

PHNXX



HeatGreen Series

Inverter Commercial Heat Pump for Heating
Cooling, DHW



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Decarbonization

Amid growing global focus on climate change, cutting carbon emissions remains a shared priority. The EU's Green Deal sets out to reduce greenhouse-gas emissions by at least 55% by 2030 compared to 1990, with climate-neutrality targeted by 2050. Heating and cooling technologies such as heat pumps are now recognized as central solutions to decarbonize buildings and industry, enabling the shift from fossil fuels to electricity driven by renewables.

F-gas Regulation

F-gases severely worsen global warming and harm the ozone layer, prompting the adoption of the new (EU) 2024/573 F-gas Reg., which affects commercial and industrial heat pump sector. E.g, starting from 2030, if GWP is larger than 150, hydronic heat pump and reversible water chillers with capacity more than 50KW will no longer be acceptable.

REPowerEU

To reduce reliance on fossil energy and speed up electrification, the REPowerEU plan sets an ambition of installing up to 60 million heat-pump units across the EU by 2030. It promotes renewable electricity integration, drives manufacturing scale-up, supports innovation and financing, and aligns heating-cooling investments with decarbonization goals.

Efficient Buildings

Buildings account for around 40 % of Europe's energy consumption. Under the revised EPBD and national frameworks, the EU is driving deep renovation and aims for zero-emission new buildings by 2030. In Germany, for example, heat-pump systems must meet a seasonal performance factor (SPF) of at least 2.7 to qualify for subsidies — and products using natural refrigerants such as R290 receive an extra 5 % bonus subsidy, with full eligibility exclusively for natural-refrigerant solutions from 2028 onwards.

R290

Natural Refrigerant

Refrigerants, essential for heat pump efficiency, pose environmental concerns due to their high global warming potential (GWP). To mitigate these negative impacts, the EU's F-gas Regulation mandates reduced emissions of these gases. The reinforced F-gases Regulation will prevent the emission of around 300 million tonnes of CO2 equivalent by 2050. It requires that new heat pumps use the most climate-friendly gases.

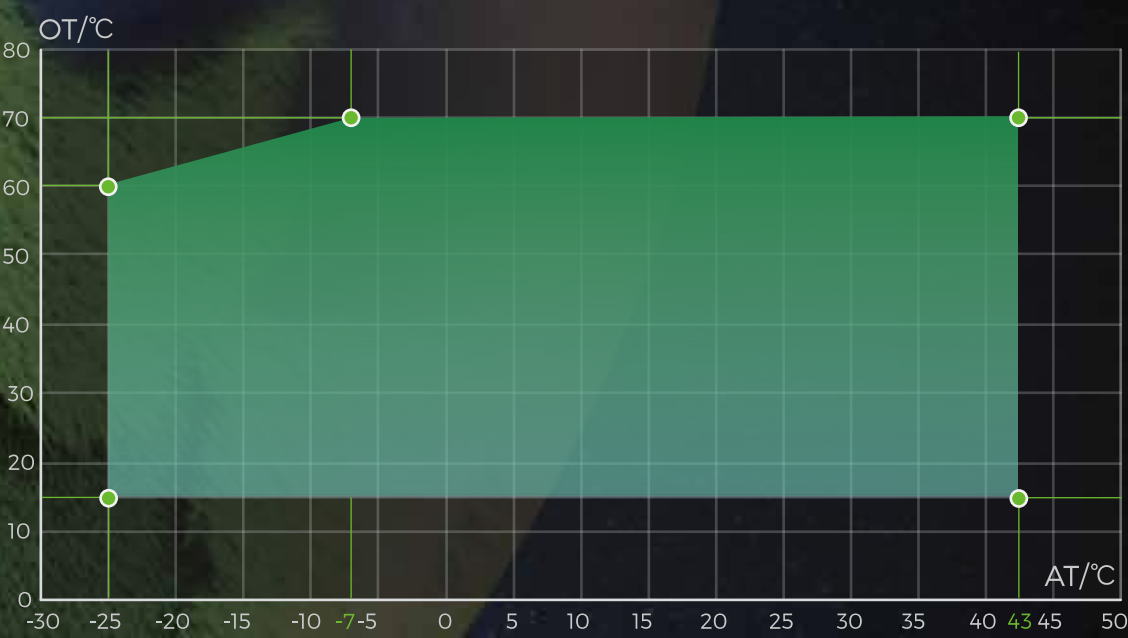
Moreover, BREEAM, a leading global environmental assessment for buildings, evaluates and certifies a structure's green performance. Achieving its certification can elevate property values, ease rates, and bolster a company's environmental image.

According to its scoring system, up to 2 credits can be gained in the "Impact of refrigerant" section by using a refrigerant with a GWP under 10.

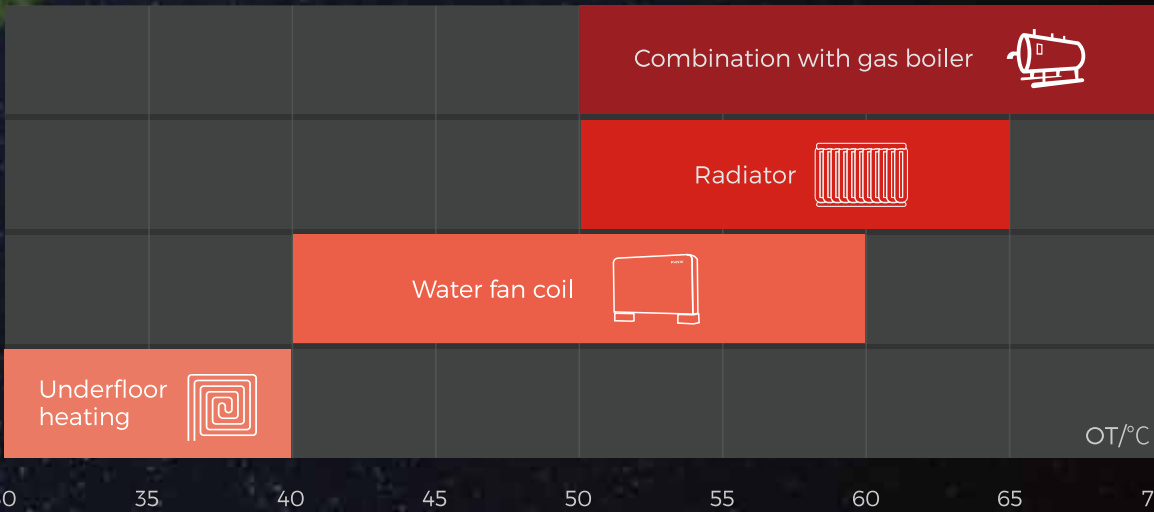
R290 Refrigerant, with its low carbon emissions and GWP, is deemed the industry's top choice. Its use aligns with carbon neutrality goals.

Refrigerant	R744	R290 R1234yf	R454C	R454B	R513A	R32	R410A	
Type	Natural	Natural	HFO	HFO	HFO	HFO	HFO	HFC
Ingredient	CO2	C3H8	CF3CF=CH2	21.5%R32+78.5%R1234yf	68.9% R32+31.1%R1234yf	44% R134a+56%R1234yf	CH2F2	50%R32+50%R125
ODP	0	0	0	0	0	0	0	0
GWP-AR4	1	3	4	148	467	631	675	2088
Boiling temperature(°C)	-62.89	-42	-29.49	-45.9	-50	-47	-51.65	-51.44
Critical temperature(°C)	30.98	96.74	94.7	82.4	76	74.9	78.11	71.34
Safety category	A1	A3	A2L	A2L	A2L	A1	A2L	A1
Temperature slip	0	0	0.16	7	1~1.1	0	0	0.1

Operation Envelope



Extended Application



Advanced Inverter Commercial Heating Technology & Solution



More Efficient

All models can reach A+++ at 35°C low water temperature application and A++ at 55°C high water temperature application.

Exhaust Temp Superheater Technology

PHNIX's patented EEV control logic maintains the exhaust temp superheater within the compressor's operating range for all climate solutions.



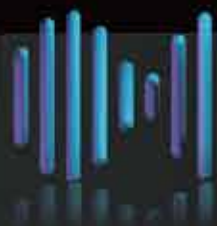
More Comfortable

Precise control of wide water temperature range via stepless inverter compressor.

Advanced Defrosting Technology

Adjusted-frequency control before and after defrosting enables the heat pump system to operate stably.

The Pressure and Temperature Compensation function ensures greater energy efficiency during defrosting.



Quiet Operation

The commercial heat pump unit could be operated as quiet as possible at night for luxury villas and apartment buildings.

Inverter Heating Technology

Enable exceptional heating performance in commercial heating and DHW applications compared to fixed-speed tandem heating technology.



Extended Application

Up to 70°C hot water supplying can match various indoor units and work perfectly in combination with commercial gas boilers.

Compressor Pre-heating Technology

Using pre-heating technology can extend the compressor's lifespan for entire heat pump system, especially in cold climate areas.



Product Features

Compact Casing Design



- A compact footprint that supports array installation can save both space and costs for commercial projects.

Full DC Fan Motor



- Large-sized multi-blades can operate steadily and quietly via the high-efficiency full DC fan motor.

Optimized Refrigerant Circuits Evaporator



- Anti-corrosion Golden Hydrophilic Window Aluminium Fin
- High-Efficiency Fine-toothed Internal Thread Copper Pipe

Patented Electric Box



- IP44 Waterproof & Dustproof
- Anti-explosion

High-efficiency SS 316 PHE

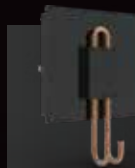


- A compact design with sufficient transferring areas to accommodate a wide range of water temperatures, from 35°C to 70°C.

Leakage Detector



- By NDIR technology, it detects the leakage of R290 gas in the range of 0~100% LFL with high precision of $\pm 2.5\%$ per second.



Liquid Refrigerant Cooler

- Using liquid refrigerant to cool down the driving PCB in stable operation enhances the efficiency of the heat pump system.



Full DC Inverter Compressor

- A full DC inverter compressor with an extended operational range can operate quietly after four layers of insulation.



Pressure Sensor

- Input refrigerant pressure and temperature table into main PCB to monitor refrigerant system operation all the time.



EEV

- One EEV is compatible with heating, cooling, and DHW modes.
- Dedicated multi-superheaters prevent liquid hammer even in extreme conditions.



Liquid Refrigerant Receiver

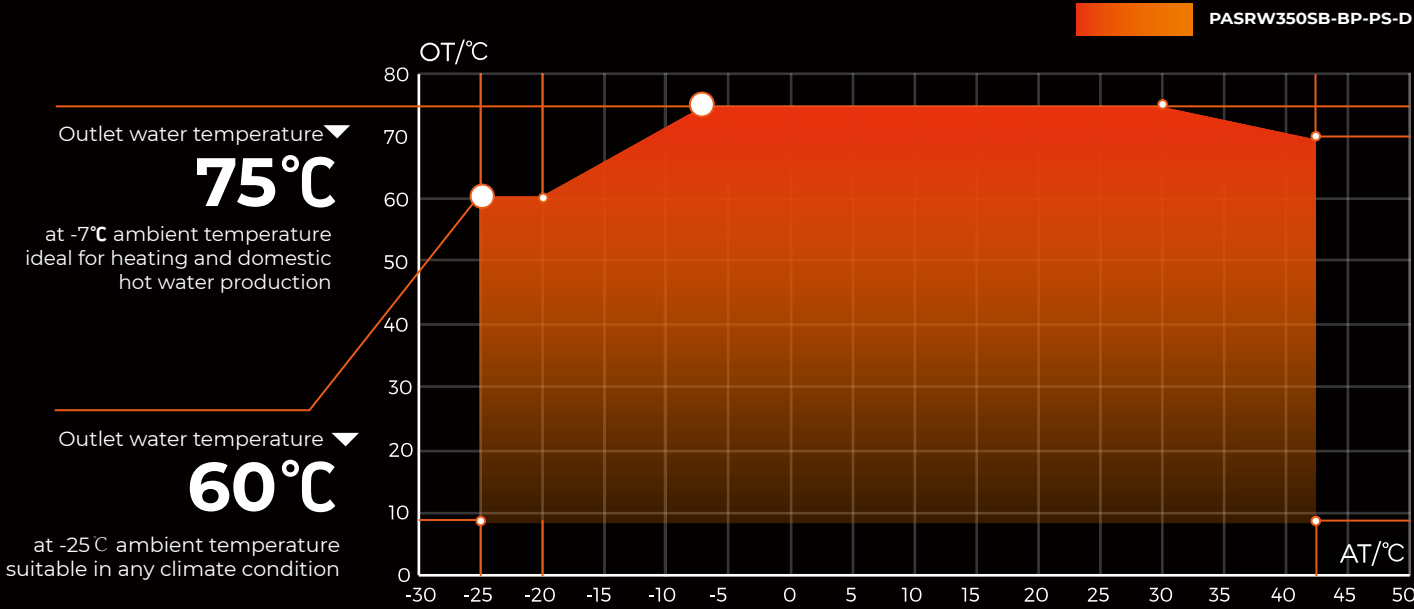
- It can constantly provide liquid refrigerant to the evaporator for complete vaporization under all operating conditions.



Refrigerant Exhaust Fan

- The ATEX certified fan accelerates the diffusion of R290 gas to avoid its accumulation leading to danger in case of leakage.

Heating Application

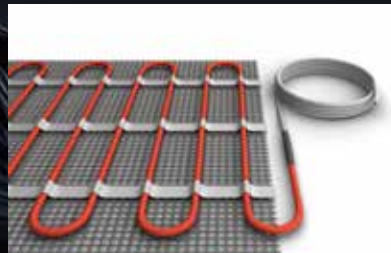


A+++@35°C

SCOP

A+++@55°C

It can be matched with different kinds of terminals to meet the requirements of a variety of scenarios



Floor Heating



Radiator



Hot Water Tank



Apartment Building

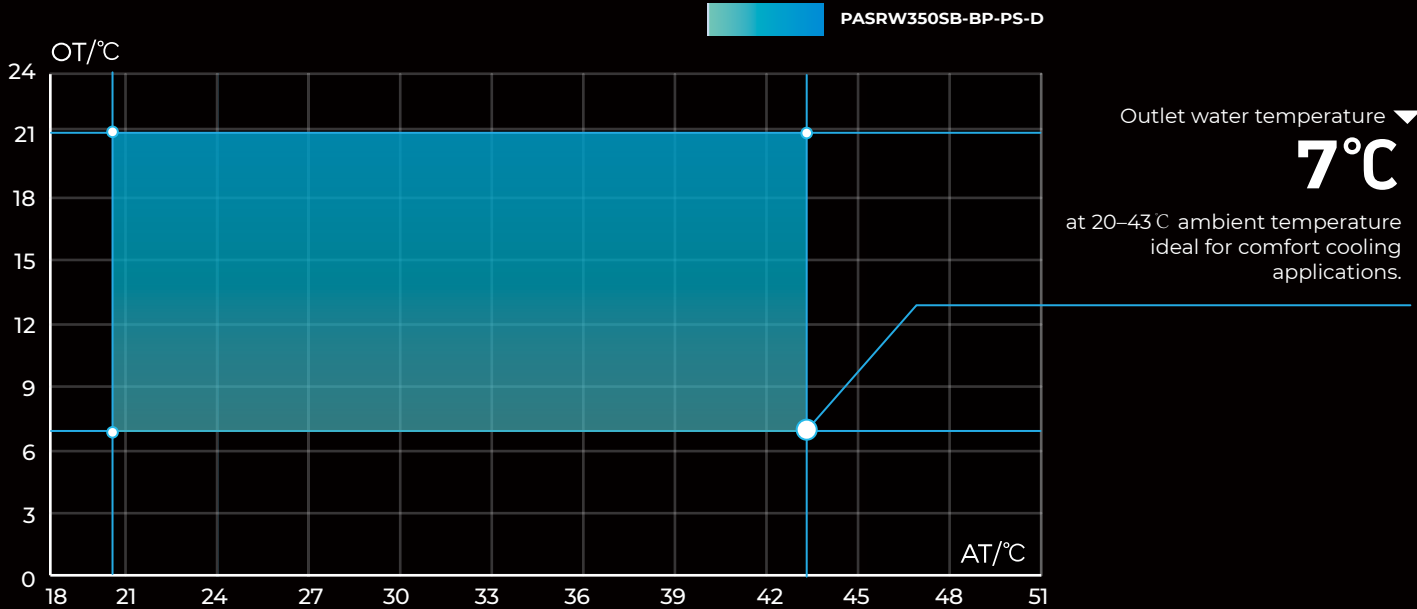


District Heating



Office Building

Cooling Application



5.14@7°C

SEER

6.84@18°C

It can be matched with different kinds of terminals to meet the requirements of a variety of scenarios



Water Fan Coil



Industrial Air Heaters



Cooling Distribution Unit



Hotel



Industrial



Data Center

Intelligent Control

- 

Smart Sliding Defrosting
- 

Weather Compensation Control
- 

Modbus RTU
- 

Energy Stage Control
- 

Oil Level Control
- 

Compressor Operation Envelope Protections
- 

Multiple Protections from Main PCB
- 

Multiple Protections from Inverter Compressor Module Driver

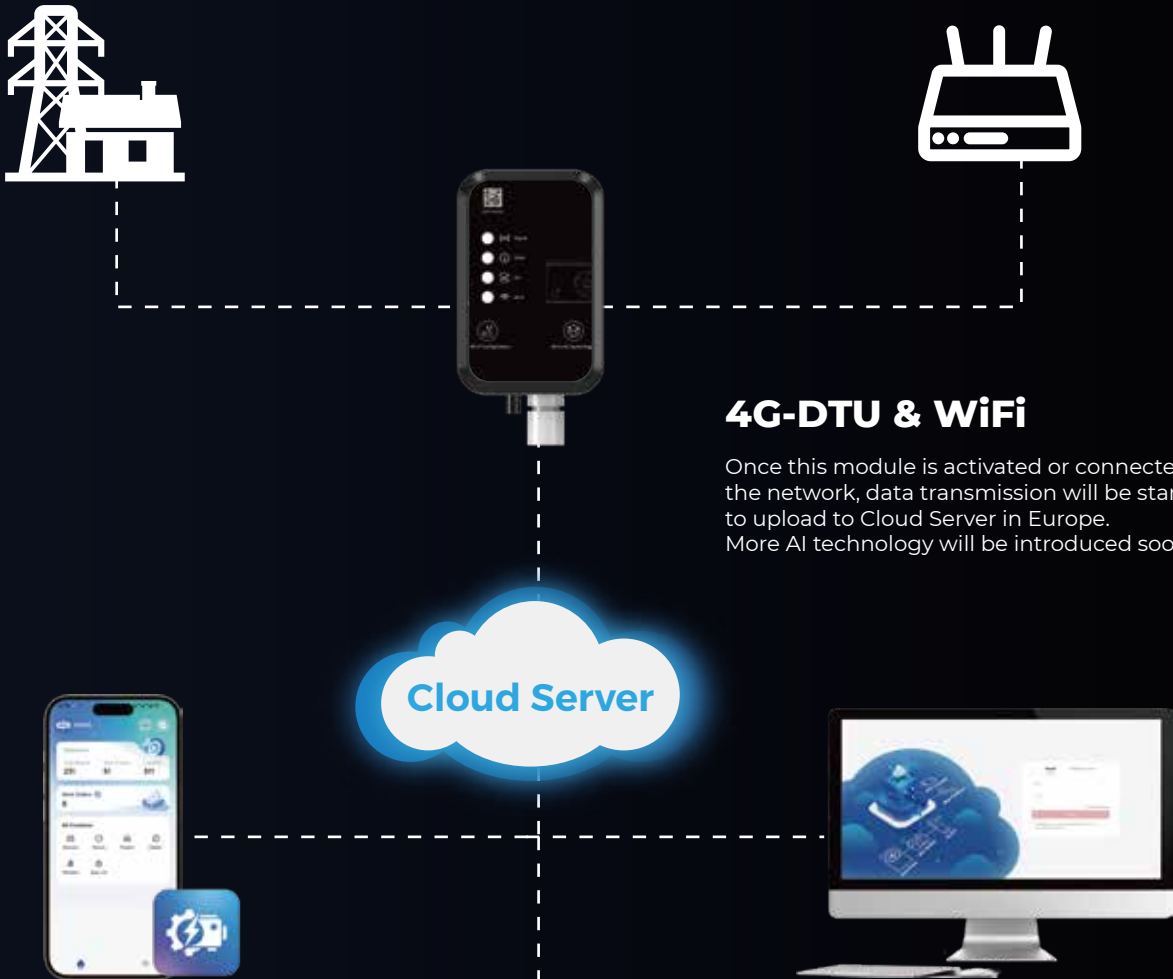


5-inch Display



7-inch Display

4G DTU & WiFi



4G-DTU & WiFi

Once this module is activated or connected to the network, data transmission will be started to upload to Cloud Server in Europe. More AI technology will be introduced soon.

Go Heating Pro

APP remote control function and real time data checking can be easily realized with DTU&WiFi module at anytime and anywhere.

Web Platform

Central platform management can be realized with DTU&WiFi module, which effectively save labor cost during the after service period.

AI WarmLink

Supports APP remote control and real-time data monitoring, accessible anytime and anywhere.

Significant Advantages of Centralized Control System

Phase three

Phase two

Phase one



10-inch
Central Display



Temperature Period Control

Precise Frequency Control

Multi-mode Operation

Curve Record Function

Smart Defrosting Function

Remote Control

Balance Operation Function

Shift Operation Function



1 Central Display manages Max. 32 Units

Having a single central display allows for the seamless coordination of modules that are added or updated at different times. This makes it easier to manage both financially and during the installation process. It also means the system can easily grow as needed and it's perfect for investment in phases.

SG Ready



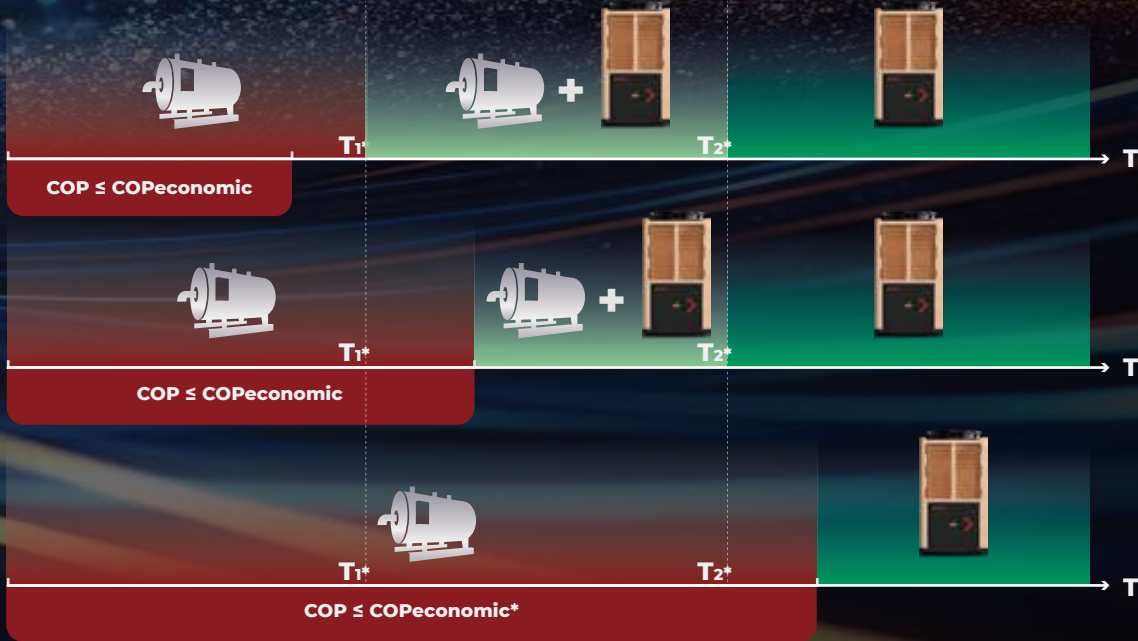
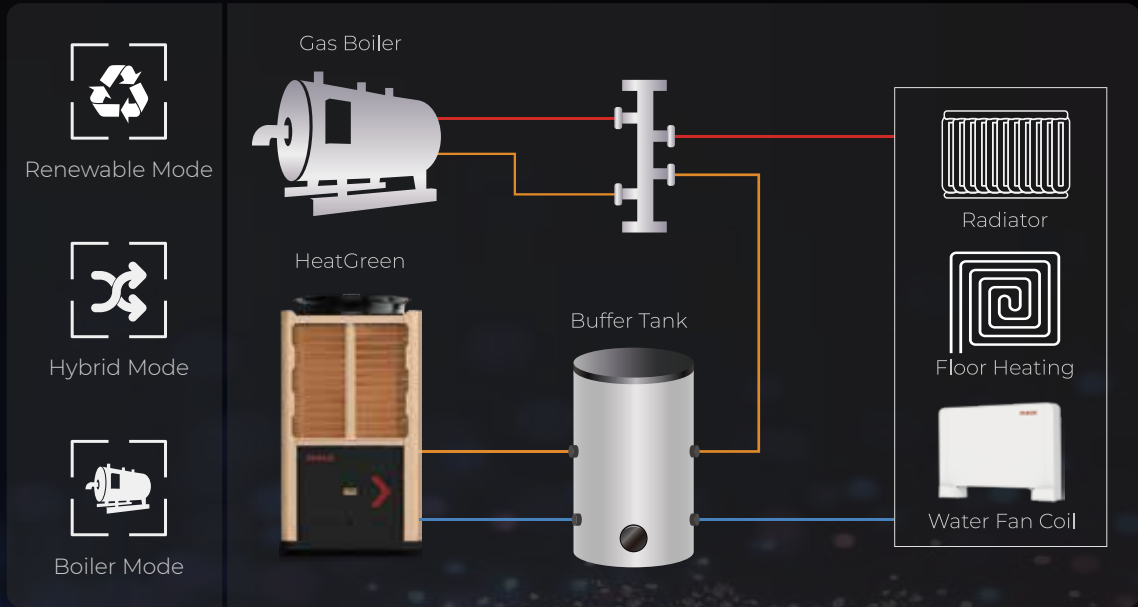
Low-power Mode

Standard Mode

High-power Mode

Hybrid Function

Using Hybrid function to upgrade existing heating systems can significantly reduce energy consumption and CO₂ emission that is a perfect choice to retrofitting commercial heating projects for non-residential buildings.



COPEconomic*: the total heating bill for heat pump heating system will be the same with gas boiler heating system if COP(coefficient of performance) of heat pump system is equal to COPEconomic that is a parameter could be adjusted according to ratio of electricity price against gas price.
T1* : Compressor in heat pump system will be stopped due to low pressure protection when ambient temperature < T1;
T2*:The heating capacity is more than heating demand when ambient temperature ≥ T2.

Application Areas



Residential

- Apartment Blocks
- Dormitories
- Mansions
- Luxury Villas



Commercial

- Office Buildings
- Shopping Centers
- Hospitals
- Hotels



Educational

- Universities
- Libraries
- Training Centers
- Kindergartens



Industrial

- Factories
- Warehouses
- Logistic Centers
- Data Centers

New Commercial Construction Solution



Future District Heating in Europe



Project Reference



Specifications



Model	PASRW080SB-BP-PS-D		PASRW100SB-BP-PS-D	PASRW150SB-BP-PS-D
Power Supply	/		380~415V / 3N~/ 50Hz	
Heating Condition - Ambient Temp. (DB/WB): 7/6°C, Water Temp. (In/Out): 30/35°C				
Nominal Heating Capacity	kW	20	24	31
Heating Capacity Range	kW	7.61~27.94	11.00~40.00	13.63~50.00
Heating Power Input Range	kW	2.22~8.14	3.46~14.30	4.36~16.00
Heating Condition - Ambient Temp. (DB/WB): 7/6°C, Water Temp. (In/Out): 47/55°C				
Nominal Capacity	kW	20	24	31
Heating Capacity Range	kW	7.05~22.00	10.80~40.00	12.85~46.00
Heating Power Input Range	kW	2.52~8.18	3.63~15.00	4.65~18.60
Cooling Condition - Ambient Temp. (DB/WB): 35/24°C, Water Temp. (In/Out): 12/7°C				
Cooling Capacity Range	kW	6.01~18.04	8.45~31.00	11.18~40.00
Cooling Power Input Range	kW	2.86~8.59	3.58~13.13	5.55~20.37
Max. Power Input	kW	12.59	17.00	24.00
Max. Current Input	A	19.25	28.00	33.73
Refrigerant Type	/		R290	
Refrigerant Volume	kg	1.8	3.2	1.8×2
Sound Pressure (1m)	dB(A)	51	38	53
Sound Power Level (EN12102)	dB(A)	66	54	70
Net Weight	kg	198	420	418
Unit Dimension(L/W/H)	mm	1250×540×1330	1515×680×1790	1198×980×1816
Shipping Dimension(L/W/H)	mm	1370×560×1460	1545×745×1995	1290×1055×2050
Circulation Pump	/		YES	
Operating Ambient Temperature	℃	-25~43	-30~43	-25~43
Fan Motor Type	/	DC Fan Motor	EC Fan Motor	DC Fan Motor
Water Connection	inch	G1.25"	G1.5"	G1.5"
Rated Water Flow	m³/h	3.4	4.13	5.33
Water Pressure Drop @Rated Water Flow	kPa	50	52	35
Circulation Pump Head @Rated Water Flow	m	7.5	14	7

Specifications



Model	PASRW250SB-BP-PS-D		PASRW350SB-BP-PS-D
Power Supply	/		380~415V / 3N~/ 50Hz
Heating Condition - Ambient Temp. (DB/WB): 7/6°C, Water Temp. (In/Out): 30/35°C			
Nominal Heating Capacity	kW	50	70
Heating Capacity Range	kW	22.09~80.00	30.00~110.00
Heating Power Input Range	kW	6.00~22.00	8.57~32.70
Heating Condition - Ambient Temp. (DB/WB): 7/6°C, Water Temp. (In/Out): 47/55°C			
Nominal Capacity	kW	50	70
Heating Capacity Range	kW	20.56~75.27	28.50~97.15
Heating Power Input Range	kW	6.51~27.75	9.00~42.19
Cooling Condition - Ambient Temp. (DB/WB): 35/24°C, Water Temp. (In/Out): 12/7°C			
Cooling Capacity Range	kW	17.18~62.00	27.90~92.00
Cooling Power Input Range	kW	7.00~25.68	7.25~30.96
Max. Power Input	kW	36.00	42.64
Max. Current Input	A	45.00	66.11
Refrigerant Type	/		R290
Refrigerant Volume	kg	3.8×2	4.7×2
Sound Pressure (1m)	dB(A)	56	60
Sound Power Level (EN12102)	dB(A)	73	78
Net Weight	kg	635	963
Unit Dimension(L/W/H)	mm	1965×1060×1900	2300x1018x2430
Shipping Dimension(L/W/H)	mm	2055×1080×2030	2330x1118x2530
Circulation Pump	/		YES
Operating Ambient Temperature	℃	-25~43	
Fan Motor Type	/ DC Fan Motor		
Water Connection	inch	G2"	G2.5"
Rated Water Flow	m³/h	8.6	12.04
Water Pressure Drop @Rated Water Flow	kPa	45	70
Circulation Pump Head @Rated Water Flow	m	2	3.5