COMMERCIAL BROCHURE

AIRHEAT

PACKAGED AIR-TO-WATER RECIPROCATING HEAT PUMP FOR OUTDOOR USE, FOR DOMESTIC HOT WATER PRODUCTION

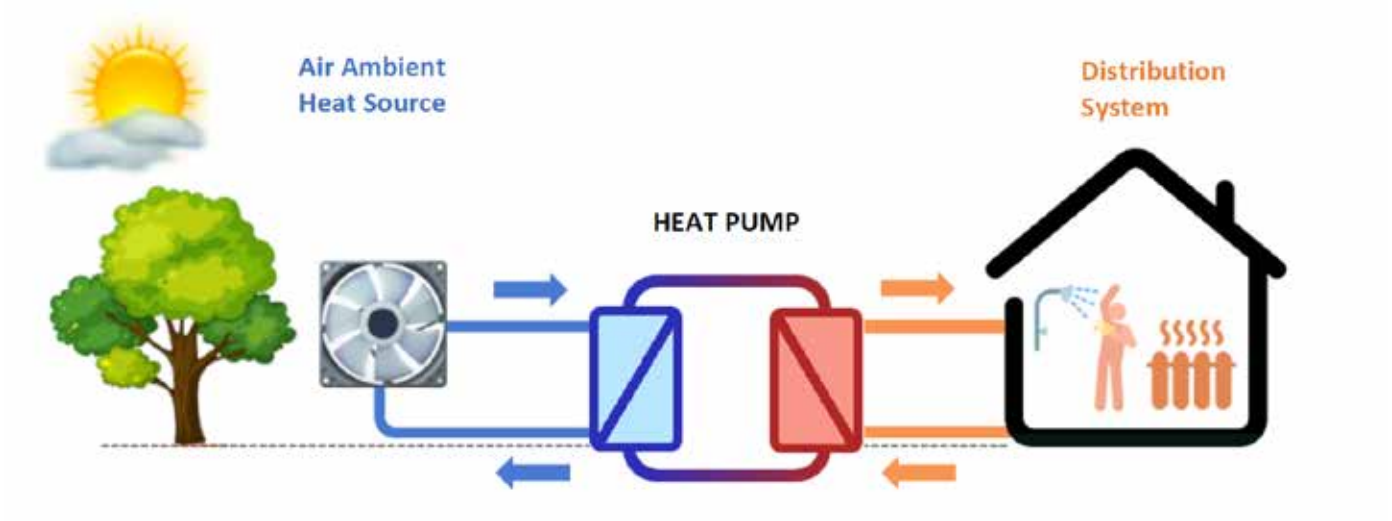
Heating capacity from 18 kW to 100 kW **for domestic hot water production** applications or **process heating** with high delta temperature, up to 90 °C

Enex presents AIRHEAT, the new, renewed and extended range of air to water heat pumps for DHW (Domestic Hot Water) that uses CO_2 (Carbon Dioxide - R744) natural refrigerant fluid. Asynthesis of innovation, flexibility and energy saving, the AIRHEAT series air to water heat pumps offer an unbeatable solution for the ability to produce large quantities of hot water at high temperatures, overcoming the typical limits of traditional heat pumps with synthetic refrigerants.

Enex was the first ever company to develop CO_2-only solutions since 2004. CO_2 is a natural fluid with zero OPD, GWP = 1. Neutral refrigerant of excellence, CO_2 is neither toxic nor flammable: it is in fact the one of the natural gases with fewer contraindications and for this reason it is a candidate as the refrigerant of the future, not subject to the F-gas regulation on fluorinated gases.

THE KEY ROLE OF THE HEAT PUMP TECHNOLOGY IN EUROPE

The key role of heat pumps, for the heating, cooling and production of domestic hot water in buildings, for the achievement of the new European community decarbonisation objectives of the building sector for the next decade, is perfectly reflected in the "European Green Deal" which expects the EU to become the first climate-neutral continent by 2050.



EXAMPLIFICATION IMAGE OF THE HEAT PUMP TECHNOLOGY
In the refrigeration cycle of a heat pump, the refrigerant gas (in our case CO2) has the ability to absorb heat from a natural source (for example in the case of AIRHEAT: the air of the external environment in which the heat pump is placed) and then, following a compression that raises the temperature, transfer it to the heating system. The energy returned to the system can even be 5 times greater than that energy supplied to the heat pump (in the form of electricity) and if this electrical energy would come from a renewable source (for example photovoltaic with or without storage) the system thus configured it would become 100% renewable energy.

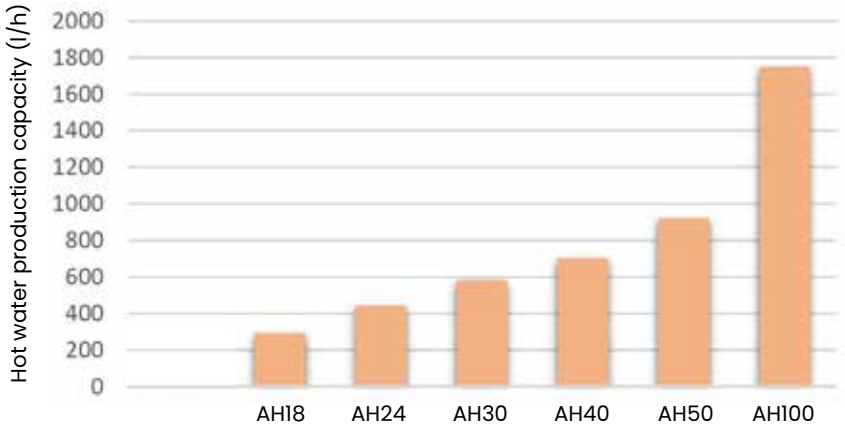
PRODUCTION OF HIGH VOLUMES OF HOT WATER

Thanks to the new range extension, AIRHEAT heat pumps perfectly cover capacity requests between 10 and 100 kW, with the possibility of extending the power range even more widely given the possibility of using more units in parallel.

AIRHEAT heat pumps are the optimal solution in all applications where a high production of hot water is required, such as:

- Residential complexes
- Hotels
- Canteens
- Restaurants
- Hospitals
- Gyms
- Sport centers
- Swimming pools
- Industrial processes

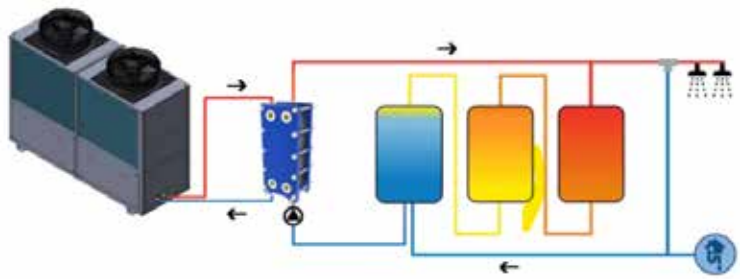
HOT WATER PRODUCTION CAPACITY



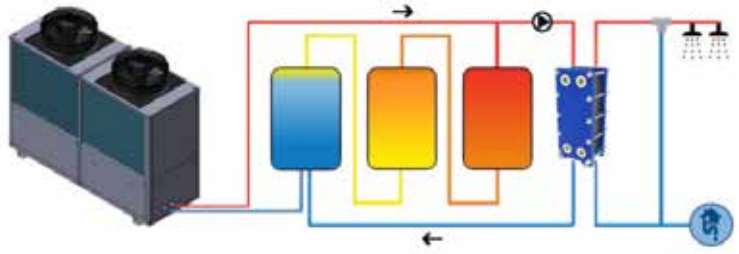
Conditions are: water IN/OUT 10/60°C - Air 7°C

TYPICAL SYSTEM CONFIGURATIONS TO ADAPT TO THE DIFFERENT NEEDS

AIRHEAT heat pumps represent a flexible and intelligent choice to manage according to the different configurations and system needs: technical water and domestic hot water for both instantaneous production and storage. Here are some examples of typical uses that take advantage of the stratification principle.



INSTANTANEOUS TECHNICAL WATER PRODUCTION AND STORAGE OF DOMESTIC HOT WATER



STORAGE OF TECHNICAL WATER AND INSTANTANEOUS PRODUCTION OF DOMESTIC HOT WATER

SPECIFICATIONS DESCRIPTION OF STANDARD UNITS

AIRHEAT unit for the production of domestic hot water up to 90°C with process water with a high temperature difference, equipped with heat pump technology with high energy efficiency CO2 natural refrigerant in an Air-Water monobloc configuration for nominal heating capacity from 18 to 100 kW.

MAIN FEATURES

Compressor semi-hermetic, specifically designed for transcritical CO_2 applications

Plate exchanger single wall stainless steel brazed plate heat exchanger

Integrated **inverter** driven water pump

Finned pack evaporator

Axial fans with integrated rotation speed control

Electronic expansion valve for accurate high pressure control

Proprietary heat pump management software developed by Enex to optimize the performance and reliability of the units

LCD display placed on the electrical panel of the unit with an easy and intuitive graphic interface

Remote connection with Modbus RS-485 or TCP / IP protocols as a standard (web server included)

Energy meter included

Remote supervision for remote assistance service

Painted frame closed by sound-absorbing panels

Anti-vibration feet to reduce vibrations and noise

Analog **safety pressure gauge** on the high pressure side

Cooling circuit made entirely of stainless steel for maximum strength and reliability

PED certification (Cat. ≤ III)

Plug and play unit tested in real operating conditions during the end-of-line test

COOLING RECOVERY

AIRHEAT heat pumps are able to recover cooling energy for the production of cold water, which can be efficiently used with significant energy savings for the air conditioning needs of the building or for process purposes, typical of the food industry, pharmaceutical or hospital requirements.

TECHNICAL DATA

AIRHEAT		AH18	AH24	AH30	AH40	AH50	AH100
Design conditions		Water 10°C / 60°C - Air 7°C D.B. / 6°C W.B.					
Heating Capacity	kW	16,9	25,7	33,8	40,7	53,3	102,0
COP	-	3,6	4,1	4,0	3,9	3,9	4,2
Design conditions		Water 10°C / 60°C - Air 7°C D.B. / -8°C W.B.					
Heating Capacity	kW	11,5	17,7	23,4	28,0	36,6	70,6
COP	-	2,7	3,1	3,1	2,9	2,8	3,1
Design conditions		Water 10°C / 60°C - Air 12°C D.B. / 11°C W.B.					
Heating Capacity	kW	18,6	28,0	37,1	44,5	58,1	111,0
COP	-	3,9	4,5	4,4	4,3	4,2	4,5
Hydraulic data							
Connection diameter IN	"	½ " INOX	1 ¼ " INOX	1 ¼ " INOX	1 ½ " INOX	1 ½ " INOX	2 " INOX
Connection diameter OUT	"	½ " INOX	1 ¼ " INOX	1 ¼ " INOX	1 ½ " INOX	1 ½ " INOX	2 " INOX
Pump type		EC	EC	EC	EC	EC	EC
Av. pressure drop	m	7	8	8	8	8	35
Electric data							
Power supply	V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
FLA	A	15	27	31	31	42	72
LRA	A	49	94	100	100	179	261
LRA with soft starter	A	35	64	68	69	121	178
Frigorific circuit main component							
Circuits	n°	1	1	1	1	1	1
Compressor	n°	1	1	1	1	1	1
Type compressor		Semi hermetic	Semi hermetic	Semi hermetic	Semi hermetic	Semi hermetic	Semi hermetic
Fans	n°	1	1	1	2	2	2
Type of fans		Axial	Axial	Axial	Axial	Axial	Axial
Nominal Air Flow	m^3/h	8850	11660	11660	17880	23850	47690

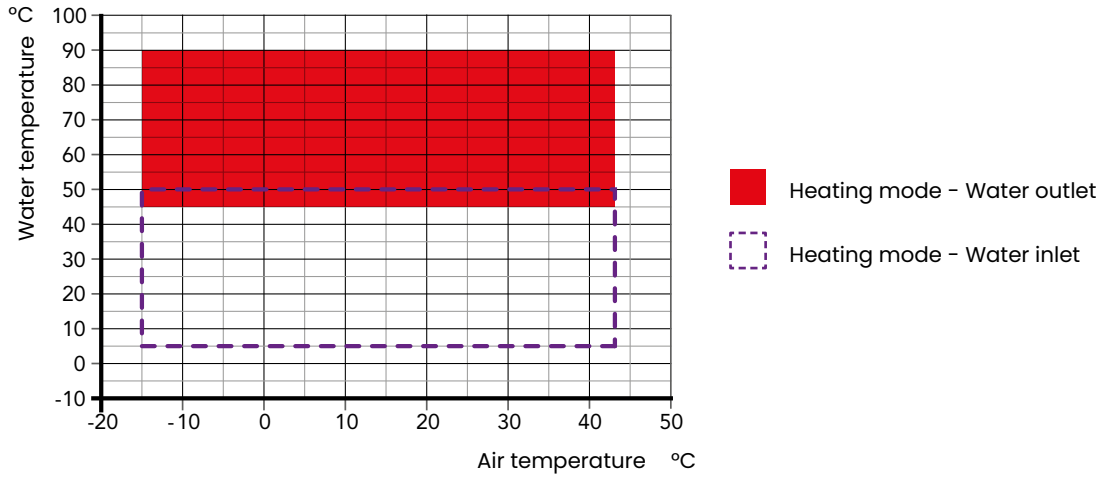
AIRHEAT		AH18	AH24	AH30	AH40	AH50	AH100
Refrigerant data							
Type refrigerant		R744	R744	R744	R744	R744	R744
Refrigerant charge	kg	4,3	6,4	6,7	8,6	9,6	20,0
Dimensions							
Lenght	mm	1100	1650	1650	2400	3050	3050
Width	mm	900	970	970	970	1120	1120
Height	mm	2100	2100	2100	2100	2450	2450
Weight							
Weight	kg	400	550	550	750	750	1500
Sound data							
Sound power (1)	dB(A)	78	78	78	80	88	88
Sound pressure (2)	dB(A)	50	50	50	52	60	60
Sound power (1) (low noise version)	dB(A)	70	70	70	74	78	78
Sound pressure (2) (low noise version)	dB(A)	42	42	42	44	50	50

(1) Sound power level in accordance with ISO 3744
(2) Sound pressure level 10m with directivity factor Q=2

WORKING CONDITIONS AND LIMITS OF USE

AIRHEAT	AH18	AH24	AH30	AH40	AH50	AH100
Outdoor air temperature (°C)	-15 → +43	-15 → +43	-15 → +43	-15 → +43	-15 → +43	-15 → +43
Water in temperature (°C)	+5 → +50	+5 → +50	+5 → +50	+5 → +50	+5 → +50	+5 → +50
Water out temperature (°C)	+45 → +90	+45 → +90	+45 → +90	+45 → +90	+45 → +90	+45 → +90
ΔT minimum (K)	20	20	20	20	20	20

AIRHEAT



DISTINCTIVE TECHNOLOGICAL CHOICES OF THE RANGE

STANDARD CONFIGURATIONS OPTIONS AND ACCESSORIES

Depending on the size and model, AIRHEAT units can be equipped with a series of devices that expand the range of use and improve the completeness of the unit:

AIRHEAT	AH18	AH24	AH30	AH40	AH50	AH100
ON/OFF compressor	--	•	•	•	•	•
Soft starter	•	o	o	o	o	o
Inverter	--	--	--	--	--	--
Water pump	•	•	•	•	•	•
DHW water pump (alternative)	o	o	o	o	o	o
Ducted option	--	--	--	--	--	--
Low noise option	•	o	o	o	o	o
Cold recovery	--	o	o	o	o	o
Coil corrosion protection	o	o	o	o	o	o
Modbus TCP/IP	•	•	•	•	•	•
Remote monitoring	•	•	•	•	•	•

• Standard o Optional -- Not available

Publication: Commercial Brochure AIRHEAT Series | Version March 2025 | ENG

Via Delle Industrie, 7 31030 Vacil Di Breda Di Piave [TV], Italy | VAT IT02328320300
Tel +39 0422 440429 | Fax +39 0422 961021 | info@enex.it | www.enex.it