UKHeatPumps
RENEWABLE CLIMATE SOLUTIONS

UK Heat Pumps Solutions

- Air Source Heat Pumps
- Ground Source Heat Pumps
- Cooling
- Mechanical Ventilation
- Solar Panels & Batteries
- Underfloor Heating
- EV Car Chargers
- MCS design, supply, installation & commissioning service
- Daikin approved installer training courses
- Site Support
- Assisted commissioning
- Showroom facility
- https://ukheatpumps.com/

@UKHeatPumps UKHeatPumps

UK Heat Pumps

UK Heat Pumps are a Daikin Sustainable Energy Centre Partner and have a showroom & installer training facility in Basingstoke. We are able to offer a comprehensive range of renewable solutions and offer a bespoke installation package to suit any project

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UK Heat Pump Market Drivers

UK Legislation

Standard Assessment Procedure (SAP) Building Regulations Part L

EU Legislation

Energy Rated Products

Warm Homes Fund

£150million fund provided by National Grid for local authorities and registered social landlords

UK Funding

Renewable Heat Incentive Domestic and Non-Domestic

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Boiler Upgrade Scheme (BUS)

ofgem

- BEIS – The Department for Business, Energy & Industrial Strategy - £450m scheme over 3 years
- Launching Monday 23rd May 2022
- Installers to make voucher applications for installations commissioned after April 1st 2022
- Installer portal to go live on Monday 11th April 2022 supported by Launch Event & Installer Forum (via Ofgem)
- £5k for air & £6k for ground source heat pumps with a minimum SPF of 2.8 (280% efficiency)
- £5k for bio-mass boilers (not replacing mains gas)
- Domestic & non-domestic buildings are eligible – Maximum 45kw
- Heating & DHW systems only
- Owner/occupier, private landlords & custom self builds are all eligible but not large scale new build or social housing
- EPC within the last 10 years required for eligibility

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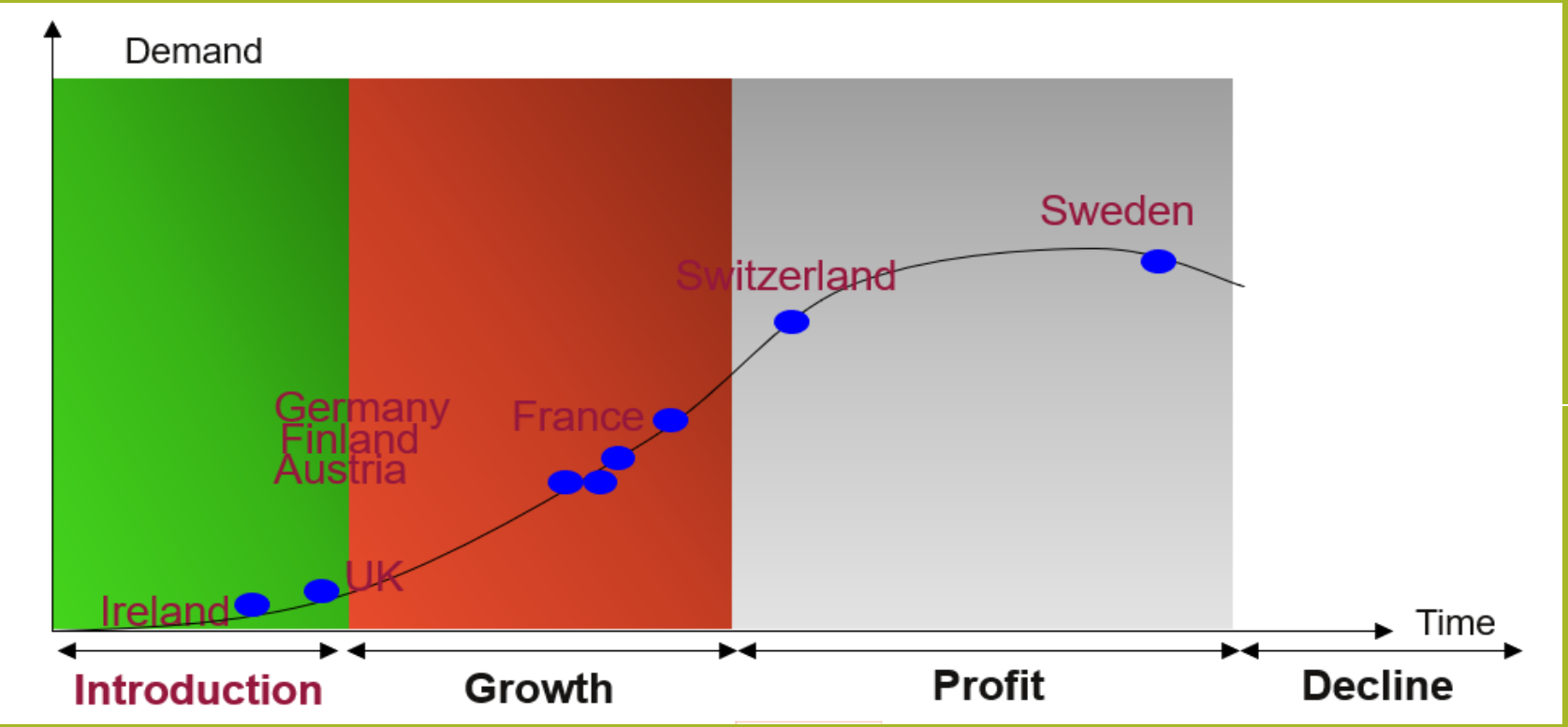
UK v European Market

Heat pumps will play a key role in reducing carbon emissions as the UK looks to decarbonise the network and achieve carbon reduction targets.



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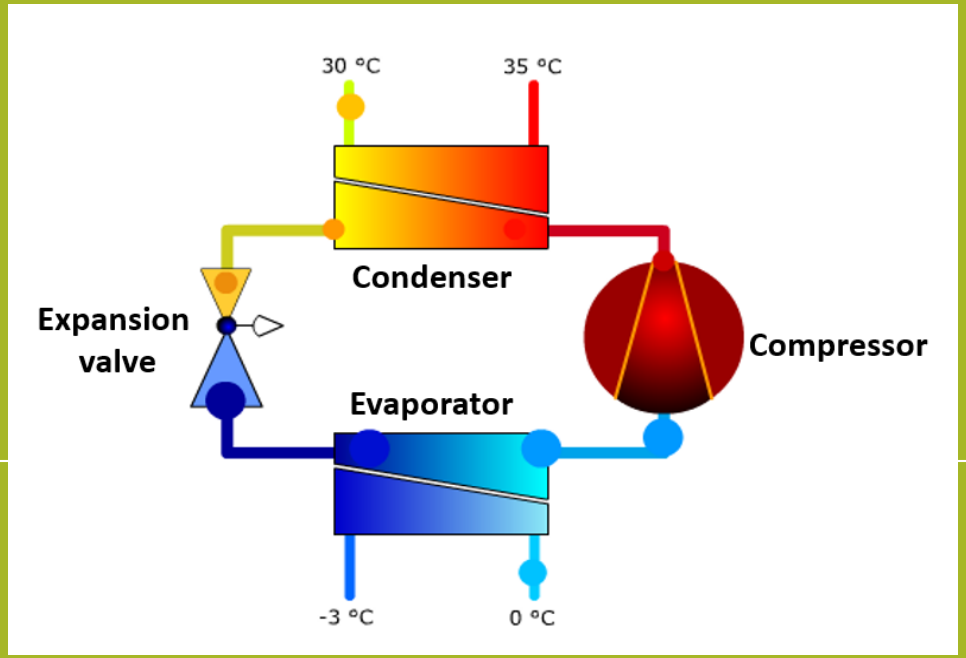
How Do Heat Pumps Work?

Heat pumps come in a range of different types, but they all extract low grade heat from the environment and convert it into useful energy around the home.

They do this using a sealed refrigerant circuit inside the heat pump.

Refrigerant Cycle

Heat is then delivered to the water at the condenser ready for distribution to the hot water tank and heating system.



The refrigerant changes state from liquid to gas and passes into the compressor where it is pressurised. This increase of pressure also increases the temperature (similar to what happens when you use a bicycle pump)

The refrigerant passes through an expansion valve where it drops its temperature and becomes a liquid once more, ready to continue the cycle.

Low temperature energy is delivered from the source (ground, water or air) to the refrigerant, which has a very low boiling point (as low as -50degC). This takes place at the evaporator

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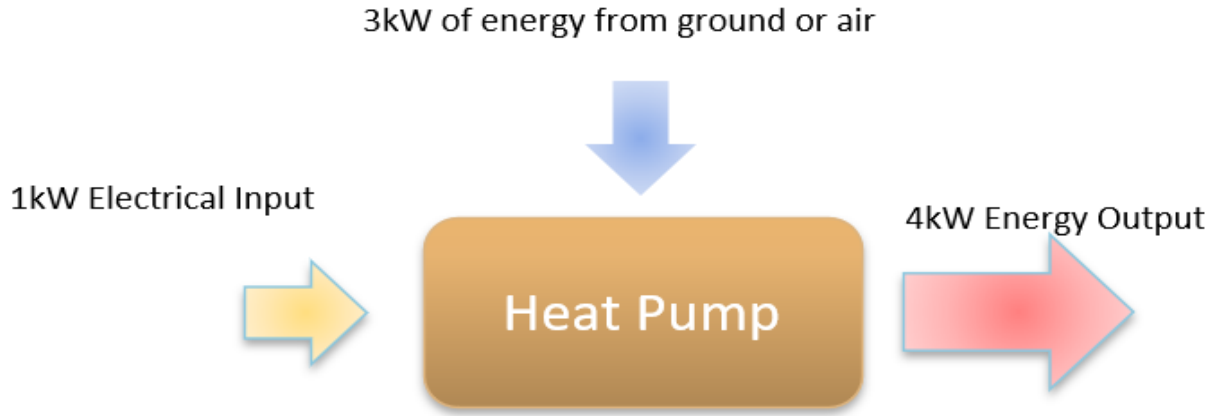
Measuring Performance

Is the efficiency ratio of the amount of heating or cooling provided over the electrical energy consumed. The higher the Coefficient of Performance the more efficient the system.

*Seasonal COP data now published for all MCS accredited products.

DAIKIN 3m 9kw	9kw 1 ph
Input power (B O/F 35) kW	1.73
Output power (B O/F 35) kW	7.33



$$COP = \frac{\text{Energy Out}}{\text{Energy In}}$$

$$\frac{7.33}{1.73} = 4.23 \text{ cop} = 423\% \text{ eff.}$$

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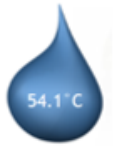
Heat Pump Applications

Heating

Cooling



Hot Water

Mechanical Ventilation

Swimming Pools

Residential Housing

- Off gas locations
- Improve SAP score
- Planning conditions
- Low energy housing
- Self-build (protect supply)
- Volume Housing - no gas connection required

Commercial Buildings

- BREEAM Ratings
- Lower energy use
- Off gas locations

Common Commercial Applications

- Care Homes
- Education
- Offices
- Industrial
- Agriculture
- Hotel/Leisure

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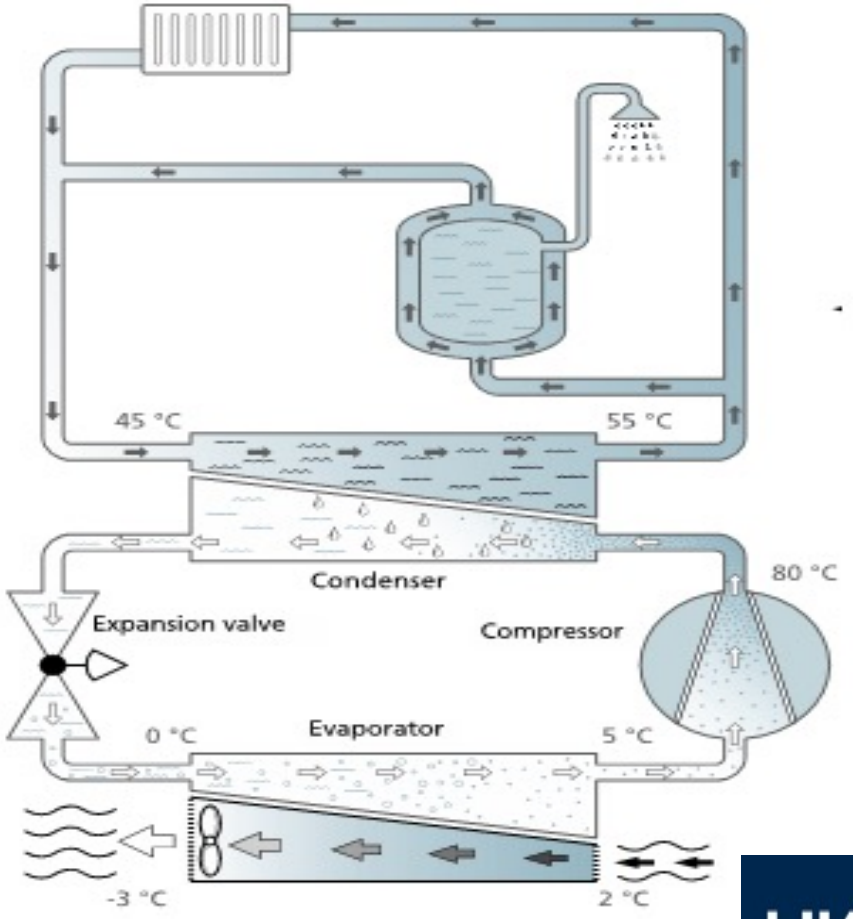
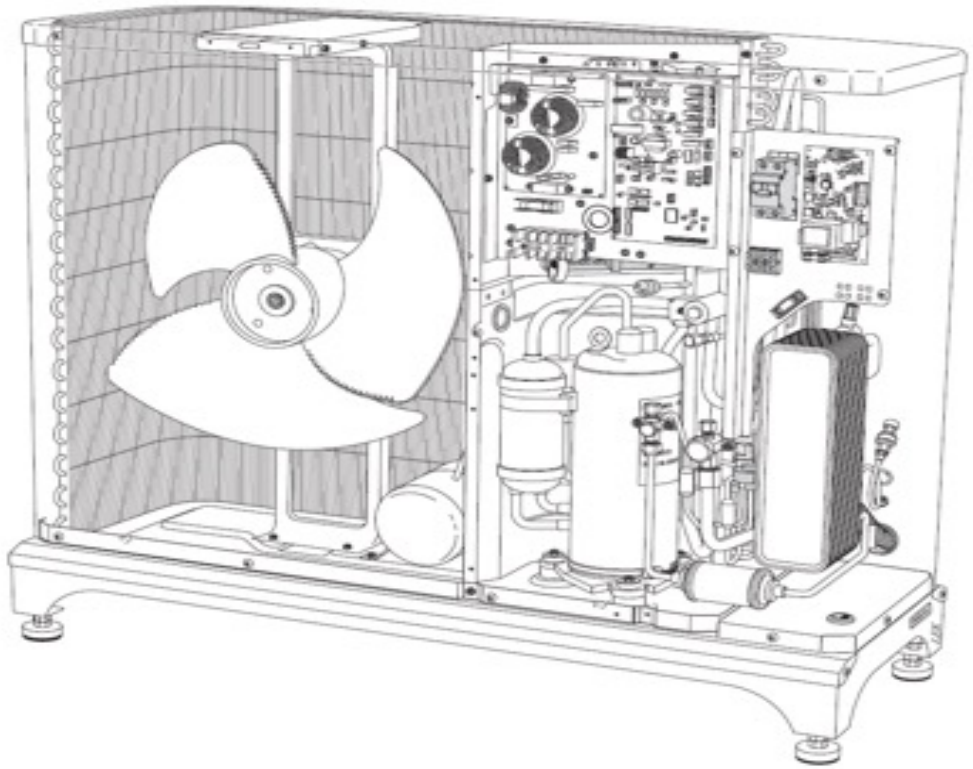
Principle of operation





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AIR SOURCE OPTIONS

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DAIKIN HEATING / COOLING CONVECTORS OPTIONS

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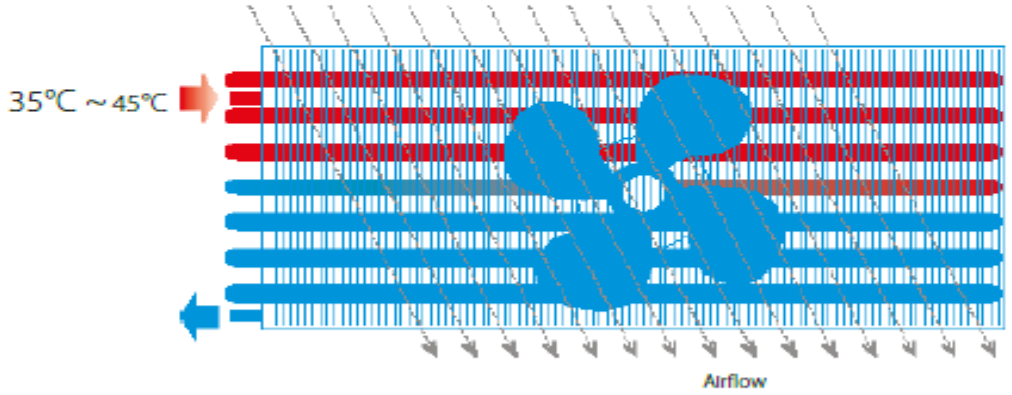
DAIKIN

By providing cooling and heating, Daikin Altherma HPC is combinable with underfloor piping and can replace outdated radiators. The unit is available in three models (floor standing, wall mounted and concealed) and fits in any bedrooms or living rooms thanks to its silent operation.

What is a heat pump convector

The way a heat pump convector works is similar to a radiator, as both use convection to heat a room. A radiator creates convection by running water through its pipes. With a heat pump convector, a radiator's convection process is faster because there is a small fan behind it speeding up the heating cycle.

A heat pump convector creates the same room temperature as a traditional radiator, but with lower water temperatures in the radiator, and in the long run, contribute to direct energy savings for users.



› Optimized for new build houses
› Can be selected at low water temperature (35°C) which makes it ideal for heat pump applications.

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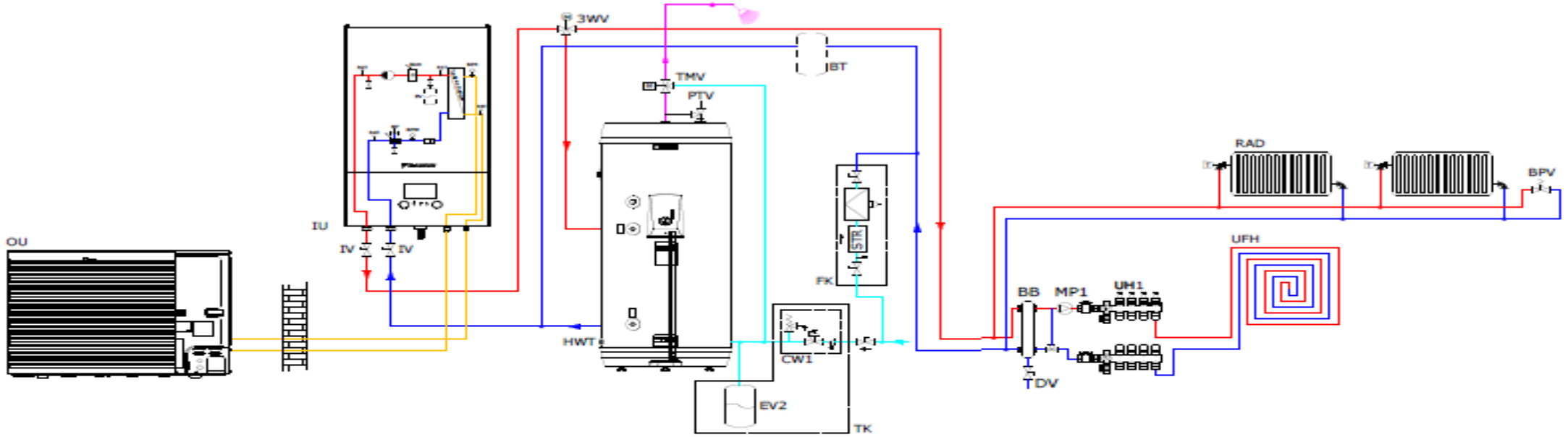

Legend :

OU	Outdoor unit	ERLA16DAV3
IU	Indoor unit	EBBH16D/6V
IV	Isolation valves	delivered with unit
HWT	Domestic hot water tank	EKHWSU300D3V3
PTV	Temperature and pressure relief valve	(delivered on the tank)
FK	Filling kit	field supply, according to local regulations
STR	Strainer	
TK1	Tank kit	
EV2	Expansion vessel	(delivered with the tank kit)
CW1	Water inlet safety group	(delivered with the tank kit)
TMV	Thermostatic mixing valve / Anti-scalding valve	156015 (VTA32)
3WV	3 way valve	delivered with the tank
BT	Buffer tank	(field supply, may be required to meet minimum water volume, 4-8kW: 10 litre & 11-16kW:20 litre)
UH	Collector	
BB	Balancing bottle	
DV	Drain valve	
BPV	By-pass valve	
MP1	Pumps group	(field supply)
RAD	Radiator	

Cautions :

DAIKIN

Piping Diagram

Low temperature split with wall mounted unit with domestic hot water tank (R32)

Professionnal :	Customer :	Date :
UKHeatPumps Ltd Ross Loveridge westham lane unit 2, Basingstoke		18/02/2022

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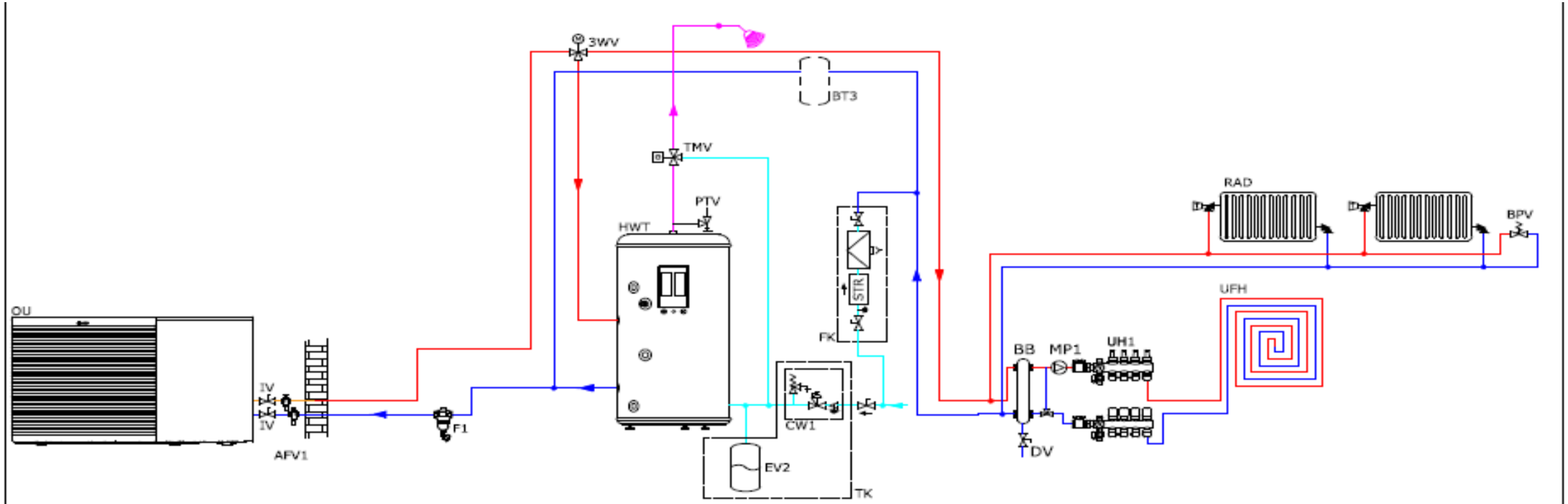

Legend :

OU	Outdoor unit	EDLA11DA3V3
AFV1	Anti-freeze valve	(optional -AFVALVEHY2)
HWT	Domestic hot water tank	EKHWSU300D3V3
PTV	Temperature and pressure relief valve	(delivered on the tank)
F1	Filter	K.FERNOXTF1
FK	Filling kit	field supply, according to local regulations
STR	Strainer	
TK	Tank kit	EKUHWBB
EV2	Expansion vessel	(delivered with the tank kit)
CW1	Water inlet safety group	(delivered with the tank kit)
TMV	Thermostatic mixing valve / Anti-scalding valve	156015 (VTA32)
3WV	3 way valve	delivered with the tank
BT3	Buffer tank	(field supply, may be required to meet minimum water volume, E(D/B)LQ(11/14/16)CA3(V3/W1) & E(D/B)LQ(05/07)CAV3 : 20 litre, E(D/B)LQ(11/14/16)CA(V3/W1): 80 litre)
UH	Collector	
BB	Balancing bottle	
DV	Drain valve	
BPV	By-pass valve	

Cautions :

DAIKIN

Piping Diagram

Daikin Altherma 3 M and domestic hot water cylinder (R32)

Professional :	Customer :	Date :
UKHeatPumps Ltd Ross Loveridge westham lane unit 2, Basingstoke	TEST TEST TEST, TEST	27/09/2021

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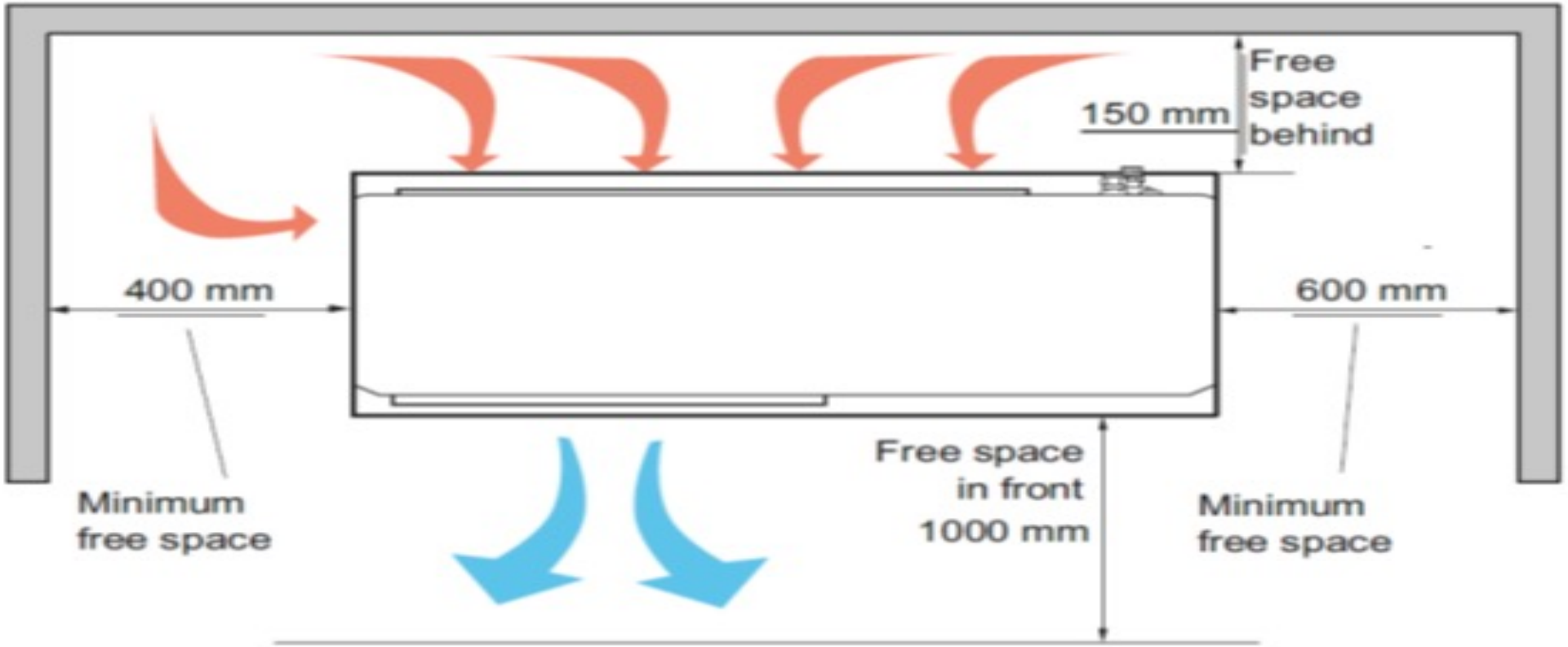
F2040 Unit Spacing



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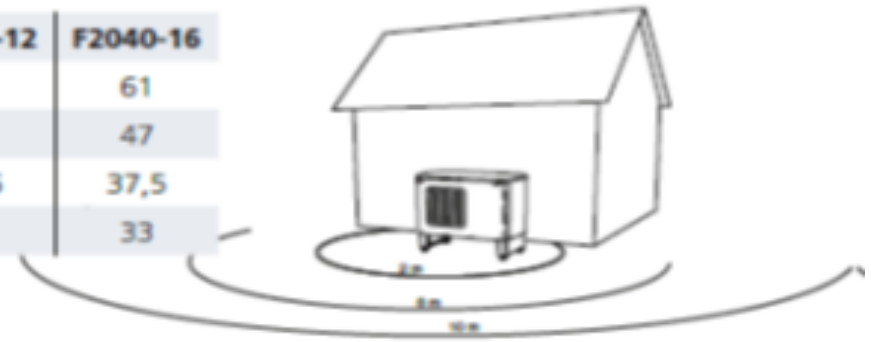
Planning Requirements/Permitted Development

	F2040-8	F2040-12	F2040-16
Sound power level* According to EN12102 at 7/45 (nominal) (Lw (A))	54	57	61
Sound pressure level at 2m free standing* (dB(A))	40	43	47
Sound pressure level at 6m free standing* (dB(A))	30,5	33,5	37,5
Sound pressure level at 10m free standing* (dB(A))	26	29	33

*free space



Key Points

- MCS020 Noise Calculation – no greater than 42dB
- Volume of unit no greater than 0.6m3
- Conservation Area or World Heritage Site not be installed on a wall or roof which fronts a highway or be nearer to any highway which bounds the property than any part of the building

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ASHP Features & Benefits

Feature	Benefit to Specifier/Installer	Benefit to end-user
Inverter compressor	More flexible application.	Less plant space (buffer) High 1 phase output.
Low noise	Meet specifications/planning permissions	Less disturbance, sign of quality
Compact outdoor unit	Attractive to end-user, planning permissions. 12KW single fan	Lower visual impact
Speed controlled Pumps	Reduced commissioning time	Improved energy efficiency
Integrated Multi-Colour Control	Reduced install time Clear and intuitive	Clear and intuitive Many accesories – one controller
Cascade control	Flexibile solution, win more projects	Simultaneous HTG and HW High output, 1 phase.
Range of cylinders	Complete solutions HTG & HW	Under one manufacturer warranty
Wide range of accessories	Flexibility in application, quicker install and commissioning, one supplier.	Easier control, system optimisation, high efficiency
SAP Listed	Meet building regulations	More energy/carbon efficient home – improved RHI
Weather compensation	Attractive feature to end-user	Improved comfort & efficiency
Uplink	Supports maintenance & performance	Remote control, easy to use interface.

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QUESTIONS?

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