

M-Series & P-Series Catalog

 **MITSUBISHI
ELECTRIC**
HEATING & AIR CONDITIONING







History of Innovation

For more than 30 years, Mitsubishi Electric's continuous innovation has brought unbeatable comfort and efficiency to homes and buildings of all shapes, sizes and uses. As a leader in advanced HVAC technologies, including Ductless and Ducted Mini-split and Variable Refrigerant Flow (VRF) heat pump and air-conditioning systems, we have a solution for any home, any building, anywhere. We continually innovate around efficiency, comfort and wellness in buildings or homes of all shapes and sizes by providing industry-leading products, design and technical training, and unmatched end-to-end support.

**A better way to heat and cool any home,
any building, anywhere.**



Sustainability

We are working to contribute to a more sustainable society by developing and promoting energy-saving all-electric products and systems, that will reduce the use of fossil fuels in the heating and cooling industry.

Our Commitment

Mitsubishi Electric promotes environmental sustainability through the electrification of residential and commercial heating and cooling products. We continue to advance technologies that reduce waste and promote sustainable resources while increasing energy efficiency and eliminating dependence on fossil fuels. We are committed to improving energy efficiency in all of our operations.

An Industry Changing

Strategic Electrification is the movement to replace fossil fuel-burning technologies with electricity-based alternatives to reduce pollution, increase energy efficiency, and reduce costs for consumers and society. Strategic Electrification in the heating and cooling industry is powering end uses with electricity instead of fossil fuels. Fossil fuel-free heating results in a reduction of greenhouse gas emissions (decarbonization), which is good for the environment, improves indoor air quality by reducing pollution, and with the zoning capabilities of Mitsubishi Electric systems, improves comfort and control.

“Our vision is clear: to align personal comfort with the greater societal good.”



INVERTER-Compressor Technology

Conventional systems are either on or off. All or nothing. Our compressors speed up or slow down based on the needs of each room to maintain comfort and conserve energy.



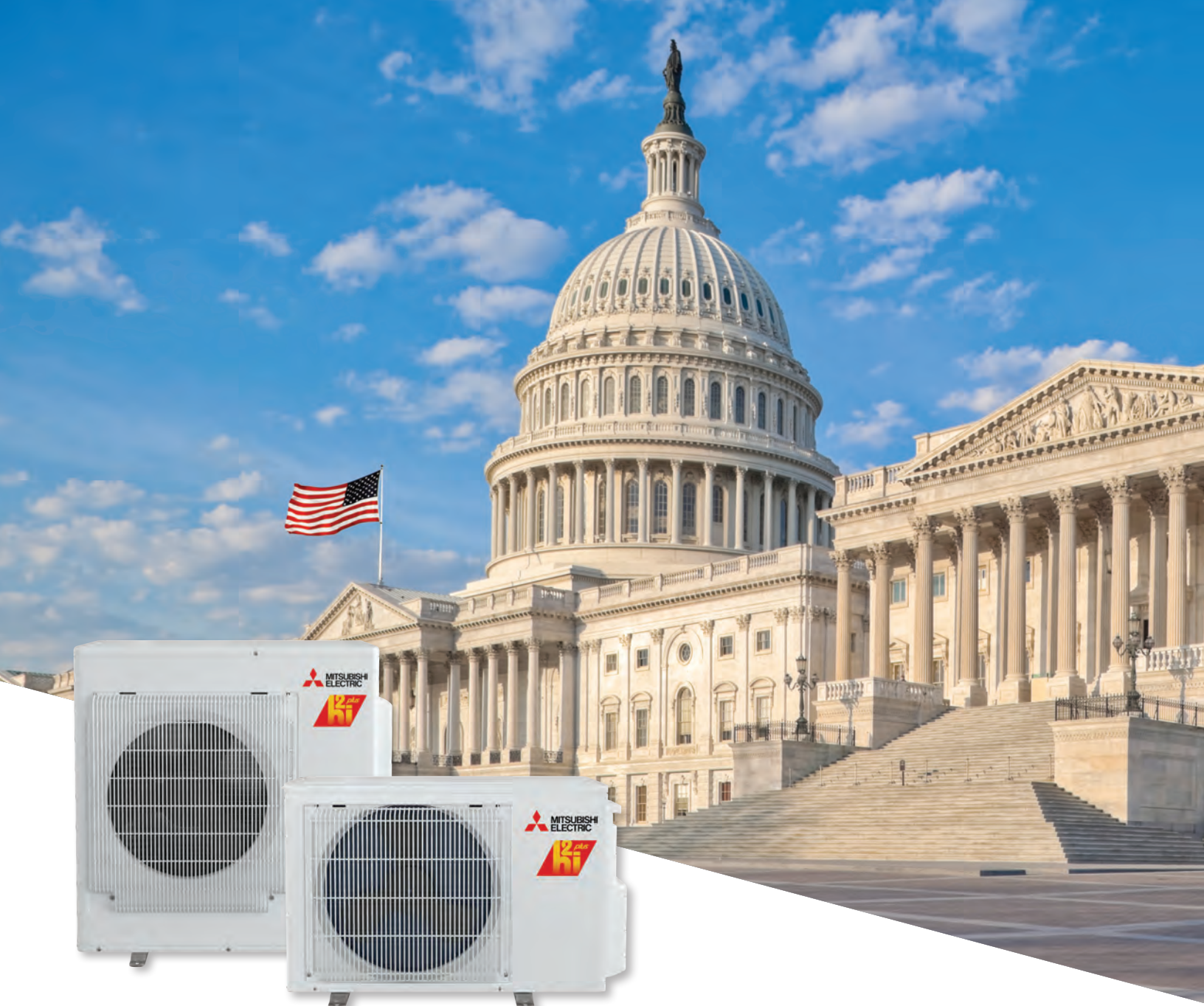
Room by Room Control

Divide your home into zones that best fit your family's needs. Save energy and maximize savings by creating your customized comfort zones.



ENERGY STAR®

Many of our systems are ENERGY STAR qualified and may be eligible for federal and state tax credits or local utility rebates.



2023 Department of Energy Minimum Efficiency Standard

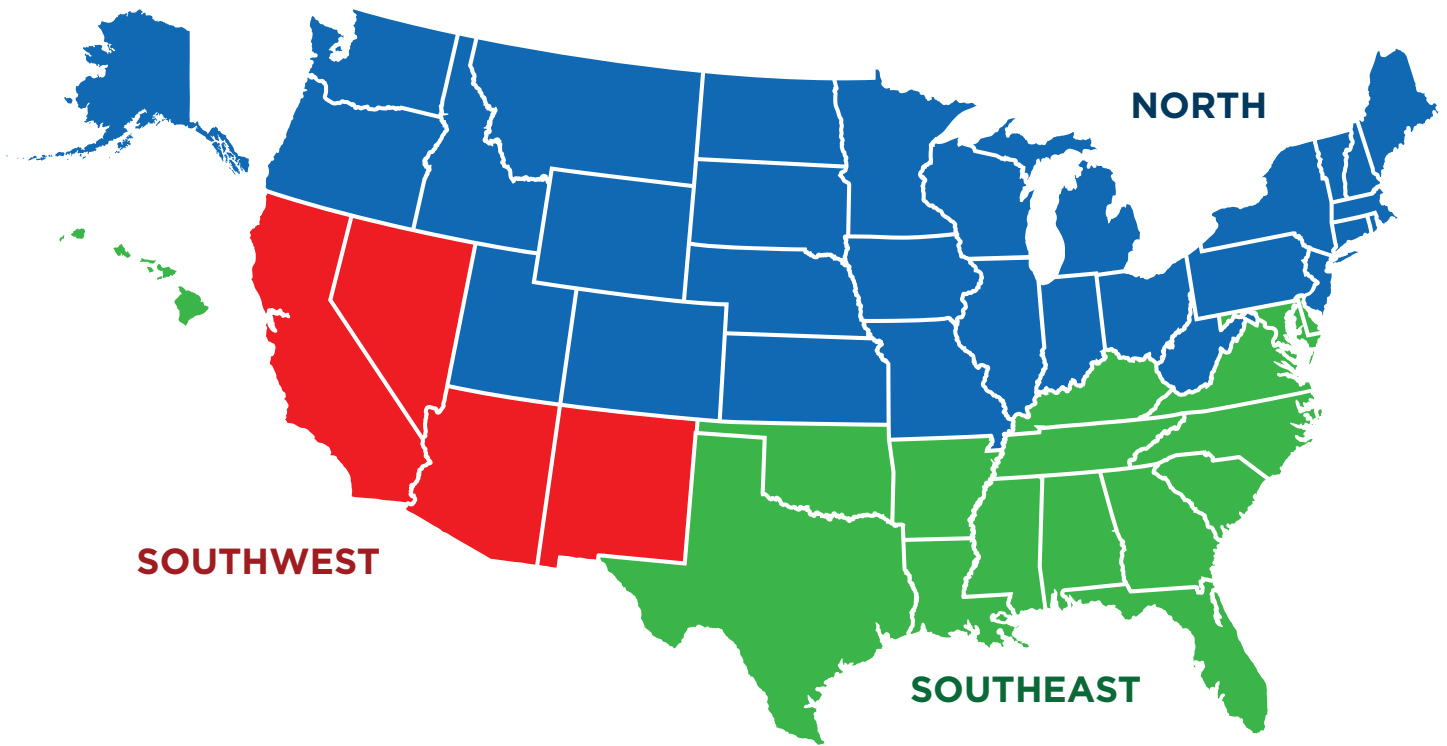
On January 1, 2023, updated minimum efficiency standards for air conditioners, heat pumps, and mini-splits were introduced. These regulations require new testing procedures and reporting metrics, outlined below:

- Testing procedure changes include increased static pressure and airflow setpoint to reflect actual field conditions
- Equipment manufactured after January 1, 2023 must meet new regulations
- Equipment manufactured prior to January 1, 2023, can continue to be sold in the North region without restriction, but also in the Southeast and Southwest where able to meet 2023 standards
- SEER, EER, HSPF will be reported as SEER2, EER2, HSPF2

Regulatory Changes by Region

Compliance for 2023 air conditioners, heat pumps, and mini splits is based on the installation date or the manufactured date, depending on location. In the North region, an AHRI-rated matched system must be compliant on the day the manufacturer produces it. These systems can only be sold and installed in the North region. In the Southeast and Southwest regions, the installation date determines compliance.

Our innovative technology positions us well for this change. We continue to invest in design, engineering, materials, and testing to produce compliant products. We do this without hesitation to remain aligned with sustainability regulations and lead the way forward for the HVAC industry. As a result, we have the most extensive list of products that meet or exceed 2023 regulations in the North and Southeast, with only a few cooling-only exceptions in the Southwest.



North Region			
Units manufactured after December 31, 2022.			
		SEER2	HSPF2
65,000 BTUH or less	AC	13.4	---
	HP	14.3	7.5

Southwest Region				
Units manufactured after December 31, 2022.				
		SEER2	HSPF2	EER2
45,000 BTUH or less	AC	14.3	---	11.7*
Greater than 45,000 BTUH	AC	13.8	---	11.2*
65,000 BTUH or less	HP	14.3	7.5	---

Southeast Region			
Units manufactured after December 31, 2022.			
		SEER2	HSPF2
45,000 BTUH or less	AC	14.3	---
Greater than 45,000 BTUH	AC	13.8	---
65,000 BTUH or less	HP	14.3	7.5

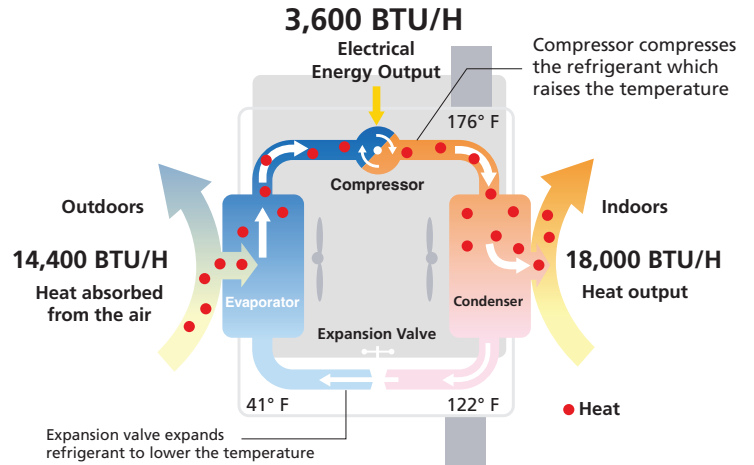
*9.8 EER2 if SEER2 ≥ 15.2

Helping to Prevent Global Warming

Heat pump technology inspires Mitsubishi Electric to design air conditioners that combine comfort and ecology. We develop technologies to achieve 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 systems.
2. 3D i-see Sensor®	When enabled, the sensor detects the location of people within a space. Customized airflow settings to move air directly toward or away from individuals provides personalized comfort.	The sensor detects the number of people in the space. When the space is detected to be vacant, the unit enters Energy Saving operation or may be set to automatically turn off.
3. Flash Injection	Achieves high heating capacity even at low temperatures plus faster start-up compared to conventional inverters.	Expands the geographical region covered by heat pump heating systems.

Heat Pump Principle (When Heating) <Case of COP of 4.0> Refrigerant and Heat Circulation



Quality Assurance and Testing

Cutting-edge technologies and uncompromising commitment to quality and reliability have made us one of the world's most trusted brands in air conditioning and refrigeration equipment and service.

Product Testing

Operating Tests in Harsh Conditions

Harsh environmental conditions of cold regions are simulated for the development of our heat pumps. This is one of the reasons customers in severely cold regions rely on us for comfortable heating.

Combustion Test

Products are subjected to a wide range of tests, including combustion testing, all to confirm safe operation under various conditions. Combustion testing is done by assuming accidental firing and replicating abnormal conditions that cause breakage of pressure components.

Shock Resistance Test

On the assumption of many different logistics environments in the world, we perform drop/strength tests, transport vibration tests, and many other product checks to assure that the quality and performance are maintained when the product reaches the user's home.

Waterproof and Corrosion Test

Since the outdoor unit is subject to rain, wind, and corrosive substances, potential problems are checked through tests such as showering the unit for a certain amount of time and increasing protection to enhance the lifespan of the unit.

Operation Noise Test

Operation noise tests are performed in an anechoic chamber with an extremely low 10 dB(A) of background noise. This is just one of the ways we ensure our customers enjoy extremely quiet heat pumps with a minimum operation noise of 19 dB(A) (sound pressure level).

Engineered Design

Engineers strive to achieve our philosophy of combining comfort and ecology in an effort to continually raise the bar. Therefore, we are working to further improve quality at all stages from development to production.

Efficient Production

Every air conditioner goes through a rigorous electrical inspection on the manufacturing line. In final testing, our experienced inspectors listen for even the faintest operation noise to detect any defect.



INVERTER Features

DC Fan Motor

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

Grooved Piping

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

Heat Caulking Fixing Method

A Heat Caulking Fixing Method replaced arc spot welding to secure internal parts in place. This change reduces the distortion of internal components, resulting in additional efficiency gains.

Highly Efficient DC Scroll Compressor

Adding a frame compliance mechanism to the DC scroll compressor achieves further efficiency. The mechanism allows movement in the axial direction of the frame supporting the cradle scroll, thereby significantly reducing leakage and friction loss and ensuring high efficiency at all speeds.

Joint Lap DC Motor

Mitsubishi Electric has developed a unique motor, called the Poki-Poki Motor in Japan, 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 a microprocessor that converts the compressor motor's electrical current waveform from a conventional waveform to a sine wave (180° conduction) to achieve higher efficiency by raising the motor winding utilization ratio and reducing energy loss.

PAM (Pulse Amplitude Modulation)

PAM is a technology controlling the current waveform to resemble the supply voltage wave, resulting in reduced loss and more efficient electricity use. PAM control effectively utilizes 98% of the input power supply.

Power Receiver and Twin LEV Control

Mitsubishi Electric developed a power receiver and twin linear expansion valve (LEVs) circuit that optimize compressor performance. This technology ensures ultimate control in response to the operating waveform and outdoor temperature. Tailoring the system to the characteristics of R410A refrigerant improves operational efficiency.

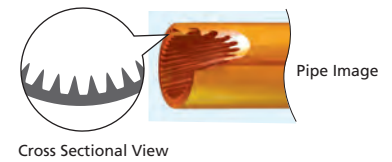
Reluctance DC Rotary Compressor

Powerful neodymium magnets used in the reluctance DC motor rotor produce strong magnetic torque and reluctance torque, resulting in more efficient operation.

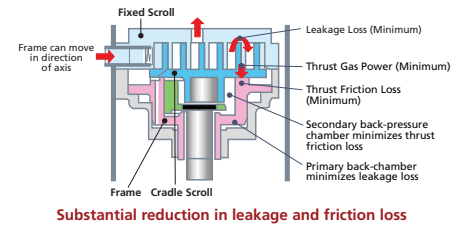
Room Temperature Maintained

The inverter monitors the varying compressor motor frequency and creates the most efficient waveform for the motor speed. This results in improving operating efficiency at all speed ranges, using less power, and reducing annual electricity costs.

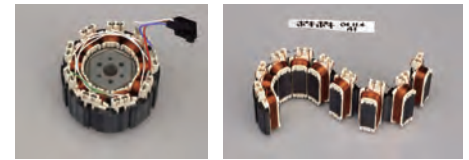
Grooved Piping



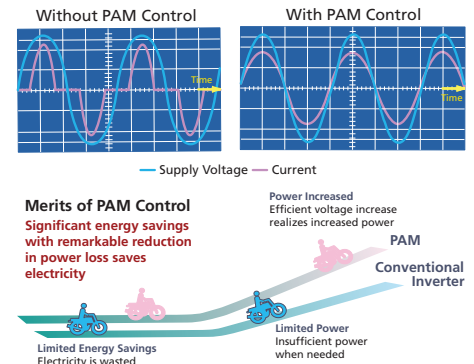
Highly Efficient DC Scroll Compressor



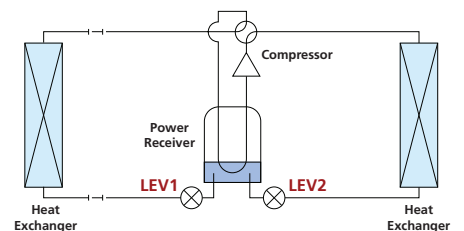
Joint Lap DC Motor



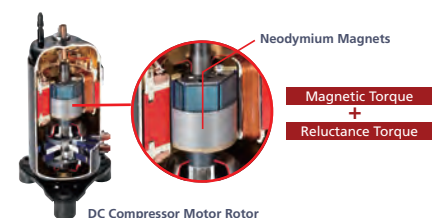
PAM (Pulse Amplitude Modulation)



Power Receiver and Twin LEV Control



Reluctance DC Rotary Compressor





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