2022/23 **ENG**

ES ENERGY SAVE

Cost reducing energy solutions for your building climate

REDUCED ENERGY COSTS – INCREASED ENVIRONMENTAL BENEFITS

ENERGY SAVE PREFABRICATES AND INDUSTRIALISES THE ENERGY MARKET

A green path towards reduced energy costs

Energy Save supplies renewable solar energy through air-to-water heat pump technology. In addition, we add a new way for the real estate industry to manage and capitalize on thoroughly tested technology.

The basis of our innovation are the prefabricated energy modules in ready-made modular systems: customized and ready to install on or adjacent to your building.

With simplified installation and maintenance results in shorter lead times and reduced investment costs.

Energy Save delivers flexible, fixed or temporary, mobile heat pump systems with lower energy costs, which contributes to an increased property value and greener profile.

Heat pumps are among the most environmentally friendly energy solutions.

Our prefabricated systems are also the most cost-effective.

Enhanced and proven energy tech

Air-to-water heat pumps from Energy Save use the stored solar energy in the air to create heat, cooling and domestic hot water. Air-to-water heat pump technology is predicted to have the largest growth among the various heat pump technologies.

It is extremely energy efficient and at the same time it does not require any major ground work during installation compared to, for example, geothermal heat pumps.

With our innovative and customized, factory produced module we enhance technology further. We add scalability, mobility and an energy performance that provides a significant reduction of energy consumption and CO_2 emissions.

> *"Take control of your building's climate with an energy solution that addresses your specific challenges"*

High market demand

Our innovative energy modules have been well received by property owners, building contractors and property developers and opened completely new markets.

Mobility provides unique opportunities for temporary installations with cost-effective and environmentally friendly heating and cooling solutions even during the construction phase.

For all types of properties and needs

Residential housing: For apartment buildings, current and new.

Commercial properties: For light and medium-sized industry, offices, modular buildings, warehouses and schools.

Historic properties: For churches, cultural buildings with antiquarian conditions for remodeling.

Construction site heating: During all phases of construction and can also be converted for permanent heating.

The foundation for your security

Save both energy and the environment and reach your climate goals. Climate-smart heat pump technology from Energy Save enables green building and environmental certifications. The solutions cover all needs, from heating of construction sites to a fixed energy solution for your property.

Scandinavian design

Our energy solutions are designed in Scandinavia with top class power and efficiency.

We combine Scandinavian state of the art competence and product development with efficient production capacity.

In this way, we are industrializing the complicated installation industry while digitizing the Swedish engineering knowledge through a web based configuration tool.

Top quality for the Nordic climate

Our products meet the high Nordic requirements for functionality and power even at extreme outdoor temperatures.

Tests and certifications are therefore a very important tool. Our heat pumps are tested independently and certified by test institutes in accordance with applicable European standards and carry the necessary certificates to support this.

Safe installation & service

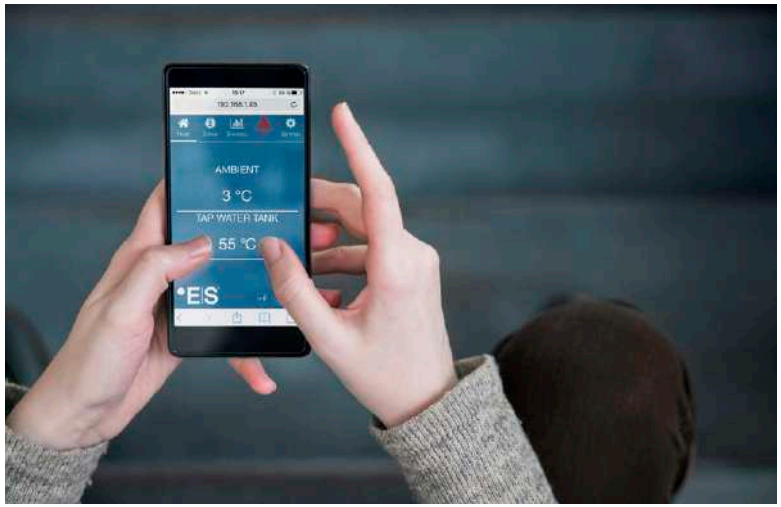
Complete delivery and installation.

Together with our professional partners we offer customers a safe delivery and installation at competitive prices.

Installation can also be carried out during “the cold season” – i.e. the winter season.

The EcoStation provides a seamless integrated energy production combined with utility spaces.

The ES Heat Pumps are designed to withstand the harsch Nordic climate.



Even when you are away, you have full control over the heating system – via web, smartphone and tablet. The control system is developed in collaboration with Jeff Electronics, which specializes in user-friendly control systems and is a leading player in the industry.

New integration possibilities

Our systems enable integration with your other heat sources.

Whether it is electricity, oil, firewood, pellets or district heating – Energy Save solutions are all hybrid heating systems. They are also compatible with other BMS control systems in your building.

Architectural and building aesthetic needs can easily be met by embedding the plug-in module, which is then called EcoStation.

Green clean tech with massive savings

The importance of heat pumps are steadily increasing in energy conversion in Europe and around the world.

Our innovative scalable plug-in modules provide a massive environmental imprint with a drastic CO_2 reduction compared to other types of energy.

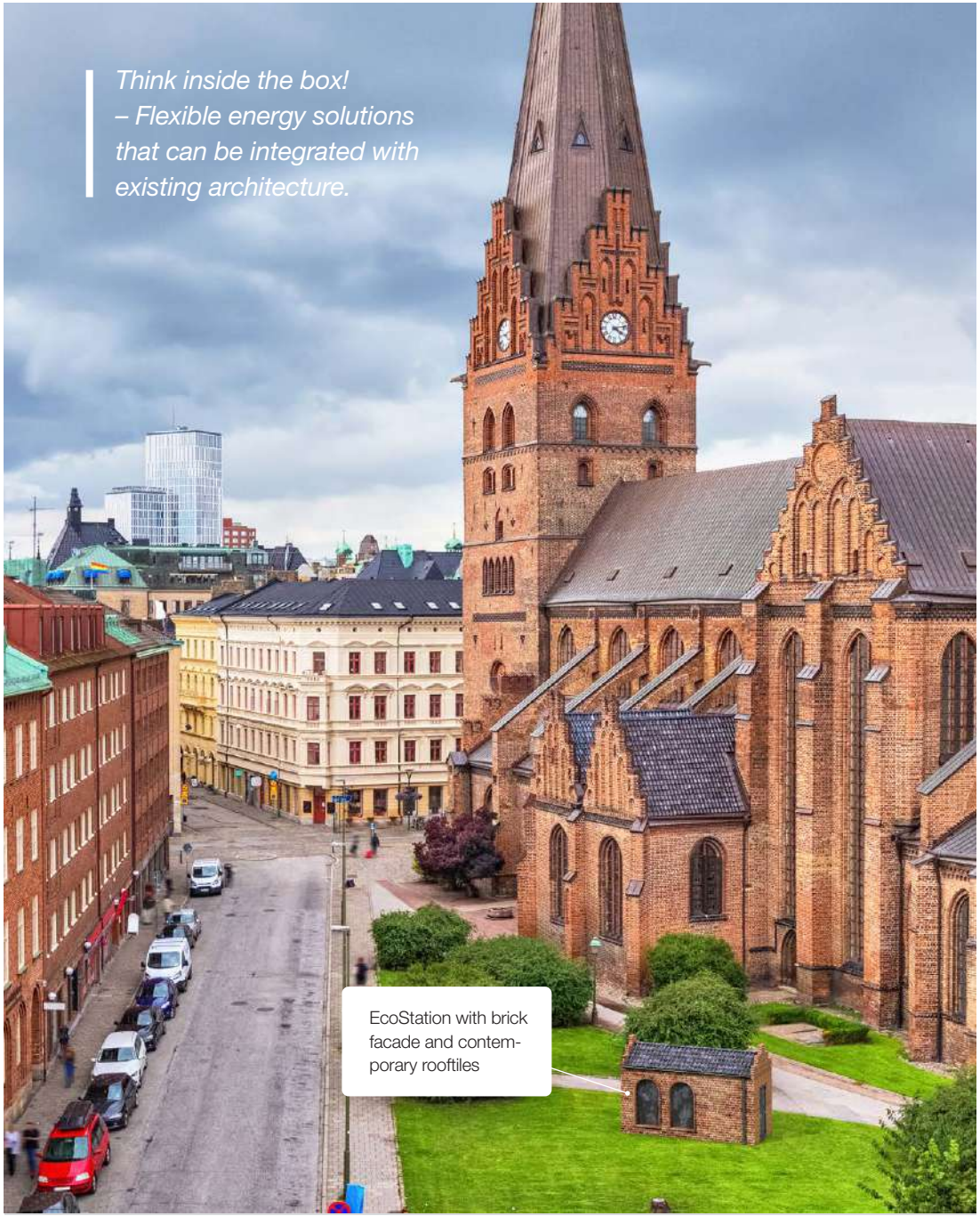
A system from Energy Save has an average of 80 kW of heating power and is developed for a typical commercial property with approximately 300,000 kWh in annual consumption.

The technical solution, investment and saving

Your chance to easily create a better property transaction.

It's easier than you think to achieve cost saving energy solutions for your property's climate.

Our custom-made solutions, designed using our digital tool, to a fully implemented solution addresses your fixed and temporary needs for heating and cooling for existing properties, new production, building heating and drying.



Matches the environment and cost conscious property owners and builders

With a customized prefabricated heat pump system from Energy Save you reduce energy costs and save up to two thirds of the installation costs.

Our solutions are perfect if you ...

… want to lower energy costs in existing properties

… want to replace the heating system in an older property

… want to maintain or obtain an environmental certification

… are seeking greener heating for new construction

… currently have a geothermal solution but foresee an increased heat demand upon expansion

… have temporary energy needs

… are seeking a compatible solution for existing heating systems and heating sources

Permanent solutions

INSIDE THE BUILDING

Customized systems for small to mid-sized commercial buildings

NordFlex – scalable, modular systems that make your property's energy supply more efficient and produces heat, domestic hot water and cooling.

HeatStar DX delivers energy and climate control in balanced ventilation systems.

Both solutions offer property owners energy savings of up to 70 % compared to, for example, oil, electricity or district heating. They thus become tools for future environmental certifications.

The Energy Save solution:
ES NordFlex och HeatStar DX

CONNECTED TO THE BUILDING

Prefabricated systems for small to mid-sized buildings

A solution that frees utility areas in all types of buildings. An energy saving and cost-reducing solution that can also be situated apart from the building.

The module can be encased and adapted to existing buildings, allowing it to be aesthetically integrated into most environments.

The Energy Save solution:
EcoStation

Temporary solutions

CONNECTED TO THE BUILDING

Temporary energy supply

Developed for temporary buildings such as refugee camps, temporary school buildings, care facilities and student housing, where the technical life span of the heat pumps outlasts that of the building. A solution that can be moved from place to place and also customized to integrate into the surroundings.

The Energy Save solution:
EcoStation

CONNECTED TO THE BUILDING

Mobile energy supply

Adapted for heat supply at construction sites, events and field hospitals. Thanks to the compact design that enables mobility, the energy- and cost saving heat pump technology can be used for heating or cooling where the needs are short-term.

The Energy Save solution:
HeatBox Hydro

SWEDISH INDUSTRIALIZED
CLEAN-TECH

Think inside the box

Plug-in Modules

Our Plug-in Modules are innovative, flexible and complete – a custom-made, prefabricated energy module available in different product versions. A stable industrial quality is guaranteed through series production in the factory. For temporary use during the construction phase the solution delivers inexpensive and environmentally friendly heating with simple installation.

The building's energy performance and operating costs are improved which in conjunction with the better environmental profile, increases the value of the property.

Flexible placement – permanent and temporary

A Plug-in Module can be placed nearby or on the roof of the building to be heated, but it does not need to be placed in direct connection to it. This creates space and utility areas inside the building resulting in a direct value to you.

Benefits for property owners, managers and society

- Lower energy consumption
- Higher direct yield
- Increased property value
- Smoother installation
- Better monitoring
- Switching to greener energy delivery
- Increased utility space

Benefits in new production projects

- Shorter construction time
- Reduced costs during the construction phase
- Better profitability in projects
- Reduced environmental impact during the construction phase
- Increased property value
- Reduced environmental impact for the property
- Reduced energy consumption and better monitoring
- Increased utility space

ES EcoStation

A stationary energy supply with a customizable exterior.

ES EcoStation is a Plug-in Module, customized to match the existing surroundings and designed for permanent use. It's equally useful for connecting to cultural buildings as innovative new architecture. An EcoStation can also easily be complemented with utility functions to match the environment.

Energy Save has created a complete power plant containing high-capacity air-to-water heat pumps. The product has everything to meet a building's needs for generating and controlling heat, domestic hot water and cooling. These factory-made prefabricated heat pump systems have superior quality over conventional site-built solutions.

To maximize the energy recovery the ES EcoStation can be placed in connection with the buildings exhaust air, usually on the roof.

An ES EcoStation can be custom made and easily be complemented with a variety of utility features, like this with bicycle parking.

ES EcoStation is perfect for all kinds of cultural buildings and churches for energy efficiency.

ES® HeatBox

A mobile and flexible energy supply

HeatBox Hydro is a prefabricated and mobile heat pump module specifically designed to provide heating fans (aerotempers) with hot water for temporary heating of buildings, construction sites and warehouses.

The HeatBox modules are recommended for achieving considerable energy cost reductions in urban environments where, for example, diesel heaters are not viable or when the available district heating or electric power is not sufficient.

With this product Energy Save has built into a single, mobile unit everything needed to heat and cool a building, including the installation know-how.

ES HeatBox models are easily placed at the building site. Connection to the builing is fast and the system is fully operational in hours.

ES HeatBoxHydro 80 kW

This unit is developed for maximum savings for projects that demands lower inlet temperatures.

ES HeatBoxHydro 90 kW EVI

The EVI technology enables bigger power outputs at lower outdoor temperatures. This unit also offer higher inlet temperatures making it suitable for construction sites heating, cooling and drying.

Modular systems

ES NordFlex and ES NordFlex+ is highly efficient, heat pump based solutions developed by Swedish engineers offering maximum energy efficiency.

It´s a reliable and safe total solution for heating, cooling and domestic hot water which is equally suitable for modernizing an existing heating system or for new installation.

ES NordFlex and ES NordFlex+ creates customized heating systems with heat pumps that makes energy supply in your building much more efficient. The systems can be combined with other supplementary and additive heat sources regard-less if it is electricity, oil, wood, pellets or district heating.

ES NordFlex is easy to install and its modular concept with heat pumps makes it suitable for all needs. It can also be supplemented post installation if needs change.

ES NordFlex

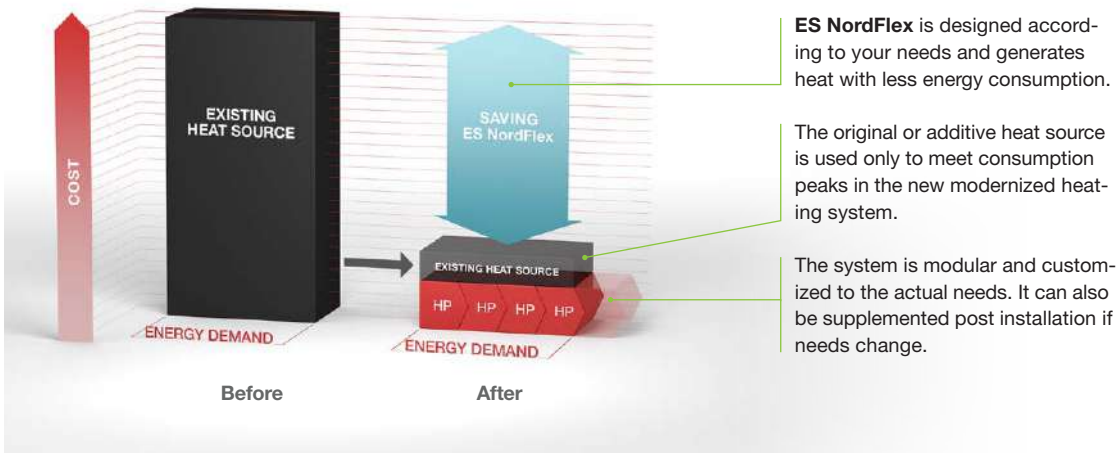
ES NordFlex is developed for small to medium-sized commercial buildings and provides you, as a property owner, with an overview and control of the indoor climate. It also provides full control of the heating system through browser or smartphone even when you are not present in the building.

You get a modern and reliable heating and cooling system, domestic hot water production with capacity up to 140 kW.

ES NordFlex is based on AW R32 series heat pumps.

High quality
A complete and modern air-to-water heat pump system, developed by Swedish engineers for the Nordic climate delivering heating, cooling and domestic hot water.

Examples of energy savings when modernization of an existing heating system



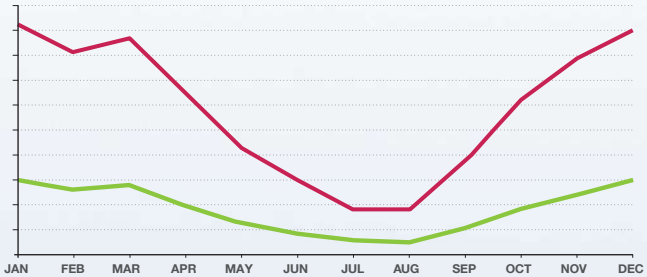
ES NordFlex is designed according to your needs and generates heat with less energy consumption.

The original or additive heat source is used only to meet consumption peaks in the new modernized heating system.

The system is modular and customized to the actual needs. It can also be supplemented post installation if needs change.

ES NordFlex

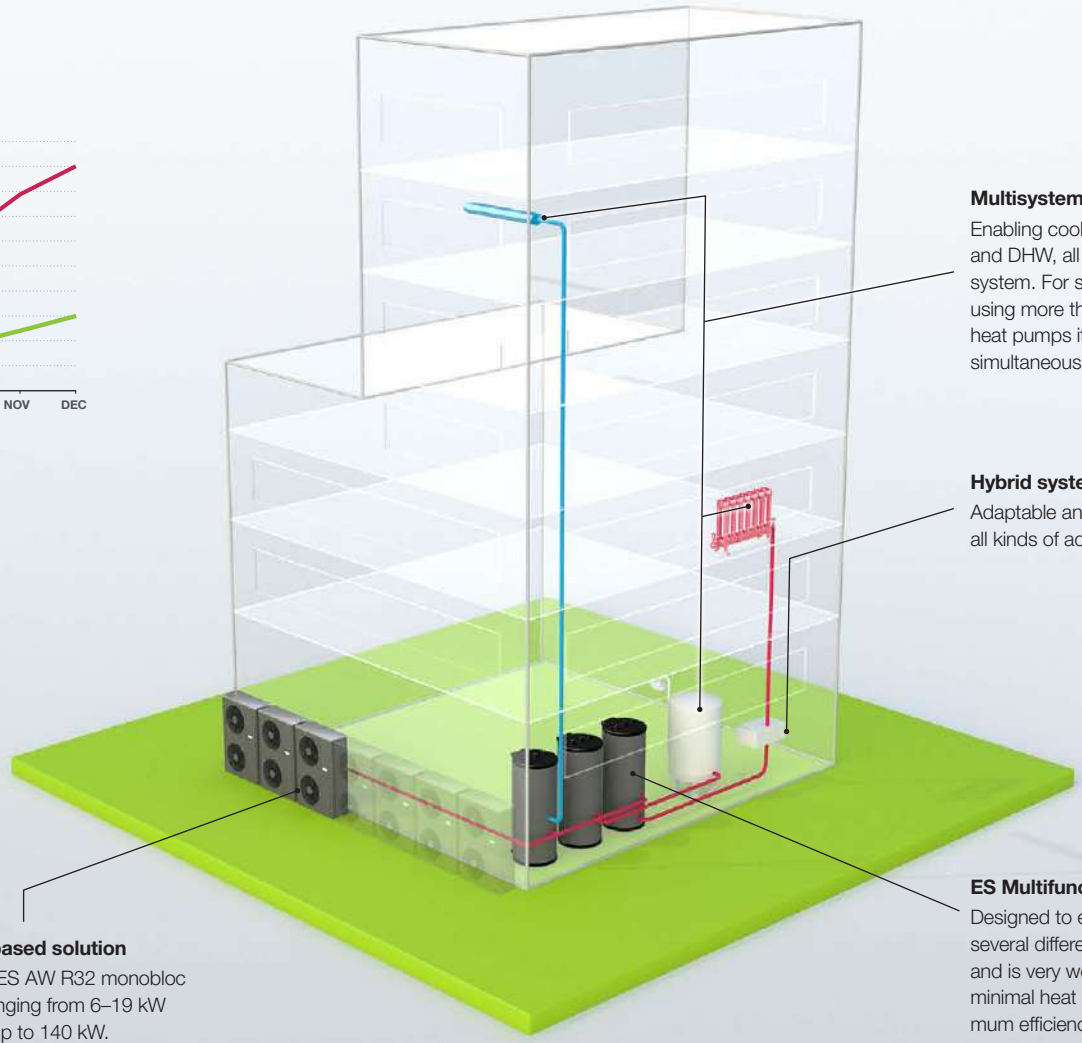
Yearly heating costs



Previous year with former heating source
With ES NordFlex

Control and monitoring

A user friendly HMI enables easy control and monitoring of the system either through the control box or smartphone and web.



Module based solution

Built with ES AW R32 monobloc units in ranging from 6–19 kW enabling up to 140 kW.

Multisystem

Enabling cooling, heating and DHW, all from one system. For systems using more than three heat pumps it can happen simultaneously.

Hybrid system

Adaptable and integrable with all kinds of additive sources.

ES Multifunctional tanks

Designed to efficiently combine several different heat sources and is very well insulated for minimal heat losses and maximum efficiency.

ES NordFlex+

The increasing electrification in the society, having more electric cars and other electric vehicles, demands more efficient solutions for energy consumption overall, to free electricity for those who need it, when they need it.

ES NordFlex+ can be a part of an energy system or a microgrid, interacting with for example district heating, tariffs for electricity and the amount of hot water in storage. This makes it possible to balance your energy system, producing energy when demand is low and the cost of electricity is low, and use the stored energy when demand occurs. Doing that you free electricity from the main grid, available for those who need it at that time.

This way ES products contribute to the energy transition and helps building modern and efficient energy systems, which enables lower costs and less CO_2-emissions. ES NordFlex+ is developed to enable bigger systems with bigger power needs. This can be for example big commercial buildings or as decentralized district heating networks, microgrids.

The system is based on our AW 30, 45 and 90 kW EVI units and can consist of up to 16 heat pumps enabling systems of up to 1.44 MW.

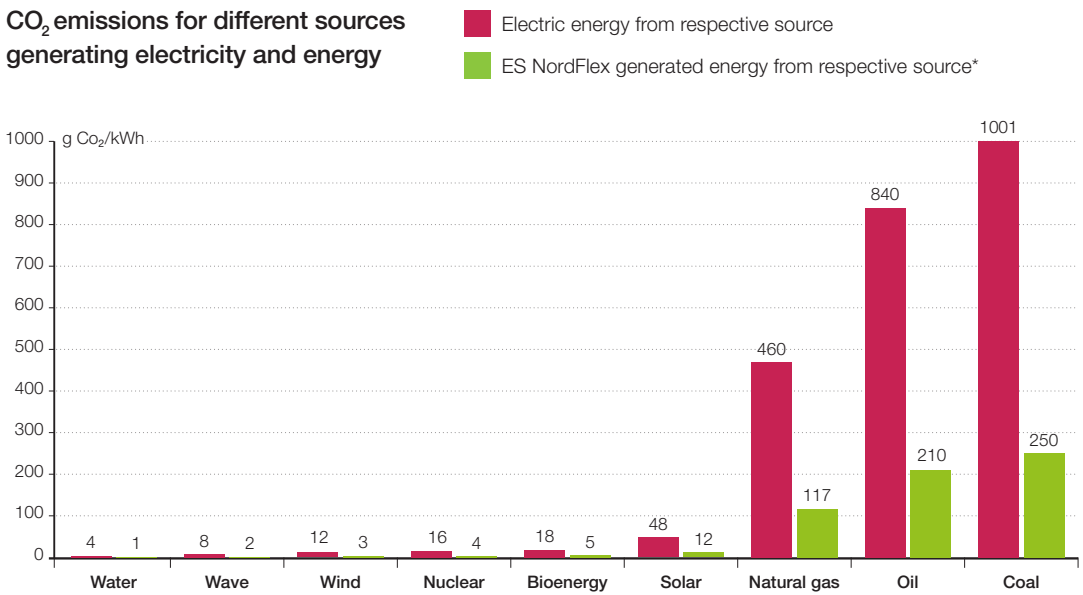
The European market today

75% of European building stock is energy inefficient.

97% of buildings in the EU need to be up-graded.

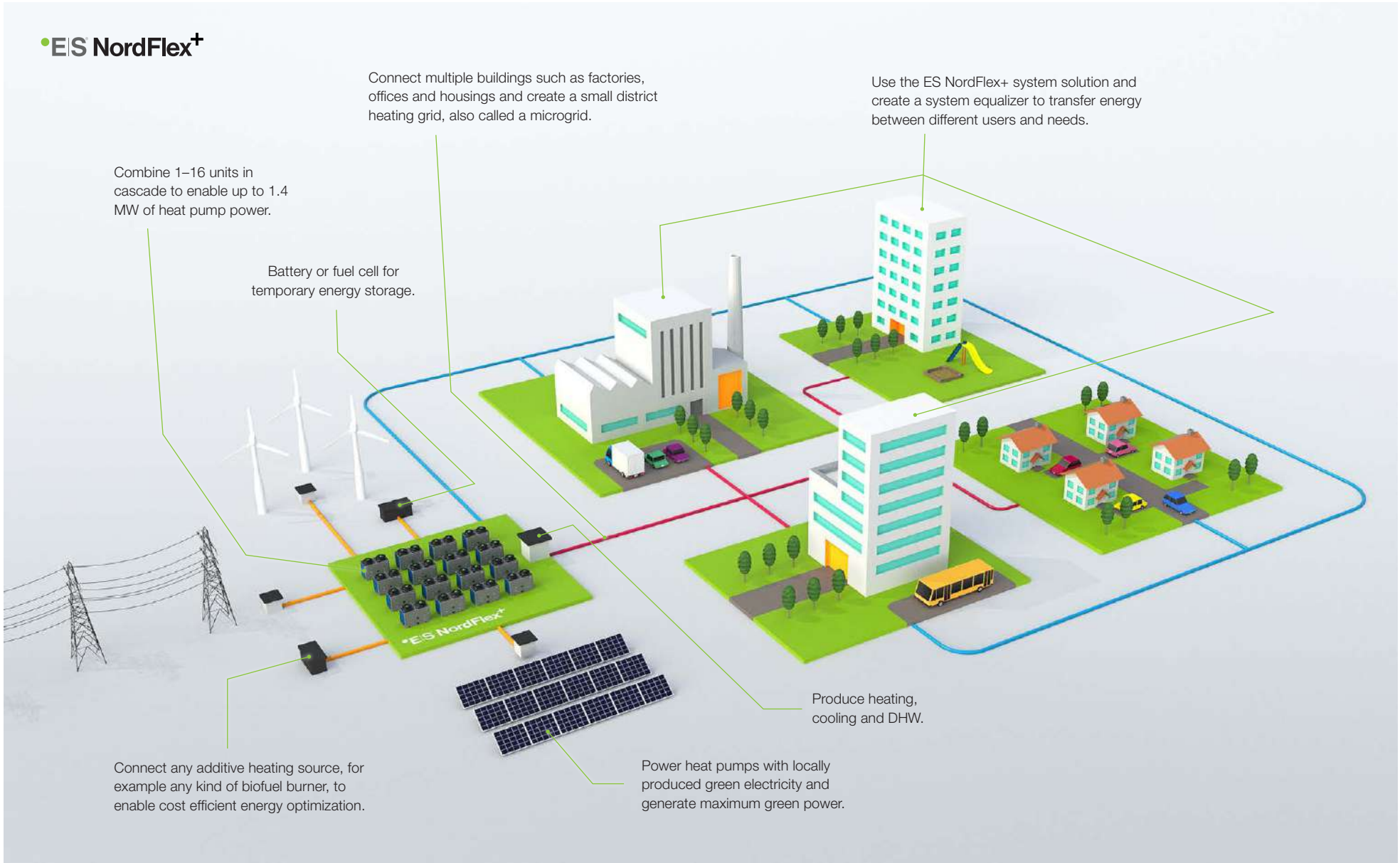
<1% of EU building stock is renovated each year.

CO_2 emissions for different sources generating electricity and energy



**Based on SCOP for heat pumps of 4.0 (average climate, low temperature)*

ES NordFlex+


Connect multiple buildings such as factories, offices and housings and create a small district heating grid, also called a microgrid.
Use the ES NordFlex+ system solution and create a system equalizer to transfer energy between different users and needs.
Combine 1–16 units in cascade to enable up to 1.4 MW of heat pump power.
Battery or fuel cell for temporary energy storage.
Produce heating, cooling and DHW.
Connect any additive heating source, for example any kind of biofuel burner, to enable cost efficient energy optimization.
Power heat pumps with locally produced green electricity and generate maximum green power.

Heat Pumps

There are two product ranges available for light commercial systems, the AW-R32-M Series and the AW EVI Monobloc Series.

AW-R32-M Series uses the refrigerant R32, and the AW EVI Monobloc Series uses the refrigerant R410a. Both series are monobloc systems which means the refrigerant runs in a factory sealed circuit, this makes the installation easier.

Both heat pump series uses the latest technology for maximum efficiency and minimum environmental impact. The bigger heat pumps 30, 45 and 90 kW use the EVI technology which make them work with almost the same efficiency even at lower outdoor temperatures.

All ES heat pumps use an advanced LED Touch Screen controller and can also be monitored via Internet. Thanks to special designed fan blades and a noise shielded compressor all the units work very quiet.

Reliable and efficient technology

All ES heat pumps have a 5-year warranty on the compressor due to the use of highly efficient and reliable compressor technology, that also makes the unit low noise and helps reduce the heating costs to a minimum.

Low noise units

AW-R32 units use a special variable speed fan motor and fan blades with innovative blade design to reduce the sound level of the heat pump. The compressor is placed in an extra compartment that is insulated with sound absorbing materials. With these technologies we achieve low sound levels that makes the units almost not hearable, even when running at maximum speeds. The units can also be set to work during the night in even lower sound levels via weekly timers.

Remote control

ES heat pumps can be connected to an external monitoring and controlling system via a Modbus connection such as a Building management system (BMS). This allows full control of the ES heat pumps with climate control systems currently used in the building.

The AW-R32-M Series

The AW-R32-M heat pump series uses the latest technologies for maximum efficiency and minimum environmental impact. The units are very quiet thanks to the special designed fan blades and a noise shielded compressor compartment.

The “M” in the name stands for Monobloc, which means the refrigerant system is a factory sealed circuit. The connection between indoor system and outdoor unit, a hydraulic connection, provides an easier installation.

ECO-friendly refrigerant

The new ES Heat pump line AW-R32 uses an ECO friendly R32 refrigerant. The conventional refrigerants used for inverter heat pumps today has a global worming potential (GWP) more then three times higher than R32 refrigerant which is used for the new ES heat pump line. The units have also less refrigerant volume for the same or even higher heating capacities. With this refrigerant we fulfil the EU norms that are not mandatory yet, but will become in the future. It also contributes to a high efficiency working of the heat pump.

High efficiency heat pumps

ES heat pumps are equipped with the latest technology on the market that is designed specifically for heat pumps, to insure the best performances and low heating costs. Components used in the ES heat pumps are from worldwide known producers, that are making innovations in this field, with a long and successful history.

Controller: Touch screen
Energy efficiency: A+++
SCOP: 4.71-4.98
Heating capacity: 6.50–18.5 kW
COP: 4.70–5.06

Max. temperature outlet: 58 °C
Working range: –25°C to +65 °C
Power supply: 230 V
Sound power level: 52–61 dB(A)
Refrigerant: R32

ES Air-to-Water Heat Pumps with EVI

AW EVI 30, 45 & 90 kW Monobloc

By using the latest inverter and EVI technology, AW-EVI-M series is designed as a high energy-efficient and stable heating solution, with wide heating capacity from 30 to 90 kW.

Not only with inverter compressor, it can adjust working speed according to heating demand automatically, to optimize the efficiency of the whole system. The EVI technology can always provide stable heating output, to minimize your energy consumption in cold winter. ES AW-EVI-M is a simple but powerful solution, which meets heating, cooling and stable hot water demand for commercial applications, such as apartments, hotels, and schools, etc.

The heat pump converts energy from the outdoor air to heat and domestic hot water for your warehouse, residential, office or industrial building.

Economic and effective air-to-water heat pump, designed for a Nordic climate

AW-EVI-M series is developed to give biggest possible energy saving and quiet operation
Components from leading manufacturers and smart control enables big energy savings and quiet operation. All AW-EVI-M series are labelled A++.

Top quality defrost – nano-coated outdoor evaporator unit
Large volumes of air circulate through the outdoor unit on all air-to-water heat pumps and energy is collected from this air. This results in ice forming on the outdoor unit's heat exchanger. With the nano-coating the condensing water drain faster from the outdoor unit.

EVI Powered

AW 30, 45 and 90 kW units are equipped with EVI technology, enabling high energy efficiency and stable performance. With inverter and EVI technology, the series reaches A++ energy level and COP is up to 4.5.

R410A refrigerant

The units use a R410A refrigerant, which is used for inverter heat pumps for several years and it has proven that it is a reliable and efficient medium for air-to-water heat pump systems as well as for air conditioning units.

High efficiency heat pumps

ES heat pumps are equipped with the latest technology on the market that is designed specifically for heat pumps, to insure the best performances and low heating costs. Components used in the ES heat pumps are from worldwide known producers, that are making innovations in this field, with a long and successful history.

Controller: Touch screen
Energy efficiency: A++
Heating capacity: 28.7–89.6 kW
COP: 4.70—5.06
Max. temperature outlet: 60 °C

Working range: –25 °C to +45 °C
Power supply: 230 V
Sound power level: 66–75 dB(A)
Refrigerant: R410A

The ES EVI series controller

- Cascade control of heat pumps – one operation panel can control up to 16 units.
- Two mixing circuits control for different temperature zones.
- Heating curve – adjust water temperature based on ambient temperature automatically.
- Run in rotation – when two or more units are connected in the system, every unit runs alternately.
- Smart defrosting in cascade – maximum 1/3 of the units may defrost at the same time, for stable temperature of the whole system.
- Emergency operation – if master unit is off-line, by turning on the emergency switch, each heat pump unit can work individually according to last working settings.

The units have self-adjusting EEV control enhanced its performance in every conditions.

Sub-cooling pipe prevents water from icing up during defrosting meaning no electrical heating cable is required.

Low noise solution with EC fan motor and improved air duct system.

The heat pumps are equipped with tube in shell heat exchanger with big watercirquit allows higher tolerance of water quality.

Control via Wi-Fi – easy for service.

Modbus – easy to communicate with BMS for smart building.

Designed with famous brand DC inverter and EVI compressor ensures stable heating capacity in harsh working conditions.

All units are monobloc design for easy installation.

Tanks

Tanks are used as storage to cover peak loads or in situations when a surge in demand exceeds the capacity of the heating system. ES tanks are desig-ned for maximum energy savings and minimal heat loss. They enable versatile solutions and makes it possible to combine all your heating sources in a modern energy system.

The tanks are available in two series, the BT Series, meaning buffer tanks, and the MWT Series, standing for multi-functional tanks. The range of tanks consist of different models from 75 to 500 liter. From an entry level model buffer tank to a more advanced 500 liter multi-functional tank.

The buffer tanks give the heat pump a bigger water volume to work with, and increases the water flow in the heating system, which can be important when updating an older heating system. The multifunctional tanks can be used as clean electric boiler, or connected to any other heating source. All ES tanks are produced in stainless steel.

ES Buffer Tanks

The BT Series

ES Buffer Tanks are manufacture from high performance stainless steel for longer lifespan and for high performance. Due to the chosen construction material the system connected to it is not being polluted with particles that could affect other components in the system, as it may happen with traditional black steel buffer tanks.

The slim design of the ES Buffer Tanks makes sure that the space usage is as less as possible. Both the 100 liter and the 200 liter version need less then 0.2 m^2 of space when installed. The 100 liter versions includes a wall bracket, so that it can also be mounted on the wall for even less floor space usage.

Both the 100 and 200 liter models have an additional coil inside to enable for connecting additional heating sources or for preheating the sanitary water.

A versatile solution for all installations

ES Multifunctional Tanks

The MWT Series

ES Multifunctional Tanks – designed to efficiently combine several different heat sources and is very well insulated for minimal heat losses and maximum efficiency.

ES Multifunctional Tanks are a complete heating system for residential and hot water heating. The tanks have connections for several sources of energy and becomes the ”hub” in the house’s heating system. A tank can be used as a clean electric boiler, or connected to solar collector, pellets, heat pump, water-powered wood stove, etc. in combination.

ES Multifunctional Tanks are produced in stainless steel. This keeps the system clean, increases efficiency and has a longer lifespan. The tanks are therefore approved also as pure water heaters. Corrugated stainless coils provide maximum heat transfer between the accumulator volume and hot water or solar collector.

The 300 and 500 liter tanks have a 3 kW electric heater built in to increase the capacity of larger hot water needs. This is thermostat regulated from 30–75 °C and it is intended only as a backup for heating hot water.

Accessories

To build a complete and modern energy system we offer accessories such as fan coils, heat pump stands, drain pan kits, and different kinds of valves, heaters, circulators and filters.

ES Fan Coils are radiators with a fan that circulates the air around the heat exchanger, with makes it more effective.

The heat pump stand ensures a good position of the heat pump and has vibrations dampers to keep the sound level down.

Our drain pan kit collects the condensing water from the outdoor unit to prevent ice to form under the unit.

ES Fan Coils

The FCF Series

ES Fan Coils used for heating purposes, is basically a radiator with a fan that circulates the air around the heat exchanger.

The fan coil uses water as medium and can be used both for heating and cooling. By circulating the air around the heat exchanger, the heat transfer to the air increases dramatically. For heating purposes this means that the water temperature in the heating system can be lowered quite much and keep the desired room temperature. Lower water temperature also increases the efficiency of the heating system.

The following functions are available and can be adjusted:

- Heating, cooling, dehumidifying and air circulation mode
- Timer operation
- Night mode / silent working
- Fan speed
- Room temperature setting

Easy to use control display.

ES Heat Pump Stands

ES heat pump stands are made from a robust and whether resistant materials. The width can be adjusted according to the heat pump model. With adjustable feet the heat pump can be positioned also on not so straight floor surface to a horizontal position. Vibration dampers prevent amplification of the sound level and spreading of the vibrations to the floor.

The ES heat pumps stands are dark gray to aline with the color of the outdoor units. They come in one version for single fan outdoor units and one for the dual fan outdoor units.

OUS40–45 Gray

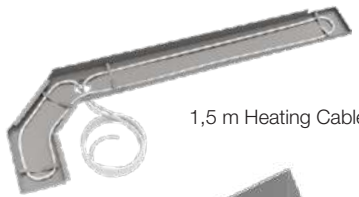
ES Drain Pan Kits

The drain pan kit collects the condensing water from the outdoor unit to a centralized drain, so no ice sheet can form under the unit. It is designed for an easy and fast installation for all AW-R32-M outdoor units. There are two models, Drain Pan 6/12 kW R32/R410A and Drain Pan EPS 15/19 kW R32.

Drain Pan 6/12 kW R32/R410A has a 140 W heating cable that connects directly to the original bottom tray heater contact. The outlet has a 5/4 inch treaded connector for drainpipe where the 1,5 meter heating cable is routed.

Drain Pan EPS 15/19 kW R32 is molded in the heat pump shape in an insulating EPS material that isolates for the cold. This is an “on the ground” system where the two-inch drain hole is put directly on top to the drain in the ground. Suitable self-adjusting electric heater is recommended in cold area operations.

Drain Pan
6/12 kW R32/R410A



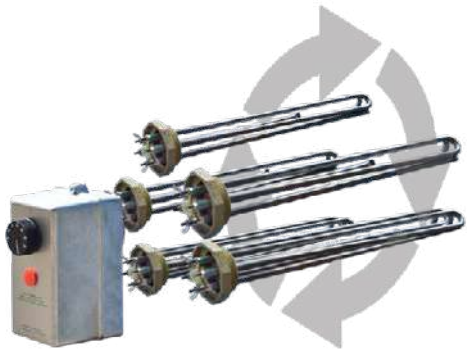
Drain Pan mounted on heat pump (green).

Drain Pan
EPS 15/19 kW R32

Drain Pan mounted on heat pump.

Heating Elements

Customizable heating elements
The heating elements are designed to fit one common controller that contains a thermostat for manual control, overheat protection and a contactor which enables a fully automatic control via ES heat pumps. Heating capacities of the heating elements range from 1,5 kW and up to 9 kW to provide an optimal solution for each house. Suitable for 230 V and 400 V connection.



Heating elements for ES Tanks
The MWT 300 and 500 liter have a thermostatically controlled electric heater of 3 kW with control from 30-75°C, which increases the water temperature. The MWT 300 and 500 liter, and the buffer tanks have the possibility of connecting large capacity electrical cartridges, which ensures the heating demand when the house heating is at peak load. ES Multifunction tanks have one (MWT300), alternatively two (MWT500), strategically placed extra R50 socket for electric cartridge in the tank, where you can insert additional electric cartridge (s) up to 18 kW per piece if existing heat sources do not meet the total heat demand of the house and more capacity is desired. The buffer tanks each has one R50 socket that allows connection of extra power supply up to 9 kW. The tank's various connection possibilities make it possible to combine with heat pumps for high temperature systems.

Technical specifications

Plug-in-Modules

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Heat Pumps

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Tanks

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Plug-in Modules

HeatBox Hydro	Unit	80 kW R32	90 kW EVI
Min/max heat output (1)	kW	9.2 / 74	13.7 / 87.4
Power consumption heating, min/max (1)	kW	1.83 / 16.56	3.3 / 24.2
COP min/max (1)	W/W	4.47 / 5.01	3.62 / 4.42
Min/max heat output (2)	kW	8.5 / 72.8	13.6 / 46.4
Power consumption heating, min/max (2)	kW	2.2 / 20	4.2 / 28.6
COP min/max (2)	W/W	3.6 / 3.82	2.99 / 3.38
Min/max cooling output (3)	kW	8.5 / 90	35 / 64
Operational temp. range, heating (re. Heat pumps)	°C	-25 to +45	-30 to +55
Operational temp. range, cooling (re. Heat pumps)	°C	0 to +65	+15 to +55
EU Energy label		A++	A++
EQUIPED WITH			
Lockable hatches for all connections		Yes	Yes
Invertor compressor technology, variable speed fans		Yes	Yes
Heat pump, outdoor units	pcs	4 pcs AW19-R32-M	2 pcs AW45-EVI-M
Accmulator multi-functional tank	pcs	1 pcs, 500 liters	1 pcs, 500 liters
ErP rated circulation pumps (4)	pcs	2 pcs Xylem EcoCirc	2 pcs Debe
Heat exchanger	kW	100	100
Piping system		Stainless steel / Copper / Brass	Aluminium / black steel
Ventilated gates		Yes	Yes
Lights in both compartments		Yes	Yes
Electrical sockets in both compartments		Yes	Yes

HeatBox Hydro	Unit	80 kW R32	90 kW EVI
MEASUREMENTS, WEIGHT, REFRIGERANT, CONNECTIONS, ENVIRONMENTAL REGULATIONS			
Dimensions of the module, 10' HC container (LxWxH)	mm	2918 x 2438 x 2896	2918 x 2438 x 2896
Net weight	kg	approx. 2600	approx. 2600
Gross weight, including water	kg	approx. 3200	approx. 3200
Refrigerant		R32	R410a
Power supply, earthed	V/Hz/A	400V/3PH/50Hz/63	400V/3PH/50Hz/63
Connector (autoadjusted current if electrical boiler option is used)	A	63	63
Ground fault circuit breaker and surge protector		Required	
Heat/cooling water connections		54 mm	54 mm
Water inlet connections, fresh water		22 mm	22 mm
Environmental regulated installation, F-gas regulations	Environment regulations	Yes	Yes

AVAILABLE OPTIONS
Electrical boiler 42 kW
Locks for all hatches and gates
Glycol filling in primary circuit
Web-based operational monitoring and surveillance, CC WEB
GSM modem
Service agreement
Electric meter

(1) Heating conditions: water temperature in /out – 30°C / 35°C, ambient temperature – DB 7°C /WB 6°C

(2) Heating conditions: water temperature in /out – 40°C / 45°C, ambient temperature – DB 7°C / WB 6°C

(3) Cooling: water temperature in /out – 12°C / 7°C, ambient temperature – DB 35°C / WB 24°C

(4) Specified manufacturers may change.

Heat Pumps

The AW-R32-M Series	Unit	AW6-R32-M	AW9-R32-M	AW12-R32-M	AW15-R32-M	AW19-R32-M
Article number outdoor unit		120290	120291	120292	120293	120294
ErP Energy efficiency class		A+++ / A++	A+++ / A++	A+++ / A++	A+++ / A++	A+++ / A++
SCOP 35°C (floor heating) EN 14825		4.74	4.73	4.71	4.98	4.85
Heating mode (A7/W35)						
Heating capacity (1)	kW	3.50 – 6.50	4.30 – 9.20	5.50 – 11.60	6.00 – 15.30	9.20 – 18.50
COP max – Coefficient of Performance (1)		4.70	4.71	4.90	5.06	5.01
Rated input power (1)	kW	0.75 – 1.41	0.92 – 2.10	1.10 – 2.68	1.22 – 3.20	1.83 – 4.14
Max. temperature of heating water	°C			58		
Operating range heating	°C			-25 to +45		
Cooling mode						
Cooling capacity (2)	kW	6.22 – 7.45	6.70 – 9.50	7.00 – 9.80	7.20 – 18.50	8.50 – 22.50
EER max – Energy Efficiency Ratio (2)		4.45	4.60	3.80	5.42	5.12
Min. temperature of cooling water	°C			7		
Operating range cooling	°C			0 to +65		
Power supply – specifications						
Voltage (outdoor unit)	V/Hz/ph		220-240/50/1		400/50/3	
Fuse for heat pump only (outdoor unit)	A/type	10A/C	16A/C	16A/C	3p 16A/C	
Fuse for indoor unit + electrical flow heater	A/type	/	/	/	/	/
Refrigerant specification						
Type / Mass of refrigerant	kg	R32 / 0.90	R32 / 1.40	R32 / 1.80	R32 / 2.55	R32 / 2.60
Type of connection between indoor-outdoor unit				Hydraulic connection		
Dimensions of hydraulic pipes connectors			G1"		G1-1/4"	

(1) Measured according to standard EN 14511. Heating condition: water inlet/outlet temperature 30°C/35°C, ambient temperature DB/WB 7°C/6°C.

(2) Measured according to standard EN 14511. Cooling condition: water inlet/outlet temperature 18°C and ambient temperature 35°C.

Heat Pumps

The AW-R32-M Series	Unit	AW6-R32-M	AW9-R32-M	AW12-R32-M	AW15-R32-M	AW19-R32-M
Controller						
Controller Type		LCD Touch Screen				
LCD Size		4.3″				
Controller features		2x Mixing Heating Circuit + 2x Mixing Cooling Circuit + DHW Heating				
Internet connection		Serial Integrated				
Sound power and sound pressure level						
Sound power level LwA - Indoor unit	dB(A)	/	/	/	/	/
Sound power level LwA - Outdoor unit (3)	dB(A)	52	53	52	58	61
Sound pressure level on distance						
Outdoor unit - 1 m	dB(A)	44	45	44	50	53
Outdoor unit - 5 m	dB(A)	30	31	30	36	39
Outdoor unit - 10 m	dB(A)	24	25	24	30	33
Outdoor unit - 15 m	dB(A)	20	21	20	27	30
Net dimensions						
Outdoor unit (WxHxD)	mm	1 010 x 735 x 370	1 165 x 885 x 370	1 165 x 885 x 370	1 085 x 1 450 x 390	
Net weight						
Outdoor unit	kg	67	80	85	120	140
Serial integrated components						
Electrical flow heater	kW/ph	/	/	/	/	/
Circulation water pump - A energy class	type	Wilo Para 25-130/9-87/IPWM1				
Temperature Sensors		Serial Integrated – All				
3-way diverting valve for DHW tank		/	/	/	/	/
Expansion vessel heating water	l	/	/	/	/	/

(3) Measured according to standard EN 12102.

Heat Pumps

AW EVI Monobloc			AW 30-EVI-M	AW 45-EVI-M	AW 90-EVI-M
Min/max heating capacity (1)		kW	15.2–28.7	13.7–43.7	27.4–89.6
Min/max input power (1)		kW	3.5–7.5	3.3–12.1	6.7–24.3
C.O.P min/max (1)		W/W	3.83–4.43	3.62–4.42	3.68–4.5
Min/max heating capacity (2)		kW	12.2–29.4	13.6–43.2	28.2–89.5
Min/max input power (2)		kW	3.8–9.0	4.2–14.3	8.2–28.3
C.O.P min/max (2)		W/W	3.26–3.43	2.99–3.38	3.16–3.48
SCOP – Average climate, low temperature (1)		W	4.21	4.18	4.14
Energy class (1)			A++	A++	A++
SCOP – Average climate, high temperature (6)		W	3.31	3.62	3.62
Energy class (6)			A++	A++	A++
Min/max cooling capacity (3)		kW	15.2–26.8	17.7–32.0	36.4–66
Min/max input power (3)		kW	3.3–8.8	3.15–11.6	6.9–23.5
E.E.R min/max (3)			3.06–4.68	2.72–5.09	3.16–3.48
Min/max cooling capacity (4)		kW	7.3–21.2	11.2–29.9	23.4–61.2
Min/max input power (4)		kW	3.1–8.0	3.5–11.6	6.9–23.5
E.E.R min/max (4)		W/W	2.33–2.84	2.6–3.3	2.6–3.4
Min/max ambient working temperature in heating mode		°C	-30 to +55	-30 to +55	-30 to +55
Min/max ambient working temperature in cooling mode		°C	+15 to +55	+15 to +55	+15 to +55
Max flow temperature in heating mode		°C	60	60	60
Min flow temperature in heating mode		°C	20	20	20
Min flow temperature in cooling mode		°C	7	7	7
Sound power level LwA – Average climate, low temperature (1)	Outdoor	dB (A)	66	71	74
Sound power level LwA – Average climate, high temperature (6)	Outdoor	dB (A)	71	72	75

AW EVI Monobloc				AW 30-EVI-M	AW 45-EVI-M	AW 90-EVI-M
Fan	Quantity	pcs		2	1	2
	Airflow	m^3/h		5250 x 2	13500	13500 x 2
	Rated power	W		93 x 2	800	800 x 2
	Blade diameter	mm		552 x 2	760	760 x 2
Plate heat exchanger	Water press. drop	kPa		60	80	100
	Pipe connection	inch		1 ½" female	2" female	DN65 Flange
Refrigerant	Type			R410A	R410A	R410A
	Charge	kg		5.2	8	8 x 2
	GWP	Co_2/kg		2088	2088	2088
	t CO_2 Equiv			10.9	16.7	33.4
Compressor	Manufacturer			Panasonic, twin rotary	SIAM (5)	SIAM (5)
	Type			Inverter + EVI	Inverter + EVI	Inverter + EVI
Power supply – Outdoor unit		V/Ph/Hz		400V/3N/50	400V/3N/50	400V/3N/50
Fuse Outdoor unit		A		3p/25A/C	3p/40A/C	3p/80A/C
Electrical compressor heater		W		30	30	30 x 2
Nominal water flow		m^3/h		5.2	8	16
Hydraulic connections		inch		1 ½" female	2" female	DN65 Flange
Flow switch				Yes	Yes	Yes
Net dimensions (L x D x H)	Outdoor unit	mm		1295 x 455 x 1447	1010 x 1158 x 1645	2158 x 1158 x 1645
	Indoor unit	mm		389 x 476 x 165	389 x 476 x 165	389 x 476 x 165
Packaging dimensions (L x D x H)	Outdoor unit	mm		1325 x 475 x 1580	1110 x 1260 x 1865	2180 x 1220 x 1865
	Indoor unit	mm		400 x 490 x 180	400 x 490 x 180	400 x 490 x 180
Net weight	Outdoor unit	kg		191	330	682
	Indoor unit	kg		9	9	9
Packaging weight	Outdoor unit	kg		215	390	717
	Indoor unit	kg		10	10	10
Article number	Outdoor unit			120314	120300	120307
	Indoor unit		AWC30-45-90-EVI-M	120301	120301	120301

(1) Heating conditions: water inlet/outlet temperature in/out: 30°C/35°C, Ambient temperature: DB 7°C /WB 6°C

(2) Heating conditions: water inlet/outlet temperature in/out: 40°C/45°C, Ambient temperature: DB 7°C /WB 6°C

(3) Cooling conditions: water inlet/outlet temperature in/out: 23°C/18°C, Ambient temperature: DB 35°C /24°C

(4) Cooling conditions: water inlet/outlet temperature in/out: 12°C/7°C, Ambient temperature: DB 35°C /24°C

(5) A part of Mitsubishi Group.

(6) Heating conditions: water inlet/outlet temperature in/out: 50°C/55°C, Ambient temperature: DB 7°C /WB 6°C

Tanks

The BT Series	Unit	BT100TC-2	BT100SC-1	BT200TC-1
Article no. (indoor/outdoor unit)	bar	120201	120204	120205
Max water pressure	bar		10	
Water temperature Max.	°C		95	
Volume	l	100	100	200
Hight	mm		1500	
Diameter	mm	375	375	520
Material of inner tank	/		Stainless steel 304	
Material of coil	/		Stainless steel 316	
Insolation – Type / Thickness	mm	Polyurethan / 37.5	Polyurethan / 37.5	Polyurethan / 50.0
Colour	/		White	
Thermometer	/		Yes	
Weight	kg	29.30	24.60	46.30
Coil	m	15	/	20
Coil diameter	mm	22		22
2 inch/ R50 connector	pcs	1	1	1
Wall bracket	/	Yes	Yes	/
Connections	/	On top	On the side	On top
Thermowell	pcs		2	

The MWT Series	Unit	MWT 300.4-3H	MWT 500.4-3H	MWT 500C.1
Article number		120175	120176	120239
Water pressure Max.	bar		10	
Water temperature Max.	°C		95	
Volume	l	300	500	500
Height	mm	1560	1850	1850
Diameter	mm	630	700	700
Inner tank and coils			Stainless 304 and 316	
Outer tank			Stainless 304, powder-coated	
Insulation		Polyurethane, 100 mm	Polyurethane, 70 mm	Polyurethane, 70 mm
Weight (blank)	kg	95	120	120
Spiral (s) for solar collector/hot water	m	10+20+20	15+20+20	15+20+20
Capacity coils, kW total	kW	16.30	17.90	17.90
R50 connector	pcs	1	2	2
Electric heater	kW	3	3	3
Connections Tank/spirals			1” female	2” female

Accessories

Fan Coils	Unit	FCF1550-V3	FCF3100-V3	FCF4600-V3	FCF6300-V3
Article no.		120265	120266	120267	120268
Cooling capacity at 12°C (1)	kW	0.75	1.50	2.20	3.10
Heating capacity at 50°C (2)	kW	0.99	2.00	2.80	4.20
Heating capacity at 70°C (3)	kW	1.55	3.10	4.60	6.30
Water flow	l/hour	162	343	471	600
Pressure drop	kPa	7.00	7.50	19.00	25.00
Volume heat exchanger	l	0.48	0.85	1.15	1.48
Max. water pressure	Bar	10			
Water connection	inch	G1/2			
Air flow min/max	m³/hour	50/160	150/320	200/460	300/580
Power supply	V/Ph/Hz	230/1/50			
Power consumption	W	14	23	27	33
Sound level min/max (4)	dB(A)	20/39	18/40	19/42	21/42
Net dimensions, W x H x D	mm	694 x 580 x 129	894 x 580 x 129	1 094 x 580 x 129	1 294 x 580 x 129
Weight	kg	16	22	28	34

(1) Cooling. Water in/out 7/12°C; room temperature DB/WB 27/19°C.

(2) Heating. Water inlet 50°C; room temperature 20°C

(3) Heating. Water inlet 70°C; room temperature 20°C.

(4) Sound pressure is tested in accordance to EN12102-2008 and ISO3745:201

Heat Pump Stands	Single fan units	Dual fan units
Model	OUS40-45-G	OUS40-55-G
Article number	120244	120245

Electrical Heaters

Control box G2”

FEATURES	ARTICLE NUMBER	SUITABLE FOR
• Automatic control via heat pump • Manual control via thermostat • Overheat protection	11245KP	Heating elements with G2” connection (whole range).

Heating Elements G2”

LENGTH	ARTICLE NUMBER	OUTPUT POWER	CONNECTION
280 mm	121001	6.0 kW	G2”
390 mm	11081	4.5 kW	G2”
390 mm	11082	6.0 kW	G2”
390 mm	11084	9.0 kW	G2”
485 mm*	112311	4.5 kW	G2”
485 mm*	112312	6.0 kW	G2”
485 mm*	112314	9.0 kW	G2”

* Inactive 150 mm

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Sweden, HQ: ES Energy Save Holding AB · Nitgatan 2, SE-441 38 Alingsås, Sweden
Norway: Energy Save AS · Kirkeveien 50, 1396 Hvalstad, Norway
Slovenia: Energy Save Nordic D.O.O. · Ulica heroja Nandeta 37, 2000 Maribor, Slovenia

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