



## Air source heat pump systems

A renewable technology

Product news

ASHP P002

**Air source heat pumps** eliminate the need for a fossil fuel heating system and are highly efficient, with 1kW of electricity consumption generating 3kW to 5kW of renewable heat throughout the year.

The main advantage of a heat pump is that heat energy is extracted from the outside air (even down to -20°C) and brought inside to provide low cost heat. A heat pump is up to five times more energy efficient than traditional heating methods. **This leaflet explains why air source heat pumps are such an effective and sustainable way to heat and cool buildings.**

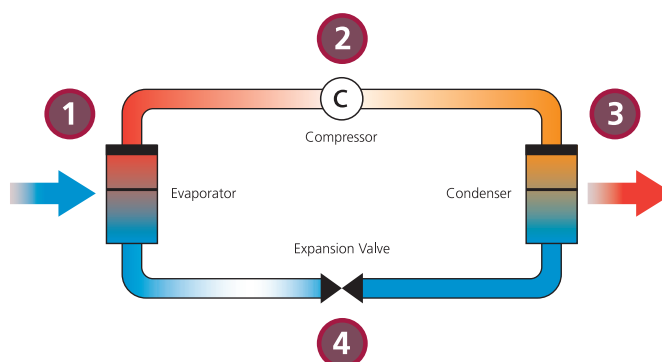


MCS HP0006

# How the Daikin Altherma heat pump works

## Heat pumps work like a refrigerator in reverse

- 1 Refrigerant in the heat exchanger absorbs heat from the outside air and evaporates.
- 2 Vapour is compressed, thereby increasing pressure and vapour temperature.
- 3 Hot vapour is condensed in the 2nd heat exchanger where heat is rejected, which feeds into the central heating and hot water system.
- 4 The liquid refrigerant passes back through an expansion valve, to start the cycle again.



## Why choose a heat pump?

The latest energy saving and carbon reduction legislation means that there is now more onus than ever to reduce our reliance on fossil fuels and adopt more sustainable, renewable energy solutions.

The benefits of doing so are huge. Delivering up to four times the energy efficiency of traditional fossil fuel systems, heat pump technology can make major cost savings, while avoiding thousands of tonnes of CO<sub>2</sub> emissions every year.

Many thousands of buildings already operate very efficiently with heat pumps as their sole heating source. In commercial environments, heating and cooling with reverse cycle heat pumps mostly release less carbon into the atmosphere than just heating alone would do using a conventional boiler.

For the domestic heating market, an air-to-water heat pump solution such as the Daikin Altherma range for UK residential applications offers a high-efficiency, sustainable heating system to replace existing oil or LPG boilers.

## Air source heat pumps are classed as renewable

Heat pumps are highly energy efficient and recognised as a renewable heat technology by European Union and the UK Renewable Energy Strategy.

As a renewable technology, air source heat pumps allow opportunities for grant and tax benefits to be claimed. A few examples of these are:

### 5% VAT

Households are responsible for 25% of all emissions. As part of ongoing efforts to reduce emissions, the Government has reduced VAT on air source heat pumps for domestic heat pumps for domestic applications to 5% on equipment and installation. For more information, visit [www.hmrc.gov.uk](http://www.hmrc.gov.uk)

### MCS accredited

The Department of Energy and Climate Change's 'Microgeneration Certification Scheme' (MCS), recognises certain air source heat pumps as approved microgeneration technology. Approved products have demonstrated their sustainable build qualities and performance and are the first choice for government and private body schemes. For more information, visit [www.microgenerationcertification.org](http://www.microgenerationcertification.org)

## ECA eligible

Highly energy efficient heat pumps which qualify for listing on the Energy Technology List (ETL) are eligible for the Government's Enhanced Capital Allowance (ECA) scheme. The ECA provides an enhanced tax advantage allowing 100% of the investment in energy saving technology to be written off against the taxable profits in the first year. For more information, visit [www.eca.gov.uk/etl](http://www.eca.gov.uk/etl)

**With over 50 years' experience in the production of heat pumps, Daikin is a world leader in this technology.**