AIR TO WATER

ECODAN

"ecodan" can heat rooms and supply domestic hot water, realising greater comfort and energy saving.

"ecodan" – Economic, eco conscious next generation heating system

Both energy-saving and safe for the environment, the Mitsubishi Electric ecodan incorporates a highly efficient heat pump system that captures "the heat in the air", a renewable energy resource. Equipped with advanced inverter control, meticulous temperature control assures comfortable heating, and its space-saving "All-in-one" indoor unit is easy to install. These energy-saving, high comfort and simple installation characteristics have drawn the ecodan heating system into the spotlight centre stage.

Excellent ecodan's heating performance, even at low outdoor temperature!

INDOOR UNIT

Hydro box, cylinder unit

EHSC/EHPX

EHST20C/EHPT20X

Reversible hydro box (heating/cooling)

ERSC

OUTDOOR UNIT

Packaged type	Small capacity (Under 5kW)	Medium capacity (7.5kW–14kW)	Large capacity
ZUBADAN		 PUHZ-HW112/140	
POWER INVERTER	 PUHZ-W50	 PUHZ-W85  NEW PUHZ-W112	

Split type	Small capacity (Under 5kW)	Medium capacity (7.5kW–14kW)	Large capacity
ZUBADAN New Generation		 PUHZ-SHW80/112/140	 PUHZ-SHW230
POWER INVERTER	 PUHZ-SW40/50	 PUHZ-SW75  PUHZ-SW100/120	 Coming soon PUHZ-SW160/200
eco INVERTER	 NEW SUHZ-SW45		
Mr.SLIM+		 PUHZ-FRP71	

Unique technology of ecodan

Auto Adaptation

Maximize energy savings while keeping comfort at all times

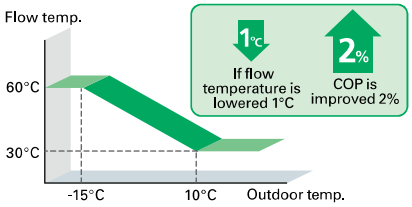
Settings can be performed using an SD card.

*SD logo is a trademark of SD-3C, LLC

Aiming to realise further comfort and energy savings, Mitsubishi Electric is proud to introduce a revolutionary new system control. This is based on data indicating that a 1°C drop in the flow temperature improves the coefficient of performance (COP) of the ATW system by 2%. This means that energy savings are dramatically affected by controlling the flow temperature in the system.

In conventional system control, the flow temperature is determined based on the preset heat curve depending on the actual outdoor temperature. However, this requires a complicated setting to achieve the optimal heat curve.

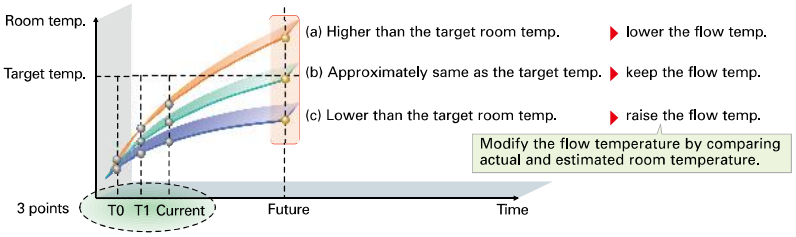
■ Heat curve setting (Example)



Mitsubishi Electric's Auto Adaptation function automatically tracks changes of the actual roomtemperatures and outdoor temperatures and adjusts the flow temperature accordingly.

Our more evolutionally Auto Adaptation function measures the room temperature and outdoor temperature, and then calculates the required heating capacity for the room. Simply stated, the flow temperature is automatically controlled according to the required heating capacity, while optimal room temperature is maintained at all times, ensuring the appropriate heating capacity and preventing energy from being wasted. Furthermore, by estimating future changes in room temperature, the system works to prevent unnecessary increases and decreases in the flow temperature.
Accordingly, Auto Adaptation maximises both comfort and energy savings without the need for complicated settings.

■ Future room temperature estimation



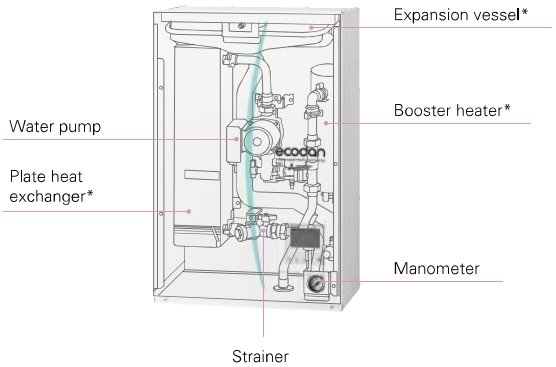
Indoor units

New all-in-one compact indoor unit

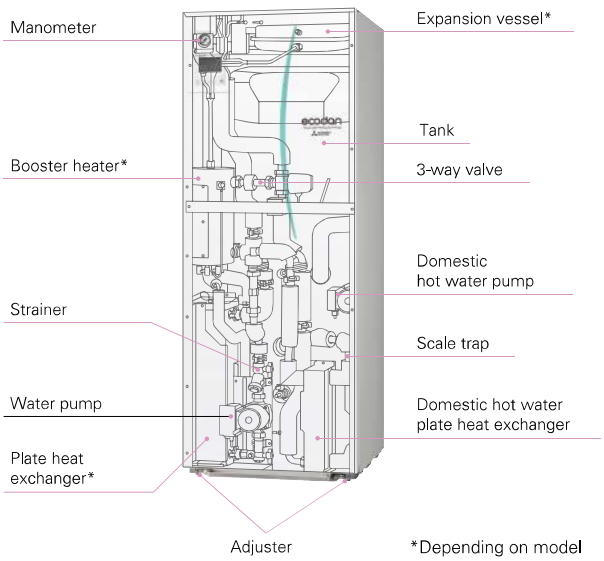
Easy to install and low maintenance

- All-in-one: Key functional components are incorporated
- Compact cylinder unit: Just 1600mm height
- Compact hydro box: only 600×600mm footprint
- Easy installation: Factory fitted pressure relief valve
- Easy service: Relevant parts are located at the front of the unit for easy maintenance
- Easy transport: Handles attached on front and back (cylinder unit)

Compact hydro box unit



Compact cylinder unit



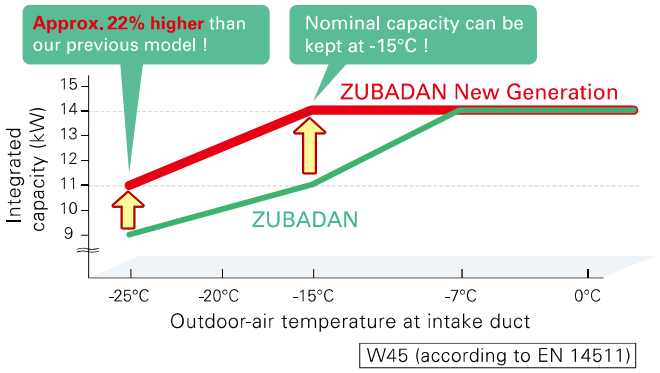
*Depending on model

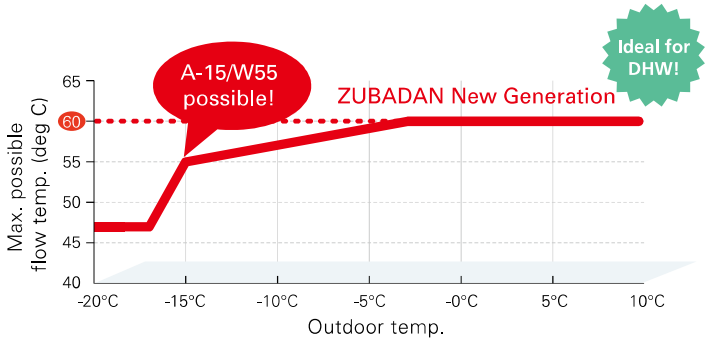
Designed for Optimal Heating

ZUBADAN New Generation (Split type)

Improved heating performance more efficiently

ZUBADAN is equipped with a unique "Flash Injection Circuit" that enables the system to provide powerful heating in cold regions during the winter months. And more evolved "ZUBADAN New Generation" incorporates a new compressor that is more efficient, further improving heating performance when outdoor temperatures is low. The rated heating capacity can now be maintained at -15°C even including defrost, making it possible to supply comfortable heating in ever more severe environments.

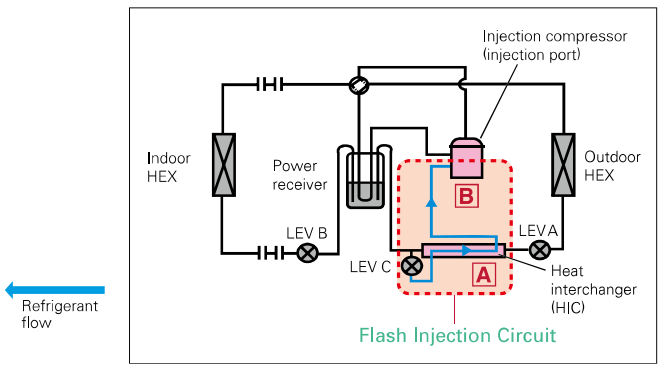


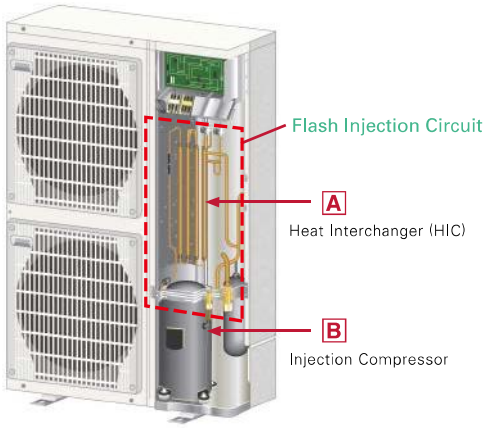


Mitsubishi Electric's Flash Injection Technology
The Key to High Heating Performance at Low Outdoor Temperatures

■Flash Injection Circuit

ZUBADAN New Generation





The Flash Injection Circuit is an original technology developed by Mitsubishi Electric. A heat exchange process at point A (heat interchanger) transforms liquid refrigerant into a two-phase, gas-liquid state and then compresses the gas-liquid refrigerant at point B (injection compressor). This circuit secures a enough flow rate of refrigerant for heating when outdoor temperatures are very low.
In the ZUBADAN New Generation, the Flash Injection Circuit is more powerful by improving the heat interchanger to increase the heat-exchange-efficiency and incorporating new injection compressor to increase the compression-efficiency.
These two improvements of ZUBADAN New Generation ensure reliable, efficient heating operation when outdoor temperatures are very low.

SD* CARD

*SD logo is a trademark of SD-3C, LLC

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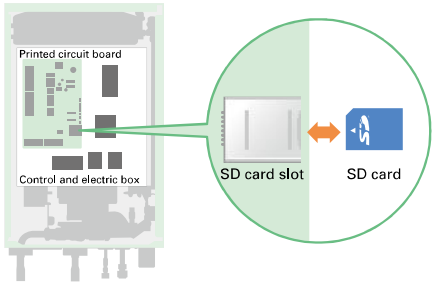
For easier settings and data logging

Initial setting for ecodan is now simpler than ever before. The special software enables the required initial settings to be saved to an SD card using a personal computer. System set-up is as easy as moving the SD card from the computer to the SD card slot in the indoor unit. Compared to the previous procedure of inputting settings using the main controller at a installation field, a remarkable reduction in set-up time has been achieved. Thus, it is ideal way for busy installers.

*SD card function is only used at the time of installation.

Hydro box operation panel



Settings can be performed easily and logging operation data saved to SD card can be confirmed via personal computer.

Items that can be preset

Simply copying preset data to a SD card, the same settings can input into another unit using the SD card.

- Initial settings (time display, contact number, etc.)
- Heating settings
  - Auto adaptation
  - Heat curve
  - Two different temperature zones (heating and cooling)
- Interlocked boiler operation settings
- Holiday mode settings
- Schedule timer settings (two separate schedules)
- Summer time settings
- Domestic hot water settings
- Legionella prevention settings

All items that are set by the main controller can be set via a personal computer.

Data that can be stored

Operation data up to a month long can be stored on a single SD card (2GB).

- Consumed electrical energy
- Delivered energy
- Flow rate
- Operation time
- Defrost time
- Actual temperature
  - Room temperature
  - Flow temperature
  - Return temperature
  - Domestic hot water temperature
  - Outdoor temperature
- Error record
- Input signal
- Etc.

Remote controller

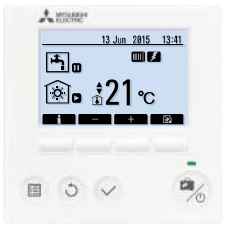
Smart user-friendly controller with stylish design

Main controller

- Large screen and backlight for excellent visibility, even in dark environment
- Multi-language support (supports 15 languages)
- Can be removed from main unit and installed in remote location (up to 500m)
- Quick reading of operation data (7.5 times faster than previous model)
- Wide range of convenient functions in response to user demand

  Function settings

  NEW – Energy monitoring
  NEW – Two-zone control (cooling and heating)
  NEW – Two separate schedules
  NEW – Summer time setting
  – Built in room temperature sensors
  – Hybrid control (boiler interlock)
  – Floor drying mode
  – Weekly timer
  – Holiday mode
  – Legionella prevention
  – Error codes



Main controller

Wireless remote controller (optional)

- Built-in room temperature sensor; easy to place in the best position to detect room temperature
- Wiring work eliminated
- Simple design that is easy to operate
- Remote control from any room without needing to choose an installation location
- Backlight and big buttons that are easy to operate
- Domestic hot water boost and cancellation
- Simplified holiday mode

PAR-WR51R-E (Option)
Receiver

PAR-WT50R-E (Option)
Wireless remote controller

Two zone control

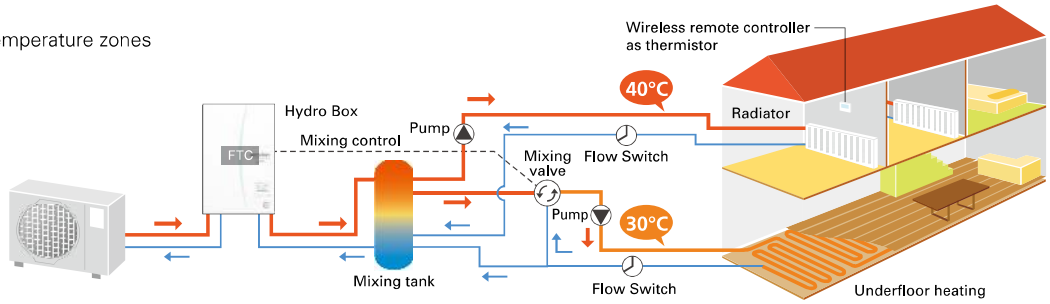
Simultaneously making two different temperature zones assures more comfortable, highly convenient heating

Settings can be performed using an SD card.

*SD logo is a trademark of SD-3C, LLC

ecodan makes it possible to set two temperatures which are used in two different types heat emitters in a system. The system allows adjustment of temperatures when different room temperatures are required, such as a temperature of 40°C for the living room radiator and temperature of 30°C for floor heating. Additionally, the scheduling for each zone can be set separately by main controller.

■ Two temperature zones



*Items such as mixing tank, mixing valve flow switch and pumps are not included and need to be purchased locally.

Intelligent boiler interlock

No need to replace existing boiler
Automatic switchover enables even more efficient operation

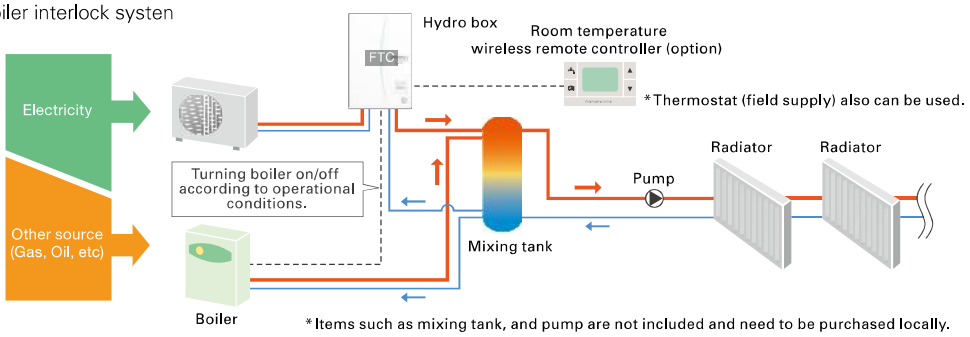
Settings can be performed using an SD card.

*SD logo is a trademark of SD-3C, LLC

The flexibility of ecodan's intelligent control allows the system to be combined with boiler currently in use. Additionally, this control can judge which heating source (ecodan, or boiler) to be operated according to situations (outdoor temperature, running cost, CO_2 emission level etc.). Customers using a boiler can receive the energy-saving performance of ecodan.

Intelligent system combining a boiler with ecodan

■ Intelligent boiler interlock systen



*Items such as mixing tank, and pump are not included and need to be purchased locally.

Multiple unit control

Connect up to 6 units–
Automatic control of multiple units to supply bigger capacity

Settings can be performed using an SD card.

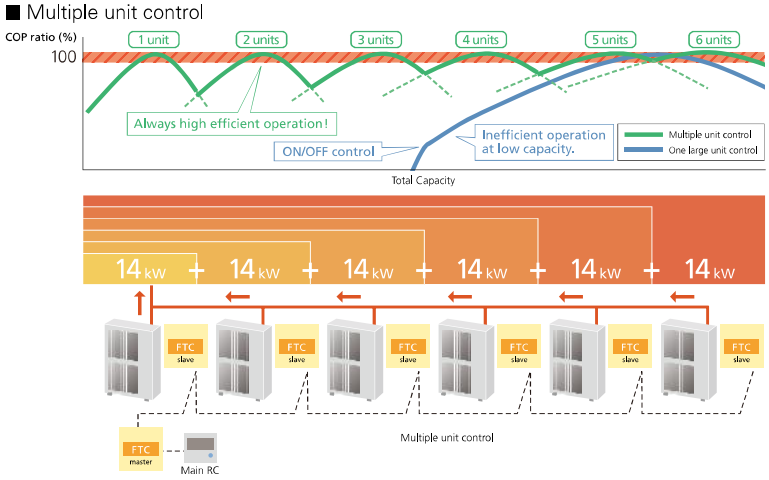
*SD logo is a trademark of SD-3C, LLC

A maximum of 6 ecodan units* can be configured according to the required heating/cooling load of the building. The most efficient number of operating units is determined automatically based on heating/cooling load. This enables ecodan to provide optimal room temperature control, and thus superior comfort for room occupants. Also incorporated is a rotation function that works to balance the running hours without depending on the operation of any one specific unit.

If one of the units malfunctions when using Multiple Unit Control, another unit can be automatically operated for back-up, thereby preventing system operation from stopping completely.

*Only same models (same capacity) can be used.

■ Multiple unit control



Split type specifications

Indoor unit

<Cylinder unit>

Model name				EHST20C-VM2C	EHST20C-VM6C	EHST20C-YM9C	EHST20C-TM9C	EHST20C-VM2EC	EHST20C-VM6EC	EHST20C-YM9EC	EHST20C-MEC	EHST20D-VM2C	EHST20D-MEC	EHST20D-MHC	EHST20C-MHCW*2	EHST20D-MHCW*2
		Type		Heating only												
		Immersion heater		–	–	–	–	–	–	–	–	–	–	×	×	×
		Expansion vessel		×	×	×	×	–	–	–	–	×	–	×	×	×
		Booster heater		×	×	×	×	×	×	×	–	×	–	–	–	–
Dimensions		HxWxD	mm	1600×595×680												
Weight (empty)			kg	110	111	112	112	104	105	106	103	103	96	103	110	103
Power supply (V/Phase/Hz)				230/Single/50												
Heater	Booster heater	Power supply (V/Phase/Hz)		230/Single/50		400/Three/50	230/Three/50	230/Single/50		400/Three/50	–	230/Single/50	–			
		Capacity	kW	2	6 (2/4/6)	9 (3/6/9)	9 (3/6/9)	2	6 (2/4/6)	9 (3/6/9)	–	2	–			
		Current	A	9	26	13	23	9	26	13	–	9	–			
		Breaker size	A	16	32	16	32	16	32	16	–	16	–			
	Immersion heater	Power supply (V/Phase/Hz)		–										230/Single/50		
		Capacity	kW	–										3		
		Current	A	–										13		
		Breaker size	A	–										16		
Domestic hot water tank	Volume / Material		L / –	200 / Stainless steel												
Guaranteed operating range*1	Ambient		°C	0~35												
	Outdoor		°C	See outdoor unit spec table												
Target temperature range	Heating	Room temperature	°C	10~30												
		Flow temperature	°C	25~60												
	DHW		°C	40~60												
	Legionella prevention		°C	60~70												
Sound pressure level (SPL)			dB (A)	28												

*1 The environment must be frost-free *2 UK model

<Hydro box>

Model name				EHSD-MEC	EHSD-VM2C	EHSC-MEC	EHSC-VM2C	EHSC-VM2EC	EHSC-VM6C	EHSC-VM6EC	EHSC-YM9C	EHSC-YM9EC	EHSC-TM9C	ERSD-VM2C	ERSC-MEC	ERSC-VM2C
		Type		Heating only										Heating and cooling		
		Immersion heater		–	–	–	–	–	–	–	–	–	–	–	–	–
		Expansion vessel		–	×	–	×	–	×	–	×	–	×	×	–	×
		Booster heater		–	×	–	×	×	×	×	×	×	×	×	–	×
Dimensions		HxWxD	mm	800×530×360												
Weight (empty)			kg	38	44	42	48	43	49	44	49	44	49	45	43	49
Power supply (V/Phase/Hz)				230/Single/50												
Heater	Booster heater	Power supply (V/Phase/Hz)		–	230/Single/50	–	230/Single/50				400/Three/50		230/Three/50	230/Single/50	–	230/Single/50
		Capacity	kW	–	2	–	2	2	6 (2/4/6)	6 (2/4/6)	9 (3/6/9)	9 (3/6/9)	9 (3/6/9)	2	–	2
		Current	A	–	9	–	9	9	26	26	13	13	23	9	–	9
		Breaker size	A	–	16	–	16	16	32	32	16	16	32	16	–	16
Guaranteed operating range*1	Ambient		°C	0~35												
	Outdoor	Heating	°C	See outdoor unit spec table												
		Cooling	°C	–											See outdoor unit spec table (minimum 10°C*2)	
Target temperature range	Heating	Room temperature	°C	10~30												
		Flow temperature	°C	25~60												
	Cooling	Room temperature	°C	–												
		Flow temperature	°C	–										5~25		
Sound pressure level (SPL)			dB (A)	28												

*1 The environment must be frost-free

*2 If you use our system in cooling mode at the low ambient temperature (10°C or below), there are some risks of plate heat exchanger breaking by frozen water.

Outdoor unit

Model name				SUHZ-SW45VA (H)*1	PUHZ-SW40VHA (-BS)	PUHZ-SW50VHA (-BS)	PUHZ-SW75VHA (-BS)	PUHZ-SW100V/YHA (-BS)	PUHZ-SW120V/YHA (-BS)	PUHZ-SHW80VHA	PUHZ-SHW112V/YHA	PUHZ-SHW140YHA	PUHZ-SHW230YKA*2 *3
Dimensions	HxWxD		mm	880×840×330	600×800×300	600×800×300	943×950×330	1350×950×330	1350×950×330	1350×950×330	1350×950×330	1350×950×330	1338×1050×330
Product weight (empty)			kg	54	42	42	75	118/130	118/130	120	120/134	134	148
Power supply (V / Phase / Hz)				VHA : 230/Single/50 YHA, YKA : 400/Three/50									
Heating (A7/W35)	Capacity		kW	4.50	4.10	6.00	8.00	11.20	16.00	8.00	11.20	14.00	23.00
	COP			5.06	4.80	4.42	4.40	4.45	4.10	4.65	4.46	4.22	3.65
	Power input		kW	0.89	0.85	1.36	1.82	2.52	3.90	1.72	2.51	3.32	6.31
Heating (A2/W35)	Capacity		kW	3.50	4.00	5.00	7.50	10.00	12.00	8.00	11.20	14.00	23.00
	COP			3.40/3.04	3.24	2.97	3.40	3.32	3.24	3.55	3.34	2.96	2.37
	Power input		kW	1.03/1.15	1.24	1.68	2.21	3.01	3.70	2.25	3.35	4.73	9.69
Cooling (A35/W7)	Capacity		kW	–	3.60	4.50	6.60	9.10	12.50	7.10	10.00	12.50	20.00
	EER			–	2.71	2.38	2.55	2.75	2.32	3.31	2.83	2.17	2.22
	Power input		kW	–	1.33	1.89	2.59	3.31	5.38	2.15	3.53	5.76	9.01
Cooling (A35/W18)	Capacity		kW	–	3.60	5.00	7.10	10.00	14.00	7.10	10.00	12.50	20.00
	EER			–	4.65	3.96	4.01	4.35	4.08	4.52	4.74	4.26	3.55
	Power input		kW	–	0.77	1.26	1.77	2.30	3.43	1.57	2.11	2.93	5.64
Sound pressure level (SPL)	Heating		dB (A)	52	45	46	51	54	54	51	52	52	59
	Cooling		dB (A)	52	45	46	48	50	51	50	51	51	58
Sound power level (PWL)	Heating		dB (A)	61	62	63	69	70	72	69	70	70	76
Operating current (max)			A	12.0	13.0	13.0	19.0	29.5/13.0	29.5/13.0	29.5	35.0/13.0	13.0	26.0
Breaker size			A	20	16	16	25	32/16	32/16	32	40/16	16	32
Piping	Diameter	Liquid/Gas	mm	6.35/12.7	6.35/12.7	6.35/12.7	9.52/15.88	9.52/15.88	9.52/15.88	9.52/15.88	9.52/15.88	9.52/15.88	9.52/25.4
	Max. length	Out-In	m	15	40	40	40	75	75	75	75	75	80
	Max. height	Out-In	m	15	10	10	10	30	30	30	30	30	30
Guaranteed operating range	Heating		°C	–15 to +24	–15 to +21	–15 to +21	–20 to +21	–20 to +21	–20 to +21	–25 to +21	–25 to +21	–25 to +21	–25 to +21
	DHW		°C	–15 to +35	–15 to +35	–15 to +35	–20 to +35	–20 to +35	–20 to +35	–25 to +35	–25 to +35	–25 to +35	–25 to +35
	Cooling*4		°C	–	–15 to +46	–15 to +46	–15 to +46	–15 to +46	–15 to +46	–15 to +46	–15 to +46	–15 to +46	–15 to +46

Note: based on EN 14511 (Input to circulation pump is not included.) It may differ according to the system configuration.

*1 SUHZ-SW45VAH incorporates base heater.

*2 PUHZ-SHW230YKA can not be connected to ecodan indoor unit.

*3 The performance data is obtain when plate heat exchanger (ACH 70-40) are connected.

*4 Optional air protection guide is required where ambient temperature is lower than –5°C.

Optional parts

<Indoor unit (Cylinder unit)>

Parts name	Model name	Specification	EHST20C-VM2C	EHST20C-VM6C	EHST20C-YM9C	EHST20C-TM9C	EHST20C-VM2EC	EHST20C-VM6EC	EHST20C-YM9EC	EHST20C-MEC	EHST20D-VM2C	EHST20D-MEC	EHST20D-MHC	EHST20C-MHCW	EHST20D-MHCW
Wirelss remote controller	PAR-WT50R-E		×	×	×	×	×	×	×	×	×	×	×	×	×
Wirelss receiver	PAR-WR51R-E		×	×	×	×	×	×	×	×	×	×	×	×	×
Thermistors	PAC-SE41TS-E	For room temp.	×	×	×	×	×	×	×	×	×	×	×	×	×
	PAC-TH011-E	For buffer and zone (flow and return temp.)	×	×	×	×	×	×	×	×	×	×	×	×	×
	PAC-TH011TK-E	For tank temp. (5m)	×	×	×	×	×	×	×	×	×	×	×	×	×
	PAC-TH011TKL-E	For tank temp. (30m)	×	×	×	×	×	×	×	×	×	×	×	×	×
	PAC-TH011HT-E	For boiler (flow and return temp.)	×	×	×	×	×	×	×	×	×	×	×	×	×
Immersion heater	PAC-IH03V2-E	1Ph 3kW	×	×	×	×	×	×	×	×	×	×	–	–	–
EHPT accessories for UK	PAC-WK01UK-E		–	–	–	–	–	–	–	–	–	–	–	×	×
Wi-Fi interface	PAC-WF010-E		×	×	×	×	×	×	×	×	×	×	×	×	×

<Indoor unit (Hydro unit)>

Parts name	Model name	Specification	EHSD-MEC	EHSD-VM2C	EHSC-MEC	EHSC-VM2C	EHSC-VM2EC	EHSC-VM6C	EHSC-VM6EC	EHSC-YM9C	EHSC-YM9EC	EHSC-TM9C	ERSD-VM2C	ERSC-MEC	ERSC-VM2C
Wirelss remote controller	PAR-WT50R-E		×	×	×	×	×	×	×	×	×	×	×	×	×
Wirelss receiver	PAR-WR51R-E		×	×	×	×	×	×	×	×	×	×	×	×	×
Thermistors	PAC-SE41TS-E	For room temp.	×	×	×	×	×	×	×	×	×	×	×	×	×
	PAC-TH011-E	For buffer and zone (flow and return temp.)	×	×	×	×	×	×	×	×	×	×	×	×	×
	PAC-TH011TK-E	For tank temp. (5m)	×	×	×	×	×	×	×	×	×	×	×	×	×
	PAC-TH011TKL-E	For tank temp. (30m)	×	×	×	×	×	×	×	×	×	×	×	×	×
	PAC-TH011HT-E	For boiler (flow and return temp.)	×	×	×	×	×	×	×	×	×	×	×	×	×
Joint pipe	PAC-SH30RJ-E	For PUHZ-SW40/50VHA (-BS) ø9.52→ ø6.35	×	×	×	×	×	×	×	×	×	×	×	×	×
	PAC-SH50RJ-E	For PUHZ-SW40/50VHA (-BS) ø15.88→ ø12.70	×	×	×	×	×	×	×	×	×	×	×	×	×
Wi-Fi interface	PAC-WF010-E		×	×	×	×	×	×	×	×	×	×	×	×	×

<Outdoor unit>

Parts name	Model name	Standard Inverter	Power inverter					ZUBADAN			
		SUHZ-SW45VA(H)	PUHZ-SW40VHA(-BS)	PUHZ-SW50VHA(-BS)	PUHZ-SW75VHA(-BS)	PUHZ-SW100/YHA(-BS)	PUHZ-SW125V/YHA(-BS)	PUHZ-SHW80VHA	PUHZ-SHW112V/YHA	PUHZ-SHW140YHA	PUHZ-SHW230YKA*1
Connector for drain hose heater signal output	PAC-SE60RA-E	×	×	×	×	×	×	×	×	×	×
Air discharge guide	MAC-886SG-E	×	–	–	–	–	–	–	–	–	–
	PAC-SG58SG-E	–	×	×	–	–	–	–	–	–	–
	PAC-SG59SG-E	–	–	–	×	×	×	×	×	×	–
	PAC-SG96SG-E	–	–	–	–	–	–	–	–	–	×
Air protection guide	PAC-SG56AG-E	–	×	×	–	–	–	–	–	–	–
	PAC-SH63AG-E	–	–	–	×	×	×	×	×	×	–
	PAC-SH95AG-E	–	–	–	–	–	–	–	–	–	×
Drain socket	PAC-SG61DS-E	–	–	–	×	×	×	–	–	–	–
	PAC-SH71DS-E	–	×	×	–	–	–	–	–	–	–
Centralised drain pan	PAC-SG63DP-E	–	×	×	–	–	–	–	–	–	–
	PAC-SG64DP-E	–	–	–	×	×	×	×	×	×	–
Control/Service tool	PAC-SK52ST	×	×	×	×	×	×	×	×	×	×

*1 PUHZ-SHW230YKA can be used for ATW.

<Interface/Flow temperature control>

Parts name	Model name	Description	Standard Inverter	Power inverter					ZUBADAN			
			SUHZ-SW45VA(H)	PUHZ-SW40VHA(-BS)	PUHZ-SW50VHA(-BS)	PUHZ-SW75VHA(-BS)	PUHZ-SW100/YHA(-BS)	PUHZ-SW125V/YHA(-BS)	PUHZ-SHW80VHA	PUHZ-SHW112V/YHA	PUHZ-SHW140YHA	PUHZ-SHW230YKA*1
Capacity step control interface	PAC-IF011B-E	1 PC Board w/ Case	×	×	×	×	×	×	×	×	×	×
Flow temperature controller	PAC-IF032B-E	1 PC Board w/ Case	×	×	×	×	×	×	×	×	×	×
System controllers	PAC-IF061B-E	1 PC Board w/ Case	×	×	×	×	×	×	×	×	×	×
	PAC-IF062B-E	1 PC Board w/ Case	×	×	×	×	×	×	×	×	×	×
	PAC-SIF061B-E	1 PC Board w/ Case	×	×	×	×	×	×	×	×	×	×

*1 PUHZ-SHW230YKA can be used for ATW.

Packaged type specifications

Indoor unit

<Cylinder unit>

Model name				EHPT20X-VM2C	EHPT20X-VM6C	EHPT20X-YM9C	EHPT20X-TM9C	EHPT20X-MHCW*2
		Type		Heating only				
		Immersion heater		–	–	–	–	×
		Expansion vessel		×	×	×	×	×
		Booster heater		×	×	×	×	–
Dimensions		H×W×D	mm	1600×595×680				
Weight (empty)			kg	98	99	100	100	98
Power supply (V/Phase/Hz)				230/Single/50				
Heater	Booster heater	Power supply (V/Phase/Hz)		230/Single/50		400/Three/50	230/Three/50	–
		Capacity	kW	2	6 (2/4/6)	9 (3/6/9)	9 (3/6/9)	–
		Current	A	9	26	13	23	–
		Breaker size	A	16	32	16	32	–
	Immersion heater	Power supply (V/Phase/Hz)		–	–	–	–	230/Single/50
		Capacity	kW	–	–	–	–	3
		Current	A	–	–	–	–	13
		Breaker size	A	–	–	–	–	16
Domestic hot water tank	Volume / Material		L / –	200 / Stainless steel				
Guaranteed operating range*1	Ambient		°C	0~35				
	Outdoor		°C	See outdoor spec table				
Target temperature range	Heating	Room temperature	°C	10~30				
		Flow temperature	°C	25~60				
	DHW		°C	40~60				
	Legionella prevention		°C	60~70				
Sound pressure level (SPL)			dB (A)	28				

*1 The environment must be frost-free
*2 UK model

<Hydro box>

Model name				EHPX-VM2C	EHPX-YM9C
		Type		Heating only	
		Immersion heater		–	–
		Expansion vessel		×	×
		Booster heater		×	×
Dimensions		H×W×D	mm	800×530×360	
Weight (empty)			kg	37	38
Power supply (V/Phase/Hz)				230/Single/50	
Heater	Booster heater	Power supply (V/Phase/Hz)		230/Single/50	400/Three/50
		Capacity	kW	2	9 (3/6/9)
		Current	A	9	13
		Breaker size	A	16	
Guaranteed operating range*1	Ambient		°C	0~35	
	Outdoor		°C	See outdoor spec table	
Target temperature range	Heating	Room temperature	°C	10~30	
		Flow temperature	°C	25~60	
Sound pressure level (SPL)			dB (A)	28	

*1 The environment must be frost-free

Outdoor unit

Model name			PUHZ-W50VHAR2 (-BS)	PUHZ-W85VHAR2 (-BS)	PUHZ-W112VHA (-BS)	PUHZ-HW112YHA2 (-BS)	PUHZ-HW140VHA2 (-BS)	PUHZ-HW140YHA2 (-BS)
Dimensions	H×W×D	mm	740×950×330	943×950×330	1350×1020×330	1350×1020×330	1350×1020×330	1350×1020×330
Product weight (empty)		kg	64	79	133	148	134	148
Power supply (V / Phase / Hz)			230/Single/50	230/Single/50	230/Single/50	400/Three/50	230/Single/50	400/Three/50
Heating (A7/W35)	Capacity	kW	5.00	9.00	11.20	11.20	14.00	14.00
	COP		4.10	4.18	4.47	4.42	4.25	4.25
	Power input	kW	1.22	2.15	2.51	2.53	3.29	3.29
Heating (A2/W35)	Capacity	kW	5.00	8.50	11.20	11.20	14.00	14.00
	COP		3.13	3.17	3.34	3.11	3.11	3.11
	Power input	kW	1.60	2.68	3.35	3.60	4.50	4.50
Sound pressure level (SPL)	Heating	dB (A)	46	48	53	53	53	53
Sound power level (PWL)	Heating	dB (A)	61	66	69	67	67	67
Operating current (max)		A	13.0	23.0	29.5	13.0	35.0	13.0
Breaker size		A	16	25	32	16	40	16
Guaranteed operating range	Heating	°C	–15~21	–20~21	–20~21	–25~21	–25~21	–25~21
	DHW	°C	–15~35	–20~35	–20~35	–25~35	–25~35	–25~35

Note: based on EN 14511 (Input to circulation pump is included.)
It may differ according to the system configuration.

Optional parts

<Indoor unit>

Parts name	Model name	Specification	Cylinder unit					Hydro box	
			EHPT20X-VM2C	EHPT20X-VM6C	EHPT20X-YM9C	EHPT20X-TM9C	EHPT20X-MHCW	EHPX-VM2C	EHPX-YM9C
Wireless remote controller	PAR-WT50R-E		×	×	×	×	×	×	×
Wireless receiver	PAR-WR51R-E		×	×	×	×	×	×	×
Thermistors	PAC-SE41TS-E	For room temp.	×	×	×	×	×	×	×
	PAC-TH011-E	For buffer and zone (flow and return temp.)	×	×	×	×	×	×	×
	PAC-TH011TK-E	For tank temp. (5m)	×	×	×	×	×	×	×
	PAC-TH011TKL-E	For tank temp. (30m)	×	×	×	×	×	×	×
	PAC-TH011HT-E	For boiler (flow and return temp.)	×	×	×	×	×	×	×
Immersion heater	PAC-IH03V2-E	1Ph 3kW	×	×	×	×	–	–	–
EHPT accessories for UK	PAC-WK01UK-E		–	–	–	–	×	–	–
Wi-Fi interface	PAC-WF010-E		×	×	×	×	×	×	×

<Outdoor unit>

Parts name	Model name	Power inverter			ZUBADAN		
		PUHZ-W50VHA2(-BS)	PUHZ-W85VHA2(-BS)	PUHZ-W112VHA (-BS)	PUHZ-HW112YHA2(-BS)	PUHZ-HW140VHA2(-BS)	PUHZ-HW140YHA2(-BS)
Connector for drain hose heater signal output	PAC-SE60RA-E	×	×	×	×	×	×
Air discharge guide	PAC-SG59SG-E	×	×	×	×	×	×
Air protection guide	PAC-SH63AG-E	×	×	×	×	×	×
Drain socket	PAC-SG61DS-E	×	×	×	–	–	–
Centralised drain pan	PAC-SG64DP-E	×	×	–	–	–	–
Control/Service tool	PAC-SK52ST	–	–	–	–	–	–

<Interface/Flow temperature control>

Parts name	Model name	Description	Power inverter			ZUBADAN		
			PUHZ-W50VHA2(-BS)	PUHZ-W85VHA2(-BS)	PUHZ-W112VHA (-BS)	PUHZ-HW112YHA2(-BS)	PUHZ-HW140VHA2(-BS)	PUHZ-HW140YHA2(-BS)
Capacity step control interface	PAC-IF011B-E	1 PC Board w/ Case	×	×	×	×	×	×
Flow temperature controllers	PAC-IF032B-E	1 PC Board w/ Case	×	×	×	×	×	×
System controllers	PAC-IF061B-E	1 PC Board w/ Case	×	×	×	×	×	×
	PAC-IF062B-E	1 PC Board w/ Case	×	×	×	×	×	×
	PAC-SIF061B-E	1 PC Board w/ Case	×	×	×	×	×	×

Combination table

Type	Model name	Package type						Split type		
		POWER INVERTER			ZUBADAN			eco INVERTER		
		PUHZ-W50VHA	PUHZ-W85VHA2	PUHZ-W112VHA	PUHZ-HW112YHA2	PUHZ-HW140VHA2	PUHZ-HW140YHA2	SUHZ-SW45VA(H)	PUHZ-SW40VHA	
Cylinder unit	EHST20C-VM2C									
	EHST20C-VM6C									
	EHST20C-YM9C									
	EHST20C-TM9C									
	EHST20C-VM2EC									
	EHST20C-VM6EC									
	EHST20C-VM9EC									
	EHST20C-MEC									
	EHST20D-VM2C							●	●	
	EHST20D-MEC							●	●	
	EHST20D-MHC							●	●	
	EHST20C-MHCW									
	EHST20D-MHCW							●	●	
	EHPT20X-VM2C	●	●	●	●	●	●			
	EHPT20X-VM6C	●	●	●	●	●	●			
	EHPT20X-YM9C	●	●	●	●	●	●			
	EHPT20X-TM9C	●	●	●	●	●	●			
	EHPT20X-MHCW	●	●	●	●	●	●			
Hydro box	EHSD-MEC							●	●	
	EHSD-VM2C							●	●	
	EHSC-MEC									
	EHSC-VM2C									
	EHSC-VM2EC									
	EHSC-VM6C									
	EHSC-VM6EC									
	EHSC-YM9C									
	EHSC-YM9EC									
	EHSC-TM9C									
	ERSD-VM2C								●	
	ERSC-MEC									
	ERSC-VM2C									
	EHPX-VM2C	●	●	●	●	●	●			
	EHPX-YM9C	●	●	●	●	●	●			

*Connectable indoor unit is coming soon.

Split type												
POWER INVERTER							ZUBADAN					Mr. SLIM+
	PUHZ-SW50VHA	PUHZ-SW75VHA	PUHZ-SW100VHA	PUHZ-SW100YHA	PUHZ-SW120VHA	PUHZ-SW120YHA	PUHZ-SHW80VHA	PUHZ-SHW112VHA	PUHZ-SHW112YHA	PUHZ-SHW140YHA	PUHZ-SHW230YKA*	PUHZ-FRP71VHA
		●	●	●	●	●	●	●	●	●		●
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Mr.SLIM+

Using waste heat from air conditioners to heat water

Mr. SLIM+ — The smart air conditioning and hot-water supply system conceived from eco-conscious ideas

INDOOR UNIT

PLA-ZRP71BA

PKA-RP71KAL

PSA-RP71KA

PCA-RP71KA

PCA-RP71HA

PEAD-RP71JAQ

PEAD-RP71JALQ

ECODAN AIR-TO-WATER INDOOR UNIT

Hydro box

EHSC-VM2C
EHSC-VM6C
EHSC-YM9C
EHSC-TM9C
EHSC-VM6EC
EHSC-YM9EC
EHSC-VM9EC
EHSC-VMEC

Cylinder unit

EHST20C-VM2C
EHST20C-VM6C
EHST20C-YM9C
EHST20C-VM9C
EHST20C-VM2EC
EHST20C-VM6EC
EHST20C-VM9EC
EHST20C-MEL
EHST20C-MHCW

*Reversible model cannot be connected

OUTDOOR UNIT

PUHZ-FRP71VHA

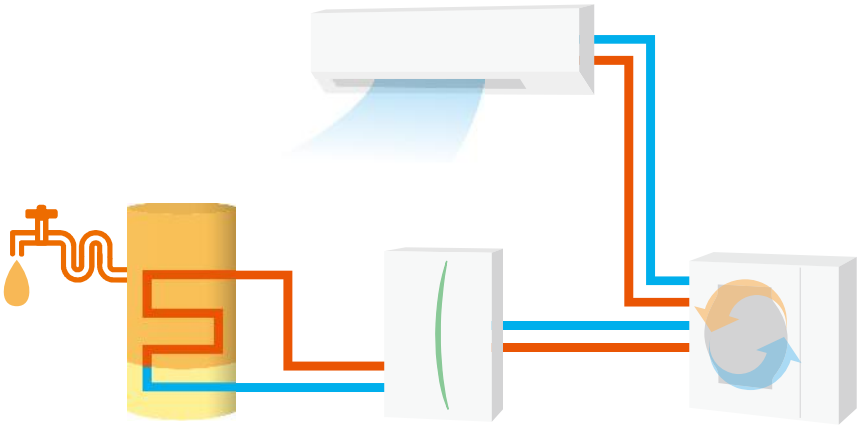
More ecological

Heat recovery function recycles waste heat from air conditioners

Air conditioners normally exhaust hot air from the outdoor unit as waste heat in cooling operation. With Mr. SLIM+, however, the heat that is exhausted by conventional air conditioning systems is recycled and simultaneously transferred to the hot-water supply system, where it's used to heat water.

In conventional systems, the air-heat exchanger in the outdoor unit works as a condenser during air conditioning operation.
The heat of the indoor-air is transferred to the outside-air and exhausted as waste heat.
The new circuit in Mr.SLIM+ uses a water-heat exchanger for supplying hot water as the condenser. When the air conditioning and hot-water systems are running at the same time, heat is recycled and used rather than being exhausted as waste heat.
"COP7.0* attained at water temperature of 45°C and standard air conditioning operation conditions"
Traditionally, when using a hot-water supply system where the air-heat exchanger is in the outdoor unit, operation may not be possible when the outside temperature is very high. However, since Mr.SLIM+ uses the Air-to-Air indoor unit for air conditioning operation and there's no heat exchange with outside-air,
it's possible to use the hot-water supply system even if the ambient temperature is very high.
"Hot-water supply is possible (in heat recovery mode) even when the temperature outside is high (outside temperature = 46°C)"

*Conditions for Air-to-Air coolong: Indoor 27°C (dry bulb) / 19°C (wet bulb) ; Outdoor 35°C (dry bulb) *Water temperrature: 45°C



Space savings

Air conditioning and hot-water supply in one system – Installation space reduced

Mr.SLIM+ utilizes an evolutionary "2-in-1" design that combines two original Mitsubishi Electric system technologies (i.e., Air-to-Air and Air-to-Water) using a single outdoor unit.

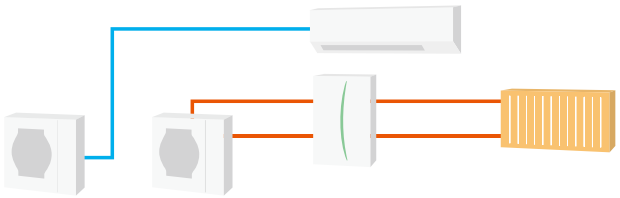
Save on installation

Mitsubishi Electric's legendary Air-to-Air and Air-to-Water systems have been integrated into a new configuration in which two systems share just one outdoor unit. The installation area required outside is cut in half, realizing a space savings of 50%.

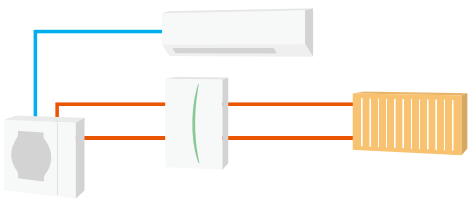
Save on construction

Previously, two systems including two separate outdoor units were required. But the all-new Mr.SLIM+ simplifies everything into a single system configuration, improving reliability and quality by reducing installation time. That results in savings in both time and money, which are passed on to our customers.

Conventional system



Hybrid heat recovery system



1 Unit, 2 Roles – Total Comfort Year-round

Air conditioning and hot-water supply matching the needs of each room

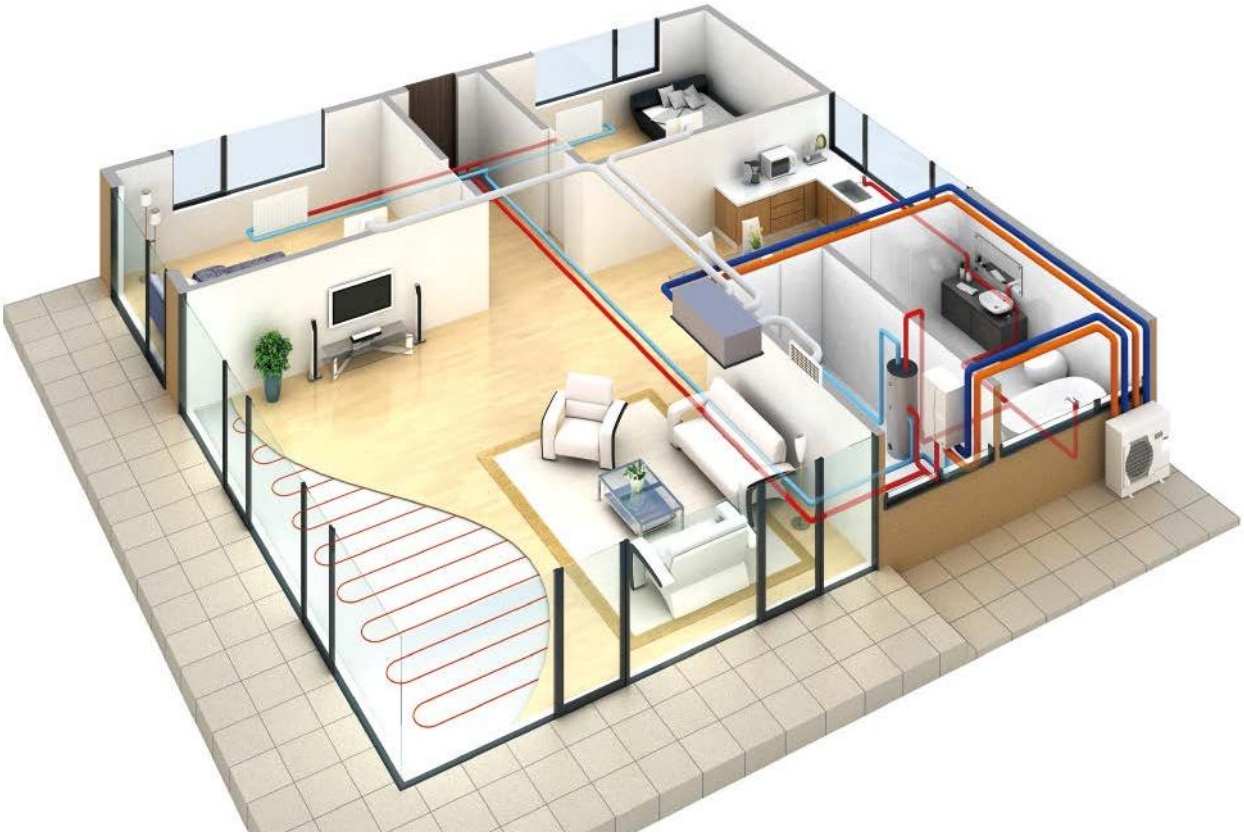
All-in-one outdoor unit
(air conditioning, hot-water supply and hot-water heating)

Mr.SLIM for Air-to-Air

Mr.SLIM+ utilizes a duct system that enables the air conditioning or heating of multiple rooms, and other indoor unit type systems that is possible to fit various applications.

ecodan for Air-to-Water

✓Hot-water supply (Domestic Hot-water supply)
✓Hot-water heating for multiple rooms



Various operations

Mr.SLIM / Air to Air (Air Cooling)

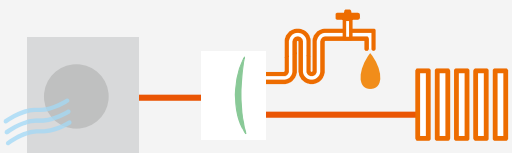
Air-to-Air cooling using Air-to-Air indoor unit

Mr.SLIM / Air to Air (Air Heating)

Air-to-Air heating using Air-to-Air indoor unit

ecodan / Air to Water (Hot-water heating + DHW)

Air-to-Water operation using Air-to-Water indoor unit



Mr.SLIM + ecodan / Air to Air (Air Cooling) + DHW

Heat recovery using both Air-to-Air and Air-to-Water indoor units

Specifications

Indoor unit					PLA-ZRP71BA	PKA-RP71KAL	PCA-RP71KA	PCA-RP71HA	PSA-RP71KA	PEAD-RP71JAQ	PEAD-RP71JALQ
Outdoor unit					PUHZ-FRP71VHA	PUHZ-FRP71VHA	PUHZ-FRP71VHA	PUHZ-FRP71VHA	PUHZ-FRP71VHA	PUHZ-FRP71VHA	PUHZ-FRP71VHA
Refrigerant					R410A						
Power supply		Outdoor (V / Phase / Hz)			230 / Single / 50						
Air-to-Air (ATA)	Cooling	Capacity	Rated	kW	7.1	7.1	7.1	7.1	7.1	7.1	7.1
			Min-Max	kW	3.3-8.1	3.3-8.1	3.3-8.1	3.3-8.1	3.3-8.1	3.3-8.1	3.3-8.1
		Total input	Rated	kW	1.85	1.88	1.90	2.26	1.97	2.10	2.08
		EER			3.84	3.78	3.74	3.14	3.60	3.38	3.41
		Design load		kW	7.1	7.1	7.1	7.1	7.1	7.1	7.1
		Annual electricity consumption *1		kWh/a	382	393	387	462	408	459	441
		SEER *3			6.5	6.3	6.4	5.4	6.1	5.4	5.6
			Energy-efficiency class		A++	A++	A++	A	A++	A	A+
	Heating (average season)	Capacity	Rated	kW	8.0	8.0	8.0	8.0	8.0	8.0	8.0
			Min-Max	kW	3.5-10.2	3.5-10.2	3.5-10.2	3.5-10.2	3.5-10.2	3.5-10.2	3.5-10.2
		Total input	Rated	kW	2.05	2.26	2.26	2.42	2.28	2.09	2.09
		COP			3.90	3.54	3.54	3.14	3.33	3.83	3.83
		Design load		kW	4.7	4.7	4.7	4.7	4.7	4.9	4.9
		Declared capacity	at reference design temperature	kW	4.7 (–10°C)	4.7 (–10°C)	4.7 (–10°C)	4.7 (–10°C)	4.7 (–10°C)	4.9 (–10°C)	4.9 (–10°C)
			at bivalent temperature	kW	4.7 (–10°C)	4.7 (–10°C)	4.7 (–10°C)	4.7 (–10°C)	4.7 (–10°C)	4.9 (–10°C)	4.9 (–10°C)
			at operation limit temperature	kW	3.5 (–20°C)	3.5 (–20°C)	3.5 (–20°C)	3.5 (–20°C)	3.5 (–20°C)	3.7 (–20°C)	3.7 (–20°C)
		Back-up heating capacity		kW	0	0	0	0	0	0	0
		Annual electricity consumption *1		kWh/a	1,510	1,569	1,555	1,787	1,709	1,799	1,799
		SCOP *3			4.4	4.2	4.2	3.7	3.9	3.8	3.8
			Energy-efficiency class		A+	A+	A+	A	A	A	A
Air-to-Water (ATW)	Nominal flow rate (for heating)			L/min	22.90						
	Heating *4	A7W35	Capacity	kW	8.00						
			Input	kW	1.96						
			COP		4.08						
		A2W35	Capacity	kW	7.50						
			Input	kW	2.65						
			COP		2.83						
	Heat recovery (ATA cooling & ATW) *5	W45	Capacity (ATA cooling + ATW)	kW	7.1+8.0	7.1+8.0	7.1+8.0	7.1+8.0	7.1+8.0	7.1+8.0	7.1+8.0
			Input	kW	1.90	1.93	1.95	2.31	2.02	2.15	2.13
			COP		7.95	7.82	7.74	6.54	7.48	7.02	7.09
		W55	Capacity (ATA cooling + ATW)	kW	7.1+9.0	7.1+9.0	7.1+9.0	6.4+9.0	7.1+9.0	7.1+9.0	7.1+9.0
			Input	kW	2.97	3.00	3.02	3.25	3.09	3.22	3.20
			COP		5.42	5.37	5.33	4.74	5.21	5.00	5.03
	ATW indoor unit				Cylinder unit or Hydro box (see previous page)						
Outdoor unit	Dimensions	HxWxD		mm	943-950-330 (+30)						
	Weight			kg	73	73	73	73	73	73	73
	Air volume	Cooling		m³/min	55	55	55	55	55	55	55
		Heating		m³/min	55	55	55	55	55	55	55
	Sound pressure level (SPL)	Cooling		dB(A)	47	47	47	47	47	47	47
		Heat recovery		dB(A)	47	47	47	47	47	47	47
		ATA Heating		dB(A)	48	48	48	48	48	48	48
		ATW Heating		dB(A)	48	48	48	48	48	48	48
	Sound power level (PWL)	Cooling		dB(A)	67	67	67	67	67	67	67
		Heat recovery		dB(A)	67	67	67	67	67	67	67
		ATA Heating		dB(A)	68	68	68	68	68	68	68
		ATW Heating		dB(A)	68	68	68	68	68	68	68
	Operating current (max)			A	19.0	19.0	19.0	19.0	19.0	19.0	19.0
	Breaker size			A	25	25	25	25	25	25	25
Ext.piping	Diameter	Liquid/Gas		mm	9.52/15.88	9.52/15.88	9.52/15.88	9.52/15.88	9.52/15.88	9.52/15.88	9.52/15.88
	Max. length	Out-In		m	30 (for ATA) + 30 (for ATW)						
	Max. height	Out-In		m	20	20	20	20	20	20	20
Guaranteed operating range (outdoor)		Cooling *2		°C	-15~+46	-15~+46	-15~+46	-15~+46	-15~+46	-15~+46	-15~+46
		Heating		°C	-20~+21	-20~+21	-20~+21	-20~+21	-20~+21	-20~+21	-20~+21
		ATW		°C	-20~+35	-20~+35	-20~+35	-20~+35	-20~+35	-20~+35	-20~+35
		Heat recovery		°C	+7~+46	+7~+46	+7~+46	+7~+46	+7~+46	+7~+46	+7~+46

*1 Energy consumption based on standard test results. Actual energy consumption will depend on how the appliance is used and where it is located.
*2 Optional air protection guide is required where ambient temperature is lower than –5°C.
*3 SEER/SCOP values are measured based on EN14825.
*4 Ait-to-Water values are measured based on EN14511 (Circulation pump input is not included.).
*5 Conditions for Air-to-Air cooling: Indoor 27°C (dry bulb) /19°C (wet bulb); Outdoor 35°C (dry bulb).

MELCloud (WiFi interface) for ecodan

NEW

MELCloud for fast, easy remote control and monitoring of your ecodan

MELCloud is a new Cloud-based solution for controlling ecodan either locally or remotely by computer, tablet or smartphone via the Internet. Setting up and remotely operating your ecodan heating system via MELCloud is simple and straight forward. All you need is wireless computer connectivity in your home or the building where the ecodan is installed and an Internet connection on your mobile or fixed terminal. To set up the system, the router and the ecodan WiFi interface must be paired, and this is done simply and quickly using the WPS button found on all mainstream routers.
You can control and check ecodan via MELCould from virtually anywhere there are Internet connections in the world.
That means, thanks to MELCloud, you can use ecodan much more easily and conveniently.

✻ MELCloud uses the PAC-WF010-E interface