

# ARAC - ARAH



## Air-cooled water chillers and heat pumps with axial fans for outdoor installations

### Range:

Cooling capacity: 42 ÷ 95 kW  
Heating capacity: 50 ÷ 106 kW

### Available versions:

- Cooling only
- Heat pump
- Ultra low noise

### Refrigerant R407C Scroll Compressors

## STANDARD FEATURES

- Self-supporting frame in galvanised steel (RAL9001 colour) with panels varnished with epoxy powders in compliance with ASTM B117
- Protection grade IP44
- Hermetic scroll compressors with internal thermal protection and anti-vibration supports
- Crankcase resistance (ARAH) with modulating condensation control option
- Stainless steel brazed plate heat exchangers insulated with closed-cell expanded polyurethane
- Heat exchangers with aluminium fins and mechanically-expanded copper tubes
- Cycle inverter with 4-way reversing valve (ARAH)
- Sickle-blade axial fans, statically and dynamically balanced with safety protection grilles: protection grade IP44
- Two independent refrigerant circuits conforming to EC Directives (PED 97/23/EC directive) including: filter dryer, flow indicator, thermostatic valves with external equalisation and high & low pressure switches
- Low-noise version: due to the particular dimensions of the aeraulic circuit and low-speed fans
- Electric panel conforming to EC Directive 73/23/EC and Directive EMC 89/336/EC with auxiliary 24V circuit, general cut-off switch, magneto-thermal protection cut-off switches
- Sequence phase control
- Water flow differential pressure switch
- Microprocessor control system including: local user control and monitoring terminal with LCD display and LED signals for all working parameters:
  - chilled water temperature regulation and hot water temperature for ARAH
  - anti-freeze protection
  - compressor timing and protection
  - compressor function display

- alarm code signalling and centralisation for general alarm control transmission
- remote ON-OFF switch

## OPTIONS

Units can be supplied with the following construction options:

- Remote user terminal (up to 150 meters) for:
  - direct display/entering of commands
  - display unit status and alarms
- Remote user terminal mP20 II (up to 200 meters) for:
  - display / entering of commands
  - display unit status and alarms
- Rubber anti-vibration kit

## TECHNICAL DATA

ARAC/ARAH MODEL		0182A	0202A	0232A	0252A	0302A	0403A	0504A
Power supply	V/ph/Hz	400 / 3 + N / 50						
<b>Cooling only (ARAC)</b>								
Cooling capacity (1)	kW	42,1	49,4	56,9	66,7	74,7	84,7	95,0
Absorbed power (1)	kW	14,66	17,30	19,86	22,06	26,48	30,36	35,29
<b>Heat pump (ARAH)</b>								
Heating capacity (2)	kW	50,1	56,8	65,9	74,0	81,4	95,4	105,6
Absorbed power (2)	kW	13,09	14,91	17,93	19,87	23,13	28,9	34,87
No. of circuits / No. of compressors				2/2			2/3	2/4
No. of fans / No. of poles		4/6	4/6	6/6	6/6	6/6	8/6	8/6
Airflow	m <sup>3</sup> /h	14000	14000	21000	21000	21000	28000	28000
Water flow	l/h	7240	8500	9790	11480	12820	14580	16340
Pressure drop	kPa	20	22	25	30	29	32	36
Available head pressure (3)	kPa	211	186	158	155	150	179	165
Pump absorbed power	kW	1,34	1,34	1,50	1,50	1,50	2,35	2,35
Noise pressure level (4)	dB(A)	43,0	43,0	45,0	45,0	45,0	46,0	46,0
<b>Ultra low noise version</b>								
Noise pressure level (4)	dB(A)	41,0	41,0	43,0	43,0	43,0	44,0	44,0
<b>Partial heat recovery (option)</b>								
Thermal heat recovery (5)	kW	13,2	15,9	16,9	19,7	24,5	27,5	32,8
Water flow	l/h	2280	2750	2920	3390	4210	4740	5650
<b>Dimensions and weight</b>								
Height	mm	1452	1452	1452	1452	1452	1452	1452
Depth	mm	1950	1950	2300	2300	2300	3200	3200
Width	mm	1191	1191	1191	1191	1191	1191	1191
Weight (without hydronic kit) (6)	kg	530	550	620	635	655	800	850

(1) Data refer to nominal conditions: water temperature 12/7°C; ambient temperature 35°C; refrigerant R407C

(2) Data refer to nominal conditions: water temperature 40/45°C; ambient temperature 7°C dry bulb, 6°C wet bulb; refrigerant R407C

(3) With re-circulating pump

(4) Measured in free field conditions, coil side, direction factor Q=2, at 10 mt. from the unit (at nominal conditions)

(5) Data refer to nominal conditions: recovery water temperature 40/45°C; chilled water temperature 12/7°C; ambient temperature 35°C; refrigerant R407C

(6) Data refer to empty unit

### Available pump group

ARAC / ARAH	0182A / 0202A	0232A / 0252A / 0302A	0403A / 0504A
A (1,34 kW)	opz.	n.a.	n.a.
B (1,50 kW)	opz.	opz.	n.a.
C (2,36 kW)	opz.	opz.	opz.

opz. = option; n.a. = not available

### Available water tanks

ARAC / ARAH	0182A / 0202A	0232A / 0252A / 0302A	0403A / 0504A
A (210 l)	opz.	opz.	opz.
B (300 l)	n.a.	opz.	opz.
C (500 l)	n.a.	n.a.	opz.

opz. = option; n.a. = not available

## CONSTRUCTION OPTIONS

- Modulating condensation control through automatic fan speed regulation
- Ultra low-noise version and modulating control of condensation pressure
- Integrated hydronic system with 1 or 2 thermo-protected circulation pump (1 + 1 stand-by), with safety valve and reservoir tank
- Partial condensation heat recovery and modulating control of condensation pressure (ARAC only)
- Microprocessor control system mP20 II with the management of capacity steps (ARAC only)
- Electronic expansion valve (\*)
- Outlet water temperature control
- RS485 serial adapter used to communicate with Uniflair supervision system or to interface with external BMS
- LAN card for local network connection mP20 II (ARAC only)
- Cascade management ready for 2, 3 or 4 units installed on a parallel hydraulic circuit connection

(only for standard control)

- High and low refrigerant pressure gauges
- Version for the production of glycol water at low temperatures (down to - 8 °C) ARAC only (\*)
- Compressor power phase correction capacitors
- Anti-freeze protection on evaporator, reservoir tank and pump group
- Condensing coils equipped with safety grilles
- R22 refrigerant (available option on request according to UE 2037/2000 standards)
- R134a Refrigerant (\*)

(\*) on request