



Reversible heat pump, for outdoor installation, for the production of hot water up to 60 °C or cold water down to 3°C. Guarantees efficiency up to 150%, thanks to the use of air source renewable energy.

High efficiency gas absorption heat pump + air source renewable energy for heating and cooling

GAHP Line AR - RTAR Series

Advantages

- Up to 33.3% utilisation of air source renewable energy.
- Designed to exceed peak efficiencies of 150%, guaranteeing up to 33.3% reductions in annual heating costs and in CO₂ emissions compared to the best condensing boilers.
- All data are tested by certificates and approvals from ENEA for Italy, DVGW-Forschungsstelle and VDE for Germany, California Energy

Commission for USA.

- The most beneficial heating system to enhance the energy qualification of buildings, because it permits a considerable promotion of the building's energy classification with the consequent increase in the value of the building.
- Also designed for cooling purposes, using gas as fuel.
- It reduces electricity consumption to a minimum, thanks to the prevalent use of gas.

- Ensures efficiency levels in excess of 130% even at -7 °C, so it is also used in especially cold climates.
- The installation of air source gas absorption heat pumps is supported by national and local incentive programs.
- With a GAHP-AR, every year 3.4 Tons of CO₂ emissions are saved, which are equivalent to those absorbed by 457 trees or those produced by 2 green cars; every year 1.6 TOE are saved.

Applications

- Ideal for heating and cooling industrial, commercial, accommodation and tertiary utilities.
- On request GAHP-AR units can be pre-assembled as links with the same units (RTAR Series) or with other units (see p. 46).
- For outdoor installation.



Example of GAHP-AR application in winter and summer operation for radiant panels, fan coils, indirect production of DHW.

HEATING OPERATION MODE ⁽¹⁾		GAHP-AR	
Working point A7/W35	GUE (gas utilization efficiency) *	%	150
	heating capacity	kW	37.8
Working point A7/W50	GUE (gas utilization efficiency)	%	140
	heating capacity	kW	35.3
Nominal water flow rate ($\Delta T = 10\text{ }^{\circ}\text{C}$)		m ³ /h	3.04
Nominal water pressure loss (A7/W50)		kPa	29
Maximum outlet water temperature ($\Delta T = 10\text{ }^{\circ}\text{C}$)		$^{\circ}\text{C}$	60
Inlet water temperature max/min		$^{\circ}\text{C}$	50/20
Ambient operating temperature (dry bulb) max/min		$^{\circ}\text{C}$	35/-20

COOLING OPERATION MODE ⁽¹⁾			
Working point A35/W7	GUE (gas utilization efficiency)	%	67
	cooling capacity	kW	16.9
Nominal water flow rate ($\Delta T = 5\text{ }^{\circ}\text{C}$)		m ³ /h	2.9
Nominal water capacity pressure loss (A35/W7)		kPa	31
Minimum outlet water temperature		$^{\circ}\text{C}$	3
Inlet water temperature max/min		$^{\circ}\text{C}$	45/6
Ambient operating temperature (dry bulb) max/min		$^{\circ}\text{C}$	45/0

BURNER CHARACTERISTICS

Thermal input (actual)		kW	25.2
Gas consumption (actual)	natural gas G20 ⁽²⁾	m ³ /h	2.67
	LPG G30/G31 ⁽³⁾	kg/h	1.96

ELECTRICAL CHARACTERISTICS

Voltage		230 V – 50 Hz	
Nominal electrical power ⁽⁴⁾	standard version	kW	0.9
	low noise version	kW	0.93

INSTALLATION DETAILS

Operational Weight	standard version	kg	380
	low noise version	kg	390
Sound pressure at 10 metres ⁽⁵⁾	standard version	dB(A)	54
	low noise version	dB(A)	49
Connections	water	" F	1 1/4
	gas	" F	3/4
	flue exhaust pipe	mm	80
Dimensions	width	mm	850
	depth	mm	1,230
	height (standard version) ⁽⁶⁾	mm	1,290
	height (low noise version) ⁽⁶⁾	mm	1,540
Electrical degree of protection		IP	X5D

Pre-assembled model RTAR	Units	Heating - cooling capacity kW	Dimensions w/d/h mm	Weight kg
RTAR 116-240 S CC	n. 2 GAHP AR S	75.0 - 33.8	2,314 x 1,245 x 1,650	970
RTAR 174-360 S CC	n. 3 GAHP AR S	112.5 - 50.7	3,610 x 1,245 x 1,650	1,435
RTAR 232-480 S CC	n. 4 GAHP AR S	150.0 - 67.6	4,936 x 1,245 x 1,650	1,920
RTAR 290-600 S CC	n. 5 GAHP AR S	187.5 - 84.5	6,490 x 1,245 x 1,650	2,395

Multiple pre-assembled links RTAR are available with or without circulators and in standard or low noise version. On request, GAHP-AR units can be pre-assembled with other units (gas heat pumps, gas chillers and gas condensing boilers), to create multiple assemblies configured on demand for heating, cooling and DHW production.

⁽¹⁾ Nominal conditions according to EN 12309-2.

⁽²⁾ PCI 34.02 MJ/m³ (9,45 kWh/m³) at 15 °C - 1013 mbar.

⁽³⁾ PCI 46.34 MJ/kg (12,87 kWh/kg) at 15 °C - 1013 mbar.

⁽⁴⁾ ± 10% depending on the power supply voltage and on the tolerance of the electrical motors power consumption.

⁽⁵⁾ Free field, at the front, direction factor 2.

⁽⁶⁾ The dimensions refer to the unit without flue exhaust pipe.

* Equivalent COP: 3.72 calculated on energy conversion factor of 2.5.

Note: The above data refer to the standard versions with circulating pumps. For the low noise version, with or without water circulating pumps, contact Robur sales network.