

Green heating and cooling with natural refrigerant

WATER -> WATER | CAPACITIES FROM 30kW TO 300kW | AIR -> WATER

SMART®
HEAT PUMP

SMART heat pump

Introducing the cutting-edge SMART heat pump series combining efficiency, sustainability and style to meet your heating and cooling needs. With 18 different models ranging from 30 kW to 300 kW, available in both water-source and air-source options, we have the perfect solution for every application, whether commercial or industrial. Plus, the SMART heat pumps significantly reduce emissions, making them an environmentally friendly choice for a sustainable future.

All models use the natural refrigerant CO_2, which is ideal for applications where return temperatures are below 47°C and for supply temperatures up to 85°C. CO_2 is a safe and non-flammable refrigerant, allowing the SMART heat pump to be installed just about anywhere, and with its aesthetic design, it will blend into any interior.

The heat pumps have extensive applications across the commercial and industrial sectors, including residential buildings, offices, supermarkets, hotels, restaurants, logistics centres, food processing, pharmaceutical and chemical industries and local heating and cooling supply.

The SMART heat pump complies with the ECO design directives EU 813/2013 and EU 814/2013. Further, it has the ATMO Approved label, which is a global gold standard highlighting best-in-class manufacturers and contractors of natural refrigerant systems and components.



Air-source SMART heat pump

Water-source SMART heat pump

ECOdesign Compliant

2024 Natural Refrigerants ATMO Approved

WE ONLY USE NATURAL REFRIGERANTS

Why CO_2 as a refrigerant

- CO_2 is a natural refrigerant with a GWP (Global Warming Potential) of 1, which is very low compared to traditional synthetic refrigerants, like HFCs, which can have GWP values in the thousands.
- When used as a refrigerant, CO_2 is contained within a closed loop and reused continuously. The quantity of CO_2 is small and does not contribute significantly to atmospheric CO_2 levels.
- CO_2 is non-flammable, non-toxic and odourless, meaning that the SMART heat pump can be placed anywhere, even close to where people live and work.
- Many countries are phasing out high-GWP refrigerants, thus CO_2 as a refrigerant is a future-proof choice aligned with current and future environmental legislation.
- CO_2 can provide high supply temperatures up to 85°C, while ensuring a high COP.
- Heat pumps using CO_2 are suitable for a wide range of applications within the commercial and industrial sectors.

SMART heat pump - commercial sector

SMART heat pumps are highly versatile and efficient devices designed to supply high temperatures, making them ideal for heating of new and renovated buildings as well as for domestic hot water production. These heat pumps can simultaneously provide hot water and space heating (and/or cooling) while ensuring consistent comfort and energy efficiency.

They are suitable for a wide range of commercial applications, including:

- **New family buildings**
- **Renovated family buildings**
- **Supermarkets**
- **Small shops**
- **Restaurants**
- **Hotels**
- **Hypermarkets**

The SMART heat pump's capability to maintain high temperatures reliably and efficiently makes it an excellent choice for various settings, ensuring both comfort and operational efficiency.



NEW BUILDINGS





RENOVATIONS





REPLACEMENT OF FOSSILS

SMART heat pump - industrial sector

SMART heat pumps are highly versatile and efficient devices designed to supply high temperatures, making them ideal for operational purposes and recreational environments. These heat pumps can deliver hot water and process heating simultaneously (and/or cooling) ensuring consistent and stable energy efficiency.

They are well-suited for a variety of industrial applications, including:

- **Spa and wellness**
- **Food processing**
- **Offices**
- **Pharmaceutical industry**
- **Swimming facilities**
- **Greenhouses**
- **Local heating and cooling supply**
- **District heating**

The SMART heat pump's capability to maintain high temperatures reliably and efficiently makes it an excellent choice for various settings, ensuring both comfort and operational efficiency.





REPLACEMENT OF FOSSILS



NEW BUILDINGS





RENOVATIONS

SMART heat pumps have many unique and beneficial features

Easy installation

- Plug and play
- Can be placed anywhere - no specific location is required
- Suitable for both indoor and outdoor installation
- Noise-cancelling housing
- Aesthetic design that will blend into the surroundings
- Powder-coated metal frame and housing with corrosion protection (EN ISO 12944, class C3)



Effortless installation: plug-and-play heat pump with easy-to-connect pipes





Variable Speed Drive



Ejector technology



Control

SMART control system

- Embedded control system, developed specifically for SMART heat pump
- Connect to WIFI and/or LAN to link to the cloud
- The cloud provides remote access to all owned heat pumps in a consolidated overview with full visibility of alarms, change logs, real-time and historical data
- Remote access to the controller from PC or smartphone
- Intelligent defrost control for air-source heat pumps

Standard equipment and features

- High-efficiency compressors
- Low-pressure ejector technology
- VSD (Variable Speed Drive)
- Brazed plate heat exchanger as gas cooler
- Air-cooled evaporator (AW heat pump only)
- Brazed plate heat exchanger as evaporator (WW heat pump only)
- Maintenance-free oil separator/muffler
- Internal suction gas heat exchanger
- Filter dryer
- Fully assembled and factory tested

SMART water-to-water heat pumps can be used for efficient heating and cooling by transferring heat between two water sources.

WE ONLY USE NATURAL REFRIGERANTS

Geothermal systems
The SMART water-to-water heat pumps can be used in geothermal heating and cooling systems, where they extract heat from groundwater or a body of water (like a lake or a pond) to heat buildings in winter and reverse the process to cool buildings in summer.

District heating and cooling
In larger buildings, campuses, or communities that use a centralised heating and cooling system, the SMART water-to-water heat pumps can efficiently transfer heat between a water loop and the building's heating and cooling systems.

Industrial processes
Many industrial processes require heating and cooling at different stages. SMART water-to-water heat pumps can provide the necessary temperature control by using waste heat from one process to heat water for another.

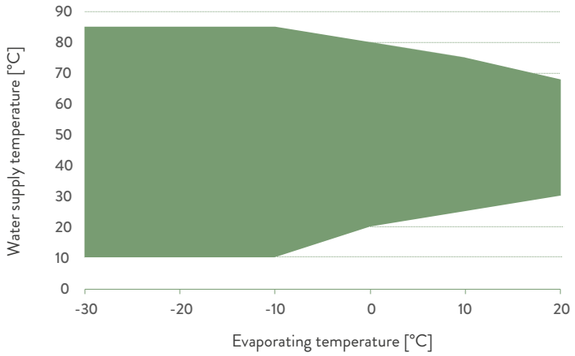
Radiant floor heating
These systems work well with water-to-water heat pumps as they often require water to be heated to moderate temperatures. The SMART heat pump can provide consistent and efficient heating to maintain comfortable indoor conditions.

Retrofit applications
In buildings where existing water-based heating systems are in place, a SMART water-to-water heat pump can be a more energy-efficient upgrade compared to traditional boilers.

Swimming pools and spas
SMART water-to-water heat pumps can be used to heat swimming pools and spas efficiently, especially when connected to a geothermal loop or other stable water source.

Combined Heat and Power (CHP) systems
In facilities that generate electricity and have a simultaneous need for heating, SMART water-to-water heat pumps can help use waste heat from power generation for heating purposes.

Operating range



Brine / Water temperature:
From -18 °C to 22 °C

Water return temperature:
Max.: 47 °C
Recommended: 40 °C

Technical specifications

Water-water	SHP W040	SHP W050	SHP W065	SHP W085	SHP W095
Max. heating capacity*	36.0 kW	51.0 kW	64.0 kW	82.0 kW	95.0 kW
Min. heating capacity*	16.0 kW	22.0 kW	28.0 kW	35.0 kW	41.0 kW
Refrigerant	R744	R744	R744	R744	R744
COP*	2.75-2.90	2.75-2.90	2.75-2.90	2.75-2.90	2.75-2.90
Dimension WxDxH	1550 x1100x1870mm	1550 x1100x1870mm	1550 x1100x1870mm	1550 x1100x1870mm	1550 x1100x1870mm
Power supply	3Ph/400V/50Hz	3Ph/400V/50Hz	3Ph/400V/50Hz	3Ph/400V/50Hz	3Ph/400V/50Hz
Pabs	14 kW	19 kW	24 kW	29 kW	35 kW
Compressors	1	1	1	1	1
Weight	950 kg	1050 kg	1150 kg	1200 kg	1250 kg
Controller	Embedded Reftronix controller				
Connection, waterside	DN32	DN32	DN32	DN40	DN40
Design pressure HP/LP	130/80 bar	130/80 bar	130/80 bar	130/80 bar	130/80 bar
Communication	Modbus, Cloud, WLAN, LAN				
Est. sound pressure level dB(A)@10m	45	42	42	42	44

*Brine: 0/-3°C, Water: 40/70°C



SHP W040 - W095 SMART heat pump with one compressor

Water-water	SHP W110	SHP W140	SHP W160	SHP W190	SHP W260	SHP W300
Max. heating capacity*	109.0 kW	138.0 kW	162.0 kW	187.0 kW	257.0 kW	299.0 kW
Min. heating capacity*	28.0 kW	35.0 kW	41.0 kW	47.0 kW	65.0 kW	75.0 kW
Refrigerant	R744	R744	R744	R744	R744	R744
COP*	2.75-2.9	2.75-2.9	2.75-2.9	2.75-2.9	2.75-2.9	2.75-2.9
Dimension WxDxH	2200x1100x1870mm	2200x1100x1870mm	2200x1100x1870mm	2200x1550x1930mm	2200x1550x1930mm	2200x1550x1930mm
Power supply	3Ph/400V/50Hz	3Ph/400V/50Hz	3Ph/400V/50Hz	3Ph/400V/50Hz	3Ph/400V/50Hz	3Ph/400V/50Hz
Pabs	40 kW	50 kW	58 kW	67 kW	94 kW	110 kW
Compressors	2	2	2	2	2	2
Weight	1500 kg	1650 kg	1700 kg	2450 kg	2550 kg	2650 kg
Controller	Embedded Reftronix controller					
Connection, waterside	DN50	DN50	DN65	DN65	DN65	DN80
Design pressure HP/LP	130/80bar	130/80bar	130/80bar	130/80bar	130/80bar	130/80bar
Communication	Modbus, Cloud, WLAN, LAN					
Est. sound pressure level dB(A)@10m	44	43	46	48	48	48

*Brine: 0/-3°C, Water: 40/70°C



SHP W110 - W300 SMART heat pump with two compressors

SMART air-to-water heat pumps provide efficient heating and cooling by transferring heat between outdoor air and a waterbased heating system.

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Residential heating and cooling

SMART air-to-water heat pumps can be used in homes to provide heating and cooling*. They can be connected to underfloor heating systems, radiators, or fan coil units, offering a versatile solution for maintaining comfortable indoor temperatures year-round.

Commercial buildings

SMART air-to-water heat pumps are suitable for offices, schools, and other commercial spaces, where they can provide efficient heating and cooling*. They are often used in combination with existing HVAC systems to improve energy efficiency and reduce operating costs.

Retrofit applications

For buildings with existing water-based heating systems, SMART air-to-water heat pumps offer an energy-efficient upgrade. They can replace or supplement traditional boilers, reducing reliance on fossil fuels and lowering greenhouse gas emissions.

Domestic hot water

SMART air-to-water heat pumps can also be used to supply hot water. They can be integrated into existing hot water systems or used as standalone units, providing a sustainable and cost-effective solution for domestic hot water needs.

Multi-family housing

In apartment complexes and multi-family units, SMART air-to-water heat pumps can provide centralised heating, hot domestic water and/or cooling*. This approach offers significant energy savings and reduces maintenance compared to individual units for each apartment.

Radiant floor heating

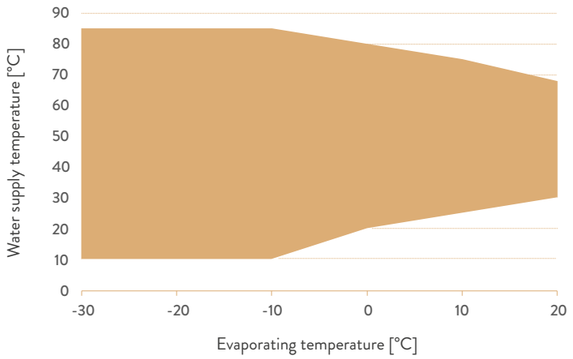
SMART air-to-water heat pumps are particularly effective when paired with radiant floor heating systems. They can deliver consistent, low-temperature heating, which is ideal for maintaining comfortable indoor environments without the high energy consumption associated with traditional heating methods.

Supplementary heating

In regions with existing heating systems, the SMART air-to-water heat pumps can serve as supplementary heating sources. They are ideal for replacing primary heating systems, such as oil or gas boilers, leading to lower energy bills, improved overall system efficiency and net zero emissions.

* Cooling function will be available in the SMART air-to-water models from Q1 2026.

Operating range



Ambient temperature:
From -22 °C to 20 °C

Water return temperature:
Max.: 47 °C
Recommended: 40 °C

Technical specifications

Air-water	SHP A070	SHP A110	SHP A140	SHP A160
Max. heating capacity*	62.0 kW	93.0 kW	141.0 kW	165.0 kW
Min. heating capacity*	16.0 kW	24.0 kW	35.0 kW	41.0 kW
Refrigerant	R744	R744	R744	R744
COP heat range*	2.8-2.9	2.8-2.9	2.8-2.9	2.8-2.9
Dimension WxDxH	2200x3460x2030mm	2200x3460x2030mm	2200x5560x2030mm	2200x5560x2030mm
Power supply	3Ph/400V/50Hz	3Ph/400V/50Hz	3Ph/400V/50Hz	3Ph/400V/50Hz
Pabs	23 kW	32 kW	50 kW	58 kW
Compressors	2	2	2	2
Weight	2350 kg	2400 kg	3400 kg	3450 kg
Controller	Embedded Reftronix controller			
Connection, waterside	DN32	DN50	DN50	DN65
Design pressure HP/LP	130/80 bar	130/80 bar	130/80 bar	130/80 bar
Communication	Modbus, Cloud, WLAN, LAN			
Est. sound pressure level @10m	48	49	49	51

*Air: 2°C, water: 40/70°C

Air-water	SHP A190	SHP A260	SHP A300
Max. heating capacity*	191.0 kW	217.0 kW	253.0 kW
Min. heating capacity*	48.0 kW	55.0 kW	64.0 kW
Refrigerant	R744	R744	R744
COP heat range*	2.8-2.9	2.8-2.9	2.8-2.9
Dimension WxDxH	2200x8100x2030mm	2200x8100x2030mm	2200x8100x2030mm
Power supply	3Ph/400V/50Hz	3Ph/400V/50Hz	3Ph/400V/50Hz
Pabs	67 kW	76 kW	90 kW
Compressors	2	2	2
Weight	4400 kg	4500 kg	4700 kg
Controller	Embedded Reftronix controller		
Connection, waterside	DN65	DN65	DN65
Design pressure HP/LP	130/80 bar	130/80 bar	130/80 bar
Communication	Modbus, Cloud, WLAN, LAN		
Est. sound pressure level @10m	51	52	52

*Air: 2°C, water: 40/70°C





SHP A070 - A300 SMART heat pump with two compressors

Contact information

We believe in more than just providing top-quality products; we are committed to offering exceptional support and service. Our team of knowledgeable and friendly experts is here to assist you with any questions you may have about the SMART heat pumps. Whether you need detailed product information, guidance on installation, or help with selecting the right model for your needs, we are here to help.

Feel free to reach out to us at any time. We are eager to help you understand how the SMART heat pump series can benefit your specific situation or project, so that we together can contribute to a greener, more efficient future.

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Efficient · Sustainable · Reliable



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HEAT PUMP

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