



RENEWABLE ENERGY  
**USE AIR  
TO HEAT YOUR HOME  
ALL YEAR ROUND**

Thermia Atec

# LOW-CARBON HEATING IS THE KEY TO SUSTAINABLE DEVELOPMENT

With the twin goals of reducing costs and maximizing sustainability, pressures on building design, operation and performance continue to grow. Today's trend towards low-energy building or so called "nearly zero energy buildings" reflects radical changes in the way buildings are being designed and constructed to reduce their environmental impact.

More than a quarter of Europe's CO<sub>2</sub> emissions come from heating, lighting and running appliances in our homes. 80% of this is attributed to our space heating and hot water alone. Clearly, we must find alternatives and more efficient means of heating our homes and water in the future.

Heat pumps harvest energy stored in the ground, air or water and convert it into an environmentally sustainable indoor climate for the building. Because no fossil fuels are burnt, heat pumps are extremely environmentally friendly and help you achieve your emissions targets.

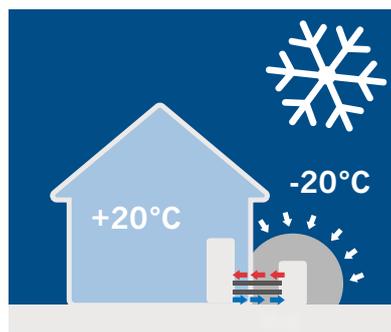
**Air and ground source heat pumps have the potential to reduce your home's CO<sub>2</sub> emissions by up to 50% and can act as your individual contribution to the commitment to source 20% of European energy from renewable sources by 2020.**

# RENEWABLE ENERGY ECO-FRIENDLY HEATING AND COOLING

As an endlessly renewable energy source for any home, heat pumps should be considered at the earliest design stage. Incorporating renewable heating and cooling into your project will significantly reduce annual energy consumption, operating costs and your carbon footprint.

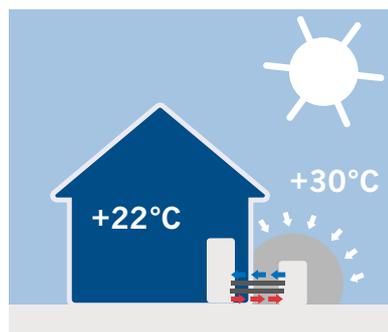
The basic principle is as simple as it is brilliant: take the free energy that exists in the air and ground – and convert it into heating for your home.

Air source heat pumps operate on a simple principal: they move energy from ambient air to water in your heating system via a refrigeration process. The energy stored in the air is simply extracted and can be used for heating, hot water and cooling. In this way, nature provides us with perfect indoor comfort in an economical way with nearly zero negative impact on the environment.



## Warm in the winter

The heat pump concentrates low-grade heat from the air and raises its temperature. The heat is then transferred to the house's energy distribution system – usually radiators, hydronic floor heating or fan coils.



## Cool in the summer

In the summer, the process can be simply reversed. The heat pump collects heat from the house and – via a refrigeration process and compressor, the same technology used in your refrigerator – removes it to provide cooling.



## OUR BRAND STORY BORN IN SWEDEN

Thermia started as one man's passion. Way back in 1889, Per Anderson began developing some of the world's first energy-efficient stoves for cooking, heating, and hot water.

By 1923, his business had matured sufficiently for him to found Thermia. Ever since, we have been guided by Per's original vision: "The products one releases must be not only the best of their time, but before their time, over time."

In 1973, at the height of the global fuel crisis, Thermia launched the world's first heat pump with its own integrated hot water tank. Since then, we have been 100% dedicated to developing, refining, manufacturing, and pioneering superior heat pumps.

Read our story at [story.thermia.com](https://story.thermia.com)

# HEAT YOUR HOME USING ENERGY OUT OF THIN AIR

**Thermia Atec: the reliable and efficient air source heat pump from the harshest of European climates – from Sweden.**

Because air is in abundant supply all around us, air source heat pumps have the advantage of low installation costs and minimal space requirements. Thermia Atec is a domestic heating and hot water system based on air source heat pump technology. It represents a flexible and cost-effective alternative to a fossil fuel boiler.

Atec is designed to provide an excellent indoor climate, maximum reliability and optimum cost efficiency. While supplying you with heating, hot water and cooling, you also benefit from a staggering reduction in energy consumption of up to 75%.

With the option of four different indoor equipment packages, Atec offers a low-carbon alternative to traditional boilers in modern buildings, whether they are new-builds or refurbishments.

## **The essence of Scandinavian design and durability**

Thermia heat pumps are designed, tested and manufactured in one of the harshest climates in Europe. Swedish winters can be very harsh and heating is essential from September to May. Even in the coldest month of February, Atec heat pumps will function efficiently at temperatures as low as -20°C.

Thermia Atec is built on 40 years of experience in developing and supplying heat pumps and has been one of Thermia's best-selling products since 2011. State-of-the-art technologies lie at the heart of its excellent performance and ensure a perfect indoor climate at all times.



## Thermia Atec

### **Thermia Atec**

Available in output sizes: 6, 9, 11, 13, 16, 18 kW  
Electrical connections: 400V 3N

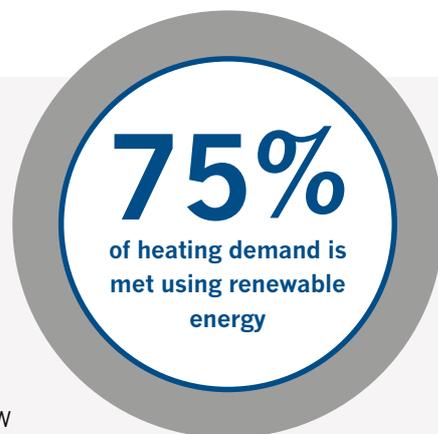
### **Thermia Atec**

Available in output sizes: 6, 9, 11, 13, 16 kW  
Electrical connections: 230V 1N

Thermia Atec is available with four types of indoor kit: Standard, Plus, Total Compact and Total and offers cascading option up to 36 kW.

Energy class according to Eco-Design Directive 811/2013:

- A<sup>++</sup>** When the heat pump is part of an integrated system
- A<sup>++</sup>** When the heat pump is the sole heat generator

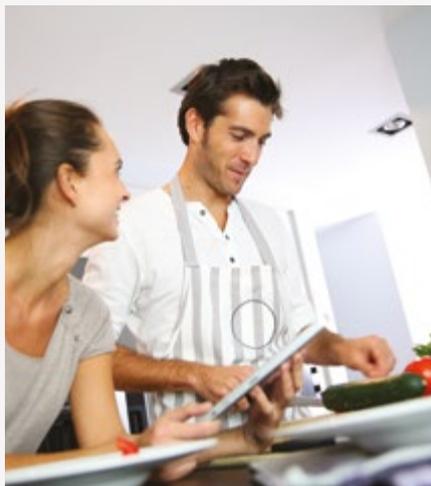


# YOUR COMPLETE CLIMATE SOLUTION



## Comfort all year round

Atec has been designed to provide you with heating and domestic hot water. To bring you maximum comfort, Atec also features an active cooling function, so you can keep cool on the hottest days. And if you have a swimming pool, it can be connected to Thermia Atec, reducing your pool heating costs.



## More hot water, faster

The integrated Tap Water Stratification (TWS) system – a patented Thermia technology that ensures extremely fast production of hot tap water – provides 15% more hot water significantly faster and at higher temperatures than traditional alternatives. It also reduces the cost of hot water and improves the heat pump's seasonal performance.



## Control your heat pump from anywhere

With the Thermia Online accessory you can, for example, check that your heating system is working properly and adjust it according to your needs. Our online system provides your installers with comprehensive diagnostics data and also enables them to respond promptly to notifications or access a live feed on system performance.



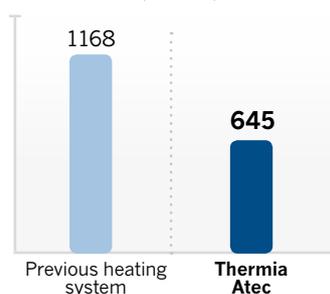
# CO<sub>2</sub> SAVINGS MAKE US ALL WINNERS

## True performance, measured day by day, speaks for itself

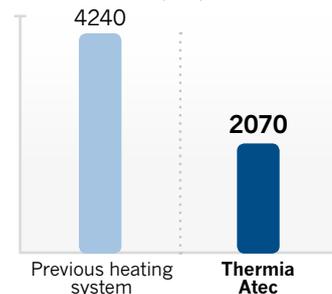
Below you can see figures from a case study of a Thermia Atec, installed in a single 110 m<sup>2</sup> family house in north Germany. The homeowner decided to install an electricity meter and heat meter to ensure that all measurements were very accurate.

Energy consumption for heating purposes dropped to 2,847 kWh and the heat delivered to the house was 9,373 kWh, meaning that 70% now comes from thin air and is renewable energy. Carbon emissions were reduced by 51% and, at the same time, the homeowner reduced annual heating costs by 55% compared with the previous oil-fired system.

### ANNUAL HEATING COST (EURO)



### CO<sub>2</sub> EMISSIONS (KG)



You can read more about this German case study on [www.thermia.com](http://www.thermia.com): 'Low carbon heating system from Thermia Atec – The choice of professionals'

# Thermia Atec

The Thermia Atec air source heat pump has been designed to deliver optimum performance across all climate zones in Europe – with an unrivalled focus on minimizing energy consumption and providing maximum comfort through state-of-the-art technologies.

## Controller – the brain of the heat pump

The Thermia controller uses an algorithm that ensures the lowest possible running costs – while maintaining the desired indoor temperature. Using the Thermia control system reduces the number of thermostats needed and means that no pumps, valves, zone valves or time clocks are required.

## High-quality components

The heat pump is equipped with a highly efficient variable speed EC fan, which matches air supply to energy demand. The refrigerant circuit is made with an electronic expansion valve, which is able to adjust and control the flow of refrigerant at different outdoor temperatures. A unique, self-commissioning flow adjustment system adapts the pump's performance to the actual system conditions - Optimum technology. State-of-the-art defrosting technology ensures the energy efficiency and full functionality of the heat pump, even during very cold winters. The built-in heated drip-tray ensures that condensed water is properly channeled away from the heat pump.

## 180-liter unvented hot water tank

The Hot Water Atec Total Compact and Total Indoor kits have a 180-liter built-in hot water tank with integrated Tap Water Stratification (TWS) technology. This produces hot water significantly faster and at higher temperatures than traditional alternatives. The large surface area and orientation of the TWS coil ensures the fastest possible recovery time.

## Plug and play

Two pipes and four cables are all that is needed for a complete installation. Its unique frame considerably reduces installation labor and costs, satisfying both installers and customers.

## Silent cabinet

Acoustically engineered design ensures one of the lowest sound levels on the market. The outdoor unit of the heat pump can simply be placed where it is most convenient without worrying about sound issues.

## High performance at low temperature

Operation range as low as -20°C.

## Scandinavian design

Scandinavian design makes the pump a discreet addition to your home.

## Flexibility

Atec is available in various sizes and offer cascading option up to 36 kW, where one indoor unit controls two outdoor units. Atec is suitable for everything from holiday homes to small multi-family buildings. Moreover, Atec offers a versatile system that is compatible with a wide range of additional products such as solar panels, back-up boilers or a swimming pool. Atec is compatible with many different types of heat emitters such as floor heating, radiators or heat convectors. It safely meets the requirements of both low and high temperature applications, whether in renovations or new-builds.





## INTELLIGENT CONTROL SYSTEM WITH EASY MENU

The controller coordinates and controls the heating system. Thermia heat pumps work with complete precision to give your home the best possible indoor climate at the lowest possible cost.

Our controller is very easy to use. The controller displays visualized heat curves and, once it is set, you never need to think about it again. Raising or lowering the temperature can be achieved at the touch of a button.

## CHOOSE YOUR INDOOR PACKAGE

Thermia Atec is a flexible solution that is easy to adapt to existing equipment – and you don't need to buy more than you need. So we have put together four complete indoor packages. All you need to do is choose the one that best meets the circumstances in your home.



Outdoor unit



### Thermia Atec STANDARD

- Intelligent controller



### Thermia Atec PLUS

- Intelligent controller
- Optimum controlled circulation pump Class A
- Immersion heater (3/6/9/12/15 kW 3~400 V; 1,5/3/4,5 kW 1~230 V)
- Three way valve for heating or hot water production



### Thermia Atec TOTAL COMPACT/ TOTAL\*

- Intelligent controller
- Hot water tank, 180 litre
- Optimum controlled circulation pump Class A
- Immersion heater (3/6/9/12/15 kW 3~400 V; 1,5/3/4,5 kW 1~230 V)
- Three way valve for heating or hot water production

\*Atec TOTAL: also available with built-in expansion vessel and 60 litres volume tank

(Thermia Atec TOTAL can only be combined with Atec 6, 9, 11, 13.)



# THERMIA THE ULTIMATE ENERGY PROVIDER SINCE 1923



## Pioneering heat pumps

For the last 50 years, we have dedicated all our resources and knowledge to developing and endlessly refining one product: the heat pump. Our focus on geothermal energy has given us world-leading knowledge in heat pump technology.



## Engineered with passion

Developing truly sustainable renewable energy solutions can only be achieved with passionate, dedicated and uncompromising experts. Some of Europe's most highly qualified engineers can be found in our own R&D center.



## Born in Sweden

All our products are designed, manufactured and tested in Sweden using the latest technology and the highest quality components. We are proud to count world-leading industry specialist, Danfoss, among our technology partners.

