Changes for the Better



# FOR THE HOTTEST SUMMERS AND THE COLDEST WINTERS



-10°C

# Heat Pump Inverter Package Air Conditioner Line Up

Model Name **SEZ/PEAD Series** 



**Compact Ceiling Concealed** 



Model Name **PLA Series** 





5 Star\*

4 Way Cassette

2 & 3 HP: 1-Phase

4 & 6 HP : 3-Phase

L Ν D 0 0 R



SUZ-KA

PUHZ-P



SUZ-KA

PUHZ-P

# Leading the world in every field with advanced technology and assured quality

Technologies are forever changing society and the way people live. Applying innovative ideas and advanced technological prowess. Mitsubishi Electric delivers various products and services that improve daily life and the social infrastructure. From residential-use products to those for commercial and industrial-use, semiconductors, social infrastructure systems, and products and services for the development of outer space, we are not only the leading manufacturer in Japan, but throughout the world.

We have maintained our commitment to the pursuit of better technologies and higher guality throughout a history nearly Spanning over 100 years. Our detailed craftsmanship in all products has resulted in global recognition as a reliable brand. Not only with advanced air conditioning products and systems, but also with superior product development power, Mitsubishi Electric will continue to support lifestyles and societies for generations to come.





1921 Mitsubishi Electric is branched off from Mitsubishi Corporation as a

195

Roor

prod

in Japan separate identity

1928

E52 the first



1935



1964 Produced radar

equipment for the weather station atop Mt. Fuii

1980

1990 Launched world's Debut of Diamond first commercial car Vision display at navigation system Dodger Stadium in incorporating GPS the United States

2000 Adopted MISTY® technology as encryption standard for 3rd-generation mobile phones

2007 Completed 173-metre-tall elevator testing tower (world's tallest at the time)



2008

Launched

Japan's first

SUPERBIRD-C2.

commercial satellite

domestically produced



2014 Unveiled world's largest full ultra-HD video display\* in Times Square New York City\*As of Nov. 18, 2014 (based on total area)



















Air Conditioner product history

ч	1967	1968	1978	1984	1993	1994
Air Conditioners ction started.	Introduced Japan's first wall-mounted split-type Air Conditioners.	Introduced Japan's first ceiling-suspended, split-type Air Conditioners.	Introduced Mr. Slim Air Conditioners for commercial use.	Introduced inverter Air Conditioners with wireless remote control and automatic vane	Accumulated room Air Conditioners production of 10 million units	Introduce (built-in s industry

2008 ed i-see Sensor Solved the problem sensor). First in of wide spaces with to develop the release of the 3D i-see Sensor. that detects the location of people.



02

## **Inverter Technologies**

Mitsubishi Electric inverters ensure superior performance, including the optimum control of operational 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 rotation 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.

### **ECONOMICAL OPERATION**

Impressively low operating cost is a key advantageof inverter-equipped Air Conditioners. We have combined advanced inverter technologies with cutting-edge electronic and mechanical technologies to achieve a synergistic effect that enables improvements in heating/cooling performance efficiency. As a result, better performance and lower energy consumption is achieved.

### **TRUE COMFORT**

Below is a simple comparison of Air Conditioner operation control with and without an inverter.

## Inverter operation comparison



The compressors of Air Conditioners without an inverter start and stop repeatedly in order to maintain the preset room temperature. This repetitive on/off operation uses excessive electricity and compromises room comfort. The compressors of Air Conditioners equipped with an inverter run continuously; the inverter quickly optimizing the operating frequency according to changes in room temperature. This ensures energy-efficient operation and a more comfortable room.

### **Quick & Powerful**

Increasing the compressor motor speed by controlling the operation frequency ensures powerful output at start-up, and 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.

### **Room Temperature Maintained**

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

# **R410A Refrigerant**

As scientific evidence points to man-made chemicals causing damage to ozone layer, Mitsubishi Electric only use chlorine-free refrigerants that are safe and rated zero ozone depletion potential ODP. Accordingly, our systems require less energy to run and have significantly lower indirect global warming potential. In short, we produce the most efficient equipment possible, while helping to protect the environment.

The Montreal Protocol calls for the complete abolishment of HCFC refrigerant consumption in Article 5 countries (such as R22) by the year 2030. Mitsubishi Electric is committed to shifting over to HFC models from HCFC models.





#### Poki-Poki Motor

Dramatically enhanced motor efficiency utilising original dense winding technology. 28% more wire as compared to conventional motor

### MITSUBISHI ELECTRIC Compressor

The compressor is the heart of the Air Conditioner. Employing Mitsubishi Electric's proprietary technology, we are able to achieve both high efficiency and high power.



#### Heat Caulking

Original heat caulking method minimizes cylinder distortion for even greater efficiency.

# **PLA** series

A complete line-up including deluxe units that offer added energy savings. The incorporation of wide air-outlet and the "3D i-see Sensor"enhances airflow distribution control, achieving an enhanced level of comfort throughout the room. The synergy of higher energy efficiency and more comfortable room environment results in optimum user satisfaction.

An automatic grille lowering function is available for easy filter maintenance. Special wired and wireless remote controllers can be used to lower the intake grille for maintenance.





### Automatic Grille Lowering Function<sup>1</sup> (PLP-6EAJ)



Grille Elevation Remote Controller(comes with the automatic elevation panel)

Wireless Remote Controller



# **3D** *i-see Sensor*<sup>1</sup> for PLA series

# **Detects number of people**

3D i-see Sensor detects the number of people in the room and sets the Air-Conditioning power accordingly. This makes automatic power-saving operation possible in places where the number of people entering and exiting is large.

Additionally, when the area is continuously unoccupied, the system switches to a more enhanced power-saving mode.

Depending on the setting, it will save additional capacity or stop operation altogether.

# Detects people's position

Once the position of a person is detected, the duct angle of the vane is automatically adjusted in that direction. Each vane can be independently set to "block wind" or "not block wind" according to taste.



#### Room occupancy energy-saving mode



### No occupancy Auto-OFF mode



### No occupancy energy-saving mode



\*PAR-32MAA is required for each setting

savings

## When cooling

Saves energy while keeping a comfortable effective temperature by automatically switching between ventilation and cooling. When a pre-set temperature is reached, the Air Conditioning unit switches to swing fan operation to maintain the effective temperature. This clever function contributes to keeping a comfortable coolness.

# When heating

The Air Conditioning unit automatically switches between circulator and heating.Wasted heat that accumulates near the ceiling is reused via circulation. When a pre-set temperature is reached the Air Conditioner switches from heating to circulator and blows air in the horizontal direction. It pushes down the warm air that has gathered near the ceiling to people's height, thereby providing smart heating.

# Seasonal airflow\*



\*PAR-32MAA is required for each setting.

# **Direct/Indirect settings\***

Some people do not like the feel of wind, some want to be warm from head to toe. People's likes and dislikes vary. With the 3D i-see Sensor, it is possible to choose to block or not block the wind for each vane.



<sup>\*</sup>PAR-32MAA or PAR-SL100A-E is required for each setting.

# **Easy Installation**

# **Electrical box wiring**

After reviewing the power supply terminal position in the electrical box, the structure was redesigned to improve connectivity. This has made previously complex wiring work easier.

# Increased space for plumbing work

The top and bottom positions of the liquid and gas pipes havebeen reversed to allow the gas pipe work, which requires more effort, to be completed first. Further, through structural innovations related to the space around the pipes, the area where the spanner can be moved has increased, thus improvingliquid pipe work and enabling smooth completion.



# Temporary hanging hook

The structure of the panel has been revised and is now equipped with a temporary hanging hook. This has improved work efficiency during panel installation.

## No need to remove screws

Installation is possible without removing the screws for the corner panel and the control box, simply by loosening them. This lowers the risk of losing screws.



Control box cover





# Lightweight decorative panel





# R410A Heatpump Inverter Ceiling Cassette PLA Specifications

Models				PLA-RP50EA-DA	PLA-RP71EA-DA	PLA-RP100EA-DA	PLA-RP140EA-DA	
Cooling	Capacity (Min - Max)		kW	5.5(2.3-5.6)	7.1(2.8-8.1)	9.4(3.7-10.6)	13.6 (5.8-14.1)	
Cooling	Capacity		BTU/h	18,800	24,000	32,100	46,400	
	Total Input		kW	1.61	2.10	3.18	5.41	
	EER		W/W	3.41	3.38	2.95	2.51	
	ISEE		W/W	4.50	4.51			
	Heating Capacity (Min - Max) Capacity Total Input		kW	5.8(1.7-7.2)	8.0 (2.6-10.2)	11.2 (2.8-12.5)	15.0(4.9-15.8)	
Heating			BTI I/h	19.800	27.300	38.200	51,200	
			kW	1.69	2 24	3.26	4.67	
	COP		w/w	3.43	3.56	3 43	3.21	
	Model name			PLA-RP50EA-DA	PLA-RP71EA-DA	PLA-RP100EA-DA	PLA-RP140EA-DA	
	Power supply				1ph 220-2	40V 50Hz		
	External finish			Munsell 1 0Y 9 2/0 2				
			CMM	14-16-17-18	16-17-19-21	19-23-26-29	24-26-29-32	
Indoor	Airflow (low-med2-med1-high)	F	CFM	495-565-600-635	565-600-670-740	670-810-920-1025	850-920-1025-1130	
Unit	External static pressure		Pa	0 (direct blow)				
	Operation control and thermostat			Remote control & Built-in				
	Noise level (low-med2-med1-high)		dB (A)	27-29-31-32	28-30-32-34	31-34-37-40	36-39-42-44	
	Unit drain pipe (outer diameter)	-	mm		3	2		
		W	mm	840(950)				
	Dimensions (panel)	D	mm	840(950)				
		н	mm	258 (40) 298(40)				
	Weight (panel)		kg	19(5)	21(5)	24(5)	27(5)	
	Model name		<u> </u>	SUZ-KA50VA-DA	SUZ-KA71VA-DA	PUHZ-P100YKA	PUHZ-P140YKA	
	Power supply			1ph 220-240V 50Hz 3ph 380-415V 50Hz				
	External finish			Munsell 3.0Y 7.8/1.1				
	Refrigerant (R410A) control			Linear Expansion Valve				
	Airflow		CMM	44.6	50.1	79	86	
	AIMOW		CFM	1575	1770	2792	3039	
	Noise Level		dB (A)	52	55	51	56	
	Dimensions D		mm	840		1050		
Outdoor			mm	33	30	330(+40)		
Unit		Н	mm	880		981		
	Weight		kg	54	53	78	85	
	Max. height difference		m	30	30	30	30	
	Max. piping length		m	31	0	5	0	
	Pipe size (outer diameter)		mm	Liquid:6.35/Gas:12.7 Liquid:9.52/Gas:15.88				
	Chargeless piping length		m	7 30				
Cooling Guaranteed Operating Range Upper limit (°CDB) Lower limit (°CDB) Linear limit (°CDB)				46				
				-15				
Heating Guaranteed Operating Range			(°CDB)	24		21		
Lower limit (°CDB)				-10		-15		

 Rating conditions Cooling - Indoor: 27°C(80°F)DB, 19°C(66°F)WB, Outdoor: 35°C(95°F)DB, Heating - Indoor: 20°C(68°F)DB, Outdoor: 7°C(45°F)DB, 6°C(43°F)WB

Refrigerant piping length (one-way): 7.5m(25ft)

Total input based on the indicated voltage (indoor/outdoor):

1ph 220-240V 50Hz, 3ph 380-415V 50Hz

\* Operation air protection guide is required where ambient temperature is lower than  $-5^{\circ}$ C.

# SEZ/PEAD SERIES

Ultra thin Ceiling Concealed indoor units of this series are the perfect answer for the air conditioning needs of modern buildings with minimum ceiling installation space requirements and wide-ranging external static pressure. Energy-saving efficiency has been improved, reducing electricity consumption and contributing to a further reduction in operating costs.







**PEAD SERIES** 



Available with SEZ Series



**Optional - Not Available with PEAD Series** 

### **External Static Pressure**

External static pressure conversion can be set up to five stages. Capable of being set to a maximum of 150 Pa, units are applicable to a wide range of building types.

External static pressure setting

Series	External Static Pressure Settings
SEZ-KD-VA	5/15/35/5 Pa
PEAD-RP JA	35/50/70/100/150 Pa

### R410A Heatpump Inverter Ceiling Concealed SEZ / PEAD Specifications

Models		-			SEZ-KD50VAL	PEAD-RP71JALQ	PEAD-RP100JALQ	PEAD-RP140JALQ	
Cooling	Capacity (Min - Max)			kW	5.1 (2.3-5.2)	7.1 (2.8-8.1)	9.4 (3.7-10.6)	13.6 (5.8-14.1)	
	Capacity			BTU/h	17,400	24,000	32,000	46,400	
	Total Input		1	kW	1.580	2.08	2.98	5.21	
	EER	· · · · ·		W/W	3.22	3.41	3.15	2.61	
Heating	Capacity (Min - Max)			kW	6.4 (1.7-7.2)	8.0(2.6-10.2)	11.2(2.8-12.5)	15.0 (4.9 - 15.8)	
	Capacity			BTU/h	21,800	27,300	38,200	51,200	
	Total Input		1	kW	1.800	2.04	2.94	4.27	
	COP			W/W	3.55	3.92	3.80	3.51	
	Model name			SEZ-KD50VAL	PEAD-RP71JALQ	PEAD-RP100JALQ-PA	PEAD-RP140JALQ-PA		
	Power supply	Power supply			1ph 220-240V 50Hz	1ph 220V-240V 50Hz			
	External finish				Galvanized sheets		Galvanized steel plate		
	Airflow (low-mid-high)			CMM	10.0-12.5-15.0	17.5-21-25	24-29-34	32-39-46	
				CFM	353-441-530	618-742-883	848-1024-1200	1130-1377-1624	
Indoor	External static pressure			Pa	5 / 15 / 35 / 50	35/50/70/100/150	35/50/70/100/150	35/50/70/100/150	
	Operation control and thermostat				Remote Control Built in	Built in			
	Noise level (low-med-hig	h)		dB (A)	30-34-37	26-30-34	29-34-38	34-38-43	
	Unit drain pipe (outer dia	meter)		mm	32	32	32	32	
			W	mm	990	1100	1400	1600	
	Dimensions	D		mm	700	700 732			
2			Н	mm	200		250		
	Weight (panel)		1	kg	22	29	38	43	
	Model name	Model name			SUZ-KA50VA-DA	SUZ-KA71VA-DA	PUHZ-P100YKA	PUHZ-P140YKA	
	Power supply				1ph 220-240V 50Hz	1ph 220-240V 50Hz	3ph 380-415V 50Hz		
	External finish			Munsell 3.0Y 7.8/1.1					
	Refrigerant (R410A) control			Linear Expansion Valve					
	A 1-11	Airflow		CMM	44.6	50.1	79	86	
	AITTIOW			CFM	1574	1770	2792	3039	
	Noise level			dB (A)	52	55	51	56	
	Dimensions		W	mm	840	840	10	50	
			D	mm	330	330	330	(+40)	
			Н	mm	880	880	981		
	Weight			ka	54	53	78	85	
	Max, height difference		m		3	30			
	Max piping length		m	30	30	50 50			
	Pipe size (outer diameter)		mm	Liquid:6.35/Gas:12.7		Liquid:9.52/Gas:15.88			
	Chargeless piping length		m	7	7 30				
	onargorooo pipilig leni	5				·		-	
	Upper limit (°C			(°CDB)	46	46			
Cooling Guaranteed Operating Range Lower limit		limit (	(°CDB)	-15	-15				
Heating Guaranteed Operating Range		limit (	(°CDB)	24	24		21		
		Lower limit		(°CDB)	-10	-10	-15		

Rating conditions Cooling - Indoor: 27°C(80°F)DB, 19°C(66°F)WB, Outdoor: 35°C(95°F)DB, Heating - Indoor: 20°C(68°F)DB, Outdoor: 7°C(45°F)DB, 6°C(43°F)WB
 Refrigerant piping length (one-way): 7.5m(25ft)

• Total input based on the indicated voltage (indoor/outdoor): 1ph 220-240V 50Hz, 3ph 380-415V 50Hz \*Operation air protection guide is required where ambient temperature is lower than -5 °C.

### **The MEQ Difference**

Simply meeting industry standards, however stringent, is not enough. Our aim is to exceed them. When it comes to comfort, efficiency and durability, Mitsubishi Electric offers you a distinctive advantage. We call it **MEQ-Mitsubishi Electric Quality.** It results in benchmark leading-edge products like our Air Conditioners, which consume minimal power, protect your investment through a long service life, offer superior reliability and are built to take the punishment of extreme weather conditions year in and year out.

### Mitsubishi Electric Offers Three Important Advantages



Clean air, optimium temperature distribution and silent operations.

MEQ has led to the development of state-of-the-art air purification and deodorization filter that removes unwanted odors and impurities in the air, original airlfow technologies and specially designed components provide even temperature distribution - even in remote regions of a room. At Mitsubishi Electric, comfort doesn't simply mean cool or warm,it means clean and quiet too.

# Optimum cost performance and energy savings.

MEQ result in Air Conditioners that are rated among the best in the industry in terms of quality and energy effciency. We strive for a perfect balance of performance. reliability, low power consumption and long service life. This is complemented by continuously introducing new technologies and components that further reduce energy requirements and mitigate the negative environmental impact.

**EFFICIENCY** 

# Rugged construction, rigorous testing, long-lasting operations.

DURABILITY

itsubishi

lectric

ualitv

MEQ is behind a mindset that goes to extremes to ensure higher quality products that protect the initial investment over years of reliable services.We subject our indoor and outdoor units to rigorous durability testing, including harsher temperature extremes than likely to be found anywhere in the world.





#### MITSUBISHI ELECTRIC INDIA PVT. LTD.

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For E-waste Collection & Disposal process: Customer can get complete details of company process on collection, disposal of e-waste product (i.e. 'Mitsubishi Electric' make Air Conditioner) and incentive/exchange scheme for returning of e-waste on Company website (www.mitsubishielectric.in) Call on Toll Free: **1800 102 2626**.

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\*For Reference purpose only.