DAIKIN

Comfort by design

ALTHERMA

HEATING & COOLING
SOLUTIONS

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ALTHERMA BY DAIKIN

Altherma is a highly flexible, energy efficient home heating system that extracts heat from the outside air, raises this heat to a higher temperature and then distributes warmth around the home through high quality heating units. At the heart of the system lies an air to water heat pump.

Daikin Altherma now offers the option of the domestic hot water tank, which supplies you with your domestic hot water needs all year round. With the inclusion of the domestic hot water tank, Daikin Altherma now offers a total heating solution.

The Altherma air to water heat pump is today's answer to the current and future concerns with conventional heating systems, such as, rising energy costs and a high environmental impact.

4 REASONS TO CHOOSE ALTHERMA

1. Daikin's Altherma system utilises free heat from the ambient air to maintain ideal comfort conditions in your home. In addition, the inverter technology inherent in Atherma means your energy savings are even greater.

2. Even in the coldest weather, the Altherma system is still able to extract heat energy from the ambient air. In the event there is insufficient heat in the outdoor air, Altherma is equipped with a back up heater to cover the shortfall.

3. Daikin's Altherma solution provides for easy and flexible installation*. This system is ideal for new homes as the underfloor piping can be installed during the construction phase and for existing homes, the piping can be connected to radiators installed around the house.

4. Altherma works without the need for oil, flammable gas (LPG, Natural) or other hazardous substances thus reducing the potential risks that these fuels can create. Furthermore, there is no need for a gas connection or a fuel tank.

* Please speak to your specialist installer to discuss these options with you.

ATHERMA AT A GLANCE

Daikin's hot water heat pump air-to-water system creates an optimal room temperature for you and your family. Altherma is available in heating only or reverse cycle (heating & cooling) options.

The heating system is located in your floor and heats up your home from the floor up, so you'll feel the warmth on your feet. This heat then radiates upwards surrounding your entire body in warmth. You enjoy a cozy temperature in just 3 steps;

1. Heat pump extracts free low temperature heat from the ambient air
2. The system raises the temperature of the recovered heat
3. This warmth is then distributed throughout your home via heat emitters

The reverse cycle system satisfies your heating requirements but can also be used for cooling your home. This is done by simply reversing the heating process and extracting heat from the inside of you home and exhausting it to the outside to leave your home cool.

HOW DOES ALTHERMA WORK?

Altherma uses a refrigeration cycle to transfer heat from the ambient air into your home. This is an efficient process for transferring heat energy as it only requires 1 kilowatt of electricity to pump 3 to 5 kilowatts of heat into your home. In other words, 66-80% of the heat energy produced by Altherma comes from the outside air and is free of charge.

To make this happen, there's an indoor unit (hydrobox) and an outdoor unit, both of which needs to be professionally installed. Circulating between the indoor unit and the outdoor unit is a refrigerant that absorbs heat energy from the ambient air and releases that heat energy into the indoor unit or hydrobox. A secondary heat exchange occurs within the hydrobox as the heat absorbed is transferred to the underfloor reticulation circuit to distribute warmth into your home.

Additionally, if the hydrobox is connected to our domestic hot water tank as well, it is then possible for Altherma to provide for your homes year round hot water needs as well.

ELEMENTS OF THE ALTHERMA SYSTEM

Daikin Altherma system is available as a Bi-Bloc or a Mono-Bloc solution with the option of connecting to our hot water tank to satisfy your year round domestic hot water needs.

OUTDOOR UNIT

Altherma Bi-Bloc Outdoor Unit

The outdoor unit extracts heat from the outside air, raises its temperature and transfers the heat to the indoor hydrobox for water circulation in the underfloor heating circuit, radiators or fan coil units. The unit is compact and can be easily installed with no drill-ing or excavation work required.

Altherma Mono-Bloc Outdoor Unit

For a simplified installation, the Monobloc option, is an all in one system removing the need for an indoor hydrobox. Heat is directly transferred from the outside air to the underfloor heating circuit, radiators or fan coil units.

INDOOR HYDROBOX

(Only Applicable to Altherma Bi-Bloc Systems)

The Hydrobox is a wall mounted indoor unit that transfers heat to the water circulating in the underfloor heating, radiators or fan coil units and also to the domestic hot water tank.

DAIKIN ALTERMA HOT WATER TANK

Designed for low energy consumption, the water inside the storage tank is primarily warmed up by the thermal energy from the outside air.

Features:

- Combination of electric element and heat pump heat exchanger ensures energy efficiency with rapid water heating
- Built-in disinfection function prevents bacteria growth
- Connects to Altherma Bi-Bloc or Mono-Bloc systems

SYSTEM CONTROLS

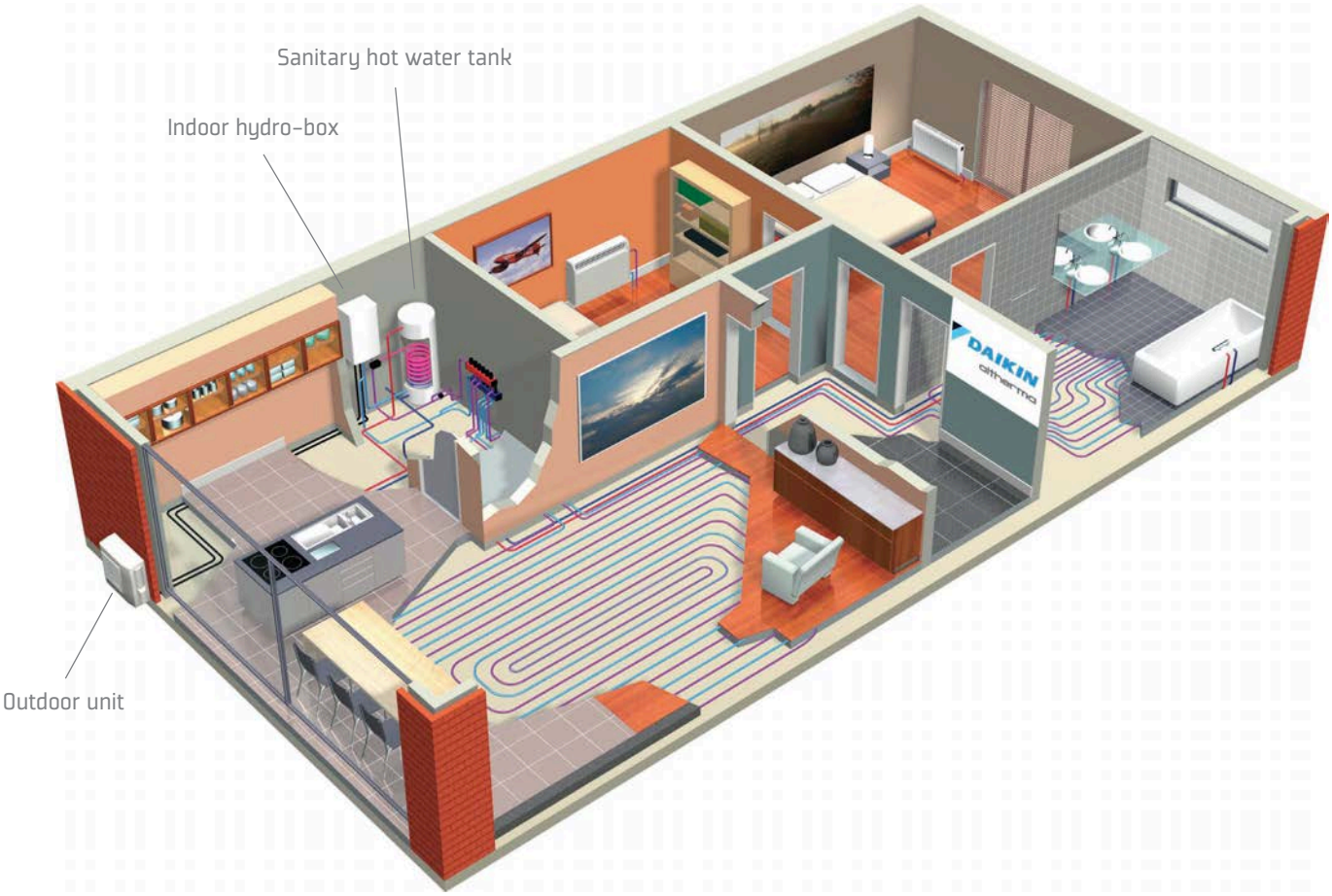
Features:

- 7 day timer
- Programmable timer on hourly or daily basis for flexible scheduling
- Domestic hot water reheat mode and scheduling
- Holiday mode*
- Quiet operation mode

*Not applicable to Mono-Bloc

Mono-Bloc Controller*

Bi-Bloc Controller



WHICH HEATING SYSTEM TO USE?

There are several different options available to provide heating in your home and Altherma is compatible with all of them. The selected system can simply be connected to the Altherma unit. Below are examples of some of the most commonly used heating emitters.

UNDERFLOOR HEATING

Underfloor heating is possibly the best solution for new installations.
The main benefits are:

- 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

FAN COILS

These systems are more flexible in that they can provide both heating and cooling if required.
The main benefits are:

- Able to heat and cool
- Cased or concealed units
- Individual control
- Ease of installation
- Water flow temperatures typically 35˚C heating 7˚C for cooling option

RADIATORS

A traditionally used system that costs relatively inexpensive compared to other systems.
The main benefits are:

- Traditional heating solution
- Low capital cost
- Ease of installation
- Water temperature typically 50˚C with heat pumps (radiators must be sized accordingly)

SPECIFICATIONS

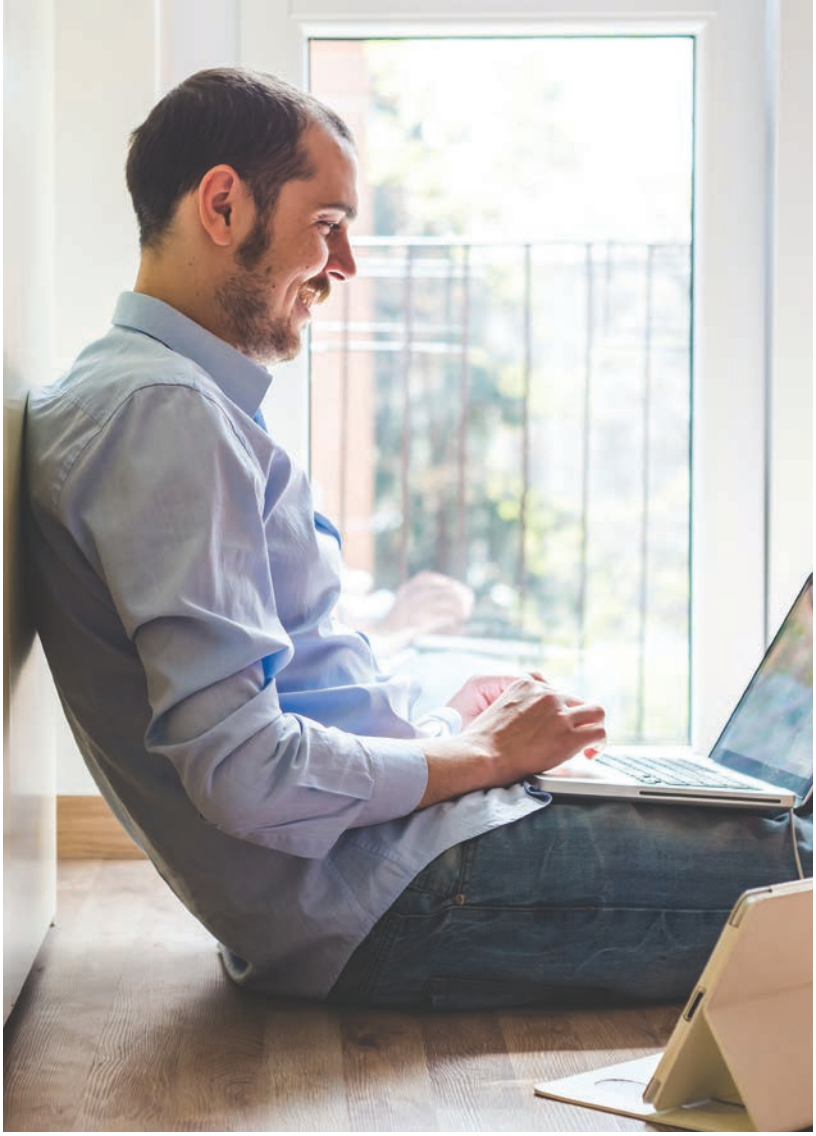
		ALTHERMA BI-BLOC SYSTEM					
		HEATING ONLY			REVERSE CYCLE		
INDOOR UNIT (HYDRO BOX)		EHBH11CB3V	EHBH16CB3V	EHBH16CB3V	EHBX11CB3V	EHBX16CB3V	EHBX16CB3V
OUTDOOR UNIT		ERHQ011BAV3	ERHQ014BAV3	ERHQ016BAV3	ERHQ011BAV3	ERHQ014BAV3	ERHQ016BAV3
Rated Capacity	Heating (kW)	11.2	14.0	16.0	11.2	14.0	16.0
	Cooling (kW)		-		13.9	17.3	17.8
Rated Input	Heating (kW)	2.55	3.26	3.92	2.55	3.26	3.92
	Cooling (kW)		-		3.86	5.86	6.87
Leaving water temperature range	Heating (°C)		15 to 55			15 to 55	
	Cooling (°C)		-			5 to 22	
Casing Material	Indoor (mm)			Precoated Sheet Metal			
	Outdoor (mm)			Painted Galvanised Steel Plate			
Colour	Indoor		White			White	
	Outdoor		Ivory White			Ivory White	
Electric booster heater (kW)			3			3	
COP (Heating Efficiency)		4.39	4.29	4.08	4.39	4.29	4.08
EER (Cooling Efficiency)			-		3.6	2.95	2.59
Dimensions (HxWxD)	Indoor (mm)			890 x 480 x 344			
	Outdoor (mm)			1170 x 900 x 320			
Weight	Indoor (kg)	43	44	44	43	44	44
	Outdoor (kg)		102			102	
Outdoor operation range	Heating (°C)		-20 to 35			-20 to 35	
	Cooling (°C)		-			10 to 46	
Refrigerant charge	R-410A (kg)		2.7			2.7	
Power supply				1 Phase, 230V, 50Hz			
Indoor sound pressure level	dBA	27	30	30	27	30	30
Outdoor sound pressure level	Heating (dBA)	49	51	53	49	51	53
	Cooling (dBA)		-		50	52	54
Outdoor EPA sound power level	Heating (dBA)	64	64	66	64	64	66
	Cooling (dBA)		-		64	66	69
Sound pressure night quiet mode	Heating (dBA)	42	42	43	42	42	43
	Cooling (dBA)		-		45	45	46

Measuring conditions: Heating Ta DB/WB 7°C/6°C – LWC 35°C (DT=5°C) – Cooling Ta 35°C – LWE18°C (DT=5°C)

SPECIFICATIONS

		ALTHERMA MONO-BLOC SYSTEM					
		HEATING ONLY			REVERSE CYCLE		
INDOOR UNIT (HYDRO BOX)		-			-		
OUTDOOR UNIT		EDHQ011BB6V3	EDHQ014BB6V3	EDHQ016BB6V3	EBHQ011BB6V3	EBHQ014BB6V3	EBHQ016BB6V3
Rated Capacity	Heating (kW)	11.20	14.00	16.00	11.20	14.00	16.00
	Cooling (kW)		-		12.85	15.99	16.73
Rated Input	Heating (kW)	2.56	3.29	3.88	2.56	3.29	3.88
	Cooling (kW)		-		3.87	5.75	6.36
Leaving water temperature range	Heating (°C)		15 to 55			15 to 55	
	Cooling (°C)		-			5 to 22	
Casing Material	Indoor (mm)	-					
	Outdoor (mm)	Painted Galvanised Steel Plate					
Colour	Indoor		-			-	
	Outdoor		Ivory White			Ivory White	
Electric booster heater (kW)			6			6	
COP (Heating Efficiency)		4.38	4.25	4.12	4.38	4.25	4.12
EER (Cooling Efficiency)			-		3.32	2.78	2.63
Dimensions (HxWxD)	Indoor (mm)	-					
	Outdoor (mm)	1418 x 1435 x 382					
Weight	Indoor (kg)		-			-	
	Outdoor (kg)		180			180	
Outdoor operation range	Heating (°C)		-15 to 35			-15 to 35	
	Cooling (°C)		-			10 to 46	
Refrigerant charge	R-410A (kg)		2.95			2.95	
Power supply		1 Phase, 230V, 50Hz					
Indoor sound pressure level	dBA		-			-	
Outdoor sound pressure level	Heating (dBA)	51	51	52	51	51	52
	Cooling (dBA)		-		50	52	54
Outdoor EPA sound power level	Heating (dBA)	64	65	66	64	65	66
	Cooling (dBA)		-		65	66	69
Sound pressure night quiet mode	Heating (dBA)	42	42	43	42	42	43
	Cooling (dBA)		-		45	45	46

Measuring conditions: Heating Ta DB/WB 7°C/6°C – LWC 35°C (DT=5°C) – Cooling Ta 35°C – LWE18°C (DT=5°C)



ASSUMPTIONS

All representations made in Daikin marketing and promotional material are based on the assumptions that the correct equipment has been selected, appropriately sized and installed in accordance with Daikin's installation instructions and standard industry practices.

QUALITY CERTIFICATIONS

Daikin Industries Limited was the first air conditioning equipment manufacturer in Japan to receive ISO 9001 certification. All Daikin manufacturing facilities have been certified to ISO 9001 Quality Management System requirements. ISO 9001 is a certificate for quality assurance concerning 'design, development, manufacturing, installation and related service' of products manufactured at that factory.

Daikin Australia Pty Limited (ISO 9001)
QEC 23256 May 12, 2006
Sydney, Brisbane, Adelaide, Melbourne, Newcastle, Townsville, Perth, Auckland

Certified System
Quality
ISO 9001
SAI GLOBAL

Daikin Australia Pty Limited (ISO 14001)
CEM 20437 October 27, 2006
Sydney, Brisbane, Adelaide, Melbourne, Perth

Certified System
Environment
ISO 14001
SAI GLOBAL

ENVIRONMENTAL CERTIFICATIONS

Daikin Industries Limited has received ISO 14001 Environmental Certification for the Daikin production facilities listed below. ISO 14001 is an international standard specifying requirement for an environmental management system, enabling an organisation to formulate policy and objectives, taking into account legislative requirements and information about significant environmental impacts. It applies to those environmental aspects within the organisation's control and over which it can be expected to have an influence.

The certification relates only to the environmental management system and does not constitute any endorsement of the products shipped from the facility by the International Organisation for Standardisation.

Head Office / Tokyo Office	Certificate number: EC02J0355
Shiga Plant (Japan)	Certificate number: EC99J2044
Sakai Plant (Japan)	Certificate number: JQA-E-80009
Daikin Industries Ltd (Thailand)	Certificate number: JQA-E-90108
Yodogawa Plant (Japan)	Certificate number: EC99J2057
Daikin Australia Pty. Ltd.	Certificate number: CEM20437

Residential Air Conditioning Manufacturing Div (ISO 9001)
JQA-0486 May 2, 1994 (Shiga Plant)

Commercial Air Conditioning and Refrigeration Manufacturing Div (ISO 9001)
JMI0107 December 28, 1992
(Kanaoka Factory and Rinkai Factory at Sakai Plant)

Industrial System and Chiller Products Manufacturing Div (ISO 9001)
JQA-0495 May 16, 1994 (Yodogawa Plant and Kanaoka Factory and Kishiwada Factory)

Daikin Europe N.V (ISO 9001)
Lloyd 928589.1 June 2, 1993

Daikin Industries (Thailand) Ltd
JQA-1452 September 13, 2002 (ISO 9001)

CERTIFIED MANAGEMENT SYSTEM
JQA
QUALITY SYSTEM

DEALER

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