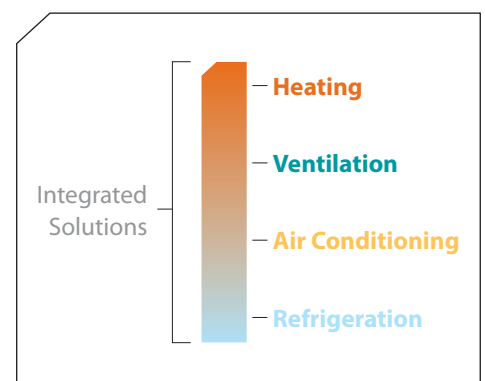




Daikin Altherma Hybrid Heat Pump

Smart heating technology – for the best of both worlds



Forward thinking

Now is the time to rethink the way we heat our homes and hot water. Central heating systems, as we have known them, are changing dramatically and new solutions are needed to meet the Government's renewable energy targets.

When old heating systems need replacing, homeowners are now increasingly demanding more efficient and more environmentally friendly solutions. They expect their new system to reduce energy consumption and be cheaper to run, reducing carbon dioxide (CO₂) emissions and protecting their budget from rising fuel prices.

Daikin is playing its part. Heat pump systems are now available for all homes – even for those homes connected to the mains gas network as well as those using LPG supplies.

The new Daikin Altherma Hybrid Heat Pump combines the benefits of a renewable energy air-water heat pump with the familiarity of a condensing gas combi boiler. This unique system provides the best of both worlds – optimising energy efficiency and delivering completely reliable and controllable heating and hot water for homes.

About Daikin

Daikin has a worldwide reputation for quality and innovative technology, with over 50 years' experience in the design and manufacture of heat pump solutions.

Daikin provides a comprehensive choice of domestic heating and renewable energy products which are ideally suited to the UK housing market.

Daikin is a leading supplier of heating, cooling, ventilation and refrigeration solutions for commercial, residential and industrial applications.

A wholly owned subsidiary of Daikin Europe NV, Daikin UK has an excellent record of concern for environmental issues and applies it to all areas of the business, in many cases pre-empting international and national environmental legislation.



New opportunities in domestic heating

The Daikin Altherma range

The extensive Daikin Altherma range provides solutions for all heating applications: new build, oil boiler replacement, and now also gas boiler replacement.

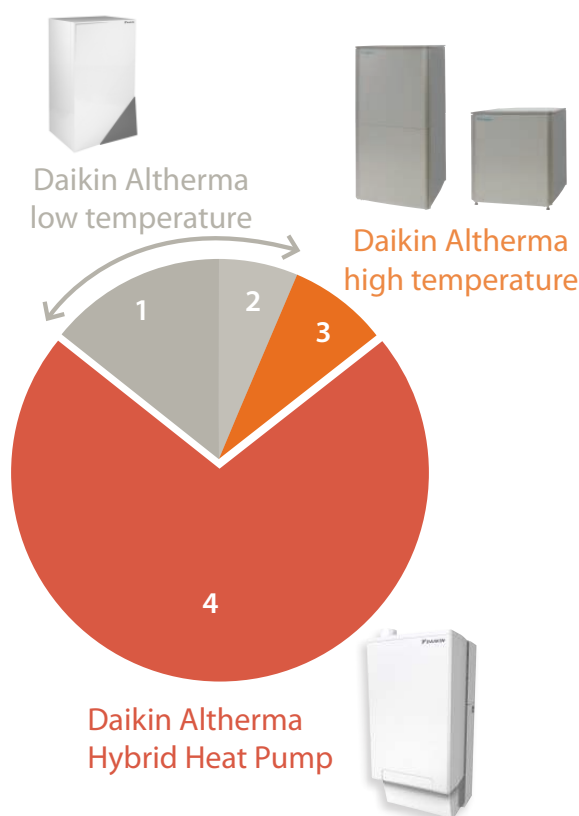
NEW Daikin Altherma Hybrid Heat Pump This unique combination of a high efficiency gas combi boiler and the latest renewable energy air-to-water heat pump is the most efficient system available for gas and LPG boiler replacement.

Daikin Altherma Low Temperature Heat Pump Ideal solution for new build applications and complete renovations, delivering the required heating, cooling and domestic hot water capacities for the home, with the best possible efficiencies.

Daikin Altherma High Temperature Heat Pump Designed to replace an oil boiler. In this case, there is no need to replace the existing radiators, since the heat pump can achieve water temperatures of up to 80°C.

Solutions for all heating applications

- 1 New Build
- 2 Renovation - including change of radiators
- 3 Renovation - oil boiler replacement, keep radiators
- 4 Gas boiler replacement - keep radiators



The NEW Daikin Altherma Hybrid Heat Pump

- ✓ Combines renewable heat pump technology with a high efficiency gas combi boiler
- ✓ Designed for properties currently using gas or LPG
- ✓ Ideal when replacing a gas or LPG boiler
- ✓ Connects to existing radiators (up to 80°C)
- ✓ Most suited to properties with heat loads 12 kW - 20 kW
- ✓ Lower running costs compared with a new condensing boiler



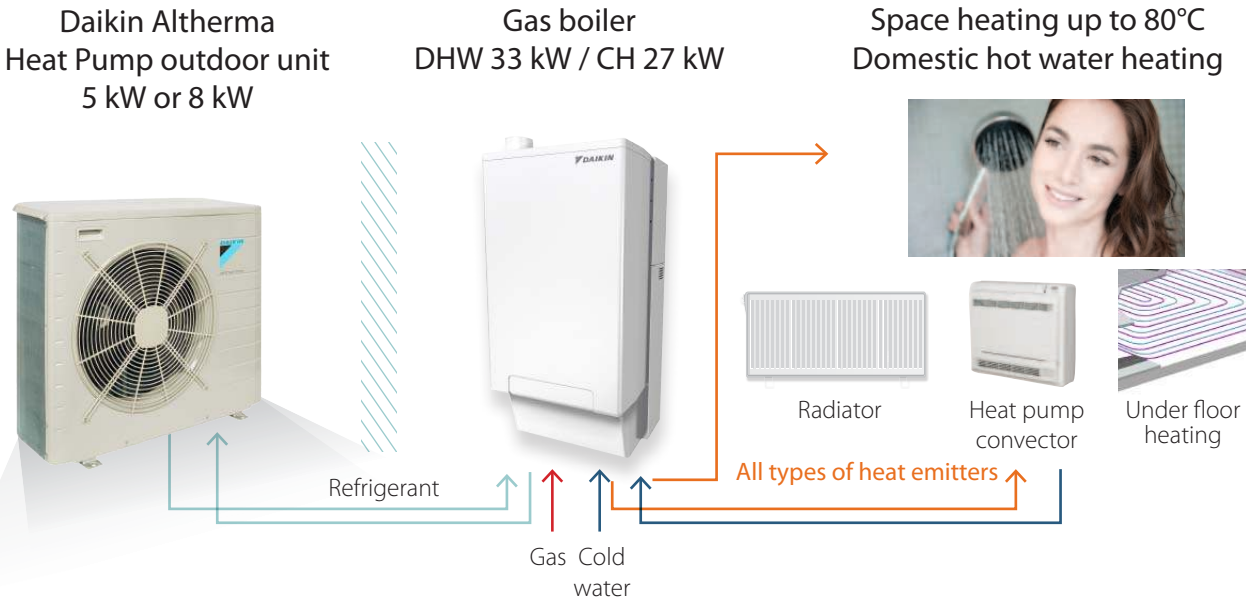
The new hybrid heat pump

The Daikin Altherma Hybrid Heat Pump is unique technology. It combines a high efficiency gas combi boiler with a renewable energy heat pump, all in one efficient, compact heating system that gives the best of both worlds. Its smart hybrid logic automatically selects the most energy-efficient and cost-effective operation based on the user's energy tariff, at any given temperature, to make it the most efficient solution on the market.

RHI-eligible system

Hybrid systems are eligible for the Renewable Heat Incentive (RHI) due to start in Spring 2014. This Government-funded scheme will pay 7.3p/kWh for each unit of renewable heat generated from an air-water heat pump.

A suitable heat meter and electric meter arrangement will be required for hybrid systems and Daikin can provide further advice.

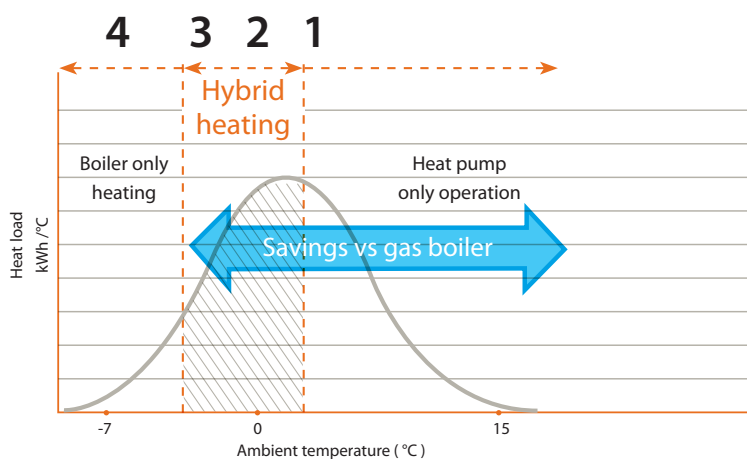


How does it work?

The new Daikin Altherma Hybrid Heat Pump incorporates advanced technology that automatically monitors system parameters and temperatures. Designed to maximise system efficiency, it ensures the most cost efficient operation at every outdoor temperature.

The smart hybrid logic controller switches between four unique operating modes depending on the relative **cost** of gas and electricity (“economical” mode – see panel). Alternatively, the user can decide to minimise ecological impact of their heating system by setting the **carbon emission rates** of gas and electricity (“ecological” mode).

The system has built-in weather compensation, which modulates both the heat pump and the condensing boiler. It always operates in the most efficient mode while still providing sufficient heating, generating flow temperatures from 25-80°C. The system is suitable for both new and older properties, and for connection to existing radiators or newly installed underfloor heating.



1. Heat pump only mode
2. First Hybrid mode [heat pump + gas boiler]
3. Second Hybrid mode [flow control]
4. Boiler only mode

Economical operating modes

- 1 Heat pump only:** During mild temperatures, heat pump capacity and efficiency is high enough to ensure running cost savings.
- 2 First hybrid mode:** When the outdoor temperature drops and heat pump efficiency falls, the Daikin Altherma Hybrid heat pump continues to operate as it is still cost effective. The boiler provides additional heat as required, operating in series with the heat pump – unlike a conventional bivalent (dual source) system which would switch entirely from heat pump to boiler.
- 3 Second hybrid mode:** When the outdoor temperature drops further and heat pump efficiency reduces, the unique flow control function automatically regulates the variable speed pump and reduces the flow rate through the system. This raises the heat pump efficiency for as long as possible while still ensuring lower running costs and lower carbon emissions than running the boiler alone.
- 4 Boiler only:** When the outdoor temperature is very low and the system temperature requirement is at its highest, the heat pump becomes less economical, and only the boiler operates.

Added benefits for installers, specifiers and householders

✓ Installer

- Single heat pump solution for all on-gas and LPG renovation applications
- Easy and fast installation of renewable energy technology
- No need to replace radiators or pipes
- Opportunity to expand your heat pump business

✓ Specifier

- Lower running costs for properties using on-gas or LPG
- A renewable energy system for hard-to-heat homes
- Helps to meet local renewable energy targets
- Eligible for Renewable Heating Incentive [RHI] scheme

✓ Householder

- Higher running cost savings compared with a conventional new gas condensing boiler
- Uses existing radiators – minimises installation hassle
- Space saving renewable energy heating system – fits in place of your old boiler
- Eligible for Renewable Heating Incentive [RHI] scheme



Installer benefits

1. SINGLE HEAT PUMP SOLUTION FOR ALL ON-GAS AND LPG APPLICATIONS

- Most suited to properties with heat load 12kW – 20kW
- Connect to existing radiators (up to 80°C)
- Also connectable to all other types of heat emitters
- Rapid start-up: the gas boiler can be commissioned without the heat pump outdoor unit to provide heating quickly. Ideal for situations in which the existing boiler has broken down

2. FAST INSTALLATION OF RENEWABLE ENERGY TECHNOLOGY

- Offers fast installation and easy maintenance, with front access to key components
- No need to change existing radiators
- Similar dimensions to an old boiler – minimises disruption and modifications
- All key hydraulic components included – expansion vessel, circulation pump, filter
- Bottom connections – familiar arrangement
- Extensive flue options available (60/100 and 80/125 options)
- Quick commissioning with advanced user interface



3. PEACE OF MIND

- Industry-leading 3-year parts and labour warranty as standard
- Gas condensing boiler with 10-year warranty on the heat exchanger
- MCS accredited – eligible for RHI
- WRAS approved

Become a Daikin Hybrid installer

- ✓ New business opportunities
- ✓ Access to latest sales tools
- ✓ Support from our specialist heating sales team
- ✓ Access to dedicated design software
- ✓ Hybrid marketing materials
- ✓ Installation and product training
- ✓ Dedicated after-sales service support on-site
- ✓ Support from Gas Safe registered Daikin service engineers



MCS HP0006



Specifier benefits

1. ONE HEAT PUMP SOLUTION FOR ALL GAS AND LPG BOILER REPLACEMENT APPLICATIONS

- Most suited to properties with heat load 12kW – 20kW
- Minimum investment cost and hassle – suitable for use with existing radiators
- Quick commissioning: boiler can be started before final commissioning of the heat pump. Allows fast replacement in event of boiler breakdown
- Flexible for choice of DHW solutions: combi boiler and cylinder option*

2. RENEWABLE ENERGY HEATING FOR ON-GAS PROPERTIES

- Meet renewable energy targets for on-gas properties
- Helps to meet local renewable energy targets
- Lower running costs for householders and tenants

3. EASY TO USE AND OPERATE

- Automatically selects most cost-efficient operation mode to ensure lowest running costs
- Back-lit easy-to-use text display for householder confidence and comfort
- Simple to update energy prices to ensure the system operation is always optimised



Gas boiler system:
DHW 33, CH 27 kW



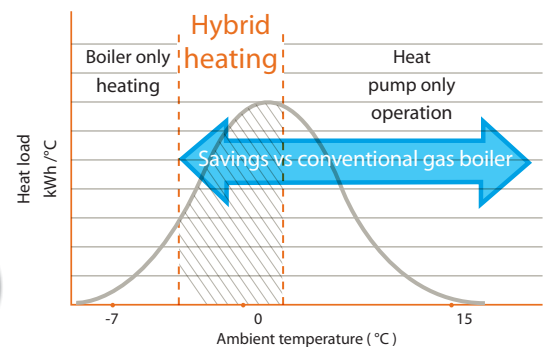
Heat pump system:
5 kW and 8 kW

(*Available Summer 2014)

Householder benefits

1. MORE EFFICIENT THAN CONVENTIONAL NEW GAS CONDENSING BOILER

- ✓ Minimises energy usage
- ✓ Space heating up to 35% more efficient than new gas condensing boiler
- ✓ Efficient domestic hot water heating
- ✓ 3-year parts and labour warranty
- ✓ Minimises impact of future energy price rises



Space heating

- Programmed for most cost-efficient operation at every outdoor temperature
- Daikin hybrid logic to maximise heat pump usage
- Most efficient heat pump system on the market

Domestic hot water heating

- Instantaneous hot water from a gas combi boiler
- High flow rate 13 litres / minute (dT 35 °C)

The Daikin Altherma Hybrid Heat Pump uses a high efficiency combi boiler to provide domestic hot water. The direct flow burner also provides support for space heating when required. By directly heating the cold water, the combi boiler condenses even in hot water mode. This increases efficiency even further compared with traditional gas combi boilers.

2. USE EXISTING RADIATORS AND CYLINDER*

- ✓ No hassle from changing radiators or cylinder
- ✓ Lower investment costs
- ✓ Quicker to install

The system is designed to work with existing system pipework and radiators to reduce disruption during installation.

3. COMPACT AND SPACE SAVING

With dimensions similar to a standard boiler, the indoor hybrid boiler is a single unit designed to fit in place of the old boiler in the available installation space.



(*Available Summer 2014)

Daikin Altherma hybrid technology in practice

Case Study

Property description: 110-year old, solid wall, 140m² mid-terraced home with double-glazed windows and a loft conversion insulated to current Building Regulations. Design heat load: 9kW (at -6°C). Total annual energy demand: approximately 18,500 kWh, with 16,300 kWh for heating.

Project: The existing gas combi boiler was replaced by a Daikin Altherma Hybrid Heat Pump with weather compensation control. Existing high temperature radiators (70°C) were retained.

Analysis and results: 13,060 kWh of space heating was delivered by the heat pump. Even in older properties, the hybrid heat pump can clearly supply most of the energy required for space heating. Measured seasonal efficiency (based on primary energy) was 126% for space heating, and 120% for the combined space heating and hot water demand. This is about 30% higher than a modern gas condensing boiler, based on a seasonal efficiency of 90% for space heating.

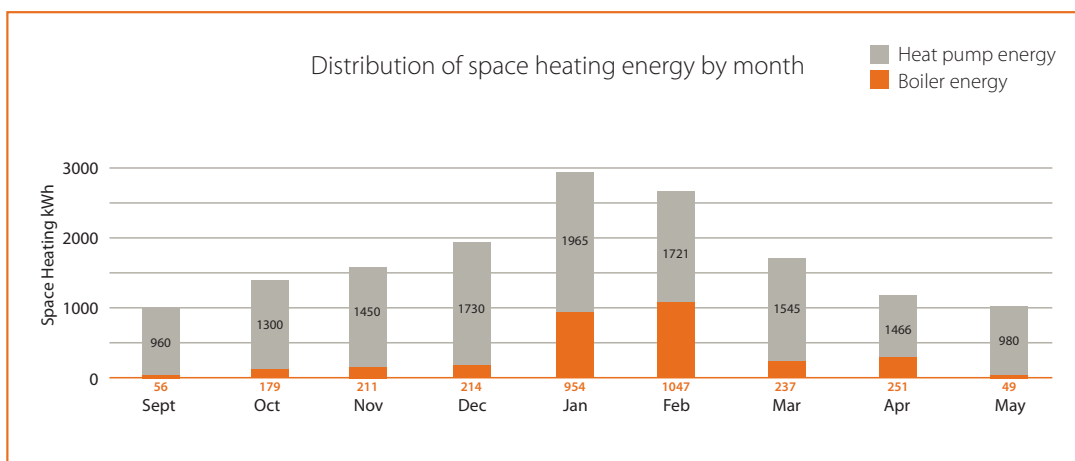
Summary of results

- ✓ Heating demand: 16,300 kWh
- ✓ Delivered by heat pump: 13,060 kWh
- ✓ sCOP (heat pump - heating) 340%
- ✓ sCOP (hybrid - heating and DHW): 177%
- ✓ Primary Energy sCOP (hybrid): 120%

What is Primary Energy sCOP?

Natural gas is a primary energy source with coefficient of 1. Electricity is a secondary energy source often produced by burning fossil fuels and has a coefficient of 2.5 (ErP Ecodesign LOT 1).

Primary Energy sCOP quantifies system efficiency by considering the different operating modes of the hybrid system.



Technical specifications

INDOOR UNIT				BOILER MODULE	HEAT PUMP MODULE	HEAT PUMP MODULE
				EHYKOMB33AA	EHYHBH05A	EHYHBH08A
				Heating & DHW	Heating only	Heating only
Heating input (Hi)	Min - Max	G20 (20 mbar)	kW	7.6 - 27.0	-	-
Heat output CH	Min - Max	80/60	kW	8.2 - 26.6	-	-
SEDBUK 2009 rating			%	89.1	-	-
DHW output	Min - Max		kW	7.6 - 32.7	-	-
Flow rate	Max	dT 35K	l/min	13.1	-	-
Dimensions (casing)	H x W x D		mm	710 x 450 x 240	902 x 450 x 164	902 x 450 x 164
Weight			kg	36	33	31.2
Flue length, 60/100	Max		m	10	-	-
Flue length, 80/125	Max		m	29	-	-
Plume kit for 60/100			dB(A)	yes	-	-
Adjustable to LPG			dB(A)	yes	-	-

OUTDOOR UNIT			EVLQ05CV3	EVLQ08CV3
Heating capacity	Minimum, heat pump operation only	kW	1.8	1.8
Heating capacity	Nominal, heat pump operation only	kW	4.40 ¹ 4.03 ²	7.4 ¹ 6.89 ²
COP	Nominal, heat pump operation only		5.04 ¹ 3.58 ²	4.45 ¹ 3.42 ²
Dimensions	H x W x D	mm	735 x 832 x 307	735 x 832 x 307
Weight		kg	54	56
Sound power level			61	62
Sound pressure level			48	49

(1) heating Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)
 (2) heating Ta DB/WB 7°C/6°C - LWC 45°C (DT = 5°C)

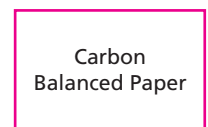




MCS HP0006



Daikin units comply with the European regulations that guarantee the safety of the product.



Daikin products are distributed by:

The present catalogue is drawn up by way of information only and does not constitute an offer binding upon Daikin UK. Daikin UK has compiled the content of this catalogue to the best of its knowledge. No express or implied warranty is given for the completeness, accuracy, reliability or fitness for particular purpose of its content and the products and services presented therein. Specifications are subject to change without prior notice. Daikin UK explicitly rejects any liability for any direct or indirect damage, in the broadest sense, arising from or related to the use and/or interpretation of this catalogue. All content is copyrighted by Daikin UK.

Daikin Airconditioning UK Limited The Heights Brooklands Weybridge Surrey KT13 0NY Tel 0845 6419000 Fax 0845 6419009 www.daikin.co.uk

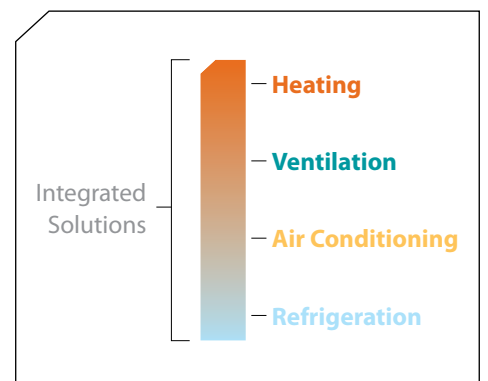
Dedicated Heating Line: 0845 641 9070

Scotland Region 0845 641 9330	Northern Region 0845 641 9340	Midlands Region 0845 641 9370	Western Region 0845 641 9320	North London 0845 641 9360	South London 0845 641 9355
-----------------------------------------	-----------------------------------------	-----------------------------------------	----------------------------------------	--------------------------------------	--------------------------------------



Heating Range

Next generation of renewable solutions





Changing the way we heat our homes



Who is Daikin

Daikin has a worldwide reputation for quality and innovative technology, with over 50 years experience in the design and manufacture of heat pump solutions. Daikin is a leading supplier of heating, cooling, ventilation and refrigeration solutions for commercial, residential and industrial applications. Daikin provides a comprehensive choice of domestic heating and renewable energy products which are ideally suited to the UK housing market.

A wholly owned subsidiary of Daikin Europe NV, Daikin UK has an excellent record of concern for environmental issues and applies it to all areas of the business, in many cases pre-empting international and national environmental legislation.

Forward thinking

Now is the time to rethink the way we heat our homes and hot water. Central heating systems as we have known them are changing dramatically today.

Everyone is concerned about reducing their energy bills, and the more eco-conscious (among us) also want to reduce our impact on the environment by using renewable energy sources. Whether for environmental or financial reasons (or even better, both),

finding a more energy efficient and economical way to heat our homes is a real priority – for the Government, for housing providers and for forward thinking home owners alike.

The good news is that you can get cheaper and 'greener' heating, without compromising on system performance. Daikin's efficient heating solutions make maximum use of the renewable energy all around us, converting free heat from the air and the sun to deliver completely reliable and controllable heating and hot water for homes, even when temperatures outside are below zero.

Daikin's heating and renewables range offers:

- > Savings on running costs
- > Reduction in CO₂ emissions
- > Easy installation
- > Space saving, low noise units
- > Safe, easy maintenance
- > High reliability
- > Solutions for new homes and for retrofit

Why the time is right for a new approach to heating our homes

"I want to see more homes, communities and businesses generating their own energy. We can literally bring power back to the people."

Gregory Barker, Minister of State for Climate Change



How are the Government helping?

The UK Government are committed to reducing carbon emissions, with heating within the home being a priority in their strategy. The Climate Change Act of November 2008 commits the UK to reducing carbon dioxide emissions by at least 26% by 2020 with a long-term goal of an 80% reduction by 2050.

The European RES Directive

The European RES Directive took effect in October 2001, and came into force in June 2009 and was designed to set a goal that 20% of European total energy production must be produced from renewable energy sources by 2020. Under the European RES Directive, air source heat pumps and solar thermal systems are recognised as renewable energy sources, this means that the market for these **will** grow fast over the next decade.

The Microgeneration Strategy

The Microgeneration Strategy, published in June 2009 was designed to promote microgeneration technologies. The Department of Energy and Climate Change is also planning a domestic Renewable Heat Incentive (RHI) to encourage the uptake of renewables, with air source heat pumps and solar thermal being included. Full details of the RHI has not been published yet, however for future qualification of grants, Daikin UK recommends customers to only choose MCS approved products, installed by MCS accredited installers.

A Green Deal for householders

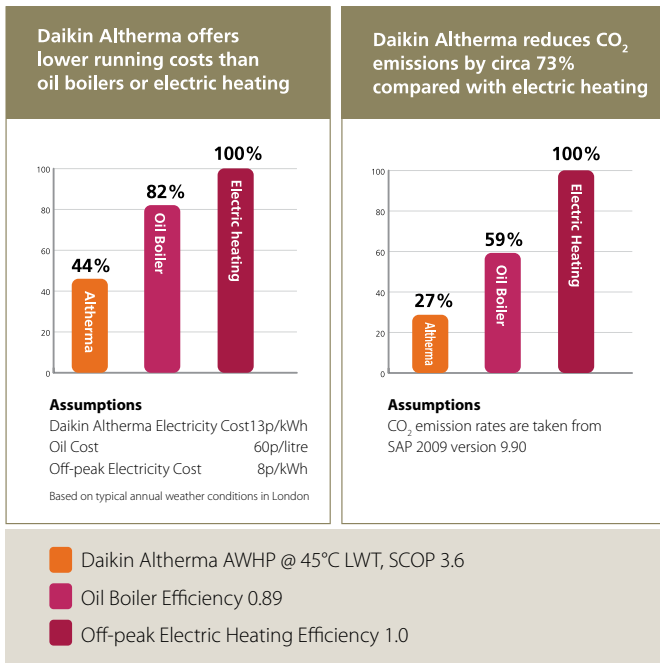
Our homes account for almost 27% of the UK's CO₂ emissions, more than 80% of which is attributed to our heating and hot water provision. Older, harder to heat properties make up the majority of homes in the UK and many have poor insulation, leading to excessive heat loss. The Government is committed to reducing CO₂ emissions and improving energy efficiency in our homes through a new Green Deal, due to be announced in Autumn 2012, which will help individuals to invest in home energy efficiency improvements.

The Code for Sustainable Homes

The Code for Sustainable Homes (CfSH) was implemented in April 2007 as a voluntary standard designed to encourage construction of new homes to higher environmental and sustainable standards. Building Regulations Part L were updated in October 2010 and the energy requirements were increased to reflect CfSH Level 3, i.e. 25% reduction against the previous Building Regulations 2006. There are many local requirements to encourage new homes to meet CfSH Level 3 and even CfSH Level 4.

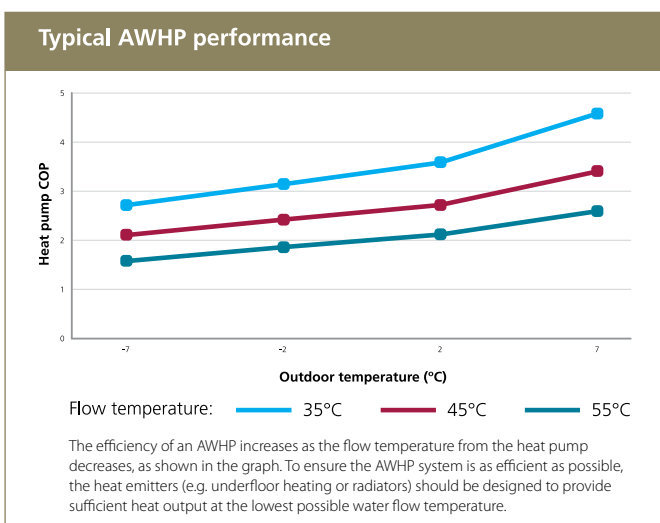
Why choose Daikin renewable energy solutions?

Daikin heating systems are more than capable of delivering all of a homes heating and hot water requirements from renewable sources throughout the year – even when the outside temperature is -20°C.



Reduce running costs with renewables

Daikin Altherma is a domestic heating and hot water system based on air-water heat pump technology, which generates up to 70% of the heat free from the air and represents a highly energy-efficient alternative to oil, LPG and electric storage systems. As a result, Daikin heat pumps can offer efficiencies up to 5 times higher than a fossil fuel boiler, so they will typically save on running costs compared with old oil and LPG boilers.



Minimise the environmental impact of heating

Daikin Altherma low temperature heat pumps deliver some of the very highest efficiencies available in the market today. Capable of achieving a Coefficient of Performance (COP) of up to 5.04¹ when installed correctly, Daikin Altherma LT systems are more efficient than traditional boilers and reduce the environmental impact of new homes, minimising carbon emissions.

European Eco-label

Daikin Altherma products carry the European Eco-label, certifying their performance meets EU-wide environmental criteria. The Eco-label scheme represents products in the top of their class for environmental performance, with compliance verified by an independent test body.



MCS Certification

Daikin Altherma air-water heat pumps are certified by the Microgeneration Certification Scheme (MCS)^{*}, providing reassurance that products and services provided meet rigorous and consistent Government standards. MCS accreditation is a mandatory standard in Government initiatives such as the proposed RHI, so it's important that developers specify MCS accredited products to ensure compliance with any forthcoming funding schemes.

^{*}Please check the MCS website for the latest list of up to date accredited Daikin heat pumps

¹ERLQ004CAV3 - tested in accordance to EN 14511 at A7 W35

Improved ratings in SAP Calculations

Some Daikin Altherma products are also included in the SAP (Standard Assessment Procedure) Appendix Q, which provides specific energy performance ratings of individual products. This means that homes using listed products will reflect the higher performance of those specific heat pumps and achieve better SAP ratings.

How to choose a system that suits your project

To get a better idea of which Daikin system would best suit your installation, please follow the flow chart showing the preferred applications of the Daikin heating products.

Daikin offers a whole range of systems to suit your requirements:

Daikin Altherma heat pump systems

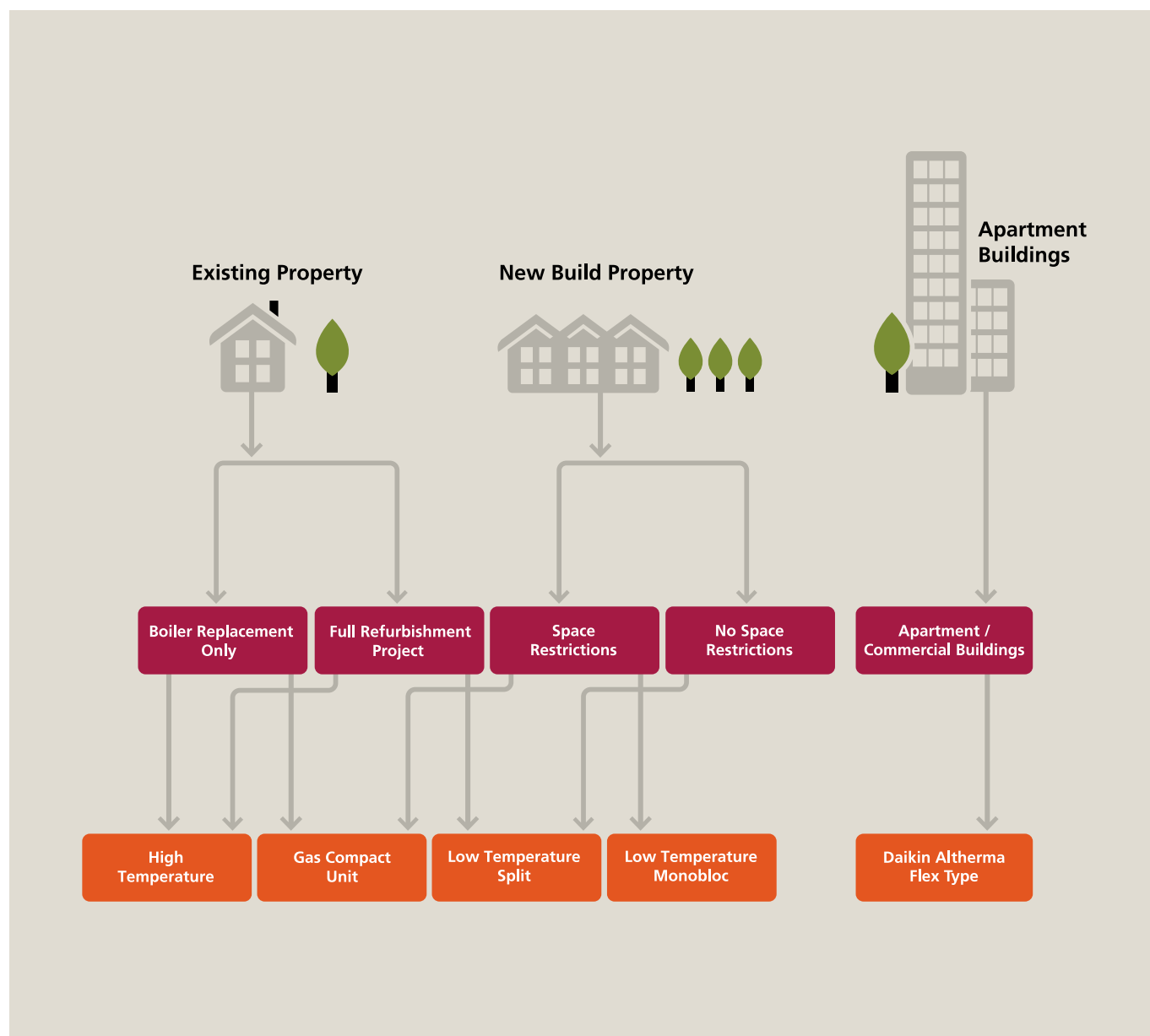
- > Low temperature monobloc
- > Low temperature split systems
- > High temperature split systems

Solar and GasCompactUnits

- > Solar thermal systems
- > GasCompactUnit – combined gas condensing boiler and solar energy

Heat emitters

- > Fan coils
- > Heat pump convectors
- > Underfloor heating

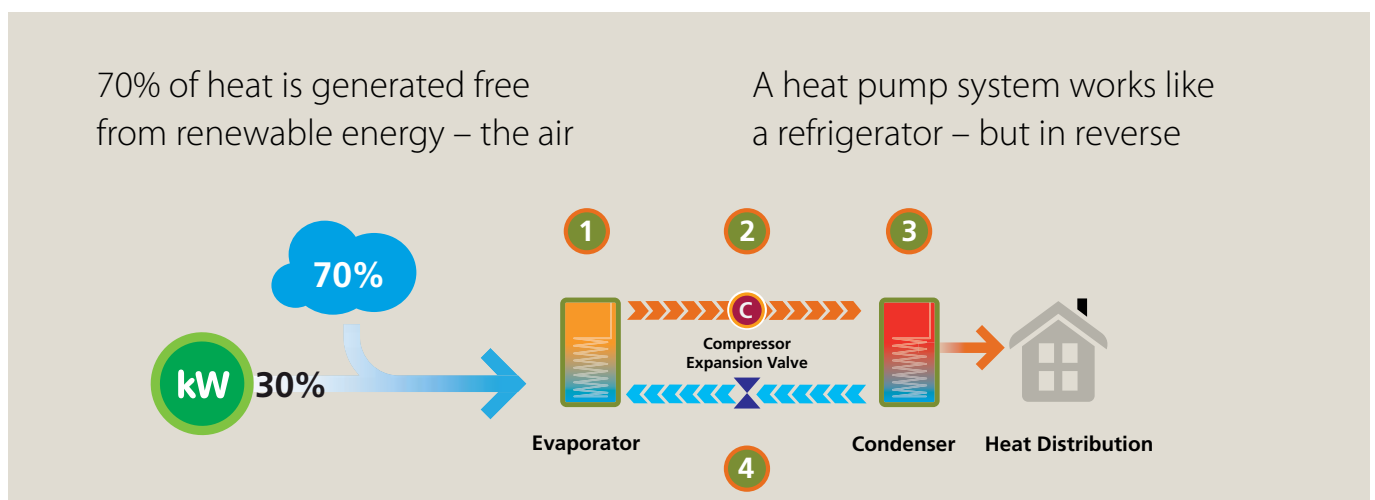


Daikin Altherma air-water heat pumps

Innovation and quality are constantly at the forefront of Daikin's philosophy. Daikin's systems provide highly efficient solutions, which minimise the impact on the environment and running costs.

Daikin Altherma is a domestic heating and hot water system based on air-water heat pump (AWHP) technology. With over 200,000 installations across Europe, it represents a flexible and cost-effective alternative to a fossil fuel boiler.

How does a heat pump work?



1. A heat exchanger contains refrigerant, which is colder than the outside air. As the air passes the exchanger, the refrigerant absorbs the latent heat from the outside air and evaporates.
2. The vapour passes into the compressor and is compressed, increasing its pressure and temperature, effectively concentrating the heat.
3. Hot vapour is condensed in the second heat exchanger where heat is rejected and the vapour condenses back into a liquid. The rejected heat passes into the central heating and hot water system, ready for use in the home.
4. The liquid refrigerant passes back through an expansion valve, ready to start the cycle again.

Daikin Altherma advantages

- > Uses renewable energy source
- > Advanced energy saving features
 - Weather compensation built in as standard
 - Inverter compressor technology
- > Low running and maintenance costs
- > Low noise – unobtrusive and quiet
- > Easy to install, no groundworks needed e.g. boreholes
- > Ideal for off gas grid properties
- > Single phase power supply with low starting current
- > Flexible, can be connected to underfloor heating, radiators or fan coils
- > As a package of energy saving measures, helps towards higher rating in the Code for Sustainable Homes
- > Can be connected with a solar thermal system which can provide up to 60% of your hot water needs for free from the sun

Daikin Altherma advantages over traditional boiler systems

- > Daikin Altherma heat pump is 3 to 5 times more efficient
- > Up to 50% reduction in CO₂ emissions

Heat pumps

Low Temperature (LT) Split system

The new advanced Daikin Altherma LT Split system offers even greater running cost savings than the original.

Based on a tried and tested concept, the new heat pump is the perfect choice for all new build and many refurbishment projects.

In a LT split system, the outdoor unit extracts energy from the outside air. Refrigerant pipework then delivers this energy to the indoor unit (or hydrobox) which can be located up to 75 metres away.

System elements

1. Outdoor unit options

The ERLQ-C-series range now includes three brand new outdoor units – 4kW, 6kW and 8kW – to complement the existing 11kW, 14kW and 16kW units. Designed for installation anywhere in Europe, this range can withstand even the toughest winter climates and will still operate even when the outside temperature drops to -25°C.

The new 4kW model has been specially designed for today's low energy homes. With even higher efficiencies and a modulation range down to 1.8kW (at A7/W35), it easily helps developers to achieve Code for Sustainable Homes Level 4.

All the new heat pumps benefit from the latest Daikin inverter technology. With a higher modulation range, even higher efficiencies are achieved.

The original ERHQ-B-series is still available in 11-16kW capacities.

2. Indoor unit options

A new wall hung indoor hydrobox with a modern design is connected to the outdoor unit. These units can produce water temperatures up to 55°C with guaranteed capacities all the way down to at least -15°C. Operation is guaranteed even at -25°C.

All required hydraulic components are in the hydrobox including circulation pump, expansion vessel and isolation valves. A new high efficiency "A" label circulation pump and a bigger heat exchanger both increase system efficiency. Additionally, the new hydrobox is easier to install and maintain with front access to the wiring and hydraulics.

The new unit is smaller and requires only 10mm side clearances. With its reduced installation footprint, siting the unit is even easier.

The system can be completed with a separate unvented hot water cylinder which can be sited to suit the available space. The hot water cylinder with back-up immersion heater is specially designed to maximise hot water supply and comes in three sizes: 150, 200 and 300 litres.

3. Controller

The Daikin Altherma LT Split heat pumps have a new and improved modern controller. This easy to use backlit controller can also be installed as a modulating room thermostat to improve system efficiencies still further.

The new controller has a simple to follow menu structure to allow the system to be set up and optimised for each installation. The controller can be commissioned by PC and has energy metering functionality to help the householder understand how much energy is used and generated by the heat pump.



3

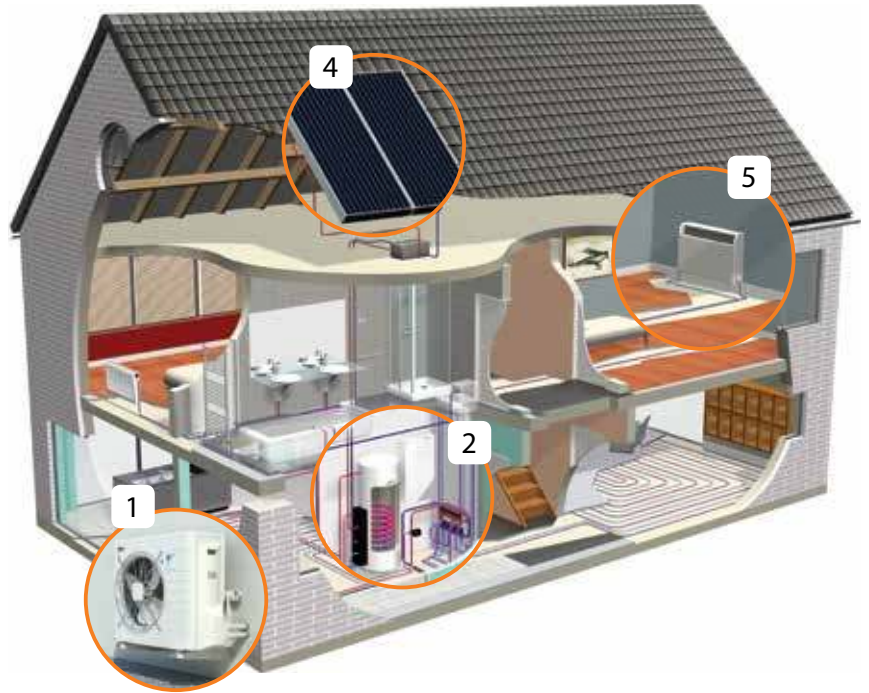
4. Solar thermal system

It is possible to connect an indirect pressurised solar thermal system to provide additional heat to the domestic hot water during summer months.

5. Heat emitters


The system can work with all appropriately sized heat emitters including underfloor heating, radiators, heat pump convectors and fan coil units.

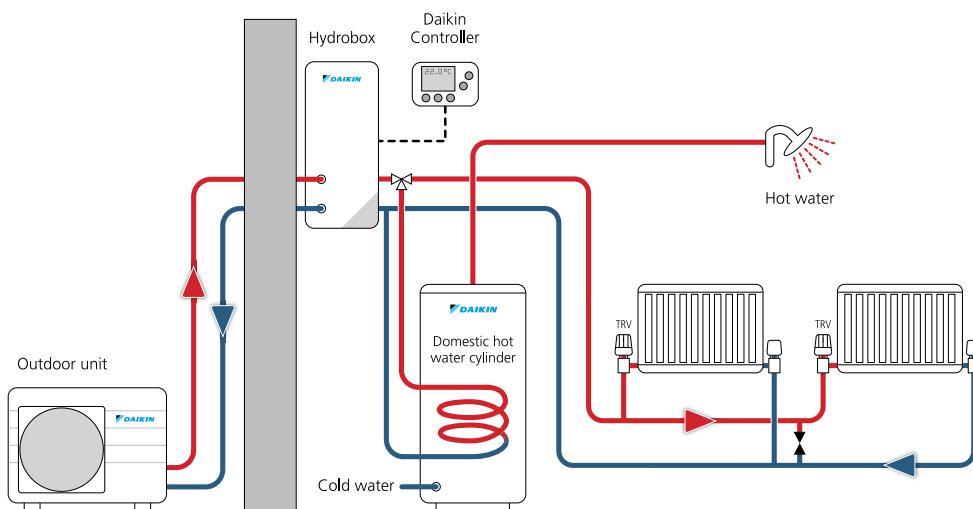
All products are MCS accredited.
The ERLQ-C range is also listed on the product characteristics database.



The Daikin Altherma LT Split system is available in a number of configurations, offering many combinations.

LT split with wall hung indoor unit

INDOOR UNIT	CYLINDER CAPACITY	OUTDOOR UNIT	CAPACITY RANGE	BENEFITS
Wall hung indoor unit & separate cylinder 	150, 200 and 300 litre	C series	4-16kW	High seasonal efficiency providing low running costs Designed to withstand even the toughest winter climates – with operation down to -25°C Hydrobox produces leaving water temperatures up to 55°C Cylinder can be sited to suit requirements Outdoor unit can be sited up to 30m (4-8kW) or 50m (11-16kW) from indoor unit
		B series	11-16kW	Has many similar benefits to the C series, this model is designed for milder climates



Heat pumps

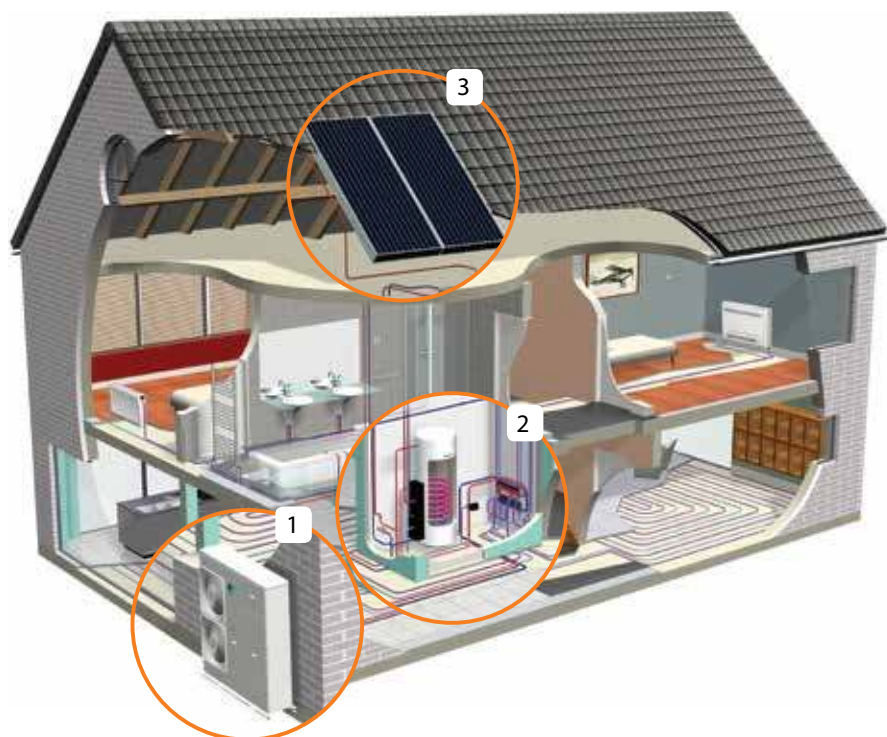
Low Temperature Monobloc system

When there are internal space constraints, the Daikin Altherma LT Monobloc system offers a perfect solution as it combines all the main hydraulic components in a single outdoor unit. No refrigerant handling qualification is required to install the system.



MCS HP0006

* Please check the MCS website for the latest list of up to date accredited Daikin heat pumps.



System elements

1. Outdoor unit

Simplified installation, as it requires only power and water connections. Sealed refrigerant circuit including back-up heater.

2. Hot water cylinder

The hot water cylinder is specially designed to maximise hot water supply and comes in three sizes: 150, 200 and 300 litres.

3. Solar thermal system

Optional connection with solar panels to create a fully renewable system.

Daikin Altherma LT Small Monobloc

Available in 6kW and 8kW capacities, ideal for small properties

- > **NEW!** 12 metre interconnecting cable between outdoor unit and control box delivered separately to aid first fix installation
- > Quick installation
- > Simplified wiring
- > All hydraulic components included in the unit
- > Compatible with solar thermal systems to create a completely renewable solution for even greater energy savings
- > Great solution for tight spaces requiring smaller capacities
- > Optional back-up heater indoors
- > Delivers COP above 3.3 at A2/W35



Heat emitters

Heat Pump Convectors and Fan Coils

Daikin Altherma heat pumps are compatible with many different types of heat emitters including heat pump convectors and fan coils.

Heat pump convectors

Heat pump convectors can provide both heating and cooling if required and can be used with the Daikin Altherma heat pump to offer a compact and highly efficient solution:

- > Designed to operate at low flow temperature (35°C) to optimise the efficiency of an air-water heat pump
- > Super quiet operation
- > No draughts
- > Able to heat and cool
- > Compact size
- > Unique solution
- > Savings on running costs
- > Available in 1.5 & 2kW



Intelligent integration with Daikin Altherma system

If required, the heat pump convector and the other heat emitter can be set at two different temperature zones, thanks to the unique interlink function, which enhances the performance of the heating system.

In refurbishment projects, where it can be difficult to install a drain pipe, a unique feature is that the cooling is still possible by limiting the water temperatures.

Can easily replace existing heat emitters

- > Ideal solution instead of underfloor heating (i.e. bedrooms) or as an alternative to unsightly radiators
- > Deliver ample levels of heat, even at low water temperatures
- > Offer remote control of each convector, for easy control of room temperature, fan speed, automatic or night mode, rapid heating or cooling and weekly timer
- > Easy to use controls
- > Can be installed against wall or recessed
- > Plug and play installation

Fan coils

A fan coil is a type of heat emitter that consists of a heat exchanger and a convector fan, which distributes heat, quickly and evenly. Fan coils are designed to work at lower temperatures to optimise the efficiency of the Daikin Altherma heat pump.

Daikin offers a range of fan coils that can be mounted horizontally or vertically. They are also available as cased or chassis units for concealment in ceiling voids, or decorative casings, and provide:

- > A wide operating range
- > Quiet operation
- > Easy installation and maintenance
- > Excellent air flow and air distribution
- > Slim and compact aesthetic design
- > Wireless remote control

Fan coils also offer the additional benefit of comfort cooling when used in conjunction with a heating and cooling Daikin Altherma system.



Heat pumps

Daikin Altherma High Temperature

In older or harder to heat properties, you need a system that reliably delivers higher water flow temperatures of up to 80°C, without necessarily replacing the whole radiator system.

System elements

1. Outdoor unit

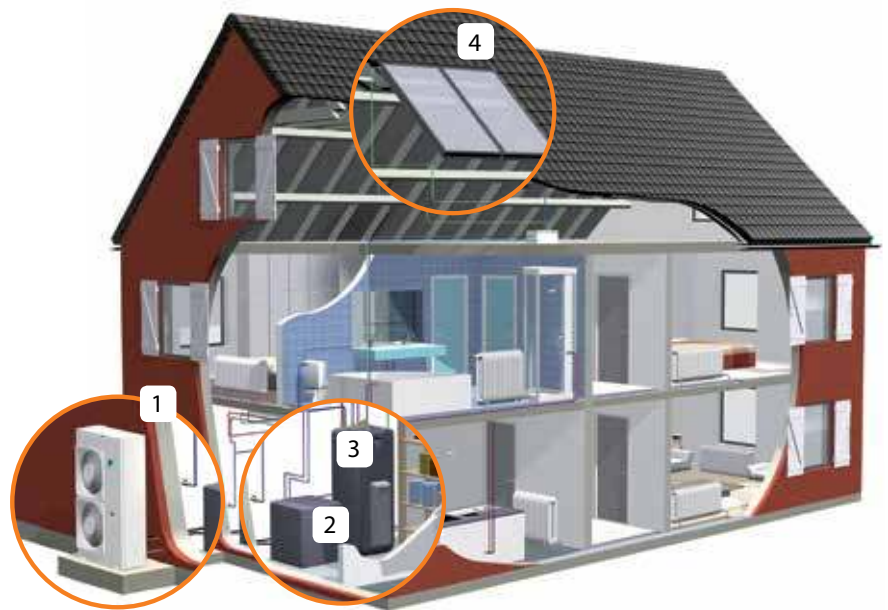
The outdoor unit extracts heat from the outside air and transfers it to the indoor unit via refrigerant piping.

2. Indoor unit

The indoor unit can be sited up to 50 metres away from the outdoor unit.

3. Unvented domestic hot water cylinder

The unvented domestic hot water cylinder can be stacked on top of the indoor unit, thus saving space.



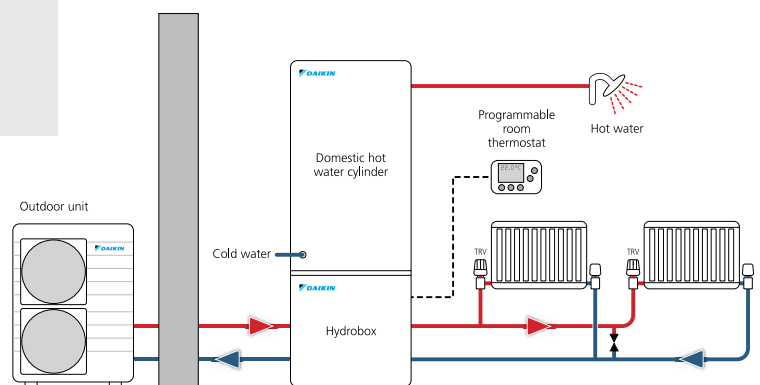
For boiler replacement and retrofit projects:

The Daikin Altherma high temperature system is ideal for straight-forward boiler replacement. The system offers:

- > Superior and unique cascade heat pump technology
- > Water flow temperature of up to 80°C, without need for an electric back-up heater
- > Hot water recovery time as fast as a boiler
- > Modular design and easy to install – all components are pre-assembled

4. Solar system

The HT heat pump can be connected to a solar thermal system for higher hot water efficiencies. A dedicated unpressurised thermal store works together with the drainback solar system and floor standing hydrobox.



Heat pumps

Daikin Altherma Flex Type

The award winning Daikin Altherma Flex Type air-to-water heat pump is a world-first renewable heating system – ideal for apartment schemes, collective housing, schools, leisure environments and businesses.

Efficient air-to-water heat pump technology for apartments and commercial applications

- > Heating and domestic hot water from a single efficient system
- > Up to 80°C water temperatures by heat pump only
- > For a typical application this system can deliver*:
 - 27% reduction in primary energy use
 - 59% less CO₂ emissions and
 - 33% less operating costs compared to an installation with individual gas boilers

* Simulation calculation carried out on an apartment building in Belgium: 5 floors, 22 apartments, average size per apartment: 107m²; all apartments are assumed to be heated with under floor heating and radiators.

A flexible heating solution

The Daikin Altherma Flex Type is a highly efficient and versatile hot water and heating solution delivering high water flow temperatures of up to 80°C. With two thirds of the heat generated from the renewable energy source of air, it's an ideal solution for replacing existing oil, LPG or electric heating systems. By reducing the total primary energy use, Daikin Altherma Flex Type can help to improve the energy performance of buildings, reduce running costs and cut carbon emissions.

A modular heating system

One or more outdoor heat pump units are connected by refrigerant pipework to multiple indoor hydrobox units. Each outdoor unit provides 23-45kW capacity and can connect up to 10 indoor units. The indoor units (5-16kW) can be configured in a centralised or de-centralised arrangement to meet the building's heating requirements. This offers complete flexibility to integrate air-water heat pump technology in various types of buildings with heat loads up to circa 500kW.



World-first

Centralised system

The indoor units can be located together in one central plant room, to create a centralised system suitable for a wide range of large domestic and light commercial applications. The centralised indoor units offer modular system scalability and capacity to meet the heating demand of the overall building.



De-centralised system

The hydroboxes can be located in individual dwellings, such as apartments, to create a de-centralised heating system. Each indoor unit can be operated independently, providing each property with individual control of heating, hot water and cooling (5 and 8kW models only). Individual dwellings can also be equipped with separate domestic hot water tanks.

Solar thermal systems

Daikin solar thermal systems integrate with the Daikin Altherma range of heat pumps to provide extra renewable energy support for domestic hot water.

System elements

1. Flat plate solar collectors

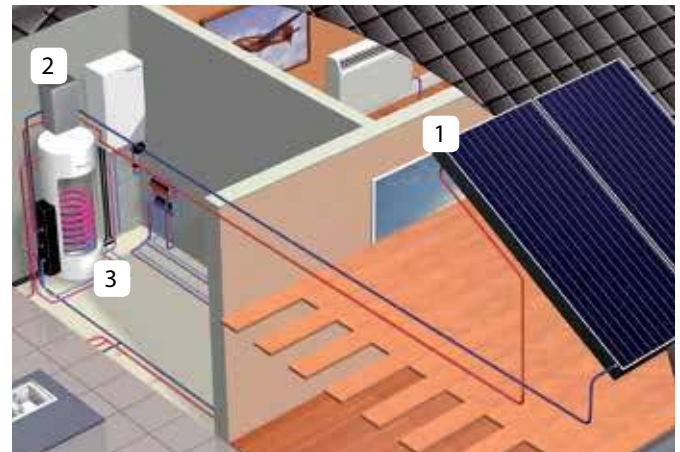
Absorbs solar energy and converts into useful heat. Can be pressurised or drainback. Various roof fixings available.

2. Solar controller and pump station

The controller decides when to start the solar pump to transfer energy from the solar collectors, depending on the available solar gain and tank temperature.

3. Hot water store

This is the store of solar energy to provide domestic hot water. Two options are available : (a) unvented indirect cylinder (150, 200 and 300 litres) for pressurised solar, or (b) vented thermal stores for drainback solar (300 and 500 litres).



Provides up to **60%** of the hot water needs for an average household over a year.

How does it work?

The Daikin high-performance solar collectors convert shortwave solar radiation into useful heat. As soon as the temperature of the fluid within the collectors exceeds the cylinder temperature, by a predetermined value, the solar controller starts the solar pump and charges the cylinder or thermal store.

Three system options

The **drainback solar system** utilises an unpressurised thermal store. Water in the store is pumped to the solar collectors, heated and drains back to the store. Hot water is delivered via an indirect mains pressure coil. The store is also heated by a heat pump when there is insufficient solar energy. There is no need for glycol or a solar fluid collection vessel resulting in lower maintenance costs.

In the **pressurised solar system**, a glycol antifreeze solar fluid collects the solar energy and transfers it from the collectors into the hot water cylinder via a specially designed external heat exchanger kit to the unvented cylinder. This allows the entire volume of the cylinder to be heated efficiently by solar energy or by the heat pump.

The **standalone pressurised solar** system includes an unvented twin coil solar cylinder and is designed to be combined with an auxiliary gas boiler. This system is ideal for on-gas retrofit applications.

Benefits of Daikin solar thermal systems

Solar collector: High efficiency and robust panel design with toughened glass for peace of mind.

Extensive range from one supplier: Daikin offer a comprehensive solar range for all applications. Pressurised or drainback systems, vertical or horizontal collectors, on-roof, in-roof or A-frame fixings and the choice of an unvented cylinder or thermal store. A full range of solar accessories are also available to complete your installation.

Intelligent control: The system automatically decides to run solar or heat pump for optimum utilisation of solar energy and reduced running costs.

Modulating pump: Automatic and controlled solar pump speed for maximum efficiency.

Grants available: The collector is Solar Keymark certified and qualifies for RHPP grants.

10 year warranty: against manufacturing defects for peace of mind.



Solar thermal systems

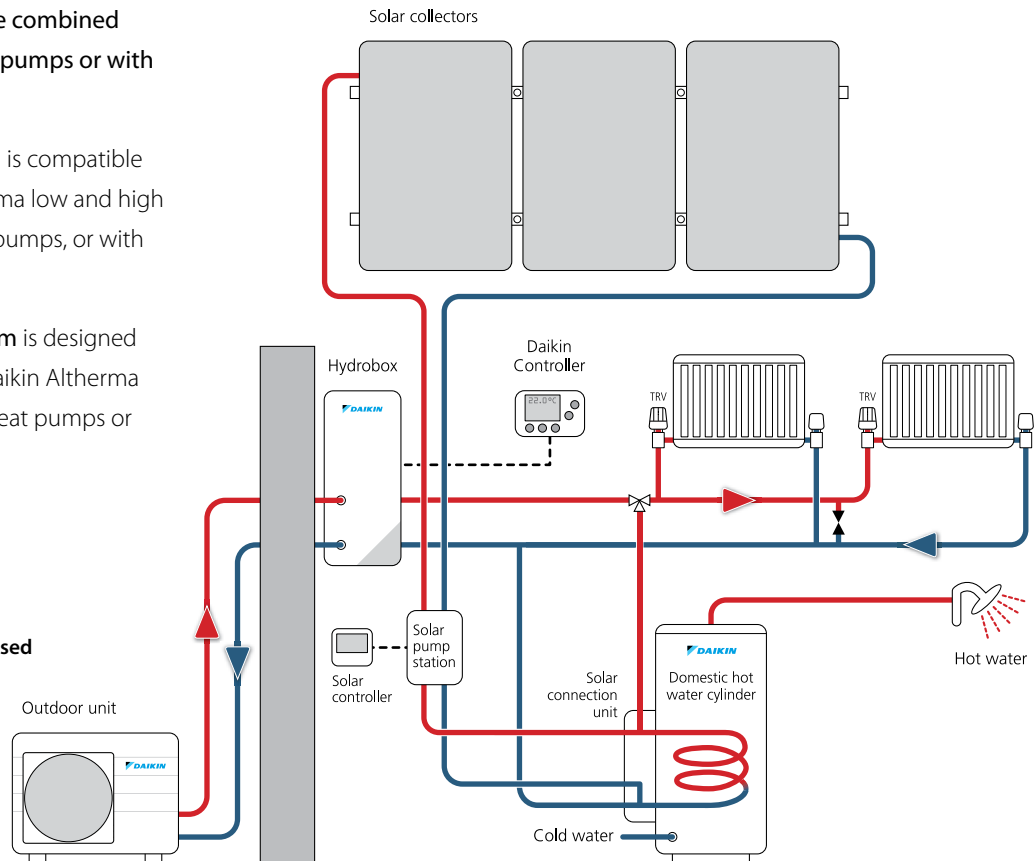
Daikin solar thermal systems offer complete flexibility for every installation. Both vertical and horizontal solar collectors are available with a range of fixing systems on-roof, in-roof and A-frame. Predefined packs are available for easy selection.

Daikin solar systems can be combined with Daikin Altherma heat pumps or with Rotex GCU.

The **drainback solar system** is compatible with both the Daikin Altherma low and high temperature range of heat pumps, or with the Rotex GCU.

The **pressurised solar system** is designed for combination with the Daikin Altherma low temperature range of heat pumps or the Rotex GCU.

Typical LT system with pressurised solar thermal system



Daikin solar packs include:

- > Flat plate collectors
- > Roof brackets
- > Mounting rails for collectors
- > Hydraulic connection kit*
- > Solar controller
- > Solar pump station
- > Flow sensor
- > Solar fluid**
- > Solar expansion vessel**

Additional accessories available to complete the system including solar pipework and mixing valve.

* For fixings at solar panel(s) and pump station
** Required and included for pressurised systems only

Solar Keymark certification

Daikin solar collectors have Solar Keymark certification, the European quality label for solar thermal products. This accreditation certifies that the solar collectors (models EKSV26P and EKSH26P) comply with EN 12975.

The Solar Keymark is accepted by MCS and qualifies for grant funding schemes. The accreditation helps householders to select quality assured collectors.

For an up to date list of products awarded the Solar Keymark, go to www.estif.org/solarkeymark and click 'products'.



011-751016F

Underfloor heating systems

ROTEX underfloor heating systems help to increase the efficiency of a heat pump system and are designed to work seamlessly with the Daikin heating range.

System types

A wide selection of underfloor heating fixing systems are available for a range of applications.



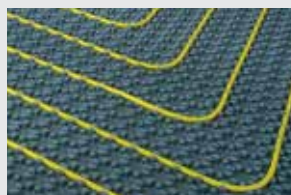
Staples

For quick and easy installation of pipe directly onto high density floor insulation with a protective film.



Clip rail

Rails fixed onto insulation provide a secure and easy clipping system for the pipe.



System plates

Styrofoam nap plates with a protective polystyrene layer provide both insulation and a secure pipe fixing system.



Secco dry system

Dry overlay plates designed for retrofit applications or above timber suspended floors without removing the existing floor.



Controls and accessories

A new range of slim wired and wireless room controls are available to be connected to a wiring centre for multiple zones. An optional small and compact timer module plugs into the wiring centre to provide time control.

A full range of UFH accessories are available, including manifolds with integrated flow meters, actuators, fixing systems and edge insulation.



Rotex Pipes

Monopex®: PE-Xc crosslinked polyethylene pipe, which is corrosion free and is a sustainable material.

Monopex-AL: PE-Xc pipe with an aluminium coating and UV stabilised PE layer for easier handling.

DUO: Dual layer PE-Xc and outer ribbed PE pipe; suitable for flow temperatures up to 80°C.



Underfloor heating benefits

- > **Comfort:** the low surface temperature and large heating area provide an extremely comfortable room climate.
- > **Energy saving:** UFH is designed to run at a lower flow temperature than radiators, at 35-45°C which is the ideal temperature range to achieve higher efficiencies and lower running costs from a Daikin Altherma heat pump.
- > **Simple installation:** easy to lay and allows optimal versatility of design for individual rooms.
- > **Floor coverings:** whether parquet flooring, ceramic tiles, vinyl floor covering or fitted carpets, underfloor heating can be designed for combination with nearly all modern floor coverings.

Applications

ROTEX underfloor heating can be used for heating almost every different type of building, from single and multiple dwellings, to schools, leisure centres, hotels, hospitals and sports halls.

Condensing gas boiler and solar energy combined

ROTEX GasCompactUnit combines a high efficiency gas boiler and hot water solution, with optional solar thermal connection.

Key features and benefits

- > **High efficiency boiler**
Intelligent burner management with gas adaptive combustion system which controls the gas/air mixture for the most efficient combustion.
- > **Easy installation**
Pre-assembled gas condensing boiler and hot water storage, which is a lightweight and easy to manoeuvre. Composite dual layer rigid plastic shell which is highly insulated for low heat loss.
- > **Weather compensator as standard**
Controls flow temperature according to outside temperature and storage tank temperature to achieve highest operating efficiency.
- > **Simple controller**
Intuitive and easy to use for quick commissioning and reduced installation time. Factory fitted with full 7-day heating and hot water programmer.
- > **Instantaneous hot water**
Mains pressure hot water delivered via the indirect heat exchanger. Pressureless storage tank—no G3 required.
- > **Optional solar connection**
A boiler and solar heated store provides a unique option for meeting higher levels of the Code for Sustainable Homes.
- > **Optional Bivalent version**
For connecting an auxiliary heat source e.g. wood fired boiler.
- > **Parts and labour warranty**
2 years on the boiler and 3 years on the tank.



Extensive range of models

Available in a range of heating outputs and tank capacities, the GCU is suitable for a wide range of applications.

All models delivered for natural gas and are LPG ready.

	15kW	24kW	33kW
300 litres	✓	✓	✗
500 litres	✓	✓	✓



Gas appliances must be installed and serviced by a competent person in accordance with the Gas Safety Regulations 1998. Always ensure that your installer is on the Gas Safe Register. Daikin is a Gas Safe Registered company and our Gas Safe Registered engineers are qualified to provide after sales service support on the GasCompactUnit.

Daikin Altherma LT Split

Technical data



INVERTER



INVERTER

OUTDOOR UNIT - C SERIES			ERLQ004CV3	ERLQ006CV3	ERLQ008CV3	ERLQ011CV3	ERLQ014CV3	ERLQ016CV3
Dimensions	H x W x D	mm	735 x 832 x 307			1345 x 900 x 320		
Weight		kg	54	56	56	113		
Nominal Capacity	Heating (a/b)	kW	4.4 / 4.2	6.0 / 5.12	7.4 / 6.13	11.2 / 9.6	14.5 / 10.8	16.0 / 10.9
	Cooling	kW	4.17	4.84	5.36	11.72	12.55	13.12
Nominal Input	Heating (a/b)	kW	0.87 / 1.85	1.27 / 2.31	1.66 / 2.89	2.43 / 4.57	3.37 / 5.19	3.76 / 5.22
	Cooling	kW	1.8	2.07	2.34	4.31	5.08	5.73
COP	Heating (a/b)		5.04 / 2.27	4.74 / 2.22	4.45 / 2.12	4.60 / 2.1	4.30 / 2.08	4.25 / 2.09
EER	Cooling		2.32	2.34	2.29	2.72	2.47	2.29
Operation Range	Heating	°C	-25 ~ 25			-25 ~ 35		
	Cooling	°C	10 ~ 43			10 ~ 46		
	Hot Water	°C	-25 ~ 35			-20 ~ 35		
Sound Pressure / Power Level	Heating	dBA	48 / 61	48 / 61	49 / 62	51 / 64	51 / 64	52 / 66
	Cooling	dBA	48 / 63	49 / 63	50 / 63	50 / 64	52 / 66	54 / 69
Refrigerant Charge	R-410A	kg	1.45	1.6	1.6	3.4		
Piping Connections	Liquid	inch	1/4			3/8		
	Gas	inch	5/8			5/8		
Max Piping Length OU to IU		m	30			50		
Power Supply			1-phase / 230V / 50Hz					
Recommended Fuses		A	20			40		

Nominal capacity and nominal input tested according to EN 14511 at the following conditions:

Heating a: Ambient air temperature 7°C and leaving water temperature 35°C (A7 W35) **Heating b:** Ambient air temperature -7°C and leaving water temperature 45°C (A-7 W35)

Cooling: Ambient air temperature 35°C and leaving water temperature 7°C (A35 W7)

Sound pressure level measured at 1m from the unit



INVERTER

OUTDOOR UNIT - B SERIES			ERHQ011BV3	ERHQ014BV3	ERHQ016BV3
Dimensions	H x W x D	mm	1170 x 900 x 320		
Weight		kg	103		
Nominal Capacity	Heating (a/b)	kW	11.2 / 6.43	14.0 / 7.42	16.0 / 8.49
	Cooling	kW	10.0	12.5	13.1
Nominal Input	Heating (a/b)	kW	2.55 / 3.11	3.26 / 3.88	3.92 / 4.5
	Cooling	kW	3.69	5.39	5.95
COP	Heating (a/b)		4.39 / 2.06	4.29 / 1.91	4.08 / 1.89
EER	Cooling		2.71	2.32	2.20
Operation Range	Heating	°C	-20 ~ 35		
	Cooling	°C	10 ~ 46		
	Hot Water	°C	-20 ~ 35		
Sound Pressure / Power Level	Heating	dBA	49/64	51/64	53/66
	Cooling	dBA	50/64	52/66	54/69
Weight		kg	103		
Refrigerant Charge	R-410A	kg	3.7		
Piping Connections	Liquid	inch	3/8		
	Gas	inch	5/8		
Max Piping Length OU to IU		m	75		
Power Supply			1-phase / 230V / 50Hz		
Recommended Fuses		A	32		

Daikin Altherma LT Split

Technical data

Note that specification tables refer to product part numbers. Please check the material reference on the price list at time of ordering



INDOOR UNIT (WALL HUNG)			EHBH04C3V	EHBX04C3V	EHBH08C**	EHBX08C**	EHBH16C**	EHBX16C**
Function			Heating Only	Reversible	Heating Only	Reversible	Heating Only	Reversible
To use with			ERLQ004CV3		ERLQ006-008CV3		ERLQ011-016C** / ERHQ011-016B**	
Dimensions	H x W x D	mm	890 x 480 x 344 / 380					
Leaving Water Temperature Range	Heating	°C	15~55					
	Cooling	°C	-	5~22	-	5~22	-	5~22
Pump	No. of speeds		Inverter controlled					
Expansion Vessel Volume		litres	10					
Water Connections	Diameter	inch	1 ¼ (female)					
	3kW 1ph 230V	A	16					
Back-up Heater	6kW 1ph 230V	A	-		32 ^a			
Fuse Rating	6kW 3ph 400V	A	-		10 ^a			
	9kW 3ph 400V	A	-		16 ^a			

Note: a: 9W models only



DOMESTIC HOT WATER CYLINDER			EKHWSU150B3V3	EKHWSU200B3V3	EKHWSU300B3V3
Suitable for			Unvented Systems (EKUHWB Kit also required)		
Water Volume	litres		150	200	300
Max Water Temperature	°C		85		
Booster Heater Capacity	kW		3		
Power Supply			1-phase / 230V / 50Hz		
Recommended Fuses	A		16		
Height	mm		1015	1265	1715
Diameter	mm		580		
Empty Weight	kg		38	46	60
Material Inside Cylinder			Stainless Steel (DIN 1.4521)		
Piping Connections (Diameter)	Water inlet H/E	inch	3/4 (female)		
	Water outlet H/E	inch	3/4 (female)		
	Cold water in	inch	3/4 (female)		
	Hot water out	inch	3/4 (female)		

Daikin Altherma LT Monobloc

Technical data



MONOBLOC 6kW-8kW			EBHQ06BBV3	EBHQ08BBV3
Dimensions	H x W x D	mm	805 x 1190 x 360	
Weight		kg	95	
Nominal Capacity	Heating (a/b)	kW	6.00 / 3.77	8.85 / 5.26
	Cooling	kW	5.12	6.08
Nominal Input	Heating (a/b)	kW	1.41 / 1.88	2.21 / 2.56
	Cooling	kW	2.16	2.75
COP	Heating (a/b)		4.26 / 2.00	4.00 / 2.05
EER	Cooling		2.37	2.21
Operation Range	Heating	°C	-15 ~ 25	
	Cooling	°C	10 ~ 43	
	Hot Water	°C	-15 ~ 35	
Sound Pressure / Power Level	Heating	dBA	48 / 61	49 / 62
	Cooling	dBA	48 / 63	50 / 63
Refrigerant Charge (Factory)	R-410A	kg	1.7	
Power Supply			1-phase / 230V / 50Hz	
Recommended Fuses		A	20	
Pump	No. of speeds		3	
Expansion Vessel Volume		litres	6	
Water Connections	Diameter	inch	1 (male)	
Max Piping Length OU to Cylinder		m	10	
Interconnecting Cable			EKCOMCAB1 (12 metres) - Delivered Separately	
BACK UP HEATER KIT (OPTIONAL)			EKMBUHB6V3	
Dimensions	Max depth	mm	170	
	Max width	mm	380	
	Max height	mm	575	
Power Supply			1-phase / 230V / 50Hz	
Recommended Fuses		A	32 (6kW BUH)	
Water Connections	Diameter	inch	1 ¼ (male)	
CONTROL BOX			EKCBH008BCV3	EKCBX008BCV3
Function			HEATING ONLY	REVERSIBLE
To use with			EBHQ006~008BBV3	
Dimensions	Max depth	mm	100 (excluding user interface)	
		mm	120 (including user interface)	
	Max width	mm	412	
	Max height	mm	390	



			HEATING ONLY			REVERSIBLE		
MONOBLOC 11-16kW			EDHQ011BB6V3	EDHQ014BB6V3	EDHQ016BB6V3	EBHQ011BB6V3	EBHQ014BB6V3	EBHQ016BB6V3
Dimensions	H x W x D	mm	1418 x 1435 x 382			1418 x 1435 x 382		
Weight		kg	180			180		
Nominal Capacity	Heating (a/b)	kW	11.2 / 6.19	14 / 7.72	16 / 8.7	11.2 / 6.19	14 / 7.72	16 / 8.7
	Cooling	kW	-	-	-	10	12.5	13.1
Nominal Input	Heating (a/b)	kW	2.56 / 3.21	3.29 / 3.76	3.88 / 4.44	2.56 / 3.21	3.29 / 3.76	3.88 / 4.44
	Cooling	kW	-	-	-	3.69	5.39	5.93
COP	Heating (a/b)		4.38 / 1.93	4.25 / 2.05	4.12 / 1.96	4.38 / 1.93	4.25 / 2.05	4.12 / 1.96
EER	Cooling		-	-	-	2.71	2.32	2.21
Operation Range	Heating	°C	-15 ~ 35			-15 ~ 35		
	Cooling	°C	-			10 ~ 46		
	Hot Water	°C	-15 ~ 35			-15 ~ 35		
Sound Pressure / Power Level	Heating	dBA	51 / 64	51 / 65	52 / 66	51 / 64	51 / 65	52 / 66
	Cooling	dBA	-	-	-	50 / 65	52 / 66	54 / 69
Refrigerant Charge	R-410A	kg	2.95			2.95		
Back-up Heater (Factory)		kW	6			6		
Power Supply			1-phase / 230V / 50Hz			1-phase / 230V / 50Hz		
Recommended Fuses	Outdoor Unit	A	32			32		
	6kW BUH	A	32			32		
Pump	No. of speeds		2			2		
Expansion Vessel Volume		litres	10			10		
Water Connections	Diameter	inch	1 ¼ (female)			1 ¼ (female)		
Max Piping Length OU to Cylinder		m	10			10		

Nominal capacity and nominal input tested according to EN 14511 at the following conditions:

Heating a: Ambient air temperature 7°C and leaving water temperature 35°C (A7 W35) **Heating b:** Ambient air temperature -7°C and leaving water temperature 45°C (A-7 W45)

Cooling: Ambient air temperature 35°C and leaving water temperature 7°C (A35 W7)

Sound pressure level measured at 1m from the unit

Heat pump convectors



HEAT PUMP CONVECTOR				FWXV15AVEB	FWXV20AVEB
Dimensions	H x W x D		mm	600 x 700 x 210	
Heating Capacity	Total capacity	Nom.	kW	1.5	2
	Water Volume	Nom.	m ³ /h	0.26	0.34
			l/min	4.3	5.7
	Water pressure drop	Nom.	kPa	13	22
Cooling capacity	Total capacity	Nom.	kW	1.2	1.7
	Sensible capacity	Nom.	kW	0.98	1.4
	Water Volume	Nom.	m ³ /h	0.2	0.29
			l/min	3.4	4.9
	Water pressure drop	Nom.	kPa	10	17
Air Flow Rate	Heating	H/M/L/SL	m ³ /h	318/228/150/126	474/354/240/198
	Cooling	H/M/L/SL	m ³ /h	318/228/150/126	474/354/240/198
Refrigerant	Water				
Sound Pressure/Power level	Heating		dBA	19 / 35	29 / 45
	Cooling		dBA	19 / 35	29 / 45
Weight	Unit		kg	15	15
Power Supply	1-phase / 230V / 50Hz				
Air Filter	Removable/Washable/Mildew proof				
Air direction control	Right, Left, Horizontal, Downward				
Temperature control	Microcomputer control				

Nominal capacity based on following conditions:

Heating: indoor temp. 20°CDB; entering water temp. 45°C, water temperature drop 5K

Cooling: indoor temp. 27°CDB; entering water temp. 7°C, water temperature rise 5K

Daikin Altherma HT system

Technical data



COMBINATION OUTDOOR INDOOR					
OUTDOOR UNIT			ERSQ011AV1	ERSQ014AV1	ERSQ016AV1
Dimensions	H x W x D	mm	1345 x 900 x 320		
Weight		kg	120		
Nominal Capacity	Heating (a/b)	kW	11 / 11	14 / 14	16 / 16
Nominal Input	Heating (a/b)	kW	3.03 / 3.57	4.07 / 4.66	4.83 / 5.57
COP	Heating (a/b)		3.63 / 3.08	3.44 / 3.00	3.31 / 2.88
Operation Range	Heating	°C	-20 to +20		
	Hot water	°C	-20 to +35		
Sound Pressure / Power Level	Heating	dBA	52 / 68	53 / 69	55 / 71
Refrigerant Charge	R-410A	kg	4.5		
Piping Connections	Liquid	inch	3/8		
	Gas	inch	5/8		
Max Piping Length OU to IU		m	50		
Power Supply			1-phase / 230V / 50Hz		
Recommended Fuses		A	25		



INDOOR UNIT (FLOOR STANDING)			EKHBRD011ACV1	EKHBRD014ACV1	EKHBRD016ACV1
To use with			ERSQ011AV1	ERSQ014AV1	ERSQ016AV1
Dimensions	H x W x D	mm	705 x 600 x 695		
Weight		kg	144.25		
Leaving Water Temperature Range		°C	25-80 Without Electrical Heating		
Refrigerant Charge (Factory)	R134a	kg	2.6		
Power Supply			1-phase / 230V / 50Hz		
Recommended Fuses		A	25		
Pump	No. of speeds		Inverter Controlled		
Expansion Vessel Volume		litres	12		
Water Connections	Diameter	inch	1 (female)		

Nominal capacity and nominal input tested at the following conditions:

a. A7 W45 according to EN14511

b. A7 W65 according to Eurovent rating standard 6/C/003-2006



DOMESTIC HOT WATER CYLINDER			EKHTSU200AC	EKHTSU260AC
Suitable For			Unvented Systems (EKUHWHT Kit also required)	
Water Volume		litres	200	260
Max Water Temperature		°C	75	
Dimensions (Cylinder Only)	H x W x D	mm	1335 x 600 x 695	1610 x 600 x 695
Dimensions (Cylinder Integrated on Hydrobox)	H x W x D	mm	2010 x 600 x 695	2285 x 600 x 695
Empty Weight		kg	70	78
Material Inside Cylinder			Stainless Steel	
Piping Connections (Diameter)	Water inlet H/E	mm	25 (Female quick coupling, supplied, integrated solution)	
	Water outlet H/E	mm	25 (Female quick coupling, supplied, integrated solution)	
	Cold water in	inch	3/4 (female)	
	Hot water out	inch	3/4 (female)	

KITS CONNECTED TO DHW CYLINDER		DOMESTIC HOT WATER CYLINDER EKHTSU
EKFMAHTB	Option Kit for Standalone Cylinder, includes Top Plate and Adaptors (to go from quick couplers to screw connections)	.

Daikin solar thermal system

Technical data



SOLAR COLLECTOR			EKSV21P	EKSV26P	EKSH26P
Orientation			Vertical		Horizontal
Dimensions	H x W x D	mm	2006 x 1006 x 85	2000 x 1300 x 85	1300 x 2000 x 85
Gross Area		m ²	2.1	2.6	
Net Area		m ²	1.79	2.35	
Weight		kg	35	43	
Water Content		litres	1.3	1.7	2.1
Absorber	Harp-Shaped Copper Pipe with Laser-Welded Highly Selective Coated Aluminium Plate				
Coating	Micro-Therm (Absorption max. 96%, Emission ca. 5% +/- 2%)				
Glazing	Single Pane Safety Glass, Transmission +/- 92%				
Heat Insulation	Mineral Wool, 50mm				
Max. Pressure Drop at 100l/min		mbar	3.5	3	0.5
Allowed Roof Angle	15° to 80°				
Max. Standstill Temperature		°C	200		
Max. Operating Pressure		bar	6		
Thermal Capacity (*)		kJ / K	7.0		
Zero Loss efficiency (o)	Absorber/Gross	%	0.784 (78.4%)		
Heat Loss coefficient (a1)	Absorber/Gross	W/m ² K	4.25		

The collectors are standstill resistant over a long period and are tested for thermal shock.
 Minimum collector yield over 525kWh/m² at 40% covering proportion, location Würzburg, Germany.
 (*) Thermal performance tested according to EN12975-2:2006.
 Reference surface for o, a1, a2 = absorber surface & gross surface.



SOLAR ENABLING KIT			EKSOLHWAV1
Dimensions	H x W x D	mm	770 x 305 x 270
Heat Exchanger	Pressure Drop	kPA	21.5
	Max. inlet Temp	°C	110
	Heat Exchange Capacity	W/K	1400
Ambient Temperature	Max.	°C	35
	Min.	°C	1
Power Supply	1-phase / 230V / 50Hz		
Power Supply intake	Indoor Unit		
Weight		kg	8
Sound Pressure Level		dBA	27



SOLAR PUMP STATION			EKSRDS1A with controller EKSR3PA
Mounting Method			On Wall
Dimensions	H x W x D	mm	332 x 230 x 145
Power Supply			1-phase / 230V / 50Hz
Control			Digital Temperature Difference Controller with Plain Text
Max. Electric Power Consumption of the Control Unit		W	2
Solar Panel Temperature Sensor			Pt1000
Storage Tank Sensor			PTC
Return Flow Sensor			PTC
Feed Temperature and Flow Sensor (option)			Voltage Signal (3.5V DC)

Underfloor heating plates

Technical data



ROTEX

UFH SYSTEM PLATES		PROTECT INTEGRAL 33-3	PROTECT 10	PROTECT MINI	PROTECT MINI SOLO
Part Number		171040	171041	171037	171038
For Pipe	mm	Dia 14 / 17		DUO 13, Monopex 14	
Pipe Spacing	mm	75, 150, 225, 300			
Height	mm	48	28	25	17
Insulation Thickness	mm	33-3	10	-	-
Height With Screed	mm	94	74	-	-
Plate Dimensions	mm	1200 x 1200	1200 x 1200	1200 x 1200	-
Package Contents	m ²	8 pcs = 11.71	13 pcs = 19.0	10 pcs = 14.6	10 pcs = 14.6
Thermal Resistance	m ² K/W	0.75	0.29	0.20	-
Impact Sound Insulation		Yes	-	-	-



UFH SYSTEM PLATES		MONO 15	COMPACT 45	ISODUR
Part Number		171010	171017	171013
For Pipe	mm	Dia 14 / 17		DUO 25
Pipe Spacing	mm	75, 150, 225, 300		200, 300, 400
Height	mm	38	67	55
Insulation Thickness	mm	15	45	25
Height With Screed	mm	79	108	55
Plate Dimensions	mm	1200 x 600		
Package Contents	m ²	14 pcs = 14.4	11 pcs = 7.92	14 pcs = 10.08
Thermal Resistance	m ² K/W	0.43	1.28	0.85



SECCO DRY SYSTEM		SECCO ALUMINIUM PLATES	
Part Number		171112	171113
For Pipe		Monopex 14 Al	DUO 17 Al
Compatible With		Mono And Compact System Plates	
Material		Galvanised Sheet Steel	
Pack Area	m ²	5.35	
Package Contents	mm	1200 x 370 (qty 8) 400 x 370 (qty 6)	

Gas Compact Unit

Technical data



Gas Compact Unit		GCU315/315 Bivalent	GCU324/324 Bivalent	GCU515/515 Bivalent	GCU524/524 Bivalent	GCU533/533 Bivalent
Part Number		157401 / 157402	157409 / 157408	157403 / 157404	157410 / 157406	157405 / 157407
Total Storage Capacity	litres	300	300	500	500	500
Empty Weight	kg	86	86	124	124	124
Total Filled Weight	kg	386	386	624	624	624
Dimensions (W x D x H)	mm	595x615x1920	595x615x1920	790x790x1920	790x790x1920	790x790x1920
Max. Permissible Storage Tank Water Temperature	°C	85	85	85	85	85
Heat Loss	kWh/24h	1.7	1.7	1.8	1.8	1.8
Drinking Water Heating						
Drinking Water Capacity	litres	19	19	24.5	24.5	24.5
Maximum Operating Pressure	bar	6	6	6	6	6
Drinking Water Heat Exchanger Surface	m ²	4	4	5	5	5
Storage Tank Charging Heat Exchanger						
Surface Area Charging Heat Exchanger	m ²	1.9	1.9	2.1	2.1	2.1
Solar Heating Support						
Heat Exchanger Surface Area	m ²	0.8	0.8	1.7	1.7	1.7
Thermal Output Data						
D Value (Specific Water Flow to EN 625*)	l/min	22	24	23	25	27
Max. Draw-Off Rate for a Period of 10min at (T _{KW} = 10°C/T _{sp} = 60°C/T _{WW} = 40°C)	l/min	19	21	20	23	24
Boiler Data						
Nominal Output	kW	5-15	5-24	5-15	5-24	5-33
Device Type		B23 / B23P / B33 / B53 / B53P / C13x / C33x / C43x / C53x / C63x / C83x				
Electrical Data	V/Hz	230/50	230/50	230/50	230/50	230/50
Protection Rating	IP	20	20	20	20	20
Maximum Permissible Operating Pressure	bar	3	3	3	3	3
Maximum Permitted Operating Temperature	°C	85	85	85	85	85
Flue Gas / Air Inlet Connection Diameter	mm	DN60 / 100				
SEDBUK (2009)	%	TBC				
Piping Connections						
Hot and Cold Water	inch	1				
Heating (Flow And Return)	inch	1				

* The specific water flow as defined in EN 625 is the domestic hot water flow which the Gas Compact Unit can supply at an average temperature increase of 30K with two successive withdrawals of water of ten minutes duration each, assuming a charging temperature of 65°C. An interval of 20 minutes is normally assumed between the withdrawals. The Gas Compact Unit achieves these values even with shorter intervals.

Awards & industry associations

National Heat Pump Awards 2013

In 2013 Daikin Altherma LT Split was highly commended for Product Innovation of the Year Award at the National Heat Pump Awards.



In our efforts to support the industry and drive forward developments of new technology, Daikin UK supports the following organisations:

- > Chartered Institute of Plumbing and Heating Engineers (CIPHE)
- > Federation of Environmental Trade Associations (FETA)
- > Heat Pump Association (HPA)
- > Micropower Council
- > Heating and Hot Water Industry Council (HHIC)
- > Domestic Heat Pump Association (DHPA)
- > Heating and Ventilating Contractors' Association (HVCA)
- > National Energy Action (NEA)
- > Northern Housing Consortium
- > Scottish Federation Housing Association (SFHA)
- > Chartered Institute of Building Services Engineers (CIBSE)
- > Building Services Research and Information Association (BSRIA)



Rushlight Awards 2011

In 2011 Daikin Altherma Flex Type won the Ground and Air Source Power award at the Rushlight Awards.

Environmental & Energy Awards 2011

In 2011 the Innovation Award for Environmental Technology at the Environmental & Energy Awards was given to Daikin Altherma Flex Type.



National Heat Pump Awards 2011

In 2011 Daikin Altherma Flex Type won another award at the National Heat Pump Awards for Product Innovation of the Year.



Service dedicated to your needs

When you select a Daikin system, you can depend on absolute quality and reliability, both of our products and of our service.

Support at all stages

As part of our commitment to ongoing service and quality, Daikin offers pre-sales and after-sales support and advice at all regional offices, supported by a dedicated heating team.

Design assistance

When designing a Daikin system, Daikin Altherma selection software can show you the heating system required, its typical running costs, energy consumption and CO₂ savings. System schematics and heat loss calculation tools are also available to help you select the best system for your requirements.

Installer training

Daikin UK's customised product training for installers is designed to raise standards, set industry benchmarks and help develop both product and service expertise. We provide the highest quality training and hands on instruction at our industry leading technology centres, throughout the country in Glasgow, Birmingham, Bristol, Manchester and Woking. The centres are fully equipped with the latest range of products installed and fully operational for maximum hands on experience.

Local training centres

Daikin also partners with specialist technical colleges – City of Bath College, College of North West London, Dudley College, West Suffolk College and PGL Training in Exeter – to help raise standards, set industry benchmarks and ensure that Daikin trained heating engineers have the necessary expertise to deliver the highly energy efficient heating systems on which our future homes will depend.

As well as having a range of Daikin UK heating courses accredited by EAL, Daikin UK has also joined forces with the National Skills Academy for Environmental Technologies to create its first national manufacture hub. For more details please view the Daikin UK training brochure.



Daikin Product Warranty

Daikin are pleased to offer industry leading warranties provided that the warranty registration form has been completed and returned, and that the system has been correctly installed and maintained in accordance with our instruction manuals. Full details of the Terms and Conditions are available separately on request.

- > The Daikin Altherma heat pump (excluding Daikin Altherma Flex Type) has the benefit of a 3-year parts and labour warranty.
- > The Daikin solar panels have the benefit of a 10-year warranty. For the first 3 years, the warranty for the panel will apply to both parts and labour and for the following 7 years, on parts only. In addition, all other solar system accessories have a 3 year warranty.



Comprehensive service support

Daikin UK offers comprehensive service support for all heating and renewable products.

- > Expert and experienced advice
- > Dedicated technical helpline for warranty calls
- > Local fast response
- > Nationwide network of Daikin trained service engineers
- > Comprehensive warranty offer

Contact Details

Pre-sales enquiries

Please contact your local regional sales office

After sales technical support

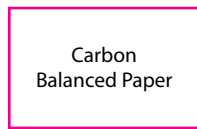
0845 641 9200 / 0845 641 9277

Warranty

0845 641 9275

Training

0845 641 9260



011-7S1016 F



MCS HP0006



Daikin units comply with the European regulations that guarantee the safety of the product.



Daikin Europe N.V. participates in the Eurovent Certification programme for Air conditioners (AC), Liquid Chilling Packages (LCP), Air handling units (AHU) and Fan coil units (FCU). Check ongoing validity of certificate online: www.eurovent-certification.com or using: www.certiflash.com

Daikin products are distributed by:

The present catalogue is drawn up by way of information only and does not constitute an offer binding upon Daikin UK. Daikin UK has compiled the content of this catalogue to the best of its knowledge. No express or implied warranty is given for the completeness, accuracy, reliability or fitness for particular purpose of its content and the products and services presented therein. Specifications are subject to change without prior notice. Daikin UK explicitly rejects any liability for any direct or indirect damage, in the broadest sense, arising from or related to the use and/or interpretation of this catalogue. All content is copyrighted by Daikin UK.

Daikin Airconditioning UK Limited The Heights Brooklands Weybridge Surrey KT13 0NY Tel 0845 6419000 Fax 0845 6419009 daikin.co.uk

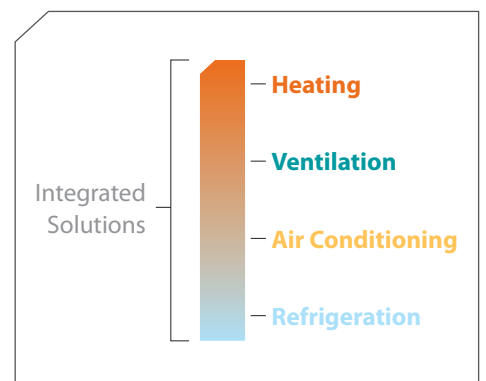
Dedicated Heating Line: 0845 641 9070

Scotland Region 0845 641 9330	Northern Region 0845 641 9340	Midlands Region 0845 641 9370	Western Region 0845 641 9320	North London 0845 641 9360	South London 0845 641 9355
-----------------------------------------	-----------------------------------------	-----------------------------------------	----------------------------------------	--------------------------------------	--------------------------------------



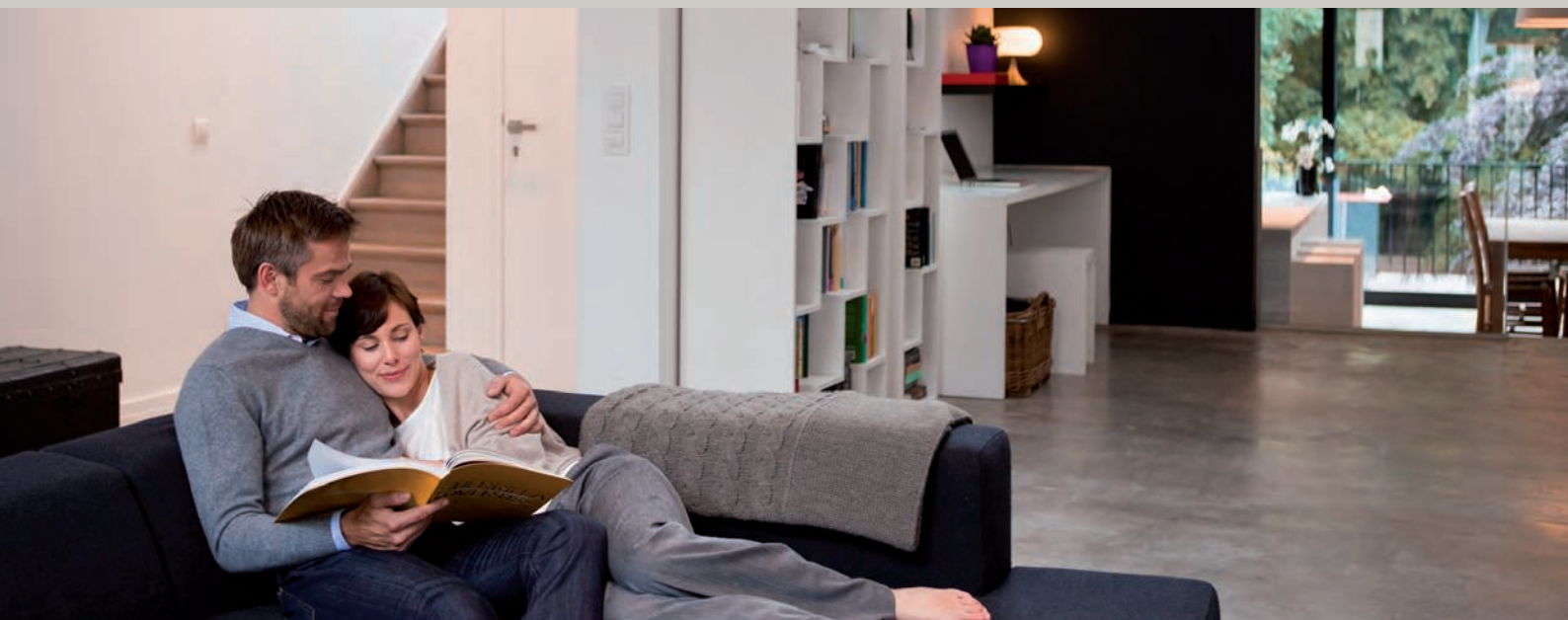
Daikin Solar Thermal Systems

Renewable energy from the sun



Daikin Solar Thermal Systems

Daikin Solar Thermal Systems feature the latest solar thermal panel technology to harness renewable, inexhaustible, energy from the sun.



As a system manufacturer with extensive experience in development and manufacturing renewable systems, Daikin is continuously updating and expanding its manufacturing facilities and are acknowledged as leading in their field in Europe.

Daikin UK is a nationwide company with headquarters in Weybridge, Surrey and regional offices in Birmingham, Bristol, Manchester and Glasgow to support your local needs.

Daikin manufactures solar panels and provides all key system components for the complete hot water system. All components are optimised and designed to work together to ensure the greatest energy efficiency and highest level of comfort.

Daikin systems use tried and tested technology to suit every requirement

As a global leader with more than 50 years experience in the design and manufacture of heating and cooling technology, Daikin provides a comprehensive choice of domestic heating and renewable energy products which are ideally suited to the UK housing market. With our extensive range of high efficiency heat pumps and solar thermal systems, we offer the most advanced solutions for new builds, renovation projects and retrofit installations – from detached rural homes and harder to heat older properties to city centre apartment schemes and affordable housing.

Heating and renewables

Over recent years, Daikin's product portfolio has expanded from air to water heat pumps to solar thermal technology and underfloor heating, suitable for residential and commercial sectors. Benefitting from more than 35 years experience of solar thermal design and manufacturing, Daikin offers a reliable and wide range of solar solutions.

Daikin's efficient heating solutions make maximum use of the renewable energy all around us, converting free heat from the air and the sun to deliver completely reliable and controllable heating and hot water for homes, even when temperatures outside are below zero.

Daikin systems connect seamlessly

Daikin solar systems are perfect partners for Daikin Altherma air to water heat pumps and ROTEX GasSolarUnits. When also combined with underfloor heating, fan convectors or other heat emitters, the full Daikin range creates a highly economical, versatile and energy efficient home heating system.

For further details on other product ranges, please contact Daikin.

Why use solar?

Solar thermal technology is a way of using solar panels to harness solar energy for hot water systems.



The fossil fuel based energy sources that we use today are limited and precious with prices continuously rising.

Energy must be used in the most efficient way possible to minimise consumption costs and to protect the environment. At the same time renewable energy should be used as much as possible to reduce dependency on fossil fuels, to protect the environment, and importantly, to meet international and Government targets on reducing CO₂ emissions.

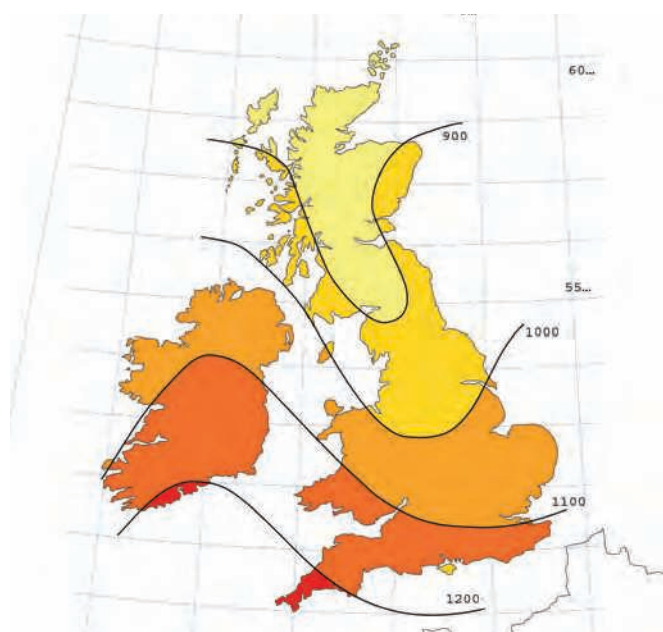
Using solar thermal energy is a very effective method of displacing other primary energy to provide hot water.

A well designed solar system is able to deliver as much as 60% of a home's typical hot water demand over the year. Solar thermal systems are also an ideal partner for today's advanced heat pump systems.

Daikin Solar Systems feature the latest solar thermal technology to harness renewable, free energy from the sun. The Daikin Solar range is suitable for domestic hot water preparation for domestic and light commercial use.

The UK receives approximately 900-1200 kWh of solar energy per square metre land area each year. This is sufficient energy to meet up to 100% hot water demand in the summer from a well designed domestic solar thermal system. Daikin solar panels are able to utilise direct and diffuse radiation from the sun.

Thus even on cloudy days, where diffuse radiation is present the panels will be able to utilise solar energy and convert it into heat.



Above: Map showing the total average solar irradiation falling on a one square metre surface on the ground, measured in kilo-watt hours (kWh). This shows that the sun's rays falling on the ground range from more than 1200 kWh m² in the far south west of the UK, to approx 900 kWh m² in central and northern Scotland.

Reproduced with permission from Solar Trade Association.

How does solar thermal technology work?

Daikin high-performance solar panels are specially designed to maximise the energy which is absorbed and converted into useful heat.

How do the solar panels work?

Daikin highly efficient solar panels absorb solar energy and convert it into useful heat. The solar panel is constructed with a single pane safety glass with 92% transmission rate and a highly selective coated aluminium absorber plate. The 50mm mineral wool insulation reduces heat loss through the panel, thus increasing efficiency. The highly selective coating on the panel surface is designed to utilise shortwave solar radiation and convert it into heat.

How does the system work?

The **pressurised solar system** is filled with a glycol antifreeze solar fluid which collects the energy and transfers it to the hot water cylinder. Temperature sensors are installed in the solar panel array and in the hot water cylinder. The solar controller monitors the temperatures and determines when to switch on the solar pump. As soon as the temperature of the solar fluid in the solar panel exceeds the cylinder temperature by a predetermined value, the digital solar control starts the solar pump and charges the cylinder. Solar heat is then transferred from the solar panels into the hot water cylinder.

The **drainback solar system** utilises a thermal store for hot water collection. Water within the store is passed through the solar panels to collect energy and drains back into the store. This system does not require glycol or a solar fluid collection vessel, as the thermal store collects the drained solar fluid, resulting in lower maintenance costs.

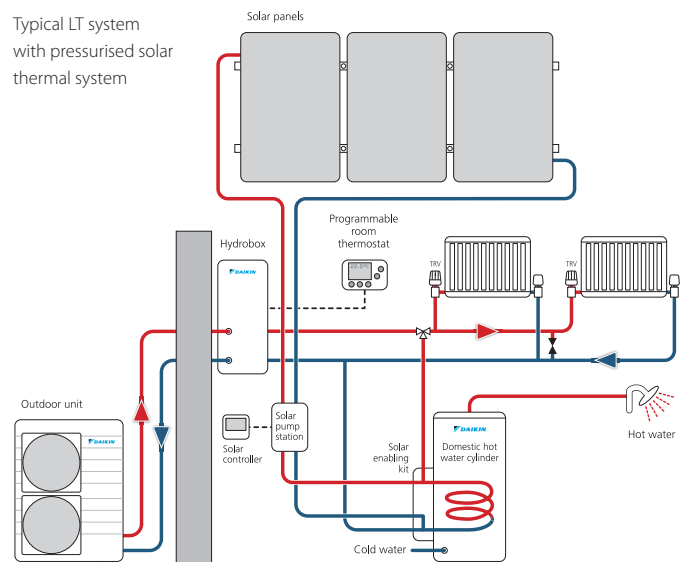
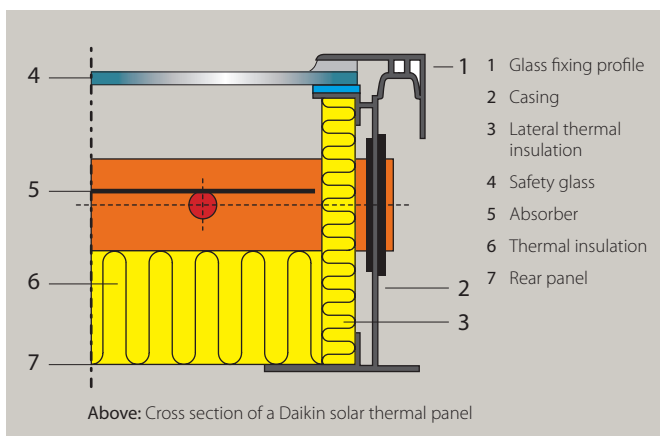
Daikin hot water comfort

The Daikin **pressurised solar system** is designed for the Daikin Altherma Low Temperature air-water heat pumps. A specially designed solar enabling kit is fitted to the Daikin hot water cylinder and means that the cylinder can be heated by the Daikin solar system or by the Daikin Altherma heat pump.

The solar hot water enabling kit has an external solar heat exchanger to transfer solar energy to the hot water cylinder. This means that the whole cylinder is heated by the solar thermal system or by the Daikin Altherma heat pump for maximum efficiency and hot water comfort, and means that there are no cold spots in the cylinder.

The Daikin **drainback solar system** is designed for use with Daikin Altherma High Temperature air-water heat pumps. The solar pump station and controller are fixed onto the front of the thermal store and the whole volume can be heated by solar energy.

The intelligent heat pump controller works in solar priority mode and ensures that when there is sufficient solar gain, the heat pump is disabled to ensure maximum hot water efficiency. Whenever additional energy is needed such as during cloudy days, the air source heat pump is then activated for hot water support.



Why consider solar thermal?

A solar hot water system will help to protect the environment by using a free source of energy to generate hot water. Combining the Daikin Altherma low or high temperature heat pump system with a solar thermal system, offers a fully integrated renewable package, designed to work together for optimum performance and maximum efficiency.



Meeting Building Regulations

New buildings must comply with the Building Regulations Part L and they are also required to meet the Code for Sustainable Homes. All homes must also have an Energy Performance Certificate when they are sold. A solar thermal system will help towards meeting these challenging targets by providing energy from a renewable source. For new build and refurbishment alike, solar energy can help to provide an environmentally sound solution towards reducing CO₂ emissions from the home and meeting the legislation in place now and in the future.

Benefits for homeowners

Hot water throughout the year: The solar system works all year round. An auxiliary heat source, such as a heat pump, will be needed to supplement the solar system during the winter months.

Cut energy bills: Sunlight is free, so once the initial installation has been paid for, the costs for heating hot water will be significantly reduced.

Reduced carbon footprint: Solar hot water is a renewable heating system and doesn't release any harmful carbon dioxide or other pollutants while it is running. The sun is a free, clean and reliable energy source.

Features and benefits

Daikin solar panel:

- > High efficiency flat plate panels for maximum solar gain
- > Selective absorber coating for highest efficiency
- > Quick and easy installation with a variety of installation kits
- > Robust panel design with toughened glass for peace of mind
- > Highly insulated (50mm) for improved efficiency

Daikin solar system:

- > Intelligent control to optimise solar energy usage
- > Simple and reliable technology
- > CO₂ reduction, environmental benefits
- > Daikin solar system and Daikin Altherma heat pump helps towards achieving high levels in the Code for Sustainable Homes
- > Automatic and controlled solar pump speed for maximum efficiency
- > Can be retrofitted to existing Daikin heat pump installations
- > Range of pressurised and drainback systems

How to size the system?

When selecting a system it is important to consider not simply how much energy the solar panel can gather under optimum conditions, but how it will be affected by local site conditions.

Designing an effective solar thermal system

To ensure maximum efficiency, it is important to understand the various factors that influence performance and output – including the size and type of panels used, roof orientation and pitch plus the location of the property.

Solar panels should ideally face south for optimum solar gain. However, they can still be effective if the roof is facing anywhere between east and west through south.

The angle of inclination is also important to the effectiveness of solar panels. The optimum fixed installation angle in the UK for year round performance is 30-45 degrees. In the majority of cases the angle of installation is determined by the existing roof pitch.

It is also important to ensure that the roof is clear from overshadowing trees or objects, for example chimneys.

Important factors to consider when designing a solar system

There are many factors which need to be considered when designing a solar system, and these are also explained in the Government's approved SAP 2009 design method and are briefly listed below. The overall performance of a solar water system depends on how the hot water system is used eg. daily draw-off patterns and the use of any auxiliary devices.







Factors to consider:

- > Annual solar radiation
- > Number of people in the home
- > Hot water usage patterns
- > Available roof area
- > Roof orientation and inclination
- > Overshading from trees or chimney

Information for SAP assessors (SAP 2009)

Solar panel		EKSV26P	EKSH26P
Gross / Net panel area	m ²	2.6 / 2.36	
Zero loss efficiency	-	0.784	
Heat loss coefficient	W/m ² K	4.25	

Guide to selecting a solar thermal system

						
Solar panels	1 (2m ²)	1 (2m ²)	2 (4m ²)	2 (4m ²)	3 (6m ²)	3 (6m ²)
Hot water cylinder	150 litres	200 litres	200 litres 300 litres	200 litres 300 litres	300 litres	300 litres

Assumptions:

- > Daily hot water requirement = 50 litres per person
- > 1m² of panel per person
- > 50 litres of hot water storage per 1m² of panel
- > Typical south facing at 30-45° inclination

Fixing systems for every roof type

The Daikin range of solar panels come with options to meet any installation requirement. Highly efficient Daikin solar panels are available in vertical and horizontal orientation for on-roof, in-roof and flat roof applications.

Daikin solar flat plate panel

- > For pressurised and drainback systems
- > Highly efficient flat plate aluminium panel
- > 2.3m² net panel area
- > Solar Keymark certified
- > Installation angle 15-80 degrees
- > 50mm mineral wool insulation
- > Laser welded and harp shaped collector inside
- > Slimline 85mm deep panel
- > 10 year panel warranty*
- > For pressurised and drainback solar systems

* Further details on request



EKSH26P

Performance and technical characteristics

Solar panel			EKSV26P	EKSH26P
Position			Vertical	Horizontal
Dimensions	HxWxD	mm	2000x1300x85	1300x2000x85
Weight		kg	42	
Max. operating pressure		Bar	6	
Max. standstill temperature		°C	200	

Roof fixing options:

On-roof:

These roof fittings are more suited to fixing solar panels to existing properties as they are mounted on top of the roof tiles.

In-roof:

Designed to fit seamlessly into the building roof schedule as they are installed in the roof structure. Daikin solar panels are low profile and when fitted in-roof offer an improved aesthetic look.

A-frame:

Designed for flat roof and ground installations. The angle of pitch can be adjusted to suit location and preference. Easy to fit, install and provide solar for any location.

Daikin solar panels have **Solar Keymark certification**, which is the European quality label for solar thermal panel.

This accreditation certifies that the Daikin solar panels (models EKSV26P and EKSH26P) comply with EN 12975. The Solar Keymark certification helps customers to select quality assured solar panels. Daikin solar panels are listed on the Solar Keymark Collector international database.

For an up to date list of products awarded the Solar Keymark, go to www.estif.org/solarkeymark and click 'products'!



011-751016 F

Daikin solar pack components

Daikin solar packs are designed for easy ordering and installation. All the necessary components are included in packs and are designed to fit easily together. Optional solar accessories can be ordered separately if needed. Daikin solar packs include the following as standard:

- > Solar panels
- > Solar pump station
- > Solar flow sensor (pressurised only)
- > Roof fixings
- > Solar controller
- > Solar fluid (pressurised only)
- > Mounting rails and solar connection kit
- > Roof flashing (drainback only)

Daikin components have been inherently designed to work seamlessly together for the most efficient, hassle free and safe installation and operation.

Solar pump station and flow sensor

- > Pressurised solar pump station with Grundfos solar 25-65 pump
- > Automatic pump speed control
- > Flow and return temperature gauges
- > Safety valve and pressure gauge
- > Expansion vessel gauge
- > Filling valves
- > The drainback controller contains the pump station

Daikin solar controller

- > Differential temperature controller
- > Temperature sensors
- > Supplied with connection and extension cables for easy installation
- > Frost and leak protection
- > Compatible with Daikin Altherma heat pump



Above: Daikin solar pump station



Above: Drainback solar controller and pump station

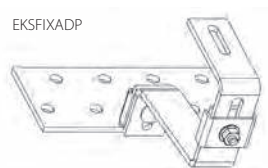
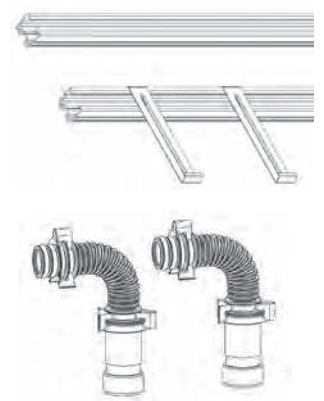
Performance and technical characteristics

			Pressurised	Drainback
Solar pump station			EKSRDS1A	EKSRPS3
Dimensions	HxWxD	mm	410x240x130	230x815x142
Power supply			230V/50Hz	
Solar panel circulation pump			Grundfos Solar 25-65 130	Grundfos UPSO 15-65 & UPS 15-65
Max. electric power consumption of the pump	W		52	120
Max. operating pressure	bar		6	-
Max. pump capacity	m ³ /h		2	-
Pressure gauge	bar		0-10	-
Temperature range	°C		0-120 (short-term 160)	-
Connections			4x 1 1/4" female for Ø 22 clamping ring bolt	
Solar controller			EKSR3PA	-
Dimensions	HxWxD	mm	332x230x145	230x815x142
Power supply			230V/50Hz	
Control			Digital differential temperature regulator with plain text display	
Max. electric power consumption of the control system	W		2	2

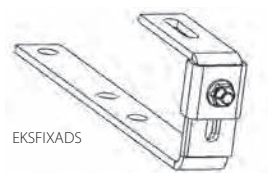


Mounting rails and solar connection kit

- > Mounting rails for connection to roof brackets and hangers to mount solar panels
- > Quick coupling solar connections and 22mm compression fittings to field piping
- > 2m UV resistant heat insulation included
- > Pipe clamps and connection fittings
- > Available for pressurised and drainback solar



EKSFIXADP



EKSFIXADS

Roof fixings options

The following on-roof fixing options are available in the solar packs:

- > **EKSFIXADP:** Suitable for curved roof tiles, with a double height adjustable feature
- > **EKSFIXADS:** Suitable for flat tiles, with a single height adjustable feature

Also available separately to order:

- > **EKSFIXWD:** Suitable for corrugated roofing
- > **EKSFIXBD:** Suitable for metal roofing types

Solar accessories

A full range of optional accessories are available to complete the solar installation:

- > Solar pipework for pressurised and drainback solar
- > Solar pipework extension kit
- > Expansion vessel with bracket and flexi hose (25L and 35L)



Daikin solar packs

Solar packs quick reference table

System type	Orientation	Fixing type	Tile	Roof cowl	1 panel pack	2 panel pack	3 panel pack	4 panel pack	5 panel pack	
Pressurised	Vertical	On-roof	Profiled tile	-	UK.SP1VPP	UK.SP2VPP	UK.SP3VPP	-	-	
			Slate/flat tile		UK.SP1VSP	UK.SP2VSP	UK.SP3VSP			
		In-roof	Profiled/slate/flat tile		-	UK.SP2VIP	UK.SP3VIP			
		A-frame	-		UK.SP1VAP	UK.SP2VAP	UK.SP3VAP			
	Horizontal	On-roof	Profiled tile		UK.SP1HPP	UK.SP2HPP	UK.SP3HPP			
			Slate/flat tile		UK.SP1HSP	UK.SP2HSP	UK.SP3HSP			
		A-frame	-		UK.SP1HAP	UK.SP2HAP	UK.SP3HAP			
			-		-	-	-			
Drainback	Vertical	On-roof	Profiled tile	Anthracite	UK.SP1VPDBA	UK.SP2VPDBA	UK.SP3VPDBA	UK.SP4VPDBA	UK.SP5VPDBA	
				Red	UK.SP1VPDBR	UK.SP2VPDBR	UK.SP3VPDBR	UK.SP4VPDBR	UK.SP5VPDBR	
			Slate/flat tile	Anthracite	UK.SP1VSDBA	UK.SP2VSDBA	UK.SP3VSDBA	UK.SP4VSDBA	UK.SP5VSDBA	
				Red	UK.SP1VSDBR	UK.SP2VSDBR	UK.SP3VSDBR	UK.SP4VSDBR	UK.SP5VSDBR	
		In-roof	Profiled/Slate/Flat tile	Anthracite	-	UK.SP2VIDBA	UK.SP3VIDBA	UK.SP4VIDBA	UK.SP5VIDBA	
				Red	-	UK.SP2VIDBR	UK.SP3VIDBR	UK.SP4VIDBR	UK.SP5VIDBR	
			Flat-roof	-	Anthracite	UK.SP1VADBA	UK.SP2VADBA	UK.SP3VADBA	UK.SP4VADBA	UK.SP5VADBA
					Red	UK.SP1VADBR	UK.SP2VADBR	UK.SP3VADBR	UK.SP4VADBR	UK.SP5VADBR
		Horizontal	On-roof	Profiled tile	Anthracite	UK.SP1HPDBA	UK.SP2HPDBA	UK.SP3HPDBA	UK.SP4HPDBA	UK.SP5HPDBA
					Red	UK.SP1HPDBR	UK.SP2HPDBR	UK.SP3HPDBR	UK.SP4HPDBR	UK.SP5HPDBR
				Slate/flat tile	Anthracite	UK.SP1HSDBA	UK.SP2HSDBA	UK.SP3HSDBA	UK.SP4HSDBA	UK.SP5HSDBA
					Red	UK.SP1HSDBR	UK.SP2HSDBR	UK.SP3HSDBR	UK.SP4HSDBR	UK.SP5HSDBR
	Flat-roof		-	Anthracite	UK.SP1HADBA	UK.SP2HADBA	UK.SP3HADBA	UK.SP4HADBA	UK.SP5HADBA	
				Red	UK.SP1HADBR	UK.SP2HADBR	UK.SP3HADBR	UK.SP4HADBR	UK.SP5HADBR	

Use the table above to select the correct solar pack for your project.

Service dedicated to your needs

When you select a Daikin system, you can depend on absolute quality and reliability, both of our products and of our service.

Find an installer

Daikin Altherma installers are featured on the Find an Installer page, which offers a fast way to quickly locate your nearest installer. Go to www.daikinheating.co.uk for:

- > A database of Daikin installers in your local area
- > Identification of MCS certified installers
- > Links to local installers' website

Installer training courses

Daikin Solar Training courses

For experienced solar installers, Daikin offer solar product training at each training centre. Please contact our training centre for booking onto our 1 day course.

For new solar installers, it is strongly recommended that the installer first follow an MCS accredited training course, such as BPEC or LOGIC.

These courses are offered by Dakin partner colleges and further details are available from our training team.

BPEC solar thermal course

This course is designed for new solar DHW installers and is specifically designed for experienced heating installers. Please note to comply with current legislation, G3 certification is required to install unvented hot water cylinders and is usually a prerequisite to this course.

Logic solar thermal course

This course is aimed at heating engineers wishing to gain further qualifications and skills in solar hot water heating systems.

Daikin solar training (SE22)

The course offers familiarisation of the Daikin solar range and explains Daikin solar thermal systems (pressurised and drainback), Daikin solar demonstration equipment is also available to view and the attendee will learn how systems operate.

The course explains the principles of selection, design, installation and maintenance of domestic solar hot water systems.

Contact details

Pre-sales enquiries

Please contact your local regional sales office

After sales technical support

0845 641 9200

0845 641 9277

Warranty

0845 641 9275

Training

0845 641 9260

Regional offices

For pre-sales, technical and to place your order:

Midlands region

0845 641 9370

South London

0845 641 9355

Northern region

0845 641 9340

Scottish region

0845 641 9330

North London

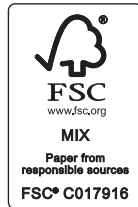
0845 641 9360

Western region

0845 641 9320

Email

heating@daikin.co.uk



Visit www.eca.gov.uk/etl and type 'Daikin' in the quick search box for details of the latest ECA qualifying Daikin units



Daikin Europe N.V. participates in the Eurovent Certification Programme for Air Conditioners (AC), Liquid Chilling Packages (LCP) and Fan Coil Units (FC); the certified data of certified models are listed in the Eurovent Directory. Multi units are Eurovent certified for combinations up to 2 indoor units. VRV products, Rooftops, FWB-J and FWD-units are not within the scope of the Eurovent Certification Programme.



Daikin units comply with the European regulations that guarantee the safety of the product.

Daikin products are distributed by:



The present catalogue is drawn up by way of information only and does not constitute an offer binding upon Daikin UK. Daikin UK has compiled the content of this catalogue to the best of its knowledge. No express or implied warranty is given for the completeness, accuracy, reliability or fitness for particular purpose of its content and the products and services presented therein. Specifications are subject to change without prior notice. Daikin UK explicitly rejects any liability for any direct or indirect damage, in the broadest sense, arising from or related to the use and/or interpretation of this catalogue. All content is copyrighted by Daikin UK.

Daikin Airconditioning UK Limited The Heights Brooklands Weybridge Surrey KT13 0NY Tel 0845 6419000 Fax 0845 6419009 www.daikin.co.uk

Scotland
Region

0845 641 9330

Northern
Region

0845 641 9340

Midlands
Region

0845 641 9370

Western
Region

0845 641 9320

North
London

0845 641 9360

South
London

0845 641 9355