

## Industrial Heat Pumps

TAS11-IU, TAS11-IU, TAS38-IU, TAS72-IU

### How does a heat pump work?

**Heat pumps** replace the electrical element of the boiler in a typical industrial geyser. It uses the reverse cycle of a refrigeration plant to heat water. In effect, it transfers heat from a source such as air which is sucked over the condenser by means of an electric fan, to heat another source (water). Latent heat energy of the air is transferred to the gas within the condenser coil, which pre-heats the gas and in this way reduces the work that the compressor has to finally do.

The compressor increases the pressure and the refrigerant gas is heated as a result of the increased partial pressure.

The coefficient of performance, or COP, is a measure of the performance of a heat pump. A typical value for COP is 4. The heating capacity is 4 times the amount of electrical energy that is required from ESKOM.

So, if the heat pump is powered by 1 kW of ESKOM power then the heating capacity will be the equivalent of a 4 kW heating element. **The saving is therefore 70%** to the consumer.

As in other refrigeration equipment, the heat pump system employs an evaporator, a compressor, a condenser, refrigerant gas, and an expansion valve as its main components, forming a closed heating circuit. A dedicated controller allows the user to set operational times and desired water temperature. Some factory pre-set values, and on board error codes, ensure safety to the end-user. Hot water temperatures normally range from 55°C to 60°C, controlled by a thermostat integrated with the controller functions.

### Advantages:

- Low noise emissions and maintenance, due to few moving parts.
- Smart controllers for simple installation and self programming.
- No coal, oil or liquid gas is used, only ambient air, thus no contaminating material is being discharged or air pollution caused.
- Works under any weather condition, or time demand.

### Hybrid Solar systems available >>

A combination of an industrial solar water heating system, and heat pumps, gives an efficiency of up to 90%.



**SAVE UP TO 70%  
on your hot water  
electricity bill, and  
reduce your carbon  
foot print !!**



086 111 3078

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Solar Academy of Sub-Saharan Africa (Pty) Ltd

## Industrial Heat Pumps

### Technical Specifications

Type	TAS11-IU	TAS19-IU	TAS38-IU	TAS72-IU
Power Supply (V/Ph/Hz)	380/3/50	380/3/50	380/3/50	380/3/50
Heating Capacity (kw)	11.2	19.3	38.5	72
Rated Power (kw)	2.7	4.6	9.2	18
Water Production Quantity (L/h)	240	415	825	1735
Type of Refrigerant	R417a	R417a	R417a	R417a
Refrigerant / weight (g)	1850	2300	2300 x 2	2300 x 4
Max. Working Current (A)	7.5	13	25	49
Rated Heating Temp. (°C)	55	55	55	55
Max. Heating Temp. (°C)	60	60	60	60
Anti-Shock Grade	1	1	1	1
Protection Grade	IPx4	IPx4	IPx4	IPx4
Machine Weight (kg)	100	140	260	622
Machine Size (mm)	700 x 690 x 860	800 x 780 x 1000	1200 x 920 x 1255	2400 x 1130 x 2300
Cycle Water pump flow rate (m <sup>3</sup> /h)	2.2	4	8	16
Configure Tank (t)	2 - 3	3 - 5	7 - 10	15 - 20
Machine Water Pipe Joint	G1"	G1"	G1 1/4"	G2"
Ambient Temperature (°C)	-10 to 45	-10 to 45	-10 to 45	-10 to 45
Noise (dB)	≤60	≤64	≤65	≤68

- Heating capacity: from 11.2 to 247.5kW
- Copeland flexible scroll compressor. Emerson ALCO expansion valve.
- CIE blower, excellent efficiency, steady capability, lower noise, longer life span. High efficiency Coaxial Coil heat exchanger.
- The data above are tested on the ambient temp. of 20°C, input 15°C, output water 55°C.

**Contact us today for your quotation, and start saving!**



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