Unical

HYBRID AND INTEGRATED SYSTEMS

RESIDENTIAL LINE

THE RANGE

HYBRID SYSTEMS

MODELS	COMPOSITION		BOILER	SOLAR	HEAT PUMP	EMBEDDED BOX	BOX AT SIGHT
HYBREER 3	HEAT PUMP + HYDRAULIC KIT + BOILER		■		■		
HYBREER 2	HEAT PUMP + HYDRAULIC KIT				■		
HYBREER SLIM	HEAT PUMP SYSTEM + BOILER		■		■	■	■
HYBREER SLIMs	SOLAR SYSTEM + BOILER + HEAT PUMP		■	■	■	■	■
KONs HP	SOLAR SYSTEM + COMBI BOILER + HEAT PUMP		■	■	■	■	■
KON HP	BOILER SYSTEM + HEAT PUMP		■		■	■	■

INTEGRATED SYSTEMS

ELE	HEAT PUMP SYSTEM				■	■	■
SLIM HP 2.0	HEAT PUMP SYSTEM				■	■	■
SLIMs HP 2.0	SOLAR SYSTEM + HEAT PUMP			■	■	■	■
KONs	SOLAR SYSTEM + COMBI BOILER		■	■		■	■

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HYBRID SYSTEMS

INTEGRATED SYSTEMS

HYBREER SYSTEMS

HYBREER 3

+

HYBREER 2

+

HYBREER 2 is a “hybridization” kit for an **existing system** served by a boiler.
It consists of: air-water heat pump HP_OWER ONE R and hydraulic connection kit.

HYBREER SLIM

+

+

HYBREER SLIMs

+

+

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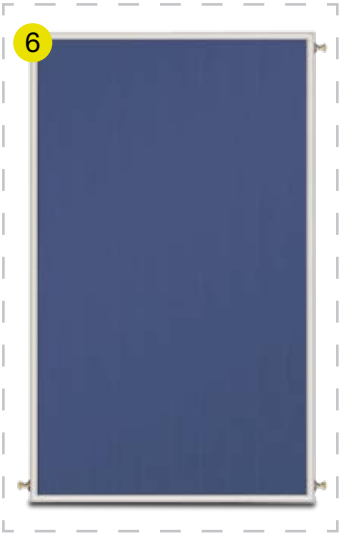

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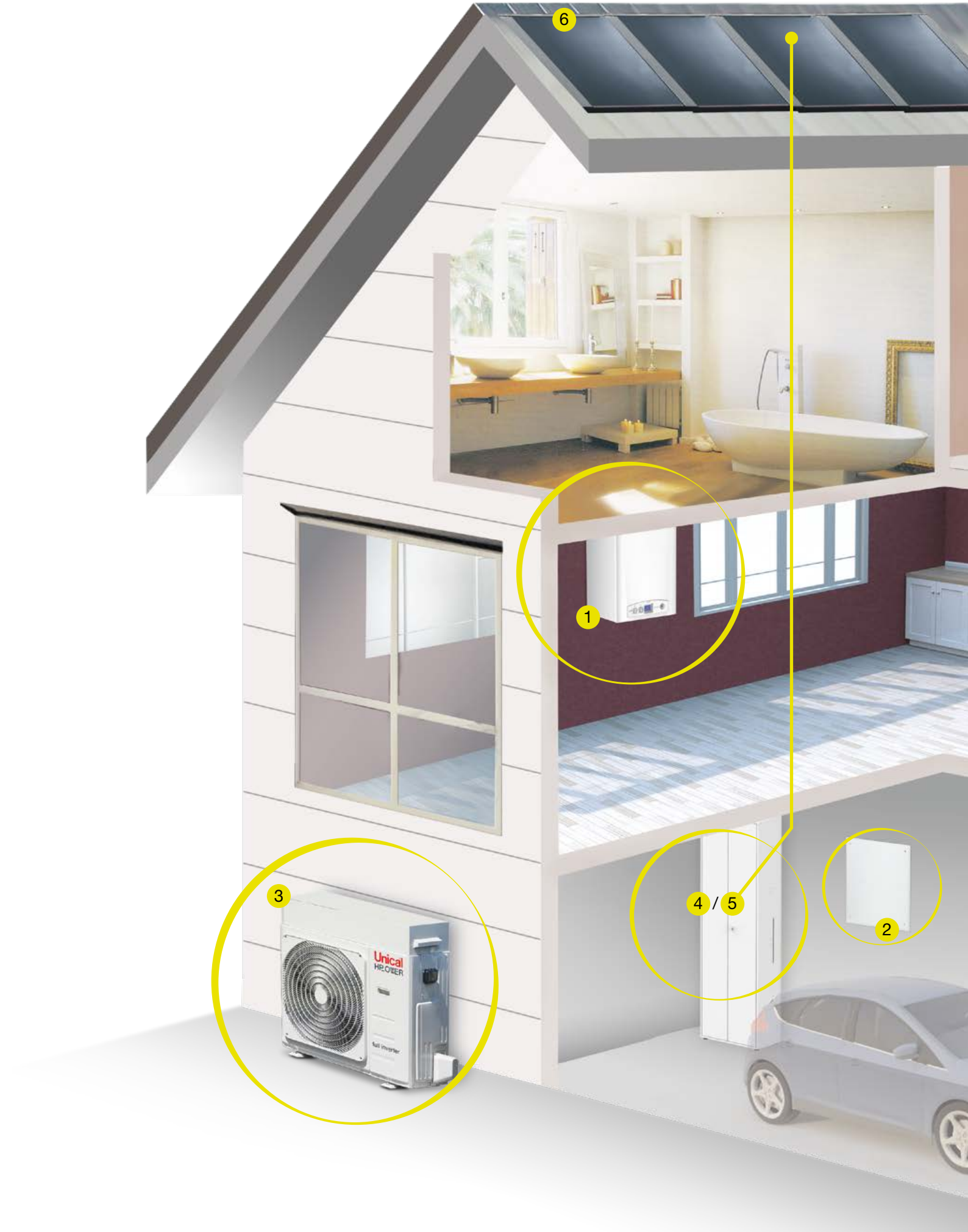
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Unical
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Heat pump + hydraulic kit + wall-hung boiler

HYBREER 3 is a hybrid system for space heating/cooling and DHW production. specifically designed to simplify the replacement of the boiler of existing air conditioning systems.

Possibility to configure the D.H.W. production in external storage systems serving the heat pump and other renewable sources such as solar thermal.

It consists of: **air-water heat pump, hydraulic connection kit, combi condensing wall-hung boiler**

- **Air-water heat pump HP_OWER ONE 70R/90R/120R** (page 26) **or HP_QOR 70/90/120** (page 28) high efficiency FULL INVERTER, super compact for outdoor installation.
- **KON^{m} 24/35 condensing boiler** (pag. 30)**, also with storage tank (KON B 28)** or boiler **X^{LD} (long distance)** (page 32).
- **HYBREER hydraulic connection kit**
  - manifold / hydraulic compensator
  - insulation for hot / cold applications
  - non-return valves
  - mounting bracket
  - at sight installation with white painted sheet metal cover
  - embedded installation with dedicated box (optional)
  - booster circulator kit (optional)
  - relay kit for emergency boiler management in relation to the external temperature

HYBREER 2

HYBREER 2 is a “hybridization” kit for an **existing system** served by a boiler.

It consists of: air-water heat pump HP_OWER ONE R and hydraulic connection kit

find out more

Accessories (optional)

- **TOUCH SCREEN_N** remote control (only for HP_OWER ONE R)
- **KTsmart** chrono-thermostat
- HYBREER insulated **booster circulator kit**
- Box for **embedded installations**
- **Vibration-dampers** kit

TOUCH SCREEN_N

KTsmart

Booster circulator kit

Vibration-dampers kit

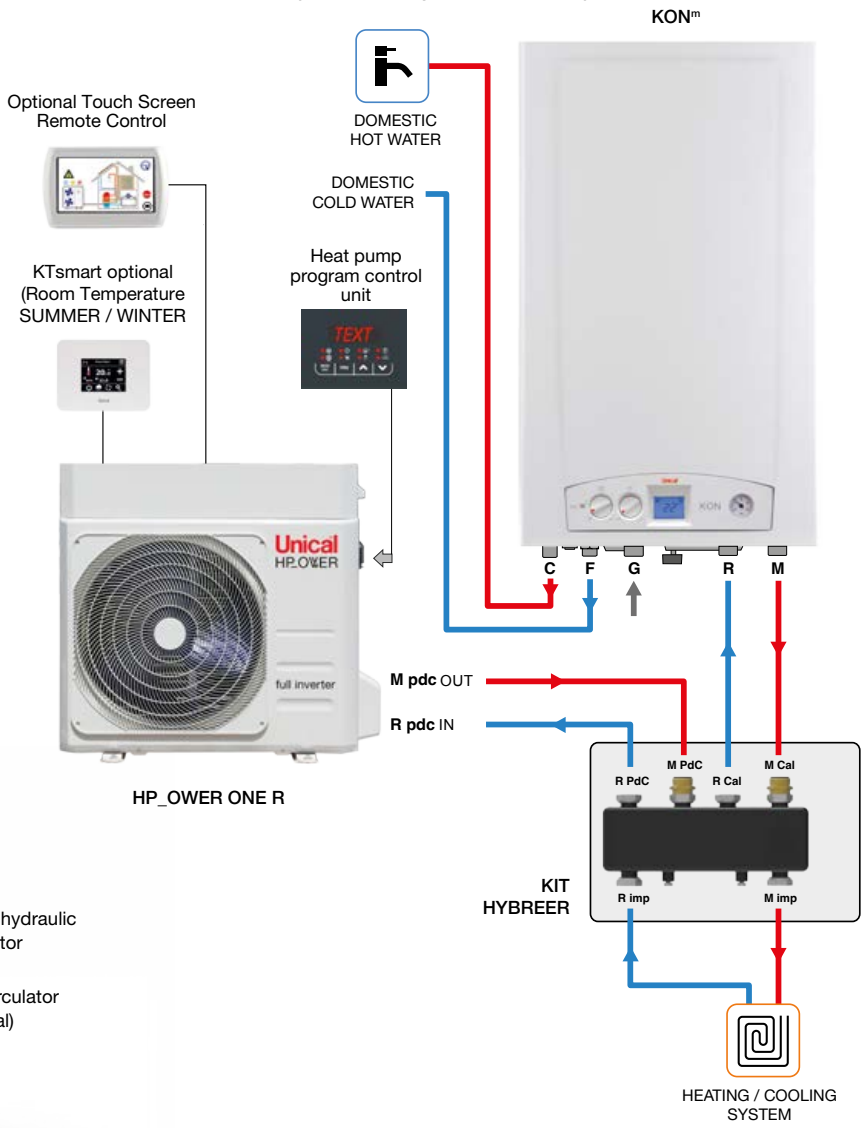
MODEL	Matched wall-hung boiler	Matched heat pump
HYBREER 3 KON 24 HP 70/90/120	KON^{m} C 24	HP_OWER ONE 70R/90R/120R
HYBREER 3 KON 24 HPQ 70/90	KON^{m} C 24	HP_QOR 70/90
HYBREER 3 KON 35 HP 70/90/120	KON^{m} C 35	HP_OWER ONE 70R/90R/120R
HYBREER 3 KON 35 HPQ 70/90/120	KON^{m} C 35	HP_QOR 70/90/120
HYBREER 3 KON INC 24 HP 90 / HPQ 90	KON INC 24	HP_OWER ONE 90R / HP_QOR 90
HYBREER 3 KON R 35 HP 90/120	KON^{m} R 35	HP_OWER ONE 90R/120R
HYBREER 3 KON R 35 HPQ 90/120	KON^{m} R 35	HP_QOR 90/120
HYBREER 3 KON B 28 HP 90 / HPQ 90	KON B 28	HP_OWER ONE 90R / HP_QOR 90
HYBREER 3 X^{LD} 24 HP 70/90	X^{LD} 24	HP_OWER ONE 70R/90R
HYBREER 3 X^{LD} 32 HP 70/90/120	X^{LD} 32	HP_OWER ONE 70R/90R/120R

Configurations with other boiler and heat pump models can be evaluated with Presale Office.

The principle diagram highlights the hydraulic interconnection role of the HYBREER kit which balances and equilibrates the circuits of the two generators having completely different characteristics, in terms of flow rates and head with the same power output.

HYBREER is one of the most compact and versatile double manifolds on the market as it is transformed, where necessary, into a hydraulic separator, by means of a simple screw shutter: in this way it **can be adapted to both new and, above all, existing systems**, with high pressure drops, allowing the installation of a booster circulator to always have the system at **maximum efficiency and always guaranteed comfort**.

PRINCIPLE HYDRAULIC DIAGRAM
(with Heat Pump HP_OWER ONE R)



HP_OWER ONE R

AT SIGHT HYBREER COVER KIT
COMPLETE WITH BOOSTER CIRCULATOR KIT

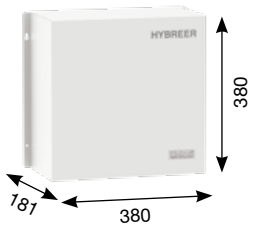
manifold / hydraulic compensator

booster circulator kit (optional)

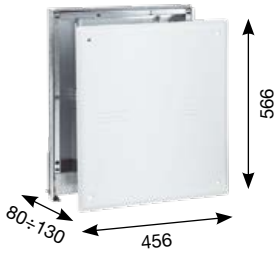
HYBREER 3		
Seasonal EFFICIENCY CLASS in space heating		A+++ (A++*)
Seasonal EFFICIENCY CLASS in D.H.W. production		A
LOADING PROFILE		XL
HYBREER KIT		
WEIGHT OF MANIFOLD / HYDRAULIC COMPENSATOR	kg	4
HYDRAULIC CONNECTIONS		1”

*referred to HYBREER 3 KON 35 HP 70 / HPQ 70, HYBREER 3 KON 35 HP 90 / HPQ 90 models

AT SIGHT COVER KIT FOR HYBREER



EMBEDDED BOX KIT FOR HYBREER



Heat pump system + wall-hung boiler

HYBREER SLIM is a super versatile "factory made" hybrid system for heating / cooling and DHW production, ideal for new installations, replacements and redevelopment of existing installations. Available in both, pre-assembled version in the factory or to be assembled on site.

- **White painted box for embedded or at sight installations** (only 70 cm wide, 35 cm deep and 2.2 m high), with practical front opening for easier inspections and maintenance.
- **Vertical DHW storage tank in stainless steel with very high stratification** to optimize the supply of energy, capacity of 150 litres, with oversized coil and high exchange surface for heat pump connection for the production of domestic hot water, also with electrical resistance.
- **Booster circulator kit for direct zone** pre-assembled in the box. Hydraulic compensator and circulator with 7 m head for effective coupling of heat pump to the different types of systems in terms of efficiency and flow rate, to ensure maximum comfort and improved energy efficiency of the system.
- **Integrated digital controller and configurator of system**.
- **Air-water heat pump HP_OWER ONE 70R/90R/120R** (page 26) **or HP_QOR 70/90/120** (page 28) high efficiency FULL INVERTER, super compact for outdoor installation.
- **Condensing boiler KON^{m} C 24/35** with extra-flat aluminum heat exchanger and a total premixed modulating burner (page 30).
- **Hydraulic and electric kits** for connection with heat pump, including: 3-way valve for DHW priority, inertial 20 litres storage tank to optimize the modulation accuracy of the heat pump, 6 litre DHW expansion tank, thermostatic mixing valve, system filling group.

Accessories (optional)

- **TOUCH SCREEN_N** remote control
- **KTsmart** chrono-thermostat
- **Carter kit for side closing of the box** covering the hydraulic connections in the at sight installations
- System **10 litre expansion vessel** kit
- **Vibration-dampers** kit


TOUCH SCREEN_N


KTsmart

Covering carter


Vibration-dampers kit

find out more

MODEL	Matched wall-hung boiler	Matched heat pump
HYBREER SLIM KON 24 HP 70/90/120	KON^{m} C 24	HP_OWER ONE 70R/90R/120R
HYBREER SLIM KON 24 HPQ 70/90	KON^{m} C 24	HP_QOR 70/90
HYBREER SLIM KON 35 HP 70/90/120	KON^{m} C 35	HP_OWER ONE 70R/90R/120R
HYBREER SLIM KON 35 HPQ 70/90/120	KON^{m} C 35	HP_QOR 70/90/120

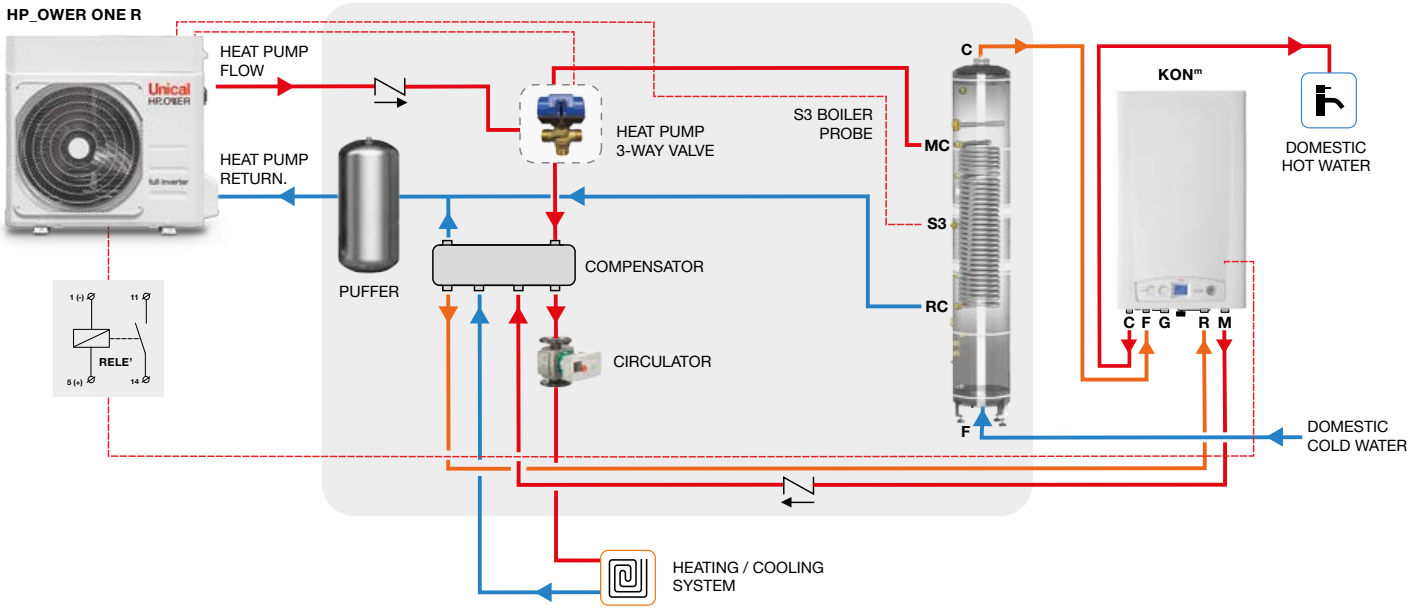
Configurations with other boiler and heat pump models can be evaluated with Presale Office.

The principle scheme highlights one of the various HYBREER SLIM hydraulic configurations: in fact, for its extreme versatility and intelligent design, heat pump and boiler can work in series or in parallel to make the most of the peculiarities of the system they must serve.

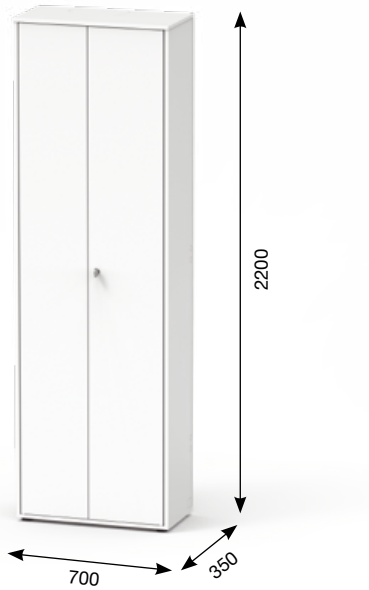
In the diagram, the generators are connected in parallel and in the heating mode they can work jointly or in univocal mode, in relation to the cheaper energy vector.

The combination of the heat pump, with the large 150 litre DHW storage tank, is a winner in the preparation of DHW, thanks to the internal coil of 1.65 m² to optimize the exchange of energy and reduce the preparation times. The boiler can always intervene in case of aid or supplement for an abundant hot water supply at a constant temperature

HYDRAULIC DIAGRAM PRINCIPLE (with Heat Pump HP_OWER ONE R)



HYBREER SLIM		
Seasonal EFFICIENCY CLASS in heating mode		A+++ (A++*)
Seasonal EFFICIENCY CLASS in DHW mode		A
LOAD PROFILE		XL
AUXILIARY ELECTRIC HEATER (optional)	kW	2
DHW storage tank		
ACTUAL CAPACITY	l	150
COIL HEAT EXCHANGE SURFACE	m^2	1.65
HEAT LOSSES	W	75
INSULATION TYPE		polyurethane in cells
INSULATION DENSITY	kg/m^3	40,5
Box		
WEIGHT (complete box)	kg	99.5



*referred to models HYBREER SLIM KON 35 HP 70/HPQ 70, HYBREER SLIM KON 35 HP 90/HPQ 90

Solar system + wall-hung boiler + Heat Pump

HYBREER SLIMs is a super versatile "factory made" hybrid system for heating / cooling and DHW production also with contribution of solar thermal energy, ideal for new systems, replacements and also redevelopment of existing systems. Available in both versions: pre-assembled in the factory and to be assembled on site.

- **White painted box for embedded or at sight installations** (only 70 cm wide, 35 cm deep and 2.2 m high), with practical front opening for easier inspections and maintenance.
- **Vertical stainless steel DHW storage tank** of 150 litres capacity **with very high stratification** for optimization of the energy supply, with double oversize coil, arranged on two concentric helices with a high surface exchange, for combined heat pump and solar thermal connection for the production of Domestic Hot Water, also with electric heater.
- **Booster circulator kit for direct zone** pre-assembled in the box. Hydraulic compensator and circulator with 7 m of head for effective coupling of the heat pump to the different types of systems, in terms of efficiency and flow rate, to ensure maximum comfort and better energy efficiency.
- **Preassembled solar group** consisting of a modulating solar pump, solar control unit Digisol Plus with digital display, visualization of system temperature and the starting of modulating circulators, "Holidays" function, solar collectors overheating protection and advanced regulation menu, 18 liter expansion tank.
- **Air-water heat pump HP_OWER ONE 70R/90R/120R** (page 26) **or HP_QOR 70/90/120** (page 28) high efficiency FULL INVERTER, super compact for outdoor installation.
- **Condensing boiler KON^{m} C 24/35** with extra-flat aluminum heat exchanger and a total premixed modulating burner (page 30).
- **Hydraulic and electric kit** for connection with heat pump, including: 3-way valve for DHW priority, inertial 20 litres storage tank, to optimize the modulation accuracy of the heat pump, 6 litres DHW expansion tank, thermostatic mixing valve, system filling group.
- **Optimal combination with Unical solar panels** (page 34).

Accessori (optional)

- **TOUCH SCREEN_N** remote control (only for HP_OWER ONE R)
- **KTsmart** chrono-thermostat
- **Carter kit of box side closing** for covering hydraulic connections in at sight installations
- System **expansion vessel** kit, 10 litres
- **Vibration-dampers** kit


TOUCH SCREEN_N


KTsmart

Covering carter


Vibration-dampers

find out more

MODEL	Matched wall-hung boiler	Matched heat pump
HYBREER SLIMs KON 24 HP 70/90/120	KON^{m} C 24	HP_OWER ONE 70R/90R/120R
HYBREER SLIMs KON 24 HPQ 70/90	KON^{m} C 24	HP_QOR 70/90
HYBREER SLIMs KON 35 HP 70/90/120	KON^{m} C 35	HP_OWER ONE 70R/90R/120R
HYBREER SLIMs KON 35 HPQ 70/90/120	KON^{m} C 35	HP_QOR 70/90/120

Configurations with other boiler and heat pump models can be evaluated with Presale Office.

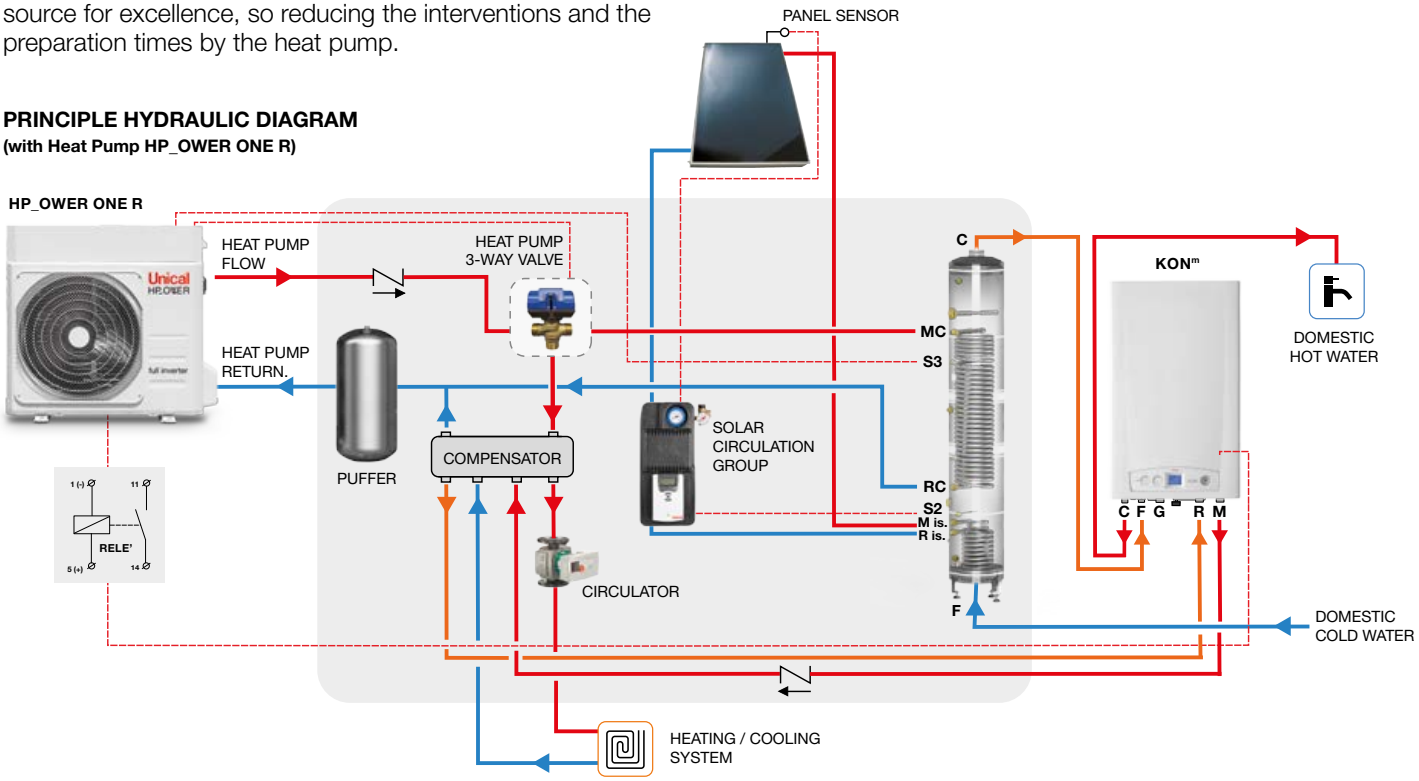
The principle scheme highlights one of the possible hydraulic configurations of HYBREER SLIMs: in fact, for its extreme versatility and intelligent design, heat pump and boiler can work in series or in parallel to make the most of the peculiarities of the system which they must serve.

The combination of solar thermal and the heat pump with the large 150 liter DHW storage tank, is a winner in the preparation of DHW., thanks to the double coil, increased to optimize in “priority” the accumulation of solar energy, free source for excellence, so reducing the interventions and the preparation times by the heat pump.

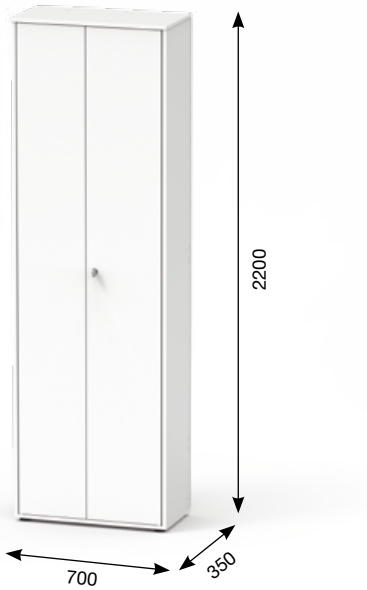
The boiler will always be able to integrate energy, if necessary, to increase the availability of the required hot water.

The HYBREER SLIMs system is optimized to exploit always at the best the most economically convenient source, ensuring the highest levels of energy savings in all operating modes.

PRINCIPLE HYDRAULIC DIAGRAM
(with Heat Pump HP_OWER ONE R)



HYBREER SLIMs		
Seasonal EFFICIENCY CLASS in heating mode		A+++ (A++*)
Seasonal EFFICIENCY CLASS in DHW mode		A
LOAD PROFILE		XL
Auxiliary electric heater (optional)	kW	2
DHW storage tank		
ACTUAL CAPACITY	lt	150
COIL HEAT EXCHANGE SURFACE	m^2	1.65 / 0.69
HEAT LOSSES	W	75
INSULATION TYPE		polyurethane in cells
INSULATION DENSITY	kg/m^3	40.5
Box		
WEIGHT (complete box)	kg	119.5

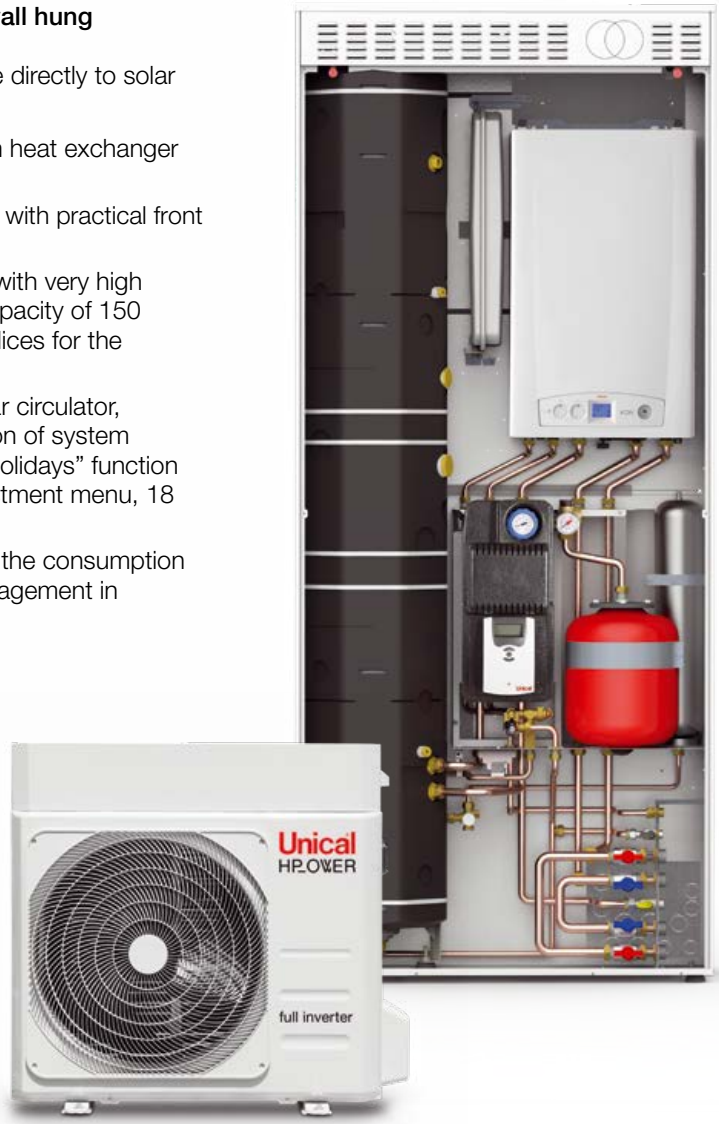


*referred to models HYBREER SLIMs KON 35 HP 70, HYBREER SLIM KON 35 HP 90

Solar system + wall-hung boiler + heat pump

KONs HP is an integrated system complete with: Combi wall hung condensing boiler, air-water heat pump and thermal solar.
For space heating / cooling and DHW production, connectable directly to solar panels.

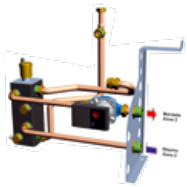
- **Condensing boiler KONm C 24/35** with extra-flat aluminum heat exchanger and a total premixed modulating burner (page 30).
- **White painted box for embedded or at sight installations** with practical front opening for easier inspections and maintenance.
- **Vertical solar DHW storage tank in stainless steel 316L** with very high stratification, to optimize the contribution of solar energy, capacity of 150 litres, with single elliptical coil arranged in two concentric helices for the production of domestic hot water, even with electric heater.
- **Preassembled solar group** consisting of a modulating solar circulator, solar control unit Digisol Plus, with digital display, visualization of system temperatures and switching on of modulating circulators, “holidays” function to prevent solar collectors overheating, and advanced adjustment menu, 18 litre expansion vessel.
- **Integrated digital controller and system configurator** for the consumption optimization, with intelligent system and auxiliary boiler management in relation to the outside temperature.
- **Air-water heat pump HP_OWER ONE 70R/90R/120R** FULL INVERTER high efficiency, MADE IN ITALY, super-compact for outdoor installation (page 26).
- **Hydraulic and electric kit** including: thermostatic diverting mixing valve, 6-liter DHW expansion vessel, tap kit.
- **Optimal combination with Unical solar panels** (page 34).



find out more

Accessories (optional)

- **TOUCH SCREEN_N** remote control
- **KTsmart** chrono-thermostat
- **Booster circulator** kit / **Direct Zone**
- Kit **2 zones Direct + Mixed**



Booster circulator kit / Direct Zone

Kit 2 zones: Direct + Mixed

TOUCH SCREEN_N

KTsmart

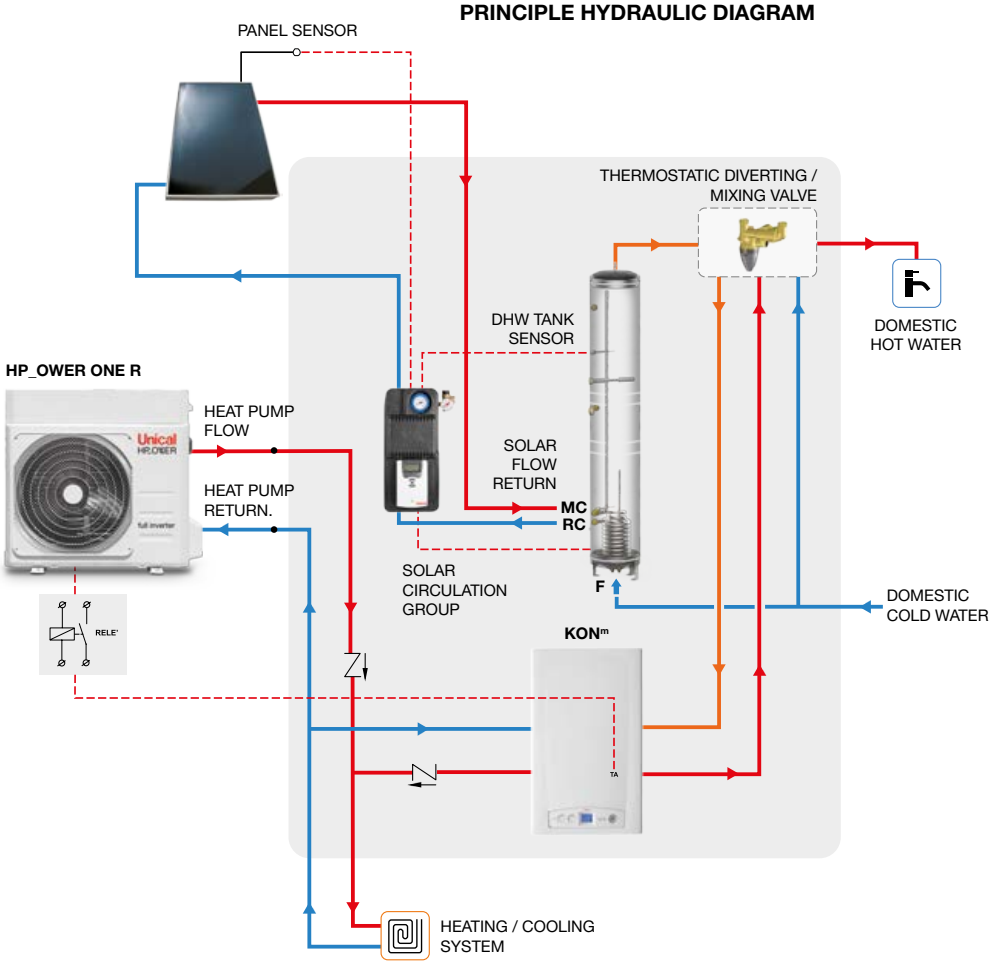
MODEL	Matched wall-hung boiler	Matched heat pump
KONs 24 HP 70	KONm C 24 INC	HP_OWER ONE 70R
KONs 24 HP 90	KONm C 24 INC	HP_OWER ONE 90R
KONs 24 HP 120	KONm C 24 INC	HP_OWER ONE 120R
KONs 35 HP 70	KONm C 35	HP_OWER ONE 70R
KONs 35 HP 90	KONm C 35	HP_OWER ONE 90R
KONs 35 HP 120	KONm C 35	HP_OWER ONE 120R

For variants with HP_OWER ONE 120RT (three-phase) heat pump, contact the Presales Office.

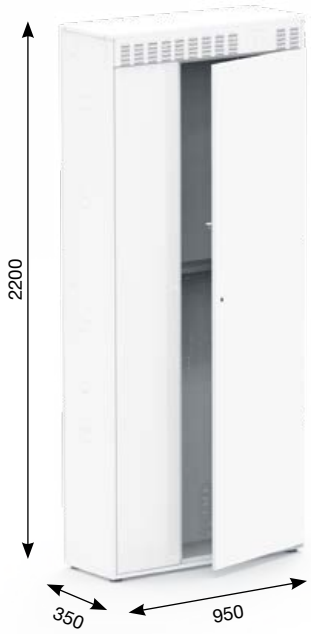
The system allows the maximum exploitation of solar energy, unique source that heats DHW in the storage tank: if the flowing out water is above 46 °C, the user is served directly at the comfort temperature via thermostatic mixer.
If the water leaving the storage tank is below 46 °C, the diverting valve switches to the auxiliary boiler which, if necessary, increases the temperature until the comfort one.

For summer and winter air conditioning, the heat pump will satisfy the system requirements: the electronic configurator will optimize the intervention of the auxiliary boiler only in unfavorable conditions with poor performance of the heat pump to always ensure maximum efficiency of the system without sacrificing the comfort.

PRINCIPLE HYDRAULIC DIAGRAM



KONs HP		
Seasonal EFFICIENCY CLASS in heating mode		A+++ (A++*)
Seasonal EFFICIENCY CLASS in DHW mode		A
LOAD PROFILE		XL
AUXILIARY ELECTRIC HEATER (optional)	kW	2
DHW storage tank		
ACTUAL CAPACITY	lt	150
COIL HEAT EXCHANGE SURFACE	m^2	0.69
HEAT LOSSES	W	75
INSULATION TYPE		polyurethane in cells
INSULATION DENSITY	kg/m^3	40.5
Box		
WEIGHT (complete box) with KONm C 24 INC / KONm C 35	kg	158 / 160.5

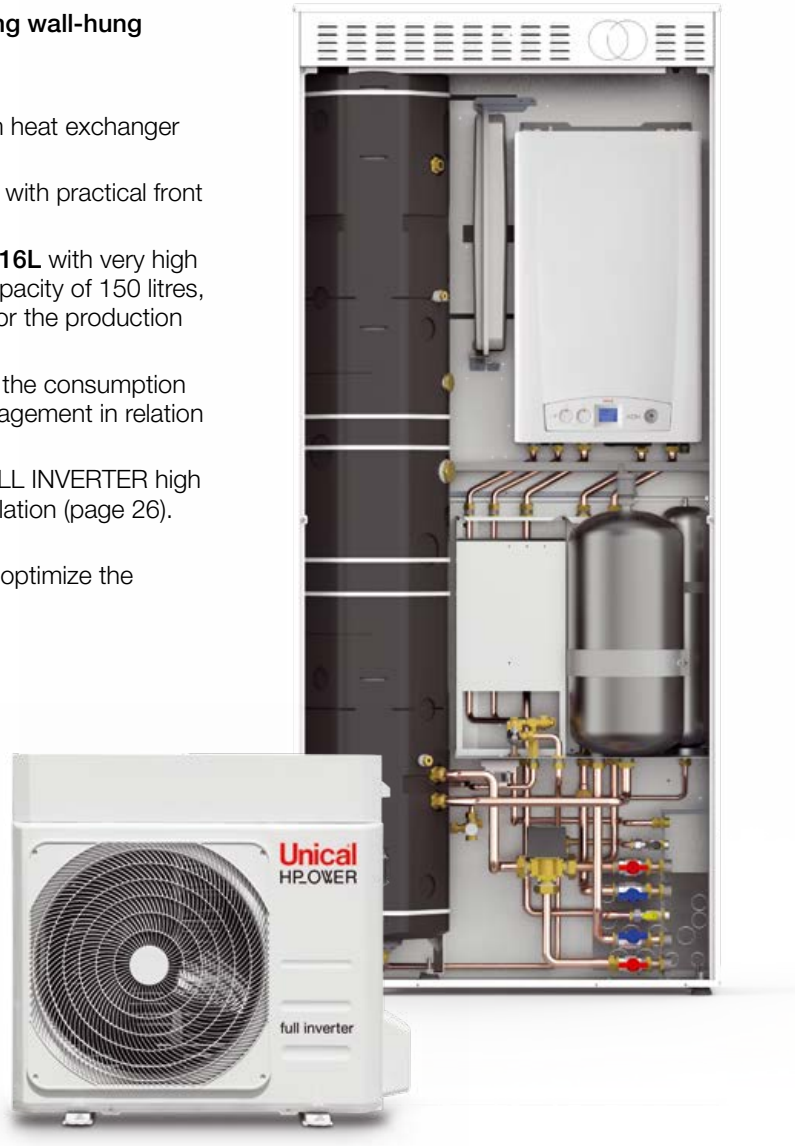


*referred to models KONs 35 HP 70, KONs 35 HP 90

System with wall-hung boiler + heat pump

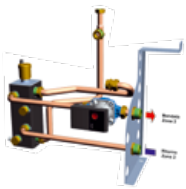
KON HP is an integrated system complete with: condensing wall-hung boiler and air-water heat pump.
For space heating / cooling and DHW production.

- **Condensing boiler KONm C 24/35** with extra-flat aluminum heat exchanger and a total premixed modulating burner (page 30).
- **White painted box for embedded or at sight installations** with practical front opening for easier inspections and maintenance.
- **Vertical solar DHW storage tank in stainless steel AISI 316L** with very high stratification, to optimize the contribution of solar energy, capacity of 150 litres, with single elliptical coil arranged in two concentric helices for the production of domestic hot water, even with electric heater.
- **Integrated digital controller and system configurator** for the consumption optimization, with intelligent system and auxiliary boiler management in relation to the outside temperature.
- **Air-water heat pump HP_OWER ONE 70R/90R/120R** FULL INVERTER high efficiency, MADE IN ITALY, super-compact for outdoor installation (page 26).
- **Hydraulic and electric kit** including:
  3-way DHW priority valve,inertial storage tank of 20 litres to optimize the modulation accuracy of the heat pump,thermostatic mixing diverting valve, DHW expansion vessel of 6 liter, tap kit.



Accessories (optional)

- **TOUCH SCREEN_N** remote control
- **KTsmart** chrono-thermostat
- **Booster circulator** kit / **Direct Zone**
- Kit **2 zones Direct + Mixed**



Booster circulator kit / Direct Zone

Kit 2 zones: Direct + Mixed

TOUCH SCREEN_N

KTsmart

find out more

MODEL	Matched wall-hung boiler	Matched heat pump
KON 24 HP 70	KONm C 24 INC	HP_OWER ONE 70R
KON 24 HP 90	KONm C 24 INC	HP_OWER ONE 90R
KON 24 HP 120	KONm C 24 INC	HP_OWER ONE 120R
KON 35 HP 70	KONm C 35	HP_OWER ONE 70R
KON 35 HP 90	KONm C 35	HP_OWER ONE 90R
KON 35 HP 120	KONm C 35	HP_OWER ONE 120R

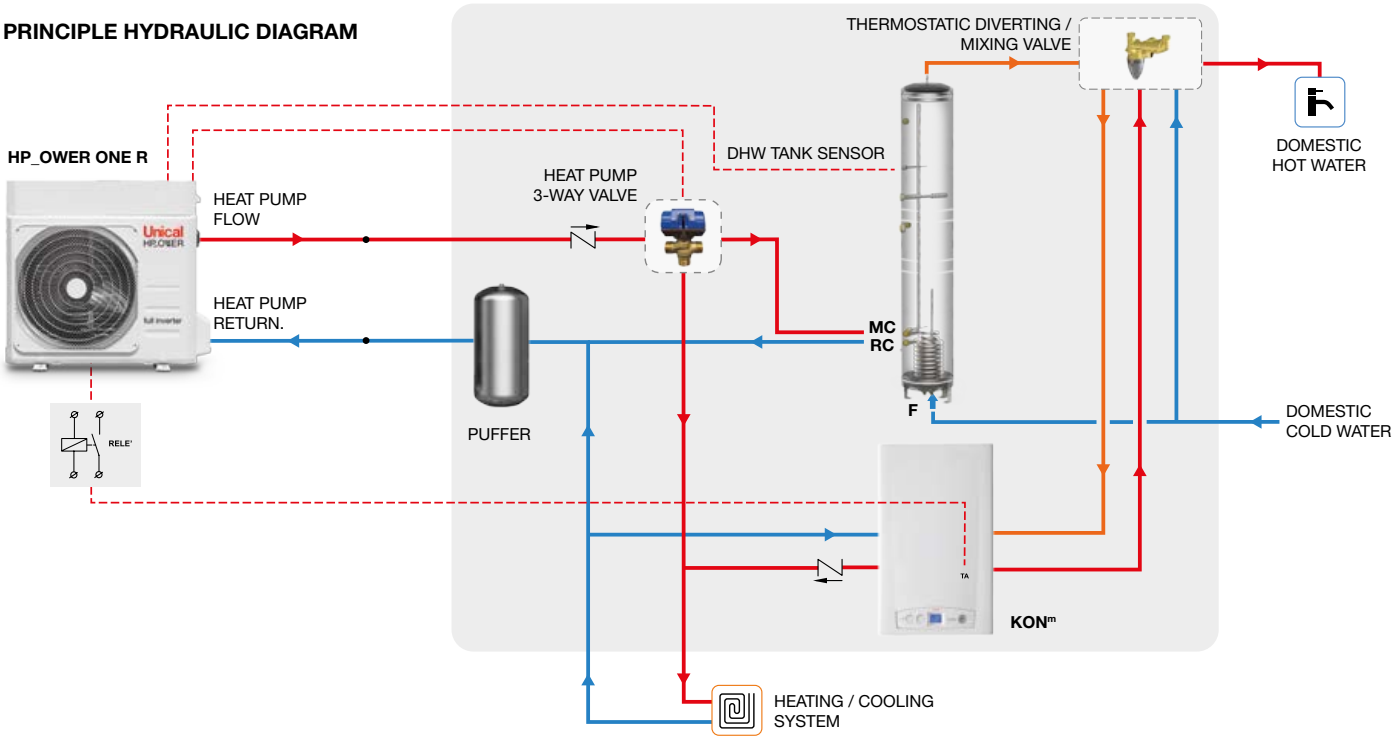
For variants with HP_OWER ONE 120RT (three-phase) heat pump, contact the Presales Office.

The principle diagram highlights exploitation of the heat pump as the only generator of renewable source which, through a three-way valve, will serve the preparation of DHW in the storage tank or will meet the needs of summer or winter air conditioning.

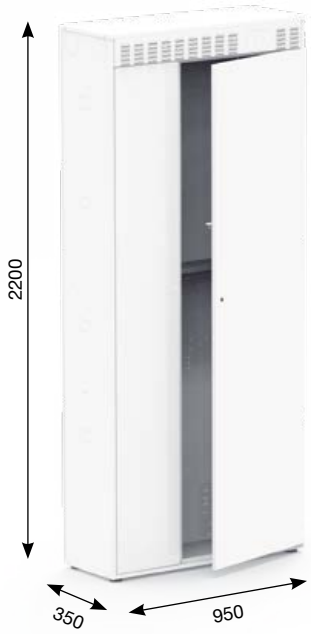
The backup boiler will intervene in the preparation of the DHW via thermostatic mixing / diverting valve, only if the DHW temperature in the storage tank is lower than 46 °C, and, for winter air conditioning, only if the electronic configurator will deem it not convenient to use the heat pump, due to unfavorable conditions with poor performance.

Maximum system efficiency and comfort always guaranteed.

PRINCIPLE HYDRAULIC DIAGRAM



KON HP		
Seasonal EFFICIENCY CLASS in heating mode		A+++ (A++*)
Seasonal EFFICIENCY CLASS in DHW mode		A
LOAD PROFILE		XL
Auxiliary electric heater (optional)	kW	2
DHW storage tank		
ACTUAL CAPACITY	lt	150
COIL HEAT EXCHANGE SURFACE	m^2	0.69
HEAT LOSSES	W	75
INSULATION TYPE		polyurethane in cells
INSULATION DENSITY	kg/m^3	40.5
Box		
WEIGHT (complete box) with KONm C 24 INC / KONm C 35	kg	158 / 160.5



*referred to models KON 35 HP 70, KON 35 HP 90

Heat Pump system

ELE: Unical exclusive system, all in one, full-electric for heating/cooling and DHW production. Ideal solution in newly built residential contexts or subject to energy requalification.

ELE was born from an innovative project that concentrates in ultra-compact spaces a product consisting of a very low visual and acoustic impact compared to traditional heat pump systems, but with very high efficiency resulting from aerodynamic tests to optimize the air flows to the generator.

- Combination with **HP_OWER ONE 90R** heat pump (page 26) fixed on a rotating plate with vibration dampers to facilitate installation and maintenance, ensuring maximum silence.
- Configuration with **single DHW cylinder** of **55 liters** or with **double cylinder** for a total capacity of **110 litres**.
- **Auxiliary electric resistance**, integrated as standard, in the DHW cylinder.
- **Metal box** with a linear design of 1 m³ to contain the entire system, for outdoor installation, at sight or semi-recessed installation, designed to optimize spaces and have minimal visual impact.

  Grates, on the suction side, made up of aerodynamic fins, designed to give the system high silence and the air supply necessary to ensure optimal operation of the heat pump.
- **Pre-assembled hydraulic kit** on a metal frame to allow installation in a very short time
- **Simple and intuitive interface** integrated into the heat pump.

Accessories (optional)

- **TOUCH SCREEN_N** remote control
- **KTsmart** chrono-thermostat

find out more

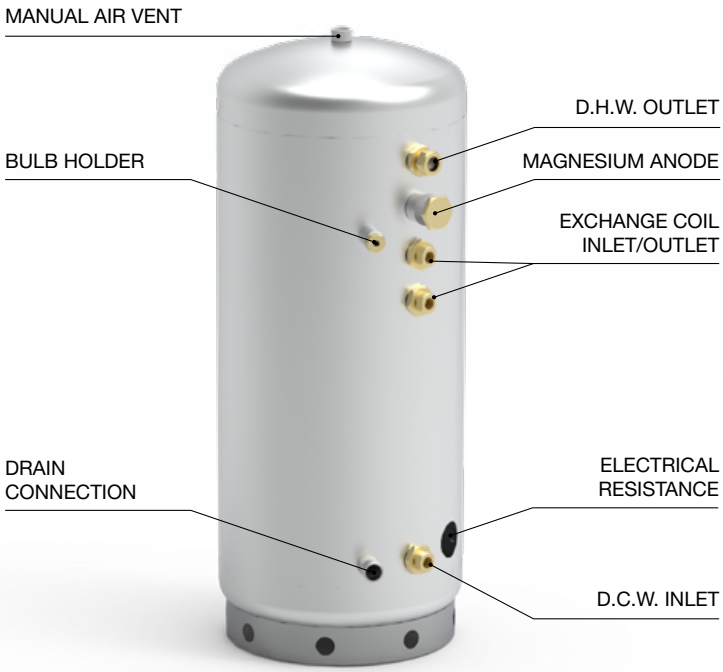

TOUCH SCREEN_N

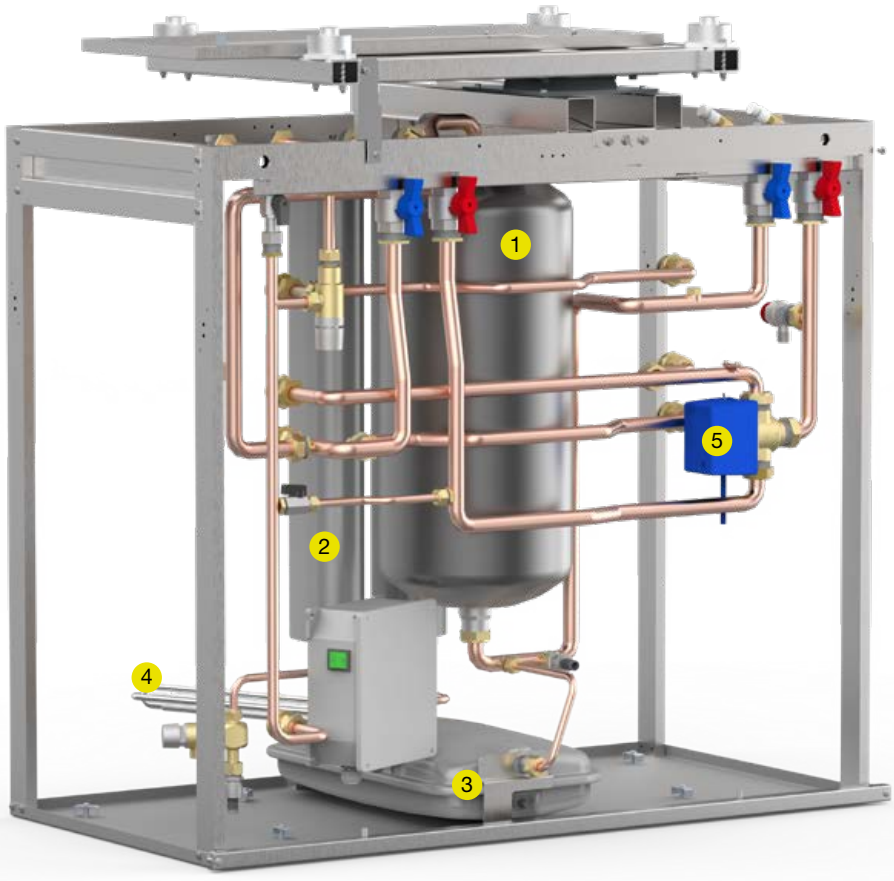

KTsmart

MODEL	Matched Heat Pump	D.H.W. capacity
ELE MONOBOILER HP 90	HP_OWER ONE 90R	55 litres
ELE DOPPIOBOILER HP 90	HP_OWER ONE 90R	110 litres

CYLINDER IN STAINLESS STEEL

- Nominal capacity 55 litres
- EPS insulation
- Heat loss: 114 W
- AISI 304 STAINLESS STEEL coil with 0.8 m² of exchange surface
- Maximum operating pressure 7 bar
- Maximum operating temperature 90°C
- Standard supplied auxiliary electric resistance of 1.5 kW





PREASSEMBLED HYDRAULIC - ELECTRICAL KIT

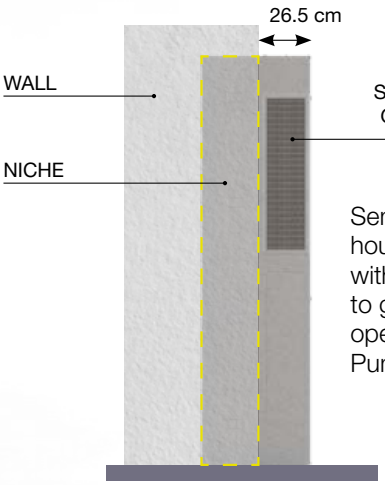
1. 20 liter buffer with integrated resistance
2. 4 liter expansion vessel for DHW
3. 10 liter expansion vessel for C.H.
4. Electric resistance of 1.5 kW (as standard)
5. Motorized 3-way diverting valve

SIMPLIFIED MAINTENANCE AND INSTALLATION

Heat pump fixed on rotating plate:

- Ease of maintenance guaranteed by anti-clockwise rotation.
- Hydraulic module mounted on a pre-assembled structure in the factory

SEMI- RECESSED BOX



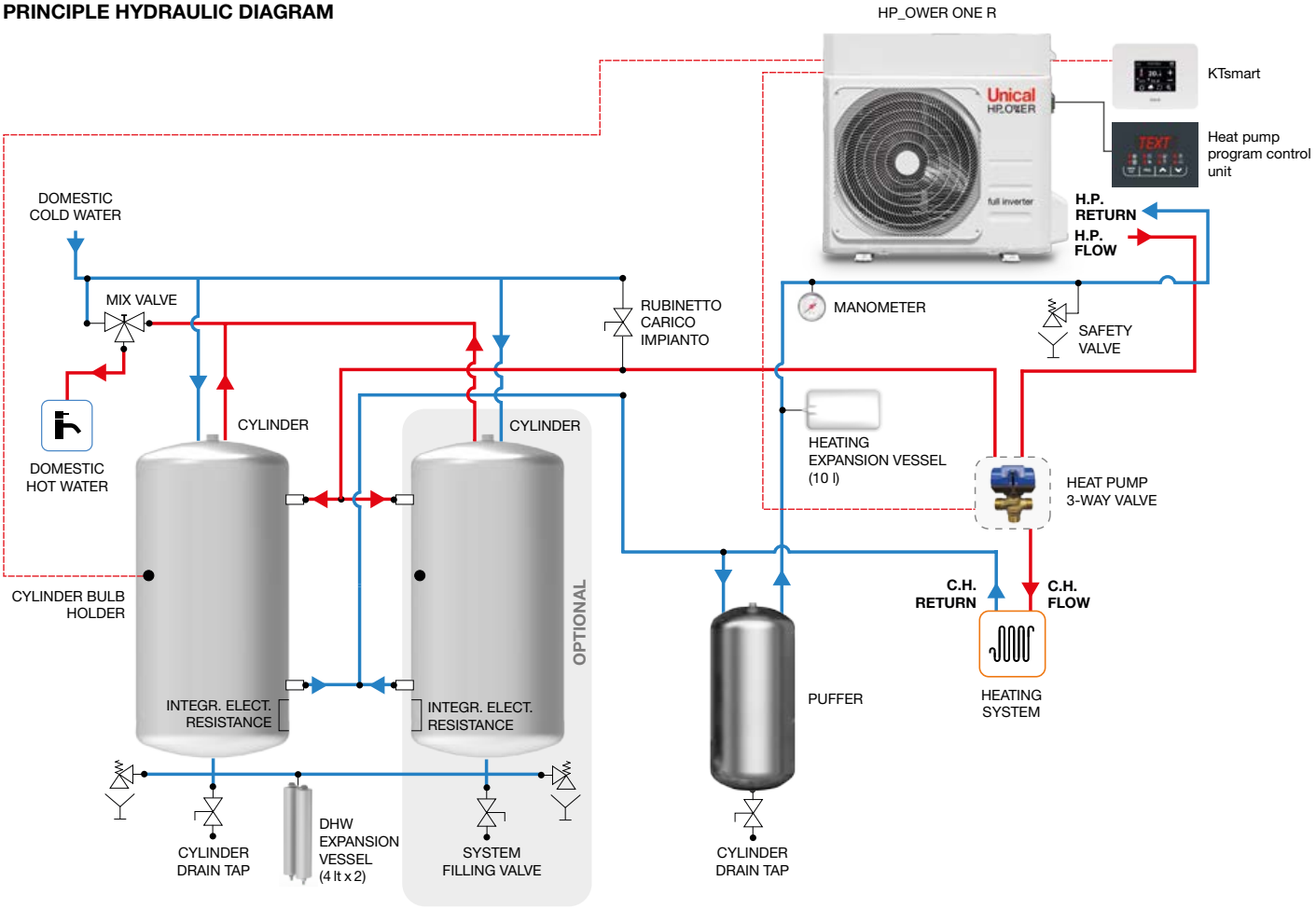
Semi-recessed box for housing the entire system with suction grilles sized to guarantee optimal operation of the Heat Pump

WORKING LOGIC

The ELE system uses the heat pump as the sole renewable source generator serving the heating/cooling and DHW production circuit.
The three-way valve is controlled via the control unit integrated into the heat pump in order to satisfy the heating request (from the room thermostat) or the DHW cylinder preparation request (from the cylinder temperature sensor).

The 55 liter cylinder is equipped, as standard, with an electric resistance which integrates the heat pump when external conditions are not optimal for the operation of the generator.
In the configuration with double tank, the two cylinders are prepared simultaneously thanks to the in parallel connection.

PRINCIPLE HYDRAULIC DIAGRAM



ELE		1 TANK	2 TANKS
Seasonal EFFICIENCY CLASS in DHW mode		A+++ / A++	
Seasonal EFFICIENCY CLASS in DHW mode		A	
LOAD PROFILE		M	L
AUXILIARY ELECTRIC HEATER	kW	1,5	1,5+1,5 KW
POWER SUPPLY	V/Ph/Hz	230-240/1/50	230-240/1/50
Stainless steel tank			
CAPACITY	l	55	110
COIL HEAT EXCHANGE SURFACE	m^2	0,8	1,6
HEAT LOSSES	W	114	114
INSULATION TYPE		synthesized expanded polyester	
INSULATION DENSITY	kg/m^3	35	35
METALLIC BOX WEIGHT	kg	48	48

Heat pump system

SLIM HP 2.0: elegant and ultra-compact solution, ideal for cooling / heating systems and DHW production, powered only by electricity, for energy requalification systems or new construction.

- **White painted box for embedded or at sight installation** (only 70 cm wide, 35 cm deep and 2.2 m high), with practical front opening for easier inspections and maintenance.
- **Vertical DHW storage tank in stainless steel with very high stratification**, to optimize the contribution of energy, 150 litres capacity, with oversized coil with large exchange surface for the connection to heat pump for domestic hot water production, also with electric heater.
- **Booster circulator kit for direct zone**, pre-assembled in the box. Hydraulic compensator and circulator with 7 m head for efficient combination of the heat pump to the different types of systems in terms of efficiency and flow rate, to ensure maximum comfort and better energy efficiency of the system.
- **Integrated digital controller and system configurator.**
- **2 kW auxiliary electric resistance** in AISI 316L stainless steel, for DHW, equipped with external thermostat and integrated temperature limiter.
- **Air-water heat pump HP_OWER ONE 70R/90R/120/140R** (page 26) **or HP_QOR 70/90/120** (page 28) high efficiency FULL INVERTER, super compact for outdoor installation.
- **Hydraulic and electric kit** for the connection with heat pump,including: 3-way DHW priority valve, inertial storage tank of 20 litres, to optimize the modulation accuracy of the heat pump,6 liter DHW expansion tank,thermostatic mixing valve, system filling group.

Accessori (optional)

- **TOUCH SCREEN_N** remote control (only for HP_OWER ONE R)
- **KTsmart** chrono-thermostat
- **Booster circulator kit for mixed zone**, with installation inside the box, circulator with 7m of available head, thermostatic mixing valve
- **Box side closing carter** kit to cover hydraulic connections in at sight installations
- 10 liter **system expansion vessel** kit


TOUCH SCREEN_N

Covering carter


KTsmart


Booster circulator kit for mixed zone


System expansion vessel

find out more

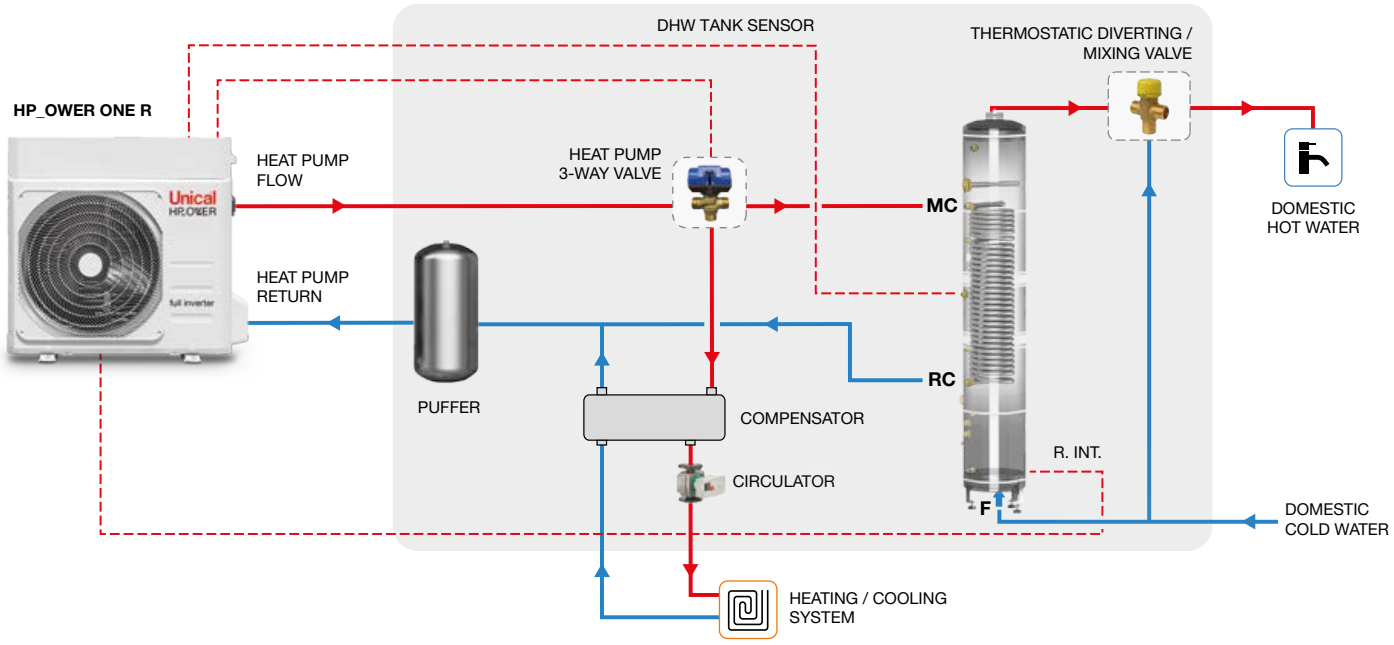
MODEL	Matched heat pump
SLIM HP 2.0 70 / HPQ 2.0 70	HP_OWER ONE 70R / HP_QOR 70
SLIM HP 2.0 90 / HPQ 2.0 90	HP_OWER ONE 90R / HP_QOR 90
SLIM HP 2.0 120 / HPQ 2.0 120	HP_OWER ONE 120R / HP_QOR 120
SLIM HP 2.0 140	HP_OWER ONE 140R

For variants with HP_OWER ONE 120RT (three-phase) heat pump, contact the Presales Office.

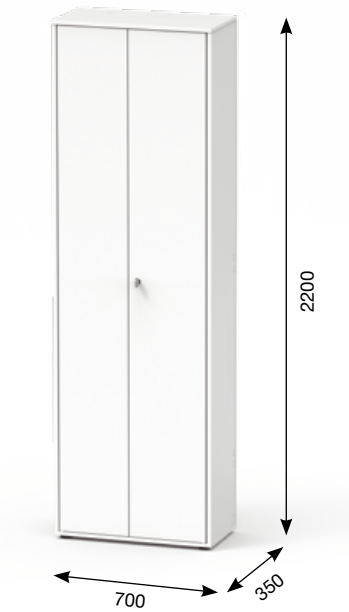
The principle scheme highlights the production of energy of the heat pump, the only player in the production of DHW and space conditioning.

The combination with the 150-liter DHW storage tank is a winner thanks to the internal coil of the storage tank, designed to optimize the energy exchange between the heat pump and the domestic hot water thanks to the increased exchange surface (1.65 m²). An auxiliary or integration electrical heater is the further guarantee for one continuous and abundant supply to the tap at any working condition of the system.

PRINCIPLE HYDRAULIC DIAGRAM **(with Heat Pump HP_OWER ONE R)**

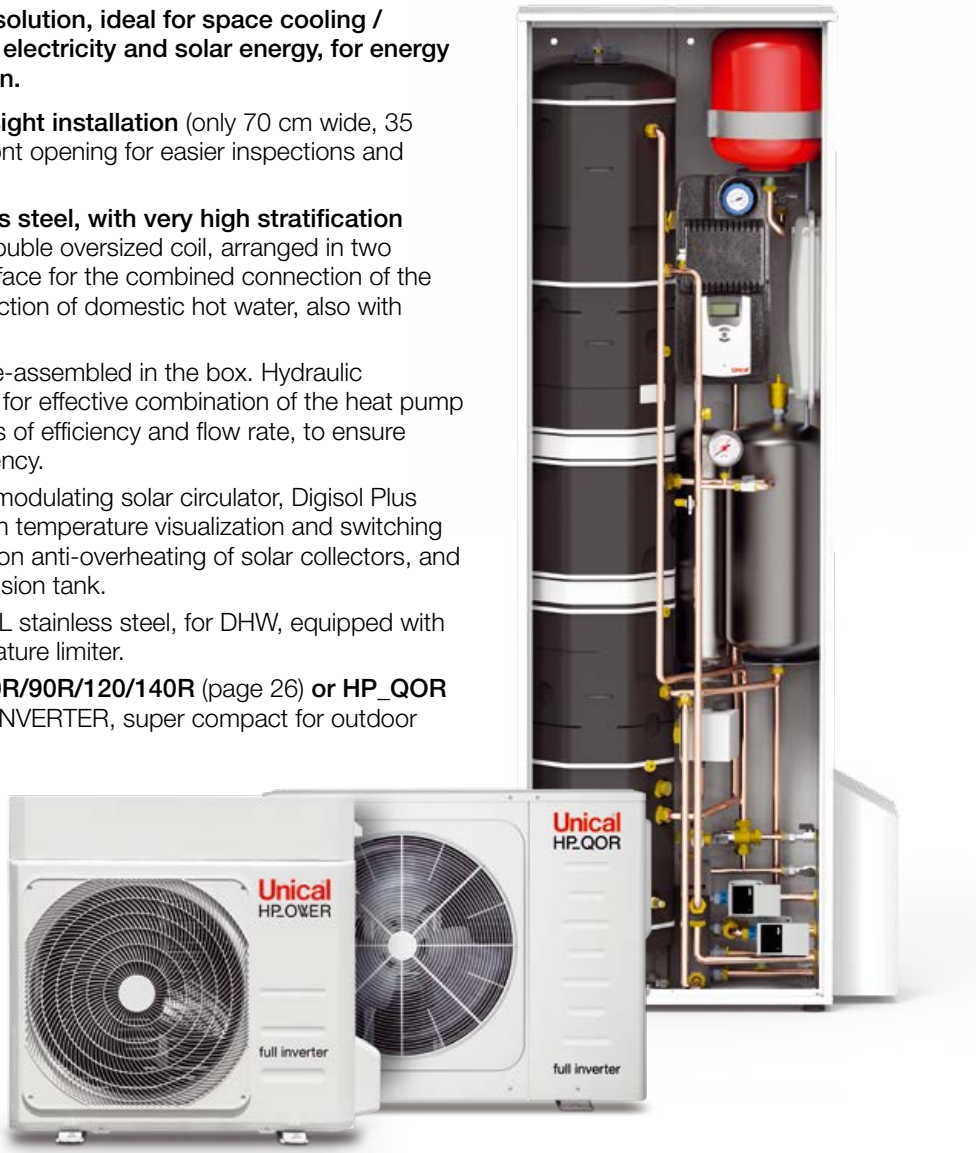


SLIM HP 2.0		
Seasonal EFFICIENCY CLASS in heating mode		A+++ / A++
Seasonal EFFICIENCY CLASS in DHW mode		A
LOAD PROFILE		L
AUXILIARY ELECTRIC HEATER (optional)	kW	2
DHW storage tank		
ACTUAL CAPACITY	lt	150
COIL HEAT EXCHANGE SURFACE	m²	1.65
HEAT LOSSES	W	75
INSULATION TYPE		polyurethane in cells
INSULATION DENSITY	kg/m³	40.5
Box		
WEIGHT (complete box)	kg	99.5



Solar system + heat pump

SLIMs HP 2.0: elegant and ultra-compact solution, ideal for space cooling / heating and DHW production, powered by electricity and solar energy, for energy requalification systems or new construction.



- **White painted box for embedded or at sight installation** (only 70 cm wide, 35 cm deep and 2.2 m high), with practical front opening for easier inspections and maintenance.
- **Vertical 150 litre storage tank in stainless steel, with very high stratification** to optimize the energy contribution, with double oversized coil, arranged in two concentric helices, with high exchange surface for the combined connection of the heat pump and thermal solar for the production of domestic hot water, also with electric heater.
- **Booster circulator kit for direct zone**, pre-assembled in the box. Hydraulic compensator and circulator with 7 m head for effective combination of the heat pump with the different types of systems, in terms of efficiency and flow rate, to ensure maximum comfort and better energy efficiency.
- **Preassembled solar group** consisting of modulating solar circulator, Digisol Plus solar control unit with digital display, system temperature visualization and switching on modulating circulators, “holidays” function anti-overheating of solar collectors, and advanced adjustment menu, 18-liter expansion tank.
- **Auxiliary electric heater 2 kW** in AISI 316L stainless steel, for DHW, equipped with external thermostat and integrated temperature limiter.
- **Air-water heat pump HP_OWER ONE 70R/90R/120/140R** (page 26) **or HP_QOR 70/90/120** (page 28) high efficiency FULL INVERTER, super compact for outdoor installation.
- **Hydraulic and electric kit** for the connection with heat pump, including: 3-way DHW priority valve, inertial storage tank of 20 litres, to optimize the modulation accuracy of the heat pump, 6 liter DHW expansion tank, thermostatic mixing valve, system filling group.
- **Optimal combination with Unical solar panels** (page 34).

Accessories (optional)

- **TOUCH SCREEN_N** remote control (only for HP_OWER ONE R)
- **KTsmart** chrono-thermostat
- **Booster circulator kit for Mixed zone**, with installation inside the box, circulator with 7m of available head, thermostatic mixing valve
- **Box side closing carter** kit to cover hydraulic connections in at sight installations
- 10 liter **system expansion vessel** kit


TOUCH SCREEN_N


KTsmart


Booster circulator kit for mixed zone

Covering carter


System expansion vessel

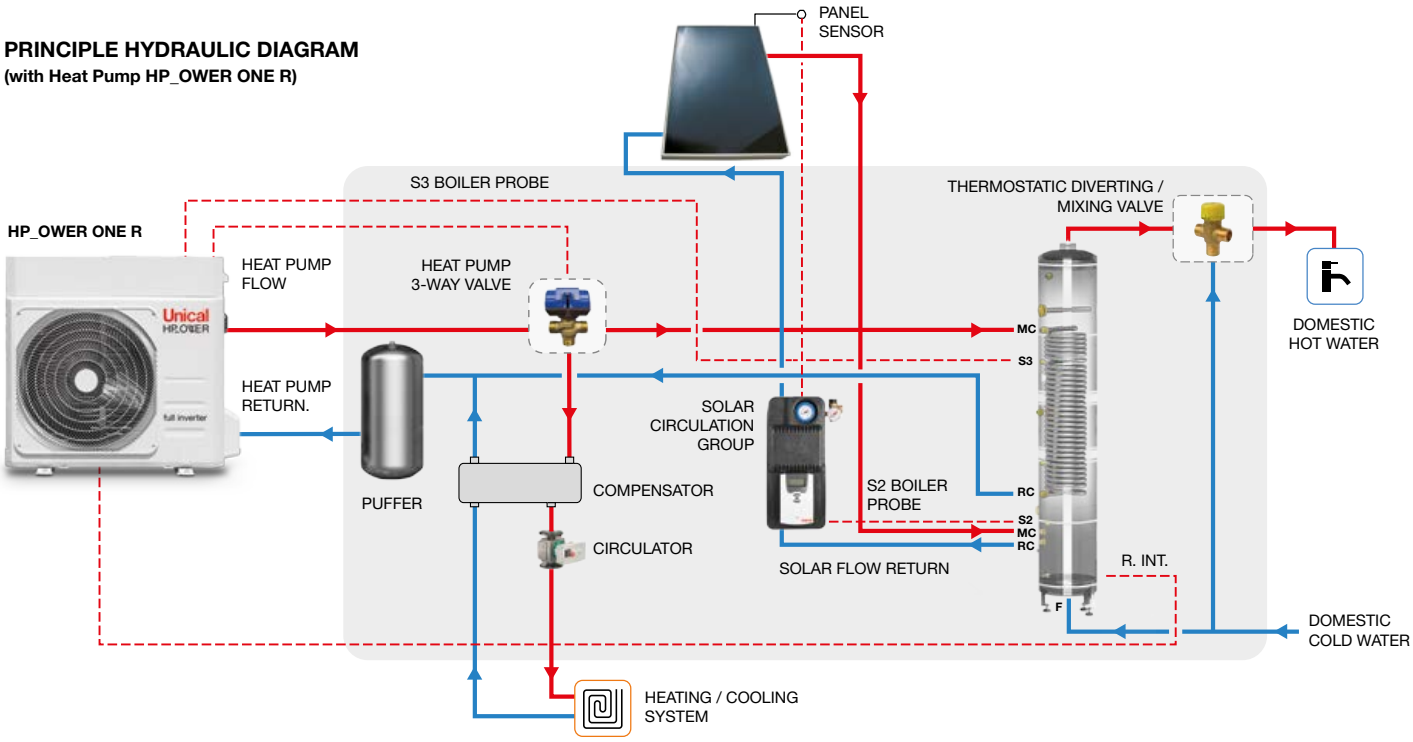
find out more

MODEL	Matched heat pump
SLIMs HP 2.0 70 / HPQ 2.0 70	HP_OWER ONE 70R / HP_QOR 70
SLIMs HP 2.0 90 / HPQ 2.0 90	HP_OWER ONE 90R / HP_QOR 90
SLIMs HP 2.0 120 / HPQ 2.0 120	HP_OWER ONE 120R / HP_QOR 120
SLIMs HP 2.0 140	HP_OWER ONE 140R

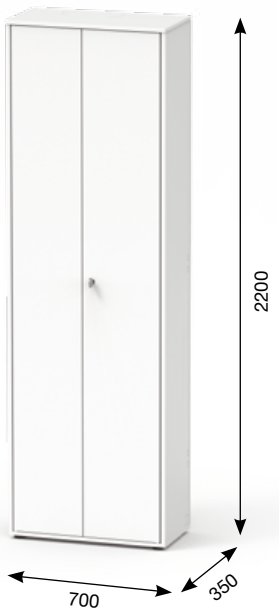
For variants with HP_OWER ONE 120RT (three-phase) heat pump, contact the Presales Office.

The system allows maximum exploitation of solar energy, free source and therefore in priority in the preparation of domestic hot water, in combination with the heat pump. The contribution of solar energy is optimized by a heat exchanger, placed in the bottom of the storage tank, with double concentric helix that increases the exchange surface and guarantees a higher efficiency of the solar system: all monitored and managed by a solar digital control unit, precise and programmable. For summer and winter air conditioning, the heat pump will meet the needs of the system.

PRINCIPLE HYDRAULIC DIAGRAM
(with Heat Pump HP_OWER ONE R)



SLIMs HP 2.0		
Seasonal EFFICIENCY CLASS in heating mode		A+++ / A++
Seasonal EFFICIENCY CLASS in DHW mode		A
LOAD PROFILE		L
AUXILIARY ELECTRIC HEATER (optional)	kW	2
DHW storage tank		
ACTUAL CAPACITY	lt	150
COIL HEAT EXCHANGE SURFACE (upper/lower)	m^2	1.65 / 0.69
HEAT LOSSES	W	75
INSULATION TYPE		polyurethane in cells
INSULATION DENSITY	kg/m^3	40.5
Box		
WEIGHT (complete box)	kg	119.5



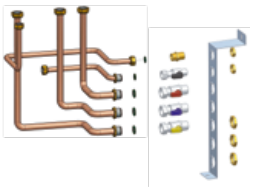
Solar system + wall-hung boiler

KONs is the integrated system for heating and DHW, directly connectable to solar panels, complete with wall-hung boiler.

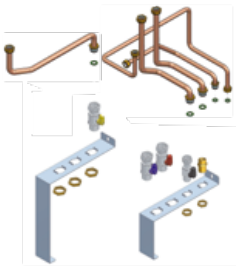
- **Condensing boiler KON^{m} C 24/35** with extra-flat aluminum heat exchanger and a total premixed modulating burner (page 30).
- **White painted box for embedded or at sight installations** with practical front opening for easier inspections and maintenance.
- **Vertical solar DHW storage tank in AISI 316L stainless steel** with very high stratification, to optimize the contribution of solar energy, capacity of 150 litres, with single elliptical coil arranged in two concentric helices for the production of domestic hot water, even with electric heater.
- **Preassembled solar group** consisting of a modulating solar circulator, Digisol Plus solar control unit with digital display, visualization of system temperatures and switching on of modulating circulators, “holidays” function to prevent solar collectors overheating, and advanced adjustment menu, 18-liter expansion tank.
- **Digital control unit** for the complete management of solar systems with storage tank, including:
  temperature sensors and power supplies for the management of circulation groups, of collector and heat integration source already pre-wired.
- **Optimal combination with Unical solar panels** (page 34).

Accessori (optional)

- **TAPS for SIDE connections**
  template, cold water tap, gas tap, taps for H.T. Flow and Return, pressure fittings.
- **PIPES for SIDE connections**
- **TAPS for REAR and LOWER connections**
  templates, cold water inlet tap, gas tap, taps for H.T. Flow and Return, pressure fittings.
- **PIPES for REAR and LOWER connections**



TAPS and PIPES for SIDE connections kit



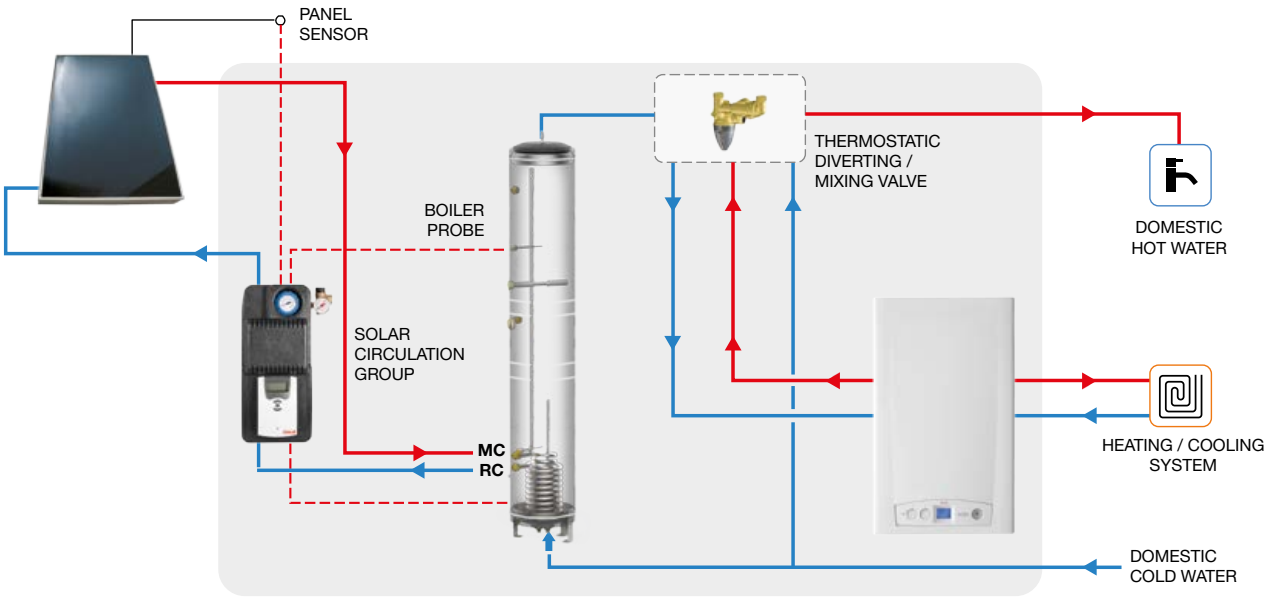
TAPS and PIPES for REAR and LOWER connections kit

find out more

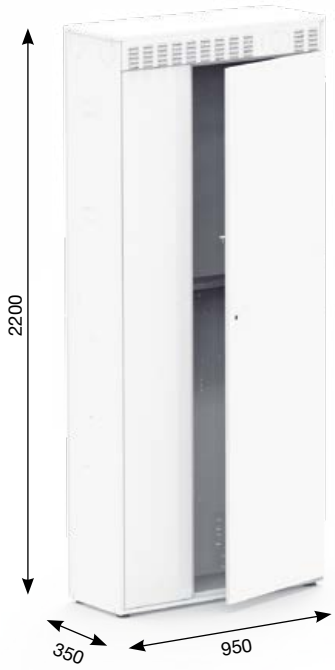
MODEL	Matched wall-hung boiler
KONs 24	KON^{m} C 24 INC
KONs 35	KON^{m} C 35

The system allows maximum exploitation of solar energy, the only energy source that heats DHW in the storage tank: if the water at the outlet is higher than 46 °C, it is sent directly to the user at the comfort temperature by means of a thermostatic mixer. If the water at the outlet of the storage tank is below 46 °C, the diverting valve switches to the integration boiler which, if necessary, increases the temperature until the comfort one.

PRINCIPLE HYDRAULIC DIAGRAM



KON HP		
Seasonal EFFICIENCY CLASS in heating mode		A
Seasonal EFFICIENCY CLASS in DHW mode		A
LOAD PROFILE		XL
AUXILIARY ELECTRIC HEATER (optional)	kW	2
DHW storage tank		
ACTUAL CAPACITY	lt	150
COIL HEAT EXCHANGE SURFACE	m^2	0.69
HEAT LOSSES	W	75
INSULATION TYPE		polyurethane in cells
INSULATION DENSITY	kg/m^3	40.5
Box		
WEIGHT (complete box)	kg	158



Enbloc full inverter heat pumps

find out more

Air-water, full inverter, **high efficiency** heat pump,

- **Efficiency Class A+++**
  C.O.P. up to 4.85
  E.E.R. up to 5.40
- Low absorption and noisiness, twin rotary, **DC INVERTER compressor**
- **DC INVERTER BRUSHLESS fan motors**
- **INVERTER circulators with high efficiency BRUSHLESS MOTOR**
- **Flow temperatures** up to 60°C
- Operation **up to -20°C**
- **PREASSEMBLED hydronic kit** composed of: safety valve at 6 bar, air vent, INVERTER circulator, circulation flow-switch
- High efficiency, stainless steel, **water/gas plate heat exchanger,** patented for **R32**
- **Air-gas heat exchanger** made of copper pipes with aluminium fins and anti-corrosion treatment.
- **D.H.W. production** through a dedicated storage tank
- **Refrigerant R32**
- **Integrated digital regulator**
- **Touch screen remote control (optional)**
- **Management of integration source** through integral climatic controller
- **Standard supplied thermo-controller** with management of modulating flow temperature
- **Management through outer controller** with 0-10 V signal (optional)
- Management through **external ON-OFF programmer** (optional)
- **Automatic management** of electric heater for D.H.W. tank
- **Automatic defrosting function**
- **Compressor case pre-heating** for low temperatures
- **Auto-restart**
- **Self-diagnosis**

HP_OWER ONE 70RD1-90RD1

HP_OWER ONE 120R

HP_OWER ONE 140R

HP_OWER ONE			70RD1	90RD1	120R	120 RT	140R
Seasonal EFFICIENCY CLASS in heating mode (T_{out} = 35/55°C)			A+++ / A++	A+++ / A++	A+++ / A++	A+++ / A++	A+++ / A++
Cooling	Cooling capacity (1) min-nom-max	kW	4.82-6.18-6.80*	4.91-7.72-8.49*	6.41-11.60-12.76*	6.41-11.60-12.76*	9.17-14.00-14.70*
	Input power (1)	kW	1.28	1.76	2.79	2.79	2.59
	E.E.R. (1)	W/W	4.82	4.38	4.16	4.16	5.40
	Cooling capacity (2) min-nom-max	kW	3.20-5.02-5.52*	3.80-6.08-6.69*	4.55-8.51-9.36*	4.55-8.51-9.36*	6.87-11.48-12.05*
	Input power (2)	kW	1.60	1.99	2.79	2.79	3.53
	E.E.R. (2) / S.E.E.R. (5)	W/W	3.14 / 4.42	3.05 / 4.51	3.05 / 4.43	3.05 / 4.43	3.25 / 4.77
Heating	Heating capacity (3) min-nom-max	kW	3.95-6.08-6.99*	3.95-7.81-8.98*	5.33-11.30-13.57*	5.33-11.30-13.57*	7.54-14.10-15.23*
	Input power (3)	kW	1.35	1.78	2.61	2.61	2.91
	C.O.P. (3)	W/W	4.51	4.38	4.32	4.32	4.85
	Heating capacity (4) min-nom-max	kW	3.82-5.88-6.76*	3.80-7.58-8.72*	5.13-11.47-13.19*	5.13-11.47-13.19*	7.23-13.56-14.64*
	Input power (4)	kW	1.66	2.17	3.33	3.33	3.55
	C.O.P. (4) / S.C.O.P. (6)	W/W	3.54 / 4.46	3.50 / 4.46	3.44 / 4.47	3.44 / 4.47	3.82 / 4.48
Electric data	Power supply	V/Ph/Hz	230/1/50	230/1/50	230/1/50	400/3/50	230/1/50
	Maximum input power (vers. K)	kW	3.5 (3.6)	3.9 (4.0)	5.1 (5.2)	5.1 (5.2)	6.6 (6.7)
	Maximum input current (vers. K)	A	15.1 (15.6)	17.0 (17.6)	22.1 (22.7)	7.3 (7.5)	28.6 (29.2)
R32 Refrigerant quantity (7)		kg	1.5	1.5	2.5	2.5	3.2
Hydraulic circuit	Water flow rate (2)	l/s	0.24	0.28	0.41	0.41	0.55
	Available head pressure (2)	kPa	78.8	76.0	63.4	63.4	75.0
	Minimum volume of water	l	40	40	60	60	60
Noise level	Sound power at full load L_w	dB(A)	64	64	65	65	68
	Sound power at partial load L_w	dB(A)	62	62	62	62	66
	Sound pression level at a dist. of 1m at full load L_{p1}	dB(A)	49.8	49.8	50.4	50.4	52.7
	Sound pression level at a dist. of 10m at full load L_{p10}	dB(A)	32.8	32.8	33.7	33.7	36.6
	Sound pression level at a dist. of 1m at partial load L_{p1}	dB(A)	47.8	47.8	47.4	47.4	50.7
	Sound pression level at a dist. of 10m at partial load L_{p10}	dB(A)	30.8	30.8	30.7	30.7	34.6
Operating / Shipping weight		kg	72 / 84	72 / 84	96 / 110	108 / 122	121 / 134

Performance referring to the following conditions:

(1) Cooling: outdoor air temperature 35°C; in/out water temperature 23/18 °C
(2) Cooling: outdoor air temperature 35°C; in/out water temperature 12/ 7°C.
(3) Heating: outdoor air temperature 7°C DB 6°C WB; in/out water temp 30/35°C.
(4) Heating: outdoor air temperature 7°C DB 6°C WB; in/out water temp 40/45°C.
(5) Cooling: in/out water temperature 7/12°C.
(6) Heating: average climatic conditions; T_{biv}=-7°C; in/out water temp 30/35°C.
(7) Indicative data subject to changes. For the correct value, always refer to the technical label on the unit.
(8) Sound power level: full load unit in heating mode according to EU Regulation 813/2013 for medium and low temperature applications. Value determined on the basis of measurements carried out in accordance with EN 12102-1: 2017, used in conjunction with UNI EN ISO 9614-2 which describes the test with the Intensimetric method.
The tolerance on the value of the total sound power level is 2 dB(A).
(9) Sound pressure level: value calculated from the sound power level using ISO 3744:2010, considering the units in the open field
(*) activating the “maximum Hz” function

Performance data declared in points (1), (2), (3) and (4) is intended to refer to instantaneous power according to UNI EN 14511. The value declared in points (5) and (6) is determined according to UNI EN 14825

Enbloc full inverter heat pumps

find out more

High Efficiency air-to-water heat pump,
Full inverter available in 4 models

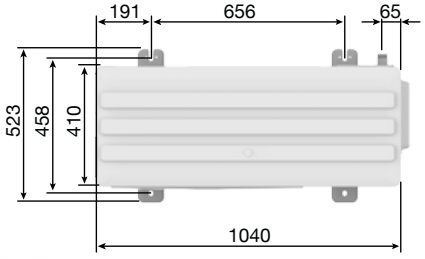
- **Efficiency Class A+++**
  COP up to 5.30 - EER up to 5.10
- **Flow temperatures up to 65°C**
- **Flow temperature of 60°C stably guaranteed** at low outside temperatures down to a temperature of -15 °C
- **DC INVERTER Twin Rotary Compressor** with double compression chamber with balanced rotors: best modulation, higher stability, low vibration and greater silence
- 40% **reduction in reaction and ignition time**
- **DC INVERTER circulator**: high manometric head
- Operation up to **-25°C outside**
- **Compact dimensions** for the entire power range, guarantee of installation flexibility
- **DC INVERTER BRUSHLESS fan**
  with high modulation and low noise
- **PRE-ASSEMBLED hydronic kit**
  composed of: 3 bar safety valve, air relief valve, INVERTER circulator, circulation flow switch, 5 litre expansion vessel, water inlet filter
- **Water-to-gas plate** heat exchanger in high efficiency stainless steel, patented for R32
- **Air-to-gas exchanger** made of copper pipes with aluminium fins anti-corrosion treated
- **R32 refrigerant**
  with low environmental impact
- **Standard digital remote control**
  for managing the heat pump and system functions
- Possible configuration of **up to 6 machines in cascade with standard setting**
- **ModBus serial port** for remote management
- **D.H.W. production** with dedicated external storage
- **Integration source management**
- **Double zone** and **double setpoint management**
- **Integrated climatic regulation**
  customizable by area
- HOLIDAY function, FLOOR PROTECTION and ANTI-LEGIONELLA
- Adjustable **double level of silence**
- **Inlet absorbed power limitation**
- **Dedicated inlet for PHOTOVOLTAIC ENERGY OPTIMIZATION FOR D.H.W. PRODUCTION**
- **Antifreeze kit** for integrated plate heat exchanger

side view

front view

rear view

upper view



HP_QOR			70	90	120	140T
Season EFFICIENCY CLASS in heating mode (T_{out} = 35/55°C)			A+++ / A++	A+++ / A++	A+++ / A++	A+++ / A++
Cooling	Cooling capacity (1)	kW	6.50	8.30	12.20	13.90
	Input power (1)	kW	1.27	1.71	2.65	3.16
	E.E.R. (1)	W/W	5.10	4.85	4.60	4.40
	Cooling capacity (2)	kW	5.50	7.40	11.60	13.40
	Input power (2)	kW	1.69	2.35	3.74	4.57
	E.E.R. (2) / S.E.E.R. (5)	W/W	3.25 / 5.09	3.15 / 5.19	3.10 / 5.07	2.93 / 5.09
	Water flow rate (2)	l/s	0.31	0.40	0.58	0.66
Heating	Heating capacity (3)	kW	6.50	8.40	12.20	14.10
	Input power (3)	kW	1.23	1.66	2.49	3.00
	C.O.P. (3)	W/W	5.30	5.05	4.90	4.70
	Heating capacity (4)	kW	6.60	8.50	12.50	14.50
	Input power (4)	kW	1.65	2.24	3.38	4.09
	C.O.P. (4) / S.C.O.P. (6)	W/W	4.00 / 5.12	3.80 / 5.17	3.70 / 5.08	3.55 / 4.89
	Water flow rate (3)	l/s	0.31	0.40	0.58	0.67
Electric data	Power supply	V/Ph/Hz	220-240/1/50	220-240/1/50	220-240/1/50	380-415/3/50
	Maximum input power	kW	3.2	3.5	5.8	6.2
	Maximum input current	A	18	18	30	14
R32 Refrigerant quantity (7)		kg	1.25	1.25	1.80	1.80
Hydraulic circuit	Available head pressure (2)	kPa	82	77	54	48
	Hydraulic connections		G1"BSP	G1"BSP	G5/4"BSP	G5/4"BSP
	Minimum volume of water	l	40	40	60	60
Sound power L_w (8)		dB(A)	48	51	56	59
Operating / Shipping weight		kg	87 / 103	87 / 103	106 / 122	120 / 136

Performance referring to the following conditions, in accordance with the EN 14511 standard:
(1) Cooling: outdoor air temperature 35°C; in/out water temperature 23/18 °C
(2) Cooling: outdoor air temperature 35°C; in/out water temperature 12/ 7°C.
(3) Heating: outdoor air temperature 7°C DB 6°C WB; in/out water temp 30/35°C.
(4) Heating: outdoor air temperature 7°C DB 6°C WB; in/out water temp 40/45°C.
(5) Raffreddamento: temperatura acqua ing./usc. 12/7°C.
Heating: average climatic conditions; Tbiv=-7°C; low temperature.

(7) Indicative data subject to changes. For the correct value, always refer to the technical label on the unit.
(8) Sound pressure measured at a distance of 1 m, in front of the unit at a height equal to (1+H)/2 m in a semi-anechoic chamber (outside temperature 7°C d.b.).

N.B. The performance data shown are indicative and may be subject to change. Furthermore, the figures declared in points (1), (2), (3) and (4) are to be understood as referring to the instantaneous power according to EN 14511. The data declared in points (5) and (6) are determined according to EN 14825.

Condensing boilers (aluminum body)

KONm

KON B

KONm INC

find out more

KONm

KON B

KONm INC

- Modulation ratio **up to 1:8** (mod. KONm)
- **Efficiency >106%** (ex dir. CE 92/42)
  ηs 93% (reg. UE 813/2013 - dir. ERP 2009/125/CE)
  for mod: KONm
- **Energy class A**
- Ultrathin **primary heat exchanger** in **Al/Si/Mg**
- Electronics with HWS **"Hot Water Speed"** function
- **Low NOx class 6** (according to EN 15502-1)
  thanks to the premix modulating burner
- **Domestic hot water production up to 18.3 l/min,**
  with Δt 25 (mod. 35) with special plate heat exchanger,
  with **12 plates** (mod. 24 C) and **16 plates** (mod. 35 C) in
  AISI 316L stainless steel
- **"Pit stop" maintenance** for technical assistance
  interventions
- Simple and intuitive panel board
- **High efficiency modulating pump**
- **HWS "Hot Water Speed"** is the **special KONm**
  electronic function that switches from heating to
  domestic hot water mode keeping the burner and pump
  always active, improving the comfort of the user who
  doesn't have to wait for warm water
- **Management of 2 differentiated priority zones**
  (high/low temperature) by applying a second on/off
  thermostat
- **Sliding temperature** programmed to operate with the
  lowest possible flow temperature to promote energy
  saving
- **Anti-overheating post-circulation**
  Automatically, after switching off the burner, the boiler
  keeps the pump running for 5 minutes, preserving the
  components
- **Service function button**
  allows maintainers to carry out checks in terms of
  efficiency and emissions as prescribed by current
  regulations
- **Anti-jaming function**
  the pump is prevented from locking after long pauses,
  thanks to the electronics that launches at the engine,
  every 24 hours of rest, an automatic pulse of 5 s.
- **60 litre storage tank (mod. KON B)**
  in stainless steel AISI 316L

Technical Data		KONm 24 C KONm 24 C INC	KONm 35 C	KON B 28
Heat input (nominal / minimum)	kW	23.4 / 3.0	33 / 4.4	28 / 4.4
Heat output (nominal / minimum)	kW	22.6 / 2.9	32 / 4.3	27 / 4.2
Output in condensation (nominal / minimum) 50°-30°C	kW	24 / 3.2	33.8 / 4.7	27 / 4.2
Combustion efficiency at full load/part load 80-60°C (Dir. Ce 92/42)	%	96.6 / 96.7	97 / 97.7	96.4 / 95.5
Combustion efficiency at full load/part load 50-30°C (Dir. Ce 92/42)	%	102.6 / 106.7	102.4 / 106.8	101.8 / 104.5
Seasonal space heating energy efficiency	ηs %	92	93	93
SEASONAL EFFICIENCY CLASS in heating mode		A	A	A
Useful heat output in high-temp. Regime (Tr 60°C / Tm 80°C)	P4 kW	12.7	18.2	27.0
Useful efficiency at nom. Heat output In high-temp. Regime (Tr 60°C/ Tm 80°C)	η4 %	87.0	87.5	87.0
Useful heat output at 30% of nom. Heat output in low-temp. Regime (Tr 30 °C)	P1 kW	4.2	6.1	9.1
Useful efficiency at 30% of nom. Heat Output in low-temp. Regime (Tr 30 °C)	η1 %	96.7	97.5	97.5
Annual electricity consumption	QHE GJ	40	56	84
Declared load profile		XL	XL	XL
Energy efficiency in D.H.W. Produc. Mode	ηWH %	86	85	73
Daily fuel consumption	Qfuel kWh	22.07	23.13	27.8
Sound pressure level	Lwa dB(A)	51	55.2	-
SEASONAL EFFICIENCY CLASS in D.H.W. production mode		A	A	B
Annual electricity consumption	AEC kWh	400	402	403
Annual fuel consumption	AFC GJ	17	18	20.3
Production of D.H.W. in cont. operation with Δt 25 K (mixed)	l/min	13.2	18.3	16.1
Expansion vessel total capacity	l	8	10	3
Storage tank capacity	l	-	-	60
Heating circuit pressure (min-max)	bar	0.5-3.0	0.5-3.0	0.5-3.0
Domestic hot water circuit pressure (min-max)	bar	0.5-6.0	0.5-6.0	0.5-8.0
Protection degree	IP	X5D	X5D	X4D
NO_x class		6	6	6
Net weight	kg	34	36.5	70.5

Condensing boilers (steel body)

scopri di più

- Modulation ratio **up to 1:5,45** (mod. C24), **1:6,1** (mod. C32)
- **Efficiency >104%** (ex dir. CE 92/42)
  ηs 93% (reg. UE 813/2013 - dir. ERP 2009/125/CE)
- **Energy class A**
- **Stainless steel exchanger/condenser**
- **Low NOx class 6** (according to EN 15502-1) thanks to the premix modulating burner
- **Domestic hot water production up to 18.2 l/min,** with Δt 25 (mod. C32) with special plate heat exchanger, with **12 plates** (mod. C24) and **16 plates** (mod. C32) in AISI 316L stainless steel
- Simple and intuitive panel board
- **High efficiency modulating pump**
- **Air suction and smoke evacuation system** that, with separated ducts, can reach exceptional distances, up to 65 meters
- **High manometric head fan: 130 Pa**
- Approved for **Ø 50 mm separate ducts systems**
- **H_2 20%** (Certified for operation with 20% of hydrogen in the natural gas)
- **Low NOx Premix burner (class 6)**
- **IPX5D (also for outdoor installation)**
- **Adjustment of minimum output** when in heating mode
- Electronic antifreeze function for **operation up to -15 °C**
- **Management of 2 heating zones** at different temperatures (high/low)
- **Electronics with HWS "Hot Water Speed" function** in order to reduce any possible delay during the production of DHW, and **automatic air vent function (combi)**
- **Approved in configuration type C10** (with the accessory smoke anti-return device)
- **Wide range of accessories**

EXT version for outdoor installation

X^LD		C 24	C 32
Heat input (nominal / minimum)	kW	22.9 / 4.2	30.5 / 5
Heat output (nominal / minimum)	kW	22.3 / 4.1	29.7 / 4.8
Output in condensation (nominal / minimum) 50°-30°C	kW	24 / 4.5	32 / 5.4
Combustion efficiency at full load 80-60°C (Dir. Ce 92/42)	%	97.5	97.4
Combustion efficiency at full load 50-30°C (Dir. Ce 92/42)	%	104.9	104.9
Seasonal space heating energy efficiency	ηs %	93	93
SEASONAL EFFICIENCY CLASS in heating mode		A	A
Useful heat output in high-temp. regime (Tr 60°C / Tm 80°C)	P4 kW	22.3	29.7
Useful efficiency at nom. Heat output In high-temp. Regime (Tr 60°C/ Tm 80°C)	η4 %	87.8	87.7
Useful heat output at 30% of nom. Heat output in low-temp. Regime (Tr 30 °C)	P1 kW	7.5	9.9
Useful efficiency at 30% of nom. Heat Output in low-temp. Regime (Tr 30 °C)	η1 %	97.9	97.8
Annual electricity consumption	QHE GJ kWh	400	400
Declared load profile		XL	XL
Energy efficiency in D.H.W. Produc. Mode	ηWH %	82	89
Daily fuel consumption	Qfuel kWh	24	21.8
SEASONAL EFFICIENCY CLASS in D.H.W. production mode		A	A
Production of D.H.W. in cont. operation with Δt 25 K (mixed)	l/min	13.2	18.2
Expansion vessel total capacity	l	10	10
Maximum production of condensate	kg/h	3.7	4.9
D.H.W. circuit pressure (min./max.)	bar	0.5 / 6.0	0.5 / 6.0
Sound pressure level LpA at nominal output (*)	dB(A)	43	46
Protection degree	IP	X5D	X5D
NO_x class		6	6
Net weight	kg	34.5	37

(*) measured in free field at 1 m distance from the appliance

Solar collectors

SUN^s

L SUN

find out more

SUN^s

L SUN

SUN^S

- 2.42 m^2 flat glazed solar collectors
- Total aluminum sheet absorber
- Highly selective treatment high efficiency

L SUN

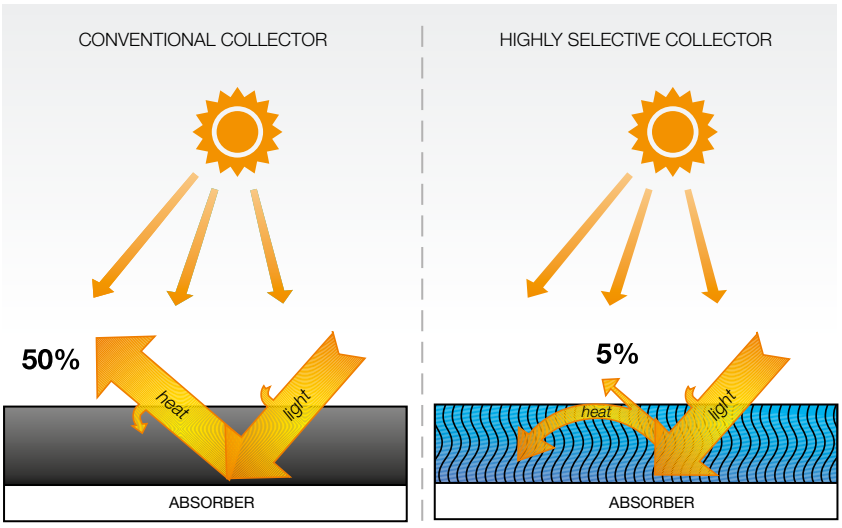
- 2.62 m^2 glazed flat solar collectors
- Total aluminum sheet absorber
- Highly selective treatment high efficiency

L SUN and SUN^S are the right answer when you need to optimize the relationship between absorber surface and footprint. High efficiency guaranteed by the highly selective treatment.

Highly selective treatment

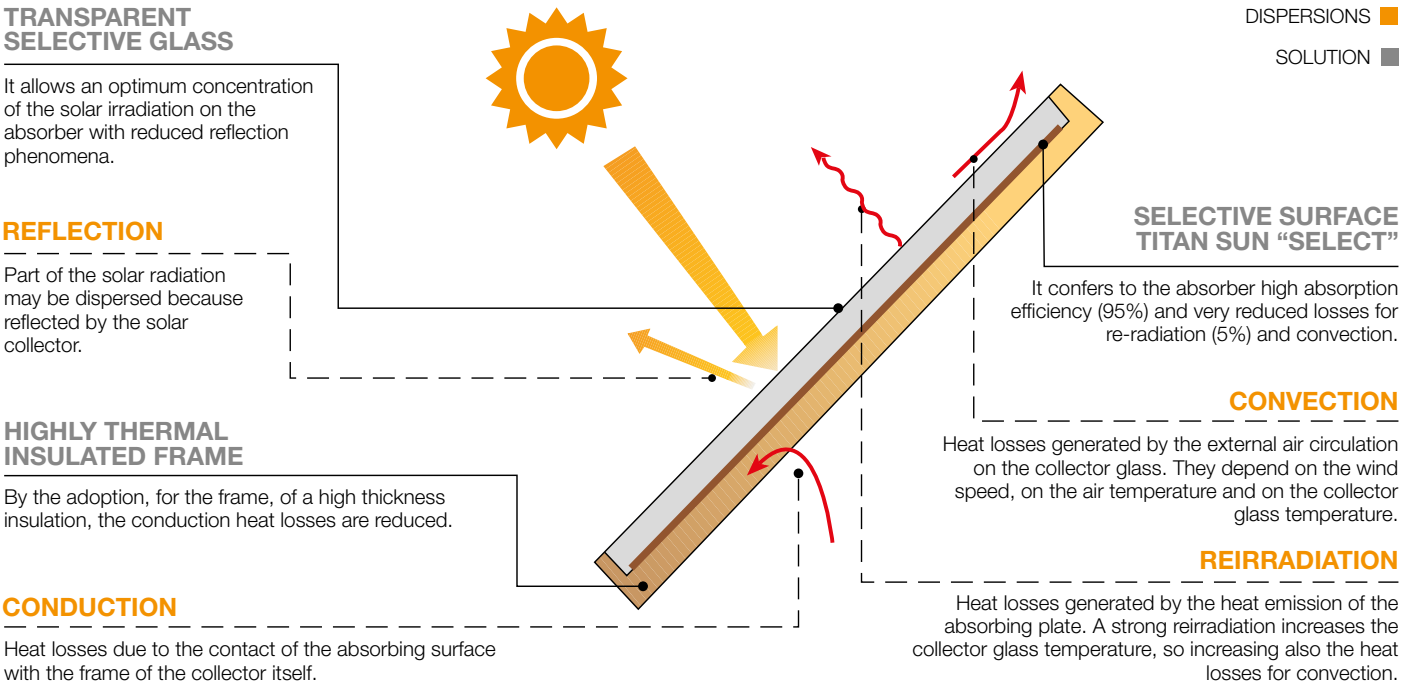
The performances of a solar collector are characterized by its efficiency, which directly depends from the useful energy that the absorber is capable to pick up in a certain period of time and to transfer it to the heat transfer fluid.

SUN^S and L SUN collectors, that have been conceived for these purposes, allow you to reach remarkable efficiency values, also with little insolation, thanks to highly selective treatment “TINOX”, which guarantee very high values of absorption and very low emissions, compared to traditional systems.



CONVENTIONAL BLACK SURFACE
HEAT REIRRADIATION
50%

HIGHLY SELECTIVE LAYER
HEAT REIRRADIATION
5%



		SUN^S	L SUN
Height	mm	1988	2022
Width	mm	1218	1295
Depth	mm	90	90
Weight	kg	44	43
Collector piping dia	mm	18-22	18-22
Box material		aluminum	aluminum
Glass type		extra clear tempered.	extra clear tempered
Net absorbing surface	m^2	2.23	2.47
Collector total surface	m^2	2.42	2.62
Absorbing plate material		aluminum	aluminum
Surface treatment		"TINOX"	"TINOX"
Absorption	%	95	95
Emission	%	4	4
Optical efficiency $\eta 0$		0.785	0.791
Losses coefficient α 1	W/m^{2}K	3.722	3.342
Losses coefficient α 2	W/m^{2}K^2	0.012	0.014
Suggested collector flow rate	l/h	100	132
Pressure losses	mbar	1.82	1.65
Collector water content	l	2	1.09

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