

**KAISAI**

# HEAT PUMPS

ENERGY-EFFICIENT SOLUTION FOR YOUR HOME AND OFFICE



**75°C**

very high water  
outlet temperature

**A+++**

super high  
efficiency



low noise  
level



**AIR TO WATER HEAT PUMPS  
WITH ECOLOGICAL REFRIGERANT R290**

**2022**



## Heat pump: a renewable energy source

The heat pump draws free energy from the air and uses it to heat and cool the building, or prepare domestic hot water. It is a cheap, ecological and reliable heat source, which can be used by anyone.

Thanks to cutting-edge technology, Kaisai heat pumps operate in a wide range of outside temperatures and achieve the high temperature parameters of the heating system or domestic hot water. No emission of harmful substances into the environment, operational safety, and maintenance-free make the Kaisai heat pumps an ideal solution for everyone who builds a house as well as replaces or retrofits the current heat source. The Kaisai heat pumps can be used in single-family, multifamily, and commercial buildings.

Renewable energy sources (RES) are based on natural resources, the extraction of which ensures not only zero-emission energy production but also a wide range of possibilities for its use. Due to relatively easy access to technology and the possibility for it to be used by companies and individual households, the most popular solutions are the units which obtain energy from the air and the sun.

**Kaisai's product range provides state-of-the-art RES solutions that include air-to-water heat pumps, heat recovery units, and photovoltaic modules and inverters.**



## Safe **R290** refrigerant

The refrigerant – R290 – is known as propane, a colorless, odorless organic compound belonging to the group of saturated hydrocarbons existing in natural gas fields. Devices based on propane have been successfully operating in various countries of the European Union for many years.

**HIGH ENERGY EFFICIENCY**

**LARGE HEAT CAPACITY**

**ENVIRONMENTALLY FRIENDLY**

**ODP=0**

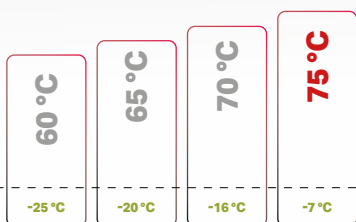
neutral for  
the ozone layer

**GWP=3**

low impact  
on global warming

## **Advantage** of Kaisai heat pumps

### WATER OUTLET TEMPERATURE



### OUTSIDE TEMPERATURE

**VERY HIGH WATER OUTLET TEMPERATURE**  
without auxiliary electric heater



**INTELLIGENT DEFROST**



**ENERGY-SAVING CIRCULATION WATER PUMP**



**CENTRALIZED CONTROL**



**COLOURFUL TOUCH DISPLAY**



**INTUITIVE CONTROL**



**INVERTER TECHNOLOGY**

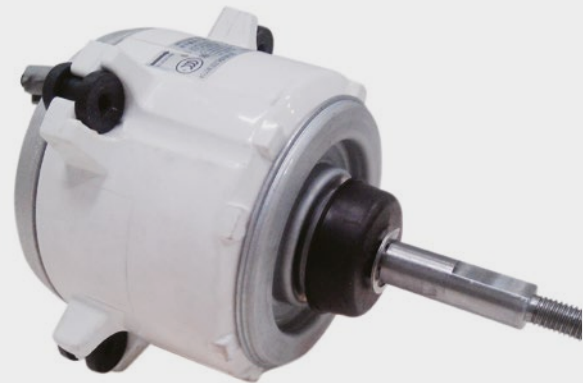
# Full DC Inverter Technology

Perfect combination of eco-friendly R290 refrigerant and inverter technology, which enables production **of efficient house heating / cooling and hot water even under extreme cold climate.**



## DC INVERTER COMPRESSOR

**Compared to AC** drive technology, DC inverter speed technology usually modulates control process of the compressor more precisely, thus improving transmission efficiency and reducing noise and energy consumption of the compressor.



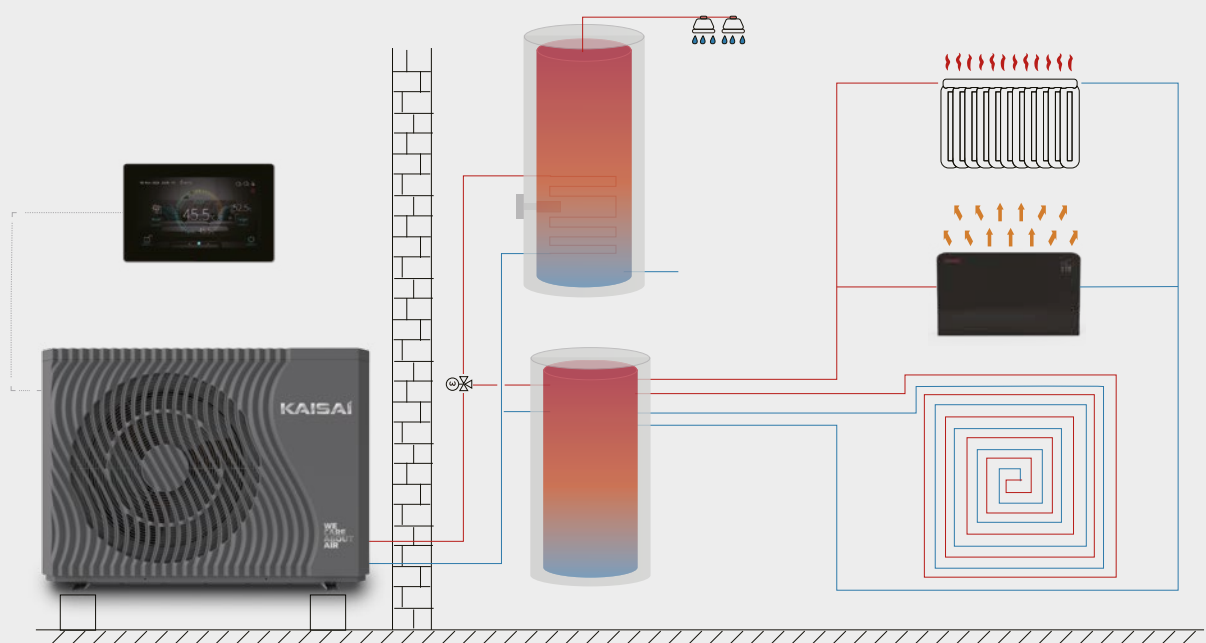
## DC DC INVERTER FAN MOTOR

With better dynamic balance and reducing turbulent flow noise, heat pump work efficiency is greatly improved.



## Heat pump: a renewable energy source

The heat pump draws free energy from the air and uses it to heat and cool the building, or prepare domestic hot water.





## **CIRCULATION WATER PUMP**

Connect to the water inlet of the machine to make water flow in the pipe.



## **SWEP PLATE HEAT EXCHANGER**

Thin rectangular channels are formed between various plates, and heat exchange is carried out through the plates, which has the advantage of high heat exchange efficiency.



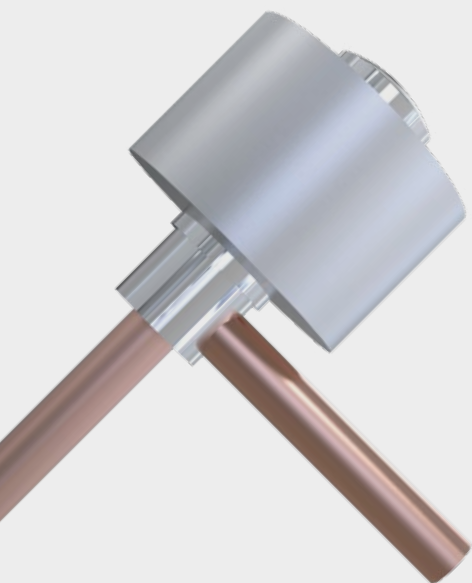
## **ELECTRONIC EXPANSION VALVE**

With electronic valve it can instantly adjust refrigerant flow to ensure the stability of the refrigeration system.



## ASA MATERIAL

The ASA panel and top cover are strongly corrosion-resistant and anti-weathering that ensures a long service life.



## PRESSURE SENSOR

Pressure sensor can detect system pressure and transmits the signal to the main board so as to protect the unit.

# Modern **technologies**

Kaisai dedicates to creating super quiet running environment for the user. The heat pumps adopt multiple noise reduction technologies, every product has been repeatedly tested and optimized.



## **SOUNDPROOF ISOLATION**

All-sided of cabinet is fully wrapped with soundproof sponge material, which can efficiently absorb and block out the noise from compressor operation.



## **SHOCK ABSORPTION AND NOISE REDUCTION TECHNOLOGY**

The suspension chassis greatly minimalizes vibration and reduces noise.

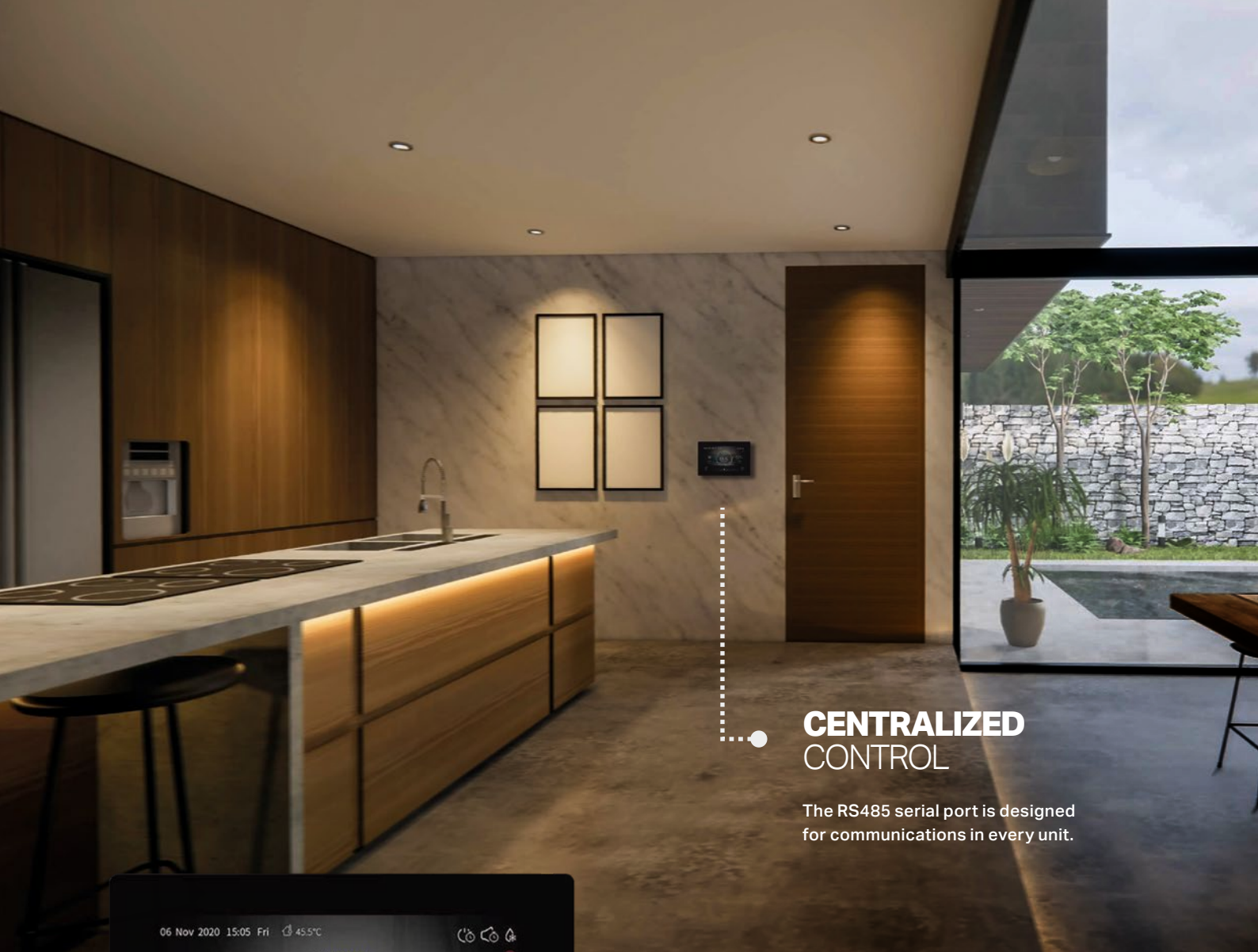


**NEW**

## **ELEGANT WAVE SCREW-FREE DESIGN**

Stylish and innovative cabinet design, with no screws visible on the surface.





## CENTRALIZED CONTROL

The RS485 serial port is designed for communications in every unit.



## Smart Touch Display

Smart Display has a high-end controller with 5-inch colourful touch screen, which is one of the highlights of this trendy heat pump product. With temperature and power consumption curve, users can always be clear of the energy consumption at a glance.



**WIRELESS WIFI OPERATION**



**MULTILINGUAL MENU**



**REAL-TIME OPERATION PARAMETERS MONITORING**




# Kaisai #R290

## Heat pumps



- **Kaisai monoblock heat pumps** with main circulation pump built inside provide heating/cooling and domestic hot water.
- When installing the unit, installer should connect the heat pump with other parts including the buffer tank, storage water tank and water pumps.
- External fittings are also needed including the safety valve, water refill valve and hot water valves (three-way valve). Temperature sensor should be added in the storage water tank. Additional electric heater can be installed in the DHW tank or the buffer tank which can get the control signal from the heat pump.

# KHX-09PY1 / KHX-14PY3 / KHX-16PY3

Model			KHX-09PY1	KHX-14PY3	KHX-16PY3
					
Heating A7W35 ΔT=5, R.H. 85%	nominal heat capacity (range)	kW	8.90 (3.10 ~ 8.90)	14.95 (5.40 ~ 14.95)	22.00 (8.00 ~ 22.00)
	electric energy consumption (range)	kW	1.98 (0.68 ~ 2.10)	3.29 (1.05 ~ 3.85)	4.94 (1.60 ~ 6.90)
	COP	W/W	4.49 (4.76 ~ 4.23)	4.54 (5.09 ~ 4.53)	4.45 (4.99 ~ 4.44)
Heating A2W55 ΔT=5, R.H. 85%	nominal heat capacity (range)	kW	6.52	10.95	16.11
	electric energy consumption (range)	kW	2.19	3.65	5.48
	COP	W/W	2.97	3.00	2.94
Heating A-7W35 ΔT=5, R.H. 85%	nominal heat capacity (range)	kW	7.18	12.06	17.75
	electric energy consumption (range)	kW	1.87	3.11	4.65
	COP	W/W	3.84	3.88	3.82
Cooling A35W18 ΔT=5	nominal heat capacity (range)	kW	1.20 ~ 5.72	3.60 ~ 10.50	4.20 ~ 15.00
	electric energy consumption (range)	kW	0.65 ~ 2.40	1.12 ~ 4.47	1.80 ~ 7.30
ErP	seasonal energy efficiency $\eta_s$ average climate 35°C / 55°C	%	205 / 150	202 / 155	201 / 150
	annual energy consumption average climate 35°C / 55°C	kWh	1970 / 2575	3750 / 4828	5076 / 6672
	seasonal energy efficiency $\eta_s$ cold climate 35°C / 55°C	%	170 / 127	168 / 131	154 / 127
	annual energy consumption cold climate 35°C / 55°C	kWh	3110 / 4019	5913 / 7536	9530 / 10599
Seasonal space heating energy efficiency class (average climate)	TWW at 35°C class		A+++	A+++	A+++
	TWW at 55°C class		A+++	A+++	A+++
SCOP (climate average / cold)	TWW for 35°C	W/W	5.20 / 4.32	5.05 / 4.20	5.03 / 3.85
	TWW for 55°C	W/W	3.83 / 3.40	3.88 / 3.28	3.75 / 3.18
Power supply	voltage / number of phases / frequency	V/Ph Hz	230 / 1N / 50	380 ~ 415 / 3N / 50	380 ~ 415 / 3N / 50
	maximum operating current	A	13.5	10.5	15.8
Hydraulic system	nominal water flow	m <sup>3</sup> /h	1.0	1.7	2.9
	pump head	mH <sub>2</sub> O	7.5	7.5	12.5
Sound level	sound power level	dB(A)	57	58	62
	sound pressure level (1m)	dB(A)	43	44	47
Outside air temperature range	cooling	°C	-5÷43	-5÷43	-5÷43
	heating	°C	-25÷43	-25÷43	-25÷43
Leaving water temperature range	cooling	°C	5÷15	5÷15	5÷15
	heating	°C	9÷75	9÷75	9÷75
Water connection	diameter	cal	G1	G1	G1
Refrigerant	symbol (GWP) / refrigerant amount	--- / kg	R290(3) / 0.50	R290(3) / 0.85	R290(3) / 1.3
	of the unit (W×H×L)	mm	1167×795×407	1287×928×458	1250×1330×540
Dimension	of the packaging (W×H×L)	mm	1300×940×485	1420×1080×540	1380×1480×570
	Weight	kg	80	160	202

All technical data is compliant with the guidelines specified in the following standards: EN14511; EN14825; EN50564; EN12102; (EU) No. 811:2013; (EU) No. 813:2013; OJ 2014/ C207/02:2014. The SCOP seasonal heating efficiency was determined for temperate climate conditions.

The sound power level in the heating mode was determined in accordance with EN 12102, under the conditions consistent with EN 14825.

The purpose of this document is to provide information and present heat pumps of the Kaisai brand. | Since the technologically advanced production process necessitates its continuous control and improvement, the information contained in this publication may be subject to change. The technical data and prices included in the folder are subject to change. Up-to-date information is always available on [www.kaisai.com](http://www.kaisai.com)



**[kaisai.com](http://kaisai.com)**