BEXIE GROUP

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BEXIE GROUP

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BEXIE GROUP designs, manufactures and delivers high-performance solar electric technology worldwide.
Our high-efficiency solar cells enable us to produce different types of solar panels with highest efficiency.

MONOBLOC HEAT PUMP R290

Multi purpose solution

BEXIE ENERGY
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High Potential Heating System Heat Pump

What is a heat pump?
A heat pump is an environmentally friendly system that provides heating, hot water, and cooling throughout the year.
It functions by extracting heat from the surrounding environment and transferring it indoors.

Do heat pump refrigerants harm the environment?
The Nature heat pump uses R290, a natural refrigerant with low environmental impact and high efficiency, making it a sustainable option for environmentally conscious users.

Can the heat pump operate effectivly in cold winters?
The Nature heat pump delivers efficient performance even in extremely cold climates, operating reliably at temperatures as low as -25°C. It maintains full heating capacity at -7°C ambient temperature with a 35°C water outlet, providing consistent comfort during harsh winter conditions..

Can the heat pump be combined with a photovoltaic system?
The Nature heat pump is fully compatible with photovoltaic systems. Midea offers the iEasyEnergy solution, a comprehensive service that includes design and installation of both heat pumps and solar systems, covering the complete energy needs of residential households.

Is the heat pump noisy during operation?
The Nature heat pump operates quietly, producing only 30 dB(A) at a distance of 3 meters under full load. This is comparable to the sound of a whisper, ensuring a peaceful environment for residential areas.

Will using a heat pump result in high electricity bills?
The Nature series heat pumps meet European Union energy standards and are rated A+++ for space heating at 55 °C/35 °C water temperatures.
This top-tier energy efficiency ensures high performance while keeping electricity costs low.

Suitability for Older Homes and Radiators?
TThe Nature heat pump delivers water temperatures up to 80 °C, even at ambient temperatures as low as -10 °C. This makes it suitable for more than 98% of European heating scenarios, including old buildings and radiator-based systems, eliminating the need for extensive water system upgrades.

Lifespan of the Heat Pump
The typical lifespan of a heat pump ranges from 15 to 25 years. Longevity depends on the equipment quality, proper installation, regular maintenance, and the operating environment.

Why Heat Pump

Low Carbon Background

To achieve carbon peaking and carbon neutrality, address the energy crisis, enhance energy independence, and accelerate the transition of buildings from carbon consumers to carbon-neutral structures, residents can play an active role by installing heat pumps.

Governments worldwide are introducing policies to encourage this transition. In Germany, for example, the Federal Ministry for Economic Affairs and Energy (BMWi) provides subsidies for heat pump installations. The level of financial support depends on the type and specifications of the system. Additionally, German states and municipalities may offer further incentives and preferential policies, depending on local regulations.

The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) also supports households with low-interest loans, allowing them to spread out the costs of purchasing and installing heat pumps. Furthermore, the Federal Ministry of Finance (BMF) offers tax incentives that help reduce upfront and long-term expenses.

For German households, investing in a heat pump is not only a practical step toward energy savings and emissions reduction but also an opportunity to benefit from government subsidies and favorable financing policies—making the transition both environmentally and economically sustainable.

Reducing CO_2 Emissions with Heat Pumps to Mitigate Climate Change and Natural Disasters

Climate Change: Phenomenon, Impact, Cause, and Solutions.

Phenomenon

Global warming has been a continuous trend in recent decades.

Impact

Increasing frequency of localized droughts, floods, and extreme weather events.

Arctic sea ice loss, melting ice sheets, rising global temperatures, and sea level rise.

Cause

Rapid increase in greenhouse gas emissions due to human activities, intensifying the greenhouse effect.

CO_2, CH_4, N_2O, H_2O, and CFCs are the main contributors.

Solutions

The European Green Deal, announced in December 2019, aims to make Europe the first climate-neutral continent by 2050 and significantly reduce greenhouse gas emissions to mitigate climate change.

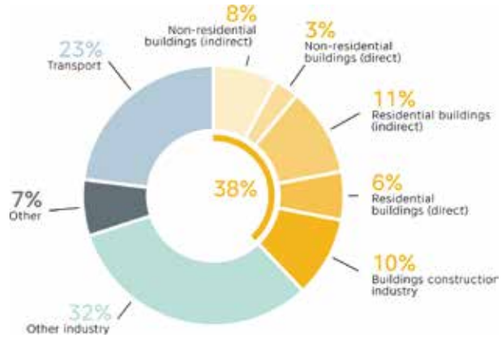
Reducing CO_2 Emissions with Heat Pumps

Reducing carbon dioxide emissions is a critical step in addressing climate change, and heat pumps provide an effective solution. By replacing traditional fossil fuel-based heating systems with heat pumps, energy consumption and CO_2 emissions can be significantly reduced.

This transition supports global climate targets while also lowering household energy costs for heating and hot water.

With modern refrigerants, heat pumps reduce greenhouse gas emissions by at least 20% compared to gas boilers, even when powered by carbon-intensive electricity.
In countries with cleaner electricity grids, this reduction can reach up to 80%.

Since building heating and domestic hot water generation account for around 30% of global greenhouse gas emissions, adopting heat pumps represents a key measure in reducing environmental impact and advancing toward a sustainable future.



Energy Efficiency and Emission Reduction with Heat Pumps

Reducing household energy consumption for heating and hot water not only lowers utility costs but also contributes to a more sustainable future.

Thanks to today's advanced refrigerants, heat pumps deliver at least a 20% reduction in greenhouse gas emissions compared to gas boilers, even when operating with electricity from carbon-intensive sources. In regions powered by cleaner electricity grids, this reduction can reach up to 80%.

What Is A Heat Pump?

A heat pump is a highly efficient system that transfers natural, renewable heat energy into indoor spaces using a compressor and a heat exchanger.

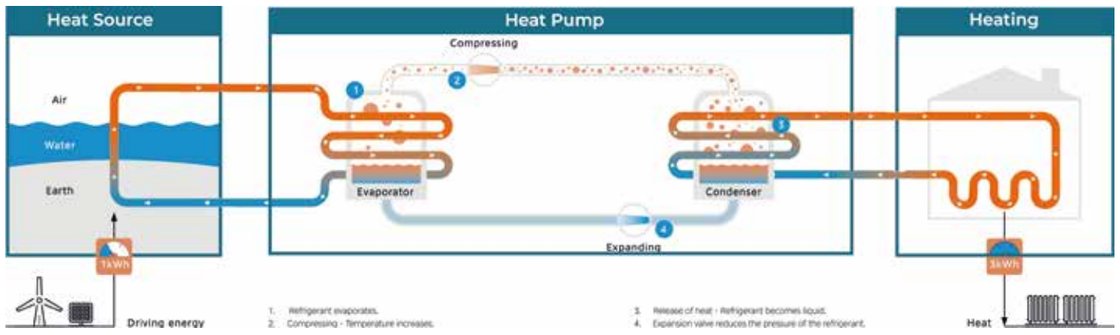
Due to their environmental benefits and high energy efficiency, heat pumps are strongly promoted and subsidized by governments—both for energy-saving retrofits in existing buildings and as a core technology in new, low-carbon construction.

Heat pumps significantly outperform conventional heating systems: with just 1 kWh of electricity, they can deliver approximately 3 kWh of usable heat.

This makes them a key solution in the global transition toward energy efficiency and carbon reduction.

Residential Heat Pumps

BEXIE's residential heat pumps seamlessly interface with multiple terminal units—such as radiators, underfloor heating circuits, fan coil units (FCUs), and hot water storage tanks—to efficiently deliver home heating, cooling, and domestic hot water.



What Are The Benefits Of Using Heat Pumps?

Advantages Over Other Heat Sources

- Lower energy cost
- Stable energy supply
- Available cooling features
- Safety with no CO poisoning risk
- Small footprint
- Zoned heating
- Intelligent control
- Remote fault viewing
- Works with a PV electricity generation and storage system to reduce electricity consumption

Government Subsidies

In May 2022, the European Union launched the REPowerEU Plan, committing €56 billion to the deployment of high-efficiency technologies such as heat pumps to strengthen Europe's energy security.

Through this initiative, purchasers of heat pump systems may benefit from financial support mechanisms, including low-interest loans and direct subsidies. For details on eligibility and application procedures, households and businesses are advised to contact their local energy consultant or certified installer.

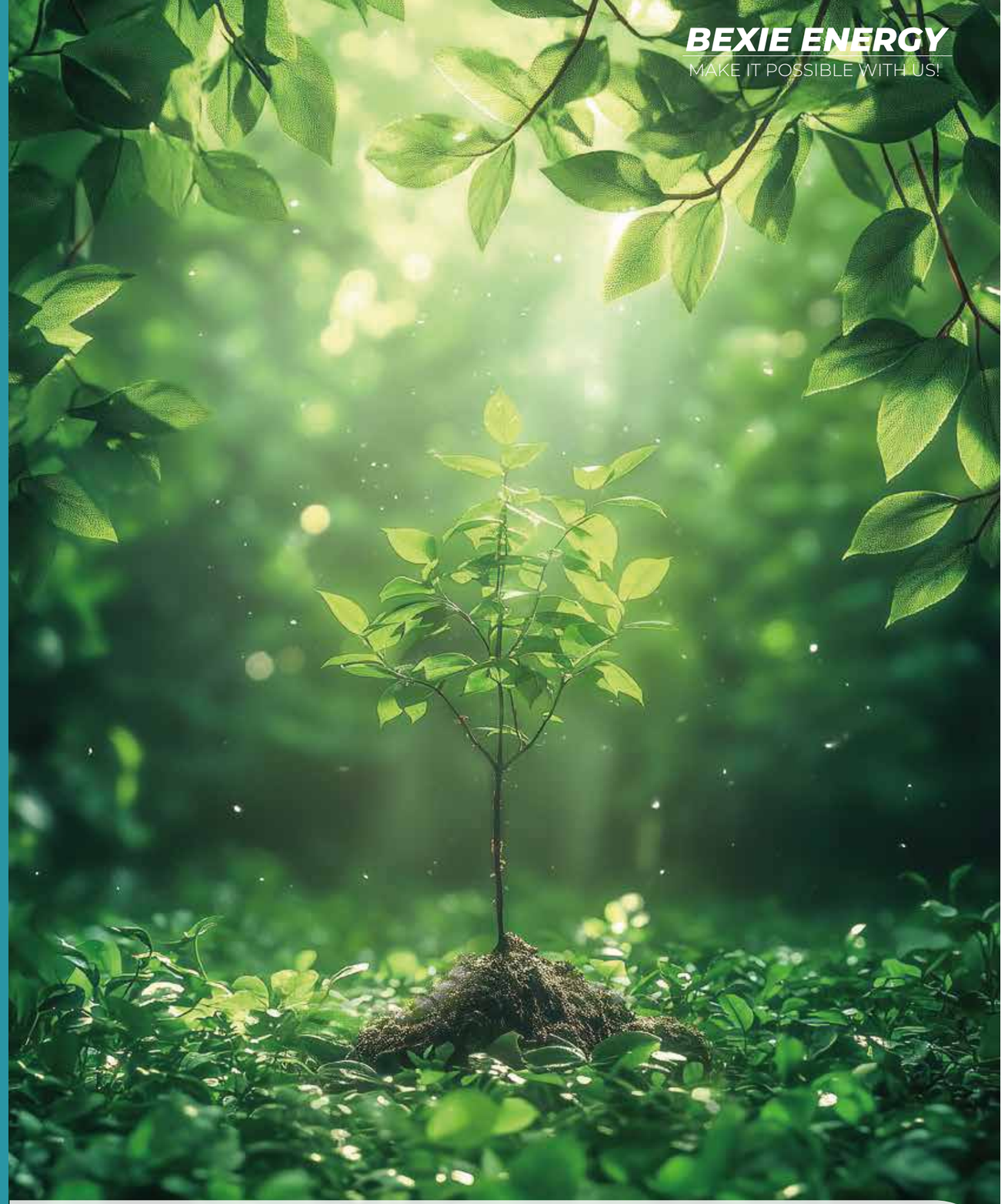
The REPowerEU Plan aims to rapidly reduce Europe's dependence on Russian fossil fuels by accelerating the clean energy transition and adapting industrial systems and infrastructure to alternative energy sources and suppliers.

To achieve this, the EU estimates that an additional €210 billion in investment will be required by 2027. This shift is essential to eliminate imports of Russian fossil fuels, which currently cost European taxpayers nearly €100 billion per year.

Do you want me to also summarize this into a concise fact-box style (with key figures: €56B, €210B, 2027, 100B/year) so it can stand out visually in the manual?

Why Choose Us

- Enviromentally Friendly
- Cost Efficiency
- User-Centric Design
- Practical Function
- Easy Scalabity
- Seamless Service
- Application Scenario Solution



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R290 vs R410A

99.86% LESS GWP VALUE
99.96% LESS CO_2 EMISSION

The R290 refrigerant has a very low global warming potential (GWP=3) and zero ozone depletion potential (ODP), which is highly energy efficient and suitable for scenarios with high environmental requirements.

R290

MULTI-SCENE COVERAGE

BEXIE GROUP residential heat pump offers an all-in-one solution for year-round climate control, seamlessly integrating advanced engineering to deliver exceptional heating and cooling performance. Utilizing next-generation, low-GWP refrigerants, it maximizes energy efficiency while minimizing environmental footprint. Designed for discerning homeowners, it combines sustainable operation with superior comfort, ensuring optimal indoor conditions in every season.

Is the heat pump noisy during operation?

No. The BEXIE heat pump operates at a noise level as low as 30 dB(A) measured at a distance of 3 meters under full-load conditions—comparable to the sound of a whisper. This ultra-quiet performance ensures minimal disturbance, making it perfectly suited for residential environments where comfort and tranquility are paramount.

Can the heat pump operate effectively in cold winters?

Yes, it can. The BEXIE heat pump is engineeredto perform efficiently in extreme cold conditions, functioning reliably at temperatures as low as -25°C. Moreover, it maintains full heating capacity without any degradation at an ambient temperature of -7°C with a 35°C water outlet, ensuring consistent comfort and warmth even during the harshest winter conditions.

Is the heat pump suitable for older houses and radiator systems?

Absolutely. The BEXIE heat pump can deliver water temperatures of up to 80°C even at an ambient temperature of -10°C. This capability covers over 98% of European heating applications, making it an ideal solution for retrofitting older buildings and replacing traditional boilers—significantly reducing the need for costly water system modifications.

Will using a heat pump result in high electricity bills?

The BEXIE series complies fully with European Union regulations, achieving an A+++ energy efficiency rating at 55°C/35°C water temperatures for space heating. This represents the highest classification for energy-efficient products on the European market, ensuring customers enjoy superior performance while minimizing operational costs.

Cost Efficiency

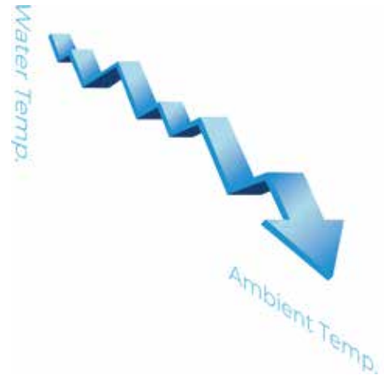
Climate Curves

The water temperature automatically adjusts in response to ambient conditions to optimize energy savings.

·Three temperature control modes:
Standard, Custom, and ECO.
· 32 predefined weather-based temperature curves.
· Precise regulation with the “Temperature Offset” function.
· Customizable curves tailored for different zones and operational modes.

Smart Grid Function

The heat pump intelligently adapts its operation in response to varying electrical signals. By automatically adjusting power consumption in accordance with peak and off-peak electricity periods, the system maximizes efficiency and minimizes energy costs to the greatest extent possible.



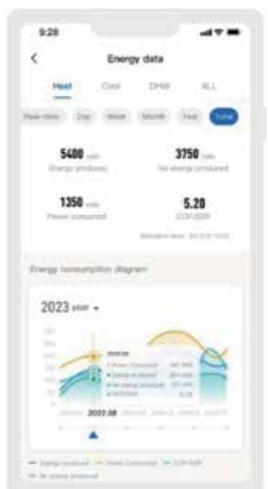
Energy Metering Function

Users have the option to receive customized energy analyses through the user interface, mobile app, and online portal.

This provides intuitive and visual energy management tools that help guide user behavior toward optimizing the heat pump system’s energy efficiency.

The system complies with EU Regulations 2018/2001/EU and (EU) 2022/759, making it eligible for relevant subsidies.

Controller



SmartHome

User-Centric Design

Liquid Code Display

· Touch-key design.
· Liquid Crystal Display.
· Error code display.
· Operation parameter checking.
· Point check function.
· Multiple languages.
· Child lock function.
· Buzzer alarm.
· Built-in temperature senor and wifi module.
· Modbus protocol and network flexibility.

Color Screen Display

· Color screen displayIntegral tempered glass panel,metallic texture border
· 3.5 inch color screen display, immersive interface after screen-off
· 2-core non-polar cable, Homebus communication protocol
· Modbus protocol
· OTA function, enables wired controller updates remotely
· APP control (Bluetooth connection for network setup)
· FAQ function

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SmartHome Integration

The SmartHome system enables end users to control and monitor their heating system anytime and anywhere, ensuring both comfort and efficiency.

With its Compressor Capacity Calculation algorithm, SmartHome provides precise monitoring of household energy consumption, allowing for optimized system performance and improved energy savings.

The SmartHome App is fully compatible with Amazon Alexa and Google Home, enabling convenient voice control of the heat pump. Users can:

- Power the system on and off.
- Change the operation mode.
- Adjust the temperature settings.

Practical Function

Special Operating Modes

Drying-Up Mode: Used to dry the floor after installation, ensuring proper preparation before regular operation.

Preheating Mode: Designed for the first heating cycle of the season. The water temperature in the floor heating loops increases gradually to prevent floor damage, such as warping or cracking.

Away Mode & Water Safety

When the user is away, the heat pump operates in heating mode and/or DHW (domestic hot water) mode at a reduced water temperature to prevent the water system from freezing.

Additionally, a disinfection cycle can be activated before the user returns, ensuring safe and hygienic water quality.

Holiday Home

Flexible settings allow users to adjust the heating schedule temporarily while at home without affecting the predefined daily or weekly program.

DHW Pump Function

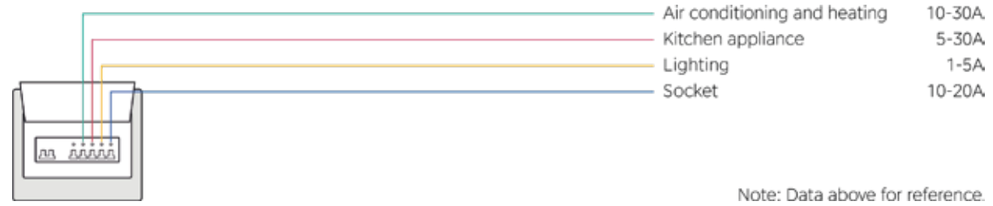
The DHW pump recirculates water from the piping network back to the tank. Users can set up to 12 timers per day, allowing the pump schedule to be customized according to daily usage patterns. This ensures hot water is available when needed without long waiting times.

Smart, Practical and Easily Scalable

Power Input Limitation

During the installation of the unit, the appropriate current usage is set in the Power Input Limitation function of thecontroller based on the user's power supply conditions. This ensures that the unit can operate safely and stably even when the power supply is limited.

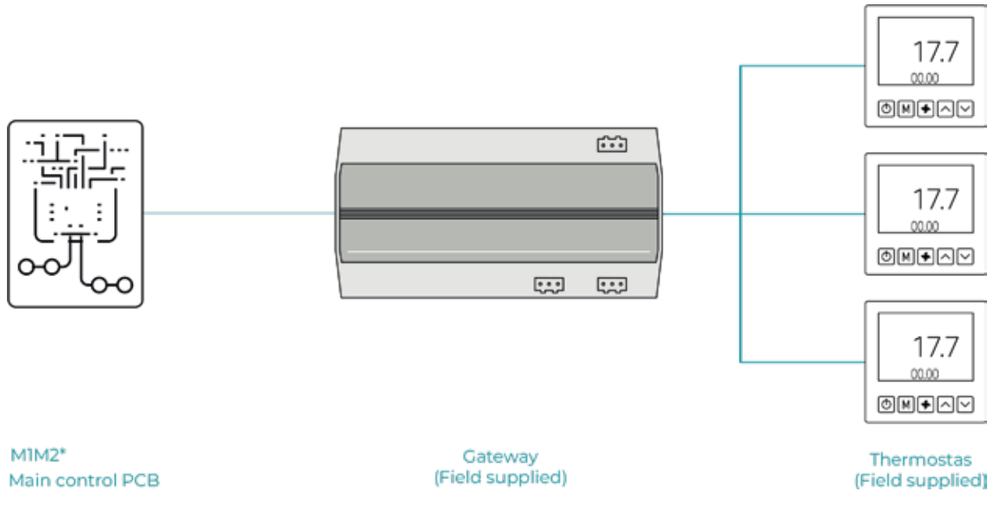
· Easy setting on wired controller.
· 8 configurations for unit current limitation adjustment.
· Flexible to adapt to different usage scenario.



Note: Data above for reference.

Multiple Thermostats Control

The main control PCB of the unit has a port connected to the gateway, through the gateway to connect a number of temperature controllers, according to the needs of different heating areas to accurately adjust the temperature of each area.



Seamless Service

Excellence in Performance and After-Sales Service

A high-quality product combines outstanding performance with reliable after-sales support to deliver a seamless user experience.

By implementing dedicated service tools and optimizing service processes, after-sales personnel can efficiently address issues, ensuring customers receive prompt and superior service.

One Controller For All Operation Parameters Display

Easy for maintenance person to do the annual inspections.

USB Function

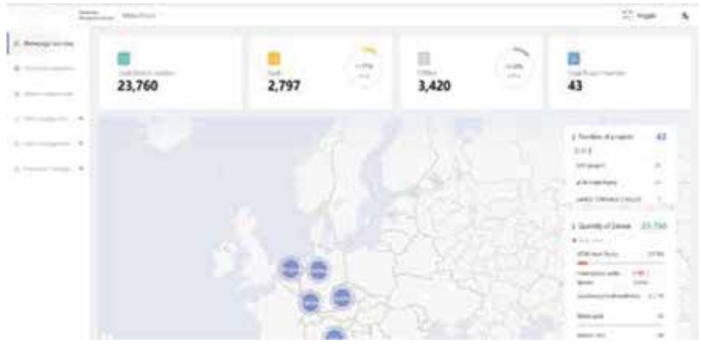
· Convenient program upgrade. No need to carry any other heave equipments but only USB can realize program upgrade.

· Parameter transmission Installer can quickly copy the setting from one controller to another via USB, which save the time of on-site installarion.

Intelligent HVAC Management System

This system is designed specifically for dealers, offering quick access to installation, maintenance, and repair records, along with the capability to monitor devices remotely.

Home page

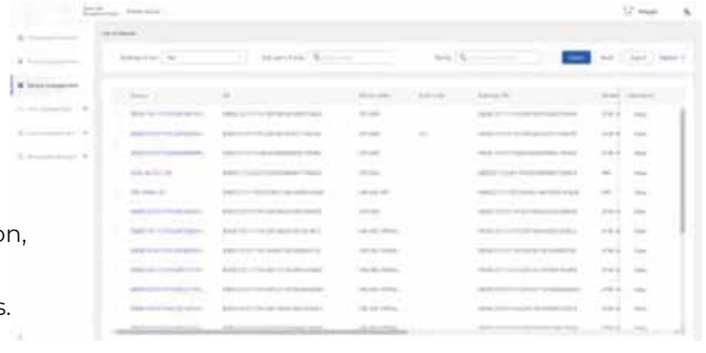


- Remote monitoring of all installations through an intuitive control panel.
- Display all systems'status.

Project management

- Key accounts/technical managers can easily use a single central controller to easily control and monitor all projects.
- Installers/facility managers can perform remote diagnosis without the need for a site visit.

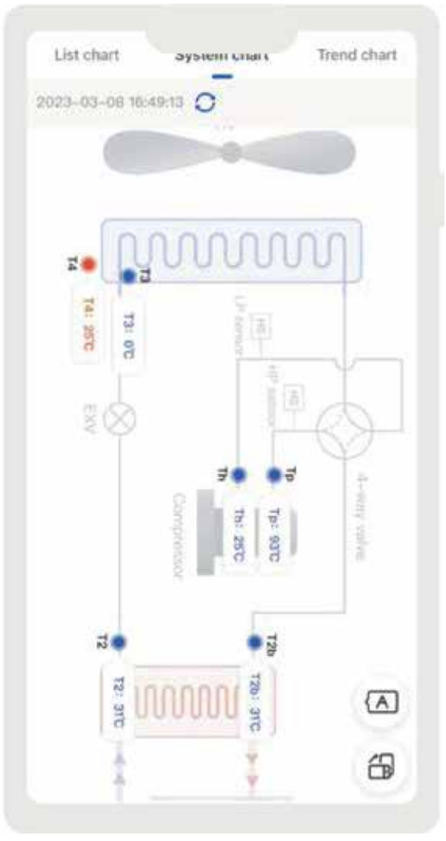
Device management



- All device details are at your fingertips.
- Ready access to all important system information, including project information, device lists, device status, faults, maintenance, repair and test run records.

LetsLink

LetsLink is tailored for professional users, enabling easy commissioning, monitoring, and diagnosis. It provides straightforward access to detailed performance data, fault code history, and diagnostic insights.



- Maintenance scheduling.
- Identify potential issues and schedule site visit with relevant details.
- Reduces cost associated with unnecessary trips.

- Timely response and fault analysis.
- Access technical information remotely and flag abnormalities.
- Enables installers and service professionals to quickly and accurately identify potential problems before they occur.

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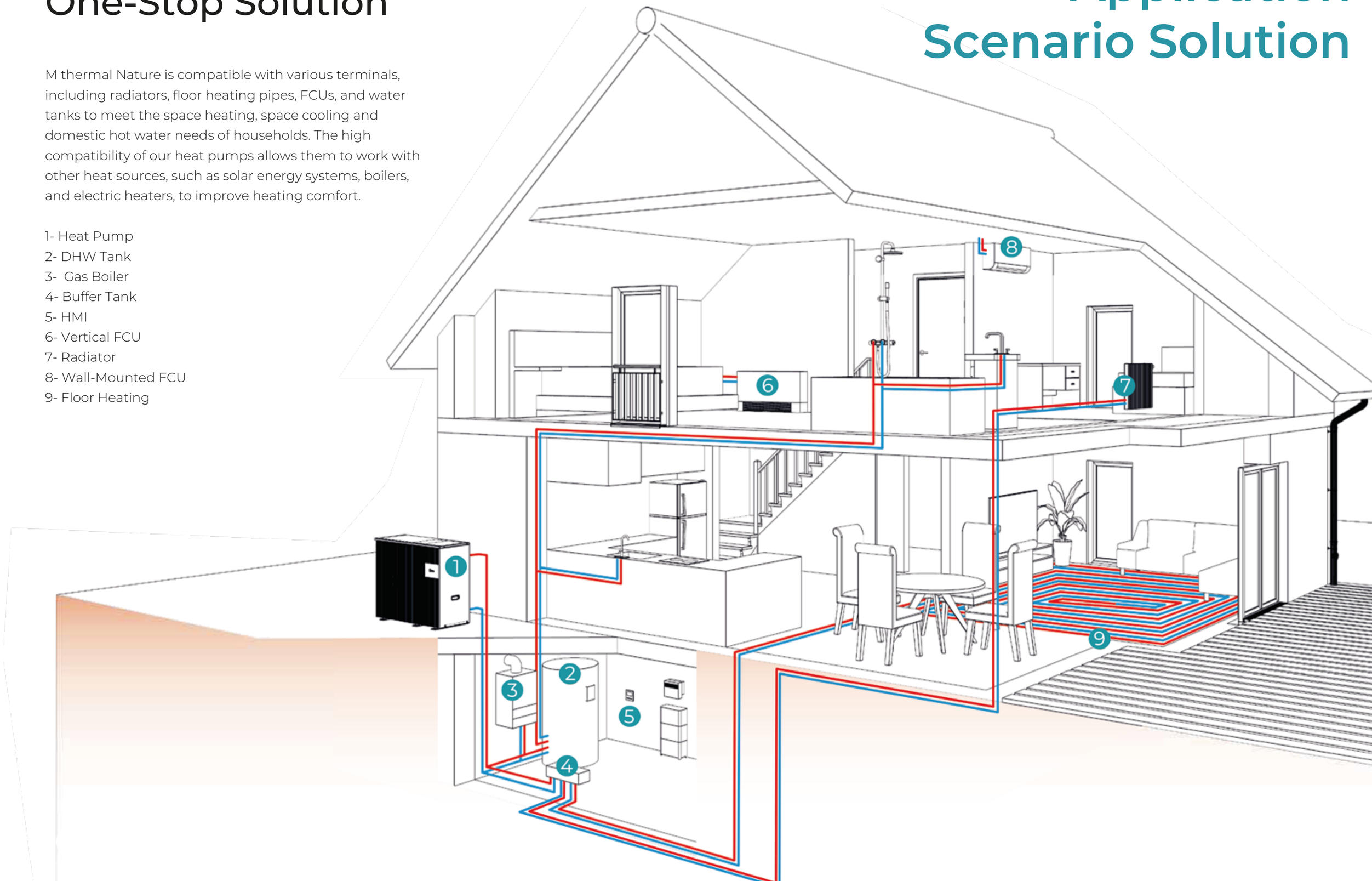
Application Scenario Solution

One-Stop Solution

M thermal Nature is compatible with various terminals, including radiators, floor heating pipes, FCUs, and water tanks to meet the space heating, space cooling and domestic hot water needs of households. The high compatibility of our heat pumps allows them to work with other heat sources, such as solar energy systems, boilers, and electric heaters, to improve heating comfort.

1- Heat Pump
2- DHW Tank
3- Gas Boiler
4- Buffer Tank
5- HMI
6- Vertical FCU
7- Radiator
8- Wall-Mounted FCU
9- Floor Heating

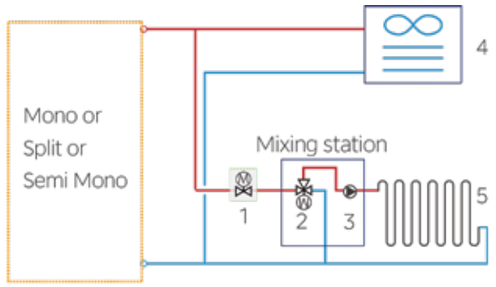


Typical Application

Practical applications are various, including but not limited to the following applications.
The application examples given below are for illustration only.g

Heating And Cooling

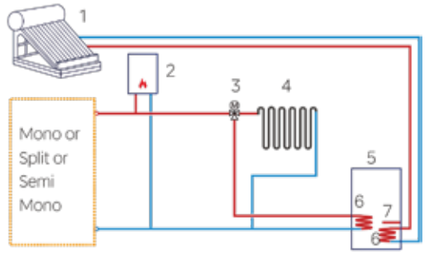
Floor heating loops is used for space heating and fan coil unit is used for both space heating and cooling. For heating mode, floor heating loops and fan coil unit require different operating water temperature. Mixing station is used to adjust appropriate water temperature for floor heating loops using. 2-way valve is used to prevent water from entering floor heating loops then result in condensation during cooling.



Notes:
1. 2-way valve (field supplied)
2. 3-way valve (field supplied)
3. Water pump (field supplied)
4. Fan coil unit (Midea can supply)
5. Floor heating loop (field supplied)

Heating, DHW And Hybrid Heat Source

The backup electric heater (optional) and the Air Handling System (AHS) provide additional heating to increase the leaving water temperature.
The Terminal Block Heater (TBH) and the solar system provide supplementary heating to raise the domestic hot water (DHW) temperature. A 3-way valve is used to switch between heating mode and DHW mode.



Notes:
1. Solar panel (field supplied)
2. AHS: Additional heating source (field supplied)
3. 3-way valve (field supplied)
4. Floor heating loop (field supplied)
5. Water tank (field supplied)
6. Heat exchanger coil (field supplied)
7. TBH: Tank booster heater (field supplied)

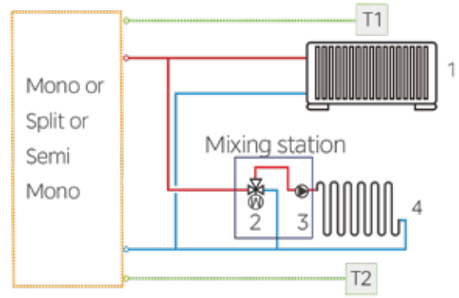
Double Zones Control

Double zone control is available exclusively in heating mode.0
It allows different areas to be maintained at different temperatures to meet varying comfort requirements.

Using Wired Controller Only
The wired controller sets the mode, temperature, and on/off status.
·Zone 1 is controlled based on the leaving water temperature.
·Zone 2 is controlled either based on the leaving water temperature or via the built-in sensor integrated into the wired controller.

Using Wired Controller with Thermostat
The wired controller sets the mode and water temperature.

Both Zone 1 and Zone 2 are controlled by their respective thermostats.

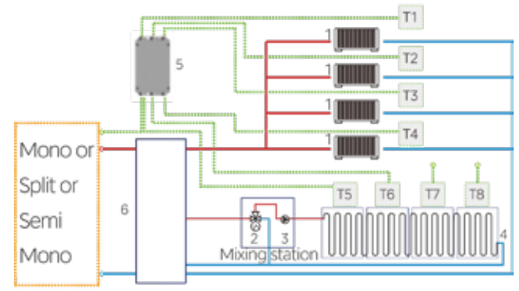


Notes:
1. Radiator (field supplied)
2. 3-way valve (field supplied)
3. Water pump (field supplied)
4. Floor heating loop (field supplied)

Abbreviation
T: Room thermostat (field supplied)

Multiple Rooms Control

Maximum 6 room thermostats are available to be connected with M-kit and 2 thermostats are connected to heat pump, which realizes maximum 8 rooms can be controlled.

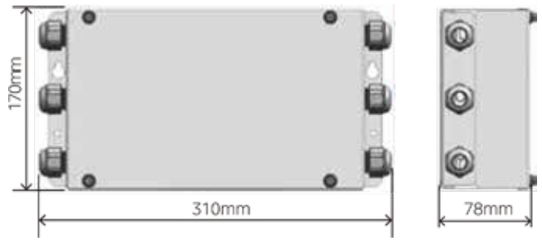


Notes:
1. Radiator (field supplied)
2. 3-way valve (field supplied)
3. Water pump (field supplied)
4. Floor heating loop
5. M-kit (optional)
6. Balance tank (field supplied)

Abbreviation
T: Room thermostat (field supplied)

M-Kit

The M-kit is wall-mounted with a simple structure, mini size, flexible installation, and can connect up to a maximum of 6 thermostats.



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iEasyEnergy Solution - A Step Toward Energy Independence

Bexie Group has launched the iEasyEnergy solution, offering a one-stop service from design to installation to meet the energy demands of household devices.

The iEasyEnergy solution integrates PV panels, LFP batteries, and a heat pump system.

Through the iEasyEnergy app, users can perform energy scheduling and centralized flexible control, significantly improving energy efficiency.

The system can increase home energy self-sufficiency by up to 90%, allowing customers to reduce energy bills while enhancing energy security.

1. Heat Pump
2. M-ESS (Energy storage)
3. M-Master (Central controller)
4. M-Charger (EV Charger)
5. M-Solar (Solar module)

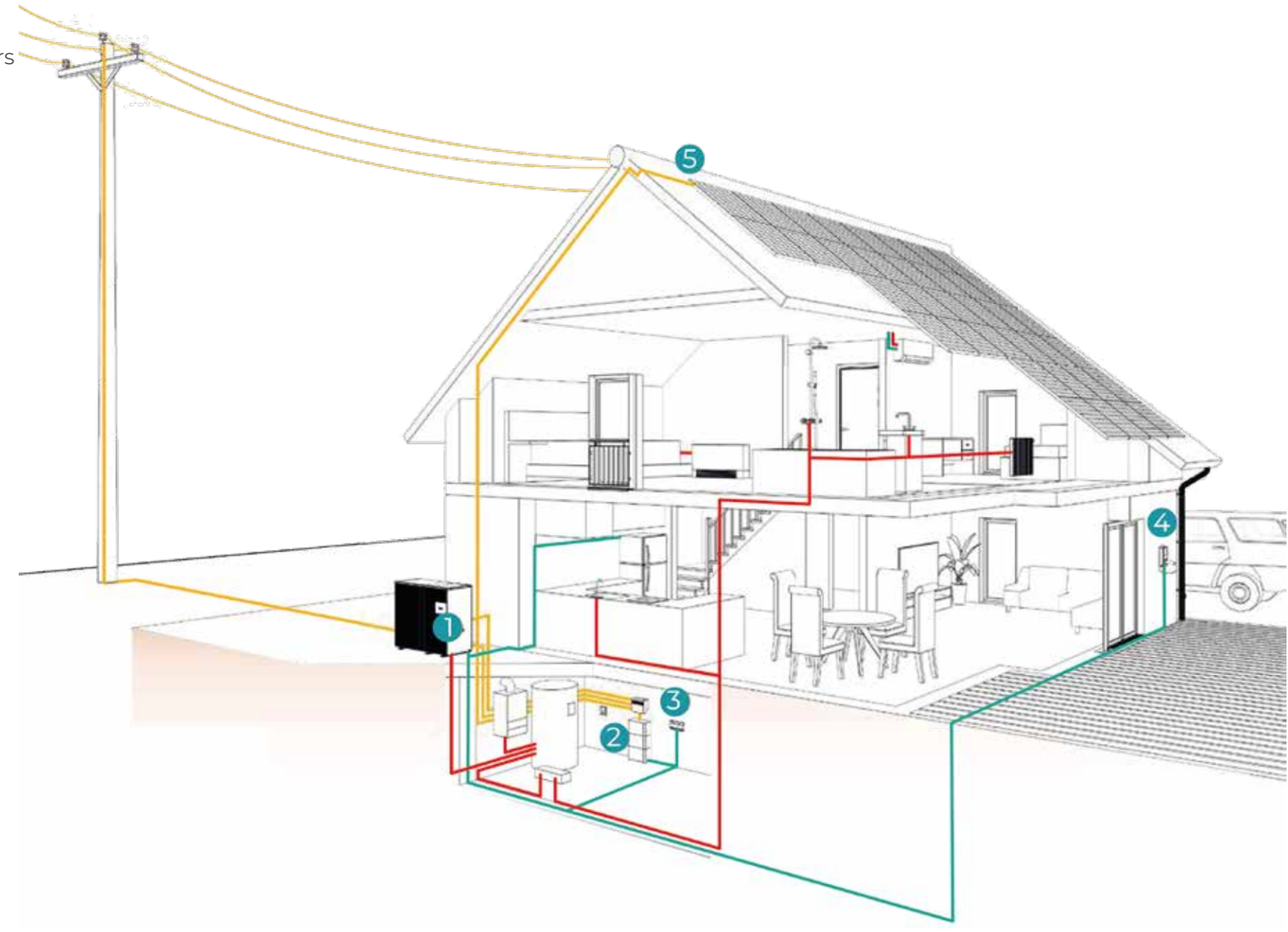
Advanced Highlights

- 3-in-1 one-stop management
- Excess solar for continues heating and free cooling by flexible control
- Home energy self-sufficiency and anergy bill savings analysis
- Automatic fault notification push and analysis

GET IT ON Google Play Download on the App Store

Analyze whether your home energy is safe, perform visible energy management automatically

The iEasyEnergy app is an intelligent energy management platform that integrates heat pumps, photovoltaic (PV) modules, energy storage, hybrid inverters, and other equipment into a flexible and efficient system. It enhances home energy independence and ushers in a new era of residential energy management.



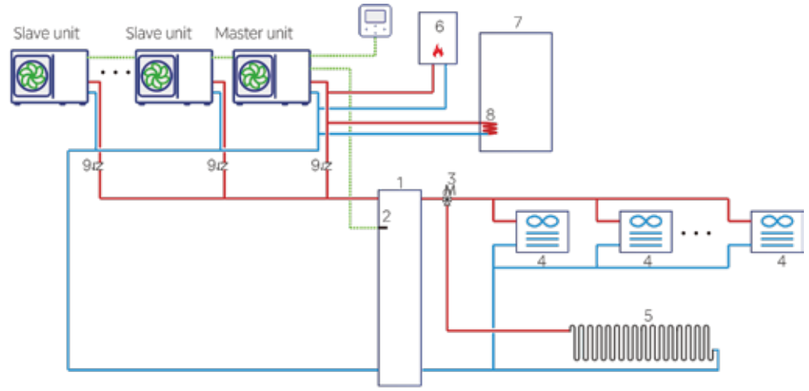
Monobloc Units and Parallel Connection

Monobloc units can be connected in parallel, with up to 6 units, to meet varying heating capacity requirements. Since the connection from the outdoor unit to the indoor space can become complex withbmultiple units, the MH-kit has been developed to simplify connections, making installation and maintenance easier for users..

Monobloc Structure

Monobloc Cascade System

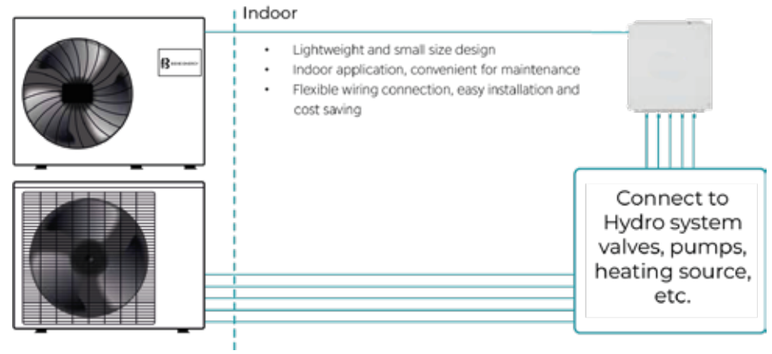
TCascade system design is perfect when an extension of capacity becomes required as the building demand evolves. Maximum 6 units can be controlled in group with one controller. Balance tank temperature control makes water temperature more accurat



Notes:
1. Balance tank (field supplied)
2. Balance tank temperature sensor (Midea can supply)
3. 3-way valve (field supplied)
4. Fan coil unit (Midea can supply)
5. Floor heating loop (field supplied)
6.AHS: Additional heating source (field supplied)
7.Water tank (field supplied)
8.Heat exchanger coil (field supplied)
9.Single way valve (field supplied)

MH-Kit

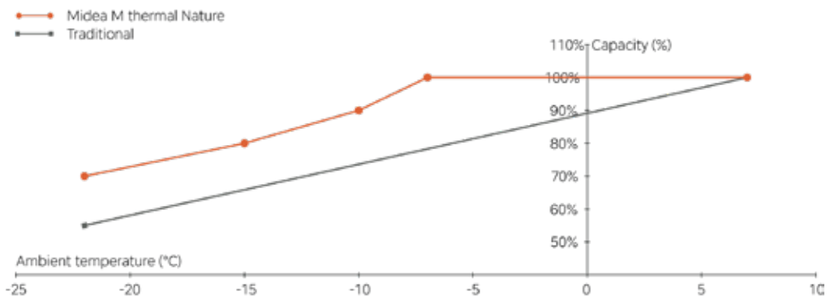
TMH-kit acts as a connection and transfer station between the unit and the water system components and simplifies the wiring connection between them. It is installed indoors, which makes winter maintenance easier.



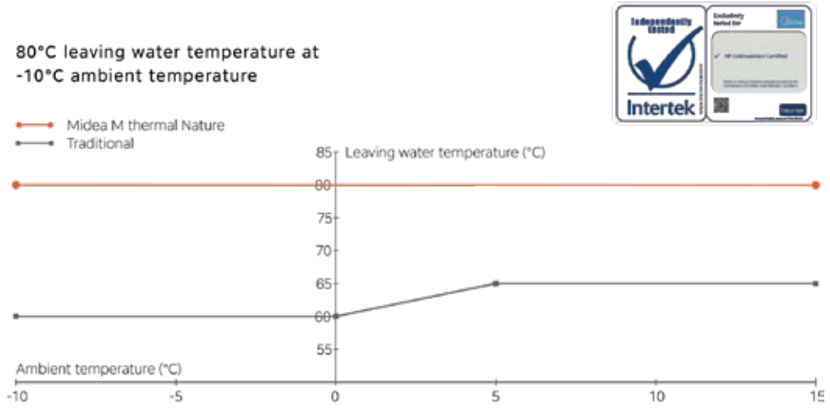
Performance Benefits

The improvement in unit performance enables it to achieve 100%* heating capacity under A-7W35 conditions. This not only enhances the performance and user experience of the equipment but also offers significant economic and environmental benefits.

Heating capacity at 35°C water temperature



80°C leaving water temperature at -10°C ambient temperature



The improved unit performance enables a water outlet temperature of 80°C even at an ambient temperature of -10°C, significantly expanding the product's range of applications.

It covers over 98% of European heating scenarios, including low-efficiency radiators in older buildings. The unit is ideal for boiler replacement, eliminating the need for extensive water system renovations.

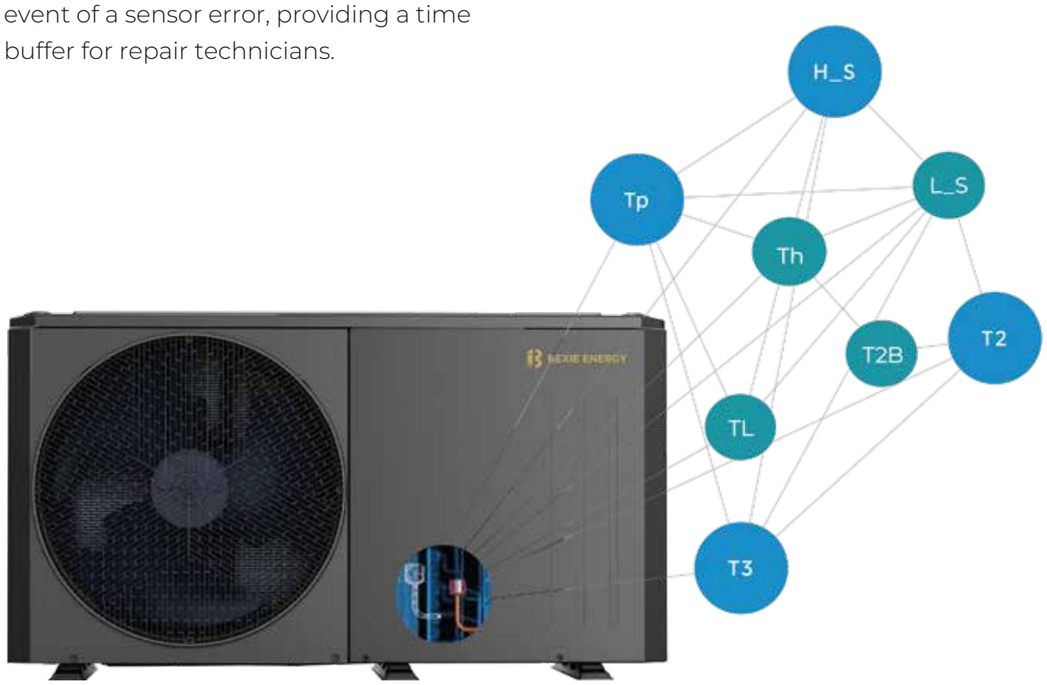
In addition, the enhanced performance and efficient structural design result in a unit that is approximately 30% smaller in volume compared to typical products of the same capacity on the market.

* The units maximum heating capacity requires operation in boost mode.

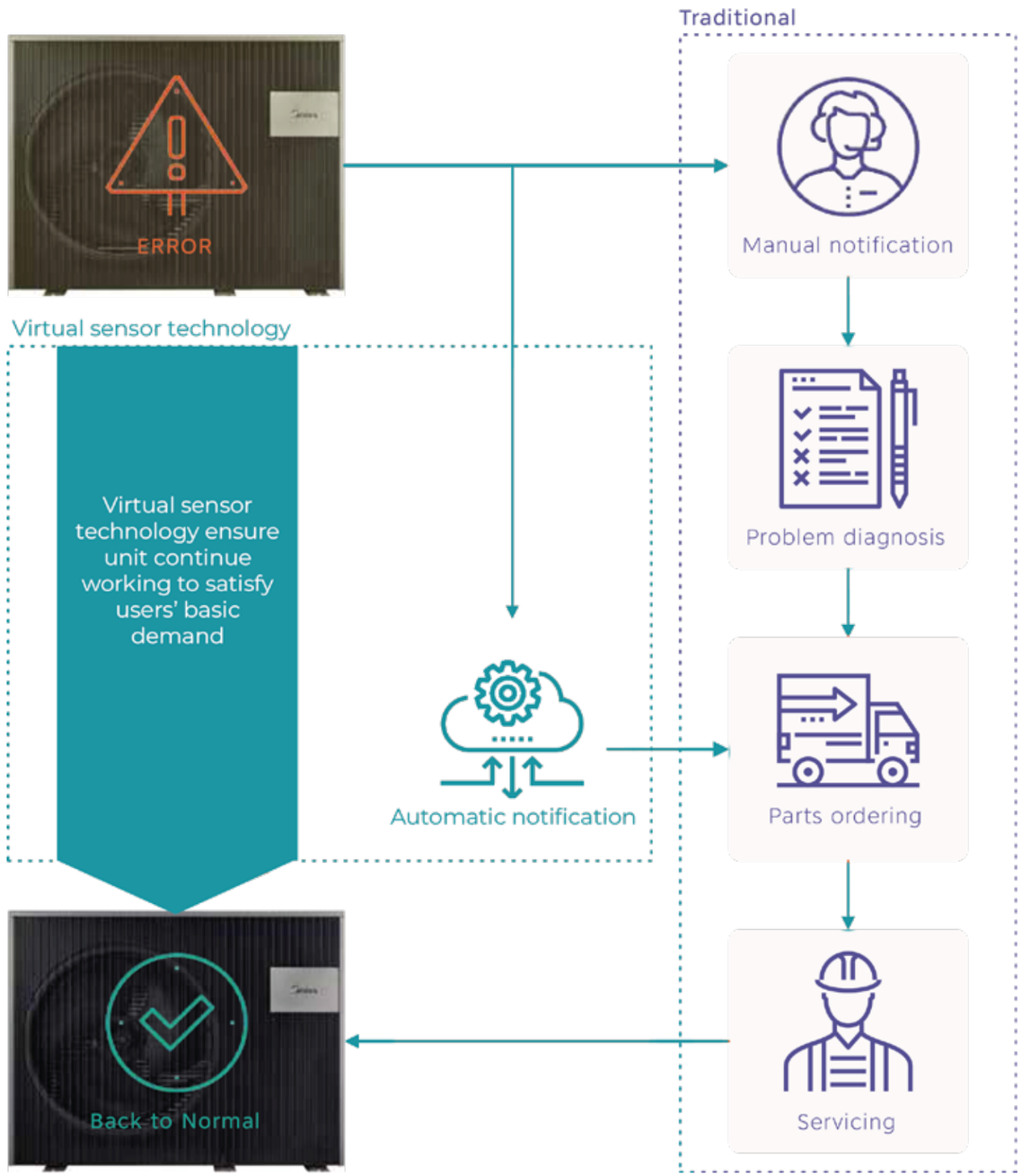
Dual Backup

Virtual Sensor Technology

Utilizing a vast array of sensors driven by proprietary algorithms, the heat pump will continue operating in the event of a sensor error, providing a time buffer for repair technicians.



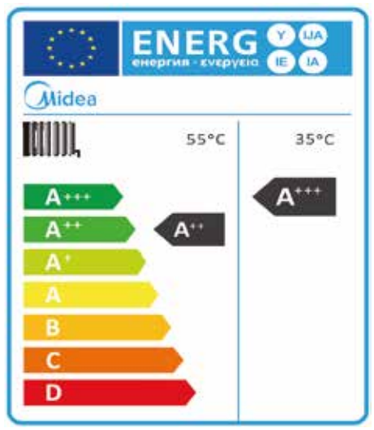
Tp: Discharge temperature sensor.
Th: Suction temperature sensor.
H_S: High pressure sensor.
L_S: Low pressure sensor.
T2B: Plate heat exchanger inlet refrigerant temperature sensor.
T2: Plate heat exchanger outlet refrigerant temperature sensor.
T3: Outdoor unit heat exchanger bottom temperature sensor.
TL: Outdoor unit heat exchanger outlet temperature sensor.



Residential Heat Pumps

Home Star Series

R290 4-16 kW



High Efficiency Level

- Seasonal space heating energy efficiency.
- Average up to A+++ at 35°C.
- Average up to A ++ at 55°C.

Specifications

Home Star Series

Model			BEMHP-V4WR1P	BEMHP-V6WR1P	BEMHP-V8WR1P	BEMHP-V10WR1P	BEMHP-V12WR1P	BEMHP-V14WR1P	BEMHP-V16WR1P	BEMHP-V12WR3P	BEMHP-V14WR3P	BEMHP-V16WR3P
Power supply		V/Ph/Hz	220-240/1/50			220-240/1/50				380-41 5/3/50		
Heating A7W35	Capacity	W	4500	6200	8400	10000	12000	14000	15000	12000	14000	15000
	Rated input	W	874	1265	1680	2128	2500	3111	3409	2500	3111	3409
	COP		5.15	4.90	5.00	4.70	4.80	4.50	4.40	4.80	4.50	4.40
Cooling A35W18	Capacity	W	4500	6500	8300	10000	12000	14000	16000	12000	14000	16000
	Rated input	W	818	1275	1612	2105	2667	3333	4103	2667	3333	4103
	COP		5.50	5.10	5.15	4.75	4.50	4.20	3.90	4.50	4.20	3.90
SCOP	Average climate, W35°C		A +++									
	Average climate, W55°C		A++									
Refrigerant	Type (GWP)		R290(3)									
	Charged volume	g	700		1100		1250					
Unit dimensions (H*W*D)		mm	1299x717x426		1385x865x523							
Packing dimensions (H*W*D)		mm	1375x885x475		1465x1035x560							
Net/Gross weight		kg	90/110		117/139		135/157			137/159		
Outdoor air temperature range		°C	-5 ~ 46									
Water setting temperature range		°C	-5 ~ 80									

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BEXIE GROUP designs, manufactures and delivers high-performance solar electric technology worldwide.
Our high-efficiency solar cells enable us to produce different types of solar panels with highest efficiency.