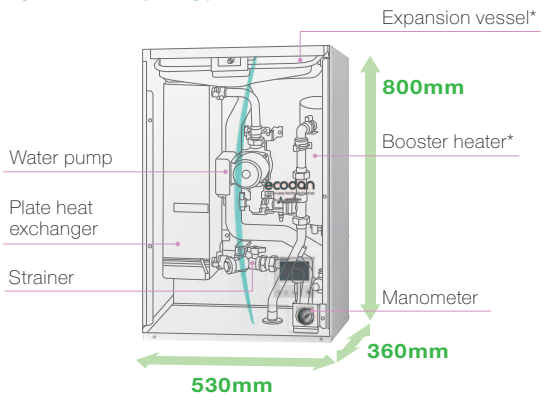
# Indoor units

## New all-in-one compact indoor unit

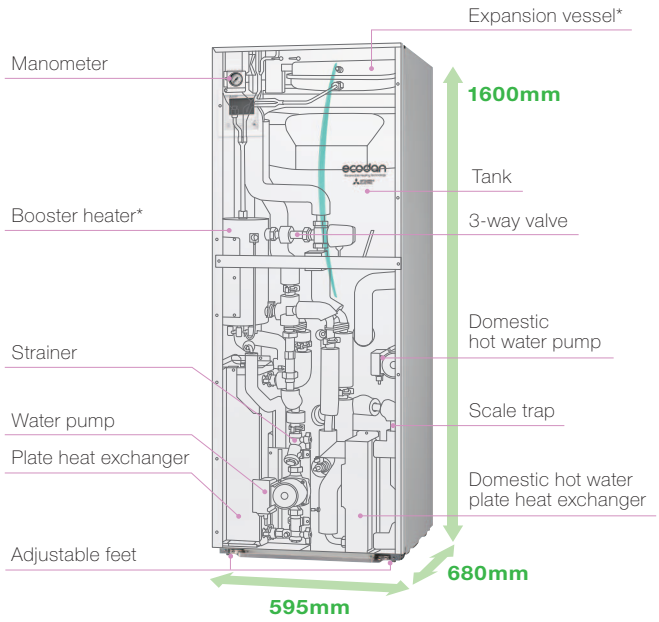
**Easy to install and low maintenance**

- 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

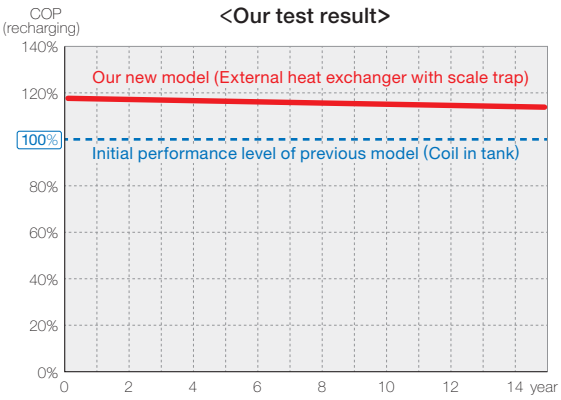
A scale trap is incorporated after the plate heat exchanger to capture calcium scale particles, thus maintaining the high performance of the external plate heat exchanger. (Just a 3% reduction during 15 years*[2]).

### 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

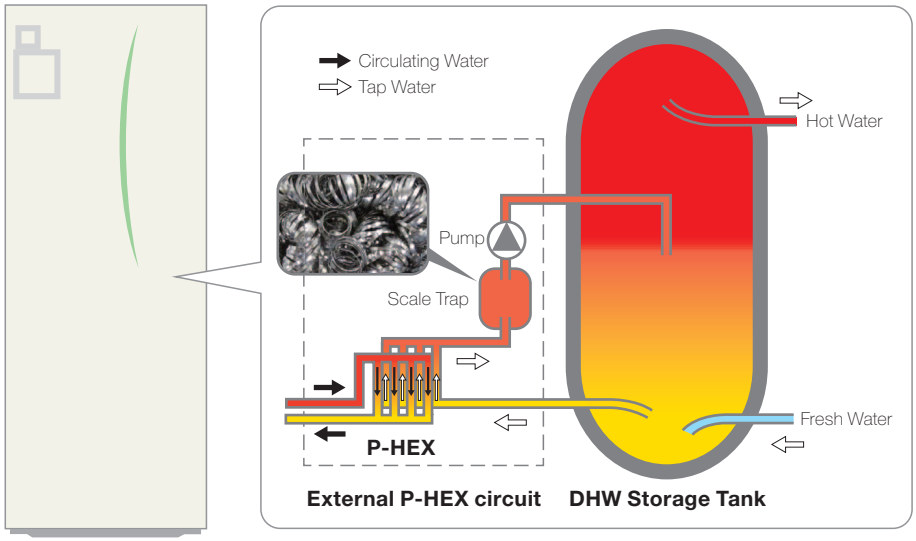
### Optimised stratification for better comfort

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

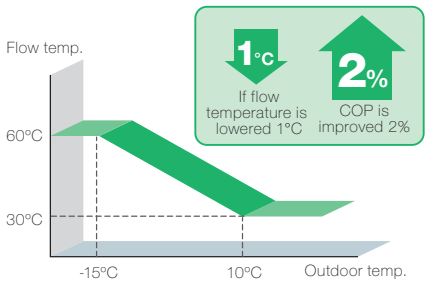
Settings can be performed using an SD card. *

## 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)

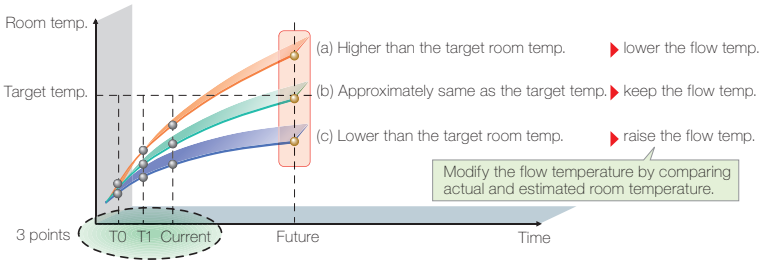



## Mitsubishi Electric's Auto Adaptation function automatically tracks changes in the actual room temperature and outdoor temperature and adjusts the flow temperature accordingly.

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

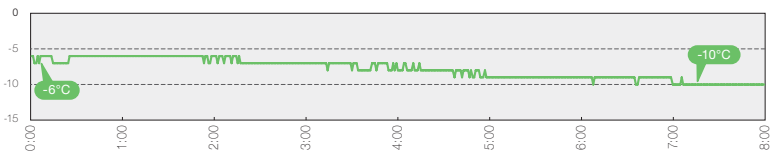



### Auto Adaptation – room temperature control

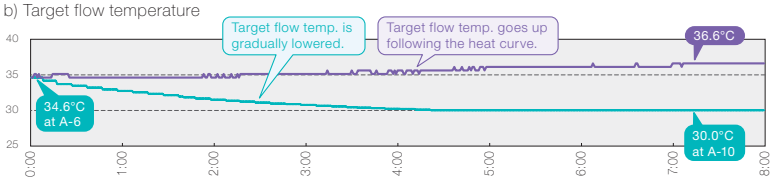
1. Installation site: Southern Sweden
2. Detached house with underfloor heating
3. Data in February 2011

[Example]

a) Outdoor temperature is gradually decreasing…

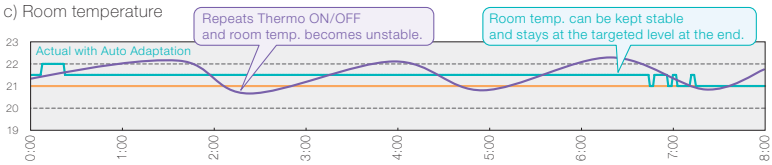



b) Target flow temperature




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.