

ENGINEERING
TOMORROW

Danfoss

Danfoss Heat Pumps

The future-proof **investment**
that pays off every single day



20+ years

with energy savings. With a life expectancy of more than 20 years, investing in a Danfoss Heat Pump will bring you comfort and top performance year after year.

heating.danfoss.com

Meet your new energy supplier

Just imagine. You can get 75% of your energy needs from solar energy stored in the ground or the air while heating your home and enjoying the highest possible level of comfort at the same time. This is made possible by our comprehensive range of heat pumps, which provide sustainable, energy-efficient solutions in all areas.

Sustainable heating comfort

Heat pumps collect CO₂ emission-free solar energy stored in the ground and convert it into an environmentally sustainable indoor climate for your home. By choosing a heat pump, you are choosing to be a part of the solution for a better climate. Today, people all over Europe are discovering their many benefits.

Comfort with big savings

Heat pumps can cover 100% of your energy needs while delivering 50–75% savings compare to traditional oil or gas heating systems. Thanks to these savings, payback times are typically just 5–7 years. Another major advantage of a heat pump is that it requires almost no maintenance or attention. Once installed, you can effectively forget about it. It will work every day, all year round, keeping your home warm and comfortable while saving you money and reducing your environmental footprint at the same time.

Enjoy.



Hello.



Start looking forward to ...

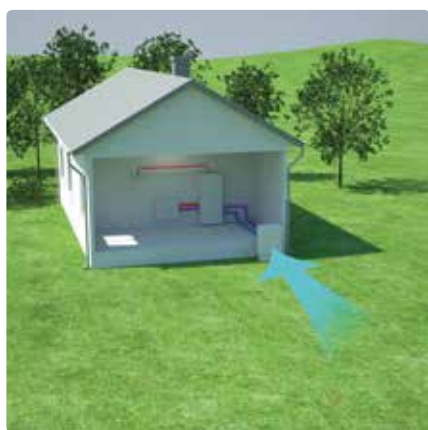
- » Reliable, tried and tested technology
 - » Up to 75% free energy from the earth's naturally stored heat
 - » 100% renewable and sustainable
 - » Easy care with no maintenance
 - » Heating and hot water from a single source
 - » Comfort cooling in warm weather
 - » Space-saving design takes up less than 0.5 m²
- ... for the next 20+ years

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4 ways to collect energy

Nature has provided four completely natural sources of energy that heat pumps allow us to efficiently extract. Providing us with the comfort levels we want for our homes with zero negative impact on the environment.



Air source

With an air source heat pump, there is no need to dig or drill. Energy is extracted direct from the surrounding air in an economical and extremely environmentally friendly manner, without having to excavate your garden. Air source heat pumps are affordable, flexible and can be easily used to upgrade your existing heating system.

Benefits:

- Lower investment cost
- No impact on the ground
- No large plot needed
- Ideal for retrofitting



Horizontal ground loop

The horizontal ground loop collects solar energy that is stored in the ground. The loop is buried about one meter below the surface and energy is extracted from the ground. The length of the loop depends on your house, the size of the heat pump and local ground conditions.

Benefits:

- Lower installation cost compared to vertical ground loop
- The coil in the ground maintains an even temperature throughout the year
- Allows passive or active cooling
- Can also be used to extract heat from lakes

Going green is totally natural

When the sun shines, it heats the ground and the air. This creates natural sources of heat energy, all around us, that are just waiting to be captured. That's what a heat pump does.

Heat pumps collect solar energy that has been stored in the ground or the air

and convert it into an environmentally sustainable indoor climate for your home. No coal. No gas. No oil.

Totally free of CO₂ emissions, heat pumps use electrical energy to reverse the natural flow of environmental heat from cold to hot or from hot to cold.

Keeping you warm in the winter and cool in the summer. So you get to enjoy ideal comfort levels – for minimal cost – while making an active contribution to environmental sustainability.

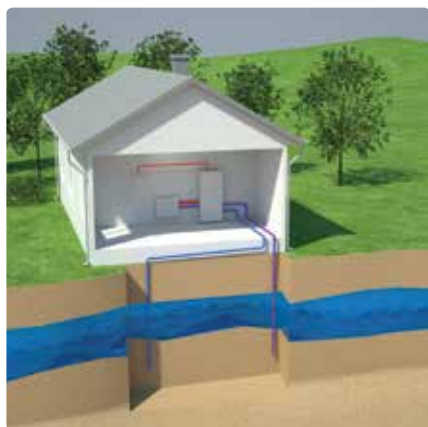


Ground source

The vertical ground loop collects solar energy stored deep below the surface. A hole is drilled into the bedrock and a pipe is installed to a depth of up to 200 meters. The precise depth depends on your house, the size of heat pump and the surrounding conditions. Due to the earth's endless ability to capture and store heat, there is no limit to the number of homes in a neighborhood that can efficiently use this technology.

Benefits:

- Needs very little space for installation
- Minimal impact on the plot: can be placed in most gardens, however small
- The hole in the rock maintains an even temperature throughout the year
- Allows passive or active cooling and fits any building

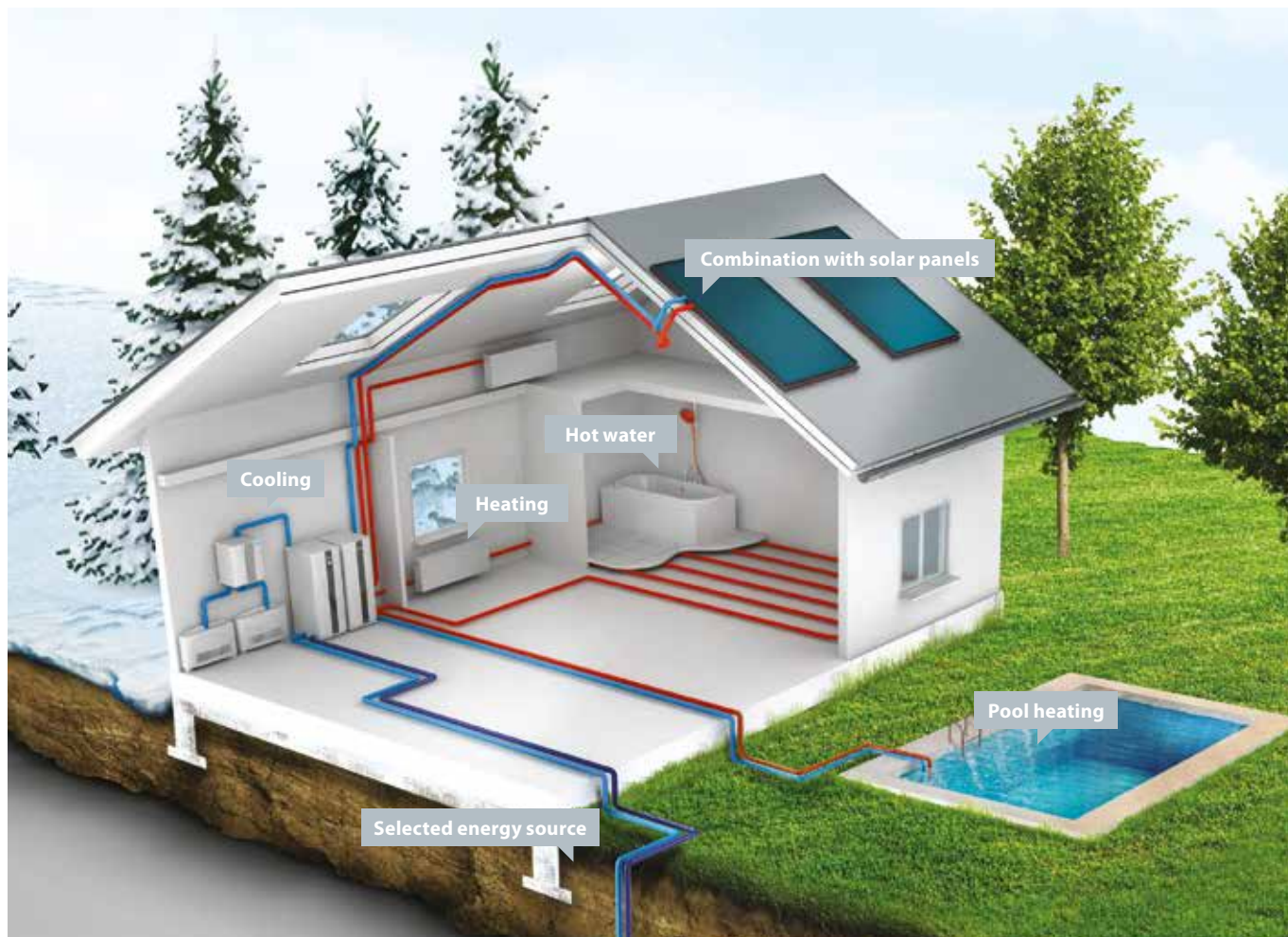


Groundwater

As the name suggests, a groundwater heat pump collects energy from the groundwater. The water is pumped up from a water borehole to a heat exchanger, where the energy is recovered. The water is then discharged back through another well. This solution can be the best choice when groundwater is readily available.

Benefits:

- Groundwater maintains a relatively high, even temperature, all year round
- Minimal impact on the plot
- Allows passive or active cooling



One system, many possibilities

Getting the most out of your Danfoss Heat Pump



Using an endlessly renewable natural energy source, Danfoss Heat Pumps can heat and cool your home, provide primary heating and hot water, heat your swimming pool or match the power of traditional air conditioning for a fraction of the cost.

From providing supplementary heating to delivering a fully integrated single heating system, Danfoss Heat Pumps offer remarkable flexibility.

Easy integration and complete reliability

Our extensive heat pump portfolio allows easy integration with a variety of supplementary heat sources, such as solar, gas and oil systems. What's more, this tried and tested technology can provide your home with the ideal interior comfort level, no matter whether the outside temperature is -20°C or $+35^{\circ}\text{C}$.

Three decisive issues when choosing a heat pump

Installing a heat pump is a long-term investment, so it is important to understand the basics. The following will guide you through the three areas you need to consider when making your decision. With the right heat pump for your needs, you can look forward to many years of economical and sustainable heat and maximum indoor comfort.



Annual efficiency

As a buyer, you need to know how efficient a heat pump is. Most manufacturers present this information in terms of COP (Coefficient of Performance). This assesses the heat pump's ability to supply heat, relative to the amount of electricity required to extract it.

However, measuring COP without calculating the energy consumption of all the components in the system (e.g. circulation pumps), doesn't tell the whole story. A far more accurate measure of a heat pump's performance is its annual efficiency. This incorporates heat demand during the warmest and coldest periods of the year, as well as hot water production. It also takes account of ambient internal temperature. Annual efficiency is unique to each heating system's specific conditions and the preferred comfort level of the people who use the building.



Hot water production

Around 20% of the energy provided by a heat pump is used to produce hot water. The availability of hot water must be sufficient to meet the needs of the whole household, so you need to choose a sufficiently powerful heat pump.

Today, hot water production represents a growing share of a home's energy needs. That is why it is important to maximize the annual efficiency of producing hot water. The hot water tank needs to refill quickly to ensure a consistent supply and to meet the needs of the entire household.



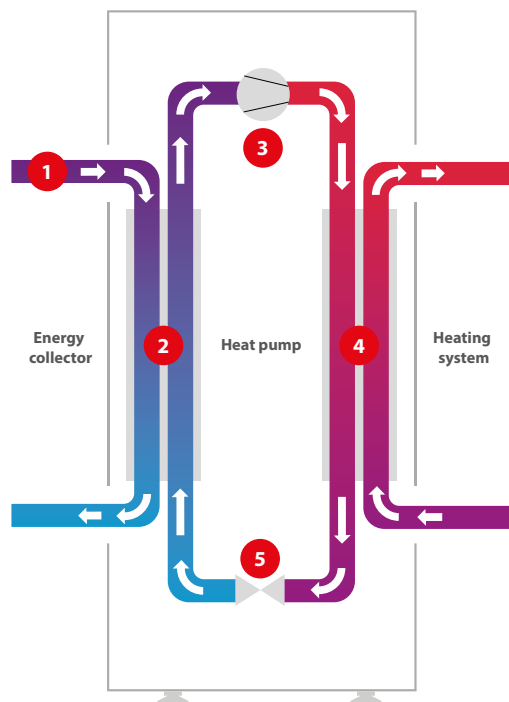
Choosing the right partner

Because your heat pump will form part of your entire heating system, you need an installer who can take responsibility for the whole process. This includes tapping the ground source and installing the heat pump and heat distribution system. For the best results, your system also needs to be correctly designed, including choosing the appropriate type and size of heat pump. Accurate 'dimensioning' will ensure that you always have plenty of heat and hot water.

Danfoss Heat Pumps are only sold via authorized installers and resellers who have been trained by us. Only Danfoss installers can provide you with the necessary warranties. Authorized Danfoss installers are specifically selected and they all have extensive experience of heating systems based on heat pumps.

How do heat pumps work?

Heat pumps are based on the simple physical principle that gas heats up when it is compressed and cools down when it expands.



- 1 A 'brine' solution, such as a mixture of water and alcohol or glycol, circulates in a collector loop and absorbs heat energy from the bedrock, ground, air or water. Brines cannot freeze.
- 2 In a heat exchanger (evaporator), the tepid brine in the collector loop meets the eco-friendly refrigerant circulating in the refrigerant circuit. The refrigerant absorbs energy, heats up and turns into gas.
- 3 A compressor is then used to increase the pressure of the refrigerant. This causes the temperature to rise to the required heating level.
- 4 In a second heat exchanger (condenser), the refrigerant releases its heat to the heating system in the house. As this occurs, the refrigerant is cooled down.
- 5 The refrigerant continues to circulate. An expansion valve is used to reduce its pressure. This in turn reduces its temperature and the refrigerant returns to liquid form. The process is repeated when the refrigerant meets the brine again.

Heat pumps in low-energy homes

High energy prices and global climate change have both made low-energy homes much more attractive in recent years.

Low-energy buildings typically use high levels of insulation and energy-efficient windows, providing low levels of heat loss and efficient energy ventilation. Heat pumps are an increasingly important part of this overall picture.

Renovation projects

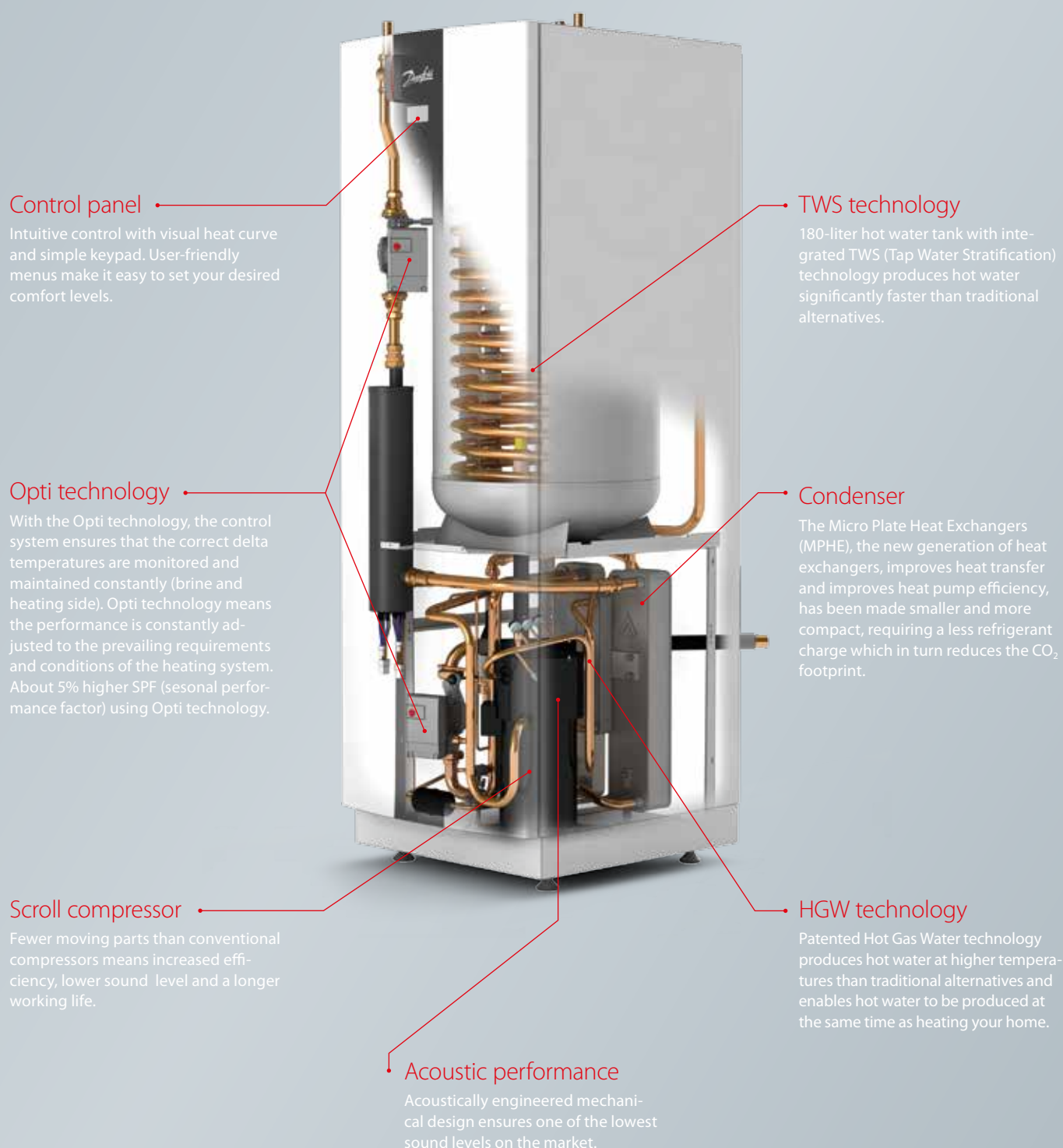
The savings a heat pump can provide will depend on your home, its location and your existing heating system. Authorized Danfoss installers can make an accurate calculation for you to help you reach the right decision. Danfoss Heat Pumps can also be adapted to existing heating systems and combined with different types of supplementary energy sources, such as solar, gas or oil.

New builds

When building a new house, there are lots of decisions to make, of which choosing the correct heating solution is one of the most important. With the right heat pump, you can cover a range of applications, including cooling and heating a swimming pool, within a single system. This avoids the need to invest in and maintain several separate solutions.

Technology for maximum annual efficiency

We have developed several technologies to ensure you get maximum performance and functionality from your heat pump. They all actively contribute to increased annual efficiency, comfort, reliability and cost savings.



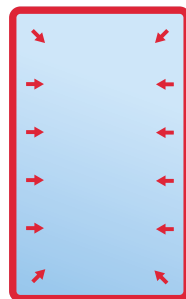
Hot water production

TWS technology

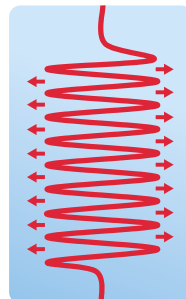
Danfoss Heat Pumps produce domestic hot water using our patented TWS (Tap Water Stratificator) technology. TWS ensures a plentiful supply of hot water, quickly and at low operating cost.

TWS hot water tanks are specially designed for heat pumps and are exceptionally energy-efficient. By way of comparison, the amount of energy used to create hot water by TWS could only create lukewarm water in a conventional hot water tank.

Danfoss Heat Pumps are factory-set to increase water temperature to above 65°C once a week. This eliminates the risk of legionella bacteria forming within the system. The normal temperature is sufficiently high to prevent bacteria growth, but this system provides extra safety.

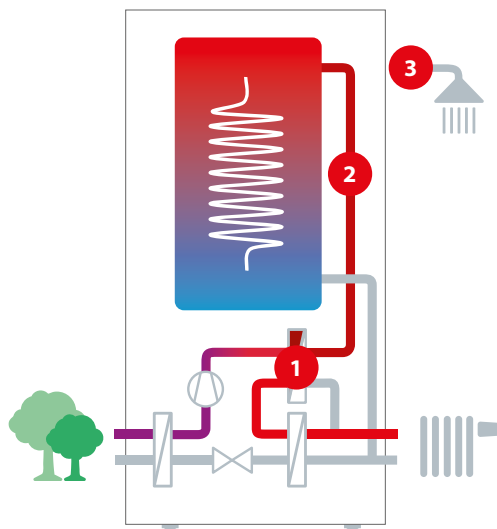


A traditional water heater provides slow heat transfer. In double wall water heater from other manufacturers heat is transferred via wall space and is less efficient. This technology requires twice as long to heat a heater that is empty compared with TWS technology.



A TWS water heater uses a technique where the hot water from the heat pump is led through a coil in the water to be heated. The water in the heater is also split so that some of the water reaches the correct temperature more quickly. TWS provides more efficient heat transfer and more warm water.





Here is how it works:

- 1** A small portion of the heated water destined for your home's heating system passes the extra de-superheater.
- 2** There it is further heated up to between 50°C and 90°C before entering the water heater.
- 3** The result is that you get more and hotter hot water during the months of the year that your home is heated – at no additional cost!

HGW technology

With our patent-pending HGW (Hot Gas Water) heater, Danfoss has developed a unique method for producing hot water. With this new technology, we have solved a seemingly impossible equation: higher annual efficiency combined with hot water production at higher temperatures and increased volumes.

At the same time as water is heated for distribution through your home's heating system, hot water is produced at very high temperature via an extra de-superheater. This means that during the part of the year when your home is heated, you get lots of hot water at a very low cost. The result is up to 20% higher annual efficiency.

Opti technology

Optimum or Opti technology uses frequency-controlled circulation pumps to keep your heat pump working at an optimum level, no matter how conditions change. This results in maximum efficiency and minimum energy consumption – second by second, hour by hour.

Our Opti-equipped heat pumps are the first choice for anyone looking for an unbeatable level of comfort at maximum cost-efficiency.





OnLine

Remote system management



The Danfoss OnLine accessory enables you to control and monitor your heat pump from any smartphone, computer or tablet – wherever you are in the world. For example, you can reduce the temperature when you are on holiday, even if you forgot to do so before leaving home. You can also easily increase the temperature to ensure that your home is warm and welcoming when you return.

You can use Danfoss OnLine at any time to check your heating system is working properly. If anything unexpected comes up and needs to be fixed, you – or your installation engineer, where agreed – will immediately receive this information

via OnLine. This is an excellent tool for controlling and monitoring several locations remotely; for example, if you have a holiday cottage with a heat pump or have relatives who need assistance.

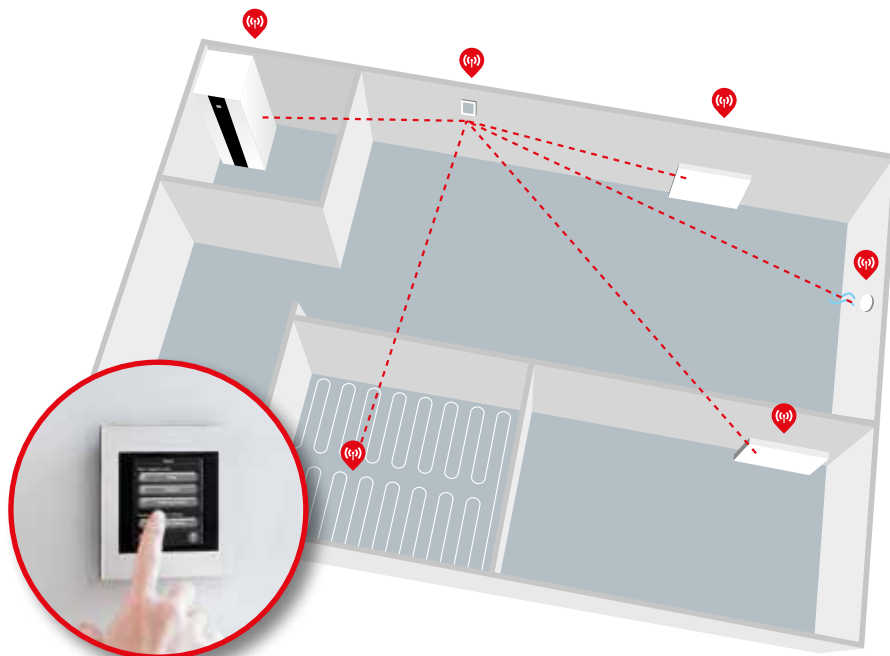
Danfoss OnLine connects your heat pump to your home broadband or mobile modem. Our OnLine app is available for both Android and iPhone.

Danfoss Link

Manages the heat pump and further reduces your heating costs

Danfoss Link is an intelligent control system that lets you manage your entire heating system, as well as other applications and appliances, from a single controller. You can use it to set individual room temperatures, adjust schedules, set minimum temperatures when you are away and more.

- Communicates wirelessly with your heat pump and all elements in the heating system, including radiator thermostats, hydronic and electric floor heating devices
- Offers individual temperature control in all rooms
- Combines functionality with aesthetics in a 'red dot' award-winning design



Passive and active cooling

Let your heat pump take care of the cooling

A Danfoss Heat Pump is smart enough to keep you warm when it is cold and cool when it is warm. Providing heat in the coldest winters and comfort cooling in the hottest summers to ensure the perfect indoor climate, all year round.

Passive cooling

Gently cooling your home can be achieved via a passive cooling module connected to your Danfoss Heat Pump. Eco-friendly coolant is circulated through the ground loops or energy wells, efficiently removing heat to maintain your desired comfort level. The passive cooling module is an optional extra (except DHP-C Opti, where it is built-in as standard).

Active cooling

If your home needs extra cooling power, active cooling via your Danfoss Heat Pump uses far less energy than traditional air conditioning.

Heating your swimming pool

With a Danfoss Heat Pump, heating your pool is not only more cost-effective. During spring, summer and autumn, you can use your heat pump to heat your pool, even while you are heating or cooling your home. This allows you to enjoy a longer swimming season while reducing energy costs and protecting the environment, all at the same time.



Jensen family wins with Danfoss

When the Jensens were looking to replace their old gas boiler, high heating costs and a desire to become independent of natural gas led them up a new path. In response to their requirements, their heating engineer suggested that they consider a Danfoss air source heat pump.

50% savings on heating costs

"It was an easy decision to make. Our heating engineer promised us it would deliver the best performance on the market, and it has certainly proved its worth. We are currently saving 50% of our annual heating expenses", said Ingrid Jensen.

Whisper-quiet operation

The Jensens were also impressed with how easy the DHP-AQ was to install and how quiet it is in operation. Due to its extremely low sound levels, the pump can be sited anywhere outside the home.

Kind to the environment

"We were looking for a solution that would benefit the environment with-

out requiring drastic changes to our house, garden or lifestyle", Ingrid Jensen explained. They got that. And the 50% energy savings they can prove to their friends and family mean that more of their neighbors will be choosing Danfoss soon!



Our heat pump was installed in May 2011. By the end of that year, it was already clear that we were going to save around 50% of our total energy costs, every year, from now on.

Ingrid Jensen,
Satisfied Danfoss
Heat Pump user



Best in test

The DHP-AQ air source heat pump chosen by the Jensens was tested against 10 competitor products by the Swedish Energy Agency in 2011. The test involved

calculating energy savings and seasonal performance for three homes of different sizes. According to the results, this innovative product offered the greatest overall savings. It also came out on top for hot water temperature, low sound level and minimal energy loss.



Here is Ingrid and Poul Erik's energy equation



Former consumption

Natural gas:

2,000 m³ per year = approx. €2,700

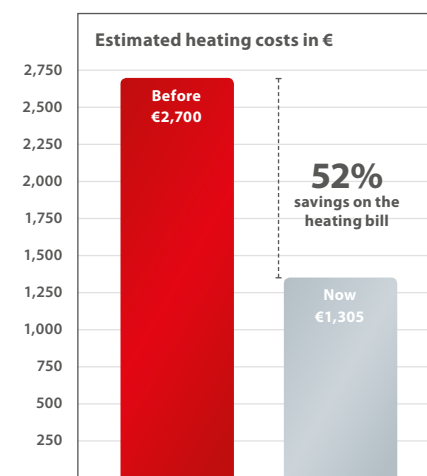
Current consumption

Heat pump:

Expected annual consumption: 4,500 kWh
Average price of €0,29 per kWh
= €1,305

Conclusion:

Household heating bills expected to be halved.





Cawdell family says goodbye to oil

Constantly rising oil prices and an insufficient supply of hot water led the Cawdell family in the UK to look for a viable long-term alternative.

Beating oil price fluctuations

The Cawdell lives in an idyllic barn conversion in the heart of England. However, the existing oil-fired boiler not only exposed them to constant shifts in oil prices but also proved unable to supply the family's need for hot water. Even running a single bath was often more than the system could cope with.

In addition, the oil-fired boiler was unable to adequately heat their home, leaving them using hugely expensive and inefficient electric fan heaters to provide enough warmth.

Beyond gas and oil

Because their home lay beyond the gas grid, the Cawdells were obliged to look for a more innovative heating solution. After exploring various options, they decided on a Danfoss DHP-H Opti Pro ground source heat pump. The installation process proved effortless and the results were immediate:

"We were really pleased with the easy installation of our ground source heat pump. The heat pump is tucked away in the garage, so we don't even know it's there! The controls were set by the installer, who showed us how to use them, but we've not needed to touch them since as it works perfectly!", said James Cawdell.

62% energy savings

What most impressed the Cawdells is their energy savings. Before the heat pump was installed, they were spending €2,354 a year on oil and €883 on electricity. Today, their total energy spend is just €1,229, a saving of 62%.

"We're delighted with the heat pump system. It provides consistent, comfortable heat and produces lots of hot water, which is really important for a family of four. We see our heat pump as an investment that will add value to our property", James Cawdell concluded.

Energy equation

Former consumption

Oil and electricity:

€3,237 per year

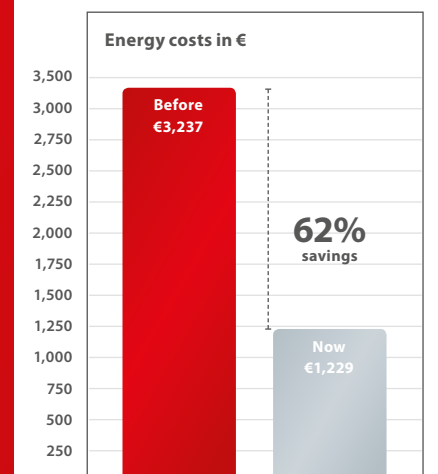
Current consumption

Heat pump and electricity:

€1,229 per year

Conclusion:

Energy savings of 62%.



Finding your perfect heat pump

Choosing the right model to meet the individual needs of your home

This table give you an overview of the different technologies used in Danfoss Heat Pumps. On the pages that follow, you can learn more about each product and determine which one is right for you. All models are also available with a separate hot water tank for extra volumes of hot water, and can be combined with solar or other heat sources.

Designing your ideal system

Factors to consider in making your choices include the size of your home,

your existing heating system – including other heat sources – and any peripherals such as a swimming pool.

Expert advice, when you need it

Once you have chosen the basic components, your authorized Danfoss installer will be pleased to guide you through the precise models needed to achieve maximum system efficiency.



		Ground source					Air source	
		DHP-H Opti Pro ⁺	DHP-L Opti Pro ⁺	DHP-H Opti	DHP-L Opti	DHP-C Opti	DHP-AQ	DHP-A Opti
		20% more hot water, extra fast		Improved annual efficiency		Complete climate solution (+ cooling)	Best in test	Harsh weather Cold climate
Technologies	TWS	✓	Optional with separate hot water tank	✓	Optional with separate hot water tank	✓	With Maxi indoor kit	✓
	Opti	✓	✓	✓	✓	✓	✓	✓
	HGW	✓	✓					
Accessories	Cooling	Optional	Optional	Optional	Optional	✓	✓	
	OnLine	Optional	Optional	Optional	Optional	Optional	Optional	Optional
	Pool Heating	Optional	Optional	Optional	Optional	Optional	Optional	Optional
	Danfoss Link	Optional	Optional	Optional	Optional	Optional	Optional	Optional



DHP-H Opti Pro⁺ / DHP-L Opti Pro⁺

These heat pumps feature Opti technology that incorporates an intelligent control system, using speed-controlled circulation pumps, to ensure optimum output and maximum efficiency under all conditions. The integrated hot water tank with its TWS technology rapidly produces large quantities of hot water. HGW technology (Hot Gas Water) allows the hot water to be constantly topped up to the desired temperature during heat production. This significantly improves seasonal performance.

DHP-H Opti Pro⁺:

Available in output sizes: 6–13 kW
Dimensions (DxWxH): 690x596x1845 mm
Electrical connections: 400V 3N

DHP-L Opti Pro⁺:

Available in output sizes: 6–17 kW
Dimensions (DxWxH): 690x596x1538 mm
Electrical connections: 400V 3N



Key features at a glance

- ✓ Can be used with any ground heat source
- ✓ Integrated 180-liter hot water tank with TWS technology in DHP-H Opti Pro⁺
- ✓ DHP-L Opti Pro⁺ available to work with external hot water tank
- ✓ Maximum operational efficiency
- ✓ Opti technology and Class-A circulation pumps
- ✓ Delivers 20% more hot water, extra fast with patented HGW technology
- ✓ Very quiet operation
- ✓ Classic Scandinavian space-saving design
- ✓ Maximum comfort level
- ✓ Highest annual efficiency
- ✓ Intuitive control panel
- ✓ Extremely low maintenance

Optional

- + Danfoss OnLine control and monitoring
- + Extremely low-cost cooling
- + Cost-effective pool heating





DHP-H Opti / DHP-L Opti

Operates at a very low sound level and can easily be adapted to provide cost-effective cooling. The intelligent Opti technology control system with its speed-controlled circulation pumps ensures maximum performance and efficiency, right throughout the year. Integrated TWS technology provides a constant supply of hot water, even when heating your home.

DHP-H Opti:

Available in output sizes: 4–12 kW
Dimensions (DxWxH): 690x596x1845 mm
Electrical connections: 230V 1N or 400V 3N

DHP-L Opti:

Available in output sizes: 4–16 kW
Dimensions (DxWxH): 690x596x1538 mm
Electrical connections: 230V 1N or 400V 3N



Key features at a glance

- ✓ Can be used with any ground heat source
- ✓ Integrated 180-liter hot water tank with TWS technology in DHP-H Opti
- ✓ DHP-L Opti available to work with external hot water tank
- ✓ Maximum operational efficiency
- ✓ Opti technology and Class-A circulation pumps
- ✓ Very quiet operation
- ✓ Classic Scandinavian space-saving design
- ✓ Maximum comfort level
- ✓ High annual efficiency
- ✓ Intuitive control panel
- ✓ Very low maintenance

Optional

- + Danfoss OnLine control and monitoring
- + Extremely low-cost cooling
- + Cost-effective pool heating

DHP-C Opti

A ground source heat pump, with integrated cooling, providing a complete climate solution that delivers the best possible indoor comfort – heating in winter, cooling in summer and hot water all year round. By circulating the cool brine through the ground loop, cooling is achieved at roughly the cost of powering a couple of light bulbs. Installation is simple thanks to the system's ability to distribute both heating and cooling in a single system.

DHP-C Opti:

Available in output sizes: 4–10 kW
Dimensions (DxWxH): 690x596x1845 mm
Electrical connections: 400V 3N



Key features at a glance

- ✓ Can be used with any ground heat source
- ✓ Built-in passive cooling
- ✓ Integrated 180-liter hot water tank with TWS technology
- ✓ Maximum operational efficiency
- ✓ Opti technology and Class-A circulation pumps
- ✓ Very quiet operation
- ✓ Classic Scandinavian space-saving design
- ✓ Maximum comfort level
- ✓ High annual efficiency
- ✓ Intuitive control panel
- ✓ Very low maintenance

Optional

- + Danfoss OnLine control and monitoring
- + Cost-effective pool heating





DHP-AQ

The Danfoss DHP-AQ air source heat pump is the newest addition to our range, providing trouble-free, environmentally friendly comfort in your home for years to come. With its superior ability to perform at temperatures as low as -20°C , it consistently provides heating, cooling and domestic hot water – with energy savings of up to 75% compared to traditional oil or gas-fired heating systems. The DHP-AQ comes with a range of different components, giving you complete design flexibility. Whatever your requirements, you never pay for more than you actually need.

DHP-AQ:

Available in output sizes: 6–18 kW

Dimensions (DxWxH):

6–9 kW: 510x856x1272 mm

11–13 kW: 564x1016x1477 mm

16–18 kW: 570x1166x1557 mm

Electrical connections:

230V 1N (≤ 16 kW) or 400V 3N

Key features at a glance

- ✓ Energy savings of up to 75%
- ✓ Can operate efficiently down to -20°C
- ✓ Very quiet operation
- ✓ Integrated 180-liter hot water tank with TWS technology in Maxi indoor unit
- ✓ Opti technology and Class-A circulation pump
- ✓ Low-cost cooling
- ✓ Classic Scandinavian space-saving design
- ✓ Maximum comfort level
- ✓ High annual efficiency
- ✓ Very low maintenance

Optional

- + Danfoss OnLine control and monitoring
- + Cost-effective pool heating

Test winner

In 2011, the Swedish Energy Agency conducted a thorough test of commercially available air source heat pumps. According to the test results, Danfoss DHP-AQ delivers the greatest overall savings. This product also achieved top results in terms of hot water temperature, noise levels and energy loss.

The test involved calculating the energy savings and seasonal performance factor for three houses with different heating needs: 15,000, 25,000 and 35,000 kWh/year. Danfoss DHP-AQ had the highest seasonal performance factor in all three cases.

Whisper quiet

The Danfoss DHP-AQ showed the second lowest absolute sound level in the test. Using the pump's silent mode reduces this even further.

Top results for hot water comfort

With its very low energy losses, the DHP-AQ produced the greatest volume of 40°C hot water in the test.





Available in three different indoor kits:

DHP-AQ utilizes energy from the outdoor air and consists of two units: an outdoor air unit with integrated heat pump and an indoor control panel.



DHP-AQ Mini

Heat pump and indoor unit with controller.



DHP-AQ Midi

Heat pump and indoor unit with controller, reversing valve, Opti circulation pump and auxiliary heater.



DHP-AQ Maxi

Heat pump and indoor unit with controller, reversing valve, Opti circulation pump, 180 liters hot water tank, 60 liters buffer tank and auxiliary heater.

Mini indoor unit:

Dimensions (DxWxH): 204x380x600 mm

Midi indoor unit:

Dimensions (DxWxH): 255x420x625 mm

Maxi indoor unit:

Dimensions (DxWxH): 690x596x1845 mm

DHP-A Opti

Danfoss DHP-A Opti is an air source heat pump with frequency-controlled circulation pumps. The Opti technology continually adjusts the heat pump to work optimally at all times. Because all the DHP-A Opti's essential parts are located indoors, it is particularly well suited to locations with harsh weather conditions and a cold climate.



DHP-A Opti:

Available in output sizes: 6–12 kW

Dimensions indoor unit (DxWxH):

690x596x1845 mm

Dimensions outdoor unit (DxWxH):

630x1175x1245 mm

Electrical connections: 230V 1N or 400V 3N

Key features at a glance

- ✓ Can operate efficiently down to -20°C
- ✓ Low sound level
- ✓ Integrated 180-liter hot water tank with TWS technology
- ✓ Opti technology and Class-A circulation pumps
- ✓ Demand-controlled defrosting
- ✓ Classic Scandinavian space-saving design
- ✓ Maximum comfort level
- ✓ High annual efficiency
- ✓ Intuitive control panel
- ✓ Very low maintenance

Optional

- + Danfoss OnLine control and monitoring
- + Cost-effective pool heating



Adding flexibility to your system

Danfoss offers a range of system components that ensure you get maximum value from your heat pump system.

Hot water tank DWH 200 and DWH 300

Ideal if you need larger volumes of hot water or prefer having a separate tank. DWH is compatible with our full heat pump range. Just like Danfoss built-in tanks, the stainless steel DWH is equipped with TWS technology for fast and efficient hot water production in large volumes. Available in 200- or 300-liter sizes. Cabinet design can be selected to match the corresponding heat pump.

Extender

Enables you to combine a heat pump with alternative heat sources, for example solar panels, further increasing the efficiency of your heat pump. The buffer tank enables the connection of two different heating systems, such as floor heating in combination with radiators. All Danfoss Heat Pumps have a control unit that supports the buffer tank function.

Cooling module

Enables your heat pump to provide a cooling function, economically and efficiently. This means you enjoy a complete climate control system that delivers a comfortable indoor climate all year round – heat in the winter, cooling in the summer and hot water throughout the year. Its compact design means that the module can be installed right next to your heat pump. It is compatible with all Danfoss ground source heat pumps.

Frequently asked questions

How energy efficient is a heat pump?	Heat Pump Systems can be over four times as energy efficient as the most efficient gas or oil boiler. Instead of burning a fuel and producing the associated emissions they simply move energy that already exists, stored solar energy.
What is seasonal performance?	Seasonal performance express the performance of a heat pump over a full year given the heating distribution system, hot water system and the actual customer demand. Proper dimensioning, installation and commissioning is needed to obtain highest possible seasonal performance. Seasonal performance is the standard measure for Danfoss Heat Pumps when designing and building heat pumps, as seasonal performance is the real measure of efficiency
How do I choose between an air source and a ground source Danfoss Heat Pump?	This choice is dependent on various factors; Your local authorized installer will be able to guide you through the entire process.
Where should I put a heat pump?	Either in your utility room, basement or even out in the garage.
Do they make much noise?	No, they hum like a large refrigerator. The units we supply have had many years of research and development that has included major noise and vibration reduction.
Can under floor heating be used with a heat pump?	Yes under floor heating, radiators or a mix of both for heat distribution in your building. In commercial buildings, air distributed systems can be used.
Will it provide enough hot water for baths showers and domestic hot water?	With the correct design and equipment, all domestic hot water requirements would be provided by the air source or ground source heat pump throughout the year.
Will it heat a building on the coldest winter day?	Yes it will. Thousands of these systems have been installed for many years in some of the most northern parts of Scandinavia where the winters are very hard and long. The key is the design and specification process so the system provides enough energy for the application.
Is it possible to connect solar panels to the system?	Yes, of course, and there are many alternatives, from simple additions to complicated systems. They provide extra energy. Talk to your installer.
Will the Danfoss Heat Pump work in combination with single room controls?	Yes, Danfoss control system properly commissioned will work perfectly alright with single room controls.
How much does it cost to install a heat pump?	There is no general answer to this question. The cost depends on your house, energy consumption and what features you want. Your local distributor can give you a precise quotation depending on your circumstances.
Why should I buy a Danfoss Heat Pump?	There are many manufacturers with a wide range of products available. Danfoss is the only one with experience in the design and installation of heat pump systems with almost 80 years manufacturing expertise in the heating and refrigeration industries. Our first heat pump with integrated hot water tank was manufactured in 1973, and we have been researching and improving our technologies ever since. Danfoss is ideally situated to provide valuable advice and information in all areas of the heat pump market, from product selection to system design and commissioning.

Choose the right partner

Hassle-free installation through trusted
network of authorized installers



Choose the right solution for your home – contact your local installer today,
or find more information at **heating.danfoss.com**

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