HeatPAC packaged ammonia heat pump

HeatPAC is an extremely compact heat pump package based on Sabroe HPO/HPC high-pressure reciprocating compressors, using environmentally responsible ammonia as refrigerant.

These integrated units feature fully welded plate heat exchangers, pre-formed piping, a shell-and-plate evaporator with built-in liquid separator, and a shell-and-plate condenser. This unique configuration, with a flooded system, is designed to provide exceptional heat pump capacity from the smallest possible footprint, and with only a very small refrigerant charge.

Factory assembly of all these component systems virtually eliminates any risk of equipment misalignment and leaks, and ensures very high degrees of safety and reliability.

HeatPAC 108

Significant advantages

The advantages of the Sabroe HeatPAC design include

- HeatPAC units are based on standard-model Sabroe HPO/HPC high-pressure reciprocating compressors, and all components are factory-assembled.
- The HeatPAC design is based on a flooded evaporating system, using ammonia only. This provides very high COP and outstanding part load performance.
- The compact, integrated design weighs less, uses less than half the refrigerant charge and has less than half the footprint compared with conventional heat pumps assembled on site using different components.
- All HeatPAC units are tested at the Sabroe End Of Line Test Centre before dispatch. A capacity test is also available as an option.

Customer benefits

For the customer, the benefits of the Sabroe HeatPAC design include

- Use of standardised Sabroe solutions using top-quality components improves safety. It also ensures maximum reliability and low operating costs, and provides easy, worldwide access to service and parts.
- Ammonia is the most environmentally responsible refrigerant currently available. Exceptional reliability and very low energy consumption also contribute to particularly low life cycle costs.
- Significantly lower installation costs due to smaller size – along with additional installation energy savings that stem from the low differential pressure on the heat exchanger secondary side – provide an easy, safe and cost-effective upgrade path.
- Confirms the specified performance and ensures trouble-free on-site start-up and operation. Faster, safer start-up and commissioning significantly reduce overall costs.

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HeatPAC heat pumps exploit waste heat from equipment such as motors and compressor units, by cooling the hot water emerging from the condensers. Instead of wasting this energy, as is often the case in traditional installations, a HeatPAC unit transforms this valuable resource into hot water (up to 70°C), at very low cost. This hot water can then be used in a wide spectrum of industrial installations (including abattoirs, dairies, breweries, fish processing plants, etc.) Heat can also be reclaimed from condensers, waste process heat, gas cooling in power plants, etc.

By enabling companies to make the best possible use of energy that would otherwise go to waste, HeatPAC installations enable these companies to reduce the overall environmental impact of their activities.

Optimized compressor alignment

HeatPAC packaged ammonia heat pumps

Condenser water inlet +64°C, outlet +70°C
Evaporator water inlet +39°C, outlet +34°C

Type	Heating capacity kW	Cooling capacity kW	Power consumption kW	E-motor size kW	R717 charge kg	Dry weight kg	Dimensions L mm	Dimensions W mm	Dimensions H mm	Sound level * dB(A)
HPAC 24-W	240	202	38	45	20	2020	2800	1000	2000	75
HPAC 26-W	359	302	57	75	23	2230	2850	1000	2000	76
HPAC 28-W	484	408	77	90	25	2420	2900	1000	2000	77
HPAC 104-W	570	478	93	110	28	2630	3050	1000	2000	81
HPAC 106-W	852	715	138	160	37	3300	3750	1000	2000	82
HPAC 108-W	1149	965	186	250	48	3950	4050	1000	2000	83

W = Heat pump unit water/water
Motor: 3 x 400V / 50Hz, 1470 rpm

COP ratio average = heating capacity / power consumption = 6.2
Capacities are nominal values

*) Mean sound pressure levels in free field over reflecting plane, distance at 1 m. All data are based on sound power measurements.

All data are only valid for operating conditions as stated.

All information is subject to change without previous notice

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