R410A

MITSUBISHI ELECTRIC

ecodan®

Advanced Air-to-Water Heat Pump Solutions

Next-Generation Central Home Heating and Hot Water Combined

Ecodan – Next-Generation Central Heating and Hot Water Heating Combined

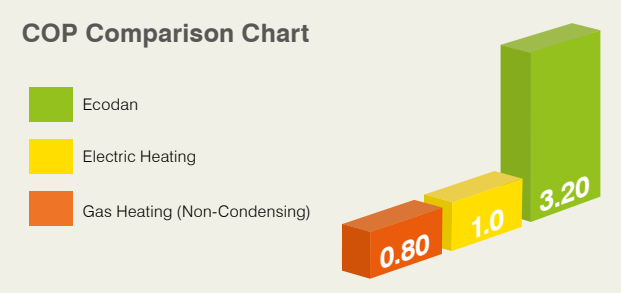
Increasing energy bills, coupled with the need to heat our homes and hot water efficiently, is driving the demand for alternative forms of domestic heating. Mitsubishi Electric has utilised their expertise and industry-leading technology to develop Ecodan – a super energy efficient air-to-water heat pump solution that combines both hot water heating and room heating through one system.

On average, combined hot water and home heating needs account for over 67%*1 of the overall energy bill in New Zealand homes.

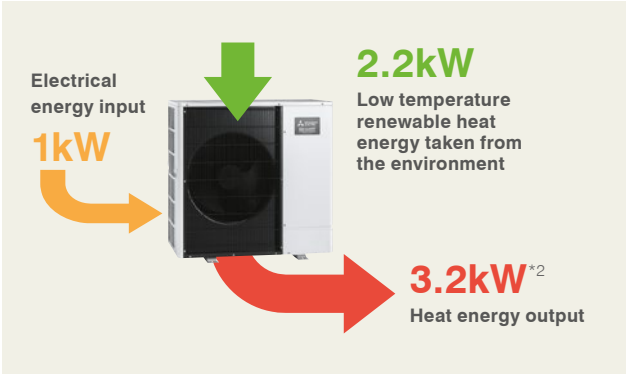
Domestic heating is therefore an obvious area to target in reducing energy bills. This is especially pertinent during the winter months, where a combination of taking longer, hotter showers and the increased need for a warm and dry home, typically drives up power bills. An Ecodan Heat Pump System can help reduce your heating and hot water bill when compared to gas and direct electric systems.

What is Ecodan?

Ecodan is an advanced air-to-water heat pump system that cleverly combines the hot water heating supply for a home with energy efficient whole home central heating; all through the same system. Heat pumps use electrical energy and take low grade heat energy from the outdoor air, to heat refrigerant which in turn heats water for domestic use and space heating.



The efficiency of a heat pump is known as the Coefficient of Performance or COP. This is a ratio of the heat delivered to power consumed. For every 1kW of electrical input energy, Ecodan absorbs renewable heat energy from the outdoor air to provide the home with an average of at least 3.2kW*2 of heat output. Compared to typical gas and direct electric heating systems that can have higher running costs with COPs as low as 0.80*3, Ecodan provides an energy efficient alternative.



Heat pumps are super efficient at heating homes, so why not use the same technology to heat water?

Many years ago, when heat pumps were first introduced to New Zealand, it did not take long for Kiwis to quickly embrace this super energy efficient technology to keep their homes and families warm all winter long.

So it should come as no surprise that the same heat pump technology that revolutionised home heating in New Zealand can be just as effective and efficient at heating your hot water.

Savings on your hot water and heating costs could be up to 70%*4 when compared to traditional water heating.

*1 Based on data sourced from EECA New Zealand.

*2 As independently tested by BSRIA based upon BSEN14511 Part 3 standard rating conditions. Due to the method of operation, the performance of heat pumps will vary based upon the temperature of the heat source and the requirements of the heat delivered. The BSEN14511 testing relates to the heat pump performance only and not the entire heating system.

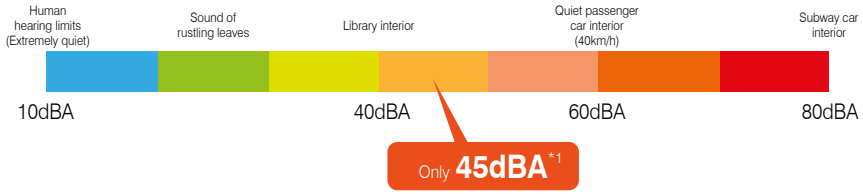
*3 Based on manufacturer information for gas instant hot water heater (non-condensing).

*4 Estimated using COP data based on BSEN14511 standard rating conditions. 7°C outdoor temp, 35°C outlet water temp. The BSEN14511 testing relates to the heat pump performance only and not the entire heating system.

The New Ultra Quiet Ecodan Outdoor Units Take Hot Water Heat Pumps to the Next Level

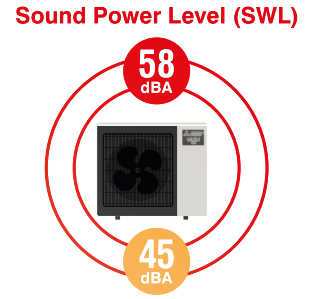
Our market-leading Ecodan Hot Water Heat Pumps are designed to provide your home with reliable, trouble-free renewable heating and hot water.

These new models offer superb style, market-leading energy efficiency, and low sound levels. Designed especially for residential applications the 6.0kW, 8.5kW and 11.2kW units are up to 3dBA quieter than previous models, making them the perfect choice for high density housing.



Ideal for High Density Housing

With space often being a premium on new build development sites, Ecodan will operate discreetly where dwellings are in close proximity to each other. The outdoor unit provides very quiet operation as low as 45dBA (SPL)*1 and 58dBA (SWL).



FTC Controller with Energy Monitoring

The Mitsubishi Electric Fifth and Sixth Generation Controllers (FTC5 and FTC6) include intelligent room temperature control as standard. This together with advanced weather compensation, ensures the system delivers efficient, comfortable heating regardless of the season. FTC now also includes energy monitoring, showing consumed and produced energy.

PAC-IF061B-E Contoller

Fast Heat-Up Times!

- Fast water heating times from 15–55°C in one hour for a three bedroom house*2
- Less than 30 minutes to re-heat half the tank (100 litres)*2
- Even faster heat-up times with Zubadan Technology*3

*1 Measured at 1m from the front of the outdoor unit and 1.5m from ground level. Applicable to PUHZ-W60VAA and PUHZ-W85VAA.
*2 When using PUHZ-W112VAA, ambient temperature above 2°C.
*3 Zubadan only available on specific models – see specification tables on pages 9, 11 and 15.
*4 Estimated using COP data based on BSEN14511 standard rating conditions. 7°C outdoor temp, 35°C outlet water temp. The BSEN14511 testing relates to the heat pump performance only and not the entire heating system.

You could **save** up to **70%**[*4] on your **hot water** and **heating bills**.

Ecodan Central Heating with Domestic Hot Water Systems

Ecodan is a highly energy efficient hot water heat pump system comprised of an outdoor hot water heat pump and an indoor component – a hydrobox or a cylinder. A reliable total home heating solution, using radiators and/or underfloor heating in conjunction with a hot water supply, that provides year-round comfort with advanced control.

With proven Mitsubishi Electric Technology, Ecodan is designed for New Zealand conditions; maintaining high performance during the winter months when heating is in high demand.

Whether you're looking for central whole home heating, hot water or both, Ecodan Hydrobox and Cylinder Systems can provide the perfect solution.

Both the Hydrobox and cylinder are compatible with the air-to-water (ATW) hydronic and split type Ecodan outdoor units ranging from 5kW to 23kW of heating and hot water for your home or light commercial application.

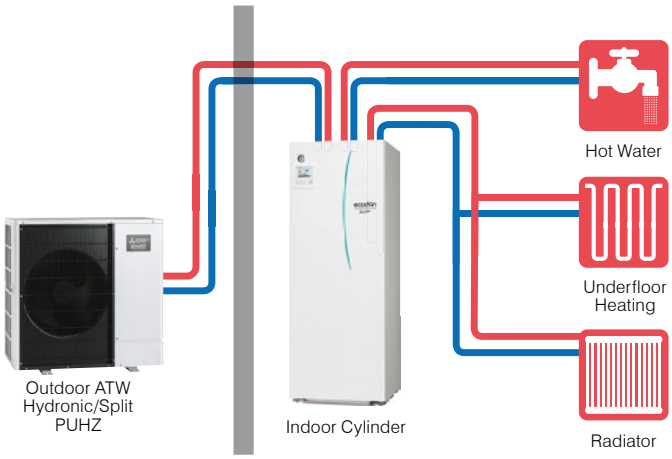
Ecodan Cylinder System

Our range of 170 - 300 litre cylinders provide improved performance and fast heat-up times through the use of plate heat exchanger technology and FTC5/FTC6 control. Ecodan cylinders are completely pre-plumbed and wired for ease of installation. The cylinder can provide heating and hot water to your home.

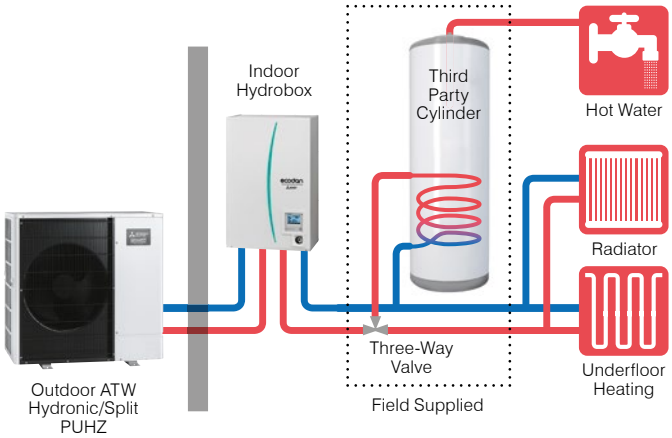
Ecodan Hydrobox System

With options for space heating, domestic hot water production or both, the Ecodan Hydrobox is a small form factor heating and cooling powerhouse.
The Hydrobox can be connected to underfloor, fan coils and/or radiators and provide a whole home central heating solution. For users wanting potable hot water, the Hydrobox can be connected to a third party coiled cylinder.

Ecodan Cylinder System



Ecodan Hydrobox System



Ecodan for Swimming and Spa Pool Applications

Ecodan Hot Water Heat Pumps provide highly efficient hot water to swimming pools and spas. Comprised of a durable outdoor hot water heat pump, specialised heat exchanger, flow switch and advanced controller, Ecodan is the ideal and cost efficient way to heat your pool or spa all year-round.

Swimming Pools

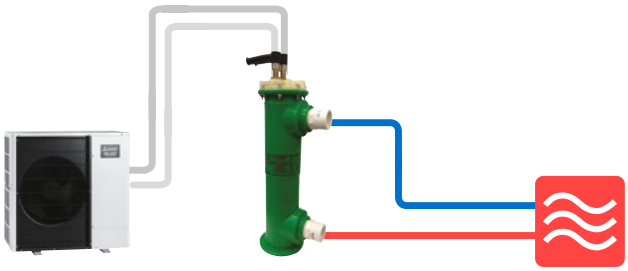
Most swimming pools are only used during the summer months and remain unused for the rest of the year. Installing a hot water heat pump can enable you to enjoy your swimming pool year-round!

The range of split PUHZ Hot Water Heat Pumps can be matched with a titanium coil heat exchanger. This removes the risk of coil degradation due to salt or chlorine conditions.

Spa Pools

Spa pools consume more power than many swimming pools due to higher temperatures and potential heat losses. Installing a hot water heat pump to an existing spa pool can significantly reduce your heating costs. Power consumption can be reduced by three to four times.

Packaged Heat Exchanger System



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Advanced Heating Technology

Ecodan Technology, Smart Energy Monitoring and System Management

State-of-the-art energy monitoring and management of the Ecodan Heat Pump System means families now have the visibility and freedom to efficiently manage their overall household power consumption for heating and hot water. Energy monitoring ensures households can take advantage of off-peak tariffs where available, providing them the ability to save even more on their power bill.

Smart Energy Monitoring

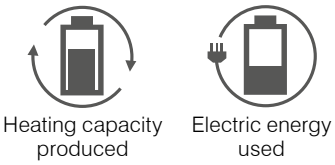
View electricity consumption and heat output on the remote controller. End users can now easily check the energy data of the Ecodan Heat Pump.

Data Shown on the Remote Controller:

- Consumed electrical energy for space heating, cooling and domestic hot water (kWh).
- Delivered energy for space heating, cooling and domestic hot water (kWh).

Other Features

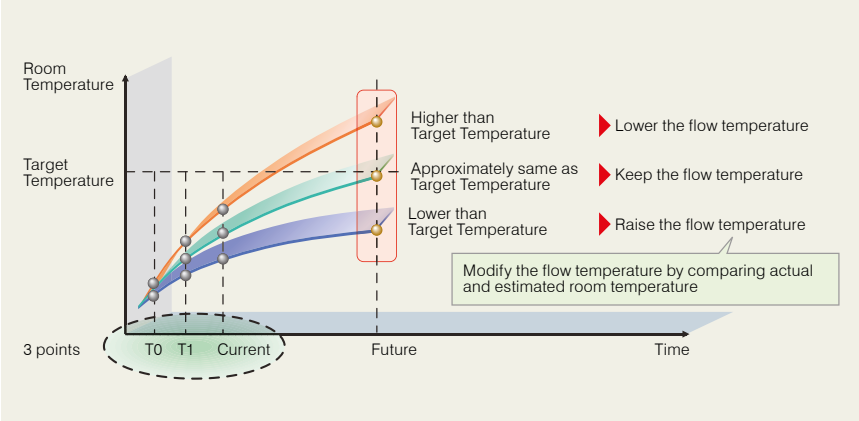
- Daily, monthly and yearly data are stored and can be displayed using the main remote controller.
- External power meter and heat meter can be connected for accurate measurement.
- An SD card is included for storing usage data.



Auto Adaptation

Our advanced Auto Adaptation Function measures the room temperature and outdoor temperature, calculating the required heating capacity for the room. 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 wastage.

Future Room Temperature Estimation



By estimating future changes in room temperature, the system works to prevent unnecessary increases and decreases in the flow temperature. Auto Adaptation maximises both comfort and energy savings.

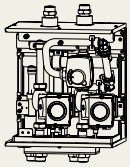
2-Zone Control Allows You to Simultaneously Control Two Different Temperature Zones

Using Ecodan, it is possible to control two different flow temperatures, thereby managing two different heating load requirements.

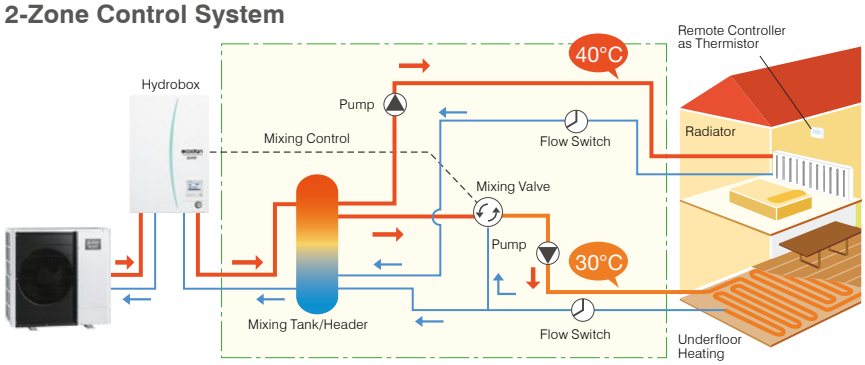
The system can adjust and maintain two flow temperatures when different temperatures are required for different rooms; for example, controlling a flow temperature of 40°C for the bedroom radiators and another flow temperature of 30°C for the living room underfloor heating.

Optional PAC-TZ01-E 2-Zone Kit

- Easy installation: G1 screw type flexi piping connections
- Compact: fits on top of cylinder or wall mountable with hydrobox
- All in one kit: key functional components are incorporated*



2-Zone Control System



*Flow switch not included – field supplied.

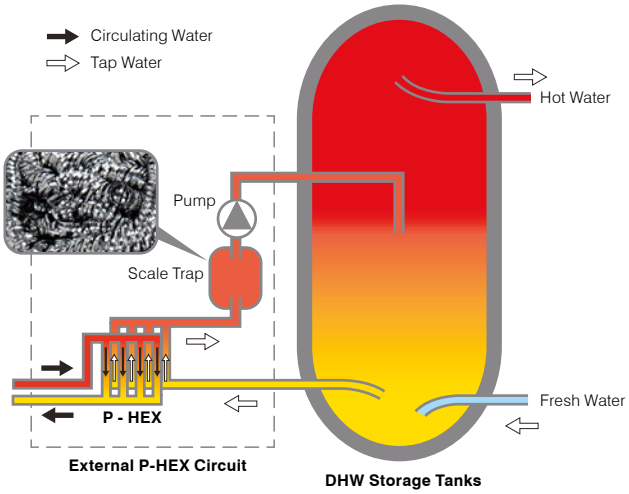
Plate Heat Exchanger and Patented Scale Trap Technology**

Contained within the Ecodan Cylinder and Hydrobox, the aluminium plate heat exchanger and patented Scale Trap Technology help achieve greater efficiencies. In conventional systems, there is a risk of calcium scale building up on the plate heat exchanger if it is exposed to tap water directly; therefore making it difficult to heat tap water. To resolve this problem, Ecodan is equipped with a “Scale Trap” that catches calcium nuclei in the tap water before it has a chance to grow into large scales, thereby inhibiting build-up in the external heat exchanger.

Ecodan can use a plate heat exchanger to heat tap water, resulting in much higher domestic hot water performance.

In the case of special localised conditions such as very hard tap water, please consult a specialist before installation.

The Secret Behind Our External Plate Heat Exchanger System



** Only available on cylinders made by Mitsubishi Electric.

Zubadan – Reliable Performance in Low Temperature Outdoor Conditions

New-generation Zubadan*[1] provides powerful heating in cold regions. Zubadan's rated heating capacity is maintained even in outdoor temperatures as low as -15°C*[2], guaranteeing total home comfort when you need it most.

Zubadan Inverter Technology

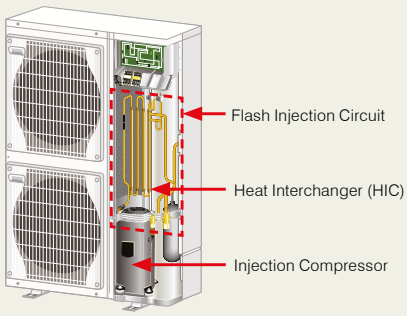
New-generation Zubadan*[1] Inverter Technology provides powerful heating in cold regions where heat pump performance can diminish. With Zubadan, rated heating capacity is maintained even in outdoor temperatures as low as -15°C*[2], with guaranteed heating operation at -25°C. Zubadan guarantees a warm, comfortable home when you need it most. Furthermore, Zubadan can provide even faster tank heat-up times in low ambient temperatures compared to standard models.

ZUBADAN

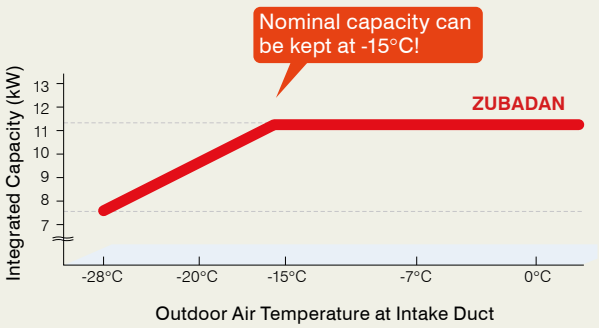
Flash Injection Technology

The Flash Injection Circuit is an original Mitsubishi Electric Technology. A heat exchange process at the heat interchanger transforms liquid refrigerant into a two-phase, gas-liquid state and then compresses the gas-liquid refrigerant at the injection compressor. This circuit secures a sufficient flow rate of refrigerant for heating when outdoor temperatures are very low.

Thanks to an improved heat interchanger and the introduction of a new injection compressor, the Flash Injection Circuit is now more powerful then ever.



Benefits of Zubadan



Example: PUHZ-SHW112VAA (according to EN 14511).

*1 Zubadan only available on specific models – see specification tables pages 9, 11 and 15.

*2 For Zubadan Model PUHZ-SHW112VAA (according to EN 14511).

Ecodan ATW Hydronic Hot Water Heat Pumps

ecodan® Advanced Heating Technology

PUHZ-(H)W OUTDOOR UNITS

Our range of Ecodan ATW (Air-to-Water) Hydronic Hot Water Heat Pumps are available in 8.5kW and 14kW capacities. Designed to suit a wide rage of heating and cooling applications, these models offer a viable solution for the varying requirements that domestic and small commercial applications demand.

Key Features

- Self-contained unit, only requiring water and electric connections
- No need for gas supply, flues or ventilation
- Single phase power supply with a low starting current
- Low maintenance and quiet operation
- Operates with outside temperatures as low as -25°C with Zubadan HW Models
- Capable of leaving water temperature down to 5°C in Cooling Mode and up to 60°C in Heating Mode

Domestic Applications

- Heating and domestic hot water
- Suits vast majority of NZ homes

Commercial Applications

- Small retail outlets
- Dental and doctors' surgeries
- Public sector and commercial buildings

PUHZ-W85VAA

PUHZ-HW140VHA2

				ZUBADAN
OUTDOOR UNIT			**PUHZ-W85VAA**	**PUHZ-HW140VHA2**
HEATING*1 (A7/W35)	Capacity	[kW]	9.00	14.00
	Power Input	[kW]	1.996	3.29
	COP		4.51	4.26
HEATING*2 (A2/W35)	Capacity (kW)	[kW]	8.50	14.00
	Power Input	[kW]	2.530	4.50
	COP		3.36	3.11
WATER DATA	Outdoor connection		1" BSP Parallel Thread ISO 228/1-G1B	1" BSP Parallel Thread ISO 228/1-G1B
	Heating Flow Rate Range	[L/min]	10.8–25.8	17.9–40.1*4
	Heating Flow Temperature Range	[°C]	25-60	25-60
	Cooling Flow Temperature Range	[°C]	5-25	5-25
OPERATING OUTDOOR TEMPERATURE RANGE	Heating	[°C DB]	-20 ~ +35°C	-25 ~ +21°C
	DHW	[°C DB]		-25 ~ +35°C
NOISE	SPL at 1M*1	[dBA]	45	53
REFRIGERANT DATA	Type		R410A	R410A
	Charge	[kg]	2.4	4.3
DIMENSIONS	Width	[mm]	1050	1020
	Depth	[mm]	480	330+30*3
	Height	[mm]	1020	1350
WEIGHT		[kg]	97	134
ELECTRICAL DATA	Electrical Supply		1Ph, 230V, 50Hz	1Ph, 230V, 50Hz
	Maximum Current	[A]	22	35
	Fuse Rating	[A]	25	40

*1 Under normal heating conditions at outdoor temp: 7°CDB / 6°CWB, outlet water temp 35°C, inlet water temp 30°C as tested to BS EN14511.
*2 Under normal heating conditions at outdoor temp: 2°CDB / 1°CWB, outlet water temp 35°C, inlet water temp 30°C.
*3 Grille.
*4 When connected to hydrobox/cylinder, max flow rate is limited to 27.7 L/min.

Ecodan ATW Split Hot Water Heat Pumps

ecodan® Advanced Heating Technology

PUHZ-SW OUTDOOR UNITS

The Ecodan ATW (Air-to-Water) Split Hot Water Heat Pump ranges from 5kW to 16kW. Designed to suit a wide range of heating and cooling applications, these models offer a viable solution for the varying requirements that domestic and small commercial applications demand.

Key Features

- Split unit with refrigerant piped between outdoor unit and indoor hydrobox or packaged cylinder
- All water connections are inside the building
- No need for gas supply, flues or ventilation
- Single phase power supply with a low starting current*
- Low maintenance and quiet operation
- Capable of leaving water temperature down to 5°C in Cooling Mode and up to 60°C in Heating Mode

Domestic Applications

- Heating and domestic hot water
- Suits vast majority of NZ homes

Commercial Applications

- Small retail outlets
- Dental and doctors' surgeries
- Public sector and commercial buildings

PUHZ-SW50VKA

PUHZ-SW75VAA

PUHZ-SW120VHA

PUHZ-SW160YKA

OUTDOOR UNIT			PUHZ-SW50VKA	PUHZ-SW75VAA	PUHZ-SW120VHA	PUHZ-SW160YKA†
HEATING*1 (A7/W35)	Capacity	[kW]	5.50	8.00	16.00	22.00
	Power Input	[kW]	1.24	1.82	3.90	5.24
	COP		4.42	4.40	4.10	4.20
HEATING*2 (A2/W35)	Capacity	[kW]	5.00	7.50	12.00	16.00
	Power Input	[kW]	1.68	2.21	3.70	5.14
	COP		2.97	3.40	3.24	3.11
OPERATING OUTDOOR TEMPERATURE RANGE	Heating	[°C DB]	-15 ~ +21°C	-20 ~ +21°C	-20 ~ +21°C	-20 ~ +21°C
	DHW	[°C DB]	-15 ~ +35°C	-20 ~ +35°C	-20 ~ +35°C	-20 ~ +35°C
NOISE	SPL at 1M*1	[dBA]	46	43	54	62
DIMENSIONS	Width	[mm]	809+62*3	1050	950	1050
	Depth	[mm]	300	480	330+30*3	330+40*3
	Height	[mm]	630	1020	1350	1338
WEIGHT		[kg]	43	92	118	136
REFRIGERANT DATA	Type		R410A	R410A	R410A	R410A
	Charge (up to 10m Pipe Length)	[kg]	1.4	3.0	4.6	7.1*4
	Pipe Size - Gas/Liquid	[mm(in)]	12.7 (1/2") / 6.35 (1/4")	15.88 (5/8") / 9.52 (3/8")	15.88 (5/8") / 9.52 (3/8")	25.4 (1") / 9.52 (3/8")
	Connection Type		Flared	Flared	Flared	Flared
	Min–Max Pipe Length	[m]	2–40	2–40	2–75	2–80
	Max Height Difference	[m]	30	30	30	30
ELECTRICAL DATA	Electrical Supply		1Ph, 230V, 50Hz	1Ph, 230V, 50Hz	1Ph, 230V, 50Hz	3Ph, 400V, 50Hz
	Maximum Current	[A]	13	22	29.5	19
	Fuse Rating	[A]	16	25	40	25

*PUHZ-SW50-120

*1 Under normal heating conditions at outdoor temp: 7°CDB / 6°CWB, outlet water temp 35°C, inlet water temp 30°C as tested to BS EN14511.

*2 Under normal heating conditions at outdoor temp: 2°CDB / 1°CWB, outlet water temp 35°C, inlet water temp 30°C.

*3 Grille.

*4 For first 30m, then add additional refrigerant.

† Only compatible with Hydrobox ERSE-YM9EC.

Zubadan ATW Split Hot Water Heat Pumps

PUHZ-SHW ZUBADAN OUTDOOR UNITS

The ATW (Air-to-Water) Split Zubadan Hot Water Heat Pump ranges from 8kW to 23kW. Designed to suit a wide range of domestic and commercial applications, these models maintain full heating capacity as ambient temperatures drop below zero right down to -15°C. Proven in cold climate areas such as Mount Ruapehu, Zubadan Systems won't let you down in the cold.

Key Features

- Split unit with refrigerant piped between outdoor unit and indoor hydrobox or packaged cylinder
- All water connections are inside the building
- No need for gas supply, flues or ventilation
- Low maintenance and quiet operation
- Capable of leaving water temperature down to 5°C in Cooling Mode and up to 60°C in Heating Mode
- Operates in outside temperatures as low as -28°C with Zubadan Technology

PUHZ-SHW80/112VAA

PUHZ-SHW230YKA2

			ZUBADAN	ZUBADAN	ZUBADAN
OUTDOOR UNIT			**PUHZ-SHW80VAA**	**PUHZ-SHW112VAA**	**PUHZ-SHW230YKA2†**
HEATING*1 (A7/W35)	Capacity	[kW]	8.00	11.20	23.00
	Power Input	[kW]	1.72	2.51	6.31
	COP		4.65	4.46	3.65
HEATING*2 (A2/W35)	Capacity	[kW]	8.00	11.20	23.00
	Power Input	[kW]	2.25	3.48	9.71
	COP		3.55	3.22	2.37
OPERATING OUTDOOR TEMPERATURE RANGE	Heating	[°C DB]	-28 ~ +21°C	-28 ~ +21°C	-25 ~ +21°C
	DHW	[°C DB]	-28 ~ +35°C	-28 ~ +35°C	-25 ~ +35°C
NOISE	SPL at 1M*1	[dBA]	45	47	59
DIMENSIONS	Width	[mm]	1050	1050	1050
	Depth	[mm]	480	480	330+30*3
	Height	[mm]	1020	1020	1338
WEIGHT		[kg]	116	116	143
REFRIGERANT DATA	Type		R410A	R410A	R410A
	Charge (up to 30m Pipe Length)	[kg]	4.6	4.6	7.1
	Pipe Size - Gas/Liquid	[mm(in)]	15.88 (5/8") / 9.52 (3/8")	15.88 (5/8") / 9.52 (3/8")	25.4 (1) / 12.7 (1/2)
	Connection Type		Flared	Flared	Flared
	Min – Max Pipe Length	[m]	2–75	2–75	2–80
	Max Height Difference	[m]	30	30	30
ELECTRICAL DATA	Electrical Supply		1Ph, 230V, 50Hz	1Ph, 230V, 50Hz	3Ph, 400V, 50Hz
	Maximum Current	[A]	22	28	20
	Fuse Rating	[A]	25	32	25

*1 Under normal heating conditions at outdoor temp: 7°CDB / 6°CWB, outlet water temp 35°C, inlet water temp 30°C as tested to BS EN14511.
*2 Under normal heating conditions at outdoor temp: 2°CDB / 1°CWB, outlet water temp 35°C, inlet water temp 30°C.
*3 Grille.
† Only compatible with Hydrobox ERSE-YM9EC.

Cylinder for Ecodan ATW Hydronic and Split Units

ECODAN CYLINDER

The Ecodan Cylinder offers a highly adaptable heating solution for retrofit or new builds. Designed specifically by Mitsubishi Electric to integrate with the Ecodan Split Air Source Heat Pump Range, the cylinder provides improved performance and faster heat-up times through the use of plate heat exchanger technology. Fast commissioning via an SD card and energy monitoring functions are included.

Key Features

- Simple graphical control
- Optional 2-Zone Space Heating Control
- Scale Trap Technology
- Floor Dry-Up Mode
- Pre-plumbed and wired for faster installation
- SD card commissioning
- Energy monitoring as standard
- Compatible with home automation via Modbus
- BMS compatible

ERST17D-VM2D*2 Cylinder

ERST20C-VM2C/ ERST20D-VM2C Cylinder

ERST30C-VM6ED Cylinder

CYLINDER				ERST17D-VM2D*2	ERST20C-VM2C ERST20D-VM2C	ERST30C-VM6ED
CYLINDER TYPE				Split	Split	Split
OUTDOOR CAPACITY RANGE (Nominal)			[kW]	7.5	ERST20C: 8.0-12.0 ERST20D: 5.0-7.5	8.0-12.0
NOMINAL HOT WATER VOLUME			[L]	170	200	300
HEATING OPERATING RANGE		Heating Flow Temperature	[°C]	20-60	25-60	20-60
		DHW	[°C]	40-60	40-60	40-60
COOLING OPERATING RANGE		Cooling Flow Temperature	[°C]	5-25	5-25	5-25
SOUND PRESSURE LEVEL AT 1M			[dBA]	28	28	28
WATER DATA		Max Flow Rate	[L/min]	25.8	27.7	36.9
		Primary Pump		Grundfos UPM3K 15-75 130	Grundfos UPM2k 15-75 130	Grundfos UPM3K 15-75 130
		Sanitary Hot Water Pump		Grundfos UPSO 15-60 CIL2	Grundfos UPSO 15-60 130 CIL2	Grundfos UPSO 15-60 CIL2
		Connection Size (Heating / DHW)		28 / 22 (mm) compression	28 / 22 (mm) compression	22 / 28 (mm) compression
		Primary Expansion Vessel	[L]	12	12	n/a
		Charge Pressure	[Bar]	1	1	n/a
WATER SAFETY DEVICES	Water Circuit	Control Thermistor	[°C]	1-80	1-80	1 to 80
		Pressure Relief Valve	[Bar]	3	3	3
		Flow Sensor Min Flow Rate	[L/min]	5.0	5.0	5.0
	DHW Cylinder	Control Thermistor	[°C]	0-75	0-75	0-75
		Pressure Relief Valve	[Bar]	10	10	10
		Legionella Prevention	[°C]	60-70	60-70	60-70
DIMENSIONS		Width	[mm]	595	595	595
		Depth	[mm]	680	680	680
		Height	[mm]	1400	1600	2050
WEIGHT EMPTY / FULL			[kg]	94 / 269	ERST20C: 110 / 320 ERST20D: 103 / 312	120 / 428
ELECTRICAL DATA	Control Board (Optionally Powered by Outdoor Unit)	Electrical Supply		1Ph, 230V, 50 Hz	1Ph, 230V, 50 Hz	1Ph, 230V, 50Hz
		Breaker	[A]	10	10	10
	Booster Heater	Electrical Supply		1Ph, 230V, 50 Hz	1Ph, 230V, 50 Hz	1Ph, 230V, 50Hz
		Capacity	[kW]	2	2	2+4
		Max Running Current	[A]	9	9	26
		Breaker	[A]	16	16	32
MECHANICAL ZONES				DHW and 1 Heating Zone*1	DHW and 1 Heating Zone*1	DHW and 1 Heating Zone*1

Cylinder includes: Flow Temperature Controller with Main Controller and Temperature Sensors, Pumps & Valves for Zone 1 and DHW use, Flow Sensor, Plate Heat Exchanger, Scale Trap, Booster Heater and Expansion Vessel (Excluding ERST30C-VM6ED).

*1 Optional 2-Zone Accessory Pack available.

*2 Available on special order only.

Hydrobox for Ecodan
ATW Hydronic and Split Units

ECODAN HYDROBOX

The Hydrobox is primarily used for space heating in the form of underfloor and/or radiators. A small footprint and a similar size to combi boilers, they are a highly adaptable solution for retrofit and new builds. Whether connecting the packaged or split unit, only two pipes are connected to supply the unit just like the cylinder. Hydraulic components are included with Flow Temperature Control and the split type model features the heat exchanger built into the Hydrobox. SD card commissioning and energy monitoring are included. For systems where a third party cylinder is to be installed, a three-way valve can be added to the system and connected to the Flow Temperature Controller.

Key Features

- Simple graphical control
- Optional 2-Zone Space Heating Control
- Floor Dry-Up Mode
- Pre-plumbed and wired for faster installation
- SD card commissioning
- Energy monitoring as standard
- Compatible with home automation via Modbus
- BMS compatible

EHPX-VM2C/ERSC-VM2C/
ERSD-VM2C/ERSE-YM9EC
Hydrobox

HYDROBOX				EHPX-VM2C	ERSC-VM2C ERSD-VM2C	ERSE-YM9EC
HYDROBOX TYPE				Hydronic	Split	Split
OUTDOOR CAPACITY RANGE (Nominal)			[kW]	5-14	ERSC: 8.0-12.0 ERSD: 5.0-7.5	16-23
HEATING OPERATING RANGE		Heating Flow Temperature	[°C]	25°C - 60°C	25°C - 60°C	25°C - 60°C
COOLING OPERATING RANGE		Cooling Flow Temperature	[°C]	N/A	5-25	5-25
SOUND PRESSURE LEVEL AT 1M			[dBA]	28	28	30
WATER DATA		Max Flow Rate	[L/min]	27.7	27.7	61.5
		Primary Pump		Grundfos UPM2 15-70 130	Grundfos UPM2k 15-75 130	Grundfos UPMXL GEO 25-125 180PWM
		Connection Size (Heating / DHW)		28 (mm) compression	1" BSP Parallel Thread ISO228/1-G1A	1" 1/2 BSP Parallel Thread ISO228/1 G1-1/2B
		Primary Expansion Vessel	[L]	10	10	N/A
		Charge Pressure	[Bar]	1	1	N/A
WATER SAFETY DEVICES	Water Circuit	Control Thermistor	[°C]	1 - 80	1 - 80	1 - 80
		Pressure Relief Valve	[Bar]	3	3	3
		Flow Sensor Min Flow Rate	[L/min]	5.0	5.0	5.0
DIMENSIONS		Width	[mm]	530	530	600
		Depth	[mm]	360	360	360
		Height	[mm]	800	800	950
WEIGHT EMPTY / FULL			[kg]	37 / 42	ERSC: 49 / 56 ERSD: 45 / 51	63 / 73
ELECTRICAL DATA	Control Board (Optionally Powered by Outdoor Unit)	Electrical Supply		1Ph, 230V, 50Hz	1Ph, 230V, 50Hz	1Ph, 230V, 50Hz
		Breaker	[A]	10	10	10
	Booster Heater (Optionally Powered if Required)	Electrical Supply		1Ph, 230V, 50Hz	1Ph, 230V, 50Hz	3Ph, 400V, 50Hz
		Capacity	[kW]	2	2	3+6
		Max Running Current	[A]	9	9	13
		Breaker	[A]	16	16	16

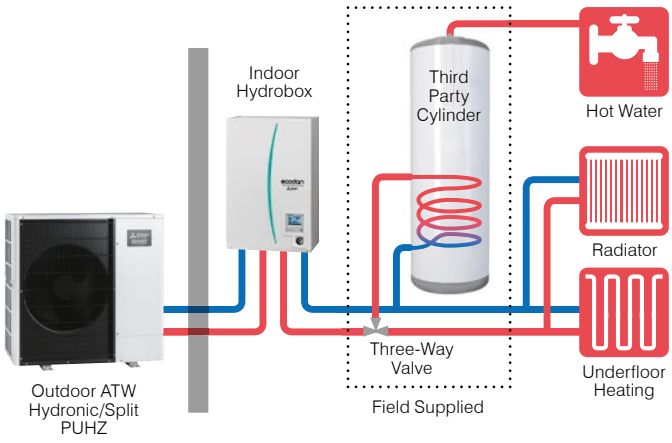
Hydrobox includes: Flow Temperature Controller (FTC5) with Main Controller and Temperature Sensors, Water Circulation Pump, Flow Sensor, Booster Heater and Expansion Vessel.

Third Party Cylinder via Hydrobox for Ecodan ATW Hydronic and Split Units

THIRD PARTY CYLINDERS

We offer a range of New Zealand made hot water cylinders manufactured to the highest standards, complete with a heat exchanger coil designed specifically for Mitsubishi Electric Hot Water Heat Pump Hydrobox Systems. Cylinders are supplied as standard with all water connections on the front and include standard electric element, thermostat and TPR valve. Sensor pockets are correctly positioned for the cylinder temperature sensor. There are sizes for mains pressure cylinders or buffer tanks and these can be made up to 800 litres.

Ecodan Hydrobox System



HOT WATER AND HEATING CONTROL WITH THIRD PARTY HEAT EXCHANGER

For hot water and heating systems that require integrating separate heat exchangers with our range of outdoor units can easily be applied using the FTC5, FTC6 or FTC2B Interface Controllers. The FTC2B Controller has the ability to connect to third party BMS and home automation with a series of simple hardwired controls.

FTC5			PAC-IF061B-E
DIMENSIONS	Width	[mm]	393
	Depth	[mm]	86.7
	Height	[mm]	422
WEIGHT		[kg]	4.0
ELECTRICAL DATA	Electrical Supply		Powered by Outdoor Unit 1Ph, 230V, 50Hz

PAC-IF061B-E

FTC2B			PAC-IF032B-E
DIMENSIONS	Width	[mm]	336
	Depth	[mm]	69
	Height	[mm]	278
WEIGHT		[kg]	2.4
ELECTRICAL DATA	Electrical Supply		Powered by Outdoor Unit 1Ph, 230V, 50Hz

PAC-IF032B-E

FTC6			PAC-IF071B-E
DIMENSIONS	Width	[mm]	393
	Depth	[mm]	86.7
	Height	[mm]	422
WEIGHT		[kg]	3.7
ELECTRICAL DATA	Electrical Supply		Powered by Outdoor Unit 1Ph, 230V, 50Hz

PAC-IF071B-E

Ecodan Split Units for Pool and Spa Applications

PUHZ-S(H)W OUTDOOR UNITS

These split systems are ideal for pool and spa applications and require an external heat exchanger. The flexibility of this system allows the installer to position the heat exchanger right where the hot water is required for both new and retrofit installations. Vaportec HXTi with high density plastics and a titanium coil heat exchanger for swimming and spa pool heating will require mounting and installation of refrigerant pipe work to the PUHZ-SW outdoor unit. The system is controlled by the advanced PAC-IF061B-E or PAC-IF032B-E Controller.

Key Features

- Reliable year-round water heating
- Inverter driven for maximum energy efficiency
- Operation in outdoor temperatures as low as -25°C
- Easy to use LCD Wall Controller with 7 Day Timer – PAC-IF061B-E
- BMS control and monitor

PUHZ-SW50VKA

PUHZ-SW75VAA

PUHZ-SW120VHA

PUHZ-SW160YKA

PUHZ-SHW80/112VAA

PUHZ-SHW230YKA2

							ZUBADAN	ZUBADAN	ZUBADAN
OUTDOOR UNIT*			PUHZ-SW50VKA	PUHZ-SW75VAA	PUHZ-SW120VHA	PUHZ-SW160YKA	PUHZ-SHW80VAA	PUHZ-SHW112VAA	PUHZ-SHW230YKA2
HEATING*1 (A7/W35)	Capacity	[kW]	5.50	8.00	16.00	22.00	8.00	11.20	23.00
	Power Input	[kW]	1.24	1.82	3.90	5.24	1.72	2.51	6.31
	COP		4.42	4.40	4.10	4.20	4.65	4.46	3.65
HEATING*2 (A2/W35)	Capacity	[kW]	5.00	7.50	12.00	16.00	8.00	11.20	23.00
	Power Input	[kW]	1.68	2.21	3.70	5.14	2.25	3.48	9.71
	COP		2.97	3.40	3.24	3.11	3.55	3.22	2.37
HEATING FLOW RATE RANGE		[L/min]	6.5–17.2	10.2–22.9	17.9–45.9	23.0–63.1	10.2–22.9	14.4–32.1	28.7–65.9
FLOW SWITCH			FSW50	FSW85	FSW140	FSW200	FSW85	FSW125	FSW200
HEAT EXCHANGER			Vaportec HXTi	Vaportec HXTi	Vaportec HXTi	Vaportec HXTi	Vaportec HXTi	Vaportec HXTi	Vaportec HXTi

Ancillary equipment such as water pumps and expansion tanks are to be provided separately by the installer, and selected to meet the individual system pressure and flow requirements. This system is supplied with the Vaportec HXTi Heat Exchanger.

* For full outdoor specifications see pages 10 to 11.

*1 Under normal heating conditions at outdoor temp: 7°CDB / 6°CWB, outlet water temp 35°C, inlet water temp 30°C as tested to BS EN14511.

*2 Under normal heating conditions at outdoor temp: 2°CDB / 1°CWB, outlet water temp 35°C, inlet water temp 30°C.

VAPORTEC HEAT EXCHANGER			HXTi 8
WATER PIPE SIZE		[mm]	50mm PVC (max. pressure 3.4 bar)
DIMENSIONS	Diameter	[mm]	165
	Height	[mm]	635
MAX TEMPERATURE			40°C*

*Nylon case Vaportec HTXi Heat Exchanger available for application above 40°C and 3.4bar.

Vaportec HXTi Heat Exchanger

PAC-IF061B-E/PAC-IF032B-E