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ELECTRIC



MITSUBISHI ELECTRIC TRANE HVAC US

# AIR-TO-WATER HEAT PUMPS





MITSUBISHI ELECTRIC TRANE HVAC US

# TOPICS

**WHAT IS AIR-TO-WATER (ATW)?**

**ATW MARKET OVERVIEW**

**ECODAN PRODUCT OVERVIEW**

# New ECODAN h2i Logo

Special design label for  
the US market



# WHY AIR-TO-WATER HEAT PUMPS?

## The case for ATW heat pumps...

### Fossil Fuel Bans

- Strong state & consumer interest in sustainability & resiliency

### Building Energy Codes

- Lower design heating loads (25-40 to 10-15 Btu/hr/ft<sup>2</sup>)

### Discernment in Comfort

- Significant % of homeowners dissatisfied with the comfort of their current HVAC system



### Electrification

- Strong interest in “net zero” homes/buildings
- All electric w/ solar PV systems
- Clean Energy Generation/Grid Resiliency

### Interest in Indoor Environment Quality




- No off-gassing/fumes/CO concerns

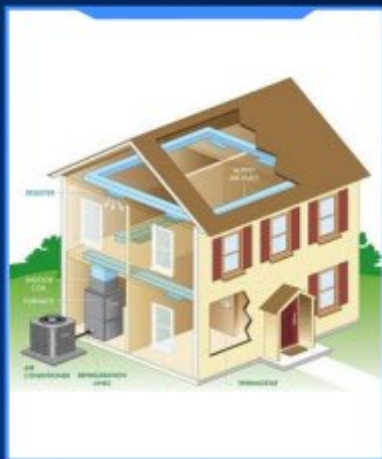
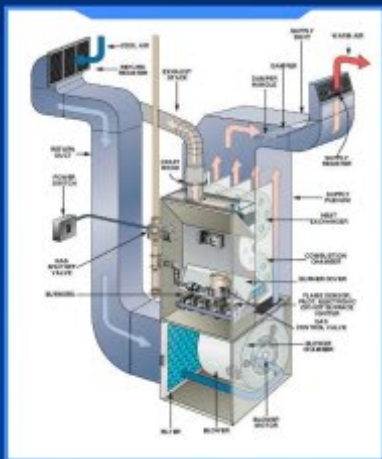
### Extensive ATW Heat Pump Incentives

- \$400 – \$2,000/ton
- Up to \$10,000/system

# WHAT IS ATW? | TRADITIONAL HEATING SYSTEMS




## Furnace

-  Heats Air
-  Distributes hot air through ducts
-  Runs on natural gas, propane, oil or electricity



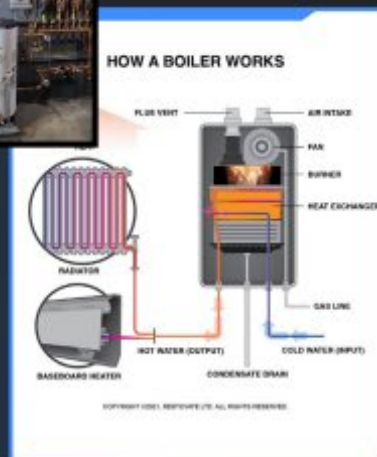
\*For illustrative purpose only.

## Boiler

-  Heats Water
-  Distributes hot water through pipes
-  Runs on natural gas, propane, oil or wood

Hydronic Heating

VS



\*For illustrative purpose only.



# ecodan® LAUNCH PLAN



Nov 25<sup>th</sup>

- Submittals
- Installation Manual
- Parts Manual
- Service Manual
- Operations Manual
- Technical & Service Manual
- Quick Setup Guide
- Product Launch Guide
- Pre-order Program (Shipment from Feb)

February 2026

- Product Introduction Video
- Product Catalog
- Application Guide
- Homeowner Guide
- Product Selection Tool on Mpro
- Shipment begins February



Job Name: \_\_\_\_\_  
System Reference: \_\_\_\_\_ Date: \_\_\_\_\_



INDOOR Unit.....ERSF-N  
OUTDOOR Unit.....WUZ-SA24

**INDOOR UNIT FEATURES**

- Automatic Air Vent: As air builds up in a hydronic system over time, that excess air pressure is automatically purged to maintain optimal performance.
- Flow Sensor: The flow sensor maintains water pressure by monitoring the water flow rate and automatically adjusting the inverter output for maximum efficiency.
- Flow Temperature Controller: Control board with multiple inputs/outputs to control 3rd party components
- Magnetic Filter: The magnetic filter catches large debris, sediment, and iron particles before they can impact the plate heat exchanger, pump, or other piping, supporting system longevity and easier maintenance.
- Touch Screen Controller: The Hydrobox comes with a touch screen controller on the front panel
- All-in-one Hydrobox: Designed with front-access serviceability, the All-in-one Hydrobox includes the pumps, expansion vessel, magnetic filter, boost heater, and plate heat exchanger.

**OUTDOOR UNIT FEATURES**

- 3-in-1: Hydronic heating, cooling, and domestic hot water
- Auto Changeover: The unit will automatically switch between heating and cooling modes to maintain the set point.
- Boiler Integration : Boiler Integration enables the system to automatically switch from electric heat pump to boiler operation for consistent comfort. The system can also be set to switch based on optimal energy efficiency or ambient temperature.
- High-flow Temperature Performance: Ecodan is capable of delivering hot water up to 158°F outlet water even in low ambient temperatures.
- Hyper Heating: 100% heating capacity down to 5° F with guaranteed heating down to -22° F.
- Quiet Operation (Ecodan): The outdoor unit features ultra-quiet operation as low as 41 - 45 db(A) due to an anti-vibration design with insulation around the compressor. The unit also offers a three-stage low-noise mode.
- Refrigerant Split System: A split system with R32 refrigerant

**RESIDENTIAL PRODUCT MANAGEMENT**

Bulletin # 2216M

To: All METUS Staff (Tuesday, Nov. 25, 2025)  
Trane Technologies™ Contacts (Tuesday, Nov. 25, 2025)  
All Distributors (Tuesday, Dec. 2, 2025)  
International Business Unit Distributors (Tuesday, Dec. 2, 2025)  
Diamond Service Group (DSG) Members (Tuesday, Dec. 2, 2025)  
Trane CSOs - Commercial Sales Office Contacts (Tuesday, Dec. 2, 2025)  
Trane DSOs - Residential Sales Office Contacts (Tuesday, Dec. 2, 2025)  
Trane Supply - Residential Sales Office Contacts (Tuesday, Dec. 2, 2025)

Subject: **Pre-Launch – Introducing the New ecodan® Air-to-Water Heat Pump System**

We're pleased to announce the introduction of the new ecodan air-to-water (ATW) heat pump system. The ecodan product is designed for new or retrofit applications with hydronic systems to provide heating, cooling and domestic hot water.



**Model Numbers:**

Indoor Unit (Hydrobox)

Model Number
ERSF-NM6E

Outdoor Unit

Model Number	Capacity
WUZ-SA24NMZ	2 ton
WUZ-SA36NMZ	3 ton
WUZ-SA48NMZ	4 ton

**Key Features:**

- Refrigerant split system with R-32 refrigerant
- 3-in-1: Hydronic heating, cooling, and domestic hot water
- Hyper-heating technology with heating operation down to -22° F and 100% heating capacity at 5° F
- Max flow temperature of 158° F: stable, reliable and efficient performance in low ambient temperatures.
- 2-ton, 3-ton, and 4-ton capacity lineup
- All-in-one Hydrobox: Includes all of the key water circuit components, including the pump, expansion vessel, magnetic filter, booster heater, and plate heat exchanger
- Optional Indirect DHW tank supplied by METUS: 60 gallons or 85 gallons (Model numbers and further details to be shared in the near future)

- Anti-vibration structure of the outdoor unit contributes to reduced operating noise and achieves whisper silent operation

**PRODUCT INFORMATION:**

- [Product overview presentation](#)
- [Product launch guide](#)
- Manuals and submittals available on [MitsubishiPro.com](#).
- [Model numbers, model codes, rough-in dimensions, package weights, and UPC codes](#)

METUS will begin taking pre-orders for the ecodan product from December 1, 2025 with shipments starting from February 16, 2026. All marketing and training materials will be available from the end of January.

Product Family	Model Number	Available to Order	Earliest Requested Ship Date
ecodan - Hydrobox	ERSF-NM6E	12/1/2025	2/16/2026
ecodan - Outdoor	WUZ-SA24NMZ	12/1/2025	2/16/2026
ecodan - Outdoor	WUZ-SA36NMZ	12/1/2025	2/16/2026
ecodan - Outdoor	WUZ-SA48NMZ	12/1/2025	2/16/2026

These models are highly anticipated, and initial orders may surpass our available inventory. We request your patience as METUS continues to adjust production to meet market demand.

**FOR DISTRIBUTORS ONLY:** Pricing is available in the Distributor Portal.

For more information, please contact your local METUS representative.



# TRAINING, SUPPORT AND TOOLS

Training Courses	Details
Product Overview (Completed)	<ul style="list-style-type: none"><li>• What is ATW?, Market Overview, Product Details, Launch Plan</li></ul>
Hydronic system Fundamentals (Jan 27)	<ul style="list-style-type: none"><li>• Basics of hydronic systems</li><li>• Overview of hydronic systems, components overview/functions, applications</li></ul>
Introduction to Air-to-water heat pump systems/Applications (Jan 27)	<ul style="list-style-type: none"><li>• ATW heat pump sizing</li><li>• Retrofitting high temperature hydronic systems with air-to-water heat pumps</li><li>• Control/Wiring configuration with existing zone control system</li><li>• Issues to avoid</li></ul>
Ecodan Essentials (In-person training) (Jan 27)	<ul style="list-style-type: none"><li>• Comprehensive overview of ecodan product, its components, and how models are selected using design software.</li><li>• Installation guidelines are covered in detail for both the Ecodan unit and required components including functional operation of the system.</li><li>• Settings, configuration, and startup procedures are outlined along with temperature control methods and remote controller operation.</li><li>• Basic operation, startup faults, and the collection of maintenance data are also covered.</li></ul>
E-learning Installation Overview (Jan 27)	<ul style="list-style-type: none"><li>• Comprehensive overview of ecodan product, its components, and how models are selected using design software. With assessment questions (required for extended warranty)</li></ul>
Field Service Seminar (Jan 27)	<ul style="list-style-type: none"><li>• 4-hour course focuses on the basic installation, service and troubleshooting of the Ecodan residential system. The concepts and theories of Ecodan system operation including electrical and refrigerant circuits are covered in detail.</li></ul>

# TRAINING, SUPPORT AND TOOLS | SELECTION TOOL



## Platforms:

- Web based (MPro), phone friendly



## Inputs:

- Location, heat emitter type, heat/cool, DHW, buffer tank, boiler interlock, replacement.new construction, etc.



## Outputs:

- ODU recommendation, de-rates, etc.
- (future: energy consumption by month, monthly cost, comparison vs fossil fuels, CO2 emissions)



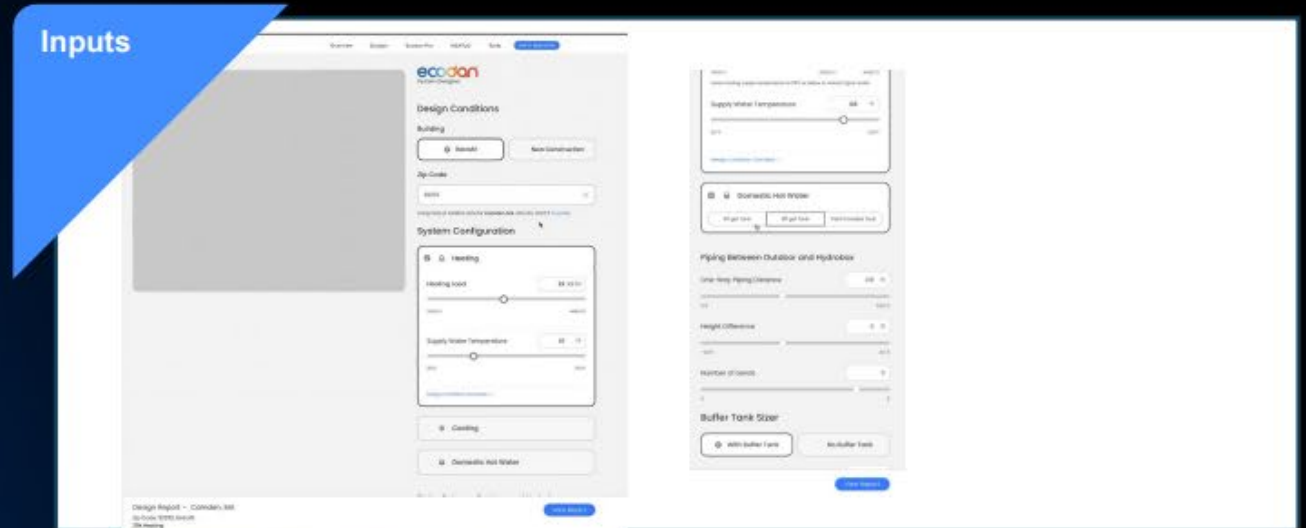
**Schematic generator** for most common installs, auto populates based on indoor and outdoor selections and application



**PDF download**



**Technical documents connector**



## Our R-split system



### Less heat loss

- Better heat transfer: Refrigerants often transfer heat more effectively than water.



### Large max piping length

- 24/36NMZ: 7 ft - 164 ft
- 48NMZ: 7 ft - 100 ft



### Designed to handle vertical distance multi family buildings

- Height difference: MAX 100ft



### No water no freeze ☺

- Refrigerant piping saves a "worrywart" about freezing



### Self-sufficient system include key water circuit components

- Pumps, expansion vessel, booster heater
- Indoor service and repair possible in a warm environment

Tailored to HVAC contractor

- Refrigerant piping

## H-split and Monoblock system



### Heat loss

- Larger pipes: water pipes are typically larger than refrigerant pipes, meaning less surface area for heat to escape.



### Water piping extension is not easy; water circuit needs powerful pumps

- Depending on the application you may need to add several pumps.



### Tend to be limited to level installations

- Depending on the application you may need to add several pumps.



### Water pipes are prone to freezing

- Glycol is needed; messy, potential cause for pump issue, additional cost required etc. ☹
- Additional heat trace could cost \$\$\$... ☹



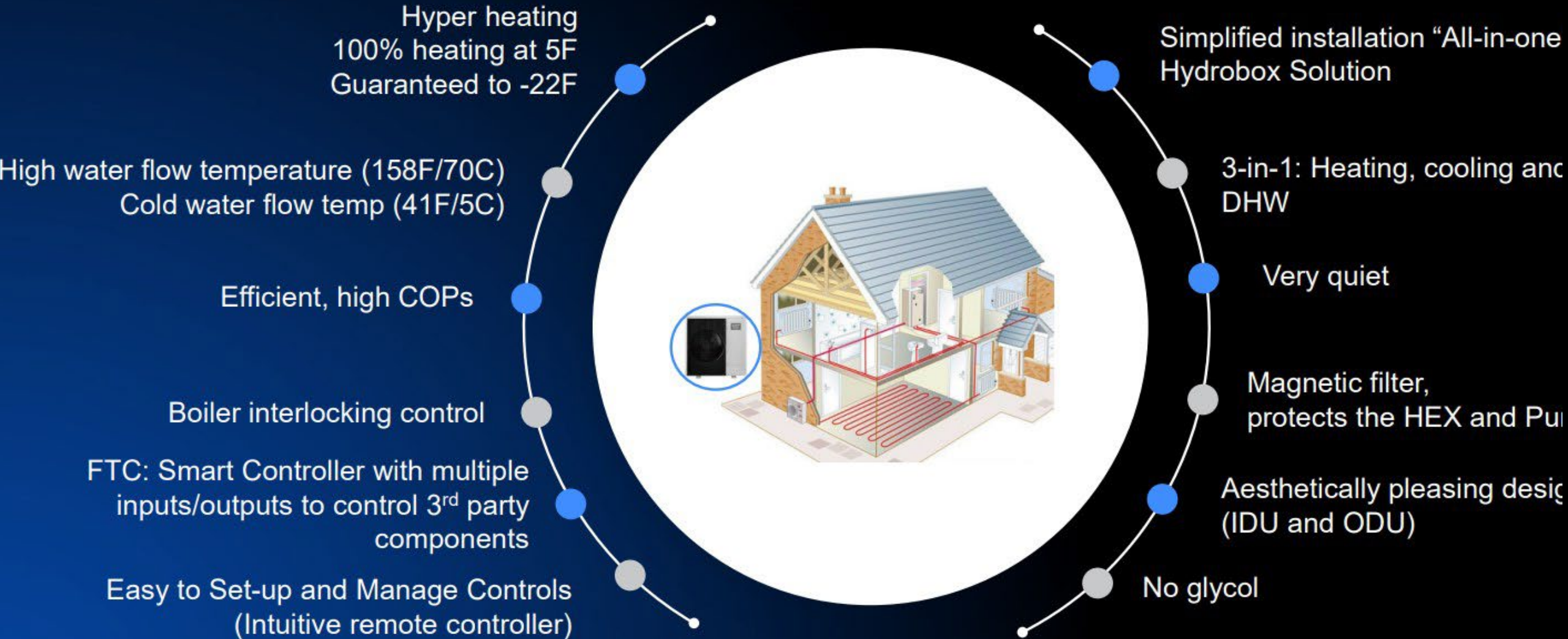
### Some components may be included in the outdoor unit or need local supply

- Service and repair must be conducted outdoors even in cold conditions.

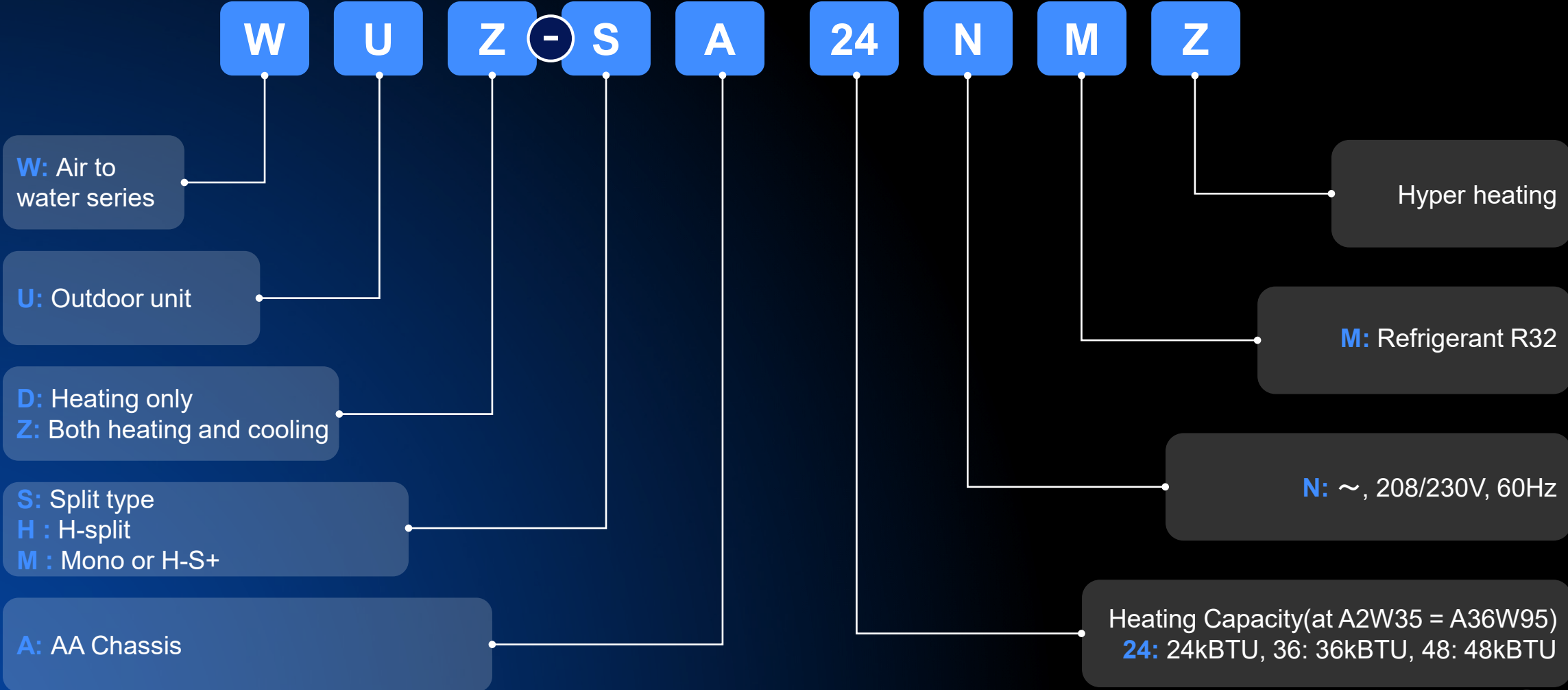
Tailored to plumber

- Water piping

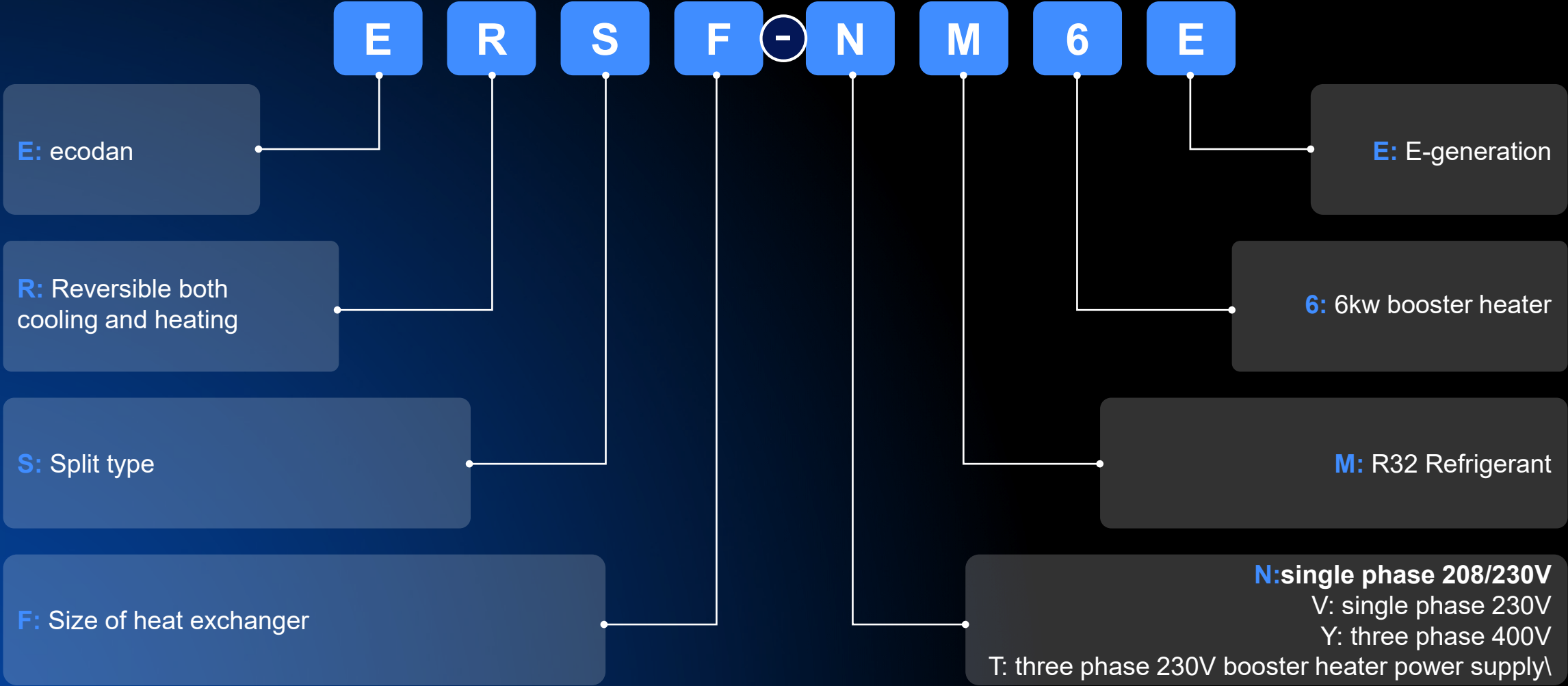
# ecodan<sup>®</sup> BENEFITS OF THE ECODAN SYSTEM



# Outdoor Unit Nomenclature



# Hydrobox Nomenclature



# Super Comfortable In Low Ambient

	Model name	Outlet MAX temp at		
		5F	19F	45F
MELCO R-split	WUZ-SA24/36/48NMZ	140F (high COP)	159F	159F (high COP)
Spacepak Monoblock	CC32-18/40/60	140F 60C *COP = 1	No data	No data
LG Monoblock	KPHTC411/481/551M	131F	135F	149F
Viessman H-split	V020028 V034043 V051078	140F *COP = 1	No data	No data
Chiltrix Monoblock (Chiller)	CX34/35/50	No data	No data	No data

Industry No.1



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# Ecodan Product Overview

“What’s in the Box!”

ecodan®

GASHER

Remove  
protective  
film  
MITSUBISHI  
ELECTRIC  
ecodan  
Renewable Heating Technology  
12  
hi

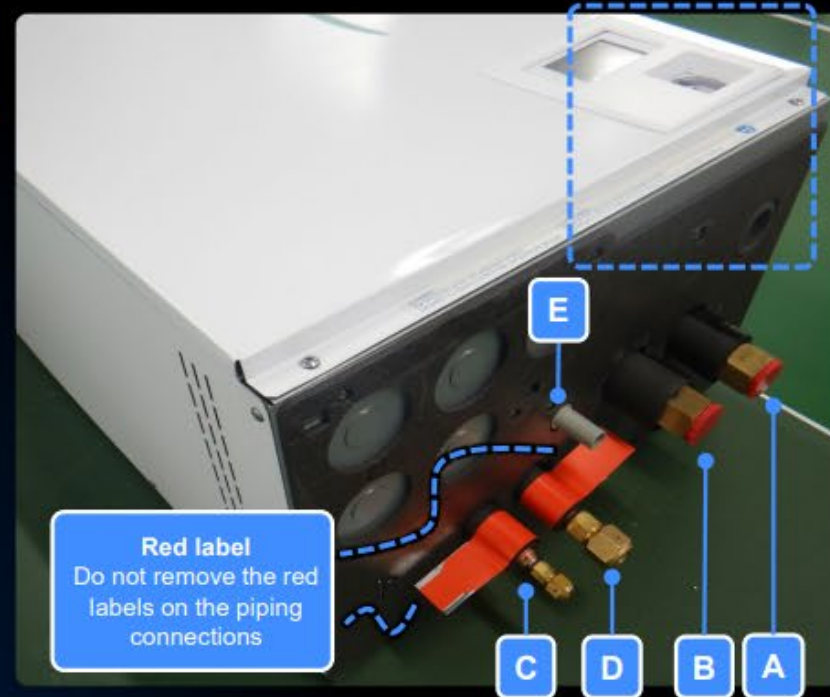
ecodan  
Renewable Heating Technology  
MITSUBISHI  
ELECTRIC



FOR ALL ELECTRICAL WORKS CONTACT A LICENSED ELECTRICIAN  
FOR ALL GAS WORKS CONTACT A LICENSED GAS FITTER  
FOR ALL PLUMBING WORKS CONTACT A LICENSED PLUMBER

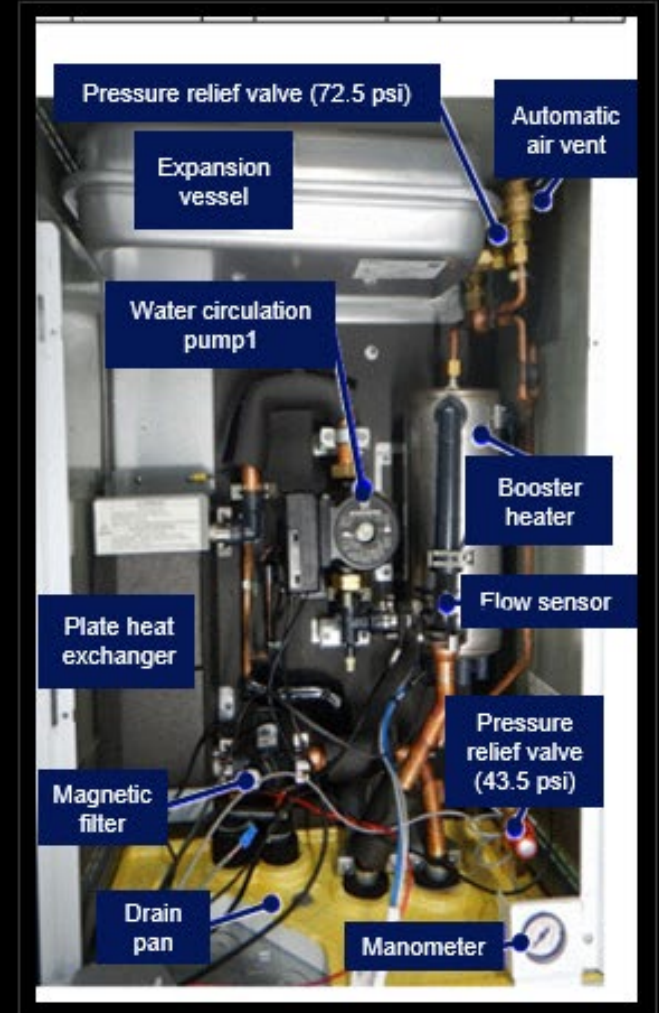
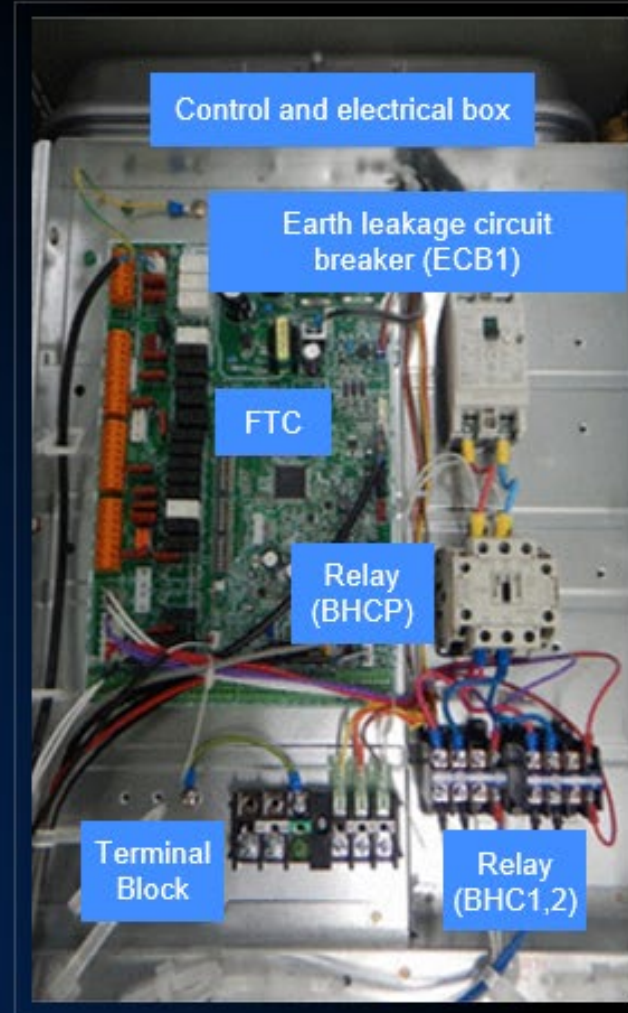
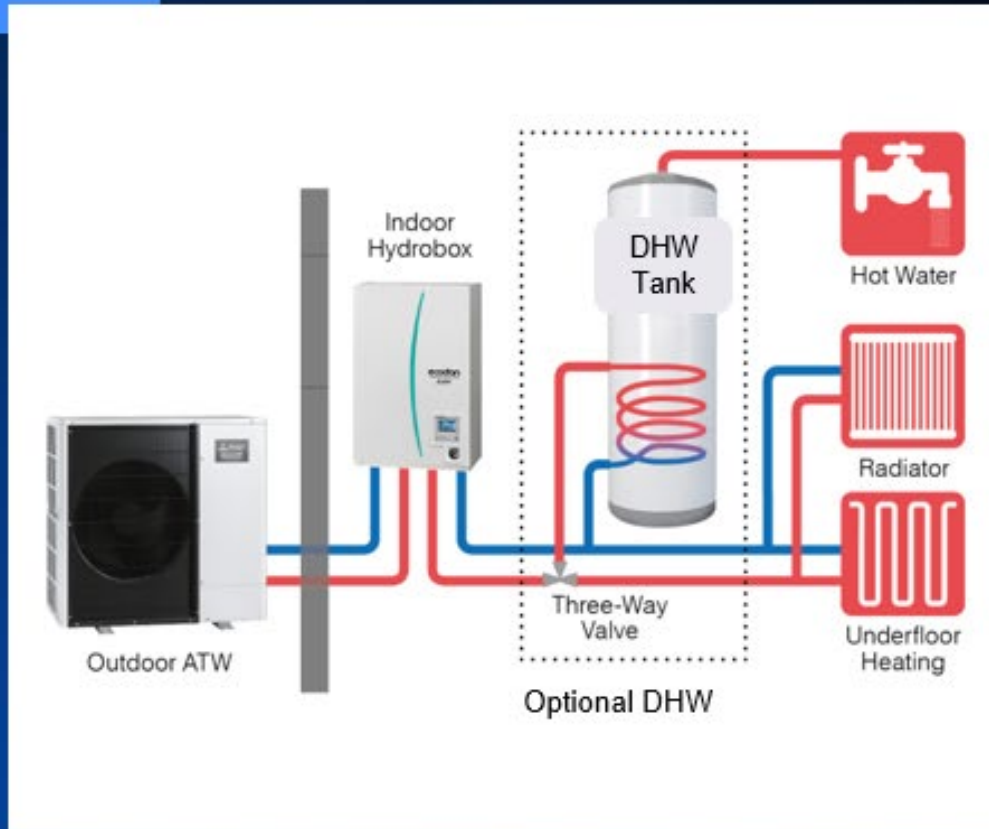
# Water Pipe Work

Symbol	Pipe description	Size • Type
A	Space heating/Indirect DHW tank (primary) RETURN connection	1" NPT Female connection
B	Space heating/Indirect DHW tank (primary) Supply connection	1" NPT Female connection
C	Refrigerant (Liquid)	1/4in (6.35mm)/Flare
D	Refrigerant (Gas)	5/8in (15.88mm)/Flare
E	Drain socket	Outside diameter: 25/32 in. (20 mm)
F	Discharge to drain (from pressure relief valve)	1/2" NPT Female





## Components in Hydrobox



# ecodan® What is a Hydrobox? | Key Components



## Plate heat exchanger

Designed and optimized for the efficient transfer of heat between refrigerant and water



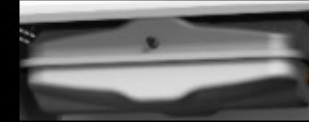
## Magnetic filter

Catches large debris, sediment, and iron particles, supporting system longevity and easier maintenance.



## Pressure relief valve (PRV)

(10):43.5psi, red cap  
(15):72.5psi, black cap  
Protects piping and components from high pressure



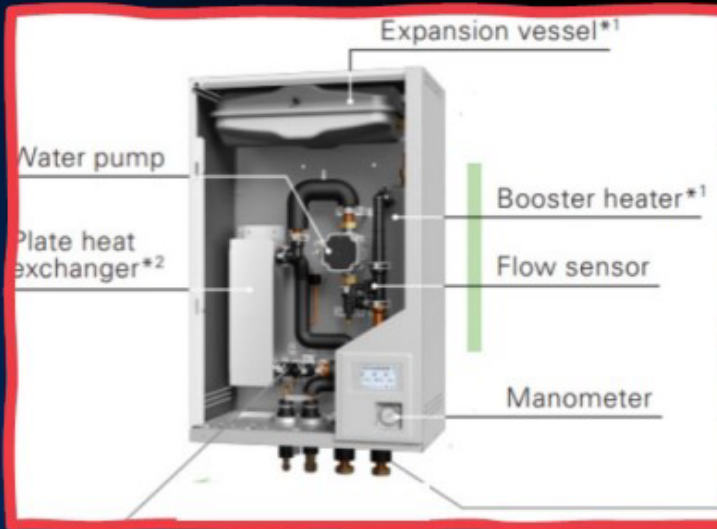
## Expansion vessel

Absorbs the volume expansion of water due to heating - Protects piping and components



## Flow Temp Controller (FTC)

Enables optimized control of the outdoor unit, indoor unit, and water circuit based on ambient and flow temperatures



## Automatic Air Vent (AAV)

Excess air pressure is automatically purged to maintain optimal performance



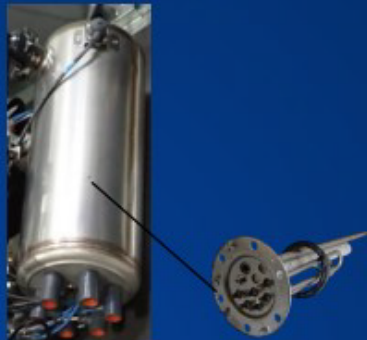
## Manometer

Measures the pressure in the water circuit



## Flow sensor

Maintains water pressure by monitoring the flow rate and automatically adjusting the inverter output for maximum efficiency



## Booster heater

Raises the water temperature with an electric heater. Operates when the heat pump capacity is insufficient.

## Water pump

Circulates water and adjusts the speed of the water flow to maintain comfort



## Drain pan

Collects condensate and drain during cooling mode



# ecodan® System Function Overview: FTC = the Brain

Outdoor



FTC

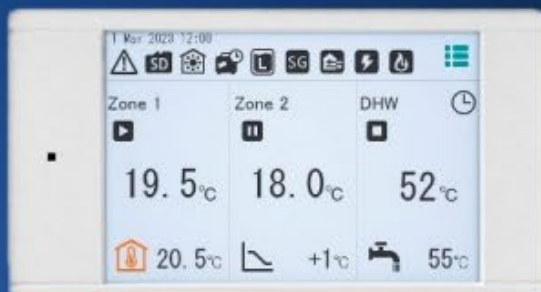


Output signal

3-way valve, etc



Remote Controller



Input signal

Thermistor, Room thermostat, etc



## OUTPUT



## INPUT

### Output

230 VAC signals

- 3-way valve control
- External pump ON/OFF control

### Input

- Thermostat signal input, Pump operation signal input
- Cooling mode, Zone controller input

### Dip-SW

- General operation settings
- Mode change for optional modes

### SD card

- Operation data logging
- Function setting copy/transfer for easy installation

# ecodan<sup>®</sup> THERMISTORS



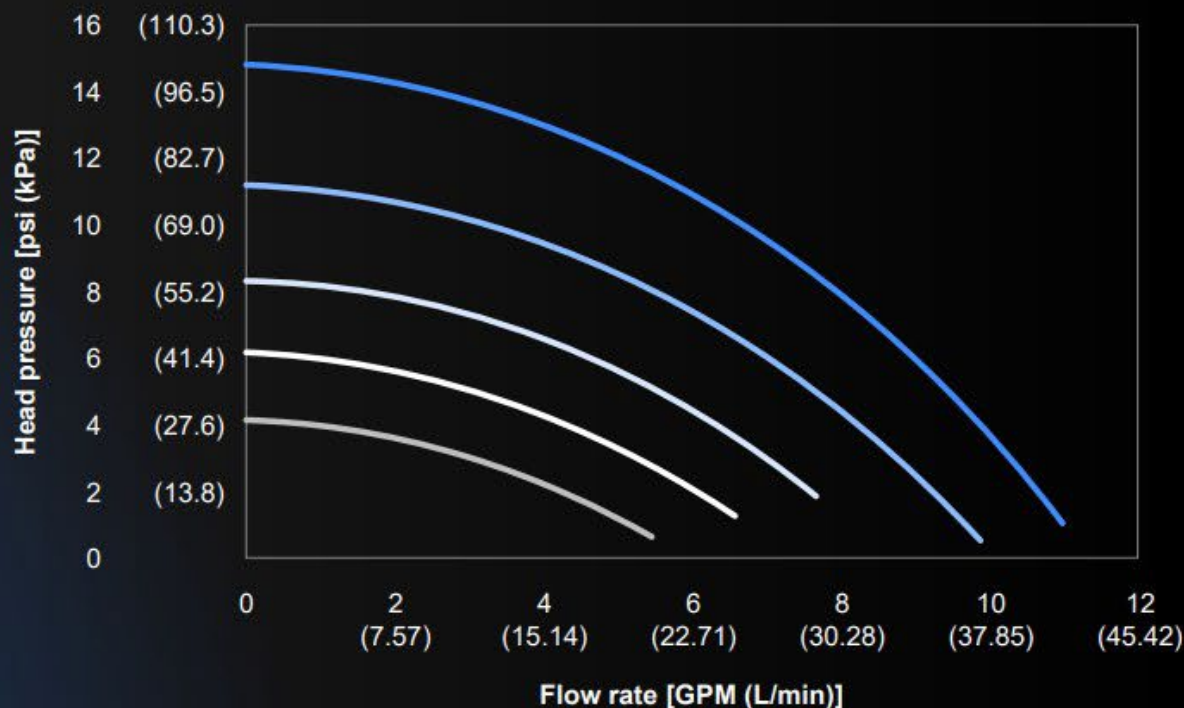
Each thermistor is necessary depending on the application



All thermistors are included in the indoor unit package

Name	THW6	THW7	THW5B	THWB1
Appearance				
For what?	Supply temp from Buffer tank	Return temp from Buffer tank	DHW tank temp	Boiler supply temp
Lead wire length <Optional parts>	197 in (5m)	197 in (5m)	197 in (5m) <1181 in(30m)>	197 in (5m) <1181 in(30m)>

# ecodan<sup>®</sup> COMPONENTS IN THE HYDROBOX: CIRCULATOR



— Pump speed 5      — Pump speed 3      — Pump speed 1  
— Pump speed 4      — Pump speed 2

### Notes:

1. If the water flow rate is less than the minimum flow rate, a flow rate error will appear.
2. If the water flow rate exceeds 9.7 GPM (36.9 L/min), the flow speed will be greater than 6.6 ft/s (2.0 m/s), which could erode the pipes.

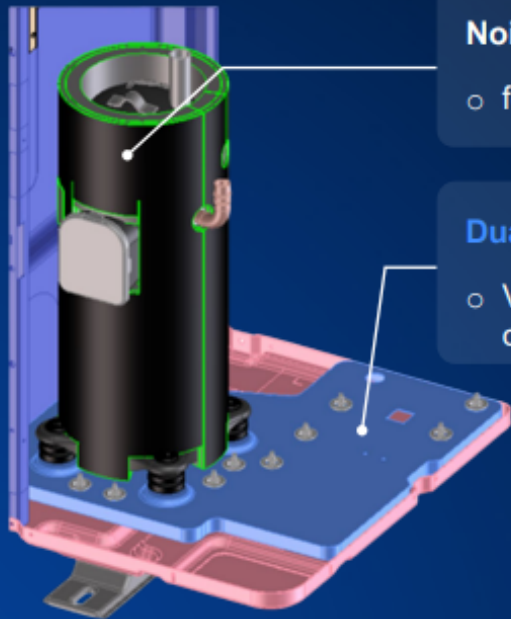
Outdoor heat pump unit		Recommend flow	
		L/min	gallon/min
Split model WUZ series	WUZ-SA24NMZ	14.3	3.8
	WUZ-SA36NMZ	17.9	4.7
	WUZ-SA48NMZ	25.1	6.6

# ecodan® NEW OUTDOOR UNIT DESIGN



## Dual Anti-vibration and 6-layer sound jacket

Anti-vibration structure contributes to reduced operating noise and achieves whisper silent operation (43 dbA)



### Noise reduction insulation

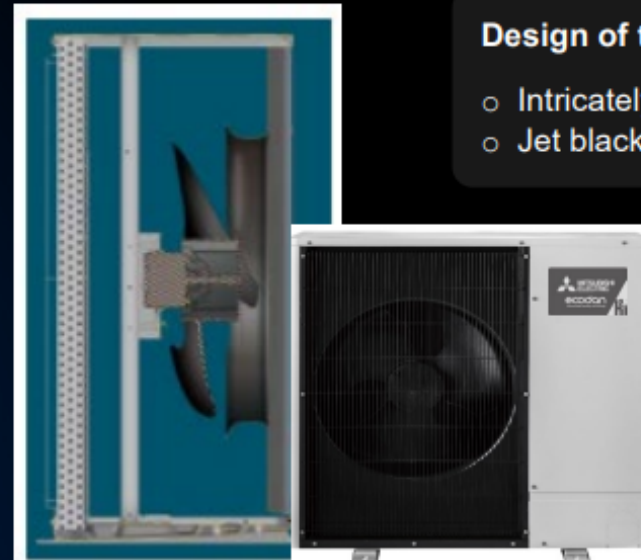
- o felt x 3 & rubber x 3 (6-layer structure)

### Dual anti-vibration measures

- o Vibration dampener systems on compressor and bottom plate

## Cabinet designed for silent operation

The elegantly designed outdoor unit, with its discreetly tucked-away fan, blends in with the ambiance.



### Design of the grill

- o Intricately designed tight mesh
- o Jet black

### Larger fan

- o Optimized bell-mouth
- o Low fan speed to reduce noise while maintaining airflow/HX

# Breaker Sizes

<b>WUZ-SA24NMZ</b>	<b>30A BREAKER</b>
WUZ-SA36NMZ	35A BREAKER
WUZ-SA48NMZ	40A BREAKER

<b>ERSF-NM6E</b>	<b>35A BREAKER</b>
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# Electrical Wiring Installation

## Summary

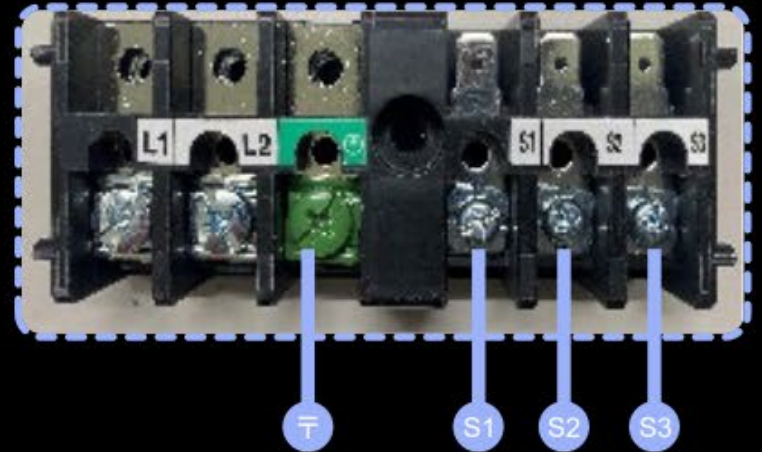
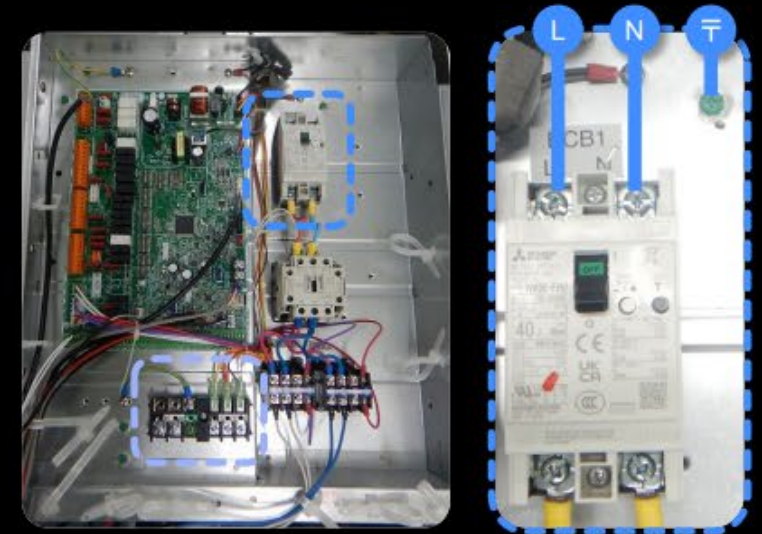
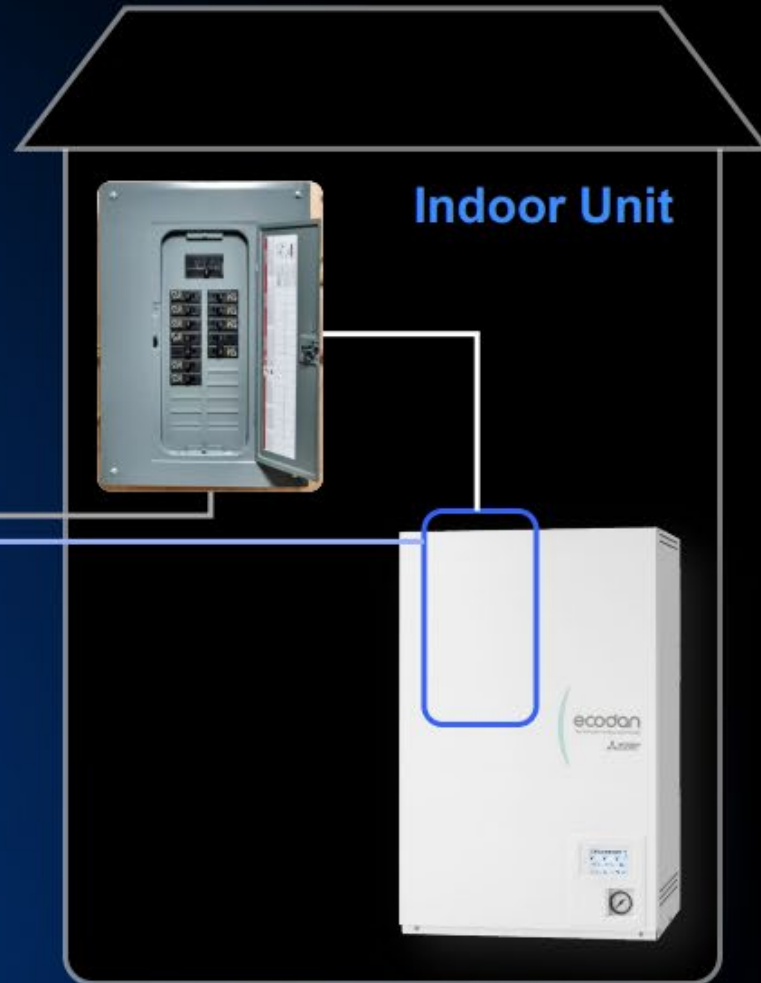
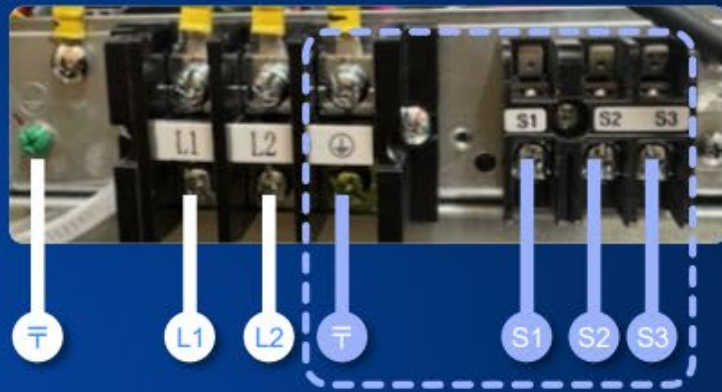
**Breaker size : 35A for Booster heater**  
(Refer to Indoor unit Installation Manual )

**Breaker size : 30~40A for OU and IU**  
(Refer to Outdoor unit Installation Manual )



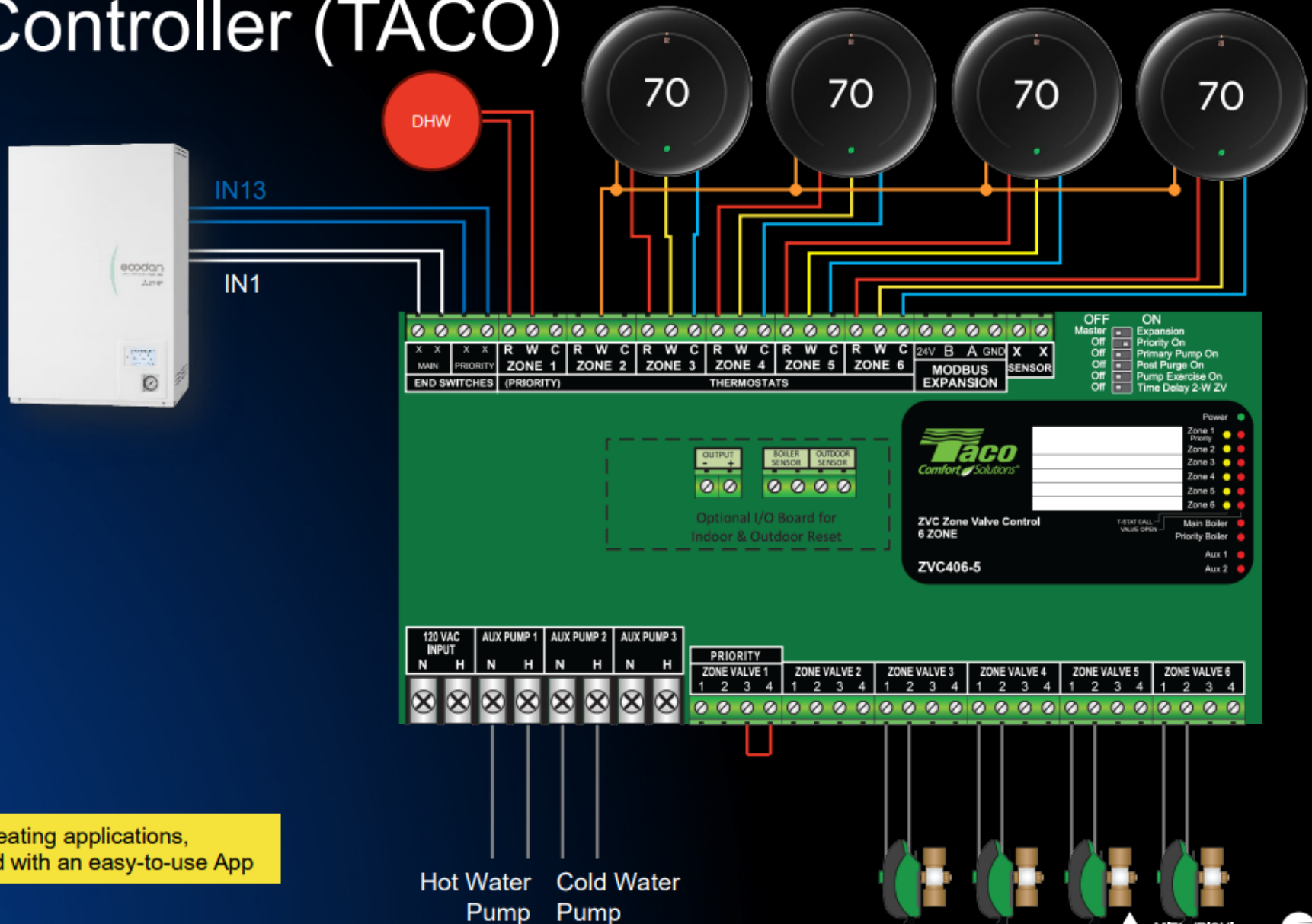
**Outdoor Unit**

*Refer to outdoor unit Installation manual*



# Zone Valve Controller (TACO)

- The TACO Zone Valve Controller can allow for Smart Thermostats compatibility with “R” and “C” connectors.
- The TACO Zone Valve Controller can be setup for Heating only applications, or Heating and Cooling applications.
- The smart thermostats can be configured and wired for “Heat Pump” application so that the customer has the option to select:
  - Heat, Cool, or Auto mode
  - Heat setpoint
  - Cool setpoint
  - Dual setpoint
- The TACO App makes it very easy to setup settings through Bluetooth for Heating and Cooling applications:
  - Assign pumps
  - Assign zones
  - Assign Cooling Call Input (Zone 2)



Recommended when doing COOLING & Heating applications, simplifies/reduces additional relays required with an easy-to-use App

# Easy Installation And Maintenance

## Features Summary



Quick setup guide available



All-in-one Hydrobox with front access for all components



Intuitive color remote controller

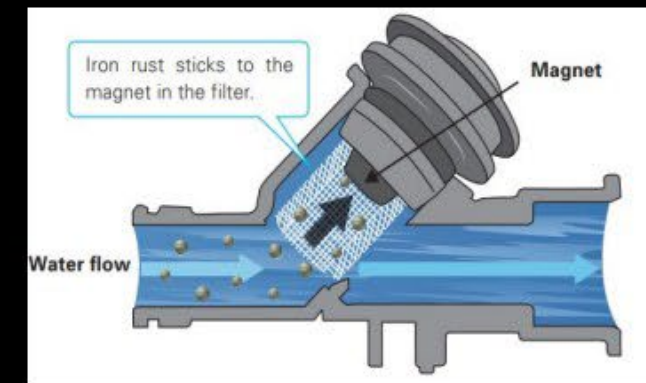
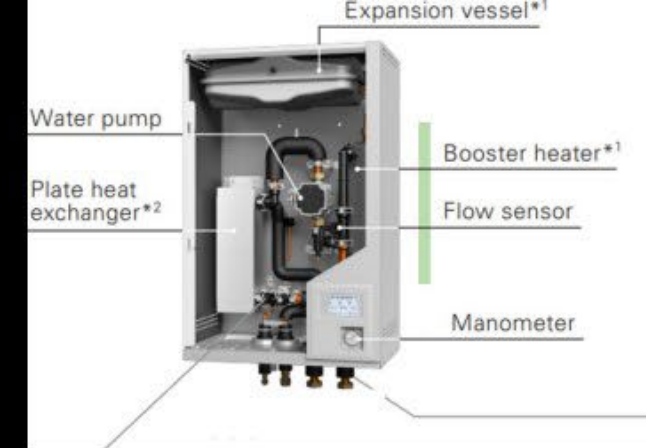


Less frequent maintenance than H-split/monobloc packaged system



Less risk of scale: Magnetic filter

- Catches large debris, sediment, and iron particles before they can impact the plate heat exchanger, pump, or other piping, supporting system longevity and easier maintenance.



# ecodan® QUICK START WIZARD

## System Control Scheme













You can select the control scheme for both heating and cooling.

<Back

Control logic

Next >

	Zone 1			
	Zone 2			
	Zone 1			
	Zone 2			

## System Control Options



### Heating room temperature Auto adaptation

- Not available when using a buffer tank.



### Weather compensation curve

- Water flow temperature can be adjusted according to the ambient temperature from TH7.
- Trigger points of the ambient temperature and target water flow temperature are adjustable.



### Flow temperature

- Set the flow temperature manually to match the space heating/cooling system design and customize user's desired requirements.

# ECODAN PRODUCT OVERVIEW

Applications / Water Circuit Configurations

# System Water Volume

Pipe Size	Multiplier		Total Feet		Gallons
1/2"	0.0132	x	100	=	1.32
3/4"	0.0269	x	100	=	2.69
1"	0.0454	x	100	=	4.54
1 1/4"	0.0681	x		=	0.00
1 1/2"	0.0951	x		=	0.00
2"	0.165	x		=	0.00
2 1/2"	0.254	x		=	0.00

# Example for Hydronic Baseboard



GPM @160



GPM @ 160



# Heat Emitter Calculation

## Typical Hydronic Baseboard Output (BTU/hr per linear foot) [🔗](#)

*Based on 1 GPM Flow Rate* [🔗](#)

**Average Water Temp** [🔗](#)

**Output (Approx BTU/hr/ft)**

200°F

600 - 800+

180°F

500 - 600

160°F

350 - 450



140°F

200 - 300

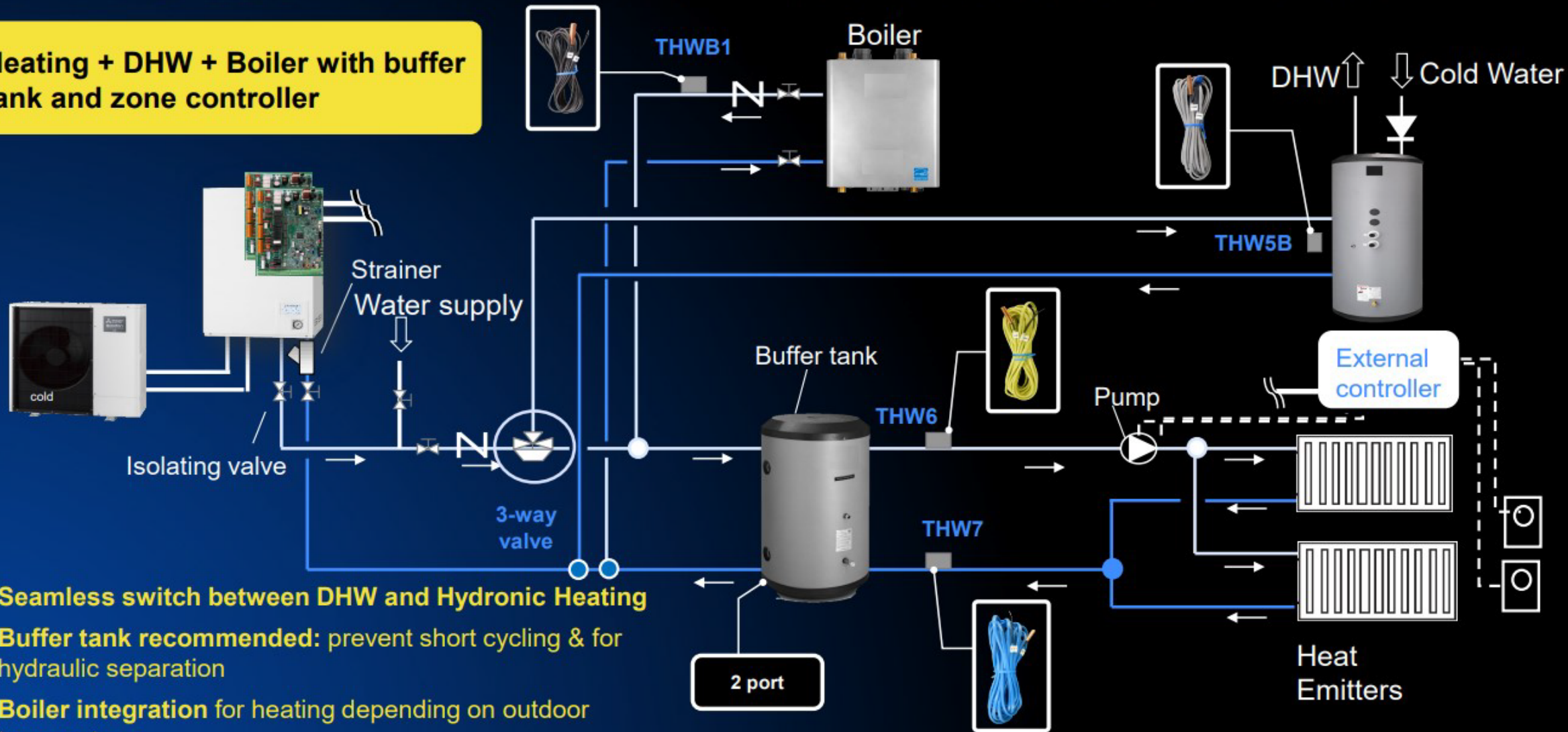
120°F

100 - 200 (Low Temp)



# RETROFIT APPLICATION: HEAT + DHW

Heating + DHW + Boiler with buffer tank and zone controller

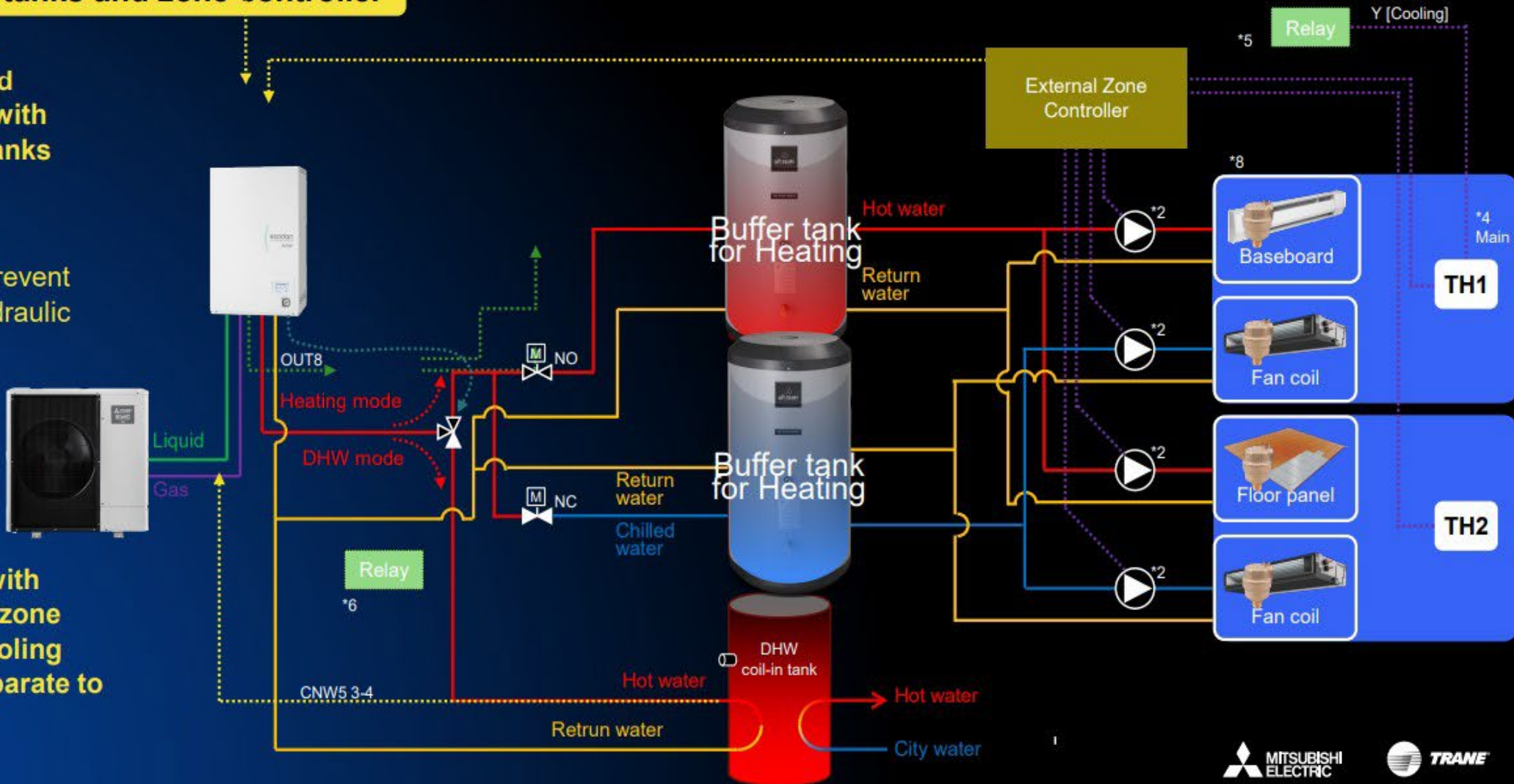


- **Seamless switch between DHW and Hydronic Heating**
- **Buffer tank recommended:** prevent short cycling & for hydraulic separation
- **Boiler integration** for heating depending on outdoor temperature
- **Easily integrate with existing external/zone controller**

# ecodan® RETROFIT APPLICATION: HEAT/COOL + DHW

Heating + Cooling + DHW with two separate buffer tanks and zone controller

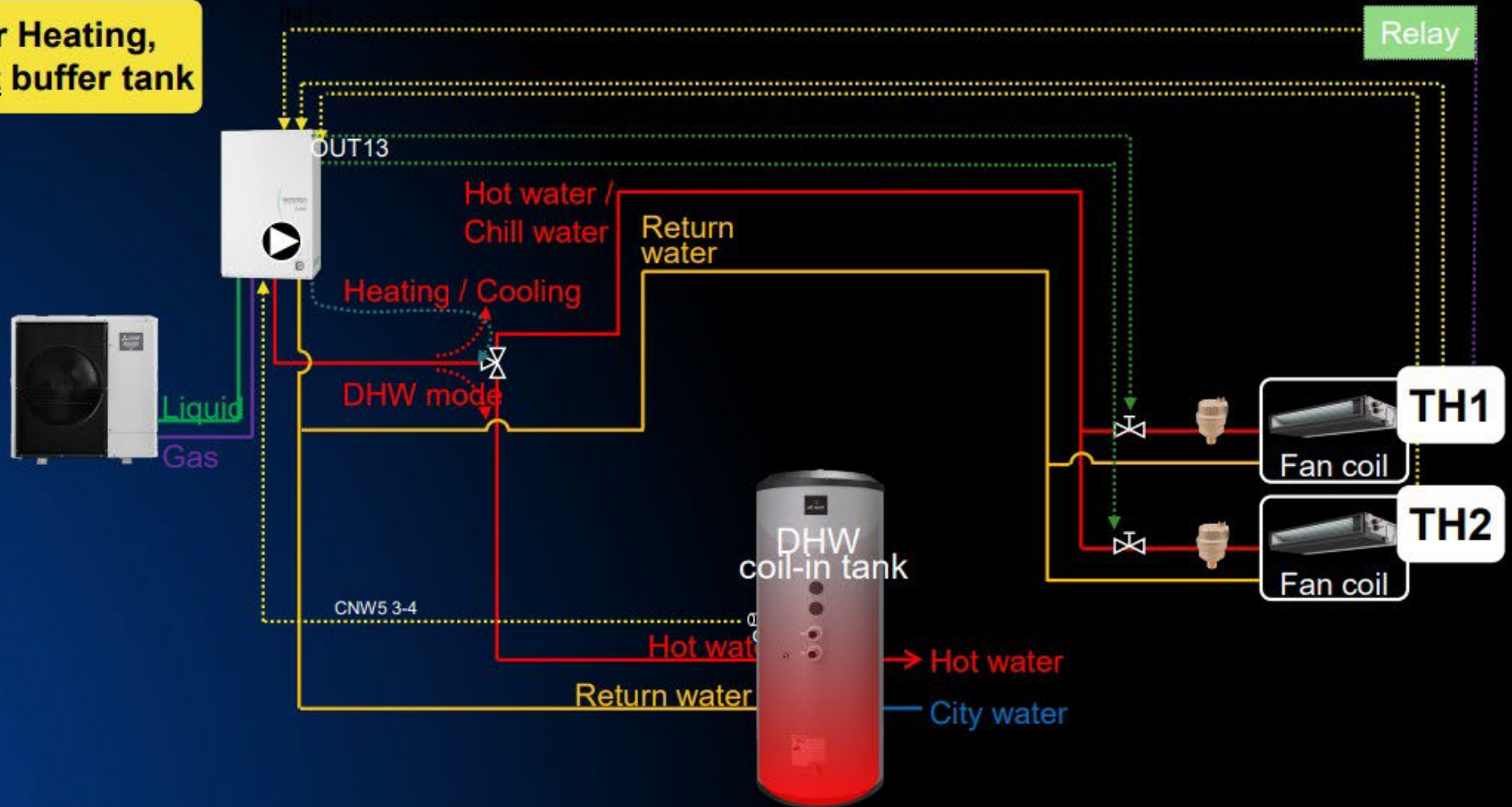
- Seamless switch between DHW and Heating/Cooling with separate buffer tanks
- Buffer tank recommended: prevent short cycling & hydraulic separation
- Easily integrate with existing external/zone controller and cooling thermostat (if separate to heating)



# ecodan® NEW CONSTRUCTION APPLICATION

2 zone direct control for Heating, Cooling & DHW without buffer tank

- Seamless switch between DHW and Hydronic Heating and Cooling
- Direct zoned control save additional costs for external zone controller and pumps





MITSUBISHI ELECTRIC TRANE HVAC US

# Ecodan Product Overview

Does it work?



ecodan®



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Thank You!

