

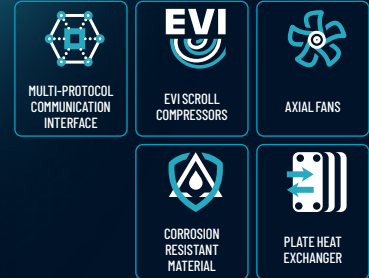
INDUSTRIAL

SERVICES

# HPS / MPS

REVERSIBLE AND MULTIPURPOSE  
AIR CONDENSED HEAT PUMPS  
FOR LOW OUTDOOR TEMPERATURES

36.3–202.2 kW

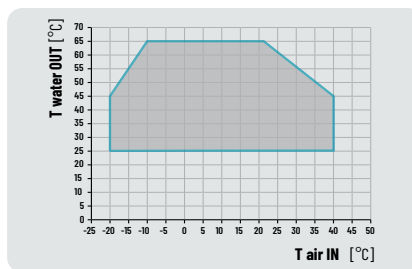


HPS is the HiRef range of air-to-water multipurpose reversible heat pumps designed for operation in very cold climates. **The use of compressors with EVI steam injection technology allows the production of hot water up to 65 °C and operation with outdoor temperatures down to -20 °C.** This is combined with special **focus on Low Noise** (the “Low-Noise” silenced version is supplied as standard) and the use of different refrigeration circuit architectures to meet the needs of many different system applications.



## Efficiency and reliability in line with system requirements

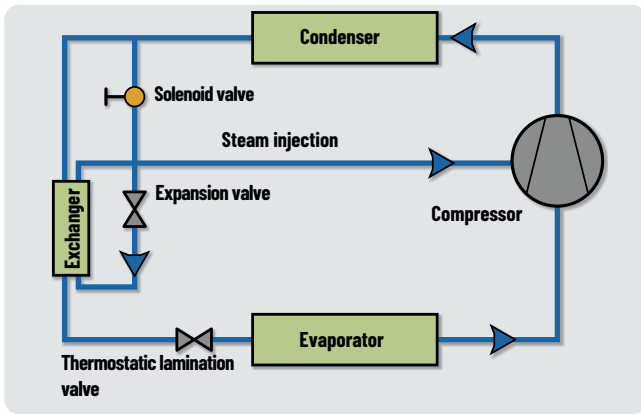
The available refrigerating circuit configurations have been designed to ensure, also simultaneously, **redundancy and efficiency at partial loads**. More specifically, the units - depending on the size of the machine and on specific plant engineering requirements - consist of two compressors on two circuits **for high system redundancy** or four compressors (double tandem) on two circuits **for a system that is simultaneously redundant and efficient at partial loads**.



## Production of hot water up to 65 °C

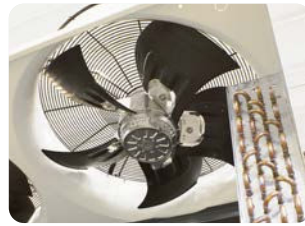
The units of the HPS range are capable of **producing water at 65°C**, as well as operating with outdoor air temperatures down to **-20°C**.

- Refrigerant R410A
- EVI compressors with steam injection
- Electronically controlled expansion valve
- “Cold” start Smart Kit configurable on request, to manage any mixing systems
- Hydrophilic coated coils with wider fin pitch
- Defrost ice disposal chutes with heating elements
- Optional EC electronic switching fans
- Available in multipurpose version for 2 and 4 pipe systems



**Units optimised for climates with T down to -20°C**

The Scroll compressors of the HPS range use **steam injection technology**: a light flow of refrigerant in a medium-pressure vapour state is “injected” into the coils in the compression chamber. This system allows for both **an increase in the cooling** (and therefore, also the heating) **capacity and efficiency and, above all, an extension of the operating range of the heat pump**; this makes of the HPS range the ideal solution in case of extremely low outdoor temperatures.



**Extra low noise**

All units in the HPS range are, as standard, **“Low Noise”**, which means fan speed is controlled, anti-vibration piping is used on the refrigeration circuit, and the compressors and pumping kit are compartmentalised in a box lined with soundproofing material. **All this ensures minimum noise emissions throughout the system.**



**Smart Defrost System**

A factor that heavily weighs on the costs of managing the entire plant is finned pack evaporator defrosting during wintertime operation. The (patented) Smart Defrost System by HiRef is able to identify a decline in the exchanger performance caused by the formation of ice and to **minimise the duration of the defrosting process**. The use of coils treated with hydrophilic surface coating **speeds up the defrosting process** so that melting of just the first, thin ice layer on the fins is only required for cleaning.

HPS		041HL	051HL	071HL	081HL	101HL	134HL	164HL	204HL
<b>Cooling: User water values 12/7°C, 35°C outside air, 40% U.R.</b>									
Cooling capacity	kW	36.3	45.5	61.8	68.9	79.2	121.5	136.9	175.2
Total absorbed power	kW	12	15	19.7	23.3	25.4	40.2	48.9	62.5
EER		3.03	3.03	3.14	2.96	3.12	3.02	2.8	2.8
<b>Heating: User water values 40/45°C, 7°C outside air, 89% U.R.</b>									
Thermal power	kW	43.6	53.9	72.5	81.6	92.2	140.3	158	202.2
Total absorbed power	kW	13	15.7	21.2	24.4	26.8	41.1	48.6	61.5
COP		3.34	3.42	3.41	3.35	3.44	3.41	3.25	3.29
SCOP		2.83	2.96	2.91	2.9	2.91	3.2	2.85	3.05
Sound power	dB(A)	79	78	80	81	81	80	82	82
Dimensions [LxHxD]	mm	2440x1735x1183		2792x1735x1183		3540x1679x1183	3538x1884x1653		3538x2284x1653

Also available with 60 Hz power supply

MPS		041PL	051PL	071PL	081PL	101PL	134PL	164PL	204PL
<b>Cooling: User water values 12/7°C, 35°C outside air, 40% U.R.</b>									
Cooling capacity	kW	39.5	49.1	66.7	73.9	86	131	148.8	188.1
Total absorbed power	kW	12	15.1	19.6	23.4	25.5	40.1	49	62.5
EER		3.29	3.24	3.41	3.16	3.37	3.27	3.03	3.01
<b>Total Recovery: Utility water temperature 12/7°C, Recovery water temperature 40/45°C</b>									
Cooling capacity	kW	38.5	47.8	64.9	72	83.7	127.3	144.4	182.2
Thermal power	kW	51.135	63.6	85.8	96.89	110.4	170.3	196.46	248.3
Total absorbed power	kW	13.3	16.7	22	26.2	28.2	45.3	54.8	69.6
TER		6.74	6.67	6.85	6.45	6.89	6.57	6.22	6.19
<b>Heating: User water values 40/45°C, 7°C outside air, 89% U.R.</b>									
Thermal power	kW	43.6	53.9	72.5	81.6	92.2	140.3	158	202.2
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