

# BRAH



## Air to water heat pumps with axial fans for outdoor installations

### Range:

Cooling capacity: 298 ÷ 697 kW  
Heating capacity: 340 ÷ 750 kW

### Available versions:

- basic
- ultra-low noise

**Refrigerant R407C**  
**Scroll / Screw Compressors**

## STANDARD FEATURES

- Self-supporting frame in galvanised steel with panels finished in epoxy powders (RAL7037 colour)
- Six hermetic Scroll compressors with internal thermal protection, oil heaters and anti-vibration supports (1206A ÷ 1506A models)
- Two semi-hermetic double Screw compressors with internal thermal protection, oil heaters and anti-vibration supports (1802A ÷ 3002A models)
- Two refrigerant circuits conforming to EC norms (PED 97/23/CE) in copper tubes mainly including: filter dryer, flow indicator, thermostatic valves with external equalisation, discharge shut-off valve, high and low pressure switches, pressure transducers and pressure gauges
- Exchange of the cycle on the refrigerant side with 4-way reversing valve
- Shell & tube evaporator with two independent cooling side circuits and one hydraulic circuit: the heat exchanger is insulated with closed-cell expanded neoprene
- Heat exchanger coils with aluminium fins and internally grooved copper tubes
- Water flow pressure switch
- Sickle-blade axial fans, statically and dynamically balanced with safety protection grilles, protection grade IP54
- Modulating condensation control by fan speed regulation
- Electric panel conforming to EC (Directive 73/23/EC and Directive EMC 89/336/EC, protection grade IP54) with anti-condensation heater, maximum internal temperature control, general cut-off switch, magneto-thermal protection for fans and auxiliaries, magneto-thermal protection for Scroll compressors and fuses for screw compressors, cut-off switches
- Sequence phase monitor
- Microprocessor control system UPC1m including:
  - local user terminal mP20 II visible on unit with panel
  - outlet chilled / heat water temperature regulation
  - advanced management of compressors (units equipped with Scroll compressors) or of 8 steps (units equipped with screw compressors) through automatic set-point sensitivity regulation
- compressor rotation with FIFO system (run time, protection and function)
- rotation of pump group setting functioning and start of pump in stand-by (alarm display) in the event of pump breakdown
- advanced defrost function to minimise cycle inversions
- advanced anti-freeze protection on evaporator
- integrated LAN card for local network connection of a group of chillers (up to 10 units)
- integrated clock card
- Moreover microprocessor control system permits:
  - set-point adjustment from external signal 0-10V
  - management of double set-point and selection
  - free-contact for general alarm and 2 addressable alarm
  - management
  - remote ON-OFF switch
  - ability to interface with Modbus protocol directly on RS485 serial card
  - ability to interface with main external communication protocols: Bacnet, Lonworks, Metasys, TCP/IP and SNMP

## TECHNICAL DATA

BRAH MODEL		1206A	1306A	1506A	1802A	2002A	2202A	2502A	2802A	3002A
Power supply	V/ph/Hz	400 / 3 + N / 50			400 / 3 + N / 50					
Compressors / circuits	n <sub>o</sub> x mod	6 x Scroll / 2			2 x Screw / 2					
Evaporator	n <sub>o</sub> x mod	1 x Shell & Tube			1 x Shell & Tube					
N <sub>o</sub> of fans / N <sub>o</sub> of poles		4 / 6	6 / 6	6 / 6	6 / 6	8 / 6	8 / 6	8 / 6	8 / 6	10 / 6
<b>Basic version</b>										
Cooling capacity (1)	kW	298	338	371	410	455	511	557	627	697
Absorbed power (1)	kW	118	122	138	157	149	182	219	250	247
Heating capacity (2)	kW	340	405	439	462	492	567	632	710	750
Absorbed power (2)	kW	116	133	143	153	156	177	205	234	237
Noise pressure level (3)	dB(A)	61,5	61,5	63	63	64	65	66	67	67
<b>Ultra low noise version</b>										
Cooling capacity (1)	kW	274	315	350	382	424	470	512	566	633
Absorbed power (1)	kW	132	136	151	175	160	198	239	295	273
Heating capacity (2)	kW	317	380	411	430	462	526	584	656	697
Absorbed power (2)	kW	117	131	141	150	154	174	201	230	233
Noise pressure level (3)	dB(A)	55	55	56	57	57	57	57	57	57,5
<b>Dimensions</b>										
Height	mm	2527	2527	2527	2527	2527	2527	2527	2527	2527
Length	mm	3500	4930	4930	4930	6360	6360	6360	6360	7785
Width	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200

(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 d.b. 6°C w.b.; refrigerant R407C

(3) Measured in free field at 10 m (Q=2, coil side) from the unit running in nominal conditions

## CONSTRUCTION OPTIONS

- Ultra-low noise version
- Partial heat recovery
- Integrated hydronic system with 1 or 2 pumps (1 + 1)
- Anti-freeze protection on evaporator, and pump group
- Evaporator / pumps protection grilles
- Heat exchange coils equipped with safety grilles and filter
- Suction shut-off valves on compressors
- RS485 serial adaptor used to communicate with Uniflair supervisory system or to interface with external BMS
- LON FTT10 serial adaptor used to communicate with external BMS managed with LON protocol
- Air-side heat exchangers cataphoresis treatment (\*)

(\*) on request

## OPTIONS

Units can be supplied with the following construction options:

- Remote user terminal mP20II (up to 200 metres) for:
  - entering of commands
  - display unit status and alarms.
- Spring anti-vibration kit