



... a greener tomorrow, today



# BAYAT ENERGY



AIR-SOURCE HEAT PUMPS / HYBRID SOLAR AIR CONDITIONER



[www.bayatenergy.co.uk](http://www.bayatenergy.co.uk)

Bayat Energy currently offers four different styles of Hybrid Solar Air Conditioners:

Wall-Mounted - Floor Standing - Floor to Ceiling - Cassette.



Each of them have several types with different capacities to suit different rooms. One of the most important features of the Hybrid Solar Air Conditioner is that it is ENERGY SAVING! which can save at least 30% on electricity costs.

The Hybrid Solar Air Conditioner adopts both solar and electric energy. Given its fluid mechanics principle and the photo-electrical complementary effect, this elegant hybrid solar air conditioner saves a great amount of energy.

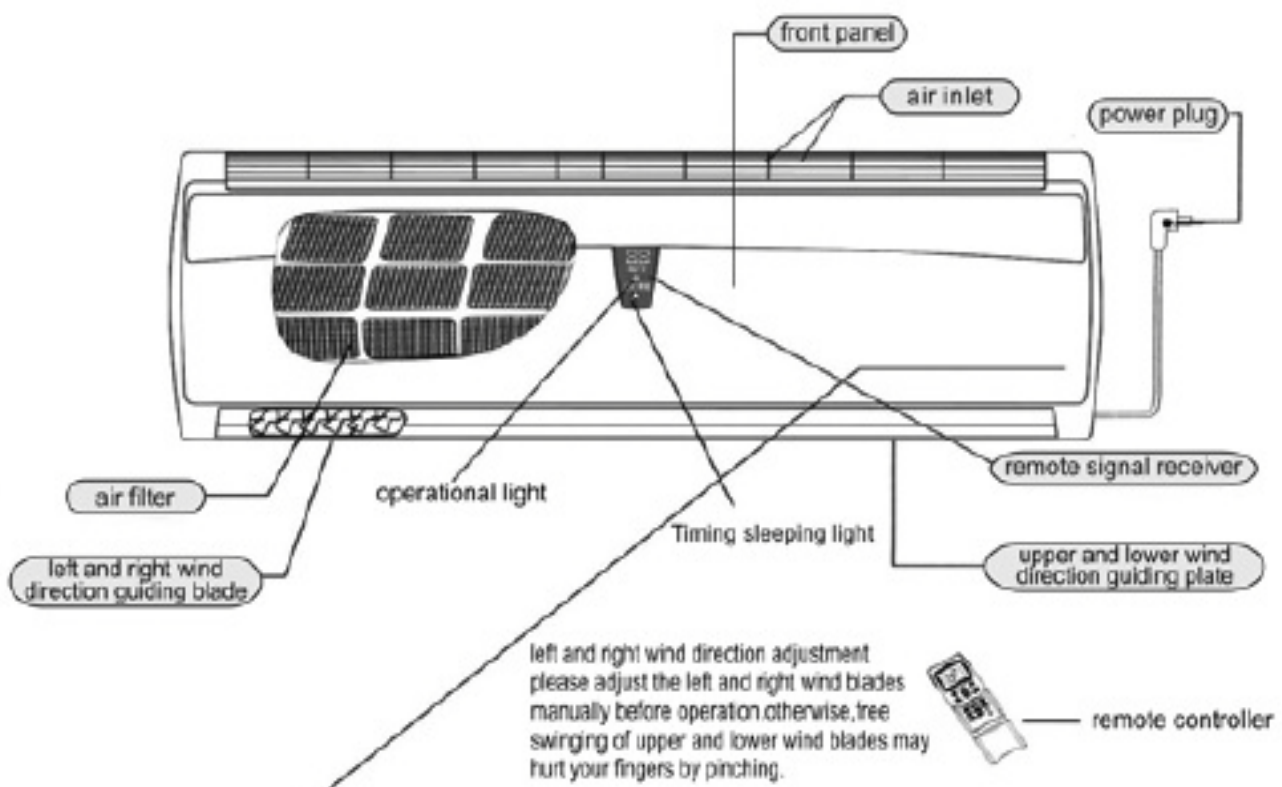
Its compressor powerfully heats and cools, operating very smoothly running on a low load. Operation is calm and silent, adopting advanced off-centre blades and foam air duct, where a high performance low noise blower is adopted which considerably reduces noise.

Via auxiliary heating, the solar air conditioner is perfect for either freezing an area or providing warmth on cold days. It also saves more electricity when compared with standard electric heating.

It is provided with a micro computer control where the remote control and control panel can be applied interchangeably, making operation both convenient and simple. The hybrid solar air conditioner is also fitted with an automatic detection display system.

**Working temperature range**

Mode		Cooling	Heating
		Indoor Temperature	Outdoor Temperature
Temperature	Indoor Temperature	above 18 °C	below 31 °C
	Outdoor Temperature	18 °C ~53 °C	-7 °C ~24 °C



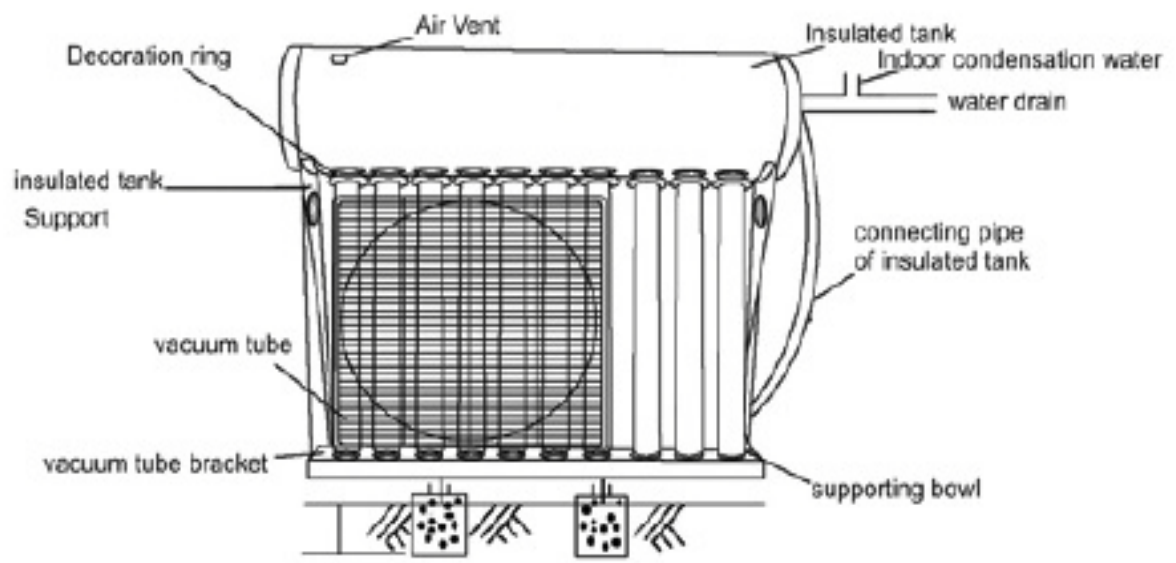
operational part (once opening the front panel)

emergency switch

Operational indicating light: the operational indicating light will shine once the air conditioner is on, timing sleeping indicating light: the indicating light will shine once the air conditioner responds to the timing or sleeping functions

Emergency switch: the emergency switch can be used for emergency operation once the dry batteries of remote controller is used up or in case of remote controller malfunctions

- Type TKFR Emergency refrigerating—heating—stop in sequence once pressing the button
- Type TKF Emergency refrigerating—stop in sequence once pressing the button



## Technical Parameters

Rated Cooling Capacity (W)		3200
Rated Heating Capacity (W)		3500(Heat)
Rated Power Input (V/Hz)		220V/50Hz/60Hz
Rated Cooling Power Input (W)		780~940
Rated Cooling Input Current (A)		3.55~4.27
Max Cooling Power Input (W)		1180
Max Cooling Input Current (A)		5.33
Rated Heating Power Input (W)		780~950
Rated Heating Input Current (A)		3.55~4.31
Max Heating Power Input (W)		1190
Max Heating Input Current (A)		5.39
Auxiliary Electric Heating Rated Power Input (W)		800
Auxiliary Electric Heating Rated Input Current (A)		3.63
Inhaling Max Working Pressure (MPa)		0.8
Exhausting Max Working Pressure (MPa)		2.8
Amount of Added Refrigerant (kg)		1000g
Air Circulation of Outdoor Unit (m <sup>3</sup> /h)		520
Waterproof Grade		1PX4
Net Weight (kg)	Outdoor unit	38
	Indoor unit	10.5
Dimensions(mm) length*width* height	Outdoor unit	790*260*540
	Indoor unit	785*285*210
Noise Level dB(a)	Outdoor unit	<50
	Indoor unit	<42

## Air-Source Heat Pump:

Heat pumps are effective and environmentally friendly solutions for heating and cooling all types of buildings, households and commercial premises. They effectively gather energy from one medium, enhance it and transfer to another in a very efficient manner using relatively small amounts of energy.

Air source heat pumps absorb heat from the outside air, extracting heat from the outside air, not just working in temperate climates but even at temperatures as low as -20C.



The atmospheric air is heated by the sun on a daily basis, effectively creating a vast available source of free low-grade heat. The heat pump can extract this heat from the air and concentrate it from low-grade heat to temperatures that are high enough to be used for heating water, homes and commercial premises.

The systems can also be reversed which makes them ideally suited to heating and cooling, providing the perfect temperature in all seasons. This clean and sustainable heating solution offers both financial and environmental benefits for those who are looking to reduce their CO2 emissions.



The air source heat pump works in the same way that a common fridge does, only in reverse.

### The process is as follows:

#### Step 1 The Evaporator

The evaporator collects heat from the outside air, which has been pre-heated by the sun, the air being drawn into the unit by the fan. Liquid refrigerant (R134a) passing through the evaporator is at a considerably lower temperature than the outside air, causing the air to give up its heat to the refrigerant which is vaporised.

#### Step 2 The Compressor

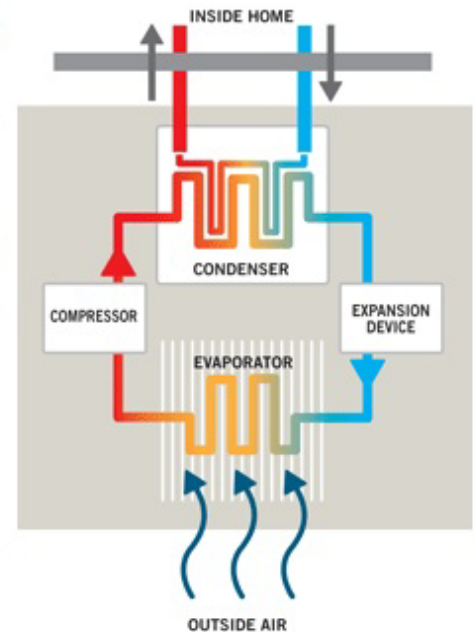
The preheated vapour passes to the compressor, where it is compressed and upgraded to a much higher temperature and pressure.

#### Step 3 The Condenser

The hot vapour created by the compressor now enters the condenser where it is surrounded by water from the heating system, causing the heat to be given up to the cooler water. The cooled refrigerant now returns to its former liquid state, although it remains under high pressure from the compressor.

#### Step 4 The Expansion Device

The refrigerant is further cooled and pressure reduced by passing the liquid through the expansion device, from where it returns to the evaporator to repeat the cycle.



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