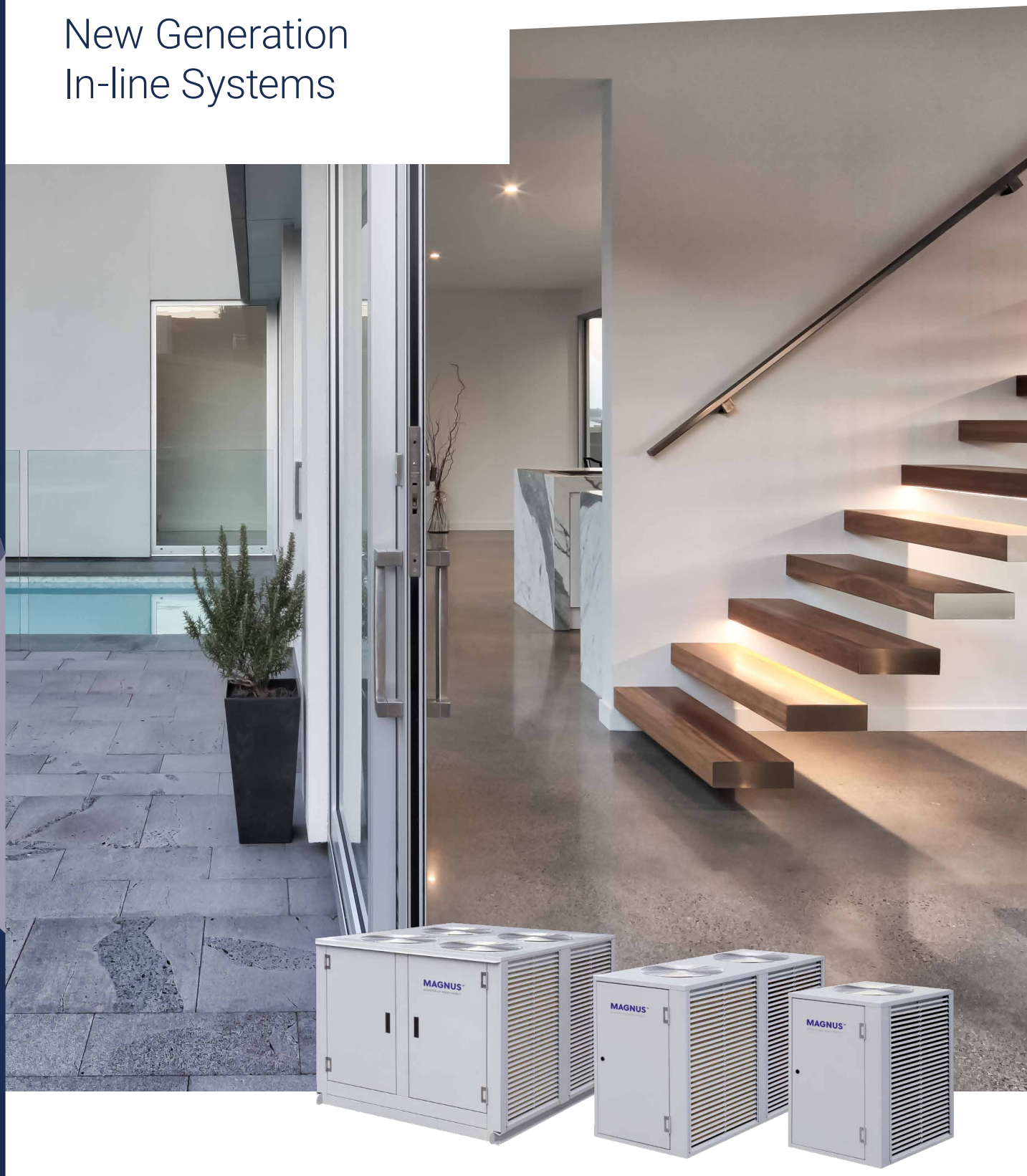
HEAT PUMP WATER HEATERS

MAGNUS®
powerhouse water heaters

Heat Pump
Water Heaters

New Generation
In-line Systems



temperzone
climate innovations

ThermoShell® technology

Inverter In-line system

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

The future is here, MAGNUS in-line design is revolutionising the way heat pump water heaters are applied. Through adapting an integrated whole system design ethos MAGNUS solutions deliver comfort and convenience that is more cost effective, efficient and extremely reliable.

Inverter In-line system

ThermoShell® technology

Providing the best solutions with premium application targeted heat pump water heater designs.

MAGNUS - MWU
Underfloor Heating

MAGNUS - MWP
Pool Heating

MAGNUS - MWH
Space Heating

MAGNUS - MWR
Space Heating & Cooling

MAGNUS - MWC
Chillers

Designed for Cost Effectiveness

MAGNUS In-line systems are designed to significantly reduce the installed system cost compared with traditional systems. In-line design delivers leaving water at the right temperature required for the application and has lower water flow rates. This eliminates the traditional requirement for water storage tanks, larger pumps and larger piping.

Designed for Better Performance

MAGNUS In-line system technology allows for substantial efficiency gains over traditional installations. This is achieved through a precise control of heated water supply for optimised heat absorption by the application. As the heating load of the application is met the MAGNUS heat pump water heater reduces energy input and increases in efficiency.

Designed to Operate Reliably, Longer

MAGNUS In-line systems are low maintenance, with low service requirements. Its ThermoShell® heat exchanger, unlike traditional heat exchangers, are fouling resistant. Also, the advanced unit controller combined with application specific design uniquely enables the compressor to constantly operate within its design limits improving unit life.

General operating principles of heat pump water heaters

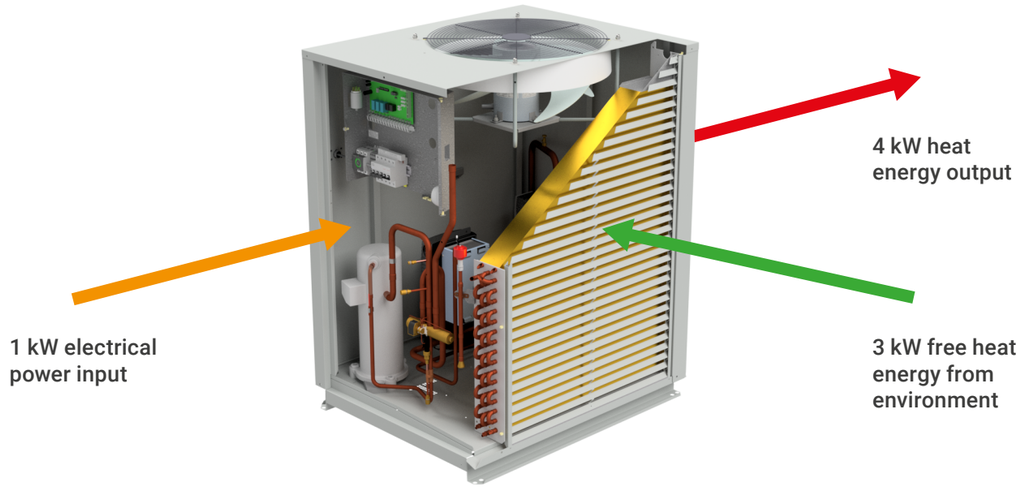
Heat-pump water heaters are the most environmentally responsible and efficient water heating technology available on the market today, providing all season heating performance.

How does a heat pump water heater work?

A heat pump water heater extracts energy from the air by boiling refrigerant based heat-transfer fluid. The refrigerant vapour is compressed which greatly increases its temperature. The high temperature refrigerant is passed through a heat exchanger where the energy is transferred from the refrigerant to the water causing it to condense. The refrigerant is returned to a low energy state where it can repeat the cycle. Because a heat pump water heater uses electricity only to transfer energy from one place to another, it does so much more efficiently than converting the electricity directly to heat.

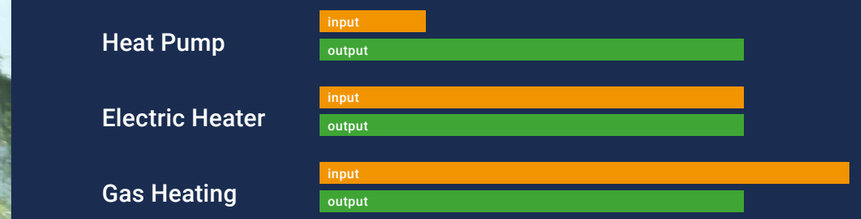
How efficient are heat pump water heaters?

Compared to electric element and gas water heaters, heat pump water heaters are much more efficient. Gas water heaters convert gas energy into heat through combustion, this process is typically only 70-80% efficient. Electric element heaters are 100% efficient converting one purchased unit of electricity into one unit of heat. Heat pump water heaters are generally 300-400% efficient converting one purchased unit of electricity into 3-4 units of heat. The graph on the opposite page compares the relative energy efficiency of each the technologies.



Energy Efficiency Comparison

Table showing a relative comparison of general energy input and output of each technology.



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MAGNUS In-line, the future of heat pump water heater systems

Designed to resolve the inefficiencies presented by current market products, MAGNUS In-line heat pump water heater innovation improves the effectiveness and efficiency of integrated systems.

MAGNUS In-line System Design

Through the use of advanced variable capacity technology, integrated system design and control principles, MAGNUS In-line heat pump water heaters offer industry leading energy efficiency and reliability.

Each application has a unique set of requirements the water heating system must operate under. MAGNUS In-line systems directly provide the capacity required for the application eliminating the need for buffer tanks and primary / secondary circuits. Depending on the application, it does this by controlling the supply water temperature and varying the water flow rates to meet the required heating or cooling demand.

This approach reduces installed system capital costs, and significantly increases system efficiency, especially under part-load conditions, resulting in one of the most cost-effective water heating systems on the market.

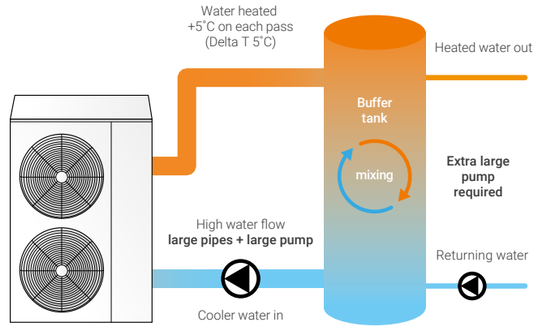

Fig.1. Conventional Buffer Tank System

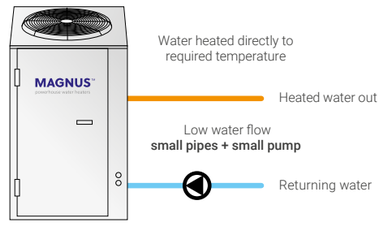

Fig. 2. MAGNUS In-line System

Main Benefits of MAGNUS In-line Systems

- ✓ **No need for buffer storage tanks**
- ✓ **Reduction in required pump power**
- ✓ **Reduction in piping required**
- ✓ **Most energy efficient system**
- ✓ **Reliable long life system**
- ✓ **Low service / maintenance requirements**

MAGNUS In-line Benefits

- ✓ No buffer storage tanks
- ✓ Reduction in pump power
- ✓ Reduction in piping required
- ✓ Application specific design
- ✓ Most energy efficient system
- ✓ Reliable long life systems
- ✓ Lower servicing requirements
- ✓ Compact design

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MAGNUS In-line advanced heat pump technology

The MAGNUS Series applies the most appropriate technology for the application, and integrates advanced control logic to maximize heating system efficiency, energy delivery and unit reliability.

MAGNUS offers a new generation of in-line heat pump water heaters purely designed for individual applications, made possible by adopting variable capacity technology, designing fully integrated systems and optimising control to achieve the most effective tailored operation.

Variable Capacity Inverter Compressor

Inverter system

Highly efficient variable capacity inverter compressors allow MAGNUS In-line systems to ramp up and down to deliver a constant leaving water temperature. Inverter compressors are extremely efficient when operating at part load. As the application gets closer to set temperature the MAGNUS In-line system will slow the inverter compressor down to operate at part load and substantially reduce energy consumption.

ThermoShell® Technology Heat Exchangers

Heat pump water heaters have at their core a refrigerant to water heat exchanger and its performance is critical to the overall performance of the system. Temperzone's ThermoShell® heat exchanger is designed to operate extremely efficiently under low water flow rates. This enables MAGNUS In-line systems, which require lower water flow rates, to provide superior performance.

Alternative heat exchanger designs are highly prone to fouling over time which reduces performance and greatly shortens the life of the system. Temperzone's ThermoShell® eliminates this fouling risk and guarantees the same performance year after year.

BLDC Variable Speed Pumps

Highly efficient variable speed pumps effectively control the heating and cooling capacity of the system by varying the water flow rate. The smart pump has a EC motor that reduces energy use by around 50%.

Intelligent System Controller

Temperzone's proprietary electronic controller intelligently monitors the refrigerant conditions, ambient and returning water temperature to deliver precise leaving water temperature while optimising system efficiency. A unique duplex electronic expansion valve control system ensures reliability and performance under a wide range of ambient temperatures (underfloor down to -15°C), while pressure transducers allow for precision pressure monitoring and control.

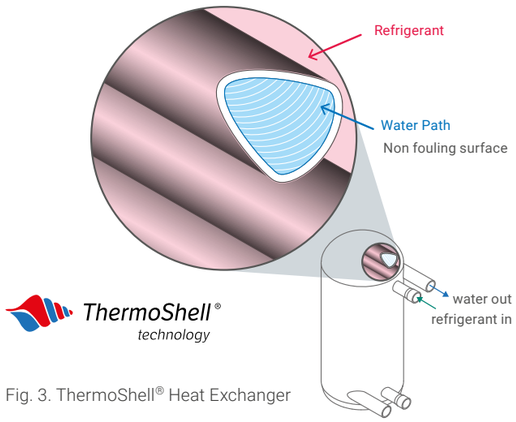


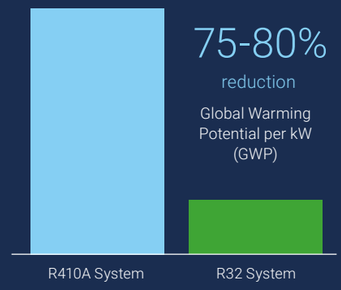
Fig. 3. ThermoShell® Heat Exchanger

MAGNUS Durability

- ✓ Integrated Controls
- ✓ Epoxy Coated Coils
- ✓ Quiet Operational Design
- ✓ Advanced Powder Coating
- ✓ Commercial Construction
- ✓ Variable Speed Condenser Fans

Lower GWP Refrigerant

MAGNUS units featuring R32 refrigerant provide a 75-80% reduction of Global Warming Potential (GWP) per kW of cooling when compared to R410a units.



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MAGNUS In-line superior heat pump performance

A focus on optimising integrated system performance and ground breaking innovative design enables MAGNUS In-line systems to achieve the highest levels of insitu energy efficiency in the market.

MAGNUS In-line systems offer the most efficient performance, when compared to alternative market offerings, as they have been exclusively designed from the ground up for specific water heating applications. Alternative offerings are usually a quick adaptation of boiler products so inefficient operating practices and equipment are introduced.

Inefficient Conventional Systems

A conventional system is typically designed with a fixed speed compressor, large pump and large pipes. Water is continually cycled at high flow rates through the heat pump to be heated in increments of 5°C on every pass until the buffer tank reaches the set temperature.

The design of conventional heat pumps mean they cannot balance the supply of heat with the heat demand. To avoid short on/off cycling of the heat pump a buffer tank is used. The buffer tank cycles between two temperature set points, one higher than is actually required by the application and one lower. As returning cooled water enters the buffer tank after cycling the application it mixes with the heated water. This is a highly inefficient system design as the entering water continually lowers the overall supply water temperature in the tank. This introduces unnecessarily high energy consumption as the conventional heat pump must continually lift the tank to a higher water temperature then the demand set point by operating longer and more frequently than ideally required. Where inverter compressors are used in buffer tank systems their part load efficiency is greatly reduced due to the mixing within the buffer tank.

Overcoming the inefficiencies of buffer tank systems

As a heat pump water heater, conventional buffer tank systems are inherently inefficient due to the mixing of heated and cooled water which occurs. MAGNUS in-line systems overcome these inefficiencies by providing heat at the required temperature directly to the application.

MAGNUS In-line systems are inverter based variable capacity systems. The utilisation of inverter compressor technology, thermoShell heat exchanger technology, advanced system controls and variable speed BLDC pumps allows MAGNUS systems to supply a constant supply water temperature to the application regardless of the ambient conditions and return water temperature. The BLDC variable speed pump controls the delivered capacity by efficiently controlling the water flow rate. This integrated system design reduces capital costs and significantly reduces system energy consumption.

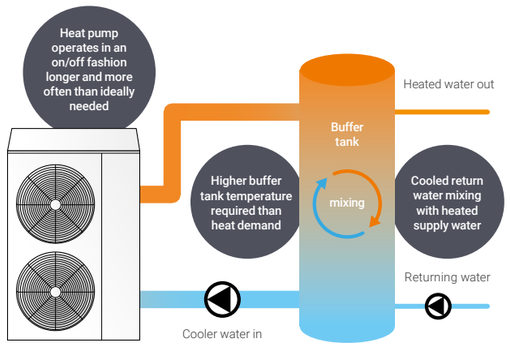
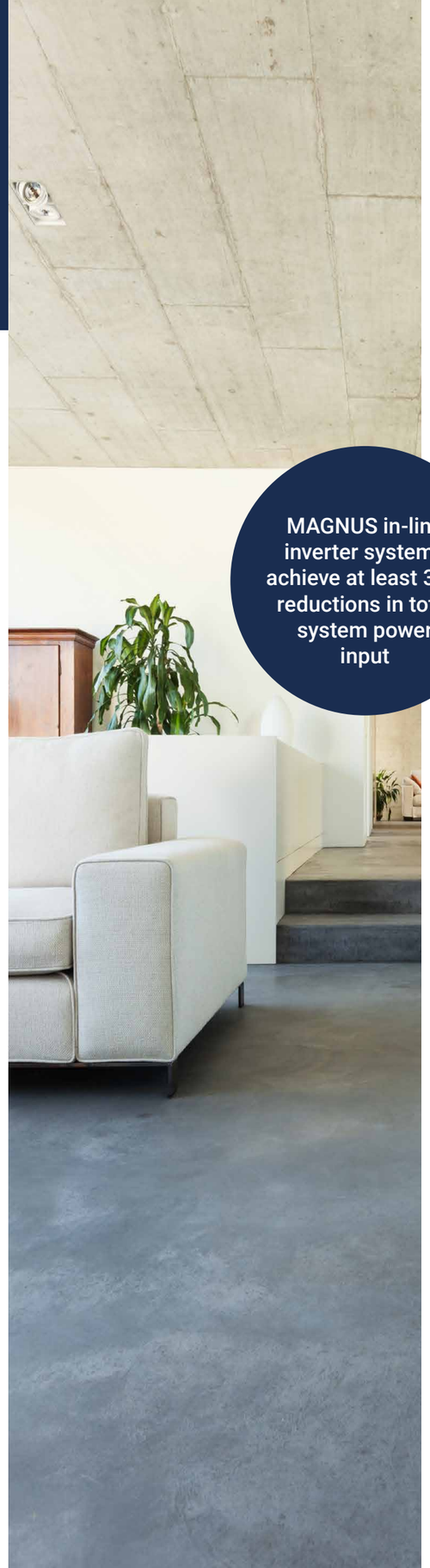


Fig. 4. Conventional buffer tank system inefficiencies



MAGNUS in-line inverter systems achieve at least 30% reductions in total system power input

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Improved efficiency with effective Inverter part load operation

A conventional heat pump, typically operates at high speed turning itself on and off as the buffer tank requires heating. This method is inefficient as the buffer tank must be overheated beyond the demand setpoint. MAGNUS In-line systems take full advantage of inverter compressor technology which increase in efficiency at part load operation. The MAGNUS inverter compressor, as the load is met, significantly reduces energy consumption by turning itself down to operate at part load while still maintaining the heating requirements of the application.

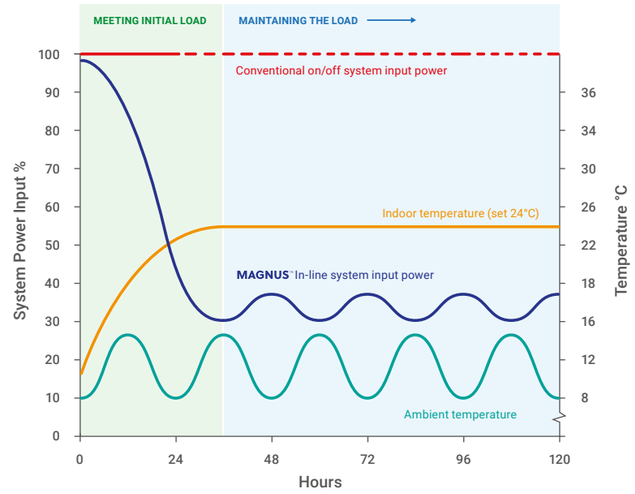


Fig. 5. System power input comparison

Quiet Performance

With their unique vertical fan discharge design MAGNUS In-line units are quiet compared to many conventional horizontal fan heat pumps.

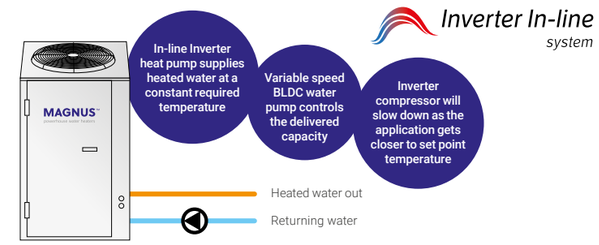


Fig. 6. MAGNUS In-line system efficient operation

MAGNUS Underfloor Heating

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. They are particularly well suited where Temperature zoning is required.

- Inverter compressor hybrid pass technology, for optimal efficiency and heating service
- Does not require buffer tanks
- BLDC variable speed pump technology
- Highly efficient de-ice control down to -15°C ambient
- Highly corrosion resistant epoxy coated coils
- Durable temperzone design and construction
- Single and three phase options available
- ThermoShell® technology
- Non-fouling heat-exchanger design
- Compact design
- Quiet operation
- Easy installation
- Low servicing requirement

Model	MWU 180	MWU 250	MWU 450	MWU 900
Power Supply	1 ph 230 AC 50Hz	3 ph 400 AC 50Hz	3 ph 400 AC 50Hz	3 ph 400 AC 50Hz
Refrigerant	R410A (R32 option)	R410A (R32 option)	R410A (R32 option)	R410A (R32 option)
Nominal Heating Capacity kW *	16.1	20.4	37.5	74
Heating Capacity Range kW *	3.7 ~ 20.0	4.6 ~ 25.5	8.5 ~ 46.5	9.0 ~ 86
Input Power kW *	3.9	5.0	9.3	17.9
COP *	4.11	4.08	4.04	4.00
Water Flow Rate l/min. *	23	29	54	106
Entering Pressure Drop kPa *	34 (5 psi)	55 (8 psi)	21 (3 psi)	55 (8 psi)
LWT Range °C	25 ~ 45 (factory setting 35)	25 ~ 45 (factory setting 35)	25 ~ 45 (factory setting 35)	25 ~ 45 (factory setting 35)
Design HEX differential °C	10	10	10	10
Min./Max. EWT °C (Heating)	10 / 35	10 / 35	10 / 35	10 / 35
Min. Ambient Operating temp. °C	-10	-10	-10	-10
Sound Power (w) dB(A) **	72	73	75	78
Sound Pressure @ 3m (SPL) dB(A)	56	57	59	62
Heat Exchanger	ThermoShell™ (x1)	ThermoShell™ (x1)	ThermoShell™ (x3)	ThermoShell™ (x6)
Compressor	Inverter scroll (x1)	Inverter scroll (x1)	Inverter scroll (x1)	Inverter scroll (x2)
Running Current A	18	8.5 / 9.5 / 8.5	16 / 18 / 16	16 / 18 / 16 (per system)
Max. Running Current A	29	16 / 18 / 16	30 / 33 / 30	30 / 33 / 30 (per system)
Fans	3 spd Axial 500mm	3 spd Axial 500mm	3 spd Axial 500mm (x2)	3 spd Axial 500mm (x4)
Pump	Integrated BLDC	Integrated BLDC	Integrated BLDC	Integrated BLDC
Communication Options	BMS / Modbus / 3rd Party			
Dimensions (W x D x H) (mm)	978 x 804 x 1199	978 x 804 x 1199	1814 x 803 x 1199	1863 x 1477 x 1259
Net Weight kg	169	178	322	545

* Rating conditions: 7/6°C db/wb outdoor ambient; EWT 25°C; LWT 35°C. ** Radiated. BS 848.2. Direct method of measurement (reverberant room).
The manufacturer reserves the right to make changes in specifications at any time without notice or obligation.

MAGNUS
Pool Heating

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

- Titanium ThermoShell® heat-exchanger for chlorinated and salt water
- Non-fouling ThermoShell® heat-exchanger for minimal maintenance
- 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
- Advanced controls for wide range of operating conditions
- Durable temperzone design and construction
- Highly corrosion resistant powder coating treatment
- Highly corrosion resistant epoxy coated coils
- Single and three phase options
- Compact design

Model	MWP 230	MWP 250	MWP 400	MWP 800
Power Supply	1 ph 230 AC 50Hz	3 ph 400 AC 50Hz	3 ph 400 AC 50Hz	3 ph 400 AC 50Hz
Refrigerant	R410A	R410A	R410A	R410A
Nominal Heating Capacity kW *	25	26.3	39.9	79.8
Input Power kW *	4.2	4.2	6.6	13.3
COP *	5.68	5.92	5.67	5.67
Water Flow Rate l/min. *	119	126	190	381
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
Min. Ambient Operating temp. °C	-10	-10	-10	-10
Design Water Temperature (EWT / LWT) °C	25 / 28	25 / 28	25 / 28	25 / 28
Sound Power (SWL) dB(A) **	68	68	71	74
Sound Pressure @ 3m (SPL) dB(A)	52	52	55	56
Heat Exchanger	Titanium ThermoShell (x1)	Titanium ThermoShell (x1)	Titanium ThermoShell (x1)	Titanium ThermoShell (x2)
Compressor	Digital Scroll	Digital Scroll	Digital Scroll	Digital Scroll (x2)
Running Current - total system A	21	8 / 7 / 7	15 / 14 / 15	31 / 29 / 31
Max. Running Current - total system A	35	17 / 15 / 15	20 / 18 / 20	38 / 36 / 38
Fans	3 spd Axial 500mm	3 spd Axial 500mm	3 spd Axial 500mm (x2)	3 spd Axial 500mm (x4)
Communication Options	TZT-100 (controller included) / BMS - Modbus / 3rd Party controls			
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 kg	175	175	285	672

Note: Pump not included.

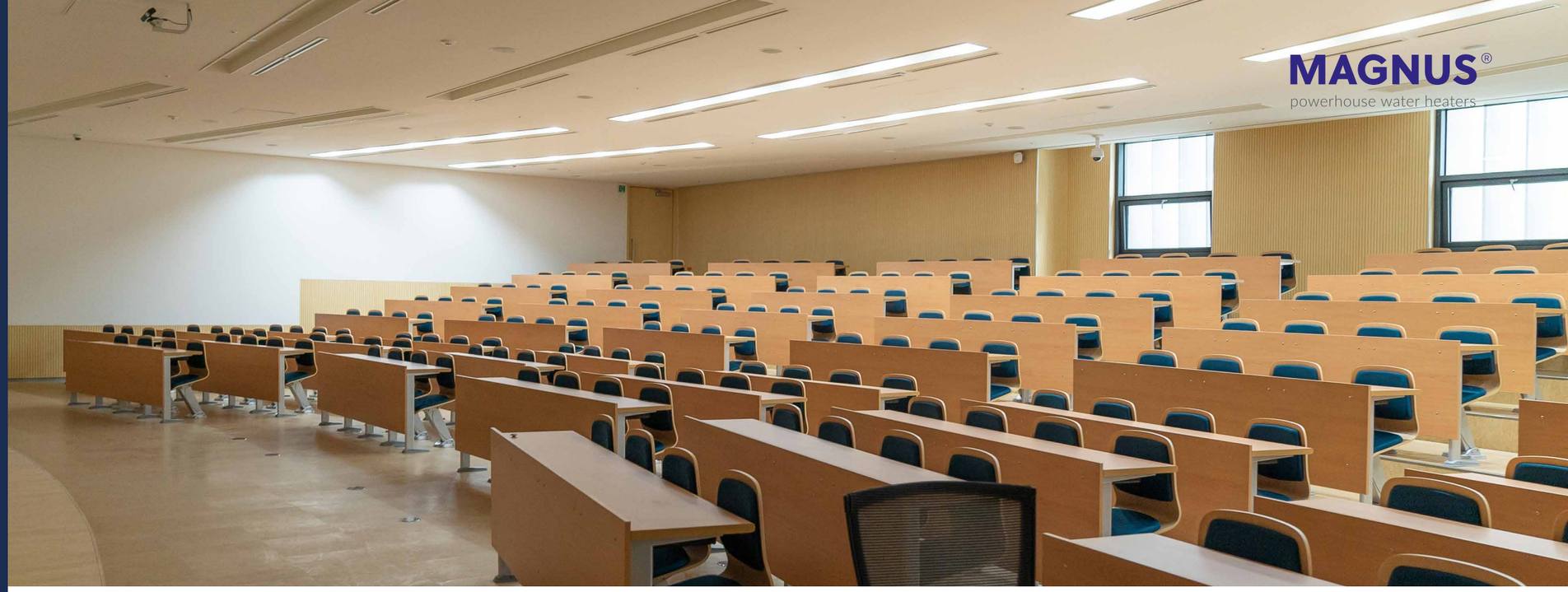
* Rating conditions: 20/17°C db/wb outdoor ambient; EWT 25°C; LWT 28°C. ** Radiated. BS 848.2. Direct method of measurement (reverberant room).
The manufacturer reserves the right to make changes in specifications at any time without notice or obligation.

MAGNUS
Space Heating

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. Integrated in-line, they do away with conventional primary / secondary heating loops.

Applications include radiator panels, fan coil space heating, fresh air tempering and process heating.

- Inverter compressor hybrid pass technology, for optimal efficiency and heating service
- Does not require buffer tanks
- Maintains fixed supply water temperature of 40°C ~ 55°C
- Flexible and adaptable for range of conditions and applications
- Suits large space heating applications
- Highly corrosion resistant epoxy coated coils
- Durable Temperzone design and construction
- Auto-staging, compressor solutions
- Low to medium head pump options
- ThermoShell® technology
- Non-fouling heat-exchanger design
- Compact design
- Quiet operation



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Model	MWH 250	MWH 450	MWH 900
Power Supply	3 ph 400V AC 50Hz	3 ph 400V AC 50Hz	3 ph 400V AC 50Hz
Refrigerant	R32	R32	R32
Nominal Heating Capacity kW *	18.7 / 19.5 **	35 / 36.5 **	70 / 73 **
Heating Capacity Range kW *	3.0 ~ 19.0 / 3.4 ~ 24.5 **	5.8 ~ 43.1 / 6.2 ~ 45.5 **	5.8 ~ 86.2 / 6.2 ~ 91 **
Input Power kW *	6.6 / 6.2 **	13.7 / 11.6 **	26.6 / 23.2 **
COP *	2.82 / 3.17 **	2.56 / 3.14 **	2.60 / 3.14 **
Water Flow Rate l/min. *	18 / 19 **	33 / 35 **	67 / 70 **
Design Pressure Drop *	3 / 3.5 **	1 / 1 **	3 / 3 **
LWT Range °C	40 ~ 55	40 ~ 55	40 ~ 55
Design HEX Differential °C	15	15	15
Min./Max. EWT °C (Heating)	20 / 50	20 / 50	20 / 50
Min. Ambient Operating temp. °C	-10	-10	-10
Design Water Temperature °C (EWT/LWT) °C	40 / 55	40 / 55	40 / 55
Sound Pressure @ 3m (SPL) dB(A)	56	59	62
Heat Exchanger	ThermoShell (x1)	ThermoShell (x2)	ThermoShell (x4)
Compressor	Inverter scroll (x1)	Inverter scroll (x1)	Inverter scroll (x2)
Running Current A	11 / 12 / 11	22 / 24 / 22	22 / 24 / 22 (per system)
Max. Running Current A	16 / 18 / 16	30 / 33 / 30	30 / 33 / 30 (per system)
Fans	3 spd Axial 500mm	3 spd Axial 500mm (x2)	3 spd Axial 500mm (x4)
Pump	Integrated BLDC	Integrated BLDC	Integrated BLDC
Max. Head Delivery of Pump m	8	8	8
Prog. Logic Controller	Optional	Optional	Optional
Communication Options		BMS / Modbus / 3rd Party controls	
Dimensions (W x D x H) (mm)	934 x 771 x 1199	1768 x 771 x 1199	1863 x 1477 x 1259

* Rating conditions: 7/6°C db/wb outdoor ambient; EWT 40°C; LWT 55°C. ** Rating conditions: 7/6°C db/wb outdoor ambient; EWT 30°C; LWT 45°C.
The manufacturer reserves the right to make changes in specifications at any time without notice or obligation.

MAGNUS Space Heating and Cooling

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.

- Inverter compressor hybrid pass technology, for optimal efficiency
- Does not require buffer tanks
- ThermoShell® technology
- Speed controlled condenser fan
- Advanced controls for wide range of operating conditions
- Highly corrosion resistant epoxy coated coils
- Durable temperzone design and construction
- Non-fouling heat-exchanger design
- Compact design
- Quiet operation
- Low servicing requirements

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Model	MWR 250	MWR 450	MWR 900
Power Supply	3 ph 400V AC 50Hz	3 ph 400V AC 50Hz	3 ph 400V AC 50Hz
Refrigerant	R32	R32	R32
Nominal Heating Capacity kW *	18.7 / 19.5 **	35 / 36.5 **	70 / 73 **
Nominal Cooling Capacity kW ***	11.7	22.4	44.8
Heating Capacity Range kW *	3.0 ~ 19.0 / 3.4 ~ 24.5 **	5.8 ~ 43.1 / 6.2 ~ 45.5 **	5.8 ~ 86.2 / 6.2 ~ 91 **
Input Power kW *	6.6 / 6.2 **	13.7 / 11.6 **	26.6 / 23.2 **
COP *	2.82 / 3.17 **	2.56 / 3.14 **	2.60 / 3.14 **
Water Flow Rate l/min. *	18 / 19 **	33 / 35 **	67 / 70 **
Design Pressure Drop *	3 / 3.5 **	1 / 1 **	3 / 3 **
Heating LWT Range °C	40 ~ 55	40 ~ 55	40 ~ 55
Design HEX Differential °C	15	15	15
Min./Max. EWT °C (Heating)	20 / 50	20 / 50	20 / 50
Min. Ambient Operating temp. °C	-10	-10	-10
Design Water Temperature °C (EWT/LWT) °C	40 / 55	40 / 55	40 / 55
Sound Pressure @ 3m (SPL) dB(A)	56	59	62
Heat Exchanger	ThermoShell (x1)	ThermoShell (x2)	ThermoShell (x4)
Compressor	Inverter scroll (x1)	Inverter scroll (x1)	Inverter scroll (x2)
Running Current A	11 / 12 / 11	22 / 24 / 22	22 / 24 / 22 (per system)
Max. Running Current A	16 / 18 / 16	30 / 33 / 30	30 / 33 / 30 (per system)
Fans	3 spd Axial 500mm	3 spd Axial 500mm (x2)	3 spd Axial 500mm (x4)
Pump	Integrated BLDC	Integrated BLDC	Integrated BLDC
Max. Head Delivery of Pump m	8	8	8
Prog. Logic Controller	Optional	Optional	Optional
Communication Options		BMS / Modbus / 3rd Party controls	
Dimensions (W x D x H) (mm)	934 x 771 x 1199	1768 x 771 x 1199	1863 x 1477 x 1259

* Rating conditions: 7°C DB/6° C WB, EWT 40° C, LWT 55° C. ** Rating conditions: 7/6°C db/wb outdoor ambient; EWT 30°C; LWT 45°C. *** Rating conditions: 35°C ambient, EWT 12°C, LWT 7°C.
The manufacturer reserves the right to make changes in specifications at any time without notice or obligation.

MAGNUS Chillers

These innovative Chiller 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. Integrated in-line, they do away with conventional primary / secondary loops.

Applications include process cooling and HVAC multi zone cooling.

- Inverter compressor hybrid pass technology, for optimal efficiency and cooling service
- Does not require buffer tanks
- Maintains fixed supply water temperature of 3°C ~ 25°C
- Flexible and adaptable for range of conditions and applications
- Suits large application cooling solutions
- Highly corrosion resistant epoxy coated coils
- Durable Temperzone design and construction
- Auto-staging, compressor solutions
- ThermoShell® technology
- Non-fouling heat-exchanger design
- Compact design
- Quiet operation

Model	MWC 200	MWC 400	MWC 800
Power Supply	3 ph 400V AC 50Hz	3 ph 400V AC 50Hz	3 ph 400V AC 50Hz
Refrigerant	R32	R32	R32
Nominal Cooling Capacity kW *	20 / 30 **	40 / 42 **	80 / 88 **
Cooling Capacity Range kW *	4 ~ 23 / 4.2 ~ 24.5 **	8 ~ 44 / 8.5 ~ 47 **	8 ~ 88 / 8.5 ~ 94 **
Input Power kW *	7.3 / 7.0 **	14.4 / 13.7 **	28.8 / 27.4 **
EER *	2.74 / 3.01 **	2.67 / 3.05 **	2.67 / 3.05 **
Water Flow Rate l/min. *	58 / 60 **	115 / 120 **	230 / 240 **
Cooling LWT Range °C	3 ~ 25	3 ~ 25	3 ~ 25
Design HEX Differential °C	5	5	5
Min./Max. Inlet Water temp. °C (Cooling)	3 / 25	3 / 25	3 / 25
Max. Ambient Operating temp. °C	40†	40†	40†
Sound Power (SWL) dB(A) ***	72	75	78
Sound Pressure @ 3m (SPL) dB(A)	56	59	62
Heat Exchanger	ThermoShell (x1)	ThermoShell (x1)	ThermoShell (x2)
Compressor	Inverter scroll (x1)	Inverter scroll (x1)	Inverter scroll (x2)
Running Current A	9 / 10 / 9	21 / 23 / 23	21 / 23 / 23 (per system)
Max. Running Current A	16 / 18 / 16	30 / 33 / 30	30 / 33 / 30 (per system)
Fans	3 speed Axial 500mm / EC Option	3 speed Axial 500mm (x2) / EC Option	3 speed Axial 500mm (x4) / EC Option
Pump	Integrated BLDC	Integrated BLDC	Integrated BLDC
Communication Options		BMS / Modbus	
Dimensions (W x D x H) (mm)	934 x 771 x 1199	1768 x 771 x 1199	1863 x 1477 x 1259

* Rating conditions: 35°C db outdoor ambient; EWT 12°C; LWT 7°C **Rating conditions: 30°C db outdoor ambient; EWT 12°C; LWT 7°C
Radiated. BS 848.2 : 2004. Direct method of measurement (reverberant room). * Min. inlet water temp -5°C when using glycol. † Max operating temp 52°C if using EC fan motor option.
The manufacturer reserves the right to make changes in specifications at any time without notice or obligation.

MAGNUS®

powerhouse water heaters

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MANUFACTURED

by temperzone climate innovations

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