

“Pump” heat to conserve nature

# Warmth and comfort

Heat using the harmonic heating principle



The future of  
heat pumps

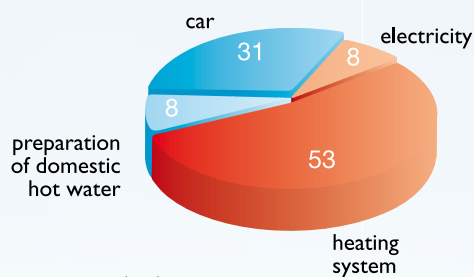


**alpha**innoTec

# Protect nature – protect the future

When choosing a new heating system, you determine how low your heating costs will be in the next decades. Your decision also has either a positive or negative impact on the environment.

Actual energy consumption in %:



source: german energy agency [www.dena.de](http://www.dena.de)

Heating demands have changed drastically in the past years. Environmental conscience and increased energy prices today demand economical system without loss of comfort, while also conserving our environment. This is exactly what heat pumps by Alpha-InnoTec deliver. This brochure will introduce the concept to you.



# Being kind to nature pays off

Protecting the environment does not have to result in loss of comfort.



Air/Water Compact heat pump indoor installation 6 kW



Air/Water heat pump outdoor installation 8 kW



LUXTRONIK Controller

## The planet needs our help. Now!

The biggest threat to our planet is climate change. Every individual person can do their part, so our children and grandchildren can live in a stable environment. The required technology is available, we just need to use it.

## Half the heating costs, huge environmental advantage!

By choosing a heat pump heating system, you are opting for very low operating costs and for very low emissions. For the environment a heat pump is first choice. Modern heat pumps heat very efficiently, generate warm water, ventilate and cool. They offer optimal living comfort for your family with easy to calculate heating costs.

## Oil and gas are ever increasing in price

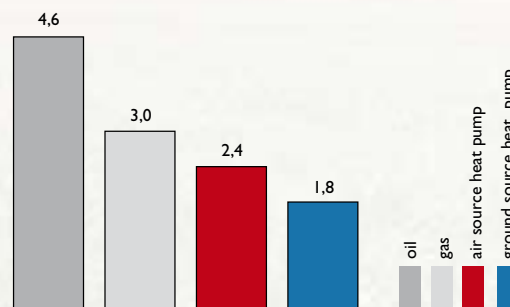
The growing worldwide demands for energy and energy trade on the markets are increasing the prices of natural gas, coal, oil and electricity. Fortunately, electricity rises only partially affect the heat pump since it uses a lot of free solar energy from the environment. With a heat pump you gain independence from oil and gas.

Alpha-InnoTec heat pumps are designed to heat with an optimized ratio of "required energy to free environmental energy".

## Higher investment costs do pay

Initially a heat pump costs more than a new oil or natural gas boiler. Upon review you will notice that while the initial investment costs maybe higher, there are additional costs associated with a boiler in a new house such as the utility room, the fire, gas connection, higher insurance and maintenance. When renovating you gain additional space with a heat pump and you are also heating with 75 % free environmental energy. That gives you a quick payback on your investment. Costing examples are listed on page 8.

## Operating cost (pence/kWh)



Average costs 2005



# The warmth of the sun for a comfortable home

When using a heat pump, the sun provides 75 % of the required heat energy for heating and domestic hot water. The sun's energy is stored directly in front of your door in the air, in the ground and in ground water. This environmental heat is unlimited. For everyone!

A heat pump can generate 4kW of this clean energy and comfort for every 1kW of electrical drive energy it consumes.

Heat pumps harmonize economy and ecology together to create a "harmonic heat principle".

A heat pump system consists of three components:

## Heat pump heating system

heat source  
(e.g. ground)

heat generator  
(heat pump)

heat distribution  
(e.g. underfloor)

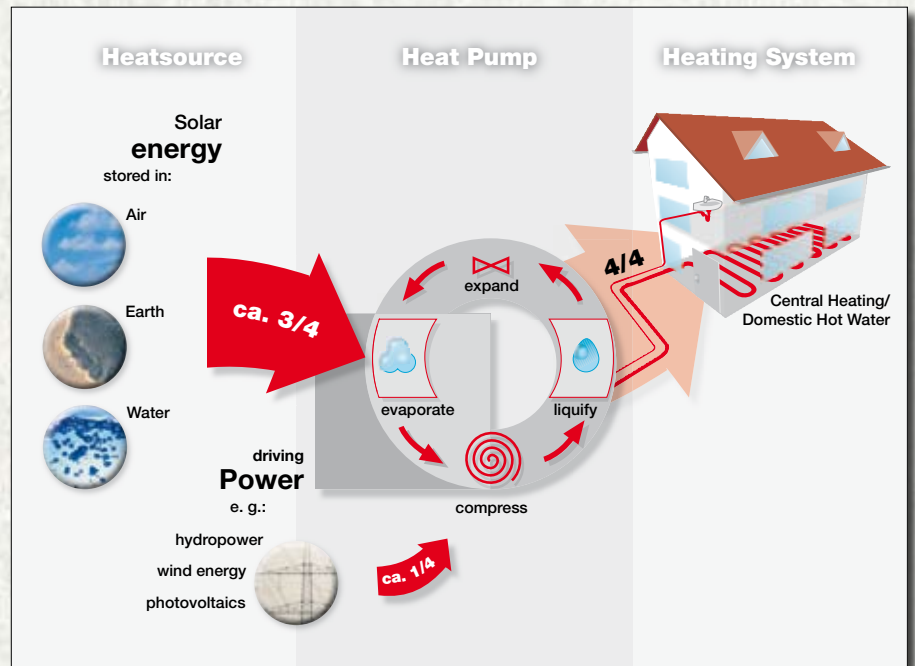


# Simple principle, ingenious result

A heat pump  
is the  
right decision

Heat pumps work most economically when the difference between the heat source intake temperature is as low as possible compared with the temperature of the heating circuit.

Therefore, low temperature heating systems, such as radiant-floor or wall heating are the ideal partners for the heat pump.



Air/Water heatpump outdoor installation 33 kW



Air/Water heatpump indoor installation 26 kW

## You know the technology already

The heat pump works like a refrigerator. It is the same proven and reliable technology, just a reversed application. The fridge extracts heat from food. The heat pump also extracts heat, but from a "cold" environment. Alpha-InnoTec heat pumps are so well developed, that this principle works in summer and winter, day and night.

## Temperatures below freezing? Even then there is plenty of heat left!

The heat pump increases the heat from low temperatures (e.g.  $-5^{\circ}\text{C}$ ) to a higher, more comfortable temperature (e.g.  $22^{\circ}\text{C}$ ). This also works in freezing temperatures. The environment benefits as well, since no emissions are created locally. Now your children can breathe easy.

## The heat pump principle

An environmentally friendly coolant is sequentially evaporated, compressed and liquefied in a closed circuit system. The increasing pressure from this process leads to higher temperature of the coolant. This way temperatures suitable for heating are generated, and these can be transferred to radiant floor heating or radiators.

## Heat Sources

A heat pump can extract energy from three sources: stored solar energy in the air, in the ground and in ground water. The heat extracted from each heat source is transferred by the heat pump to the heating system (e.g. floor heating) via a heat exchanger.

The heat from the source is usually exchanged to a water heating circuit. Therefore we classify the heat pump as air/water, brine/water or water/water heat pumps.

Each of the heat sources contains so much heat that the heat pump circuit process can take place even at low temperatures and still provide sufficient heating energy.

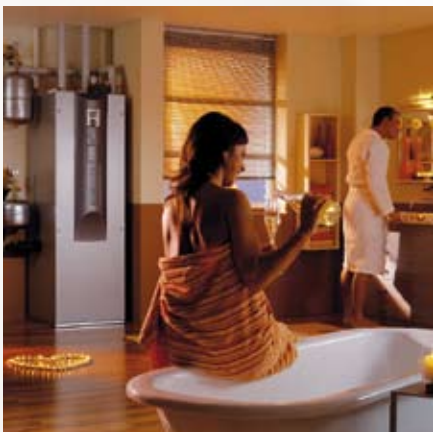


# We have the perfect heat pump for you!

You can enjoy the advantages of a heat pump in both **new build** and older homes. Alpha-InnoTec has a suitable heat pump for you for almost any application. Ideally surface heat systems, like floor or wall heating should be used to emit the free environmental heating to the individual rooms.

We have developed heat pumps especially for **renovation** projects that provide a high flow temperature. Units with 65°C heat water temperature for low emission homes or heating system upgrades are the result. You can usually continue to use the existing radiators when renovating. This reduces the building works considerably.

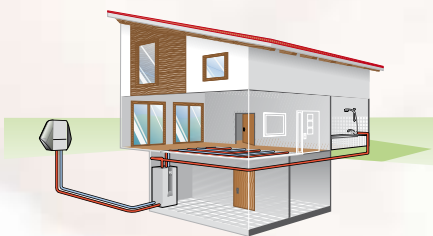
To find a source for your heat pump and your project, please see your local distributor (p12).



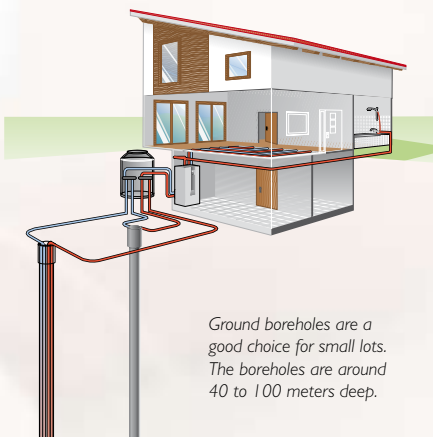
Brine/water heat station 8 kW

# The natural fuel tank on your property is filled for free – all the time

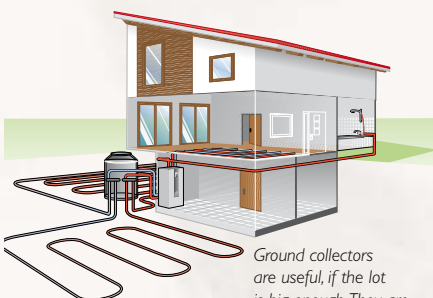
**Our environment stores a lot of sun energy**



*Air/Water heat pumps outdoor installation: ideal for furnace renovation*



*Ground boreholes are a good choice for small lots. The boreholes are around 40 to 100 meters deep.*



*Ground collectors are useful, if the lot is big enough. They are installed ca. 20 cm below the frost level roughly 1.0 to 1.4 meter depth.*

## Get comfortable

A heat pump is a decision for a complete heating system, providing you and your family optimized living comfort. For comfortable heat and plenty of hot water you do not require additional heat sources or burners. Our equipment can supply everything.

Alpha-InnoTec heat pumps are very user friendly. Once your pump is installed there is nothing left for you to do, no more fuel to order. Heating with a heat pump requires no tank, no chimney and no fuel storage room for the house.

## Free-cooling: Cooling with the heater

Only a heat pump can do this. Provide heat on cold days and cooling on hot days, simply and economically with a brine/water heat pump. The lower temperatures in the ground are used to cool your rooms in the summer to a comfortable temperature. For this the heat pumps remain deactivated. Only the heat exchanger and brine pump need to run which does not take much electricity. Room temperatures can be lowered through the floor or wall heater from 26 °C to 23°C, for example.

## Operation? Child's play!

The heat pump knows when to provide heat. This is ensured by an exterior temperature sensor. If it is too cold outside, the sensor activates the heat pump. You can adjust it to your most comfortable temperature with a thermostat. Using the menu controlled Luxtronik heat pump controller with Turn & Tip control, you can simply adjust at what time on what day the heat pump should turn on or off. You can always return to a warm house when you are back from a winter holiday.

## You can hardly hear it

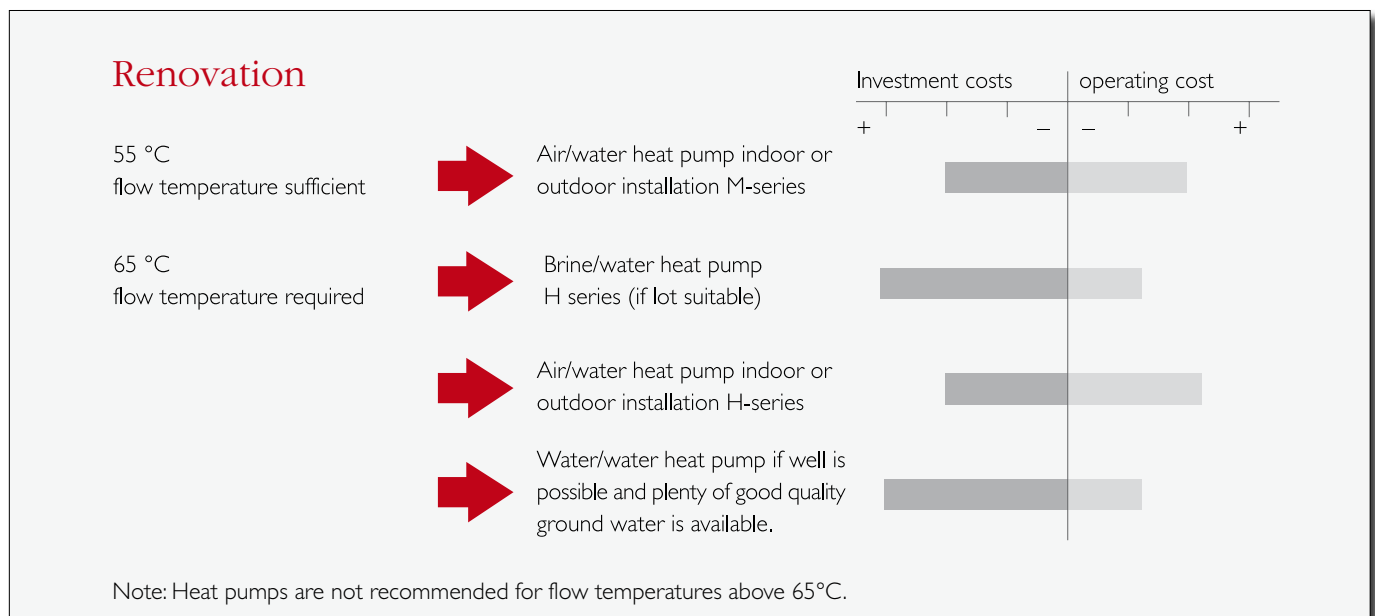
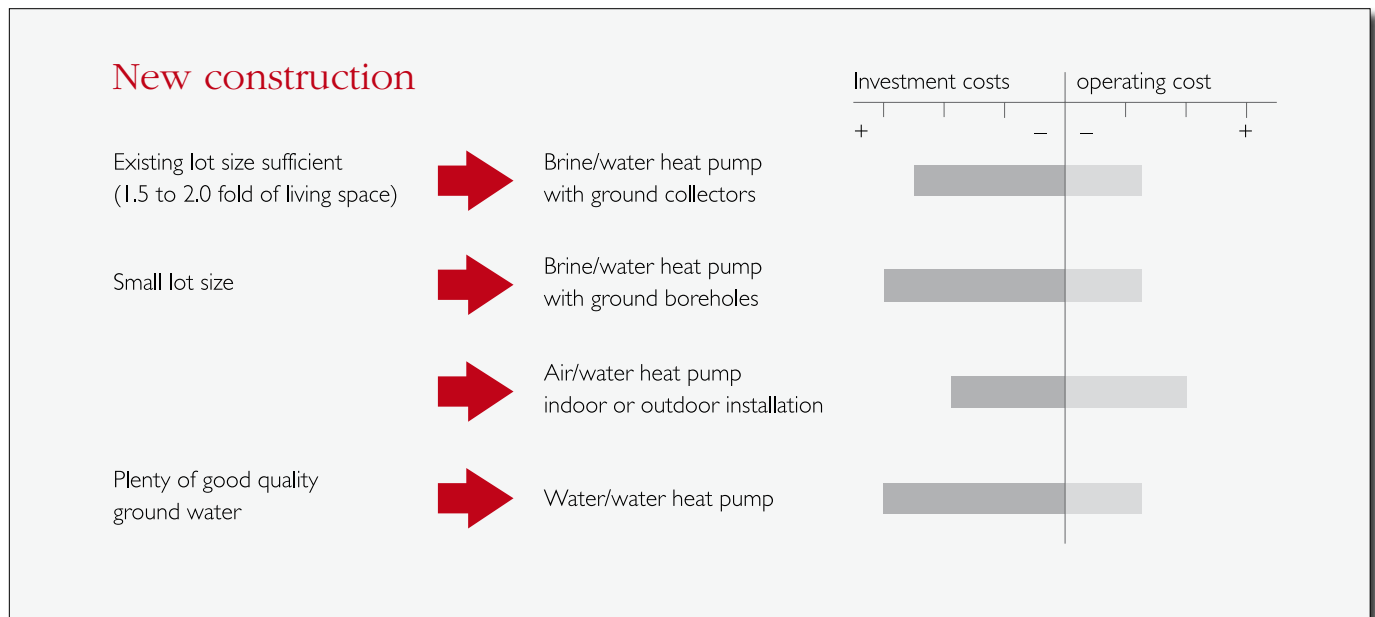
Alpha-InnoTec heat pumps are very quiet. Depending on the model, they can even be installed in the utility room without bothering you. The compact units require little space, leaving plenty of room for you. If you decide on an air source heat pump, the heat pump can be installed outside. There, it is out of sight. There will also be no smells like oil or coal, since the heat pump heats without a flame.

Whether for new builds or boiler renovation, Alpha-InnoTec heat pumps provide you with heating technology that fulfills all the requirements of a modern heating system:

- heating with lots of sun energy, day and night
- largely independent from oil and gas
- reliable, proven technology
- modern design
- compact units, easy to install
- small footprint
- full heat comfort
- almost halve heating energy costs
- optimal for environmental protection
- local CO<sub>2</sub>-emissions are zero
- noise minimised

# Which heat pump is right for me?

## Orientation guide



# We have the perfect heat pump for you!

## Overview

### Air/Water heat pumps – indoor installation

**Comfort heat station KHZ**  
heating – ventilation – domestic hot water



- 6,1 kW or 8,1 kW<sup>1)</sup>
- 55 °C flow temperature
- integrated ventilation
- integrated hot water tank
- many hydraulic components already integrated

**Heat station**  
Heating – domestic hot water



- 6,1 kW or 8,1 kW<sup>1)</sup>
- 55 °C flow temperature
- optimized for solar integration
- many hydraulic components already integrated

**Compact-Series**  
Heating – domestic hot water



- 6,1 kW or 8,1 kW<sup>1)</sup>
- 55 °C flow temperature
- many hydraulic components already integrated

**M-Series**  
Heating – domestic hot water



- 10 kW to 33 kW<sup>1)</sup>
- 55 °C flow temperature

**H-Series**  
Heating – domestic hot water



- 15 kW or 32 kW<sup>1)</sup>
- 65 °C flow temperature
- ideal for modernization

### Air/Water heat pumps outdoor installation

**M-Series**  
Heating – domestic hot water



- 5 kW to 33 kW<sup>1)</sup>
- 55 °C flow temperature

**H-Series**  
Heating – domestic hot water



- for houses with a total capacity from 15kW to 32kW
- 65 °C flow temperature
- ideal for modernization

### Brine/Water heat pumps

**Heat station WZS**  
Heating – cooling (optional) Domestic hot water



- 6 kW, 8 kW or 10 kW<sup>2)</sup>
- 65 °C flow temperature
- Free cooling optional
- integrated warm water tank
- many hydraulic components already integrated
- very quiet operation

**Compact-Series SWC**  
Heating – cooling (optional) Domestic hot water



- 6 kW to 17 kW<sup>3)</sup> with 65 °C flow temperature
- 23 kW to 33 kW with 55°C flow temperature
- Freecooling optional
- many hydraulic components already integrated
- very quiet operation

### Water/Water-Heat pumps

**Compact Series WWC**  
Heating – domestic hot water



- 10 kW to 22 kW<sup>3)</sup> with 65 °C flow temperature
- 28 kW to 44 kW with 55°C flow temperature
- many hydraulic components already integrated
- very quiet operation

You can find detailed information on our heat pumps at: [www.alpha-innotec.com](http://www.alpha-innotec.com)

1) Heating capacity at A2/W35 · 2) Heating capacity at B0/W35 · 3) Heating capacity at W10/W35

# Our know-how for your environment heater

Over 300 customer focused specialists ensure innovation, motivation and satisfaction. Alpha-InnoTec has the top know-how in the area of heating and cooling technology. Consequent innovation, constant technical development, qualified and motivated partners and the right "nose" for the market make Alpha-InnoTec one of the market leaders in heat pumps throughout Europe. Alpha-InnoTec is already the volume market leader in Switzerland.

As one of the leading manufacturers in Europe, Alpha-InnoTec has a product range that is fine tuned to international markets. Our consequent customer orientation also means that needs and experiences of international users are integrated into research and development of new products.

## Modern and economical

Compact size, nearly silent operation and modern and elegant design are the trademarks of our heat pumps. Simple operation, highest comfort and extremely economical use of energy by the equipment is ensured by the clever Luxtronic control technology, which was developed in close cooperation with the Technical University of Berlin.

## Space saving and environmentally friendly

Our heat pumps are designed for the demands of modern living, functionality, small space requirements and a variety of connection standards and installation scenarios. Our heat pumps are easy to install due to the supply of the complete equipment package.

## Checked and tested

Every heat pump undergoes a 100 % inspection and demanding quality tests enabling you to rely on their production of clean and free environmental heat for many years.

## Easy-care with quality guarantee

There are no service and maintenance costs as for a regular boiler. Our heat pumps are designed to be maintenance free and have a long life expectancy. Alpha-InnoTec heat pumps have the international quality seal from independent test institutes, such as TÜV in Germany. Even service and customer service are part of the test evaluation. Alpha-InnoTec is also certified with quality management certificates ISO 9001 and ISO 14001

## Pact with the environment

Alpha-InnoTec is fully committed to the heating of the environment and has an active role in the Umweltpakt Bayern (Environmental pact of Bavaria).

## Important heat pump terminology in brief

### Operating mode

The operating mode is a major factor in the economy of a heat pump system.

Usual operating modes:

- **mono-valent:** Only heat pump operation
- **mono-energetic:** Heat pump with the addition of an electrical resistor heater for very cold days (immersion heater)
- **bi-valent:** Additional to the heat pump, there is a secondary heat source, e.g. the old oil boiler.

### Performance

(COP = coefficient of performance)

The performance value is a momentary value measured under given situations in a lab environment. The performance value is a test value without auxiliary drives. It is the ratio from the heat performance to the drive performance of the compressor. The performance value is always  $>1$ , since the heat output is always larger than the drive performance of the compressor. A performance value of 4 relates to a quadruple of the used electrical energy as usable heat output.

### Annual performance number

The annual performance number calculates the ratio of usable energy to added electrical energy over the period of a year.



# Our partners worldwide

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Alpha-InnoTec  
Heat Pumps  
are the right choice!



Alpha-InnoTec has the European quality stamp for heat pumps



Alpha-InnoTec is member of :  
· Bundesverband WärmePumpe (BWP) e.V.  
(federal heat pump association) Germany  
· European Heat pump Association (EHPA)



Alpha-InnoTec product manufacturing is monitored by TÜV



Alpha-InnoTec products carry the CE-label



Alpha-InnoTec is certified according to  
ISO 9001 (quality) and ISO 14001  
(environment)

