
MITSUBISHI ELECTRIC
SPLIT-TYPE AIR CONDITIONERS
Changes for the Better
Mitsubishi Electric Quality
Full Product Line Catalogue 2012
for a greener tomorrow
eco Changes

Doing Our Part to Create a Better Future for All...

Core Environmental Policy

The Mitsubishi Electric Group promotes sustainable development and is committed to protecting and restoring the global environment through technology, through all its business activities, and through the actions of its employees.

Environmental Vision 2021

Making Positive Contributions to the Earth and its People through Technology and Action

Preventing Global Warming

- Reduce CO_2 emissions from product usage by 30%
- Reduce total CO_2 emissions from production by 30%
- Aim to reduce CO_2 emissions from power generation

Creating a Recycling-Based Society

- Reduce, reuse and recycle "3Rs" products reduce resources used by 30%
- Zero emissions from manufacturing reducing the direct landfill of waste to zero

Ensuring Harmony with Nature Fostering Environmental Awareness

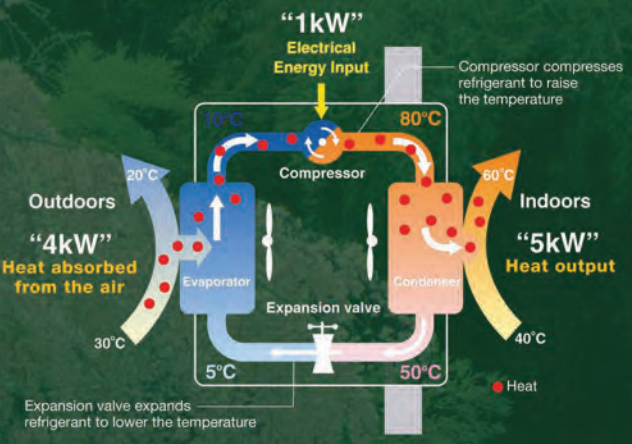
Mitsubishi Electric reflects the essence of this policy and vision in all aspects of its air conditioner business as well.

Preventing Global Warming

Heat pump technology inspires Mitsubishi Electric to design air conditioners that harmonize comfort and ecology.

Heat Pump Principle (When Heating) <Case of COP 5.0>

Refrigerant and Heat Circulation



Output energy is quintuple of input energy

"1kW" Electrical Energy Input	+	"4kW" Heat Absorbed from the air	=	"5kW" Heat Output

Mitsubishi Electric develops technologies to balance comfort and ecology, achieving greater efficiency in heat pump operation.

	Comfort	Ecology
1. Inverter	Faster start-up and more stable indoor temperature than non-inverter units.	Fewer On/Off operations than with non-inverter, saving energy.
2. i-see Sensor	Monitoring the temperature gaps between the floor and the set temperature to prevent deficient warming.	Optimum control of the airflow to prevent excessive compressor operation for more efficient heating operation.
3. Flash Injection	Achieves high heating capacity even at low temperatures, plus faster start-up compared to conventional inverters.	Expands the region covered by heat pump heating system.

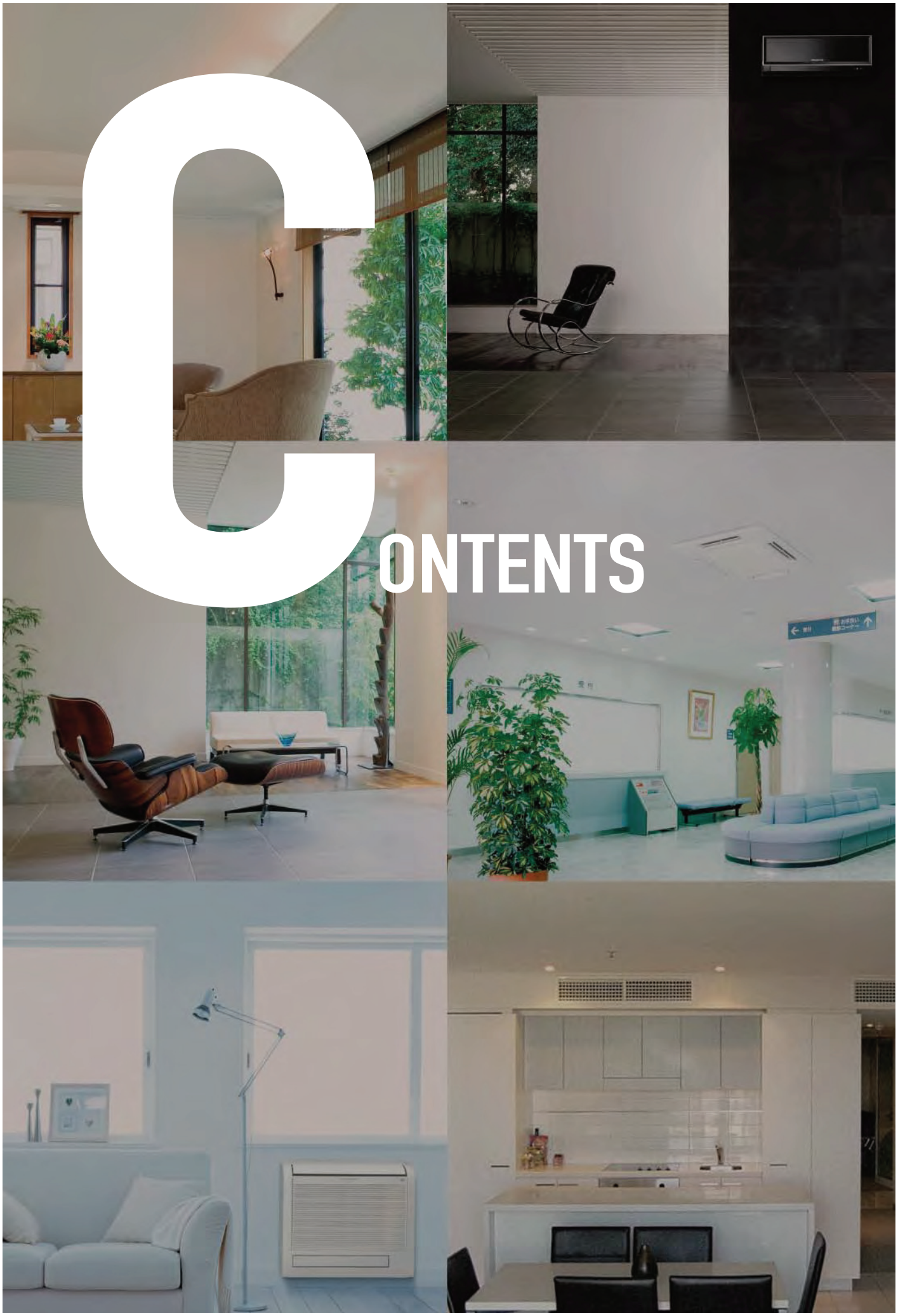
Creating a Recycling-Based Society

1. All models are designed for RoHS and WEEE compliance.*
2. Mitsubishi Electric develops downsizing technology to reduce materials use.
   - PUHZ-RP200/250YKA2: Volume reduction approx. 60% compared to PUHZ-RP200/250YHA
   - MUZ-HC25/25VA: Volume reduction approx. 25% compared to MUZ-HA25/35VA

* WEEE and RoHS directives: The Waste Electrical and Electronic Equipment (WEEE) Directive is a recycling directive for this type of equipment, while the Restrictions of Hazardous Substances (RoHS) Directive is an EU directive restricting the use of six specified substances in electronic and electrical devices. In the EU, it is no longer possible (from July 2006) to sell products containing any of the six substances.

Ensuring Harmony with Nature / Fostering Environmental Awareness

In striving to heighten the eco-awareness of its employees, Mitsubishi Electric provides education in RoHS, WEEE and other environmental regulations, along with environmental education targeting second and third-year workers.



CONTENTS

Air Conditioners

AIR-TO-WATER

LOSSNAY SYSTEM

LINE-UP

M SERIES

INVERTER Models

Model Name		1.5kW	2.0kW	2.2kW	2.5kW	3.5kW	4.2kW	5.0kW	6.0kW	7.1kW	8.0kW	Page
		1-phase	1-phase	1-phase	1-phase	1-phase	1-phase	1-phase	1-phase	1-phase	1-phase	
Wall-mounted	MSZ-F Series 				SINGLE[S]	SINGLE[S]		SINGLE[S]				29
	MSZ-E Series 			MXZ connection only[S-B]	SINGLE[S-B H]	SINGLE[S-B H]	SINGLE[S-B]	SINGLE[S-B]				33
	MSZ-G Series 			MXZ connection only	SINGLE[H]	SINGLE[H]	SINGLE[H]	SINGLE[H]				35
									SINGLE	SINGLE		35
	MSZ-H Series 				SINGLE	SINGLE						37
	MSZ-S Series 	MXZ connection only	MXZ connection only									39
Compact floor	MFZ Series 				SINGLE[H]	SINGLE[H]		SINGLE				43
1-way cassette	MLZ Series 				MXZ connection only	MXZ connection only		MXZ connection only				45

H : Outdoor unit with freeze-prevention heater is available.
S : Indoor units are available in two colours; Silver and White.
S-B: Indoor units are available in three colours; Silver, Black and White.

FIXED-SPEED Models (Heat Pump & Cooling Only)

Model Name		2.0kW	2.2kW	2.5kW	3.5kW	4.2kW	5.0kW	6.0kW	7.1kW	8.0kW	Page
		1-phase	1-phase	1-phase	1-phase	1-phase	1-phase	1-phase	1-phase	1-phase	
Wall-mounted	MS(H)-G Series	SINGLE		SINGLE	SINGLE						41 – 42
							SINGLE	SINGLE		SINGLE	41 – 42

S SERIES

INVERTER Models

Model Name		2.5kW	3.5kW	4.2kW	5.0kW	6.0kW	7.1kW	8.0kW	10.0kW	14.0kW	20.0kW	Page
		1-phase	1-phase	1-phase	1-phase	1-phase	1-phase	1-phase	1- & 3-phase	1- & 3-phase	1- & 3-phase	
2 x 2 cassette	SLZ Series 	SINGLE[L]	SINGLE[L]		SINGLE[L]		TWIN[L] ※1		TWIN[L] ※1	TRIPLE[L] ※1	QUADRUPLE[L] ※1	49
Compact ceiling-concealed	SEZ Series 	SINGLE[L]	SINGLE[L]		SINGLE[L]	SINGLE[L]	SINGLE[L]					51

L : Indoor units are available in two types; with or without the wireless remote controller.
※1: Connectable outdoor units are limited. Please refer to page 49 for details of possible combinations.

Indoor Combinations

SINGLE 1 outdoor unit & 1 indoor unit
TWIN 1 outdoor unit & 2 indoor units
TRIPLE 1 outdoor unit & 3 indoor units
QUADRUPLE 1 outdoor unit & 4 indoor units

POWERFUL HEATING SERIES

INVERTER Models

Model Name			2.5kW 1-phase	3.5kW 1-phase	5.0kW 1-phase	7.1kW 1-phase	10.0kW 1- & 3-phase	12.5kW 3-phase	Page
ZUBADAN	4-way cassette	PLA Series 				SINGLE TWIN	SINGLE TWIN	SINGLE TWIN	87
	Wall-mounted	PKA Series 					SINGLE TWIN	TWIN	87
	Ceiling-concealed	PEAD-JA Series 				SINGLE TWIN	SINGLE TWIN	SINGLE TWIN	87
Wall-mounted		MSZ-FD VABH Series 	SINGLE S H	SINGLE S H	SINGLE S H				89

H: Freeze-prevention heater is included as standard equipment.
S: Indoor units are available in two colours; Silver and White.

MXZ SERIES

INVERTER Models

Model Name	Capacity Class	Wall-mounted	Floor-standing	Cassette	Ceiling-concealed	Ceiling-suspended	Page
up to 8 indoor units MXZ-8B160VA MXZ-8B160YA 	15.5kW <1-phase> <3-phase>	MSZ-FD25/35/50 MSZ-EF22/25/35/42/50 MSZ-GE22/25/35/42/50/60/71 MSZ-SF15/20	MFZ-KA25/35/50	MLZ-KA25/35/50 SLZ-KA25/35/50 PLA-RP35/50/60/71	SEZ-KD25/35/50/60/71		97
up to 8 indoor units MXZ-8B140VA MXZ-8B140YA	14.0kW <1-phase> <3-phase>	MSZ-FD25/35/50 MSZ-EF22/25/35/42/50 MSZ-GE22/25/35/42/50/60/71 MSZ-SF15/20	MFZ-KA25/35/50	MLZ-KA25/35/50 SLZ-KA25/35/50 PLA-RP35/50/60/71	SEZ-KD25/35/50/60/71		97
up to 6 indoor units MXZ-6C120VA 	12.0kW <1-phase>	MSZ-FD25/35/50 MSZ-EF22/25/35/42/50 MSZ-GE22/25/35/42/50/60/71 MSZ-SF15/20	MFZ-KA25/35/50	MLZ-KA25/35/50 SLZ-KA25/35/50 PLA-RP50/60/71	SEZ-KD25/35/50/60/71	PCA-RP50/60/71	97
up to 5 indoor units MXZ-5C100VA 	10.0kW <1-phase>	MSZ-FD25/35/50 MSZ-EF22/25/35/42/50 MSZ-GE22/25/35/42/50/60/71 MSZ-SF15/20	MFZ-KA25/35/50	MLZ-KA25/35/50 SLZ-KA25/35/50 PLA-RP50/60/71	SEZ-KD25/35/50/60/71	PCA-RP50/60/71	97
up to 4 indoor units MXZ-4C80VA	8.0kW <1-phase>	MSZ-FD25/35/50 MSZ-EF22/25/35/42/50 MSZ-GE22/25/35/42/50/60/71 MSZ-SF15/20	MFZ-KA25/35/50	MLZ-KA25/35/50 SLZ-KA25/35/50 PLA-RP50/60/71	SEZ-KD25/35/50/60/71	PCA-RP50/60/71	97
up to 4 indoor units MXZ-4C71VA	7.1kW <1-phase>	MSZ-FD25/35/50 MSZ-EF22/25/35/42/50 MSZ-GE22/25/35/42/50/60 MSZ-SF15/20	MFZ-KA25/35/50	MLZ-KA25/35/50 SLZ-KA25/35/50 PLA-RP50/60	SEZ-KD25/35/50/60	PCA-RP50/60	97
up to 3 indoor units MXZ-3C68VA 	6.8kW <1-phase>	MSZ-FD25/35/50 MSZ-EF22/25/35/42/50 MSZ-GE22/25/35/42/50/60 MSZ-SF15/20	MFZ-KA25/35/50	MLZ-KA25/35/50 SLZ-KA25/35/50 PLA-RP50/60	SEZ-KD25/35/50/60	PCA-RP50/60	97
up to 3 indoor units MXZ-3C54VA	5.4kW <1-phase>	MSZ-FD25/35/50 MSZ-EF22/25/35/42/50 MSZ-GE22/25/35/42/50 MSZ-SF15/20	MFZ-KA25/35/50	MLZ-KA25/35/50 SLZ-KA25/35/50 PLA-RP50	SEZ-KD25/35/50	PCA-RP50	97
up to 2 indoor units MXZ-2C52VA	5.2kW <1-phase>	MSZ-FD25/35 MSZ-EF22/25/35/42/50 MSZ-GE22/25/35/42/50 MSZ-SF15/20	MFZ-KA25/35	MLZ-KA25/35 SLZ-KA25/35	SEZ-KD25/35		97
up to 2 indoor units MXZ-2C40VA 	4.0kW <1-phase>	MSZ-FD25/35 MSZ-EF22/25/35 MSZ-GE22/25/35 MSZ-SF15/20	MFZ-KA25/35	MLZ-KA25/35 SLZ-KA25/35	SEZ-KD25/35		97
up to 2 indoor units MXZ-2C30VA	3.0kW <1-phase>	MSZ-FD25 MSZ-EF22/25 MSZ-GE22/25 MSZ-SF15/20	MFZ-KA25	MLZ-KA25 SLZ-KA25	SEZ-KD25		97

LINE-UP

P SERIES

POWER INVERTER Models

Model Name		3.5kW	5.0kW	6.0kW	7.1kW	10.0kW	12.5kW	14.0kW	20.0kW
		1-phase	1-phase	1-phase	1-phase	1- & 3-phase	1- & 3-phase	1- & 3-phase	3-phase
4-way cassette	PLA Series 	SINGLE	SINGLE	SINGLE	SINGLE TWIN	SINGLE TWIN	SINGLE TWIN	SINGLE TWIN TRIPLE	TWIN TRIPLE QUADRUPLE
Wall-mounted	PKA Series 	SINGLE	SINGLE	SINGLE	SINGLE TWIN	SINGLE TWIN	TWIN	TWIN TRIPLE	TWIN TRIPLE QUADRUPLE
Ceiling-suspended	PCA-KAQ Series 		SINGLE	SINGLE	SINGLE	SINGLE TWIN	SINGLE TWIN	SINGLE TWIN TRIPLE	TWIN TRIPLE QUADRUPLE
Ceiling-suspended for Professional Kitchen	PCA-HAQ Series 				SINGLE		SINGLE	TWIN	
Floor-standing	PSA Series 				SINGLE	SINGLE	SINGLE	SINGLE TWIN	TWIN
Ceiling-concealed	PEAD-JA Series 	SINGLE	SINGLE	SINGLE	SINGLE TWIN	SINGLE TWIN	SINGLE TWIN	SINGLE TWIN TRIPLE	TWIN TRIPLE QUADRUPLE
	PEA Series 								SINGLE

STANDARD INVERTER Models

Model Name		3.5kW	5.0kW	6.0kW	7.1kW	10.0kW	12.5kW	14.0kW	20.0kW
		1-phase	1-phase	1-phase	1-phase	1- & 3-phase	1- & 3-phase	1- & 3-phase	3-phase
4-way cassette	PLA Series 	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE TWIN	SINGLE TWIN	SINGLE TWIN TRIPLE	TWIN TRIPLE QUADRUPLE
Wall-mounted	PKA Series 					SINGLE TWIN	TWIN	TWIN TRIPLE	TWIN TRIPLE QUADRUPLE
Ceiling-suspended	PCA-KAQ Series 		SINGLE	SINGLE	SINGLE	SINGLE TWIN	SINGLE TWIN	SINGLE TWIN TRIPLE	TWIN TRIPLE QUADRUPLE
Ceiling-suspended for Professional Kitchen	PCA-HAQ Series 						SINGLE	TWIN	
Floor-standing	PSA Series 					SINGLE	SINGLE	SINGLE TWIN	TWIN
Ceiling-concealed	PEAD-JA Series 	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE TWIN	SINGLE TWIN	SINGLE TWIN TRIPLE	TWIN TRIPLE QUADRUPLE
	PEA Series 								SINGLE

Indoor Combinations

SINGLE 1 outdoor unit & 1 indoor unit
TWIN 1 outdoor unit & 2 indoor units
TRIPLE 1 outdoor unit & 3 indoor units
QUADRUPLE 1 outdoor unit & 4 indoor units

FIXED-SPEED Models

Model Name			7.1kW	10.0kW	12.5kW	14.0kW	Page
			1- & 3-phase	1- & 3-phase	3-phase	3-phase	
4-way cassette	PLA Series 	Heat Pump	SINGLE TWIN	SINGLE TWIN	SINGLE TWIN	SINGLE TWIN TRIPLE	57
		Cooling Only	SINGLE TWIN	SINGLE TWIN	SINGLE TWIN	SINGLE TWIN TRIPLE	57
Wall-mounted	PKA Series 	Heat Pump	SINGLE TWIN	SINGLE TWIN	TWIN	TWIN TRIPLE	63
		Cooling Only	SINGLE TWIN	SINGLE TWIN	TWIN	TWIN TRIPLE	63
Ceiling-suspended	PCA-KAQ Series 	Heat Pump	SINGLE	SINGLE TWIN	SINGLE TWIN	SINGLE TWIN TRIPLE	67
		Cooling Only	SINGLE	SINGLE TWIN	SINGLE TWIN	SINGLE TWIN TRIPLE	67
Ceiling-suspended for Professional Kitchen	PCA-HAQ Series 	Heat Pump	SINGLE		SINGLE	TWIN	71
		Cooling Only	SINGLE		SINGLE	TWIN	71
Floor-standing	PSA Series 	Heat Pump	SINGLE	SINGLE	SINGLE	SINGLE TWIN	75
		Cooling Only	SINGLE	SINGLE	SINGLE	SINGLE TWIN	75
Ceiling-concealed	PEAD- JA Series 	Heat Pump	SINGLE TWIN	SINGLE TWIN	SINGLE TWIN	SINGLE TWIN TRIPLE	79
		Cooling Only	SINGLE TWIN	SINGLE TWIN	SINGLE TWIN	SINGLE TWIN TRIPLE	79

	25.0kW	40.0kW	50.0kW	Page
	3-phase	3-phase	3-phase	
	TWIN TRIPLE QUADRUPLE			57
	TRIPLE QUADRUPLE			63
	TWIN TRIPLE QUADRUPLE			67
	TWIN TRIPLE			71
	TWIN TRIPLE			75
	TWIN TRIPLE QUADRUPLE			79
	SINGLE	SINGLE*	SINGLE*	83

* 1 indoor unit requires 2 outdoor units.

	25.0kW	40.0kW	50.0kW	Page
	3-phase	3-phase	3-phase	
	TWIN TRIPLE QUADRUPLE			57
	TRIPLE QUADRUPLE			63
	TWIN TRIPLE QUADRUPLE			67
	TWIN TRIPLE			71
	TWIN TRIPLE			75
	TWIN TRIPLE QUADRUPLE			79
	SINGLE	SINGLE*	SINGLE*	83

* 1 indoor unit requires 2 outdoor units.

DC Inverter INVERTER TECHNOLOGIES

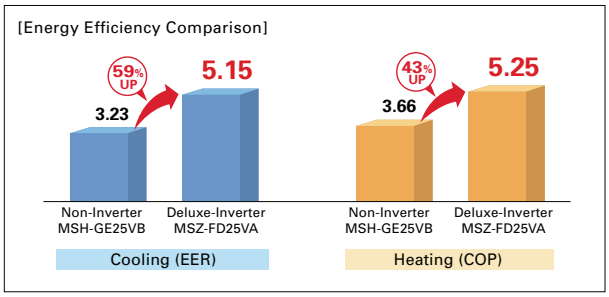
Mitsubishi Electric inverters ensure superior performance including the optimum control of operation frequency. As a result, optimum power is applied in all heating/cooling ranges and maximum comfort is achieved while consuming minimal energy. Fast, comfortable operation and amazingly low running cost — That's the Mitsubishi Electric promise.

INVERTERS — HOW THEY WORK

Inverters electronically control the electrical voltage, current and frequency of electrical devices such as the compressor motor in an air conditioner. They receive information from sensors monitoring operating conditions, and adjust the revolution speed of the compressor, which directly regulates air conditioner output. Optimum control of operation frequency results in eliminating the consumption of excessive electricity and providing the most comfortable room environment.

ECONOMIC OPERATION

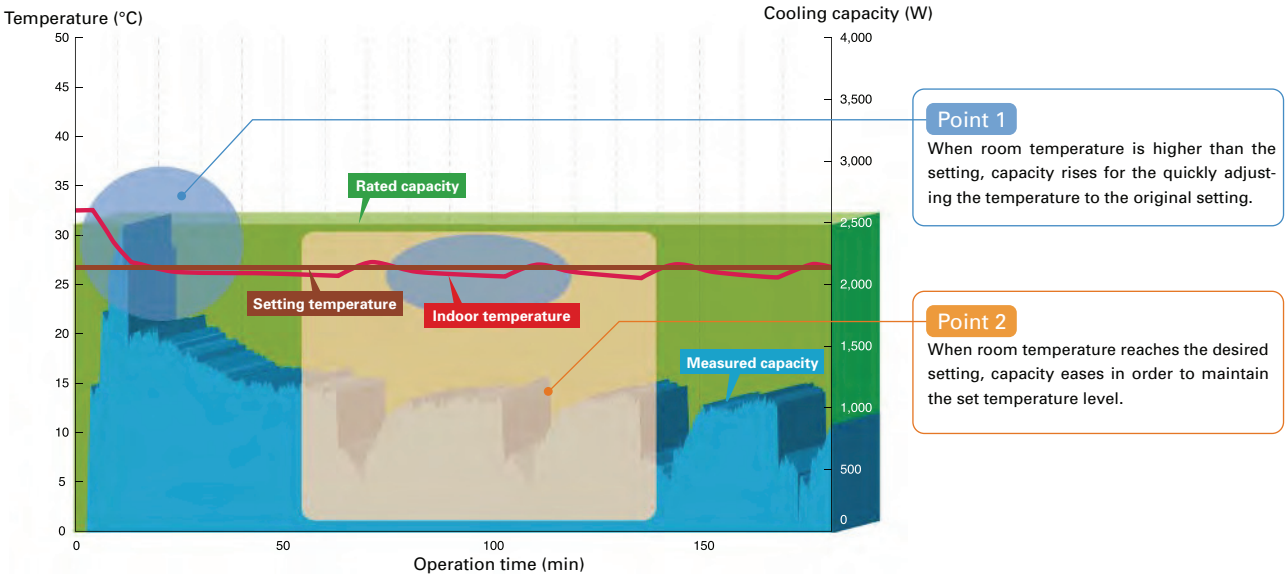
Impressively low operating cost is a key advantage of inverter air conditioners. We've combined advanced inverter technologies with cutting-edge electronics and mechanical technologies to achieve a synergistic effect that enables improvements in heating/cooling performance efficiency. Better performance and lower energy consumption are the result.



TRUE COMFORT

Simple comparison of air conditioner operation control with and without inverter.

■ Inverter Operation Image (cooling mode)



Point 1 Quick & Powerful

Increasing the compressor motor speed by controlling the operation frequency ensures powerful output at start-up, brings the room temperature to the comfort zone faster than units not equipped with an inverter. Hot rooms are cooled, and cold rooms are heated faster and more efficiently.

Point 2 Room Temperature Maintained

The compressor motor operating frequency and the change of room temperature are monitored to calculate the most efficient waveform to maintain the room temperature in the comfort zone. This eliminates the large temperature swings common with non-inverter systems, and guarantees a pleasant, comfortable environment.

MORE ADVANTAGES WITH MITSUBISHI ELECTRIC

Joint Lap DC Motor

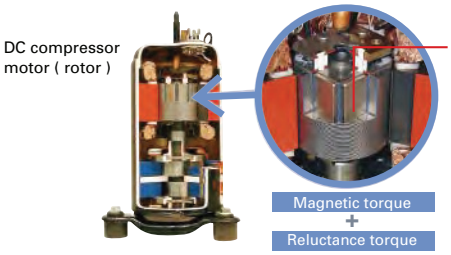
Mitsubishi Electric has developed a unique motor, called the "Poki-Poki Motor" in Japan, which is manufactured using a joint lapping technique. This innovative motor operates based on a high-density, high-magnetic force, leading to extremely high efficiency and reliability.

Magnetic Flux Vector Sine Wave Drive

This drive device is actually a microprocessor that converts the compressor motor's electrical current waveform from a conventional waveform to a sine wave (180°conductance) to achieve higher efficiency by raising the motor winding utilisation ratio and reducing energy loss.

Reluctance DC Rotary Compressor

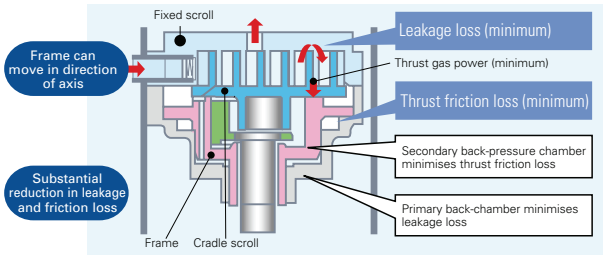
Powerful neodymium magnets are used in the rotor of the reluctance DC motor. More efficient operation is realised by strong magnetic and reluctance torques produced by the magnets.



Highly Efficient DC Scroll Compressor

Higher efficiency has been achieved by adding a frame compliance mechanism to the DC scroll compressor. The mechanism allows movement in the axial direction of the frame supporting the cradle scroll, thereby greatly reducing leakage and friction loss, and ensuring extremely high efficiency at all speeds.

*Japan Society of Refrigerating and Air Conditioning Engineers



Rare Earth Magnet Rotor (Compressor)

An innovative motor with a rare earth magnet rotor is equipped in the compressor to ensure excellent efficiency. The rare earth magnet has a residual magnetic flux density threefold that of the previously used ferrite magnet.

Rare earth magnet (for MSZ-FD)

DC Fan Motor

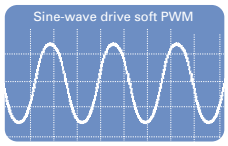
A highly efficient DC motor drives the fan of the outdoor unit. Efficiency is much higher than an equivalent AC motor.

Vector-Wave Eco Inverter

This inverter monitors the varying compressor motor frequency and creates the most efficient waveform for the motor speed. As the result, operating efficiency in all speed ranges is improved, less power is used and annual electricity cost is reduced.

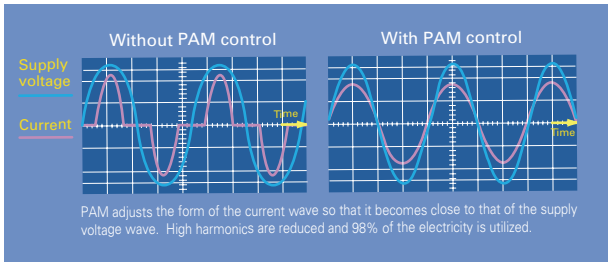
Smooth wave pattern

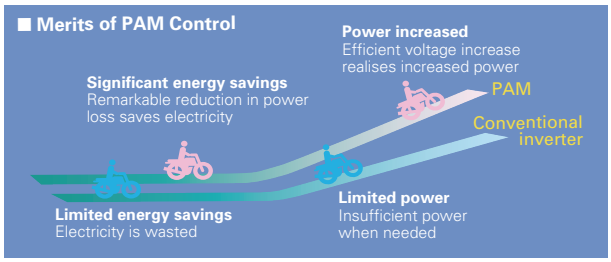
Inverter size has been reduced using insert-molding, where the circuit pattern is molded into the synthetic resin. To ensure quiet operation, soft PWM control is used to prevent the metallic whine associated with conventional inverters.



PAM (Pulse Amplitude Modulation)

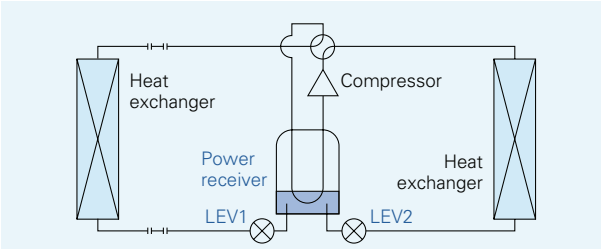
PAM is a technology that controls the current waveform so that it resembles the supply voltage wave, thereby reducing loss and realising more efficient use of electricity. Using PAM control, 98% of the input power supply is used effectively.





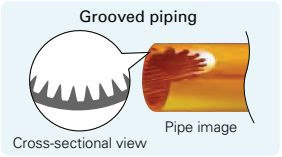
Power Receiver and Twin LEV Control

Mitsubishi Electric has developed a power receiver and twin linear expansion valves (LEVs) circuit that optimise compressor performance. This technology ensures optimum control in response to operating waveform and outdoor temperature. Operating efficiency has been enhanced by tailoring the system to the characteristics of R410A refrigerant.



Grooved Piping

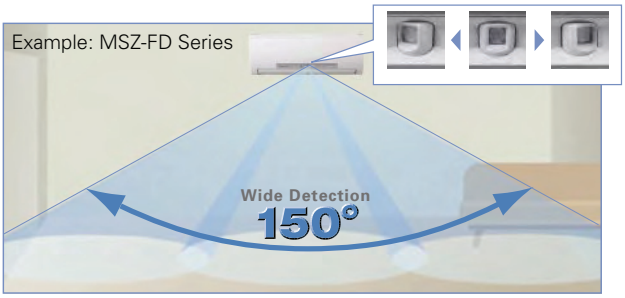
High-performance grooved piping is used in heat exchangers to increase the heat exchange area.



FUNCTIONS

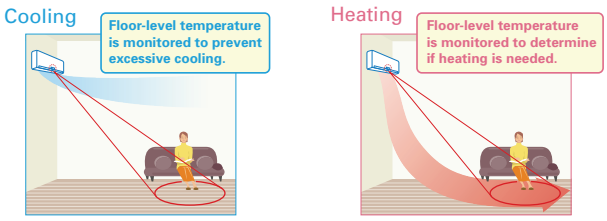
ENERGY-SAVING

i-see Sensor Felt Temperature Control



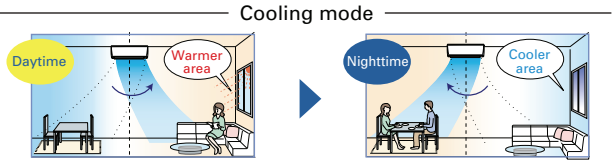
The "i-see Sensor" sweeps from side-to-side automatically monitoring the floor temperature over a wide area spanning 150°.

Conventional air conditioners monitor the air temperature at the top of a room to control room temperature and fail to take foot-level temperature, that which has the strongest impact on room comfort, into consideration. The "i-see Sensor" monitors the floor temperature and estimates the "felt temperature" (i.e., the temperature felt by people in the room). The airflow speed and temperature are adjusted to prevent over-heating/cooling, thereby eliminating the consumption of excessive electricity.



AREA Area Temperature Monitor

The "i-see Sensor" monitors the whole room in sections and directs the airflow to areas of the room where the temperature does not match the temperature setting. (When cooling the room, if the middle of the room is detected to be hotter, more airflow is directed towards it.) This eliminates unnecessary heating /cooling and contributes to lower electricity costs.



Econo Cool Econo Cool Energy-Saving Feature

"Econo Cool" is an intelligent temperature control feature that adjusts the amount of air directed towards the body based on the air-outlet temperature. The setting temperature can be raised by as much as 2°C without any loss in comfort, thereby realising a 20% gain in energy efficiency. *(Function only available during manual cooling operation.)*

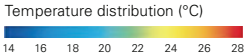
	Conventional	Econo Cool
Ambient temperature	35°C	35°C
Set temperature	25°C	27°C
Perceived temperature	30°C	29.3°C

Econo Cool Mode
A comfortable room environment is maintained even when setting the temperature 2°C higher than the conventional cooling mode.

Econo Cool on

Conventional cooling mode

Temperature distribution (°C)



"I Feel" Control

The "I Feel" fuzzy-logic control memorises the most desirable temperature setting. If the "TOO WARM" or "TOO COOL" button on the remote controller is pressed, the system adds the choice to the control memory and adjusts the temperature so that the most comfortable temperature is provided. That temperature setting is used the next time the unit is turned on.

Demand Control Demand Function (Onsite Adjustment)

The demand function can be activated when the unit is equipped with a commercially available timer or an On/Off switch is added to the CNDM connector (option) on the control board of the outdoor unit. Energy consumption can be reduced up to 100% of the normal consumption according to the signal input from outside.

[Example: Power Inverter Series]
Limit energy consumption by changing the settings of SW7-1 and SW7-2 on the control board of the outdoor unit. The following settings are possible.

SW7-1	SW7-2	Energy consumption
OFF	OFF	0% (STOP)
ON	OFF	50%
OFF	ON	75%

ATTRACTIVE

Pure White Pure White

Pure white is adopted for the unit colour; white expressing the essence of cleanliness and easily matching virtually all interior décor.

AUTO VANE Auto Vane

The vane closes automatically when the air conditioner is not running, concealing the air outlet and creating a flat surface that is aesthetically appealing.

AIR QUALITY

Plasma Duo

Units are equipped with a pre-filter and two special filters that perform plasma air cleaning and plasma purification functions (Plasma Duo). The plasma system remove bad odours and bacterial particulates of micron- and nanometre-size from the air.

Air Cleaning Filter

The filter is charged with static electricity, enabling it to attract and capture dust particulates that regular filters don't.

Fresh-air Intake

Indoor air quality is enhanced by the direct intake of fresh exterior air.

Anti-allergy Enzyme Filter

The anti-allergy enzyme filter works to trap allergens such as molds and bacteria and decompose them using enzymes retained in the filter.

High-efficiency Filter

This high-performance filter has a much finer mesh compared to standard filters, and is capable of capturing minute particulates floating in the air that were not previously caught.

Nano Platinum Filter

The filter has a large capture area and incorporates nanometre-sized platinum-ceramic particles that work to kill bacteria and deodourise the circulating air.

Catechin Filter

Catechin is a bioflavonoid by-product of green tea with both antiviral and antioxidant qualities. It also has an excellent deodorising effect, which is why Mitsubishi Electric uses the compound in its air conditioner filters. In addition to improving air quality, it prevents the spreading of bacteria and viruses throughout the room. Easily removed for cleaning and maintenance, when the filter is washed regularly the deodorising action is rated to last more than 10 years.

Oil Mist Filter

The oil mist filter prevents oil mist from penetrating into the inner part of the air conditioner.

Long-life Filter

A special process for the entrapment surface improves the filtering effect, making the maintenance cycle longer than that of units equipped with conventional filters.

Filter Check Signal

Air conditioner operating time is monitored, and the user is notified when filter maintenance is necessary.

Electrostatic Anti-allergy Enzyme Filter

This function features both the Air Cleaning Filter and Anti-allergy Enzyme Filter.

AIR DISTRIBUTION

Horizontal Vane

The air outlet vane swings up and down so that the airflow is spread evenly throughout the room.

Vertical Vane

The air outlet fin swings from side to side so that the airflow reaches every part of the room.

High Ceiling Mode

In the case of rooms with high ceilings, the outlet-air volume can be increased to ensure that air is circulated all the way to the floor.

Low Ceiling Mode

If the room has a low ceiling, the airflow volume can be reduced for less draft.

Auto Fan Speed Mode

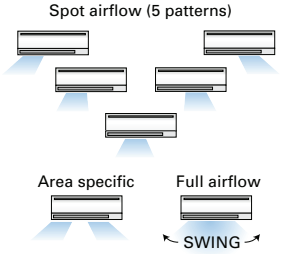
The airflow speed mode adjusts the fan speed of the indoor unit automatically according to the present room conditions.

Wide and Long Airflow

The wide and long airflow function is especially beneficial for large spaces, helping to ensure that air is well circulated and reaches every corner of the room.

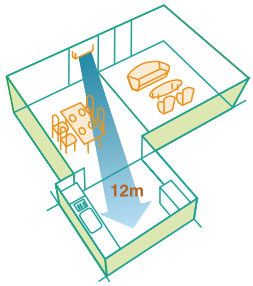
Wide Airflow

This unique airflow system distributes air horizontally over a wide-ranging 150° in heating mode and 100° in cooling mode. Simply press the Wide Swing icon on the remote controller to select the desired airflow from seven different patterns.



Long Airflow

Use this function to ensure that the airflow circulates to areas far across the room. Press the Long Airflow icon on the remote controller to extend reach up to as far as 12 metres from the unit.



FUNCTIONS

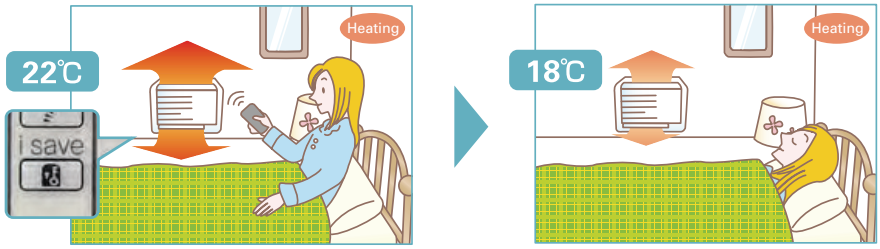
CONVENIENCE

On/Off Operation Timer

Use the remote controller to set the times of turning the air conditioner On/Off.

"i save" Mode

"i save" is a simplified setting function that recalls the preferred (preset) temperature by pressing a single button on the remote controller. Press the same button twice in repetition to immediately return to the previous temperature setting.
Using this function contributes to comfortable waste-free operation, realising the most suitable air conditioning settings and saving on power consumption when, for example, leaving the room or going to bed.



✻ Temperature can be preset to 10°C when heating in the "i-save" mode (except when connected to MXZ-8B140VA/YA, MXZ-8B160VA/YA).

Photo of MFZ Series remote controller

Auto Changeover

The air conditioner automatically switches between heating and cooling modes to maintain the desired temperature.

Auto Restart

Especially useful at the time of power outages, the unit turns back on automatically when power is restored.

Low-temperature Cooling

Intelligent fan speed control in the outdoor unit ensures optimum performance even when the outside temperature is low.

Low-noise Operation (Outdoor Unit)

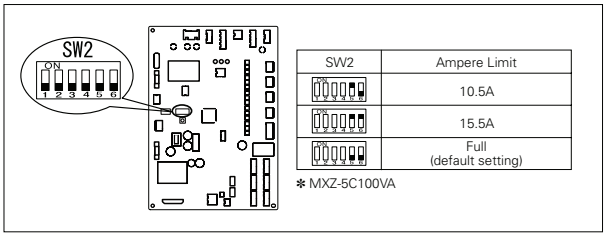
System operation can be adjusted to prioritise less noise from the outdoor unit over air conditioning performance.

Ampere Limit Adjustment

Dipswitch settings can be used to adjust the maximum electrical current for operation. This function is highly recommended for managing energy costs.

*Maximum capacity is lowered with the use of this function.

■ Dip Switch Setting (Board for MXZ-5C100VA)



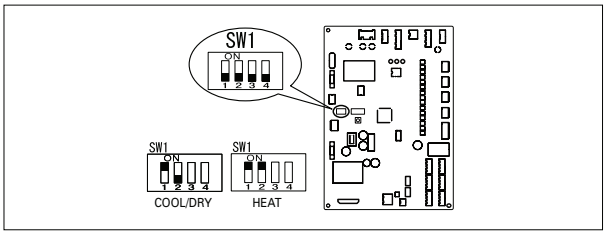
SW2	Ampere Limit
	10.5A
	15.5A
	Full (default setting)

✻ MXZ-5C100VA

Operation Lock

To accommodate specific use applications, cooling or heating operation can be specified when setting the control board of the outdoor unit. A convenient option when a system needs to be configured for exclusive cooling or heating service.

■ Dip Switch Setting (Board for MXZ-5C100VA)



Weekly Timer Built-in Weekly Timer Function

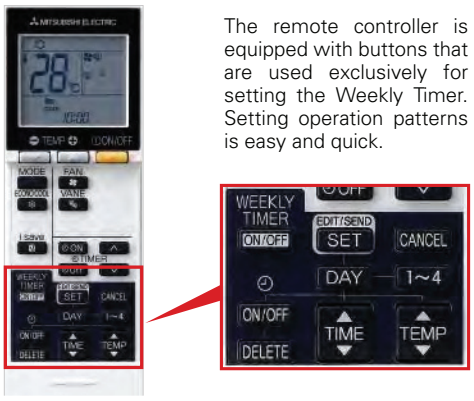
Easily set desired temperatures and operation start/stop times to match lifestyle patterns. Reduce wasted energy consumption by using the timer to prevent forgetting to turn off the unit and eliminate temperature setting adjustments.

■ Example Operation Pattern (Winter/Heating mode)

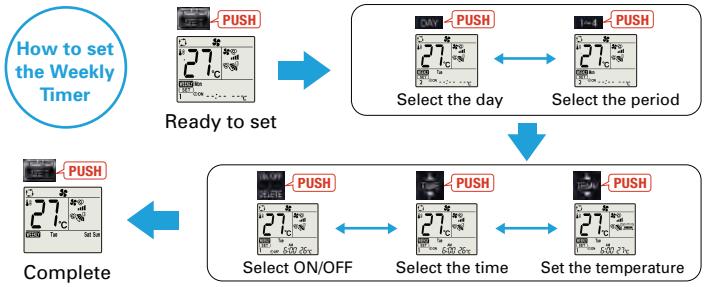
	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
6:00	ON 20°C	ON 20°C	ON 20°C	ON 20°C	ON 20°C	ON 20°C	ON 20°C
8:00	Automatically changes to high-power operation at wake-up time						
10:00	OFF	OFF	OFF	OFF	OFF	ON 18°C	ON 18°C
12:00	Automatically turned off during work hours					Midday is warmer, so the temperature is set lower	
14:00							
16:00							
18:00	ON 20°C	ON 20°C	ON 20°C	ON 20°C	ON 20°C	ON 20°C	ON 20°C
20:00	Automatically turns on, synchronized with arrival at home					Automatically raises temperature setting to match time when outside-air temperature is low	
22:00							
(during sleeping hours)	ON 18°C	ON 18°C	ON 18°C	ON 18°C	ON 18°C	ON 18°C	ON 18°C
	Automatically lowers temperature at bedtime for energy-saving operation at night						

Settings **Pattern Settings:** Input up to four settings for each day
Settings: •Start/Stop operation •Temperature setting ✻The operation mode cannot be set.

■ Easy set-up using dedicated buttons



The remote controller is equipped with buttons that are used exclusively for setting the Weekly Timer. Setting operation patterns is easy and quick.



- Start by pushing the "SET" button and follow the instructions to set the desired patterns. Once all of the desired patterns are input, point the top end of the remote controller at the indoor unit and push the "SET" button one more time. (Push the "SET" button only after inputting all of the desired patterns into the remote controller memory. Pushing the "CANCEL" button will end the set-up process without sending the operation patterns to the indoor unit).
- It takes a few seconds to transmit the Weekly Timer operation patterns to the indoor unit. Please continue to point the remote controller at the indoor unit until all data has been sent.

SYSTEM CONTROL

PAR-30MAA/PAR-21MAA Control

Units are compatible for use with the PAR-30MAA or PAR-21MAA remote controller, which has a variety of management functions including a weekly timer.

Group Control System Group Control

The same remote controller is capable of controlling the operational status of up to 16 refrigerant systems.

M-NET connection M-NET Connection

Units can be connected to MELANS system controllers (M-NET controllers) such as the AG-150A.

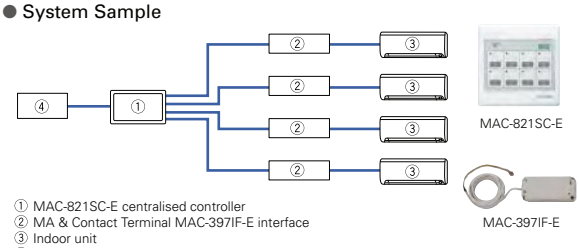
COMPO COMPO (Simultaneous Multi-unit Operation)

Multiple indoor units can be connected to a single outdoor unit. (Depending on the unit combination, connection of up to four units is possible; however, all indoor units must operate at the same settings.)

Centralised On/Off Centralised On/Off Control

Units can be connected to the MAC-821SC-E centralised remote controller, which can control the On/Off function for a maximum of eight indoor units.

● System Sample



① MAC-821SC-E centralised controller
② MA & Contact Terminal MAC-397IF-E interface
③ Indoor unit
④ Breaker

MXZ connection MXZ Connection

Connection to the MXZ multi-split outdoor unit is possible.

FUNCTIONS

INSTALLATION

Cleaning-free Pipe Reuse

The application of pipe reuse technology such as Mitsubishi Electric's original hard alkyl benzene oil makes it possible to reuse the same piping, thereby allowing cleaning-free renewal of air conditioning systems that use R22 refrigerant.

•Please refer to page 56 for details.

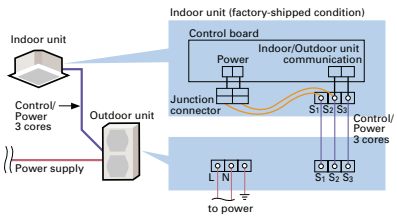
Reuse of Existing Wiring

Wiring recycling problem solved! Compatible with other wiring connection methods*

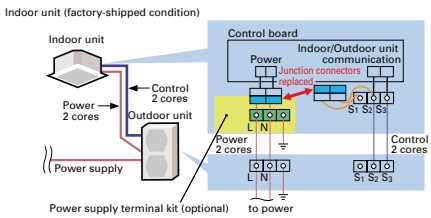
The wiring method has been improved, making it possible to use methods different from that utilized for control and power supply. Units are compatible with the dual harness control line/power line method and the separate power supply method. Using a power-supply terminal kit, wire can be efficiently reused at the time of system renewal regardless of the method the existing system uses.

* Optional. Usage may be limited due to wiring type diameter.

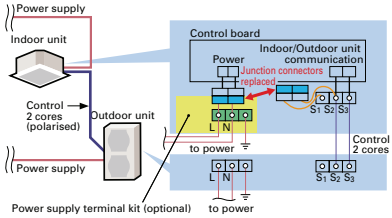
Single Harness Control/Power Line Method (Current method)



Dual Harness Control Line/Power Line Method



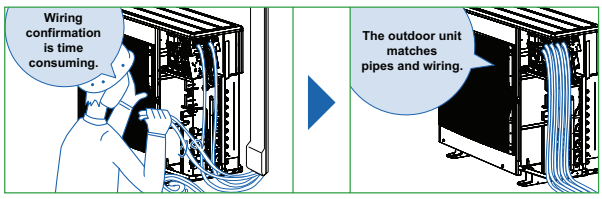
Separate Power Supply Method



Wiring/Piping Correction Function*

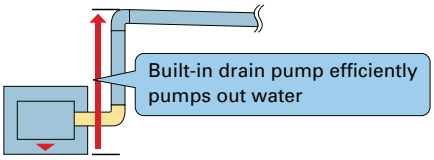
The push of a single button is all that is required to confirm that piping and wiring are properly connected. Corrections are made automatically if a wiring error is detected, eliminating the need for complicated wiring confirmation work when expanding the number of rooms served.

* This function cannot be used when the outdoor temperature is below 0°C. The correction process requires 10–20 minutes, and only works when the unit is set to the Cooling mode.



Drain Pump

A built-in drain pump enables drain piping to be raised.



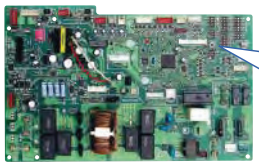
Flare Connection

Flare connection to cooling pipe work is possible.

Pump Down Switch

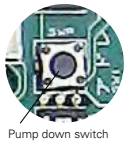
Enables smooth and easy recovery of refrigerant. Simply press the "Pump Down" switch before moving or changing the unit.

Outdoor unit control circuit board



* Photo of Model PUHZ-P100

Pump Down Switch



Push this switch to start/stop refrigerant recovery operation automatically. (Valve in refrigerant circuit is opened/closed.)

Pump down switch

MAINTENANCE

Quick Clean Body

The cover panel can be quickly removed for washing and the airflow vents can be opened without any special tools, making it easy to clean the inside of the air conditioner in minutes. Periodic cleaning of the air conditioner is recommended to maintain optimum operating efficiency and energy savings.



Open the vents and reach into clean the fan


Exclusive Quick Clean Kit (Optional)

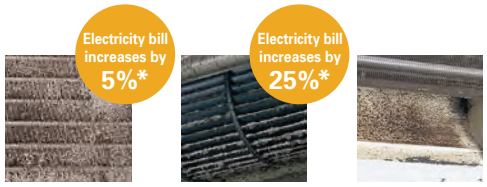
Our exclusive "Quick Clean Kit" can be easily connected to a household vacuum cleaner for quick and easy cleaning of the heat exchanger.*

*Wearing gloves is highly recommended when cleaning the heat exchanger, because touching it with bare hands can cause injury.

Mitsubishi Electric's "Quick Clean Body" prevents increases in electricity cost by as much as 30%*

Always clean the heat exchanger, fan, and air vent to ensure proper performance and economical operation.

*Electricity cost comparison of operation between two units at a fixed temperature; one with 8g of dirt on one fan and the other fan clean. Based on in-house data.



Heat exchanger | Fan | Air vent

Self-Diagnostic Function (Check Code Display)

Check codes are displayed on the remote controller or the operation indicator to inform the user of malfunctions detected.

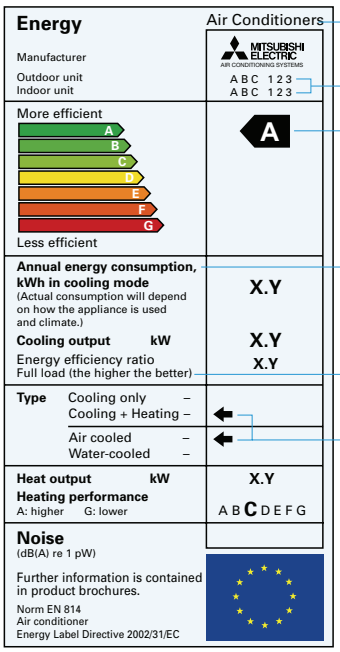
Failure Recall Function

Operation failures are recorded, allowing confirmation when needed.

ENERGY LABELING

In order to conform with the regulations stipulated in the Kyoto Protocol, the European Climate Change Program has been introduced. This program has established a form of "energy labeling" as one method to promote the reduction of CO_2 emissions. The European Commission is confident that this labeling program will contribute to educating companies and the public as to the vital importance of understanding energy consumption, thereby leading consumers to purchase products that are both efficient and environmentally friendly. Each label contains information pertaining to the amount of energy consumed by the unit. Air conditioners with cooling capacities of under 12kW are split into seven categories (A-G). Each category is classified according to energy consumption (i.e. the "Energy Efficiency Ratio") and color coded. Units in Category A are the most efficient, symbolized by a green arrow on the label. Less efficient units are classified in order of efficiency, with the least efficient units belonging to Category G, the label of which is marked with a red arrow. This enables consumers to easily identify the more efficient units when they are comparing brands and units at the time of purchase.

Energy Labeling of Air Conditioners



Product

Model Name

Energy Efficiency Class

Annual Energy Consumption

The Annual Energy Consumption is calculated with the total input power multiplied by an average of 500 hours per year in cooling mode at full load.

Energy Efficiency Ratio
Higher EER means better energy efficiency.

Type of Air Conditioner

Classifications

All air conditioners with the cooling capacity under 12kW are concerned.
Directive defines for each type of product the energy class going from A (more efficient) to G (less efficient).
The energy efficiency class is determined in accordance with the following tables.

Energy Efficiency Class In cooling mode	Energy Efficiency Class In heating mode
A 3.20 < EER	A 3.60 < COP
B 3.20 ≥ EER > 3.00	B 3.60 ≥ COP > 3.40
C 3.00 ≥ EER > 2.80	C 3.40 ≥ COP > 3.20
D 2.80 ≥ EER > 2.60	D 3.20 ≥ COP > 2.80
E 2.60 ≥ EER > 2.40	E 2.80 ≥ COP > 2.60
F 2.40 ≥ EER > 2.20	F 2.60 ≥ COP > 2.40
G 2.20 ≥ EER	G 2.40 ≥ COP

(These classifications are for Split and Multi-Split type air conditioners.)

FUNCTION LIST

Category		Icon	Combination	M SERIES																										
			Indoor unit	MSZ-FD20/35/50VA(S)							MSZ-EF22/25/35/42/50VE(W)(B)(S)							MSZ-GE22/25/35/42/50/60/71VA							MSZ-SF15/20VA						
			Outdoor unit	MUZ -FD	MXZ -2C	MXZ -3C	MXZ -4C	MXZ -5C	MXZ -6C	MXZ -8B	MUZ -EF	MXZ -2C	MXZ -3C	MXZ -4C	MXZ -5C	MXZ -6C	MXZ -8B	MUZ -GE	MXZ -2C	MXZ -3C	MXZ -4C	MXZ -5C	MXZ -6C	MXZ -8B	MXZ -2C	MXZ -3C	MXZ -4C	MXZ -5C	MXZ -6C	MXZ -8B
Technology	DC Inverter			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Joint Lap DC Motor			●	●	●	71				●	●	●	71				●	●	●	71				●	●	71				
	Magnetic Flux Vector Sine Wave Drive									●							●							●						●
	Reluctance DC Rotary Compressor						80	●	●					80	●	●					80	●	●				80	●	●		
	Highly Efficient DC Scroll Compressor									●							●							●						●
	Rare Earth Magnet Rotor(Compressor)			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	DC Fan Motor			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Vector-Wave Eco Inverter									●							●							●						●
	PAM(Pulse Amplitude Modulation)			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Power Receiver and Twin LEV Control					●	●	●					●	●	●					●	●	●				●	●	●			
	Grooved Piping			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Functions	Energy Saving	Felt Temperature Control (i-see Sensor)		●	●	●	●	●	●	●																				
		AREA Temperature Monitor		●	●	●	●	●	●	●																				
		Econo Cool Energy-saving Feature		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		'I-Feel' Control																												
		Demand Function								Opt							Opt							Opt							Opt
	Attractive	Pure White		VA	VA	VA	VA	VA	VA	VA	VEW	VEW	VEW	VEW	VEW	VEW	VEW	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		Auto Vane		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Air Quality	Plasma Duo		●	●	●	●	●	●	●																				
		Air Cleaning Filter																												
		Fresh-air Intake																												
		Anti-allergy Enzyme Filter																Opt 22-50	Opt 22-50	Opt 22-50	Opt 22-50	Opt 22-50	Opt 22-50	Opt 22-50							
		Electrostatic Anti-allergy Enzyme Filter									Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt 60/71		Opt 60	Opt 60/71	Opt 60/71	Opt 60/71	Opt 60/71							
		High-efficiency Filter																												
		Catechin Filter																22-50	22-50	22-50	22-50	22-50	22-50	22-50							
		Nano Platinum Filter									●	●	●	●	●	●	●	60/71		60	60/71	60/71	60/71	60/71							
		Oil Mist Filter																												
		Long-life Filter																												
		Filter Check Signal																												
	Air Distribution	Horizontal Vane		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		Vertical Vane		●	●	●	●	●	●	●								60/71			60/71	60/71	60/71	60/71							
		High Ceiling Mode																												
		Low Ceiling Mode																												
		Auto Fan Speed Mode		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		Wide and Long Airflow																60/71			60/71	60/71	60/71	60/71							
	Convenience	On/off Operation Timer		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		"i save" Mode									●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		Auto Changeover		●	●*1	●*1	●*1	●*1	●*1	●*1	●	●*1	●*1	●*1	●*1	●*1	●*1	●	●*1	●*1	●*1	●*1	●*1	●*1	●*1	●*1	●*1	●*1	●*1	●*1	●*1
		Auto Restart		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		Low-temperature Cooling		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		Low-noise Operation(Outdoor Unit)			●	●	●	●	●	●		●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●
		Ampere Limit Adjustment					80	●	●	●				80	●	●	●				80	●	●	●			80	●	●	●	●
		Operation Lock			●	●	●	●	●	●		●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●
		Built-in Weekly Timer Function									●	●	●	●	●	●	●	60/71		60	60/71	60/71	60/71	60/71	●	●	●	●	●	●	●
		Rotation, Back-up and 2nd Stage Cut-in Functions																													
	System Control	PAR-30MAA Control *3		Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
		PAR-21MAA Control *3		Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
		Centraliesd On/Off Control *3		Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
		System Group Control *3		Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
		M-NET Connection *3		Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
		COMPO *4																													
		MXZ Connection			●*2	●*2	●*2	●*2	●*2	●*2		●*2	●*2	●*2	●*2	●*2	●*2		22-50*2	22-50*2	●*2	●*2	●*2	●*2	●*2	●*2	●*2	●*2	●*2	●*2	●*2
	Installation	Cleaning-free Pipe Reuse		●	●	●	●	●	●		●	●	●	●	●	●		●	●	●	●	●	●		●	●	●	●	●	
		Reuse of Existing Wiring																												
		Wiring/Piping Correction Function					80	●	●					80	●	●					80	●	●				80	●	●		
		Drain Pump																												
		Pump Down Switch																												
		Flare Connection		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Maintenance	Quick Clean Body		●	●	●	●	●	●	●								●	●	●	●	●	●	●							
		Self-Diagnosis Function(Check Code Display)		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		Failure Recall Function		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

*1 When multiple indoor units connected to an MXZ outdoor unit are running at the same time, simultaneous cooling and heating is not possible.
*2 For the possible connectivity of MXZ outdoor units and indoor units, please refer to the list on page 99 for details.
*3 Please refer to "System Control" on pages 25-26 for details.
*4 Please refer to page 54 for details.

• The figures listed in the table are "only when combined with an outdoor unit with the appropriate capacity range".
• Opt: Separate parts must be purchased.

M SERIES																						S SERIES													
MSZ-HC25/35VA(B)	MSC-GE20/25/35VB		MSH-GE50VB	MSH-GA60VB	MSH-GD80VB	MS-GE50VB	MS-GA60VB	MS-GD80VB	MFZ-KA25/35/50VA							MLZ-KA25/35/50VA						SLZ-KA25/35/50VAL/VAQ							SEZ-KD25/35/50/60/71VAL/VAQ						
MUZ-HC	MUH-GA	MU-GA	MUH-GE	MUH-GA	MUH-GD	MU-GE	MU-GA	MU-GD	SUZ-KA	MXZ-2C	MXZ-3C	MXZ-4C	MXZ-5C	MXZ-6C	MXZ-8B	MXZ-2C	MXZ-3C	MXZ-4C	MXZ-5C	MXZ-6C	MXZ-8B	SUZ-KA	MXZ-2C	MXZ-3C	MXZ-4C	MXZ-5C	MXZ-6C	MXZ-8B	SUZ-KA	MXZ-2C	MXZ-3C	MXZ-4C	MXZ-5C	MXZ-6C	MXZ-8B
●									●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
●									●	●	●	71				●	●	71				●	●	●	71				●	●	●	71			
															●						●							●							●
												80	●	●				80	●	●					80	●	●		71			80	●	●	
															●						●							●							●
35									●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
●									●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
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									●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
											●	●	●				●	●	●					●	●	●					●	●	●		
●									●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●														
	●	●	●	●	●	●	●	●																											
															Opt						Opt							Opt							Opt
●									●	●	●	●	●	●	●							●	●	●	●	●	●	●							
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●							
	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt																											
																						●	●	●	●	●	●	●							
									●	●	●	●	●	●	●	Opt	Opt	Opt	Opt	Opt	Opt														
Opt	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	Opt	Opt	Opt	Opt	Opt	Opt														
																						●	●	●	●	●	●	●							
																						VAQ	VAQ	VAQ	VAQ	VAQ	VAQ	VAQ							
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●							
			●	●	●	●	●	●																											
																●	●	●	●	●	●														
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●								●	●	●	●	●	●	●
			●	●	●	●	●	●																											
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
									●	●	●	●	●	●	●																				
									●	●*1	●*1	●*1	●*1	●*1	●*1	●*1	●*1	●*1	●*1	●*1	●*1	●	●*1	●*1	●*1	●*1	●*1	●*1	●	●*1	●*1	●*1	●*1	●*1	●*1
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
									●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
										●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●		●	●	●	●	●	●
												80	●	●	●			80	●	●	●				80	●	●	●				80	●	●	●
										●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●		●	●	●	●	●	●
									Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
									Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
									Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
									Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
									Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
										●*2	●*2	●*2	●*2	●*2	●*2	●*2	●*2	●*2	●*2	●*2	●*2		●*2	●*2	●*2	●*2	●*2	●*2		●*2	●*2	●*2	●*2	●*2	●*2
●									●	●	●	●	●	●		●	●	●	●	●			●	●	●	●	●			●	●	●	●	●	
												80	●	●				80	●	●					80	●	●					80	●	●	
																●	●	●	●	●	●	●	●	●	●	●	●	●	Opt	Opt	Opt	Opt	Opt	Opt	Opt
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
●									●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

FUNCTION LIST

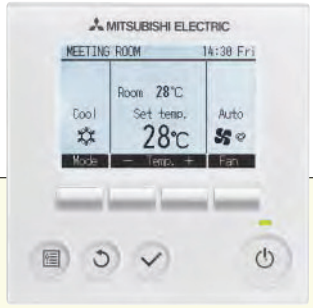
Category		Icon		P SERIES																					
		Combination	Indoor unit	PLA-RP35/50/60/71/100/125/140BA(2/3)											PEAD-RP35/50/60/71/100/125/140JAQ						PEAD-RP35/50/60/71/100/125/140JALQ					
			Outdoor unit	PUHZ -HRP	PUHZ -RP	PUHZ -P	SUZ -KA	PUH -P	PU-P	MXZ -3C	MXZ -4C	MXZ -5C	MXZ -6C	MXZ -8B	PUHZ -HRP	PUHZ -RP	PUHZ -P	SUZ -KA	PUH -P	PU-P	PUHZ -HRP	PUHZ -RP	PUHZ -P	SUZ -KA	PUH -P	PU-P
Technology	DC Inverter			●	●	●	●			●	●	●	●	●	●	●	●	●			●	●	●	●		
	Joint Lap DC Motor				35-71		●			●	71					35-71		●				35-71		●		
	Magnetic Flux Vector Sine Wave Drive			●	●	●								●	●	●	●				●	●	●				
	Reluctance DC Rotary Compressor					100-140	71				80	●	●				100-140	71					100-140	71		
	Highly Efficient DC Scroll Compressor			●	100-250	200/250								●	●	100-250	200/250				●	100-250	200/250			
	Rare Earth Magnet Rotor(Compressor)			●	●	●	●			●	●	●	●	●	●	●	●	●			●	●	●	●		
	DC Fan Motor			●	●	●	●			●	●	●	●	●	●	●	●	●			●	●	●	●		
	Vector-Wave Eco Inverter			●	●	●								●	●	●	●				●	●	●			
	PAM(Pulse Amplitude Modulation)			●	35-140	100-140	●			●	●	●	●	●	●	35-140	100-140	●			●	35-140	100-140	●		
	Power Receiver and Twin LEV Control			●	●					●	●	●			●	●					●	●				
	Grooved Piping			●	●	●	●	100	100	●	●	●	●	●	●	●	●	●	100	100	●	●	●	●	100	100
Functions	Energy Saving	Felt Temperature Control (i-see Sensor)		Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt												
		AREA Temperature Monitor																								
		Econo Cool Energy-saving Feature																								
		'I-Feel' Control																								
		Demand Function		Opt	Opt	Opt								Opt	Opt	Opt	Opt				Opt	Opt	Opt			
	Attractive	Pure White		●	●	●	●	●	●	●	●	●	●	●												
		Auto Vane		●	●	●	●	●	●	●	●	●	●	●												
	Air Quality	Plasma Duo																								
		Air Cleaning Filter																								
		Fresh-air Intake		●	●	●	●	●	●	●	●	●	●	●												
		Anti-allergy Enzyme Filter																								
		High-efficiency Filter		Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt												
		Catechin Filter																								
		Oil Mist Filter																								
		Long-life Filter		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		Filter Check Signal		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Air Distribution	Horizontal Vane		●	●	●	●	●	●	●	●	●	●	●												
		Vertical Vane																								
		High Ceiling Mode		●	●	●	●	●	●	●	●	●	●	●												
		Low Ceiling Mode		●	●	●	●	●	●	●	●	●	●	●												
		Auto Fan Speed Mode		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		Wide and Long Airflow																								
	Convenience	On/off Operation Timer		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		"i save" Mode																								
		Auto Changeover		●	●	●	●	●		●*1	●*1	●*1	●*1	●*1	●	●	●	●	●		●	●	●	●	●	
		Auto Restart		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		Low-temperature Cooling		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		Low-noise Operation(Outdoor Unit)		●	●	●				●	●	●	●	●	●	●	●				●	●	●			
		Ampere Limit Adjustment		100/125	60-140V 200/250						80	●	●	●	100/125	60-140V 200/250					100/125	60-140V 200/250				
		Operation Lock								●	●	●	●	●												
		Built-in Weekly Timer Function																								
		Rotation, Back-up and 2nd Stage Cut-in Functions		●	●	●		●	●						●	●	●		●	●	●	●	●		●	●
	System Control	PAR-30MAA Control *3		Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
		PAR-21MAA Control *3		Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
		Centraliesd On/Off Control *3		Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
		System Group Control *3		●	●	●	Opt	●	●	Opt	Opt	Opt	Opt	Opt	●	●	●	Opt	●	●	●	●	●	Opt	●	●
		M-NET Connection *3		Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
		COMPO *4		●	71-250	●		●	●						●	71-250	●		●	●	●	71-250	●		●	●
		MXZ Connection								●*2	●*2	●*2	●*2	●*2												
	Installation	Cleaning-free Pipe Reuse		●	●					●	●	●	●		●	●					●	●				
		Reuse of Existing Wiring		Opt	Opt	Opt		Opt	Opt						Opt	Opt	Opt		Opt	Opt	Opt	Opt	Opt		Opt	Opt
		Wiring/Piping Correction Function									80	●	●													
		Drain Pump		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●						
		Pump Down Switch		●	●	●		●	●						●	●	●		●	●	●	●	●		●	●
		Flare Connection		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Maintenance	Quick Clean Body																								
		Self-Diagnosis Function(Check Code Display)		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		Failure Recall Function		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

*1 When multiple indoor units connected to an MXZ outdoor unit are running at the same time, simultaneous cooling and heating is not possible.
*2 For the possible connectivity of MXZ outdoor units and indoor units, please refer to the list on page 99 for details.
*3 Please refer to "System Control" on pages 25-26 for details.
*4 Please refer to page 54 for details.

• If a numerical figure is listed, the feature is only available with the outdoor unit of that capacity.
• Opt: Optional parts must be purchased.

	P series																											
	PEA-RP200/250/400/500GAQ		PKA-RP35/50HAL		PKA-RP60/71/100KAL					PCA-RP50/60/71/100/125/140KAQ										PCA-RP71/125HAQ				PSA-RP71/100/125/140GA			
	PUHZ-RP	PUHZ-P	PUHZ-RP	PUHZ-P	PUHZ-HRP	PUHZ-RP	PUHZ-P	PUH-P	PU-P	PUHZ-RP	PUHZ-P	SUZ-KA	PUH-P	PU-P	MXZ-3C	MXZ-4C	MXZ-5C	MXZ-6C	PUHZ-RP	PUHZ-P	PUH-P	PU-P	PUHZ-RP	PUHZ-P	PUH-P	PU-P
	●	●	●	●	●	●	●			●	●	●			●	●	●	●	●	●			●	●		
			35-71			60-71				50-71		●			●	71			71				71			
	●	●	●	●	●	●	●			●	●								●	●			●	●		
				100-140			100-140				100-140	71				80	●	●		100/125				100-140		
	●	●	100-200	200	●	100-250	200/250			100-250	200/250								100-250	250			100-250	200/250		
	●	●	●	●	●	●	●			●	●	●			●	●	●	●	●	●			●	●		
	●	●	●	●	●	●	●			●	●	●			●	●	●	●	●	●			●	●		
	●	●	●	●	●	●	●			●	●								●	●			●	●		
			35-140	100-140	●	60-140	100-140			50-140	100-140	●			●	●	●	●	71-140	125/140			71-140	100-140		
	●		●		●	●				●					●	●	●		●				●			
	●	●	●	●	●	●	●	100	100	●	●	●	100	100	●	●	●	●	●	●	100	100	●	●	100	100
	Opt	Opt	Opt	Opt	Opt	Opt	Opt			Opt	Opt								Opt	Opt			Opt	Opt		
			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					●	●	●	●
			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●								
										●	●	●	●	●	●	●	●	●	●	●	●	●				
										Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt								
																			●	●	●	●				
										●	●	●	●	●	●	●	●	●					●	●	●	●
			Opt	Opt	Opt	Opt	Opt	Opt	Opt	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●								
																							●	●	●	●
										●	●	●	●	●	●	●	●	●								
										●	●	●	●	●	●	●	●	●								
			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●								
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●	●		●	●	●	●		●*1	●*1	●*1	●*1	●	●	●		●	●	●	
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●			●	●				●	●	●	●	●	●			●	●		
	●		60-140V 200/250		100/125	60-140V 200/250				60-140V 200/250						80	●	●	71-140V 200/250				71-140V 200/250			
															●	●	●	●								
			Opt	Opt	Opt	Opt	Opt	Opt	Opt	●	●		●	●	●	●	●	●	●	●	●	●				
	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
			Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
	●	●	Opt	Opt	Opt	Opt	Opt	Opt	Opt	●	●	Opt	●	●	●	●	●	●	●	●	●	●	Opt	Opt	Opt	Opt
	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
			71-250	●	●	71-250	●	●	●	71-250	●		●	●					71-250	●	●	●	71-250	●	●	●
															●*2	●*2	●*2	●*2								
	●		●		●	●				●					●	●	●	●	●				●			
			Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt		Opt	Opt					Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
																80	●	●								
			Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt								
	●	●	●	●	●	●	●	●	●	●	●		●	●					●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

CONTROL TECHNOLOGIES



PAR-30MAA

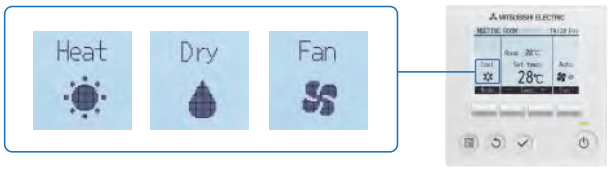
User-friendly Deluxe Remote Controller with Excellent Operability and Visibility

Easy To Read & Easy To Use
Full Dot Liquid-crystal Display Adopted

Easier to read thanks to use of a full dot liquid-crystal display with backlight, and easier to use owing to adopting a menu format that has reduced the number of operating buttons.

Display Example [Operation Mode]

Full Dot LCD



Multi-language Display

Multi-language

Control panel operation in eight different languages

Choose the desired language, among the following languages.

Energy-efficient Control
Operation Control Functions

Energy-saving Schedule

Precise control of power consumption

The amount of power consumed in each time period is managed so that the demand value is not exceeded. The demand control function can be set to start and finish in 5-minute units. Additionally, the level can be adjusted to 0, 50, 60, 70, 80 or 90% of maximum capacity, and up to 4 patterns can be set per day. Air-conditioning operation is automatically controlled to ensure that electricity in excess of the contracted volume is not consumed.

■Setting pattern example

Start time		Finish time	Capacity savings
8:15	→	12:00	80%
12:00	→	13:00	50%
13:00	→	17:00	90%
17:00	→	21:00	50%

Auto-return

Prevents wasteful operation by automatically returning to the preset temperature after specified operating time

After adjusting the temperature for initial heating in winter or cooling on a hot summer day, it is easy to forget to return the temperature setting to its original value. The Auto-return function automatically resets the temperature back to the original setting after a specified period of time, thereby preventing overheating/overcooling. The Auto-return activation time can be set in 10-minute units, in a range between 30 and 120 minutes.

*Auto-return cannot be used when Temperature Range Restrictions is in use.

Night Setback

Keep desired room temperatures automatically

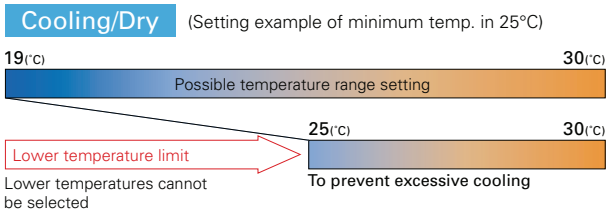
This function monitors the room temperature and automatically activates the heating mode when the temperature drops below the preset minimal temperature setting. It has the same function for cooling, automatically activating the cooling mode when the temperature rises above the preset maximum temperature setting.

Temperature Range Restriction

Temperature Range Restriction prevents overheating/overcooling

Using a temperature that is 1°C lower/higher for heating/cooling results in a 10% reduction in power consumption.* Temperature Range Restriction limits the maximum and minimum temperature settings, contributing to the prevention of overheating/overcooling.

*In-house calculations



Recommended for Office Restaurant

Auto-off Timer

Turns heating/cooling off automatically after preset time elapses

When using Auto-off Timer, even if one forgets to turn off the unit, operation stops automatically after the preset time elapses, thereby preventing wasteful operation. Auto-off Timer can be set in 10-minute units, in a range between 30 minutes and 4 hours. Eliminates all anxiety about forgetting to turn off the unit.

Recommended for: Meeting room | Changing room

Operation Lock

Fixed temperature setting promotes energy savings

In addition to operation start/stop, the operation mode, temperature setting and airflow direction can be locked. Unwanted adjustment of temperature settings is prevented and an appropriate temperature is constantly maintained, leading to energy savings. This feature is also useful in preventing erroneous operation or tampering.

Recommended for: Office | School | Public hall | Hospital | Computer server facility

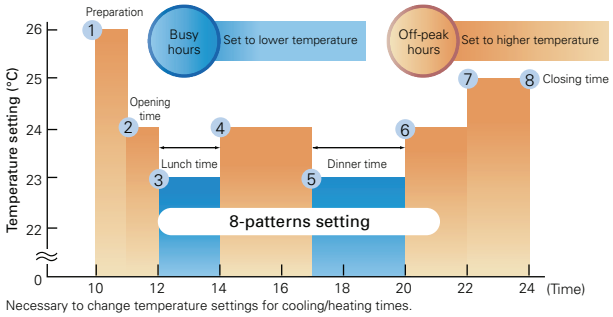
Weekly Timer

Set up to 8 patterns per day including temperature control

The Weekly Timer enables the setting of operation start and finish times and adjusting the temperature as standard features. Up to 8 patterns per day can be set, providing operation that matches the varying conditions of each period, such as the number of customers in the store.

*Weekly Timer cannot be used when On/Off Timer is in use.

Setting Example (restaurant in summer time)



Necessary to change temperature settings for cooling/heating times.
*Joint research conducted with Japan Facility Solutions, Inc.

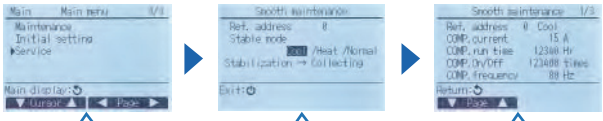
Installation/Maintenance Support Functions

Smooth Maintenance

Outdoor unit data accessed immediately, enabling fast maintenance

Using the Stable Operation Control (fixed frequency) of the Smooth Maintenance function, the operating status of the inverter can be checked easily via the screen on the remote controller.

■ Smooth Maintenance Function Operating Procedure



Display information (11 items)

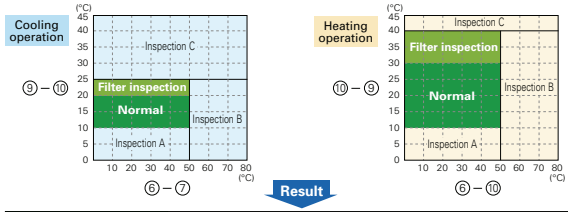
Compressor		⑥	OU TH4 temp. (°C)
①	COMP. current (A)	⑦	OU TH6 temp. (°C)
②	COMP. run time (Hr)	⑧	OU TH7 temp. (°C)
③	COMP. ON/OFF (times)	Indoor Unit	
④	COMP. frequency (Hz)	⑨	IU air temp. (°C)
Outdoor Unit		⑩	IU HEX temp. (°C)
⑤	Sub cool (°C)	⑪	IU filter operating time* (Hr)

*IU filter operating time is the time elapsed since filter was reset.

Inspection Guidelines

The computed temperature difference is plotted as in the graph below and operating status is determined.

		Item
Cooling	Temp. difference	(⑥ OU TH4 temp.) – (⑦ OU TH6 temp.)
		(⑨ IU air temp.) – (⑩ IU HEX temp.)
Heating		(⑥ OU TH4 temp.) – (⑩ IU HEX temp.)
		(⑩ IU HEX temp.) – (⑨ IU air temp.)



Normal	Normal operating status.
Filter inspection	Filter may be blocked.*1
Inspection A	Capacity is reduced. Detailed inspection is necessary.
Inspection B	Refrigerant level is low.
Inspection C	Filter or indoor unit heat exchanger is blocked.

*1: Due to indoor and outdoor temperatures, "Filter inspection" may be displayed even if the filter is not blocked.
* The above graphs are based on trial data. Results may vary depending on installation/temperature conditions.
● Stable operation may not be possible under the following temperature conditions:
a) In cooling mode when the outdoor induction temperature is over 40°C or the indoor induction temperature is below 23°C.
b) In heating mode when the outdoor induction temperature is over 20°C or when the indoor induction temperature is over 25°C.
● If the above temperature conditions do not apply and stable operation is not achieved after 30 minutes has passed, please inspect the units.
● The operating status may change due to frost on the outdoor heat exchanger.

Manual Vane Angle Setting (4-way ceiling cassette)

Direction of vertical airflow for each vane can be set

Setting the vertical airflow direction for each individual vane can be performed simply via illustrated display. Seasonal settings such as switching between cooling and heating are easily changed as well.

Auto-descending Panel Operation

Easily raise/lower panels using the remote controller

Auto-descending panel operation is available as an option. Panels can be lowered/raised using a button on the wired remote controller. Filter cleaning can be performed easily.

Reassuring Troubleshooting Navigation Function

Contact Details Displayed When Abnormality Occurs
Easily contact a service company when there is a problem.

The telephone number of a service company and other information can be input and stored in advance. When a problem occurs, the contact details are displayed automatically, and a call for help can be made without delay.

CONTROL TECHNOLOGIES

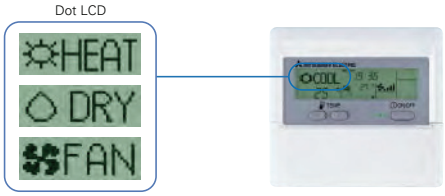
Advanced MA Remote Controller —
A Progressive Step in the Evolution of Air Conditioning Control

PAR-21MAA

Easy To Read & Easy To Use
Dot Liquid-crystal Display Adopted

The adoption of dot liquid-crystal display (LCD) technology and a large display screen for the control panel optimises visibility. Operation and control status are easily read at a glance.

Display Example [Operation Mode]



Multi-language Display

Multi-language

Control panel operation in eight different languages

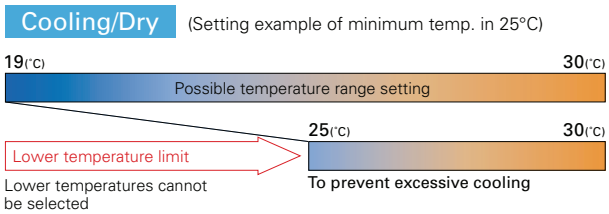
Choose the desired language, among the following languages.

Energy-efficient Control
Operation Control Functions

Temperature Range Restriction

Air conditioner operation restricted to within a specified operating range

Set the upper and lower limits for the temperature range during operation. Excessive heating or cooling is prevented, leading to increased energy savings.



Recommended for: Office, Restaurant

Auto-off Timer

Automatically turns off air conditioner

Set the time for the air conditioner to turn off automatically. The timer can be set in the range from 30 minutes up to 4 hours in 30-minute intervals.

The "Simple Timer"—starts/stops in units of 1 hour in a 72-hour period—is set at the time of shipment from the factory. It can be changed to the "Auto-off Timer" function using the remote controller.

Recommended for: Meeting room, Changing room

Operation Lock

Prevent operation settings from being changed

Units can be set so that the operation mode cannot be changed. When "Operation Lock" is activated, new temperature setting commands are not accepted, thereby ensuring that the unit runs in the specified (locked in) temperature range. This promotes energy savings and prevents erroneous/ mischievous operation.

Only the administrator can change settings when using the Operation Lock mode.

Recommended for: Office, School / Private school, Public facility like public hall, Hospital, Server room

Weekly Timer

Introduced in response to market demand

Control temperature on a weekly basis

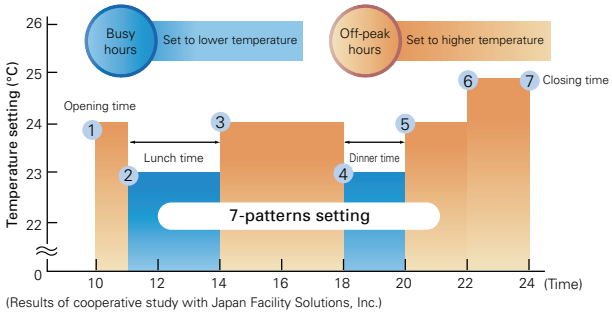
Temperature settings and On/Off control can be managed over a period of one week using the Weekly Timer. Up to eight setting patterns per calendar day are possible.

Setting the temperature 1°C higher for cooling and 1°C lower for heating leads to an energy savings of approximately 10%.

Approximate 10%* Energy Savings

*Based on in-house calculations

Setting Example (restaurant in summer time)



(Results of cooperative study with Japan Facility Solutions, Inc.)

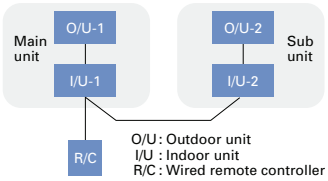
Rotation Back-up Rotation, Back-up and 2nd Stage Cut-in Functions (PAR-30MAA and PAR-21MAA)

(1) Rotation and Back-up Functions

Function Outline

- Main and sub units take turns operating according to a rotation interval setting.
- If one unit malfunctions, the other unit automatically begins operation (Back-up function)

System Image



(2) 2nd Stage Cut-in Function

Function Outline

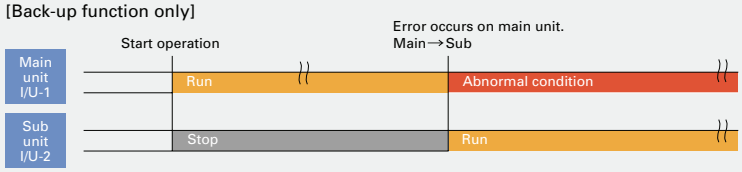
- Number of units operating is based on room temperature and predetermined settings.
- When room temperature rises above the desired setting, the standby unit starts (2-unit operation).
- When the room temperature falls 4°C below the predetermined setting, the standby unit stops (1-unit operation).

System Constraint

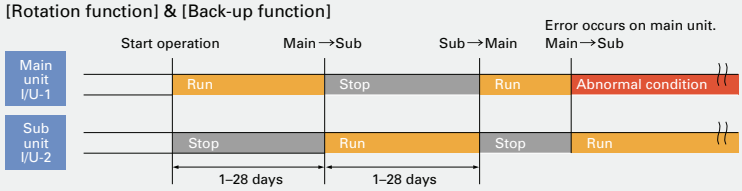
- This function is only available for rotation operation and when the back-up function is in cooling mode.

Operation Pattern

[Back-up function only]



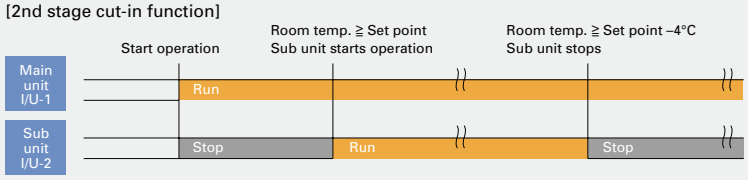
[Rotation function] & [Back-up function]



(Ex: When the request code is "313", each unit operates alternately in daily cycle.)

Operation Pattern

[2nd stage cut-in function]



Easy Maintenance Function (Mr. Slim Power Inverter only)

POWER INVERTER

- Nearly maintenance-free operation
- Monitor operation data of the indoor and outdoor units via the remote controller. Remote controller also lets you set the operating frequency, allowing easier inspection.

Easy Maintenance Information

Compressor		Outdoor Unit		Indoor Unit	
①	Accumulated operating time (x10hr)	④	Heat exchanger temperature (˚C)	⑦	Intake-air temperature (˚C)
②	Number of ON/OFF times (x100 times)	⑤	Discharge temperature (˚C)	⑧	Heat exchanger temperature (˚C)
③	Operating current (A)	⑥	Outdoor-air temperature (˚C)	⑨	Filter operating time* (hr)

*The filter operating time is the time elapsed since the filter button was reset.

Refrigerant Leakage Check (Mr. Slim Power Inverter only)

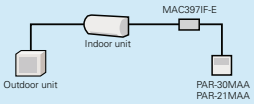
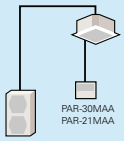
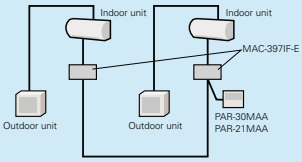
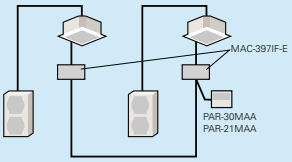
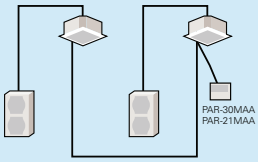
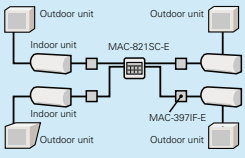
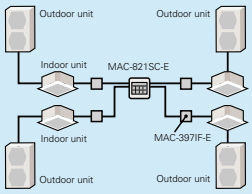
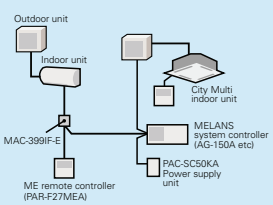
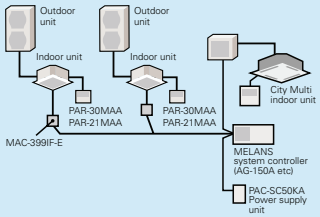
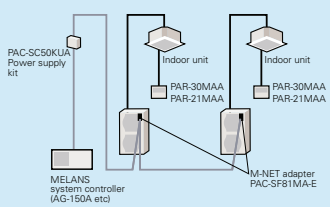
POWER INVERTER

The Mr. Slim Power Inverter units come equipped with a useful new "Refrigerant Leakage Check" function. Using a wired remote controller, it is easy to check if refrigerant has been lost over a long period of use. This reduces service time and gives an added sense of safety.

SYSTEM CONTROL

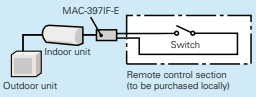
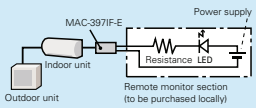
Versatile system controls can be realised using optional parts, relay circuits, control panels, etc.

MAJOR SYSTEM CONTROL

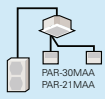
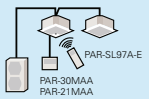
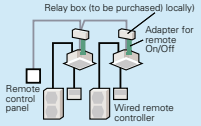
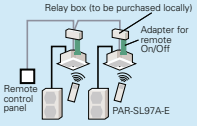
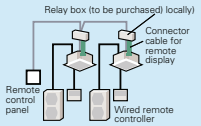
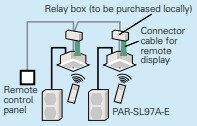
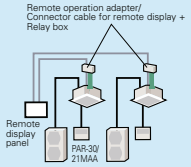
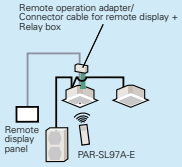
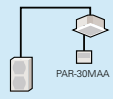
	System Examples		
Indoor Unit	M Series Indoor Unit	S Series & P Series Indoor Unit	P Series Indoor Unit
Outdoor Unit	M Series and MXZ Series Outdoor	S Series and MXZ Series Outdoor	P Series Outdoor
PAR-30MAA Control **PAR-21MAA Control**			
Details	• Wired remote controller can be connected to indoor unit	Standard equipment (for indoor units compatible with wired remote controllers)	
Major Optional Parts Required	• MAC-397IF-E (Interface) • PAR-30MAA (Wired remote controller) • PAR-21MAA (Wired remote controller)	• PAR-30MAA (Wired remote controller) • PAR-21MAA (Wired remote controller)	
System Group Control			
Details	• One remote controller can control plural air conditioners with the same settings simultaneously. • One remote controller can control up to 16 refrigerant systems. (When connected to a MXZ unit, MAC-397IF-E is counted as one system.) • Up to two remote controller can be connected.		
Major Optional Parts Required	• MAC-397IF-E (Interface) • PAR-30MAA (Wired remote controller) • PAR-21MAA (Wired remote controller)		• PAR-30MAA (Wired remote controller) • PAR-21MAA (Wired remote controller)
Centralised On/Off Control			
Details	• Up to 8 indoor units can be switched On/Off with one remote controller.		
Major Optional Parts Required	• MAC-397IF-E (Interface) • MAC-821SC-E (Centralised remote controller)		
M-NET Connections			
Details	• Group of air conditioners can be controlled by MELANS system controller (M-NET).		
Major Optional Parts Required	• MAC-399IF-E (M-NET Interface) • MELANS System controller • PAC-SC50KUA (power supply unit)		• PAC-SF81MA-E (M-NET converter) • MELANS System controller • PAC-SC50KUA (power supply unit)

OTHERS

For M Series Indoor Units (New A-control Models Only)

	System Examples	Connection Details	Control Details	Major Optional Parts Required
1 Remote On/Off Operation • Air conditioner can be started/stopped remotely. (1 and 2 can be used in combination)		Connect the interface to the air conditioner. Then connect the locally purchased remote controller to the terminal in the interface.	On/Off operation is possible from a remote location.	• **MAC-397IF** (Interface) • Parts for circuit such as relay box, lead wire, etc. (to be purchased locally)
2 Remote Display of Operation Status • The On/Off status of air conditioners can be confirmed remotely. (1 and 2 can be used in combination)		Connect the interface to the air conditioner. Then connect the locally purchased remote controller to the terminal in the interface.	The operation status (On/Off) or error signals can be monitored from a remote location.	• **MAC-397IF-E** (Interface) • Parts for circuit to be purchased locally (DC power source needed)

For P Series and S Series Indoor Units

	System Examples		Details	Major Optional Parts Required
	Wired remote controller	Wireless remote controller		
A 2-remote Controller Control With two remote controllers, control can be performed locally and remotely from two locations.	 * Set "Main" and "Sub" remote controllers. (Example of 1 : 1 system)	 * When using wired and wireless remote controllers (Example of Simultaneous Twin)	• Up to two remote controllers can be connected to one group. • Both wired and wireless remote controllers can be used in combination.	• Wired Remote Controller **PAR-30MAA** **PAR-21MAA** (for PKA, **PAC-SH29TC-E** is required) • Wireless Remote Controller **PAR-SL97A-E** (Except for SLZ) • Wireless Remote Controller Kit for PCA **PAR-SL99B-E**
B Operation Control by Level Signal Air conditioner can be started/stopped remotely. In addition, On/Off operation by local remote controller can be prohibited/permitted.	 (Example of 1 : 1 system x 2)	 (Example of 1 : 1 system x 2)	• Operation other than On/Off (e.g., adjustment of temperature, fan speed, and airflow) can be performed even when remote controller operation is prohibited. • Timer control is possible with an external timer.	• Adapter for remote On/Off **PAC-SE55RA-E** • Relay box (to be purchased locally) • Remote control panel (to be purchased locally)
C Operation Control by Pulse Signal	 (Example of 1 : 1 system x 2)	 (Example of 1 : 1 system x 2)	• The pulse signal can be turned On/Off. • Operation/emergency signal can be received at a remote location.	• Connector cable for remote display **PAC-SA88HA-E**/**PAC-725AD** **(10 pcs. x PAC-SA88HA-E)** • Relay box (to be purchased locally) • Remote control panel (to be purchased locally)
D Remote Display of Operating Status Operating status can be displayed at a remote location.	 (Example of 1 : 1 system)	 (Example of Simultaneous Twin)	• Operation/emergency signal can be received at a remote location (when channeled through the **PAC-SF40RM** → no-voltage signal, when channeled through the **PAC-SA88HA-E** → DC 12V signal).	• Remote display panel (to be purchased locally) • Connector cable for remote display **PAC-SA88HA-E**/**PAC-725AD** **(10 pcs. x PAC-SA88HA-E)** • Relay box (to be purchased locally) • Remote operation adapter **PAC-SF40RM** *Unable to use with wireless remote controller
E Timer Operation Allows On/Off operation with timer *For control by an external timer, refer to B Operation Control by Level Signal.	 (Example of 1 : 1 system)		• **Weekly Timer:** On/Off and up to 8 pattern temperatures can be set for each calendar day. (Initial setting) • **On/Off Timer:** On/Off can be set once each within 72 hr in intervals of 5-minute units. • **Auto-off Timer:** Operation will be switched off after a certain time elapse. Set time can be changed from 30 min. to 4 hr. at 10 min. intervals. *Simple Timer and Auto-off Timer cannot be used at the same time.	Standard functions of **PAR-30MAA**