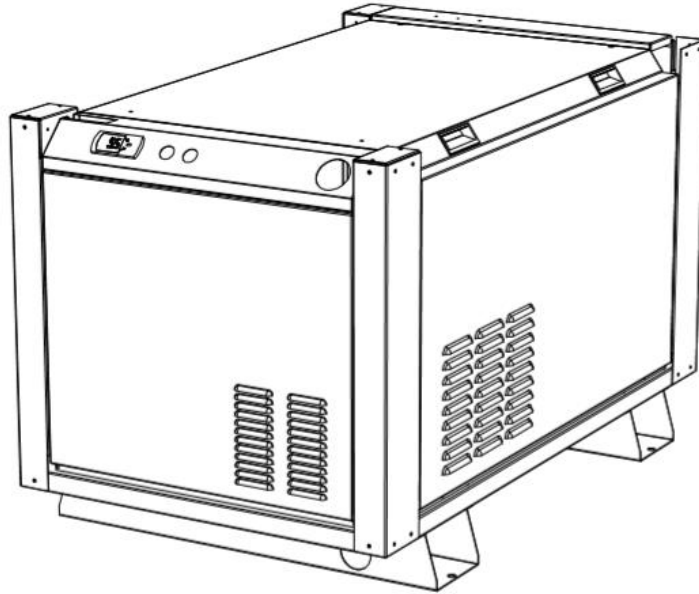


## COMMERCIAL HEAT PUMPS WATER TO WATER



### About Us

Thermal IQ is Australia's largest manufacturer of small capacity specialised commercial HVAC equipment. The technical team at Thermal IQ have a combined 50 years in the Australian HVAC industry – no other company can offer this level of engineering support for our customers critical applications.

Rather than offer imported units, Thermal IQ has dedicated itself to providing locally specified and manufactured heat pumps which are supplied with components sourced from the industry's leading suppliers. With specifying heat pumps, experience counts, and no other company has the experience to offer the advice and solutions the market requires.

As the Australian market grows and diversifies, Thermal IQ can offer expert advice on chillers, heat pumps, variable speed high efficiency scroll chillers, air handling and more.

Thermal IQ is back by a nationwide team of service technicians who are trained in the operation and maintenance of Thermal IQ heat pumps.

## Heat Pump Applications

Heat pumps are designed to circulate water and produce hot water for a variety of applications – capturing heat from the air they are an extremely efficient method of pricing hot water via a water pump.



Hotels



Food preparation



Medical Apps



Swimming pools



Process heating

## Features

The heat pumps are supplied with – as standard

- Suitable for indoor or outdoor installation
- Rugged stainless-steel construction
- Components sourced from the industry's leading suppliers
- R134a refrigerant for high ambient temperature operation and the lowest GWP of all contemporary refrigerants
- Integrated circulation pump if required.
- Comprehensive 12 months warranty on all parts and labour.
- Highly accurate electronic controller
- 316SS plate heat exchanger condenser
- Comprehensive factory testing before dispatch.
- Condenser protection on all models

Water to water heat pumps use the waste heat from the chillers in the building for water heating. The systems can be designed to use the chiller cooling loop or the cooling tower water. Whichever method is used the effect is the same – the energy comes for free, it lessens the cooling load on the chiller and very high coefficient of performance is achieved – up to 7.0 in some cases.



**All Thermal IQ heat pumps have as standard inclusions.**

**Automatic Hot Gas Defrost/de-ice Protection** is standard to protect the plate heat exchanger evaporator

**Rugged stainless steel chassis** construction for all weather durability

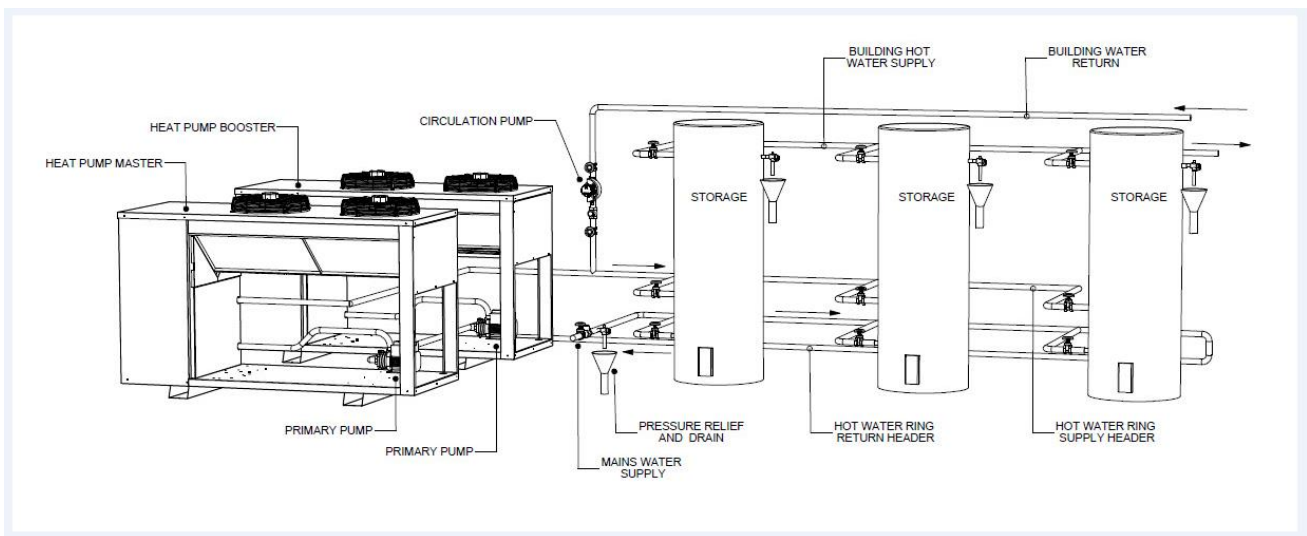
**High efficiency scroll compressors** from the industry's leading suppliers for durability and long product life

**Staging control for up to 8 heat pumps** – this allows the lead machine to manage all the other machines in the installation turning them on and off as they are needed for maximum product life and efficiency



**Components** used in Thermal IQ Solutions heat pumps are sourced from the industry's tier one suppliers.

- Evaporators – Australian
- Compressor – USA or France
- Heat exchanger – USA, Sweden or Germany – model specific
- Controller – Australia
- Switching equipment – contactors, thermal protection, phase failure and transducers– Sweden/ France
- Expansion and solenoid valves – France



### Options

- Double wall heat condensers
- Shell and tube heat exchangers
- Modbus connectivity
- Variable speed inverter compressors

Below is some general technical data on the heat pump – Thermal IQ can produce units to 300kW if required.

When a unit is quoted, the quote will include specific technical data that meet the customers requirements.

GENERAL DATA – HEAT PUMP				
<b>System type</b>	HEAT PUMP	Heat rejection		Water
Model		<b>TH20W3</b>	<b>TH30W3</b>	<b>TH40W3</b>
<b>Capacity – kW 07/12 Water 45C hot water supply</b>	TR	5.9	8.2	10.8
	Recovery – 50C Rise	414 l/hr	606 l/hr	801 l/hr
	kW	21.2	29.0	38.0
Total power input	kW	4.8	6.3	8.4
Total running current	Amps	11.2	12.6	19.2
Cooling effect	kW	15.9	21.5	27.7
Unit COP	kW/kW	4.4	4.6	4.5
<b>COMPRESSOR</b>	Scroll Hermetic			
Motor size	HP	9	12	15
RPM	per/min	2900		
QTY		1	1	1
<b>CONDENSER</b>	Plate heat exchanger - single wall			
Material	316 Stainless steel			
Inlet / outlet HW Temperature	°C	40/45		
Pressure drop	kPa	50	50	50
Hot water flow rate	l/s	1.0	1.5	2.0
Water connections – HOT	mm	1" FBSP	1 1/2" FBSP	1 1/2" FBSP
Condenser protection		Flow switch		
<b>EVAPORATOR</b>	Plate heat exchanger – single wall 316 Stainless steel			
Water flow	l/s	0.8	1.0	1.3
Water connections		1" FBSP	1" FBSP	1" FBSP
<b>CONTROLLER</b>	Standard electronic Carel controller – 0.1C accuracy			
<b>HP Safety</b>	2850kPa	LP Safety		375kPa
<b>Shipping weight - dry</b>	Kg	130	150	165
<b>Breaker size</b>	Amps	20	40	50
No. refrigeration circuits		1	1	1
<b>BMS protocols</b>	-	Compressor start		DOL
Capacity control	%	0-100%		
Power requirements	V/Hz/Ph	380-415/50/3		
Working temperature range	C	40-65		
<b>Rating conditions</b>		07/12 chiller water 45C hot water supply		

GENERAL DATA – HEAT PUMP				
System type	HEAT PUMP	Heat rejection		Water
Model		TH50W3	TH60W3	TH80W3
<b>Capacity – kW 07/12 Water 45C hot water supply</b>	TR	14.0	17.5	21.6
	Recovery – 50C Rise	857 l/hr	1028 l/hr	1600 l/hr
	kW	48.1	60.0	76.0
Total power input	kW	11.1	13.9	16.8
Total running current	Amps	21.2	26.6	38.4
Cooling effect	kW	36.0	44.6	55.4
Unit COP	kW/kW	4.3	4.3	4.5
<b>COMPRESSOR</b>	Scroll Hermetic			
Motor size	HP	20	26	2 x 15
RPM	per/min	2900		
QTY		1	1	1
<b>CONDENSER</b>	Plate heat exchanger - single wall			
Material	316 Stainless steel			
Inlet / outlet HW Temperature	°C	40/45		
Pressure drop	kPa	50	50	50
Hot water flow rate	l/s	2.2	2.8	4.0
Water connections – HOT	mm	1 1/2" FBSP	1 1/2" FBSP	1 1/2" FBSP
Condenser protection		Flow switch		
<b>EVAPORATOR</b>	Plate heat exchanger – single wall 316 Stainless steel			
Water flow	l/s	1.7	2.0	2.6
Water connections		1 1/2" FBSP	1 1/2" FBSP	1 1/2" FBSP
<b>CONTROLLER</b>	Standard electronic Carel controller – 0.1C accuracy			
<b>HP Safety</b>	2850kPa	LP Safety		375kPa
<b>Shipping weight - dry</b>	Kg	500	550	600
<b>Breaker size</b>	Amps	63	63	80
No. refrigeration circuits		1	1	2
<b>BMS protocols</b>	-	Compressor start		DOL
Capacity control	%	0-100%		0-50%-100%
Power requirements	V/Hz/Ph	380-415/50/3		
Working temperature range	C	40-65		
<b>Rating conditions</b>		07/12 chiller water 45C hot water supply		

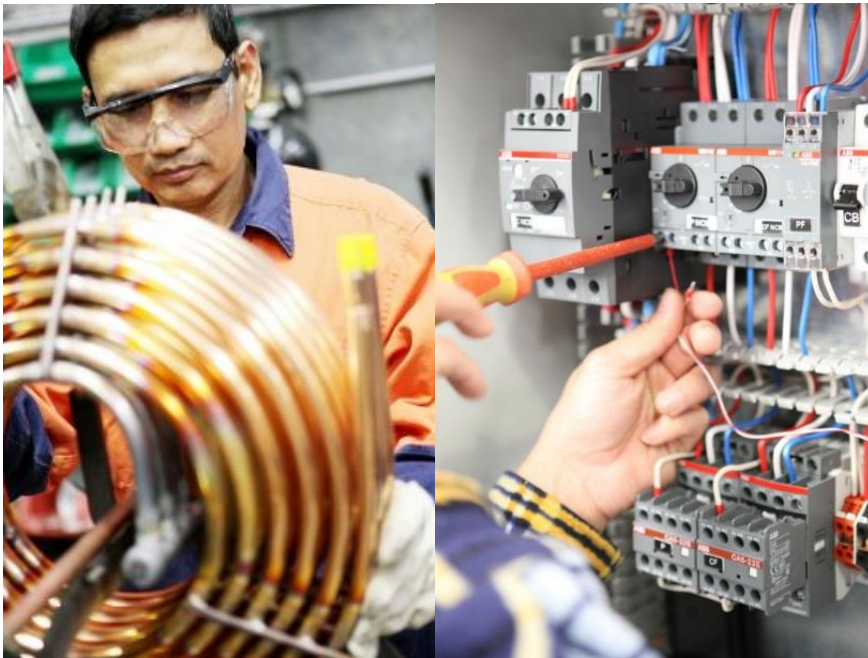
GENERAL DATA – HEAT PUMP			
<b>System type</b>	HEAT PUMP	Heat rejection	Water
Model		<b>TH100W3</b>	<b>TH120W3</b>
<b>Capacity – kW 07/12 Water 45C hot water supply</b>	TR	28.0	35.0
	Recovery – 50C Rise	1720l/hr	2060 l/hr
	kW	96.1	119.5
Total power input	kW	22.2	27.8
Total running current	Amps	42.4	53.2
Cooling effect	kW	72.0	89.2
Unit COP	kW/kW	4.3	4.3
<b>COMPRESSOR</b>	Scroll Hermetic		
Motor size	HP	20 x 2	26 x 2
RPM	per/min	2900	
QTY		2	2
Max power input	kW	30.6	34.4
Max running current	Amps	52.6	61.0
MCC	Amps	47 each	49.0 each
Rated load current	Amps	30.1 each	31.4 each
Locked rotor amps	Amps	225 each	272 each
Oil charge / comp	L	3.6	5.0 each
<b>Oil type</b>	POE		
<b>CONDENSER</b>	Plate heat exchanger - single wall		
Material	316 Stainless steel		
Inlet / outlet HW Temperature	°C	40/45	
Pressure drop	kPa	50	50
Hot water flow rate	l/s	4.4	5.6
Water connections – HOT	mm	2" FBSP	2" FBSP
Condenser protection		Flow switch	
<b>EVAPORATOR</b>	Plate heat exchanger – single wall 316 Stainless steel		
Water flow	l/s	3.4	4.0
Water connections		2" FBSP	2" FBSP
<b>CONTROLLER</b>	Standard electronic Carel controller – 0.1C accuracy		
<b>HP Safety</b>	2850kPa	LP Safety	375kPa
<b>Shipping weight - dry</b>	Kg	700	750
<b>Breaker size</b>	Amps	80	80
No. refrigeration circuits		2	1
<b>BMS protocols</b>	-	Compressor start	DOL
Capacity control	%	0-50%-100%	
Power requirements	V/Hz/Ph	380-415/50/3	
Working temperature range	C	40-65	
<b>Rating conditions</b>		07/12 chiller water 45C hot water supply	



All operational heating capacity, power consumption and current draw data shown above is based on the unit operating at the limit of its design and is intended to be an indication only. The electrical data is based on 380V power supply – where the power is 415V the current draw and power consumption will also be different.

Each unit will be individually designed to customer requirements and a detailed product specification will be supplied at time of order including installation instructions and dimensions. The power consumed by the unit and the current it will draw vary depending on how the unit is constructed. The unit's performance may also vary slightly from the figures above again based on customer requirements.

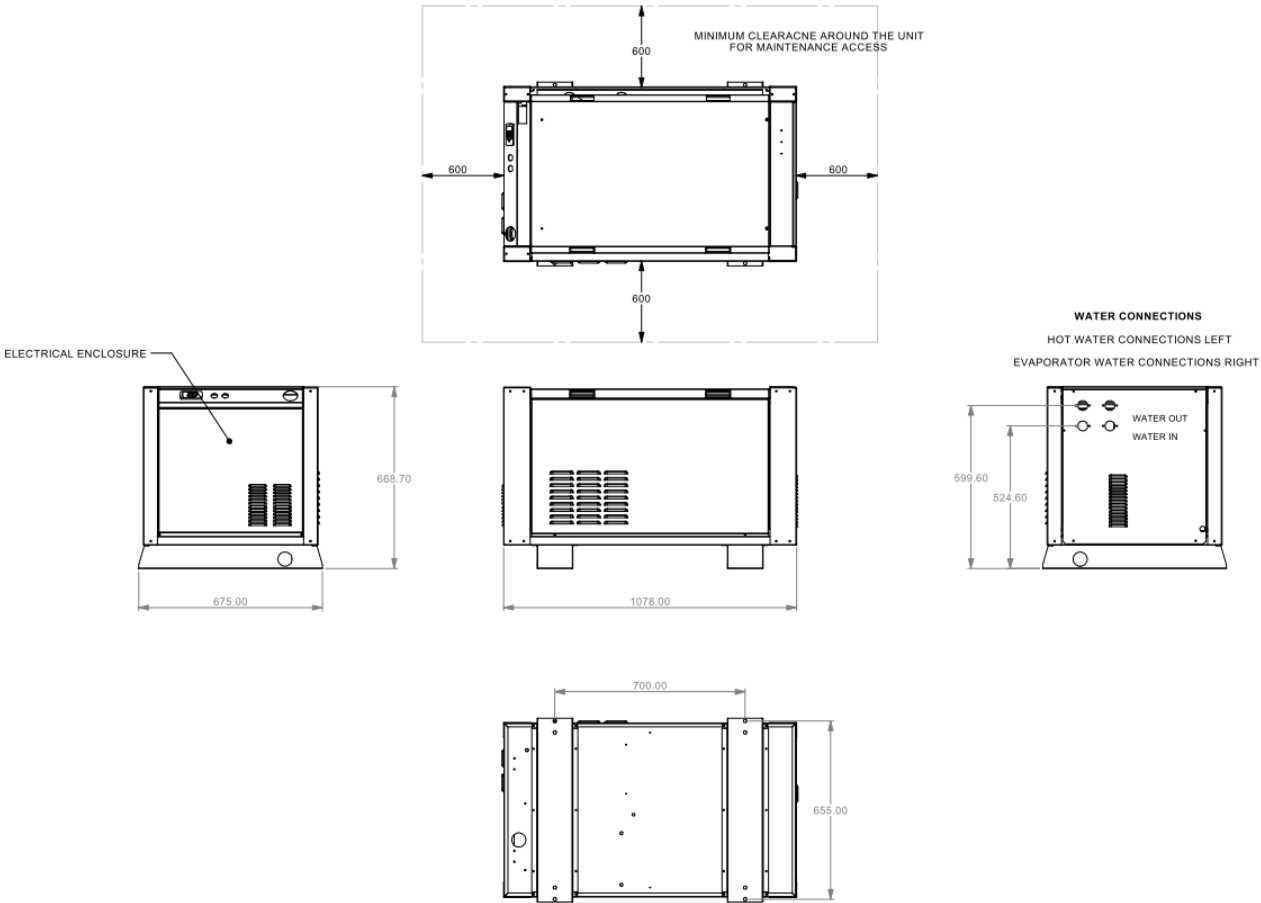
At Thermal IQ we are always improving our product range, so it is therefore subject to change without notice





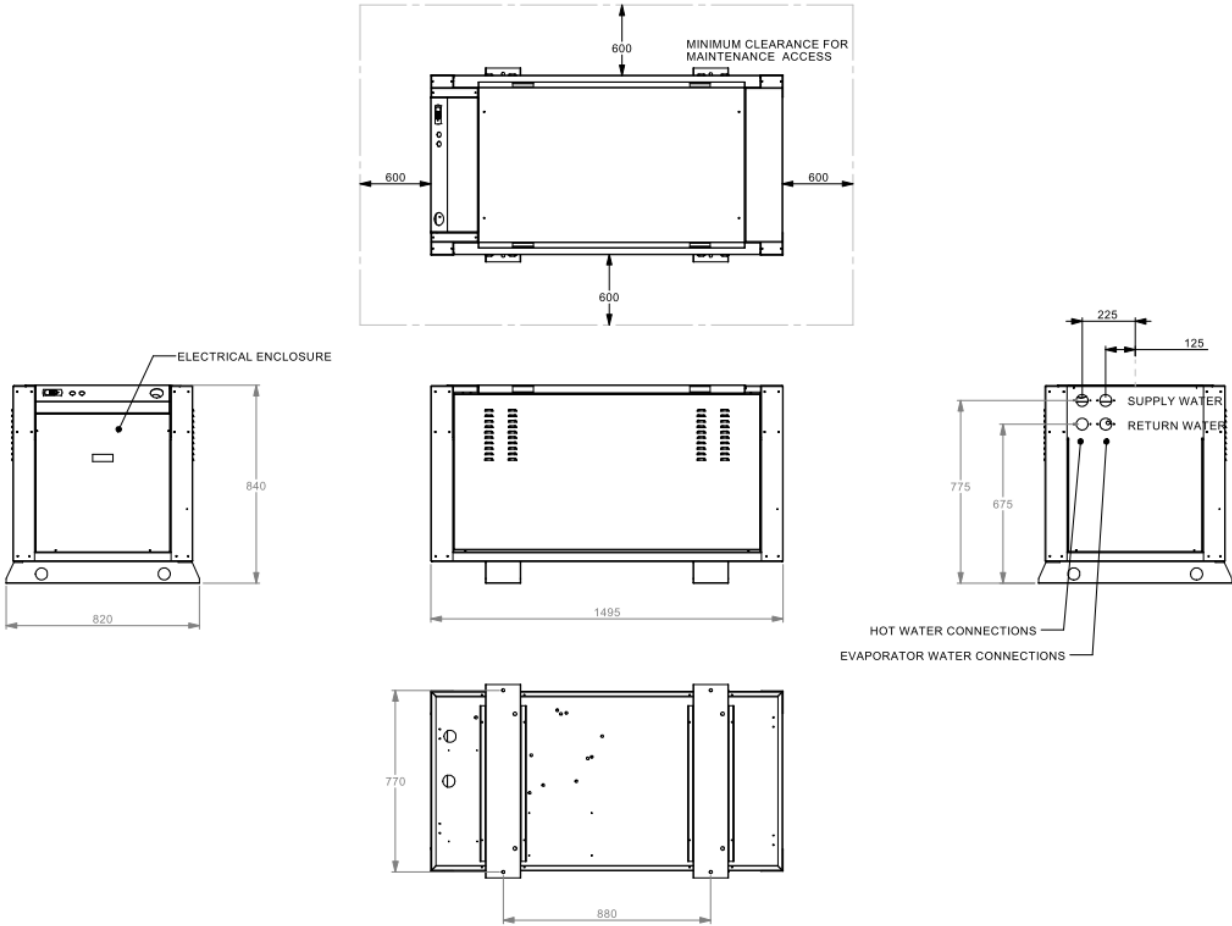


**DIMENSIONS and CLEARANCES – 20kW and 30kW Models**

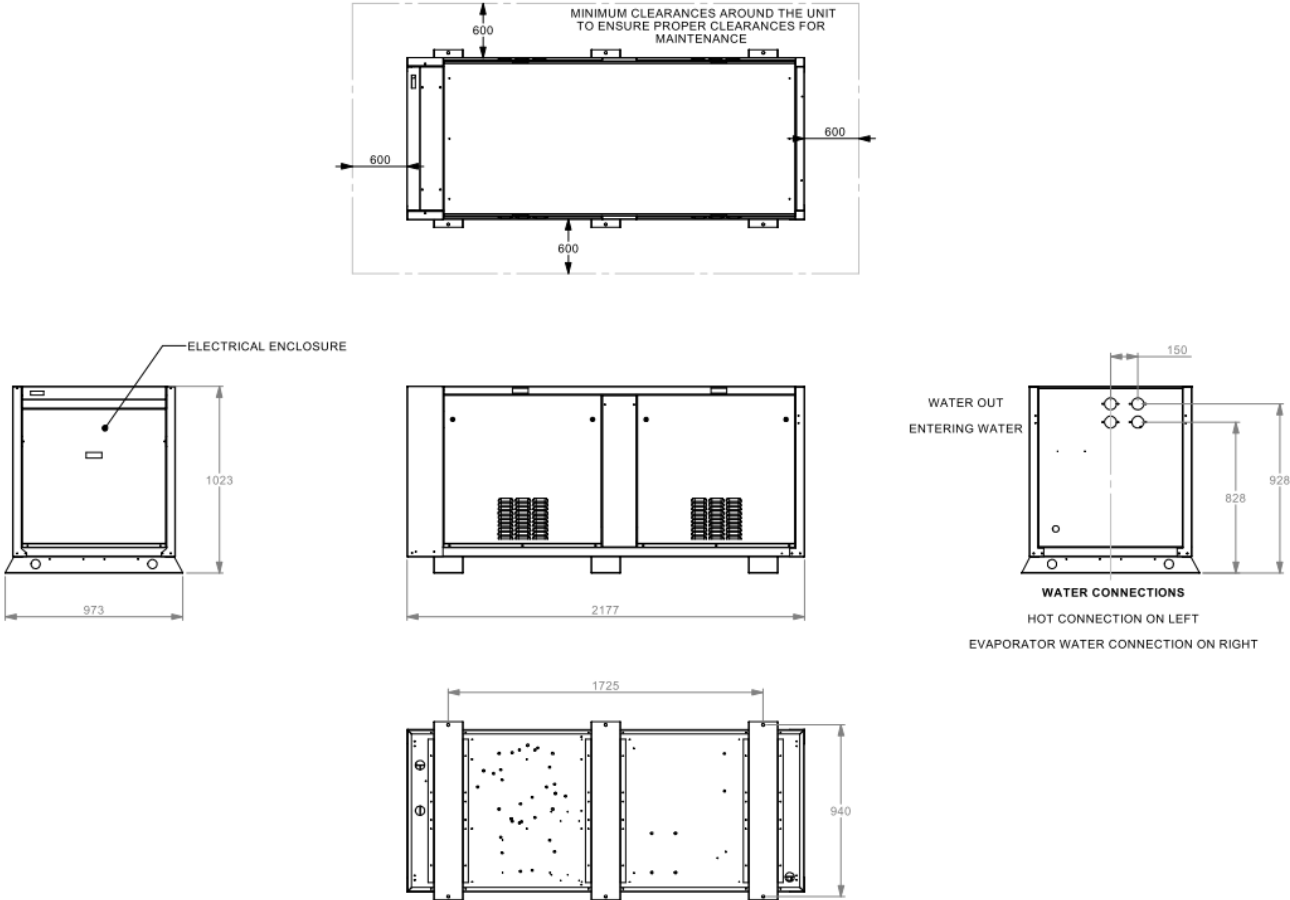




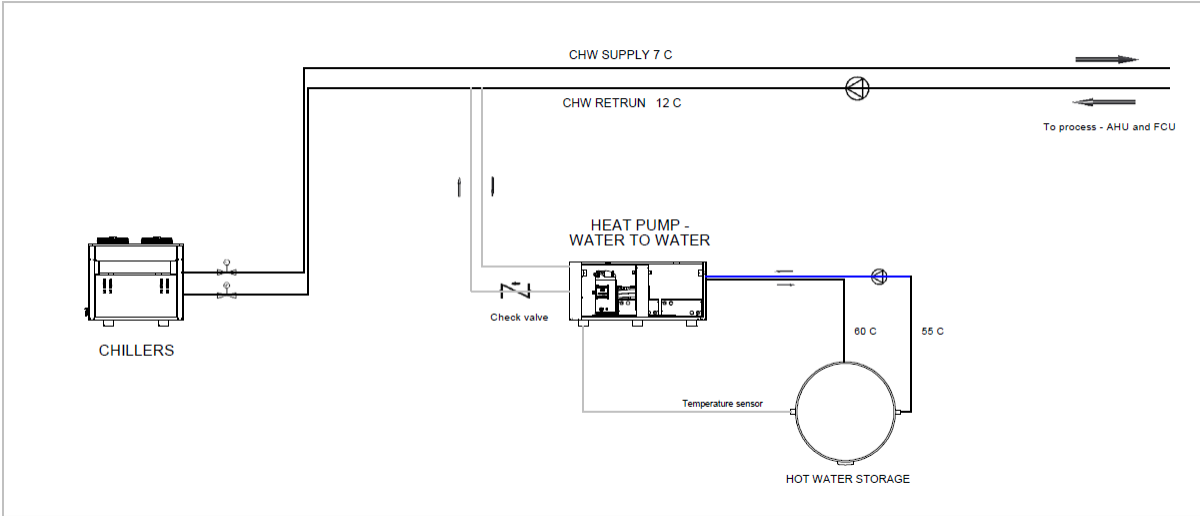
**DIMENSIONS and CLEARANCES – 40kW Unit**



### DIMENSIONS and CLEARANCES 50kW, 60kW and the 80kW UNIT



### Typical Water to Water heat pump installation



## Certification

THERMAL IQ is an accredited participant in the WaterMark QA scheme and is audited annually by SAI Global  
The Watermark scheme covers all products that are connected to the town water supply and is based on the ISO9001 QA program



## CONTACT DETAILS

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