

# ONLY IN | HOT WATER | ONSEN

AIR CONDITIONER  
WITHOUT OUTDOOR

HEAT PUMP  
WATER HEATERS

HEAT PUMP HEATERS  
FOR SWIMMING POOLS



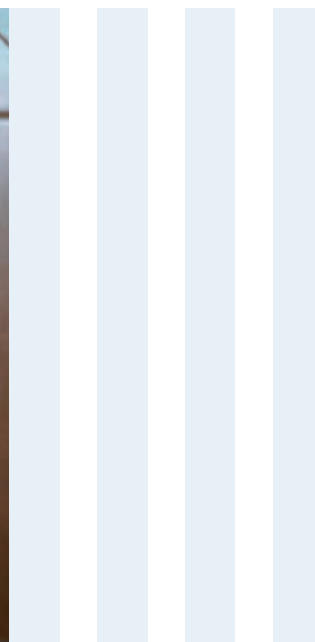
**Termal**





# AIR CONDITIONER WITHOUT OUTDOOR UNIT, HOT WATER AND SWIMMING POOL HEAT PUMPS

Termal is a leading company in the marketing of plant equipment for domestic use. Termal offers a diversified range of units suitable for historic centres, water heaters with different capacities and units for heating medium and small swimming pools.



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Line up

# THE MOST COMPLETE RANGE ON THE MARKET

## AIR CONDITIONER WITHOUT OUTDOOR UNIT

Cool in the summer. Warm in the winter. Design all year long.

Only in



TTWIS 310 Z  
GAS R32

## WATER HEATER HOT WATER



### DUCTED Kitchen

80/100/150L  
monoblock tank  
TWMMS 09080 J  
TWMMS 09100 J  
TWMMS 09150 J

GAS R290



### DUCTED

200/300L  
monoblock tank  
TWMBS 2203 J  
TWMBS 2303 J

GAS R290



### HEA DUCTED

200/300/400L  
monoblock tank  
TWMBS 2202 HEA  
TWMBS 2302 HEA  
TWMBS 2402 HEA  
TWMBS 4402 HEA

GAS R134a

## ONSEN SWIMMING POOL HEATERS



TCPNS 701 Z  
TCPNS 1001 Z  
TCPNS 1301 Z  
TCPNS 1701 Z  
TCPNS 2101 Z  
TCPSS 3001 Z

GAS R32





# Only

AIR CONDITIONER  
WITHOUT  
OUTDOOR UNIT

NEW R32  
REFRIGERANT GAS  
(GWP 675)

COOL IN THE SUMMER  
WARM IN THE WINTER  
DESIGN ALL YEAR LONG

Only in



“Onlyin”, the heat pump without outdoor unit combines the evaporating and condensing part in a single unit, normally divided into traditional splits composed by two units

A+/A  
TTWIS 310 Z



## The advantages

### Ideal for historical buildings

Since it has no outdoor unit, its installation does not compromise the aesthetics of the building's façade. Its modern, essential design with a depth of only 17 cm adapts to all types of interiors, for air conditioning "without architectural barriers."

### Low consumption

DC Inverter technology makes "Only in" consumption very low. Once the desired temperature has been reached, the units run at minimum power, reducing air outlet speed in the environment, thus significantly reducing electrical consumption.

### Less Maintenance

Practically no maintenance is required since the cooling circuit is "sealed" and therefore free of any refrigerant pipes.

### Quiet

Thanks to the power used, the internal layout and skilful use of soundproofing materials, "Only in" offers exceptional levels of quiet: it is difficult to tell it apart from a normal wall split unit.

### Easy to install

Without an outdoor unit, it can be easily installed on any perimeter wall, even without the presence of a qualified refrigeration installer. Simply drill two 16.2 cm diameter holes in the wall. No need to then lay any pipes which normally connect the indoor and outdoor units.

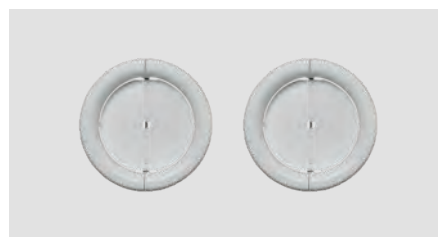
### Remote and on-board control

"Only in" is equipped with a practical, functional remote control. A convenient control panel is also present on-board the machine, from where all settings can be made including the "LOCK" function which locks the keyboard. The "heating" function can also be deactivated from the control panel. "Only in" therefore can operate only in "cold" and can be installed without a condensate drain pipe.



### Retractable outer grilles

The tilting outer grilles open only when the unit is running. This guarantees better indoor comfort as it reduces the entry of dust, noise and pollution and requires less maintenance and even less visibility outside. The outer grilles can be painted with the same colour as the façade to almost completely hide its installation.





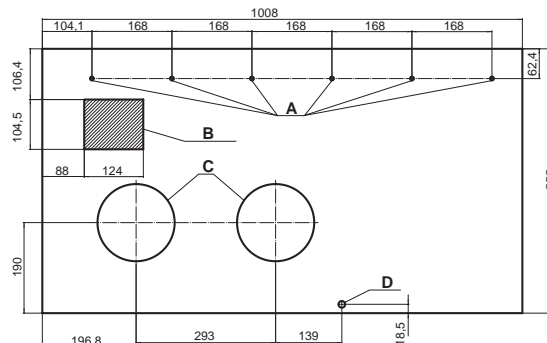
# AIR CONDITIONER WITHOUT OUTDOOR UNIT



## Technical installation information

- A** Holes for M8 plugs
- B** Area for electrical connection
- C** Holes for Ø160 mm air ducting
- D** Ø14 mm condensate drain

Assembly template, support bracket, pipes for holes and outer grilles are contained inside packaging.



## New wall control T-DTW-ST-Modbus

- Cable included (8m)
- Modulating speed
- Touch Screen Interface
- Built-in Modbus port



Model			TTWIS 310 Z
Type			Monobloc double duct - DC-Inverter heat pump
Control			Panel + Remote control
Rated capacity (T=+35°C)	Cooling	kW	2.33
Rated capacity (Dual-Power function)		kW	3.10
Rated absorbed power		kW	0.72
Rated energy efficiency coefficient		EER1	3.25
Seasonal energy efficiency class		626/20112	A+
Dehumidifying capacity		L/h	0.9
Rated capacity (T=+7°C)	Heating	kW	2.31
Rated capacity (Dual-Power function)		kW	3.05
Rated absorbed power		kW	0.71
Rated energy efficiency coefficient		COP1	3.28
Seasonal energy efficiency class		626/20112	A
Electrical data			
Power	Ph-V-Hz		1Ph - 220/240V - 50Hz
MAX absorbed current	A		4.60
Refrigerant circuit			
Refrigerant <sup>3</sup>	Type (GWP)		R32 (675)
Quantity (tons CO2)	kg (t)		0.50 (0.338)
Product specifications			
Dimensions	LxDxH	mm	1030x555x170
Net weight		kg	41
Sound power level		dB(A)	58
Sound pressure level	Hi-Lo	dB(A)	41-27
Treated air volume (indoor/outdoor)	Hi	m <sup>3</sup> /h	400/480
	Mi	m <sup>3</sup> /h	320/390
	Lo	m <sup>3</sup> /h	270/340
Operating limit (indoor environment)	Cooling	°C (BS)	18~35
	Heating	°C (BS)	5~27
Operating limit (outdoor environment)	Cooling	°C (BS)	-5~43
	Heating	°C (BS)	-10~24
Installation			
Wall hole diameter	mm		162
Wall hole distance	mm		293
Optional parts			
Decorative foot kit			TTWIS 2200 CINF
Smart Touch + ModBus wall control panel			T-DTW-ST-Modbus

1. Value measured according to harmonised standard EN14511. 2. Delegated Regulation UEN 6.26/2011 with regard to energy labelling indicating the energy consumption of air conditioners. 3. Refrigerant leakage contributes to climate change. When released into the atmosphere, refrigerants with a lower global warming potential (GWP) contribute less to global warming than those with a higher GWP. This appliance contains a refrigerant with a GWP of 675. If 1 kg of this refrigerant fluid were released into the atmosphere, therefore, the impact on global warming would be 675 times higher than 1 kg of CO<sub>2</sub>, over a period of 100 years. Under no circumstances should the user try to intervene on the refrigerant circuit or disassemble the product. Always contact qualified personnel if necessary.

# HEAT PUMP WATER HEATERS HOT WATER

NEW REFRIGERANT GAS  
R290 (GWP 0,02)

DOMESTIC HOT WATER  
UP TO 70°C





## New eco-friendly R290 refrigerant

R290 refrigerant gas is a natural hydrocarbon, also known as propane, widely used as a refrigerant in air conditioning systems and heat pumps.

Among its main advantages are energy efficiency, low environmental impact (GWP=0.02) and adherence to ecological standards, all elements that contribute to the sustainability of the installed system. Its high thermal efficiency makes it an eco-friendly choice for heating systems and DHW production.

# A complete range for any application

## Efficiency - Savings - Well-being

The Termal Hot Water range of heat pump water heaters is characterised by a large number of solutions capable of satisfying any need in a range of applications, both on a small and large scale. Termal technology solutions include products:

- Ducted Kitchen
- Ducted

With the use of the compressor alone, the Ducted and Ducted Kitchen models at R290 can bring the water up to 65° C. All models can bring the water to a maximum of 70° C via the electrical resistance.

At such temperatures, it is possible to perform periodic thermal disinfection cycles of the stored hot water, which can prevent the proliferation of Legionella bacteria.

All solutions are **ideal for new buildings and renovation projects**.

## Advantages

**All DUCTED models** are equipped with a **titanium anode** that permanently protects the tank from the corrosive effects of water.

**As opposed to a magnesium anode solution, the service life of the tank is extended and little maintenance is required, thus reducing the costs of periodic servicing.**

Like any metal structure in direct contact with an electrolyte (water), the heating elements are also subject to the phenomenon of corrosion. Electrochemical reactions cause decomposition and re-composition with other elements of the metals from which they are made, inevitably compromising their structure.

The Titanium Anode is an **environmentally friendly solution** which is “clean” and designed and engineered to operate using as little energy as possible.

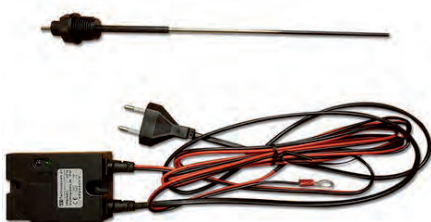
The anode is electrically powered by means of a direct current that is circulated between the device and the tank to be protected.

**At the heart of the system is the innovative electronics** completely managed by a state-of-the-art microprocessor **capable of achieving performance hitherto unthinkable for this specific application.**

The regulation of the impressed current value is based on a highly efficient calculation algorithm, which allows the control of the correct current intensity in accordance with the instantaneous degree of protection and the reaction time of the tank.

The reading of the system's potential value through the same titanium electrode takes place in dynamic mode, allowing the current flow to be maintained once the equilibrium value is reached, without frequent interruptions or even partial variations in intensity.

**The ability of Titanium Anode to self-learn and adjust to the actual conditions of the structure under protection, means that even the delivery of the impressed current is dynamic and perfectly balanced to the needs of the system to be protected.**





## Ducted Kitchen series

The “Ducted Kitchen” series is designed to be installed inside the tall cabinetry of the kitchen. The range consists of three tank sizes (80/100/150L) with external air expulsion and both internal and external intake.

Thanks to the wall-mounted installation, it is possible to further optimize the spaces inside the technical compartment.



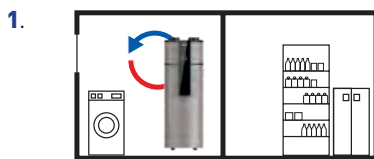
## Ducted series

To be positioned indoors, it can be used in different installation configurations, with or without air intake or expulsion ducting. Thanks to the possibility of parallel or series installation (centralised systems), Termal Hot Water in the “Ducted” series is also suitable for large-volume hot water requirements.

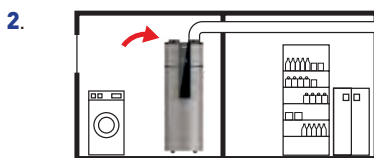
### Versatile installation allows the full energy of the air to be harnessed

Air intake and/or expulsion is possible in the installation premises or with air intake and/or expulsion ducts from other premises. A condensate drainage network must be created.

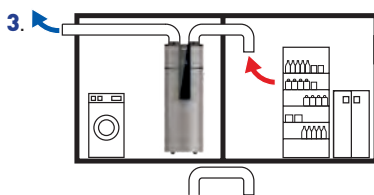
In particular, the “Ducted” series allows the heat pump system to be used in **5 installation modes**:



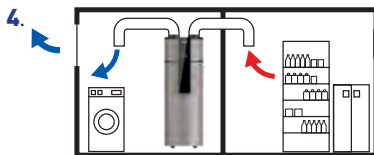
**Recirculated air installation: air inlet and outlet take place in the installation premises.** DHW is produced by exploiting the air in the room and at the same time removing heat and humidity from it, cooling it. The installation of a partition to prevent air recirculation in the immediate vicinity of the extraction vent is recommended.



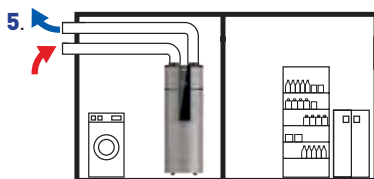
**Installation with internal air intake: with air extraction outdoors.** DHW is produced by exploiting the air in the installation premises, which is then expelled outside via ducting.



**Installation with air intake from another room and expulsion to the outside via ducting.** In situations where there are rooms with a high degree of heat build-up, this installation mode allows the system to work with a high level of energy efficiency, guaranteeing the exchange of air without the need to open the window.



**Installation with air intake from another room and expulsion inwards** (with or without ducting in rooms with openings to the outside). An advantageous situation for example in cellars where cold, dehumidified air is needed.



**Installation with air intake and extraction to the external environment.** This mode ensures that there is no variation in the temperature of the room where the Hot Water is installed. Operation depends on the minimum and maximum temperature of the external air intake (see product data sheets). This application is mainly used in locations with mild temperatures.

# EXAMPLES OF RESIDENTIAL AND COMMERCIAL APPLICATIONS

Termal models are made of innovative materials to ensure a long service life. Furthermore, they are quiet and efficient.

The various power ratings meet all energy needs, and the availability of hot water will no longer be a problem.



- Independent homes 13
- Gyms or company changing rooms 15

# DHW with 80/100/150 L Hot Water **Ducted Kitchen** units in R290 for independent homes

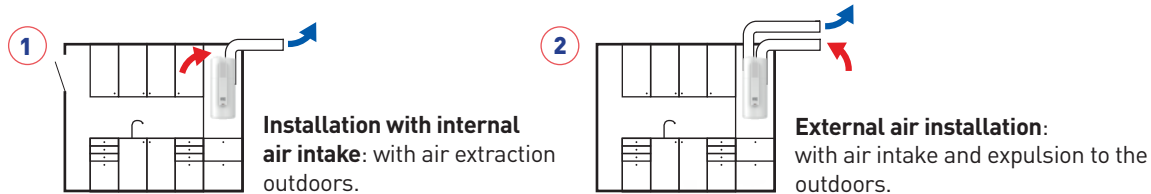
## Description of the installation

The application type, illustrated in the figure, describes the installation in an apartment, which is newly built, being renovated or involves the replacement of existing installations.

Domestic hot water is produced by a single 80, 100 or 150 litres Hot Water unit.

The heat pump is designed to be installed in the kitchen, just like a traditional boiler, and is conveniently placed inside the tall cabinetry of the kitchen, with air extraction to the outside.

The "Ducted kitchen" series allows use in **2 installation modes**:



DUCTED KITCHEN  
TWMMS 09080 J  
TWMMS 09100 J  
TWMMS 09150 J  
80/100/150 litres



 1  
apartment

 1  
bathrooms with  
showers and  
toilets

 1  
family of 1/2  
persons

 80/100/150 L  
depending on the household's DHW use

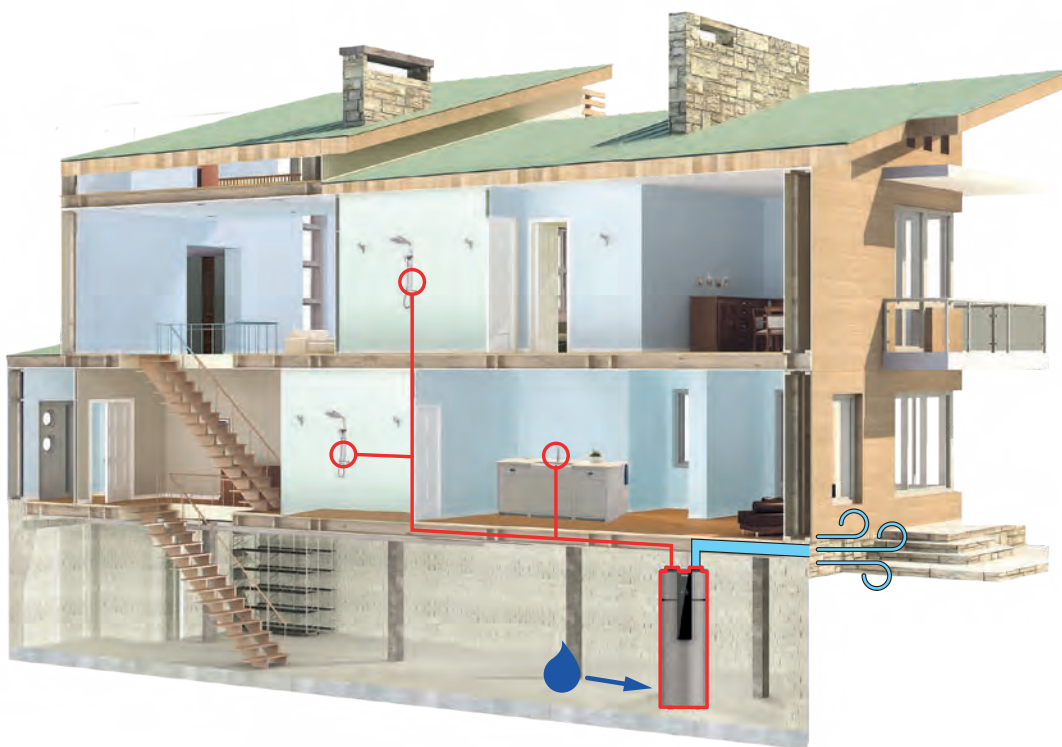
# DHW with 200/300 L Hot Water **Ducted** units in R290 for independent homes

## Description of the installation

The application type, illustrated in the figure, describes the installation in an independent home, which is newly built, being renovated or involves the replacement of existing installations.

The production of domestic hot water is provided by one 200 or 300-litre monoblock Hot Water system.

The heat pump can be located in a technical or service room of the building, e.g. cellar or garage.



TWMB5 2203-2303 J  
DUCTED  
200/300 litres



 1  
apartment

 2  
bathrooms with  
showers and  
toilets

 1  
family of 3/4  
persons

 200/300 L  
tank size



# DHW with 300 L Hot Water **Ducted** units in R290 for gyms or company changing rooms

## Description of the installation

The application type, illustrated in the figure, describes the system in a company with a warehouse and offices.

The production of domestic hot water is provided by one 300-litre monoblock Hot Water system.

The heat pump can be located in a technical or service room, e.g. a central heating room, with ducting of the treated air.



TWMB5 2303 J  
DUCTED  
300 litres



changing rooms (with 3 showers each)



users (5 per shift)



requirements per person



DHW requirements per day



water supply temperature to utilities

# Hot Water monoblock 80/100/150 litres at R290 Ducted Kitchen series

- Monoblock heat pump water heater, designed to be installed inside the tall cabinetry of the kitchen
- R290 refrigerant gas
- Titanium anode
- Energy Efficiency Class **A+**
- Hot water up to 65° C with compressor only
- Anti-Legionella cycle
- Exceptional resistance to corrosion thanks to the **titanium anode included as standard**



TWMMs 09080 J  
TWMMs 09100 J  
TWMMs 09150 J

## Energy class



Model		TWMMs 09080 J*	TWMMs 09100 J*	TWMMs 09150 J*	
Tank volume	L	78	98	145	
Nominal thermal output <sup>1</sup>	W	950	980	1300	
Nominal DHW production capacity <sup>1</sup>	L/h	20.5	21.0	28.0	
Test cycle profile <sup>2</sup>	-	M	M	L	
Hot water volume at 40°C <sup>2</sup>	L	85	110	160	
Energy efficiency (η <sub>wh</sub> ) <sup>3</sup>	%	112	111	122	
Energy Efficiency Class <sup>3</sup>	-	A+	A+	A+	
IP protection rating	-	IP21	IP21	IP21	
Hot water T. adjustment range	°C	38~70 (50 default)	38~70 (50 default)	38~70 (50 default)	
Maximum hot water T. compressor only	°C	62	62	62	
Electrical data	Power supply	Ph-V-Hz	1-220~240V-50Hz		
	Additional electric heating element	W	1500		
	Maximum current (including heating element)	A	9.00	9.00	10.50
Refrigerant circuit	Refrigerant <sup>4</sup>	type (GWP)	R290 (0.02)		
	Quantity	kg	0.15	0.15	0.15
	Compressor	type	Rotary ON/OFF		
Product specifications	Dimensions (D x H)	mm	ø500 x 1196	ø500 x 1360	ø500 x 1707
	Net weight	kg	57	62	80
	Noise power level (without channels)	dB(A)	54	54	56
Tank	DHW hydraulic connections	inches	G1/2" (DN15)	G1/2" (DN15)	G1/2" (DN15)
	Type of anode	-	Titanium electrode		
	Maximum operating pressure	Mpa	0.8	0.8	0.8
Product specifications	Field of work (compressor only)	°C	-7~+43		
	Air flow (without ducts)	m <sup>3</sup> /h	190	200	240
	Fan static pressure (max)	Pa	30	30	30
	Air ducting (in/out)	-	Possible		

\* DRAFT: data subject to change without notice.

1. Conditions: air intake 15° C DB (12° C WB), water inlet 15° C / outlet 45° C. 2. Test according to EN16147.

3. Directive 2009/125/EC – ERP EU No. 814/2013. 4. Refrigerant leakage contributes to climate change. When released into the atmosphere, refrigerants with a lower global warming potential (GWP) contribute less to global warming than those with a higher GWP. This appliance contains a refrigerant with a GWP of 0.02. If 1 kg of this refrigerant fluid were released into the atmosphere, therefore, the impact on global warming would be 50 times less than 1 kg of CO<sub>2</sub>, over a period of 100 years. Under no circumstances should the user try to intervene on the refrigerant circuit or disassemble the product. Always contact qualified personnel if necessary.



### Comfort at home

Designed to be installed in the kitchen, just like a traditional boiler, the "Ducted Kitchen" series is conveniently placed inside the tall cabinetry of the kitchen, with air extraction to the outside.

### Safety

- The tank is protected from corrosion by the titanium anode included as standard.
- Anti-legionella system: the danger of legionella bacteria is averted thanks to periodic cycles that raise the temperature of the water inside the storage tank above 65°C.

### Installation warnings

1. It is mandatory to install a safety and non-return valve on the cold-water inlet. Failure to do so could seriously damage the equipment. Use a valve with a 0.7 MPa setting. For the installation location, please refer to the piping connection diagram.
2. The discharge pipe of the safety valve must descend vertically and must not be placed in an environment where there is a risk of freezing.
3. The water must be able to drip freely from the pipe and its end must be left free.
4. The safety valve must be tested regularly to check its function and to remove any limescale that might block it.



# Hot Water monoblock 200/300 litres at R290 **Ducted** series

- Floor-standing heat pump water heaters
- R290 refrigerant gas
- Titanium anode with alarm LED
- Additional 1.5 kW electric heating element
- Hot water up to 60°C with compressor alone; up to 70° C with electric heating element integration



TWMMBS 2203 J  
TWMMBS 2303 J

## Energy class



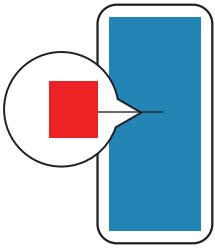
Model		TWMMBS 2203 J*	TWMMBS 2303 J*
Tank volume	L	200	300
Solar integration coil (stainless steel)	m <sup>2</sup>		Not present
Rated thermal power <sup>1</sup>	W	1500	1500
Rated power consumption <sup>1</sup>	W	345	345
COP (rated) <sup>1</sup>	W/W	4.35	4.35
Rated hot water production capacity <sup>1</sup>	L/h	32.0	32.0
COPDHW <sup>2</sup>	W/W	3.24	3.24
Test cycle profile <sup>2</sup>	-	L	XL
Volume of hot water at 40°C <sup>2</sup>	L	250	377
Energy Efficiency Class <sup>3</sup>	-	A+	A+
IP Degree of protection	-	IPX1	IPX1
Hot water T. adjustment interval	°C	35~65	35~65
Maximum DHW temperature only compressor	°C	65	65
Electrical data	Power	Ph-V-Hz	1-220~240V-50Hz
	Integrative heating element	W	1500
	Maximum current (including heating element)	A	9.60
Refrigerant circuit	Refrigerant <sup>4</sup>	type (GWP)	R290 (0.02)
	Quantity	kg	0.15
	Compressor	type	Rotary ON/OFF
Product specifications	Dimensions (D x H)	mm	ø600x1645
	Net weight	kg	95
	Sound power level	dB(A)	51
	Sound pressure level at 2 m	dB(A)	45
Tank	Tank material	-	Stainless steel 304
	DHW hydraulic connections	inches	G3/4" (DN20)
	Hydraulic solar coil connections	inches	-
	Titanium anode	-	Titanium electrode with alarm LED
	Maximum operating pressure	bar	10
	Operating range	°C	-5~+43
Suctioned air	Rated flow (not ducted)	m <sup>3</sup> /h	350
	Air flow (ducted)	Pa	60
	Air duct - Diameter	mm	177
	Air duct - Length	m	8

\* DRAFT: data subject to change without notice.

1. Conditions: air intake 15°C DB (12° C WB), water inlet 15°C / outlet 45° C. 2. Test according to EN16147.

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## Product benefits



### Durable titanium anode

Titanium anode as standard with the Hot Water system.



## Comfort at home

- Programming to take advantage of any advantageous time slots on the electricity tariff and have hot water available when needed.
- Two operating modes: maximum savings with the use of the compressor alone or maximum speed with the simultaneous use of the heat pump and integrated electric heating element, to produce large quantities of DHW in a short time.

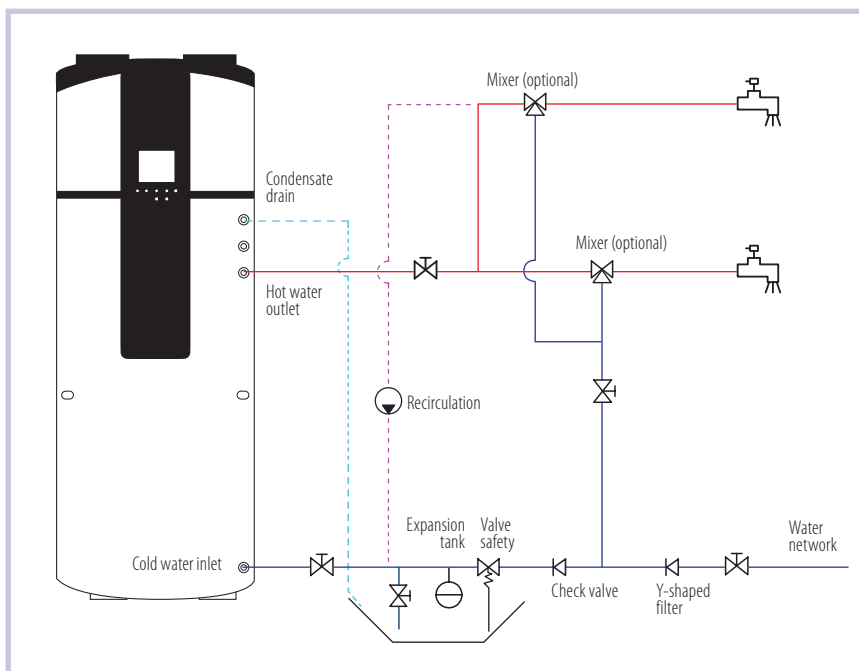
## Safety

- Since the heat exchanger is outside the tank, no contamination between water and coolant is possible.
- Anti-legionella system: the danger of legionella bacteria is averted thanks to periodic cycles that raise the temperature of the water inside the storage tank above 65°C.
- The titanium anode permanently protects the tank from the corrosive action of the water, ensuring greater reliability and lower maintenance costs than a magnesium anode solution.

## 5 installation modes

1. Recirculated air installation: air inlet and outlet take place in the installation premises.
2. Installation with internal air intake and air extraction outdoors.
3. Installation with intake from another room and expulsion outdoors
4. Installation with air intake from another room and expulsion to an internal room (with or without ducting).
5. Installation with air intake and extraction to the external environment.

## Hydraulic connections diagram



# HEAT PUMP WATER HEATERS HOT WATER

REFRIGERANT GAS  
R134A (GWP 1430)

DOMESTIC HOT WATER  
UP TO 70°C

HOT WATER  
WITH SOLAR  
THERMAL ENERGY



# A complete range for any application

## Efficiency - Savings - Well-being

The Termal Hot Water range of heat pump water heaters is characterised by a large number of solutions capable of satisfying any need in a range of applications, both on a small and large scale.

All **HEA DUCTED** models are equipped with a stainless-steel tank and a microcomputer-controlled automatic defrosting system.

All models can deliver hot water up to 60°C. All models can bring the water to a maximum of 70°C via the electrical resistance.

At such temperatures, it is possible to perform periodic thermal disinfection cycles of the stored hot water, which can prevent the proliferation of Legionella bacteria.

All solutions are **ideal for new buildings and renovation projects**.

## Advantages

**All DUCTED models** are equipped with a **titanium anode** that permanently protects the tank from the corrosive effects of water.

**As opposed to a magnesium anode solution, the service life of the tank is extended and little maintenance is required, thus reducing the costs of periodic servicing.**

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The anode is electrically powered by means of a direct current that is circulated between the device and the tank to be protected.

**At the heart of the system is the innovative electronics** completely managed by a state-of-the-art microprocessor **capable of achieving performance hitherto unthinkable for this specific application.**

The regulation of the impressed current value is based on a highly efficient calculation algorithm, which allows the control of the correct current intensity in accordance with the instantaneous degree of protection and the reaction time of the tank.

The reading of the system’s potential value through the same titanium electrode takes place in dynamic mode, allowing the current flow to be maintained once the equilibrium value is reached, without frequent interruptions or even partial variations in intensity.

**The ability of Titanium Anode to self-learn and adjust** to the actual conditions of the structure under protection, **means that even the delivery of the impressed current is dynamic and perfectly balanced to the needs of the system to be protected.**



## R134a refrigerant gas

R134A gas (GWP=1430), is an alkyl halide used as a refrigerant in compression refrigeration cycles. It is part of the HFC family, environmentally friendly refrigerants developed as substitutes for CFCs.





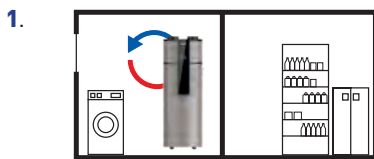
## HEA Ducted series

To be positioned indoors, it can be used in different installation configurations, with or without air intake or expulsion ducting. Thanks to the possibility of parallel or series installation (centralised systems), Termal Hot Water in the “Ducted” series is also suitable for large-volume hot water requirements.

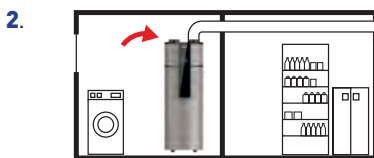
### Versatile installation allows the full energy of the air to be harnessed

Air intake and/or expulsion is possible in the installation premises or with air intake and/or expulsion ducts from other premises. A condensate drainage network must be created.

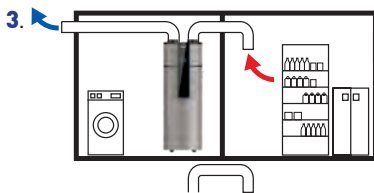
In particular, the “Ducted” series allows the heat pump system to be used in **5 installation modes**:



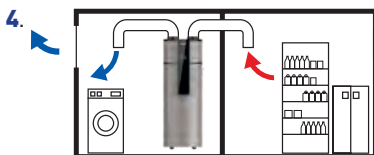
**Recirculated air installation: air inlet and outlet take place in the installation premises.** DHW is produced by exploiting the air in the room and at the same time removing heat and humidity from it, cooling it. The installation of a partition to prevent air recirculation in the immediate vicinity of the extraction vent is recommended.



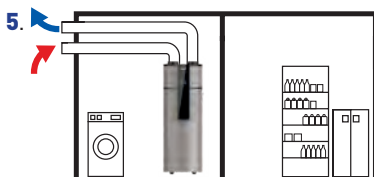
**Installation with internal air intake: with air extraction outdoors.** DHW is produced by exploiting the air in the installation premises, which is then expelled outside via ducting.



**Installation with air intake from another room and expulsion to the outside via ducting.** In situations where there are rooms with a high degree of heat build-up, this installation mode allows the system to work with a high level of energy efficiency, guaranteeing the exchange of air without the need to open the window.



**Installation with air intake from another room and expulsion inwards** (with or without ducting in rooms with openings to the outside). An advantageous situation for example in cellars where cold, dehumidified air is needed.



**Installation with air intake and extraction to the external environment.** This mode ensures that there is no variation in the temperature of the room where the Hot Water is installed. Operation depends on the minimum and maximum temperature of the external air intake (see product data sheets). This application is mainly used in locations with mild temperatures.



Combined with a solar thermal system, the savings are almost absolute

**The HEA DUCTED models offer the possibility of integration with solar thermal energy.**

In new buildings, the Termal Hot Water range of heat pump water heaters can be used as renewable energy products with possible integration of solar thermal energy.

It is possible to achieve truly green results, with considerable savings.



# EXAMPLES OF RESIDENTIAL AND COMMERCIAL APPLICATIONS

The Hot Water range is designed to suit a variety of applications: from flats to large residential apartment buildings; for offices and commercial premises. Termal models are made of innovative materials to ensure a long service life. Furthermore, they are quiet and efficient.

The various power ratings meet all energy needs, and the availability of hot water will no longer be a problem.



■ Apartment buildings	24
■ Micro-apartment buildings	25
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■ B&B	27
■ Gyms	28
■ Beauty salons	29

# DHW with Hot Water HEA Ducted R134a for apartment buildings with solar thermal

## Description of the installation

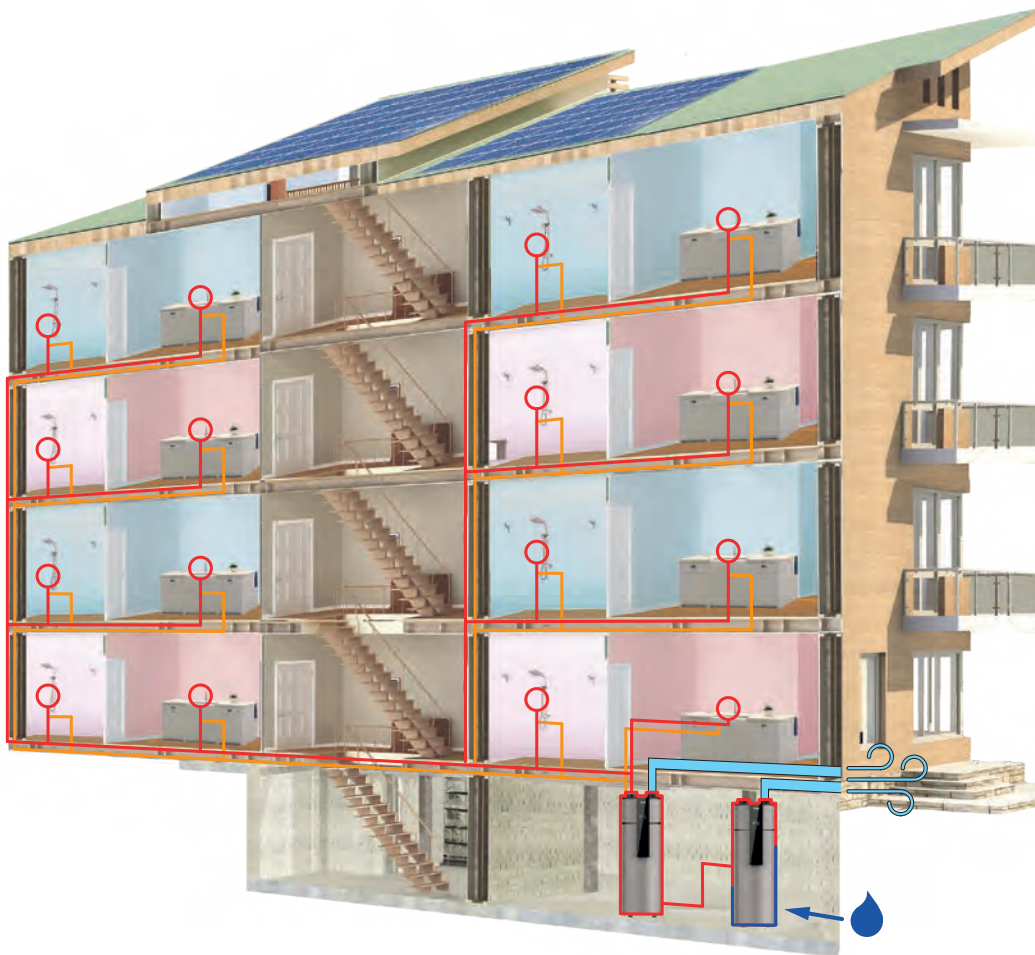
Newly built apartment buildings, or those undergoing major renovation, generally have solar thermal systems that can be used to produce domestic hot water "for free".

Hot Water HEA DUCTED systems are equipped with a dedicated solar thermal energy coil.

The high COP values, even with **air intake at 7°C**, allow Hot Water units to be placed individually, in parallel or in series in a technical or service room of the building, e.g. cellar or central heating room, with air ducting.

## Practical example

Determining an estimate of DHW consumption, for a block of flats consisting of 8 apartments with a floor area of 70 m<sup>2</sup> each, two 400-litre Hot Water HEA DUCTED systems would be sufficient, except for the energy input needed for recirculation.



### HEA DUCTED WITH SOLAR THERMAL

TWMB5 2202 HEA  
COP 2,61 - 200 litres

TWMB5 2302 HEA  
COP 2,68 - 300 litres

TWMB5 2402 HEA  
COP 2,61 - 400 litres (2 kW)

TWMB5 4402 HEA  
COP 2,62 - 400 litres (4 kW)

Modular configuration between Hot Water models with different (litre) capacities

x2 400 litres

300 litres



x2 TWMB5 4402 HEA  
HEA DUCTED 400 litres



Calculation according to UNI TS 11300-2

**8**  
apartments

**800 L**  
total DHW requirements per day

**50°C**  
water temperature inside the tank

**40°C**  
water supply temperature to utilities

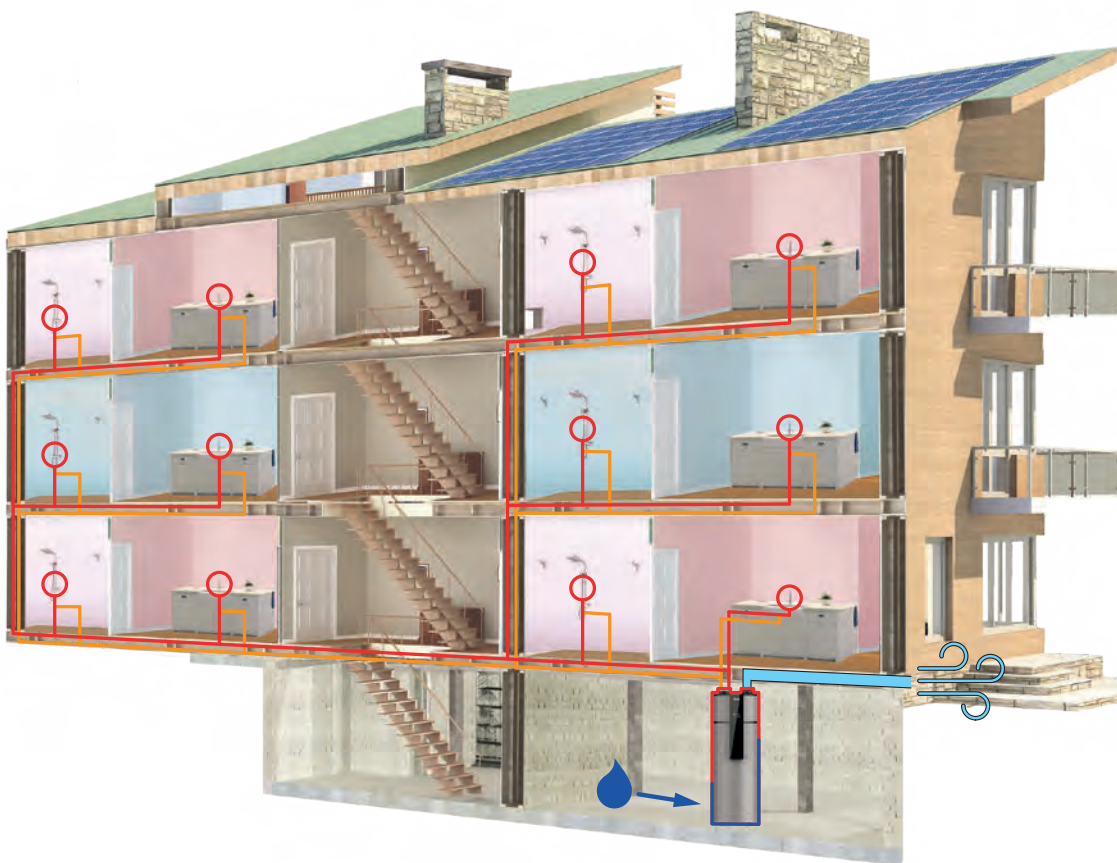
# DHW with Hot Water **HEA Ducted** R134a 400 L for micro-apartment buildings with solar thermal energy

## Description of the installation

The application type, illustrated in the figure, describes the installation in a block of flats of four apartments with a size of 70 m<sup>2</sup> each, which is newly built, being renovated or involves the replacement of existing installations.

The production of domestic hot water is provided by one 400-litre monoblock Hot Water system, except for the energy supply required for recirculation.

The high **COP** values, even with **air intake at 7°C**, allow Hot Water units to be placed in a technical or service room of the building, e.g. cellar or central heating room, with air ducting.



TWMB5 4402 HEA  
HEA DUCTED  
400 litres



Calculation according to UNI TS 11300-2



apartments



total DHW  
requirements per day



water temperature  
inside the tank



water supply  
temperature to  
utilities

# DHW with Hot Water **HEA Ducted** R134a 200/300 L for independent homes with solar thermal

## Description of the installation

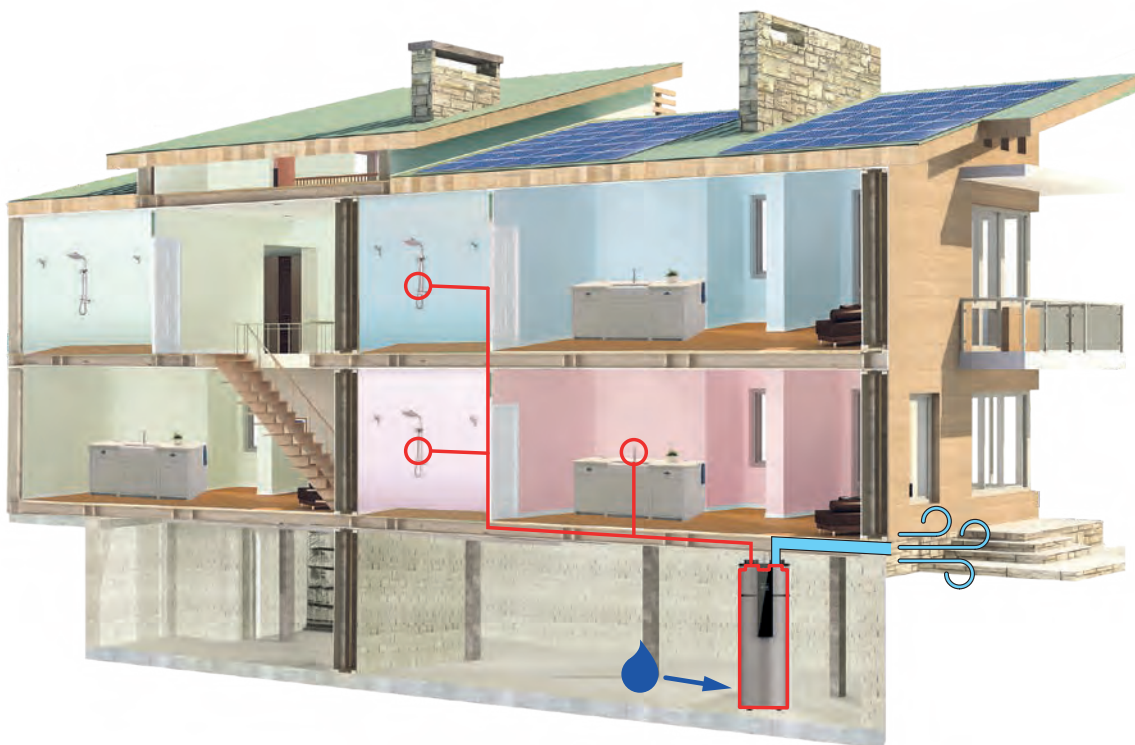
The application type, illustrated in the figure, describes the installation in an independent home, which is newly built, being renovated or involves the replacement of existing installations.

The production of domestic hot water is provided by one 200 or 300-litre monoblock Hot Water system.

The heat pump can be located in a technical or service room of the building, e.g. cellar or garage.

## With solar thermal energy

The **HEA DUCTED** water heater is also available in a version with a coil for connection to a solar thermal energy system.



TWMB5 2202HEA  
TWMB5 2302HEA  
HEA DUCTED  
200/300 litres



 1  
apartment

 2  
bathrooms with  
showers and  
toilets

 1  
family of 3/4  
persons

 200/300 L  
tank size

# DHW with Hot Water **HEA Ducted** R134a 400 L for accommodation facilities (B&B); possible integration with solar thermal energy

## Description of the installation

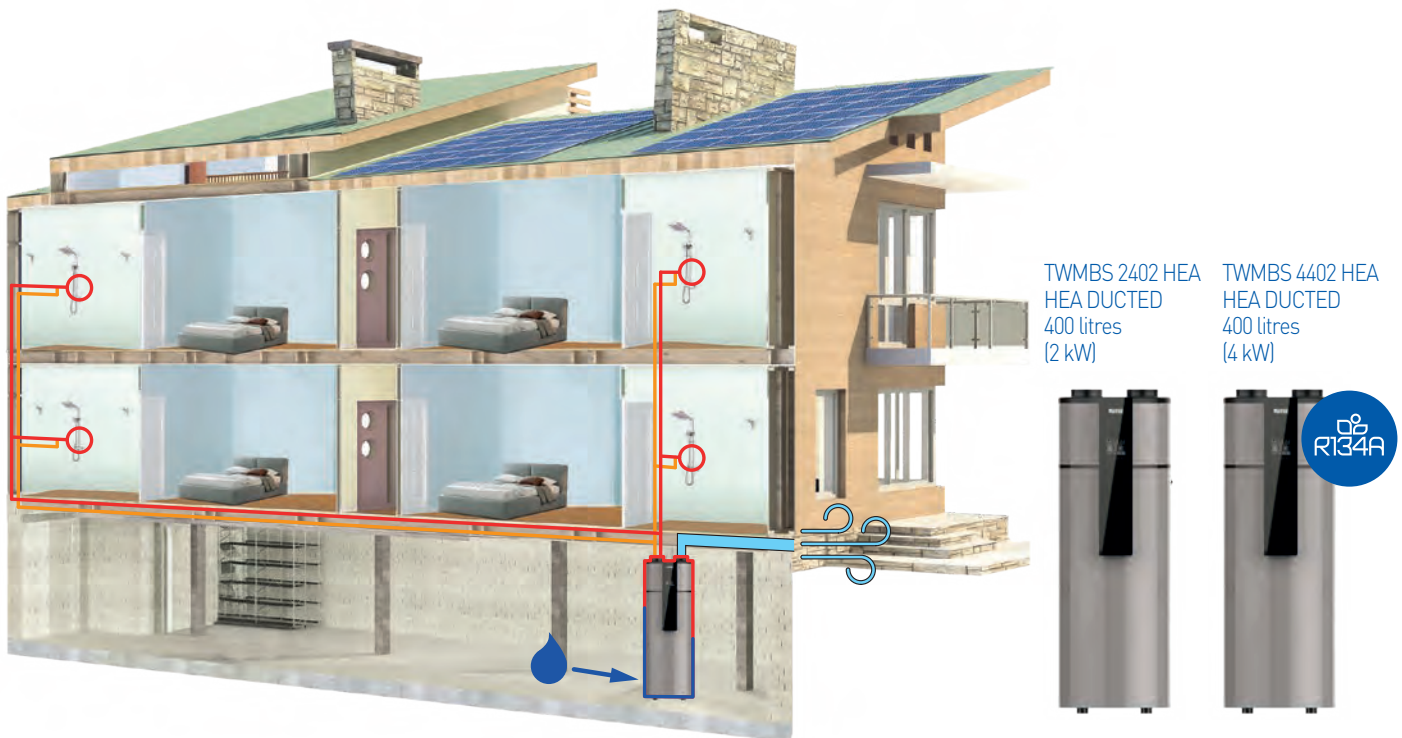
The demand for domestic hot water for medium/small accommodation facilities such as B&Bs is extremely variable depending on the occupancy of the facility. Water consumption is generally concentrated in the early morning and evening hours.

Assuming a facility consisting of four rooms, the requirement can be met with one 400-litre Hot Water monoblock, except for the energy supply needed for recirculation.

The heat pump can be located in a technical or service room of the building, e.g. cellar or central heating room, with ducting of the treated air.

## With solar thermal energy

The **DUCTED** water heater is also available in a version with a coil for connection to a solar thermal energy system.



Calculation according to UNI TS 11300-2

4  
rooms

8  
guests

400 L  
DHW requirements  
per day

50°C  
DHW production  
temperature in the  
PDC tank

40°C  
water supply  
temperature to  
utilities

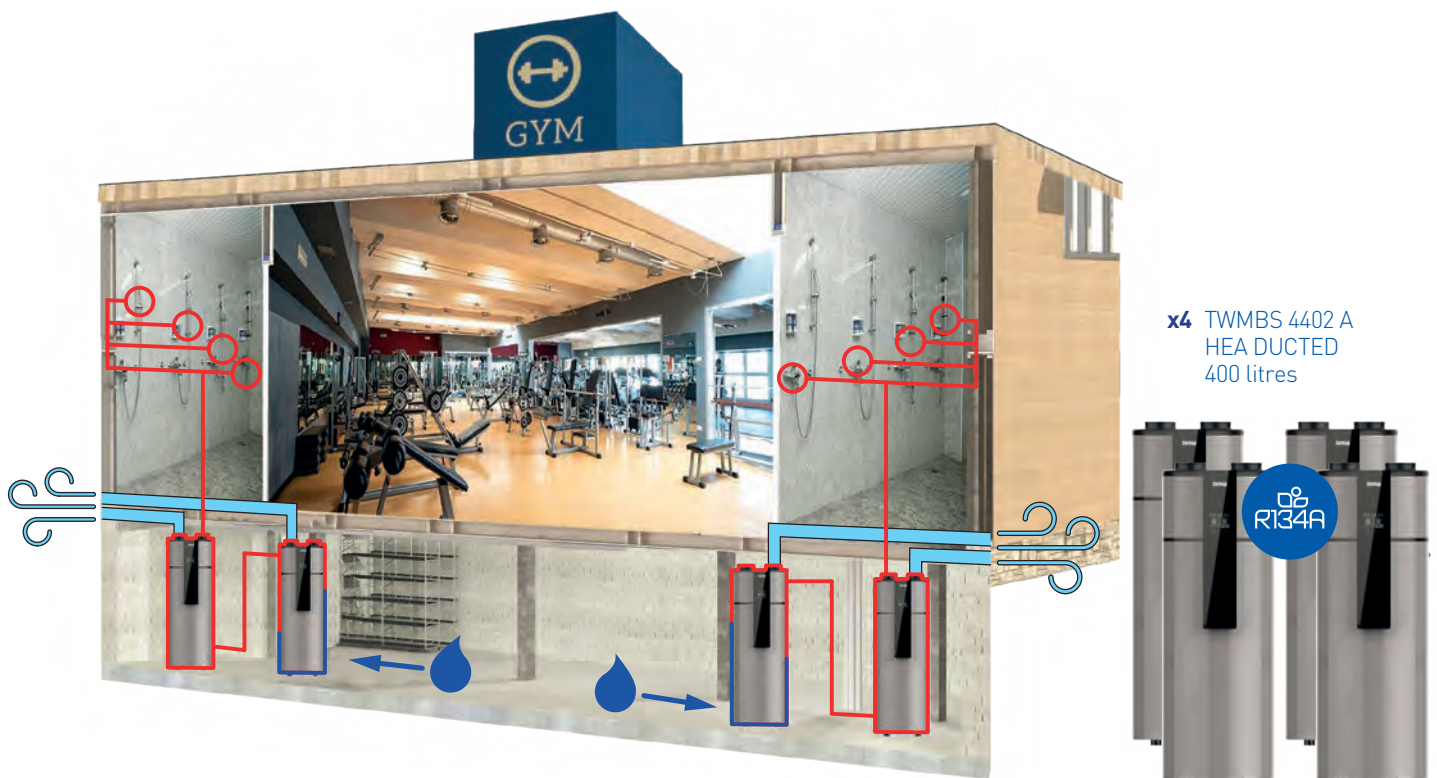
# DHW with Hot Water **HEA Ducted** R134a 400 L for gyms

## Description of the installation

Gyms or sports facilities need a large amount of domestic hot water that is mainly used for showers. 90% of the daily requirement is concentrated in the evening hours.

Assuming the presence of 40 persons in this time slot, the hot water demand can be met with four 400-litre Hot Water units placed in series or in parallel for a total of 1,600 litres available at 50°C.

The heat pumps can be positioned in a technical or service room, such as a central heating room, with ducting of the treated air.



2

changing rooms



60

users  
(20 morning,  
40 evening)



40 L

requirements per person



50°C

DHW production  
temperature in the  
PDC tank



42°C

water supply  
temperature to  
utilities



2400 L

total DHW requirements  
per day

# DHW with Hot Water **HEA Ducted** R134a 400 L for beauty salons

## Description of the installation

The application type, illustrated in the figure, describes the system in a beauty salon.

The production of domestic hot water is provided by one 400-litre monoblock Hot Water system.


The heat pump can be located in a technical or service room, e.g. a central heating room, with ducting of the treated air.




 20  
customers  
per day

 20 L  
requirements  
per person

 400 L  
total DHW  
requirements  
per day

 40°C  
water supply  
temperature to  
utilities

 50°C  
DHW production  
temperature in the  
PDC tank

# Hot Water monoblock 200/300/400 litres at R134a **HEA Ducted** with solar thermal energy



TWMB5 2202 HEA  
TWMB5 2302 HEA  
TWMB5 2402 HEA  
TWMB5 4402 HEA

## POSSIBILITY OF SOLAR THERMAL ENERGY INTEGRATION

- Floor-standing heat pump water heaters
- R134A refrigerant gas
- Titanium anode with alarm LED
- Additional 1.5 kW electric heating element
- Hot water up to 60°C with compressor alone; up to 70°C with electric heating element integration

Capacity	Intake temperature (°C)		
	20	15	7
200	4.39*	-	2.61**
300	4.43*	-	2.68**
400	4.32*	-	2.61**
400	3.67*	-	2.62**

\* Factory test with air intake 20°C DB (15° C WB), water inlet 15°C/outlet 55°C.

\*\* Test according to EN 16147.

## Energy class



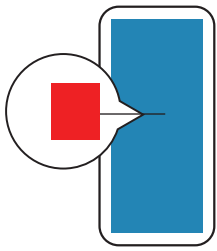
Model		TWMB5 2202 HEA	TWMB5 2302 HEA	TWMB5 2402 HEA	TWMB5 4402 HEA	
Tank volume	L	200	300	400	400	
Solar integration coil (stainless steel)	m <sup>2</sup>	1.0	1.0	1.0	1.0	
Rated thermal power <sup>1</sup>	W	2040	2040	2060	3285	
Rated power consumption <sup>1</sup>	W	465	460	477	895	
Rated hot water production capacity <sup>1</sup>	L/h	43.5	43.5	45.0	70.5	
COP (rated) <sup>1</sup>	W/W	4.39	4.43	4.32	3.67	
COPDHW <sup>2</sup>	W/W	2.61	2.68	2.61	2.62	
Test cycle profile <sup>2</sup>	-	L	XL	XL	XL	
Volume of hot water at 40°C <sup>2</sup>	L	250	390	434	434	
Energy Efficiency Class <sup>3</sup>	-	A	A	A	A	
IP Degree of protection	-	IPX1	IPX1	IPX1	IPX1	
Hot water T. adjustment interval	°C	10~70 (50 default)	10~70 (50 default)	10~70 (50 default)	10~70 (50 default)	
Maximum DHW temperature only compressor	°C	60	60	60	60	
Electrical data	Power	Ph-V-Hz	1-220~240V-50Hz			
	Integrative heating element	W	1500			
	Maximum current (including heating element)	A	10.00	10.00	10.00	13.00
Refrigerant circuit	Refrigerant <sup>4</sup>	type (GWP)	R134a (1430)			
	Quantity	kg	1.0	1.0	1.0	0.9
	Tons of CO2 equivalent	t	1.430	1.430	1.430	1.287
	Compressor	type	Rotary ON/OFF			
Product specifications	Dimensions (D x H)	mm	560 x 1745	640 x 1840	700 x 1880	700 x 1880
	Net weight	kg	95	105	115	118
	Sound power level	dB(A)	58.2	58.2	58	59.2
	Sound pressure level at 2 m	dB(A)	37.8	37.8	38	37.2
	Tank material	-	Stainless steel 304			
Tank	DHW hydraulic connections	inches	G1" (DN25)	G1" (DN25)	G1" (DN25)	G1" (DN25)
	Hydraulic solar coil connections	inches	G3/4" (DN20)	G3/4" (DN20)	G3/4" (DN20)	G3/4" (DN20)
	Titanium anode	-	Titanium electrode with alarm LED			
	Maximum operating pressure	bar	10	10	10	10
Suctioned air	Operating range	°C	-5~+43			
	Rated flow (not ducted)	m <sup>3</sup> /h	400	400	450	800
	Air flow (ducted)	Pa	60	60	60	60
	Air duct - Diameter	mm	177	177	177	177
	Air duct - Length	m	6	6	6	6

1. Conditions: air intake 20°C DB (15° C WB), water inlet 15°C/outlet 55°C. 2. Test according to EN 16147; air intake 7°C. 3. Directive 2009/125/EC - ERP EU No. 814/2013.

4. Refrigerant leakage contributes to climate change. When released into the atmosphere, refrigerants with a lower global warming potential (GWP) contribute less to global warming than those with a higher GWP. This appliance contains a refrigerant with a GWP of 1430. If 1 kg of this refrigerant fluid were released into the atmosphere, therefore, the impact on global warming would be 1430 times higher than 1 kg of CO<sub>2</sub>, over a period of 100 years. Under no circumstances should the user try to intervene on the refrigerant circuit or disassemble the product. Always contact qualified personnel if necessary.



## Product benefits



### Durable titanium anode

Titanium anode as standard with the Hot Water system.

## Comfort at home

- Programming to take advantage of any advantageous time slots on the electricity tariff and have hot water available when needed.
- Two operating modes: **maximum savings** with the use of the compressor alone or **maximum speed** with the simultaneous use of the heat pump and integrated electric heating element, to produce large quantities of DHW in a short time.

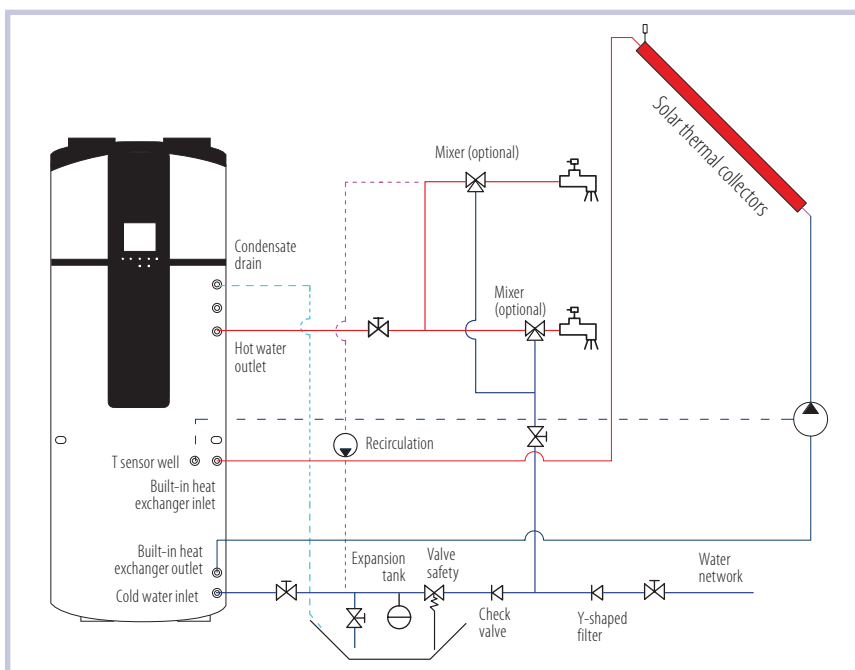
## Safety

- Since the heat exchanger is outside the tank, no contamination between water and coolant is possible.
- Anti-legionella system: the danger of legionella bacteria is averted thanks to periodic cycles that raise the temperature of the water inside the storage tank above 65°C.
- The titanium anode permanently protects the tank from the corrosive action of the water, ensuring greater reliability and lower maintenance costs than a magnesium anode solution.

## 5 installation modes

1. Recirculated air installation: air inlet and outlet take place in the installation premises.
2. Installation with internal air intake and air extraction outdoors.
3. Installation with intake from another room and expulsion outdoors
4. Installation with air intake from another room and expulsion to an internal room (with or without ducting).
5. Installation with air intake and extraction to the external environment.

## System diagram with solar thermal energy integration



# HEAT PUMP HEATERS **ONSEN** FOR SWIMMING POOLS

**GAS R32**  
**QUICK INSTALLATION**

**RUSTPROOF**  
**ABS CASING**



## The pleasure of swimming in a pool in all seasons

5 single-phase models  
1 three-phase model

**Termal heat pump heaters** can be used in small, medium, and large indoor as well as outdoor pools.

They are an effective solution for heating swimming pool water, even in late autumn or during sudden drops in temperature, **thus extending the bathing season.**

Equipped with a titanium heat exchanger and high-efficiency compressor, Termal swimming pool heat pumps guarantee absolute operational reliability, high energy performance and low operating consumption.

### Titanium heat exchanger: a guarantee of safety and reliability

All **Termal heat pump heaters** are equipped with a titanium exchanger capable of heating any type of water, irrespective of its origin and the treatment used (chlorine treatment, salt sterilisation, bromine, ozone, etc.) and all systems with extensive disinfection requirements.

The titanium alloy provides maximum protection, guaranteed over time, against corrosion caused by chlorine.

### Durable materials: ABS pump body

All units are **encased in a rust-free thermoformed ABS outer shell.**

This casing makes it possible to install all products in the open air, without the risk of deterioration caused by atmospheric agents or the need for special maintenance.

# Heat pump heaters for swimming pools **ONSEN**

INTEGRATED  
Wi-Fi 

- New design, ABS plastic casing, rustproof
- R32 refrigerant gas
- 5 single-phase models from 7.76 to 21.41 kW;  
1 three-phase model from 30.05 kW
- **Titanium** heat exchanger
- Operating air temperature -15°C~+43°C



## Full DC Inverter technology

The heaters for swimming pools ONSEN is equipped with:

- High efficiency DC Inverter compressor;
- DC Inverter fan motor.

The design of the expulsion grille and the sawtooth fan guarantees an increase in air flow and a low noise level.

single-phase

TCPNS 701 Z - TCPNS 1001 Z  
TCPNS 1301 Z - TCPNS 1701 Z  
TCPNS 2101 Z

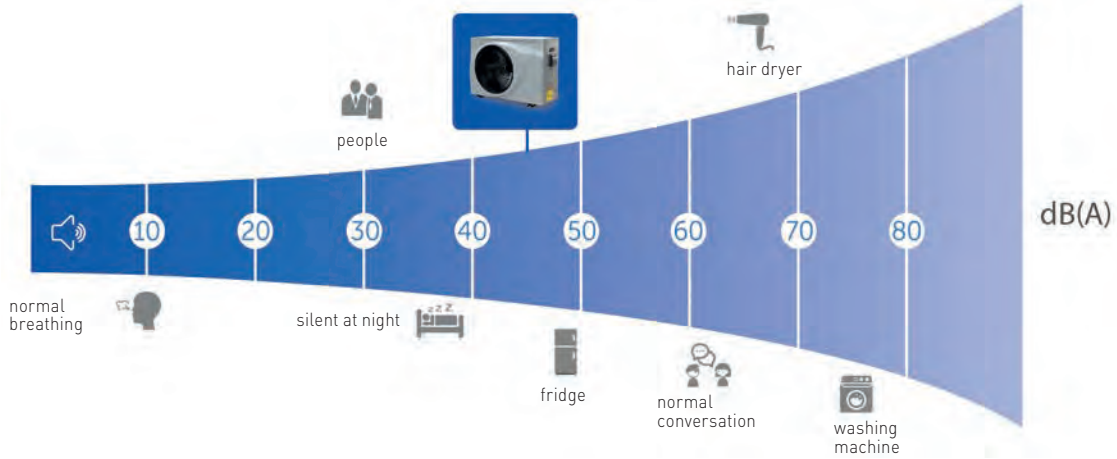
three-phase

TCPSS 3001 Z

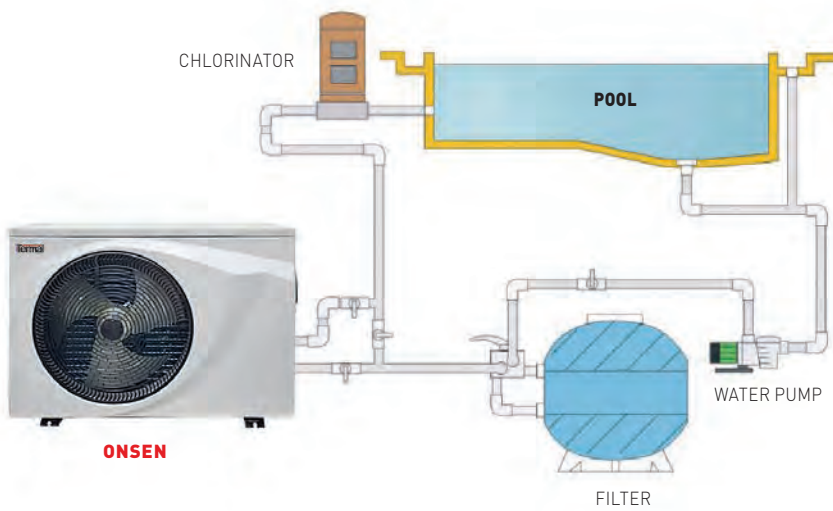
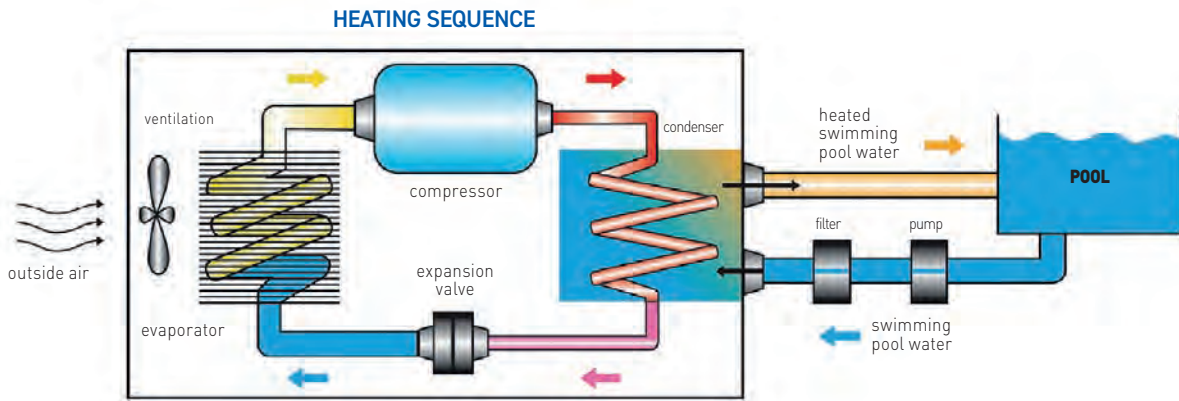


Model		TCPNS 701 Z	TCPNS 1001 Z	TCPNS 1301 Z	TCPNS 1701 Z	TCPNS 2101 Z	TCPSS 3001 Z	
<b>Air heating capacity 26°C, humidity 80%, water 26°C input, 28°C output</b>								
Heating capacity	kW	7.76~1.76	10.55~2.40	13.61~3.09	17.15~3.88	21.41~4.85	30.05~6.84	
Power consumption	kW	1.12~0.11	1.52~0.15	1.95~0.19	2.46~0.24	3.08~0.30	4.30~0.42	
COP		15.75~6.94	15.84~6.95	16.12~6.98	15.96~6.98	15.95~6.96	16.14~6.99	
<b>Air heating capacity 15°C, humidity 70%, water 26°C input, 28°C output</b>								
Heating capacity	kW	5.76~1.30	7.85~1.78	10.12~2.29	12.78~2.89	15.91~3.59	22.14~4.99	
Power consumption	kW	1.16~0.17	1.58~0.23	2.03~0.30	2.57~0.38	3.20~0.47	4.44~0.65	
COP		7.57~4.96	7.59~4.97	7.64~4.99	7.63~4.98	7.59~4.97	7.63~4.99	
<b>Cooling capacity air 35°C, water 29°C input, 27°C output</b>								
Cooling capacity	kW	4.28~1.06	5.92~1.48	7.25~1.82	9.47~2.35	11.58~2.96	15.89~3.93	
Power consumption	kW	1.15~0.16	1.57~0.22	1.89~0.26	2.51~0.34	3.07~0.43	4.17~0.56	
EER		6.61~3.73	6.74~3.76	6.95~3.83	6.89~3.78	6.87~3.77	6.98~3.81	
Power supply		220~240V / 1/ 50 Hz					380~415V / 3/ 50 Hz	
Rated input power	kW	1.20	1.60	2.10	2.60	3.20	4.40	
Rated current	A	5.40	7.30	9.40	11.70	14.60	7.90	
Compressor		Mitsubishi	Mitsubishi	Mitsubishi	Mitsubishi	Mitsubishi	Mitsubishi	
Refrigerant		R32	R32	R32	R32	R32	R32	
Heat exchanger		Titanium	Titanium	Titanium	Titanium	Titanium	Titanium	
Air flow direction		Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	
Water flow volume	m³/h	2.5	3.5	4.5	5.5	6.5	9	
Type of defrosting		Via 4-way valve	Via 4-way valve	Via 4-way valve	Via 4-way valve	Via 4-way valve	Via 4-way valve	
Operating temperature range	°C	-15~43	-15~43	-15~43	-15~43	-15~43	-15~43	
Noise level	dB(A)	≤ 43	≤ 43	≤ 46	≤ 46	≤ 46	≤ 48	
Housing material		ABS Plastic	ABS Plastic	ABS Plastic	ABS Plastic	ABS Plastic	ABS Plastic	
Colour		Brown						
Net dimensions (WxDxH)	mm	860x320x592	860x320x592	920x360x640	920x360x640	920x360x640	1080x370x730	
Packaging dimensions (WxDxH)	mm	940x400x710	940x400x710	990x430x760	990x430x760	990x430x760	1140x440x860	
Net weight	kg	40	42	51	54	58	86	
Gross weight	kg	51	53	62	65	69	97	
Level of water resistance		IPX4	IPX4	IPX4	IPX4	IPX4	IPX4	

## Silence



## Applications



Due to the continuous technological evolution of our products, we reserve the right to vary the technical specifications within this catalogue at any time and without prior notice. The hydraulic diagrams shown are only examples and do not replace the system design.





## **ONLY IN | HOT WATER | ONSEN**

AIR CONDITIONER WITHOUT OUTDOOR UNIT  
HEAT PUMP WATER HEATERS  
HEAT PUMP HEATERS FOR SWIMMING POOLS



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