

Air Source Heat Pump Electrical Requirements

Maximum current and protective device requirements for the AUX R290 high temperature monobloc range, 4 to 16 kW. For use by the installing electrician alongside the unit rating plate and the AUX installation manual.

			Maximum current			Protection
Unit	Model code	Supply	Heat pump (A)	Backup heater (A)	Combined (A)	RCD
Single phase — 220–240 V, 1N, 50 Hz · 3 kW backup heater						
4 kW	ACHP-H04/4R2HA-M	1N	19	14	33	30 mA, inverter compatible
6 kW	ACHP-H06/4R2HA-M	1N	19	14	33	30 mA, inverter compatible
8 kW	ACHP-H08/4R2HA-M	1N	21	14	35	30 mA, inverter compatible
8 kW (NE)	ACHP-H08/4R2HA-M(NE)	1N	21	—	21	30 mA, inverter compatible
10 kW	ACHP-H10/4R2HA-M	1N	21	14	35	30 mA, inverter compatible
10 kW (NE)	ACHP-H10/4R2HA-M(NE)	1N	21	—	21	30 mA, inverter compatible
12 kW	ACHP-H12/4R2HA-M	1N	32	14	46	30 mA, inverter compatible
14 kW	ACHP-H14/4R2HA-M	1N	32	14	46	30 mA, inverter compatible
16 kW	ACHP-H16/4R2HA-M	1N	32	14	46	30 mA, inverter compatible
Cascade figures are per unit. The supply arrangement for a cascade pair is not covered by the AUX documentation — confirm with AUX before design.						
Three phase — 380–415 V, 3N, 50 Hz · 9 kW backup heater, 3 kW per phase · figures are per phase						
8 kW	ACHP-H08/5R2HA-M	3N	11	14	25	30 mA, inverter compatible
10 kW	ACHP-H10/5R2HA-M	3N	11	14	25	30 mA, inverter compatible
12 kW	ACHP-H12/5R2HA-M	3N	14	14	28	30 mA, inverter compatible
14 kW	ACHP-H14/5R2HA-M	3N	14	14	28	30 mA, inverter compatible
16 kW	ACHP-H16/5R2HA-M	3N	14	14	28	30 mA, inverter compatible

Requirements stated by AUX — all units

- **Residual current device.** High-speed type, 30 mA, operating in under 0.1 s. A leakage protection switch must be fitted to the unit supply.
- **Inverter compatibility.** These units are equipped with an inverter. The ground fault circuit interrupter must be compatible with the inverter and resistant to high-frequency electrical noise, to avoid unnecessary opening of the device.
- **Isolation.** All-pole disconnection with contact separation of not less than 3 mm.
- **Never fit a phase advancing capacitor.** It reduces the power factor improvement effect and can cause abnormal heating of the capacitor, and could lead to an accident.
- **Cable.** Always use multicore cable for power supply cables. Use 3-core shielded wire. Flexible cord must meet 60245 IEC (H05VV-F).
- **Earthing.** Connect the earth cable first, before the current-carrying connections; disconnect the current-carrying cables first, before separating the earth. Do not connect earth cables to gas or water pipes, lightning rods or telephone earths. Always connect the backup heater power supply and the earth cable.
- **Overcurrent protection.** Attach a ground fault circuit interrupter and fuse to the power supply line. A creepage circuit breaker above the maximum current must be installed.

Segregation and siting

- Power wiring and communication wiring should not be run in the same conduit. Where the power supply is less than 10 A, maintain at least 300 mm separation between conduits; from 10 A to 50 A, at least 500 mm.
- Secure the electrical wiring with cable ties so it does not contact the piping, particularly on the high-pressure side.
- Install the power cord at least 1 m from a TV or radio to prevent interference.
- Where multiple units are installed in a centralized manner, check the load balance of the three-phase supply to prevent units forming on the same phase.
- **Circulation pump.** 0.095 kW, 0.75 A full load.

Auxiliary output ports. 220–240 VAC. A load drawing less than 0.2 A may connect to the port directly; a load of 0.2 A or more requires an AC contactor. Applies to the 3-way valves MV1, MV2 and MV3, the zone and DHW pipe pumps and the tank booster heater.