

HOT WATER AND ONSEN

HOT WATER AND SWIMMING POOL
HEAT PUMPS



Termal

HOT WATER AND SWIMMING POOL HEAT PUMPS

Termal is a leading manufacturer and seller of equipment for domestic systems: Termal offers a wide range of products in terms of capacity and size for the production of domestic hot water as well as for heating medium and small swimming pools.

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Line up

HOT WATER, THE MOST COMPLETE RANGE ON THE MARKET



DUCTED series
200/300/500L
monoblock tank
TWMS 2202 A
TWMS 2302 A
TWMS 4502 A



CONNECTION
WITH
SOLAR
HEATING

DUCTED series
200/300/500L
monoblock tank
TWMS 2202 HEA
TWMS 2302 HEA
TWMS 4502 HEA



**DUCTED
Kitchen** series
80L
monoblock tank
TWMS 8080-D A

**GAS
R134A** **GWP
1430**

WHAT IS 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.

ONSEN SWIMMING POOL HEATERS



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

**GAS
R32** **GWP
675**

WHAT IS R32 REFRIGERANT GAS

R32 gas (GWP=675), is difluoromethane. It is one of the fluorinated gases used in air conditioners with multiple uses. It is part of the HFC family, environmentally friendly refrigerants developed as substitutes for CFCs.

ADVANTAGES OF R32 GAS

- it is environmentally friendly;
- **it is non-toxic**;
- it is slightly flammable;
- is not harmful and poses no risk to the ozone layer;
- it is very efficient.

HOT WATER

HEAT PUMP WATER HEATERS

REFRIGERANT GAS
R134A (GWP 1430)

DOMESTIC HOT WATER
UP TO 70°C



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
- Ducted Kitchen

All 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, using the compressor alone, and reach a temperature of up to 70°C via the electric heating element.

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.**



DUCTED product advantages

DUCTED models up to 500 litres are equipped with a **titanium anode** that permanently protects the tank from the corrosive effects of water.

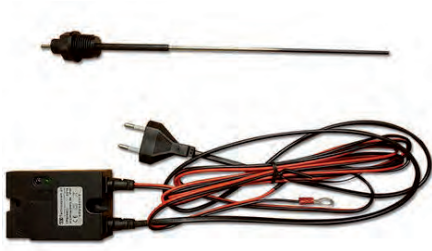
As opposed to a magnesium anode solution, the service life of the tank is extended and little maintenance is required, thus reducing the costs of periodic servicing. Like any metal structure in direct contact with an electrolyte (water), the heating elements are also subject to the phenomenon of corrosion. 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.**

Hot Water



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.**



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.



DUCTED Kitchen series

The "Ducted Kitchen" series is designed to be installed inside the tall cabinetry of the kitchen: it is an 80 litre monoblock with external air expulsion and both internal and external intake.

The tank is manufactured using Duplex technology and has exceptional corrosion resistance. Invisible but highly efficient and above all environmentally friendly.



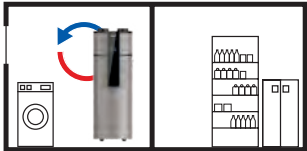

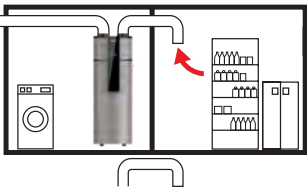
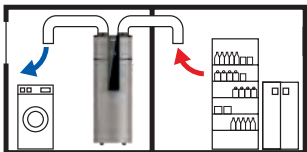
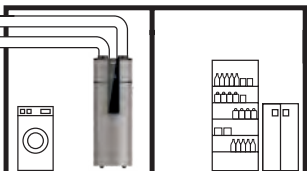
DUCTED series

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**:

1.  **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.
2.  **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.
3.  **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.
4.  **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.
5.  **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

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 8
- Micro-apartment buildings 10
- Independent homes 12
- B&B 14
- Gyms or company changing rooms 15
- Beauty salons 17



DHW with Hot Water **DUCTED** units for apartment buildings

Description of the installation

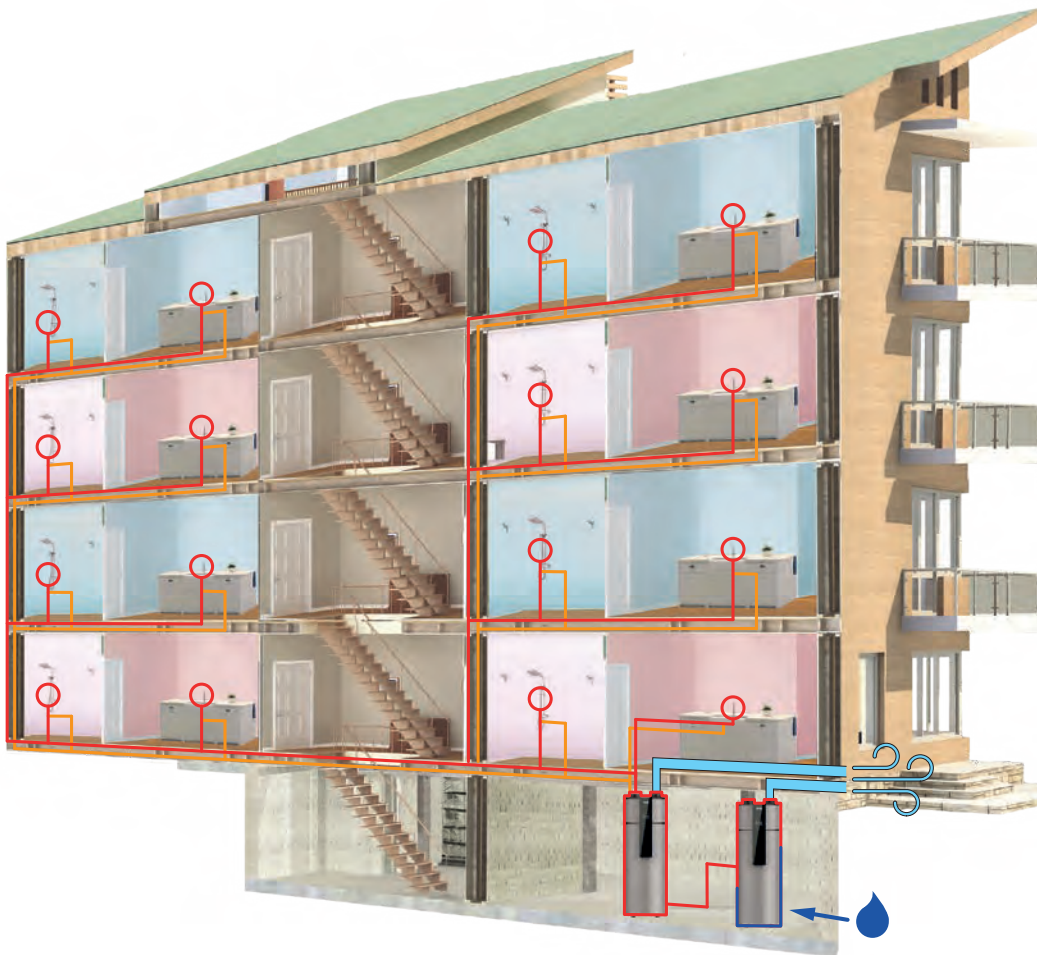
Apartment buildings, depending on the number and needs of the households in them, have different hot water requirements.

DUCTED Hot Water systems, with their wide range of products, make it possible to meet the hot water needs of apartment buildings.

Hot Water systems can be positioned 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 10 apartments with a floor area of 70 m² each, two 500-litre Hot Water DUCTED systems would be sufficient, except for the energy input needed for recirculation.



DUCTED

- TWMB5 2202 A - 200 litres
- TWMB5 2302 A - 300 litres
- TWMB5 4502 A - 500 litres

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



x2 TWMB5 4502 A DUCTED 500 litres




Calculation according to UNI TS 11300-2

 **10**
apartments

 **1000 L**
total DHW requirements per day

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

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

DHW with Hot Water **DUCTED** units for apartment buildings with solar thermal

Description of the installation

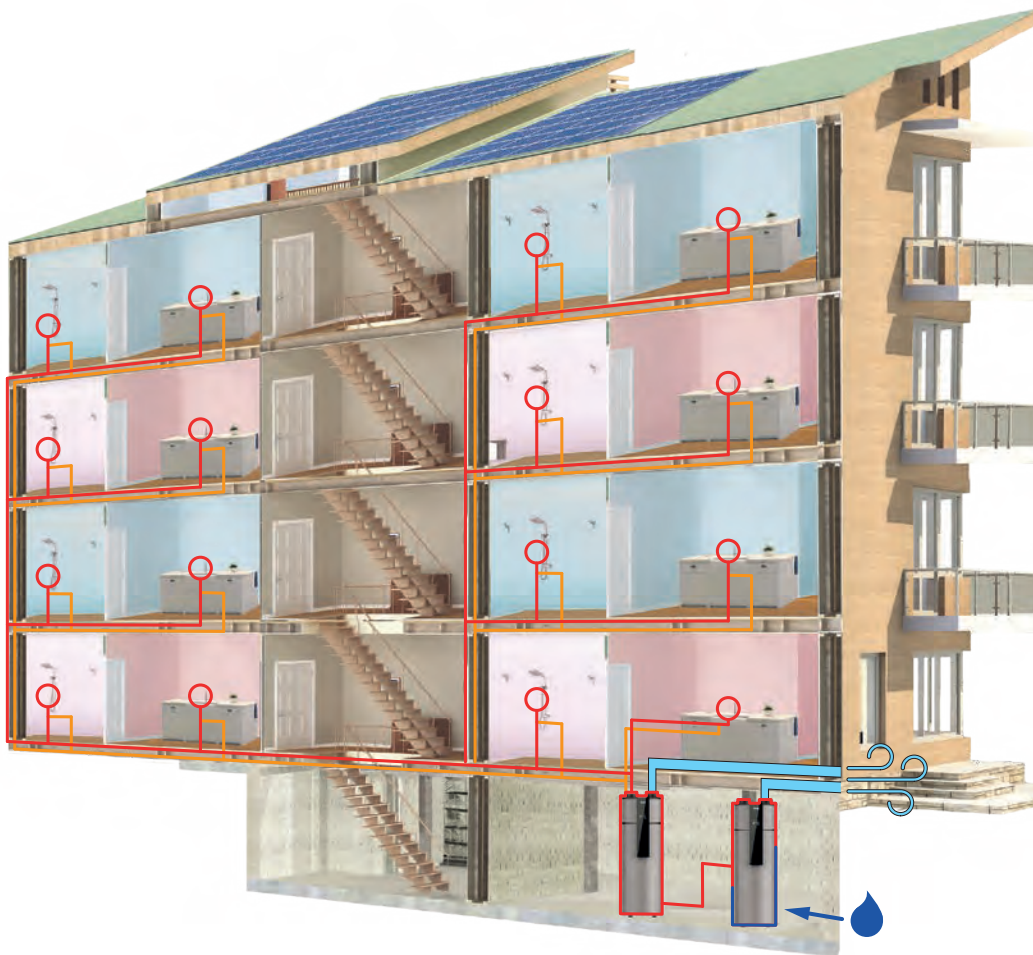
Newly built apartment buildings, or those undergoing major renovation, generally have solar thermal systems that can be used to produce domestic hot water “for free”.

Hot Water 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 10 apartments with a floor area of 70 m² each, two 500-litre Hot Water DUCTED systems would be sufficient, except for the energy input needed for recirculation.



DUCTED WITH SOLAR THERMAL

TWMB5 2202 HEA
COP 2,61 - 200 litres

TWMB5 2302 HEA
COP 2,68 - 300 litres

TWMB5 4502 HEA
COP 2,66 - 500 litres

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

x2 500 litres

300 litres



x2 TWMB5 4502 HEA DUCTED 500 litres




Calculation according to UNI TS 11300-2

 10
apartments

 1000 L
total DHW requirements per day

 50°C
water temperature inside the tank

 40°C
water supply temperature to utilities

Examples of residential applications

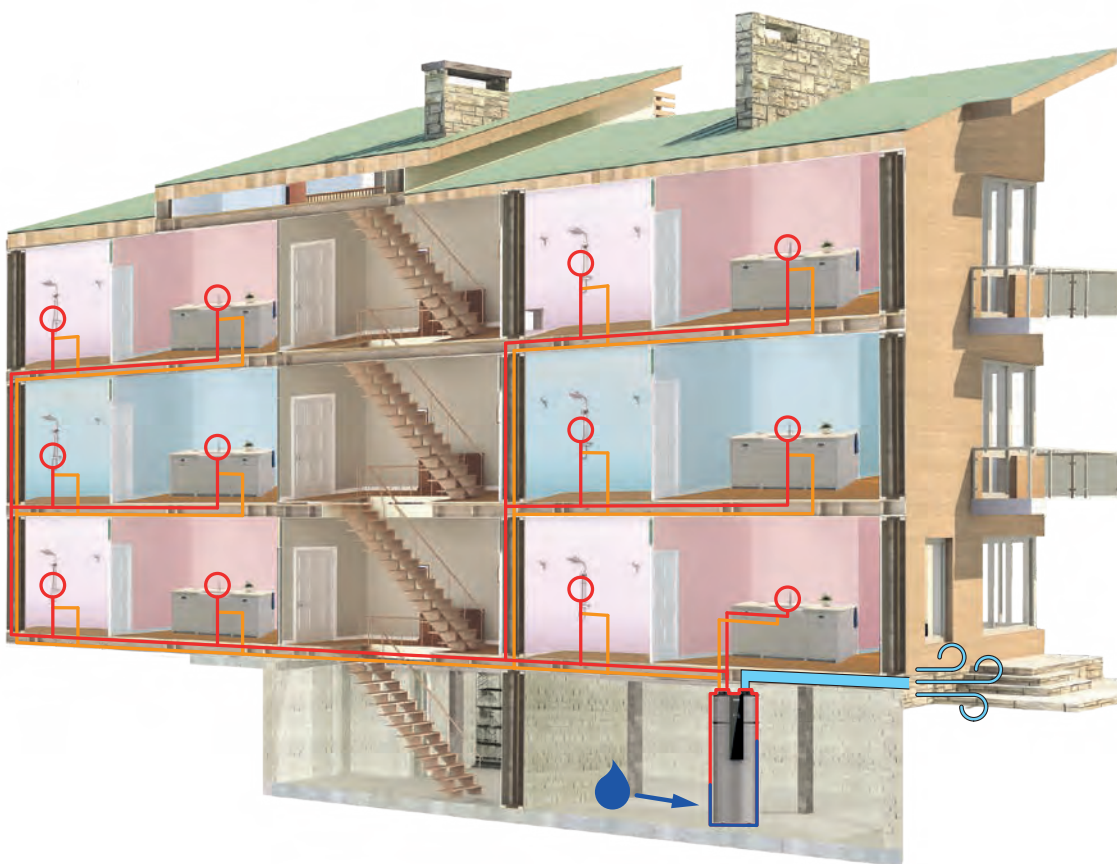
DHW with 500 L Hot Water **DUCTED** units for micro-apartment buildings

Description of the installation

The application type, illustrated in the figure, describes the installation in a block of flats of five apartments with a size of 70 m² each, which is newly built, being renovated or involves the replacement of existing installations.

The production of domestic hot water is provided by one 500-litre monoblock Hot Water system, except for the energy supply required 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.



TWMB5 4502 A
DUCTED
500 litres



Calculation according to UNI TS 11300-2

 5

apartments

 500 L

total DHW
requirements per day

 50°C

water temperature
inside the tank

 40°C

water supply
temperature to
utilities

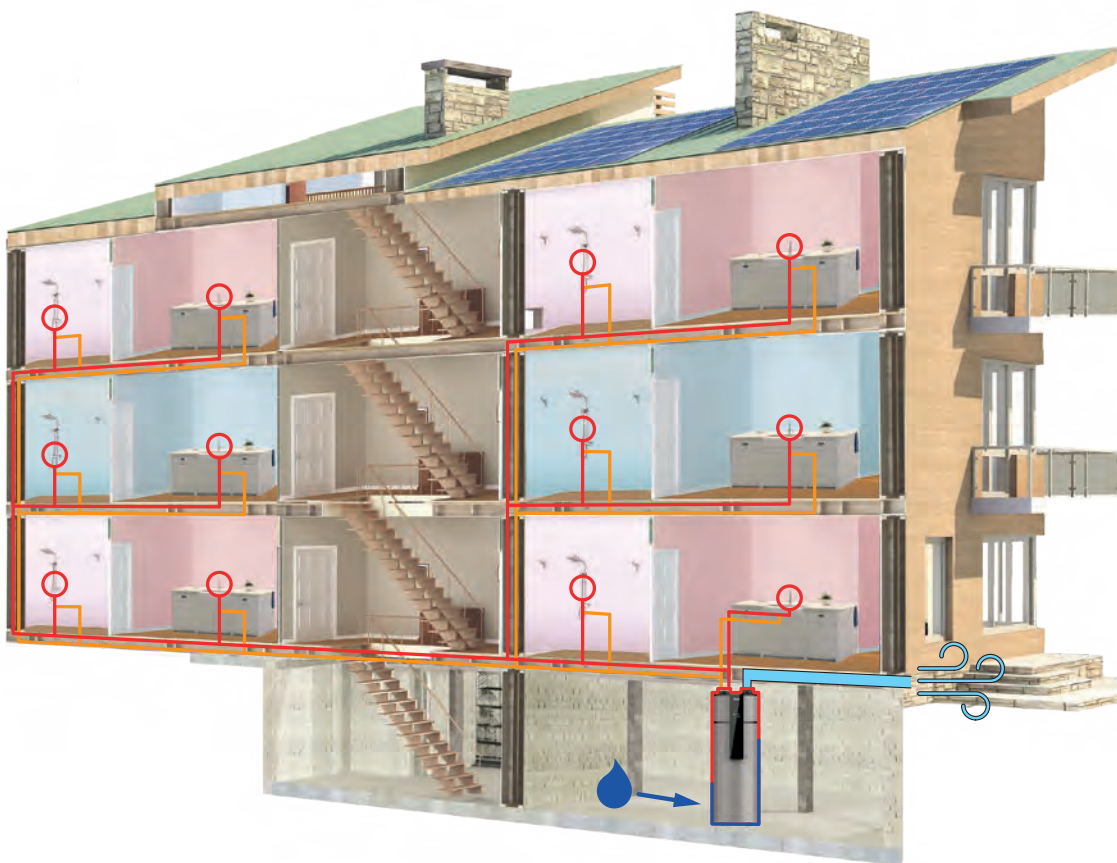
DHW with 500 L Hot Water **DUCTED** units for micro-apartment buildings with solar thermal energy

Description of the installation

The application type, illustrated in the figure, describes the installation in a block of flats of five apartments with a size of 70 m² each, which is newly built, being renovated or involves the replacement of existing installations.

The production of domestic hot water is provided by one 500-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 4502 HEA
DUCTED
500 litres



Calculation according to UNI TS 11300-2

 5

apartments

 500 L

total DHW
requirements per day

 50°C

water temperature
inside the tank

 40°C

water supply
temperature to
utilities

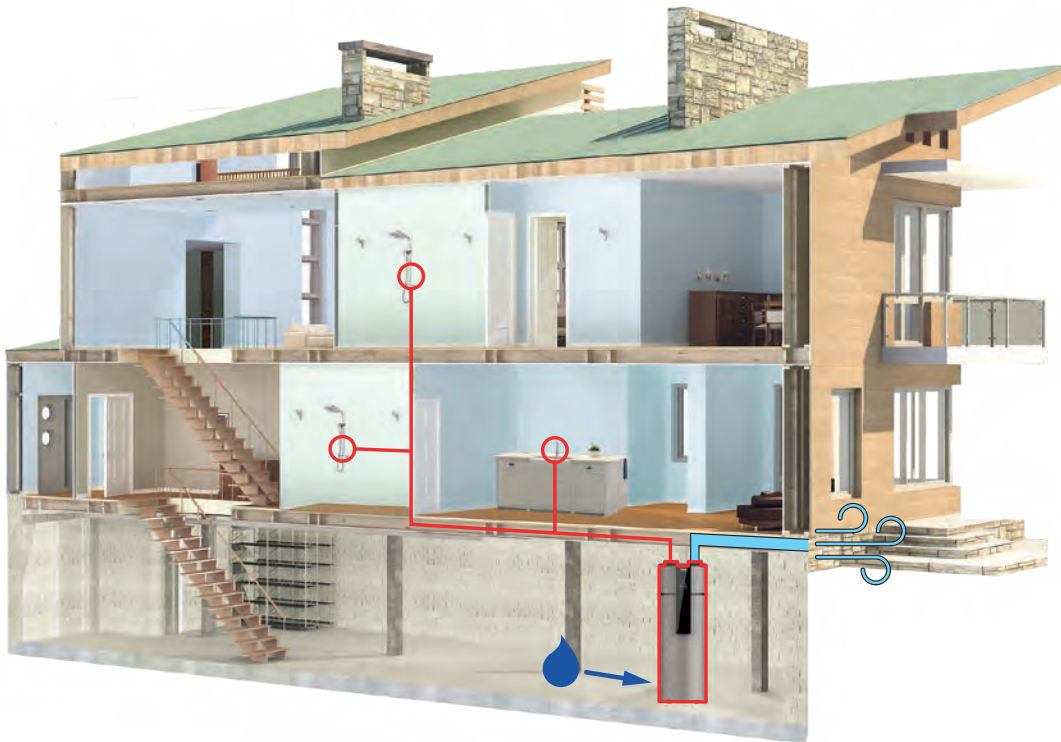
DHW with 200/300 L Hot Water **DUCTED** units for independent homes

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.

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.



TWMBS 2202-2302 A
DUCTED
200/300 litres



TWMBS 2202-2302 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 80 L Hot Water **DUCTED KITCHEN** units for independent homes

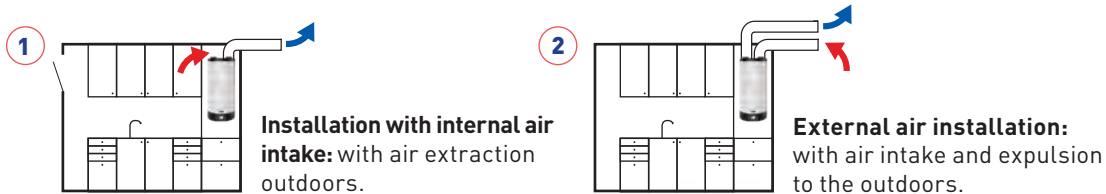
Description of the installation

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-litre 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
TWMBS 8080-D A
80 litres



 1
apartment

 1
bathrooms with
showers and
toilets

 1
family of 1/2
persons

 80 L
tank size

DHW with **DUCTED** 500 L Hot Water units for accommodation facilities (B&B); possible integration with solar thermal energy

Description of the installation

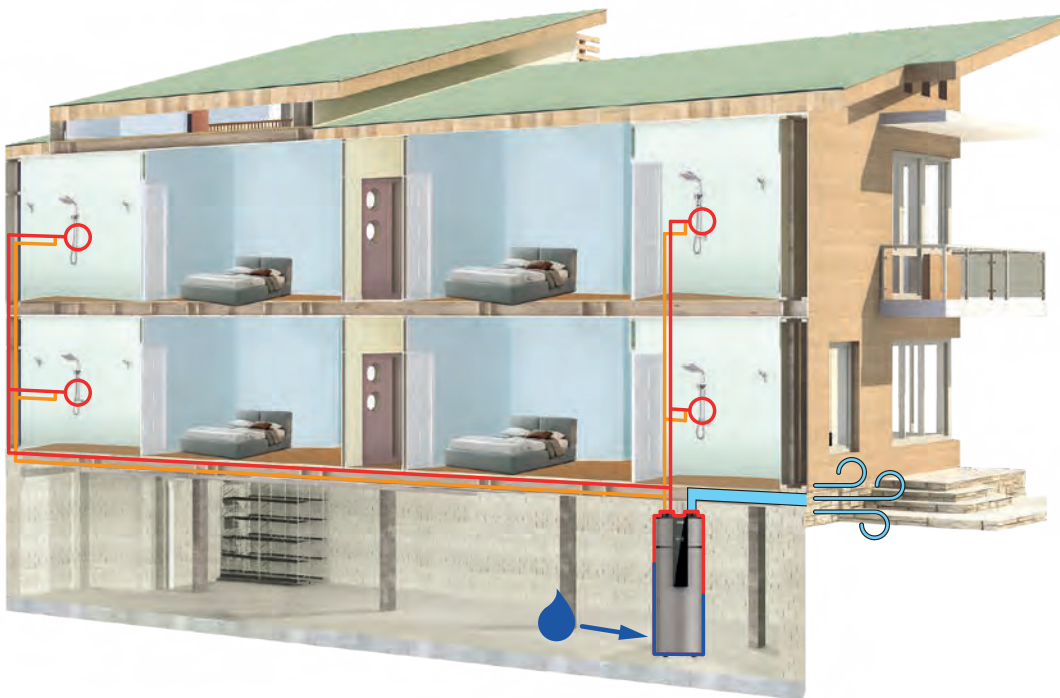
The demand for domestic hot water for medium/small accommodation facilities such as B&Bs is extremely variable depending on the occupancy of the facility. Water consumption is generally concentrated in the early morning and evening hours.

Assuming a facility consisting of five rooms, the requirement can be met with one 500-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.



TWMB5
4502 A
DUCTED
500 litres

TWMB5
4502 HEA
DUCTED
500 litres





Calculation according to UNI TS 11300-2

 5
rooms

 10
guests

 500 L
DHW requirements
per day

 50°C
DHW production
temperature in the
PDC tank

 40°C
water supply
temperature to
utilities

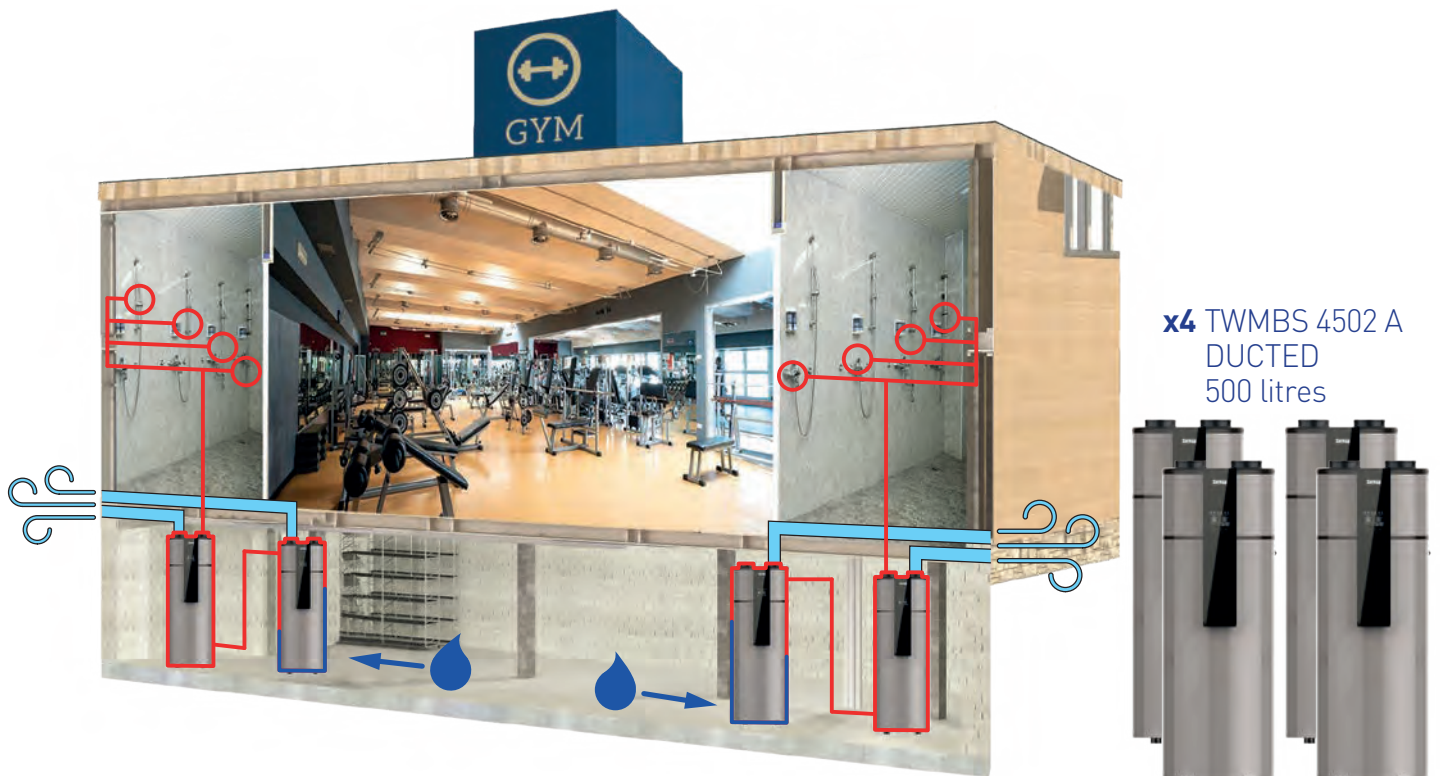
DHW with **DUCTED** 500 L Hot Water units for gyms

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 50 persons in this time slot, the hot water demand can be met with four 500-litre Hot Water units placed in series or in parallel for a total of 2,000 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

 80
users
(30 morning,
50 evening)

 40 L
requirements per person

 50°C
DHW production
temperature in the
PDC tank

 42°C
water supply
temperature to
utilities

 3200 L
total DHW
requirements per day

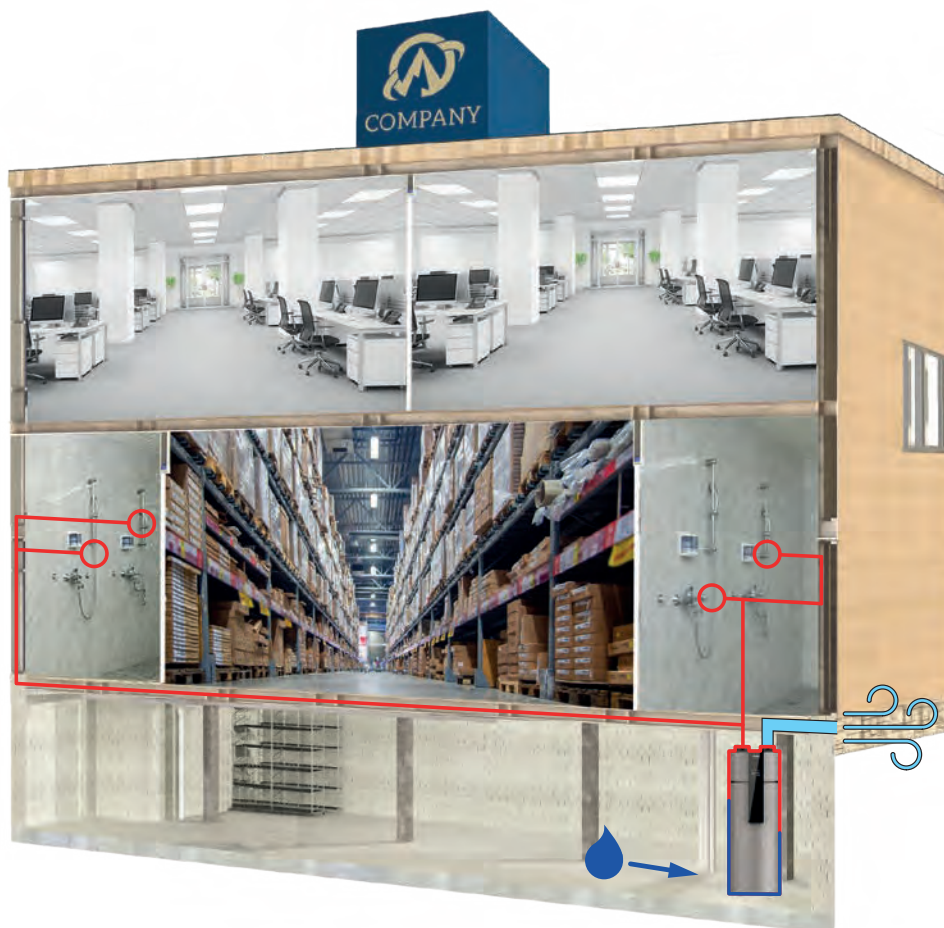
DHW with **DUCTED** 300 L Hot Water units for gyms or company changing rooms

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.



TWMBMS 2302 A
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

DHW with **DUCTED** 500 L Hot Water units 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 500-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.




 25
customers
per day

 20 L
requirements
per person

 500 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

200/300/500 litre

DUCTED series

- 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	4.16*	2.64**	2.20**
300	4.16*	2.69**	2.30**
500	4.02*	-	2.66**

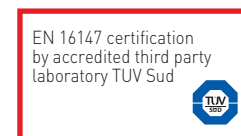
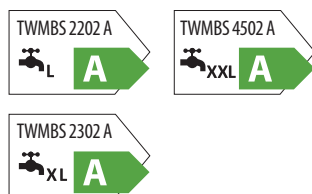
* Factory test with air intake 20°C DB(15° C WB), water inlet 15°C/outlet 55°C.

** Test according to EN 16147.



TWMB5 2202 A
TWMB5 2302 A
TWMB5 4502 A

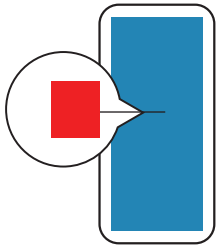
Energy class



Model		TWMB5 2202 A	TWMB5 2302 A	TWMB5 4502 A	
Tank volume	L	200	300	500	
Solar integration coil (stainless steel)	m ²	not present	not present	not present	
Rated thermal power ¹	W	2020	2020	3800	
Rated power consumption ¹	W	486	486	945	
Rated hot water production capacity ¹	L/h	43.2	43.2	81.7	
COP (rated) ¹	W/W	4.16	4.16	4.02	
COPDHW ²	W/W	2.64	2.69	2.66	
Test cycle profile ²	-	L	XL	XXL	
Volume of hot water at 40°C ²	L	251	380	594	
Energy Efficiency Class ³	-	A	A	A	
IP Degree of protection	-	IPX1	IPX1	IPX1	
Hot water T. adjustment interval	°C	10~70 (50 default)	10~70 (50 default)	10~70 (50 default)	
Maximum DHW temperature only compressor	°C	60	60	60	
Electrical data	Power	Ph-V-Hz	1-220~240V-50Hz		
	Integrative heating element	W	1500		
Refrigerant	Maximum current (including heating element)	A	10.00	13.00	
	Type (GWP) ⁴	-	R134a (1430)	R134a (1430)	
	Quantity	kg	0.80	0.80	
	Tons of CO2 equivalent	t	1.144	1.144	
Compressor	-	-	Rotary ON/OFF		
Dimensions	Unit ø x H	mm	560 x 1755	640 x 1850	
	Net weight	kg	90	100	
Sound power level	dB(A)	55	56	59	
Sound pressure level at 2 m	dB(A)	46	46	48	
Tank	Tank material	-	Stainless steel 304		
	DHW hydraulic connections	inches	G1" (DN25)	G1" (DN25)	
	Hydraulic solar coil connections	inches	-	-	
	Titanium anode	-	Titanium electrode with alarm LED		
	Maximum operating pressure	bar	10	10	10
Suctioned air	Operating range	°C	-5~+43		
	Rated flow (not ducted)	m ³ /h	400	400	800
	Air flow (ducted)	Pa	60	60	60
	Air duct - Diameter	mm	177	177	177
	Air duct - Length	m	6	6	6

1. Conditions: air intake 20°C DB (15°C WB), water inlet 15°C / outlet 55°C. 2. Test according to EN16147, air intake 15°C for 200 and 300 liter models; air 7° C for 500L model. 3. Directive 2009/125/EC - ERP EU No. 814/2013 (TUV Sud certification for all models). 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 CO₂, 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.

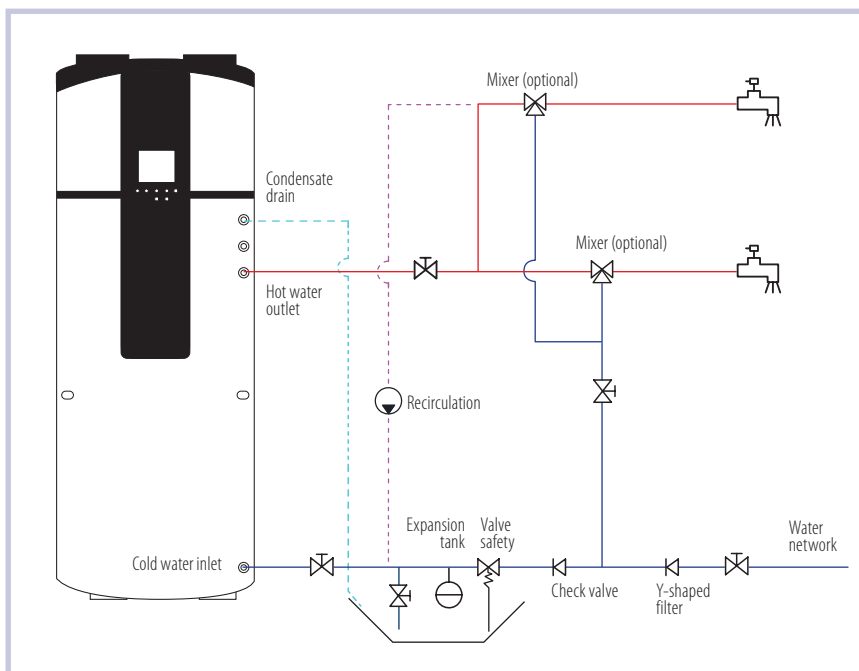
Comfort at home

- 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.

Hydraulic connections diagram



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.

Hot Water monoblock

200/300/500 litre **DUCTED** series

- with solar thermal energy



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

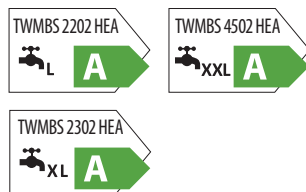
Capacity	Intake temperature (°C)		
	20	15	7
200	4.39*	-	2.61**
300	4.43*	-	2.68**
500	4.02*	-	2.66**

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

** Test according to EN 16147.

TWMS 2202 HEA
TWMS 2302 HEA
TWMS 4502 HEA

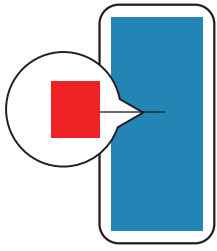
Energy class



Model		TWMS 2202 HEA	TWMS 2302 HEA	TWMS 4502 HEA
Tank volume	L	200	300	500
Solar integration coil (stainless steel)	m ²	1.0	1.0	1.0
Rated thermal power ¹	W	2040	2040	3800
Rated power consumption ¹	W	465	460	945
Rated hot water production capacity ¹	L/h	43.5	43.5	82.0
COP (rated) ¹	W/W	4.39	4.43	4.02
COPDHW ²	W/W	2.61	2.68	2.66
Test cycle profile ²	-	L	XL	XXL
Volume of hot water at 40°C ²	L	250	390	594
Energy Efficiency Class ³	-	A	A	A
IP Degree of protection	-	IPX1	IPX1	IPX1
Hot water T. adjustment interval	°C	10~70 (50 default)	10~70 (50 default)	10~70 (50 default)
Maximum DHW temperature only compressor	°C	60	60	60
Electrical data	Power	Ph-V-Hz 1-220~240V-50Hz		
	Integrative heating element	W	1500	
Refrigerant	Maximum current (including heating element)	A	10.00	13.00
	Type (GWP) ⁴	-	R134a (1430)	R134a (1430)
	Quantity	kg	1.0	1.0
	Tons of CO2 equivalent	t	1.430	1.430
Compressor	-	Rotary ON/OFF		
Dimensions	Unit ø x H	mm	560 x 1755	640 x 1850
	Net weight	kg	95	105
Sound power level	dB(A)	58.2	58.2	59.2
Sound pressure level at 2 m	dB(A)	37.8	37.8	37.2
Tank	Tank material	Stainless steel 304		
	DHW hydraulic connections	inches	G1" (DN25)	G1" (DN25)
	Hydraulic solar coil connections	inches	G3/4" (DN20)	G3/4" (DN20)
	Titanium anode	-	Titanium electrode with alarm LED	
Suctioned air	Maximum operating pressure	bar	10	10
	Operating range	°C	-5~+43	
	Rated flow (not ducted)	m ³ /h	400	400
	Air flow (ducted)	Pa	60	60
Air duct - Diameter	mm	177	177	177
	m	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 (TUV Sud certification for all models). 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 CO₂, 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.

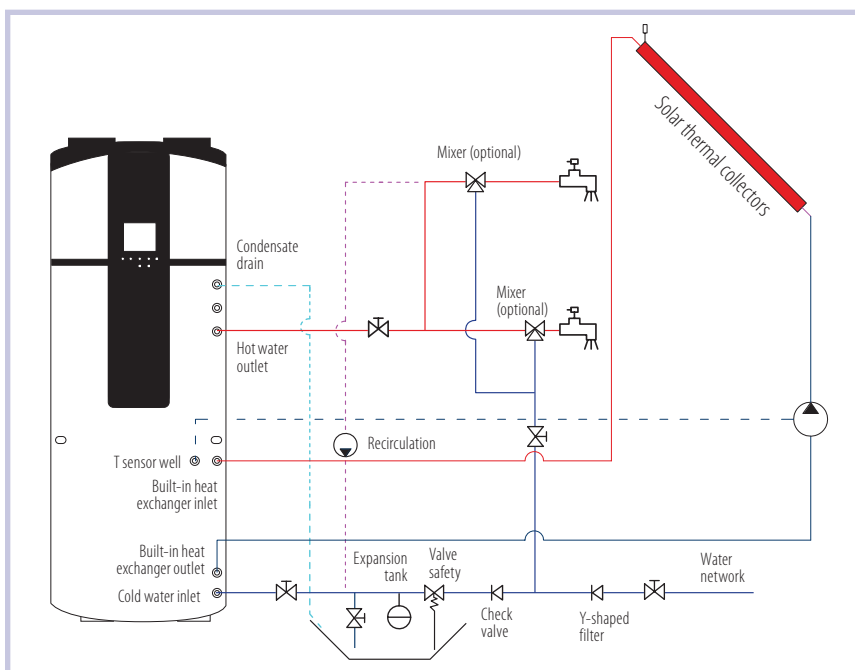
Safety

- 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



Hot Water

Hot Water monoblock 80 litre **DUCTED Kitchen** series

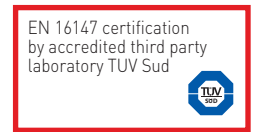
- Monoblock heat pump water heater, designed to be installed inside the tall cabinetry of the kitchen
- R134A refrigerant gas
- Magnesium anode
- Energy Efficiency Class **A++**
- COP 3.04*
- Hot water up to 60°C with compressor only
- Anti-Legionella cycle
- Outstanding corrosion resistance
- Exceptional resistance to corrosion thanks to **Duplex technology**

* According to EN 16147



TWMBS 8080-D A

Energy class



Model		TWMBS 8080-D A	
Tank volume	L	80	
Solar integration coil (Inox)	m ²	not present	
Nominal thermal output ¹	W	1050	
Nominal power consumption ¹	W	250	
Nominal DHW production capacity ¹	L/h	20	
Nominal COP ¹	W/W	4.2	
COPDHW ²	W/W	3.04	
Test cycle profile ²	-	M	
Warm-up time ²	hh:mm	03:42	
Hot water volume at 40°C ²	L	116	
Energy Efficiency Class ³	-	A++	
IP protection rating	-	IPX1	
Hot water T. adjustment range	°C	38~70 (50 default)	
Maximum hot water T. compressor only	°C	60	
Electrical data	Power supply	Ph-V-Hz	1-220~240V-50Hz
	Additional electric heating element	W	1500
	Maximum current (including heating element)	A	8.30
Refrigerant	Type (GWP) ⁴	-	R134a (1430)
	Quantity	kg	0.65
	Tonnes of CO2 equivalent	t	0.930
Compressor	-	Rotary ON/OFF	
Dimensions	Unit ø x H	mm	520 x 1160
	Net weight	kg	50
Noise power level	-	dB(A)	46
Noise pressure level at 2 m	-	dB(A)	31
Tank	Tank material	-	Duplex Stainless Steel
	DHW hydraulic connections	inches	G1/2" (DN15)
	Solar coil hydraulic connections	inches	-
	Type of anode	-	Magnesium bar
	Maximum operating pressure	bar	10
Intake air	Field of work	°C	-5~+43
	Air flow rate (with ducting)	m ³ /h	300
	Fan head	Pa	60
	Air ducting - Diameter	mm	120
	Air ducting - Maximum length	m	8

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 20°C.

3. Directive 2009/125/EC - ERP EU No. 814/2013 (TUV Sud certification). 4. 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 CO₂, 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.

ONSEN HEATERS

HEAT PUMP HEATERS FOR SWIMMING POOLS

**GAS
R32**

**QUICK
INSTALLATION**

**RUSTPROOF
ABS CASING**

5 single-phase models
1 three-phase model





The pleasure of swimming in a pool in all seasons

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

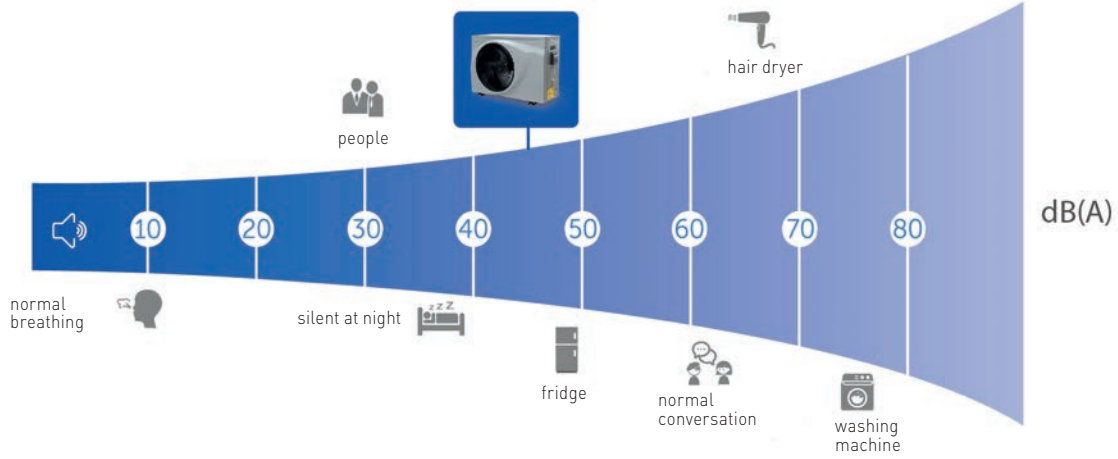
three-phase

TCPSS 3001 Z

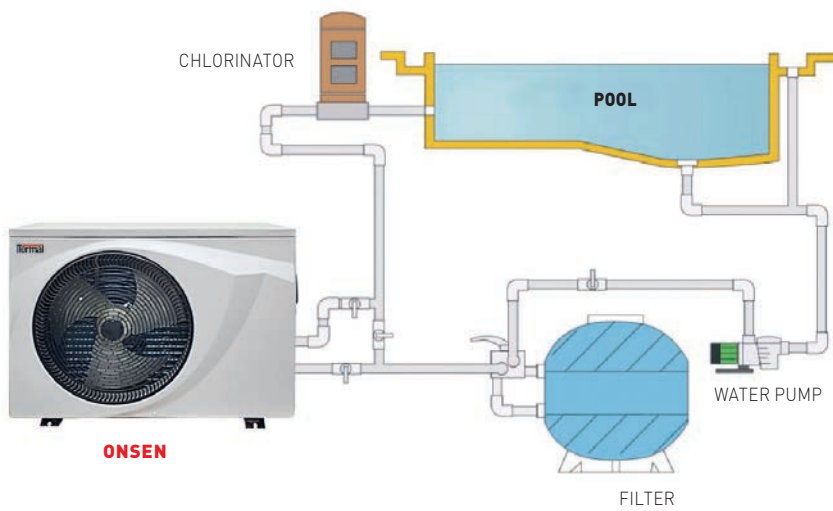
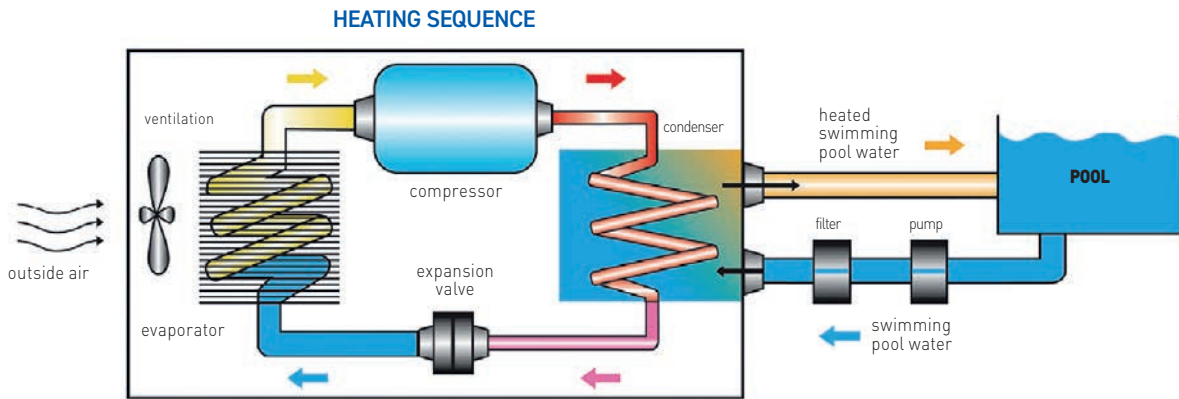


Model		TC PNS 701 Z	TC PNS 1001 Z	TC PNS 1301 Z	TC PNS 1701 Z	TC PNS 2101 Z	TC PSS 3001 Z
Air heating capacity 26°C, humidity 80%, water 26°C input, 28°C output							
Heating capacity	kW	7.76~1.76	10.55~2.40	13.61~3.09	17.15~3.88	21.41~4.85	30.05~6.84
Power consumption	kW	1.12~0.11	1.52~0.15	1.95~0.19	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
Air heating capacity 15°C, humidity 70%, water 26°C input, 28°C output							
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
Cooling capacity air 35°C, water 29°C input, 27°C output							
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.



HOT WATER AND ONSEN

HOT WATER AND SWIMMING POOL
HEAT PUMPS



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