation mode	Does have an auto operation mode
No. 6	Availability of a fan oscillation setting	If "Oscillate" is displayed when you push the "Fan Direction" button on the wireless remote control, the fan oscillation setting is available (OFF). (If there is no "Fan Direction" button, the setting is OFF.)	Has a fan oscillation setting	Does not have a fan oscillation setting
No. 7	Availability of a fan direction setting	If there is a "Fan Direction" button on the wireless remote control, the fan direction setting is available (OFF).	Has a fan direction setting	Does not have a fan direction setting
No. 8	Availability of a heating mode	If "Heat" appears when you push the "Mode" button on the wireless remote control, the unit is a model that offers both cooling and heating (OFF).	Dual cooling and heating model	Cooling unit only

■ SW510, SW501 - Address settings
Specifies the address settings for centralized management (address settings can be set from 01–50).

Self-Address

10s position   1s position
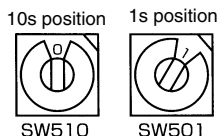
SW510   SW501

SW510 sets the 10s position of the address and SW501 sets the 1s position of the address.
For example, to set a unit to the address 25, set SW510 to "2" and SW501 to "5".

■ **Position of SW500, SW501, SW510**

Board (1): DM00J805B

Board (2): DM00J805B — with labels SW510, SW501, SW500, TB520, B2 A2 B1 A1, M-Net2, M-Net1, M-NET Address SW510, SW520, SW500

5. Connecting the M-NET Interface to indoor unit

Connect the M-NET Interface board to the indoor control board.

Indoor unit
Indoor control board
CN105

Interface unit ❶
CN560

Connect the 5-core connecting cable that comes with the M-NET Interface unit to the connector CN105 on the indoor control board.

• 5-core connecting cable connected to the Indoor unit should be mounted on or near the Indoor unit.
  If the 5-core connecting cable is not securely mounted, the connector may detach, break, or malfunction.

Mounting cord clamp ❻
Electrical wire mounting bracket
Mounting screws ❾ 4 × 16

Mounting screws ❽ 4 × 10
Mounting cord clamp ❻

6. Connecting the M-NET Interface, the Power Supply, and the ME Remote Controller

- When connecting the unit to a system controller or ME Remote Controller, connect the transmission line of the M-NET to the control signal terminal.
  Connect the 2-core connection wrings Ⓐ to A1/B1 or A2/B2 (they can be connected to either).
- Cross the shield portion of each connecting wire using the S terminal only when cross wiring the connection wires.
- When connecting the connection wrings Ⓐ and the ME Remote Controller connection wrings Ⓑ to the terminal board, there is no need to worry about polarity.
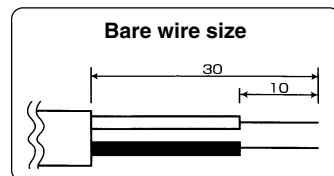
When the connection wrings Ⓐ are not cross-wired
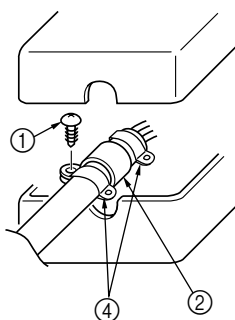
When the connection wrings Ⓐ are cross-wired
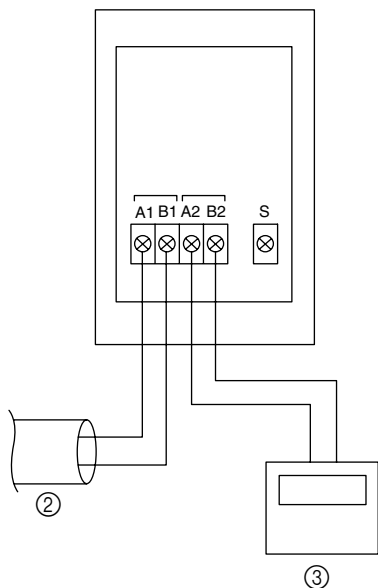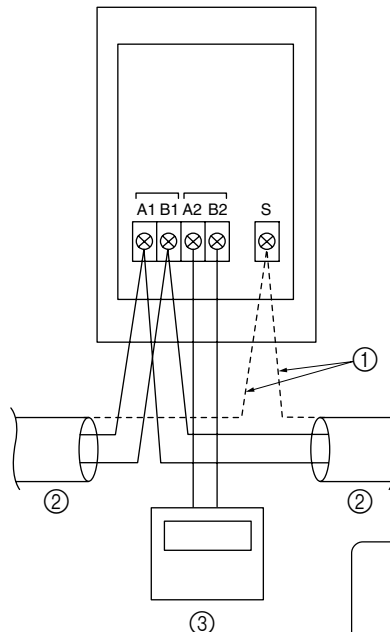
① Shield
② Connection wirings Ⓐ
   (M-NET transmission wire)
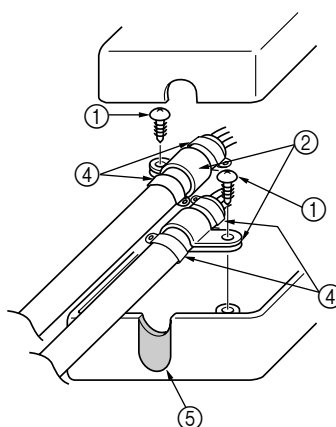③ ME Remote Controller
   (only when needed)

Bare wire size

- After the wiring is completed secure the ires with the cord clamp (large) and the cable ties.

When the connection wring Ⓐ is not cross-wired

When the connection wring Ⓐ is cross-wired

When using the ME remote controller

① Screws
② Cord clamp (large)
③ Cord clamp (small)
④ Cable ties
⑤ Cut with nippers at the notches.
   Make sure the cut surface is free of any burr so that the connection wire dose not get damaged.
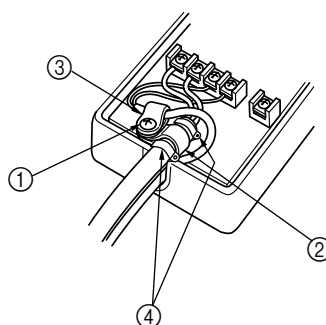
⚠ **Caution**

- **Electrical work should be performed in accordance with the Technical Standards Regarding Electrical Equipment and the Interior Wiring Standards.**
- **Connection wiring and remote control wiring should be located as far away from other electrical wiring as possible. Placing them too closely together could cause a malfunction.**

7. Notes Regarding Use

Please read this information carefully before attempting a test run.
The following control information should be thoroughly explained and provided to the users of this device. (Please provide these instructions to the user once the installation is complete.)

* This M-NET Interface operates M/P/S Series using the controls of a packaged air conditioner (city-multi), but there are several limitations imposed as a result of the functional differences between M/P/S Series and packaged air conditioners.
   1. When operating the system using a system controller or ME Remote Controller, these operations will not appear on the display of the wireless remote controller.
   2. Functions available only on M series (e. g. ECONO COOL) cannot be operated using the ME Remote Controller/System Controller. When these functions are operated using the wireless remote controller that came with M series, the operated using the wireless remote controller that came with M series, the operation will not appear on the display of the ME Remote Controller/System controller.
   3. Functions that are available on the ME Remote Controller/System Controller but that are not available on the M/P/S series can be operated by switching to a predetermined separate operation mode. (See the "Table of Functions Activated from the ME Remote Controller/System Controller.")
   4. Functions that are available on the remote controller of the M/P/S series but are not available on the ME Remote Controller/System Controller will produce a predetermined display. In this case, the actual operation and the display may differ. (If the fan speed is automatically set using the remote controller that came with the M/P/S series, the setting "High" will appear on the ME Remote Controller/System Controller. Likewise, if the fan direction is set to automatic, the setting "Downward Air Flow 80%" will appear on the ME Remote Controller/System Controller.)
   5. Because the temperature range of the M/S series is broader than the ME Remote Controller/System Controller, when the M/S series is set to lower than 17°C or higher than 30°C, the temperature display on the ME Remote Controller/System Controller will show the minimum or maximum temperature that can be set. (For example, even if the room air conditioner is set to cool a room to 16°C, the display on the ME Remote Controller/System Controller may read "17°C.")
      The M/S series operates according to the room temperature detected by the M/S series unit.
   6. Timer operations should be set using only the remote controller that came with the M/P/S series or the ME Remote Controller/System Controller. If both are used to set the timer to the same time, the timer will not function properly.
   7. When the timer is set using the remote controller that came with the M/P/S series, the timer information will not be displayed on the ME Remote Controller/System Controller.
   8. If the timer is set using the ME Remote Controller/System Controller, the timer set using that device will not be cancelled even if the unit is turned off using the remote controller that came with the M/P/S series.
   9. When manual operations using the system controller are prohibited, the remote controller that came with the M/P/S series will not function, but the beeping sound that is emitted when it is operating normally will still sound.
   10. To clear an error message from the display of the ME Remote Controller/System Controller, briefly turn off the unit using the ME Remote Controller/System Controller or the remote controller that came with the M/P/S series. (The error display on the air conditioner unit may be cleared automatically, but it will not clear from the ME Remote Controller/System Controller until the unit is turned off.)
   11. The room temperature sensor installed in the ME Remote Controller cannot be used.

8. Table of Functions Activated from the ME Remote Controller/System Controller

Functions operated from the wireless remote controller that came with M/P/S series.

[Symbol] ○: Available/△: Available with limitations on the display/×: Non-available/—: Non-applicable (no functions)

Functions *1		ME remote controller	G-50A	BACnetl/F	LM-AP
On/Off	Power On (Operation)	○	○	○	○
	Power Off (Stop)	○	○	○	○
Mode	Auto operation (Operation)	○	○	○	○
	Manual Cool (Cool)	○	○	○	○
	Manual Heat (Heat)	○	○	○	○
	Manual Dry (Dry)	○	○	○	○
	Air-purifying (Fan)	○	○	○	○
Fan speed (MSZ, S, P)	Low (First: Low)	○	○	○	○
	Med. (Second: Medium2) Med. (Third: Medium2)	○	○	○	○
	High (Third: Medium1) High (Forth: High)	○	○	○	○
	Super high (Forth: High)	○	○	○	○
	AUTO	△ (High)	△ (High)	△ (High)	△ (High)
Fan speed (MFZ)	Low (First: Low)	○	○	○	○
	Med. (Second: Medium) Med. (Second: Medium1)	○	○	○	○
	High (Third: Medium) Med. (Second: Medium2)	○	○	○	○
	Super high (Forth: High)	○	○	○	○
	AUTO	△ (High)	△ (High)	△ (High)	△ (High)
Air direction	Position1 (Horizontal)	○	○	○	—
	Position2 (Bottom flow Position2)	○	○	○	—
	Position3 (Bottom flow Position3)	○	○	○	—
	Position4 (Vertical)	○	○	○	—
	Position5 (Vertical)	○	○	○	—
	Swing	○	○	○	—
	AUTO	△ (Bottom flow Position3)	△ (Bottom flow Position3)	△ (Bottom flow Position3)	—
Set temperature	16°C–31°C	○	○	○	○
Monitor	Timer display	×	×	×	×
	Inlet temp. (10–38°C) *2	△	△	○	○

*1: Functions that are not available on M/P/S series (MAC-399IF) cannot be performed.
The display on the M-NET side in shown in ( ).
*2: The display does not appear on the wireless remote controller.

9. Specifications

Air conditioner side	Input voltage	12 V ⎓
	Power consumption	0.6 W
	Input current	0.05 A
M-NET side	Input voltage	17–24 V ⎓