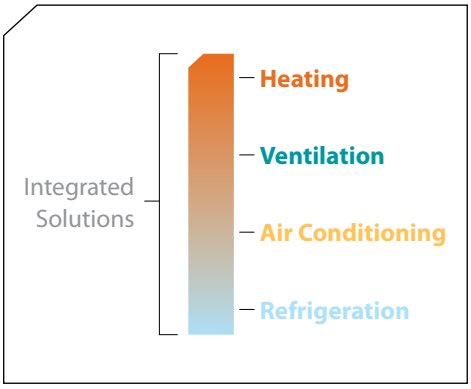
DAIKIN

your comfort. **our world.**

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 CO_2 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 CO_2 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 CO_2 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.

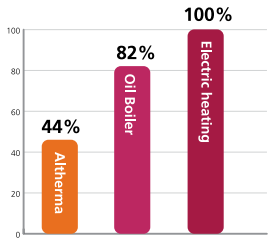
The Code for Sustainable Homes

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.

Daikin Altherma offers lower running costs than oil boilers or electric heating

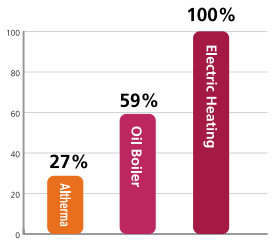


Assumptions

Daikin Altherma Electricity Cost	13p/kWh
Oil Cost	60p/litre
Off-peak Electricity Cost	8p/kWh

Based on typical annual weather conditions in London

Daikin Altherma reduces CO_2 emissions by circa 73% compared with electric heating



Assumptions

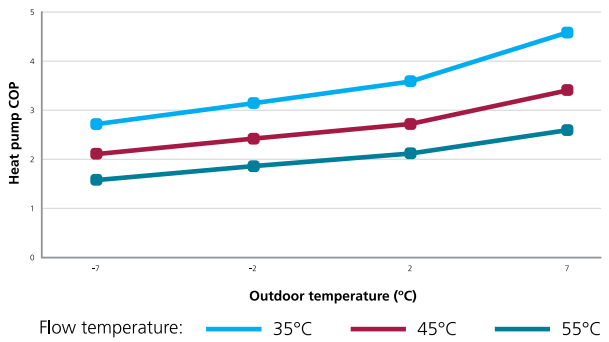
CO_2 emission rates are taken from SAP 2009 version 9.90

- Daikin Altherma AWHP @ 45°C LWT, SCOP 3.6
- Oil Boiler Efficiency 0.89
- Off-peak Electric Heating Efficiency 1.0

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.

Typical AWHP performance



The efficiency of an AWHP increases as the flow temperature from the heat pump decreases, as shown in the graph. To ensure the AWHP system is as efficient as possible, the heat emitters (e.g. underfloor heating or radiators) should be designed to provide sufficient heat output at the lowest possible water flow temperature.

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 5.04[1] 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

[1]ERLQ004CAV3 - 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

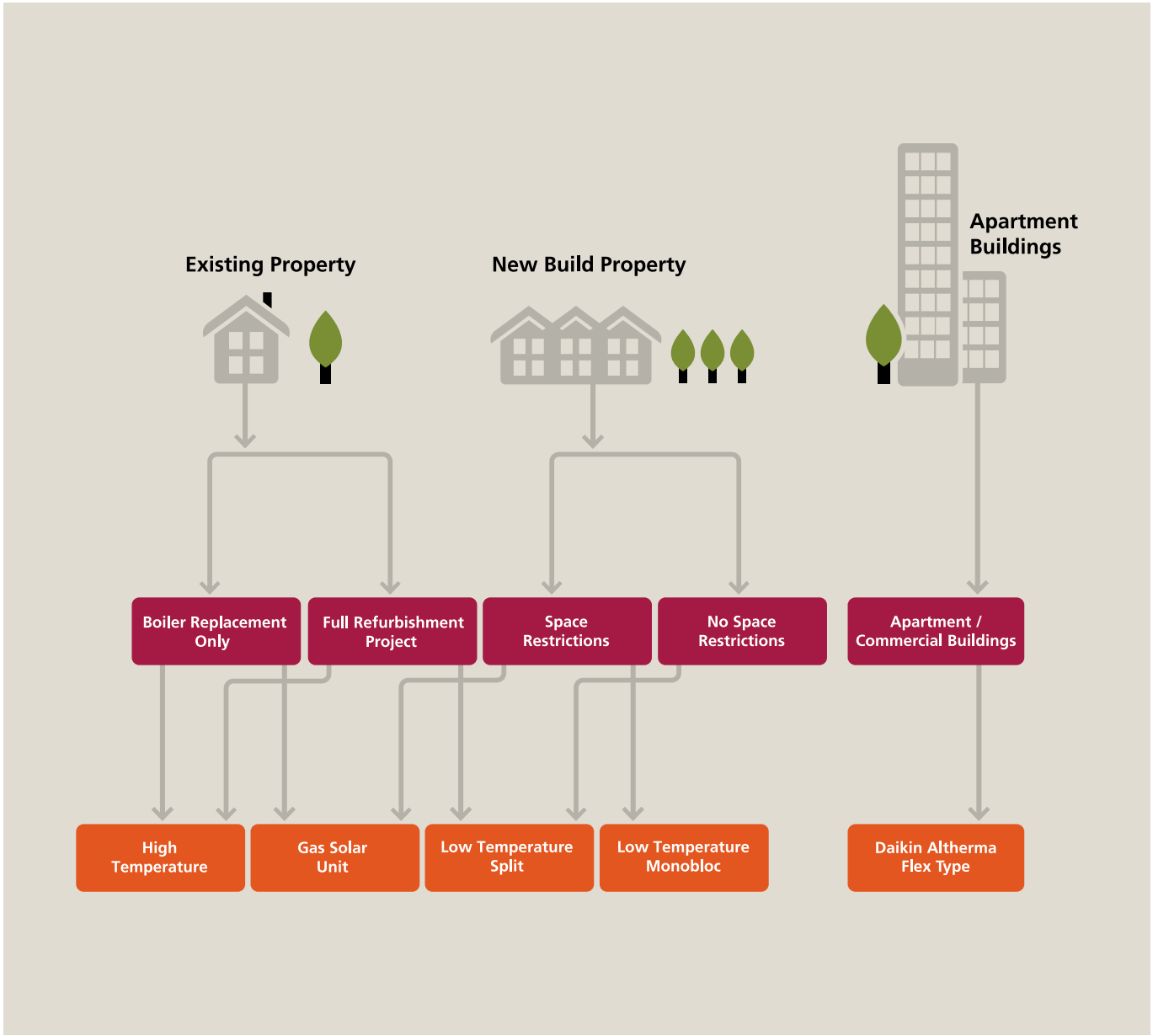
To get a better idea of which Daikin system would best suit your installation, please follow the flow chart showing the preferred applications of the Daikin heating products.

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

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



Daikin Altherma air-water heat pumps

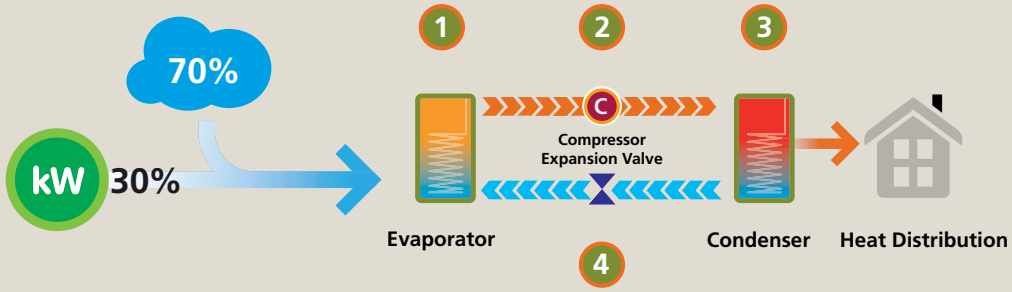
Innovation and quality are constantly at the forefront of Daikin's philosophy. Daikin's systems provide highly efficient solutions, which minimise the impact on the environment and running costs.

Daikin Altherma is a domestic heating and hot water system based on air-water heat pump (AWHP) technology. With over 170,000 installations across Europe, it represents a flexible and cost-effective alternative to a fossil fuel boiler.

How does a heat pump work?

70% of heat is generated free from renewable energy – the air

A heat pump system works like a refrigerator – but in reverse



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 up to 5 times more efficient
> Up to 50% reduction in CO_2 emissions

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 70 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 back-lit controller can also be installed as a modulating room thermostat to improve system efficiencies still further.

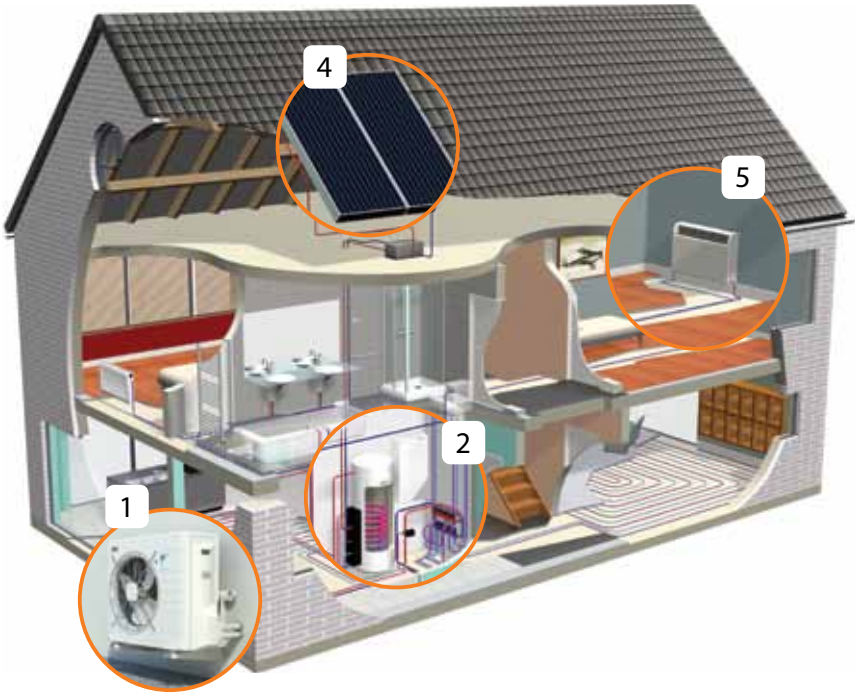
   The new controller has a simple to follow menu structure to allow the system to be set up and optimised for each installation. The controller can be commissioned by PC and has energy metering functionality to help the householder understand how much energy is used and generated by the heat pump.

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, low temperature radiators, heat pump convectors and fan coil units.

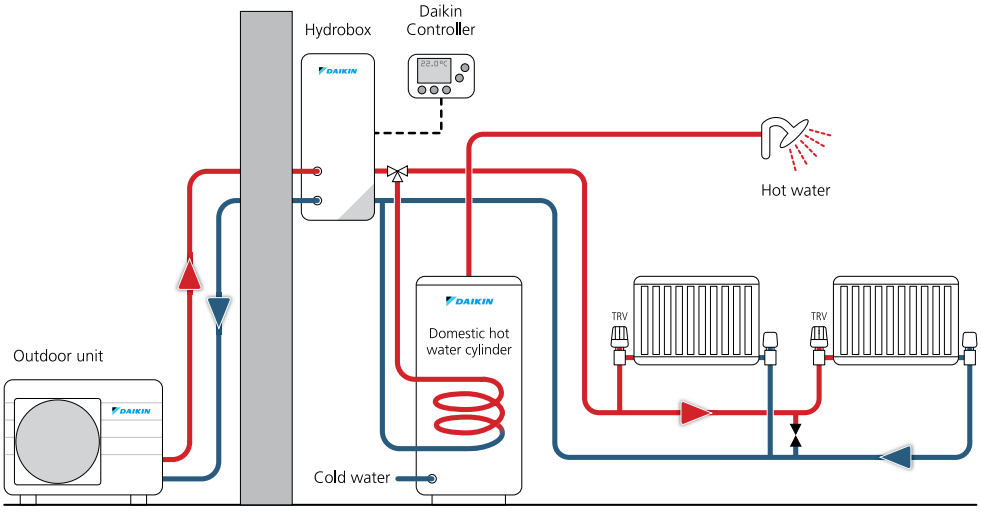
   MCS and SAP Appendix Q certification have been applied for.



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

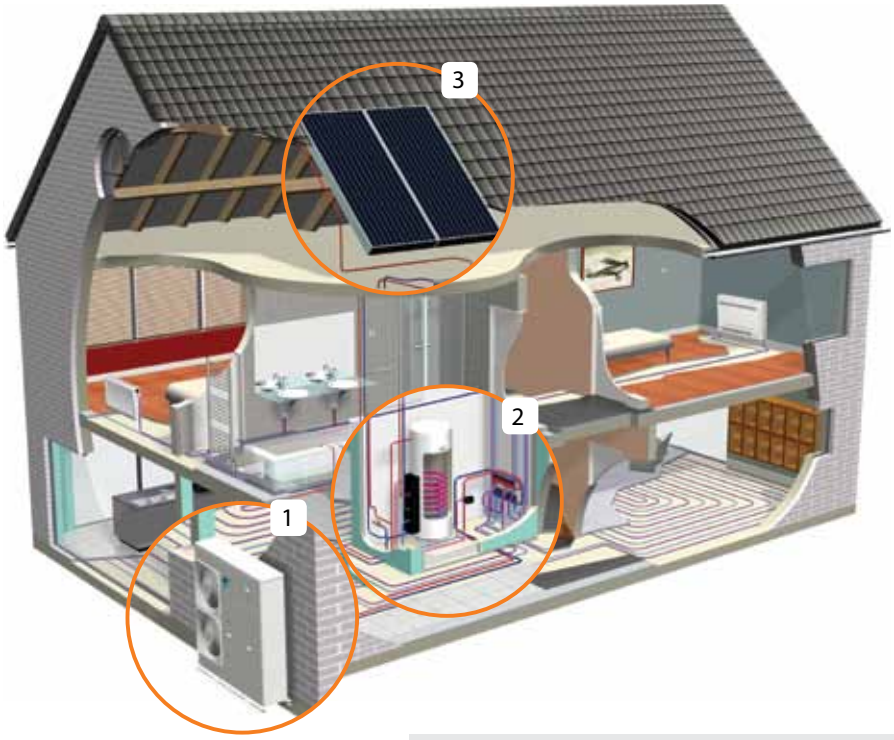
LT split with wall hung indoor unit

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



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

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

- 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

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

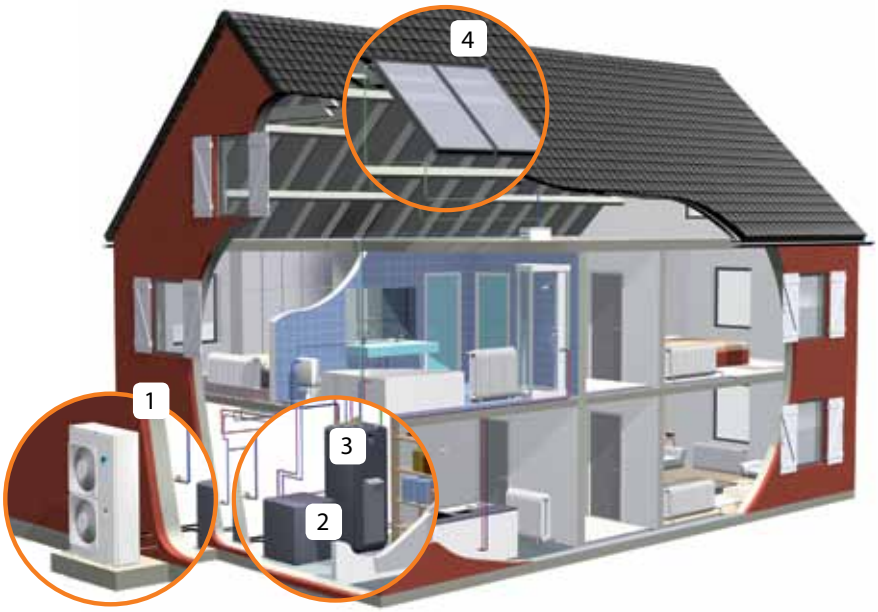
Fan coils also offer the additional benefit of comfort cooling when used in conjunction with a heating and cooling Daikin Altherma system.

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.

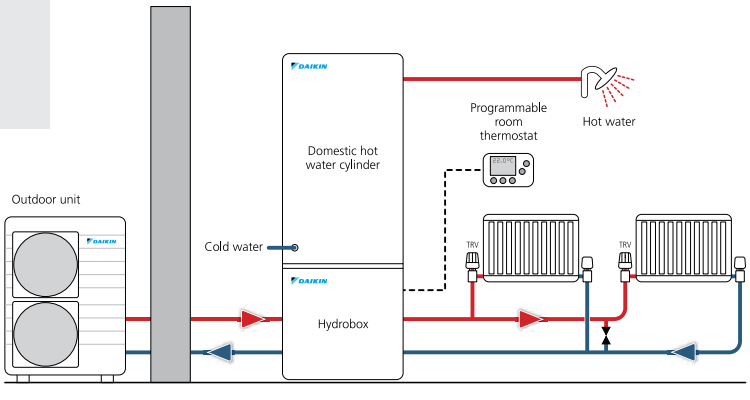


For boiler replacement and retrofit projects:

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.



Typical HT system

DAIKIN ALTHERMA 3 YEAR WARRANTY ON ALL PARTS AND LABOUR

APPROVED PRODUCT MCS BRE GLOBAL LISTED
MCS HP0006

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 CO_2 emissions and
  – 33% less operating costs compared to an installation with individual gas boilers

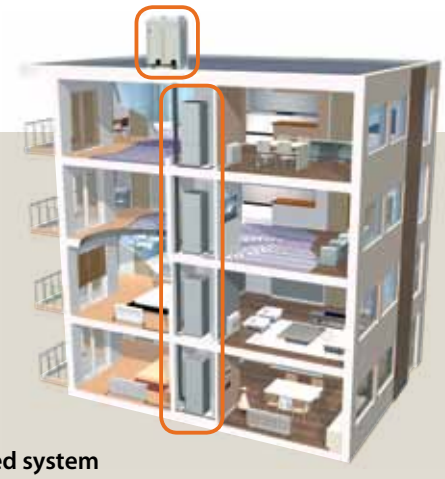
* Simulation calculation carried out on an apartment building in Belgium: 5 floors, 22 apartments, average size per apartment: 107m^2; all apartments are assumed to be heated with under floor heating and radiators.

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

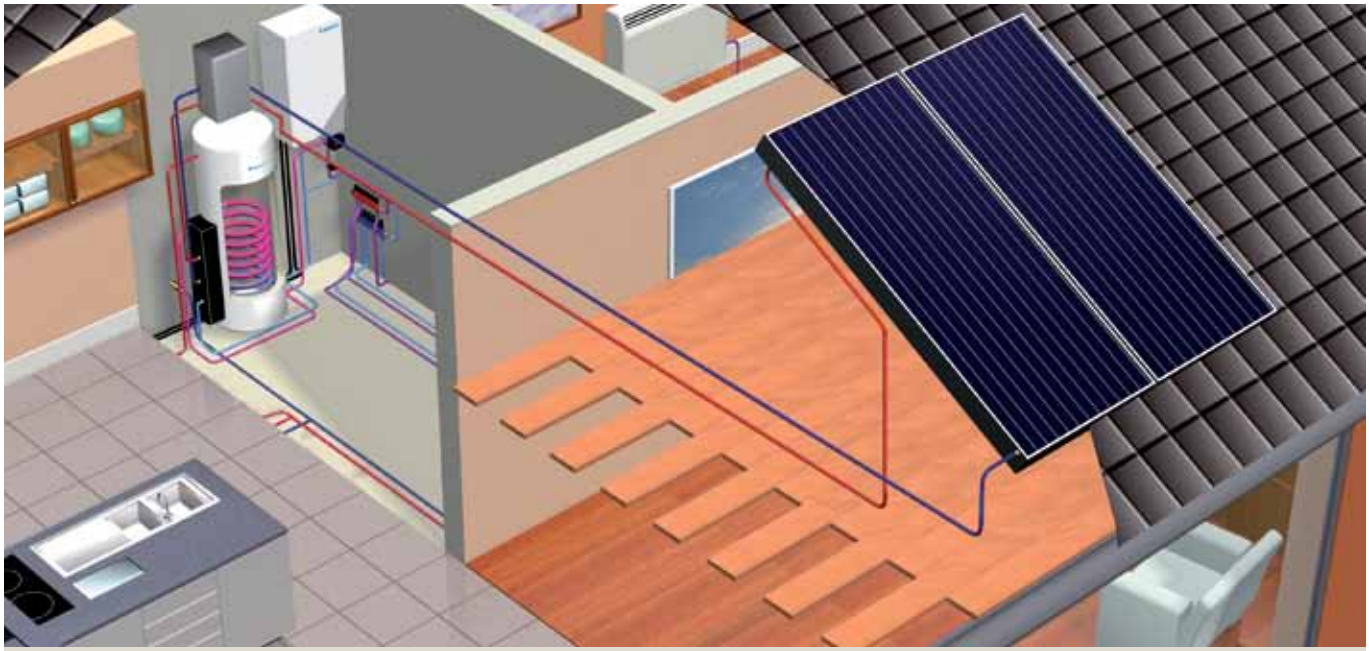
The indoor units can be located together in one central plant room, to create a centralised system suitable for a wide range of large domestic and light commercial applications. The centralised indoor units offer modular system scalability and capacity to meet the heating demand of the overall building.

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.



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

Integrating Daikin solar thermal with the heat pump

In combination with solar collectors, Daikin Altherma maximises the use of renewable free energy from the environment, therefore delivering highest energy utilisation and very low environmental impact.

- Pressurised and drainback systems available
- Daikin solar system and Daikin Altherma heat pump help achieve higher levels in the Code for Sustainable Homes
- High efficiency flat plate collectors
- Quick and easy connection of panels
- Robust panel design
- Selective absorber coating
- Intelligent control for optimum utilisation of the solar energy
- Simple and reliable technology
- CO_2 reduction and environmental benefits
- The solar energy (kWh) is measured by a sensor, which controls the solar pump speed for maximum efficiency
- Can be retrofitted to existing Daikin heat pump installations
- Panel is Solar Keymark approved and qualifies for grant funding

How does it work?

The Daikin high-performance solar panels convert shortwave solar radiation into heat through the highly selective coating. As soon as the temperature of the solar fluid in the solar collector exceeds the cylinder temperature by a predetermined value, the solar control starts the solar pump and charges the cylinder.

Solar heat is then transferred from the collectors into the hot water cylinder via a unique external heat exchanger, which allows the entire content of the cylinder to be heated efficiently by solar energy. This means that the Daikin single coil cylinder can be charged either by the heat pump or by the solar system when solar energy is available.

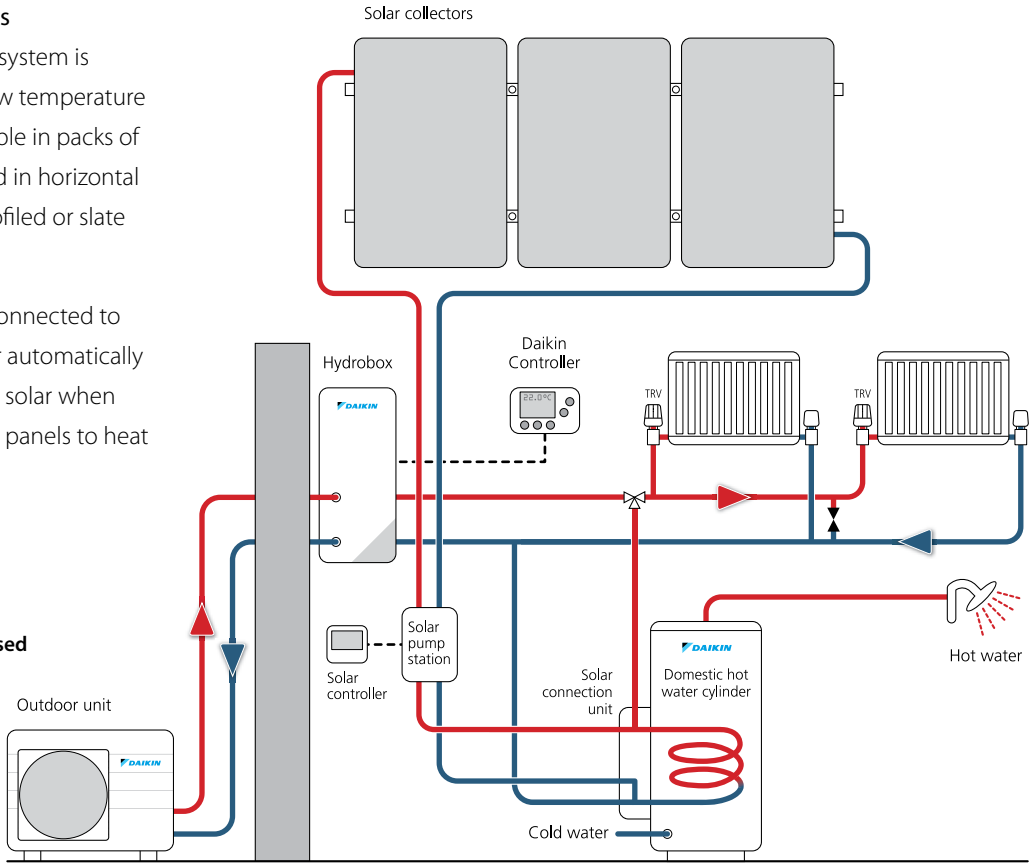
Solar thermal systems

Daikin solar thermal systems offer complete flexibility and are available for indirect pressurised systems in pre-defined packs for easy selection. A-frame kits for flat roofs and in-roof kits are also available.

Indirect pressurised systems

The Daikin pressurised solar system is designed for use with the low temperature range of heat pumps. Available in packs of one, two or three panels, and in horizontal or vertical orientation for profiled or slate type tiles.

A simple solar enabling kit connected to the Daikin Altherma cylinder automatically switches from heat pump to solar when there is sufficient heat in the panels to heat the water cylinder.



Typical LT system with pressurised solar thermal system

The indirect pressurised solar pack includes:

- Flat plate collectors
- Roof brackets
- Mounting rail for panel
- Hydraulic connection kit
- Solar controller
- Solar pump station
- Flow sensor
- Solar fluid (20 litres)
- Coupling kit for multiple panels*

* Additional accessories available to complete the system including solar pipework and expansion vessel

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'.

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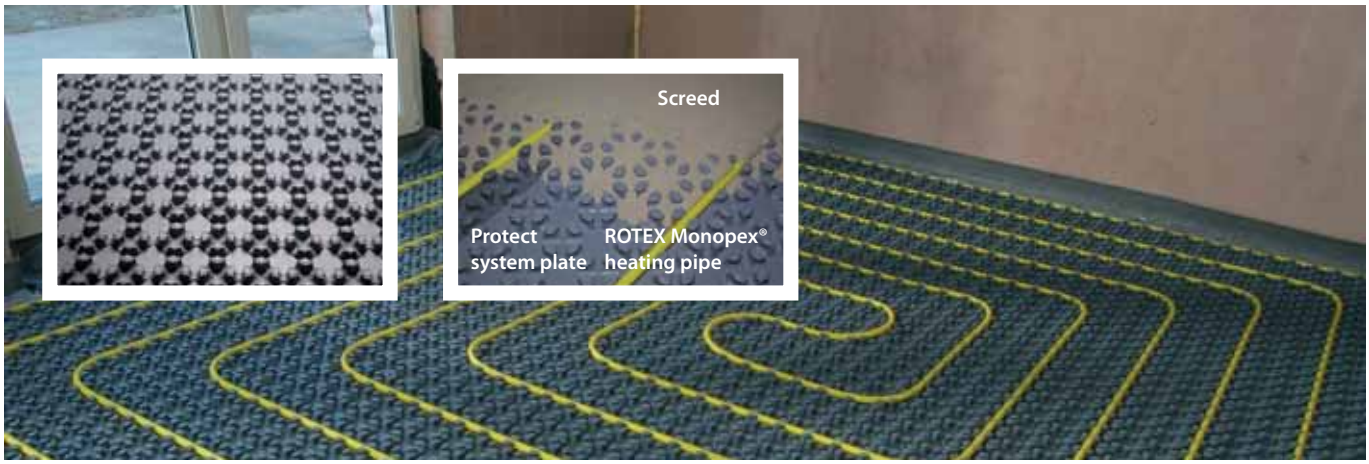
Underfloor heating system

ROTEX underfloor heating system is designed to work seamlessly with the Daikin heating range – and helps to increase the efficiency of a heat pump system.



ROTEX Underfloor Heating comfortably fulfils all of the modern heating system requirements in an ideal way.

Structure

ROTEX Monopex® has three main separate components:

> **System plates** with edge insulation strips, available in two variants:
  – The standard system plates are made out of Polystyrene
  – The Protect system plates are made of two separate layers
> **Heating pipe**: is made of crosslinked polyethylene, which is corrosion-free and is a sustainable material. Heating pipe is completely surrounded by screed
> **Manifold** with optional electronic individual room control

System benefits

> Comfort: the high heat radiation level, the low surface temperature and the large heating area provide for an extremely comfortable room climate
> Energy saving: with ROTEX Monopex® all popular heat source providers can be used, also in particular modern developments such as condensing boilers, heat pumps, or solar systems
> Floor coverings: whether parquet flooring, ceramic tiles, fitted carpets, or a vinyl floor covering, underfloor heating can be used with nearly all modern floor coverings with almost no exceptions
> Simple installation: easy to lay and allows optimal versatility of design in individual rooms
> Balanced temperature distribution and lower levels of air circulation
> Easy and variable room temperature control
> Uniform temperature profile through precise pipe conduction

Applications

ROTEX Monopex® underfloor heating can be used for the heating of most different types of buildings, e.g.

> Single and multiple dwellings
> High rises
> Schools
> Swimming baths, offices and administrative buildings
> Hotels
> Hospitals
> Sports halls
> Factory and warehouse halls

Also available:

ROTEX Monopex Secco – dry system

This system is a dry overlay underfloor heating system designed for retrofit applications or timber suspended floors without removing the existing floor.

The ROTEX System 70

This unique pipe offers a choice of heat emitter and can connect to radiators and underfloor heating – all running off a single water circuit. The maximum flow temperature can be up to 80°C.

Condensing gas boiler and solar energy combined

ROTEX GasSolarUnit, uses solar energy to offer a sustainable heating and hot water solution, with high efficiency condensing boiler back up.

Features

- High efficiency gas condensing boiler and solar storage tank all in one
- Optional solar thermal support
- Inbuilt weather compensator

High efficiency

ROTEX GSU are listed on the SEDBUK database

	SAP 2009
GSU 320-e	**89.70%**
GSU 520 S-e	**89.90%**
GSU 530 S-e	**89.10%**
GSU 535-e	**89.70%**

System benefits

Low cost installation

Completely pre-assembled gas condensing boiler.

Minimises heat losses and saves space

Integrated in a hot water storage tank for an all-in-one, floor standing unit. Compact footprint area of just 0.36m^2. In addition, the excellent heat insulation of the plastic storage tank ensures minimum heat losses.

Reduced CO_2 emissions through:

- Modulating condensing technology
- Consistent solar utilisation

Weather compensated system

Fully electronic digital control system offers weather-dependent control of the feed temperature and storage tank temperature.

Optimum hot water hygiene

The potable water is heated indirectly in a stainless steel corrugated pipe heat exchanger through the pressureless storage tank water from the hot water tank.

Optional solar energy connection for further energy efficiency

Drainback solar system with benefits of glycol-free low maintenance solar system.

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 GasSolarUnit.

GAS safe REGISTER
531078

Daikin Altherma LT Split

Technical data

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		
Nominal Capacity	Heating	kW	4.4	6.0	7.4	11.2	14.5	16.0
	Cooling	kW	4.17	4.84	5.36	11.72	12.55	13.12
Nominal Input	Heating	kW	0.87	1.27	1.66	2.43	3.37	3.76
	Cooling	kW	1.8	2.07	2.34	4.31	5.08	5.73
COP (Heating)			5.04	4.74	4.45	4.60	4.30	4.25
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
Weight		kg	54	56	56	113		
Refrigerant Charge	R-410A	kg	1.45	1.6	1.6	3.4		
Piping Connections	Liquid	inches	1/4			3/8		
	Gas	inches	5/8			5/8		
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: Ambient air temperature 7°C and leaving water temperature 35°C (A7 W35)
Cooling: Ambient air temperature 35°C and leaving water temperature 7°C (A35 W7)
Sound pressure level measured at 1m from the unit

*** Note:** Capacities, inputs, COPs and EERs subject to change

OUTDOOR UNIT - B SERIES			ERHQ011BV3*	ERHQ014BV3*	ERHQ016BV3*
Dimensions	H x W x D	mm	1170 x 900 x 320		
Nominal Capacity	Heating	kW	11.2	14.0	16.0
	Cooling	kW	10.0	12.5	13.1
Nominal Input	Heating	kW	2.55	3.26	3.92
	Cooling	kW	3.69	5.39	5.95
COP (Heating)			4.39	4.29	4.08
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	inches	3/8		
	Gas	inches	5/8		
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
Drain Valve			Yes					
Material			Precoated Sheet Metal					
Colour			White					

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

Daikin Altherma LT Monobloc

Technical data

MONOBLOC 6kW-8kW (230V 1ph)			EBHQ006BAV3	EBHQ008BAV3
Nominal Capacity	Heating	kW	6.00	8.85
	Cooling	kW	5.12	6.08
Nominal Input	Heating	kW	1.41	2.21
	Cooling	kW	2.16	2.75
COP (Heating)			4.26	4.00
EER (Cooling)			2.37	2.21
Sound power level	Heating	dBA	61	62
	Cooling	dBA	63	63
Sound pressure level	Heating	dBA	48	49
	Cooling	dBA	48	50
Dimensions	H x W x D	mm	805 x 1190 x 360	
Refrigerant Charge (Factory)	R-410A	Kg	1.7	
Power Supply			1-phase / 230V / 50Hz	
Water Connections (diameter)		inch	1"	
BACK UP HEATER KIT			**EKMBUHB6V3**	
Dimensions	Max depth	mm	170	
	Max width	mm	380	
	Max height	mm	575	
Power supply			1-phase / 230V / 50Hz	
Water Connections (diameter)		inch	1 1/4"	
CONTROL BOX			**EKCBH008BBV3**	**EKCBX008BBV3**
Function			**HEATING ONLY**	**REVERSIBLE**
To use with			EBHQ006~008BAV3	
Dimensions	Max depth	mm	100 (excluding user interface)	
		mm	120 (including user interface)	
	Max width	mm	412	
	Max height	mm	390	
Power supply			1-phase / 230V / 50Hz	
Colour			Metallic Grey	

			HEATING ONLY			REVERSIBLE		
MONOBLOC 11-16kW (230V 1ph)			**EDHQ011BB6V3**	**EDHQ014BB6V3**	**EDHQ016BB6V3**	**EBHQ011BB6V3**	**EBHQ014BB6V3**	**EBHQ016BB6V3**
Nominal Capacity	Heating	kW	11.2	14	16	11.2	14	16
	Cooling	kW	-			10	12.5	13.1
Nominal Input	Heating	kW	2.56	3.29	3.88	2.56	3.29	3.88
	Cooling	kW	-			3.69	5.39	5.93
COP (Heating)			4.38	4.25	4.12	4.38	4.25	4.12
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 Power Level	Heating	dBA	64	65	66	64	65	66
	Cooling	dBA	-			65	66	69
Sound Pressure Level	Heating	dBA	51	51	52	51	51	52
	Cooling	dBA	-			50	52	54
Dimensions	H x W x D	mm	1418 x 1435 x 382			1418 x 1435 x 382		
Weight		kg	180			180		
Refrigerant Charge	R-410A	kg	2.95			2.95		
Power Supply			1-phase / 230V / 50Hz			1-phase / 230V / 50Hz		
Recommended Fuses		A	32			32		

Nominal capacity and nominal input tested according to EN 14511 at the following conditions:
Heating: Ambient air temperature 7°C and leaving water temperature 35°C (A7 W35)
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 (230V 1ph)			**ERSQ011AV1**	**ERSQ014AV1**	**ERSQ016AV1**
Nominal Capacity	Heating	kW	11	14	16
Nominal Input a/b	Heating	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 Power Level	Heating	dBA	68	69	71
Sound Pressure Level	Heating	dBA	52	53	55
Dimensions	H x W x D	mm	1345 x 900 x 320		
Weight		kg	120		
Refrigerant Charge	R-410A	kg	4.5		
Power Supply			1-phase / 230V / 50Hz		
Recommended Fuses		A	25		

INDOOR UNIT			**EKHBRD011ACV1**	**EKHBRD014ACV1**	**EKHBRD016ACV1**
Dimensions	H x W x D	mm	705 x 600 x 695		
Weight		kg	144.25		
Leaving Water Temp		°C	25-80 Without Electrical Heating		
Drain Valve / Fill Valve			Yes		
Material			Precoated Sheet Metal		

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

COMBINATION TABLE INDOOR – ACCESSORIES		**EKHBRD011ACV1**	**EKHBRD014ACV1**	**EKHBRD016ACV1**
Stainless Steel DHW Cylinder (unvented)	EKHTSU200AC	•	•	•
	EKHTSU260AC	•	•	•
Wired Remote Control	EKRTW	•	•	•
Wireless Remote Control	EKRTR + EKRTETS	•	•	•

DOMESTIC HOT WATER CYLINDER			**EKHTSU200AC**	**EKHTSU260AC**
Suitable For			Unvented Systems (EKUHWHT Kit also required)	
Water Volume		l	200	260
Max Water Temperature		°C	75	
Height		mm	1335	1610
Width		mm	600	600
Depth		mm	695	695
Empty Weight		kg	70	78
Colour			Metallic Grey	
Material Inside Cylinder			Stainless Steel	
Material Outside Casing			Galvanised Steel (Precoated Sheet Metal)	
Piping Connections (Diameter)	Water inlet H/E	inch	3/4"	
	Water outlet H/E	inch	3/4"	
	Cold water in	inch	3/4"	
	Hot water out	inch	3/4"	

KITS CONNECTED TO DHW CYLINDER		**DOMESTIC HOT WATER CYLINDER EKHTSU**
EKUHWHT	Kit for Unvented Systems includes: Combined Pressure Reducing Valve, Non Return Valve, Strainer, Expansion Relief Valve, Expansion Vessel, Tundish	•
EKFMAHTB	Option Kit for Standalone Cylinder, includes Top Plate and Adaptors (to go from quick couplers to screw connections)	•

Daikin solar thermal system pressurised

Technical data

SOLAR COLLECTOR			EKSV26P	EKSH26P
Orientation			Vertical	Horizontal
Dimensions	H x W x D	mm	2000 x 1300 x 85	1300 x 2000 x 85
Gross Area		m^2	2.6	
Net Area		m^2	2.36	
Weight		kg	43	
Water Content		l	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	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^2K	4.25	

The collectors are standstill resistant over a long period and are tested for thermal shock.
Minimum collector yield over 525kWh/m^2 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 panels

Technical data

ROTEX

UNDERFLOOR HEATING PANELS	BASIS-INTEGRAL 33-3	COMPACT 45	MONO 15	PROTECT-INTEGRAL 33-3	PROTECT 10
Dimensions	1200 x 600	1200 x 600	1200 x 600	1220 x 1200	1220 x 1200
Pack qty	14 plates = 10.08 m^2	8 plates = 5.76 m^2	20 plates = 14.40 m^2	8 plates = 11.71 m^2	13 plates = 19.03 m^2
Insulation thickness [mm]	33-3	45	15	33-3	10
Impact sound insulation	Yes	No	No	Yes	No
Total height with standard screed	94	108	79	87	70
Total height with Estrotherms screed additive	79	93	64	72	55
Pipe spacing	75 / 150 / 225 / 300				
Covering sheet	–	–	–	polystyrol	
Weight per plate	0.7 kg	1.5 kg	0.55 kg	2.8 kg	2.5 kg
Thermal resistance EN1264	0.75 m^2 K/W	1.28 m^2 K/W	0.43 m^2 K/W	0.75 m^2 K/W	0.29 m^2 K/W
Fire proofing DIN 4102	B1			B2	

SECCO DRY SYSTEM	SECCO PLATES
LxW	1200 x 372
Pack area	5.35m^2
Package contents	8 x 1200mm long
	6 x 400mm long

GasSolarUnit

Technical data

GasSolarUnit	Product Material	GSU 320-e 157031	GSU 520 S-e 157113	GSU 530 S-e 157125	GSU 535-e 157143
Total storage capacity	Litres	300	500	500	500
Empty weight	kg	86	124	128	128
Total filled weight	kg	386	624	628	628
Dimensions (L x B x H)	cm	59.5 x 61.5 x 189	79 x 79 x 181	79 x 79 x 181	79 x 79 x 181
Max. permissible storage tank water temperature	°C	85	85	85	85
Potable water heating					
Potable water capacity	Litres	19	24.5	24.5	24.5
Maximum operating pressure	bar	6	6	6	6
Potable water heat exchanger surface	m^2	4.1	5.5	5.5	5.5
Storage tank charging heat exchanger					
Surface area charging heat exchanger	m^2	2.1	2.3	2.3	4.3
Solar heating support					
Heat exchanger surface area	m^2	—	0.43	0.43	—
Thermal output data					
D value (specific water flow to EN 625*)	l/min	23	25	27	39
Max. draw-off rate for a period of 10min at (T_{KW} = 10°C/T_{SP} = 60°C/T_{WW} = 40°C)	l/min	20	21	22	31
Boiler Data					
Nominal output	kW	3.7 - 20.0	3.7 - 20.0	6.5 - 30.0	8.0 - 35.0
Device type		B_{23} / C_{13x} / C_{43x} / C_{53x} / C_{63x} / C_{83x}			
NO_x class		5	5	5	5
Electrical data	V/Hz	230/50	230/50	230/50	230/50
Protection rating	IP	20	20	20	20
Maximum permissible operating pressure	bar	3	3	3	3
Maximum permitted operating temperature	°C	85	85	85	85
Flue gas / air infeed connection diameter	mm	80/125	80/125	80/125	80/125
SEDBUK 2009 efficiency	%	89.7	89.9	89.1	89.7

* The specific water flow as defined in EN 625 is the domestic hot water flow which the GasSolarUnit can supply at an average temperature increase of 30 K 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 GasSolarUnit achieves these values even with shorter intervals.

Awards & industry associations

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.

H&V News Awards 2011

Daikin Altherma Flex Type has been shortlisted for the Domestic H&V News Product of the Year.

Environment & Energy Awards 2010

The Daikin Altherma High Temperature system won the Environment & Energy Awards 2010 in the Energy Product/Service category.

Self-Build Product Innovation Awards 2010

The Daikin Altherma High Temperature system won the Self-Build Product Innovation Awards 2010 in the Heating, Plumbing, Ventilation and Building Services category.

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)
- Micropower Council
- Heating and Hot Water Industry Council (HHIC)
- Heat Pump Association (HPA)
- 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)

Daikin was a finalist in the following award:

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.

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 CO_2 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.

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

DAIKIN

your comfort. **our world.**

DAIKIN UK
RECYCLING
END OF LIFE
AIR CON
UNITS

FSC

Carbon
Balanced Paper

011-7S1016 F

APPROVED PRODUCT
MCS
BRE GLOBAL LISTED

MCS HP0006

LLOYD'S REGISTER QUALITY ASSURANCE · ISO9001 · UKAS QUALITY MANAGEMENT 001

LLOYD'S REGISTER QUALITY ASSURANCE · ISO 14001 · UKAS ENVIRONMENTAL MANAGEMENT 001

EUROVENT CERTIFIED PERFORMANCE

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.

CE

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

Daikin products are distributed by:

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Scotland Region	Northern Region	Midlands Region	Western Region	North London	South London
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