Samsung Integrated ASHP
1st Fix Wiring Requirements

This has been created as a checklist for you to work through. We will require all points to be completed before we can second fix (install) the ASHP/Cylinder heating/controls.

Plant room size to be discussed and approved prior to any building works. If unsure on any locations please contact the office 01353 669 000.

If Eco installer has to complete/install these it will be charged on a time and materials basis at our current hourly rate.

Air Source Heat Pump (ASHP)

- ○ 1 x 32A supply protected by a C32 RCBO (or MCB with separate RCD) **per heat pump** with a rotary isolator fitted. Location of the isolator should be on the right-hand side of the Heat Pump base outside of the protective zone, consider the total heigh of the heat pump (see picture below).

Cylinder Immersion – TO BE LEFT ON 20A DB POLE SWITCH WITH FLEX OUTLET

- ○ 1x 16A supply for immersion in plant room for cylinder immersion
LOCATION OF CYLINDER TO BE CONFIRMED.

Under floor heating manifold:

- ○ 1 x 13A supply left on a labelled switched fused spur with flex outlet above the location of the manifold for underfloor heating controls
- ○ 2 x 1.0mm 3c cable (flex) from each UFH manifold to the plant room (if not located in the plant room).
- ○ If having hard wired thermostats -> 3c + E to each thermostat back to the respective manifold, minimum 32mm back box required – to be fitted by first fix electrician.

Radiator zone:

- ○ For radiator circuit– 5c Flex from thermostat location to plant room

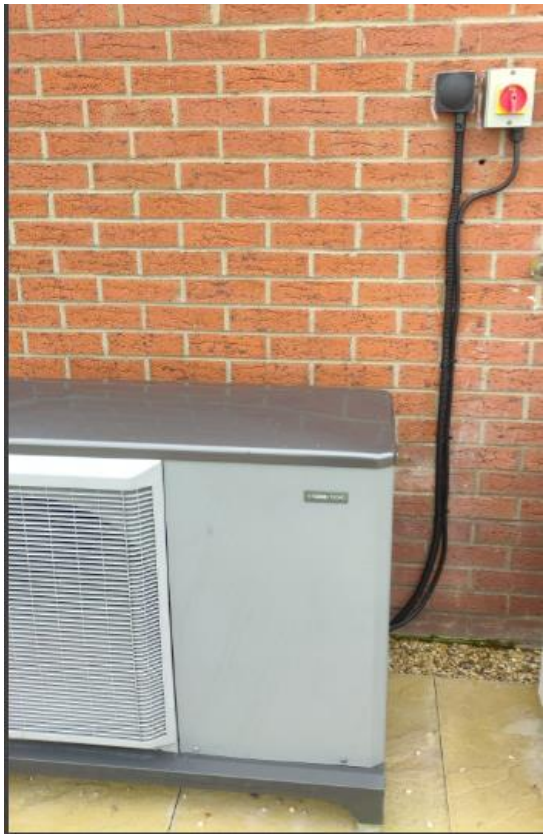
  - Please first fix for one thermostat per floor.
  - Room stat to be installed in a suitable position: Example hallway away from radiator + external doors + direct sunlight.

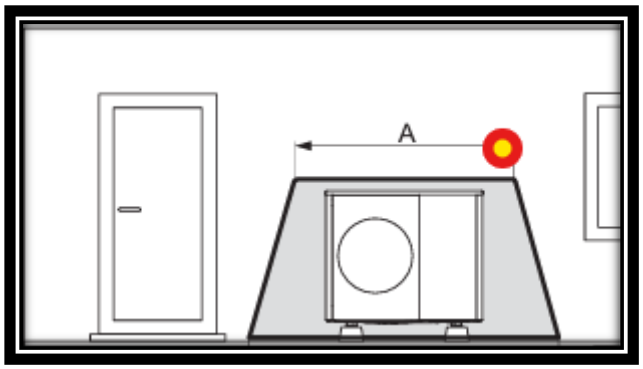
We require test certificates for all first fixed circuits mentioned above before we can book our electrician to do the second fix electrics. This will then ensure that all switches and isolators are fitted prior to our booking. Safety of all our employees and sub-contractors is paramount.

Example of rotary isolator location – top right of the Heat Pump, outside of the protective zone.

To calculate the height of the ASHP please consider the height of the base from the ground, the feet and the heat pump. E.G. for a 5kW R32 HTQ heat pump the total height will be 1400mm from ground level (Base 200mm, Feet 100mm, ASHP 1000mm plus 100mm protective zone allowance)

IP 65 (minimum) rated box for control cable, all cable entry points on bottom.





Example of labelled fused spurs/ DB Pole Switch:

Samsung ASHP base

Heat pumps with the R290 gas have **protective zone** that must be considered when choosing the location of the heat pump base. Please consult the diagram below for more information on this.

This document covers these size heat pumps – 5kW / 9kW / 12kW / 16kW

Base options : Solid base (photo 1) or two slabs/pillars (photo 2) There must be allowance for the condense to run into a soakaway or a solid base with a drain nearby for the condense.

Please start the base 200mm from the exterior surface of the building – allow for final finishing/cladding.

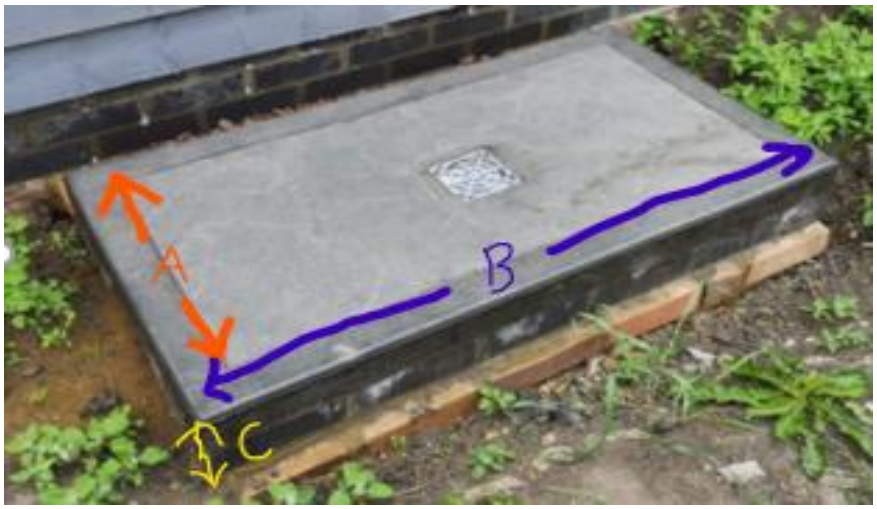
Please ensure a drain is provided for the condense to run into. Either in the centre or one of the back corners.

Solid base (see picture)

A - 600mm (if there is room for an additional 50mm that is ideal)
B - 1350 mm
C – 200mm

The anti-vibration feet that the Heat Pump will sit on are 600mm long, the base needs to be at least this deep (A) to accommodate them.

Example of the base:



All ASHP's sit on a set of anti-vibration feet.

Feet dimensions - 600(L) x 185(W) x 100(H)mm

Example of an Air Source Heat Pump sat on feet:

The condensate that accumulates can be guided into a sewer, pump sump or soakaway via a downpipe, gully, balcony run-off or roof run-off. Open gullies or downpipes within the protective zone do not pose any safety risk. For all installation types, you must ensure that any condensate that accumulates is discharged frost-free.

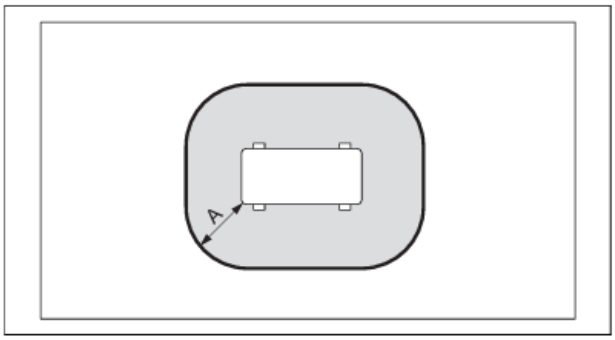
For the ground installation, the condensate must be discharged via a down pipe into a gravel bed which is in the frost-free area.

R290 ASHP Protective Zones

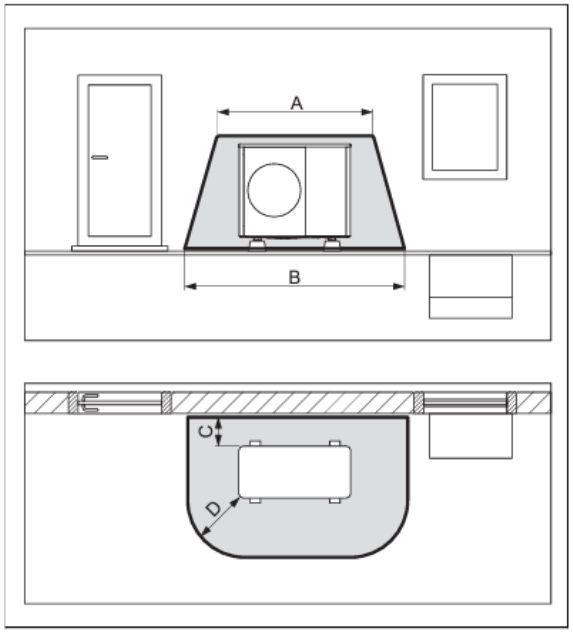
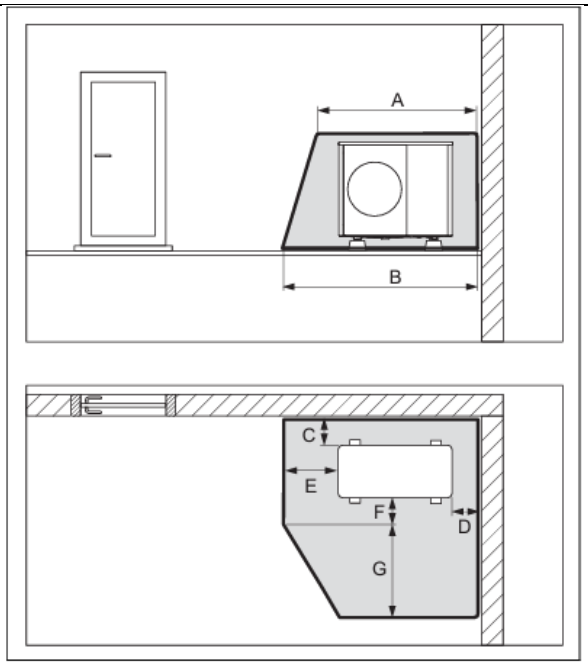
The product contains R290 refrigerant. Note that this refrigerant has a higher density than air. In the event of a leak, escaping refrigerant may collect near the ground. The refrigerant must not collect in any way that may lead to a dangerous, explosive, suffocating or toxic atmosphere. The refrigerant must not get inside the building via building openings. The refrigerant must not collect ingrooves. A protective zone is defined around the product. There must be no windows, doors, light shafts, cellar entrances, escape hatches, flat-roof windows, or ventilation openings in the protective zone.

There must be no ignition sources, such as plug sockets, light switches, lamps, electrical switches, or other permanent ignitions sources, in the protective zone. The protective zone must not extend to adjacent buildings or public traffic areas. In the protective zone, you are not permitted to make any subsequent structural alterations which infringe the stated rules for the protective zone.

Ground Installation Birdseye view



A 1000 mm

Ground installation infront of a building wall	Ground installation in a building corner
	
A 2100 mm B 3100 mm C 200 mm/250 mm D 1000 mm	A 2100 mm B 2600 mm C 200 mm/250 mm D 500 mm E 1000 mm F 500 mm G 1800 mm

Unit dimensions

Samsung Gen 7 R290 Integrated

	5kW	8kW	12kW	16kW
Product Code	**AE050CXYBEK/EU**	**AE080CXYBEK/EU**	**AE120CXYBEK/EU**	**AE160CXYBEK/EU**
Heating and Cooling (°c)				
Min. heating flow temp	15	15	15	15
Max. heating flow temp	75	75	75	75
Min. cooling flow temp	5	5	5	5
Max. cooling flow temp	25	25	25	25
MCS listed SCOPS				
@ 35°c	4.84	4.66	4.73	4.57
@ 40°c	4.49	4.35	4.42	4.29
@ 45°c	4.14	4.04	4.12	4.00
@ 50°c	3.78	3.72	3.82	3.72
@ 55°c	3.42	3.41	3.51	3.43
@ 60°c	3.18	3.15	3.17	3.12
@ 65°c	2.93	2.89	2.84	2.81
Dimensions (mm)				
Height	850	850	1018	1018
Width	1270	1270	1270	1270
Depth	500	500	530	530
Additional Data				
Weight (kg)	113.0	125.0	154.0	154.0