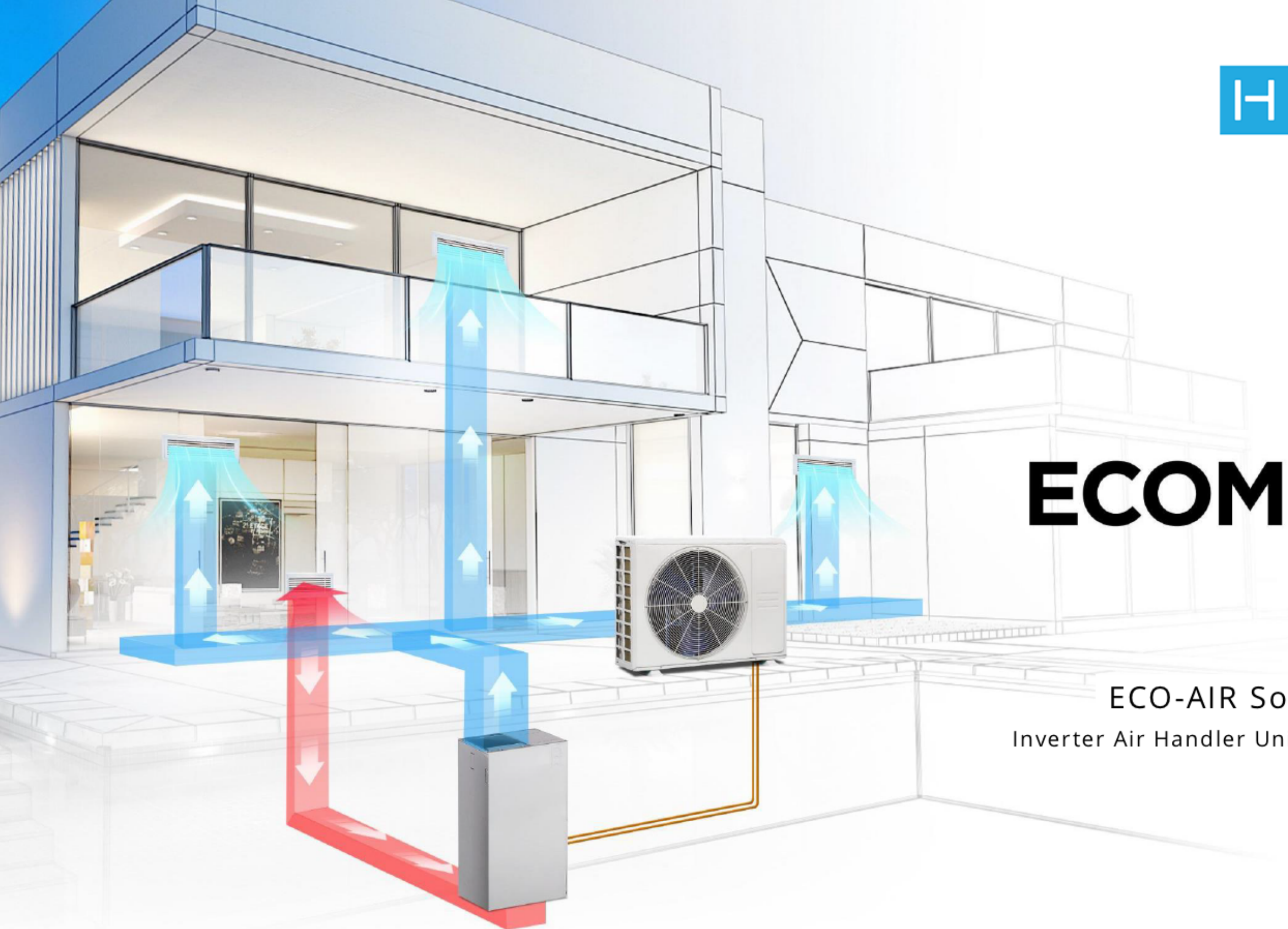


HYDROMAXX



# — ECOMFORT PRO SERIES

ECO-AIR Solution for Users & Installers  
Inverter Air Handler Unit with Side-Discharge Condensing Unit

# MARKET OVERVIEW

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A faint, light-colored map of North America is visible in the background, showing the outlines of the continents and a grid of latitude and longitude lines.

8

**MILLION UNITS**  
Market Volume

**AIR HANDLER**  
North American Market

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**AHU Market Volume**  
USA Air Handler Market

80%

Replacement Demand

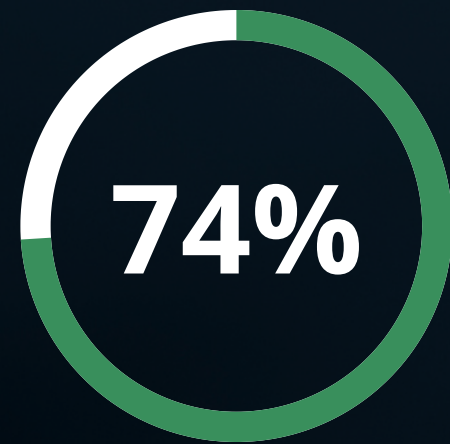
Source: JARN



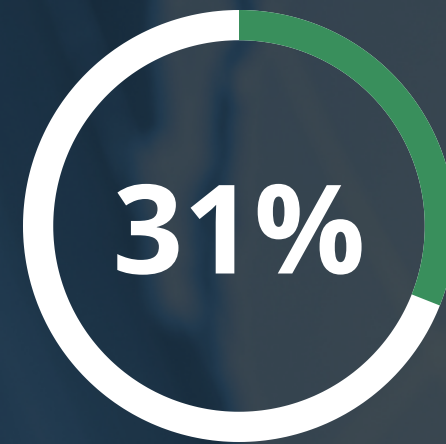
# MARKET PENETRATION

## Room AC (RAC) and Central AC (CAC)

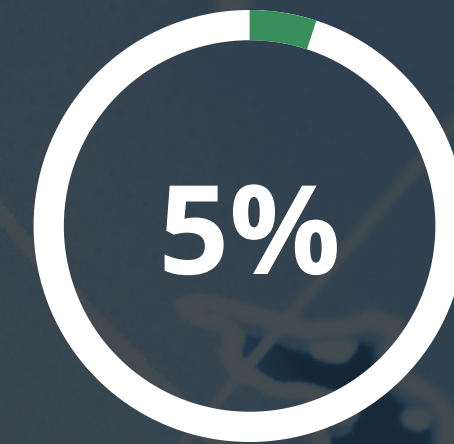
Air Conditioner Type / millions of homes



**CAC Only**



**RAC Only**



**CAC & RAC**

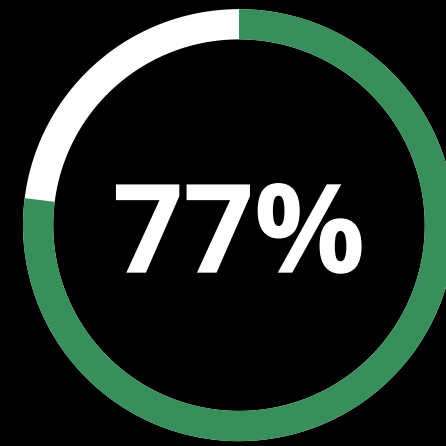
Of those with air conditioning, 74% use central air conditioners, 31% use room air conditioners and 5% use both central and room air conditioners. There are 76.1 million homes with central air conditioners in the US.



# HOME CONSTRUCTION CHARACTERISTICS



**Apartments**



**Single Family Townhomes**



**Condos**

Ducted units are used commonly in the single family townhomes and condos.





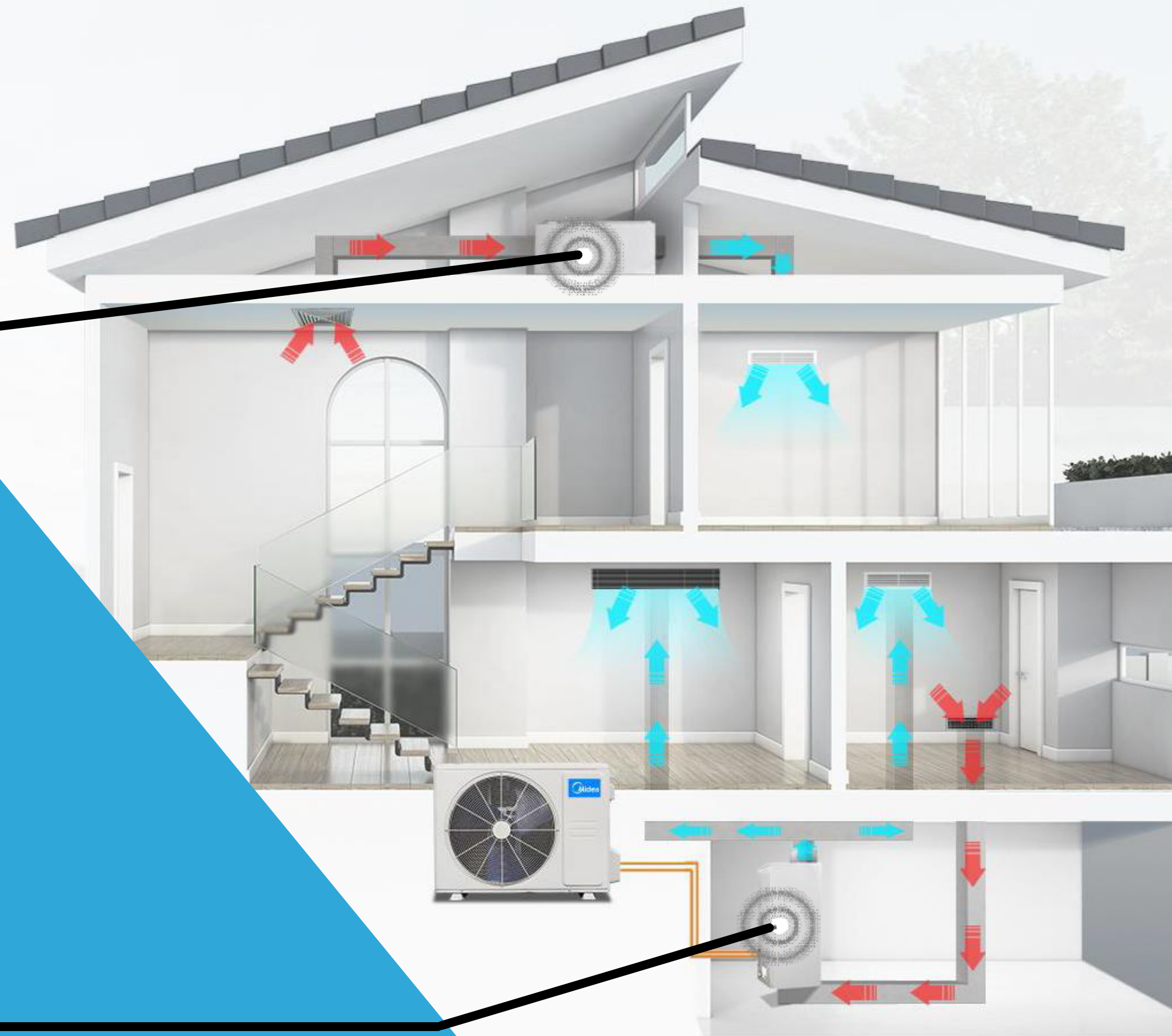
# **STATUS OF AHU APPLICATION IN NORTH AMERICA**

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# TYPICAL INSTALLATION OF DUCT SYSTEM

Attic Installation

Basement Installation



# USER COMPLAINTS



Loud Noise  
due to frequent on-off.



Inaccurate temperature  
control and large  
temperature fluctuation.



High Electricity Bills.



On-off models work  
ineffectively or stop  
working below 0°C.



Only one thermostat  
control.



# INSTALLER PAIN POINTS



Hard to change duct design after installation.



Difficult to determine air volume and Static Pressure.



High Cost of Replacement Material.



Traditional AHU takes Larger Footprint.



Bad Compatibility of Traditional AHU

# AFTER-SALES DIFFICULTIES



High Maintenance Cost



High Complaint Rate of  
Traditional AHU



High Replacement Cost



# AHU PRODUCT DEVELOPMENT TREND



## Environmental Requirements

Some States publish the policy to subsidize the energy-saving air conditioner and to promote the benefits of high energy efficiency.



## Higher DOE Threshold

DOE regulation with higher SEER entry.



## Increasing Consumer Demand

Higher consumer demand for more convenient and practical AC.



## Multiple Application Scenarios


Multiple application and smart home appliance trends.



HYDRO MAXX

# ECOMFORT PRO SERIES





1ton /12K  
1.5ton  
/18K  
2ton/24K  
**(45\*17 - 1/2\*21)**

2.5ton/30K  
3ton/36K  
4ton/48K  
**(45\*21\*21)**

5ton/60K  
**(58\*24 - 1/2\*21)**





# PRODUCT

Universal Product  
Connection.  
A Universe of Possibilities.

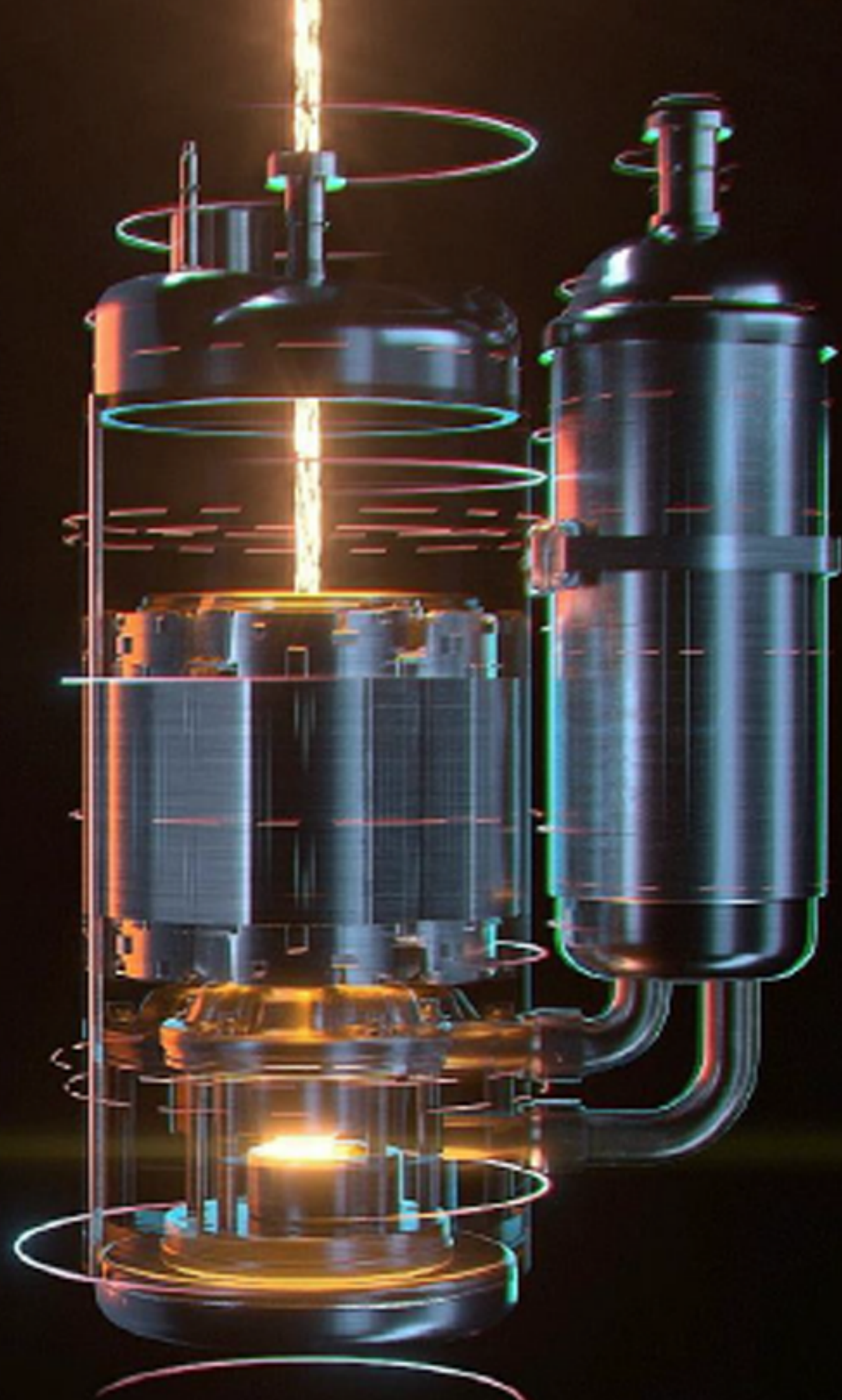
# INDUSTRIES

Efficiency Refined by  
ALL EASY Installation  
Technologies.

# USER

Our Innovative  
Connection to Real-life  
Demands .





# Quick FIT. Inverter

The technology that saves you  
time and money.



# Quick FIT. Inverter

## i-Optimized Control of Inverter Technology

The inverter system creates an efficient mutual data communication between the IDU and ODU, which constantly adjusts the compressor's output capacity according to indoor temperature and pressure, as well as significantly enhancing the unit performance.

## Advanced Electric Control and Differentiated Program Setting

The mutual data communication empowers the system to achieve more complicated and delicate logic control and application mode that traditional systems can't do. Like heating mode, minimum temperature operation, etc. This allows you to satisfy differentiated needs of homeowners.

## Consistent Room Temperature

Instead of cycling on/off, the inverter-driven system is able to self-adjust, avoiding indoor temperature fluctuation while maintaining consistent room temperature, even when the outdoor temperature dips to -40 F.

## Fast Response

It takes traditional systems a long time to reach the homeowner's desired temperature, while the boosted compressor speed of inverter systems allows for quicker, smoother and more efficient heating and cooling.

## Maximum Comfort, Minimum Cost

By adjusting compressor capacity according to real-need, modular inverter systems deliver the optimal amount of hot or cool air needed to achieve the desired temperature – no more, no less. This helps avoid unnecessary energy waste and saves you money.

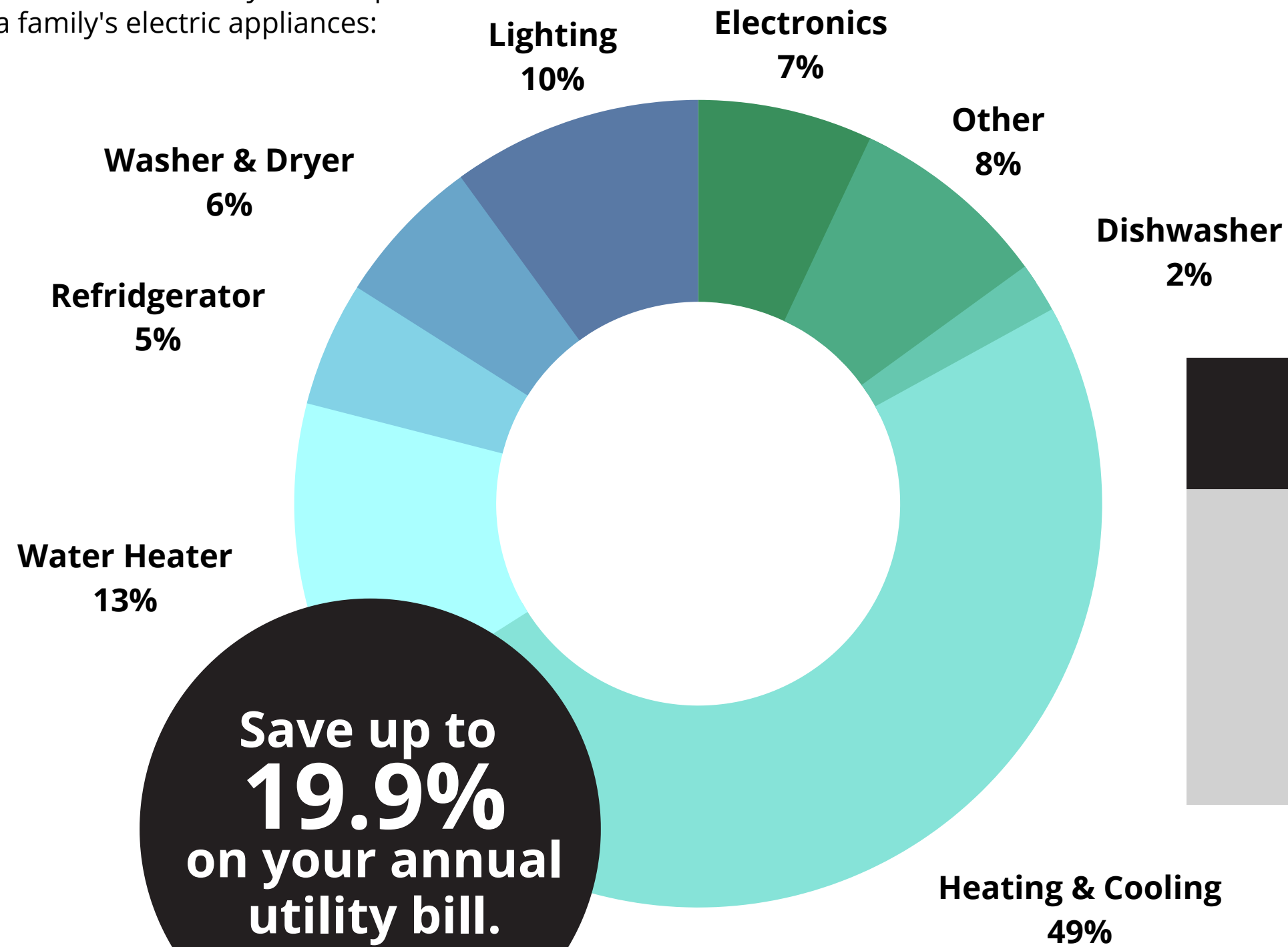
## Quiet Comfort

The stable Inverter system is one of the quietest on the market. Through the use of silent blade technology, sound isolating mounts and outdoor condensing section placement - the system can deliver outdoor sound levels as low as 56 dBA - which is far superior to any standard system on the market.



# FAMILY BILL REDUCTION

Estimated electricity consumption of a family's electric appliances:



Save up to **19.9%** on your annual utility bill.

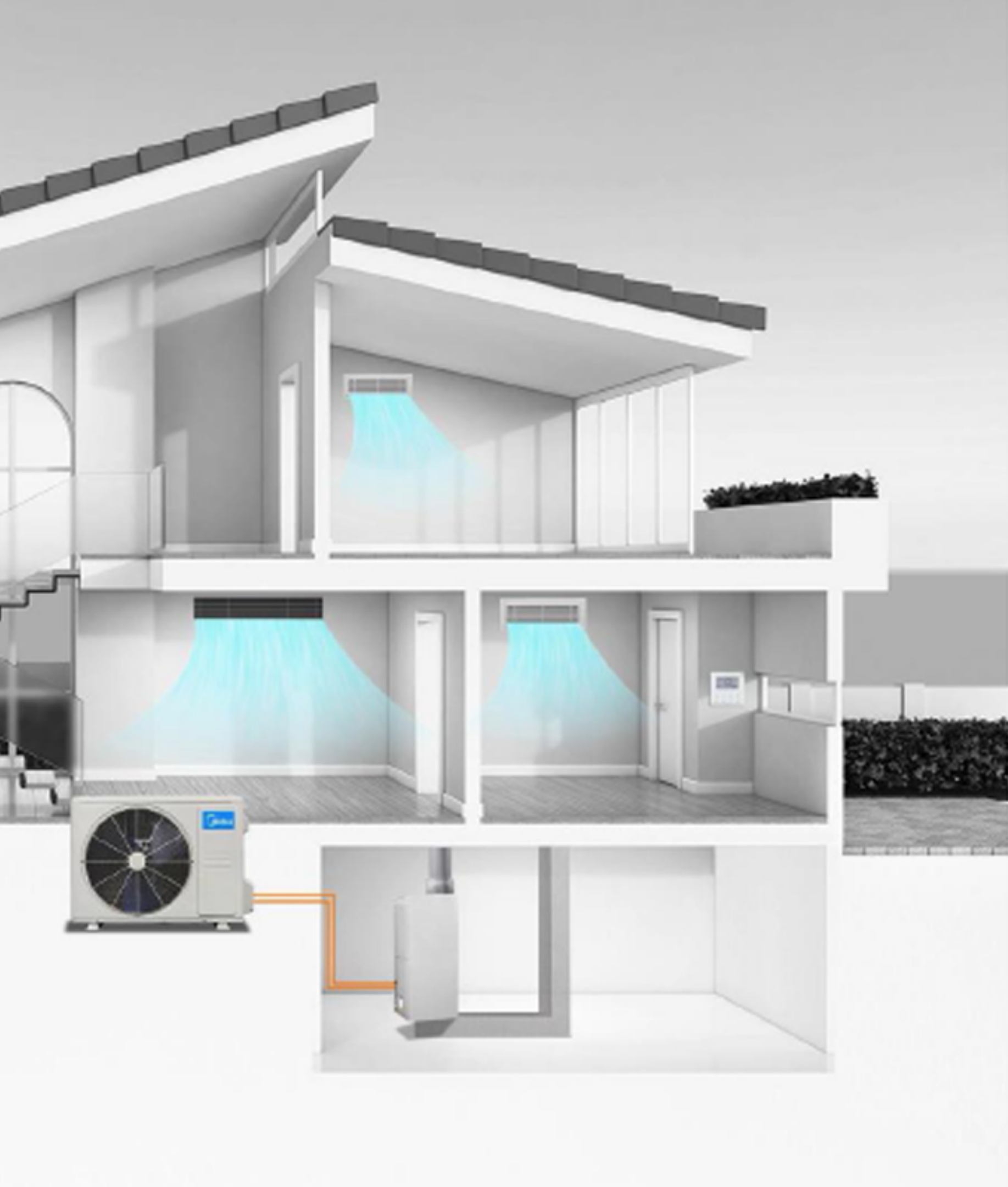
36K	Conventional On/Off Units	ECO-AIR Ecomfort
SEER	14.8	20.8
ERR	8.9	12.5

# **THIS COULD BE THE MOST COMPATIBLE AHU SYSTEM EVER**

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Universal Product Connection. A Universe of Possibilities.





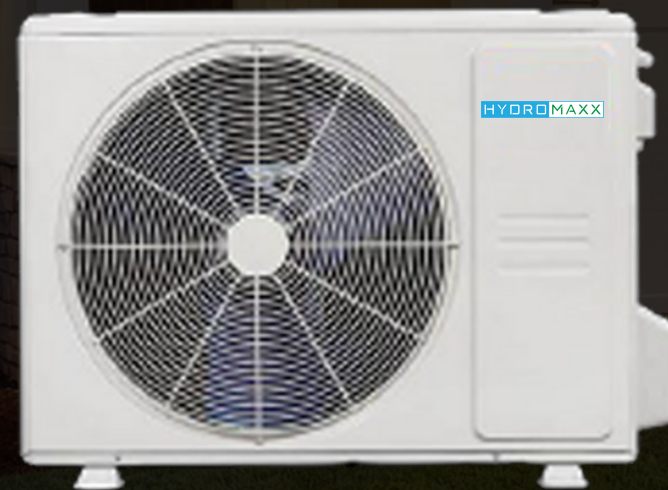
# High Compatibility in Wiring

With built-in wiring terminals of common low voltage communication, HYDROMAXX AHU 2nd generation is compatible with most other brands' products and thermostats in the market and can meet most of replacement demands.





**HYDROMAXX provides a versatile AHU system that allows single zone/multizone ODU application.**





# Universal IDU of Multi

The Ecomfort Series is compatible with the HYDROMAXX Multi-split system. It allows independent IDU control and realizes the excellent cooperation between the Ecomfort Series and a single-split installed on a second floor.

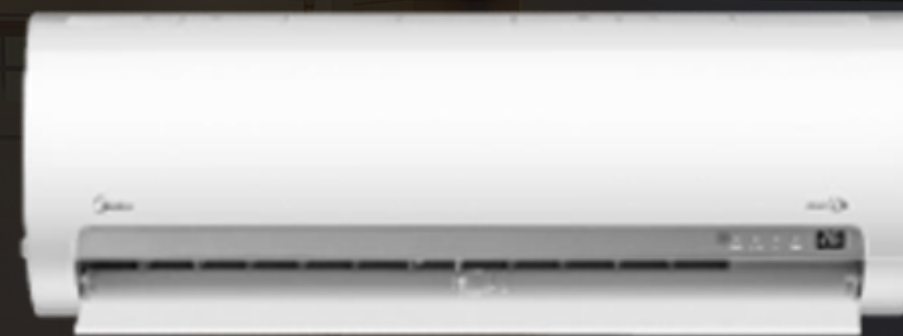
This solution gives our partners the flexibility to provide more customized AC systems and services for various house types and room layouts.

(\*Only for 24K Ecomfort Series)





**Duct or Ductless - we can handle it all.**





# ODU 485 + 24V Connect Guide



## 485

<b>L1</b>	Power
<b>L2</b>	Power
<b>S1</b>	To HYDROMAXX Unit IDU AHU
<b>S2</b>	36K ~ 60K Cassette/Duct/F&C

## 24V

<b>L1</b>	Power	
<b>L2</b>	Power	
<b>R</b>	24 V HOT	
<b>C</b>	24 V COMM	
<b>Y1</b>	HEAT/COOL STAGE 1	Thermostat
<b>Y2</b>	HEAT/COOL STAGE 2 (High Demand)	
<b>B</b>	Changeover valve energized in heating	
<b>W</b>	Heat pump	
<b>D</b>	Defrost (output, back to AHU/Furnace)	Thermostat or IDU
<b>L</b>	ODU Malfunction Indicator (output to Thermostat or identification)	





# AHU 485 + 24V Connect Guide

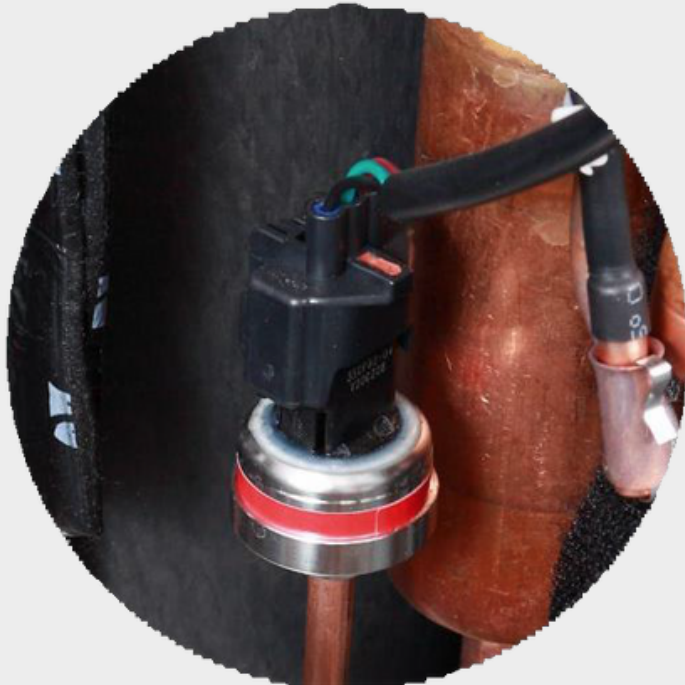
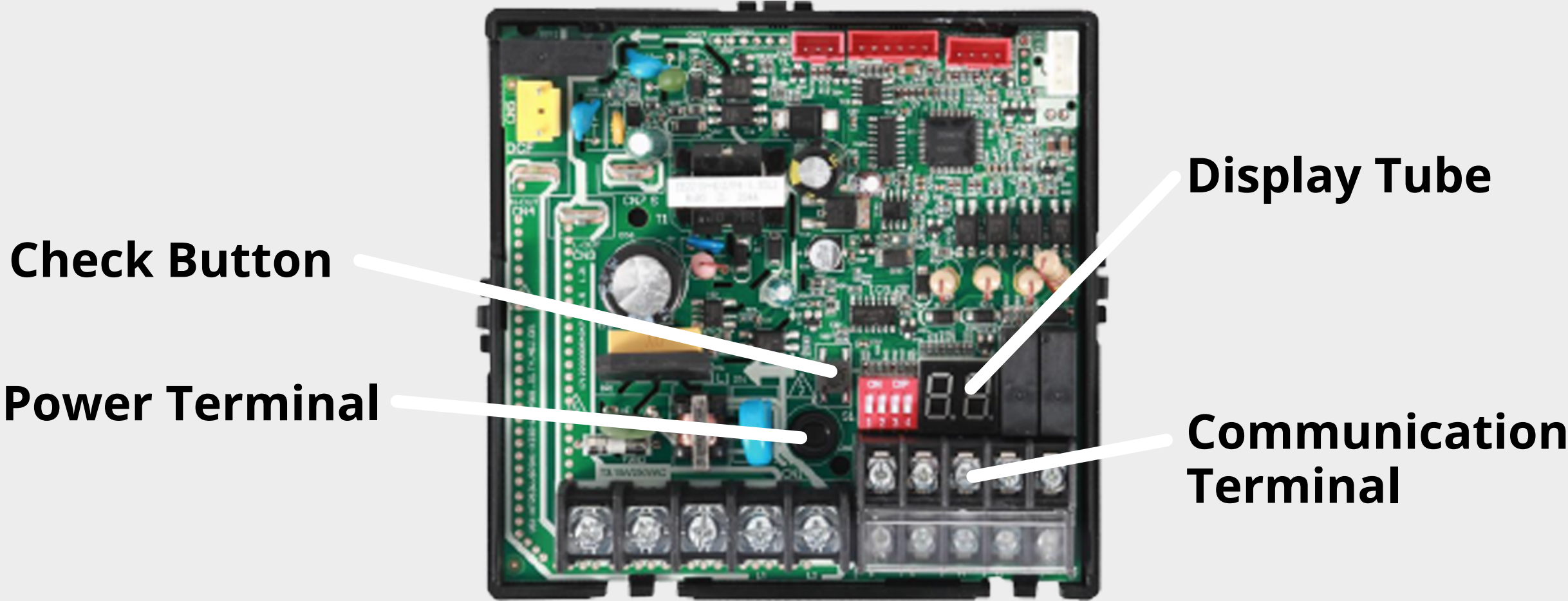
## 485

<b>L1</b>	Power	
<b>L2</b>		
<b>S1</b>	To HYDROMAXX Unit IDU 18K ~ 60K	Main Board
<b>S2</b>	AHU 36K ~ 60K Cassette/Duct/F&C	
<b>CN7</b>	No polarity 2 wires of wire controller	From ECO-AIR
<b>CN13</b>	WiFi port (connect to smart port)	
<b>CN14</b>	reserve with 4 wires wire controller	
<b>X.Y.E.</b>	Central Control/BACnet (controller from 3rd party)	
<b>CN2</b>	Remote Control (default with jumper shorten) - output	

## 24V

<b>L1</b>	Power
<b>L2</b>	
<b>R</b>	24 V HOT
<b>C</b>	24 V COMM
<b>L</b>	No ODU Malfunction Indicator (output to thermostat or identification.)
<b>G</b>	Fan
<b>Y1</b>	Heat/Cool Stage 1
<b>Y/Y2</b>	Heat/Cool Stage 2 (High Demand)
<b>B</b>	Change 4 ways valve energized in heating
<b>W</b>	Heat pump + heater
<b>W1</b>	Heater Group 1
<b>W2</b>	Heater Group 2
<b>E/AUX</b>	Auxilliary Heater
<b>DH</b>	Humidify (output)

# ODU Connect Guide



## DIP SWITCH

- L1** ON for IDU with expand Control and OFF with ODU expand control
- L2** ON for 24V communication protocol and OFF for 485 communication protocol
- S1** ON for activating enhanced cool/heat, OFF for not activating enhanced cool/heat
- S2** Reserve



# High Extensibility

HYDROMAXX AHU 2nd generation has reserved connective ports for the extension of some auxiliary functions, such as electric heater, UV lamp, humidifier, etc.



**Electric Heater**



**UV Lamp**



**Humidifier**

# Complete Product Line, High Universality.

## Product Lineup with Low Voltage Communication (RS485,24V)

Product	12K	18k	24k	30k	36k	48k	60k	Launch
AHU	Y	Y	Y	Y	Y	Y	Y	
SEER18 ODU		Y	Y	Y	Y	Y	Y	
Hyper Heat ODU	Y	Y	Y	Y	Y	Y		

## Product Lineup with High Voltage Communication (Current Loop)

Unit Type	Series	12K	18k	24k	27k	30k	36k	48k	Launch
AHU	AHU	Y	Y	Y		Y	Y		
SEER18 ODU	SEER18 ODU	Y	Y	Y		Y	Y		
Hyper Heat ODU	E*Star	Y	Y	Y					
AHU	Hyper Heat	Y	Y	Y		Y	Y		
SEER18 ODU	Regular		Y		Y		Y	Y	
Hyper Heat ODU	Hyper		Y		Y		Y	Y	



# THE EXCLUSIVE INSTALLATION INNOVATON

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Efficiency Refined.





# Automatic Airflow Adjustment

Easier installation:



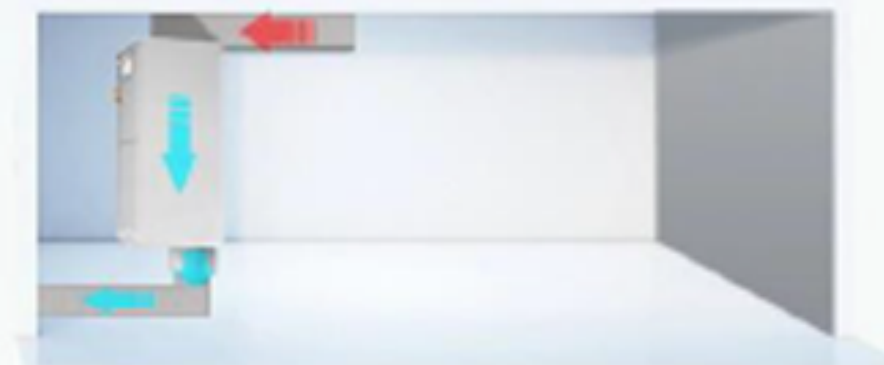


# Installation Convenience

Full Multi-position Installation.



This AHU is capable of upflow, downflow, horizontal left, or horizontal right configurations.





# Up to 2 Days Complicated Installation!

Currently, replacing a non-inverter to inverter AHU system always comes with a series of bulky fieldwork, owing to the specific requirements of line sets, wire sets, and thermostats of the inverter system.



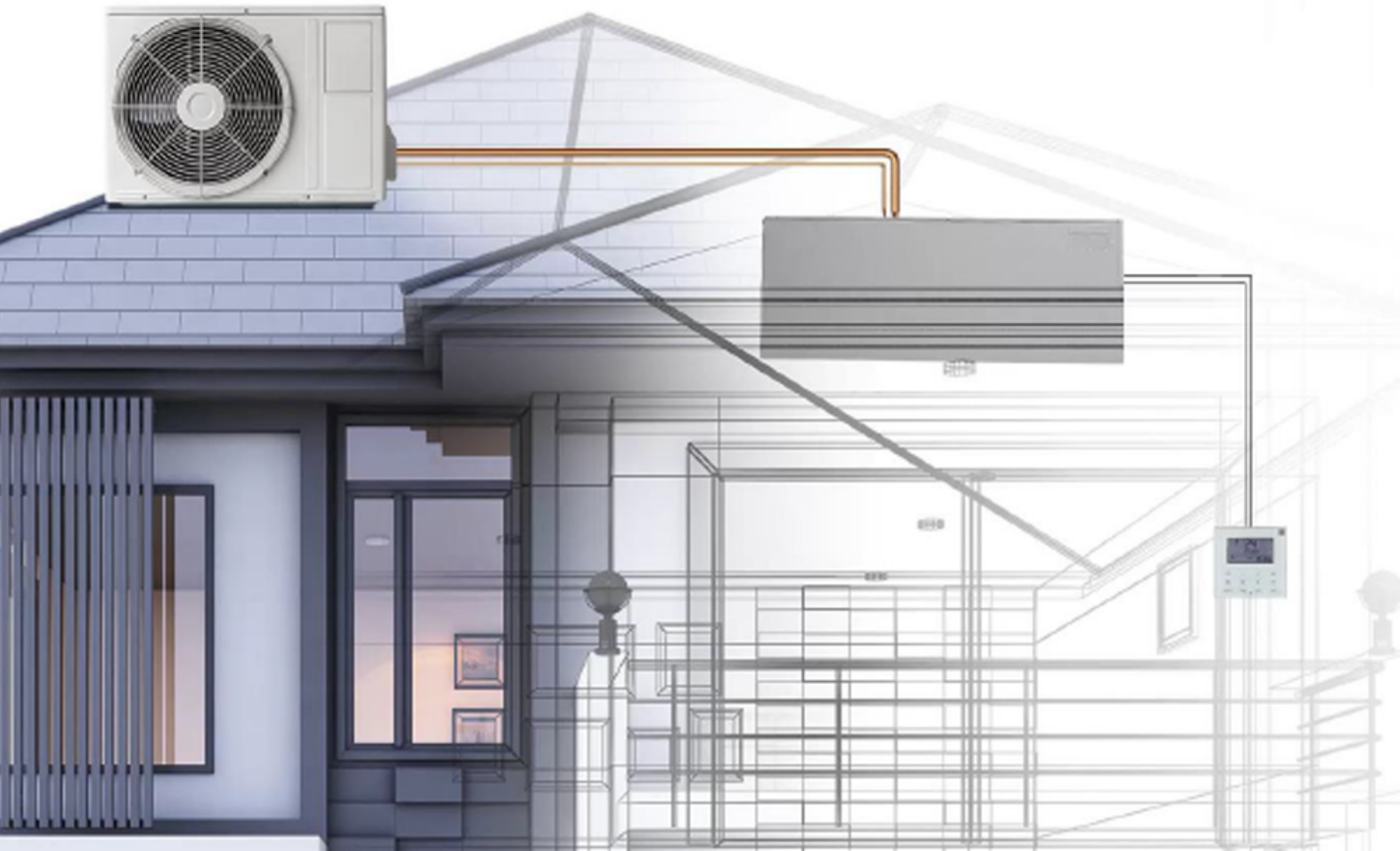


# ECO-AIR Quick FIT. Inverter

Simply 1 plug to replace! Totally compatible. Keep your existing line, wire, and thermostat function.

- Flexible throttle solution compatible to existing refrigerant line.
- Enable mutual data communication between the existing wire sets.
- Compatible with existing thermostat.

**Get your work done  
in half a day!**



# Easy Fault Code Checking

Thanks to advanced mutual data communication technology, the AHU system can intelligently self-detect the failure cause and generate a corresponding code.

Installer or user can easily check the fault code displayed on the electric function board by just opening the lid.

It helps you proactively determine the failure cause, prepare for replacement parts ahead of field maintenance work, greatly improve the work efficiency.





# Easy Maintenance of Evaporator After Pipe Connection

After installation and pipe connection work is finished, remove 6 bolts around the drainage pan plate to do the evaporator maintenance easily without breaking the connection pipes.



# Easy Maintenance

Remove 2 bolts for Easy Access for  
Core Parts Maintenance





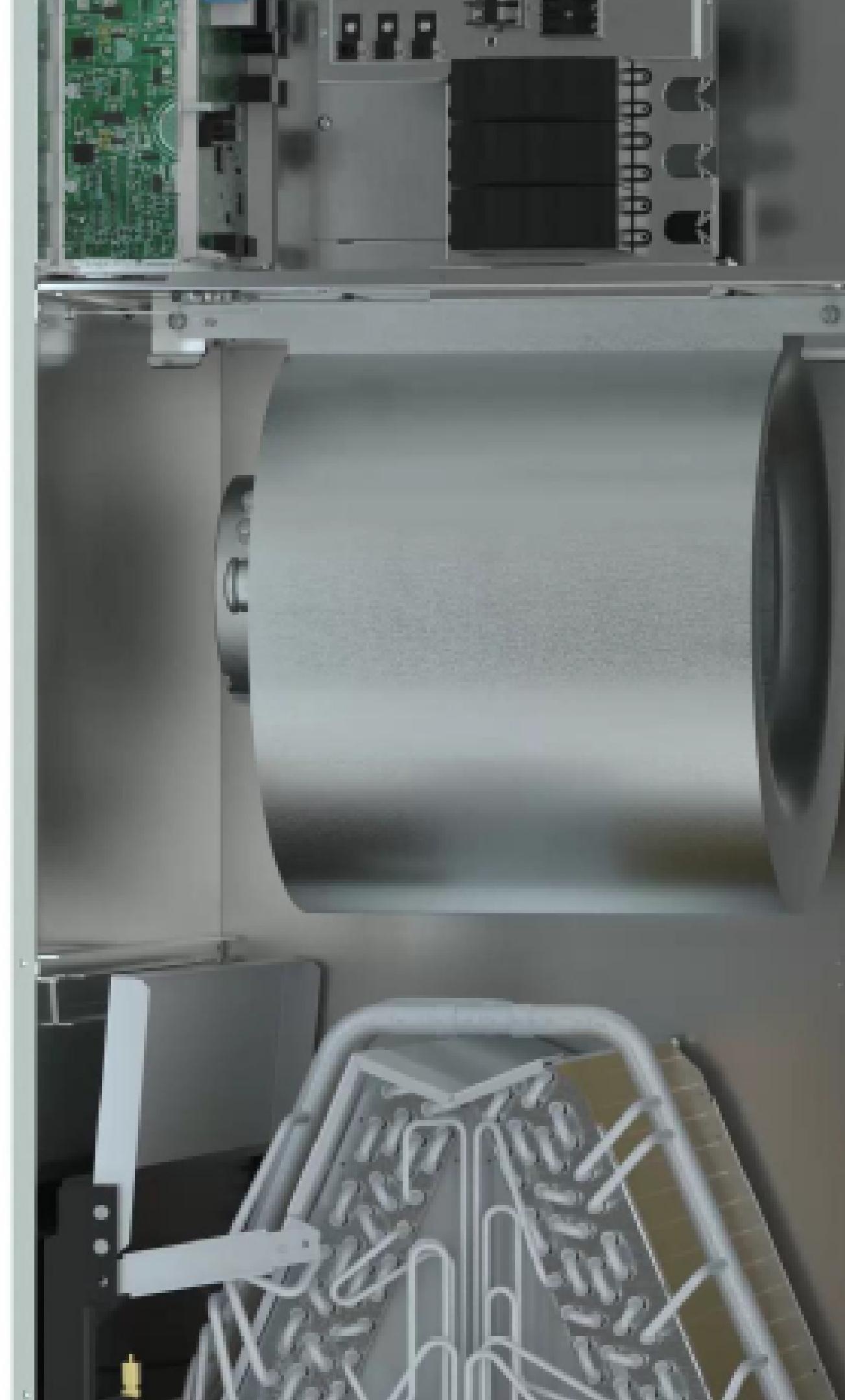
# Easy Maintenance

## Optimized fan design:

Disassemble the top cover, then disassemble the fan and motor assembly. The fan is connected by a slide rail with the unit.

Assemble via the fan flange and fan fixed board slide rail.

Use the screw on the fan flange top to fix the fan when disassembling, no need to disassemble the air outlet.

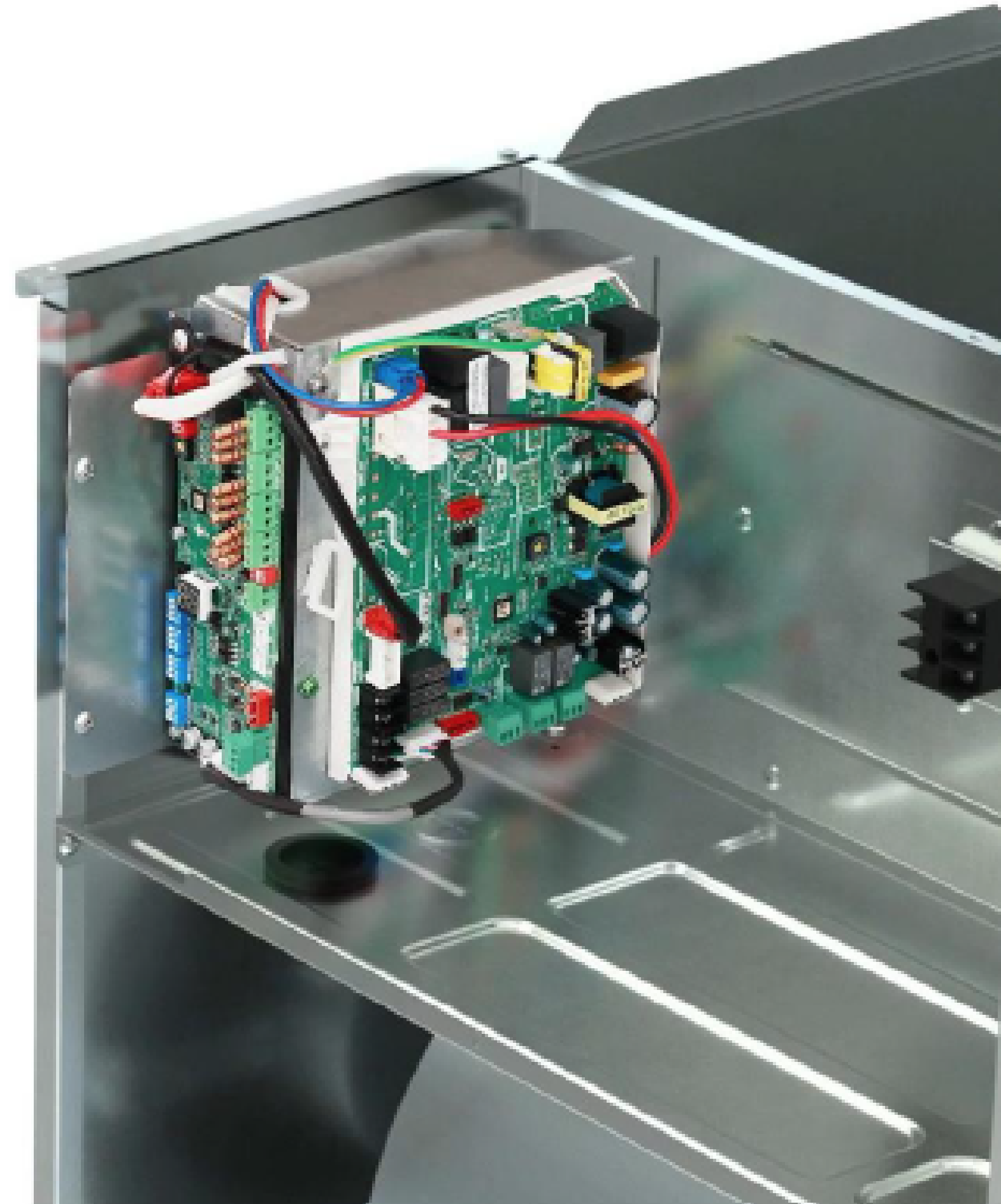


# Easy Maintenance

## Electrical Part:

Only two integrated PCB. One is the main control board, and the other is the function board for the 24V thermostat, dip switch, wired controller and 88 display.

High-efficiency of manufacturing, easy for maintenance, the wires are connected by connector.





# Easy Maintenance

## Electrical Heater Fixing:

Only one piece.

High efficiency of manufacturing, easy for installation, and easy for maintenance.





# Easy Maintenance

Easy filter maintenance.



# Easy Maintenance

## Evaporator Modular Slide Design.

The evaporator coil adopts modular design and can be easily pulled out through the slide track for easy maintenance.



# Easy Maintenance

Evaporator coil can be easily pulled out and configured according to the need of multiple position installation.







## Easy Maintenance

Top cover can be easily slipped out making it more convenient to access the E-box or the Electrical heater when the duct work is finished.

# Nitrogen Charge and Leakage Check Valve

ECO-AIR AHU indoor unit is standard with Nitrogen injection to maintain positive pressure of the indoor unit. It is easy to check from the check valve whether there is leakage in the evaporator or not.







# Better Package Design

Vertical package with pallet.

Pallet + bottom carton board + 2 pieces of carton sleeves + top cover.



A modern living room interior featuring a light-colored sofa with patterned cushions, a low-profile coffee table, and a wooden sideboard with open shelving. A large window with a grid pattern is in the background, and a floor lamp is positioned to the right. The room is decorated with plants and various decorative items.

# Personalized Comfort for All

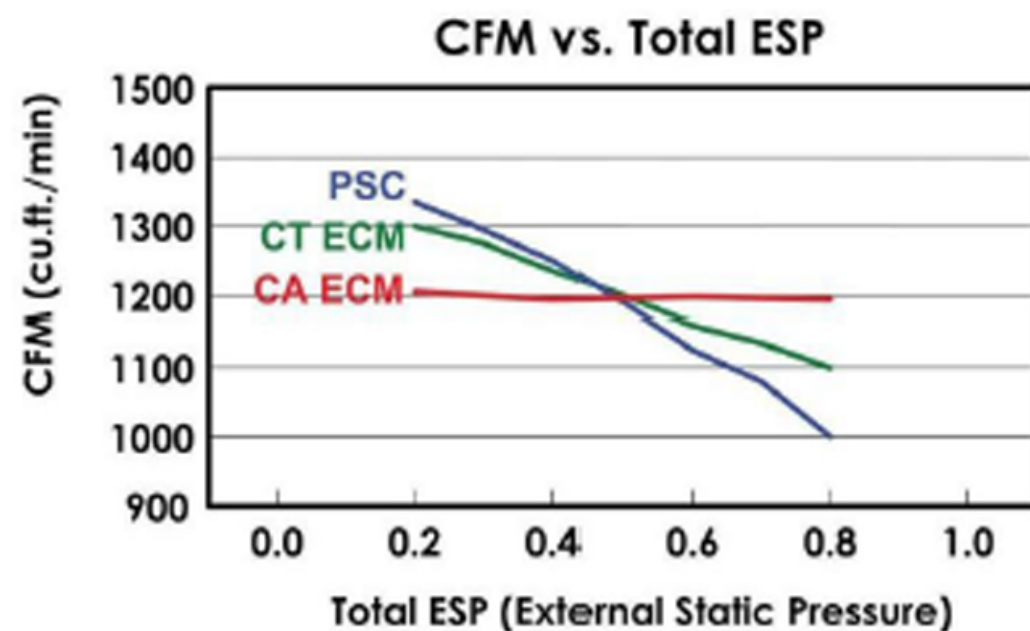
Our Innovation connection to real-life demands



# Automatic Airflow Adjustment

## More comfort for the end user:

During operation, when the dust filter or evaporator is clogged with dust, the load of the system and motor torque increases. The MPU (microprocessor) on the unit can detect this change and adjust the fan speed to keep the CFM stable.







# Cold Nights, Warm Hearts

5°F (-15°) 100% Heating Output



# MULTI CONTROL WAYS

Compatible with HYDROMAXX wireless remote controller, programmable wired controller, central controller, Wi-Fi controller, Remote On/Off.



**Remote Control**



**Wired Control**

Avoid Misplacement



**Central Control**

Professional for  
Commercial User



**Remote On/Off**

Easy for  
Commercial Users



**WiFi Control**

Operate from  
Anywhere



**24V Thermostat Control**

Compatible for common  
24V thermostat controller

# HYDROMAXX Wired Controller

## Two options:

- Current 120G 485 control wired controller
- New 2-wired non-polarity control 120X2 wired controller



	<b>485 Control</b>	<b>2-Wired Non-Polarity</b>
Weekly Timer	Yes	Yes
Follow-Me	Yes	Yes
Remote Control Compatible	No	Yes
Dual Control	No	Yes
Group Control	No	Yes
Rotation & Backup	No	Yes
Ducted/Cassette/Ceiling/Floor Compatible	Yes	No

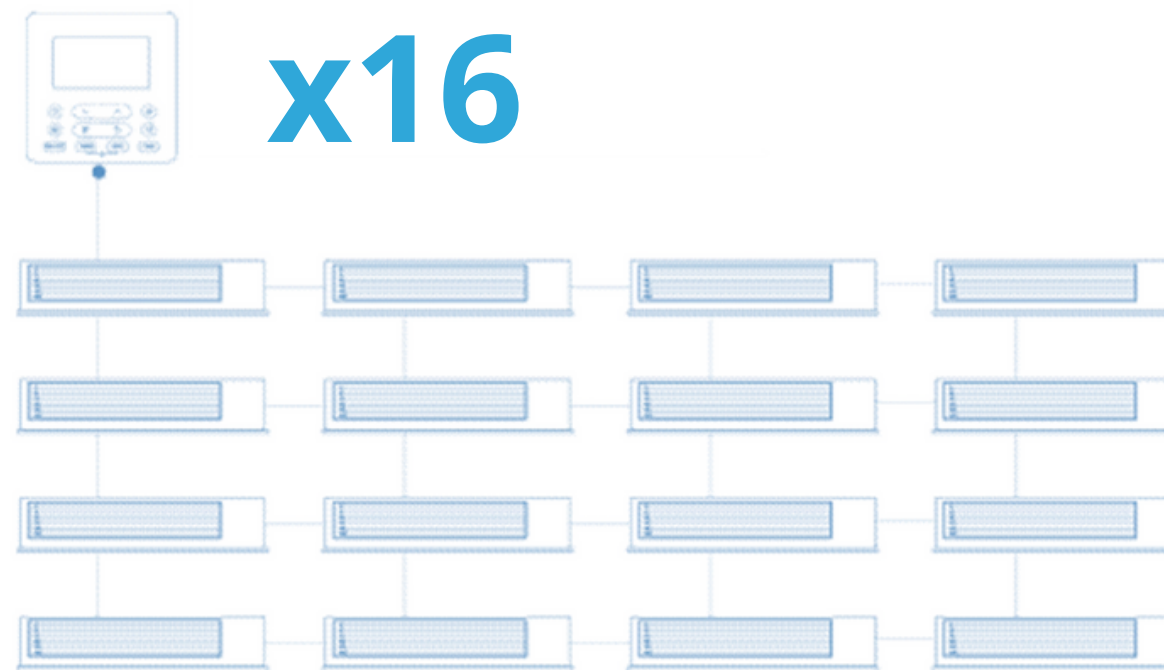




# Group Control

One 120X wired controller can adjust the operation mode, temperature and fan speed of up to 16 indoor units together. It saves costs and simplifies the control of multiple IDUs in large spaces requiring an even temperature. One control for all of the machines to keep them aligned.

**Indoor units must be the same category**



(\*Only for 2-wired non-polarity controller)





# Group Control

Demanding scenarios, such as server rooms, require consistent cooling/heating to maintain a prescriptive temperature. The Rotation & Back-up function of the 120X wired controller ensures the best working time arrangement of all air conditioners.

(\*Only for 2-wired non-polarity controller)



# Dual Control

Two 120X wired controls can control one air conditioner. This system is designed to be accessed throughout the home - set the desired temperature from the living room and later adjust the settings from the bedroom. Ability to maintain control even in the furthest reaches of the home.

(\*Only for 2-wired non-polarity controller)



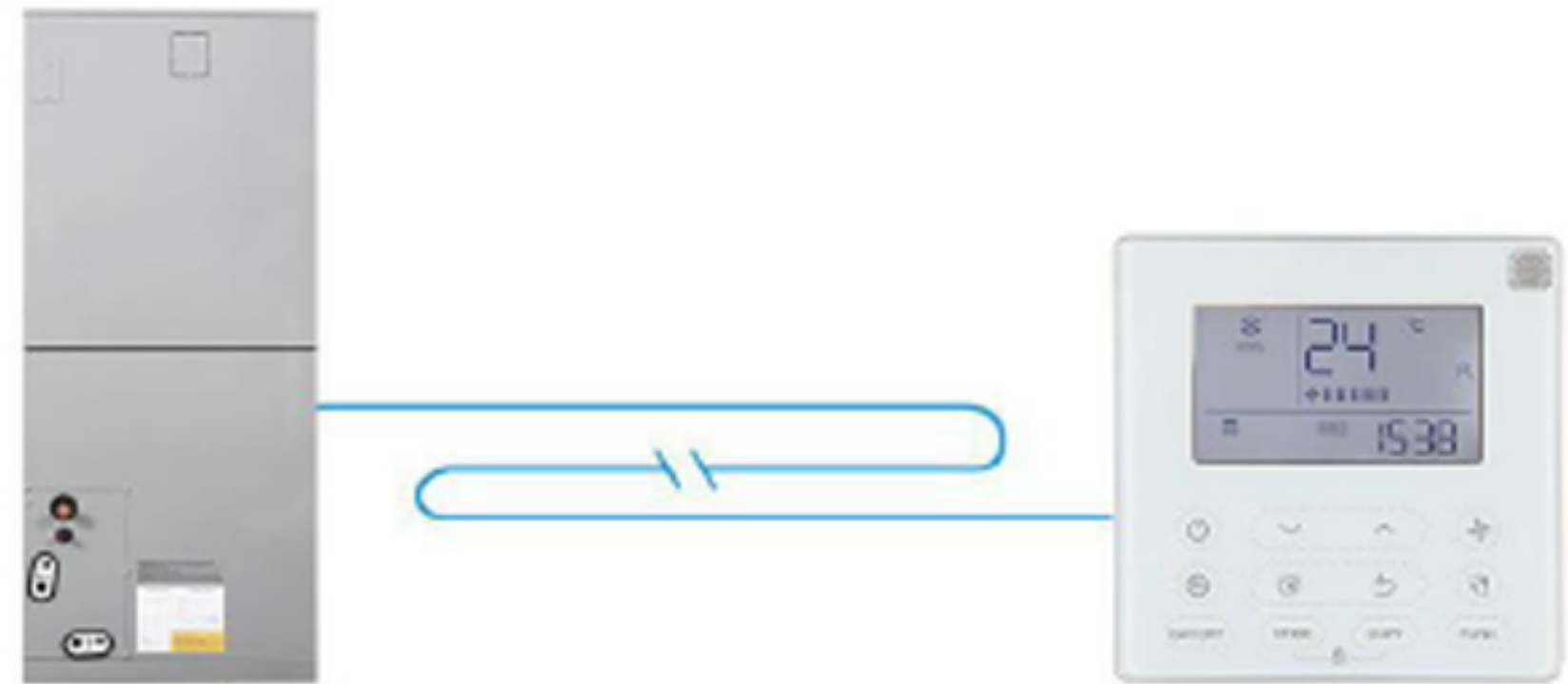




# Dual Control

120X wired controller is connected to indoor units via two wires without polarity. This simplifies the application and saves on installation time.

(\*Only for 2-wired non-polarity controller)



**4**

4 Connection  
Holes on Back

**25**

25m Max  
Wiring Length



# Weekly Timer

Two weekly timers are available, WT1 & WT2.

WT2 has more choices in settings and manages the air conditioner specifically. They can't be set the same or with conventional timing function together.

	SUN				MON - FRI	SAT			
Session	1	2	3	4		1	2	3	4
Setting	4 different sessions for 1 day. Only switch on/off setting.								

	SUN								MON - FRI	SAT							
Session	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8
Setting	8 sessions per day. Every session can have a different setting mode, temperature, fan speed. Switch on/off.																





# HYDROMAXX New Inverter AHU



Match up  
product group/Metrics



Single zone/Multizone  
/AHU/A-Coil



Range: Entry Level,  
E-star, Hyper



Full Capacity  
Range



Free match-up  
/compatible