

Pool Heat Pump Water Heaters

MAGNUS[®]

powerhouse water heaters





NEW ZEALAND
DESIGNED AND
MANUFACTURED



**Over 60 years
of innovation**



MAGNUS In-line design, a revolution in heat pump water heater solutions.

Heat pump water heaters are the most environmentally responsible and efficient water heating technology available on the market today, providing all season heating performance.

Designed for residential and commercial pools, these highly efficient heating systems incorporate titanium heat-exchangers making them suitable for use with chlorinated and salt water pools. Temperzone's highly corrosion resistant design ensures durable long life operation.

Temperzone expertise.

With over 60 years of expertise in the design of leading climate innovations, trust Temperzone to offer the most efficient and reliable solutions for local conditions.

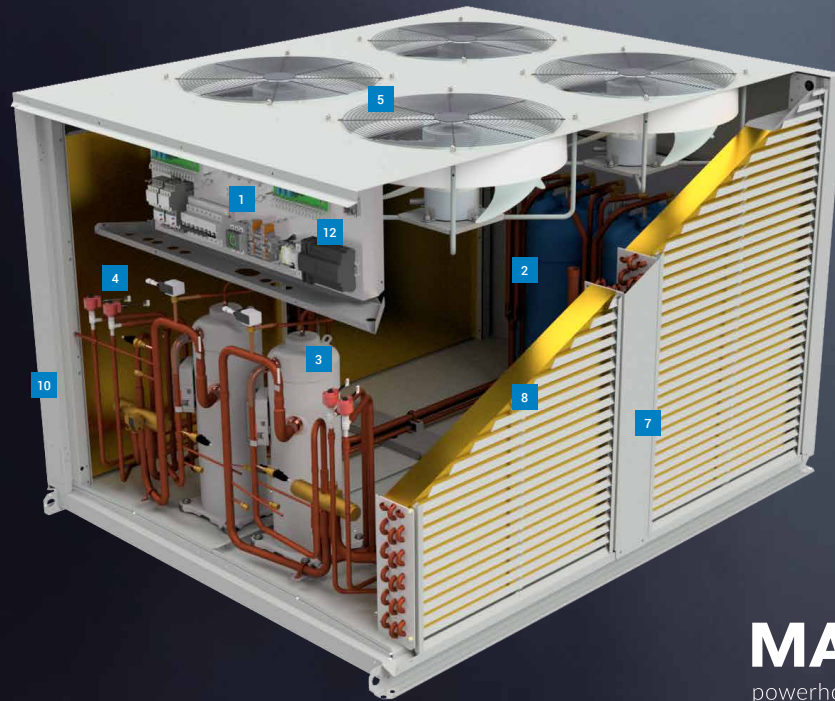
Be assured that any of the models selected will meet Temperzone's long established reputation for quality. Temperzone has several decades of experience as the market leader in manufacturing hydronic air conditioning systems in the Australasian region.

MAGNUS pool heat pumps are designed with local conditions in mind. Temperzone's understanding of what makes refrigeration systems continue to operate reliably, combined with a highly corrosion resistant design, offers confidence that MAGNUS should be your first choice for pool heating.



MWP - Pool Heat Pumps

03



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1

INTELLIGENT UNIT CONTROLLER

Ensures the unit runs at its optimum efficiency and provides system operation data.



2

TITANIUM THERMOSHELL

Corrosion resistant Titanium ThermoShell. Anti Fouling design. Higher Performance. Negligible pressure drop.



3

HIGH EFFICIENCY COMPRESSORS

For superior performance under extreme outdoor conditions.



4

ELECTRONIC EXPANSION VALVES

Electronic expansion valves for greater control and efficiency.



5

MULTI SPEED FANS

Multi speed condenser fans for better efficiency and control.



6

LOW AMBIENT TEMPERATURE OPERATION

Performs down to -10°C ambient.



7

MARINE GRADE POWDER COATING

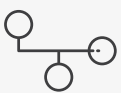
Surpasses 1000hr salt spray test.



8

EPOXY COATED COILS

Standard for added coil protection.



9

LOCAL OR 3RD PARTY CONTROL

Operates with Temperzone local or 3rd party controllers.



10

DURABLE COMPACT DESIGN

Robust high quality commercial construction.



11

EASY SERVICE ACCESS

Easy access panels to internal components.



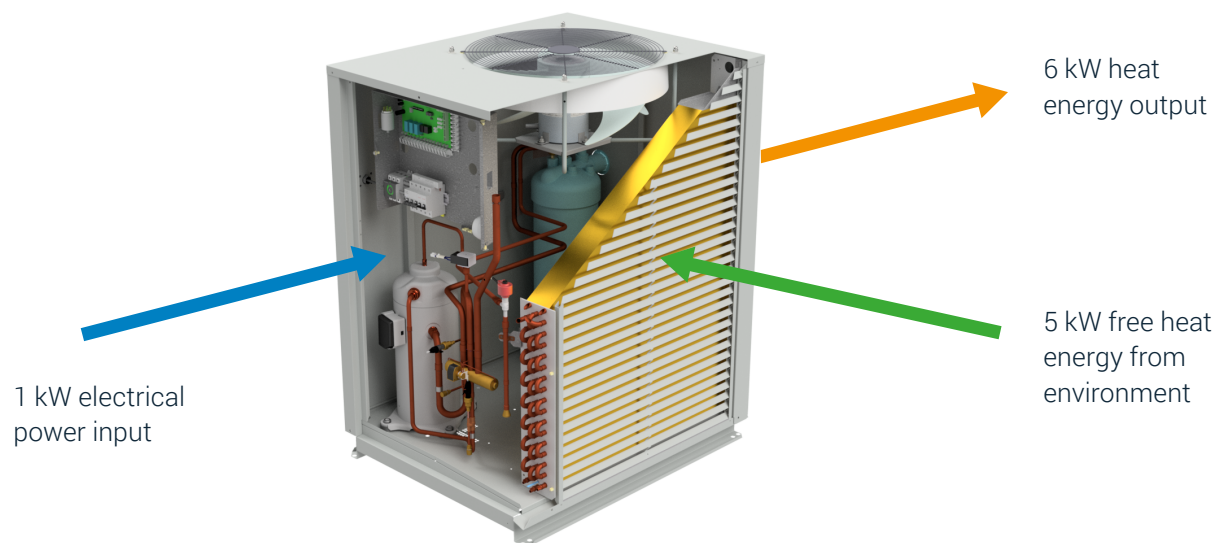
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BMS INTEGRATION

BACnet[™] or Modbus via RS485 (or TCP/IP option)
[†]BACnet is optional accessory.

MAGNUS MWP, delivering 600% heating efficiency*

Heat pump water heaters are the most efficient way to heat a pool. MAGNUS pool heaters are able to turn one unit of input power into as much as 6 units of output power. The 600%* efficiency compares well with 100% for electric resistance heaters, and 70-90% for gas systems. The very low cost of operation means MAGNUS heat pump systems are the most cost effective option for your pool.



Comparing Energy Efficiency

Comparative energy input and output for various pool heating technologies*.



* conditions: 27/20°C db/wb outdoor ambient; EWT 27°C; LWT 30°C.

Lowest Carbon Emissions

MAGNUS Pool Heat Pumps

Utilising heat pump water heater technology leads to substantially reduced carbon emissions when compared to conventional water heating systems. Using renewable energy, individual units have nearly no carbon emissions and have the lowest overall carbon footprint. Carbon emissions can be reduced by as much as 70% when compared to gas boiler heating systems.

Reliable Performance

Intelligent De-ice Performance

In very cold ambient conditions ice will form on the evaporator coil during operation. Our coil design has been optimised for the local humid marine climate to more effectively remove ice build-up while maintaining unit efficiency. Combined with our intelligent de-ice system, these are the most effective cold climate heat-pump water heating units on the market.

Operates Down to -10°C Ambient

Designed for the harshest conditions, MAGNUS Pool heat pumps feature electronic expansion valves (EEV) which enable these units to operate in ambient temperatures down to -10°C and ensure efficient heating, whatever the weather.

Energy Savings

Electronic Expansion Valves

A unique electronic expansion valve control system ensures reliable performance under a wide range of ambient temperatures. They also facilitate maximised energy savings in shoulder seasons – periods in which systems often run at part-load. Pressure transducers allow for precision pressure monitoring and control.

High Efficiency Compressors

Highly efficient digital compressors allow additional control of the refrigeration cycle to cope with extreme outdoor conditions, and provide flexibility in pool temperature control options. The advanced unit controller combined with application specific design uniquely enables the compressor to constantly operate within its design limits improving unit life.





Durable long life design

Superior Durable Construction

Temperzone's has a long established reputation for quality and durability with a focus on long life commercial grade systems. You can be assured that MAGNUS will stand the test of time in the harshest of conditions.

- Durable galvanised steel cabinet
- Leak-free access door construction
- Easy service and maintenance access using panels

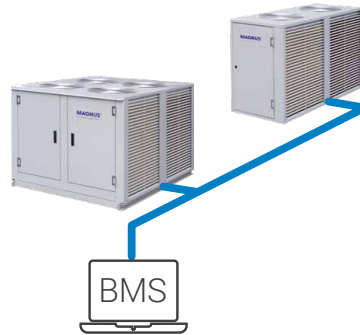
- Free draining base, preventing water and ice accumulation inside the unit.
- Highly durable closed cell foam insulation
- Meets fire test standards AS 1530.3 (1989) and BS 476 parts 6 and 7
- Non-fouling ThermoShell® heat-exchanger for minimal maintenance
- Separated compressor compartment from fan chamber so unit can be serviced whilst operating.

Highly Corrosion Resistant Design

- Highly corrosion resistant Titanium ThermoShell® heat-exchanger for chlorinated and salt water
- Highly corrosion resistant pre-treatment beneath powder coating - achieves AS/NZ 4506 Atmospheric Classification D High Marine/Industrial - salt spray resistance testing: 1000 hours with undercut <2mm
- Highly corrosion resistant polyester powder coating treatment
- Highly corrosion resistant epoxy coated coils. Superior epoxy-coated fins to suit harsh climatic conditions.

Superior Control

Temperzone offers superior refrigeration control to enable reliable and efficient performance of MAGNUS heat pumps.



Intelligent UC8 Controller

Temperzone's proprietary UC8 electronic unit controller intelligently monitors the refrigerant conditions, ambient and returning water temperature to deliver precise leaving water temperature while optimising system efficiency under all conditions.

- Display for system error / fault reporting
- Control inputs via pluggable screw terminal blocks
- Operates with 12Vdc or 24Vac thermostats
- Accepts Modbus BMS connection
- Remote start/stop input
- DRED Compatible
- Advanced refrigeration safety system
- High and low pressure safeties
- BACNET option available

BMS Control Integration

Providing for centralised management control, the UC8 controller is BMS compatible via digital and analogue signals or via Modbus.



Local or 3rd Party Control

Choose either Temperzone's TZT-100 advanced thermostat controller, or utilise 3rd-party control integration with 12VAC or 24VDC control

WiFi Service Utility Tool

WiFi Service Utility (WSU) is a portable control interface that plugs directly into the UC8 board on a Temperzone MAGNUS Unit.

It allows you to monitor a wide range of operational parameters, view fault logs and even take control of the unit. It has its own WiFi network built in and the control and diagnostics are done wirelessly from a smartphone, tablet or notebook PC.





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MWP Features & Benefits

- Highly corrosion resistant Titanium ThermoShell® heat-exchanger for chlorinated and salt water
- Non-fouling ThermoShell® heat-exchanger for minimal maintenance
- ThermoShell heat exchangers feature negligible pressure drops
- Highly efficient design achieving very high COP's
- Highly corrosion resistant pre-treatment coatings - achieves AS/NZ 4506 Atmospheric Classification D High Marine/Industrial - salt spray resistance testing: 1000 hours with undercut <2mm
- Durable galvanised steel construction entirely finished with advanced polyester powder coat
- Superior epoxy-coated fins and advanced rifle bore copper tubes to suit harsh climatic conditions for 1000-hours of salt spray
- Durable polyester powder coated drain tray
- Leak-free access door construction
- Easy service and maintenance access panels
- Highly durable closed cell foam insulation.
- Meets fire test standards AS 1530.3 (1989) and BS 476 parts 6 and 7
- AS1530.3 compliant insulation
- Advanced UC8 controller logic for wide range of operating conditions
- Single and three phase options
- Compact designed range
- Quiet design operation
- Simplified BMS control integration
- Local or 3rd Party control integration
- Electronic Expansion Valves
- Highly efficient digital compressors
- Multi-speed condenser fans
- Intelligent De-ice function
- Low ambient operation to -10°C
- Low carbon emission technology

MAGNUS

MWP Specifications

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Contact Temperzone for custom units up to 200kW



Model	MWP 230			MWP 250			MWP 400			MWP 800		
Heating Capacity (kW)	26.9	25.0	18.4	28.4	26.3	19.6	43.9	39.9	29.9	87.8	79.8	59.9
Ambient Temp db/wb	27/20	20/17	7/6	27/20	20/17	7/6	27/20	20/17	7/6	27/20	20/17	7/6
Input Power (kW)	4.4	4.2	4.2	4.5	4.2	4.3	7.0	6.6	6.7	14.1	13.3	13.4
COP	5.80	5.68	4.21	6.02	5.92	4.32	5.91	5.67	4.24	5.91	5.67	4.24
Water Flow Rate l/min.	128	119	88	135	126	94	210	190	143	419	381	286
Design Water Temp. (EWT/LWT) °C	27/30	25/28	25/28	27/30	25/28	25/28	27/30	25/28	25/28	27/30	25/28	25/28
Design HEX Differential °C	3			3			3			3		
Min./Max. EWT °C (Heating)	10 / 40			10 / 40			10 / 40			10 / 40		
Max. Operating Pressure kPa	200			200			200			200		
Electronic Expansion Valves	1			1			2			4		
Heat Exchanger	Titanium ThermoShell			Titanium ThermoShell			Titanium ThermoShell			Titanium ThermoShell (x2)		
Sound Power (SWL) dB(A) *	68			68			71			74		
Sound Pressure @ 3m (SPL) dB(A)	52			52			55			56		
Power Source	1ph. 230V ac 50Hz			3ph. 400V ac 50Hz			3ph. 400V ac 50Hz			3ph. 400V ac 50Hz		
Running Amps - Total Sys. (A/ph.)	21			8 / 7 / 7			15 / 14 / 15			31 / 29 / 31		
Max. Running Amps - Total Sys.(A/ph.)	35			17 / 15 / 15			20 / 18 / 20			38 / 36 / 38		
Refrigerant	R410A			R410A			R410A			R410A		
Min. Ambient Operating temp.	-10°C			-10°C			-10°C			-10°C		
Unit Controller	UC8			UC8			UC8			UC8		
Compressor	Digital Scroll			Digital Scroll			Digital Scroll			Digital Scroll (x2)		
Fans	3 spd Axial 500mm			3 spd Axial 500mm			3 spd Axial 500mm (x2)			3 spd Axial 500mm (x4)		
Water Connections	1 1/2" BSP union (x2)			1 1/2" BSP union (x2)			2" BSP union (x2)			2" BSP union (x4)		
Unit Dimensions (W x D x H) (mm)	963 x 771 x 1199			963 x 771 x 1199			1766 x 771 x 1199			1863 x 1477 x 1259		
Net Weight	175			175			285			672		
Communications Options	----- TZT-100 (controller incl.) / Modbus (BACNET option) / 3rd Party controls -----											
Unit Finish	----- zinc galvanised steel / grey polyester powder coat -----											

Note: Pump not included.

* Radiated. BS 848.2 : 2004. Direct method of measurement (reverberant room). The manufacturer reserves the right to make changes in specifications at any time without notice or obligation. Materials and specifications are subject to change without notice due to ongoing research and development programme.

MAGNUS

Tailored Solutions

Our leading expertise coupled with an offering of application specific MAGNUS heat pump water heaters, can help realise significant energy savings and reductions in carbon emissions across your projects.



MAGNUS Underfloor Heating - MWU

Designed to support zoned underfloor heating systems, these In-line inverter systems remove the requirement for a buffer tank, significantly increasing the efficiency and cost effectiveness of the overall system. They combine variable capacity BLDC pump and inverter compressor technologies to efficiently maintain a constant supply water temperature under the widest possible range of ambient conditions.

MAGNUS Potable Water Heating - MWS

These MAGNUS systems heat water directly to 62°C in a single pass. Single-Pass technology is ideal for commercial markets where meeting the load at peak demand for hot water is the key driver of system capital cost. As it functions in a similar way to an instantaneous hot water system, a greatly reduced storage volume is required to meet the peak demand load usage period. This substantially reduces the installed cost of the hot water system and significantly reduces the running cost.

MAGNUS Space Heating - MWH

These innovative boiler/electric heater bank replacement systems combine variable capacity inverter compressor and BLDC pump technologies to efficiently maintain a constant supply water temperature under the widest possible range of ambient conditions. As integrated in-line heating systems, they do away with conventional primary / secondary heating loops.

MAGNUS Space Heating/Cooling - MWR

An innovative solution to combining space heating and cooling into a single, In-line system. Designed for use with a range of wall and floor mounted fan coil / fan assisted radiator systems. With variable capacity inverter compressor and BLDC pump technologies they efficiently maintain a constant supply water temperature in heating or cooling while delivered capacity is controlled at each zone to meet the real time demand for stable room temperature control.

MAGNUS Chillers - MWC

Temperzone's revolutionary new In-line chiller design incorporates a highly efficient, non-fouling heat exchanger design which is also resistant to freeze damage. Small, compact yet powerful, these chillers have at their heart the reliability and performance of inverter scroll compressors, and Temperzone construction.



Temperzone Ltd

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