SPHERA EVO 2.0 Box

SQKN-YEE BC + MiSAN-YEE 1 S 2.1 - 8.1

Product Presentation

SPHERA EVO 2.0

Contents

1	**The New Split Air to Water Heat Pump**
2	Key Technology
3	Features & Specifications
4	Applications
5	Conclusions
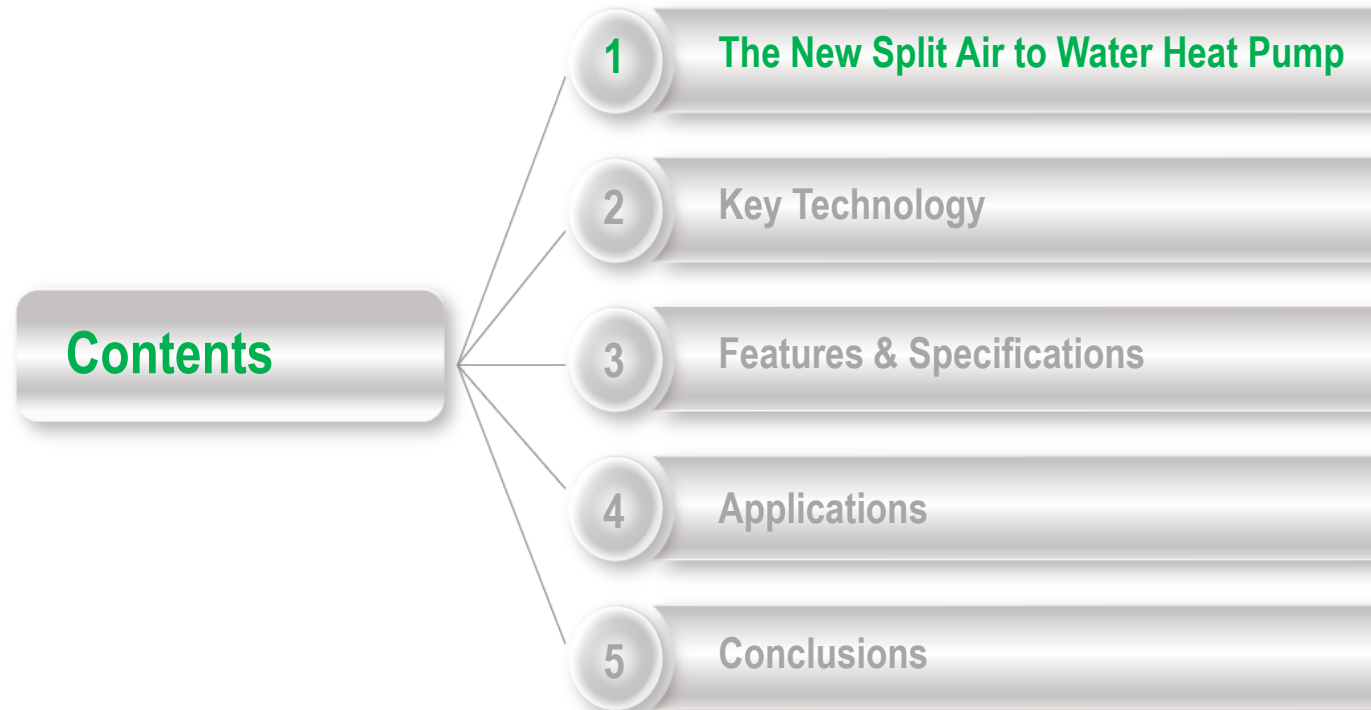
INTEGRATED SOLUTION FOR EACH APPLICATION:
Heating, Cooling and Domestic Hot Water

R-32

- **SPHERA EVO 2.0** it is the integrated system that provide heating, cooling and domestic hot water for all the family combined with additional tank.

- **A total comfort solution** for the whole year

- **Hybrid** version combined with the **Clivet condensing gas boiler**

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SPHERA EVO : Applications

Each version of SPHERA EVO 2.0 has been carefully designed to meet in the best way the different demands of all type of residential homes.

Medium-Low consumption single-family Houses and Offices

SPHERA EVO 2.0 BOX Comfort is suitable for commercial application as offices or houses with specific DHW volume required.

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SPHERA EVO 2.0: New refrigerant R-32

R-32

SPHERA EVO 2.0 is the sustainable solution for the all year round comfort thanks to the new ecological **refrigerant R-32:**

- Low GWP (Global Warming Potential): -70% compared to R-410A

- Better performance under severe conditions

- Less charged volume is needed in the system

- Higher heat transfer coefficient

TECNOLOGIA FULL DC INVERTER E NON SOLO

- **New R-32 refrigerant**

- **7 capacity sizes** to cover every needed

- **Class A+++** on heating mode BT (LWT 35 °C)

- **Class A++** on heating mode MT (LWT 55 °C)

- **Twin Rotary DC inverter** compressor and DC inverter Fan

- **Electronic pump** with **variable flow**

- **3 Way Valve** for Domestic Hot Water production and tank probe

- From **-25 °C** on heating mode to **+43 °C** on cooling mode

- **Silent** mode during the night **- 4 dB(A)**

- **ICE Protection System** to protect the outdoor unit

- **24 kW or 34 kW Combi boiler** for space heating and **DHW (Hybrid Version)**

R-32

DC Inverter

Nominal Heating Capacity:
(**A7/W35**) da **4** a **16** kW

Nominal Cooling Capacity:
(**A35/W7**) da **4** a **16 kW**

SPHERA EVO 2.0: What is new?

NEW DISTINTIVE Features and differences compared to SPHERA EVO

- **Very silent outdoor unit only 55 dB[A]** on the 4 kW and only **66 dB[A]** on the 16 kW

- **Highest efficency**

- **Capacity range up to16 kW**

- **COP** up to **5,40**

- **Wide operating range Two 60 °C a -15 °C**

- **Hybrid** Version with separated gas boiler size **24 or 34 kW**

- Gas boiler management with **0-10 V signal**

- **Euroswitch Function** for optimal management of the **gas boiler** and **heat pump** combination

- Maximum water output that can be set on the Hybrid **75 °C**

- **Single fan** outdoor units

SPHERA EVO 2.0: What is still present

MAIN Features

- **WiFi Connection**

- **Dedicated APP**

- **Smart Grid Function** mangement of the power supply fro the photovoltaic and the power supply

- **Completed system** integrated dirth magnetic strainer and space expansion vessel.

- **40 litres Buffer tank** (Accessory)

- **Longer refrigerant line up to 30 m and precharge ready until to 15 m**

- Greater Versatility with three different DHW storage tanks supplied separately **200, 300 and 500** also with **solar exchanger**.

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SPHERA EVO 2.0: What is new?

SYSTEM COMBINATION

SPHERA EVO 2.0		2.1	3.1	4.1	5.1	6.1	7.1	8.1
Heating capacity	Amb 7 °C – Water 35°C	4,32 kW	6,18 kW	8,30 kW	10,9kW	12,1 kW	14,5 kW	16,0 kW
Outdoor Units	MiSAN-YEE 1 S	2.1	3.1	4.1	5.1	6.1	7.1	8.1
Indoor Units	SQKN-YEE 1 BC	**A** - (Standard pump max 70 kPa)					**B** (Standard pump max 100 kPa)	
		A - 1PUM (Oversize pump max 100 kPa)						

+ **Hybrid**

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WIDE OPERATING RANGE

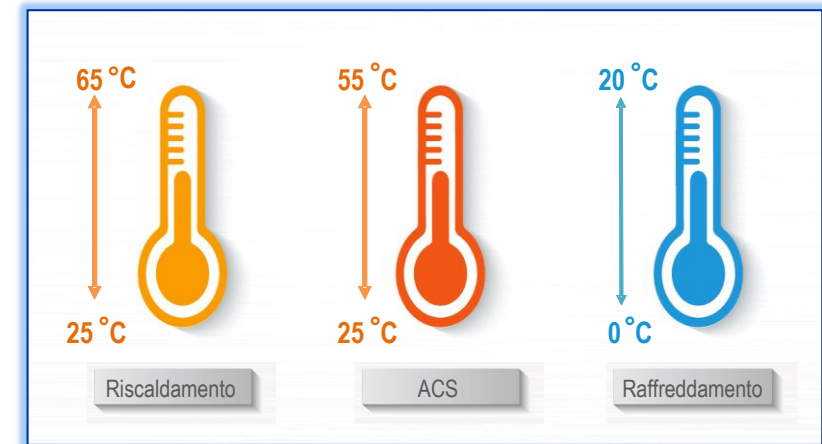- ## Outdoor air temperature operating range

SPHERA EVO 2.0 is made up of an inverter compressor optimally operated according to the outdoor temperature, offering heating capacity of 70% at **-15 °C** and reliable anti-freezing protection

35 °C	43 °C	43 °C
-25 °C	-25 °C	-10 °C
Riscaldamento	ACS	Raffreddamento
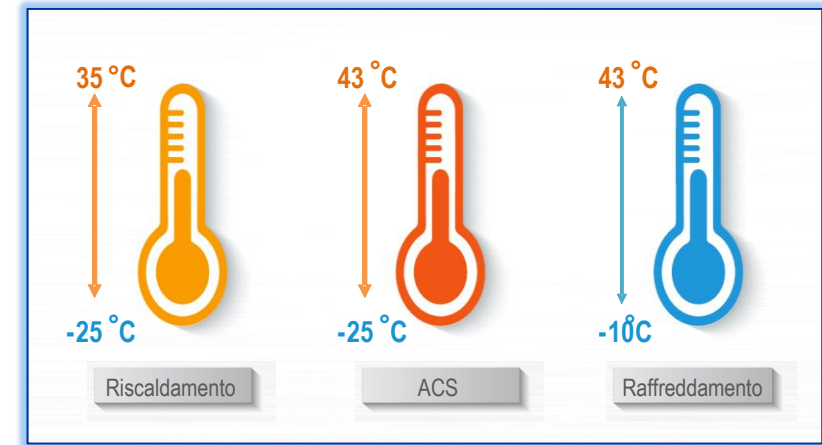
- ## Leaving water temperature range

SPHERA EVO 2.0 can supply a minimum water temperature in cooling mode of 5 °C and a maximum leaving temperature in heating mode of **65 °C**.*
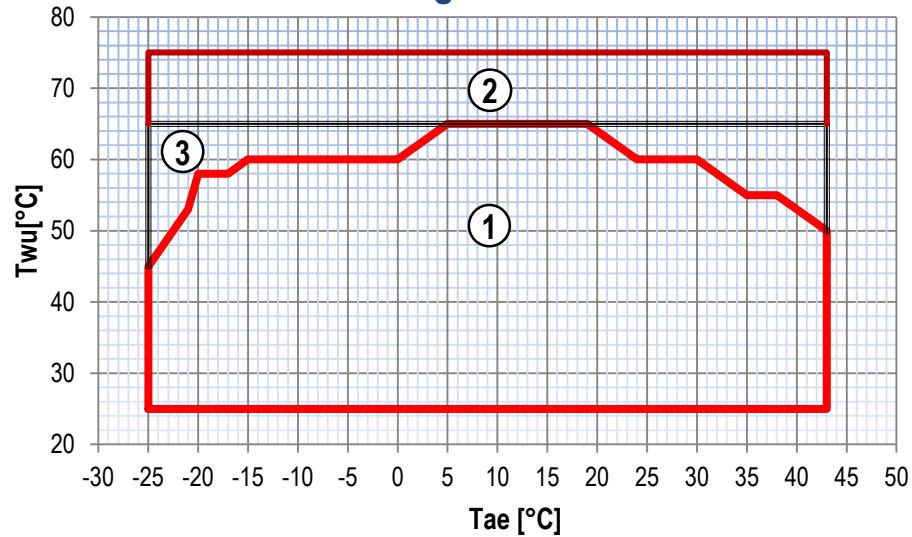
The maximun leaving water temperature on the Hybrid is **75 °C**.

65 °C	55 °C	20 °C
25 °C	25 °C	0 °C
Riscaldamento	ACS	Raffreddamento

* The leaving water temperature range will differ when setting different mode.

WIDE OPERATING RANGE

Heating

Cooling

Hot water at 45 °C production down to **-25 °C** air temperature!
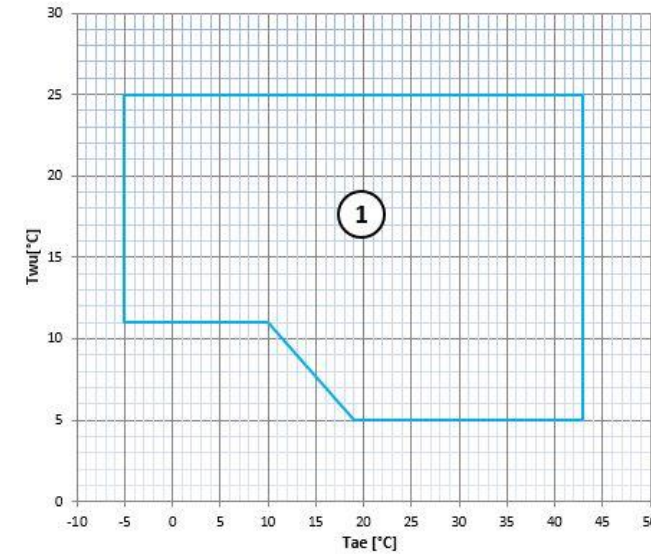
Twu [°C] = Leaving exchanger water temperature

Tae [°C] = External exchanger inlet air temperature
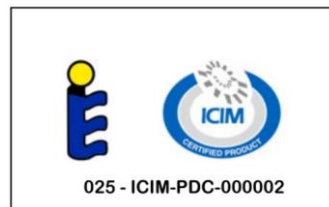
① = Normal operating range

② = Operating range covered by the condensing gas boiler

③ = Operating range with only back-up heater* or additional heating source

* Back-up heater supplied as a separate option

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CERTIFICATIONS

Eurovent Certification

Keymark
End Nov 2021

MCS
2nd quarter 2022

EKO SKLAD
1st quarter 2021

SPHERA EVO 2.0

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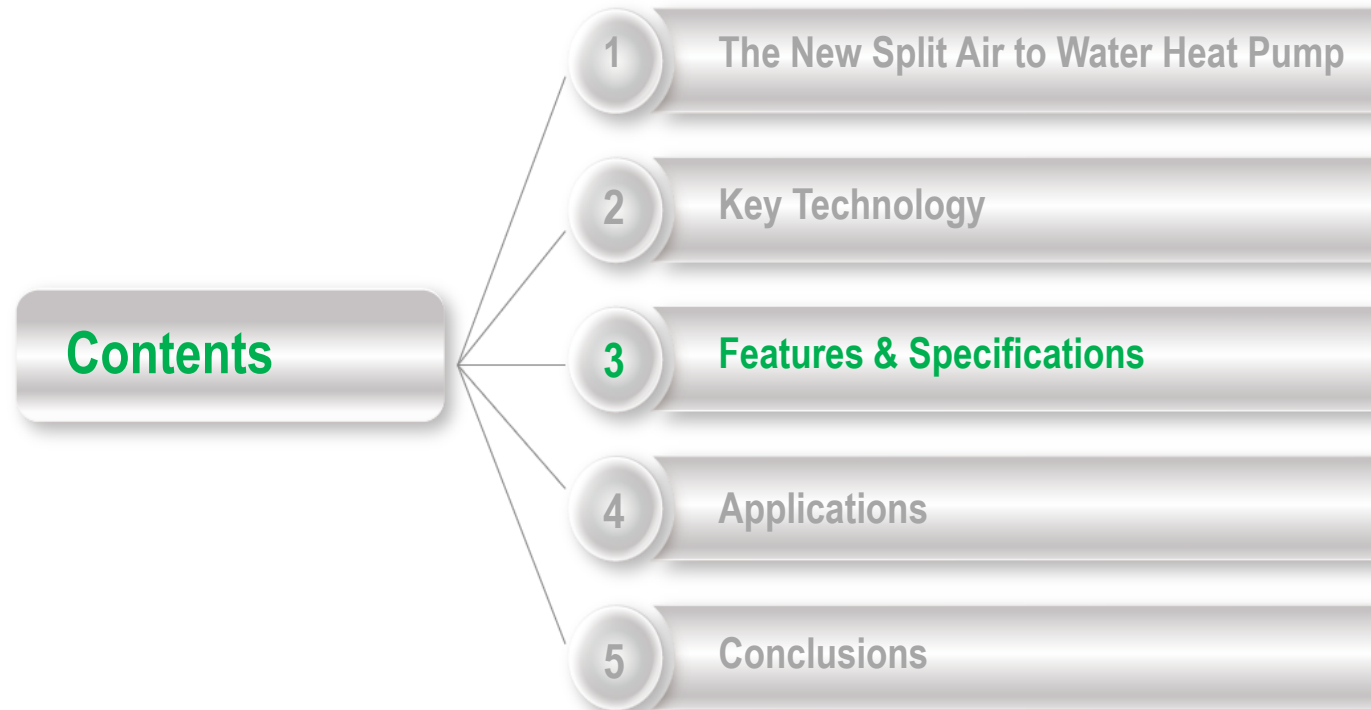
FEATURES & SPECIFICATIONS

Newly designed wired remote User Interface Remotely Now!!!

New generation remote User Interface , for internal installation, that guarantees a **complete control solution:**

- ON/OFF unit
- Operation Mode setting: cooling/heating/AUTO
- DHW setting
- Temp. setting: water outlet temp
- Time setting: 12H/24H
- Timer ON/OFF setting, Day/Weekly
- Display space heating/cooling and DHW set temperature
- Water tank temperature
- Display components status
- Query, malfunction Code, Parameter
- remotely connectable with thermostat function   **New !**
- **Modbus** connection
- **WiFi** connection
- Management by **ELFOCONTROL3**
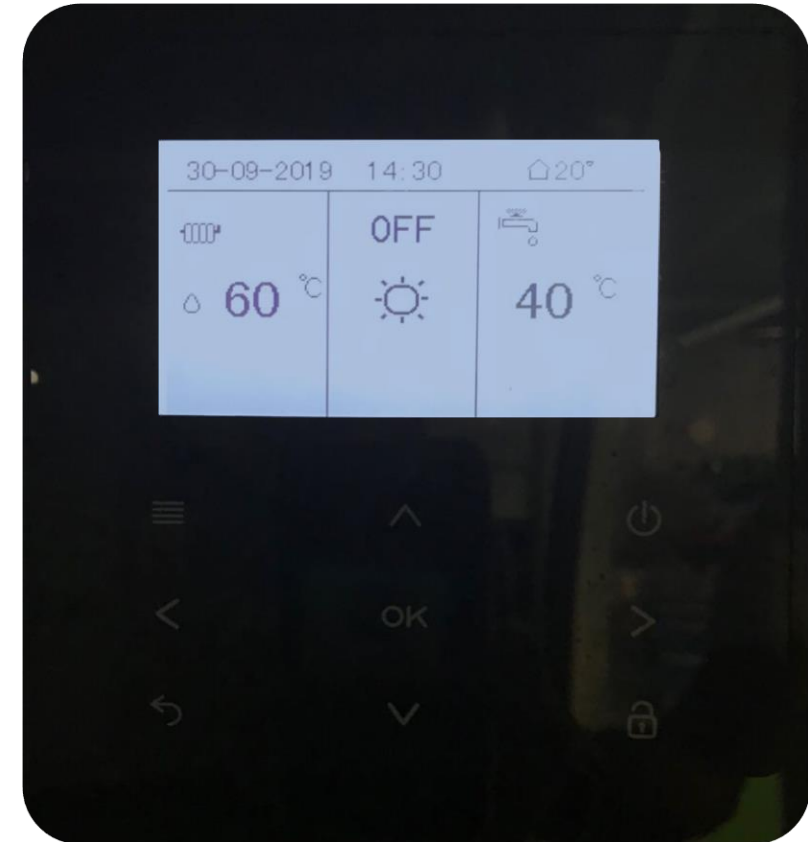
Two zone control (High and low temperature)

The unit manages **two different set-point**

- **Zone A** High temperature managed by the thermostat (HMI or HIDT-Connect)

- **Zone B** High temperature managed by the thermostat (HIDT-Connect)

The kit is composed by :

- Thermostatic mixing valve

- Circulating pump for zone A and B (managed by the unit)
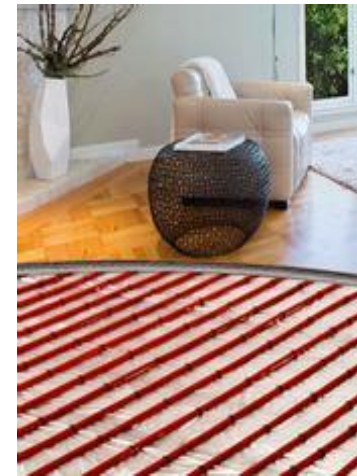
Climatic compensation with outdoor air temperature

In cooling/heating mode, the user can set the **desired climate correlation curve on 9 available** directly on the user interface. Then the system will set the outlet water temperature according to the outdoor ambient temperature automatically.
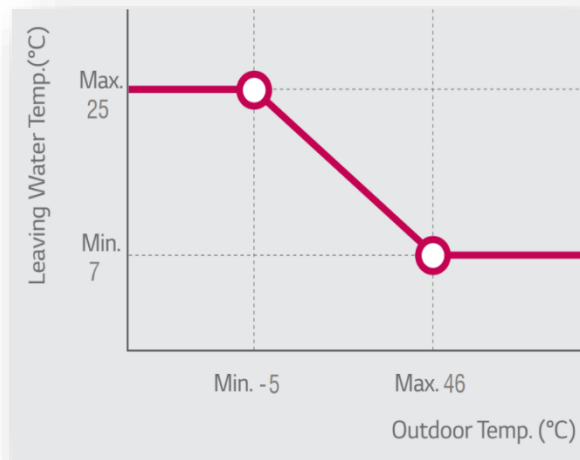

Cooling Operation
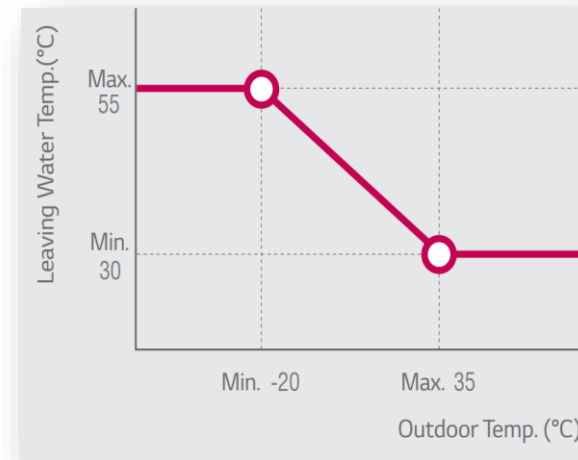
Heating Operation

- Cooling operation: if outdoor temperature increases, cooling capacity supplied will increase automatically in order to keep comfortable cooling performance.

- Heating operation: if outdoor temperature decreases, heating capacity supplied will increase automatically in order to keep comfortable heating performance.

ECO Mode

- In heating mode: during the daytime (7:00 – 22:00) the setting leaving water temperature will be 35 °C in order to keep comfortable heating performance.

- And during the night time (22:00 – 7:00) the setting leaving water temperature will be 30 °C in order to save energy.

- Above duration (7:00 – 22:00 – 7:00) as well the water temperature (e.g. 30 °C or 35 °C) **can be set on the User Interface automatically**.
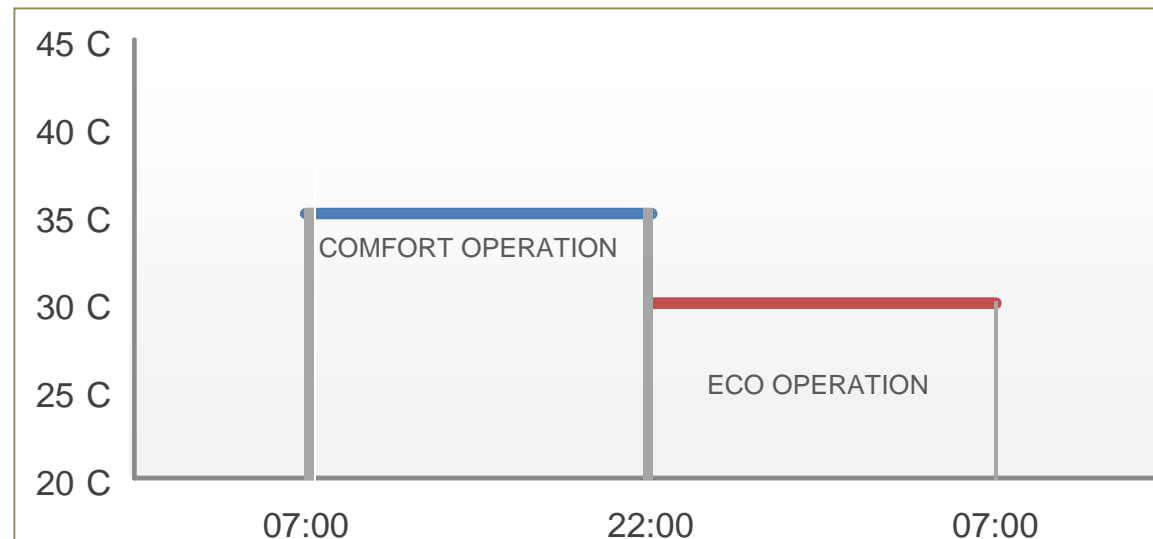
Silent mode

- Silent mode operation can reduce the noise level specially during the night time.

- When the silent mode operation starts, the outdoor unit will reduce the compressor and fan motor speed to lower the noise.

- The default silent mode operation duration is settable .

- **Two silent mode levels** are available: up to **-4 dB(A)** can be reduced compared with normal operation.

- There are two methods to set the silent mode: *Silent mode all time* and *Silent mode in timer* (two different timers can be set).
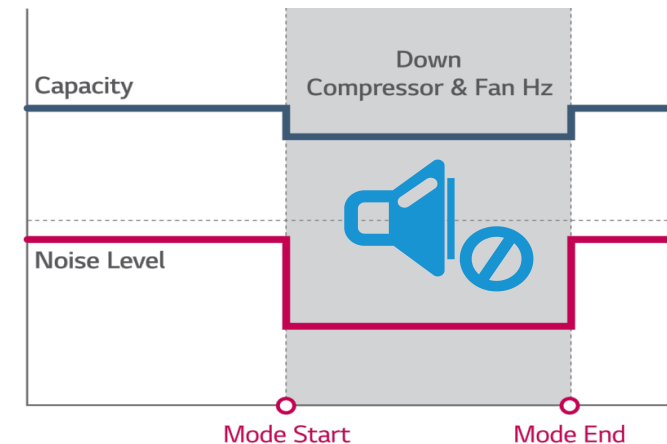
DHW Mode

SPHERA EVO 2.0 produces Domestic Hot Water up to **60°C**.

- The DHW will have **the first priority** and stop running any other mode.

- Integrated **3 way valve .**

- Manage up to 4 kW Back-up electrical heater on the additional tank.

- Anti legionella function, guarantee all the tank on temperature.

- Possibility to chose the right volume of sanitary water up to 500 litres

Hybrid Version

SPHERA EVO 2.0 Box Hybrid is the combination of the **heat pump** with the **24 kW or 34 kW combi boiler** by Clivet .

- Management of high temperature water systems supplied **up to 75 ° C**

- Intelligent energy management based on the COP (**Euroswitch function**)

- Replacement with **back-up function** in case of anomaly

- **Instant production** of domestic hot water thanks to the boiler.

- **Simultaneous cooling or heating** operation with **DHW withdrawal**.

Euroswitch Function on Hybrid Version

SPHERA EVO 2.0 Tower optimally manages the synergy between heat pump and boiler

- The heat pump gives priority to intervention of it or the boiler according to efficiency in the specific working condition.

- By entering the cost of the electricity and gas source, SPHERA EVO 2.0 determines which is the most efficient resource to use.
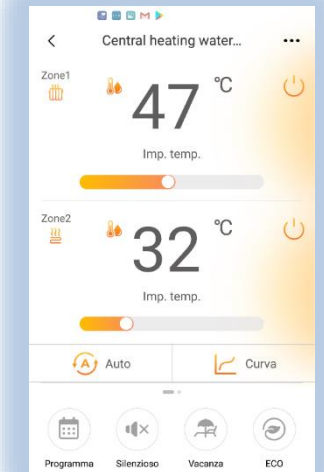

Legend:
- Ambient temperature
- €/kwht Gas Boiler (0.85€/smc)
- €/kwht Heat Pump (55°C) (0.2€/kWhe)
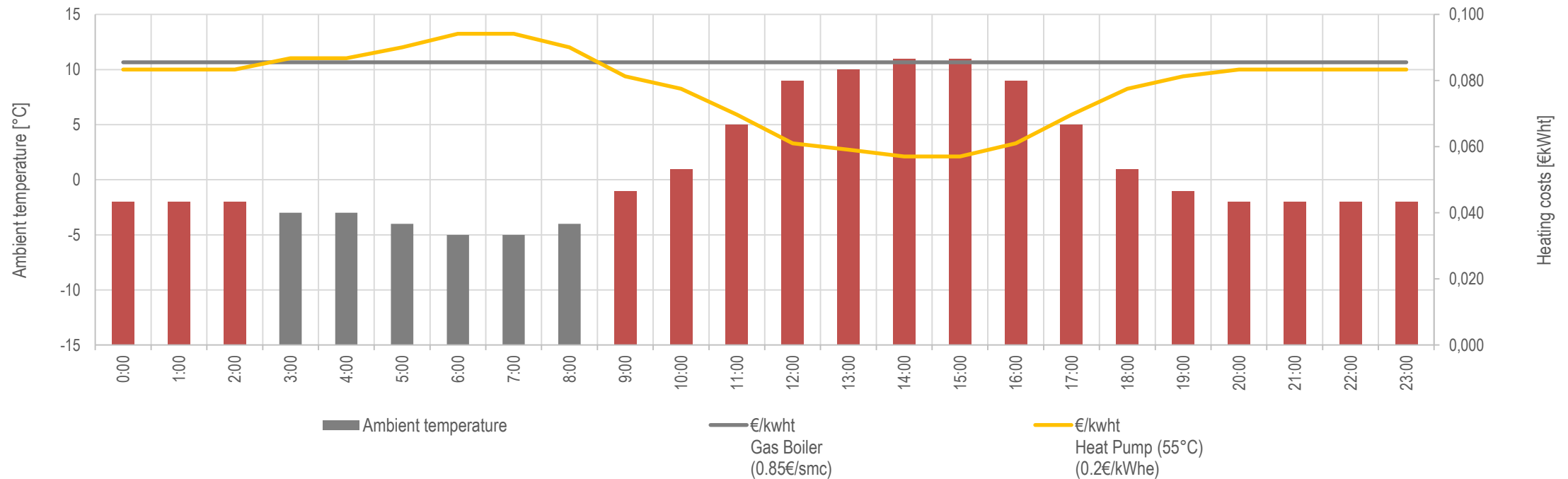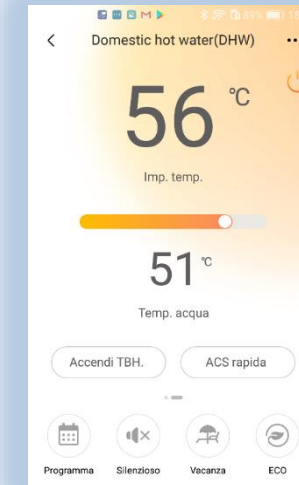
APP

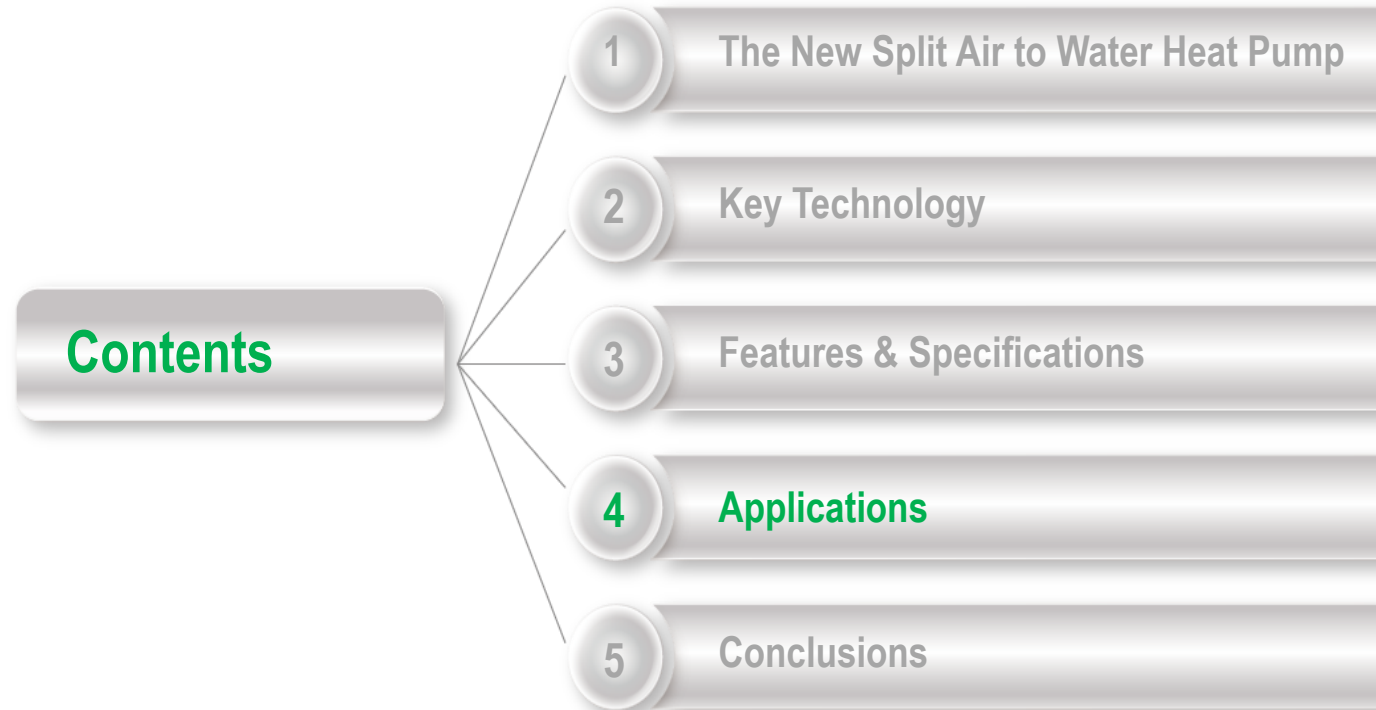**SPHERA EVO 2.0** Can be managed by the new **APP** on the main functions as

- Manage the set point for space heating and cooling.

- Manage the set point for DHW

- Scheduling for:
  - Space
  - DHW
  - ECO Mode
  - Silent Mode

- Fast recharge fo DHW

- Change mode

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CONFIGURATIONS

➢ **Standard indoor unit**

• Domestic Hot Water 3 Way valve integrated

➢ **Oversized Indoor Unit 1PUM**

• High pressure pump up to **100 kPa**

➢ **Auxiliary electric heater**

• Selectable electric heater 2, 4 kW Single phase
  6 and 9 kW Three phase (Power supply of the whole indoor unit)

CONFIGURATIONS

➤ **Hybrid Version**

New !

- combining the 24 kW or 34 kW condensing boiler with the heat pump and all managed by the latter and both supplied by Clivet. Instant production of domestic hot water .

➤ **Gas Boiler Accessories**

- conversion kit from methane to LPG

- Coaxial fitting for flue gas exhaust and air intake

- smoke splitter

- intake fittings and fume exhaust

- Coaxial fumes discharge with piping

KSDFX

KAS80X

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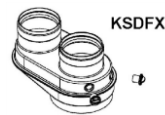
➢ **External gas boiler connection kit**

- The kit is composed by three way and pipes to connect the external gas boiler to produce DHW.
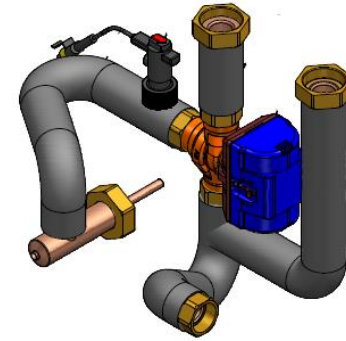
➢ **Two zones control kit**

- Separately kit to manage two zones with different setting temperature.

➢ **Buffer Tank**

- Space heating **40 liters** buffer tank, to install on the return side from the system. Studied to be positioned back to the unit.

Accessori forniti separatamente

➤ **Additional Domestic Hot Water tank**

Enameled steel Domestic hot water tank with capacity of 200, 300 or 500 liters equipped with 2 kW back-up heater, magnesium anode. *

➤ **Solar heat exchanger**

• 0.8 m2 or 1.2 m2 solar exchanger for flange installation.

The kit is available in two sizes, from 0.8 m^2 for the combination with the 200 and 300 liter tank and 1.2 m2 for the combination with the 500 liter tank.

New !

* The DHW sensor is standard supplied with the unit.

ACCESSORIES

➢ **Circuit breacker**

- Insulated 1 litre circuit breacker

- Insulated 50 litres circuit breacker

➢ **Single zone kit**

- Single zone management kit Insulated 1 litre circuit breacker +
   high efficency pump + installation box

➢ **Quick connection kit**

- Kit to assembly in easy and quick way the indoor unit and the gas boiler

ACCESSORIES

➢ **Accessories for outdoor unit installation**

- bracket kit for fixing to the wall

- Condensate recovery kit

New !

New !

- anti-vibration kit for outdoor unit on base   or wall bracket

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ACCESSORIES

➢ **HIDT-Connect Chronothermostat**

- Soft touch white chronothermostat, room temperature control and App management / Voice control

- Soft touch black chronothermostat, room temperature control and App management / Voice control
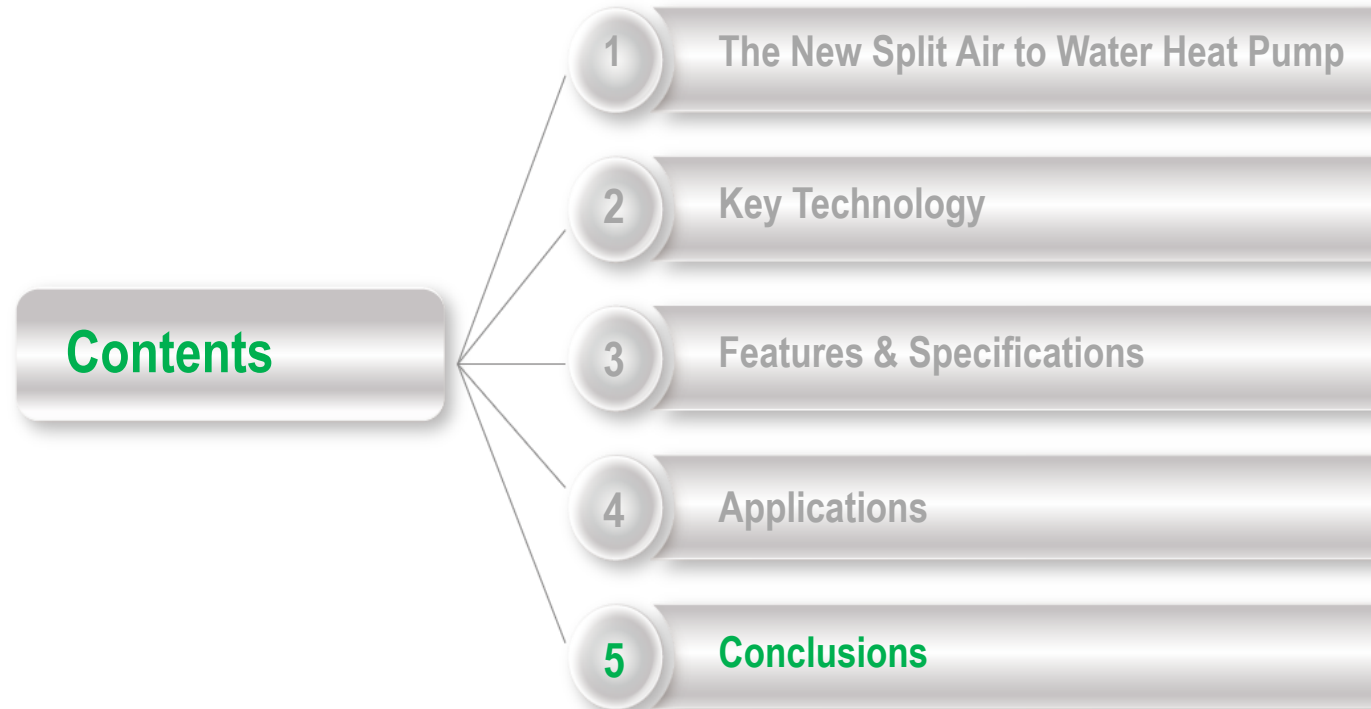
➢ **SwitchConnect Radio reciver**

- Radio receiver for HID-TConnect, for call management of terminal units or radiant systems, heat pump mode change or double set-point.

SPHERA EVO 2.0

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CONCLUSIONS

SPHERA EVO 2.0: The better features a residential heat pump

- **New refrigerant R-32**

- **7 capacity sizes** to cover every needed

- High seasonal efficency
  - ➤ **Class A+++** on heating BT (LWT 35°C); ηs up to 210 %
  - ➤ **Class A++** on heating MT (LWT 55°C); ηs up to 146 %
  - ➤ **Class A+** on DHW

- Advanced **Full DC Technology**

- **Extremely quiet** unit **only 55 dB[A]** on 4 kW

- **Complete integrated system** with many accessories.

- **New functions and options** for a full comfort solution.

- **Dedicated APP** to managing the heat pump on the main functions

Thank you!

www.clivet.com