KAISAI

eco HOME

ARCTIC series heat pumps

Energy-efficient solutions for your home

R32

EUROVENT CERTIFIED PERFORMANCE
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eco HOME

Heat pump

An ideal alternative for gas-fired, coal-fired or pellet boilers.

The heat pump draws free energy in the air and uses it to heat or 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 the cutting-edge technology, Kaisai heat pumps operate in a wide range of external temperatures and achieve the high-temperature parameters of the heating system or domestic hot water. No emission of harmful substances into the environment, the 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 current heat source. The Kaisai heat pumps can be used in single-family, multifamily, and commercial buildings.

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Operational parameters monitoring

Energy consumption monitor

Control of two heating circuits

WiFi as standard

Kaisai products incorporate several features improving the comfort of use; for example, new control options have been added so that managing a heat pump has never been so convenient and simple.

- Remote control using an application on a smartphone or tablet
- Monitoring of current device status, zone switching, supply and domestic hot water temperat control
- Error displaying
- Current energy consumption displaying

R32

Environmentally-friendly refrigerant, available in the entire Kaisai range

Kaisai Eco Home heat pumps of the ARCTIC series currently use the latest green refrigerant – R32. It is more efficient than those previously used, that is why a less refrigerant is required. Moreover, what is characteristics of the refrigerant is that it has a much better impact on the environment. It is a modern solution taking into account both ecological needs and economy of use.

Heat pump Why is it worth using it?

Ecological **energy source**

Heat pumps are one of the green energy sources that use free energy contained in the air instead of coal, gas or oil. This means that up to 80% of the energy is obtained from the outside air. The electrical power supply also allows the use of home photovoltaics in the so-called passive house system (i.e., not drawing energy from outside).

User **comfort**

Thanks to their automation, the operation of the heat pumps ensures full comfort of use. Convenient indoor temperature and desired domestic water parameters are set using an intuitive controller, and the device automatically maintains thermal comfort throughout the year.

Low operating costs

Heat pumps make a significant contribution to reducing the house operating costs. Using them, the costs of room heating and domestic hot water preparation can drop up to four times. The use of a heat pump also reduces system maintenance costs, e.g., due to no need for performing chimney inspections.

QUIET OPERATION

The use of an inverter compressor in outdoor units and extremely quite Split indoor unit operation ensure the full comfort of using the Kaisai heat pumps.

COMPACT DESIGN

Both Monoblock and Split pumps have a compact design, thus reducing the space required for their installation.

HIGH ENERGY EFFICIENCY

Due to the energy-efficient inverter compressor used, the coefficient of performance (COP) is as high as 5.20.

Reduced **CO_2 emission**

Heat pumps are an ideal alternative to gas-fired, coal-fired or pellet boilers, reducing CO_2 emissions to the atmosphere. The devices do not produce smoke, ash or any other substance harmful to the environment.

Safe **use**

Heat pumps are a very safe solution as they do not present a fire hazard, a risk of gas leakage or explosion compared to traditional domestic heating devices. You can abandon using gas or carbon monoxide sensors and sleep peacefully.

Comfort **all year round**

During the heating period, the pump transfers energy from outside air to the heating system and DHW. In summer, thanks to the built-in cooling function, it provides thermal comfort even during the hottest days.

OPERATIONAL SAFETY

The intelligent automation system protects the heat pump against damage. The use of special explosion-proof electronic systems maximises the safety of working with R32 refrigerant.

HIGH FLEXIBILITY

Thanks to the inverter technology, the heat pump adjusts the heating power to the specific system demands. Modulated heating power improves the device's efficiency and operational comfort.

FINS WITH ANTI-CORROSION COATING

The aluminium fins of heat exchangers are coated with a hydrophilic layer improving durability and corrosion resistance.

split

A compact design, an independent indoor unit, and flexible installation make the Eco Home – Split Heat Pump the ideal choice for owners of homes, shops, offices and service premises.

All the hydraulic components are easily accessible. The refrigerating connection between the outdoor and indoor units is resistant to freezing, even during a prolonged power failure, and an additional charge of refrigerant is only required, if the length of the refrigerant lines exceeds 15 m.

6 kW

8-16 kW

outdoor unit

- Compact design, independent hydraulic module, and flexible installation
- The refrigerating connection between the outdoor and indoor units is resistant to freezing, even during a prolonged power failure
- An additional charge of refrigerant is only required if the length of the refrigerant lines exceeds 15 m
- Built-in drip tray with heater

technical specification

Model			**KHA-06RY1**	**KHA-08RY1**	**KHA-10RY1**	**KHA-12RY3**	**KHA-14RY3**	**KHA-16RY3**
Power supply		V/Ph/Hz	220÷240/1/50	220÷240/1/50	220÷240/1/50	380÷415/3/50	380÷415/3/50	380÷415/3/50
Heating A7W35 ΔT=5, R.H. 85%	nom. heating capacity	kW	6,20	8,30	10,00	12,10	14,50	16,00
	electric power consumption	kW	1,24	1,60	2,00	2,44	3,09	3,56
	coefficient of performance (COP)		5,00	5,20	5,00	4,95	4,70	4,50
Heating A2W35 ΔT=5, R.H. 85%	nom. heating capacity	W	5,50	7,10	8,20	9,30	11,40	13,00
	electric power consumption	W	1,39	1,73	2,02	2,35	3,12	3,71
	coefficient of performance (COP)		3,95	4,10	4,05	3,95	3,65	3,50
Heating A-7W35 ΔT=8, R.H. 85%	nom. heating capacity	W	6,10	7,10	8,25	10,0	12,0	13,3
	electric power consumption	W	2,00	2,18	2,62	3,33	4,29	4,93
	coefficient of performance (COP)		3,05	3,25	3,15	3,00	2,80	2,70
Cooling A35W18 ΔT=5	nom. cooling capacity	W	6,55	8,40	10,00	12,00	13,50	14,90
	electric power consumption	W	1,34	1,66	2,08	3,00	3,75	4,38
	energy efficiency rating (EER)		4,90	5,05	4,80	4,00	3,60	3,40
Cooling A35W7 ΔT=5	nom. cooling capacity	W	7,00	7,40	8,20	11,60	12,70	14,00
	electric power consumption	W	2,33	2,19	2,48	4,22	4,98	5,71
	energy efficiency rating (EER)		3,00	3,38	3,30	2,75	2,55	2,45
Seasonal space heating energy efficiency class (temperate climate zone)	LWT at 35°C	class	A+++	A+++	A+++	A+++	A+++	A+++
	LWT at 55°C	class	A++	A++	A++	A++	A++	A++
SCOP	LWT at 35°C		4,95	5,22	5,20	4,81	4,72	4,62
	LWT at 55°C		3,52	3,37	3,47	3,45	3,47	3,41
Sound power level		dB(A)	58	59	60	64	65	68
Sound pressure level[1] (1 m)		dB(A)	46,4	47,3	49,8	52	52,2	56
Device dimensions (WxHxL)		mm	1008×712×426	1118×865×523	1118×865×523	1118×865×523	1118×865×523	1118×865×523
Dimensions in the packaging (WxHxL)		mm	1065×800×485	1180×890×560	1180×890×560	1180×890×560	1180×890×560	1180×890×560
Net/gross weight		kg	58/64	77/88	77/88	112/125	112/125	112/125
Air-side heat exchanger	type		finned tube coil heat exchanger	finned tube coil heat exchanger	finned tube coil heat exchanger	finned tube coil heat exchanger	finned tube coil heat exchanger	finned tube coil heat exchanger
Line size, outer diameter	liquid	mm	6,35	9,52	9,52	9,52	9,52	9,52
	gas	mm	15,88	15,88	15,88	15,88	15,88	15,88
	connection method		socket	socket	socket	socket	socket	socket
Between the indoor and outdoor unit	height difference	m	max.20	max.20	max.20	max.20	max.20	max.20
	line length	m	2÷30	2÷30	2÷30	2÷30	2÷30	2÷30
Additional refrigerant	charge	g/m	20	38	38	38	38	38
	min. line size	m	15	15	15	15	15	15
Compressor type			Twin Rotary	Twin Rotary	Twin Rotary	Twin Rotary	Twin Rotary	Twin Rotary
Outdoor air temperature range	cooling	°C	-5÷43	-5÷43	-5÷43	-5÷43	-5÷43	-5÷43
	heating	°C	-25÷35	-25÷35	-25÷35	-25÷35	-25÷35	-25÷35
	DHW	°C	-25÷43	-25÷43	-25÷43	-25÷43	-25÷43	-25÷43
Refrigerant	type (GWP)	kg	R32(675)	R32(675)	R32(675)	R32(675)	R32(675)	R32(675)
	charge amount	kg	1,5	1,65	1,65	1,84	1,84	1,84
Expansion valve type			electronic	electronic	electronic	electronic	electronic	electronic
Net EUR price			3 020	3 220	3 800	4 500	4 760	5 045

hydraulic module

- Built-in controller in the indoor unit
- Indoor unit to be connected to the outdoor unit
- More compact design (depth just 270 mm) and easy installation
- Standard equipment: plate heat exchanger, expansion vessel, flow sensor, water pump, manometer
- All the hydraulic components are easily accessible for maintenance
- Safety valve and air vent valve
- Built-in auxiliary heater
- Built-in drip tray

technical specification

Model		Model	KMK-60RY1	KMK-100RY1	KMK-160RY1
		Names of compatible outdoor unit models	KHA-06RY1	KHA-08RY1 KHA-10RY1	KHA-12RY3 KHA-14RY3 KHA-16RY3
Hydraulic module power supply		V/Ph/Hz	220÷240/1/50	220÷240/1/50	380÷415/3/50
Auxiliary electric heater	standard installation	kW	3	3	9
	capacity levels		1	1	3
	power supply		220÷240/1/50	220÷240/1/50	380÷415/3/50
Leaving water temperature (LWT)	cooling	°C	5÷25	5÷25	5÷25
	heating	°C	25÷65	25÷65	25÷65
	DHW	°C	30÷60	30÷60	30÷60
Room temperature range		°C	5÷35	5÷35	5÷35
Sound power level		dB(A)	38	42	43
Device dimensions (WxHxL)		mm	420×790×270	420×790×270	420×790×270
Dimensions in the packaging (WxHxL)		mm	525×1050×360	525×1050×360	525×1050×360
Net/gross weight		kg	37/43	37/43	39/45
Water-side heat exchanger	type		plate	plate	plate
Water pump lifting height		m	9	9	9
Expansion vessel	volume	l	8	8	8
	charge pressure	MPa	0,3	0,3	0,3
Connection	water-side	inch	R1"	R1"	R1"
	refrigerant liquid	mm	6,35	9,52	9,52
	refrigerant gas	mm	15,88	15,88	15,88
Safety valve		MPa	0,3	0,3	0,3
Flow switch		m^3/h	0,36	0,36	0,6
Water volume, total		l	5	5	5
Net EUR price			3 700	3 840	4 080

SPLIT TECHNICAL SPECIFICATION
1. Sound pressure level is a maximum value tested under three conditions determined in the notes A7W35, ΔT=5; A7W45, ΔT=5; A7W55 ΔT=8; R.H. 85%
2. The above data refers to the following standards: EN14511; EN14825; EN50564; EN12102; (EU) No. 811/2013; (EU) No. 813/2013; OJ 2014/C 207/02:2014

TECHNICAL SPECIFICATION — HYDRAULIC MODULE
1. EN12102-1
2. Sound power level is a maximum value tested under three conditions: A7W35, ΔT=5; A7W45, ΔT=5; A7W55 ΔT=8; R.H. 85%
3. The above data refers to the following standards: EN14511; EN14825; EN50564; EN12102; (EU) No. 811/2013; (EU) No. 813/2013; OJ 2014/C 207/02: 2014

DHW - domestic hot water
LWT - leaving water temperature

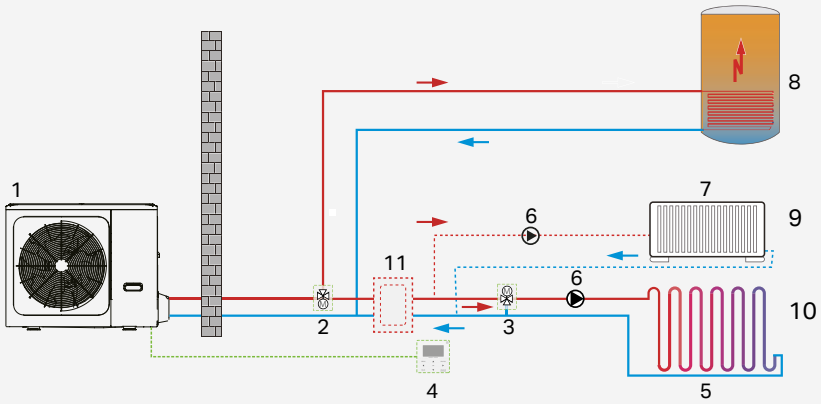
user interface

- Multilingual menu
- Newly designed controller with touch buttons
- Wireless WiFi operation
- Modbus RTU protocol – you can connect up to 16 devices and integrate it with BMS
- Cascade configuration support up to 6 units
- Simple and quick changing of the heat pump's operational parameters
- Real-time operation parameters monitoring
- Communication cable length adjustable to 50 m
- Built-in temperature sensor
- Software can be updated via USB and the heat pump settings can be saved on a portable memory

heating circuits

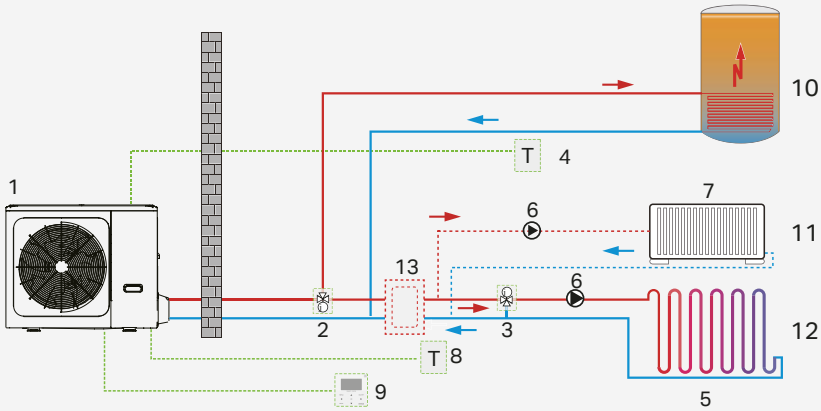
Two heating circuits [as standard]

- More flexibility thanks to two control zones
- Independent control of underfloor heating and radiator heating temperature
- No need to purchase an extension module for second heating system



1. KHC / KHA+KMK
2. Three-way valve
3. Three-way valve
4. User interface
5. Underfloor heating
6. Water pump
7. Radiator
8. Domestic hot water tank
9. Zone 1 control based on outlet water temperature
10. Zone 2 control based on outlet water temperature
11. Buffer

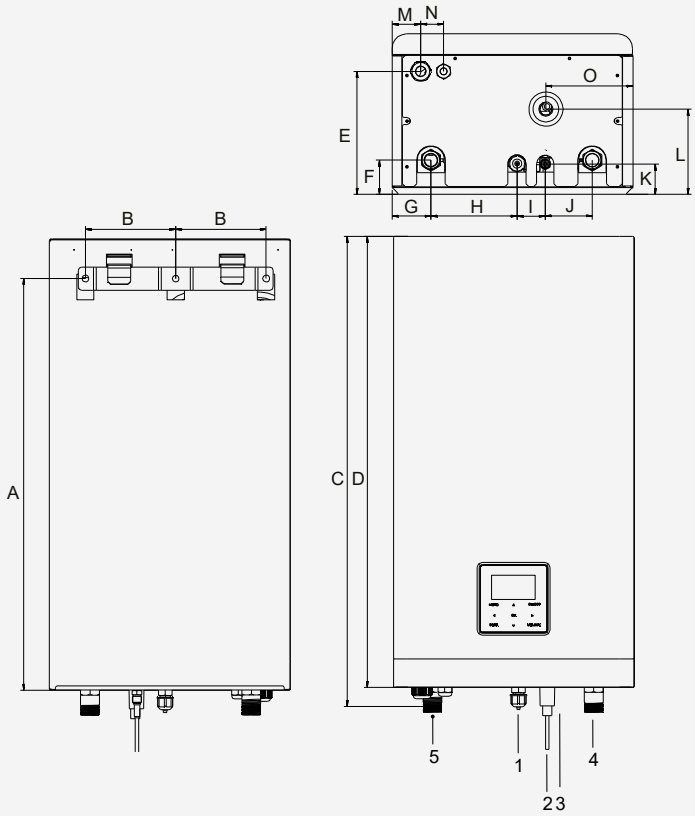
Two control zones thanks to user interface and thermostat



1. KHC / KHA+KMK
2. Three-way valve
3. Three-way valve
4. Thermostat 1
5. Underfloor heating
6. Water pump
7. Radiator
8. Thermostat 2
9. User interface
10. Domestic hot water tank
11. Zone 1 control based on thermostat 1
12. Zone 2 control based on thermostat 2
13. Buffer

dimensions

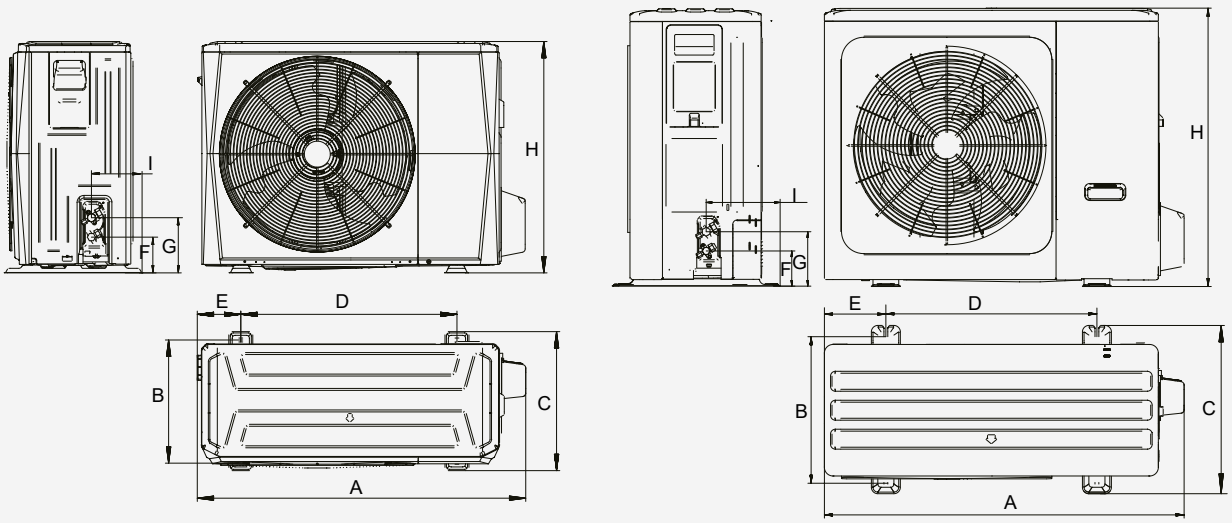
hydraulic module



1	Refrigeration connection – gas 5/8"
2	Refrigeration connection – liquid 1/4" (model 60), 3/8" (models 100/160)
3	Condensate drain ø25
4	Central heating water inlet
5	Central heating water outlet

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
721	158	824	790	216	60	68	151	49	82	53	149	50	40	152

outdoor unit



MODEL	A	B	C	D	E	F	G	H	I
KHA-06RY1	1008	375	426	663	134	110	170	712	160
KHA-08/10RY1	1118	456	523	656	191	110	170	865	230
KHA-12/14/16RY3	1118	456	523	656	191	110	170	865	230

price list of the devices 2020

MODEL		PRICE [net EUR]
Outdoor units		
KHA-06RY1	KHA-06RY1 heat pump – split – outdoor unit	3 020
KHA-08RY1	KHA-08RY1 heat pump – split – outdoor unit	3 220
KHA-10RY1	KHA-10RY1 heat pump – split – outdoor unit	3 800
KHA-12RY3	KHA-12RY3 heat pump – split – outdoor unit	4 500
KHA-14RY3	KHA-14RY3 heat pump – split – outdoor unit	4 760
KHA-16RY3	KHA-16RY3 heat pump – split – outdoor unit	5 045
Indoor units		
KMK-60RY1	KMK-60RY1 heat pump – split – indoor unit	3 700
KMK-100RY1	KMK-100RY1 heat pump – split – indoor unit	3 840
KMK-160RY1	KMK-160RY1 heat pump – split – indoor unit	4 080
Sets: outdoor and indoor unit		
KHA-06RY1 + KMK-60RY1	Heat pump – split – set KHA-06RY1+KMK-60RY1	6 720
KHA-08RY1 + KMK-100RY1	Heat pump – split – set KHA-08RY1+KMK-100RY1	7 060
KHA-10RY1 + KMK-100RY1	Heat pump – split – set KHA-10RY1+KMK-100RY1	7 640
KHA-12RY3 + KMK-160RY1	Heat pump – split – set KHA-12RY3+KMK-160RY1	8 580
KHA-14RY3 + KMK-160RY1	Heat pump – split – set KHA-14RY3+KMK-160RY1	8 840
KHA-16RY3 + KMK-160RY1	Heat pump – split – set KHA-16RY3+KMK-160RY1	9 125
Accessories		
HP EH Electric heater (dedicated to the KHC-07/09RX1)		1 600
HP T1 Additional temperature sensor		60
HP 3WV Three-way valve switching central heating/DHW		420
HP MXS Mixing group		1 500

The purchase prices contained in the price list are all net prices in EUR. | The price-list does not constitute an offer within the meaning of art. 66 of the Commercial Code, while all photos of the products are only examples and provided for the purpose of presenting the selected models. | The actual products may differ from the ones demonstrated in the pictures. | The products are subject to continuous improvement. Therefore, Kaisai reserves the right to change their prices and technical parameters without prior notice. | The current price list is no longer valid.

This document is provided for the purpose of giving information about and presenting heat pumps manufactured by Kaisai. | Since the technologically advanced production process necessitates its continuous control and improvement, the information contained in this publication may be subject to change. | The net prices provided are catalogue prices for the products and do not include any discounts or installation costs. | The technical data and prices included in the folder are subject to change. Up-to-date information is always available on **www.kaisai.com**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