MITSUBISHI ELECTRIC

Changes for the Better

for a greener tomorrow

Air-to-water Heat Pumps

10th anniversary ecodan

The next generation of smart heating

ecodan

Renewable Heating Technology

Mitsubishi Electric Quality

Innovative heat pump system

Why heat pumps and why now?

Carbon Dioxide (CO_2) emissions affect global warming.
This is why reducing CO_2 emissions is one of the most important matter around the world.
Countries face a huge challenge to reduce CO_2 emissions.
To achieve the necessary reduction in CO_2 emissions, it is clear that
our approach to energy use and the way we heat our homes has to change.
Improving energy efficiency and greater use of renewable energy is fundamental to this change.
Heat pumps mainly use renewable energy from the outside air to heat our homes.
This highly efficient use of renewable energy is why heat pumps are a key to reducing CO_2 emissions.

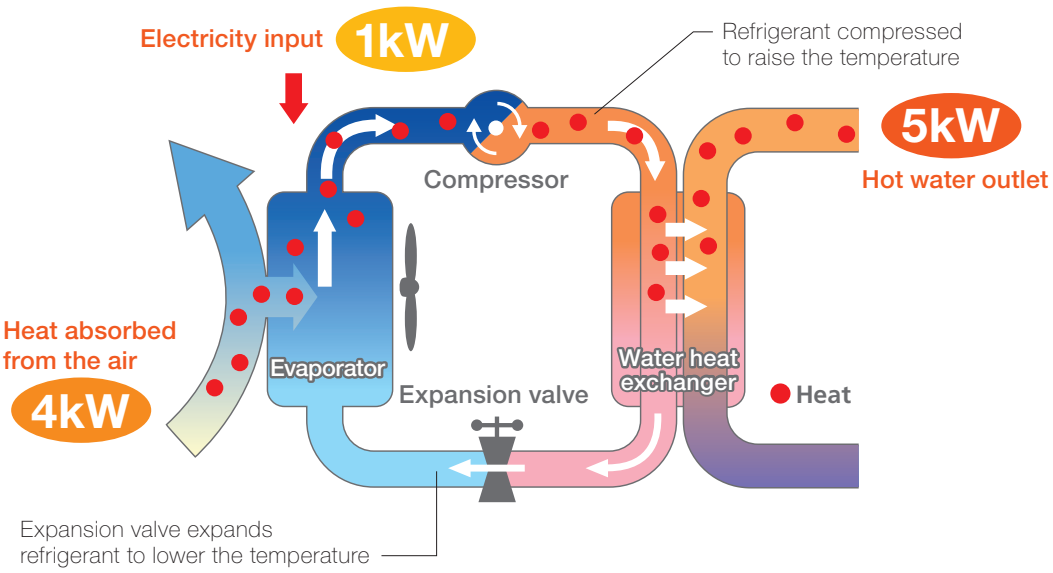
harnessing renewable energy

The secret behind our impressive heat pump efficiency is capturing the heat in the air.

Heat pump systems collect atmospheric heat from the air which is used as a heat source to provide highly efficient heating. For example, a heat pump with a coefficient of performance (COP) of 5.0 uses 1kW of electricity to produce 5kW of useful heat energy.

Air-to-water Heat Pump Principle (when heating)

Refrigerant and heat circulation <Case of COP 5.0>



New eco-design directive

What is the ErP Directive?

The Ecodesign Directive for Energy-related Products (ErP Directive) established a framework to set mandatory standards for ErPs sold in the European Union (EU).
The ErP Directive introduces new energy efficiency ratings across various product categories. It affects how products such as computers, vacuum cleaners, boilers and even windows are classified in terms of environmental performance.
Labelling regulations that apply to our ATW heat pumps came into effect from September 26, 2015.

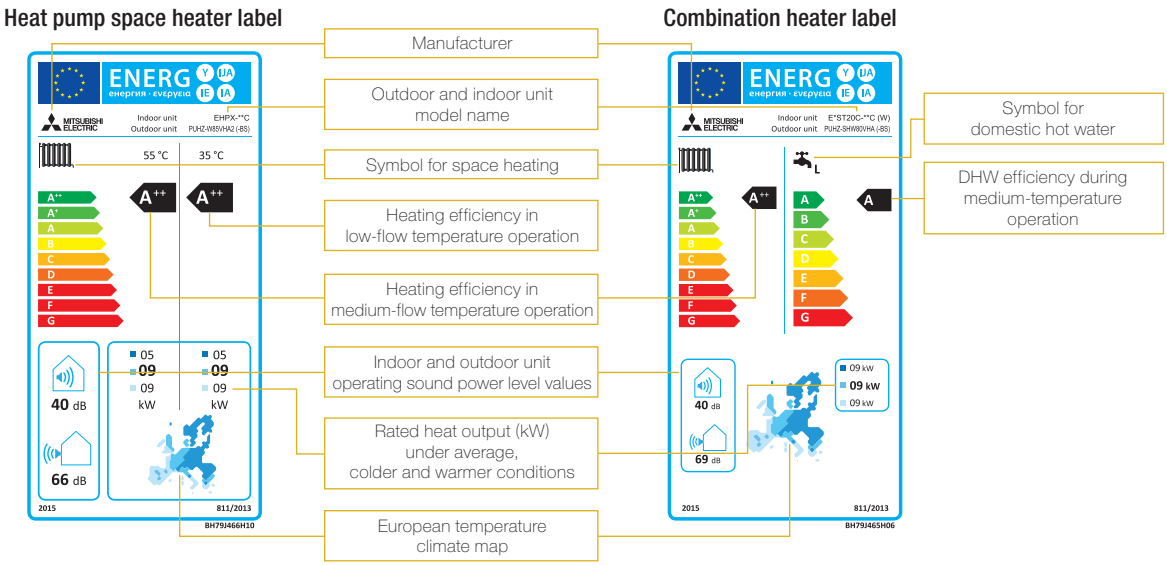
New energy label and measurements

Under directive 2009/125/EC, ATW heat pumps of up to 70kW are required to show their heating efficiency on the energy label. The purpose of the energy label is to inform customers about the energy efficiency of a heating unit. The efficiency for space heating is ranked from A^{++} to G. In the case of domestic hot water, it is from A to G.
A package label is also required if the ecodan heat pump is installed with a controller and/or a solar system or additional heater. All ecodan units* are already rated as A^{++} for heating at both 55°C and 35°C and A for domestic hot water, which are the highest efficiency ranks.

*Except for our ATA/ATW hybrid system Mr. SLIM+

Product label

This label is for individual heating units, such as an ecodan heat pump. Typically, the space heater label is used for ecodan systems with a hydro box, and the combination heater label is used for ecodan systems with a cylinder unit.



These labels are delivered with all ecodan outdoor units.

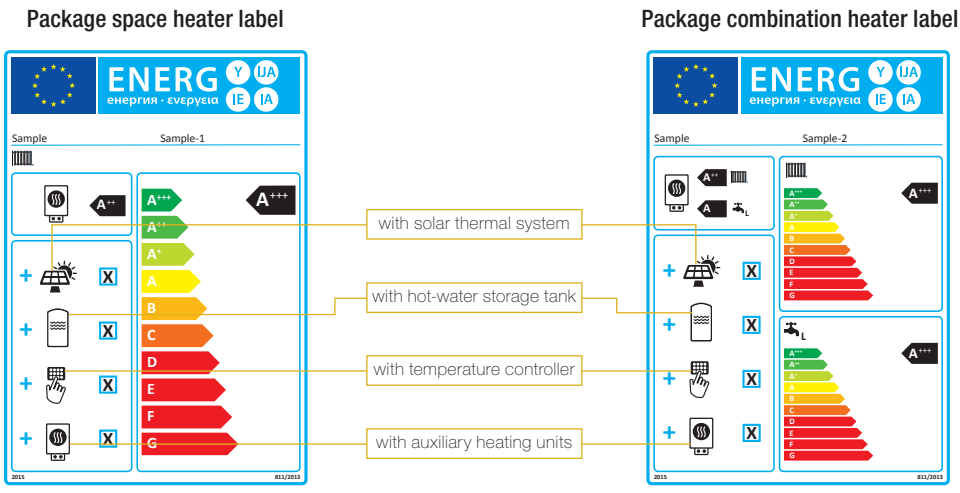
What is the package label?

A heating system can use several energy-related products, such as a controller or solar thermal system. Therefore, a label showing the efficiency of the total heating system is required. The category range is defined from A^{+++} to G. Creating the package label is the responsibility of the installers and distributors. A useful tool on the Mitsubishi Electric website is available to easily create the labels for ecodan products and controllers.

erp.mitsubishielectric.eu/erp/options

Package label

This label is for heating systems that use several energy-related products, such as a controller or a solar thermal system.



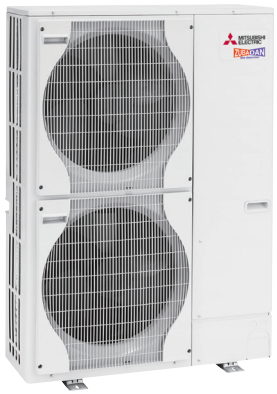
Customised package labels including ecodan heat pumps and the FTC5 controller can be created on the Mitsubishi Electric website.

Smart, energy-efficient, environmentally-friendly ecodan

ecodan is an ideal solution to reduce a home's CO_2 emissions and running costs.
ecodan operates with top-class high efficiency and provides excellent heating performance, even at low outdoor temperatures.
In addition, ecodan incorporates many innovative and advanced functions that bring greater comfort to users' lifestyles.
Since its launch, ecodan has kept improving to achieve an ever-higher heating efficient, providing much more comfort and effective heating.
Now is the time to experience ecodan!

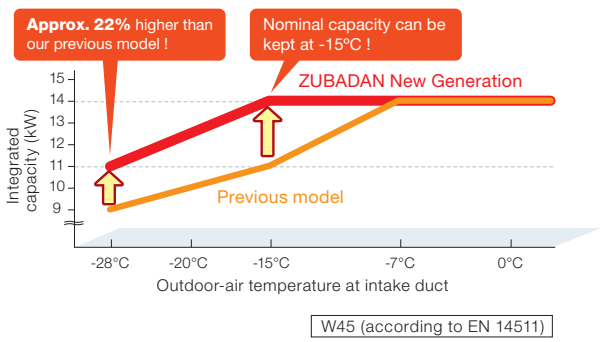
Reliable performance in low-temperature outdoor conditions

ZUBADAN New Generation provides powerful heating in cold regions where most heat pumps cannot perform very well. ZUBADAN's rated heating capacity is maintained even in outdoor temperatures as low as –15°C. That means ZUBADAN can be trusted to provide comfortable heating during severe winter months.



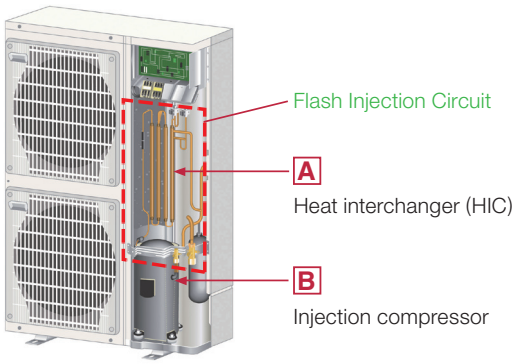
● Benefits ZUBADAN New Generation

Example: PUHZ-SHW140YHA

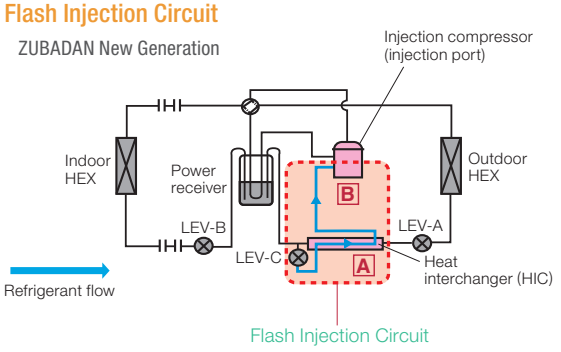


W45 (according to EN 14511)

Mitsubishi Electric's Flash Injection Technology
The key to high heating performance at low outdoor temperatures



Flash Injection Circuit



The Flash Injection Circuit is an original 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 improving the heat interchanger and introducing a new injection compressor, the Flash Injection Circuit is now more powerful.

heating

10th anniversary model coming soon...

New generation

- Low noise
- High performance
- Stylish design

Outdoor unit line-up

Packaged type	Small capacity (Under 5kW)*	Medium capacity (7.5kW–14kW)*	Large capacity (≧16kW)*
ZUBADAN		 PUHZ-HW112/140	
POWER INVERTER	 PUHZ-W50	 PUHZ-W85  PUHZ-W112	

Split type	Small capacity (Under 5kW)*	Medium capacity (7.5kW–14kW)*	Large capacity (≧16kW)*
ZUBADAN New Generation		 PUHZ-SHW80/112/140	 PUHZ-SHW230
POWER INVERTER	 PUHZ-SW50	 PUHZ-SW75  PUHZ-SW100/120	 PUHZ-SW160/200
Eco Inverter	 SUHZ-SW45		

ATA/ATW Hybrid system	Small capacity (Under 5kW)*	Medium capacity (7.5kW–14kW)*	Large capacity (≧16kW)*
Mr.SLIM+		 PUHZ-FRP71	
PUMY + ecodan		 NEW PUMY-P112/125/140	

*Rated capacity is at conditions A2W35. (according to EN14511)

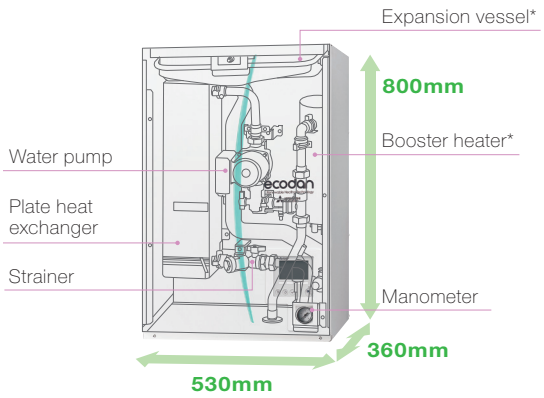
Indoor units

New all-in-one compact indoor unit

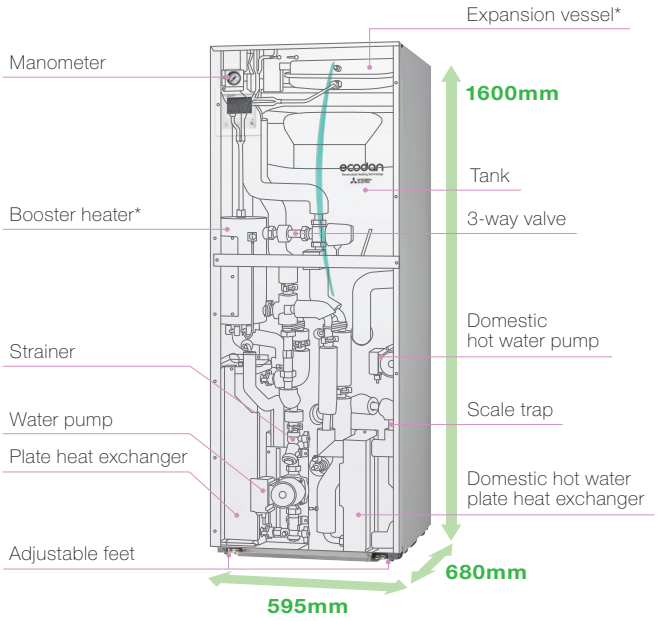
Easy to install and low maintenance

- All-in-one: Key functional components are incorporated
- Compact cylinder unit: Just 1600mm in height
- Compact hydro box: Only 530×360mm 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)

Hydro box (Split type)



Cylinder unit (Split type)



*Depending on model

Line-up

ecodan's line-up has many types of indoor units to satisfy diverse customers' needs, requests and local regulations.
It includes smaller capacity units, with/without booster heater, with/without an expansion vessel, etc.
In addition, a reversible hydro box and a reversible cylinder unit are available.

Hydro box

Cylinder unit

Available options

– Packaged or Split type
– With/without booster heater
– With/without expansion vessel
– Cylinder unit has an integrated 200L stainless steel tank
– Hydro box is control ready for domestic hot water with a stand-alone tank (locally supplied)

Larger capacity system

Outdoor units

PUHZ-SW160/200YKA
SHW230YKA2

Indoor units

EHSE-YM9EC, EHSE-MEC, ERSE-YM9EC, ERSE-MEC

Our 8–10HP ecodan heat pumps, only available with a hydro box connection, are suitable for large houses and small businesses where a high heating load is necessary. Our latest generation of 8–10HP Power Inverter outdoor units can reach 60°C maximum flow temperature. The new 8–10HP hydro box is available in both heating only and reversible models and can be connected to a customised capacity domestic hot water tank.

Reversible models (for heating/cooling)

Reversible hydro box

Reversible cylinder unit

Perfect comfort in winter and summer time, thanks to our reversible models.

Reversible models are now available for both hydro box and cylinder units (Split type only).
The new reversible cylinder is now able to produce cold water for cooling use and can alternatively produce domestic hot water in summer time.

*Reversible cylinder requires the installation of the drain pan stand PAC-DP01-E.

High-performance for domestic hot water re-charge

External plate heat exchanger – more energy savings using ecodan's unique and innovative technologies

Save energy in domestic hot water operations

Thanks to an external plate heat exchanger, ecodan offers much higher domestic hot water efficiency. Compared to our previous model, domestic hot water recharge efficiency is improved by approximately 17%*1, thereby reducing operating costs.

Avoid performance loss due to scale

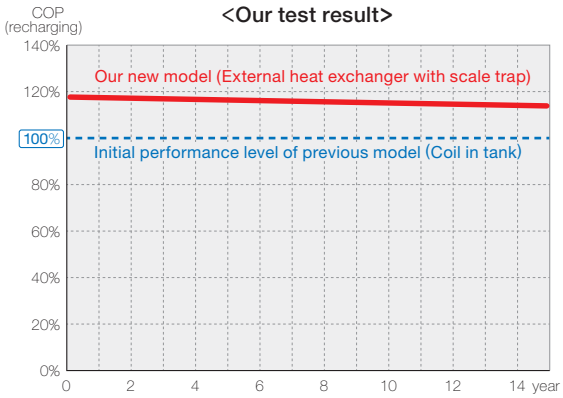
A scale trap is incorporated after the plate heat exchanger to capture calcium scale particles, thus maintaining the high performance of the external plate heat exchanger. (Just a 3% reduction during 15 years*2).

Lighter weight

Compared to our previous model, the cylinder unit is up to 15kg lighter*. This is thanks to the coil incorporated in the tank which has been removed and replaced by a much lighter plate heat exchanger.

*Comparison between EHST20C-VM2C and EHST20C-VM2B.

<Our test result>



<*1, *2> **Usage condition** Tank temperature: 10 degree to 60 degree
Heating up time: 1 hour per 1 day
Supersaturation of $CaCO_3$: 50
*15 years accelerated testing

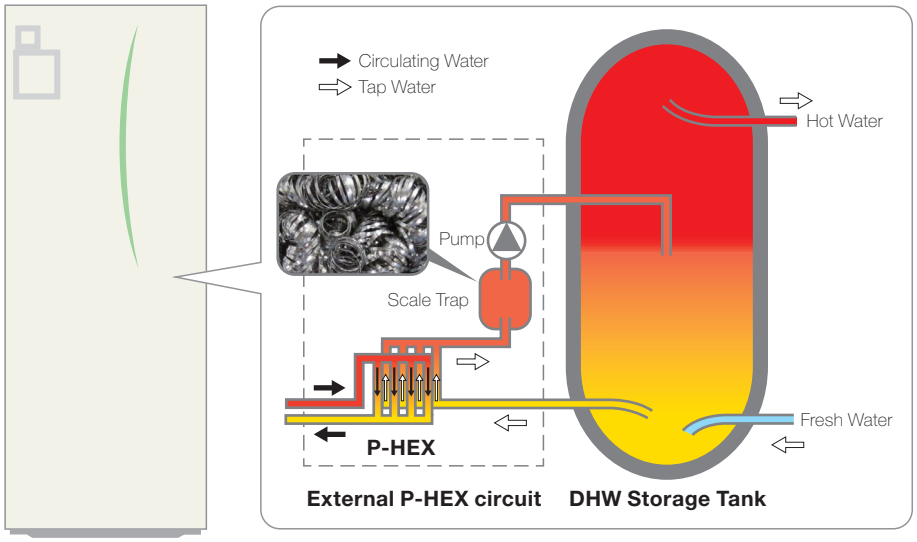
Optimised stratification for better comfort

Thanks to the L-shaped inlet pipe from the plate heat exchanger, stratification is well maintained after re-charge. You do not need to worry about running out of hot water the same as with a conventional coil in tank. Supply water temperature can be kept high until all the hot water in the tank has been used.

The secret behind our external plate heat exchanger system

Thanks to the unique plate heat exchanger and scale trap technology, a more efficient performance is achieved. In conventional systems, there is a risk of calcium scale building up on the heat-exchange plate if it is exposed to tap water directly. Therefore, it is difficult to use plate-based heat exchangers to heat tap water. To resolve this problem, ecodan is equipped with a "scale trap" that catches homogeneous 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.

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



Auto adaptation

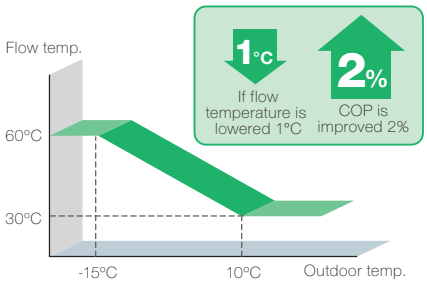
Settings can be performed using an SD card. ✻

Maximise energy savings while retaining 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 ATW system by 2%. This means that energy savings are dramatically affected 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 depending on the actual outdoor temperature. However, this requires a complicated setting to achieve the optimal heat curve.

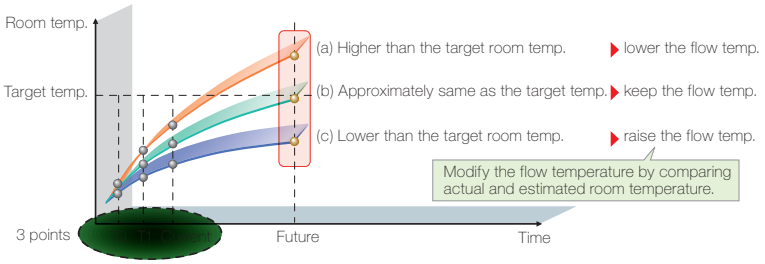
Heat curve setting (Example)



Mitsubishi Electric's Auto Adaptation function automatically tracks changes in the actual room temperature and outdoor temperature and adjusts the flow temperature accordingly.

Aiming to realise further comfort and energy savings, Mitsubishi Electric is proud to introduce a revolutionary new controller. Our advanced 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

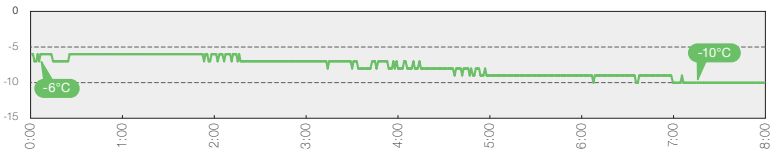


Auto Adaptation – room temperature control

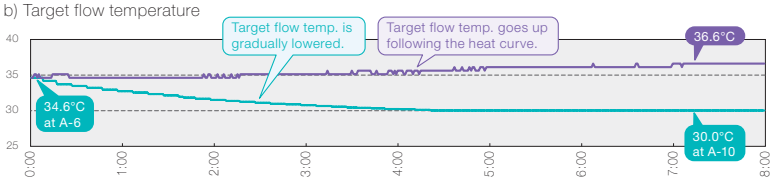
1. Installation site: Southern Sweden
2. Detached house with underfloor heating
3. Data in February 2011

[Example]

a) Outdoor temperature is gradually decreasing…

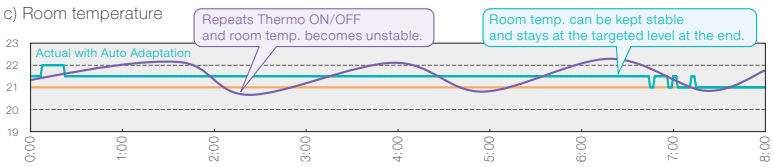


b) Target flow temperature

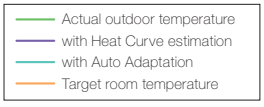


By Auto Adaptation, flow temperature can be lowered even when outdoor temp. is decreasing.

c) Room temperature



By Auto Adaptation, flow temperature can be lowered without sacrificing comfort.

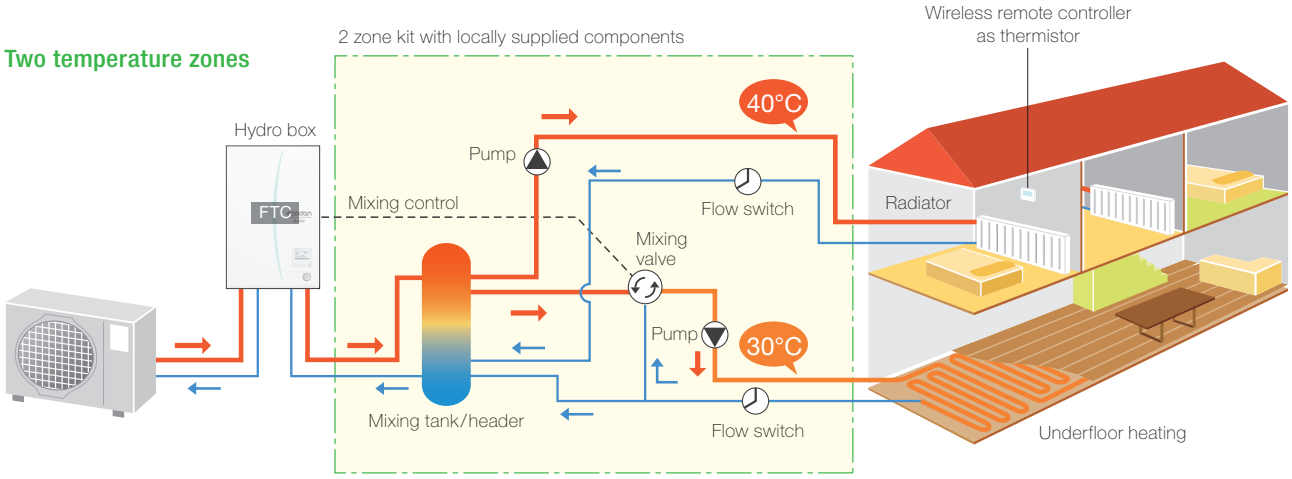


2 zone control (for heating/cooling)

Settings can be performed using an SD card. *

Simultaneously control two different 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 floor heating.
Another feature of this model is that 2 zone cooling control is now possible. Using these functions it is easy to maintain the most comfortable temperature in each room and to save energy too.



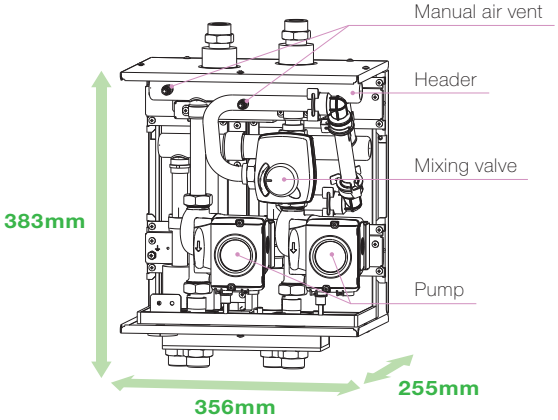
*Items such as a mixing tank, mixing valve flow switch and pumps are not included and need to be purchased locally.

2 zone kit NEW

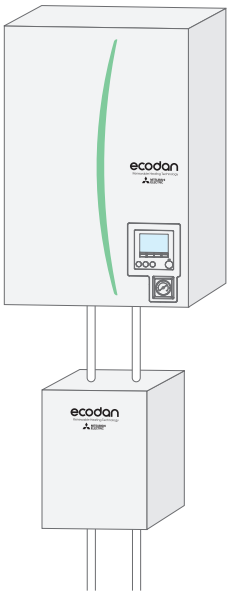
Settings can be performed using an SD card. *

With optional parts

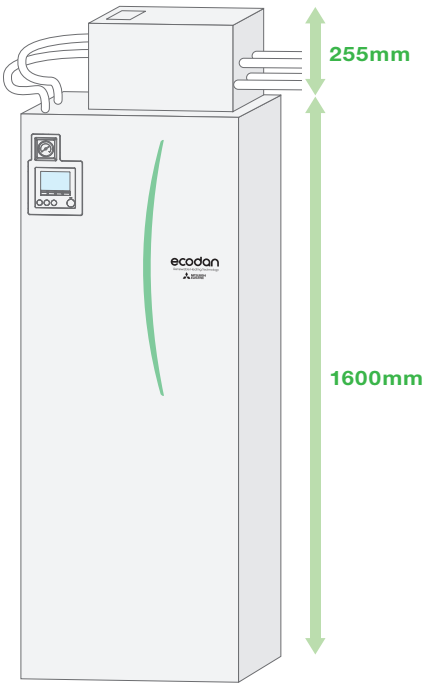
2 zone kit



Hydro box connection



Cylinder unit connection



Easy to install and low maintenance

- All-in-one kit: Key functional components are incorporated in 2 zone kit.
- Easy installation: G1 screw type flexi piping to avoid brazing.
- Compact size: Just to fit on the top of cylinder unit, also wall mountable.

Intelligent hybrid control (boiler interlock)

Settings can be performed using an SD card. ✻

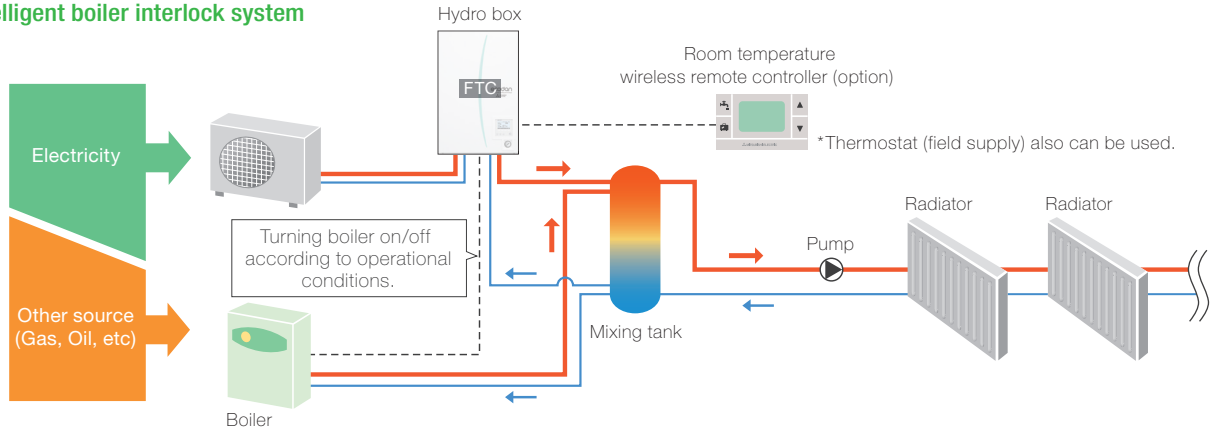
An existing boiler can be used for extra heating capacity in an efficient way

The flexibility of ecodan's intelligent control allows the system to be combined with the boiler currently in use. Additionally, this control can judge which heating source to use either ecodan or the existing boiler, based on various conditions*.
In the event of one heating unit not working due to some unforeseen problem, the other heating system can be used as a back-up, thereby preventing the heating system operation from stopping completely.

*Please see below "Heat source switchover".

Intelligent system combining a boiler with ecodan

Intelligent boiler interlock system



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

Heat source switchover - Choose appropriate system based on needs

4 types of heat source switchover logic

① Switchover based on actual outdoor temperature
- Heat source switchover occurs when the outdoor temperature drops below a pre-set temperature.

② Switchover based on running cost
- Heat source switchover occurs by judging optimal operation based on running cost.

*Pre-registration of the energy price of electricity, and gas or oil per 1kWh is necessary.

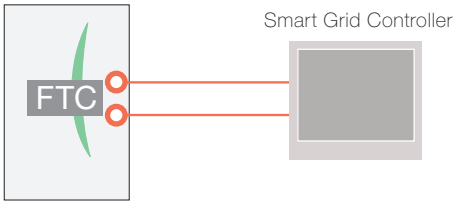
③ Switchover based on CO_2 emission level
- Heat source switchover occurs to minimise CO_2 emission.

*Pre-registration of CO_2 emission amount from electricity and gas or oil is necessary.

④ Switchover can also be activated via external input
- For example, the peak cut signal from electric power company.

Smart Grid Ready function NEW

In recent years renewable energy generation has become popular. However, this rapid growing causes the problem of supply and demand gap of electricity. The aim of “SG Ready” is to make the electricity demand response more flexible by creating a uniform interface for the smart grid integration of heat pumps. Air-to-Water units need to be able to change the operation pattern when the signal is received from the Smart Grid Controller.
New ecodan Cylinder, Hydro box and FTC have been modified to communicate with Smart Grid Controller. The communication protocol is based on “SG Ready” label regulation. (Version 1.1; gültig ab 01.01.2013)



Pattern	Input 1	Input 2	Operation
1	OFF	OFF	Normal operation
2	ON	OFF	Switch ON recommendation
3	OFF	ON	Switch OFF command
4	ON	ON	Switch ON command

SG

Pattern 1: Normal operation
When there is no signal from the Smart Grid Controller, DHW and Heating operate according to user settings.

Pattern 2: Switch ON recommendation
When set to the “Switch ON” recommendation, the target temperature of DHW is increased a specified amount and the heating “Thermo ON” condition range is extended.

Pattern 3: Switch OFF command
When the “Switch OFF” command is received, both DHW and Heating are turned off.

Pattern 4: Switch ON command
When the “Switch ON” command is received, the target temperature of DHW is increased to the maximum target temperature and Heating continues.

Multiple unit control

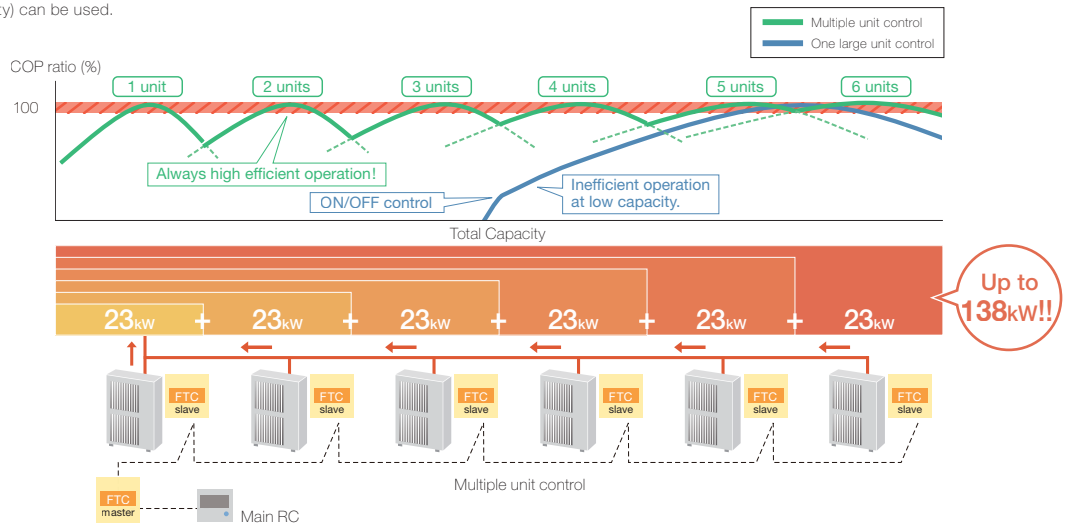
Settings can be performed using an SD card. *

Connect up to 6 units – Automatic control of multiple units for bigger capacity and better efficiency

A maximum of 6 units* can be configured according to the 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 enables each unit to run for an equal time period.
If one of the units malfunctions when using the Multiple Unit Control, another unit can be automatically operated for back-up, thereby preventing the system operation from stopping completely.

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

Multiple unit control



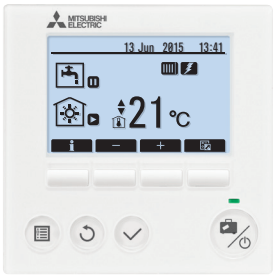
Remote controllers

Smart user-friendly controller with stylish design

Main remote controller

- Large screen and backlight for excellent visibility, even in dark environments
- Multi-language support (supports 15 languages)
- Can be removed from main unit and installed in a 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
  - Energy monitoring
  - Two-zone control (cooling and heating)
  - Two separate schedules
  - Summer time setting
  - Built-in room temperature sensors
  - Hybrid control (boiler interlock)
  - Floor drying mode
  - Weekly timer
  - Holiday mode
  - Legionella prevention
  - Error codes

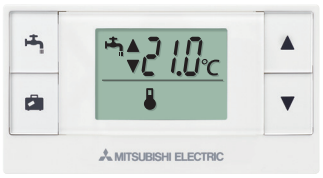


Main controller

PAR-WR51R-E (Option)
Receiver

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-WT50R-E (Option)
Wireless remote controller

Energy monitoring

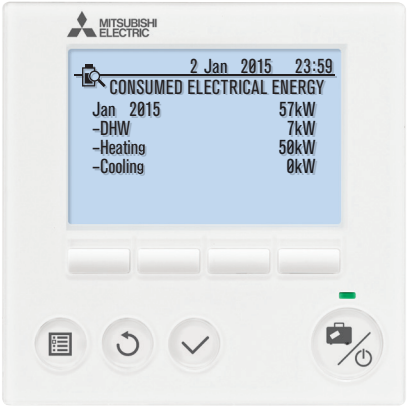
Settings can be performed using an SD card. *

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.

Heating capacity produced

Electric energy used



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.
– SD card is also available for storing data.

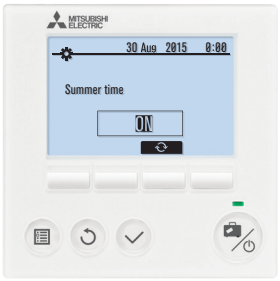
*Using pre-set values on the main remote controller, estimated energy consumption/output can be shown without external power and a heat meter. Depending on operating condition and system configuration, there is some possibility to show different data from the reality.
*This function is available depending on the version of the outdoor unit model.

Summer time setting

Settings can be performed using an SD card. *

Easy adjustment for summer time

Just switch the summer time mode 'on' using the main remote controller and the clock in the main remote controller is adjusted to summer time hours.
This function can release the end user from clock setting tasks.

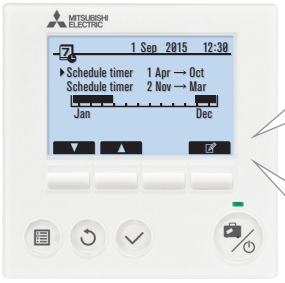


Two separate schedules

Settings can be performed using an SD card. *

Pre-setting two different schedules for winter and summer seasons

Two different schedule settings are available for use via the main remote controller.
These schedules can be pre-set and changed depending on the season.
For example, from November to March, space heating and domestic hot water are used; however, during warm months such as from April to October, only domestic hot water is used.



<Example>

Schedule 1 Winter time
Space heating **daytime**
Domestic hot water **early morning**

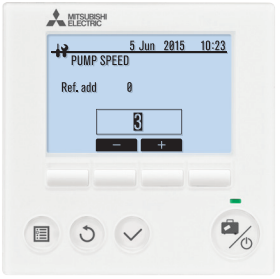
Schedule 2 Summer time
Domestic hot water **any time**

Easy commissioning

Pump for primary water circuit* speed setting possible using ecodan's main remote controller

Even when the system is running, pump output can be set to one of five different settings using the main remote controller.
The person commissioning the system can adjust this speed much more easily.

*Speed setting of pump for domestic hot water is not available through the main remote controller when the system is running.



Flow sensor newly incorporated

The flow sensor is key for monitoring energy output and can also be used to detect flow error.
– Flow rate can be checked on the main remote controller.
– Flow rate can also be shown as graphs using the SD card tool.

Run indoor unit* without outdoor unit

During installation or situations such as an outdoor unit malfunction, the indoor unit can be operated using a heater.
While using this mode, flow and tank temperature are selectable.
Fixing and maintenance of the outdoor unit can be done without stopping heating and domestic hot water operation*.

*Models with electric heater only.
*When the indoor unit operation stops, please check all settings after the outdoor unit is connected.

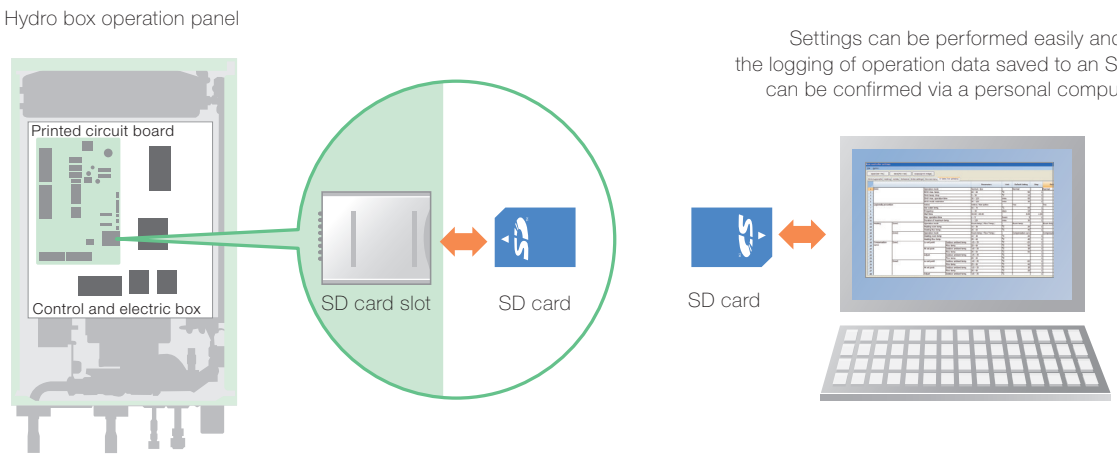
SD* card

Settings can be performed using an SD card.*

For easier settings and data logging

The 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. The 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 the installation site, a remarkable reduction in set-up time has been achieved. Thus, it is ideal for busy installers.

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



Items that can be pre-set

Simply copying pre-set data to an 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)
- 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

- 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.

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-YM9C	EHST20D-VM2EC	EHST20D-MHC	EHST20D-MEC	EHST20C-MHCW*2	EHST20D-MHCW*2
Type				Heating only														
Immersion heater				–	–	–	–	–	–	–	–	–	–	–	×	–	×	×
Expansion vessel				×	×	×	×	–	–	–	–	×	×	–	×	–	×	×
Booster heater				×	×	×	×	×	×	×	–	×	×	×	–	–	–	–
Dimensions	H×W×D		mm	1600×595×680														
Weight (empty)			kg	110	111	112	112	104	105	106	103	103	105	97	103	96	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	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	9 (3/6/9)	2	–			
		Current	A	9	26	13	23	9	26	13	–	9	13	9	–			
		Breaker size	A	16	32	16	32	16	32	16	–	16	16	16	–			
	Immersion heater	Power supply (V/Phase/Hz)		–											230/Single/50	–	230/Single/50	
		Capacity	kW	–											3	–	3	
		Current	A	–											13	–	13	
		Breaker size	A	–											16	–	16	
Domestic hot water tank	Volume / Material		L / –	200 / Stainless steel														
Guaranteed operating range*1	Ambient		°C	0~35*1														
	Outdoor	Heating	°C	See outdoor unit spec table														
		Cooling	°C	–														
Target temperature range	Heating	Room temperature	°C	10~30														
		Flow temperature	°C	25~60														
	Cooling	Room temperature	°C	–														
		Flow temperature	°C	–														
	DHW		°C	40~60														
	Legionella prevention		°C	60~70														
Sound pressure level (SPL)			dB (A)	28														

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

<Hydro box>

Model name				EHSD-MEC	EHSD-MC	EHSD-VM2C	EHSD-YM9C	EHSC-MEC	EHSC-VM2C	EHSC-VM2EC	EHSC-VM6C	EHSC-VM6EC	EHSC-YM9C	EHSC-YM9EC	EHSC-TM9C	EHSE-MEC	EHSE-YM9EC
Type				Heating only													
Immersion heater				–	–	–	–	–	–	–	–	–	–	–	–	–	–
Expansion vessel				–	×	×	×	–	×	–	×	–	×	–	×	–	–
Booster heater				–	–	×	×	–	×	×	×	×	×	×	×	–	×
Dimensions	H×W×D		mm	800×530×360												950×600×360	
Weight (empty)			kg	38	43	44	45	42	48	43	49	44	49	44	49	60	62
Power supply (V/Phase/Hz)				230/Single/50													
Heater	Booster heater	Power supply (V/Phase/Hz)		–	–	230/Single/50	400/Three/50	–	230/Single/50				400/Three/50		230/Three/50	–	400/Three/50
		Capacity	kW	–	–	2	9 (3/6/9)	–	2	2	6 (2/4/6)	6 (2/4/6)	9 (3/6/9)	9 (3/6/9)	9 (3/6/9)	–	9 (3/6/9)
		Current	A	–	–	9	13	–	9	9	26	26	13	13	23	–	13
		Breaker size	A	–	–	16	16	–	16	16	32	32	16	16	32	–	16
Guaranteed operating range*1	Ambient		°C	0~35*1													
	Outdoor	Heating	°C	See outdoor unit spec table													
		Cooling	°C	–													
Target temperature range	Heating	Room temperature	°C	10~30													
		Flow temperature	°C	25~60													
	Cooling	Room temperature	°C	–													
		Flow temperature	°C	–													
Sound pressure level (SPL)			dB (A)	28												30	

*1 The indoor environment must be frost-free

<Reversible cylinder unit>

Model name				ERST20D-VM2C	ERST20D-MEC	ERST20C-VM2C	ERST20C-MEC
Type				Heating and cooling			
Immersion heater				–	–	–	–
Expansion vessel				×	–	×	–
Booster heater				×	–	×	–
Dimensions	H×W×D		mm	1600×595×680			
Weight (empty)			kg	103	96	110	103
Power supply (V/Phase/Hz)				230/Single/50			
Heater	Booster heater	Power supply (V/Phase/Hz)		230/Single/50	–	230/Single/50	–
		Capacity	kW	2	–	2	–
		Current	A	9	–	9	–
		Breaker size	A	16	–	16	–
	Immersion heater	Power supply (V/Phase/Hz)		–	–	–	–
		Capacity	kW	–	–	–	–
		Current	A	–	–	–	–
		Breaker size	A	–	–	–	–
Domestic hot water tank	Volume / Material		L / –	200 / Stainless steel			
Guaranteed operating range*1	Ambient		°C	0~35*1			
	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			
	DHW		°C	40~60			
	Legionella prevention		°C	60~70			
Sound pressure level (SPL)			dB (A)	28			

*1 The indoor 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.

<Reversible hydro box>

Model name				ERSD-VM2C	ERSC-MEC	ERSC-VM2C	ERSE-MEC	ERSE-YM9EC
Type				Heating and cooling				
Immersion heater				–	–	–	–	–
Expansion vessel				×	–	×	–	–
Booster heater				×	–	×	–	×
Dimensions	H×W×D		mm	800×530×360			950×600×360	
Weight (empty)			kg	45	43	49	61	63
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
		Capacity	kW	2	–	2	–	9 (3/6/9)
		Current	A	9	–	9	–	13
		Breaker size	A	16	–	16	–	16
Guaranteed operating range*1	Ambient		°C	0~35*1				
	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			30	

*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-SW50VKA (-BS)	PUHZ-SW75VHA (-BS)	PUHZ-SW100V/YHA (-BS)	PUHZ-SW120V/YHA (-BS)	PUHZ-SW160YKA (-BS)	PUHZ-SW200YKA (-BS)	PUHZ-SHW80VHA	PUHZ-SHW112V/YHA	PUHZ-SHW140YHA	PUHZ-SHW230YKA2
Dimensions	H×W×D		mm	880×840×330	630×809×300	943×950×330	1350×950×330	1350×950×330	1338×1050×330	1338×1050×330	1350×950×330	1350×950×330	1350×950×330	1338×1050×330
Product weight (empty)			kg	54	43	75	118/130	118/130	136	136	120	120/134	134	149
Power supply (V / Phase / Hz)				VHA : 230/Single/50 YHA, YKA : 400/Three/50										
Heating (A7/W35)	Capacity		kW	4.50	5.50	8.00	11.20	16.00	22.00	25.00	8.00	11.20	14.00	23.00
	COP			5.06	4.42	4.40	4.45	4.10	4.20	4.00	4.65	4.46	4.22	3.65
	Power input		kW	0.889	1.244	1.818	2.517	3.902	5.238	6.250	1.720	2.511	3.318	6.301
Heating (A2/W35)	Capacity		kW	3.50	5.00	7.50	10.00	12.00	16.00	20.00	8.00	11.20	14.00	23.00
	COP			3.40/3.04	2.97	3.40	3.32	3.24	3.11	2.80	3.55	3.34	2.96	2.37
	Power input		kW	1.029/1.151	1.684	2.206	3.009	3.704	5.145	7.143	2.254	3.353	4.730	9.705
Cooling (A35/W7)	Capacity		kW	4.00	4.50	6.60	9.10	12.50	16.00	20.00	7.10	10.00	12.50	20.00
	EER			2.73	2.76	2.82	2.75	2.32	2.76	2.25	3.31	2.83	2.17	2.22
	Power input		kW	1.465	1.630	2.340	3.309	5.388	5.797	8.889	2.145	3.534	5.760	9.009
Cooling (A35/W18)	Capacity		kW	3.80	5.00	7.10	10.00	14.00	18.00	22.00	7.10	10.00	12.50	20.00
	EER			4.28	4.60	4.43	4.35	4.08	4.56	4.10	4.52	4.74	4.26	3.55
	Power input		kW	0.888	1.087	1.603	2.299	3.431	3.947	5.366	1.571	2.110	2.934	5.634
Sound pressure level (SPL)	Heating		dB (A)	52	46	51	54	54	62	62	51	52	52	59
Sound power level (PWL)	Heating		dB (A)	61	63	68	70	72	78	78	69	70	70	75
Operating current (max)			A	12.0	13.0	17.0	29.5/13.0	29.5/13.0	19.0	21.0	29.5	35.0/13.0	13.0	26.0
Breaker size			A	20	16	25	32/16	32/16	25	32	32	40/16	16	32
Piping	Diameter	Liquid/Gas	mm	6.35/12.7	6.35/12.7	9.52/15.88	9.52/15.88	9.52/15.88	9.52/25.4	12.7/25.4	9.52/15.88	9.52/15.88	9.52/15.88	12.7/25.4
	Max. length	Out-In	m	30	40	40	75	75	80	80	75	75	75	80
	Max. height	Out-In	m	30	30	30	30	30	30	30	30	30	30	30
Guaranteed operating range	Heating		°C	–15 to +24	–15 to +21	–20 to +21	–20 to +21	–20 to +21	–20 to +21	–20 to +21	–28 to +21	–28 to +21	–28 to +21	–25 to +21
	DHW		°C	–15 to +35	–15 to +35	–20 to +35	–20 to +35	–20 to +35	–20 to +35	–20 to +35	–28 to +35	–28 to +35	–28 to +35	–25 to +35
	Cooling*2		°C	–10 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	–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 Optional air protection guide is required where ambient temperature is lower than –5°C.

Optional parts

<Indoor unit>

Parts name	Model name	Specification	Cylinder unit															Hydro box	
			EHST20C-VM2C	EHST20C-VM6C	EHST20C-YM9C	EHST20C-TM9C	EHST20C-VM2EC	EHST20C-VM6EC	EHST20C-YM9EC	EHST20C-MEC	EHST20D-VM2C	EHST20D-YM9C	EHST20D-VM2EC	EHST20D-MEC	EHST20D-MHC	EHST20C-MHCW	EHST20D-MHCW	ERST models	E*SD or E*SC models	E*SE models
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-I03V2-E	1Ph 3kW	×	×	×	×	×	×	×	×	×	×	×	×	–	–	–	×	–	–
EHPT accessories for UK	PAC-WK01UK-E		–	–	–	–	–	–	–	–	–	–	–	–	–	×	×	–	–	–
Joint pipe	PAC-SG73RJ-E	For PUHZ-SW200YKA/ SHW230YKA2 (-BS) ø9.52→ø12.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×
Wi-Fi interface	MAC-567IF-E		×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Drain pan stand	PAC-DP01-E	D665mm H270mm W595mm N/W: 14.5kg	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	×*1	–	–
2 zone kit	PAC-TZ01-E		×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	–

*1 PAC-DP01-E is necessary when you use ERST units. If you use ERST units without this parts, drain will be flowed from the base of units, in cooling mode.

<Outdoor unit>

Parts name	Model name	Eco Inverter	Power Inverter						ZUBADAN			
		SUHZ-SW45VA (H)	PUHZ-SW50VKA (-BS)	PUHZ-SW75VHA (-BS)	PUHZ-SW100V/YHA (-BS)	PUHZ-SW120V/YHA (-BS)	PUHZ-SW160YKA (-BS)	PUHZ-SW200YKA (-BS)	PUHZ-SHW80VHA	PUHZ-SHW112V/YHA	PUHZ-SHW140YHA	PUHZ-SHW230YKA2
Connector for drain hose heater signal output	PAC-SE60RA-E	–	–	×	×	×	×	×	×	×	×	×
	PAC-SE61RA-E	–	×	–	–	–	–	–	–	–	–	–
Air discharge guide	MAC-886SG-E	×	–	–	–	–	–	–	–	–	–	–
	PAC-SJ07SG-E	–	×	–	–	–	–	–	–	–	–	–
	PAC-SG59SG-E	–	–	×	×	×	–	–	×	×	×	–
	PAC-SG96SG-E	–	–	–	–	–	×	×	–	–	–	×
Air protection guide	PAC-SJ06AG-E	–	×	–	–	–	–	–	–	–	–	–
	PAC-SH63AG-E	–	–	×	×	×	–	–	×	×	×	–
	PAC-SH95AG-E	–	–	–	–	–	×	×	–	–	–	×
Drain socket	PAC-SG61DS-E	–	–	×	×	×	×	×	–	–	–	–
	PAC-SJ08DS-E	–	×	–	–	–	–	–	–	–	–	–
Centralised drain pan	PAC-SG63DP-E	–	×	–	–	–	–	–	–	–	–	–
	PAC-SG64DP-E	–	–	×	×	×	–	–	–	–	–	–
	PAC-SH97DP-E	–	–	–	–	–	×	×	–	–	–	–
Control/Service tool	PAC-SK52ST	–	×	×	×	×	×	×	×	×	×	×

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

<Hydro box>

Model name				EHPX-VM2C	EHPX-VM6C	EHPX-YM9C
		Type		Heating only		
		Immersion heater		–	–	–
		Expansion vessel		×	×	×
		Booster heater		×	×	×
Dimensions		H×W×D	mm	800×530×360		
Weight (empty)			kg	37	38	38
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
		Capacity	kW	2	6 (2/4/6)	9 (3/6/9)
		Current	A	9	26	13
		Breaker size	A	16	32	16
Guaranteed operating range*1	Ambient		°C	0~35*1		
	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 indoor environment must be frost-free

Outdoor unit

Model name			PUHZ-W50VHA2 (-BS)	PUHZ-W85VHA2 (-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		4.50	4.18	4.47	4.42	4.25	4.25
	Power input	kW	1.111	2.153	2.506	2.534	3.294	3.294
Heating (A2/W35)	Capacity	kW	5.00	8.50	11.20	11.20	14.00	14.00
	COP		3.50	3.17	3.34	3.11	3.11	3.11
	Power input	kW	1.429	2.681	3.353	3.601	4.502	4.502
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 to +21	–20 to +21	–20 to +21	–25 to +21	–25 to +21	–25 to +21
	DHW	°C	–15 to +35	–20 to +35	–20 to +35	–25 to +35	–25 to +35	–25 to +35
	Cooling*1	°C	–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 included.) It may differ according to the system configuration.
*1 Optional air protection guide is required where ambient temperature is lower than –5°C.

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-VM6C	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.	×	×	×	×	×	×	×	×
	PAC-TH011TKL-E	For tank temp. (longer)	×	×	×	×	×	×	×	×
	PAC-TH011HT-E	For boiler (flow and return temp.)	×	×	×	×	×	×	×	×
Immersion heater	PAC-I03V2-E	1Ph 3kW	×	×	×	×	–	–	–	–
EHPT accessories for UK	PAC-WK01UK-E		–	–	–	–	×	–	–	–
Wi-Fi interface	MAC-567IF-E		×	×	×	×	×	×	×	×
2 zone kit	PAC-TZ01-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	–	–	–	–	–	–

Refrigerant amount

	Model name	Refrigerant		Pre-charged quantity		Max added quantity	
			GWP	Weight (kg)	CO_2 equivalent (t)	Weight (kg)	CO_2 equivalent (t)
ATW Packaged	PUHZ-W50VHA2(-BS)	R410A	2088	1.7	3.55	–	
	PUHZ-W85VHA2(-BS)	R410A	2088	2.4	5.02	–	
	PUHZ-W112VHA(-BS)	R410A	2088	4.0	8.36	–	
	PUHZ-HW112YHA2(-BS)	R410A	2088	4.0	8.36	–	
	PUHZ-HW140VHA2(-BS)	R410A	2088	4.3	8.98	–	
	PUHZ-HW140YHA2(-BS)	R410A	2088	4.3	8.98	–	
ATW Split	SUHZ-SW45VA(H)	R410A	2088	1.3	2.72	0.35	0.72
	PUHZ-SW50VKA(-BS)	R410A	2088	1.4	2.93	0.6	1.26
	PUHZ-SW75VHA(-BS)	R410A	2088	3.2	6.69	1.4	2.93
	PUHZ-SW100VHA(-BS)	R410A	2088	4.6	9.61	2.9	6.06
	PUHZ-SW100YHA(-BS)	R410A	2088	4.6	9.61	2.9	6.06
	PUHZ-SW120VHA(-BS)	R410A	2088	4.6	9.61	2.9	6.06
	PUHZ-SW120YHA(-BS)	R410A	2088	4.6	9.61	2.9	6.06
	PUHZ-SW160YKA(-BS)	R410A	2088	7.1	14.83	4.0	8.36
	PUHZ-SW200YKA(-BS)	R410A	2088	7.7	16.08	5.2	10.86
	PUHZ-SHW80VHA	R410A	2088	5.5	11.49	2.4	5.02
	PUHZ-SHW112VHA	R410A	2088	5.5	11.49	2.4	5.02
	PUHZ-SHW112YHA	R410A	2088	5.5	11.49	2.4	5.02
	PUHZ-SHW140YHA	R410A	2088	5.5	11.49	2.4	5.02
	PUHZ-SHW230YKA2	R410A	2088	7.7	16.08	5.2	10.86
Mr. SLIM+	PUHZ-FRP71VHA	R410A	2088	3.8	7.94	1.8	3.76
PUMY + ecodan	PUMY-P112V/YKM(E)3 (-BS)	R410A	2088	4.8	10.03	13.8	28.82
	PUMY-P125V/YKM(E)3 (-BS)	R410A	2088	4.8	10.03	13.8	28.82
	PUMY-P140V/YKM(E)3 (-BS)	R410A	2088	4.8	10.03	13.8	28.82

Interface/Flow temperature controller

Parts name	Model name	Description
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-IF063B-E	1 PC Board w/ Case
	PAC-SIF051B-E	1 PC Board w/ Case

Note: SUHZ CANNOT be connected to these IFs.

Combination table

Type	Model name	Package type					Split type		
		Power Inverter			ZUBADAN		Eco Inverter	Power Inverter	
		PUHZ-W50VHA2	PUHZ-W85VHA2	PUHZ-W112VHA	PUHZ-HW112YHA2	PUHZ-HW140VHA2/YHA2	SUHZ-SW45VA(H)	PUHZ-SW50VKA	PUHZ-SW75VHA
Cylinder unit	EHST20C-VM2C								●
	EHST20C-VM6C								●
	EHST20C-YM9C								●
	EHST20C-TM9C								●
	EHST20C-VM2EC								●
	EHST20C-VM6EC								●
	EHST20C-YM9EC								●
	EHST20C-MEC								●
	EHST20C-MHCW								●
	EHST20D-VM2C						●	●	●
	EHST20D-MEC						●	●	●
	EHST20D-MHC						●	●	●
	EHST20D-MHCW						●	●	●
	EHST20D-VM2EC						●	●	●
	EHST20D-YM9C						●	●	●
	ERST20C-MEC								●
	ERST20C-VM2C								●
	ERST20D-MEC						●	●	●
	ERST20D-VM2C						●	●	●
	EHPT20X-VM2C	●	●	●	●	●			
	EHPT20X-VM6C	●	●	●	●	●			
	EHPT20X-YM9C	●	●	●	●	●			
	EHPT20X-TM9C	●	●	●	●	●			
	EHPT20X-MHCW	●	●	●	●	●			
Hydro box	EHSC-VM2C								●
	EHSC-VM2EC								●
	EHSC-VM6C								●
	EHSC-VM6EC								●
	EHSC-YM9C								●
	EHSC-YM9EC								●
	EHSC-TM9C								●
	EHSC-MEC								●
	EHSD-VM2C						●	●	●
	EHSD-YM9C						●	●	●
	EHSD-MEC						●	●	●
	EHSD-MC						●	●	●
	ERSC-VM2C								●
	ERSC-MEC								●
	ERSD-VM2C						●	●	●
	EHPX-VM2C	●	●	●	●	●			
	EHPX-VM6C	●	●	●	●	●			
	EHPX-YM9C	●	●	●	●	●			
	EHSE-YM9EC								
	EHSE-MEC								
	ERSE-YM9EC								
	ERSE-MEC								

Split type									ATA/ATW Hybrid system			
Power Inverter					ZUBADAN				Mr. SLIM+	PUMY+ecodan		
	PUHZ-SW100VHA/YHA	PUHZ-SW120VHA/YHA	PUHZ-SW160YKA	PUHZ-SW200YKA	PUHZ-SHW80VHA	PUHZ-SHW112VHA/YHA	PUHZ-SHW140YHA	PUHZ-SHW230YKA2	PUHZ-FRP71VHA	PUMY-P112VKM3/YKM(E)3	PUMY-P125VKM3/YKM(E)3	PUMY-P140VKM3/YKM(E)3
	●	●			●	●	●		●	●	●	●
	●	●			●	●	●		●	●	●	●
	●	●			●	●	●		●	●	●	●
	●	●			●	●	●		●	●	●	●
	●	●			●	●	●		●	●	●	●
	●	●			●	●	●		●	●	●	●
	●	●			●	●	●		●	●	●	●
	●	●			●	●	●		●			
	●	●			●	●	●		●	●	●	●
	●	●			●	●	●					
	●	●			●	●	●					
	●	●			●	●	●		●	●	●	●
	●	●			●	●	●		●	●	●	●
	●	●			●	●	●		●	●	●	●
	●	●			●	●	●		●	●	●	●
	●	●			●	●	●		●	●	●	●
	●	●			●	●	●		●	●	●	●
	●	●			●	●	●		●	●	●	●
	●	●			●	●	●		●			
	●	●			●	●	●					
	●	●			●	●	●					
			●	●				●				
			●	●				●				
			●	●				●				
			●	●				●				

●: Combination is available. Blank: Combination is NOT available.

Mr. SLIM+

A smart air conditioning and hot water supply system conceived from eco-conscious ideas

Mr. SLIM+ has a heat recovery function, which uses waste heat from air conditioners to heat water.
Thanks to heat recovery, the Mr. SLIM+ model can achieve a COP of 7.0*, resulting in intelligent systems with amazing efficiency.

*Conditions for air-to-air cooling: Indoor 27°C (dry bulb), 19°C (wet bulb); Outdoor 35°C (dry bulb)

1 unit, 2 roles – Total comfort year-round

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

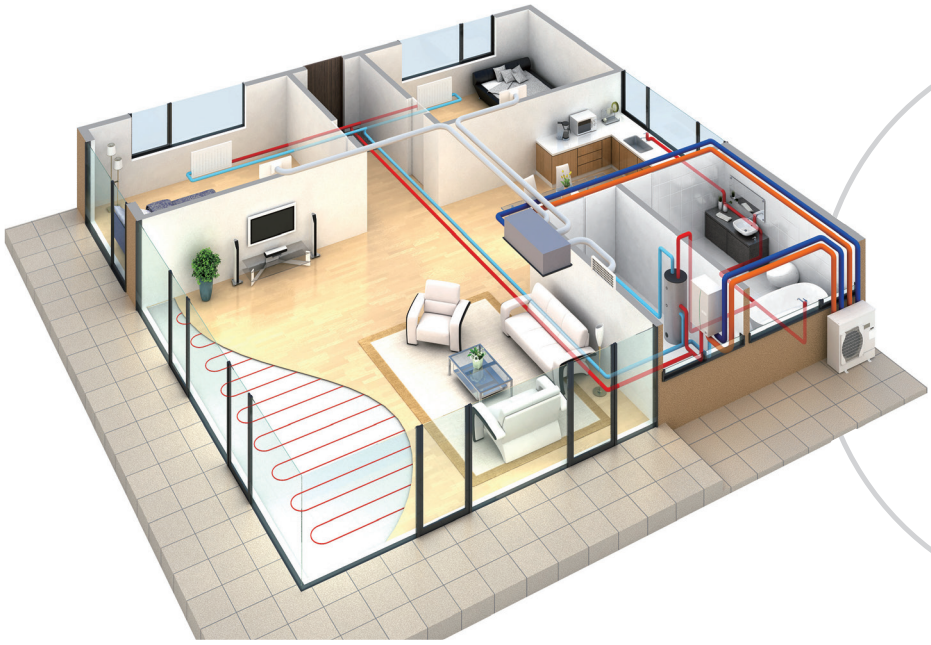
All-in-one outdoor unit (air conditioning, domestic hot water supply and hot water heating)

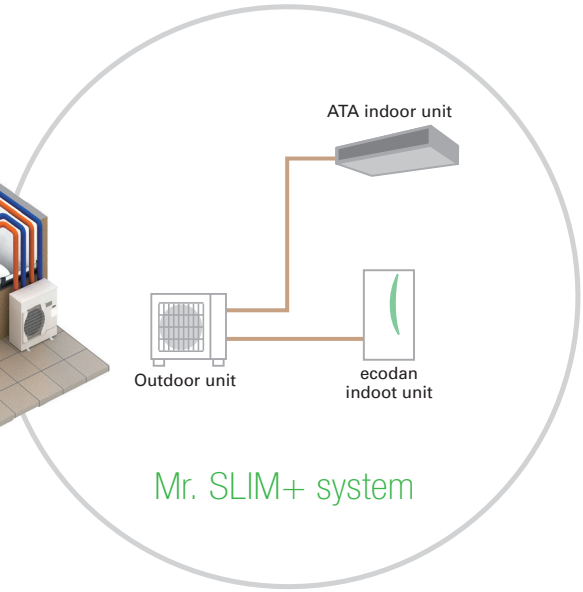
Mr. SLIM for Air-to-Air

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

ecodan for Air-to-Water

✓Domestic hot water (DHW) supply
✓Heating for multiple rooms

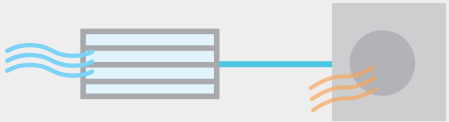




Various operations

Mr. SLIM / ATA (Air Cooling)

Cooling using ATA indoor unit

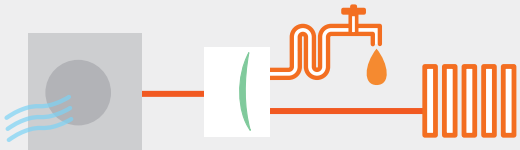


Mr. SLIM / ATA (Air Heating)

Heating using ATA indoor unit

ecodan / ATW (Hot water heating + DHW)

Heating and DHW using ATW indoor unit



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

Heat recovery using both ATA and ATW indoor units

Specifications

Indoor unit					PLA-ZRP71BA	PKA-RP71KAL	PCA-RP71KAQ	PCA-RP71HAQ	PSA-RP71KAQ	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		m^3/min	55	55	55	55	55	55	55
		Heating		m^3/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 Air-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).

PUMY + ecodan NEW

Air-to-Air and Air-to-Water hybrid multi split 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, domestic hot water supply and hot water heating)

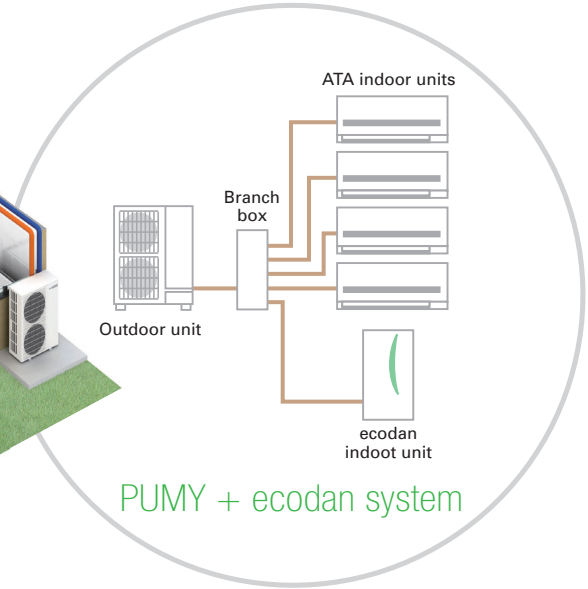
PUMY for Air-to-Air

PUMY utilises various indoor units, enabling the air conditioning or heating of multiple rooms, and controls each unit individually.

ecodan for Air-to-Water

✓Domestic hot water (DHW) supply

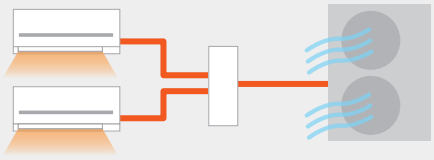
✓Heating for multiple rooms



Main operation patterns

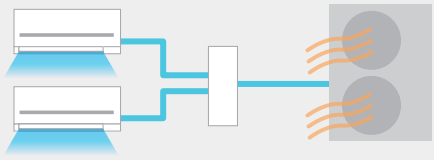
ATA (Air Heating)

Heating using ATA indoor unit



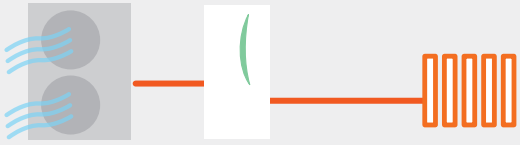
ATA (Air Cooling)

Cooling using ATA indoor unit



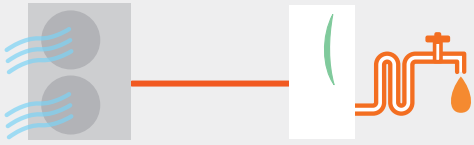
ATW (Hot water heating)

Heating using ATW indoor unit



ATW (DHW)

DHW using ATW indoor unit



Optional operation patterns* (simultaneous)

ATA (Air Heating) & ATW (Hot water heating)

ATA (Air Heating) & ATW (DHW)

*When using optional simultaneous operation, there are some restrictions, such as connectable indoor units, operation range and DHW flow temp.

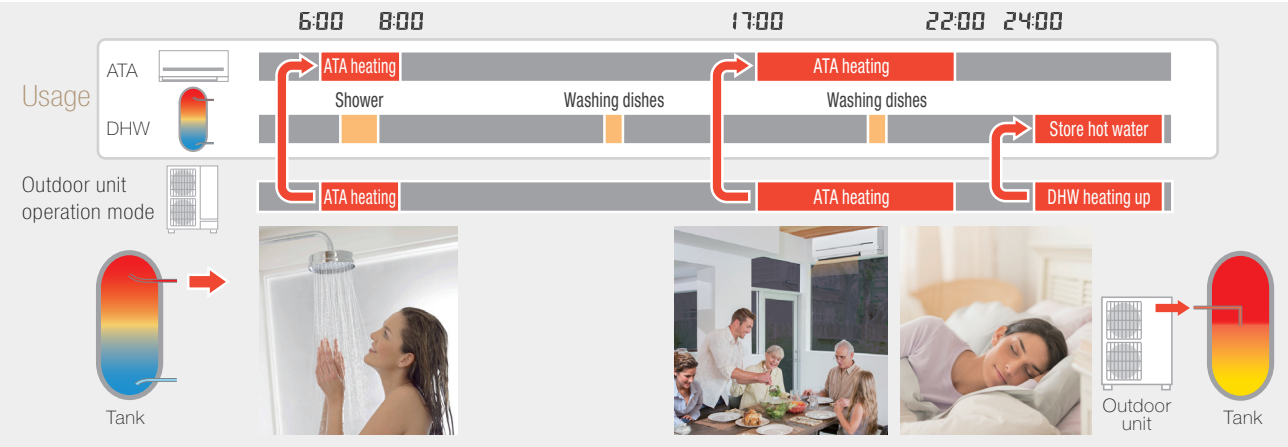
Usage pattern All-in-one system solution

Summer 2-in-1 operation

In summer ATA cooling and DHW are utilized. Keep your room comfortable with ATA cooling during high temperature daytime. Heat pump operates to heat up water stored in the DHW tank when ATA is not operated. The hot water can be utilized for shower and washing dishes during daytime.

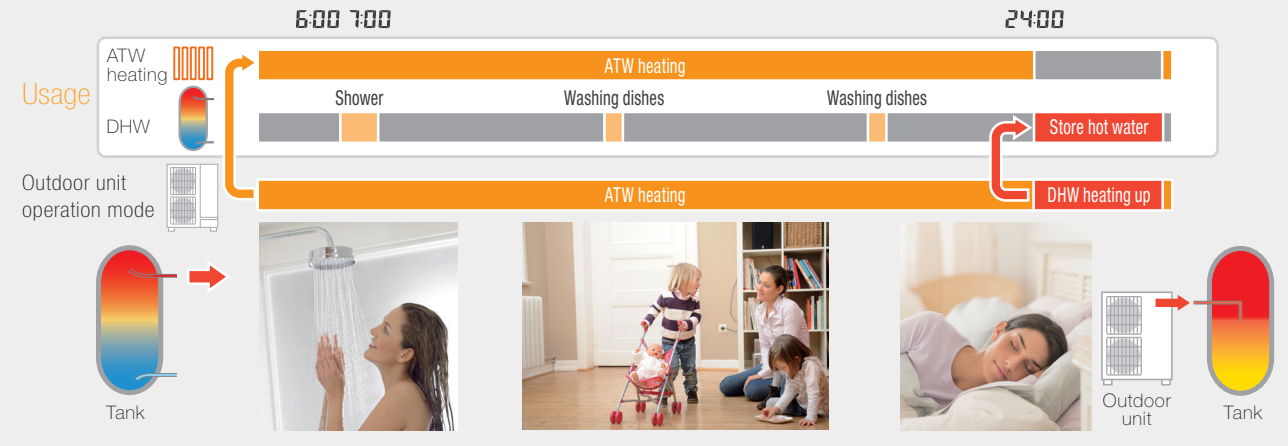
Spring & Autumn 2-in-1 operation

In spring and autumn, ATA heating and DHW are utilized. ATA heating can warm up each room quickly during the low temperature morning and evening. Heat pump operates to heat up water stored in the DHW tank when ATA is not operated. The hot water can be utilized for shower and washing dishes during daytime.



Winter ecodan

In winter ATW heating and DHW are utilized. ATW heating warms home all the day in severe cold weather. ATW heating stops temporarily only when the heat pump operates to heat up water stored in the DHW tank.



PUMY + ecodan

Model name						PUMY-P112VKM3(-BS)	PUMY-P125VKM3(-BS)	PUMY-P140VKM3(-BS)	PUMY-P112YKM(E)3(-BS)	PUMY-P125YKM(E)3(-BS)	PUMY-P140YKM(E)3(-BS)
Power supply						1-phase 220 - 240V, 50Hz			3-phase 380 - 415V, 50Hz		
Air-to-Air (ATA)	Cooling (nominal)*1	Capacity			kW	12.5	14.0	15.5	12.5	14.0	15.5
		Power input			kW	2.79	3.46	4.52	2.79	3.46	4.52
		EER				4.48	4.05	3.43	4.48	4.05	3.43
	Temp. range of cooling	Indoor temp.			W.B.	15 - 24°C					
		Outdoor temp.*2			D.B.	–5 - 52°C					
	Heating (nominal)*1	Capacity			kW	14.0	16.0	18.0	14.0	16.0	18.0
		Power input			kW	3.04	3.74	4.47	3.04	3.74	4.47
		COP				4.61	4.28	4.03	4.61	4.28	4.03
	Temp. range of heating	Indoor temp.			W.B.	15 - 27°C					
		Outdoor temp.			D.B.	–20 - 15°C					
Air-to-Water (ATW)	Nominal flow rate (for heating)				L/min	35.8					
	Heating*3	A7W35	Capacity		kW	12.5					
			Power input		kW	3.06					
			COP			4.08					
		A2W35	Capacity		kW	10.0					
			Power input		kW	3.50					
			COP			2.86					
	Guaranteed operating range	ATW	Heating		D.B.	–20 - +21°C					
			DHW		D.B.	–20 - +35°C					
		ATA + ATW	ATA heating + DHW		D.B.	7 - +21°C					
			ATA heating + ATW heating *4		D.B.	–10 - +21°C					
	Maximum Outlet water temp.				°C	55					
Outdoor unit	Indoor unit connectable	ATA only	Total capacity			50 to 130% of outdoor unit capacity					
			Model/Quantity	City Multi		15-140/9	15-140/10	15-140/12*5	15-140/9	15-140/10	15-140/12*5
				Branch box		15-100/8	15-100/8	15-100/8	15-100/8	15-100/8	15-100/8
				Mixed system		15-140*6/10	15-140*6/10*7	15-140*6/10*7	15-140*6/10	15-140*6/10*7	15-140*6/10*7
		ATA + ATW individual operation	Total capacity			ATA : Max 130% of outdoor unit capacity + ATW (EHST20C or EHSC) *8					
			Model/Quantity (including ATW)	City Multi		15-140/9	15-140/10	15-140/12*5	15-140/9	15-140/10	15-140/12
				Branch box		15-100/8	15-100/8	15-100/8	15-100/8	15-100/8	15-100/8
				Mixed system		15-140*6/10	15-140*6/10*7	15-140*6/10*7	15-140*6/10	15-140*6/10*7	15-140*6/10*7
		ATA + ATW simultaneous operation	Total capacity			Max 100% of outdoor unit capacity : ATA + ATW (EHST20C or EHSC) *8					
			Model/Quantity	ATA		15/1*9	15-25/2*10	15-42*12/3*11	15/1*9	15-25/2*10	15-42*12/3*11
				ATW		ATW (EHST20C or EHSC) / 1					
	Sound pressure level (measured in anechoic room)				dB<A>	49 / 51	50 / 52	51 / 53	49 / 51	50 / 52	51 / 53
	Sound power level (measured in anechoic room)				dB<A>	69 / 71	70 / 72	71 / 73	69 / 71	70 / 72	71 / 73
	Refrigerant piping diameter			Liquid pipe	mm	9.52 flare					
				Gas pipe	mm	15.88 flare					
	Fan	Type × Quantity				Propeller fan × 2					
		Airflow rate			m³/min	110					
					L/s	1,883					
					cfm	3,884					
		Motor output			kW	0.074 + 0.074					
	Compressor	Type × Quantity				Scroll hermetic compressor × 1					
		Starting method				Inverter					
		Motor output			kW	2.9	3.5	3.9	2.9	3.5	3.9
	External dimensions (H × W × D)				mm	1,338 × 1,050 × 330 (+25)					
	Weight				kg	122			YKM: 125 / YKME: 136		

*1

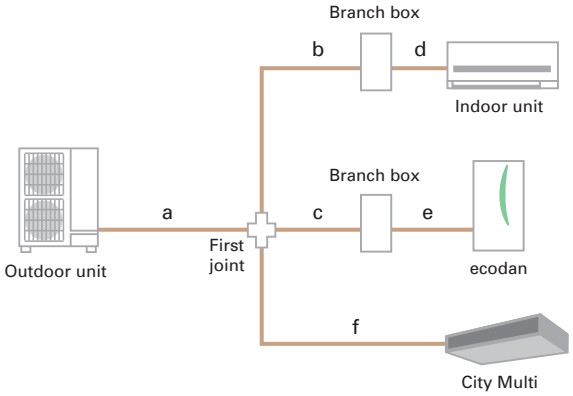
	Indoor	Outdoor	Piping length	Level difference
Cooling	27°C DB / 19°C WB	35°C DB	7.5m	0m
Heating	20°C DB	7°C DB / 6°C WB	7.5m	0m

*2 10 to 52°C D.B.: When connecting PKFY-P15/20/25VBM, PFFY-P20/25/32VKM, PFFY-P20/25/32VLE(R)M, PEFY-P*VMA3 or M series indoor unit.
*3 In the case of ATW single connection. Input to circulation pump is not included.
*4 In the case of simultaneous operation of ATA heating and ATW heating, target flow temperature range is restricted to 45-55°C and when the ambient temp is under 7°C, the flow temp is lowered.
*5 In the case of connection to 12 units, all the units are P15.
*6 Up to P100 when connecting via branch box.
*7 Up to 11 units when connecting via 2 branch boxes.
*8 Only one ecodan unit can be connected.
*9 Exceptionally, one MSZ-SF15VA can be connected.
*10 Exceptionally, two MSZ-SF15VA can be connected.
*11 Exceptionally, three MSZ-SF15VA can be connected.
*12 In the case of City Multi connection, maxmum is P32.

Piping specifications

Total piping length	m	150*	a+b+c+d+e+f
Farthest piping length	m	80	a+b+d or a+c+e
		85	a+f
Total piping length betwen outdoor unit and branch box	m	55	a+b+c
Total piping length between branch boxes and indoor units	m	95	d+e
Farthest piping length from the first joint	m	30	b or c or f
Farthest piping length after branch box	m	25	d or e
Height difference (Outdoor upside / Outdoor downside)	m	50 / 40	

*When an ecodan is connected, the maximum piping length is 150m.



PUMY+ ecodan compatibility table

ATW branch box connection compatibility table

Series	Type	Model name	Compatibility
ATW	Cylinder unit	EHST20C-VM2/6C	●
		EHST20C-YM9C	●
		EHST20C-TM9C	●
		EHST20C-VM2/6EC	●
		EHST20C-YM9EC	●
		EHST20C-MHCW	●

Type	Model name	Compatibility
Hydro box	EHSC-VM2(E)C	●
	EHSC-VM6(E)C	●
	EHSC-YM9(E)C	●
	EHSC-TM9C	●

Type	Model name	Compatibility
Branch box	PAC-MK52BC	●
	PAC-MK32BC	●
	PAC-MK52BCB	●
	PAC-MK32BCB	●

Branch box connection compatibility table

Series	Type	Model name	Compatibility									
			P15	P18	P20	P22	P25	P35	P42	P50	P60	P71	P100
M series	Wall-mounted	MSZ-FH•VE2					●	●		●			
		MSZ-EF•VE3		●		●	●	●	●	●			
		MSZ-SF•VA	●		●								
		MSZ-SF•VE3					●	●	●	●			
		MSZ-GF•VE2									●	●	
	Floor-standing	MFZ-KJ•VE					●	●		●			
	1-way cassette	MLZ-KA•VA					●	●		●			
S series	Ceiling-concealed	SEZ-KD•VAQ(L)					●	●		●	●	●	
	2×2 cassette	SLZ-KF•VA2					●	●		●	×		
P series	Ceiling-suspended	PCA-RP•KAQ						●		●	●	●	●
	4-way cassette	PLA-RP•EA						●		●	●	●	●
	Ceiling-concealed	PEAD-RP•JA(L)Q						×		●	●	●	●

LEV kit connection compatibility table

Series	I/U type	Model name	Compatibility									
			P15	P18	P20	P22	P25	P35	P42	P50	P60	P71
M series	Wall-mounted	MSZ-FH•VE2					●	●		●		
		MSZ-EF•VE3		●		●	●	●	●	●		
		MSZ-SF•VA	●		●							
		MSZ-SF•VE3					●	●	●	●		
		MSZ-GF•VE2									×	×
	Floor-standing	MFZ-KJ•VE					●	●		●		

Connectable indoor unit capacity

For individual operation ATA+ATW (no simultaneous operation) ATA: Max 130% of outdoor unit capacity + ATW (EHST20C or EHSC)

Outdoor capacity 12.5kW	
ATW indoor unit (Cylinder or Hydro box) 11.2kW	Connectable ATA indoor unit total capacity: Max.16.2kW (130%)

Outdoor capacity 14.0kW	
ATW indoor unit (Cylinder or Hydro box) 11.2kW	Connectable ATA indoor unit total capacity: Max.18.2kW (130%)

Outdoor capacity 15.5kW	
ATW indoor unit (Cylinder or Hydro box) 11.2kW	Connectable ATA indoor unit total capacity: Max.20.2kW (130%)

For simultaneous operation of ATA+ATW Max 100% of outdoor unit capacity: ATA + ATW (EHST20C or EHSC)

Outdoor capacity 12.5kW	
ATW indoor unit (Cylinder or Hydro box) 11.2kW	ATA capacity Max. 1.3kW

*Exceptionally, one MSZ-SF15VA can be connected.

Outdoor capacity 14.0kW	
ATW indoor unit (Cylinder or Hydro box) 11.2kW	ATA capacity Max. 2.8kW

*Exceptionally, two units of MSZ-SF15VA can be connected.

Outdoor capacity 15.5kW	
ATW indoor unit (Cylinder or Hydro box) 11.2kW	ATA capacity Max. 4.3kW

*Exceptionally, three units of MSZ-SF15VA can be connected.

MELCloud (WiFi interface) for ecodan

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.

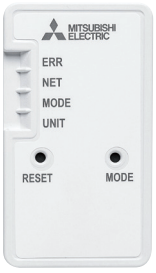
Setting up and remotely operating your ecodan heating system via MELCloud is simple and straight forward. All you need is wireless computer connectivity in your home or the building where the ecodan is installed and an Internet connection on your mobile or fixed terminal. To set up the system, the router 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 MELCloud from virtually anywhere an Internet connection is available.

That means, thanks to MELCloud, you can use ecodan much more easily and conveniently.

MELCloud™

NEW



✻

✻ MELCloud uses the MAC-567IF-E interface

Key control and monitoring features

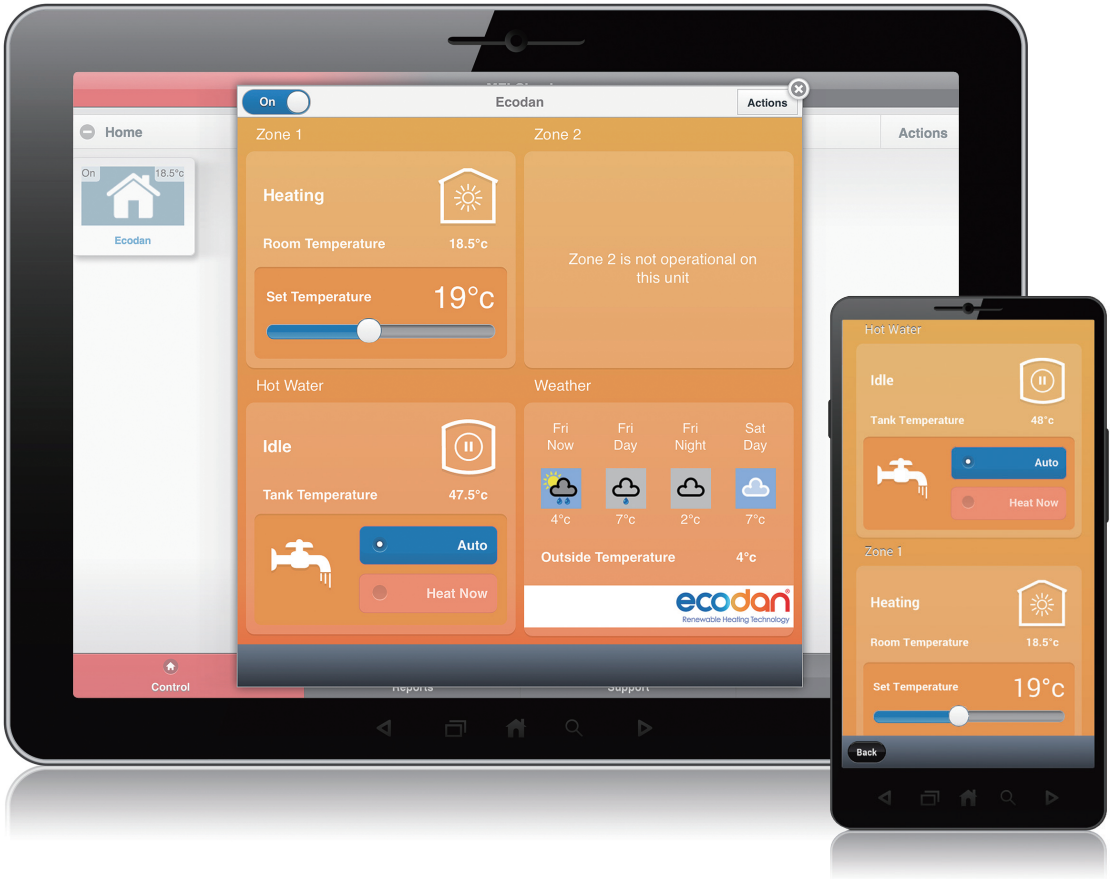
1. **Turn system on/off**
2. **See status of each of your heating zones & adjust set points**
3. **See the status of your hot water cylinder & boost remotely**
4. **Live weather feed from ecodan location**

   Holiday mode - Set system parameters while away

   Schedule timer - Set 7 day weekly schedule

   Frost protection - Set system to run at minimum temperature

   Error status
5. **Check energy usage report*** *Additional metering hardware is required.



All A^{++} line-up!!

*except for ATA & ATW hybrid system, Mr. SLIM+

		For medium-temperature application							For low-temperature application						
Outdoor unit	Indoor unit	Seasonal space heating energy efficiency class	Water heating energy efficiency class	Rated heat output under average climate conditions	Seasonal space heating energy efficiency under average climate conditions	Water heating energy efficiency under average climate conditions	Sound power level L_{WA} indoor	Sound power level L_{WA} outdoor	Seasonal space heating energy efficiency class	Water heating energy efficiency class	Rated heat output under average climate conditions	Seasonal space heating energy efficiency under average climate conditions	Water heating energy efficiency under average climate conditions	Sound power level L_{WA} indoor	Sound power level L_{WA} outdoor
				kW	%	%	dB	dB			kW	%	%	dB	dB
SUHZ-SW45VA (-H)	EHST20D-****	A^{++}	A	4.6	126	109	40	61	A^{++}	A	5.0	170	109	40	61
	ERST20D-****	A^{++}	A	4.6	128	109	40	61	A^{++}	A	5.0	174	109	40	61
	EHSD-****	A^{++}	–	4.6	126	–	40	61	A^{++}	–	5.0	170	–	40	61
	ERSD-****	A^{++}	–	4.6	128	–	40	61	A^{++}	–	5.0	174	–	40	61
PUHZ-SW50VKA (-BS)	EHST20D-****	A^{++}	A	4.3	125	98	40	63	A^{++}	A	4.5	163	98	40	63
	ERST20D-****	A^{++}	A	4.3	128	98	40	63	A^{++}	A	4.5	167	98	40	63
	EHSD-****	A^{++}	–	4.3	125	–	40	63	A^{++}	–	4.5	163	–	40	63
	ERSD-****	A^{++}	–	4.3	128	–	40	63	A^{++}	–	4.5	167	–	40	63
PUHZ-SW75VHA (-BS)	EHST20D-****	A^{++}	A	7.1	127	100	40	68	A^{++}	A	7.2	164	100	40	68
	ERST20D-****	A^{++}	A	7.1	129	100	40	68	A^{++}	A	7.2	166	100	40	68
	EHSD-****	A^{++}	–	7.1	127	–	40	68	A^{++}	–	7.2	164	–	40	68
	ERSD-****	A^{++}	–	7.1	129	–	40	68	A^{++}	–	7.2	166	–	40	68
PUHZ-SW75VHA (-BS)	EHST20C-****	A^{++}	A	7.1	127	103	40	68	A^{++}	A	7.2	165	103	40	68
	ERST20C-****	A^{++}	A	7.1	129	103	40	68	A^{++}	A	7.2	167	103	40	68
	EHSC-****	A^{++}	–	7.1	127	–	40	68	A^{++}	–	7.2	165	–	40	68
	ERSC-****	A^{++}	–	7.1	129	–	40	68	A^{++}	–	7.2	167	–	40	68
PUHZ-SW100VHA/YHA (-BS)	EHST20C-****	A^{++}	A	10.0	125	103	40	70	A^{++}	A	10.4	164	103	40	70
	ERST20C-****	A^{++}	A	10.0	127	103	40	70	A^{++}	A	10.4	166	103	40	70
	EHSC-****	A^{++}	–	10.0	125	–	40	70	A^{++}	–	10.4	164	–	40	70
	ERSC-****	A^{++}	–	10.0	127	–	40	70	A^{++}	–	10.4	166	–	40	70
PUHZ-SW120VHA/YHA (-BS)	EHST20C-****	A^{++}	A	12.0	125	99	40	72	A^{++}	A	12.9	162	99	40	72
	ERST20C-****	A^{++}	A	12.0	127	99	40	72	A^{++}	A	12.9	164	99	40	72
	EHSC-****	A^{++}	–	12.0	125	–	40	72	A^{++}	–	12.9	162	–	40	72
	ERSC-****	A^{++}	–	12.0	127	–	40	72	A^{++}	–	12.9	164	–	40	72
PUHZ-SW160YKA (-BS)	EHSE-****	A^{++}	–	13.5	125	–	45	78	A^{++}	–	15.3	161	–	45	78
	ERSE-****	A^{++}	–	13.5	126	–	45	78	A^{++}	–	15.3	163	–	45	78
PUHZ-SW200YKA (-BS)	EHSE-****	A^{++}	–	15.5	128	–	45	78	A^{++}	–	17.3	162	–	45	78
	ERSE-****	A^{++}	–	15.5	129	–	45	78	A^{++}	–	17.3	164	–	45	78
PUHZ-SHW80VHA (-BS)	EHST20C-****	A^{++}	A	9.0	131	103	40	69	A^{++}	A	9.6	171	103	40	69
	ERST20C-****	A^{++}	A	9.0	133	103	40	69	A^{++}	A	9.6	174	103	40	69
	EHSC-****	A^{++}	–	9.0	131	–	40	69	A^{++}	–	9.6	171	–	40	69
	ERSC-****	A^{++}	–	9.0	133	–	40	69	A^{++}	–	9.6	174	–	40	69
PUHZ-SHW112VHA/YHA (-BS)	EHST20C-****	A^{++}	A	12.7	128	103	40	70	A^{++}	A	13.9	167	103	40	70
	ERST20C-****	A^{++}	A	12.7	130	103	40	70	A^{++}	A	13.9	169	103	40	70
	EHSC-****	A^{++}	–	12.7	128	–	40	70	A^{++}	–	13.9	167	–	40	70
	ERSC-****	A^{++}	–	12.7	130	–	40	70	A^{++}	–	13.9	169	–	40	70
PUHZ-SHW140YHA (-BS)	EHST20C-****	A^{++}	A	15.8	127	103	40	70	A^{++}	A	17.0	164	103	40	70
	ERST20C-****	A^{++}	A	15.8	128	103	40	70	A^{++}	A	17.0	165	103	40	70
	EHSC-****	A^{++}	–	15.8	127	–	40	70	A^{++}	–	17.0	164	–	40	70
	ERSC-****	A^{++}	–	15.8	128	–	40	70	A^{++}	–	17.0	165	–	40	70
PUHZ-SHW230YKA2	EHSE-****	A^{++}	–	23.0	127	–	45	75	A^{++}	–	25.0	164	–	45	75
	ERSE-****	A^{++}	–	23.0	128	–	45	75	A^{++}	–	25.0	165	–	45	75
PUHZ-W50VHA2 (-BS)	EHPT20X-****	A^{++}	A	5.0	127	99	40	61	A^{++}	A	5.0	162	99	40	61
	EHPX-****	A^{++}	–	5.0	127	–	40	61	A^{++}	–	5.0	162	–	40	61
PUHZ-W85VHA2 (-BS)	EHPT20X-****	A^{++}	A	8.5	128	97	40	66	A^{++}	A	8.5	162	97	40	66
	EHPX-****	A^{++}	–	8.5	128	–	40	66	A^{++}	–	8.5	162	–	40	66
PUHZ-W112VHA (-BS)	EHPT20X-****	A^{++}	A	10.0	125	100	40	69	A^{++}	A	10.0	164	100	40	69
	EHPX-****	A^{++}	–	10.0	125	–	40	69	A^{++}	–	10.0	164	–	40	69
PUHZ-HW112YHA2 (-BS)	EHPT20X-****	A^{++}	A	12.7	126	100	40	67	A^{++}	A	12.7	155	100	40	67
	EHPX-****	A^{++}	–	12.7	126	–	40	67	A^{++}	–	12.7	155	–	40	67
PUHZ-HW140VHA2/YHA2 (-BS)	EHPT20X-****	A^{++}	A	15.8	126	96	40	67	A^{++}	A	15.8	157	96	40	67
	EHPX-****	A^{++}	–	15.8	126	–	40	67	A^{++}	–	15.8	157	–	40	67
PUHZ-FRP71VHA ATA & ATW hybrid system, Mr. SLIM+	EHST20C-****	A^{+}	A	7.5	123	98	40	68	A^{++}	A	7.5	163	98	40	68
	EHSC-****	A^{+}	–	7.5	123	–	40	68	A^{++}	–	7.5	163	–	40	68
PUMY-P112VKM3/YKM(E)3 (-BS)	EHST20C-****	A^{+}	A	11.2	121	75	40	69	A^{++}	A	11.2	168	75	40	69
	EHSC-****	A^{+}	–	11.2	121	–	40	69	A^{++}	–	11.2	168	–	40	69
PUMY-P125VKM3/YKM(E)3 (-BS)	EHST20C-****	A^{+}	A	11.2	121	75	40	69	A^{++}	A	11.2	168	75	40	69
	EHSC-****	A^{+}	–	11.2	121	-	40	69	A^{++}	–	11.2	168	–	40	69
PUMY-P140VKM3/YKM(E)3 (-BS)	EHST20C-****	A^{+}	A	11.2	121	75	40	69	A^{++}	A	11.2	168	75	40	69
	EHSC-****	A^{+}	–	11.2	121	–	40	69	A^{++}	–	11.2	168	–	40	69

✻ Based on COMMISSION DELEGATED REGULATION (EU) No 811/2013, average climate conditions

⚠ NOTICE

■ Our air-conditioning equipment and heat pumps contain a fluorinated greenhouse gas, R410A (GWP: 2088). This GWP value is based on Regulation (EU) No. 517/2014 from IPCC 4th edition. In the case of Regulation (EU) No. 626/2011 from IPCC 3rd edition, the GWP value of R410A is 1975.

■ The water in both the primary and sanitary circuits should be clean and have a pH value of 6.5-8.0.
The following are maximum allowed values:
Calcium: 100mg/L, Ca harness: 250mg/L, Chlorine: 100mg/L, Copper: 0.3mg/L, Iron/Manganese: 0.5mg/L
Other constituents should be compliant with European Directive 98/83 EC standards.

MITSUBISHI ELECTRIC CORPORATION
HEAD OFFICE: TOKYO BLDG., 2-7-3 MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN
http://Global.MitsubishiElectric.com/

S-179-7-C9958-A 1702 (IP)

New publication effective Feb. 2017.
Specifications are subject to change without notice.