



**MasterTherm**  
H E A T P U M P S

[www.mastertherm.co.uk](http://www.mastertherm.co.uk)





## ABOUT MASTERTHERM

MasterTherm heat pumps have been pioneering heat pump technology for over two decades...

Today, MasterTherm continue to dominate the heat pump market as a manufacturer of a superior range of both ground and air source heat pumps. Since inception in the early 90's, MasterTherm have developed a comprehensive range of heat pumps suitable for all applications.

As pioneers of Inverter Technology in ground source heat pumps, Master Therm are always pushing

boundaries to maximise efficiency and performance across the entire range. Every product produced by MasterTherm is hand built and subject to rigorous analysis, robustness testing, lifetime performance testing and regular acoustic testing at independent laboratories.

In producing bespoke, hand-built heat pumps, MasterTherm offers commercial properties completebespoke systems to meet individual requirements. Modbus and MasterLAN™ allow for smooth integration with Building Management Services (BMS) and for applications with substantial heating requirements.

**MasterTherm UK**  
MasterTherm UK was born in 2009 to serve the ever-expanding UK market and to offer UK customers access to all the benefits that MasterTherm units have to offer. With a UK based technical support centre, full online control and an extensive network of accredited installer and engineers, you're never alone. All MasterTherm heat pumps are MCS accredited by BBA ErP compliant, Domestic and Non Domestic RHI compliant (PEL listed products).





# MasterTherm Heat Pumps



## Online Control and 7 Year Warranty

The robust and reliable design of MasterTherm heat pumps allows for a 7 year comprehensive warranty. All units are fitted with internet modules allowing control of all units via iOS, Android or any other web enabled device. MasterTherm UK actively monitors all units, looking to improve performance or reliability.



## Intelligent Zone Control

MasterTherm allows the highest possible level of control of heating or cooling circuits. Up to 6 heating circuits can be linked and controlled by the heat pump system including swimming pools, solar thermal hot water systems and domestic hot water. This allows for multiple zones of varying flow temperatures, ideal for systems where underfloor heating is combined with traditional radiators or higher temperature underfloor heating zones.



## Inverter Technology

MasterTherm heat pumps are available with inverter driven compressors on both air and ground source heat pumps. Through modulating the output of the unit, supply will match the demand of the property reducing running costs whilst increasing the lifespan and efficiency.



## Cooling Capability

MasterTherm heat pumps can, when purchased with an additional module, provide whole-house cooling. With state of the art cooling control and functions, heat pumps can offer a cost effective cooling alternative. Cooling is available both passively and actively.



## Weather Compensation

Weather compensation monitors external ambient temperatures and alters required output. Thermostats need not be adjusted between seasons as the heat pump will switch between modes dependant on external ambient temperatures. MasterTherm differ from the competition in being able to apply weather compensation to individual zones and circuits.



## Simultaneous Heating and Cooling

Using MasterLAN algorithm and controls, MasterTherm heat pumps are able to offer simultaneous heating and cooling to buildings, manufacturing processes and more. Heat pumps in general are able to offer 'heating energy' and 'cooling energy' either actively or passively. With the MasterLAN application, management of the heating and cooling capabilities of inverter heating pumps is far more controlled, balanced and efficient when compared against other manufacturers.



## Solar Thermal Integration

The majority of heat pumps on the market operate independent of solar thermal hot water systems. MasterTherm heat pumps will prioritise hot water generation from solar thermal hot water systems when there is solar gain, maximising the savings without compromising on hot water availability.



## Low Noise Output

State of the art DC fans are fitted across the entire MasterTherm range. Low noise impellers combined with modulation flow result in minimum airflow and noise disturbance ensuring that MasterTherm are amongst the quietest units on the UK market.



## Wide Range of Sizes

With outputs of up to 22kW in single phase and 70kW in three phase, MasterTherm heat pumps come in all shapes and sizes. Units can be linked together in a Master/Slave configuration to provide up to an incredible 2MW – ideal for commercial applications.



## Arguably the most comfortable heat pump

All MasterTherm heat pumps can be connected to the internet.

Users have the ability to control and monitor units from the Web, iPad or mobile phone (android or iOS).



**iOS App (iPad, iPhone)**  
Use test login  
(login: demo, Password: demo-mt)

**Android App**  
Use test login  
(login: demo, Password: demo-mt)





## Residential Systems

An environmentally-friendly and low-cost way to heat your home.

Whether it's a one-bedroom apartment or a sprawling stately home, MasterTherm heat pumps have been installed in homes of all sizes, providing renewable heating and hot water systems which are built to last and deliver outstanding comfort.

MasterTherm technology has been applied to many residential projects including social housing, state-of-the-art eco homes and renovations and retrofits of every size and style.

With a seven-year warranty as standard and some of the highest seasonal co-efficient performance (SCOP) ratings available, you can be assured that when you choose MasterTherm, you're choosing a best in class system.



## The New Age – Inverter Control Technology

The development of inverter control technology started more than two decades ago in Japan. Since then manufacturers of compressor units for cooling and heating equipment have been working on perfecting variable output technology. MasterTherm have perfected this technology and applied it to the flagship range of inverter heat pumps – the inverter range. These heat pumps have the capacity to continuously modulate heating/cooling output across a range of 30%-100%. This level of control

enables the output of the system to be matched perfectly to the demand of the property, eliminating the inefficient overheating.

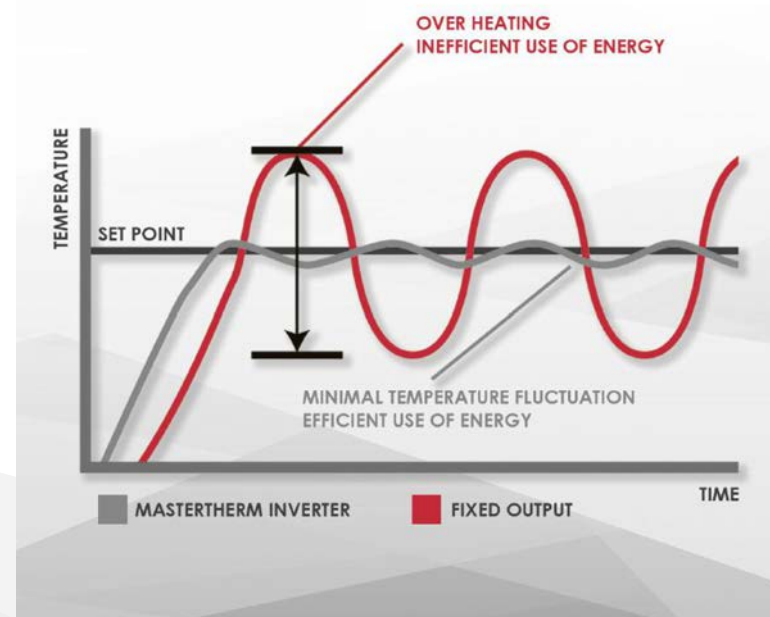
Heat pumps, in general, are sized to cater for the full load of a property – 100%. A fixed output heat pump will be turned on and off continuously with the compressor always operating at 100% of its capacity regardless of demand. The use of inverter technology allows the units to vary its output to match the demand of the property. When demand is

low, the output of the heat pump is reduced to match the requirement of the property, therefore significantly reducing the number of on/off cycles (cycling).

The lifespan of a compressor is limited by the number of times the compressor is switched on and off. MasterTherm inverter technology significantly reduced the mechanical load applied through cycling and vastly extends the lifespan of the equipment.

The technology has several notable advantages including:

- Increased Coefficient of Performance (CoP) – Inverter control allows demand to be matched by supply through speed modulation of the compressor resulting in a greater CoP
- Reduced energy consumption
- Controlled starting current – Zero Amps
- No requirement for a buffer tank
- Reduced mechanical load – increase lifespan



### Why MasterTherm?

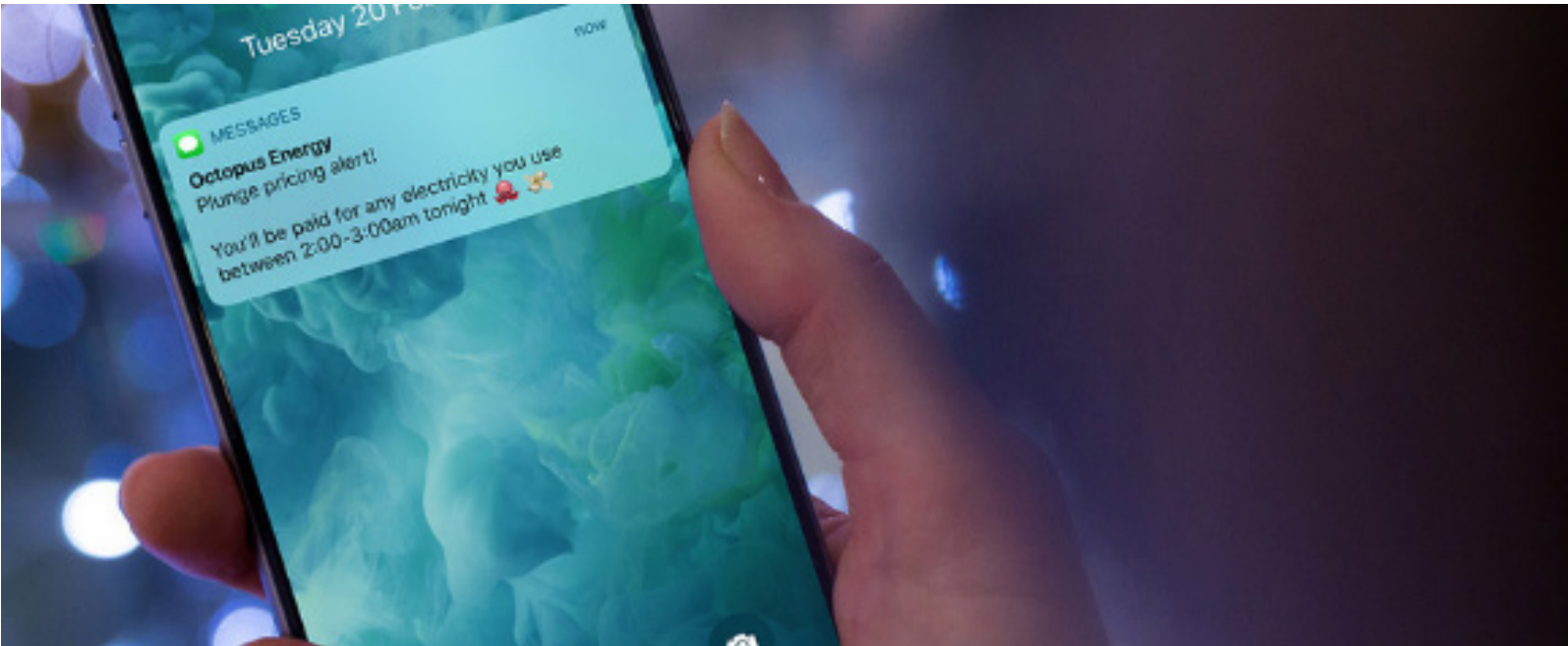
- 7-year warranty
- Inverter technology for a more efficient system
- Control your heating with smartphone apps
- Online system monitoring – if you ever have a problem with your heat pump we can remotely connect and often diagnose your heat pump without needing to step foot in your home
- Customise the colour of your heat pump
- MCS Compliant
- Eligible for government grants and funding
- Over 25 years of industry-leading research and development
- Award-winning technology
- Compatible with Octopus Agile and Homely to help you save even more on your energy bill
- Expert installers – Our partner installer network (PIN) includes the most reputable, experienced and trusted heating engineers in the industry.



# A Smarter Home Heating System

A smarter system designed to save you money whilst using more sustainable energy.

MasterTherm integration with Homely Energy and Octopus Agile can achieve up to 50% additional savings on your heating and hot water on the already low costs of running a heat pump.



## How Does It Work?

Smart meters allow customers' electricity use to be calculated and billed in half hourly periods and see the price of electricity as it changes throughout the day. Agile's half-hourly prices reflect the real price of electricity that Octopus buys a day ahead, this is made up of the wholesale costs and extra charges for use of the grid.

Connecting your MasterTherm heat pump to Homely enables you to take advantage of the Octopus Agile tariff. The innovative system will learn how long your house takes to heat up and cool down. It then looks at weather forecasts and electricity prices to make sure your house is heated at the lowest cost times throughout the day to meet your desired temperatures. All you have to do is download the Homely App, set your temperature preferences just once, and that's it. Your heat pump will be operating as cheaply as possible using cutting edge technology, fair electricity pricing and fully renewable energy.

Agile Octopus includes Price Cap Protect, which ensures you'll never pay more than 35p / kWh for your electricity, guaranteed. Even if you continue to use your electricity as normal, you'll still save money compared with tariffs from the big 6 energy providers.



## WHAT OUR CUSTOMERS ARE SAYING...

“My MasterTherm system with Octopus Agile and Homely is up and running and has reduced my electricity consumption by 35%. Very happy!”

Anthony Phillips,  
MasterTherm Customer

## Commercial and Industrial Systems

MasterTherm ground and air source heat pumps are ideal for industrial and commercial premises.

Heat pumps will significantly reduce running costs and increase the green credentials of your organisation helping to boost environmental policies. Heat pumps operate best at low, constant temperatures which will help to improve working environments.

Installations are not limited by the rating of an individual unit. A series of heat pumps can be linked together using MasterTherm's intelligent MasterLAN software. Units can be linked in a Master/Slave configuration with a combined total power of up to 2MW.

### Longevity

Unlike traditional boilers, heat pumps do not rely on any form of combustion and as such the lifespan of a heat pump is expected to exceed 20 years, with ground source heat pumps lasting more than 30 years. Traditional oil and gas fired boilers installed in a commercial premises have a typical lifespan of 7-10 years.

### Simultaneous Heating and Cooling

Utilising MasterTherm's bespoke MasterLAN algorithm and controls, MasterTherm heat pump systems have the ability to offer simultaneous heating and cooling to buildings, manufacturing processes and numerous other applications.

Most heat pumps have the ability to offer 'heating energy' and 'cooling energy' either actively or passively but with the MasterLAN

application the management of the actual heating and cooling capacities of MasterTherm inverter heat pumps is far more controlled, balanced and efficient when compared against other manufacturers.

Some manufacturing processes such as galvanising steel, brewing of beer, anodising aluminium and ice cream production to name a few all have a heating and cooling demand. Ground source heat pumps are ideally suited to provide this and can offer significant energy savings over conventional heating and cooling systems.

With MasterTherm's MasterLAN application, a heating and cooling solution can be provided using the unique control system, without the need for a reversible unit. MasterLAN will control the multiple set points of each unit at the given conditions to ensure that the energy is going to the right place at the right time.



# Funding & Grants

If you're considering installing a heat pump in your home, you could benefit from these financial incentives to help cover the cost...

## Renewable Heat Incentive (RHI)

RHI is a financial incentive scheme established by the government to increase the use of renewable heat across the UK and in turn reduce national carbon emissions. If you're considering a heat pump we recommend securing your installation date and applying for the RHI before it ends on 31st March 2022. The Domestic RHI scheme covers buildings and properties designed for residential use. Payments are made every quarter for a total duration of 7 years and are based upon the annual heat requirement of your property set out by the EPC. Homeowners can easily calculate their annual entitlement using the UK Governments RHI Calculator which can be found online.

## The Green Homes Grant

The Green Homes Grant is available for residential properties in England and offers vouchers that will cover as much as two-thirds of the cost of installing a heat pump, up to a maximum contribution of £5,000. If you, or someone in your household receive certain benefits, you may be eligible for a voucher up to the value of £10,000. Like RHI, the Green Homes Grant will also come to an end in March 2022, so be sure to make your application before the closing date.



# Energy Related Products Directive – Heat Pump Efficiency

All heating and hot water products with an output equal to or less than 400kW are affected by the Energy related Products (ErP) directive. Energy labels are used for assigning heat pumps to individual classes based on their energy efficiency (heating efficiency).

The best class is marked A+++, the worst G. These ratings can help you to compare and decide which heat pump is right for your project. One of the deciding factors for determining energy efficiency is the seasonal SCOP heating factor. Methodology for determining energy efficiency is defined in BS EN 14 825.

## What is SCOP?

Seasonal Co-efficient of Performance (SCOP) represents the ratio between the total produced heat and the total electricity consumption over a heating season. This is in contrast to the COP (Co-efficient of Performance) heating factor, which is specified for particular temperature conditions, for example COP=3.2 at A2W35 (air temperature of 2°C and heating water temperature of 35°C). As SCOP is calculated based on more than just one fixed temperature, it provides a much more accurate rating of real efficiency of heat pumps much more accurately conditions than the COP factor. To give you a clear understanding of the performance of MasterTherm heat pumps and the efficiency they offer, we've provided a low and medium temperature example below.

Air-Water	Low-temperature operation 35°C				Medium-temperature operation 55°C			
BoxAir Inverter	Power*	SCOP	ηs%	Class	Power*	SCOP	ηs%	Class
BA 22i	5kW	4,18	164	A++	4kW	3,22	126	A++
BA 26i	7,5kW	4,40	173	A++	7kW	3,36	132	A++
BA 30i	8,5kW	4,49	177	A+++	8kW	3,45	135	A++
BA37i	11kW	4,48	176	A+++	10kW	3,50	137	A++
BA 45i	14kW	4,30	169	A++	13kW	3,32	130	A++
BA60i	22kW	4,47	176	A+++	24kW	3,42	134	A++

\*Power output - for the proposal outdoor temperature of -10°C



Ground- Water	Low-temperature operation 35°C				Medium-temperature operation 55°C			
AquaMaster Inverter	Power*	SCOP	ηs%	Class	Power*	SCOP	ηs%	Class
AQ 17i	5kW	4,65	179	A+++	4kW	3,53	133	A++
AQ 22i	7kW	4,61	177	A+++	6kW	3,53	133	A++
AQ 26i	9kW	4,83	185	A+++	9kW	3,74	141	A++
AQ 30i	11kW	4,85	186	A+++	11kW	3,78	143	A++
AQ 37i	15kW	5,00	193	A+++	14kW	3,94	149	A++
AQ 45i	21kW	4,80	184	A+++	19kW	3,70	140	A++
AQ 60i	33kW	5,02	193	A+++	33kW	3,97	151	A+++
AQ 90i	44kW	4,87	187	A+++	43kW	3,87	147	A++

\*Power output - for the proposal outdoor temperature of -10°C



Air-Water	Low-temperature operation 35°C				Medium-temperature operation 55°C			
EasyMaster	Power*	SCOP	ηs%	Class	Power*	SCOP	ηs%	Class
EM60Z	25Kw	3,56	140	A+	24kW	2,86	111	A+
EM75Z	31kW	3,61	141	A+	30kW	2,92	114	A+

\*Power output - for the proposal outdoor temperature of -10°C



Ground-Water	Low-temperature operation 35°C				Medium-temperature operation 55°C			
AquaMaster Inverter Combi	Power*	SCOP	ηs%	Class	Power*	SCOP	ηs%	Class
AQ22i1c	7,kW	4,61	140	A+++	6kW	3,53	133	A++
AQ30i1c	11kW	4,85	186	A+++	11kW	3,78	143	A++
AQ37i1c	15kW	5,00	193	A+++	14kW	3,94	149	A++

\*Power output - for the proposal outdoor temperature of -10°C

















## Ground/Water Source Heat Pump – AquaMaster Inverter

MasterTherm's range of Ground and Water source heat pumps in a range of capacities.








The AquaMaster Inverter heat pump achieves the highest efficiency in its class. The BLDC compressor with frequency controlled inverter drive continuously adjusts its output to the building's heating demand. This means the AquaMaster Inverter only produces the energy the property needs. It also means we can remove or reduce the capacity of a buffer tank. The combination of inverter technology, electronic expansion valve, equi-thermal control system adds unique heating performance at all operating modes with significant operating savings, market leading COP's, extended lifetime and improved reliability.

These features means the AquaMaster Inverter heat pump has won several internationally recognised awards.

### Key Features:

-  7 year warranty supplied as standard with Internet Control Neobox Module
-  Low noise with special insulation and painted panels
-  Zero amp starting current. Never issues with DNO
-  High efficiency BLDC compressor
-  No requirement for a buffer tank
-  Fully variable output control from 30-100%
-  Electronic expansion valve
-  Integral solar controller
-  Output water up to 60°C
-  Low maintenance

### Optional Features:

-  Passive cooling
-  Full cooling
-  Desuperheater (Output water up to 70°C)
-  Water to water version
-  Heating circuit room terminals
-  Heating circuit expansion board
-  Immersion backup heater




## Ground/Water Source Heat Pump – AquaMaster Inverter Combi




The AquaMaster Combi Ground Source Inverter Heat Pump with integral stainless steel domestic hot water cylinder encompasses the same intelligent control systems as a the AquaMaster Inverter Ground Source Heat Pump. The unit requires minimum space and can be positioned in a kitchen or utility room and is available in 3 capacity ranges the same as the original AquaMaster Inverter range.

Due to the 'all in one' nature of the unit, electrical and mechanical installation is significantly reduced resulting in a faster, more efficient installation. The integral hot water tank includes a solar coil to allow Solar Hot Water system integration.

### Key Features:

-  7 year warranty supplied as standard with internet control Neobox Module
-  Low noise with special insulation and painted panels
-  Zero amp starting current. Never issues with DNO.
-  High efficiency BLDC compressor
-  No requirement for a buffer tank
-  Fully variable output control from 30-100%
-  Electronic expansion valve
-  Integral 180l hot water cylinder with rapid heat recovery coil
-  Integral solar coil
-  Integral solar controller
-  Output water up to 60°C
-  Low maintenance
-  4.5kW immersion for backup and legionella function

### Optional Features:

-  Passive cooling
-  Heating circuit room terminals
-  Heating circuit expansion board


















## Air Source Heat Pump – BoxAir Inverter




The BoxAir Inverter is the latest development in the MasterTherm range of products to feature inverter technology and single phase output up to 22kW (A7W35). The range combines the compact design of the BoxAir with an electronic expansion valve, electronic control and BLDC inverter compressor technology in a single compact unit that offers many advantages compared to standard equipment. Inverter drive decreases the frequency of the compressor switching on and off, this greatly reduced power consumption and extends the equipment lifetime. A significant decline in operating costs is achieved (up to 30%).

In most cases, no buffer tank is required, this saves boiler room space and installation costs. The unit is equipped with modulating DC fans of infinitely variable speed, built-in immersion heaters, equilibrium control and internet control/diagnostics.

### Key Features:

-  7 year warranty supplied as standard with internet control Neobox Module
-  Operate down to -20°C external ambient temperature
-  Low noise with special insulation
-  Low noise DC Fan – 38dBA @ 10m
-  Zero amp starting current. Never issues with DNO.
-  High efficiency BLDC compressor
-  No requirement for a buffer tank
-  Fully variable output control from 30-100%
-  Electronic expansion valve
-  Integral solar controller
-  Output water up to 60°C
-  Low maintenance
-  Integral backup heater

### Optional Features:

-  Full cooling
-  Heating circuit room terminals
-  Heating circuit expansion board





**MasterTherm**  
H E A T P U M P S

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APPROVED PRODUCT



Cert No: MCS BBA 0034

