AMITIME®

Prepare for low-carbon life


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AMITIME®

# Residential Heat Pump —EcoSTAR Pro Series

# Residential Heat Pump

## EcoSTAR Pro Series

The EcoSTAR Pro series is a highly efficient air source heat pump that uses the eco-friendly R290 refrigerant. It provides reliable heating, cooling, and domestic hot water. The series offers flexible system configurations, supporting both standalone outdoor units and combinations with various indoor units to suit different installation needs. For those seeking an environmentally friendly, cost-effective, and complete home comfort solution, the EcoSTAR Pro is the answer.

R290 ECO refrigerant

A+++ energy label

High water outlet temperature 75°C

Full power till -7°C

Monoblock

Easier installation, no refrigerant piping connections required

## Uncompromising Safety for Your Home

Your family's safety is our highest priority. The EcoStar Pro series is engineered to meet and exceed stringent EU regulations. Even in the unlikely event of a refrigerant-to-water heat exchanger leak, the multi-layered mechanical safety system helps prevent R290 refrigerant from entering the indoor environment, enhancing overall operational safety.

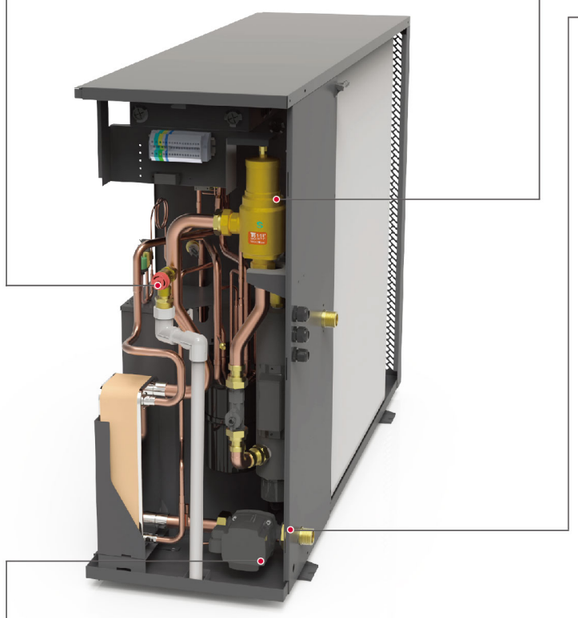
All safety components are purely mechanical, ensuring reliable protection even during power outages or electronic control system failures.

### Pressure Relief Valve

A leak of refrigerant into the water loop can cause a rapid increase in pressure. Our high-precision pressure relief valve automatically opens at 2.5 bar to release this excess pressure, preventing a hazardous situation.

### Gas Separator

This device is designed to automatically remove air and gas from the water system, including refrigerant gas in the unlikely event of a leak, helping prevent it from entering the indoor environment.



### Check Valve

Strategically positioned on the return line of the outdoor unit, the check valve acts as a reliable physical barrier to help prevent reverse flow and keep refrigerant safely contained within the outdoor system.

## Built-in Pump for Flexible and Efficient Operation

The EcoSTAR Pro outdoor unit features a built-in primary circulation pump for enhanced system flexibility and efficiency.

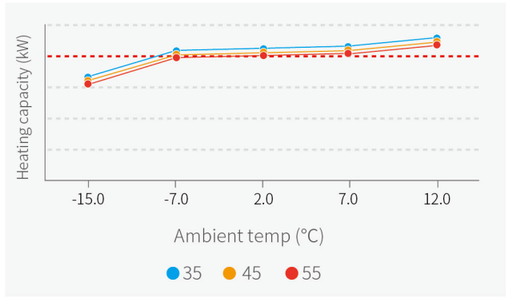
### Primary Circulation Pump

This design simplifies installation and allows for cascade connection of up to 15 units.



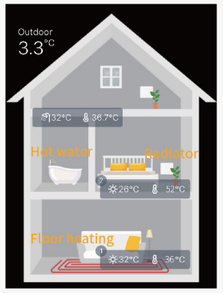
## Exceptional Performance in Extreme Conditions

Designed and tested for rigorous real-world scenarios and extreme conditions, EcoSTAR Pro ensures outstanding performance even at very low temperatures.



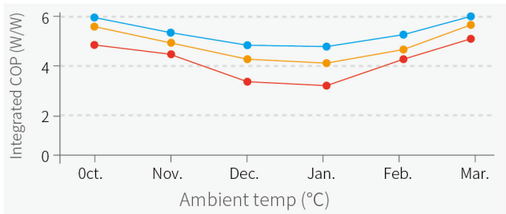

## Integrated Solution for Total Home Comfort

EcoSTAR Pro offers an integrated solution capable of supporting dual-zone systems with multiple terminal units requiring different water temperatures, all while providing domestic hot water for complex application scenarios.



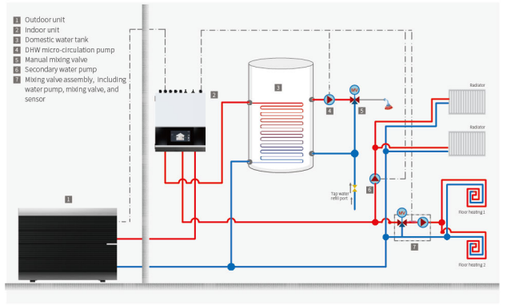

## Industry-Leading Energy Efficiency

With a market-leading SCOP of up to 5.62, EcoSTAR Pro aligns with green energy trends, delivering significant cost savings for users.



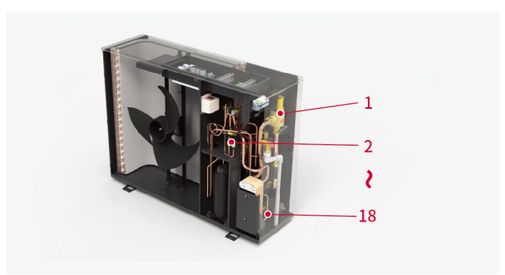

## Intelligent Control for Cost Savings

Leveraging Amitime's unique real-time inverter control technology and steady-state operation design, EcoSTAR Pro dynamically adjusts its output based on system parameters and water temperature trends. Some installations can even eliminate the need for a buffer tank, significantly reducing initial investment costs.



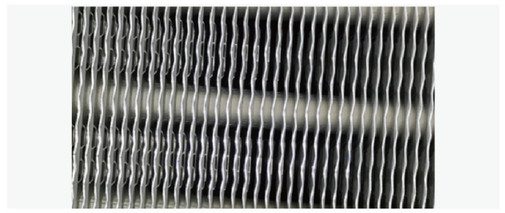

## Precise Sensing for Stability and Reliability

Equipped with up to 18 high-precision sensors, EcoSTAR Pro continuously monitors the unit's operating status. Accurate sensing not only ensures real-time, on-demand adjustments but also forms a solid foundation for safe, stable, and reliable operation.




## Innovative Fin Design for Enhanced Heat Exchange

Amitime's pioneering evaporator fin ripple design optimizes airflow contact, increasing heat exchange efficiency by 30% within the same footprint for superior thermal performance.



## Smart Control, Seamless Integration

The advanced 7'' touchscreen controller is designed for intuitive operation and maximum flexibility. The high-definition display ensures a smooth user experience with vertical and horizontal installation support.

With a multilingual interface and intuitive functions, it enables easy system control. Built-in 4G and Wi-Fi connectivity provides cloud-based remote monitoring and extended functionality. It is compatible with common control systems and supports cascade control for larger installations.

### Multi-circuit control

Support two mixing circuits with different water temperatures plus hot water control, adapting to various heating terminals

### DHW storage

Timer and priority management for sanitary hot water, with anti-legionella function

### ECO use for electric heater

Two-stage control and special logic to activate/stop electric heater, balancing comfort and energy saving

### Real-time COP

Monitor power consumption, output, and COP in real time with clear energy efficiency data

### SG-Ready

Intelligently select the most cost-effective solution based on the signals provided by the power grid in peak and off-peak time

### Unified interface: Effortless control

Both the touch control panel and the mobile app share the same interactive UI design, ensuring a minimal learning curve, fast response, and a seamless user experience

### Smart defrosting

Sophisticated algorithms take into account ambient temperature, coil temperature and defrosting time

### Cascade

One controller manages up to 15 units for flexible capacity expansion

### Modbus

Easy integration with BMS for smart building systems



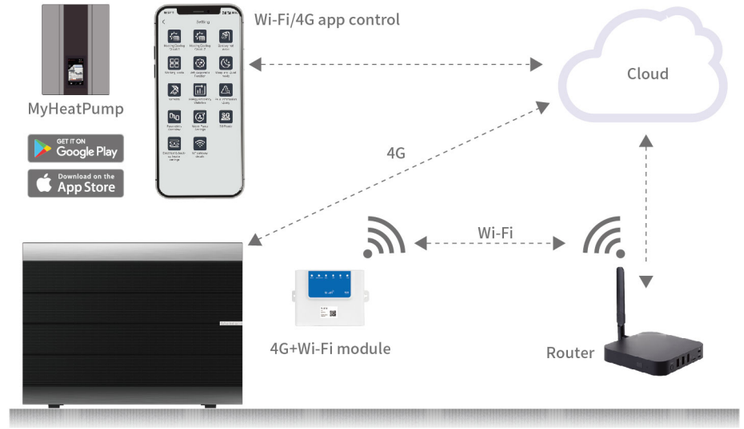
## Flexible Connectivity: 4G & Wi-Fi Solutions

Our device offers dual connectivity with both 4G and Wi-Fi, allowing flexible connection options for different scenarios. The simple setup ensures quick and seamless pairing.

Regardless of location, the remote control function keeps you connected at all times. You can effortlessly monitor device operation in real time and ensure efficient performance wherever you are.

**Simple operation for various functions**

- On/Off control
- Operation mode selection
- Current temperature display
- Set temperature adjustment
- Energy monitoring




## Connected Service, Elevated Support

Leverage advanced connectivity for smarter, more convenient after-sales service.

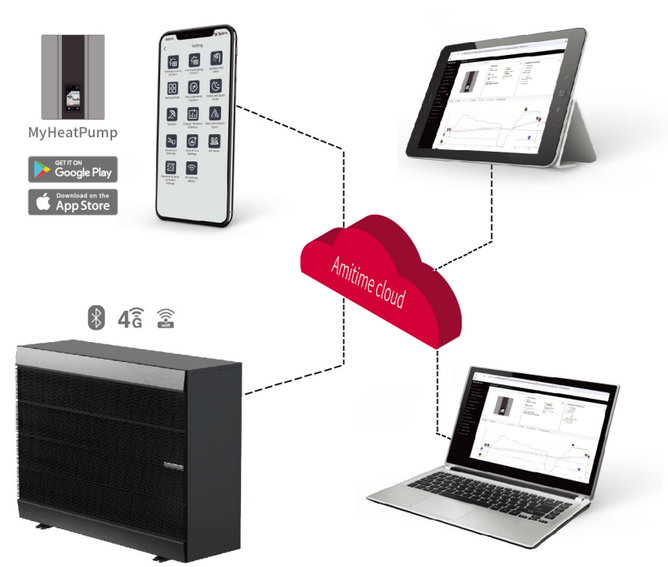
**Save time and costs**
- One-time visit with right parts
- No need for pre-visit for diagnosis

**Quality service**
- Better service to end-users with accurate diagnosis and fast repair

**Increased business opportunities**
- Combine product and service offerings
- Strengthen the connection with users

**Enjoy peace of mind**
- Be serviced at once or faster
- Be confident that immediacy and quality service will be provided in case of an error

**Less constraints**
- No need to be at home for first diagnosis
- Monitor the operation status and control the system remotely



**Amitime meticulously researches every noise source and pays close attention to every critical detail in our design process. We are committed to achieving ultimate quietness, providing you with a serene and enjoyable user environment.**

Multi-layer noise reduction technology ensures outstanding quiet operation.

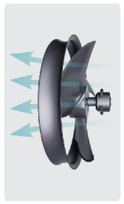
## The Art of Silent Airflow

**Low-Resistance, Wide-Fin Heat Exchanger**
Reduces airflow resistance, thereby lowering fan noise.

**Simulated Optimization**
Eliminates internal air chamber vortexes, reducing airflow noise.

**Anti-Resonance Motor Bracket (Reverse C-Type Design)**
Follows airflow direction to minimize resonance.

**High-Efficiency Low-Noise DC Motor**
Specifically tuned to suppress low-frequency noise for smooth operation.



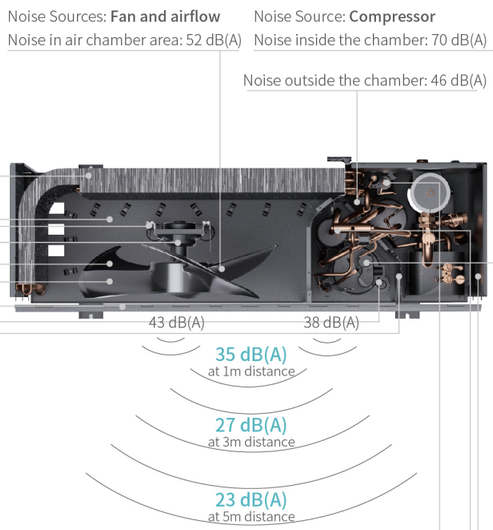
**Large-Diameter, Sharp-Edged Silent Fan Blades**
These blades are designed with sharp edges to cut high-speed airflow efficiently. This action effectively reduces air resistance and creates smoother, more orderly airflow, thereby significantly lowering noise.

**Streamlined Airflow Path Design**
Precisely matches the guide ring bell mouth with fan blades for smooth air guidance.

**Biomimetic Grille Design**
Further optimizes airflow and reduces noise.

| EcoSTAR Pro Sound Pressure Level | | at 1m | at 3m | at 5m |
|---|---|---|---|---|
| EcoSTAR Pro 06M | dB(A) | 37 | 28 | 24 |
| EcoSTAR Pro 08M | dB(A) | 35 | 27 | 23 |
| EcoSTAR Pro 12(T)M | dB(A) | 36 | 28 | 24 |
| EcoSTAR Pro 15(T)M | dB(A) | 41 | 34 | 29 |
| EcoSTAR Pro 20TM | dB(A) | 49 | 43 | 39 |

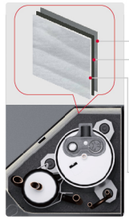
**Notes:**
1. Noise values in the table are evaluated per EN 12102 (nominal A7/W55).
2. The picture below is an example for Model EcoSTAR Pro 08M.




## Low-Noise Compressor Operation

**Vibration-Damping Rubber Feet**
Further isolate vibration transmission and reduce structural noise.

**Buffer Vibration-Damping Base**
Effectively absorbs vibration generated during compressor startup and operation.



**Soundproof Enclosure**
A multi-layer noise reduction structure provides protection from external noise:
- High-Density Sheet Metal: Robust structure that suppresses noise leakage.
- Damping Adhesive (High-Density Butyl Rubber): Effectively absorbs and dissipates vibration energy.
- Polyester Fiber + PVC Composite Sound-Absorbing Material: Multi-layered sound absorption to block mid- to high-frequency noise.

## Comprehensive Quiet Operation

**Optimized Expansion Valve**
Eliminates abnormal "whistling" sounds caused by refrigerant flow.

**Pipework Vibration Damping Design**
Optimizes pipe layout to reduce vibration transmission.

**360° All-Round Vibration & Sound Absorption**
The unit's interior is lined with polyester fiber + PVC material, providing comprehensive absorption and suppression of noise.

**Smart Noise Reduction Mode**
Users can select and activate an active noise reduction function via the controller for a more personalized quiet experience.



# EcoSTAR Pro Series

# Technical Data

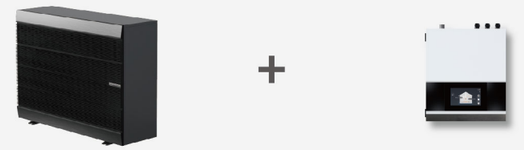
| Model | | | | EcoSTAR Pro 06M(-FM)-O | EcoSTAR Pro 08M(-FM)-O | EcoSTAR Pro 12M(-FM)-O | EcoSTAR Pro 12TM(-FM)-O | EcoSTAR Pro 15M(-FM)-O | EcoSTAR Pro 15TM(-FM)-O | EcoSTAR Pro 20TM(-FM)-O |
|---|---|---|---|---|---|---|---|---|---|---|
| Seasonal Energy (According to EN14825) | | | | | | | | | | |
| ErP Data | Energy Class-Heating (35°C/55°C) | | - | A+++/A+++ | | | | | | |
| | SCOP (35°C/55°C) | | W/W | 5.18/3.91 | 5.44/4.09 | 5.48/4.12 | 5.62/4.14 | 5.51/4.04 | 5.35/4.03 | 5.29/4.1 |
| | Rated Heat Output (Prated) (35°C/55°C) | | kW | 5.7/5.64 | 7.63/7.5 | 9.83/9.6 | 9.74/9.72 | 13.3/12 | 13.1/12.4 | 15.7/14.4 |
| | Seasonal Space Heating Efficiency (ηs) (35°C/55°C) | | % | 204/153 | 215/161 | 216/162 | 222/163 | 217/159 | 211/158 | 209/161 |
| | Annual Energy Consumption (35°C/55°C) | | kWh | 2275/2979 | 2896/3789 | 3706/4812 | 3579/4852 | 4974/6153 | 5082/6360 | 6111/7270 |
| | Sound Power Level | | dB(A) | 49 | 49 | 50 | 50 | 55 | 55 | 59 |
| Nominal Capacity and Nominal Input | | | | | | | | | | |
| Nominal Heating | Heating Capacity Min./Max. | A7/W35 | kW | 2.17/6.43 | 2.9/9.6 | 3.7/12.2 | 3.7/12.2 | 5.3/15.9 | 5.3/15.9 | 5.9/19 |
| | Heating Power Input Min./Max. | | kW | 0.44/1.22 | 0.55/1.9 | 0.67/2.46 | 0.67/2.46 | 0.97/3.24 | 0.97/3.24 | 1.19/4.35 |
| | COP | | W/W | 4.99/5.28 | 5.21/5.05 | 5.63/4.95 | 5.63/4.95 | 5.49/4.9 | 5.49/4.9 | 4.94/4.37 |
| | Heating Capacity Min./Max. | A7/W45 | kW | 1.91/6.1 | 2.7/9.2 | 3.5/11.6 | 3.5/11.6 | 4.9/15.2 | 4.9/15.2 | 5.5/18.3 |
| | Heating Power Input Min./Max. | | kW | 0.59/1.46 | 0.69/2.38 | 0.83/2.94 | 0.83/2.94 | 1.22/3.8 | 1.22/3.8 | 1.44/5.15 |
| | COP | | W/W | 3.25/4.18 | 3.86/3.87 | 4.04/3.94 | 4.04/3.94 | 4.02/4 | 4.02/4 | 3.84/3.54 |
| Nominal Cooling | Cooling Capacity Min./Max. | A35/W18 | kW | 3.66/7.44 | 3.4/9 | 6.3/12.2 | 6.3/12.2 | 7.8/15.3 | 7.8/15.3 | 9.1/19.3 |
| | Cooling Power Input Min./Max. | | kW | 0.66/1.83 | 0.81/2.46 | 1.16/2.95 | 1.16/2.95 | 1.57/4.12 | 1.57/4.12 | 1.8/5.32 |
| | EER | | W/W | 5.54/4.07 | 4.17/3.67 | 5.38/4.12 | 5.38/4.12 | 4.97/3.7 | 4.97/3.7 | 5.04/3.63 |
| | Cooling Capacity Min./Max. | A35/W7 | kW | 2.47/5.94 | 2.3/7 | 3.3/9.2 | 3.3/9.2 | 5.2/12.1 | 5.2/12.1 | 6.2/12.4 |
| | Cooling Power Input Min./Max. | | kW | 0.68/1.75 | 0.88/2.34 | 1.19/2.78 | 1.19/2.78 | 1.65/3.79 | 1.65/3.79 | 1.85/4.06 |
| | EER | | W/W | 3.65/3.39 | 2.59/2.99 | 2.8/3.32 | 2.8/3.32 | 3.18/3.19 | 3.18/3.19 | 3.33/3.05 |
| General Information | | | | | | | | | | |
| Electrical Data | Power Supply | | V/Hz/Ph | 220-240/50/1 | | | 380-415/50/3 | 220-240/50/1 | 380-415/50/3 | |
| Operation Limits | Max. Current | | A | 13 | 17 | 22 | 9 | 32 | 13 | 16 |
| | Ambient Temperature Range | | °C | -25~43 | | | | | | |
| | Water Temperature Range (Heating) | | °C | 75/20 | | | | | | |
| | Water Temperature Range (Cooling) | | °C | 25/7 | | | | | | |
| Components | Refrigerant | Type/Amount | -/kg | R290/0.85 | R290/1.05 | R290/1.2 | R290/1.2 | R290/1.75 | R290/1.75 | R290/1.9 |
| | Compressor | Type | | Twin-Rotary | | | | | | |
| | Fan | Quantity | | 1 | 1 | 1 | 1 | 2 | 2 | 2 |
| | | Airflow | $m^3/h$ | 2850 | 4200 | 5700 | 5700 | 6300 | 6300 | 6300 |
| | | Rated Power | W | 62 | 116 | 172 | 172 | 62*2 | 62*2 | 62*2 |
| Water Side | Heat Exchanger | Type | | Plate Heat Exchanger | | | | | | |
| | Piping Connection | | | G1" | G1" | G1" | G1" | G1-1/4" | G1-1/4" | G1-1/4" |
| | Allowable Water Flow-Min./Rated/Max. | | L/s | 0.17/0.24/0.31 | 0.27/0.38/0.5 | 0.4/0.57/0.75 | | 0.5/0.72/0.93 | | 0.67/0.96/1.24 |
| Physical Specifications | Net Dimensions (L*D*H) | Outdoor Unit | mm | 1165*400*740 | 1260*395*1030 | | | 1260*420*1525 | | 1347*442*1458 |
| | Net Weight | Outdoor Unit | kg | 100 | 128 | 140 | 155 | 200 | 215 | 230 |

Specifications are subject to change without prior notice. For the actual specifications, please refer to the label on the unit.

# Flexible Configurations for Any Installation

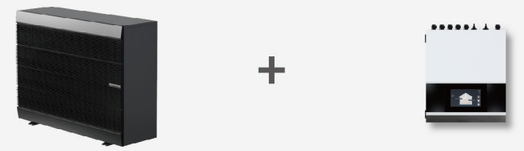
The EcoSTAR Pro offers several configurations to meet the specific needs of any installation scenario.

Installation with Hydro Box

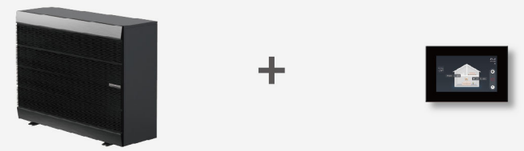


Installation with Indoor Unit with Tank

Installation with Control Box



Installation with Touch Control Panel



# Installation with Hydro Box

The hydro box integrates the control panel, main electronics, hydraulic parts, and electric heater, greatly simplifying on-site installation.

## Indoor Unit Structure

Front panel swings open like a door, fully exposing the hydraulic system, which provides sufficient space to work on any internal component and allows easy access to the control system. All connections from the controller are made via terminal blocks, simplifying wiring and troubleshooting.

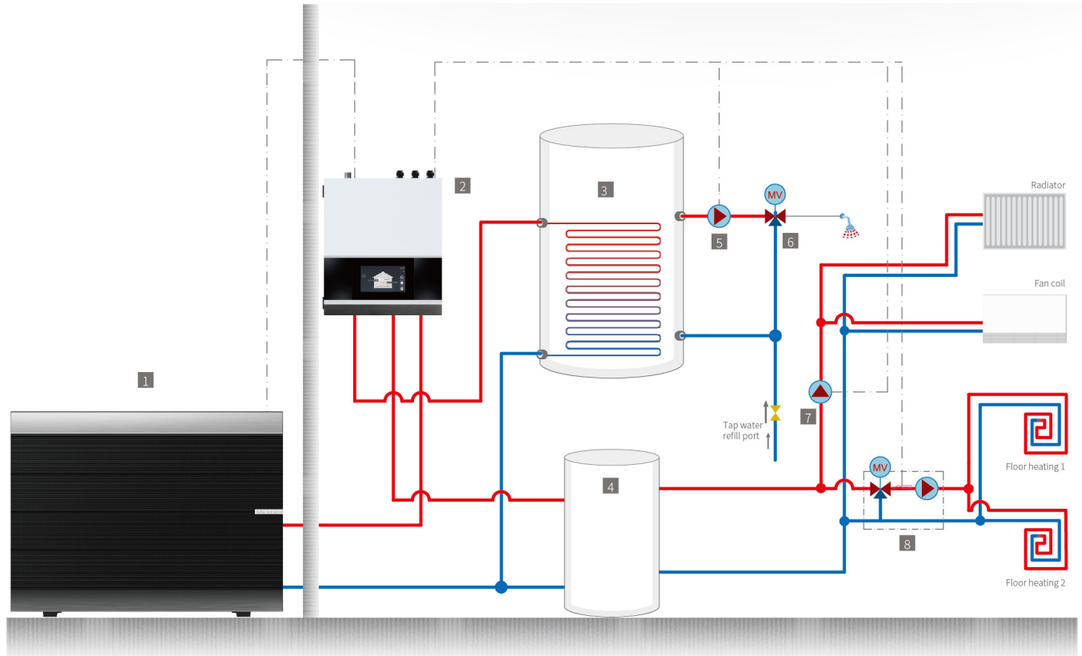
## Technical Data

| Hydro Box | | EcoSTAR Pro 01-HB-I | EcoSTAR Pro 02-HB-I |
|---|---|---|---|
| Power Supply | / | 220-240V, 50Hz | 380-415V, 3N~, 50Hz |
| Water Temperature Range | ℃ | 7-75 | |
| Heat Pump Inlet Connection | inch | 1 | |
| Heat Pump Outlet Connection | inch | 1 | |
| Heating Outlet Connection | inch | 1 | |
| Safety Valve Connection | inch | 1 | |
| Max. Water Pressure | bar | 3 | |
| Water Pressure Drop* | kPa | 22 | |
| Electric Heater | kW | 3 | 9 |
| Sound Pressure at 1m | dB(A) | 25 | |
| Dual-Zone Control | / | Yes | |
| Net Weight | kg | 32 | |
| Gross Weight | kg | 37 | |
| Net Dimensions (L*D*H) | mm | 550*260*650 | |
| Package Dimensions (L*D*H) | mm | 640*330*740 | |

* The test flow rate is 2 $m^3$/h.



## Application




1 Outdoor unit
2 Indoor unit
3 Domestic water tank
4 Buffer water tank
5 DHW micro-circulation pump
6 Manual mixing valve
7 Secondary water pump
8 Mixing valve assembly, including water pump, mixing valve, and sensor

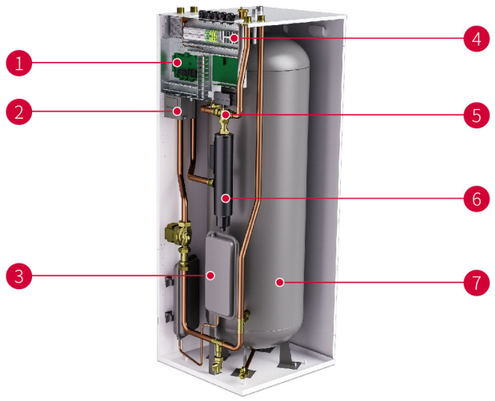
## Models

| Capacity (kW) | Indoor Unit | | Outdoor Unit | |
|---|---|---|---|---|
| 6 | EcoSTAR Pro 01-HB-I |  | EcoSTAR Pro 06M-O |  |
| 8 | | | EcoSTAR Pro 08M-O | |
| 12 | | | EcoSTAR Pro 12(T)M-O | |
| 15 | EcoSTAR Pro 02-HB-I | | EcoSTAR Pro 15(T)M-O |  |
| 20 | | | EcoSTAR Pro 20TM-O | |

# Installation with Indoor Unit with Tank

An all-in-one solution that integrates all components and a domestic hot water tank for the easiest installation.

## Components



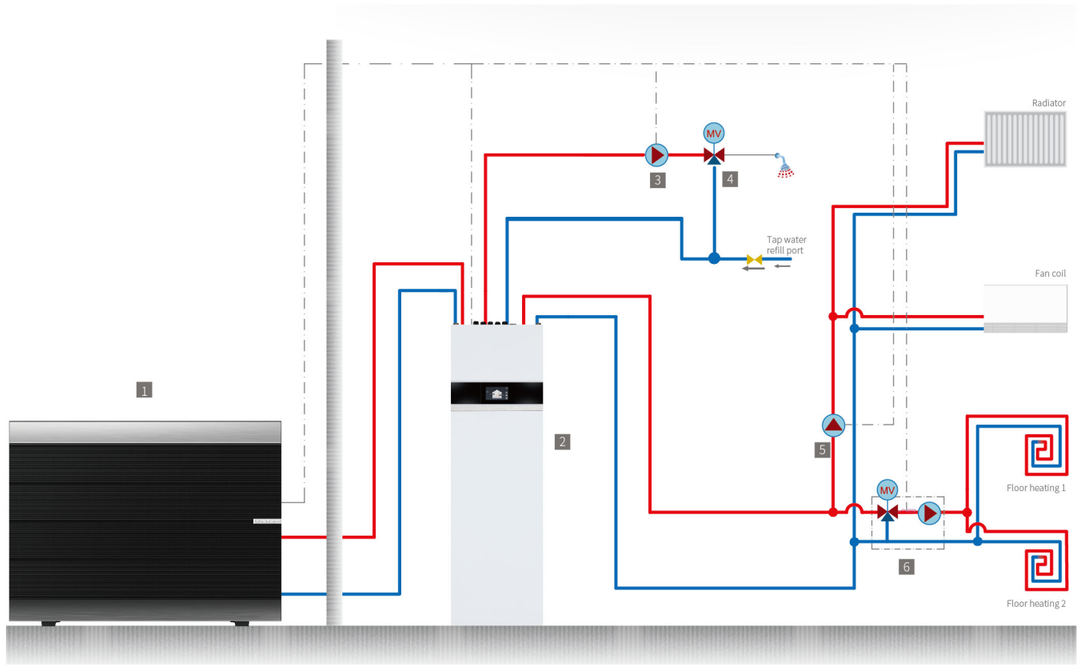

1 Electrical box
2 AC contactor
3 10L expansion tank
4 Digital thermostat
5 Three-way valve
6 Electric heater
7 250L DHW tank

## Technical Data

| All-in-One Indoor Unit | | EcoSTAR Pro 01-AIO-I | EcoSTAR Pro 02-AIO-I |
|---|---|---|---|
| Power Supply | / | 220-240V, 50Hz | 380-415V, 3N~, 50Hz |
| Water Temperature Range | ℃ | 7-75 | |
| Heat Pump Inlet Connection | inch | 1 | |
| Heat Pump Outlet Connection | inch | 1 | |
| Heating Inlet Connection | inch | 1 | |
| Heating Outlet Connection | inch | 1 | |
| Domestic Hot Water Inlet Connection | inch | 3/4 | |
| Domestic Hot Water Outlet Connection | inch | 1 | |
| Drain Outlet Connection | inch | 1/2 | |
| Expansion Tank | L | 10 | |
| Hot Water Tank Capacity | L | 250 | |
| Max. Water Tank Pressure | bar | 7 | |
| Electric Heater | kW | 3 | 9 |
| Dual-Zone Control | / | Yes | |
| Net Weight | kg | 111 | |
| Gross Weight | kg | 131 | |
| Net Dimensions (L*D*H) | mm | 600*710*1720 | |
| Package Dimensions (L*D*H) | mm | 640*755*1945 | |



## Application




1 Outdoor unit
2 All-in-one indoor unit
3 DHW micro-circulation pump
4 Manual mixing valve
5 Secondary water pump
6 Mixing valve assembly, including water pump, mixing valve, and sensor

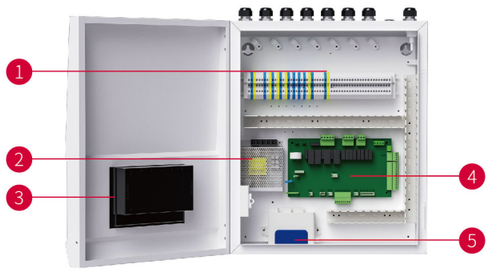
## Models

| Capacity (kW) | Indoor Unit | | Outdoor Unit | |
|---|---|---|---|---|
| 6 | EcoSTAR Pro 01-AIO-I |  | EcoSTAR Pro 06M-O |  |
| 8 | | | EcoSTAR Pro 08M-O | |
| 12 | | | EcoSTAR Pro 12(T)M-O | |
| 15 | EcoSTAR Pro 02-AIO-I | | EcoSTAR Pro 15(T)M-O |  |
| 20 | | | EcoSTAR Pro 20TM-O | |

# Installation with Control Box

The control box includes the control panel and main electronics, making wiring simpler and faster.

## Components



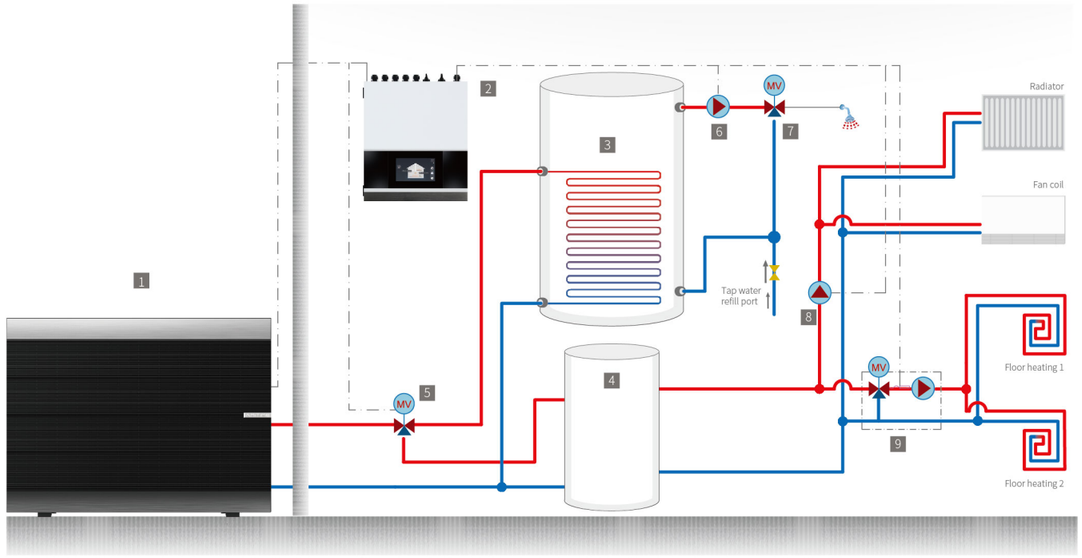

1. Wiring terminal
2. Switching power supply
3. Touch control panel
4. Main control board
5. 4G & Wi-Fi module

## Technical Data

| Control Box | | EcoSTAR Pro-CB-I |
|---|---|---|
| Power Supply | / | 220-240V, 50Hz |
| Net Weight | kg | 10 |
| Gross Weight | kg | 13 |
| Net Dimensions (L*D*H) | mm | 390*132*450 |
| Package Dimensions (L*D*H) | mm | 420*220*500 |



## Application




1 Outdoor unit
2 Indoor unit
3 Domestic water tank
4 Buffer water tank
5 Three-way valve
6 DHW micro-circulation pump
7 Manual mixing valve
8 Secondary water pump
9 Mixing valve assembly, including water pump, mixing valve, and sensor

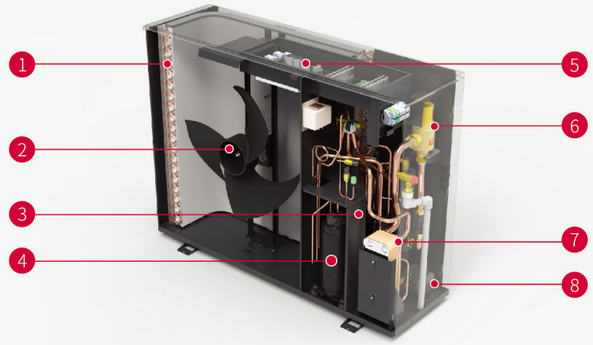
## Models

| Capacity (kW) | Indoor Unit | | Outdoor Unit | |
|---|---|---|---|---|
| 6 | EcoSTAR Pro-CB-I |  | EcoSTAR Pro 06M-O |  |
| 8 | | | EcoSTAR Pro 08M-O | |
| 12 | | | EcoSTAR Pro 12(T)M-O | |
| 15 | | | EcoSTAR Pro 15(T)M-O |  |
| 20 | | | EcoSTAR Pro 20TM-O | |

# Installation with Touch Control Panel

For maximum flexibility, you can purchase the outdoor unit and touch control panel, allowing installers to source other components based on the site's specific requirements.

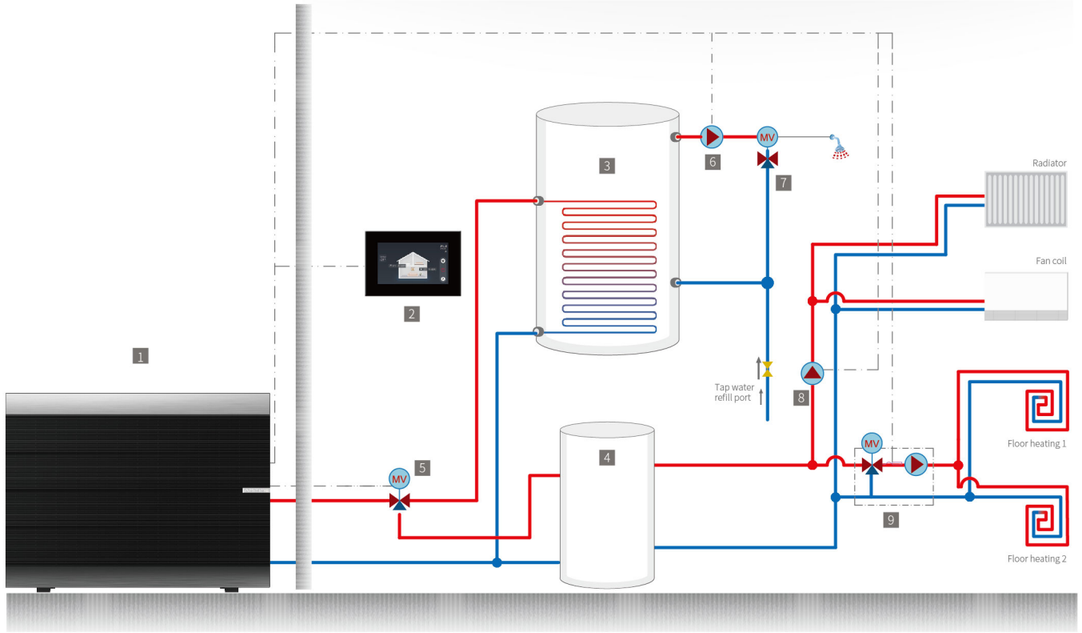
## Components




1 Evaporator
2 DC fan motor
3 Compressor sound shield
4 R290 twin-rotary compressor
5 Electrical box
6 Gas separator
7 Plate heat exchanger
8 Water pump



## Application




1 Outdoor unit
2 Touch control panel
3 Domestic water tank
4 Buffer water tank
5 Three-way valve
6 DHW micro-circulation pump
7 Manual mixing valve
8 Secondary water pump
9 Mixing valve assembly, including water pump, mixing valve, and sensor

## Models

| Capacity (kW) | Outdoor Unit | | Touch Control Panel |
|---|---|---|---|
| 6 | EcoSTAR Pro 06M-FM-O |  |  |
| 8 | EcoSTAR Pro 08M-FM-O | | |
| 12 | EcoSTAR Pro 12(T)M-FM-O | | |
| 15 | EcoSTAR Pro 15(T)M-FM-O |  | |
| 20 | EcoSTAR Pro 20TM-FM-O | | |