

THE MOST SUSTAINABLE TECHNOLOGY HEATS WITHOUT BURNING ANYTHING.



HIGH TEMPERATURE HEAT PUMPS
Advanced climate control for companies, large facilities
and apartment blocks.

WATERBLAZE®
TECHNOLOGY

TEON
ENERGIA DALLA TERRA

TEON. Sustainable heating with zero emissions.

TEON heat pumps are high temperature and high efficiency. They extract heat from a natural resource such as groundwater, soil or air, and deliver it to the heating and domestic hot water distribution system at any required temperature, up to 80°C and therefore perfectly compatible with radiators. The raising of heat to the required temperature occurs via an electrically powered compressor. With the reversible kit, summer cooling is also produced, resulting in a thermal power station that integrates the function of a boiler and a chiller in a single solution. They represent a solution for heating using renewable energy in an efficient and state-of-the-art way in the field of sustainability.

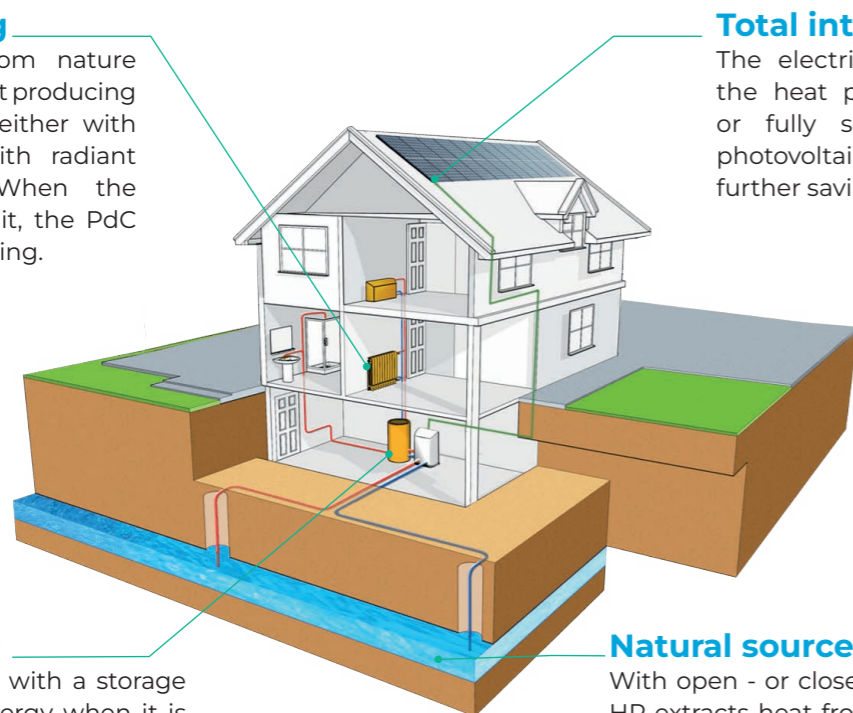
The residential range finds its application in villas, cottages, small apartment blocks or offices.

The professional range is applied in central heating contexts or large commercial/industrial buildings and volumes.

Come funziona

Heating and cooling

The HP extracts heat from nature (water, ground or air) without producing emissions; it can operate either with traditional radiators or with radiant systems or fan coils. When the distribution system allows it, the PdC also produces summer cooling.



Total integration

The electricity needed to run the heat pump can be partly or fully self-generated by a photovoltaic system, generating further savings.

Sanitary Hot Water

The HP can be combined with a storage boiler to store thermal energy when it is cheaper to produce it, or to have a reserve of hot water.

Natural source

With open - or closed - cycle probes, the HP extracts heat from nature for at least 80 per cent of requirements. From a few degrees centigrade, the PdC raises the temperature to over 80°C if necessary. You can eliminate all fossil fuels from your home.

CONFIGURATION



Control Panel

Remotely manageable, to display operating parameter values and warnings.

Inspectionable casing

The box is made of galvanised steel sheet panels painted with polyester powders in the RAL colour of the customer's choice; they are easily disassembled to simplify inspection.

High-efficiency compressors

They are optimised and specially developed for natural refrigerant applications; they minimise power consumption, vibration and noise.

Soundproof housing

Silent operation. Low-vibration design, which in combination with the internal insulation and vibration-damping couplings and mounts (original TEON accessories) ensure very quiet operation.

Modularity

The machines are also designed to operate in parallel or cascade; the achievable power becomes the sum of the powers of the connected machines. Upon request, it is possible to configure a self-supporting structure to vertically superimpose several TEON PdCs.

Steel exchangers

Plate heat exchangers optimised for both plant-side and source-side heat exchange in AISI 316 stainless steel with counterflow heat exchange and AISI 304 stainless steel connections. Characterised by high thermal efficiency.

Compact unit

Ready-to-connect compact unit with galvanised steel support structure.

Advantages



Health and Sustainability

The use of fossil fuels exposes to risks of accidents, even serious ones. Equipment/plant malfunctioning, poor maintenance, obsolescence and irregular installations are the main causes. With TEON heat pumps, at least 80 per cent of the thermal energy requirement comes from a natural resource; for the remaining 20 per cent, electricity is used. This means zero pollutant emissions on site and the elimination of fuels.



Saving

Energy expenditure is the one that has increased the most for families over the years, particularly heating, which is now the third largest household expense, after housing and food and before clothing and healthcare. Due to their innovative configuration, TEON PdCs offer unrivalled efficiency on the market, which also translates into bill cuts: 50% when replacing methane boilers and 70% when replacing oil or LPG boilers.



High temperature

High-temperature heat pumps are not all the same. TEON heat pumps are the only solution that can replace boilers and integrate with existing systems, even radiator systems, as they easily and efficiently reach 80°C and more. And that's not all: when domestic hot water consumption becomes predominant, such as in high energy class homes (A, B, C), TEON PdCs do not need high-consumption heating elements and can conduct anti-legionella cycles.



More value for your home

The energy performance certificate 'APE', compulsory in cases of buying, selling or renting, is changing the way we evaluate and decide on which type of house to go for. The difference in primary energy consumption between a house of higher energy classes (A/B) and one of lower classes (F/G) can be as much as 20%. TEON heat pumps drastically reduce primary energy consumption when replacing a boiler.



Energy requalification and incentives

The mere installation of a TEON heat pump to replace any fossil fuel boiler guarantees the home the gain of two energy classes. This is an important advantage in view of the European Green House Directive, which envisages all homes moving to at least class E by 2028. In addition, TEON heat pumps qualify for energy redevelopment incentives such as Conto Termico and Ecobonus; often the savings obtained from the heat pump in operation combined with the incentive effectively reduce the investment cost to zero.

50% to 90% savings on utility bills compared to traditional condensing and centralised boilers.

You heat, you save, you do not pollute, and you get rid of gas without having to replace radiators.

FEATURES

WATER VERSION

Residential Domestic

EFFICIENCY AND PERFORMANCE	U.M.	T10			T30		
HEATING (T models)							
Thermal power	kW	12,1	11,8	9,8	34,7	33,4	27,3
Electrical power consumption	kW	1,9	2,8	3,3	5,7	7,9	8,8
COP	[-]	6,38	4,27	3,00	6,09	4,22	3,12
Source-side water flow rate	l/s	0,81	0,43	0,31	2,31	1,22	0,89
Source water temperature	°C	10	15	15	10	15	15
Water-to-system flow temperature	°C	35	60	80	35	60	80
Refrigerant charge (R600a)	kg	0,9			2,5		
COOLING (RT models)							
Cooling capacity	kW	9,7			28,4		
Electrical power consumption	kW	1,9			5,7		
EER	[-]	5,15			4,99		

Professional

T60			T115			T250			T350		
HEATING (T models)											
65,0	62,0	49,2	119,4	110,7	88,2	238,8	221,4	176,4	345,7	334,7	286,6
10,3	14,6	16,3	18,4	25,7	28,8	36,7	51,4	57,6	56,4	79,6	106,2
6,30	4,26	3,02	6,51	4,30	3,06	6,51	4,30	3,06	6,13	4,21	2,70
4,35	2,26	1,57	8,05	4,06	2,84	16,09	8,12	5,68	23,04	12,19	8,62
10	15	15	10	15	15	10	15	15	10	15	15
35	60	80	35	60	80	35	60	80	35	60	80
4,0			6,9			15,0			24,0		
COOLING (RT models)											
51,9			51,9			191,9			276,4		
10,3			10,3			36,7			56,4		
5,03			5,03			5,23			4,90		

GROUND VERSION

Residential Domestic

EFFICIENCY AND PERFORMANCE	U.M.	T10			T30		
HEATING (T models)							
Thermal capacity	kW	8,6	9,6	7,9	24,4	26,9	21,7
Electrical power consumption	kW	1,7	2,5	2,9	4,9	7,0	7,5
COP	[-]	4,94	3,77	2,70	4,99	3,86	2,89
Source-side water flow rate	l/s	0,55	0,56	0,40	1,56	1,59	1,13
Source water temperature	°C	0	7	7	0	7	7
Water-to-system flow temperature	°C	35	60	80	35	60	80
Refrigerant charge (R600a)	kg	0,9			2,5		
COOLING (RT models)							
Cooling capacity	kW	9,7			28,4		
Electrical power consumption	kW	1,9			5,7		
EER	[-]	5,15			4,99		

Professional

T60			T115			T250			T350		
HEATING (T models)											
44,5	49,2	38,9	81,9	88,1	69,4	163,8	176,3	138,9	253,5	275,4	232,0
9,3	13,0	14,1	16,2	23,1	25,2	32,5	46,1	50,3	56,6	77,5	103,6
4,81	3,78	2,76	5,04	3,82	2,76	5,04	3,82	2,76	4,48	3,55	2,24
2,81	2,88	1,98	5,23	5,18	3,53	10,46	10,37	7,05	15,68	15,76	10,23
0	7	7	0	7	7	0	7	7	0	7	7
35	60	80	35	60	80	35	60	80	35	60	80
4,0			6,9			15,0			24,0		
COOLING (RT models)											
51,9			95,9			191,9			276,4		
10,3			18,4			36,7			56,4		
5,03			5,2			5,2			4,9		

AIR VERSION

Residential Domestic

EFFICIENCY AND PERFORMANCE	U.M.	T10			T30		
HEATING (T models)							
Operating conditions		A7/W35	A7/W50	A7/W80	A7/W35	A7/W50	A7/W80
Thermal capacity	kW	9,0	8,1	5,9	25,4	22,6	16,0
Electrical power consumption	kW	2,1	2,5	2,9	5,7	6,4	6,9
COP	[-]	4,18	3,25	2,04	4,47	3,55	2,30
Refrigerant charge (R600a)	kg	0,9			2,5		
COOLING (RT models)							
Operating conditions (Rel. Hum. 50%)		A35/W7			A35/W7		
Cooling capacity	kW	10,5			29,7		
Electrical power consumption	kW	2,1			6,5		
EER	[-]	4,93			4,59		

Professional

T60			T115			T250		
HEATING (T models)								
A7/W35	A7/W50	A7/W80	A7/W35	A7/W50	A7/W80	A7/W35	A7/W50	A7/W80
46,2	40,9	28,6	85,2	73,6	50,7	170,5	147,2	101,4
11,3	12,6	13,7	19,0	21,4	23,6	38,0	42,8	47,2
4,07	3,24	2,09	4,48	3,44	2,15	4,48	3,44	2,15
4,0			6,9			15,0		
COOLING (RT models)								
A35/W7			A35/W7			A35/W7		
56,3			104,9			209,9		
10,7			18,4			36,9		
5,27			5,69			5,69		

WATER[®] BLAZE TECHNOLOGY

TEON's WATER BLAZE technology introduces into the traditional thermodynamic cycle of heat pumps a forced sub-cooling, thanks to which more thermal power is recovered from the natural source to be transferred to the heating system and overall efficiency is maximised. This is done by splitting the iso-enthalpic curve into two distinct transformations, one at constant pressure and one at constant temperature, which take place in a recuperator and a lamination valve, respectively.