



The natural combination



DAIKIN ALTHERMA
HYBRID HEAT PUMP SYSTEM

The future is now...

The new hybrid system

- Heat pump solution for gas boiler replacement market
- Daikin Altherma hybrid combines heat pump technology with gas
- Connectable to existing radiators (up to 80°C)
- High heat loads (above 12 kW) of renovation applications

End user benefits

- Save money in comparison to a new gas condensing boiler!
- Use existing equipment (radiators, installation room) - low investment



... and the future is more eco-friendly, energy efficient and cost conscious. There is a growing demand from home owners for replacement of heating systems, especially the replacement of gas boilers, with more efficient, more cost effective and more environmentally friendly systems that reduce CO₂ emissions, reduce energy consumption and protect the end-user's budget. We, at Daikin, are playing our part with our advanced heat pump solutions and here's how ...

Installer benefits

- One heat pump solution for all renovation applications
- Easy and fast installation of renewable energy source technology

Wholesaler benefits

- Low stock value covering all renovation applications



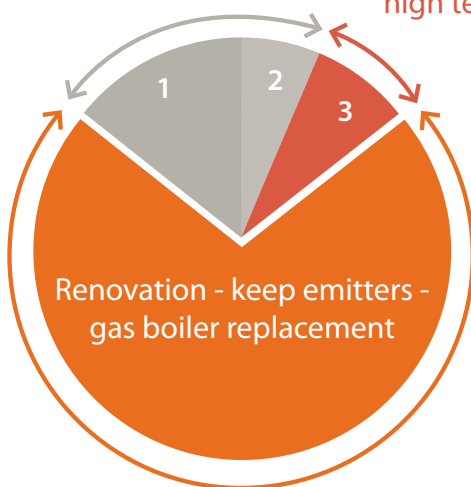
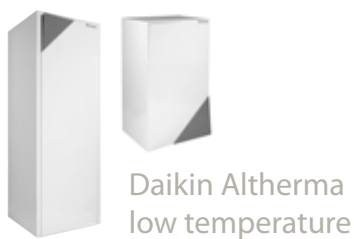
New opportunities in residential heating !

→ 1. HEAT PUMP SOLUTION FOR GAS BOILER REPLACEMENT MARKET

The product range of Daikin Altherma covers all applications in the heating market, not only new installations and replacement of oil boilers, but also the replacement of gas boilers.

Daikin Altherma low temperature is the ideal solution for new build applications and complete renovations, delivering the required heating, cooling and domestic hot water capacities for the house, with the best possible efficiencies. When replacing an oil boiler by **Daikin Altherma high temperature**, no need to replace the existing radiators, as water temperatures of up to 80°C are reached with heat pump operation only.

A new opportunity when replacing a gas boiler is **Daikin Altherma hybrid heat pump**, a cost efficient solution combining a new gas condensing boiler and the most efficient air-to-water heat pump system on the market.



Access to new applications
for Daikin Altherma hybrid heat pump

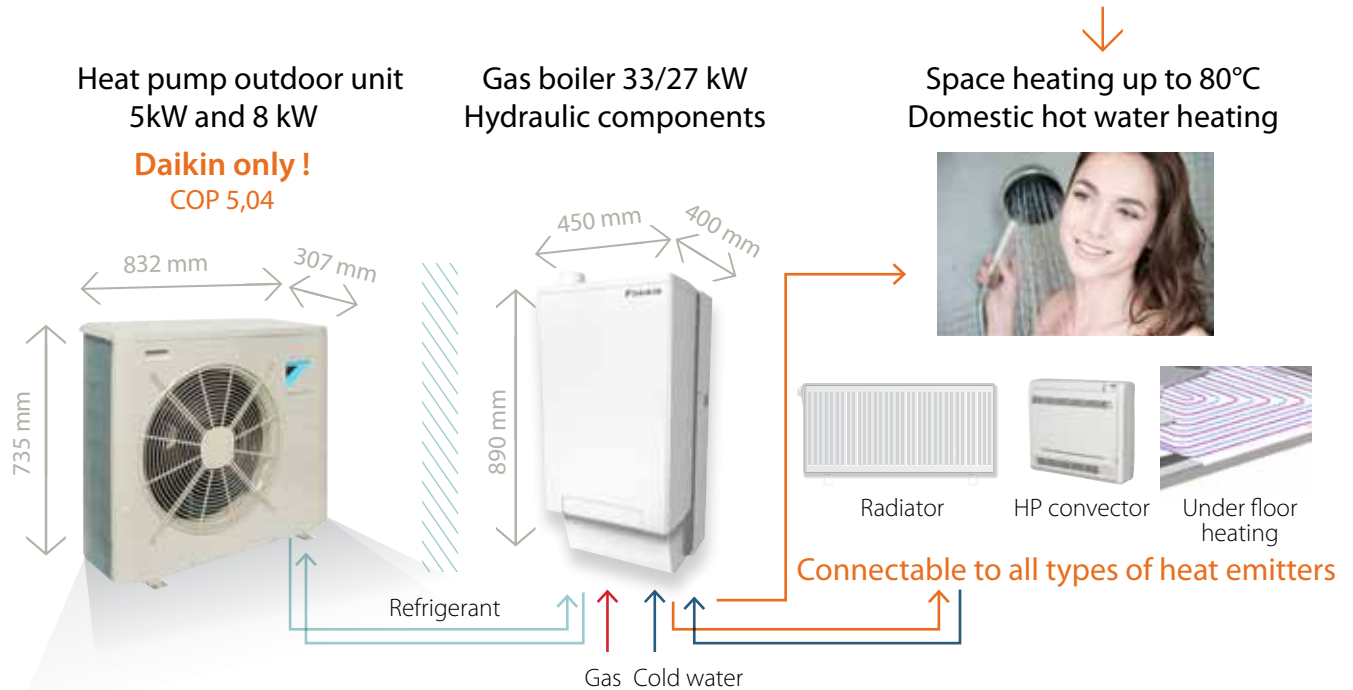
- 1 New Build
- 2 Renovation -
change emitters
- 3 Renovation - keep emitters -
oil boiler replacement

- ✓ Connectable to existing radiators (up to 80°C)
- ✓ Use existing installation space, easy to replace old system
- ✓ Cover high heat loads (above 12 kW) of renovation applications
- ✓ Good ROI compared to new gas condensing boiler

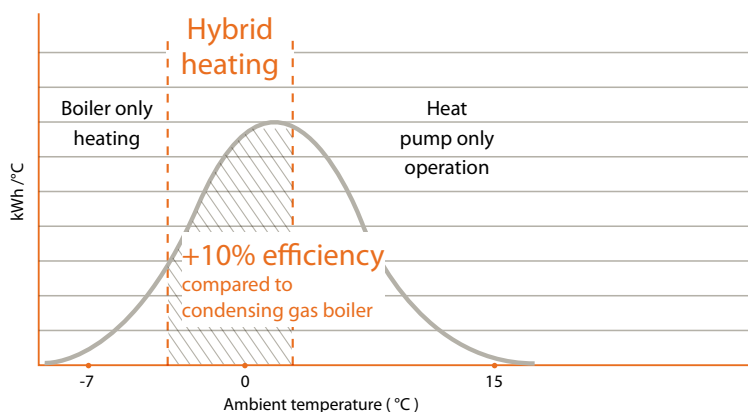


2 DAIKIN ALTHERMA HYBRID HEAT PUMP COMBINES HEAT PUMP TECHNOLOGY WITH GAS

Daikin Altherma hybrid heat pump uses a smart combination of a new gas condensing boiler and the most efficient air-to-water heat pump system on the market.



With the Daikin Altherma hybrid heat pump technology, the most cost efficient operation made at each ambient temperature will be used.



- 1 High temperature zone:
100% heat pump
- 2 Mid temperature zone:
heat pump + gas boiler *
- most cost efficient to operate both
- additional capacity if required
- 3 Cold temperature zone:
100% gas boiler

Typical application

- Location: London
- Heat load: 14 kW
- 70% heat pump output
- 30% gas boiler output

* Did you know that...

thanks to the special Daikin Altherma hybrid heat pump **flow control**, both gas boiler and heat pump can operate at the same time in the most cost efficient way. The water flow rate will be automatically regulated, in order to have the possibility of lowering the entering water temperature coming from the radiators to the heat pump and so maximising heat pump efficiency. This results in the most cost efficient operation combining gas boiler and heat pump to deliver the capacities required.

Daikin
patented

Added value benefits for end users, installers and wholesalers

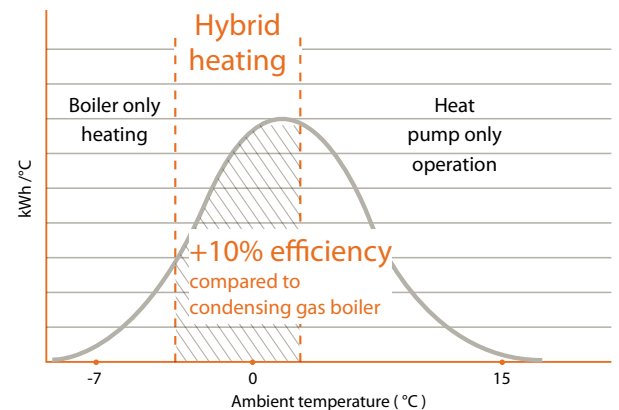
If you're an end user then you benefit from decreased heating costs, a rapid return on investment and no need to replace radiators and existing pipe work. If you're an installer you have the benefit of having a single heat pump solution for all replacement applications: one that is easy and fast to install and uses renewable energy sources. If you're a wholesaler then you benefit from not having to stock a huge range of materials since one hybrid capacity class can cover all possible replacement applications.



End user benefits

→ 1. SAVE MONEY IN COMPARISON TO A NEW GAS CONDENSING BOILER

- ✓ Space heating **35% more efficient** than new gas condensing boiler
- ✓ Domestic hot water heating **30% more efficient** than new gas condensing boiler
- ✓ High return on investment: **payback of 3-7 years**



Space heating

- Programmed for most cost efficient operation over the entire temperature range
- Daikin hybrid logic to maximise heat pump usage
- Most efficient heat pump system on the market

Domestic hot water heating

Three possibilities

- Instantaneous with gas boiler *
- Optional domestic hot water tank for storage of domestic hot water
- Optional solar tank to increase domestic hot water efficiency even further (solar - heat pump - gas boiler for domestic hot water heating)



* Did you know that...

the Daikin Altherma hybrid heat pump has the most efficient instantaneous domestic hot water heating on the market, thanks to a special 2 in 1 heat exchanger used for both space heating and domestic hot water heating. Thanks to direct heating of cold water, the Daikin Altherma hybrid heat pump system can benefit from the condensation effect as well for domestic hot water heating, allowing an efficiency increase **up to 30%** over traditional gas condensing boilers.

→ 2. USE EXISTING EQUIPMENT – LOW INVESTMENT

- ✓ No modification inside the house required
- ✓ No additional investment required
 - Connectable to **existing radiators** (water temperatures up to 80°C possible) and **existing water piping** system
 - Similar dimensions to existing gas boiler - **no change to installation space**

Typical example

- existing gas boiler:
HxWxD: 850mm x 450 mm x 350mm
- Daikin Altherma hybrid heat pump indoor unit:
HxWxD: 890mm x 450mm x 400mm





Installer benefits

→ 1. ONE HEAT PUMP SOLUTION FOR ALL RENOVATION APPLICATIONS

✓ More applications possible using Daikin Altherma

- All heat loads coverable up to 27 kW
- Connectable to all types of heat emitters as well as existing radiators (up to 80°C)
- One solution for heating and domestic hot water
- Gas boiler can be installed without heat pump in early stage, in order to quickly restart heating in case of break down of existing gas boiler

→ 2. EASY AND FAST INSTALLATION OF RENEWABLE ENERGY SOURCE TECHNOLOGY

✓ Time saving: installation and maintenance

- No changes to radiators and installation room
- All components included with front access
- All connections at the bottom, similar to all wall hung gas boilers
- Quick commissioning with user interface



Quick commissioning
with user interface





Wholesaler benefits



Gas boiler system:
33/27 kW



Heat pump system:
5 kW or 8 kW



LOW STOCK VALUE COVERING ALL REPLACEMENTS

✓ One heat pump solution for all renovation applications

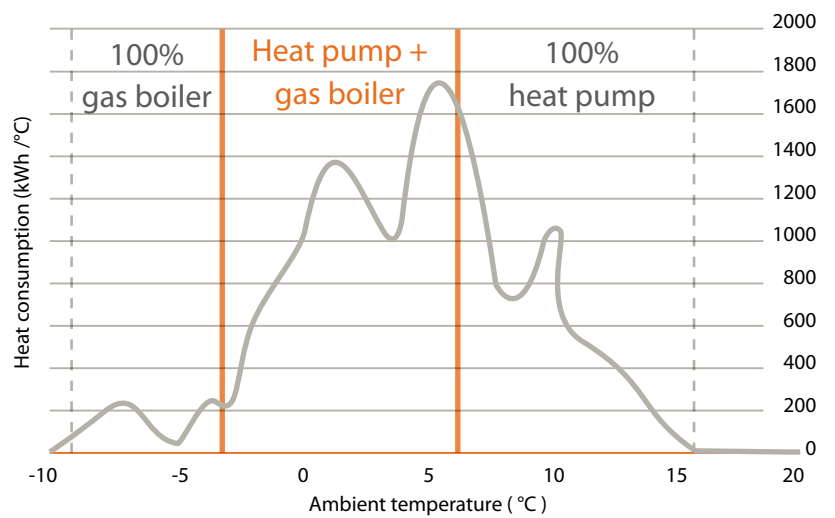
- All heat loads
- All types of emitters
- Space heating and domestic hot water heating
- Replacement in case of break down

✓ Low stock value - low chance of being out of stock

- Heat pump system: 5 kW or 8 kW
- Gas boiler system: 33/27 kW
- One combination (e.g. 5 kW heat pump with 33/27 kW boiler) can cover all possible renovation applications
 - > less stock required
 - > lower chance of being out of stock

Daikin Altherma hybrid heat pump in practice

Replacing a gas boiler by Daikin Altherma hybrid heat pump means saving on running costs both for space heating as domestic hot water supply



Running costs comparison versus new gas condensing boiler - Typical Belgian example

Heat load	16 kW
Design temperature	-8°C
Space heating off temperature	16°C
Maximum water temperature	60°C
Minimum water temperature	38°C
Gas price	0.070 €/kWh
Electricity price (day)	0.237 €/kWh
Electricity price (night)	0.152 €/kWh
Total space heating requirement	31,180 kWh
Total DHW heating requirement (4 persons)	4,000 kWh

	DAIKIN ALTHERMA HYBRID HEAT PUMP	NEW GAS CONDENSING BOILER	EXISTING GAS CONDENSING BOILER
SPACE HEATING			
Energy supplied by HP	21,190 kWh		
HP efficiency	4.81 SCOP		
Energy supplied by gas boiler	9,990 kWh	31,180 kWh	31,180 kWh
Space heating efficiency	90%	90%	75%
Running costs	1,640 €	2,430 €	2,910 €
DHW HEATING			
Energy supplied by gas boiler	4,000 kWh	4,000 kWh	4,000 kWh
DHW heating efficiency	90%	70%	55%
Running costs	310 €	400 €	510 €
TOTAL			
Running costs	1,950 €	2,830 €	3,420 €

YEARLY SAVINGS	
versus new gas condensing boiler	880 €/year
versus existing gas condensing boiler	1,470 €/year

Technical specifications

INDOOR UNIT				GAS MODULE	HEAT PUMP MODULE			
				*EHYKOMB33AA	*EHYHBH05A	*EHYHBH08AV3		
Function				Heating only	Heating only			
Power rating	Nom.			kW	7.2-32.7	-		-
Heating capacity	Nom.	80/60	kW		7.1-26.3	-		-
		50/30	kW		7.8-27.1	-		-
User efficiency	High	Heat recovery space heating		%	107	-		-
		Heat recovery domestic hot water		%	95,8	-		-
Casing	Colour			S5730 White	S5730 White			
Dimensions	Unit	HeightxWidthxDepth		mm	710x450x240	970x450x165		
Weight	Unit			kg	36			
Sound power level	Heating	Nom.		dBA				42 dBA
Sound pressure level	Heating	Nom.		dBA				28 dBA

OUTDOOR UNIT				*EVLQ05CV3		*EVLQ08CV3	
Heating capacity	Nom.	Heat pump operation only		kW	4.40 ¹	7.40 ¹	
				kW	4.03 ²	6.89 ²	
COP		Heat pump operation only			5.04 ¹	4.45 ¹	
					3.58 ²	3.42 ²	
Dimensions	Unit	HeightxWidthxDepth		mm	735x825x300		
Sound power level	Heating	Nom.		dBA	61	62	
Sound pressure level	Heating	Nom.		dBA	48	49	

(1) cooling Ta 35°C - LWE 18°C (DT = 5°C); heating Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C)

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

* Note: grey cells contain preliminary data





Today, Daikin leads the way towards more efficient, cost-effective and environmentally friendly comfort solutions, introducing products optimised for all seasons. In fact, Daikin products reduce energy and costs in a smart way. They are designed to perform under all conditions and reflect the actual performance you can expect over an entire heating and cooling season. So, with Daikin you make the right choice for your wallet... and the environment.

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