

Mitsubishi System Technologies:

commercial, institutional and large residential personalized comfort solution. (P-Series systems)

Mitsubishi Electric delivers flexible and convenient cooling and heating solutions to almost any commercial, institutional or large residential application. Choose from small, quiet indoor and outdoor units that operate with the increased efficiency you need. Whether in a church, office building, school, nursing home, restaurant, retail store, or equipment room, the compact design of the indoor units make cooling and heating difficult spaces a breeze.

With wall-mounted, ceiling-recessed, ceiling-suspended and horizontal ducted options, capacities of up to 42,000 Btu/h of cooling or heating performance and Hyper-Heating INVERTER P-Series technology that provides 100 percent heating capacity down to 5° F, Mitsubishi Electric systems have the perfect solution for almost any building.



Technology Benefits of Mitsubishi Systems

Features	Benefits
INVERTER TECHNOLOGY	You can enjoy high-speed cooling and heating and consistent delivery of comfort year-round.
QUIET OPERATION	You can hold a board meeting or teach a class in quiet comfort.
EASY INSTALLATION	Installs quickly room by room with minimal interruption.
ZONE CONTROL	You can cool and heat only those spaces desired for maximum control and energy efficiency.
ADVANCED MICROPROCESSOR TECHNOLOGY	Built-in electronics ensure efficient operation and maximum performance for optimum comfort.
LOW AMBIENT COOLING DOWN TO 0° F OUTDOORS (REQUIRES WIND BAFFLE)	This feature is perfect for computer network centers and telecom equipment rooms that need help to stay cool down to 0° F outside.
ENVIRONMENTALLY FRIENDLY REFRIGERANT	Mitsubishi systems use R410A, an environmentally-friendly refrigerant.

Flexible Control

Convenient and efficient zone control means you can cool or heat only the spaces in use. You can even have single or dual controllers connected to one system. The controller does not even have to be in the space shared with the indoor unit. Features of the controller include a weekly timer, temperature range limiting, auto-off, expanded fault codes, and service call number display.

Installation Service and Maintenance Ease

The units use only three polarity sensitive wires plus a ground conductor run from the outdoor to the indoor unit, providing both power and communication connections. Two non-polar wires connect the indoor unit and wall-mounted controller. This wiring design helps avoid installation errors. An optional wireless remote controller kit is available for the ceiling-mounted indoor units.

Mitsubishi outdoor units are designed with easy service and maintenance in mind. Maintenance points are located behind easy-access panels to make installation and service effortless for a trained technician. Four-way piping access allows connection in four directions: front, rear, right and bottom (all PUY/PUZ models).

Redi-charged Systems

Mitsubishi outdoor units come with enough refrigerant to be installed 70 feet (PUY(Z)12-36) and up to 100 feet (PUY(Z)42) from the indoor units. Linesets can be run up to 100 feet from PUY(Z)12-18 outdoor units and 165 feet from PUY(Z)24-42 outdoor units when additional charge is added.

Thanks to unique design profiles and R410A refrigerant, these systems are easier to fit into any space. R410A is environmentally friendly with zero Ozone Depletion Potential (ODP).

Hot-start System

Heat pump systems use our hot-start technology to provide warmth from the beginning by ramping up fan speed as the coil warms. When you want warm air without annoying drafts, that's what you'll get.

Low Ambient Operation (PUY/PUZ)

The ability of these units to operate effectively in low temperatures, along with the addition of a low-ambient wind baffle accessory, allows for a space to be air-conditioned even when it is as low as 0° F outside. This cooling ability is important when dealing with electronic equipment rooms, telecom substations, surveillance mechanical rooms, restaurant kitchens, fitness centers and more.

Auto Fan Speed Feature (excludes PEA model)

Choose from multiple set fan speeds or auto fan speed to ensure faster achievement of room temperature. Auto fan speed mode allows the fan to adjust its speed based on the degree of differential between set-point and room temperature.





Innovative Compressor Technology

Located in the outdoor unit, INVERTER-driven compressor systems detect subtle changes in temperature and, like a car's cruise control, automatically adjust compressor speed unlike conventional units, which start and stop repetitively.

Special components within the compressor increase the magnetic flux and reduce its weight allowing the compressor to generate higher energy efficiencies with the best in performance than ever at low levels of sound during start-up and running.



INVERTER

Extra Energy Savings

Six (6) Mitsubishi Hyper-Heating INVERTER (H2i®) P-Series systems are ENERGY STAR rated and One (1) system qualifies for the Economic Stimulus Tax Credit offered as part of the American Reinvestment and Recovery Act (qualifying systems detailed on page 31).

Visit www.mitsubishicomfort.com/taxcredit for more details or ask your contractor.

Visit www.dsireusa.org for any possible local rebate opportunities.



Easy-clean Filters

Convenient tabs let you remove the washable filters quickly and easily for faster cleaning in the PKA, PCA and PLA indoor units. You'll also save time and money because you won't need to replace the filters.

Auto Cooling/Heating Changeover

In Auto Mode our systems monitor and sense when a space needs cooling or heating and automatically switch operation as needed to maintain a consistent temperature within the selected range of a single zone.

Bring In Outside Air

Ducting can be installed with minimal on-site work to bring in outside air for PCA, PLA and PEA/D indoor units, creating a healthier indoor environment.



Mitsubishi System Technologies:

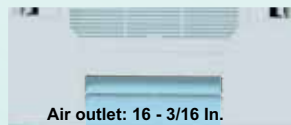
indoor unit specific technologies

PLA ceiling-recessed model

Wider Air Stream

Longer air outlets deliver wider air streams for improved air distribution and energy savings. This feature means quieter air delivery with fewer drafts and great overall cooling and heating coverage.

Previous Model



Air outlet: 16 - 3/16 In.

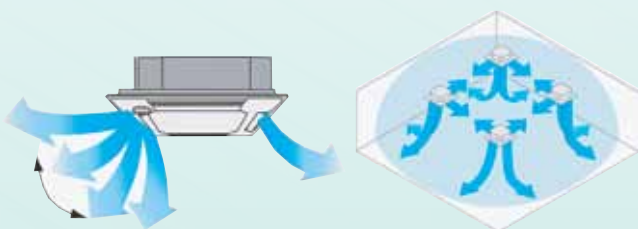
PLA-A**ABA



Air outlet: 19 - 11/16 In.

Independent Vane Motor Control

Each of the four vanes can be set by the wired remote controller to operate independently to match the room layout. Specific vane settings include five fixed directions plus swing.



Auto Wave Feature (HEATING mode)

In the HEATING mode each air outlet vane operates independently, distributing warm air in multiple directions for the best in room heating.



i-see™ Sensor Optional Accessory **i-see Sensor**

In addition to the return air temperature, the PLA-A**BA four-way ceiling cassette with the field-installed i-see sensor measures the floor temperature in real time, observing the room vertically for better management of sensible temperature (temperature felt by the occupant). The i-see sensor measures the infrared rays generated from the surrounding wall and floor surface at an angle of 360°. The infrared ray energy is converted into a temperature value. The i-see sensor rotates 90° slowly in five-second intervals for correct measurement of temperature to cover the full floor space. When combined with the auto fan speed mode, air can be directed to the farthest corners of the room for enhanced temperature coverage.



i-see sensor detail

PKA wall-mounted model



Ultimate Comfort Meets Ultimate Convenience

Select from a wall-mounted, hard-wired controller (PKA-HA/KA) for ultimate comfort control.

The set-temperature display is large and easy to read. Using the 24-hour timer, you can get the unit operation to start and stop at specified times and to repeat daily. And the convenient remote provides easy control of the Fan Speed as well as the COOL, HEAT, AUTO and DRY modes from anywhere in the room.

The hand-held wireless remote controller is easier to use than most TV remotes for the PKA-HA(L)/KA(L).

Lightweight, Easy-to-install Indoor Unit

The smallest PKA unit measures about 36" wide, 11-1/2" tall and 9-3/4" deep. It weighs just 29 lbs., is easily installed above windows or doorways, and can typically be installed by just two licensed installers in about half of a day. And the PKA-Series models don't even require ductwork, only a small three-inch opening in the wall or ceiling, so they can be installed in some of the toughest spaces, even on brick and masonry walls.

Auto Vane Control

With a simple press of the OFF button, the vane closes the air outlet for a clean presentation when not in use. During operation, the vane can be adjusted with the remote controller to the perfect position to direct the airflow horizontally in cooling mode or towards the floor in heating mode, keeping room temperature even and comfortable.

PCA ceiling-suspended model



Control Airflow Angle for Better Coverage

With the wired remote controller, four different airflow positions can be set. The Autovane feature when in use during cooling, permits the angle to self-adjust into a horizontal position and circulate cold air more effectively.

During heating, the vane directs the hot air downward toward the floor, where it will rise and circulate, keeping your room comfortable from top to bottom.

i-see™ Sensor Optional Accessory **i-see Sensor**

The field-installed i-see sensor accessory improves the operation in the room by sensing and controlling for the temperature felt by the room's occupants to help prevent over cooling or under heating. Taking floor temperature samples five times every 40 seconds over a 160° angle of the surface area. Sensors alter the Auto Fan setting and Vane control setting to account for ambient room temperature fluctuations from the set point.

PEA/PEAD horizontal ducted models



When installed, the PEA/PEAD indoor unit utilizes short duct runs allowing for the air-conditioning of adjacent spaces or extending the range of distributed capacities within a single zone with very little visual impact to the conditioned area. With features like a built-in condensate lift mechanism, adjustable static pressure, multiple fan speeds, DRY Mode and an operating sound as low as 23 dB(A) the PEA system expands the number of installation applications for the P-Series line.

Built-in Drain Pump

The PEA indoor unit features a built-in drain pump that lifts condensation up to 21-11/16 inches above the drain pan and upto 27-9/16 inches for the PEAD indoor unit. The unit's fail-safe mechanism recognizes when there is a high level in the condensate pan and shuts off the indoor fan and the outdoor unit compressor to prevent overflow.



Product Line-Up Showcase

SYSTEM MODELS AND CONTROLLERS

Indoor Unit Models

Mitsubishi Electric indoor units are available in a wide variety of styles and capacity ranges to provide an almost unlimited number of applications. If there is a problem, we have a solution.

PKA (HA/HAL, KA/KAL) WALL-MOUNTED SERIES

Air-Conditioner and Heat Pumps
12,000 to 34,200 Btu/h



- INVERTER-driven compressor
- PKA-HAL/KAL use a wireless hand-held controller
- Ideal for applications such as:
 - Churches, classrooms, day care rooms, out buildings, guard houses and more



PLA CEILING-RECESSED SERIES

Air-Conditioner and Heat Pumps
12,000 to 42,000 Btu/h



- Built-in condensate lift mechanism
- i-see™ Sensor optional
- Knockout for ventilation air
- Built-in condensate lift mechanism
- Ideal for applications such as:
 - Retail stores, classrooms, office spaces, conference rooms, lobbies and more



PCA CEILING-SUSPENDED SERIES

Air-Conditioner and Heat Pumps
24,000 to 42,000 Btu/h



- INVERTER-driven compressor
- i-see™ Sensor optional
- Knockout for ventilation air
- AUTO fan speed control
- Ideal for applications such as:
 - Restaurants, classrooms, building entrances, retail stores and more



PEA/PEAD HORIZONTAL DUCTED SERIES

Air-Conditioner and Heat Pumps
12,000 to 42,000 Btu/h



- INVERTER-driven compressor
- Automatic fan speed control
- Built-in condensate lift mechanism
- Ideal for applications such as:
 - Retail stores, classrooms, office spaces, conference rooms, lobbies and more





Outdoor Unit Models

Mitsubishi Electric outdoor units, either cooling-only or heat pump models, work with each of the indoor unit styles creating a wide range of installation applications.

These outdoor units employ advanced Pulse Amplitude Modulation (PAM). PAM adjusts the form of the current wave to emulate the form of the supply voltage wave so that **98 percent** of input power is effectively utilized.

PUZ-HA**NHA2 (H2i®) Hyper-Heating INVERTER

PUY/PUZ-NHA3

Cooling-only and Heat Pump



12,000 to
18,000 Btu/h



24,000 to
36,000 Btu/h

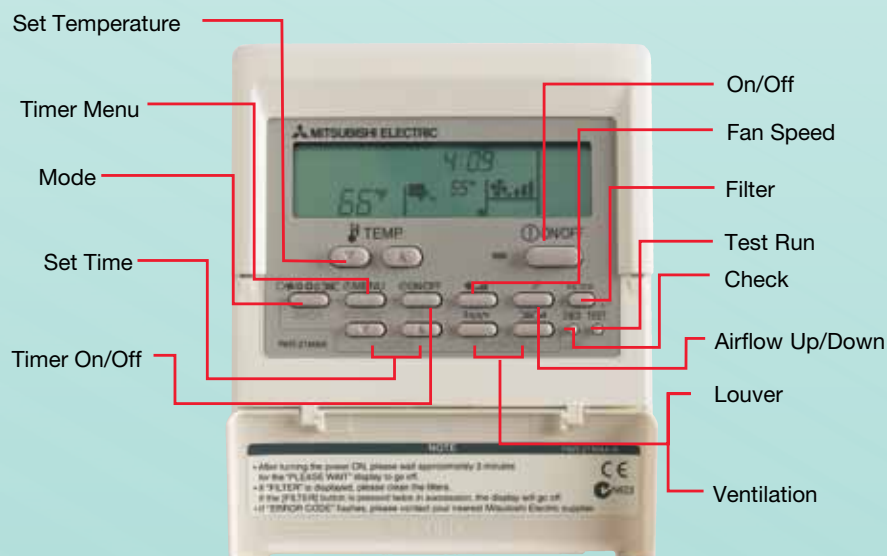


42,000 Btu/h



30,000 to
36,000 Btu/h
(see page 30-31
for more information)

WIRED REMOTE CONTROLLER



Wired controller for the
indoor unit. (multi-lingual)

P-Series Hyper-Heating INVERTER

BRINGING YEAR-ROUND COMFORT SOLUTIONS
TO EXTREME CLIMATES.

Heat Pump System: 34,200 to 36,000 Btu/h Capacity



Unequaled Year-round Comfort

The cooling and heating success of Mitsubishi Electric's INVERTER heat pump systems is well documented. Our Hyper-Heating INVERTER (H2i) P-Series technology advances the process a step further with the added benefit of year-round comfort with a single system even on the coldest days of the year in most areas. The 2.5- and 3-ton wall-mounted, ceiling-suspended, ceiling-cassette and ducted indoor units connected to the H2i P-Series outdoor units are flexible enough to satisfy almost any light commercial or institutional renovation or new construction project.



The Next Generation in Heat Pump Technology

These H2i P-Series outdoor units give a new level of performance to Mitsubishi P-Series models, providing the extra heat-generating power it takes to deliver comfort and consistency in extreme climates. H2i units use Mitsubishi Electric's INVERTER-driven scroll compressor technology to achieve the desired room temperature quickly, maintaining it consistently while simultaneously conserving energy. Plus with the integration of our exclusive H2i flash technology, these H2i P-Series units recover heat energy that is normally wasted in the flash process at the outdoor coil. This process helps the H2i system overcome issues commonly associated with conventional heat pumps such as decreases in low-side pressure, refrigerant mass flow rate and operational capacity. As a result, H2i P-Series units exhibit 100 percent of rated heating capacity at 5° F and 80 percent at -13° F outdoor ambient temperatures (see Figure 1). Plus they use R410A environmentally friendly refrigerant.

H2i P-Series heat pumps offer a variety of features designed to take the worry out of temperature control such as automatic restart in the case of power outages and automatic cool/heat changeover. And its long line length capabilities of up to 260 ft. expand application possibilities.

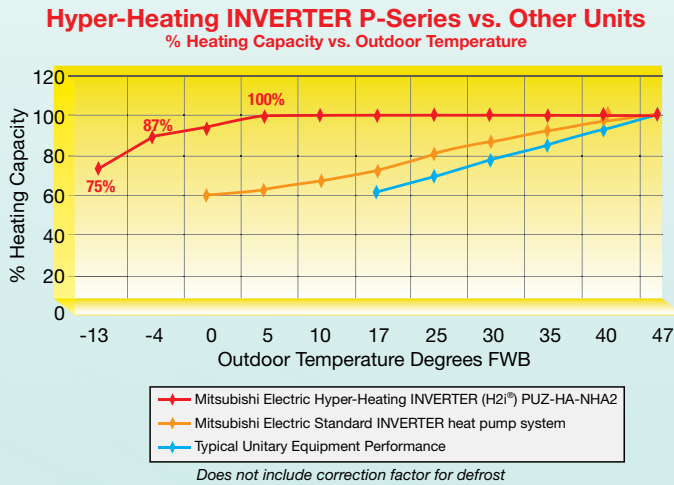
Sometimes cooling spaces such as computer or mechanical rooms and kitchens is necessary even when the temperature is below freezing. Air conditioning down to 0° F outdoor ambient temperature is possible with the addition of a wind baffle. Whether cooling or heating, the H2i P-Series gives you the flexibility to temper extreme outdoor temperatures.



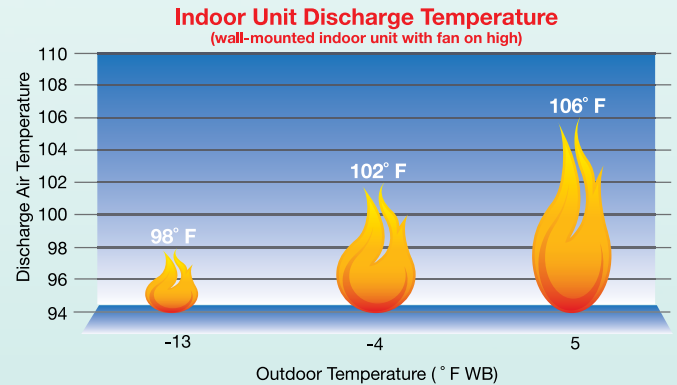
Warm Air Quickly!

At startup, a special circuit in H2i P-Series quickly delivers refrigerant to the air-conditioning cycle, which rapidly increases the mass flow rate in the system. As a result, air at comfortable temperatures begins flowing from indoor units right away. Even at an outdoor temperature of -13° F, the H2i P-Series system can discharge 100° F temperature air from the indoor units. At 5° F outdoor temperature and above, the discharge temperature reaches an impressive 110° F with a 40° F temperature rise (see Figure 2). This feature translates into a comfortable climate in all zones of a home or office, whether cooling or heating, no matter the temperature outside.

(Figure 1)



(Figure 2)



ENERGY STAR and Tax Credit Systems

Six (6) H2i P-Series systems are ENERGY STAR rated and one (1) qualifies for the Federal Tax Credit.



Energy Star

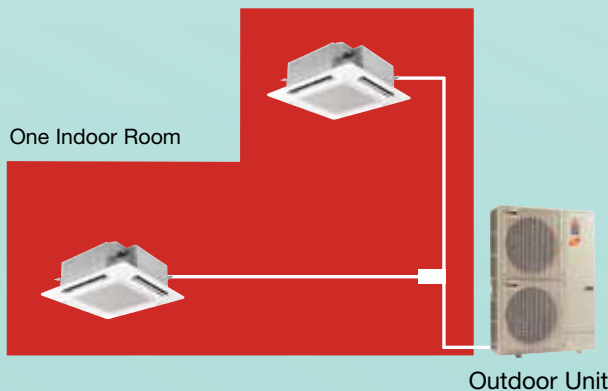
PKA-A30KA
PKA-A36KA
PLA-A30BA
PLA-A36BA
PCA-A30KA
PCA-A36KA

Tax Credit

PLA-A36BA

Two in One

If you have a large space such as a long room or hallway which would be considered one zone, two indoor units can be connected to one outdoor unit to cool or heat the space, providing the maximum amount of comfort. The process, in which two indoor units act as one to spread the outdoor unit's capacity over a large area, is called *Twinning*.



Heating Performance at Low Temperatures

Our Hyper-Heating INVERTER system provides outstanding heating performance at extremely low temperatures while keeping effective energy usage at the forefront. See the impressive COP (Coefficient of Performance) values in the table below. The Mitsubishi H2i P-Series systems are able to maximize efficiency at low temperatures while providing tremendous heating output.

Heating Performance at Low Temperatures

PUZ-HA30NHA

COP if	PKA	PLA	PCA	PEAD
47° F	3.20	2.72	3.13	3.41
17° F	1.84	1.63	1.81	1.90
5° F	1.62	1.41	1.60	1.73

PUZ-HA36NHA

COP if	PKA	PLA	PCA	PEAD
47° F	3.26	3.44	3.40	3.53
17° F	1.85	2.10	1.94	2.06
5° F	1.64	1.90	1.70	1.82