



prana

The perfect formula

Air source, water source and brine source heat pumps optimized for geothermal applications.

Perfect
comfort

Reduced
energy costs

Free domestic
hot water production

Silent
operation

Pranda

The perfect formula

Perfect
Comfort

50%
Energy
costs

Ease of
Integration

nadisystem

60%
Emissions

Committed to achieve premium sustainability and efficiency targets, Prana is the new Climaveneta's heat pump range that utilise the energy contained in renewable resources to answer to the residential, small/medium office buildings heating requirements.

- ✓ -50% energy costs
- ✓ Extensive use of renewables
- ✓ Ease of installation and integration
- ✓ Silent operation
- ✓ Free domestic hot water production
- ✓ Profitable investment on your property

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		<p>Prana BWR DHW2 <u>pg. 56</u> Medium temperature reversible heat pump with total heat recovery, geothermal source. indoor installation 5,0 ÷ 34,0 kW</p>

Why the heat pump is the best solution for comfort and environment

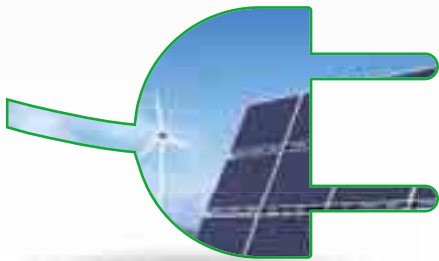


- 50% energy costs

Prana units are characterized by high efficiency thanks to the capability to take most of the energy for heating, cooling and domestic hot water production, directly from air, water and ground.

They employ the most advanced technologies, like the inverter driven compressors, fans and pumps, and an exclusive control system designed to ensure highest integration among the components of the system.

Advanced technological choices aimed at reducing energy costs of 50% when compared to traditional systems.



Extensive use of renewables

Heat pumps use the energy contained in renewable resources: sun, air, water and ground, with zero CO₂ emissions and no fossil fuel use.

The heat from the sun is clean and unlimited, making the heat pump a precious renewable source according to the RES European directive (Renewable Energy Source).



Cutting-edge technology

Technological advancements have recently led to the design of high efficiency heat pumps, which are 50% more efficient than those designed a few years ago. As a result, energy consumption has been reduced by half.

The heat pump is today a cutting-edge product that is becoming more and more efficient thanks to the adoption of advanced technologies such as the inverter compressor.

Over the last 30 years, Climaveneta has been focusing on research and development in order to design the best answer in terms of efficiency and reduced operating costs.

Installing a heat pump nowadays is the easiest and most efficient way to reduce costs and emissions of heating and air conditioning by simply using free energy from renewable resources such as air, water and ground.



- 60% Emissions on the air

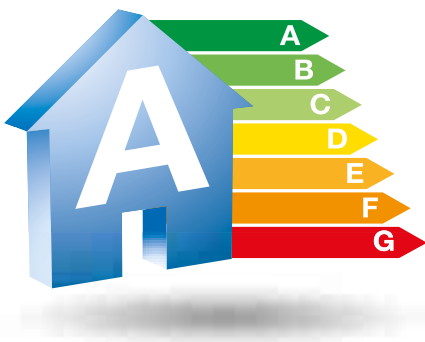
The heat pump provides the right answer to comfort buildings requiring green and sustainable targets in heating, cooling and hot water production.

The heat pump takes 75% of the energy directly from the environment, whereas only 25% of it is provided by the National power grid. The low energy consumption ensures a 60% reduction of CO2 emissions than traditional systems based on fossil fuel.



Comfort all year round

All year round comfort is guaranteed thanks to the installation of a single heat pump able to answer to the requirements of heating, cooling and hot water production in all seasons.



Profitable investment on your property

Compliance with increasingly strict energy consumption and environmental impact regulations, are becoming more and more crucial factors for real estate valuation.

Using PRANA in new buildings or in refurbishments is a simple and effective way to combine an improvement of the energy class of the building with an higher quality of comfort, enhancing the present and future value of the property.

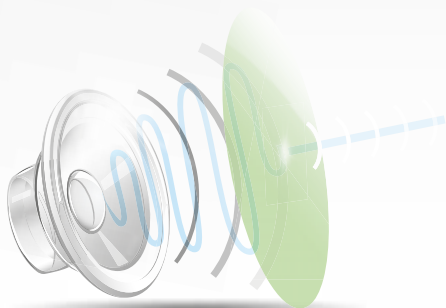
All the advantages of a new approach to heating and comfort



Free domestic hot water production

All units produce domestic hot water. Thanks to the exclusive total heat recovery system, domestic hot water is free in DHW2 models. During the cooling cycle, your system will remove heat and humidity from your home and will transfer this heat to the outdoor air.

During the heating cycle, your system will remove heat and humidity from the outdoor air and will transfer this heat to your home. When operating in cooling mode your system will cool fluids (e.g water in the hydronic systems) and then it will transfer the heat to another fluid, air, water or ground. Thanks to heat pump it is possible to avoid any heat waste, using this heat for the production of hot water.



Silent operation

Brilliantly engineered to achieve extremely low acoustical levels, silent operation is key in all PRANA units.

The adoption, in air source units, of low noise fans with continuous regulation guarantee minimum noise emissions. Compressors are jacked and insulated in order to reduce vibrations whereas dedicated acoustic panels in indoor units ensure the lowest noise emissions on the market.



Heating down to -20°C

Climaveneta has found the perfect solution for the operation of heat pumps in extreme weather conditions and the installation in harsh climate areas with outdoor temperatures down to -20°C.

PRANA's selection technological components and compressors ensures an efficient operation of heat pumps, which goes beyond the limits of the traditional units. This without using any other heating solution.

One single unit for any heating, cooling and domestic hot water requirement, with countless advantages from any point of view.

Ease of installation and complete reliability



PRANA units are plug&play and equipped with all the components necessary for an easy installation in each system type: from low temperature systems based on radiant floor or fancoils, to more traditional systems with radiators. Low maintenance is ensured by the use of sealed, factory-tested refrigerant circuits.



Integration among the components

Total reliability is always guaranteed by the installation of cutting-edge components and the introduction of a central control system that coordinates the different components of the system. This eliminates communication inefficiencies and simplifies the installation, reducing the number of checks.

All the models can be easily integrated with the existing heating system and with other renewable sources as solar systems, both thermal and photovoltaic.

The background of the page is a photograph of a natural landscape. The top half shows a bright blue sky with wispy white clouds. Below the sky is a dense line of green bushes and trees. In the lower right, a calm body of water reflects the sky. The overall scene is peaceful and natural.

Energy

sources

Air, water and ground are precious thermal sources.

Their use in heat pumps ensures reduced energy expenses and a complete sustainable system.

Heat pumps use a technology that allows to move thermal energy from a source with low temperature to a receiver with higher temperature.



Air

The use of the energy from the air can be the best solution for the production of domestic hot water, heating and cooling.

The PRANA new generation heat pumps use the energy taken from the air to heat even at low temperatures. High performances are increased by the adoption of Inverter technology (both in the i-NRG and i-KI(R) products).



Water

Rivers, ponds and also the sea are all important energy sources.

Thanks to the property of water to maintain a constant temperature, PRANA water heat pumps ensure the highest performances whilst cutting the energy consumption by 50%.



Ground

The ground stays at a fairly constant temperature under the surface, so the heat pump can be used throughout the year - even in areas with harsh winters.

The research into the thermal field has led to the development of heat pumps which are designed to adapt to every kind of soil. Prana is the most innovative solution in this field.

Ais solutions

Prana air-water heat pumps transfer the heat from the outside air to the indoor environment using water as exchange fluid.

Thanks to its unbeatable technological choices, air source PRANA heat pumps provide excellent performances even at extremely low temperatures.

Thermal energy in the air is particularly high, even in winter and on cold nights. The heat pump uses this energy to provide heating to generate hot water for domestic use.

The reversible units also provide cooling by absorbing the heat from the indoor environment and by releasing it to the outdoor environment.

Air source heat pumps do not have additional installation costs because they do not require excavation activities to install them.

The use of a single solution able to answer to all the building requirements makes PRANA air source units the best solution for all comfort applications.

Air solutions



Reversible air/water heat pump with DC Inverter compressor, production of hot domestic water and total heat recovery. Indoor and outdoor installation.



AWR DHW2 XE
Reversible air/water heat pump with production of hot domestic water and total heat recovery. Outdoor installation.



Medium temperature reversible or heating only heat pump with DC inverter compressor, air source. Outdoor installation



Reversible or heating only heat pump with DC inverter compressor, air source, for outdoor installation



AWR MTD2 XE
Air/water reversible heat pump for water heating up to 58°C and operating limits down to -15°C external air temperature and domestic hot water production. Outdoor installation.



AW HT
Air/water only heating heat pump, for water heating up to 65°C and operating limits down to -20°C. Outdoor installation.

The water is a precious energy source because it ensures better performances (COP and EER) than other solutions, with extremely low costs.

The water is a precious energy source because it ensures premium energy efficiency levels but a very low initial investment.

In this system the exchange of heat is possible thanks to two wells, one for the water extraction and the other for draining. Simple in design and operation but able to provide a significant number of advantages, these ground water systems are highly efficient, even if they have some prerequisites.

First of all, installers need to observe local laws and regulations on the extraction capacity and the temperature variation of the water that returns to the soil.

The distance between the dewatering and immersion wells should be at least 10-15 m and the characteristics of the water must accurately follow the technical instructions included in the technical bulletins and manuals.

Furthermore, it is extremely important that the amount of water is enough; this can be easily calculated before the system is installed.

Water solutions



WWR MTD2

Reversible water/water heat pump for water heating up to 55°C and domestic hot water production. Indoor installation.



WWR DHW2

Reversible water/water heat pump domestic hot water production. Indoor installation.





Water


solutions

Rivers, ponds and groundwater below the surface provide an important renewable source of energy, thanks to the properties of water to maintain a stable temperature all year round.



Geothermal solutions

Geothermal heat pumps use the ground as a heat source, because even a few meters below the surface the ground temperature is constant all year round.



The heat extraction and release from the ground can be used to heat, cool and supply domestic hot water. The efficiency of this system is 4 times higher than the electrical absorption.

The exchange of heat is guaranteed by horizontal and vertical loops. The loop system consists of a grid of polyethylene pipes where a thermal fluid composed of water and glycol flows in a closed circuit.

This circulating fluid is an antifreeze solution. Different kinds of loops are available in order to meet the requirements of different plants.

Geothermal loops can be divided as follows:

- **Horizontal loops** are buried horizontally a few of meters below the surface.
- **Vertical loops** are inserted vertically into the soil when there are limited spaces.

Geothermal solutions



BWR MTD2

Reversible heat pump, geothermal source, for water heating up to 55°C and domestic hot water production. Indoor installation.



BWR DHW2

Reversible heat pump, with domestic hot water production and total heat recovery. Indoor installation.

Horizontal loops



Horizontal loops require a greater amount of land surface area but they are less expensive to install.

Horizontal loops are laid in trenches, typically at a depth of 1 - 1.5 m.

They usually require a land surface area which is 2.5 - 3 times bigger than the area that needs to be cooled. In summer the requested land surface area could be even bigger. Alternatively, a series of pipes can be buried in a trench. In this case the geothermal exchanger grows in length.

The most used systems are the 'Slinky' exchangers, which have a double loop system with 4 pipes. They are buried at a depth of 2.5 - 3m. The pipes can be either PP or PE80 when installed on the surface and they have a diameter of DN25, DN32.

The amount of heat that can be extracted ranges from 10 to 15 W/m² (indicative values) but they can reach higher values in sandy soils, water soils or soils affected by high solar radiation. The values depend, even if partially, on the temperature of the air.

Vertical loops



Vertical loops allow the heat pump to use the energy from a ground source, where the temperature is constant throughout the year, with great benefits in terms of cost reduction.

Vertical loops are generally considered when the available land area is limited. Wells are bored to depths around 100 m in order to reduce the pumping power and increase the efficiency of the system.

Vertical loops can reach depths around 200m if the tools and machinery are suitable and the staff is highly-skilled.

The loops are double U-shaped in PE 100 with DN32 (the most common) and DN40 diameter.

In order to avoid thermal interference, bore holes are spaced at least 8-10m apart and the number of loops depends on the area and the thermal or cooling power.

Once the loops are installed, the borehole is commonly filled with bentonite grout - and eventually quartz sand, to increase the thermal conductivity.

The thermal performance of the loop and the optimal operation of the system also depends on the grouting.

The appropriate grouting avoids any interference between subsurface water spaces where the loops are installed.

The performance, which is calculated in Watt (W) per meter, usually is 50 W/m (the standard value included in the VDI4640 directive).

nadisystem



- Back-lit display complete with remote temperature and humidity probe.

- User-friendly management of the system

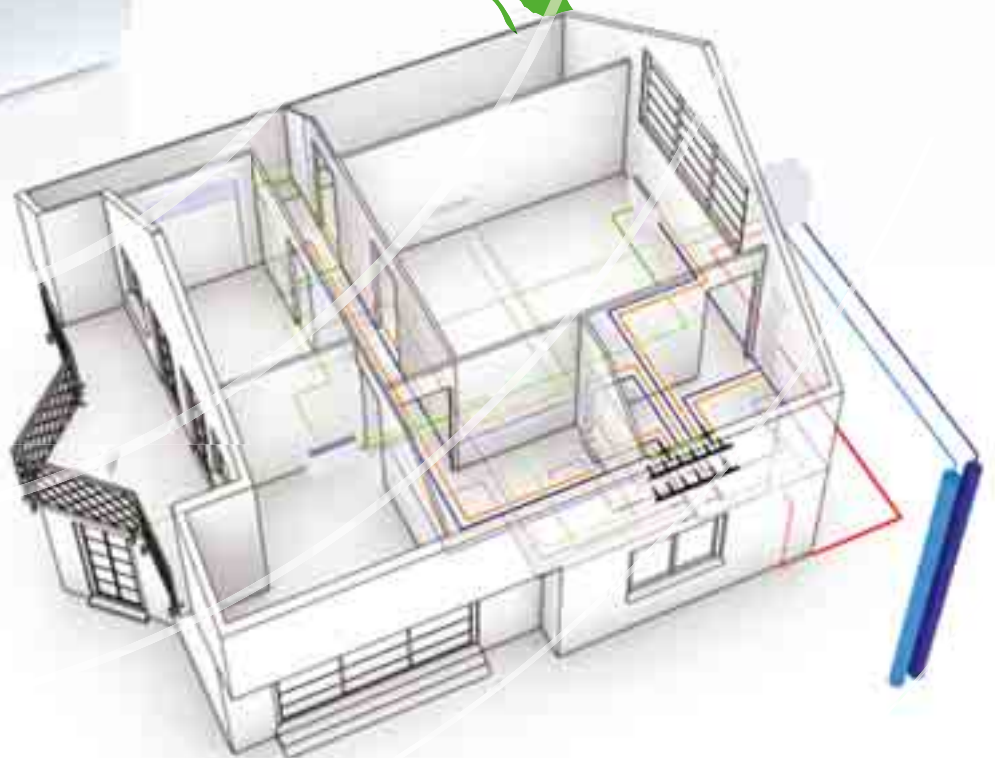
- Customised management

- Time bands programming

- Up to 4 heat pumps in cascade

- Domestic hot water production

- Better Technical Assistance



The new electronic controller that ensures greater interaction among the components of the systems.

Temperature control

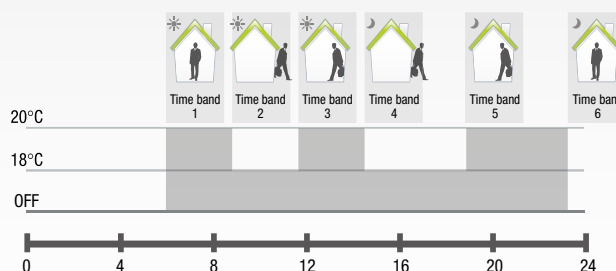
NADISYSTEM ensures dynamic control of water outlet temperature according to real needs in the building and the outside air temperature, optimising comfort and reducing wasted energy. The introduction of a single integrated control system for the coordination among the different system components, eliminates inefficiencies in communication, simplifying installation and reducing the number of controllers.

The remote keypad supplied with the unit can be used to freely set the room temperature, humidity, operating mode, domestic hot water production and operating times for each zone. In summer the correct outlet temperature is guaranteed by the calculation of the dew point.

Time bands programming

A timer is available to customise differentiated activation and deactivation for each individual zone of the system, creating an operating profile with up to 6 daily time bands.

The time bands programming ensures to choose different temperatures according to different time.

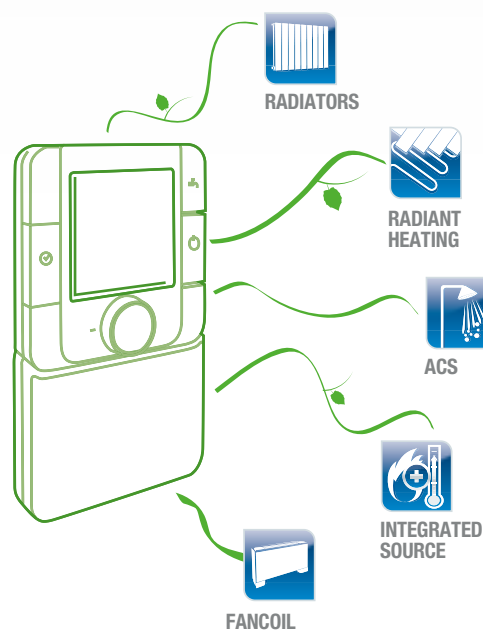


Smart management of the sources

Nadisystem integrates different energy sources. Energy is only consumed when necessary and the use of energy sources is based on availability, efficiency and cost, giving priority to renewable sources, where available. The supplementary sources are used to meet the building requirements at low outside temperatures by supplementing the heating capacity of the heat pump. System operation can be distinguished as monovalent, electric or bivalent. The controller can activate the external source to achieve one of the functions listed above.

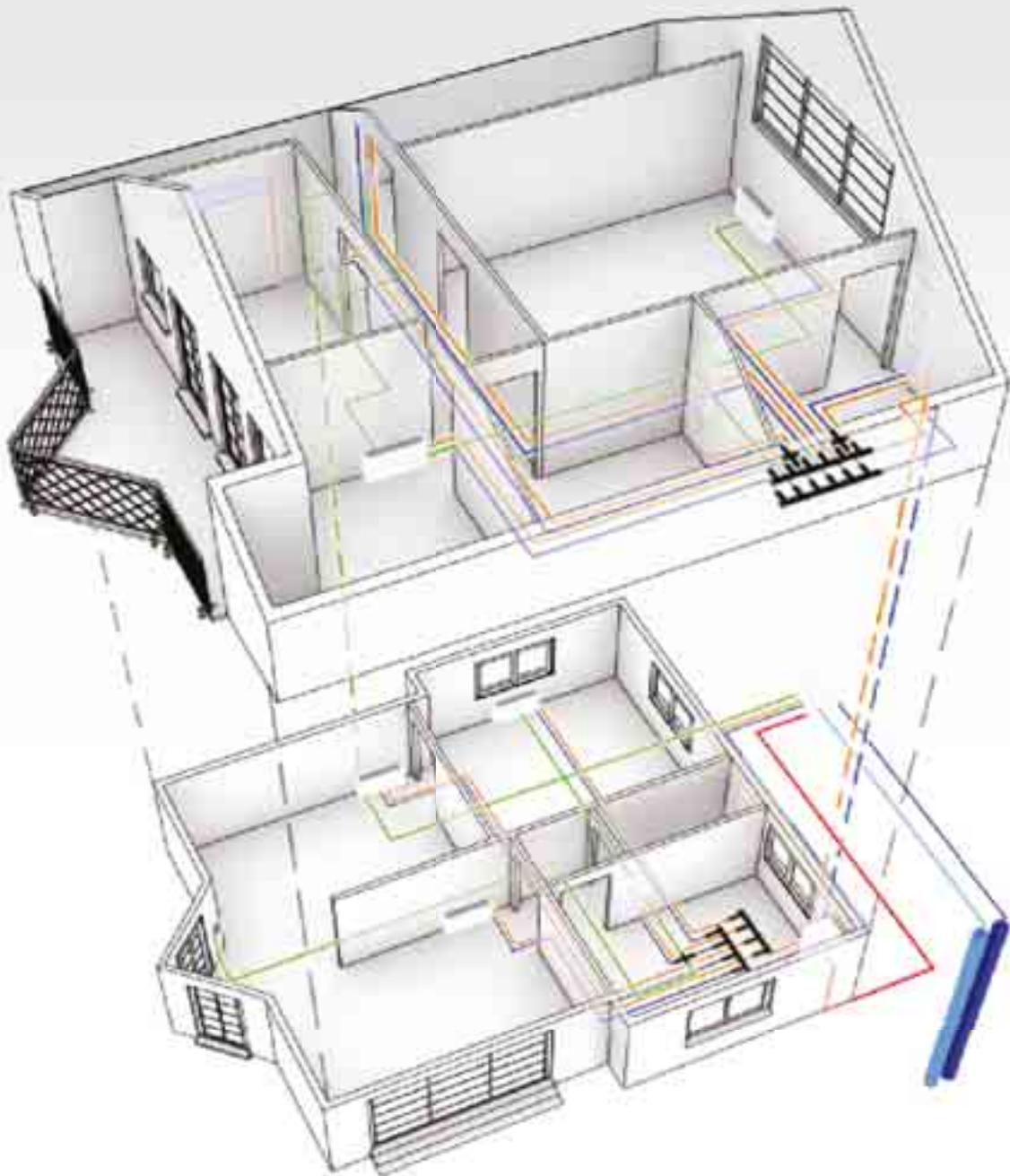
System management

The NADISYSTEM control system for residential applications ensures high operating flexibility by controlling the secondary circuits, that is, activating zone pumps and valves depending on the room temperature set on the remote keypad, and by controlling mixing valves to ensure the correct water temperature in radiant systems according to the climate conditions set for each circuit. There are 15 different types of pre-configured systems for quick and easy installation, with the possibility to manage up to 5 remote keypads for controlling thermal load in likewise zones. Moreover, the cascade connection of up to 4 heat pumps ensures fine control over the capacity delivered, without decreasing performance, and more precise system sizing.



The solutions

Specific types of units designed for different heating and cooling requirements.



A wide range of products is the best choice for different types of plants: high temperature units optimised for heating (HT), reversible medium temperature units (MTD) and units with total heat recovery for the supply of domestic hot water (DHW).

Prana DHW



Reversible units that use total heat recovery to supply free domestic hot water.

In cooling mode, when the fluid is cooled, the heat rejected from the unit exchanges with another source either from air, water or ground.

The rejected heat is not wasted but recovered to produce domestic hot water.



i-NRG



AWR DHW2 XE



WWR DHW2



BWR DHW2

Prana MTD



Reversible medium temperature units for hot water production up to 60°C and domestic hot water as a priority.

Ideal for heating and cooling using one single unit, they are particularly suitable for radiator systems.

Available in either water source, geothermal or air source models, with operating limits down to -20°C external air temperature.



i-KIR2-MTD



i-KI MTD / i-KIR MTD



AWR MTD2 XE



WWR MTD2



BWR MTD2

Prana HT



High temperature units optimized for heating and domestic hot water supply as priority.

The units assure hot water production up to 65°C and operating limits down to -20°C.

They are the best solution with traditional heating systems such as radiators and they also guarantee good performances if combined with radiator systems.



AW HT

The range

Prana

The perfect formula



Air solutions

Prana air source heat pumps transfer the heat from the external air using water as exchange fluid.

- ✓ Simplified installation



i-NRG



Reversible air/water heat pump with DC Inverter compressor, production of hot domestic water and total heat recovery.



i-KIR2-MTD



Reversible or heating only heat pump with DC inverter compressor, air source, for outdoor installation.



Water solutions

Prana water source heat pumps use water from aquifer.

- ✓ Highest energy efficiency



WWR MTD2



Reversible water/water heat pump for water heating up to 55°C and domestic hot water production.



WWR DHW2



Reversible water/water heat pump domestic hot water production.

Hydronic Terminals Residential and commercial terminals

Wide range of hydronic terminals for different space requirements.

- ✓ High environment comfort
- ✓ Maximum versatility and configurability



MHD2



Hi-wall type terminal



a-CHD / i-CHD



Cassette type terminal

Controls

Management and control systems

Systems and devices to control and manage components.

- ✓ Great flexibility
- ✓ Real increase in comfort levels
- ✓ High reduction of wastes



nadisystem

Electronic device for the control and management of components. (Nadisystem is included in the corresponding unit).

Perfect
Comfort

50%
Energy
costs

Ease of
Integration
nadisystem

60%
Emissions



AWR DHW2 XE



Reversible air/water heat pump with production of hot domestic water and total heat recovery.



AWR MTD2 XE



Air/water reversible heat pump for water heating up to 58°C and operating limits down to -15°C external air temperature and domestic hot water production.



i-KI MTD /i-KIR MTD



Medium temperature reversible or heating only heat pump with DC inverter compressor, air source, for outdoor installation.



AW HT



Air/water only heating heat pump, for water heating up to 65°C and operating limits down to -20°C.



Geothermal solutions

Prana geothermal heat pumps transfer the heat from the earth through horizontal or vertical probes.

- ✓ Highest energy efficiency
- ✓ Lowest environmental impact



BWR MTD2



Reversible heat pump, geothermal source, for water heating up to 55°C and domestic hot water production.



BWR DHW2



Reversible heat pump, with domestic hot water production and total heat recovery.



i-LIFE2



High efficiency professional fan-coil powered by modulating speed centrifugal fan, with cabinet or in-built version.



a-LIFE2 HP



High head fan-coil for professional application, in-built version



a-LIFE2



Professional fan-coil, with cabinet or in-built version.



i-LIFE Slim



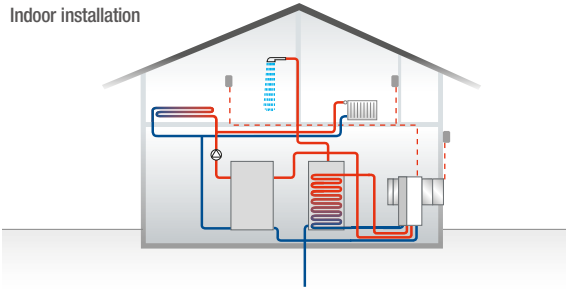
Residential fan-coil, with inverter motor and tangential fan.



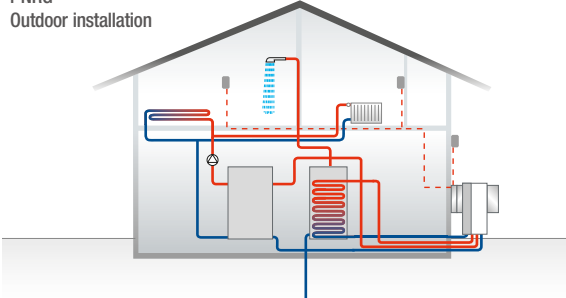
IDRORELAX

Measurement & Verification Device

i-NRG
Indoor installation



i-NRG
Outdoor installation



nadisystem

Remote keypad with
temperature and
humidity probe



Versions



i-NRG

Reversible heat pump with inverter compressor, total heat recovery, air source for indoor/outdoor installation.

Unit description

The new i-NRG heat pump provides exactly the energy required by the system, perfectly following the real load of the building, thanks to the modulation of the DC inverter fan. One single unit for the highest efficiency, sustainability and huge savings, thanks to the advantages of DC frequency driven fans and circulating pumps (inverter) for both plant and domestic hot water circuits. i-NRG is the new generation heat pump for all year round operation in any operating mode: single cycle (air conditioning, heating, domestic hot water) as well as combined cycle in total heat recovery (domestic hot water together with cooling). Domestic hot water production is guaranteed by the dedicated exchanger for heat recovery: total, for free domestic hot water production, or partial. Domestic hot water is stored in a properly dimensioned storage tank. The unit can be installed indoor or outdoor, thus ensuring complete flexibility. Extended operating limits for all year, specially in heating:

- Maximum flow temperature 60°C
- Maximum external air temperature 45°C
- Minimum external air temperature -15°C

Controls

Electronic control Nadisystem provides great application flexibility. The remote keyboard kit wired and outdoor air temperature sensors ensure a dynamic control of delivery water temperature, optimising comfort in the room and increasing the energy efficiency.

The electronic board allows you to manage:

- wired remote control with backlit display and remote temperature/humidity probe
- outdoor temperature probe for water plant side modular set point compensation
- a zone of direct heating for serving the radiator, floor heating or fancoil
- a zone with mix valve for floor heating
- electrical heating device for possible integration and anti-legionella cycle for cylinder
- boiler or electric heater in substitution or in addition
- the room controller can customise up to six time bands. The presence of the programmable timer allows the creation of an operating profile containing up to 6 time bands
- up to 4 heat pumps in cascade (with N-CM component)
- several solutions through appropriate configuration of the controller and use of dedicated extension modules (optional), up to 5 zones

Features

- Structure and base in hot galvanised epoxy powder coated steel.
- High efficient stainless steel (AISI 316) plate to plate exchanger (at the domestic hot water side), with low pressure drop. It is positioned next after the compressor, it ensures the domestic hot water production. That can work either in full recovery or in part, with the constant optimization of efficiency through logic advanced adjusting controller.
- High efficient plant side plate exchanger of stainless steel AISI 316 with low pressure drop. It meets the supply of both hot or cold water for the facility, regardless of the domestic hot water.
- DC inverter scroll compressor with self-adaptive capacity adjustment. Reduced inrush current due to modulation by an inverter.
- Electronic expansion valve.
- Finned coils made with copper pipes and aluminium fins with large exchange surface area (100% fully quality tested).
- Axial electric fan in continuous current housed in aerodynamic conveyor profile with safety grill.
- Low external air temperature device: continuous fan speed regulation with pressure switch.
- The water circuit comes complete with:
 - Variable flow circulator plant side, the curves are selected by control, energy efficiency class A
 - Variable flow circulator domestic hot water side, energy efficiency class A
 - Expansion tank.
 - Safety valve.
 - Pressure switch, system side.
 - Pressure gauge.
 - Manual filling assembly.

Main accessories

- Wired room terminal with backlit display and temperature and humidity probe
- Extension module for system configuration
- Acoustic insulation casing kit (MANDATORY for outdoor installation)
- Kit of rectangular air ducts and grills for indoor installation
- Electric heater for the heating system
- Electric heater for hot water cylinder and for anti-legionellosis
- Cascade management kit
- Serial card RS485 for ModBus
- Buffer tank 35,100,200 liters
- Hot water cylinder 300,500 liters
- 300 litres thermal store for domestic hot water, for DOMH20 kit
- 300,500,1000 litres thermal store for domestic hot water with solar heat exchanger, for kit DOMH20
- DOMH2015 e DOMH2024 kit for domestic hot water with external heat exchanger plate-to-plate and pump

Reversible heat pump with DC inverter compressor and total heat recovery, air source, for indoor/outdoor installation 14,7 kW



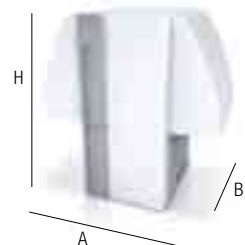
APPLICATION HYDRONIC TERMINAL

i-NRG		0061m		0061t	
Power supply	V/ph/Hz	230/1/50	400/3/50		
COOLING ONLY (GROSS VALUE)					
Cooling capacity	(1)	kW	14,7	14,7	
Total power input	(1)	kW	5,10	5,10	
EER	(1)	kW/kW	2,88	2,88	
ESEER	(1)	kW/kW	4,47	4,33	
COOLING ONLY (EN14511 VALUE)					
Cooling capacity	(1)(2)	kW	14,7	14,7	
EER	(1)(2)	kW/kW	2,85	2,85	
ESEER	(1)(2)	kW/kW	4,24	4,20	
HEATING ONLY (GROSS VALUE)					
Total heating capacity	(3)	kW	15,7	15,7	
Total power input	(3)	kW	4,80	4,70	
COP	(3)	kW/kW	3,27	3,34	
HEATING ONLY (EN14511 VALUE)					
Total heating capacity	(2)(3)	kW	15,7	15,7	
COP	(2)(3)	kW/kW	3,21	3,28	
COOLING WITH TOTAL HEAT RECOVERY					
Cooling capacity	(4)	kW	13,7	13,8	
Total power input	(4)	kW	4,40	4,40	
Recovery heat exchanger capacity	(4)	kW	17,9	18,0	
TOTAL RECOVERY ONLY					
Total heating capacity	(3)	kW	15,7	15,7	
Total power input	(3)	kW	4,80	4,70	
SEASONAL EFFICIENCY IN HEATING (EN14825 VALUE)					
PDesign	(5)	kW	11,2	11,2	
SCOP	(5)		3,80	3,74	
Performance η_{s} (Reg. 811/2013 UE)	(5)	%	149	147	
Seasonal efficiency class (Regulation (UE) 811/2013)	(5)		A+	A+	
EXCHANGERS					
HEAT EXCHANGER USER SIDE IN REFRIGERATION					
Water flow	(1)	m ³ /h	2,53	2,53	
Available unit's head	(1)	kPa	89,2	89,2	
HEAT EXCHANGER USER SIDE IN HEATING					
Water flow	(3)	m ³ /h	2,73	2,73	
Available unit's head	(3)	kPa	84,3	84,3	
HEAT EXCHANGER RECOVERY USER SIDE IN REFRIGERATION					
Water flow	(4)	m ³ /h	3,10	3,12	
Pressure drop	(4)	kPa	37,3	37,8	
HEAT EXCHANGER RECOVERY USER SIDE IN HEATING					
Water flow	(4)	m ³ /h	2,68	2,68	
Pressure drop	(4)	kPa	27,9	27,8	
COMPRESSORS					
No. Compressors	N°		1	1	
No. Circuits	N°		1	1	
NOISE LEVEL					
Sound power level in cooling	(6)(7)	dB(A)	68	69	
Sound power level in heating	(6)(8)	dB(A)	69	70	
Noise Pressure	(9)	dB(A)	52	53	
SIZE AND WEIGHT					
A	(10)	mm	750	750	
B	(10)	mm	1050	1050	
H	(10)	mm	1600	1600	
Operating weight	(10)	kg	260	260	

Notes

i-NRG

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511-3:2013.
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (auxiliary side) heat exchanger recovery water (in/out) 45°C/50°C.
- Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (UE) N. 811/2013]
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.



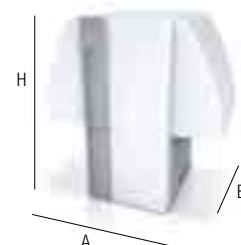
APPLICATION FLOOR HEATING

i-NRG			0061m	0061t
Power supply		V/ph/Hz	230/1/50	400/3/50
COOLING ONLY (GROSS VALUE)				
Cooling capacity	(1)	kW	19,7	19,7
Total power input	(1)	kW	5,38	5,38
EER	(1)	kW/kW	3,66	3,66
ESEER	(1)	kW/kW	4,47	4,33
COOLING ONLY (EN14511 VALUE)				
Cooling capacity	(1)(2)	kW	19,7	19,7
EER	(1)(2)	kW/kW	3,61	3,61
ESEER	(1)(2)	kW/kW	4,24	4,20
HEATING ONLY (GROSS VALUE)				
Total heating capacity	(3)	kW	16,2	16,3
Total power input	(3)	kW	4,02	3,96
COP	(3)	kW/kW	4,03	4,12
HEATING ONLY (EN14511 VALUE)				
Total heating capacity	(2)(3)	kW	16,2	16,2
COP	(2)(3)	kW/kW	3,96	4,03
COOLING WITH TOTAL HEAT RECOVERY				
Cooling capacity	(4)	kW	19,0	19,2
Total power input	(4)	kW	4,35	4,35
Recovery heat exchanger capacity	(4)	kW	23,1	23,3
TOTAL RECOVERY ONLY				
Total heating capacity	(3)	kW	16,2	16,3
Total power input	(3)	kW	4,02	3,96
SEASONAL EFFICIENCY IN HEATING (EN14825 VALUE)				
PDesign	(5)	kW	11,2	11,2
SCOP	(5)		3,80	3,74
Performance η_s (Reg. 811/2013 UE)	(5)	%	149	147
Seasonal efficiency class (Regulation (UE) 811/2013)	(5)		A+	A+
EXCHANGERS				
HEAT EXCHANGER USER SIDE IN REFRIGERATION				
Water flow	(1)	m ³ /h	3,39	3,39
Available unit's head	(1)	kPa	65,1	65,2
HEAT EXCHANGER USER SIDE IN HEATING				
Water flow	(3)	m ³ /h	2,81	2,82
Available unit's head	(3)	kPa	82,1	82,0
HEAT EXCHANGER RECOVERY USER SIDE IN REFRIGERATION				
Water flow	(4)	m ³ /h	4,02	4,05
Pressure drop	(4)	kPa	62,6	63,4
HEAT EXCHANGER RECOVERY USER SIDE IN HEATING				
Water flow	(4)	m ³ /h	2,68	2,68
Pressure drop	(4)	kPa	27,9	27,8
COMPRESSORS				
No. Compressors		N°	1	1
No. Circuits		N°	1	1
NOISE LEVEL				
Sound power level in cooling	(6)(7)	dB(A)	68	69
Sound power level in heating	(6)(8)	dB(A)	69	70
Noise Pressure	(9)	dB(A)	52	53
SIZE AND WEIGHT				
A	(10)	mm	750	750
B	(10)	mm	1050	1050
H	(10)	mm	1600	1600
Operating weight	(10)	kg	260	260

Notes

I-NRG

- Plant (side) cooling exchanger water (in/out) 23°C/18°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511-3:2013.
- Plant (side) heat exchanger water (in/out) 30°C/35°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Plant (side) cooling exchanger water (in/out) 23°C/18°C; Plant (auxiliary side) heat exchanger recovery water (in/out) 45°C/50°C.
- Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (UE) N. 811/2013]
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.



Reversible heat pump with DC inverter compressor and total heat recovery, air source, for indoor/outdoor installation, 14,7 kW



$$\beta = \frac{x+3=51}{\sqrt{1-\frac{v^2}{c^2}}}$$

$$9-y=7$$

$$52-x^2+y=? \quad x(x-1)=x^2-1$$

$$\frac{\partial^2 \varphi}{\partial t^2} = -\omega^2 \Delta \varphi$$

$$\sqrt{64} \cdot \frac{1}{290}$$

$$\frac{\partial^2 \varphi}{\partial t^2} = -\omega^2 \Delta \varphi$$

$$\beta = \frac{x+3=51}{\sqrt{1-\frac{v^2}{c^2}}}$$



$$x(x-1)=x^2-1$$

$$x+3=5$$

$$x(x-1)=x^2-1$$

$$-8=2 \cdot x \quad y=yx^2$$

$$E=mc^2$$

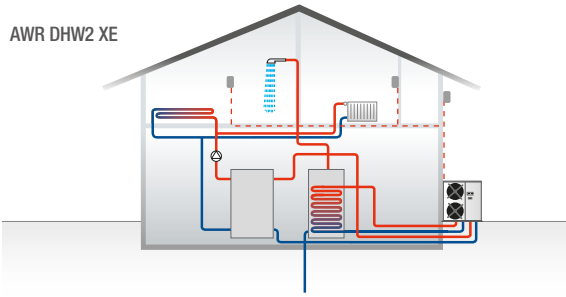
$$-8=2 \cdot x \quad y=yx^2$$

$$\frac{1}{290} \quad 52-x^2+y$$



prana AWR DHW2 XE

AWR DHW2 XE



nadisystem

Remote keypad with temperature and humidity probe



Versions



AWR DHW2 XE - B

Reversible air/water heat pump with production of hot domestic water and total heat recovery.



AWR DHW2 XE - SL

Reversible air/water heat pump with production of hot domestic water and total heat recovery. Super-low noise version.

Unit description

PRANA DHW is the new HIGH EFFICIENCY heat pump for all year round operation in any operating mode: single cycle (air conditioning, heating, domestic hot water) as well as combined cycle in total heat recovery (domestic hot water together with cooling). Energy efficiency is higher during the summer cycle, when the production of hot water is free, thanks to the full recovery of the heat. During the combined use, the DHW exchanger uses the temperature of the discharged gases to get inside the accumulation sanitary water as high as 65° C. The advanced electronic regulation developed by Climaveneta ensures the highest operational flexibility, fast working condition and a significant increase in the overall COP, which go hand in hand with electricity and space reduction. These advantages, combined with the possibility of completely eliminating the traditional boiler, make PRANA DHW heat pumps the ideal solution for energy saving applications in residential, hotel and the service sector.

Controls

Electronic control Nadisystem provides great application flexibility. The remote keypad kit wired and outdoor air temperature sensors ensure a dynamic control of delivery water temperature, optimising comfort in the room and increasing the energy efficiency.

The electronic board allows you to manage:

- wired remote control with backlit display and remote temperature/humidity probe
- outdoor temperature probe for water plant side modular set point compensation
- a zone of direct heating for serving the radiator, floor heating or fancoil
- a zone with mix valve for floor heating
- electrical heating device for possible integration and anti-legionella cycle for cylinder
- boiler or electric heater in substitution or in addition
- the room controller can customise up to six time bands. The presence of the programmable timer allows the creation of an operating profile containing up to 6 time bands
- up to 4 heat pumps in cascade (with N-CM component)
- several solutions through appropriate configuration of the controller and use of dedicated extension modules (optional), up to 5 zones

Features

- Structure and base in hot galvanised epoxy powder coated steel.
- Stainless steel (AISI 316) high efficient and low pressure drop plate to plate exchanger (at the domestic hot water side). It is positioned next after the compressor and it ensures the domestic hot water production. This can work either in full or in partial recovery, with the constant optimisation of efficiency through advanced logic of the controller
- Stainless steel AISI 316 plant side exchangers, which ensure high efficiency and low pressure drop and they meet the supply of both hot and cold water of the building, regardless of the domestic hot water production
- Hermetic scroll type compressors, equipped with the crankcase heater and thermal protection.
- Finned coils made with copper pipes and aluminium fins with large exchange surface area (100% fully quality tested)
- Axial electric fans, external rotor, 6-pole electric motor fitted with thermal protection, housed in aerodynamic conveyor profile with safety grill
- Low external air temperature device: continuous fan speed regulation with pressure switch
- Coil protection grille
- Soft starter for 230V units /ms and 400V units /ts
- The water circuit comes complete with:
 - Plant side variable flow circulator, the curves are selected by control, energy efficiency class A
 - Variable flow circulator domestic (hot water side), energy efficiency class A
 - Plant side differential pressure switch
 - Expansion tank
 - Safety valve
 - Manual filling assembly
 - Pressure gauge
 - Air vent valve

Main accessories

- Wired room terminal with backlit display and temperature and humidity probe
- Extension module for system configuration
- Electric heater for the heating system
- Electric heater for hot water cylinder and for anti-legionellosis
- Serial card RS485 for ModBus
- Cascade management kit
- Buffer tank 35,100,200 liters
- Hot water cylinder 300,500 liters
- 300 litres thermal store for domestic hot water, for use with the DOMH2O kit
- 300,500,1000 litres thermal store for domestic hot water with solar heat exchanger, for use with DOMH2O kit
- DOMH2015 e DOMH2024 kit for domestic hot water with external heat exchanger plate-to-plate and pump

Reversible heat pump with total heat recovery, air source,
for outdoor installation 5,80 - 22,8 kW



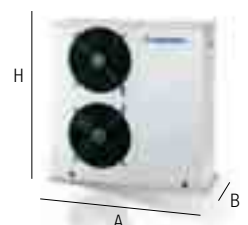
APPLICATION HYDRONIC TERMINAL

AWR DHW2 XE			0021m B	0025m B	0041m B	0025t B	0041t B	0065t SL	0101t SL
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	400/3/50	400/3/50	400/3/50	400/3/50
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	5,80	6,90	10,00	6,90	9,90	15,1	22,8
Total power input	(1)	kW	2,20	2,60	3,60	2,50	3,50	5,10	7,80
EER	(1)	kW/kW	2,64	2,65	2,78	2,76	2,83	2,96	2,92
ESEER	(1)	kW/kW							
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	5,81	6,93	10,0	6,93	9,94	15,2	22,9
EER	(1)(2)	kW/kW	2,67	2,68	2,83	2,79	2,88	2,95	2,95
ESEER	(1)(2)	kW/kW	3,09	3,15	3,31	3,28	3,38	3,30	3,14
HEATING ONLY (GROSS VALUE)									
Total heating capacity	(3)	kW	7,30	8,70	12,5	8,60	12,3	19,0	28,8
Total power input	(3)	kW	2,30	2,70	3,80	2,60	3,70	5,90	8,80
COP	(3)	kW/kW	3,17	3,22	3,29	3,31	3,32	3,22	3,27
HEATING ONLY (EN14511 VALUE)									
Total heating capacity	(2)(3)	kW	7,29	8,67	12,5	8,57	12,3	18,9	28,7
COP	(2)(3)	kW/kW	3,21	3,25	3,33	3,34	3,37	3,21	3,29
COOLING WITH TOTAL HEAT RECOVERY									
COOLING CAPACITY									
Total power input	(4)	kW	2,12	2,47	3,54	2,47	3,37	4,61	6,76
Recovery heat exchanger capacity	(4)	kW	6,95	8,34	12,2	8,32	12,0	18,5	27,7
TOTAL RECOVERY ONLY									
Total heating capacity	(3)	kW	7,30	8,70	12,5	8,60	12,3	19,0	28,8
Total power input	(3)	kW	2,30	2,70	3,80	2,60	3,70	5,90	8,80
SEASONAL EFFICIENCY IN HEATING (EN14825 VALUE)									
PDesign	(5)	kW	5,83	6,01	9,49	5,75	9,33	15,1	20,5
SCOP	(5)		3,24	3,20	3,42	3,27	3,44	3,44	3,31
Performance η_{s} (Reg. 811/2013 UE)	(5)	%	126	125	134	128	134	134	129
Seasonal efficiency class (Regulation (UE) 811/2013)	(5)		A+	A+	A+	A+	A+	A+	A+
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	m ³ /h	1,00	1,19	1,72	1,19	1,70	2,60	3,93
Available unit's head	(1)	kPa	60,4	104,7	95,2	104,7	95,7	109,6	107,2
HEAT EXCHANGER USER SIDE IN HEATING									
Water flow	(3)	m ³ /h	1,27	1,51	2,17	1,49	2,14	3,30	5,00
Available unit's head	(3)	kPa	55,1	96,8	82,1	97,2	83,2	104,7	97,9
HEAT EXCHANGER RECOVERY USER SIDE IN REFRIGERATION									
Water flow	(4)	m ³ /h	1,21	1,45	2,13	1,45	2,09	3,21	4,81
Pressure drop	(4)	kPa	8,27	8,54	11,3	8,50	10,9	10,1	9,65
HEAT EXCHANGER RECOVERY USER SIDE IN HEATING									
Water flow	(4)	m ³ /h	1,24	1,49	2,14	1,48	2,12	3,28	4,96
Pressure drop	(4)	kPa	8,79	9,04	11,5	8,86	11,3	10,5	10,3
COMPRESSORS									
No. Compressors		N°	1	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1	1
NOISE LEVEL									
Sound power level in cooling	(6)(7)	dB(A)	69	70	71	70	71	73	74
Sound power level in heating	(6)(8)	dB(A)	65	70	70	65	70	74	75
Noise Pressure	(9)	dB(A)	54	55	55	55	55	57	58
SIZE AND WEIGHT									
A	(10)	mm	1250	1250	1700	1250	1700	1700	1700
B	(10)	mm	420	420	650	420	650	650	650
H	(10)	mm	1125	1125	1200	1125	1200	1700	1700
Operating weight	(10)	kg	165	165	295	165	295	348	390

Notes

AWR DHW2 XE

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511-3:2013.
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (auxiliary side) heat exchanger recovery water (in/out) 45°C/50°C.
- Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (UE) N. 811/2013]
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.



prana AWR DHW2 XE

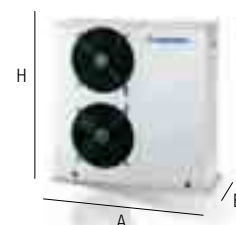
APPLICATION FLOOR HEATING

AWR DHW2 XE			0021m B	0025m B	0041m B	0025t B	0041t B	0065t SL	0101t SL
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	400/3/50	400/3/50	400/3/50	400/3/50
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	8,21	9,76	13,9	9,78	13,9	21,0	31,3
Total power input	(1)	kW	2,18	2,60	3,68	2,50	3,62	5,57	8,47
EER	(1)	kW/kW	3,77	3,75	3,78	3,91	3,84	3,77	3,70
ESEER	(1)	kW/kW							
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	8,22	9,79	13,9	9,81	13,9	21,1	31,4
EER	(1)(2)	kW/kW	3,83	3,83	3,85	3,99	3,91	3,80	3,75
ESEER	(1)(2)	kW/kW	3,09	3,15	3,31	3,28	3,38	3,30	3,14
HEATING ONLY (GROSS VALUE)									
Total heating capacity	(3)	kW	7,59	9,00	12,9	8,84	12,6	19,4	29,4
Total power input	(3)	kW	1,87	2,17	3,06	2,08	2,99	4,68	7,06
COP	(3)	kW/kW	4,06	4,15	4,22	4,25	4,21	4,15	4,16
HEATING ONLY (EN14511 VALUE)									
Total heating capacity	(2)(3)	kW	7,58	8,96	12,8	8,81	12,6	19,3	29,3
COP	(2)(3)	kW/kW	4,14	4,19	4,27	4,30	4,29	4,13	4,19
COOLING WITH TOTAL HEAT RECOVERY									
COOLING CAPACITY									
Total power input	(4)	kW	2,01	2,35	3,43	2,35	3,31	4,67	6,78
Recovery heat exchanger capacity	(4)	kW	9,10	11,0	16,0	10,9	15,9	24,8	36,8
TOTAL RECOVERY ONLY									
Total heating capacity	(3)	kW	7,59	9,00	12,9	8,84	12,6	19,4	29,4
Total power input	(3)	kW	1,87	2,17	3,06	2,08	2,99	4,68	7,06
SEASONAL EFFICIENCY IN HEATING (EN14825 VALUE)									
PDesign	(5)	kW	5,83	6,01	9,49	5,75	9,33	15,1	20,5
SCOP	(5)		3,24	3,20	3,42	3,27	3,44	3,44	3,31
Performance η_s (Reg. 811/2013 UE)	(5)	%	126	125	134	128	134	134	129
Seasonal efficiency class (Regulation (UE) 811/2013)	(5)		A+	A+	A+	A+	A+	A+	A+
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	m ³ /h	1,42	1,69	2,40	1,69	2,40	3,62	5,41
Available unit's head	(1)	kPa	51,7	91,7	74,3	91,6	74,2	101,8	93,5
HEAT EXCHANGER USER SIDE IN HEATING									
Water flow	(3)	m ³ /h	1,31	1,56	2,23	1,53	2,18	3,36	5,09
Available unit's head	(3)	kPa	54,1	95,5	80,3	96,2	81,7	104,2	97,0
HEAT EXCHANGER RECOVERY USER SIDE IN REFRIGERATION									
Water flow	(4)	m ³ /h	1,58	1,91	2,78	1,90	2,76	4,32	6,39
Pressure drop	(4)	kPa	14,2	14,8	19,3	14,7	19,1	18,2	17,1
HEAT EXCHANGER RECOVERY USER SIDE IN HEATING									
Water flow	(4)	m ³ /h	1,24	1,49	2,14	1,48	2,12	3,28	4,96
Pressure drop	(4)	kPa	8,79	9,04	11,5	8,86	11,3	10,5	10,3
COMPRESSORS									
No. Compressors		N°	1	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1	1
NOISE LEVEL									
Sound power level in cooling	(6)(7)	dB(A)	69	70	71	70	71	73	74
Sound power level in heating	(6)(8)	dB(A)	65	70	70	65	70	74	75
Noise Pressure	(9)	dB(A)	54	55	55	55	55	57	58
SIZE AND WEIGHT									
A	(10)	mm	1250	1250	1700	1250	1700	1700	1700
B	(10)	mm	420	420	650	420	650	650	650
H	(10)	mm	1125	1125	1200	1125	1200	1700	1700
Operating weight	(10)	kg	165	165	295	165	295	348	390

Notes

AWR DHW2 XE

- Plant (side) cooling exchanger water (in/out) 23°C/18°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511-3:2013.
- Plant (side) heat exchanger water (in/out) 30°C/35°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Plant (side) cooling exchanger water (in/out) 23°C/18°C; Plant (auxiliary side) heat exchanger recovery water (in/out) 45°C/50°C.
- Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (UE) N. 811/2013]
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.



Reversible heat pump with total heat recovery, air source,
for outdoor installation 5,80 - 22,8 kW



$$\beta = \frac{x+3=51}{\sqrt{1-\frac{v^2}{c^2}}}$$

$$9-y=7$$

$$52-x^2+y=? \quad x(x-1)=x^2-1$$

$$\frac{\partial^2 \varphi}{\partial t^2} = \frac{-2}{\sigma} \Delta \varphi$$

$$\sqrt{64} \cdot \frac{1}{290}$$

$$\frac{\partial^2 \varphi}{\partial t^2} = \frac{-2}{\sigma} \Delta \varphi$$

$$\beta = \frac{x+3=51}{\sqrt{1-\frac{v^2}{c^2}}}$$



$$x(x-1)=x^2-1$$

$$x+3=5$$

$$x(x-1)=x^2-1$$

$$-8=2 \cdot x \quad y=yx^2$$

$$E=mc^2$$

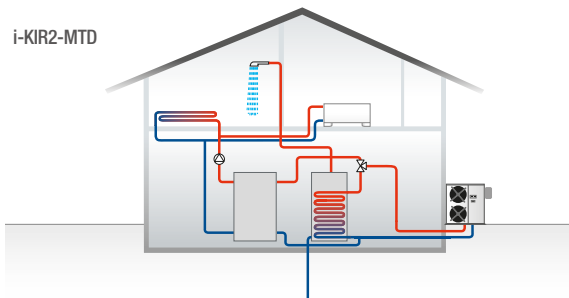
$$-8=2 \cdot x \quad y=yx^2$$

$$\frac{1}{290} \quad 52-x^2+y$$



Prana i-KIR2-MTD 0011m÷0061m

i-KIR2-MTD



Remote keypad with temperature and humidity probe



Versions



i-KIR2-MTD

Reversible or heating only heat pump with DC inverter compressor, air source, for outdoor installation

Unit description

i-KIR2 heat pumps provide for heating, cooling and domestic hot water production. Winter mode is always guaranteed by the Inverter technology, which ensures standard operation beyond traditional working limits, supplying hot water up to 60°C. The i-KIR2 reverse-cycle heat pumps feature high seasonal efficiency in both heating and cooling mode, using the DC inverter technology to modulate the compressor operation and deliver the exact amount of energy according to the real needs of the building. This excellent result has been achieved by carefully sizing all the components. Special attention has been paid to all heat exchange surfaces and the fans. The use of innovative condensing coils, with larger surfaces and special layout, together with new asymmetrical evaporators with better and more efficient refrigerant distribution, both in the liquid and gas phase, and high efficiency fans with DC motor are some of the important advancements featured by this product. i-KIR2 units can be coupled with traditional systems or radiant panels, always guaranteeing very high energy efficiency. Installation is strongly simplified thanks to the integrated hydronic module with inverter pump.

Controls

NADISYSTEM LT Electronic control provides great application flexibility. The remote keyboard kit wired indoor and outdoor temperature sensors allow dynamic control of delivery temperature water, optimizing comfort in the room and increasing the energy efficiency.

The electronic board allows you to manage:

- wired remote keypad, backlit display complete with remote temperature
- outdoor air temperature sensor on board for climatic curve
- one zone with mixing valve for floor heating and one zone of direct heating for radiator, floor heating or fan coil
- domestic hot water production by external three-way valve (accessory)
- electric heater for possible integration and anti-legionella cycle for DHW tank
- gas boiler or electric heater in substitution or in addition for space heating
- the built-in clock can be used to create an operating profile containing time bands for space heating/cooling and for DHW
- up to 4 heat pumps in cascade (with the accessories N-CM and one internal module i-EMR2 each units)

The defrost adopts a proprietary self-adaptive logic, which features the monitoring of numerous operational parameters. This allows to reduce the number and duration of the defrost cycles, with a benefit for the overall energy efficiency.

Features

- System efficiency. The unit is designed as a system: all components are regulated using proprietary control's logic for the highest efficiency.
- High efficiency at partial load: High seasonal efficiency in both heating and cooling mode, using DC inverter technology to modulate compressor operation and deliver the exact amount of energy according to the actual needs of the building. High efficiency for low energy consumption during the operating hours.
- High efficiency components: In terms of improving performance and reducing power consumption, the electronic thermostatic valve is an important component that maximises system efficiency, such as the hydronic kit with inverter water pump and the fans with DC motor, both provided as standard.
- Extensive operating limits: Thanks to the inverter technology, standard operation in winter mode is guaranteed beyond traditional working limits, supplying hot water up to 60°C and down to -20° external air.
- Integrated hydronic module: The integrated hydronic includes all the water circuit components in order to optimise installation space, timing and costs.

Main accessories

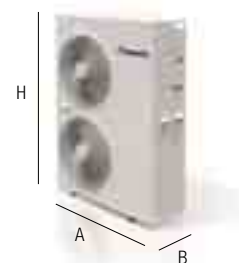
- Wired remote keyboard with backlit display, and with temperature probe (it is a mandatory accessory)
- Outside air temperature probe for plant water set point compensation.
- DHW temperature probe and Buffer temperature probe
- i-EMR2 Internal module kit can be used for cascade configuration or for management up to 5 secondary circuits.
- Extension module for system configuration (only in combination with i-EMR2)
- Cascade management kit (only in combination with i-EMR2)
- Three-way valve for domestic hot water
- Electric heater for the heating system
- Electric heater for hot water cylinder and for anti-legionellosis
- Serial card RS485 for ModBus
- Buffer tank 35,100,200 liters
- Hot water cylinder 300,500 liters
- 300 liters thermal store for domestic hot water, for DOMH20 kit
- 300,500,1000 liters thermal store for domestic hot water with solar heat exchanger, for DOMH20 kit
- DOMH2015 e DOMH2024 kit for domestic hot water with external plate heat exchanger and pump

Reversible or heating only heat pump with DC inverter compressor, air source, for outdoor installation
3,75 - 12,1 kW



		APPLICATION HYDRONIC TERMINAL		
i-KIR2-MTD		0011m	0031m	0061m
Power supply	V/ph/Hz	230/1/50	230/1/50	230/1/50
COOLING ONLY (GROSS VALUE)				
Cooling capacity	(1) kW	4,03	6,50	12,5
Total power input	(1) kW	1,45	3,04	4,22
EER	(1) kW/kW	2,78	2,14	2,96
ESEER	(1) kW/kW	4,08	4,04	3,68
COOLING ONLY (EN14511 VALUE)				
Cooling capacity	(1)(2) kW	3,70	5,20	12,3
EER	(1)(2) kW/kW	2,87	2,74	3,26
ESEER	(1)(2) kW/kW	4,00	4,17	3,90
Classe EUROVENT		C	C	A
HEATING ONLY (GROSS VALUE)				
Total heating capacity	(3) kW	5,32	9,40	15,3
Total power input	(3) kW	1,75	2,95	5,37
COP	(3) kW/kW	3,04	3,19	2,85
HEATING ONLY (EN14511 VALUE)				
Total heating capacity	(3)(2) kW	5,31	9,37	14,7
COP	(3)(2) kW/kW	3,05	3,23	3,23
Classe EUROVENT		B	A	A
SEASONAL EFFICIENCY IN HEATING (EN14825 VALUE)				
PDesign	(4) kW	3,92	7,15	11,7
SCOP	(4)	4,01	4,13	3,77
Performance η_s (Reg. 811/2013 UE)	(4) %	157	162	148
Seasonal efficiency class (Regulation (UE) 811/2013)	(4)	A++	A++	A+
EXCHANGERS				
HEAT EXCHANGER USER SIDE IN REFRIGERATION				
Water flow	(1) m ³ /h	0,69	1,12	2,16
Available unit's head	(1) kPa	148,4	136,9	91,4
HEAT EXCHANGER USER SIDE IN HEATING				
Water flow	(3) m ³ /h	0,93	1,63	2,65
Available unit's head	(3) kPa	123,0	102,2	66,2
COMPRESSORS				
No. Compressors	N°	1	1	1
No. Circuits	N°	1	1	1
NOISE LEVEL				
Sound power level in cooling	(5)(6) dB(A)	60	64	65
Sound power level in heating	(5)(7) dB(A)	61	65	66
Noise Pressure	(8) dB(A)	46	50	50
SIZE AND WEIGHT				
A	(9) mm	825	850	1000
B	(9) mm	300	330	330
H	(9) mm	675	882	1418
Operating weight	(9) kg	52	74	119

		APPLICATION FLOOR HEATING		
		0011m	0031m	0061m
		230/1/50	230/1/50	230/1/50
	(1*)	4,39	7,97	16,2
	(1*)	1,06	2,35	4,21
	(1*)	4,14	3,39	3,85
	(1*)	4,07	4,00	3,68
	(1*)(2)	4,41	8,00	16,2
	(1*)(2)	4,16	3,48	3,89
	(1*)(2)	4,00	4,17	3,91
	(3*)	5,87	9,26	15,7
	(3*)	1,46	2,24	3,90
	(3*)	4,02	4,13	4,03
	(3*)(2)	5,86	9,23	15,7
	(3*)(2)	4,03	4,22	4,09
	(4)	3,92	7,15	11,7
	(4)	4,01	4,13	3,77
	(4)	157	162	148
	(4)	A++	A++	A+
	(1*)	0,88	1,49	2,88
	(1*)	127,9	112,0	54,6
	(3*)	1,02	1,69	3,20
	(3*)	111,9	98,4	38,1
		1	1	1
		1	1	1
	(5)(6)	60	64	65
	(5)(7)	61	65	66
	(8)	46	50	50
	(9)	825	850	1000
	(9)	300	330	330
	(9)	675	882	1418
	(9)	52	74	119



Notes

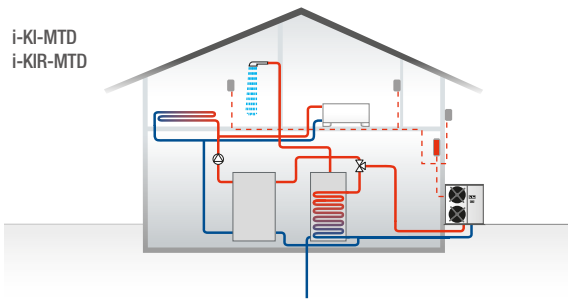
i-KIR2-MTD

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Plant (side) cooling exchanger water (in/out) 23°C/18°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511-3:2013.
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Plant (side) heating exchanger water (in/out) 30°C/35°C; Source (side) heat exchanger air (in) 7°C - U.R. 87%.
- Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (UE) N. 811/2013]
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.

Certified data in EUROVENT

prana i-KI-MTD / i-KIR-MTD 0075t ÷ 0151t

i-KI-MTD
i-KIR-MTD



nadisystem

Remote keypad with
temperature and
humidity probe



Versions



i-KI-MTD

Air cooled heat pump, with axial fans and inverter driven compressor, for heating water up to 60°C and operating limit down to -20°C outdoor air temperature. Domestic hot water production.



i-KIR-MTD

Air cooled reversible heat pump, with axial fans and inverter driven compressor, for heating water up to 60°C and operating limit down to -20°C outdoor air temperature. Domestic hot water production.

Unit description

i-KI heating only and reversible i-KIR heat pumps provide for heating, cooling and domestic hot water production. Winter mode is always guaranteed by the Inverter technology, which ensures standard operation beyond traditional working limits, supplying hot water up to 60°C. The i-KI(R)reverse-cycle heat pumps feature high seasonal efficiency in both heating and cooling mode, using the DC inverter technology to modulate the compressor operation and deliver the exact amount of energy according to the real needs of the building. This excellent result has been achieved by carefully sizing all the components. Special attention has been paid to all heat exchange surfaces and the fans. The use of innovative condensing coils, with larger surfaces and special layout, together with new asymmetrical evaporators with better and more efficient refrigerant distribution, both in the liquid and gas phase, and high efficiency fans with DC motor are some of the important advancements featured by this product. i-KI(R) units can be coupled with traditional systems or radiant panels, always guaranteeing very high energy efficiency. Installation is strongly simplified thanks to the integrated hydronic module with inverter pump.

Controls

Electronic control Nadisystem provides great application flexibility. The remote keyboard kit wired and outdoor air temperature sensors ensure a dynamic control of delivery water temperature, optimising comfort in the room and increasing the energy efficiency.

The electronic board allows you to manage:

- wired remote control with backlit display and remote temperature/humidity probe
- outdoor temperature probe for water plant side modular set point compensation
- a zone of direct heating for serving the radiator, floor heating or fancoil
- a zone with mix valve for floor heating
- electrical heating device for possible integration and anti-legionella cycle for cylinder
- boiler or electric heater in substitution or in addition
- the room controller can customise up to six time bands. The presence of the programmable timer allows the creation of an operating profile containing up to 6 time bands
- up to 4 heat pumps in cascade (with N-CM component)
- several solutions through appropriate configuration of the controller and use of dedicated extension modules (optional), up to 5 zones

Features

- Wide range: Extended capacity range.
- System efficiency: The unit is designed as a system: all components are regulated using proprietary control's logic for the highest efficiency.
- High efficiency at partial loads: High seasonal efficiency in both heating and cooling modes, using DC inverter technology to modulate compressor operation and deliver the exact amount of energy according to the real needs of the building. High efficiency for low energy consumption during the operating hours.
- High efficiency components: In terms of improving performance and reducing power consumption, the electronic thermostatic valve is an important component that maximises system efficiency, such as the hydronic kit with inverter water pump (optional) and the fans with DC motor.
- Extreme operating limits: Thanks to the inverter technology, standard operation in winter mode is guaranteed beyond traditional working limits, supplying hot water up to 60°C and down to -20°C external air.

Main accessories

- Integrated hydronic module with on/off pump or high efficiency inverter pump
- Wired room terminal with backlit display, and with temperature and humidity probe
- Extension module for system configuration
- Three-way valve for domestic hot water
- Electric heater for the heating system
- Electric heater for hot water cylinder and for anti-legionellosis
- Cascade management kit
- Serial card RS485 for ModBus
- Hot water cylinder 300,500 liters
- 300 liters thermal store for domestic hot water, for DOMH2O kit
- 300,500,1000 liters thermal store for domestic hot water with solar heat exchanger, for DOMH2O kit
- DOMH2O15 e DOMH2O24 kit for domestic hot water with external plate heat exchanger and pump
- Copper-Copper heat exchanger coils
- Copper-Aluminum heat exchanger coils with epoxy treatment
- Electric heater for the base and for condensate collecting tray to avoid freezing

Reversible or heating only heat pump with DC inverter compressor,
air source, outdoor installation 15,6 - 30,5 kW



APPLICATION HYDRONIC TERMINAL

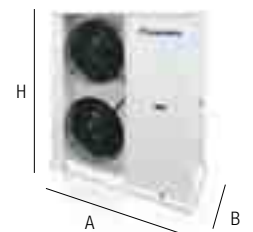
i-KIR-MTD			0075t	0091t	0095t	0101t	0121t	0135t	0151t
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1)	kW	15,6	19,3	22,1	24,0	26,4	28,7	30,5
Total power input	(1)	kW	6,54	6,93	8,84	10,2	10,1	12,5	12,6
EER	(1)	kW/kW	2,39	2,78	2,50	2,35	2,61	2,30	2,42
ESEER	(1)	kW/kW	4,30	4,44	4,37	4,28	4,69	4,65	4,65
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2)	kW	15,5	19,2	22,0	23,9	26,3	28,6	30,4
EER	(1)(2)	kW/kW	2,35	2,75	2,46	2,32	2,59	2,27	2,39
ESEER	(1)(2)	kW/kW	4,08	4,25	4,14	4,04	4,52	4,45	4,45
Classe EUROVENT			E	C	E	E	D	F	E
HEATING ONLY (GROSS VALUE)									
Total heating capacity	(3)	kW	20,4	23,9	27,6	30,1	32	35,1	38,1
Total power input	(3)	kW	7,33	7,06	8,9	10,1	9,33	10,7	11,5
COP	(3)	kW/kW	2,78	3,39	3,1	2,98	3,43	3,28	3,31
HEATING ONLY (EN14511 VALUE)									
Total heating capacity	(3)(2)	kW	20,5	24	27,8	30,3	32,1	35,2	38,3
COP	(3)(2)	kW/kW	2,76	3,34	3,07	2,94	3,39	3,26	3,27
Classe EUROVENT			D	A	B	C	A	A	A
SEASONAL EFFICIENCY IN HEATING (EN14825 VALUE)									
PDesign	(4)	kW	15,9	23,1	25,3	27,5	25,9	28,5	32,5
SCOP	(4)		3,61	4,14	4,08	4,00	4,17	4,16	4,36
Performance η_s (Reg. 811/2013 UE)	(4)	%	141	163	160	157	164	163	171
Seasonal efficiency class (Regulation (UE) 811/2013)	(4)		A+	A++	A++	A++	A++	A++	A++
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1)	m ³ /h	2,68	3,33	3,81	4,12	4,55	4,94	5,24
Pressure drop	(1)	kPa	13,3	12,2	16,0	18,7	10,4	12,2	13,7
HEAT EXCHANGER USER SIDE IN HEATING									
Water flow	(3)	m ³ /h	3,76	5,27	5,71	6,19	6,23	6,81	7,71
Pressure drop	(3)	kPa	26,1	30,6	35,9	42,2	19,4	23,2	29,7
COMPRESSORS									
No. Compressors		N°	1	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1	1
NOISE LEVEL									
Sound power level in cooling	(5)(6)	dB(A)	71	72	74	75	76	77	77
Sound power level in heating	(5)(7)	dB(A)	72	73	75	76	77	78	78
Noise Pressure	(8)	dB(A)	55	56	58	59	60	61	61
SIZE AND WEIGHT									
A	(9)	mm	1470	1470	1470	1470	1720	1720	1720
B	(9)	mm	570	570	570	570	670	670	670
H	(9)	mm	1200	1700	1700	1700	1700	1700	1700
Operating weight	(9)	kg	220	285	285	285	330	330	330

Notes

i-KI-MTD / i-KIR-MTD

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511-3:2013.
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (UE) N. 811/2013]
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.

Certified data in EUROVENT



prana i-KI-MTD / i-KIR-MTD 0075t ÷ 0151t

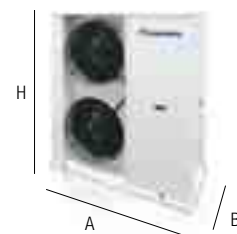
APPLICATION FLOOR HEATING

i-KIR-MTD		0075t	0091t	0095t	0101t	0121t	0135t	0151t
Power supply	V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1) kW	19,4	24,4	27,7	30,4	30,5	34,4	36,4
Total power input	(1) kW	5,92	6,14	7,52	8,91	7,73	9,15	10,1
EER	(1) kW/kW	3,28	3,97	3,68	3,41	3,95	3,76	3,60
ESEER	(1) kW/kW	4,30	4,44	4,38	4,28	4,69	4,63	4,65
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2) kW	19,3	24,3	27,5	30,2	30,4	34,3	36,2
EER	(1)(2) kW/kW	3,20	3,88	3,59	3,32	3,88	3,69	3,53
ESEER	(1)(2) kW/kW	4,08	4,25	4,14	4,04	4,52	4,45	4,45
HEATING ONLY (GROSS VALUE)								
Total heating capacity	(3) kW	19,7	24,5	28,1	30,9	32,2	35,5	39,2
Total power input	(3) kW	5,44	5,89	7,21	8,25	7,84	9,12	9,71
COP	(3) kW/kW	3,62	4,16	3,90	3,75	4,11	3,89	4,04
HEATING ONLY (EN14511 VALUE)								
Total heating capacity	(3)(2) kW	19,8	24,6	28,3	31,1	32,3	35,6	39,4
COP	(3)(2) kW/kW	3,57	4,09	3,83	3,69	4,06	3,84	3,99
SEASONAL EFFICIENCY IN HEATING (EN14825 VALUE)								
PDesign	(4) kW	14,0	17,8	20,8	23,1	22,1	24,7	27,5
SCOP	(4)	3,60	4,04	4,02	3,99	4,10	4,10	4,31
Performance η_s (Reg. 811/2013 UE)	(4) %	141	159	158	157	161	161	170
Seasonal efficiency class (Regulation (UE) 811/2013)	(4)	A+	A++	A++	A++	A++	A++	A++
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1) m ³ /h	3,59	4,54	5,15	5,55	6,11	6,58	6,99
Pressure drop	(1) kPa	23,8	22,7	29,2	33,9	18,7	21,7	24,4
HEAT EXCHANGER USER SIDE IN HEATING								
Water flow	(3) m ³ /h	3,77	5,36	5,76	6,23	6,37	6,94	7,85
Pressure drop	(3) kPa	26,2	31,6	36,5	42,7	20,3	24,1	30,9
COMPRESSORS								
No. Compressors	N°	1	1	1	1	1	1	1
No. Circuits	N°	1	1	1	1	1	1	1
NOISE LEVEL								
Sound power level in cooling	(5)(6) dB(A)	71	72	74	75	76	77	77
Sound power level in heating	(5)(7) dB(A)	72	73	75	76	77	78	78
Noise Pressure	(8) dB(A)	55	56	58	59	60	61	61
SIZE AND WEIGHT								
A	(9) mm	1470	1470	1470	1470	1720	1720	1720
B	(9) mm	570	570	570	570	670	670	670
H	(9) mm	1200	1700	1700	1700	1700	1700	1700
Operating weight	(9) kg	220	285	285	285	330	330	330

Notes

i-KI-MTD / i-KIR-MTD

- Plant (side) cooling exchanger water (in/out) 23°C/18°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511-3:2013.
- Plant (side) heat exchanger water (in/out) 30°C/35°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (UE) N. 811/2013]
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.



Reversible or heating only heat pump with DC inverter compressor, air source, outdoor installation 15,6 - 30,5 kW



APPLICATION HYDRONIC TERMINAL

i-KI-MTD 0075-0151		0075t	0091t	0095t	0101t	0121t	0135t	0151t
Power supply	V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
HEATING ONLY (GROSS VALUE)								
Total heating capacity	(1) kW	20,4	23,9	27,6	30,1	32	35,1	38,1
Total power input	(1) kW	7,33	7,06	8,9	10,1	9,33	10,7	11,5
COP	(1) kW/kW	2,78	3,39	3,1	2,98	3,43	3,28	3,31
HEATING ONLY (EN14511 VALUE)								
Total heating capacity	(1)(2) kW	20,5	24	27,8	30,3	32,1	35,2	38,3
COP	(1)(2) kW/kW	2,76	3,34	3,07	2,94	3,39	3,26	3,27
SEASONAL EFFICIENCY IN HEATING (EN14825 VALUE)								
PDesign	(3) kW	15,9	23,1	25,3	27,5	25,9	28,5	32,5
SCOP	(3)	3,52	4,06	4,01	3,94	4,10	4,10	4,29
Performance η_s (Reg. 811/2013 UE)	(3) %	138	160	157	155	161	161	169
Seasonal efficiency class (Regulation (UE) 811/2013)	(3)	A+	A++	A++	A++	A++	A++	A++
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN HEATING								
Water flow	(1) m ³ /h	3,76	5,27	5,71	6,19	6,23	6,81	7,71
Pressure drop	(1) kPa	26,1	30,6	35,9	42,2	19,4	23,2	29,7
COMPRESSORS								
No. Compressors	N°	1	1	1	1	1	1	1
No. Circuits	N°	1	1	1	1	1	1	1
NOISE LEVEL								
Sound power level in heating	(4)(5) dB(A)	72	73	75	76	77	78	78
Noise Pressure	(6) dB(A)	56	57	59	60	61	62	62
SIZE AND WEIGHT								
A	(7) mm	1470	1470	1470	1470	1720	1720	1720
B	(7) mm	570	570	570	570	670	670	670
H	(7) mm	1200	1700	1700	1700	1700	1700	1700
Operating weight	(7) kg	220	285	285	285	330	330	330

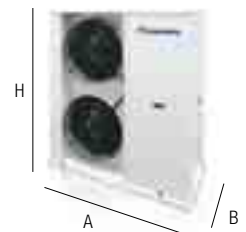
APPLICATION FLOOR HEATING

i-KI-MTD 0075-0151		0075t	0091t	0095t	0101t	0121t	0135t	0151t
Power supply	V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
HEATING ONLY (GROSS VALUE)								
Total heating capacity	(1*) kW	19,7	24,5	28,1	30,9	32,2	35,5	39,2
Total power input	(1*) kW	5,44	5,89	7,21	8,25	7,84	9,12	9,71
COP	(1*) kW/kW	3,62	4,16	3,9	3,75	4,11	3,89	4,04
HEATING ONLY (EN14511 VALUE)								
Total heating capacity	(1*)(2) kW	19,8	24,6	28,3	31,1	32,3	35,6	39,4
COP	(1*)(2) kW/kW	3,57	4,09	3,83	3,69	4,06	3,84	3,99
SEASONAL EFFICIENCY IN HEATING (EN14825 VALUE)								
PDesign	(3) kW	15,9	23,1	25,3	27,5	25,9	28,5	32,5
SCOP	(3)	3,52	4,06	4,01	3,94	4,10	4,10	4,29
Performance η_s (Reg. 811/2013 UE)	(3) %	138	160	157	155	161	161	169
Seasonal efficiency class (Regulation (UE) 811/2013)	(3)	A+	A++	A++	A++	A++	A++	A++
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN HEATING								
Water flow	(1*) m ³ /h	3,77	5,36	5,76	6,23	6,37	6,94	7,85
Pressure drop	(1*) kPa	26,2	31,6	36,5	42,7	20,3	24,1	30,9
COMPRESSORS								
No. Compressors	N°	1	1	1	1	1	1	1
No. Circuits	N°	1	1	1	1	1	1	1
NOISE LEVEL								
Sound power level in heating	(4)(5) dB(A)	72	73	75	76	77	78	78
Noise Pressure	(6) dB(A)	56	57	59	60	61	62	62
SIZE AND WEIGHT								
A	(7) mm	1470	1470	1470	1470	1720	1720	1720
B	(7) mm	570	570	570	570	670	670	670
H	(7) mm	1200	1700	1700	1700	1700	1700	1700
Operating weight	(7) kg	220	285	285	285	330	330	330

Notes

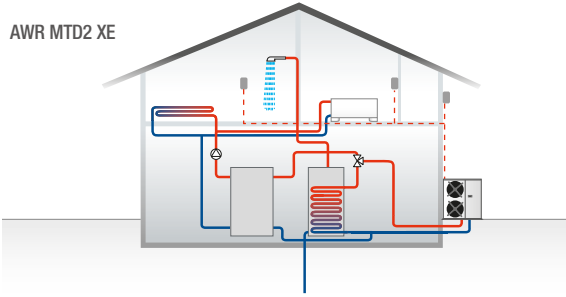
i-KI-MTD / i-KIR-MTD

- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- 1* Plant (side) heat exchanger water (in/out) 30°C/35°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Values in compliance with EN14511-3:2013.
- Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (UE) N. 811/2013]
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in heating, outdoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.



Prana AWR MTD2 XE

AWR MTD2 XE



Versions



AWR MTD2 XE

Air/water reversible heat pump for water heating up to 58°C and operating limits down to -15°C external air temperature and domestic hot water production.



AWR MTD2 XE/H

Air/water reversible heat pump for water heating up to 58°C and operating limits down to -15°C external air temperature and domestic hot water production. Integrated electric heater.

Unit description

AWR-MTD2-XE reversible units are able to provide heating, cooling and domestic hot water. Thanks to special technological choices standard operation in winter mode is guaranteed beyond the normal limits of traditional units. Prana AWR-MTD2-XE can be combined with traditional systems or radiant panels, ensuring high energy efficiency. All units are certified in accordance with the Class A Eurovent classification. This makes them particularly suitable for use radiant installations. The installation is greatly simplified: thanks to the integration of the hydraulic group, the start up of the unit is possible by simply connecting the unit to the water plant and electricity grid.

Controls

Electronic control Nadisystem provides great application flexibility. The remote keyboard kit wired and outdoor air temperature sensors ensure a dynamic control of delivery water temperature, optimising comfort in the room and increasing the energy efficiency.

The electronic board allows you to manage:

- wired remote control with backlit display and remote temperature/humidity probe
- outdoor temperature probe for water plant side modular set point compensation
- a zone of direct heating for serving the radiator, floor heating or fancoil
- a zone with mix valve for floor heating
- electrical heating device for possible integration and anti-legionella cycle for cylinder
- boiler or electric heater in substitution or in addition
- the room controller can customise up to six time bands. The presence of the programmable timer allows the creation of an operating profile containing up to 6 time bands
- up to 4 heat pumps in cascade (with N-CM component)
- several solutions through appropriate configuration of the controller and use of dedicated extension modules (optional), up to 5 zones

Features

- Structure and base in hot galvanised epoxy powder coated steel.
- High efficiency and low pressure drop stainless steel (AISI 316) water exchangers complete with closed-cell insulation with vapour barrier, antifreeze heating element and differential pressure switch
- Hermetic scroll type compressors, equipped with the crankcase heater and thermal protection
- Finned coils made with copper pipes and aluminium fins with large exchange surface area (100% fully quality tested)
- Axial electric fans, external rotor, 6-pole electric motor fitted with thermal protection, housed in aerodynamic conveyor profile with safety grill
- Low external air temperature device: continuous fan speed regulation with pressure switch
- Antifreeze electrical resistance located between the winged heat exchanger and the basement in order to improve and facilitate the water flow during the defrosting phase
- Condensate collecting tray (models 0011÷0051)
- Coil protection grille
- Soft starter for 230V/1/50Hz units (ms)
- Phase sequence control relay for three phase models
- The water circuit comes complete with:
 - Variable flow circulator for all models.
 - Water side differential pressure switch.
 - Expansion tank.
 - Safety valve.
 - Manual filling assembly.
 - Pressure gauge.
 - Air vent valve.

Main accessories

- Wired room terminal with backlit display, with temperature and humidity probe
- Extension module for system configuration
- Three-way valve for domestic hot water
- Electric heater for the heating system
- Electric heater for hot water cylinder and for anti-legionellosis
- Cascade management kit
- Serial card RS485 for ModBus
- External buffer tank and hydronic connecting kit
- Buffer tank 35,100,200 liters
- Hot water cylinder 300,500 liters
- 300 litres thermal store for domestic hot water, for use with kit DOMH2O
- 300,500,1000 litres thermal store for domestic hot water with solar heat exchanger, for use with kit DOMH2O
- DOMH2015 e DOMH2024 kit for domestic hot water with external heat exchanger plate-to-plate and pump



nadisystem

Remote keypad with temperature and humidity probe



High efficiency reversible heat pump, air source for outdoor installation 5,2 ÷ 22,1 kW



APPLICATION HYDRONIC TERMINAL

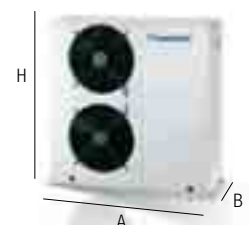
AWR MTD2 XE		0011ms	0025ms	0031ms	0041ms	0031t	0041t	0051t	0061t	0091t
Power supply	V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
COOLING ONLY (GROSS VALUE)										
Cooling capacity	(1) kW	5,20	6,30	9,20	11,7	8,60	11,9	13,2	15,2	22,1
Total power input	(1) kW	1,70	2,20	3,10	4,00	3,00	4,00	4,60	5,00	7,20
EER	(1) kW/kW	3,06	2,86	2,97	2,92	2,87	2,97	2,87	3,04	3,07
ESEER	(1) kW/kW	3,62	3,63	3,52	3,46	3,42	3,65	3,24	3,55	3,57
COOLING ONLY (EN14511 VALUE)										
Cooling capacity	(1)(2) kW	5,20	6,30	9,23	11,7	8,63	11,9	13,2	15,2	22,2
EER	(1)(2) kW/kW	3,08	2,89	3,01	2,97	2,91	3,02	2,91	3,06	3,09
ESEER	(1)(2) kW/kW	3,65	3,64	3,62	3,53	3,46	3,70	3,30	3,57	3,61
Classe EUROVENT		B	C	B	B	B	B	B	B	B
HEATING ONLY (GROSS VALUE)										
Total heating capacity	(3) kW	6,10	7,30	10,8	13,6	10,6	13,8	15,4	17,5	24,6
Total power input	(3) kW	1,90	2,30	3,30	4,10	3,20	4,30	4,60	5,20	7,40
COP	(3) kW/kW	3,21	3,17	3,27	3,32	3,31	3,21	3,35	3,37	3,32
HEATING ONLY (EN14511 VALUE)										
Total heating capacity	(3)(2) kW	6,10	7,30	10,8	13,6	10,6	13,8	15,4	17,5	24,5
COP	(3)(2) kW/kW	3,23	3,20	3,30	3,35	3,34	3,24	3,38	3,38	3,33
Classe EUROVENT		A	A	A	A	A	A	A	A	A
SEASONAL EFFICIENCY IN HEATING (EN14825 VALUE)										
PDesign	(4) kW	6,34	6,40	7,99	9,65	7,56	10,0	11,1	12,7	17,5
SCOP	(4)	3,65	3,60	3,53	3,44	3,28	3,55	3,29	3,44	3,33
Performance η_s (Reg. 811/2013 UE)	(4) %	143	141	138	134	128	139	128	135	130
Seasonal efficiency class (Regulation (UE) 811/2013)	(4)	A+	A+	A+	A+	A+	A+	A+	A+	A+
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(1) m ³ /h	0,90	1,08	1,58	2,01	1,48	2,05	2,27	2,62	3,80
Available unit's head	(1) kPa	54,3	51,2	92,2	81,1	95,4	79,9	78,1	53,8	101,1
HEAT EXCHANGER USER SIDE IN HEATING										
Water flow	(3) m ³ /h	1,06	1,27	1,88	2,36	1,84	2,40	2,68	3,04	4,27
Available unit's head	(3) kPa	48,4	44,8	82,0	67,5	83,3	66,0	62,9	46,4	95,9
COMPRESSORS										
No. Compressors	N°	1	1	1	1	1	1	1	1	1
No. Circuits	N°	1	1	1	1	1	1	1	1	1
NOISE LEVEL										
Sound power level in cooling	(5)(6) dB(A)	69	69	71	71	71	71	71	72	74
Sound power level in heating	(5)(7) dB(A)	70	70	70	70	70	70	70	73	75
Noise Pressure	(8) dB(A)	54	54	56	56	56	56	56	57	58
SIZE AND WEIGHT										
A	(9) mm	900	900	900	900	900	900	900	1550	1550
B	(9) mm	420	420	420	420	420	420	420	450	450
H	(9) mm	1240	1240	1240	1390	1240	1390	1390	1200	1700
Operating weight	(9) kg	145	150	155	170	155	170	180	250	335

Notes

AWR MTD2 XE

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511-3:2013.
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (UE) N. 811/2013]
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.

Certified data in EUROVENT



prana AWR MTD2 XE

APPLICATION FLOOR HEATING

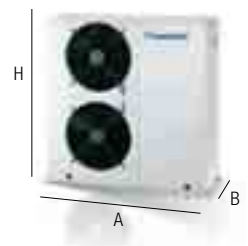
AWR MTD2 XE		0011ms	0025ms	0031ms	0041ms	0031t	0041t	0051t	0061t	0091t
Power supply	V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
COOLING ONLY (GROSS VALUE)										
Cooling capacity	(1) kW	7,20	8,30	12,3	15,7	11,7	15,8	17,7	20,2	29,2
Total power input	(1) kW	1,90	2,20	3,30	4,10	3,10	4,20	4,70	5,30	7,80
EER	(1) kW/kW	3,79	3,77	3,73	3,83	3,77	3,76	3,77	3,81	3,74
ESEER	(1) kW/kW	3,62	3,63	3,52	3,46	3,42	3,65	3,24	3,55	3,57
COOLING ONLY (EN14511 VALUE)										
Cooling capacity	(1)(2) kW	7,19	8,29	12,3	15,7	11,7	15,8	17,7	20,2	29,3
EER	(1)(2) kW/kW	3,81	3,80	3,78	3,86	3,83	3,79	3,79	3,82	3,78
ESEER	(1)(2) kW/kW	3,65	3,64	3,62	3,53	3,46	3,70	3,30	3,57	3,61
Classe EUROVENT		B	C	B	B	B	B	B	B	B
HEATING ONLY (GROSS VALUE)										
Total heating capacity	(3) kW	6,30	7,40	11,2	14,0	10,9	14,0	15,9	17,9	25,1
Total power input	(3) kW	1,50	1,80	2,60	3,30	2,60	3,30	3,80	4,20	6,00
COP	(3) kW/kW	4,20	4,11	4,31	4,24	4,19	4,24	4,18	4,26	4,18
HEATING ONLY (EN14511 VALUE)										
Total heating capacity	(3)(2) kW	6,30	7,40	11,2	14,0	10,9	14,0	15,9	17,9	25,0
COP	(3)(2) kW/kW	4,24	4,16	4,36	4,29	4,25	4,29	4,23	4,29	4,20
Classe EUROVENT		A	A	A	A	A	A	A	A	A
SEASONAL EFFICIENCY IN HEATING (EN14825 VALUE)										
PDesign	(4) kW	6,34	6,40	7,99	9,65	7,56	10,0	11,1	12,7	17,5
SCOP	(4)	3,65	3,60	3,53	3,44	3,28	3,55	3,29	3,44	3,33
Performance η_s (Reg. 811/2013 UE)	(4) %	143	141	138	134	128	139	128	135	130
Seasonal efficiency class (Regulation (UE) 811/2013)	(4)	A+	A+	A+	A+	A+	A+	A+	A+	A+
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN REFRIGERATION										
Water flow	(1) m ³ /h	1,24	1,43	2,12	2,71	2,02	2,73	3,06	3,49	5,04
Available unit's head	(1) kPa	40,8	38,1	72,0	51,8	76,4	50,9	46,4	37,3	85,4
HEAT EXCHANGER USER SIDE IN HEATING										
Water flow	(3) m ³ /h	1,09	1,28	1,94	2,42	1,89	2,42	2,75	3,10	4,35
Available unit's head	(3) kPa	47,2	44,3	79,5	64,8	81,5	64,8	59,7	45,2	95,0
COMPRESSORS										
No. Compressors	N°	1	1	1	1	1	1	1	1	1
No. Circuits	N°	1	1	1	1	1	1	1	1	1
NOISE LEVEL										
Sound power level in cooling	(5)(6) dB(A)	69	69	71	71	71	71	71	72	74
Sound power level in heating	(5)(7) dB(A)	70	70	70	70	70	70	70	73	75
Noise Pressure	(8) dB(A)	54	54	56	56	56	56	56	57	58
SIZE AND WEIGHT										
A	(9) mm	900	900	900	900	900	900	900	1550	1550
B	(9) mm	420	420	420	420	420	420	420	450	450
H	(9) mm	1240	1240	1240	1390	1240	1390	1390	1200	1700
Operating weight	(9) kg	145	150	155	170	155	170	180	250	335

Notes

AWR MTD2 XE

- Plant (side) cooling exchanger water (in/out) 23°C/18°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511-3:2013.
- Plant (side) heat exchanger water (in/out) 30°C/35°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (UE) N. 811/2013]
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.

Certified data in EUROVENT



High efficiency reversible heat pump, air source
for outdoor installation 5,2 ÷ 22,1 kW



$$B = \frac{X+3=51}{\sqrt{1-\frac{V^2}{c^2}}}$$

$$9-y=7$$

$$52-x^2+y=? \quad x(x-1)=x^2-1$$

$$\frac{\partial^2 \varphi}{\partial t^2} = \frac{-2}{\sigma} \Delta \varphi$$

$$\sqrt{64} \cdot \frac{1}{290}$$

$$\frac{\partial^2 \varphi}{\partial t^2} = \frac{-2}{\sigma} \Delta \varphi$$

$$B = \frac{X+3=51}{\sqrt{1-\frac{V^2}{c^2}}}$$



$$x(x-1)=x^2-1$$

$$x+3=5$$

$$x(x-1)=x^2-1$$

$$-8=2 \cdot x \quad y=yx^2$$

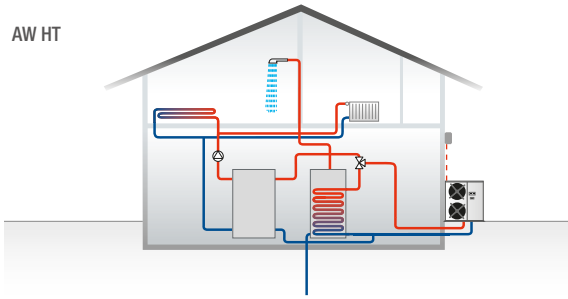
$$E=mc^2$$

$$-8=2 \cdot x \quad y=yx^2$$

$$\frac{1}{290} \quad 52-x^2+y$$



AW HT



Versions



AW HT

Air/water only heating heat pump, for water heating up to 65°C and operating limits down to -20°C.

Unit description

AW HT is the ideal solution for systems with heating radiators, where the water high temperature is needed. The EVI technology compressor with additional steam injection in the compressing cycle assures a water temperature of 65°C and operating limits as low as -20°C. Neither probes nor connections pipes to wells are needed; the installation is simple, this is a suitable solution for all applications.

Controls

Electronic control provides great application flexibility. The remote keyboard kit and the outdoor temperature probe ensure a dynamic control of delivery water temperature, delivering great advantages in terms of comfort and energy efficiency. The electronic board PRO EXTENDED allows you to manage:

- domestic hot water production by external three-way valve (accessory)
- circulator on system side
- a zone of direct heating
- outdoor temperature sensor for water plant side modular set point compensation
- electrical heating element for possible integration and anti-legionella cycle for cylinder
- integrated boiler with heat pump
- several solutions through appropriate configurations of the controller and use of dedicated extension modules (accessories)

Features

- Structure and base in hot-dip galvanised steel with epoxy powder coating finish.
- Circulating pump for all models
- High-efficiency plate exchangers in AISI 316 stainless steel with low pressure drops, fitted with heating element for frost protection.
- High efficiency cycle EVI Hermetic Scroll Compressor (with hot gas direct injection into the compressor) to reach 65° C, with the crankcase heater and thermal protection
- Finned coils made with copper pipes and aluminium fins with large exchange surface area (100% fully quality tested); sub cooling circuit to prevent the icing at the basement
- Axial electric fans, external rotor, 6-pole electric motor fitted with thermal protection, housed in aerodynamic conveyor profile with safety grill
- A condense collecting tray for the water discharge
- Antifreeze electrical resistance located between the winged heat exchanger and the basement in order to improve and facilitate the water flow during the defrosting phase
- Coil protection grille
- Soft starter for 230V/1/50Hz units (ms)
- Phase sequence control relay for three phase models
- The water circuit comes complete with:
 - Expansion tank.
 - Safety valve.
 - Manual filling assembly.
 - Pressure gauge.
 - Air vent valve.

Main accessories

- Three-way valve for domestic hot water
- Buffer tank 35,100,200 liters
- Hot water cylinder 300,500 liters
- 300 litres thermal store for domestic hot water, for use with kit DOMH20
- 300,500 litres thermal store for domestic hot water with solar heat exchanger, for kit DOMH20
- DOMH2015 e DOMH2024 kit for domestic hot water with external heat exchanger plate-to-plate and pump
- Control kit with hydronic components for underfloor heating
- 1,2,3 kW single-phase electric heater kit
- Radiant panels or radiator management kit
- Control kit for underfloor heating with hydronic components
- Removable metal mesh water filter kit
- Rubber anti-vibration mounting kit
- Wired remote unit
- Room thermostat wired based

High efficiency heat pump, air source for outdoor installation, high water temperature 15,1 ÷ 27,1 kW



APPLICATION HYDRONIC TERMINAL

AW-HT			0041ms	0041t	0041ts	0061t	0061ts	0071t	0071ts
Power supply		V/ph/Hz	230/1/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
HEATING ONLY (GROSS VALUE)									
Total heating capacity	(1)	kW	15,1	14,3	14,3	19,7	19,7	27,1	27,1
Total power input	(1)	kW	4,20	4,00	4,00	5,60	5,60	7,40	7,40
COP	(1)	kW/kW	3,60	3,58	3,58	3,52	3,52	3,66	3,66
HEATING ONLY (EN14511 VALUE)									
Total heating capacity	(1)(2)	kW	15,1	14,3	14,3	19,7	19,7	27,1	27,1
COP	(1)(2)	kW/kW	3,56	3,54	3,54	3,50	3,50	3,60	3,60
SEASONAL EFFICIENCY IN HEATING (EN14825 VALUE)									
PDesign	(3)	kW	10,3	9,89	9,89	14,1	14,1	18,6	18,6
SCOP	(3)		2,84	2,86	2,86	2,89	2,89	3,00	3,00
Performance η_s (Reg. 811/2013 UE)	(3)	%	110	111	111	113	113	117	117
Seasonal efficiency class (Regulation (UE) 811/2013)	(3)		B	B	B	B	B	A	A
PDesign	(4)	kW	11,4	10,8	10,8	14,8	14,8	20,0	20,0
SCOP	(4)		2,66	2,66	2,66	2,65	2,65	2,76	2,76
Performance η_s (Reg. 811/2013 UE)	(4)	%	104	103	103	103	103	107	107
Seasonal efficiency class (Regulation (UE) 811/2013)	(4)		A+	A+	A+	A+	A+	A+	A+
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN HEATING									
Water flow	(1)	m ³ /h	2,62	2,48	2,48	3,42	3,42	4,71	4,71
Available unit's head	(1)	kPa	56,3	58,7	58,7	45,0	45,0	65,9	65,9
COMPRESSORS									
No. Compressors		N°	1	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1	1
NOISE LEVEL									
Sound power level in heating	(5)(6)	dB(A)	70	70	70	71	71	74	74
Noise Pressure	(7)	dB(A)	55	55	55	56	56	58	58
SIZE AND WEIGHT									
A	(8)	mm	900	900	900	900	900	1470	1470
B	(8)	mm	420	420	420	420	420	570	570
H	(8)	mm	1390	1390	1390	1390	1390	1700	1700
Operating weight	(8)	kg	160	160	160	170	170	320	320

APPLICATION FLOOR HEATING

AW-HT			0041ms	0041t	0041ts	0061t	0061ts	0071t	0071ts
Power supply		V/ph/Hz	230/1/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
HEATING ONLY (GROSS VALUE)									
Total heating capacity	(1*)	kW	14,9	14,1	14,1	19,7	19,7	26,6	26,6
Total power input	(1*)	kW	3,50	3,35	3,35	4,70	4,70	6,05	6,05
COP	(1*)	kW/kW	4,26	4,21	4,21	4,19	4,19	4,40	4,40
HEATING ONLY (EN14511 VALUE)									
Total heating capacity	(1*)(2)	kW	14,8	14,1	14,1	19,7	19,7	26,6	26,6
COP	(1*)(2)	kW/kW	4,19	4,17	4,17	4,16	4,16	4,31	4,31
SEASONAL EFFICIENCY IN HEATING (EN14825 VALUE)									
PDesign	(3)	kW	10,3	9,89	9,89	14,1	14,1	18,6	18,6
SCOP	(3)		2,84	2,86	2,86	2,89	2,89	3,00	3,00
Performance η_s (Reg. 811/2013 UE)	(3)	%	110	111	111	113	113	117	117
Seasonal efficiency class (Regulation (UE) 811/2013)	(3)		B	B	B	B	B	A	A
PDesign	(4)	kW	11,4	10,8	10,8	14,8	14,8	20,0	20,0
SCOP	(4)		2,66	2,66	2,66	2,65	2,65	2,76	2,76
Performance η_s (Reg. 811/2013 UE)	(4)	%	104	103	103	103	103	107	107
Seasonal efficiency class (Regulation (UE) 811/2013)	(4)		A+	A+	A+	A+	A+	A+	A+
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN HEATING									
Water flow	(1*)	m ³ /h	2,57	2,45	2,45	3,41	3,41	4,61	4,61
Available unit's head	(1*)	kPa	57,2	59,3	59,3	45,2	45,2	67,9	67,9
COMPRESSORS									
No. Compressors		N°	1	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1	1
NOISE LEVEL									
Sound power level in heating	(5)(6)	dB(A)	70	70	70	71	71	74	74
Noise Pressure	(7)	dB(A)	55	55	55	56	56	58	58
SIZE AND WEIGHT									
A	(8)	mm	900	900	900	900	900	1470	1470
B	(8)	mm	420	420	420	420	420	570	570
H	(8)	mm	1390	1390	1390	1390	1390	1700	1700
Operating weight	(8)	kg	160	160	160	170	170	320	320

Notes

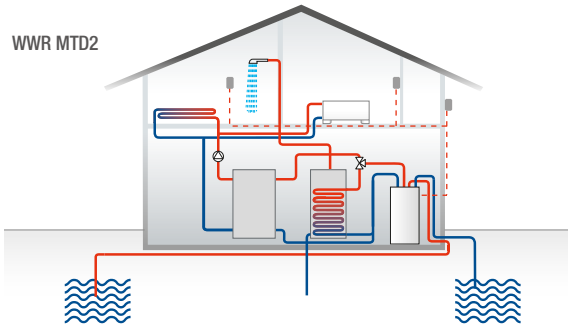
AW-HT

- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Plant (side) heat exchanger water (in/out) 30°C/35°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Values in compliance with EN14511-3:2013.
- Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (UE) N. 811/2013]
- Seasonal space heating energy efficiency class MEDIUM TEMPERATURE in AVERAGE climate conditions [REGULATION (UE) N. 811/2013]

- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in heating, outdoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.

Prana WWR MTD2

WWR MTD2



nadisystem

Remote keypad with temperature and humidity probe

Versions



WWR MTD2

Reversible water/water heat pump for water heating up to 55°C and domestic hot water production.

Unit description

The MTD2 water-cooled heat pumps are reversible units for heating, cooling and domestic hot water by means of an external three-way valve (accessory). Both the MTD2 heat pumps are suitable for traditional heating systems and radiant panels. The latter, working with water at lower temperatures, ensure a better performance and are particularly appreciated for new buildings with low energy consumption that point on using renewable energy resources. The installation is greatly simplified through the integration of the group, which ensures the unit start up by simply connecting the unit to the water plant and the electrical grid.

Controls

Electronic control Nadisystem provides great application flexibility. The remote keyboard kit wired and outdoor air temperature sensors ensure a dynamic control of delivery water temperature, optimising comfort in the room and increasing the energy efficiency.

The electronic board allows you to manage:

- wired remote control with backlit display and remote temperature/humidity probe
- outdoor temperature probe for water plant side modular set point compensation
- a zone of direct heating for serving the radiator, floor heating or fancoil
- a zone with mix valve for floor heating
- electrical heating device for possible integration and anti-legionella cycle for cylinder
- boiler or electric heater in substitution or in addition
- the room controller can customise up to six time bands. The presence of the programmable timer allows the creation of an operating profile containing up to 6 time bands
- up to 4 heat pumps in cascade (with N-CM component)
- several solutions through appropriate configuration of the controller and use of dedicated extension modules (optional), up to 5 zones

Features

- Structure and base in hot galvanised epoxy powder coated steel.
- High-efficiency plate exchangers in AISI 316 stainless steel with low pressure drops, fitted with heating element for frost protection.
- Hermetic scroll type compressors, equipped with the crankcase heater and thermal protection
- Case panels are insulated within low noise material for further improvement of silence
- Rubber vibration damper.
- Soft starter for 230V/1/50Hz units (ms)
- Phase sequence control relay for three phase models
- The water circuit comes complete with:
 - Variable flow circulator for 0011÷0061 models and centrifugal variable flow pump for models 0071÷0121, plant side
 - Modulating valve to reduce water consumption (source side).
 - Safety valve.
 - Expansion tank.
 - Manual filling assembly
 - Pressure gauge.
 - Air vent valve.
 - Drain valve on both plant and source circuits.
 - Differential pressure switch on source side and system side.

Main accessories

- Wired room terminal with backlit display and temperature and humidity probe
- Extension module for system configuration
- Three-way valve for domestic hot water
- Electric heater for the heating system
- Electric heater for hot water cylinder and for anti-legionellosis
- Cascade management kit
- Serial card RS485 for ModBus
- Buffer tank 35,100,200 liters
- Hot water cylinder 300,500 liters
- 300 litres thermal store for domestic hot water, for use with kit DOMH20
- 300,500,1000 litres thermal store for domestic hot water with solar heat exchanger, for use with kit DOMH20
- DOMH2015 e DOMH2024 kit for domestic hot water with external heat exchanger plate-to-plate and pump

Medium temperature reversible heat pump, water source, for indoor installation 5,2 ÷ 33,4 kW



APPLICATION HYDRONIC TERMINAL

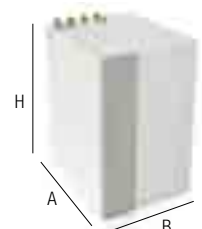
WWR MTD2		0011ms	0025ms	0031ms	0041ms	0025t	0031t	0041t	0061t	0071t	0091t	0101t	0121t
Power supply	V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
COOLING ONLY (GROSS VALUE)													
Cooling capacity	(1) kW	5,20	7,20	8,80	11,3	7,30	8,90	11,8	15,7	19,8	22,9	26,0	33,4
Total power input	(1) kW	1,50	2,00	2,60	3,20	1,90	2,40	3,20	4,00	5,10	5,80	6,80	8,40
EER	(1) kW/kW	3,47	3,60	3,38	3,53	3,84	3,71	3,69	3,92	3,88	3,95	3,82	3,98
ESEER	(1) kW/kW	3,81	4,21	3,94	3,95	4,54	4,18	4,19	4,33	4,38	4,44	4,31	4,30
COOLING ONLY (EN14511 VALUE)													
Cooling capacity	(1)(2) kW	5,22	7,22	8,84	11,3	7,32	8,94	11,9	15,8	20,0	23,1	26,2	33,7
EER	(1)(2) kW/kW	3,17	3,36	3,02	3,22	3,57	3,28	3,36	3,65	3,50	3,62	3,46	3,68
ESEER	(1)(2) kW/kW	3,43	3,85	3,42	3,53	4,15	3,61	3,74	3,97	3,87	4,00	3,83	3,92
Classe EUROVENT		F	F	G	F	E	F	F	E	E	E	E	E
HEATING ONLY (GROSS VALUE)													
Total heating capacity	(3) kW	7,20	9,80	12,2	15,4	9,60	12,1	16,1	21,2	26,2	30,5	34,9	44,0
Total power input	(3) kW	1,70	2,30	3,00	3,60	2,20	2,80	3,70	4,60	5,90	6,50	7,70	9,60
COP	(3) kW/kW	4,24	4,26	4,07	4,28	4,36	4,32	4,35	4,61	4,44	4,69	4,53	4,58
HEATING ONLY (EN14511 VALUE)													
Total heating capacity	(3)(2) kW	7,18	9,77	12,2	15,3	9,57	12,1	16,0	21,1	26,1	30,3	34,7	43,7
COP	(3)(2) kW/kW	3,84	3,92	3,58	3,82	4,00	3,77	3,87	4,16	3,90	4,17	3,99	4,11
Classe EUROVENT		D	D	E	D	C	D	C	B	C	C	C	C
SEASONAL EFFICIENCY IN HEATING (EN14825 VALUE)													
PDesign	(4) kW	8,74	11,5	14,4	18,4	11,8	14,5	19,0	25,4	31,4	36,6	41,8	52,2
SCOP	(4)	4,69	4,85	4,42	4,49	5,20	4,57	4,66	4,87	4,63	4,91	4,74	4,75
Performance η _s (Reg. 811/2013 UE)	(4) %	180	186	169	172	200	175	178	187	177	188	182	182
Seasonal efficiency class (Regulation (UE) 811/2013)	(4)	A++	A++	A++	A++	A++	A++	A++	A++	A++	A++	A++	A++
EXCHANGERS													
HEAT EXCHANGER USER SIDE IN REFRIGERATION													
Water flow	(1) m ³ /h	0,90	1,24	1,51	1,95	1,26	1,53	2,03	2,70	3,41	3,94	4,48	5,75
Available unit's head	(1) kPa	61,5	67,1	96,2	91,8	66,7	95,7	89,7	85,0	158,8	151,3	184,2	171,9
HEAT EXCHANGER USER SIDE IN HEATING													
Water flow	(3) m ³ /h	1,25	1,70	2,12	2,68	1,67	2,10	2,80	3,68	4,55	5,30	6,06	7,65
Available unit's head	(3) kPa	52,2	54,6	77,3	70,8	55,6	77,9	66,7	59,7	116,6	105,2	146,7	129,2
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION													
Water flow	(1) m ³ /h	1,14	1,57	1,95	2,48	1,57	1,93	2,56	3,37	4,26	4,91	5,61	7,15
Pressure drop	(1) kPa	12,3	18,3	27,5	30,8	18,3	27,1	32,9	33,5	37,0	31,7	43,2	44,0
HEAT EXCHANGER SOURCE SIDE IN HEATING													
Water flow	(3) m ³ /h	1,61	2,19	2,69	3,45	2,16	2,72	3,62	4,84	5,92	7,00	7,94	10,0
Pressure drop	(3) kPa	24,2	35,5	52,5	59,5	34,6	53,5	65,7	69,1	71,5	64,4	86,5	86,6
COMPRESSORS													
No. Compressors	N°	1	1	1	1	1	1	1	1	1	1	1	1
No. Circuits	N°	1	1	1	1	1	1	1	1	1	1	1	1
NOISE LEVEL													
Sound power level in cooling	(5)(6) dB(A)	52	53	53	58	53	53	58	59	66	66	70	70
Sound power level in heating	(5)(7) dB(A)	52	53	53	58	53	53	58	59	66	66	70	70
Noise Pressure	(8) dB(A)	37	38	38	43	38	38	43	44	51	51	55	55
SIZE AND WEIGHT													
A	(9) mm	845	845	845	845	845	845	845	845	845	845	845	845
B	(9) mm	680	680	680	680	680	680	680	680	680	680	680	680
H	(9) mm	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105
Operating weight	(9) kg	188	190	195	210	190	195	210	225	230	245	250	270

Notes

WWR-MTD2

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
- Values in compliance with EN14511-3:2013.
- Plant (side) heating exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 10°C/7°C.
- Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (UE) N. 811/2013]
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, indoors.
- Sound power level in heating, indoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.

Certified data in EUROVENT



Prana WWR MTD2

APPLICATION FLOOR HEATING

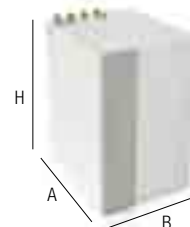
WWR MTD2		0011ms	0025ms	0031ms	0041ms	0025t	0031t	0041t	0061t	0071t	0091t	0101t	0121t
Power supply	V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
COOLING ONLY (GROSS VALUE)													
Cooling capacity	(1) kW	7,10	9,80	12,0	15,1	9,50	12,0	15,7	21,3	26,9	30,7	34,8	44,8
Total power input	(1) kW	1,60	2,00	2,50	3,30	1,80	2,50	3,30	4,10	5,20	6,00	7,00	8,80
EER	(1) kW/kW	4,44	4,90	4,80	4,58	5,28	4,80	4,76	5,20	5,17	5,12	4,97	5,09
ESEER	(1) kW/kW	3,81	4,21	3,94	3,95	4,54	4,18	4,19	4,33	4,38	4,44	4,31	4,30
COOLING ONLY (EN14511 VALUE)													
Cooling capacity	(1)(2) kW	7,12	9,83	12,0	15,2	9,53	12,0	15,8	21,4	27,0	30,9	35,0	45,1
EER	(1)(2) kW/kW	4,04	4,51	4,20	4,11	4,83	4,20	4,26	4,72	4,56	4,60	4,44	4,63
ESEER	(1)(2) kW/kW	3,43	3,85	3,42	3,53	4,15	3,61	3,74	3,97	3,87	4,00	3,83	3,92
Classe EUROVENT		F	F	G	F	E	F	F	E	E	E	E	E
HEATING ONLY (GROSS VALUE)													
Total heating capacity	(3) kW	7,70	10,2	12,8	16,2	10,4	12,8	16,8	22,4	27,8	32,3	37,0	46,2
Total power input	(3) kW	1,40	1,80	2,30	2,90	1,70	2,20	2,90	3,70	4,70	5,20	6,10	7,70
COP	(3) kW/kW	5,50	5,67	5,57	5,59	6,12	5,82	5,79	6,05	5,91	6,21	6,07	6,00
HEATING ONLY (EN14511 VALUE)													
Total heating capacity	(3)(2) kW	7,68	10,2	12,8	16,1	10,4	12,8	16,7	22,3	27,7	32,2	36,8	45,9
COP	(3)(2) kW/kW	4,83	5,03	4,65	4,78	5,36	4,82	4,91	5,23	4,94	5,27	5,08	5,17
Classe EUROVENT		F	D	E	D	C	D	C	B	C	C	C	C
SEASONAL EFFICIENCY IN HEATING (EN14825 VALUE)													
PDesign	(4) kW	8,74	11,5	14,4	18,4	11,8	14,5	19,0	25,4	31,4	36,6	41,8	52,2
SCOP	(4)	4,69	4,85	4,42	4,49	5,20	4,57	4,66	4,87	4,63	4,91	4,74	4,75
Performance η_{sp} (Reg. 811/2013 UE)	(4) %	180	186	169	172	200	175	178	187	177	188	182	182
Seasonal efficiency class (Regulation (UE) 811/2013)	(4)	A++	A++	A++	A++	A++	A++	A++	A++	A++	A++	A++	A++
EXCHANGERS													
HEAT EXCHANGER USER SIDE IN REFRIGERATION													
Water flow	(1) m ³ /h	1,23	1,69	2,07	2,61	1,64	2,07	2,71	3,68	4,64	5,30	6,01	7,73
Available unit's head	(1) kPa	52,9	54,9	79,0	73,1	56,5	79,0	69,7	59,9	112,9	105,2	148,2	127,0
HEAT EXCHANGER USER SIDE IN HEATING													
Water flow	(3) m ³ /h	1,33	1,77	2,22	2,81	1,80	2,22	2,91	3,88	4,82	5,59	6,41	8,00
Available unit's head	(3) kPa	49,6	52,6	73,7	66,5	51,4	73,7	62,8	53,8	105,9	94,2	137,2	119,9
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION													
Water flow	(1) m ³ /h	1,49	2,02	2,49	3,15	1,94	2,49	3,26	4,36	5,51	6,29	7,17	9,19
Pressure drop	(1) kPa	20,8	30,3	44,8	49,8	27,8	44,8	53,1	56,0	61,7	52,1	70,5	72,7
HEAT EXCHANGER SOURCE SIDE IN HEATING													
Water flow	(3) m ³ /h	1,83	2,44	3,05	3,87	2,52	3,08	4,04	5,43	6,71	7,86	8,97	11,2
Pressure drop	(3) kPa	31,4	44,1	67,5	74,8	47,2	68,7	81,6	86,9	91,6	81,4	110	107
COMPRESSORS													
No. Compressors	N°	1	1	1	1	1	1	1	1	1	1	1	1
No. Circuits	N°	1	1	1	1	1	1	1	1	1	1	1	1
NOISE LEVEL													
Sound power level in cooling	(5)(6) dB(A)	52	53	53	58	53	53	58	59	66	66	70	70
Sound power level in heating	(5)(7) dB(A)	52	53	53	58	53	53	58	59	66	66	70	70
Noise Pressure	(8) dB(A)	37	38	38	43	38	38	43	44	51	51	55	55
SIZE AND WEIGHT													
A	(9) mm	845	845	845	845	845	845	845	845	845	845	845	845
B	(9) mm	680	680	680	680	680	680	680	680	680	680	680	680
H	(9) mm	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105
Operating weight	(9) kg	188	190	195	210	190	195	210	225	230	245	250	270

Notes

WWR-MTD2

- Plant (side) cooling exchanger water (in/out) 23°C/18°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
- Values in compliance with EN14511-3:2013.
- Plant (side) heating exchanger water (in/out) 30°C/35°C; Source (side) heat exchanger water (in/out) 10°C/7°C.
- Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (UE) N. 811/2013]
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, indoors.
- Sound power level in heating, indoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.

Certified data in EUROVENT



Medium temperature reversible heat pump, water source,
for indoor installation 5,2 ÷ 33,4 kW



$$\beta = \frac{x+3=51}{\sqrt{1-\frac{v^2}{c^2}}}$$

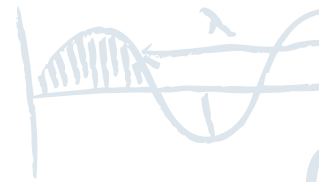
$$9-y=7$$

$$52-x^2+y=? \quad x(x-1)=x^2-1$$

$$\frac{\partial^2 \varphi}{\partial t^2} = \ddot{\alpha} \Delta$$

$$\sqrt{64} \cdot \frac{1}{290}$$

$$\frac{\partial^2 \varphi}{\partial t^2} = \ddot{\alpha} \Delta \varphi \quad \beta = \frac{x+3=51}{\sqrt{1-\frac{v^2}{c^2}}}$$



$$x(x-1)=x^2-1$$

$$x+3=5$$

$$x(x-1)=x^2-1$$

$$-8=2 \cdot x \quad y=yx^2$$

$$E=mc^2$$

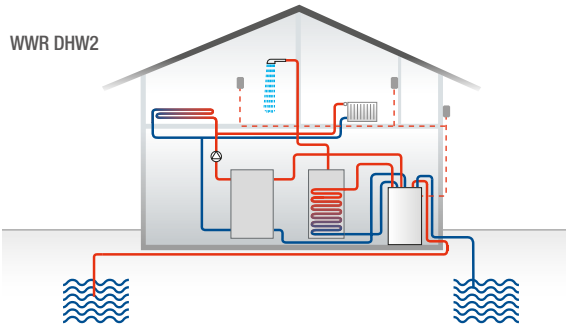
$$-8=2 \cdot x \quad y=yx^2$$

$$\frac{1}{290} \quad 52-x^2+y$$



Prana WWR DHW2

WWR DHW2



Versions



WWR DHW2

Reversible water source heat pump, with total heat recovery, for domestic hot water production

Unit description

PRANA DHW2 heat pumps are reversible units for all year round operation in any operating mode: single cycle (air conditioning, heating, domestic hot water) as well as combined cycle in total heat recovery (domestic hot water together with cooling). Energy efficiency is particularly high during the summer cycle, when, thanks to the full recovery of the heat, the production of hot water is free. During the combined use, the DHW exchanger uses the temperature of the discharge gases to get domestic hot water of 65° C. The advanced electronic regulation developed by Climaveneta ensures the highest operational flexibility, a quick set point achievement and a significant increase in the overall COP, which go hand in hand with electricity and space reduction. These advantages, combined with the possibility of completely eliminating the traditional boiler, make PRANA DHW2 the ideal solution for energy saving applications in residential, hotel and small applications.

Controls

Electronic control Nadisystem provides great application flexibility. The remote keypad kit wired and outdoor air temperature sensors ensure a dynamic control of delivery water temperature, optimising comfort in the room and increasing the energy efficiency.

The electronic board allows you to manage:

- wired remote control with backlit display and remote temperature/humidity probe
- outdoor temperature probe for water plant side modular set point compensation
- a zone of direct heating for serving the radiator, floor heating or fancoil
- a zone with mix valve for floor heating
- electrical heating device for possible integration and anti-legionella cycle for cylinder
- boiler or electric heater in substitution or in addition
- the room controller can customise up to six time bands. The presence of the programmable timer allows the creation of an operating profile containing up to 6 time bands
- up to 4 heat pumps in cascade (with N-CM component)
- several solutions through appropriate configuration of the controller and use of dedicated extension modules (optional), up to 5 zones

nadisystem

Remote keypad with temperature and humidity probe



Features

- Structure and base in hot galvanised epoxy powder coated steel
- Case panels are insulated within low noise material for a silent operation
- Rubber vibration damper
- Hermetic scroll type compressors, equipped with the crankcase heater and thermal protection
- Stainless steel (AISI 316) plate to plate exchanger (at the domestic hot water side) ensures with high efficiency and low pressure drop. It is positioned next after the compressor and it ensures the domestic hot water production. This can work either in full or in partial recovery, with the constant optimisation of efficiency through the advanced logic of the controller
- Plant side exchanger with stainless steel AISI 316 plates that ensure high efficiency and low pressure drop. It meets the supply of both hot or cold water, regardless of the domestic hot water
- Source side exchanger with stainless steel (AISI 316) plates. It ensures high efficiency and low pressure drop
- Soft starter for 230V/1/50Hz units (ms)
- Phase sequence control relay for three phase models
- The water circuit comes complete with:
 - Circulator for the 0011÷0061 models and centrifugal for the 0071÷0121 models, plant side.
 - Circulator for the 0011÷0091 models and centrifugal pump for the 0101÷0121 models, hot water side.
 - Modulating valve to reduce water consumption (source side).
 - Safety valve.
 - Expansion tank.
 - Manual filling assembly.
 - Drain valve on both plant and source circuits.
 - Pressure gauge.
 - Air vent valve.
 - Differential pressure switch on source side and system side.

Main accessories

- Wired room terminal with backlit display and temperature/ humidity probe
- Extension module for system configuration
- Electric heater for the heating system
- Electric heater for hot water cylinder and for anti-legionellosis
- Cascade management kit
- Serial card RS485 for ModBus
- Buffer tank 35,100,200 liters
- Hot water cylinder 300,500 liters
- 300 litres thermal store for domestic hot water, for use with DOMH20 kit
- 300,500,1000 litres thermal store for domestic hot water, with solar heat exchanger, for use with the DOMH20 kit
- DOMH2015 e DOMH2024 kit for domestic hot water, with external heat exchanger plate-to-plate and pump

Medium temperature reversible heat pump with total heat recovery, water source, for indoor installation 5,1 - 34,8 kW



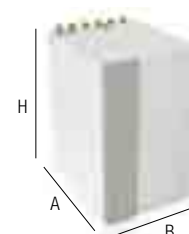
APPLICATION HYDRONIC TERMINAL

WWR DHW2		0011ms	0025ms	0031ms	0041ms	0025t	0031t	0041t	0061t	0071t	0091t	0101t	0121t
Power supply	V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
COOLING ONLY (GROSS VALUE)													
Cooling capacity	(1)	kW	5,10	7,70	8,90	11,0	7,70	8,80	10,9	16,1	21,7	24,6	34,8
Total power input	(1)	kW	1,30	2,00	2,40	2,90	2,00	2,30	2,80	4,00	5,40	5,90	8,90
EER	(1)	kW/kW	3,92	3,85	3,71	3,79	3,85	3,83	3,89	4,03	4,02	4,17	3,91
ESEER	(1)	kW/kW											
COOLING ONLY (EN14511 VALUE)													
Cooling capacity	(1)(2)	kW	5,12	7,72	8,94	11,0	7,72	8,84	10,9	16,2	21,9	24,8	35,1
EER	(1)(2)	kW/kW	3,55	3,59	3,29	3,44	3,59	3,38	3,52	3,76	3,63	3,82	3,63
ESEER	(1)(2)	kW/kW											
HEATING ONLY (GROSS VALUE)													
Total heating capacity	(3)	kW	6,00	9,20	10,6	13,1	9,10	10,5	13,0	19,0	25,5	28,7	40,7
Total power input	(3)	kW	1,70	2,60	3,10	3,70	2,50	3,00	3,50	5,00	6,80	7,40	11,2
COP	(3)	kW/kW	3,53	3,54	3,42	3,54	3,64	3,50	3,71	3,80	3,75	3,88	3,74
HEATING ONLY (EN14511 VALUE)													
Total heating capacity	(2)(3)	kW	5,98	9,17	10,6	13,0	9,07	10,5	12,9	18,9	25,3	28,5	40,4
COP	(2)(3)	kW/kW	3,24	3,32	3,07	3,23	3,40	3,14	3,37	3,54	3,38	3,53	3,35
COOLING WITH TOTAL HEAT RECOVERY													
Cooling capacity	(4)	kW	4,39	6,73	7,71	9,67	6,72	7,70	9,65	14,2	19,1	21,7	30,2
Total power input	(4)	kW	1,68	2,57	3,11	3,64	2,56	3,02	3,57	5,00	6,85	7,44	11,2
Recovery heat exchanger capacity	(4)	kW	5,97	9,14	10,6	13,1	9,13	10,5	13,0	18,9	25,6	28,7	40,7
TOTAL RECOVERY ONLY													
Total heating capacity	(3)	kW	6,00	9,20	10,6	13,1	9,10	10,5	13,0	19,0	25,5	28,7	40,7
Total power input	(3)	kW	1,70	2,60	3,10	3,70	2,50	3,00	3,50	5,00	6,80	7,40	11,2
SEASONAL EFFICIENCY IN HEATING (EN14825 VALUE)													
PDesign	(5)	kW	7,18	10,9	12,5	15,4	10,7	12,4	15,2	22,5	30,2	34,0	48,6
SCOP	(5)		4,02	4,11	3,72	3,69	4,22	3,81	4,03	4,29	4,05	4,17	4,03
Performance η_s (Reg. 811/2013 UE)	(5)	%	153	156	141	140	161	144	153	164	154	159	154
Seasonal efficiency class (Regulation (UE) 811/2013)	(5)		A++	A++	A+	A+	A++	A+	A++	A++	A++	A++	A++
EXCHANGERS													
HEAT EXCHANGER USER SIDE IN REFRIGERATION													
Water flow	(1)	m ³ /h	0,88	1,33	1,53	1,89	1,33	1,51	1,88	2,77	3,74	4,24	5,99
Available unit's head	(1)	kPa	62,4	65,9	96,5	93,9	65,9	96,9	94,3	87,6	149,2	143,3	168,7
HEAT EXCHANGER USER SIDE IN HEATING													
Water flow	(3)	m ³ /h	1,04	1,60	1,84	2,27	1,58	1,83	2,26	3,30	4,43	4,98	7,08
Available unit's head	(3)	kPa	58,7	58,9	87,7	84,3	59,4	88,2	84,8	76,2	123,8	118,6	145,4
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION													
Water flow	(1)	m ³ /h	1,09	1,66	1,93	2,38	1,66	1,90	2,34	3,44	4,64	5,22	7,48
Pressure drop	(1)	kPa	10,4	19,1	25,8	27,1	19,1	24,9	26,3	28,6	41,3	33,9	45,6
HEAT EXCHANGER SOURCE SIDE IN HEATING													
Water flow	(3)	m ³ /h	1,26	1,94	2,21	2,75	1,94	2,21	2,78	4,10	5,48	6,23	8,66
Pressure drop	(3)	kPa	13,8	26,0	33,8	36,3	25,9	33,8	37,1	40,6	57,6	48,2	61,2
HEAT EXCHANGER RECOVERY USER SIDE IN REFRIGERATION													
Water flow	(4)	m ³ /h	1,04	1,59	1,85	2,28	1,59	1,83	2,26	3,29	4,45	4,99	7,07
Pressure drop	(4)	kPa	9,36	17,5	23,6	24,8	17,4	23,2	24,4	26,1	37,9	31,0	40,2
HEAT EXCHANGER RECOVERY USER SIDE IN HEATING													
Water flow	(4)	m ³ /h	1,01	1,64	1,84	2,33	1,55	1,79	2,22	3,23	4,32	4,87	6,87
Pressure drop	(4)	kPa	8,81	18,7	23,6	25,9	16,7	22,2	23,6	25,2	35,9	29,5	38,2
COMPRESSORS													
No. Compressors	N°		1	1	1	1	1	1	1	1	1	1	1
No. Circuits	N°		1	1	1	1	1	1	1	1	1	1	1
NOISE LEVEL													
Sound power level in cooling	(6)(7)	dB(A)	52	53	53	58	53	53	58	59	66	66	70
Sound power level in heating	(6)(8)	dB(A)	52	53	53	58	53	53	58	59	66	66	70
Noise Pressure	(9)	dB(A)	37	38	38	43	38	38	43	44	51	51	55
SIZE AND WEIGHT													
A	(10)	mm	845	845	845	845	845	845	845	845	845	845	845
B	(10)	mm	680	680	680	680	680	680	680	680	680	680	680
H	(10)	mm	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105
Operating weight	(10)	kg	205	210	215	230	210	215	230	245	270	280	315

Notes

WWR DHW2

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
- Values in compliance with EN14511-3:2013.
- Plant (side) heating exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 10°C/7°C.
- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (auxiliary side) heat exchanger recovery water (in/out) 45°C/50°C.
- Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (UE) N. 811/2013]
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, indoors.
- Sound power level in heating, indoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.



prana WWR DHW2

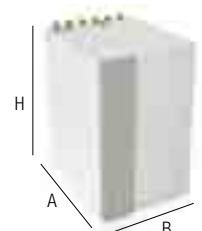
APPLICATION FLOOR HEATING

WWR DHW2		0011ms	0025ms	0031ms	0041ms	0025t	0031t	0041t	0061t	0071t	0091t	0101t	0121t
Power supply	V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
COOLING ONLY (GROSS VALUE)													
Cooling capacity	(1) kW	7,26	11,0	12,6	15,4	11,0	12,5	15,4	22,5	30,2	34,4	39,0	49,8
Total power input	(1) kW	1,29	1,96	2,37	2,89	1,96	2,27	2,82	4,10	5,47	6,11	7,28	9,24
EER	(1) kW/kW	5,63	5,61	5,32	5,33	5,61	5,51	5,46	5,49	5,52	5,63	5,36	5,39
ESEER	(1) kW/kW												
COOLING ONLY (EN14511 VALUE)													
Cooling capacity	(1)(2) kW	7,28	11,0	12,6	15,5	11,0	12,5	15,5	22,6	30,3	34,5	39,3	50,1
EER	(1)(2) kW/kW	5,04	5,13	4,62	4,73	5,12	4,76	4,84	5,01	4,83	5,00	4,77	4,86
ESEER	(1)(2) kW/kW												
HEATING ONLY (GROSS VALUE)													
Total heating capacity	(3) kW	6,35	9,64	11,1	13,7	9,50	11,0	13,5	19,9	26,8	30,1	34,5	43,1
Total power input	(3) kW	1,33	2,03	2,43	2,91	1,94	2,35	2,76	3,97	5,37	5,93	6,99	8,93
COP	(3) kW/kW	4,77	4,75	4,57	4,71	4,90	4,68	4,89	5,01	4,99	5,08	4,94	4,83
HEATING ONLY (EN14511 VALUE)													
Total heating capacity	(2)(3) kW	6,33	9,61	11,1	13,6	9,47	11,0	13,4	19,8	26,7	29,9	34,2	42,8
COP	(2)(3) kW/kW	4,26	4,33	3,95	4,15	4,45	4,03	4,29	4,54	4,32	4,47	4,31	4,31
COOLING WITH TOTAL HEAT RECOVERY													
Cooling capacity	(4) kW	6,42	9,77	11,0	13,8	9,70	11,1	13,8	20,0	27,2	30,8	34,9	44,1
Total power input	(4) kW	1,68	2,51	3,05	3,66	2,51	2,97	3,62	5,10	6,88	7,60	9,12	11,5
Recovery heat exchanger capacity	(4) kW	8,00	12,1	13,9	17,2	12,1	13,9	17,2	24,8	33,7	38,0	43,5	54,9
TOTAL RECOVERY ONLY													
Total heating capacity	(3) kW	6,35	9,64	11,1	13,7	9,50	11,0	13,5	19,9	26,8	30,1	34,5	43,1
Total power input	(3) kW	1,33	2,03	2,43	2,91	1,94	2,35	2,76	3,97	5,37	5,93	6,99	8,93
SEASONAL EFFICIENCY IN HEATING (EN14825 VALUE)													
PDesign	(5) kW	7,18	10,9	12,5	15,4	10,7	12,4	15,2	22,5	30,2	34,0	38,8	48,6
SCOP	(5)	4,02	4,11	3,72	3,69	4,22	3,81	4,03	4,29	4,05	4,17	4,03	4,06
Performance η_{sp} (Reg. 811/2013 UE)	(5) %	153	156	141	140	161	144	153	164	154	159	153	154
Seasonal efficiency class (Regulation (UE) 811/2013)	(5)	A++	A++	A+	A+	A++	A+	A++	A++	A++	A++	A++	A++
EXCHANGERS													
HEAT EXCHANGER USER SIDE IN REFRIGERATION													
Water flow	(1) m ³ /h	1,25	1,89	2,17	2,65	1,89	2,15	2,66	3,88	5,21	5,94	6,73	8,59
Available unit's head	(1) kPa	53,2	50,2	77,1	73,1	50,1	77,6	72,9	61,7	92,4	83,3	134,5	107,1
HEAT EXCHANGER USER SIDE IN HEATING													
Water flow	(3) m ³ /h	1,10	1,67	1,92	2,37	1,64	1,90	2,34	3,44	4,64	5,21	5,98	7,47
Available unit's head	(3) kPa	57,3	56,9	85,4	81,7	57,6	86,1	82,5	72,9	115,8	110,4	154,2	136,1
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION													
Water flow	(1) m ³ /h	1,47	2,22	2,56	3,13	2,22	2,53	3,13	4,56	6,11	6,95	7,94	10,1
Pressure drop	(1) kPa	18,7	34,0	45,4	47,0	34,1	44,3	46,9	50,3	71,7	60,1	77,4	83,6
HEAT EXCHANGER SOURCE SIDE IN HEATING													
Water flow	(3) m ³ /h	1,46	2,22	2,53	3,14	2,20	2,51	3,13	4,63	6,23	7,03	8,01	9,97
Pressure drop	(3) kPa	18,6	34,0	44,1	47,1	33,5	43,7	46,9	51,8	74,5	61,5	78,9	81,0
HEAT EXCHANGER RECOVERY USER SIDE IN REFRIGERATION													
Water flow	(4) m ³ /h	1,39	2,11	2,42	3,00	2,10	2,41	3,00	4,31	5,86	6,60	7,56	9,54
Pressure drop	(4) kPa	16,8	30,8	40,5	42,9	30,4	40,1	42,9	44,8	65,8	54,1	70,3	74,2
HEAT EXCHANGER RECOVERY USER SIDE IN HEATING													
Water flow	(4) m ³ /h	1,01	1,64	1,84	2,33	1,55	1,79	2,22	3,23	4,32	4,87	5,57	6,87
Pressure drop	(4) kPa	8,81	18,7	23,6	25,9	16,7	22,2	23,6	25,2	35,9	29,5	38,2	38,4
COMPRESSORS													
No. Compressors	N°	1	1	1	1	1	1	1	1	1	1	1	1
No. Circuits	N°	1	1	1	1	1	1	1	1	1	1	1	1
NOISE LEVEL													
Sound power level in cooling	(6)(7) dB(A)	52	53	53	58	53	53	58	59	66	66	70	70
Sound power level in heating	(6)(8) dB(A)	52	53	53	58	53	53	58	59	66	66	70	70
Noise Pressure	(9) dB(A)	37	38	38	43	38	38	43	44	51	51	55	55
SIZE AND WEIGHT													
A	(10) mm	845	845	845	845	845	845	845	845	845	845	845	845
B	(10) mm	680	680	680	680	680	680	680	680	680	680	680	680
H	(10) mm	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105
Operating weight	(10) kg	205	210	215	230	210	215	230	245	270	280	290	315

Notes

WWR DHW2

- Plant (side) cooling exchanger water (in/out) 23°C/18°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
- Values in compliance with EN14511-3:2013.
- Plant (side) heating exchanger water (in/out) 30°C/35°C; Source (side) heat exchanger water (in/out) 10°C/7°C.
- Plant (side) cooling exchanger water (in/out) 23°C/18°C; Plant (auxiliary side) heat exchanger recovery water (in/out) 45°C/50°C.
- Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (UE) N. 811/2013]
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, indoors.
- Sound power level in heating, indoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.



Medium temperature reversible heat pump with total heat recovery,
water source, for indoor installation 5,1 - 34,8 kW



$$\beta = \frac{x+3=51}{\sqrt{1-\frac{v^2}{c^2}}}$$

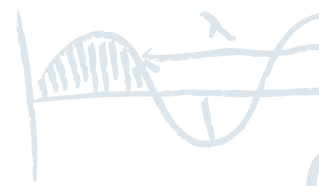
$$9-y=7$$

$$52-x^2+y=? \quad x(x-1)=x^2-1$$

$$\frac{\partial^2 \varphi}{\partial t^2} = -\omega^2 \Delta \varphi$$

$$\sqrt{64} \cdot \frac{1}{290} \quad x(x-1)=x^2-1$$

$$\frac{\partial^2 \varphi}{\partial t^2} = -\omega^2 \Delta \varphi \quad \beta = \frac{x+3=51}{\sqrt{1-\frac{v^2}{c^2}}}$$



$$-8=2 \cdot x \quad y=yx^2$$

$$E=mc^2$$

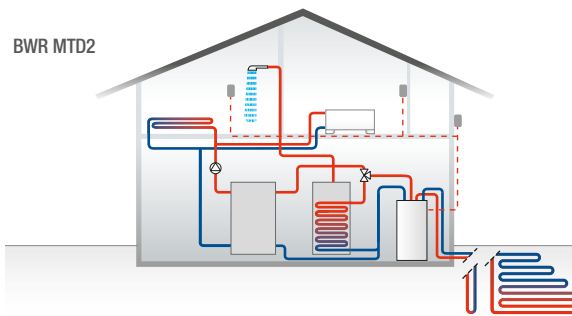
$$-8=2 \cdot x \quad y=yx^2$$

$$52-x^2+y=?$$



prana BWR MTD2

BWR MTD2



nadisystem

Remote keypad with temperature and humidity probe



Versions



BWR MTD2

Reversible heat pump, geothermal source, for water heating up to 55°C and domestic hot water production.

Unit description

The MTD2 water-cooled heat pumps are reversible units for heating, cooling and domestic hot water by means of an external three-way valve (accessory). Both the MTD2 heat pumps are suitable for traditional heating systems and radiant panels. The latter, working with water at lower temperatures, ensure a better performance and are particularly appreciated for new buildings with low energy consumption that point on using renewable energy resources. The installation is greatly simplified through the integration of the group, which ensures the unit start up by simply connecting the unit to the water plant and the electrical grid.

Controls

Electronic control Nadisystem provides great application flexibility. The remote keyboard kit wired and outdoor air temperature sensors ensure a dynamic control of delivery water temperature, optimising comfort in the room and increasing the energy efficiency.

The electronic board allows you to manage:

- wired remote control with backlit display and remote temperature/humidity probe
- outdoor temperature probe for water plant side modular set point compensation
- a zone of direct heating for serving the radiator, floor heating or fancoil
- a zone with mix valve for floor heating
- electrical heating device for possible integration and anti-legionella cycle for cylinder
- boiler or electric heater in substitution or in addition
- the room controller can customise up to six time bands. The presence of the programmable timer allows the creation of an operating profile containing up to 6 time bands
- up to 4 heat pumps in cascade (with N-CM component)
- several solutions through appropriate configuration of the controller and use of dedicated extension modules (optional), up to 5 zones

Features

- Structure and base in hot galvanised epoxy powder coated steel.
- High-efficiency plate exchangers in AISI 316 stainless steel with low pressure drops, fitted with heating element for frost protection.
- Hermetic scroll type compressors, equipped with the crankcase heater and thermal protection
- Case panels are insulated within low noise material for further improvement of silence
- Rubber vibration damper
- Soft starter for 230V/1/50Hz units (ms)
- Phase sequence control relay for three phase models
- The water circuit comes complete with:
 - Variable flow circulator for 0011÷0061 models and centrifugal variable flow pump for models 0071÷0121, plant side.
 - Variable flow circulator for 0011÷0031 models, centrifugal variable flow pump for models 0041÷0121 on source side (for geothermal systems, closed vertical or horizontal loops).
 - Safety valve.
 - Expansion tank.
 - Manual filling assembly
 - Pressure gauge.
 - Air vent valve.
 - Drain valve on both plant and source circuits.
 - Differential pressure switch on source side and system side.

Main accessories

- Wired room terminal with backlit display and temperature and humidity probe
- Extension module for system configuration
- Three-way valve for domestic hot water
- Electric heater for the heating system
- Electric heater for hot water cylinder and for anti-legionellosis
- Cascade management kit
- Serial card RS485 for ModBus
- Buffer tank 35,100,200 liters
- Hot water cylinder 300,500 liters
- 300 litres thermal store for domestic hot water, for use with the DOMH2O kit
- 300,500,1000 litres thermal store for domestic hot water with solar heat exchanger, for use with the DOMH2O kit
- DOMH2015 e DOMH2024 kit for domestic hot water with external heat exchanger plate-to-plate and pump

Medium temperature reversible heat pump, geothermal source, for indoor installation 5,1 ÷ 32,6 kW



APPLICATION HYDRONIC TERMINAL - GEOTHERMAL SOURCE

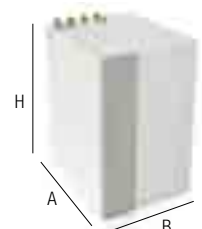
BWR MTD2		0011ms	0025ms	0031ms	0041ms	0025t	0031t	0041t	0061t	0071t	0091t	0101t	0121t
Power supply	V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
COOLING ONLY (GROSS VALUE)													
Cooling capacity	(1) kW	5,08	6,97	8,57	11,0	7,17	8,67	11,5	15,3	19,3	22,3	25,3	32,5
Total power input	(1) kW	1,61	2,01	2,61	3,21	1,91	2,51	3,31	4,12	5,12	5,92	6,93	8,64
EER	(1) kW/kW	3,16	3,47	3,28	3,43	3,75	3,45	3,47	3,71	3,77	3,77	3,65	3,76
ESEER	(1) kW/kW												
COOLING ONLY (EN14511 VALUE)													
Cooling capacity	(1)(2) kW	5,10	6,99	8,61	11,0	7,19	8,71	11,5	15,4	19,4	22,5	25,5	32,8
EER	(1)(2) kW/kW	2,78	2,96	2,78	2,77	3,19	2,90	2,82	3,21	3,16	3,27	3,11	3,35
ESEER	(1)(2) kW/kW												
Classe EUROVENT		G	F	G	G	F	G	G	F	F	F	F	E
HEATING ONLY (GROSS VALUE)													
Total heating capacity	(3) kW	5,19	7,08	8,98	11,3	6,98	8,68	11,8	15,2	18,7	21,7	25,0	31,8
Total power input	(3) kW	1,70	2,30	3,00	3,60	2,20	2,70	3,70	4,40	5,60	6,20	7,40	9,00
COP	(3) kW/kW	3,05	3,08	2,99	3,14	3,17	3,21	3,19	3,45	3,34	3,50	3,38	3,53
HEATING ONLY (EN14511 VALUE)													
Total heating capacity	(3) kW	5,17	7,06	8,94	11,3	6,96	8,64	11,7	15,1	18,6	21,5	24,8	31,5
COP	(3) kW/kW	2,69	2,65	2,56	2,56	2,72	2,70	2,61	2,98	2,78	3,00	2,84	3,10
Classe EUROVENT	(3)	G	G	G	G	G	G	G	F	G	F	G	F
SEASONAL EFFICIENCY IN HEATING (EN14825 VALUE)													
PDesign	(4) kW	6,08	8,23	10,3	13,2	8,47	10,2	13,7	17,9	22,1	25,7	29,6	37,2
SCOP	(4)	3,58	3,35	3,32	3,33	3,62	3,59	3,36	3,74	3,54	3,84	3,70	3,82
Performance η_{sp} (Reg. 811/2013 UE)	(4) %	135	126	125	125	137	136	126	142	133	146	140	145
Seasonal efficiency class (Regulation (UE) 811/2013)	(4)	A+	A+	A+	A+	A+	A+	A+	A+	A+	A+	A+	A+
EXCHANGERS													
HEAT EXCHANGER USER SIDE IN REFRIGERATION													
Water flow	(1) m ³ /h	0,87	1,20	1,47	1,89	1,23	1,49	1,97	2,64	3,33	3,84	4,36	5,59
Available unit's head	(1) kPa	61,9	68,0	97,2	93,3	67,2	96,8	91,2	86,4	161,5	154,4	186,6	175,0
HEAT EXCHANGER USER SIDE IN HEATING													
Water flow	(3) m ³ /h	0,90	1,23	1,56	1,96	1,21	1,51	2,04	2,63	3,26	3,78	4,35	5,53
Available unit's head	(3) kPa	61,3	67,3	95,0	91,5	67,7	96,4	89,3	86,5	163,8	156,3	186,8	176,2
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION													
Water flow	(1) m ³ /h	1,24	1,67	2,07	2,63	1,69	2,07	2,74	3,61	4,54	5,24	5,98	7,63
Pressure drop	(1) kPa	17,1	24,5	37,1	41,2	25,1	37,1	44,8	45,8	50,0	43,1	58,5	59,7
HEAT EXCHANGER SOURCE SIDE IN HEATING													
Water flow	(3) m ³ /h	1,15	1,58	1,97	2,53	1,58	1,97	2,66	3,54	4,33	5,10	5,80	7,49
Pressure drop	(3) kPa	14,8	22,0	33,7	38,2	21,9	33,5	42,2	43,9	45,4	40,9	55,0	57,5
COMPRESSORS													
No. Compressors	N°	1	1	1	1	1	1	1	1	1	1	1	1
No. Circuits	N°	1	1	1	1	1	1	1	1	1	1	1	1
NOISE LEVEL													
Sound power level in cooling	(5)(6) dB(A)	52	53	53	58	53	53	58	59	66	66	70	70
Sound power level in heating	(5)(7) dB(A)	52	53	53	58	53	53	58	59	66	66	70	70
Noise Pressure	(8) dB(A)	37	38	38	43	38	38	43	44	51	51	55	55
SIZE AND WEIGHT													
A	(9) mm	845	845	845	845	845	845	845	845	845	845	845	845
B	(9) mm	680	680	680	680	680	680	680	680	680	680	680	680
H	(9) mm	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105
Operating weight	(9) kg	188	190	195	210	190	195	210	225	230	245	250	270

Notes

BWR MTD2

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
- Values in compliance with EN14511-3:2013.
- Plant (side) heating exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 0°C/-3°C (Gly 30%).
- Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (UE) N. 811/2013]
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, indoors.
- Sound power level in heating, indoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.

Certified data in EUROVENT



prana BWR MTD2

APPLICATION FLOOR HEATING - GEOTHERMAL SOURCE

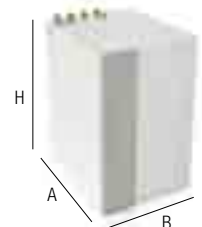
BWR MTD2		0011ms	0025ms	0031ms	0041ms	0025t	0031t	0041t	0061t	0071t	0091t	0101t	0121t
Power supply	V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
COOLING ONLY (GROSS VALUE)													
Cooling capacity	(1) kW	6,97	9,56	11,7	14,6	9,26	11,8	15,3	20,7	26,2	29,9	33,9	43,6
Total power input	(1) kW	1,61	2,01	2,61	3,31	1,91	2,51	3,41	4,22	5,32	6,13	7,13	8,94
EER	(1) kW/kW	4,33	4,76	4,48	4,41	4,85	4,70	4,49	4,91	4,92	4,88	4,75	4,88
ESEER	(1) kW/kW												
COOLING ONLY (EN14511 VALUE)													
Cooling capacity	(1)(2) kW	6,99	9,59	11,7	14,7	9,29	11,8	15,4	20,8	26,3	30,1	34,1	43,9
EER	(1)(2) kW/kW	3,84	4,08	3,78	3,54	4,13	3,94	3,61	4,19	4,12	4,22	4,06	4,31
ESEER	(1)(2) kW/kW												
Classe EUROVENT		G	F	G	G	F	G	G	F	F	F	F	E
HEATING ONLY (GROSS VALUE)													
Total heating capacity	(3) kW	5,38	7,28	9,17	11,7	7,48	9,07	12,2	15,8	19,6	22,8	26,3	33,1
Total power input	(3) kW	1,30	1,80	2,30	2,80	1,70	2,10	2,80	3,50	4,40	4,90	5,80	7,30
COP	(3) kW/kW	4,14	4,04	3,99	4,18	4,40	4,32	4,36	4,51	4,45	4,65	4,53	4,53
HEATING ONLY (EN14511 VALUE)													
Total heating capacity	(3) kW	5,36	7,26	9,13	11,6	7,46	9,03	12,1	15,7	19,4	22,6	26,1	32,8
COP	(3) kW/kW	3,53	3,37	3,26	3,23	3,64	3,47	3,36	3,74	3,56	3,85	3,67	3,87
Classe EUROVENT	(3)	G	G	G	G	G	G	G	F	G	F	G	F
SEASONAL EFFICIENCY IN HEATING (EN14825 VALUE)													
PDesign	(4) kW	6,08	8,23	10,3	13,2	8,47	10,2	13,7	17,9	22,1	25,7	29,6	37,2
SCOP	(4)	3,58	3,35	3,32	3,33	3,62	3,59	3,36	3,74	3,54	3,84	3,70	3,82
Performance η_{sp} (Reg. 811/2013 UE)	(4) %	135	126	125	125	137	136	126	142	133	146	140	145
Seasonal efficiency class (Regulation (UE) 811/2013)	(4)	A+	A+	A+	A+	A+	A+	A+	A+	A+	A+	A+	A+
EXCHANGERS													
HEAT EXCHANGER USER SIDE IN REFRIGERATION													
Water flow	(1) m ³ /h	1,20	1,65	2,01	2,53	1,60	2,03	2,65	3,58	4,52	5,16	5,85	7,53
Available unit's head	(1) kPa	53,6	56,2	81,1	75,6	57,7	80,5	71,8	62,8	117,8	110,4	152,5	132,1
HEAT EXCHANGER USER SIDE IN HEATING													
Water flow	(3) m ³ /h	0,93	1,26	1,59	2,02	1,29	1,57	2,11	2,75	3,40	3,95	4,56	5,73
Available unit's head	(3) kPa	60,6	66,6	94,2	90,0	65,8	94,7	87,7	84,1	159,1	150,9	182,5	172,2
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION													
Water flow	(1) m ³ /h	1,59	2,15	2,65	3,34	2,08	2,65	3,49	4,64	5,87	6,70	7,63	9,78
Pressure drop	(1) kPa	28,4	40,9	60,8	66,5	38,1	60,8	72,6	75,7	83,5	70,4	95,2	98,0
HEAT EXCHANGER SOURCE SIDE IN HEATING													
Water flow	(3) m ³ /h	1,34	1,79	2,25	2,90	1,89	2,28	3,06	4,03	4,97	5,85	6,69	8,42
Pressure drop	(3) kPa	19,9	28,3	43,7	50,1	31,4	44,8	55,8	57,1	60,0	53,6	73,3	72,6
COMPRESSORS													
No. Compressors	N°	1	1	1	1	1	1	1	1	1	1	1	1
No. Circuits	N°	1	1	1	1	1	1	1	1	1	1	1	1
NOISE LEVEL													
Sound power level in cooling	(5)(6) dB(A)	52	53	53	58	53	53	58	59	66	66	70	70
Sound power level in heating	(5)(7) dB(A)	52	53	53	58	53	53	58	59	66	66	70	70
Noise Pressure	(8) dB(A)	37	38	38	43	38	38	43	44	51	51	55	55
SIZE AND WEIGHT													
A	(9) mm	845	845	845	845	845	845	845	845	845	845	845	845
B	(9) mm	680	680	680	680	680	680	680	680	680	680	680	680
H	(9) mm	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105
Operating weight	(9) kg	188	190	195	210	190	195	210	225	230	245	250	270

Notes

BWR MTD2

- Plant (side) cooling exchanger water (in/out) 23°C/18°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
- Values in compliance with EN14511-3:2013.
- Plant (side) heating exchanger water (in/out) 30°C/35°C; Source (side) heat exchanger water (in/out) 0°C/-3°C (Gly 30%).
- Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (UE) N. 811/2013]
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, indoors.
- Sound power level in heating, indoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.

Certified data in EUROVENT



Medium temperature reversible heat pump, geothermal source,
for indoor installation 5,1 ÷ 32,6 kW



$$\beta = \frac{x+3=51}{\sqrt{1-\frac{v^2}{c^2}}}$$

$$9-y=7$$

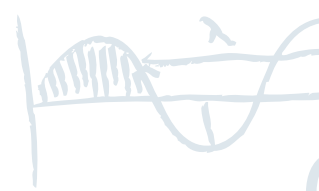
$$52-x^2+y=? \quad x(x-1)=x^2-1$$

$$\frac{\partial^2 \varphi}{\partial t^2} = \ddot{\alpha} \Delta \quad 9-y=7$$

$$\sqrt{64} \cdot \frac{1}{290}$$

$$\frac{\partial^2 \varphi}{\partial t^2} = \ddot{\alpha} \Delta \varphi$$

$$\beta = \frac{x+3=51}{\sqrt{1-\frac{v^2}{c^2}}}$$



$$x(x-1)=x^2-1$$

$$x+3=5$$

$$x(x-1)=x^2-1$$

$$-8=2 \cdot x \quad y=yx^2$$

$$E=mc^2$$

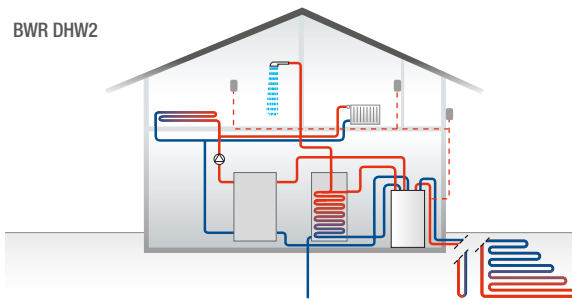
$$-8=2 \cdot x \quad y=yx^2$$

$$\frac{1}{290} \quad 52-x^2+y$$



prana BWR DHW2

BWR DHW2



nadisystem

Remote keypad with temperature and humidity probe



Versions



BWR DHW2

Reversible heat pump, with domestic hot water production and total heat recovery.

Unit description

PRANA DHW2 heat pumps are reversible units for all year round operation in any operating mode: single cycle (air conditioning, heating, domestic hot water) as well as combined cycle in total heat recovery (domestic hot water together with cooling). Energy efficiency is particularly high during the summer cycle, when, thanks to the full recovery of the heat, the production of hot water is free. During the combined use, the DHW exchanger uses the temperature of the discharge gases to get domestic hot water of 65° C. The advanced electronic regulation developed by Cimaveneta ensures the highest operational flexibility, a quick set point achievement and a significant increase in the overall COP, which go hand in hand with electricity and space reduction. These advantages, combined with the possibility of completely eliminating the traditional boiler, make PRANA DHW2 the ideal solution for energy saving applications in residential, hotel and small applications.

Controls

Electronic control Nadisystem provides great application flexibility. The remote keyboard kit wired and outdoor air temperature sensors ensure a dynamic control of delivery water temperature, optimising comfort in the room and increasing the energy efficiency.

The electronic board allows you to manage:

- wired remote control with backlit display and remote temperature/humidity probe
- outdoor temperature probe for water plant side modular set point compensation
- a zone of direct heating for serving the radiator, floor heating or fancoil
- a zone with mix valve for floor heating
- electrical heating device for possible integration and anti-legionella cycle for cylinder
- boiler or electric heater in substitution or in addition
- the room controller can customise up to six time bands. The presence of the programmable timer allows the creation of an operating profile containing up to 6 time bands
- up to 4 heat pumps in cascade (with N-CM component)
- several solutions through appropriate configuration of the controller and use of dedicated extension modules (optional), up to 5 zones

Features

- Structure and base in hot galvanised epoxy powder coated steel.
- Case panels are insulated within low noise material for further improvement of silence
- Rubber vibration damper.
- Hermetic scroll type compressors, equipped with the crankcase heater and thermal protection
- High efficiency stainless steel (AISI 316) plate to plate exchanger (at the domestic hot water side), with low pressure drop. It is positioned next after the compressor and it ensures domestic hot water production. It can work either in full or partial recovery mode, with the constant optimization of efficiency through logic advanced adjusting controller
- High efficiency plates exchanger in AISI 316 stainless steel with low pressure drops. It meets the supply of both hot or cold water for the facility, regardless of the domestic hot water
- High efficiency stainless steel (AISI 316) plate exchanger (source side), with low pressure drop
- Soft starter for 230V/1/50Hz units (ms)
- Phase sequence control relay for three phase models
- The water circuit comes complete with:
 - Circulator for the 0011÷0061 models and centrifugal for the 0071÷0121 models, plant side
 - Circulator for the 0011÷0091 models and centrifugal pump for the 0101÷0121 models, hot water side
 - Circulator for 0011÷0031 models, centrifugal flow pump for models 0041÷0121, on source side (for vertical loops or horizontal loops)
 - Safety valve.
 - Expansion tank.
 - Manual filling assembly.
 - Drain valve on both plant and source circuits.
 - Pressure gauge.
 - Air vent valve.
 - Differential pressure switch on source side and system side.

Main accessories

- Wired room terminal with backlit display, with temperature and humidity probe
- Extension module for system configuration
- Electric heater for the heating system
- Electric heater for hot water cylinder and for anti-legionellosis
- Cascade management kit
- Serial card RS485 for ModBus
- Buffer tank 35,100,200 liters
- Hot water cylinder 300,500 liters
- 300 litres thermal store for domestic hot water, for use with DOMH20 kit
- 300,500,1000 litres thermal store for domestic hot water with solar heat exchanger, for use with kit DOMH20
- DOMH2015 e DOMH2024 kit for domestic hot water with external heat exchanger plate-to-plate and pump

Medium temperature reversible heat pump with total heat recovery, geothermal source. indoor installation 5,0 ÷ 34,0 kW



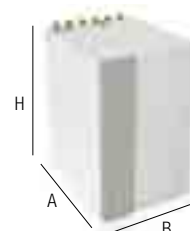
APPLICATION HYDRONIC TERMINAL - GEOTHERMAL SOURCE

BWR DHW2		0011ms	0025ms	0031ms	0041ms	0025t	0031t	0041t	0061t	0071t	0091t	0101t	0121t
Power supply	V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
COOLING ONLY (GROSS VALUE)													
Cooling capacity	(1) kW	4,98	7,47	8,67	10,7	7,47	8,57	10,6	15,6	21,1	23,9	27,2	33,9
Total power input	(1) kW	1,41	2,01	2,51	2,91	2,01	2,41	2,81	4,02	5,52	6,02	7,13	9,14
EER	(1) kW/kW	3,53	3,72	3,45	3,68	3,72	3,56	3,77	3,88	3,82	3,97	3,81	3,71
ESEER	(1) kW/kW												
COOLING ONLY (EN14511 VALUE)													
Cooling capacity	(1)(2) kW	4,99	7,49	8,71	10,7	7,49	8,61	10,6	15,7	21,3	24,1	27,4	34,2
EER	(1)(2) kW/kW	3,06	3,19	2,91	2,91	3,19	2,97	2,97	3,36	3,25	3,46	3,28	3,33
ESEER	(1)(2) kW/kW												
HEATING ONLY (GROSS VALUE)													
Total heating capacity	(3) kW	4,29	6,58	7,68	9,37	6,48	7,48	9,27	13,3	17,8	20,4	23,4	28,3
Total power input	(3) kW	1,70	2,50	3,00	3,50	2,40	2,90	3,40	4,70	6,50	7,00	8,30	10,5
COP	(3) kW/kW	2,52	2,63	2,56	2,68	2,70	2,58	2,73	2,83	2,74	2,91	2,82	2,70
HEATING ONLY (EN14511 VALUE)													
Total heating capacity	(2)(3) kW	4,28	6,56	7,64	9,32	6,46	7,44	9,23	13,2	17,7	20,2	23,2	28,0
COP	(2)(3) kW/kW	2,20	2,29	2,18	2,16	2,33	2,18	2,19	2,46	2,33	2,53	2,40	2,39
COOLING WITH TOTAL HEAT RECOVERY													
Cooling capacity	(4) kW	4,39	6,73	7,71	9,67	6,72	7,70	9,65	14,2	19,1	21,7	24,6	30,2
Total power input	(4) kW	1,68	2,57	3,11	3,64	2,56	3,02	3,57	5,00	6,85	7,44	8,83	11,2
Recovery heat exchanger capacity	(4) kW	5,97	9,14	10,6	13,1	9,13	10,5	13,0	18,9	25,6	28,7	32,9	40,7
TOTAL RECOVERY ONLY													
Total heating capacity	(3) kW	4,29	6,58	7,68	9,37	6,48	7,48	9,27	13,3	17,8	20,4	23,4	28,3
Total power input	(3) kW	1,70	2,50	3,00	3,50	2,40	2,90	3,40	4,70	6,50	7,00	8,30	10,5
SEASONAL EFFICIENCY IN HEATING (EN14825 VALUE)													
PDesign	(5) kW	4,96	7,60	8,80	10,9	7,48	8,57	10,7	15,5	21,1	23,8	27,3	33,3
SCOP	(5)	3,07	3,11	3,11	3,08	3,09	3,09	3,07	3,18	3,09	3,27	3,14	3,23
Performance ηs (Reg. 811/2013 UE)	(5) %	115	116	116	115	116	115	115	119	116	123	118	121
Seasonal efficiency class (Regulation (UE) 811/2013)	(5)	B	A	A	A	A	A	B	A	A	A	A	A
EXCHANGERS													
HEAT EXCHANGER USER SIDE IN REFRIGERATION													
Water flow	(1) m³/h	0,86	1,29	1,49	1,83	1,29	1,47	1,82	2,69	3,64	4,12	4,68	5,83
Available unit's head	(1) kPa	62,8	66,8	97,5	95,2	66,8	97,9	95,6	89,1	152,6	147,1	183,1	171,8
HEAT EXCHANGER USER SIDE IN HEATING													
Water flow	(3) m³/h	0,75	1,14	1,33	1,63	1,13	1,30	1,61	2,30	3,10	3,55	4,07	4,92
Available unit's head	(3) kPa	65,0	69,9	101,2	99,6	70,2	102,0	99,9	96,1	170,0	164,0	194,5	188,2
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION													
Water flow	(1) m³/h	1,18	1,76	2,07	2,52	1,76	2,04	2,48	3,65	4,95	5,56	6,37	7,98
Pressure drop	(1) kPa	14,5	25,5	35,4	36,2	25,5	34,2	35,1	38,3	55,9	45,8	59,5	61,9
HEAT EXCHANGER SOURCE SIDE IN HEATING													
Water flow	(3) m³/h	0,86	1,36	1,56	1,95	1,36	1,53	1,95	2,84	3,77	4,45	5,01	5,92
Pressure drop	(3) kPa	7,71	15,2	20,0	21,7	15,2	19,2	21,7	23,2	32,4	29,3	36,9	34,0
HEAT EXCHANGER RECOVERY USER SIDE IN REFRIGERATION													
Water flow	(4) m³/h	1,04	1,59	1,85	2,28	1,59	1,83	2,26	3,29	4,45	4,99	5,72	7,07
Pressure drop	(4) kPa	9,36	17,5	23,6	24,8	17,4	23,2	24,4	26,1	37,9	31,0	40,2	40,7
HEAT EXCHANGER RECOVERY USER SIDE IN HEATING													
Water flow	m³/h	0,73	1,13	1,33	1,61	1,12	1,30	1,60	2,28	3,03	3,50	3,99	4,82
Pressure drop	kPa	4,66	8,82	12,3	12,4	8,65	11,7	12,3	12,5	17,6	15,3	19,6	18,9
COMPRESSORS													
No. Compressors	N°	1	1	1	1	1	1	1	1	1	1	1	1
No. Circuits	N°	1	1	1	1	1	1	1	1	1	1	1	1
NOISE LEVEL													
Sound power level in cooling	(6)(7) dB(A)	52	53	53	58	53	53	58	59	66	66	70	70
Sound power level in heating	(6)(8) dB(A)	52	53	53	58	53	53	58	59	66	66	70	70
Noise Pressure	(9) dB(A)	37	38	38	43	38	38	43	44	51	51	55	55
SIZE AND WEIGHT													
A	(10) mm	845	845	845	845	845	845	845	845	845	845	845	845
B	(10) mm	680	680	680	680	680	680	680	680	680	680	680	680
H	(10) mm	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105
Operating weight	(10) kg	205	210	215	230	210	215	230	245	270	280	290	315

Notes

BWR DHW2

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
- Values in compliance with EN14511-3:2013.
- Plant (side) heating exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 0°C/-3°C (Gly 30%).
- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Plant (auxiliary side) heat exchanger recovery water (in/out) 45°C/50°C.
- Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (UE) N. 811/2013]
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, indoors.
- Sound power level in heating, indoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.



prana BWR DHW2

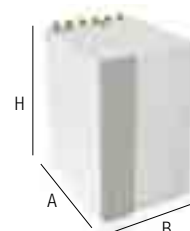
APPLICATION FLOOR HEATING - GEOTHERMAL SOURCE

BWR DHW2		0011ms	0025ms	0031ms	0041ms	0025t	0031t	0041t	0061t	0071t	0091t	0101t	0121t
Power supply	V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
COOLING ONLY (GROSS VALUE)													
Cooling capacity	(1) kW	7,09	10,6	12,2	14,9	10,6	12,1	14,9	21,8	29,3	33,4	37,8	48,5
Total power input	(1) kW	1,39	1,97	2,48	2,91	1,97	2,38	2,83	4,12	5,59	6,24	7,41	9,48
EER	(1) kW/kW	5,10	5,38	4,92	5,12	5,38	5,08	5,27	5,29	5,24	5,35	5,10	5,12
ESEER	(1) kW/kW												
COOLING ONLY (EN14511 VALUE)													
Cooling capacity	(1)(2) kW	7,11	10,6	12,2	15,0	10,6	12,1	15,0	21,9	29,4	33,5	38,1	48,8
EER	(1)(2) kW/kW	4,46	4,61	4,11	4,02	4,61	4,22	4,11	4,54	4,38	4,60	4,38	4,49
ESEER	(1)(2) kW/kW												
HEATING ONLY (GROSS VALUE)													
Total heating capacity	(3) kW	4,39	6,74	7,81	9,65	6,63	7,61	9,47	13,7	18,7	21,1	24,3	29,6
Total power input	(3) kW	1,32	1,94	2,33	2,76	1,86	2,26	2,69	3,74	5,11	5,60	6,57	8,29
COP	(3) kW/kW	3,33	3,47	3,35	3,50	3,56	3,37	3,52	3,66	3,66	3,77	3,70	3,57
HEATING ONLY (EN14511 VALUE)													
Total heating capacity	(2)(3) kW	4,38	6,72	7,77	9,60	6,61	7,57	9,42	13,6	18,6	20,9	24,1	29,3
COP	(2)(3) kW/kW	2,81	2,92	2,74	2,69	2,98	2,74	2,70	3,09	3,01	3,18	3,06	3,10
COOLING WITH TOTAL HEAT RECOVERY													
Cooling capacity	(4) kW	6,42	9,77	11,0	13,8	9,70	11,1	13,8	20,0	27,2	30,8	34,9	44,1
Total power input	(4) kW	1,68	2,51	3,05	3,66	2,51	2,97	3,62	5,10	6,88	7,60	9,12	11,5
Recovery heat exchanger capacity	(4) kW	8,00	12,1	13,9	17,2	12,1	13,9	17,2	24,8	33,7	38,0	43,5	54,9
TOTAL RECOVERY ONLY													
Total heating capacity	(3) kW	4,39	6,74	7,81	9,65	6,63	7,61	9,47	13,7	18,7	21,1	24,3	29,6
Total power input	(3) kW	1,32	1,94	2,33	2,76	1,86	2,26	2,69	3,74	5,11	5,60	6,57	8,29
SEASONAL EFFICIENCY IN HEATING (EN14825 VALUE)													
PDesign	(5) kW	4,96	7,60	8,80	10,9	7,48	8,57	10,7	15,5	21,1	23,8	27,3	33,3
SCOP	(5)	3,07	3,11	3,11	3,08	3,09	3,09	3,07	3,18	3,09	3,27	3,14	3,23
Performance η_s (Reg. 811/2013 UE)	(5) %	115	116	116	115	116	115	115	119	116	123	118	121
Seasonal efficiency class (Regulation (UE) 811/2013)	(5)	B	A	A	A	A	A	B	A	A	A	A	A
EXCHANGERS													
HEAT EXCHANGER USER SIDE IN REFRIGERATION													
Water flow	(1) m ³ /h	1,22	1,83	2,11	2,57	1,84	2,10	2,58	3,77	5,06	5,77	6,53	8,36
Available unit's head	(1) kPa	54,0	52,0	79,1	75,7	51,9	79,6	75,5	64,7	98,3	89,7	139,8	113,3
HEAT EXCHANGER USER SIDE IN HEATING													
Water flow	(3) m ³ /h	0,76	1,17	1,35	1,67	1,15	1,32	1,64	2,38	3,25	3,66	4,21	5,14
Available unit's head	(3) kPa	64,7	69,4	100,8	98,7	69,8	101,6	99,4	94,8	165,4	160,9	192,0	184,6
HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION													
Water flow	(1) m ³ /h	1,58	2,35	2,74	3,31	2,35	2,70	3,31	4,84	6,50	7,39	8,42	10,8
Pressure drop	(1) kPa	25,8	45,4	61,8	62,6	45,5	60,3	62,4	67,3	96,7	80,9	104	113
HEAT EXCHANGER SOURCE SIDE IN HEATING													
Water flow	(3) m ³ /h	1,01	1,58	1,80	2,27	1,56	1,76	2,23	3,28	4,47	5,09	5,82	7,01
Pressure drop	(3) kPa	10,6	20,5	26,8	29,3	20,2	25,5	28,3	31,0	45,7	38,3	49,6	47,8
HEAT EXCHANGER RECOVERY USER SIDE IN REFRIGERATION													
Water flow	(4) m ³ /h	1,39	2,11	2,42	3,00	2,10	2,41	3,00	4,31	5,86	6,60	7,56	9,54
Pressure drop	(4) kPa	16,8	30,8	40,5	42,9	30,4	40,1	42,9	44,8	65,8	54,1	70,3	74,2
HEAT EXCHANGER RECOVERY USER SIDE IN HEATING													
Water flow	m ³ /h	0,73	1,13	1,33	1,61	1,12	1,30	1,60	2,28	3,03	3,50	3,99	4,82
Pressure drop	kPa	4,66	8,82	12,3	12,4	8,65	11,7	12,3	12,5	17,6	15,3	19,6	18,9
COMPRESSORS													
No. Compressors	N°	1	1	1	1	1	1	1	1	1	1	1	1
No. Circuits	N°	1	1	1	1	1	1	1	1	1	1	1	1
NOISE LEVEL													
Sound power level in cooling	(6)(7) dB(A)	52	53	53	58	53	53	58	59	66	66	70	70
Sound power level in heating	(6)(8) dB(A)	52	53	53	58	53	53	58	59	66	66	70	70
Noise Pressure	(9) dB(A)	37	38	38	43	38	38	43	44	51	51	55	55
SIZE AND WEIGHT													
A	(10) mm	845	845	845	845	845	845	845	845	845	845	845	845
B	(10) mm	680	680	680	680	680	680	680	680	680	680	680	680
H	(10) mm	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105
Operating weight	(10) kg	205	210	215	230	210	215	230	245	270	280	290	315

Notes

BWR DHW2

- Plant (side) cooling exchanger water (in/out) 23°C/18°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
- Values in compliance with EN14511-3:2013.
- Plant (side) heating exchanger water (in/out) 30°C/35°C; Source (side) heat exchanger water (in/out) 0°C/-3°C (Gly 30%).
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Medium temperature reversible heat pump with total heat recovery,
geothermal source. indoor installation 5,0 ÷ 34,0 kW



$$\beta = \frac{x+3=51}{\sqrt{1-\frac{v^2}{c^2}}}$$

$$9-y=7$$

$$52-x^2+y=? \quad x(x-1)=x^2-1$$

$$\frac{\partial^2 \varphi}{\partial t^2} = -\omega^2 \Delta \varphi$$

$$\sqrt{64} \cdot \frac{1}{290}$$

$$\frac{\partial^2 \varphi}{\partial t^2} = -\omega^2 \Delta \varphi$$

$$\beta = \frac{x+3=51}{\sqrt{1-\frac{v^2}{c^2}}}$$



$$x(x-1)=x^2-1$$

$$x+3=5$$

$$x(x-1)=x^2-1$$

$$-8=2 \cdot x \quad y=yx^2$$

$$E=mc^2$$

$$-8=2 \cdot x \quad y=yx^2$$

$$\frac{1}{290} \quad 52-x^2+y$$





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