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/ft2)

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

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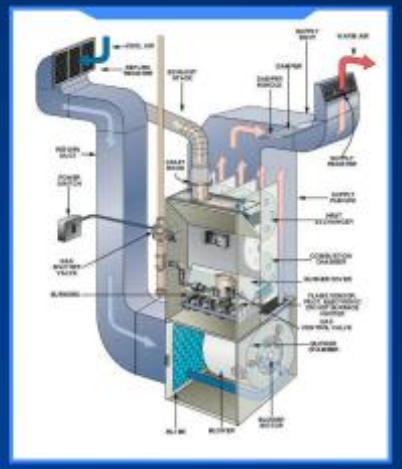
WHAT IS ATW? | TRADITIONAL HEATING SYSTEMS

Furnace

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



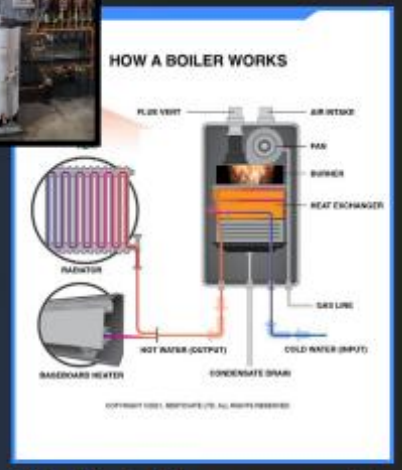
*For illustrative purpose only.

VS

Boiler

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

Hydronic Heating



*For illustrative purpose only.

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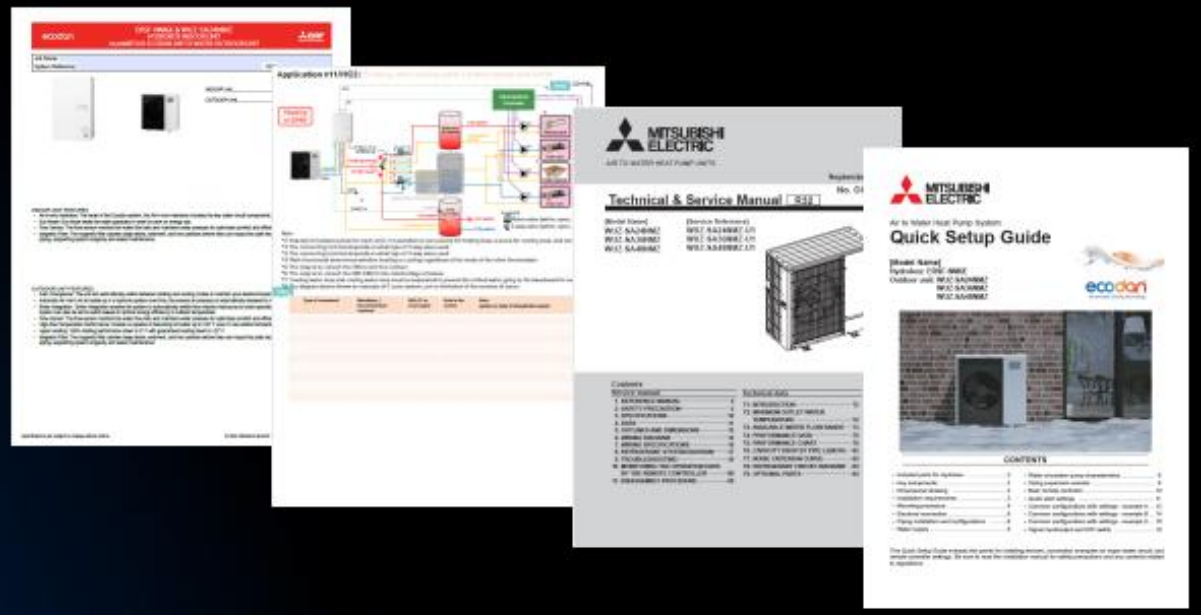
ecodan LAUNCH PLAN

Nov 25th

- 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



ecodan

ERSF-NM6E & WUZ-SA24NMZ
HYDROBOX INDOOR UNIT
24,000BTU/H ECODAN AIR TO WATER OUTDOOR UNIT

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 pressures is automatically purged to maintain optimal performanc
- Flow Sensor: The flow sensor maintains water pressure by monitoring the water flow rate and automatically adjusting the inverter output for maximu 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 oth 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. T 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 arou the compressor. The unit also offers a three-stage low-noise mode.
- Refrigerant Split System: A split system with R32 refrigerant

airwave NEWS BULLETIN

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 temperature.
- 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)

airwave NEWS BULLETIN

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

RODUCT INFORMATION:

- Product overview presentation
- Product launch guide
- Manuals and submittals available on MitsubishiPro.com.
- Model numbers, model codes, package dimensions, package weights, and UPC codes

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

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

OR DISTRIBUTORS ONLY: Pricing is available in the Distributor Portal.

or more information, please contact your local METUS representative.

ecodan TRAINING, SUPPORT AND TOOLS

Training Courses	Details
Product Overview (Completed)	• What is ATW?, Market Overview, Product Details, Launch Plan
Hydronic system Fundamentals (Jan 27)	• Basics of hydronic systems • Overview of hydronic systems, components overview/functions, applications
Introduction to Air-to-water heat pump systems/Applications (Jan 27)	• ATW heat pump sizing • Retrofitting high temperature hydronic systems with air-to-water heat pumps • Control/Wiring configuration with existing zone control system • Issues to avoid
Ecodan Essentials (In-person training) (Jan 27)	• Comprehensive overview of ecodan product, its components, and how models are selected using design software. • Installation guidelines are covered in detail for both the Ecodan unit and required components including functional operation of the system. • Settings, configuration, and startup procedures are outlined along with temperature control methods and remote controller operation. • Basic operation, startup faults, and the collection of maintenance data are also covered.
E-learning Installation Overview (Jan 27)	• Comprehensive overview of ecodan product, its components, and how models are selected using design software. With assessment questions (required for extended warranty)
Field Service Seminar (Jan 27)	• 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.

TRAINING, SUPPORT AND TOOLS | SELECTION TOOL

Platforms:
- Web based (MPro), phone friendly

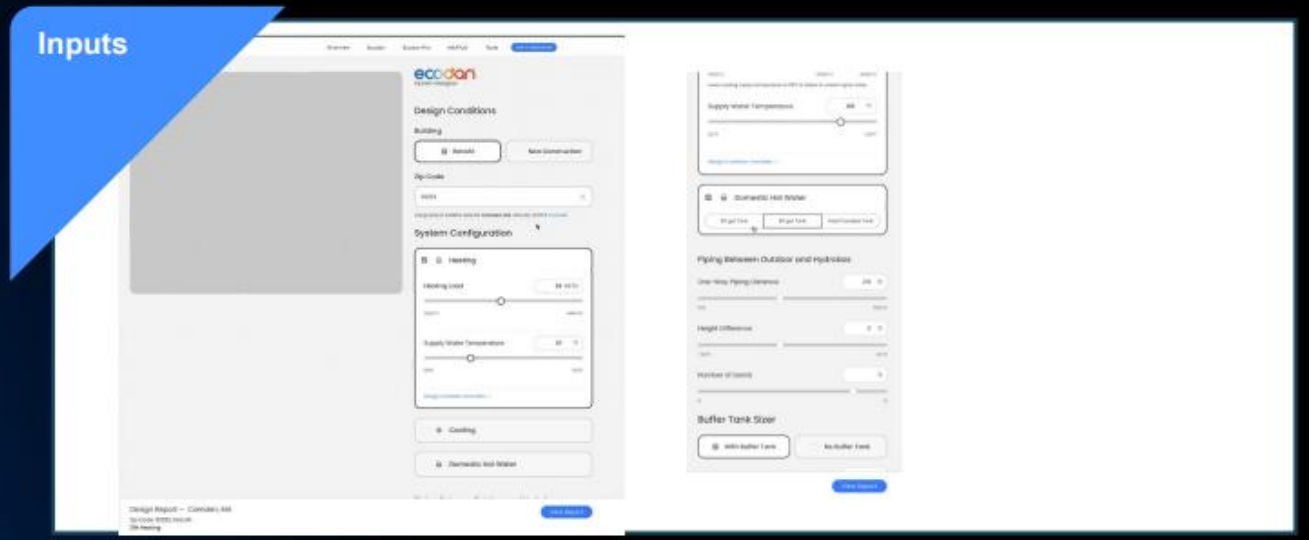
Inputs:
- Location, heat emitter type, heat/cool, DHW, buffer tank, boiler interlock, replacement.new construction, etc.

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



ecodan Renewable Heating Technology 1-Phase | HYDRONIC HEAT/COOL & DHW

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**

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ecodan BENEFITS OF THE ECODAN SYSTEM

- Hyper heating
  100% heating at 5F
  Guaranteed to -22F
- High water flow temperature (158F/70C)
  Cold water flow temp (41F/5C)
- Efficient, high COPs
- Boiler interlocking control
- FTC: Smart Controller with multiple inputs/outputs to control 3rd party components
- Easy to Set-up and Manage Controls (Intuitive remote controller)

- Simplified installation “All-in-one” Hydrobox Solution
- 3-in-1: Heating, cooling and DHW
- Very quiet
- Magnetic filter, protects the HEX and Pu
- Aesthetically pleasing desig (IDU and ODU)
- No glycol

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Outdoor Unit Nomenclature

W: Air to water series

U: Outdoor unit

D: Heating only
Z: Both heating and cooling

S: Split type
H : H-split
M : Mono or H-S+

A: AA Chassis

Heating Capacity(at A2W35 = A36W95)
24: 24kBTU, 36: 36kBTU, 48: 48kBTU

N: ～, 208/230V, 60Hz

M: Refrigerant R32

Hyper heating

Hydrobox Nomenclature

E: ecodan

R: Reversible both cooling and heating

S: Split type

F: Size of heat exchanger

N: **single phase 208/230V**
V: single phase 230V
Y: three phase 400V
T: three phase 230V booster heater power supply\

M: R32 Refrigerant

6: 6kw booster heater

E: E-generation

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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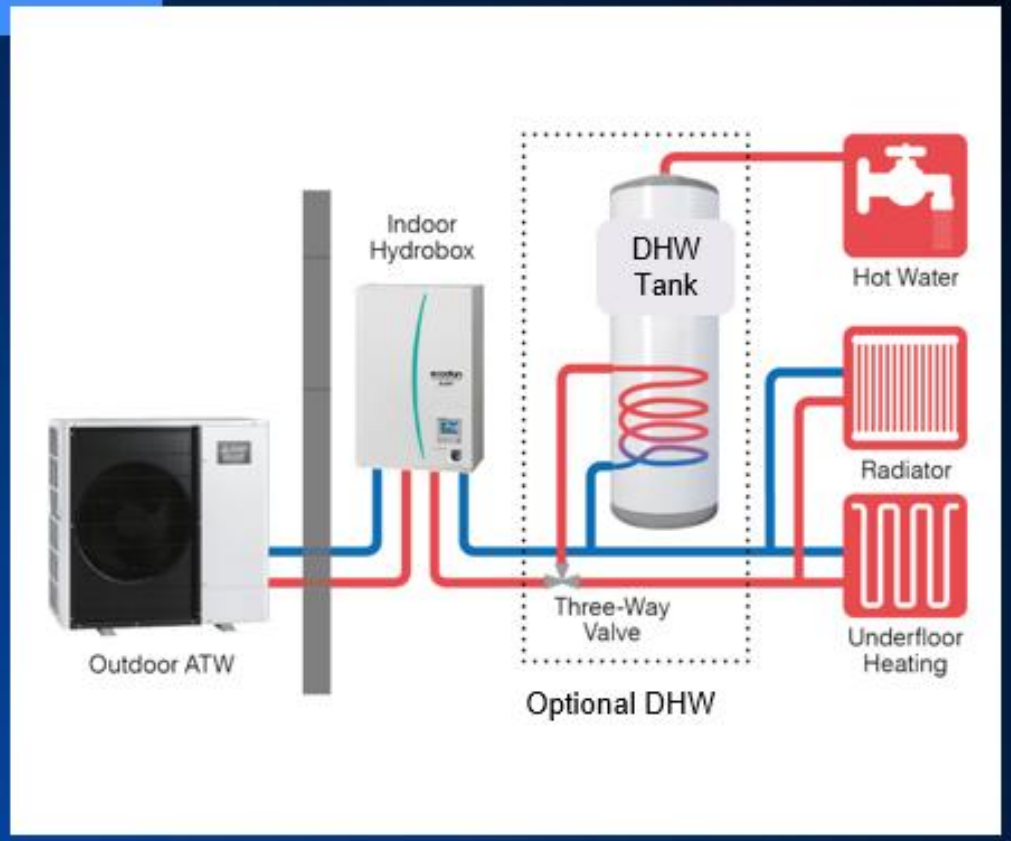
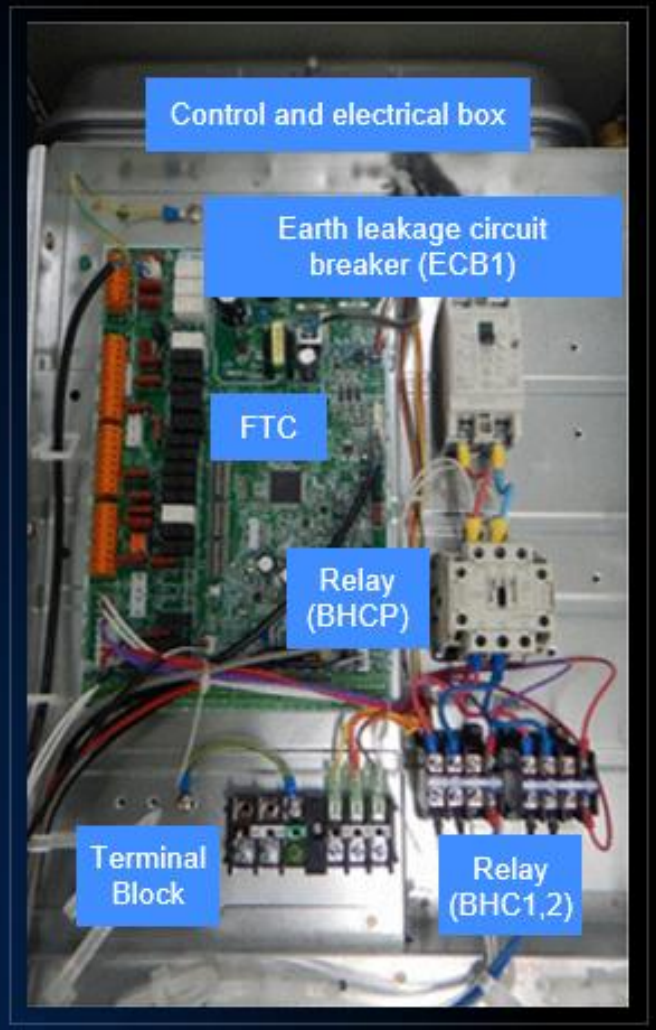
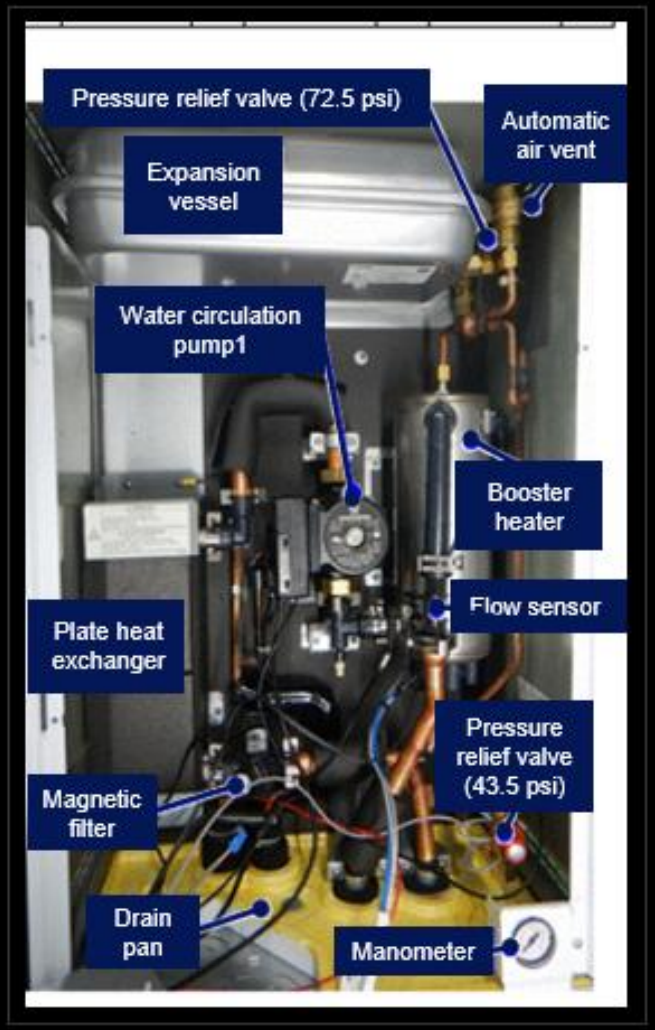
1-Phase | HYDRONIC HEAT/COOL & DHW

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

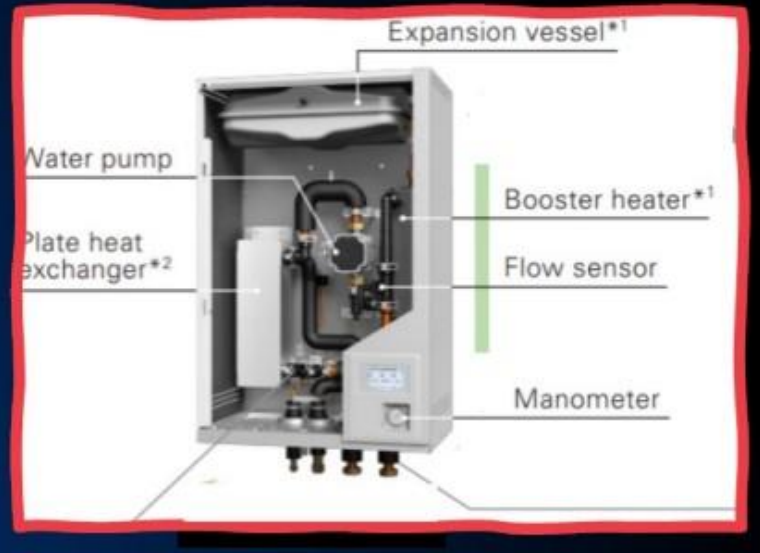
Absorbs the volume expansion of water due to heating - Protects piping and components

Flow Temp Controller (FTC)

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

Booster heater

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



Automatic Air Vent (AAV)

Excess air pressure is automatically purged t 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

Water pump

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

Drain pan

Collects condensate and drain during cooling mode

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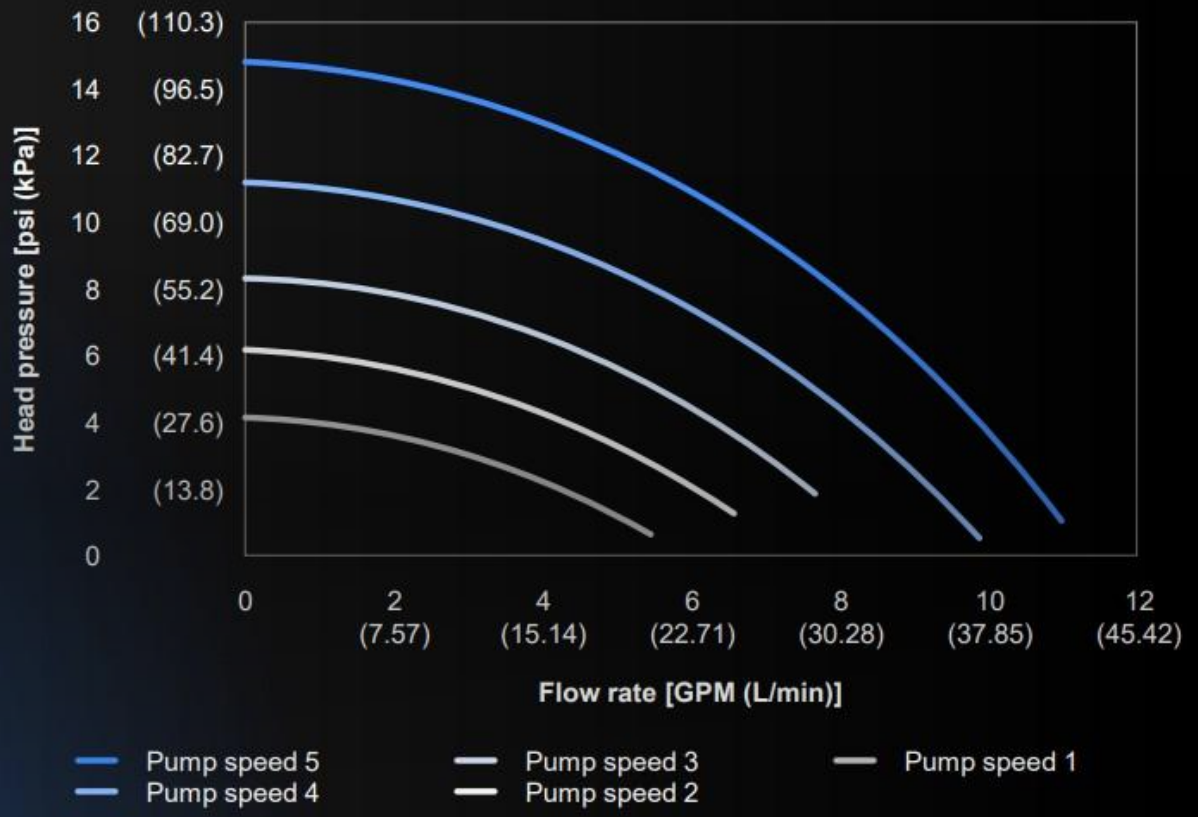
ecodan COMPONENTS IN THE HYDROBOX: CIRCULATOR



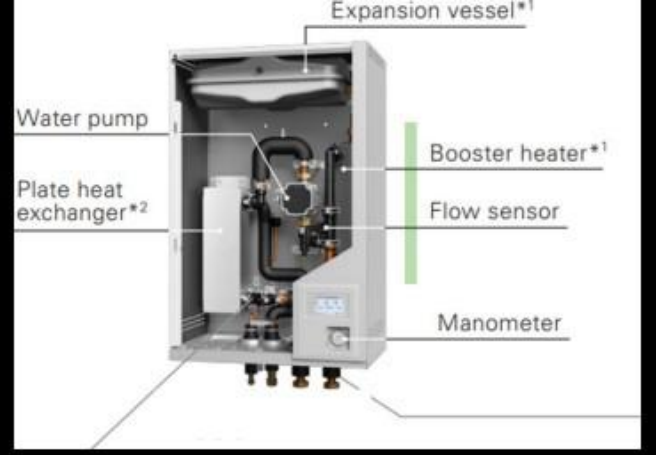
Outdoor heat pump unit		Recommend flow	
		L/min	gallon/min
Split model WUZ series	WUZ-SA24NMZ	14.3	3.8
	WUZ-SA36NMZ	17.9	4.7
	WUZ-SA48NMZ	25.1	6.6

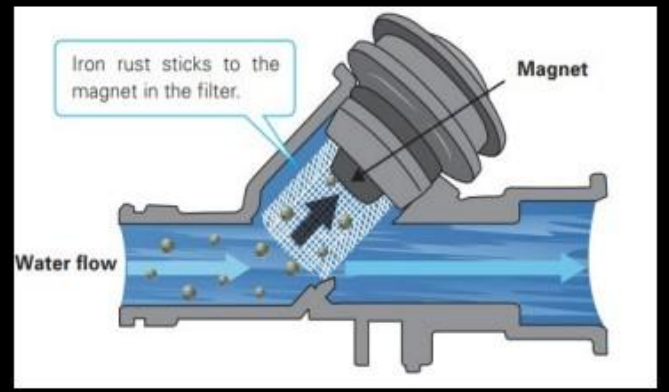
Notes:
1. If the water flow rate is less than the minimum flow rate, a flow rate error will appear.
2. If the water flow rate exceeds 9.7 GPM (36.9 L/min), the flow speed will be greater than 6.6 ft/s (2.0 m/s), which could erode the pipes.

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.

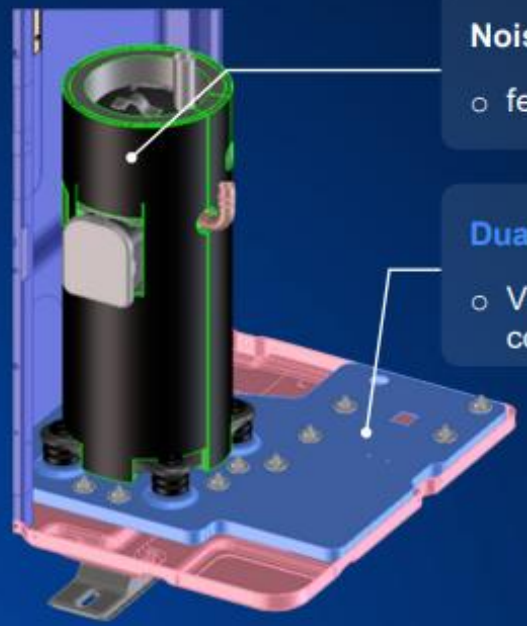




ecodan NEW OUTDOOR UNIT DESIGN

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

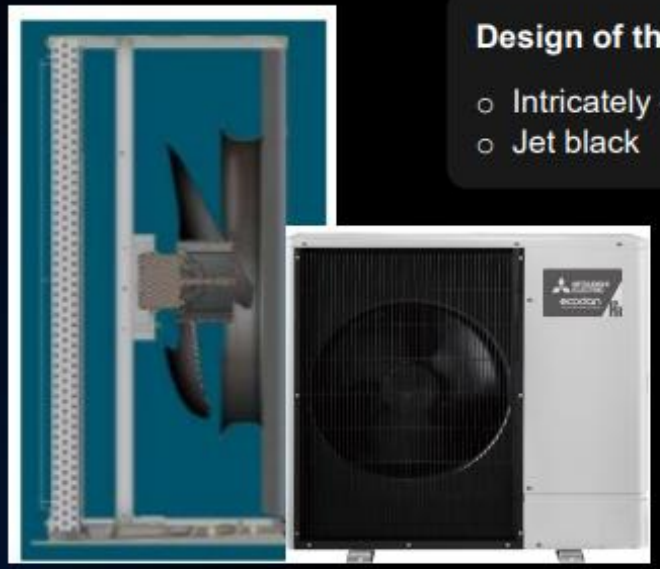
- felt x 3 & rubber x 3 (6-layer structure)

Dual anti-vibration measures

- 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

- Intricately designed tight mesh
- Jet black

Larger fan

- Optimized bell-mouth
- Low fan speed to reduce noise while maintaining airflow/HX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GASHER
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Renewable Heating Technology
12 hi


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ECODAN PRODUCT OVERVIEW

Applications / Water Circuit Configurations

Breaker Sizes

WUZ-SA24NMZ	30A BREAKER
WUZ-SA36NMZ	35A BREAKER
WUZ-SA48NMHZ	40A BREAKER

ERSF-NM6E	35A BREAKER

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

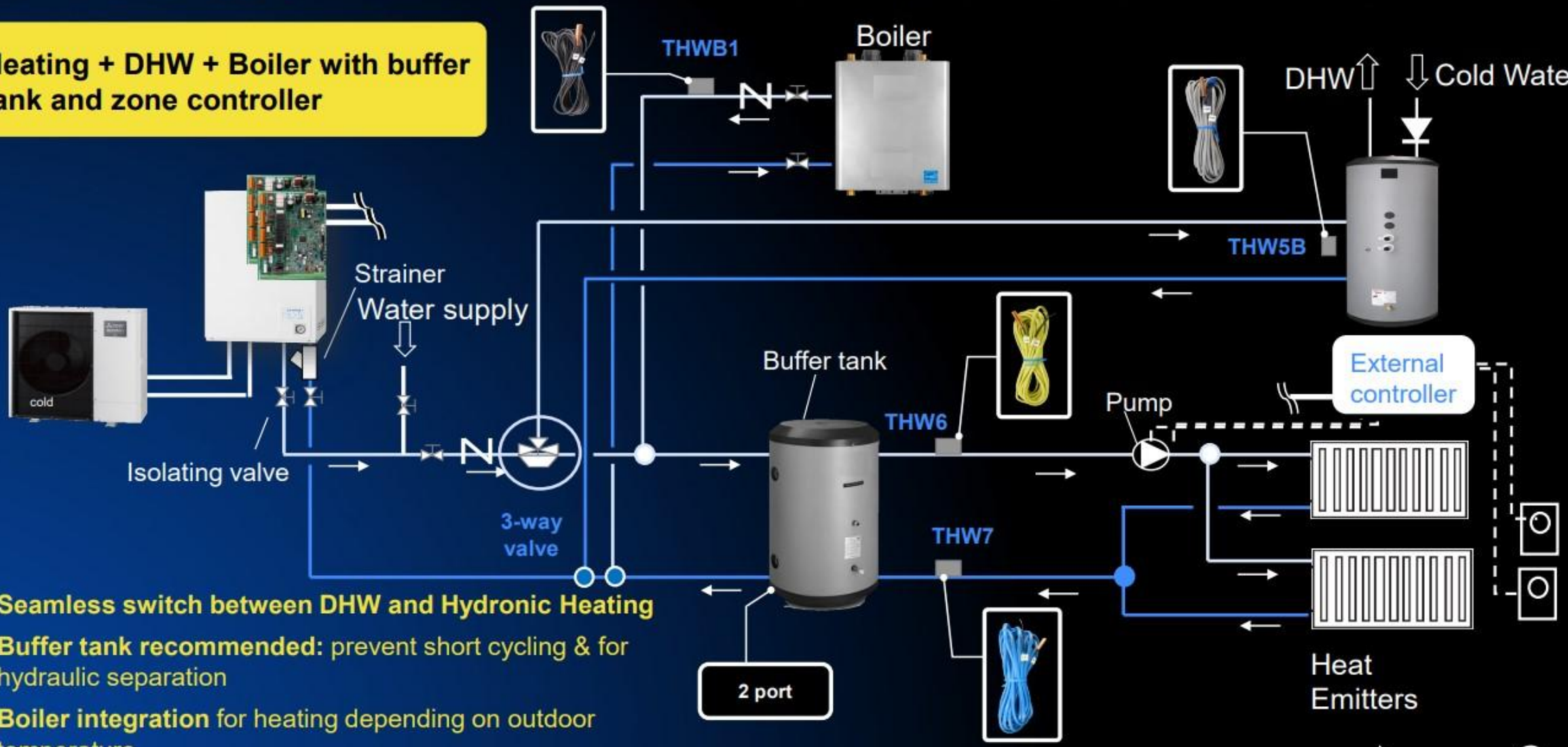
Typical Hydronic Baseboard Output (BTU/hr per linear foot)

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)

ecodan 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**

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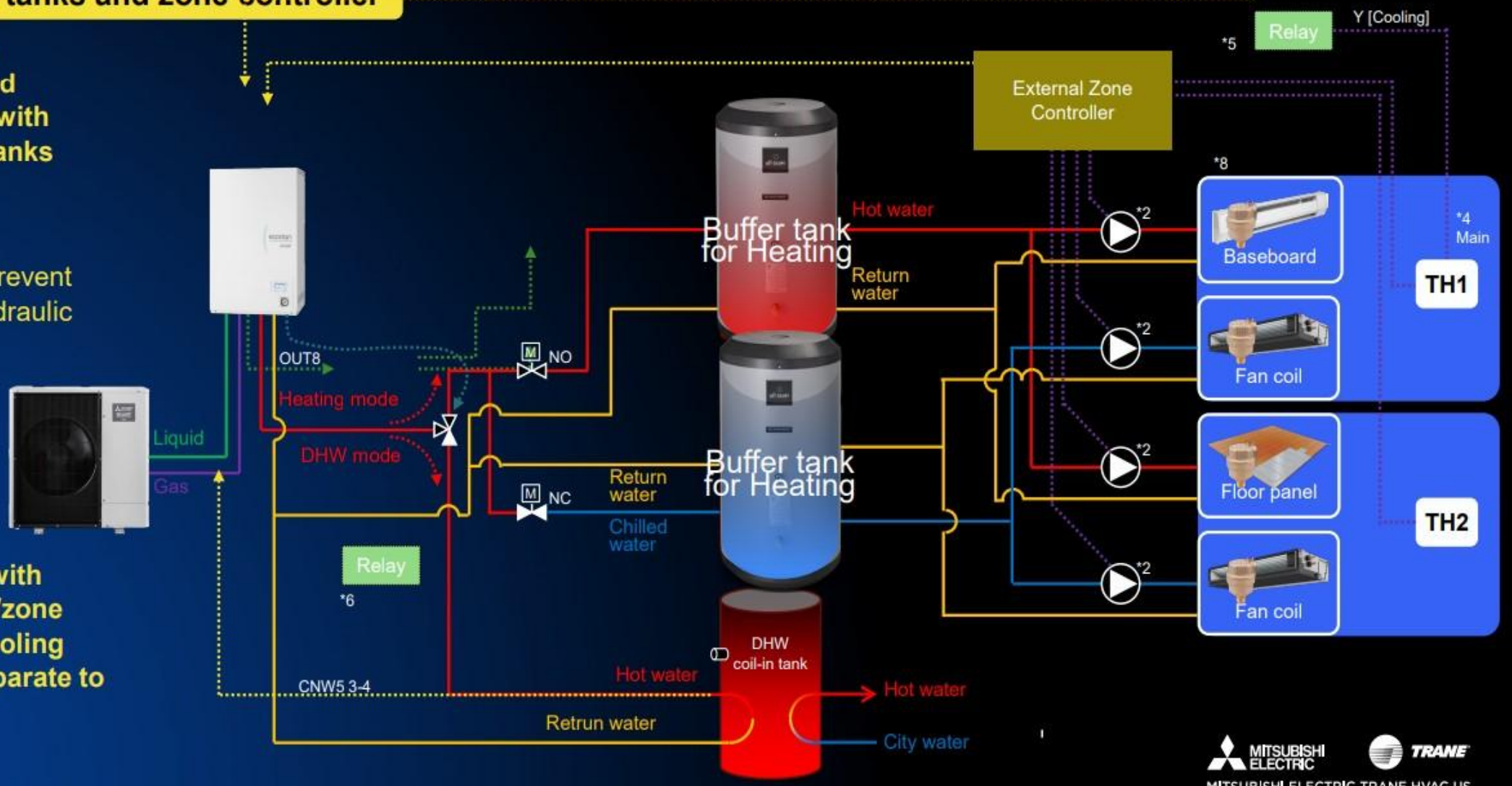
ecodan RETROFIT APPLICATION: HEAT/COOL + DHW

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

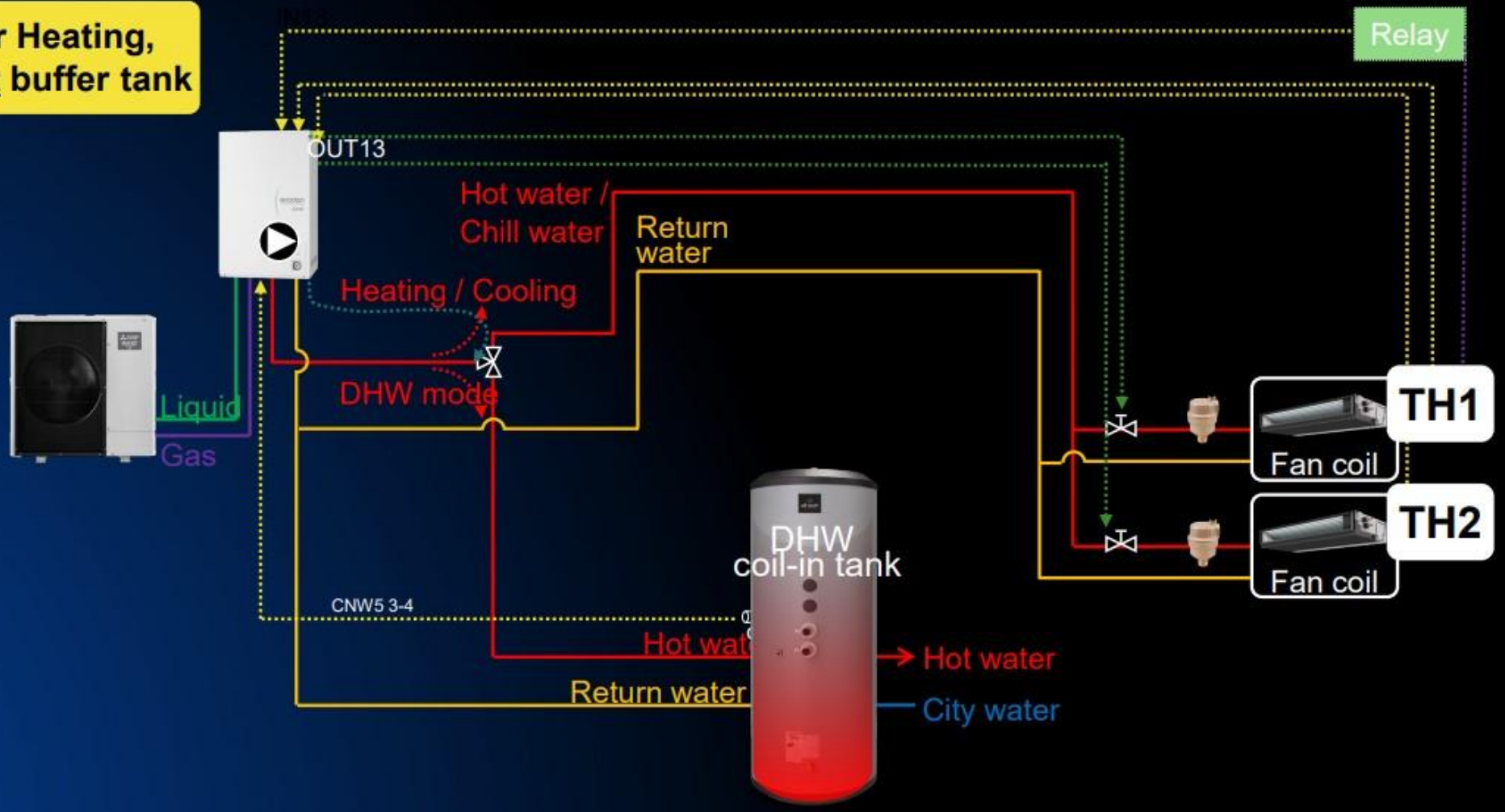
- **Seamless switch between DHW and Heating/Cooling with separate buffer tanks**
- **Buffer tank recommended:** prevent short cycling & hydraulic separation
- **Easily integrate with existing external/zone controller and cooling thermostat (if separate to heating)**



ecodan NEW CONSTRUCTION APPLICATION

2 zone direct control for Heating, Cooling & DHW <u>without</u> buffer tank

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



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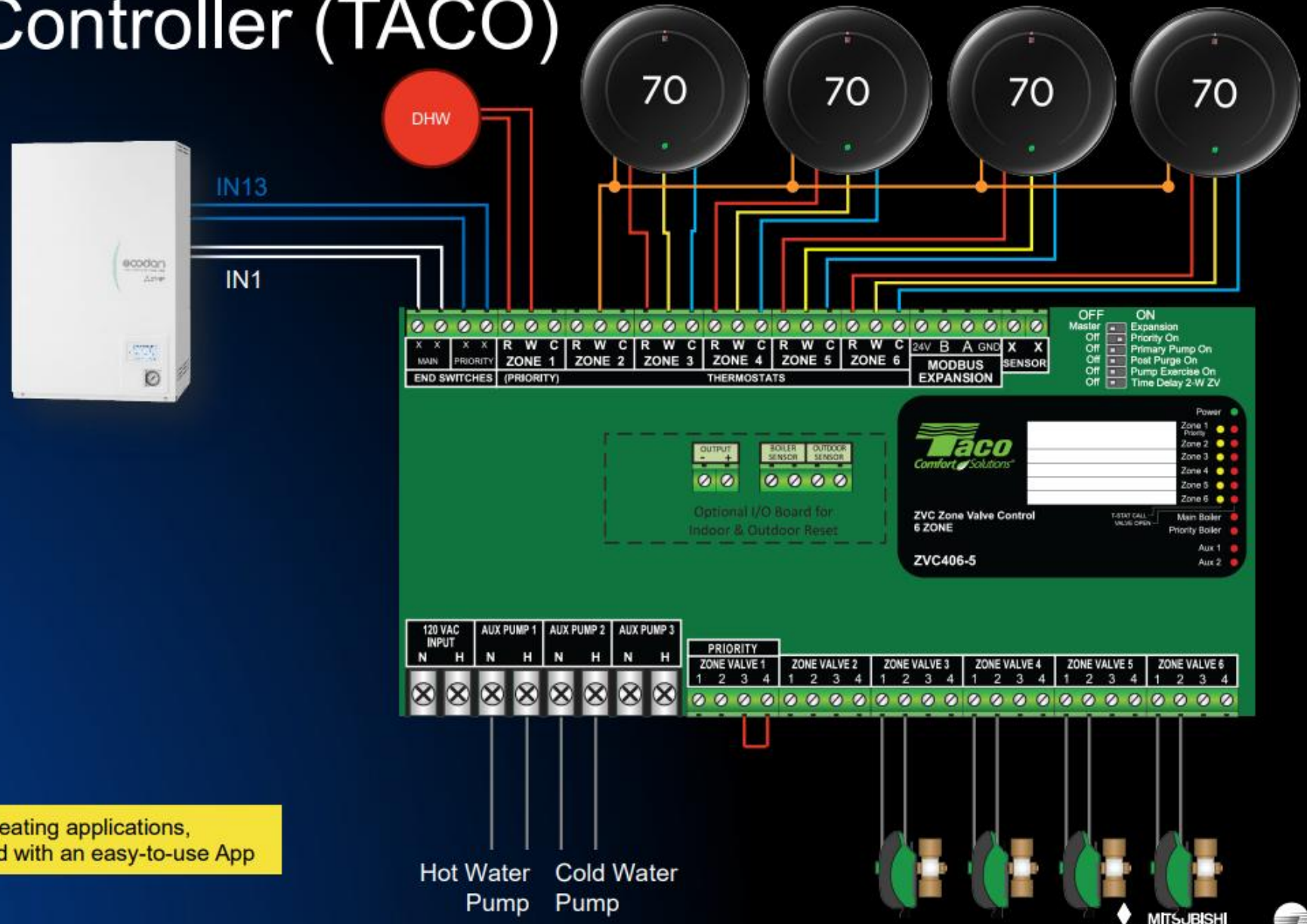
Zone Valve Controller (TACO)

- 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

ecodan System Function Overview: FTC = the Brain

Outdoor

FTC

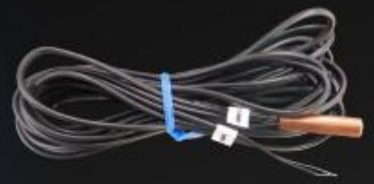
Output signal

3-way valve, etc

Remote Controller

Input signal

Thermistor, Room thermostat, etc



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ecodan 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)>

Electrical Wiring Installation

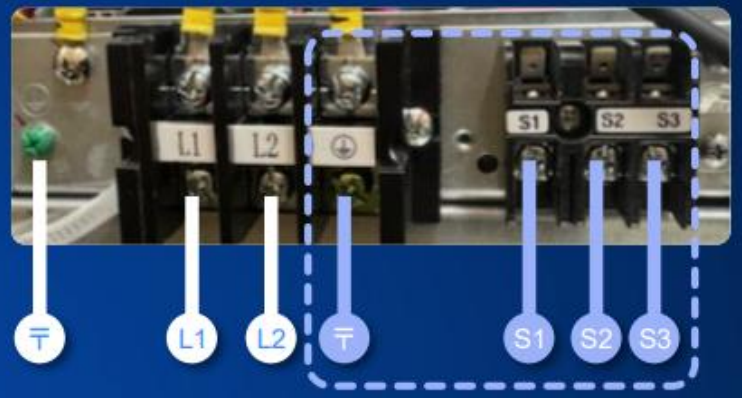
Summary

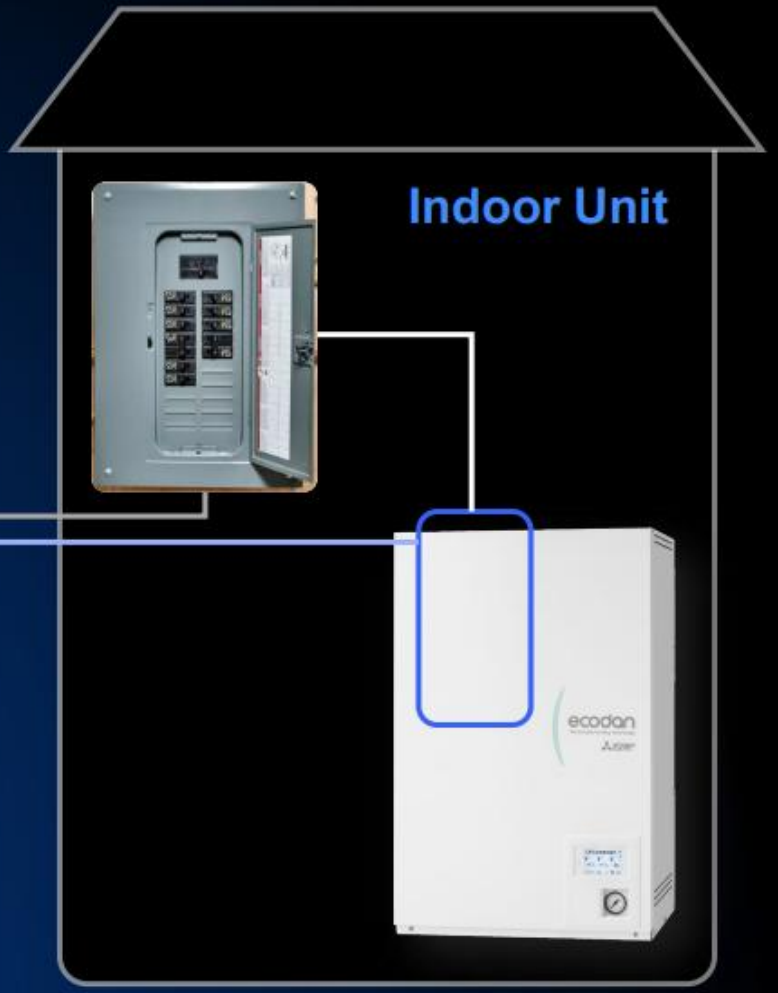
Breaker size : 35A for Booster heater
(Refer to Indoor unit Installation Manual)

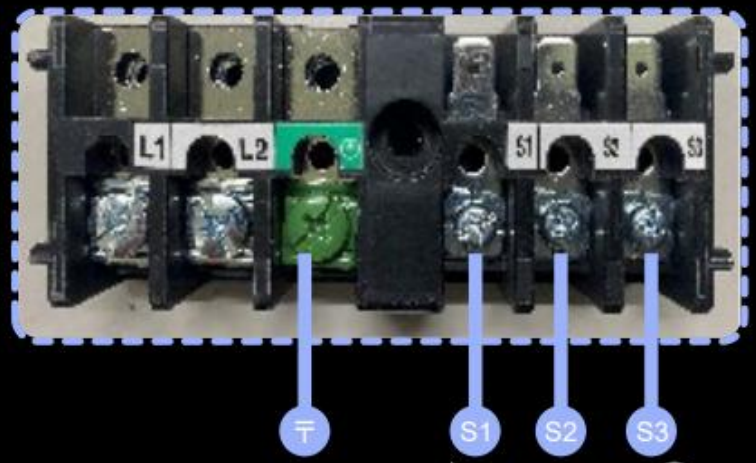
Breaker size : 30~40A for OU and IU
(Refer to Outdoor unit Installation Manual)

Outdoor Unit

Refer to outdoor unit Installation manual



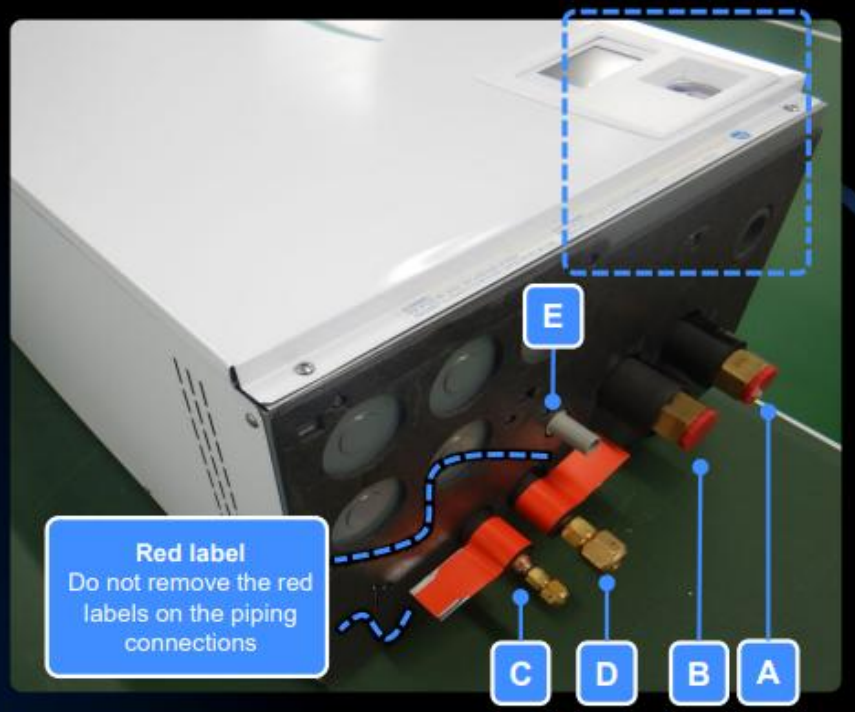




MITSUBISHI ELECTRIC TRANE HVAC US

Water Pipe Work

Symbol	Pipe description	Size • Type
A	Space heating/Indirect DHW tank (primary) RETURN connection	1” NPT Female
B	Space heating/Indirect DHW tank (primary) Supply connection	1” NPT Female
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)	½” NPT Female



ecodan FLOW TEMPERATURE CONTROLLER (FTC)

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

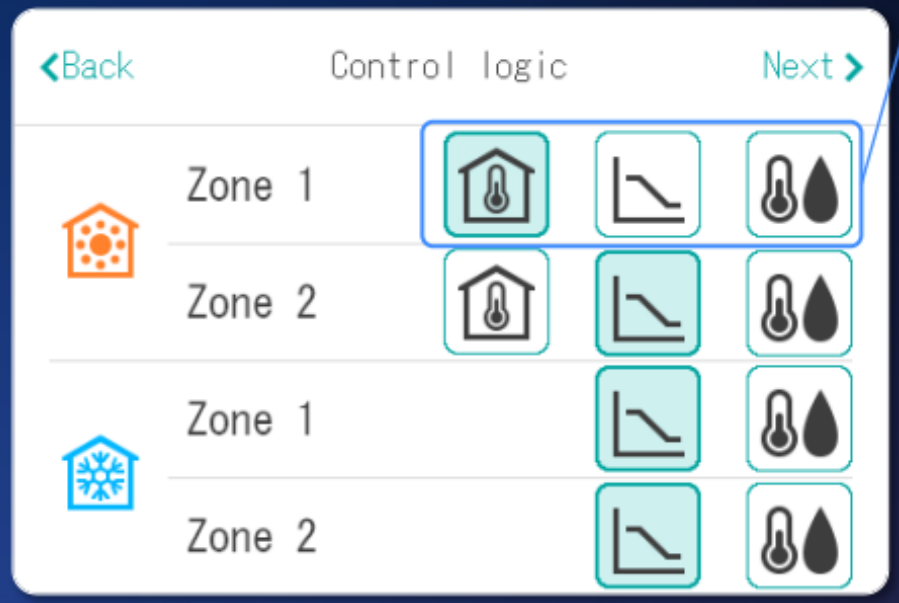
SD card

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

ecodan QUICK START WIZARD

System Control Scheme

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



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.

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Thank You!