

# HEAT PUMPS

**WATER-WATER**  
**AIR-WATER**



**HIGH  
COP**

ENERGY  
EFFICIENT

RELIABLE IN  
OPERATION

CLIMATE &  
ENVIRONMENTALLY  
FRIENDLY

MORE THAN  
**20 MW**  
IN PARALLEL

## CONFIGURABLE HEAT PUMPS

With CO<sub>2</sub> heat pumps it is easy to replace existing gas and oil burners with a **fossil free** and sustainable alternative.

Many buildings with traditional heating systems such as radiators have been designed for high temperature delivery (<85°C). Advansor CO<sub>2</sub> heat pumps can deliver high water outlet temperatures up to **85°C** at low water inlet temperature (up to 50°C) without compromising COP.

Advansor CO<sub>2</sub> heat pumps are ideal for comfort heating, hot tap water, and process heating. Also in **cold climates**.

Our configurable CO<sub>2</sub> heat pumps deliver up to 3 MW in a single unit and more than 20 MW in parallel.

We only use industry known, high quality components and we perform full component and system testing in our own R&D lab.

All heat pumps are delivered with pre-programmed controllers, are **CE-marked**, and **fully factory tested** for fast and easy installation.

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## SPECIFICATIONS SELECTED MODELS

Maximum heating capacity (kW)	650	1600	3000
Minimum heating capacity (kW)	100	250	600
Maximum cooling capacity (kW)	450	1100	2000
Heating COP*	3,2	3,2	3,2
Heating capacity control (%)	15-100%	15-100%	20-100%
Water supply temperature	Up to 85°C	Up to 85°C	Up to 85°C
Connections water side	DN 65	DN 65	DN65
Min/Max ambient operating temperature	-15°C / +45°C	-15°C / +45°C	-15°C / +45°C
Electrical supply	3x400 +N VAC/TN-S	3x400 +N VAC/TN-S	3x400 +N VAC/TN-S
Communication protocol	Modbus/TCP & RTU	Modbus/TCP & RTU	Modbus/TCP & RTU
Receiver volume	450-750 L	1000-1500 L	1000-2000 L
No. of compressors	4-8	8-13	10-16
Length App. (m)	6	11	12
Weight App. (kg)	4000	9500	20000

\*Conditions: +1°C ambient and +35/75°C water in/outlet

## STANDARD EQUIPMENT

Plate heat exchanger  
Insulation hot and cold side  
Insulation of compressors  
Filter drier and strainers  
CO<sub>2</sub> low level switch  
Integrated evaporators

## COMMUNICATION

MODBUS TCP & RTU

## DESIGN PRESSURES

Operation with optimal COP: >45°C water inlet  
Standstill in ambient temperature: >40°C  
High pressure: 140 bar  
Receiver pressure: 80 bar

## OPTIONS

Chiller module  
Frequency inverter on lead compressor  
Energy meter  
CO<sub>2</sub> liquid level measurement  
High level switch  
Double high pressure and gas bypass valve  
80 bar suction side  
Double pressure relief valves on changeover valve  
CE-marked pressure relief valves manifold  
(selected configurations)

## ENERGY SAVING OPTIONS

Parallel compression  
Permanent magnet motors  
Ejector technology  
Ultra-Low Superheat (air-water)

ISO 9001:2015 certified

Extensive factory tests to ensure fast commission on both pressure and electrical installations. Documentation and manuals that meet legal requirements

CE marked according to EU regulation PED 2014/68/EU

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# CAPACITY AND EFFICIENCY\*

## AIR-WATER

Heating output (kW) and COP at ambient temperature (°C)								
Temperature °C	-15	-12	-7	0	+7	+12	+20	+30
Capacity/COP	COP	COP	COP	COP	COP	COP	COP	COP
200 kW	2,51	2,63	2,83	3,25	3,57	3,86	4,33	4,48
400 kW	2,51	2,63	2,83	3,25	3,57	3,86	4,33	4,48
600 kW	2,51	2,63	2,83	3,25	3,57	3,86	4,33	4,48
800 kW	2,51	2,63	2,83	3,25	3,57	3,86	4,33	4,48
1,2 MW	2,51	2,63	2,83	3,25	3,57	3,86	4,33	4,48
1,5 MW	2,51	2,63	2,83	3,25	3,57	3,86	4,33	4,48
3 MW	2,51	2,63	2,83	3,25	3,57	3,86	4,33	4,48

## WATER-WATER

Heating output (kW) and COP at water inlet temperature (°C)					
Temperature °C	0	+7	+12	+20	+30
Capacity/COP	COP	COP	COP	COP	COP
200 kW	3,01	3,44	3,64	4,07	4,25
400 kW	3,01	3,44	3,64	4,07	4,25
600 kW	3,01	3,44	3,64	4,07	4,25
800 kW	3,01	3,44	3,64	4,07	4,25
1,2 MW	3,01	3,44	3,64	4,07	4,25
1,5 MW	3,01	3,44	3,64	4,07	4,25
3 MW	3,01	3,44	3,64	4,07	4,25

\*Conditions: +35°C water inlet temperature/+75°C water outlet temperature,  
Including the options permanent magnet motor, parallel compression, and ejectors

## COP BASED ON WATER INLET AND OUTLET TEMPERATURE\*

Water inlet temperature (°C)	50	-	-	-	-	2,6	2,6	2,5	2,4
	47,5	-	-	-	2,8	2,8	2,8	2,7	2,6
	45	-	-	2,9	2,9	2,9	2,9	2,8	2,7
	42,5	-	-	3,1	3,1	3,0	3,0	3,0	2,9
	40	-	3,2	3,2	3,2	3,1	3,1	3,1	3,0
	37,5	-	3,4	3,3	3,3	3,3	3,2	3,1	3,0
	35	3,6	3,6	3,5	3,4	3,4	3,3	3,2	3,1
		50	55	60	65	70	75	80	85
Water outlet temperature (°C)									

\*COP @ -2°C evaporation temperature

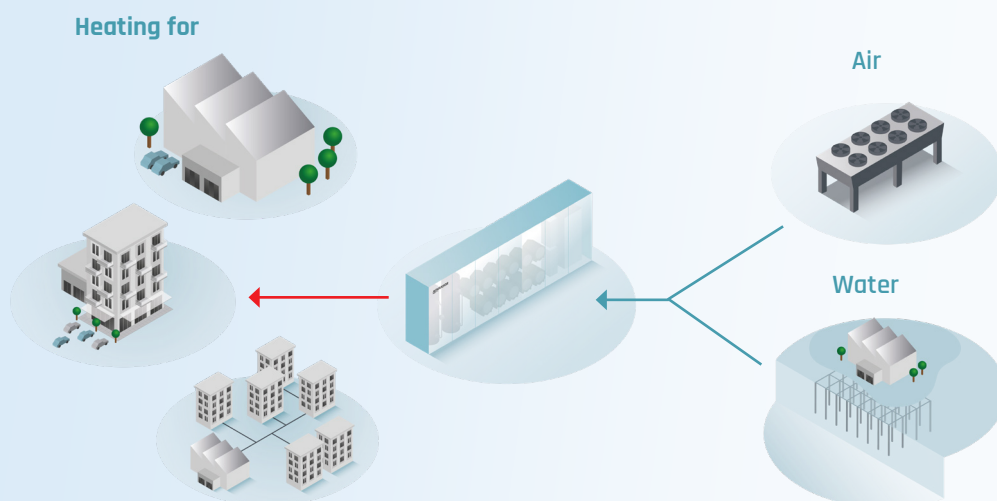
## HIGH COP

A unique feature for CO<sub>2</sub> heat pumps is the high COP in applications where a high temperature difference is required between water inlet and outlet temperature.

As a result, CO<sub>2</sub> heat pumps require less water circulation and thereby smaller pipes and smaller water pumps. The end result is less electricity and higher COP.

To get the best COP we recommend as a minimum to choose permanent magnet motors.

## AIR-WATER OR WATER-WATER



## IDEAL FOR BUILDINGS AND INDUSTRY

CO<sub>2</sub> heat pumps deliver up to 3 MW in a single unit and can be used for comfort heating, hot tap water, and process heating. Also in cold climates.

The heat pumps can be used for almost any industrial application such as district heating, larger buildings and processing industries.

Each heat pump can be configured with different options to get the exact match for your needs.

## 1:1 REPLACEMENT OF OIL & GAS BURNERS

Many buildings with traditional heating systems such as radiators have been designed for high temperature delivery (<85°C). CO<sub>2</sub> heat pumps can deliver high water temperatures up to 85°C, and thereby easily replace existing gas and oil boilers.

