



# Daikin Altherma Split

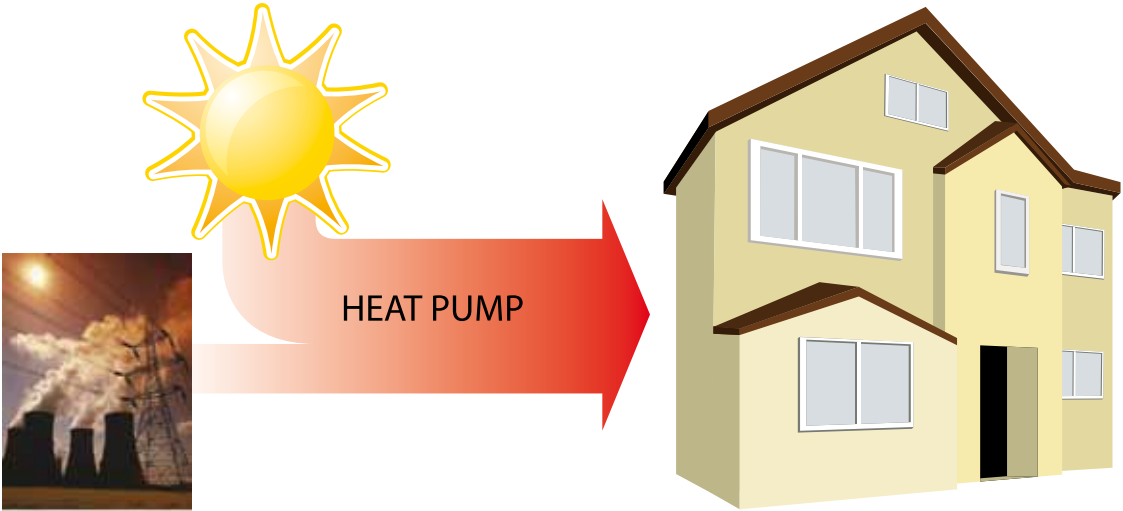
## Air Source Heat Pump

### DAIKIN ALTHERMA... Tomorrow's Solution Today!

Daikin Altherma is safe, reliable, highly efficient and a true low carbon, low cost solution for home heating and hot water. Daikin Altherma heats up to 5 times more efficiently than a traditional heating system based on fossil fuels or electricity. By making use of the heat in the outside air it uses much less energy, whilst still providing year round comfort.

Daikin Altherma is a split system consisting of an outdoor unit and an indoor hydro-box that can be connected to all standard low temperature radiators and underfloor heating systems. As maintenance requirements are minimal, running costs are low. Inverter technology means energy savings are even greater.

2-4 kWh renewable heat



#### COP (Coefficient of Performance)

The COP is defined as the ratio of output energy in Kilo Watts (kW) and the input energy Kilo Watts (kW). The higher the COP is, the more efficient the system. The Daikin Altherma heat pump boiler has a COP of 3 to 5, which means that the pump delivers 3 to 5 times more energy than it uses. From 1 kilowatt of electricity Daikin Altherma produces 3 to 5 kilowatts of available heat.

#### Minimal installation cost

Daikin Altherma takes heat from the air. No digging or excavation works are required. Both the outdoor and indoor units are compact. The external unit can be located easily outside any building, including apartments. Without flames or fumes, there is no need for a chimney or constant ventilation in the room, where Daikin Altherma's indoor unit is installed.

#### Flexible configurations

Daikin Altherma can be configured for use in both new and refurbishment applications and connects to standard low temperature radiators, under floor heating or fan coil units. If you already have a heating system, you don't need to change everything.

#### Complete comfort for the family

Daikin Altherma not only satisfies heating and domestic hot water requirements, it also comes with a cooling option.

#### Absolutely safe

Daikin Altherma doesn't need oil, gas or other hazardous substances. Moreover, you don't need a gas connection or a fuel tank. No risk of intoxication, smell or pollution from leaking tanks.

# HOW THE SYSTEM WORKS

## 1 The heat pump extracts heat from the outside air

Daikin Altherma uses a natural, renewable source of energy... air.

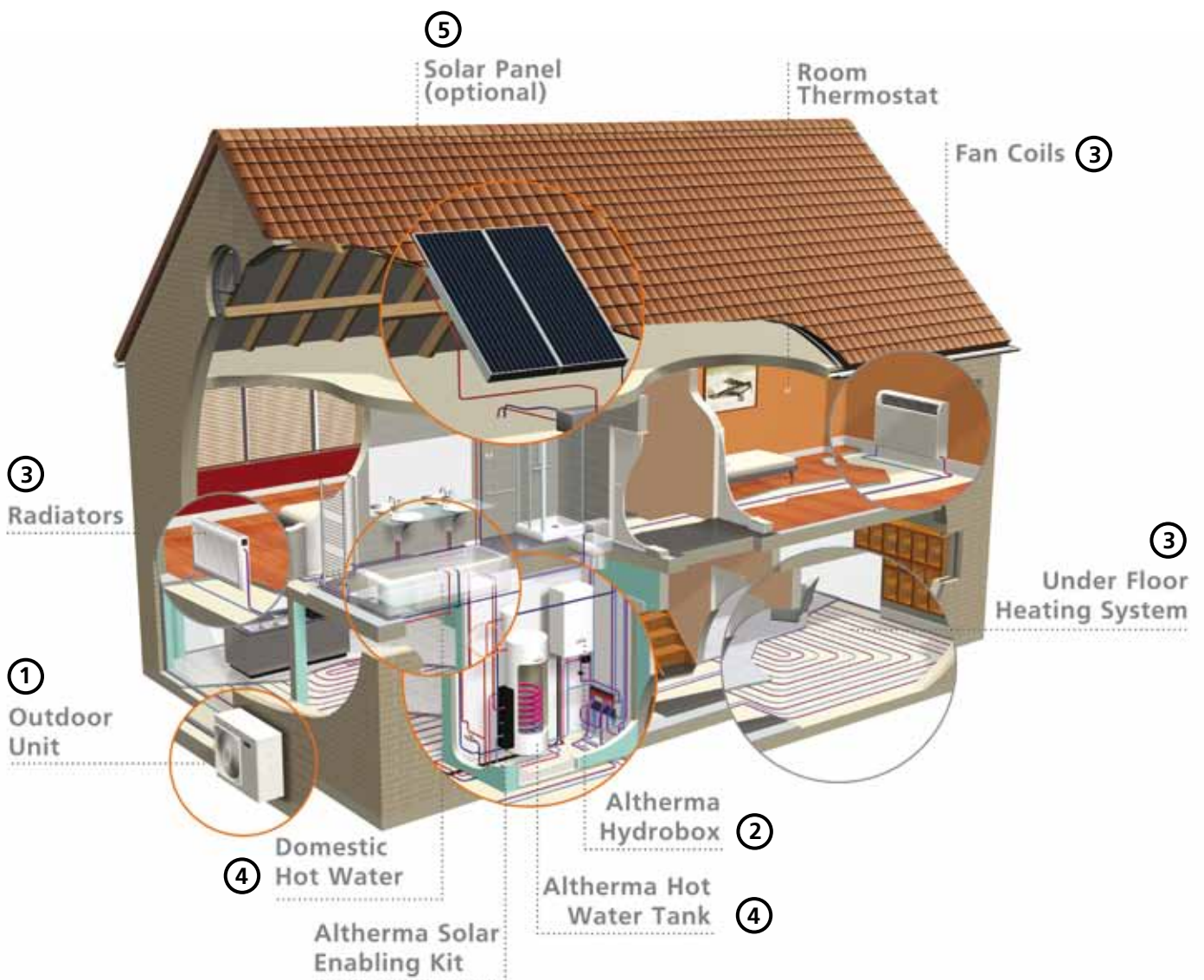
The outdoor unit derives heat from the surrounding air and raises its temperature until it is high enough to heat a home. This heat is then transmitted to the indoor unit through heat transfer fluid.

The compact outdoor unit is easily installed and can also be used in properties without a garden.

## 2 The system raises this heat to a higher temperature

The indoor hydrobox unit heats the water that circulates through your radiators, floor heating systems or fan coil units and provides you with domestic hot water.

If the user opts for the combination of heating and cooling, then the indoor unit can also decrease the water temperature to distribute a refreshing coolness.



**3** This heat is then distributed throughout the home via heating units...

### Underfloor heating

Underfloor heating is possibly the best solution for new installations. It provides the following benefits:

- Maximum comfort due to radiated heat
- Maximum efficiency compared to other heat emitters
- Unobtrusive i.e. no wall space required
- Water flow temperatures typically 35 to 40°C.
- Seasonal COP typically 3.5 to 4.5

### Radiators

Traditionally used as the costs are relatively inexpensive compared to other systems. The main benefits for the radiator system are:

- Traditional heating solution
- Low capital cost
- Water temp typically 50°C with heat pumps (radiators must be sized accordingly)
- Seasonal COP with weather compensation typically 3.0 to 3.5

### Fan coils

These systems are more diverse in that they can provide both heating and cooling if required. Benefits include:

- Able to heat and cool
- Cased or concealed units
- Individual control
- Water flow temperatures typically 35C heating 7C for cooling option
- Seasonal COP heating typically 3.5 to 4.5

**4** ...and to the bath, shower and sinks

A purpose built stainless steel water cylinder, constructed to maintain the highest levels of energy efficiency, is available to meet domestic hot water needs. The combination of an electric booster heater in the upper part of the tank and a heat pump exchanger in the lower part ensures the lowest possible energy consumption with rapid water heating. In addition, a built in function raises the water temperature to 70°C or higher at least once a week to remove any possibility of legionella growth.

**5** Optional Solar Kit

The Daikin Altherma System can be perfectly combined with solar collectors to produce hot water. The sun provides 30 to 70% of the energy required for our hot water needs. Daikin Altherma, your total solution, thinks of the future.



# DAIKIN ALTHERMA CONTROLS



## Smart temperature regulator

The control system which operates Daikin Altherma is built into the casing of the indoor unit and is very simple to use. With this integrated control, it is possible to regulate the heating according to the needs of the user. It is easy to set up a full weekly programme and in this way, temperature is reduced automatically at night or during holidays and increased when the user gets up or returns home.

The system can also be combined with additional temperature regulating systems with separate thermostats for living rooms, bedrooms, etc.

## Weather compensation

Whatever the temperature outside Daikin Altherma optimises the temperature inside. Daikin Altherma has weather compensation built into its integrated control system, allowing it to minimise energy input to achieve optimum temperature conditions. Compared to most systems Daikin Altherma will be more efficient and will cost less to use. Daikin Altherma has weather compensation built in as standard.



## Room Thermostat

With the wired or wireless room thermostat, the ideal temperature can be easily, quickly and conveniently regulated. As an option to the wireless room thermostat, an external sensor (EKRTETS) can also be placed between the under floor heating and the floor. It allows for more precise measurement and can regulate the comfort level of your customer even more optimally and energy efficiently.

EKRTW: wired wall-mounting room thermostat

EKRTR: wireless room thermostat.



EKBH(X)-A\*

INDOOR UNIT (HYDRO BOX)			EKHBH008B***	EKHBX008B***	EKHBH016B***	EKHBX016B***
Function			Heating only	Reversible	Heating only	Reversible
To use with			ERHQ006~008B**		ERHQ011~016B**	
Dimensions	HxWxD	mm	922x502x361	922x502x361	922x502x361	922x502x361
Leaving Water Temperature Range	heating	°C	15~50		15~55	
	cooling	°C	-	5~22	-	5 - 22
Drain valve			Yes			
Material			Epoxy polyester painted galvanized steel			
Colour			RAL 9010 (neutral white)			

\*\*\* Hydro Box with Factory Mounted Electric Heater

	FACTORY MOUNTED ELECTRIC HEATER	
	Power supply	Capacity steps
<b>Heating Only</b>		
EKHBH008B3V3	230V Single Phase	3kW 1 step
EKHBH008B6V3	230V Single Phase	6kW 2 step
EKHBH008B9WN	400V Three Phase and Neutral	9kW 2 step
<b>Reversible</b>		
EKHBX008B3V3	230V Single Phase	3kW 1 step
EKHBX008B6V3	230V Single Phase	6kW 2 step
EKHBX008B9WN	400V Three Phase and Neutral	9kW 2 step



OUTDOOR UNIT			ERHQ006BV3	ERHQ007BV3	ERHQ008BV3	ERHQ011BV3	ERHQ014BV3	ERHQ016BV3	ERHQ011BW1	ERHQ014BW1	ERHQ016BW1
Dimensions	HxWxD	mm	735x825x300			1170x900x320			1345x900x320		
Nominal capacity	Heating	kW	5.75	6.84	8.43	11.2	14.0	16.0	11.32	14.5	16.05
	Cooling	kW	5.12	5.86	6.08	10.0	12.5	13.1	11.72	12.55	13.12
Nominal input	Heating	kW	1.26	1.58	2.08	2.46	3.17	3.83	2.54	3.33	3.73
	Cooling	kW	2.16	2.59	2.75	3.6	5.29	5.95	4.22	5	5.65
COP			4.56	4.33	4.05	4.55	4.42	4.18	4.46	4.35	4.3
EER			2.37	2.26	2.21	2.78	2.36	2.2	2.78	2.51	2.32
Operation range	Heating	°C	-20 ~ 25			-20 ~ 35			-20 ~ 35		
	Cooling	°C	10 ~ 43			10 ~ 46			10 ~ 46		
	Hot water	°C				-20 ~ 43					
Sound Pressure level	Heating	dB(A)	48	48	49	49	51	53	51	51	52
	Cooling	dB(A)	48	48	50	50	52	54	50	52	54
Weight		kg	56			103			108		
Refrigerant charge	R-410A	kg	1.7			3.7			2.95		
Power Supply			1 ~ /230V/50Hz						3 ~ /400V/50Hz		
Recommended fuses		A	20			32			20		

Nominal Capacity and Power Input based on the following conditions:

**Heating** Ambient 7 °CDB/6 °CWB / Leaving Water Temp. 35 °C (DT 5 °C)      **Cooling** Ambient 35 °C / Leaving Water Temp. 7 °C (DT 5 °C)

OPTIONS		Hydro Box Heating Only EKHBH008 EKHBH016	Hydro Box Reversible EKHBX008 EKHBX016	Outdoor Unit ERHQ006-008	Outdoor Unit ERHQ011-016
EKHBDP	Drain pan Kit for cooling operation below 18 °C		•		
EKRP1HB	Option PCB for solar connection and remote alarm reporting	•	•		
EKBPHT08B	Drain pan heater tape			•	
EKBPHT16A	Drain pan heater tape				•

DOMESTIC HOT WATER CYLINDER			EKHWSU150B3V3	EKHWSU200B3V3	EKHWSU300B3V3
Suitable for			Unvented Systems (EKUHWB Kit also required - see below)		
Water Volume	l		150	200	300
Max Water Temperature	°C		85		
Booster Heater Capacity	kW		3		
Power Supply	ph/V/Hz		1/230/50		
Height	mm		1015	1265	1715
Diameter	mm		580		
Empty Weight	kg		38	46	60
Colour			Neutral White		
Material Inside Tank			Stainless Steel (DIN 1.452 1)		
Material Outside Casing			Epoxy-Coated Mild Steel		
Piping Connections (Diameter)	Water inlet H/E	inch	3/4"		
	Water outlet H/E	inch	3/4"		
	Cold Water in	inch	3/4"		
	Hot water out	inch	3/4"		



ACCESSORY KIT FOR UNVENTED SYSTEMS		Domestic Hot Water Tank EKHWSU-B3V3
EKUHWB	Includes: Combined Pressure Reducing Valve, Non Return Valve, Strainer, Expansion Relief Valve, Expansion Vessel, Turkish	•
EKUHW2WB	Separate 2 way valve (To use with EKUHWB for installations with Solar Kit)	•

SOLAR ENABLING KIT			EKSOLHWAV1
Dimensions	HxWxD	mm	770x305x207
Heat exchanger	Pressure drop	kPa	21.5
	Max. inlet temp	°C	110
	Capacity	W/K	1,400
Ambient temperature	Max.	°C	35
	Min.	°C	1
Power supply			1 ~ /220-240V/50Hz
Power supply intake			indoor unit