MITSUBISHI ELECTRIC

ecodan®

Advanced Heating Technology

Central Home Heating and Hot Water Supply

Next Generation Central Home Heating and Hot Water Combined.

Ecodan – Next Generation Central Heating and Hot Water Heating Combined

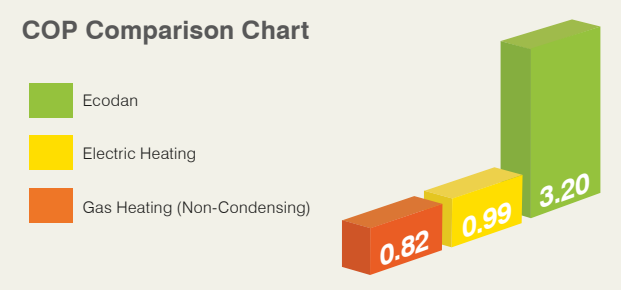
Increasing energy bills, coupled with the need to heat our homes and hot water efficiently, is driving the demand for alternative forms of domestic heating. Mitsubishi Electric has utilised their expertise and industry-leading technology to develop Ecodan – a super energy efficient heat pump solution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

On average, hot water and home heating needs combined account for over 70%*[1] of the overall energy bill in New Zealand homes.

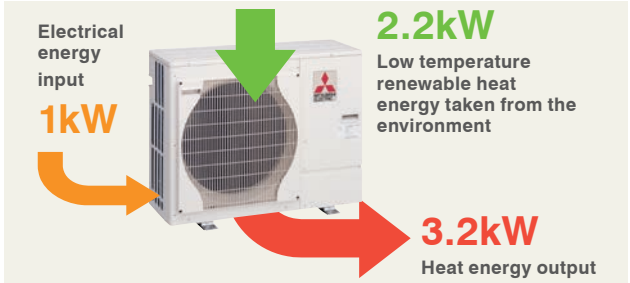
Domestic heating is therefore an obvious area to target in reducing energy bills. This is especially pertinent during the winter months, where a combination of taking longer, hotter showers and the increased need for a warm and dry home, typically drives up power bills. An Ecodan Heat Pump System can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

What is Ecodan?

Ecodan is an advanced 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 harvests and upgrades renewable heat 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 have COPs as low as 0.82*[3] and can have higher running costs.



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.

Return on Investment

The estimated return on investment of an Ecodan System, when compared to a gas or direct electric heating system, is about 10 years*[4]. There are ways of reducing this payback period further such as taking advantage of lower cost nightly electricity tariffs available. Such tarrifs can further reduce homeowners' energy bills by heating the hot water cylinder during the night. Large households with high hot water usage could bring the payback period down significantly, closer towards 5 years*[4].

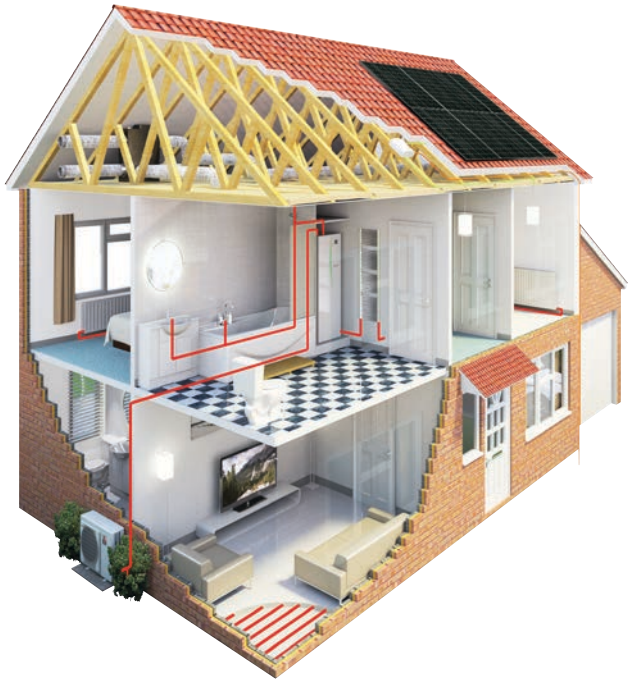
- **Savings could be as much as 35%** when compared to traditional gas central heating systems.
- **Savings could be as much as 40%** when compared to traditional direct electric heaters.

*1 Based on data sourced from NZGBC.

*2 The overall system efficiency and energy savings will depend on the comparison with your current heating system, satisfactory system design and installation, and operational settings i.e. how you use the heating system.

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

*4 Payback period comparison based on average energy supplier costs per kWh over an average winter heating period. Actual savings may vary in line with gas and electricity price fluctuations and seasonal conditions. This is an estimate only.



Fast Heat Up Times!

- Fast water heating times from 15°C – 55°C in 1 hour for a 3 bedroom house*1
- Less than 30 minutes to re-heat half the tank (100 litres)*1
- Even faster heat up times with Zubadan Technology*2

Zubadan Inverter Technology

New Generation Zubadan Inverter Technology*2 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, 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.

*1 When using PUHZ-W112VHA, ambient temperature above 2°C.
*2 Zubadan only available on specific models – see specification tables pg 9 and 10.

Zubadan – Reliable Performance in Low Temperature Outdoor Conditions

New Generation Zubadan* provides powerful heating in cold regions where most heat pumps' performance lacks. Zubadan's rated heating capacity is maintained even in outdoor temperatures as low as –15°C, guaranteeing total home comfort when you need it most.

Flash Injection Technology

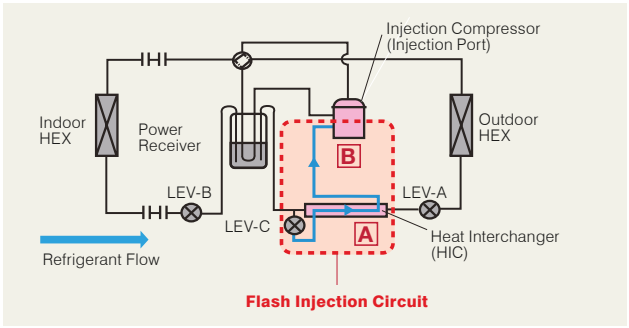
The Flash Injection Circuit is an original Mitsubishi Electric technology. A heat exchange process at point A (Heat Interchanger) transforms liquid refrigerant into a two-phase, gas-liquid state and then compresses the gas-liquid refrigerant at point B (Injection Compressor). This circuit secures a sufficient 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.

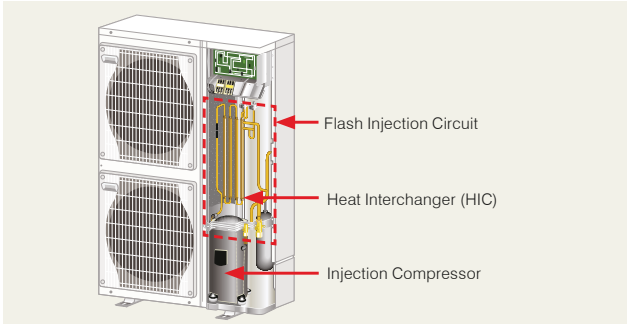
ZUBADAN

* Zubadan only available on specific models – see specification tables pg 9 and 10.

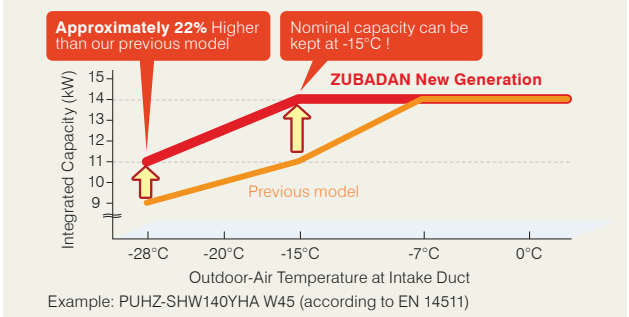
Flash Injection Circuit



Flash Injection Technology



Benefits of Zubadan New Generation



Example: PUHZ-SHW140YHA W45 (according to EN 14511)

Plate Heat Exchanger and Patented Scale Trap Technology*

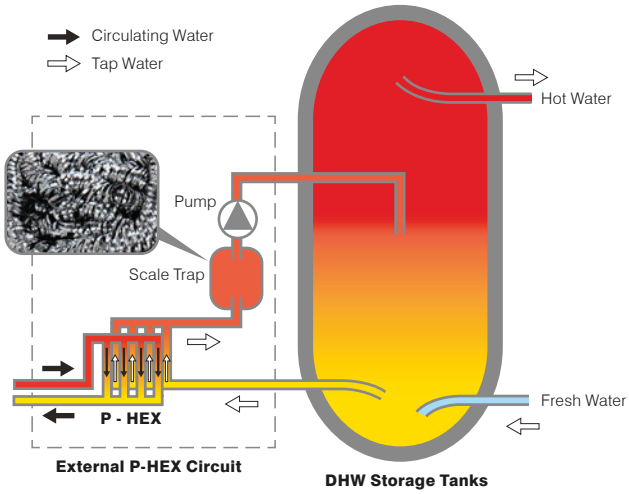
Thanks to the Aluminium Plate Heat Exchanger and patented Scale Trap Technology, greater efficiencies are achieved. In conventional systems, there is a risk of calcium scale building up on the Plate Heat Exchanger if it is exposed to tap water directly.

Therefore, it is difficult to use Plate Heat Exchangers 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 Mitsubishi Electric made cylinders.

Ecodan – Smart Energy Monitoring and 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, 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. Every end-user can now easily check the energy data of the Ecodan Heat Pump.

Data Shown on the Remote Controller:

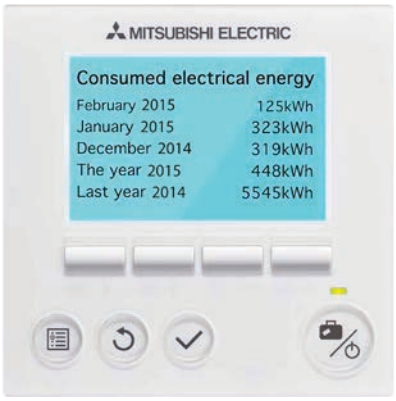
- Consumed electrical energy for space heating, cooling and domestic hot water (kWh)
- Delivered energy for space heating, cooling and domestic hot water (kWh)

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

Heating capacity produced

Electric energy used

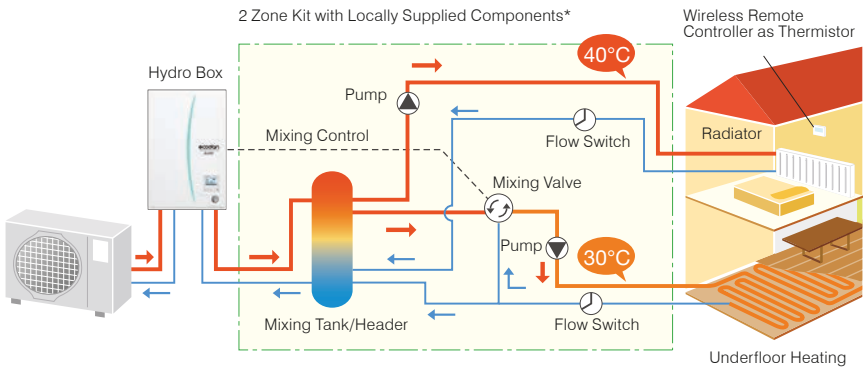


2-Zone Control allows you to simultaneously control two different temperature zones.

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 45°C for the bedroom radiators and another flow temperature of 35°C for the living room underfloor heating.

2-Zone Control makes it easy to maintain the most comfortable temperature in different areas of the house, and saves energy too.

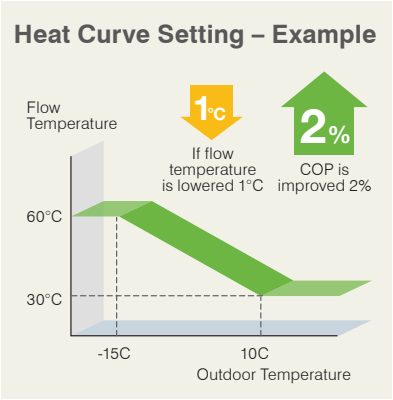


* Items such as a Mixing Tank, Mixing Valve, Flow Switch and Pumps are not included and need to be purchased locally.

Auto Adaptation

Auto Adaptation maximises energy savings while maintaining comfort at all times.

Regarding the relation of flow temperature and unit performance, a 1°C drop in the flow temperature improves the Coefficient of Performance (COP) of the air to water system by 2%. Significant energy savings can be achieved by controlling the flow temperature in the system.

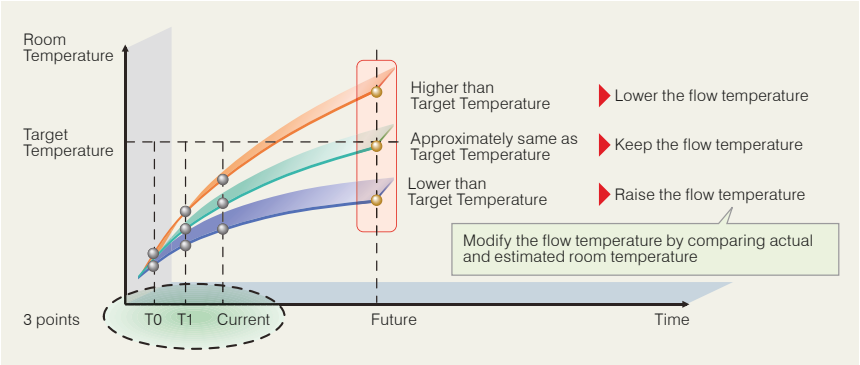


In a conventional system controller, the flow temperature is determined based on the pre-set heat curve dependant on the actual outdoor temperature.

Mitsubishi Electric's Auto Adaptation Function automatically tracks changes in both the indoor and outdoor temperature and adjusts the flow temperature accordingly.

Our advanced Auto Adaptation Function measures the room temperature and outdoor temperature, and then calculates 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 from being wasted.

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.

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 Tank. A reliable total home heating solution using radiators and/or underfloor heating in conjunction with hot water supply 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 where heating is in high demand.

Whether you need 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 Monobloc and Split Type Ecodan Outdoor Units ranging from 4.5–14 kW of heating and hot water for your home or light commercial application.

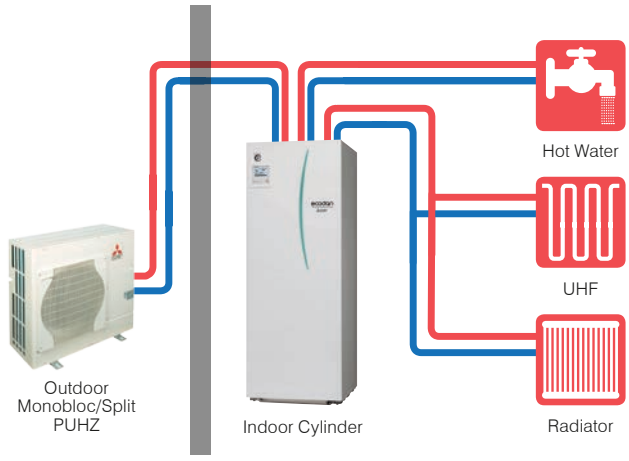
Packaged Cylinder System

The 200 litre Cylinder provides improved performance and fast heat up times through the use of Plate Heat Exchanger Technology and FTC5 Control. The Cylinders are completely pre-plumbed and wired for ease of installation. The Cylinder can provide heating and hot water to your home.

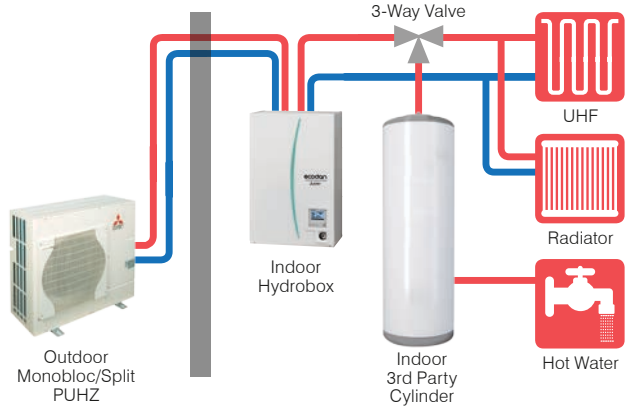
Packaged Hydrobox System

The Hydrobox is primarily for space heating in the form of underfloor or radiators or a mixture. They have a small footprint and are sized similarly to Combi Boilers, providing a highly adaptable solution for retrofit and new builds. Whether connecting the Monobloc or Split Unit only, 2 pipes are connected to supply the unit just like the Cylinder. For systems where a third party tank is to be installed, this can be easily catered for by adding a 3-way valve to the system and connecting to the FTC5 Controller.

Packaged Cylinder System



Packaged Hydrobox System



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Advanced Heating Technology

The Ecodan Advantage

- Ecodan is flexible in design as it can work as a stand alone system or in conjunction with other systems.
- Mitsubishi Electric Cylinders are pre-plumbed and wired, with FTC5 Control. It is easy to design, install, commission and maintain due to it's pre-packaged features.
- It is built for the modern home, with SD card commissioning and logging, and the ability to program settings and monitor energy usage.
- For areas with hard water prone to scale build up, Ecodan has Scale Trap Technology which actively decreases scale build up.
- It can replace any existing heating system, with a small footprint that can fit into any home.
- Ecodan has industry-leading low noise levels in both the outdoor and indoor units.

Technical Specifications

FTC5 CONTROLLER – WITH ENERGY MONITORING

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

Ecodan Monobloc
Air Source Heat Pumps

PUHZ-(H)W OUTDOOR UNITS

Our range of Ecodan Monobloc Air Source Heat Pumps are available in 5, 8.5, 11.2 and 14kW capacities. Designed to suit a wide range of 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
- 5°C – 60°C outlet water temperature
- Optional 2-Zone Energy Efficient Space Heating Control
- Energy monitoring as standard

Domestic Applications

- Heating and hot water
- The vast majority of NZ homes

Commercial Applications

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

PUHZ-W50VHA(-BS)

PUHZ-W85VHA(-BS)

PUHZ-W112–HW140VHA(-BS)

					ZUBADAN
OUTDOOR UNIT		**PUHZ-W50VHA(-BS)**	**PUHZ-W85VHA(-BS)**	**PUHZ-W112VHA(-BS)**	**PUHZ-HW140VHA(-BS)**
HEATING*1 (A7/W35)	Capacity (kW)	5.00	9.00	11.20	14.00
	Power Input (kW)	1.11	2.15	2.51	3.29
	COP	4.50	4.18	4.47	4.26
HEATING*2 (A2/W35)	Capacity (kW)	5.00	8.50	11.20	14.00
	Power Input (kW)	1.43	2.68	3.35	4.50
	COP	3.50	3.17	3.34	3.11
OPERATING AMBIENT TEMPERATURE (°C DB)*4		-15 ~ +35°C	-20 ~ +35°C	-20 ~ +35°C	-25 ~ +35°C
SOUND PRESSURE LEVEL AT 1M (dBA)*1		46	48	53	53
LOW NOISE MODE (dBA)*1		40	42	46	46
WATER DATA	Water Pipe Size	1" BSP Parallel Thread *ISO 228/1-G1B)	1" BSP Parallel Thread *ISO 228/1-G1B	1" BSP Parallel Thread *ISO 228/1-G1B	1" BSP Parallel Thread *ISO 228/1-G1B
	Flow Rate (l/min)	14.3	25.8	32.1	40.1
	Water Pressure Drop (kPa)	12	13.5	6.3	9
DIMENSIONS (mm)	Width	950	950	1020	1020
	Depth	330+30*3	330+30*3	330+30*3	330+30*3
	Height	740	943	1350	1350
WEIGHT (kg)		64	79	133	134
ELECTRICAL DATA	Electrical Supply	220-240V, 50Hz	220-240V, 50Hz	220-240V, 50Hz	220-240V, 50Hz
	Phase	Single	Single	Single	Single
	Maximum Current (A)	13	23	29.5	35
	Fuse Rating	16	25	32	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 Heating maximum ambient temperature ~21°CDB, DHW hot water maximum ambient temperature ~35°CDB.

Ecodan Split
Air Source Heat Pumps

PUHZ-S(H)W OUTDOOR UNITS

The Ecodan Split Air Source Heat Pump ranges from 4.5kW to 16kW. Designed to suit a wide range of applications, these models offer a viable solution for the varying requirements that domestic and small commercial applications demand.

Key Features

- Split unit allowing water connections to be made internally
- No need for gas supply, flues or ventilation
- Single phase power supply with a low starting current
- Low maintenance and quiet operation
- Operates in outside temperatures as low as -28°C with Zubadan Technology – HW Models
- 2-Zone Energy Efficient Space Heating Control
- Energy monitoring as standard

Domestic Applications

- Heating and hot water
- The vast majority of NZ homes

Commercial Applications

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

SUHZ-SW45VAH

PUHZ-SW50VKA(-BS)

PUHZ-SW75VHA(-BS)

OUTDOOR UNIT		SUHZ-SW45VAH	PUHZ-SW50VKA(-BS)	PUHZ-SW75VHA(-BS)
HEATING*1 (A7/W35)	Capacity (kW)	4.50	5.50	8.00
	Power Input (kW)	0.89	1.24	1.82
	COP	5.06	4.42	4.40
HEATING*2 (A2/W35)	Capacity (kW)	3.50	5.00	7.50
	Power Input (kW)	1.15	1.68	2.21
	COP	3.04	2.97	3.40
OPERATING AMBIENT TEMPERATURE (°C DB)*4		-15 ~ +35°C	-15 ~ +35°C	-20 ~ +35°C
SOUND PRESSURE LEVEL AT 1M (dBA)*1		-	46	51
LOW NOISE MODE (dBA)*1		42	42	48
WATER DATA	Flow Rate (l/min)	12.9	15.8	22.9
DIMENSIONS (mm)	Width	840	809+62*5	950
	Depth	330	300	330+30*3
	Height	880	630	943
WEIGHT (kg)		54	43	75
ELECTRICAL DATA	Type	R410A	R410A	R410A
	Charge (kg) - 10m Pipe Length	1.4	1.4	3.2
	Pipe Size - Gas/Liquid (mm (in))	12.7 (1/2") / 6.35 (1/4")	12.7 (1/2") / 6.35 (1/4")	15.88 (5/8") / 9.52 (3/8")
	Connection Type	Flared	Flared	Flared
	Max Pipe Length (m)	30	40	40
	Min Pipe Length (m)	2	2	2
	Max Height Difference (m)	30	30	30
ELECTRICAL DATA	Electrical Supply	220-240V, 50Hz	220-240V, 50Hz	220-240V, 50Hz
	Phase	Single	Single	Single
	Maximum Current (A)	12	13	17
	Fuse Rating	20	16	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.
*4 Heating maximum ambient temperature ~21°CDB, DHW hot water maximum ambient temperature ~35°CDB.
*5 Electrical cover.

PUHZ-SW120VHA(-BS)

PUHZ-SHW80/112VHA(-BS)

	ZUBADAN	ZUBADAN
PUHZ-SW120VHA(-BS)	PUHZ-SHW80VHA(-BS)	PUHZ-SHW112VHA(-BS)
16.00	8.00	11.20
3.90	1.72	2.51
4.10	4.65	4.46
12.00	8.00	11.20
3.70	2.25	3.35
3.24	3.55	3.34
-20 ~ +35°C	-28 ~ +35°C	-28 ~ +35°C
54	51	52
51	49	50
45.9	20.4	32.1
950	950	950
330+30*3	330+30*3	330+30*3
1350	1350	1350
118	120	120
R410A	R410A	R410A
4.6	5.5	5.5
15.88 (5/8") / 9.52 (3/8")	15.88 (5/8") / 9.52 (3/8")	15.88 (5/8") / 9.52 (3/8")
Flared	Flared	Flared
75	75	75
2	2	2
30	30	30
220-240V, 50Hz	220-240V, 50Hz	220-240V, 50Hz
Single	Single	Single
29.5	29.5	35
40	32	40

Flow Temperature Controller

FTC2B FLOW TEMPERATURE CONTROLLER

The FTC2B has been developed to allow the Ecodan PUHZ Range to interface with third party or BEMS (Building Energy Management System) Controls. A combination of volt free and voltage inputs allow the Ecodan PUHZ Range to be used in applications where only simple on/off and temperature control is required.

Functions that can be controlled by third party controls:

- On/Off Heating Mode
- On/Off Heating ECO Mode
- On/Off Hot Water Mode
- On/Off Holiday Mode
- On/Off Legionella Mode
- Change Water Flow Temperature

Functions that can be monitored by third party controls:

- Unit Running
- Error
- Defrost

The ability to interface with third party controls opens up a huge number of application opportunities. Many processes simply require a heat source that provides hot water, without polished end-user controls. The FTC2B Controller allows the Ecodan PUHZ to be used in these applications. FTC2B inputs and outputs can be used in conjunction with local BEMS.

Application Examples

- Smart home integration
- Leisure centres
- Agriculture
- Industrial process heating
- Under soil heating

PAC-IF032B-E

FTC2B		PAC-IF032B-E
DIMENSIONS (mm)	Width	336
	Depth	69
	Height	278
WEIGHT (KG)		2.4
Operating Ambient Temperature (°C DB)		0~+35°C (RH<80%)
ELECTRICAL DATA	Electrical Supply	Powered from Outdoor Unit (240v)
	Phase	Single

FTC5 Packaged Cylinder for Ecodan Monobloc and Split Units

FTC5 PACKAGED CYLINDER

The Packaged Cylinder offers a highly adaptable heating solution for retrofit or new builds. Designed specifically by Mitsubishi Electric to integrate with the Ecodan Monobloc and 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 now included.

Key Features

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

MelcoBEMS Mini (Modbus)

EHST/ERST/EHPT Cylinder

CYLINDER			EHST20D(C)-VM2CR2	ERST20D(C)-VM2CR2	EHPT20X-VM2C
CYLINDER TYPE			Packaged Split	Packaged Split Reversible	Packaged Monobloc
NOMINAL HOT WATER VOLUME (LITRES)			200	200	200
OPERATING AMBIENT TEMPERATURE (°C DB)			0 ~ +35°C (RH<80%)	0 ~ +35°C (RH<80%)	0 ~ +35°C (RH<80%)
SOUND PRESSURE LEVEL AT 1M (dBA)			28	28	28
WATER DATA		Max Flow Rate (l/min)	27.7	27.7	27.7
		Primary Pump	Grundfos UPM2 15 70 - 130	Grundfos UPM2 15 70 - 130	Grundfos UPM2 15 70 - 130
		Sanitary Hot Water Pump	Grundfos UPSO 15-60 130 CIL2	Grundfos UPSO 15-60 130 CIL2	Grundfos UPSO 15-60 130 CIL2
		Connection Size (mm) Heating / DHW	28 / 22	28 / 22	28 / 22
		Primary Expansion Vessel (Litres)	12	12	12
		Charge Pressure (MPa (Bar))	0.1 (1)	0.1 (1)	0.1 (1)
WATER SAFETY DEVICES	Water Circuit	Control Thermistor (°C)	1 - 80	1 - 80	1 - 80
		Pressure Relief Valve (MPa (Bar))	0.3 (3)	0.3 (3)	0.3 (3)
		Flow Sensor (Minimum Flow 5L/min)	Supplied	Supplied	Supplied
	DHW Cylinder	Control Thermistor (°C)	40-70	40-70	40-70
		Temp and Pressure Relief Valve (°C)/ (MPa (Bar))	90 / 0.7 (7)	90 / 0.7 (7)	90 / 0.7 (7)
DIMENSIONS (mm)		Width	595	595	595
		Depth	680	680	680
		Height	1600	1600	1600
WEIGHT EMPTY / FULL (kg)			110 / 320	110 / 320	115 / 307
ELECTRICAL DATA	Control Board (Optionally Powered by Outdoor Unit)	Electrical Supply	220-240V, 50Hz	220-240V, 50Hz	220-240V, 50Hz
		Phase	Single	Single	Single
		Breaker (A)	10	10	10
	Booster Heater	Electrical Supply	220-240V, 50Hz	220-240V, 50Hz	220-240V, 50Hz
		Phase	Single	Single	Single
		Capacity (kW)	2	2	2
		Max Running Current (A)	9	9	9
		Breaker (A)	16	16	16
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 (FTC5) with Main Controller and Temperature Sensors, Pumps & Valves for Zone 1 and DHW use, Flow Sensor, Plate Heat Exchanger, Scale Trap, 2kW Booster Heater and Expansion Vessel.
*1 Optional 2-Zone Accessory Pack available.

FTC5 Packaged Hydrobox for Ecodan Monobloc and Split Units

FTC5 PACKAGED HYDROBOX

The Hydrobox is primarily 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 FTC5 Control, whilst the split type model features the Heat Exchanger built into the Hydrobox. SD card comissioning and energy monitoring are included. For systems where a third party tank is to be installed, this can be easily catered for by adding a 3-way valve to the system and connecting to the FTC5 Controller.

Key Features

- Simple graphical control
- 2-Zone Energy Efficient Space Heating Control
- Sleek modern design
- Pre-plumbed and wired for faster installation
- SD card commissioning
- Energy monitoring as standard
- Compatible with home automation via Modbus
- BMS compatible

MelcoBEMS Mini (Modbus)

EHSD/ERSD/EHPX Hydrobox

HYDROBOX			EHSD(C)-VM2CR2	ERSD(C)-VM2CR2	EHPX-VM2C
CYLINDER TYPE			Packaged Split	Packaged Split Reversible	Packaged Monobloc
OPERATING AMBIENT TEMPERATURE (°C DB)			0 ~ +35°C (RH<80%)	0 ~ +35°C (RH<80%)	0 ~ +35°C (RH<80%)
SOUND PRESSURE LEVEL AT 1M (dBA)			28	28	28
WATER DATA		Max Flow Rate (l/min)	27.7	27.7	27.7
		Pump	Grundfos UPM2 15 70 - 130	Grundfos UPM2 15 70 - 130	Grundfos UPM2 15 70 - 130
		Connection Size (mm)	28	G1 Nut	28
		Primary Expansion Vessel (Litres)	10	10	10
		Charge Pressure (MPa (Bar))	0.1 (1)	0.1 (1)	0.1 (1)
WATER SAFETY DEVICES	Water Circuit	Control Thermistor (°C)	1 - 80	1 - 80	1 - 80
		Pressure Relief Valve (MPa (Bar))	0.3 (3)	0.3 (3)	0.3 (3)
		Flow Sensor (Minimum Flow 5L/min)	Supplied	Supplied	Supplied
	DHW Cylinder	Booster Heater Control Thermistor (°C)	80	80	80
		Booster Heater Manual Reset Thermostat (°C)	90	90	90
		Booster Heater Thermal Cut Off (°C)	121	121	121
DIMENSIONS (mm)		Width	530	530	530
		Depth	360	360	360
		Height	800	800	800
WEIGHT EMPTY / FULL (kg)			44 / 50	45 / 51	37 / 42
ELECTRICAL DATA	Control Board (Optionally Powered by Outdoor Unit)	Electrical Supply	220-240V, 50Hz	220-240V, 50Hz	220-240V, 50Hz
		Phase	Single	Single	Single
		Breaker (A)	10	10	10
	Booster Heater (Optionally Powered if Required)	Electrical Supply	220-240V, 50Hz	220-240V, 50Hz	220-240V, 50Hz
		Phase	Single	Single	Single
		Capacity (kW)	2	2	2
		Max Running Current (A)	9	9	9
		Breaker (A)	16	16	16

Hydrobox includes: Flow Temperature Controller (FTC5) with Main Controller and Temperature Sensors, Water Circulation Pump, Flow Sensor, 2kW Booster Heater and Expansion Vessel.

ecodan®
Advanced Heating Technology

Ecodan – Manufactured in the United Kingdom

Mitsubishi Electric's manufacturing facility in Livingston, Scotland produces Ecodan Air Source Heat Pumps, Controls and Cylinders for the UK and European markets. The production facility, custom-built by the company in 1994, currently employs 420 staff and includes specially adapted and scalable production lines for Ecodan Air Source Heat Pumps, a new Cylinder and a purpose-built Ecodan testing facility.

Mitsubishi Electric's manufacturing plants are all ISO14001 and ISO9001 registered, an international benchmark ensuring we meet and continually improve upon quality and environmental standards.

Ecodan Full 5 Year Warranty

Every Ecodan Air Source Heat Pump comes with a full 5 year warranty as standard, subject to the following conditions:

- The Ecodan purchase and installation is registered with BDT.
- The Ecodan must be installed and commissioned by an accredited BDT Installer.

HOME AUTOMATION AND COMMERCIAL

- Ecodan Systems are compatible with a range of home automation systems via modbus using the MelcoBEMS Mini Modbus Interface.
- As part of a wider range of applications, commercial Ecodan products are also available. Please contact your local BDT Representative or branch nearest you for more details.

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