RIELLO ADAPTO HYBRID

Residential Hybrid System

NEW

RIELLO
Energy For Life

A Carrier Company

www.riello.com

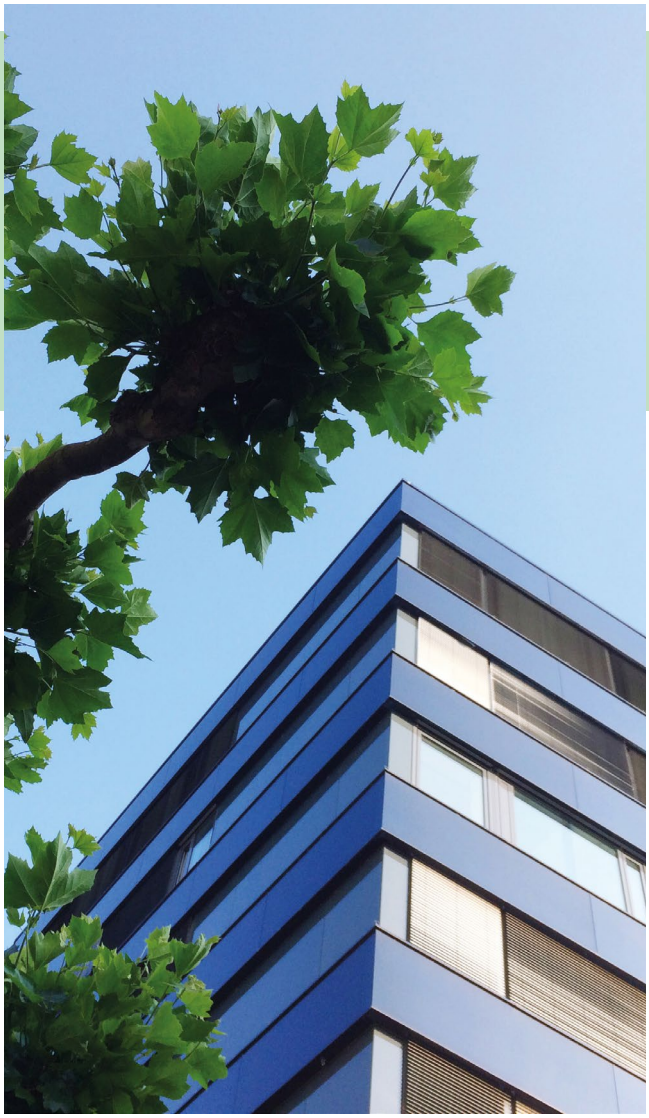
Within the scope of **the EU's objectives for** decarbonizing the residential sector, **hybrid systems, which combine electric heat pumps and high-efficiency boilers to significantly reduce emissions**, represent a key solution for the retrofitting of existing buildings.

With ADAPTO HYBRID, Riello aims to offer a technologically advanced solution that is also easily accessible, capable of guiding end users and professionals towards a low-emission future without compromising on flexibility, comfort, and ease of installation.

A smart choice for those who want efficient, sustainable comfort that is ready for the energy challenges of today and tomorrow.

HYBRID SYSTEMS: **WHY CHOOSE THEM?**

Choosing a hybrid system means relying on a **technologically advanced solution**, designed to improve efficiency in home energy management. The integration of two sources, one electric and one gas, allows you to **optimize consumption, keep bills under control, and minimize environmental impact**. It is a conscious and future-oriented choice that combines **comfort** and **sustainability**.



DUAL TECHNOLOGY, CONTINUOUS EFFICIENCY

The primary objective of a hybrid system is to provide constant and reliable comfort at home. The presence of two generators helps to ensure continuity of service, offering stability and reliability to the system.

FOCUS ON SAVINGS

Invest today to save tomorrow: **ADAPTO HYBRID is cost-effective and might be eligible for government incentives.** Please check with a qualified representative in your local area for potential compensations with the remplacement of an older model.

The savings continue over time thanks to the **intelligent management of the two generators,** which optimize operation based on the external temperature, energy costs, and the actual needs of the home.

THE IDEAL SOLUTION FOR RENOVATION

Ideal for both existing systems and more complex renovation projects, hybrid systems can **improve the efficiency and energy class of your home**, increasing its economic value.

AN EYE ON THE ENVIRONMENT

Compared to traditional solutions, hybrid systems are more sustainable: thanks to the possibility of controlling gas and electricity, **they can make a real contribution to reducing CO_2** emissions coming from domestic heating. This has a positive impact not only on the environment, but also on the overall energy efficiency of the country.

ADAPTO HYBRID: **THE TECHNOLOGY THAT FITS YOUR LIFESTYLE**

ADAPTO HYBRID IS RIELLO'S RESIDENTIAL HYBRID SOLUTION, REPRESENTING AN IMPORTANT INNOVATION IN THE FIELD OF ENERGY EFFICIENCY OF HEATING SYSTEMS FOR DOMESTIC USE.

AS ITS NAME SUGGESTS, ADAPTO HYBRID HAS BEEN DESIGNED TO ADAPT TO DIFFERENT TYPES OF HEATING SYSTEMS, ALLOWING THE HEAT PUMP AND CONDENSING BOILER TECHNOLOGIES TO BE INTELLIGENTLY INTEGRATED, ACTIVATING ONE OR BOTH ENERGY SOURCES BASED ON USER PREFERENCES AND CLIMATIC CONDITIONS TO PROVIDE HEATING, COOLING, AND DOMESTIC HOT WATER WITH A SINGLE SYSTEM.

ADAPTO HYBRID is a multi-energy system, **compact and versatile**, which consists of four main components: the outdoor unit of the residential split heat pump **RIELLO ADAPTO** in R32, its indoor unit **HYDRAULIC HYBRID KIT**, the condensing boiler **START** in the combi version, and the advanced System Manager **Hi, Comfort T300-Hy**.

The system has been designed with **flexibility and installation simplicity** in mind, as the ideal solution to preserve living spaces by minimizing size, both inside and outside the home. ADAPTO HYBRID meets the needs for **heating, cooling, and domestic hot water production in a single solution**, offering home comfort throughout the year.

It allows **combined operation** of the **heat pump** and the **boiler** in **heating mode**; the combi **boiler** also provides instant **domestic hot water** and, if the system **is equipped with fan coils**, the **heat pump** can provide **hydronic cooling** during the hottest periods.

The intelligent and intuitive digital user interface manages the system and allows advanced control of the home comfort, **optimising consumption** and adapting to user needs.

The operation of ADAPTO HYBRID can also be managed remotely, thanks to a dedicated section of the **Hi, Comfort App**.

NEX-HY
Next Hybrid Solutions

With ADAPTO HYBRID, Riello inaugurates a generation of hybrid systems for the residential sector named NEX-HY™, the new platform designed to guide users towards a more sustainable future without compromising on living comfort.

THE RANGE

Riello offers **two commercial configurations** :

ADAPTO HYBRID START 3.5 - 25
consisting of RIELLO ADAPTO 3.5,
HYBRID HYDRAULIC KIT, START 25 KIS
and Hi, Comfort T300-Hy

ADAPTO HYBRID START 3.5 - 30
consisting of RIELLO ADAPTO 3.5,
HYBRID HYDRAULIC KIT, START 30 KIS
and Hi, Comfort T300-Hy

The 5 kW model of RIELLO ADAPTO and its relevant commercial configurations, with the 25 and 30 kW sizes of the START KIS boiler, will be available from the beginning of 2026.

FEATURES AND BENEFITS OF RIELLO ADAPTO HYBRID

BENEFITS FOR **THE USER**

HIGH EFFICIENCY

Choosing ADAPTO HYBRID means **taking conscious actions in the energy transition**, focusing on innovation and efficiency.

ENERGY CONSUMPTION MANAGEMENT

Thanks to **accurate consumption monitoring**, you can optimize **energy use intelligently**, with the possibility of achieving real savings on your bills. **The affordable price, low running costs, and potential incentives*** also make the investment even more advantageous.

SILENT OPERATION

Thanks to its low noise level, the system works quietly in the background without disturbing anyone.

COMPACT DESIGN

The compact design of ADAPTO HYBRID **integrates easily into any living environment**, thanks to its reduced size and discreet, harmonious aesthetics.

Compared to a TRADITIONAL HEATING SYSTEM with a condensing gas boiler only, with **ADAPTO HYBRID** you can:

–70%* **REDUCE CO_2** emissions by up to 70%

–35%* **SAVE** up to 35% of **YOUR ANNUAL BILL**

*Indicative estimate, based on an internal study conducted in Riello's R&D labs, using a simulator, subject to variations based on various factors, such as gas and electricity rates, the surface area of the home, the level of thermal insulation, and the geographical area.

BENEFITS FOR **INSTALLERS**

CUSTOMIZED INTELLIGENCE

Thanks to **the intelligent management** of the heat pump and condensing boiler, the system adapts its operation to the user's needs, **optimizing comfort**, **efficiency**, and **sustainability**.

MINIMUM INTERVENTION, MAXIMUM PERFORMANCE

Ideal for replacements and renovations, it improves performance and can upgrade the value of the home.

QUALIFICATION FOR PROFESSIONALS

Installers can offer **a high-quality product in line with the latest technologies,** thus strengthening their reputation and expertise.

PLUG&PLAY TECHNOLOGY

The ease of installation **drastically reduces** time and complexity, making the intervention not only faster and cheaper for the user, but also more flexible for the installer.

ADAPTO HYBRID can also be installed to integrate with an existing START KIS boiler to transform the traditional system into an advanced hybrid system without the need for replacement.

* According to the regulations of your country.

RIELLO ADAPTO
Compact, only 771 mm wide, and easy to install. Quiet operation.

ADAPTO HYBRID is Smart Grid Ready: designed to work in synergy with modern smart energy distribution networks

START KIS
Only 400 mm wide.
Excellent domestic hot water comfort.
Hydrogen Ready up to 20%.

Hi, Comfort T300-Hy
The brain of the system for advanced control of home comfort.
Versatility and adaptability to user management preferences.

HYBRID HYDRAULIC KIT
The heart of the system for synergistic operation between the boiler and heat pump.
Flexible positioning, even next to the boiler.

INTEGRATION WITH PHOTOVOLTAIC PANELS

ADAPTO HYBRID is also designed for integration with photovoltaic panels, allowing sustainable electricity generation and significant additional energy savings.

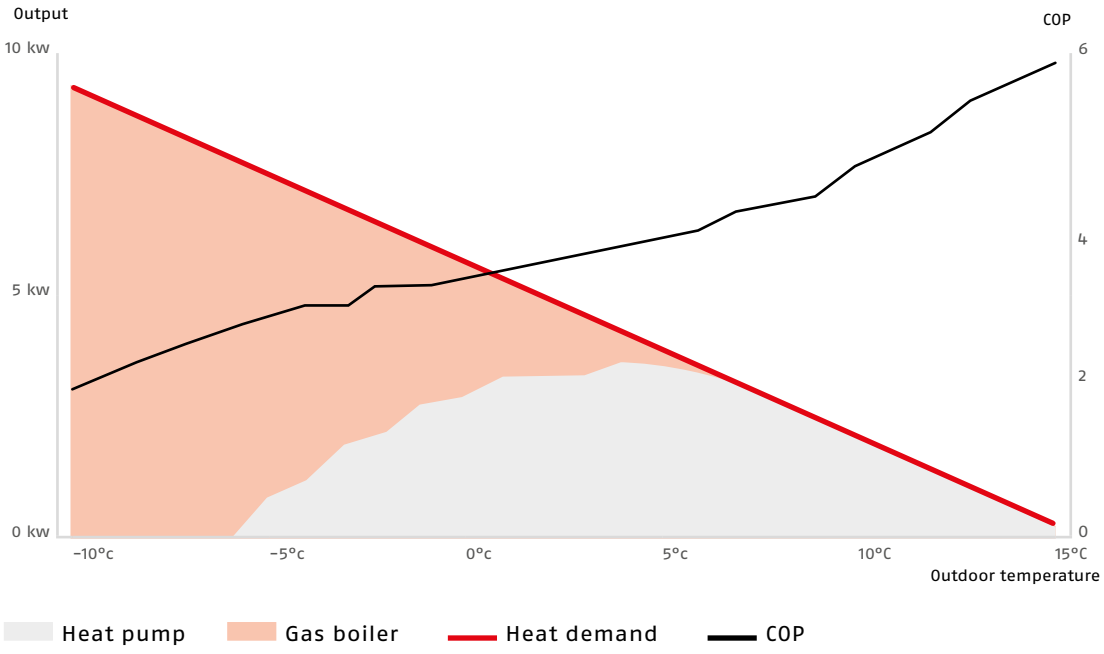
Hi, Comfort T300-Hy
VALUES YOUR CHOICES

HI, COMFORT T300-HY IS THE CONTROL SYSTEM THAT MANAGES THE WHOLE SYSTEM, ACTING AS THE BRAIN THAT HOUSES THE HYBRID SYSTEM OPTIMISATION LOGIC.

A **special proprietary algorithm**, stored inside the T300-Hy, **optimizes the use of the two energy sources** of the hybrid system, **according to user preferences**, allowing you to prioritize either **economic cost** or **environmental impact,** in terms of carbon dioxide emissions.

The system intelligence **identifies the optimal flow temperature of the heat pump based on the type of optimization, economic or ecological**, selected by the user. This calculated setpoint temperature determines the optimal fraction of power generated by the heat pump unit in relation to the total demand of the system, in compliance with the operating limits of the generators.

The algorithm enables **ADAPTO HYBRID** to take a step forward compared to traditional residential hybrid systems, allowing the **heat pump** and **boiler to operate simultaneously** to achieve **minimum operating costs**.

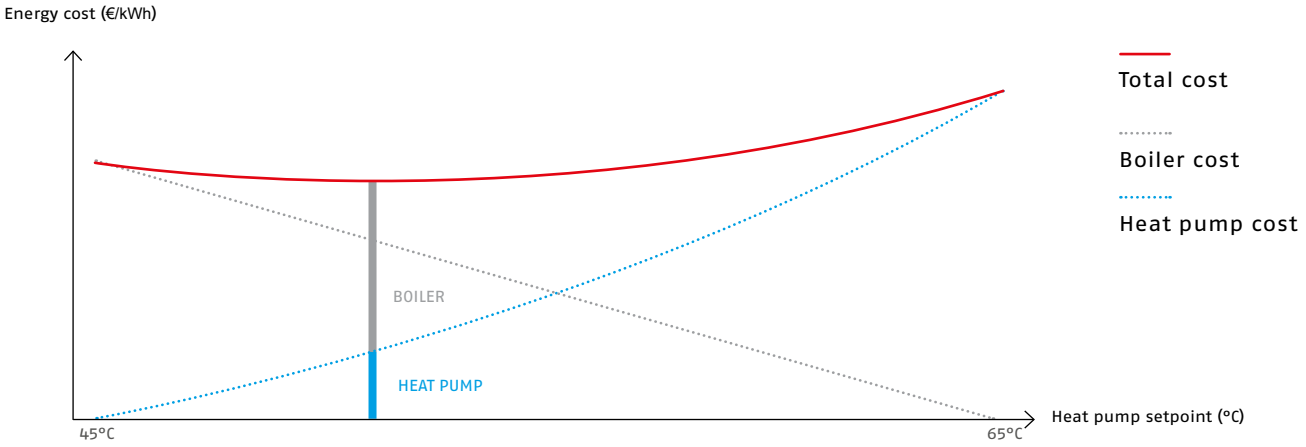


Graph obtained based on parameter set by Riello as an example.

Thanks to this **special proprietary algorithm**, Hi, Comfort T300-Hy **identifies the setpoint temperature value** of the heat pump (**Tsp,HP**) that **optimizes the economic cost** (ECONOMIC OPTIMIZATION) **or the value of CO_2** (ECOLOGICAL OPTIMIZATION).

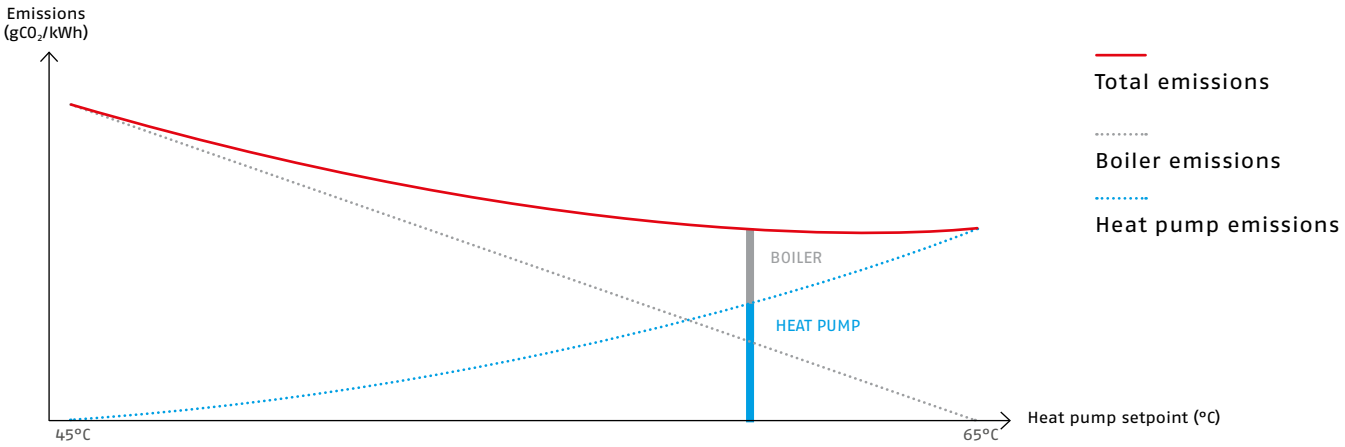
ECONOMIC **OPTIMIZATION**

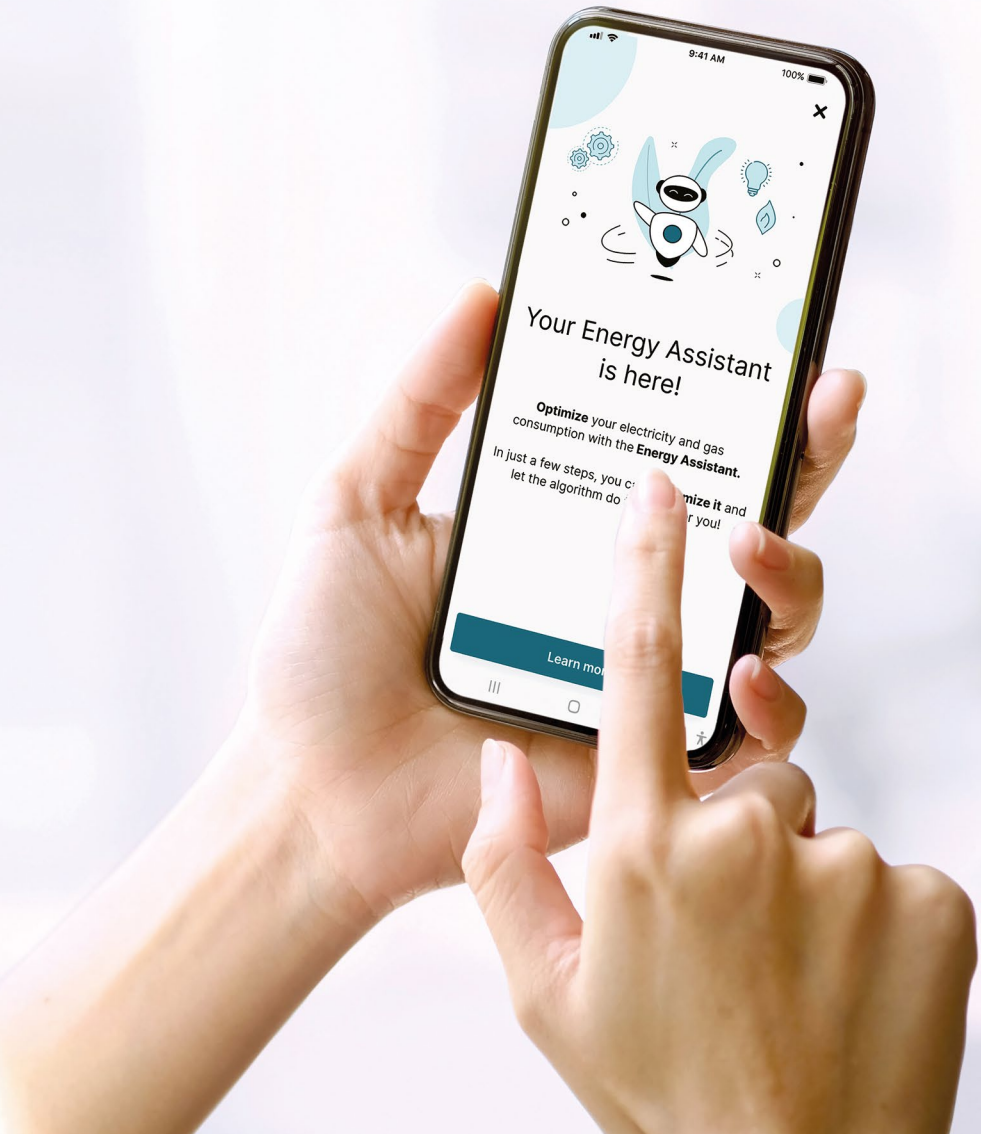
The snapshot below, based on a specific system setpoint and represented in an operating range at different heat pump flow temperatures, shows the estimated total operating cost determined by the sum of the cost curves of the two generators. The cost of the boiler (€/Smc) and that of the heat pump (€/kWh) can be configured by the user based on their supply conditions or using the national averages suggested by the system.
At the minimum cost point, the algorithm identifies the optimal setpoint for the heat pump, taking into account the efficiency and operating limits of both generators, as well as the heat demand of the system.



ECOLOGICAL OPTIMISATION

The snapshot below, based on a specific system setpoint and represented in a range of operation at different heat pump flow temperatures, shows the estimated CO_2 emissions determined by the sum of the emission curves of the two generators. The CO_2 emission factor of the boiler ($tonCO_2/TJ$) and that of the heat pump (gCO_2/kWh) are suggested by the system and can also be configured by the user.
At the point of minimum emissions, the algorithm identifies the optimum setpoint for the heat pump, taking into account the efficiency and operating limits of both generators, as well as the heat demand of the system.





Hi, Comfort

Available on the App Store

GET IT ON Google Play

Hi, Comfort:
ENERGY AT YOUR FINGERTIPS

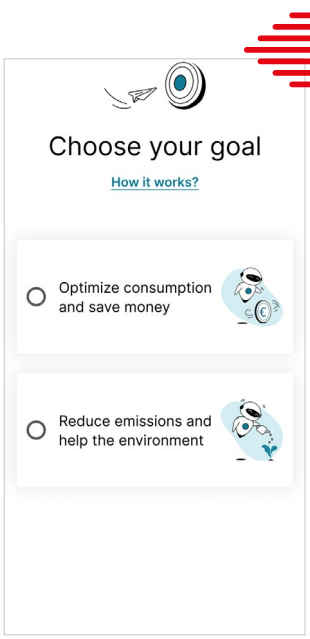
ADAPTO HYBRID introduces a **new specific section** within **the Hi, Comfort app**, a real **Energy Assistant designed** to guide the user in the intelligent management of the hybrid system**.**

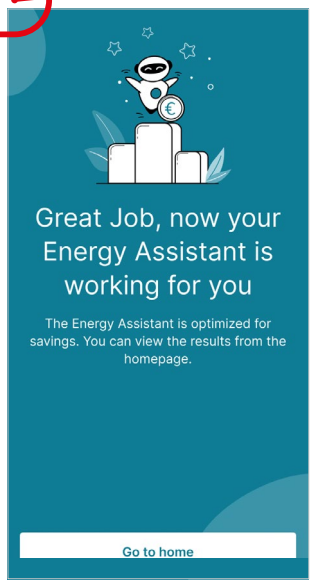
Through a **simple and intuitive interface**, the user can choose between **two optimization profiles**: **ECONOMIC** or **ECOLOGICAL**.

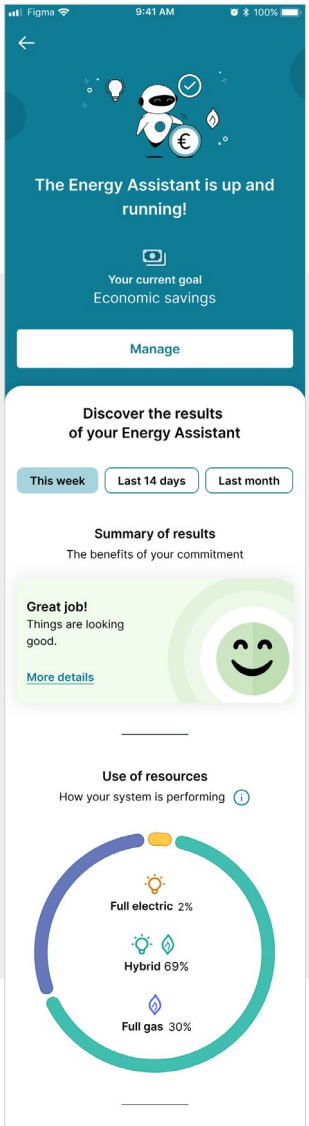
By choosing the **Economic Optimization profile**, the Assistant guides the user in entering their electricity and gas supply contract data and **identifies the most advantageous operating conditions to optimize the costs on the bill**.

By choosing the **Ecological Optimization profile**, on the other hand, based on the conversion factors of electricity and gas into CO_2 emissions**,** the Assistant allows the system to operate with a focus on reducing environmental impact, to meet the needs of even the most sustainability-conscious users.

Configuring the app to control your ADAPTO HYBRID system is **simple and intuitive**. Thanks to the **Energy Assistant**, you can **customize the system's operation** in just a few minutes, according to your **comfort**, s**avings and sustainability** needs.







MAXIMUM TRANSPARENCY AND **CONTROL** FOR THE USER

Within the app, users always have access to **a complete and constantly updated overview** of the **system operation.**

The contribution of the energy sources to the operation of the system and the prioritization of the electric mode can be **checked at any time.**

The percentages of use of the different operating modes (heat pump only, boiler only, hybrid mode) are also displayed, providing **a clear picture of resource use.**

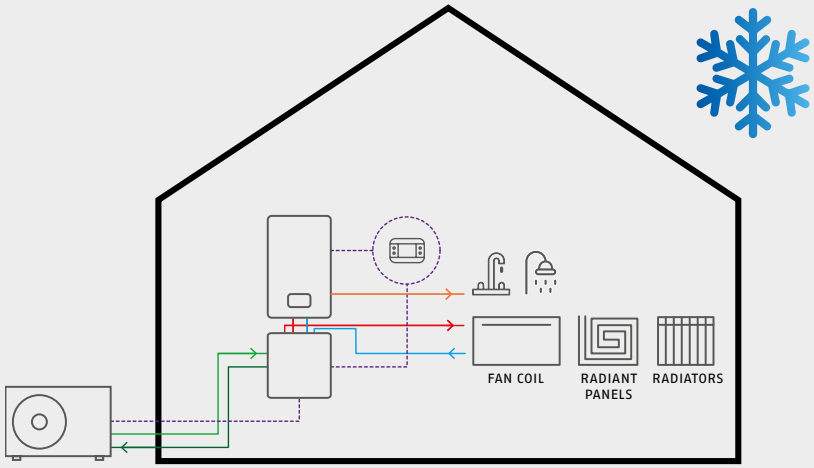
Finally, the energy contribution in kWh of the two generators – heat pump and boiler – is reported in detail, **allowing the user to understand exactly how to achieve home comfort.**

ALL-SEASONS COMFORT

ADAPTO HYBRID is the versatile solution designed to efficiently meet the heating and cooling needs of rooms, both in winter and in summer.

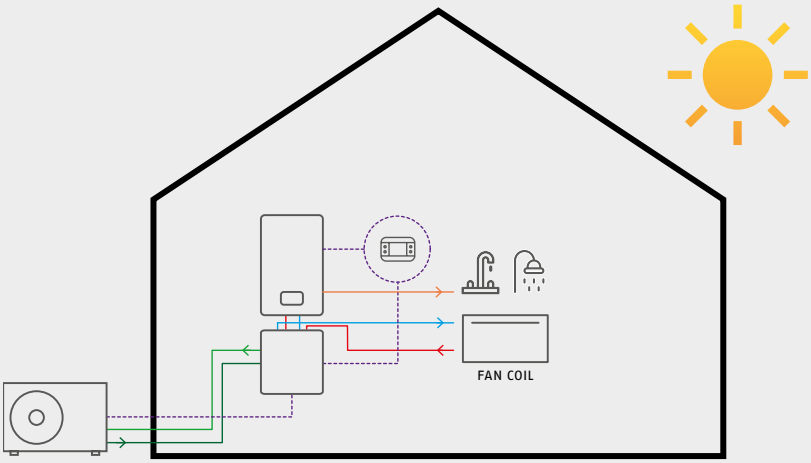
Thanks to its flexibility, it adapts perfectly to different types of systems and can operate with high and low temperature systems, always offering optimal comfort and energy efficiency.

HEATING OPERATION



- Domestic hot water
- Flow
- Return
- Refrigerant inlet
- Refrigerant outlet
- Electrical and electronic connections

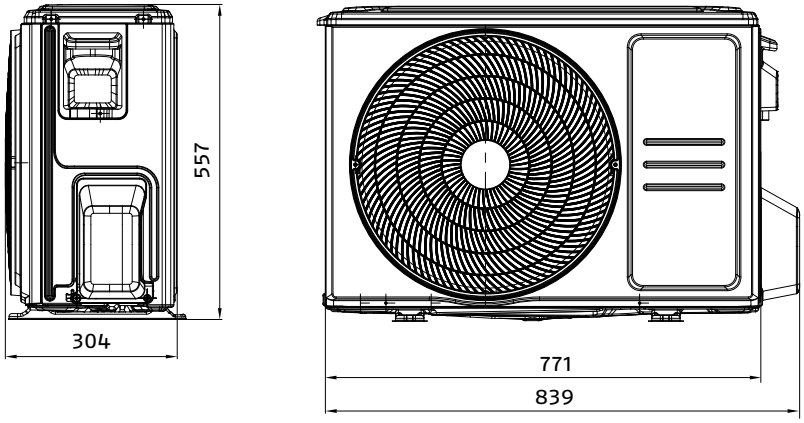
COOLING OPERATION



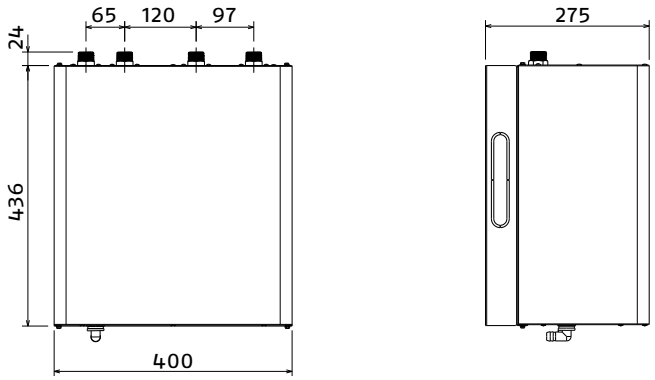
- Domestic hot water
- Flow
- Return
- Refrigerant inlet
- Refrigerant outlet
- Electrical and electronic connections

TECHNICAL **DRAWINGS**

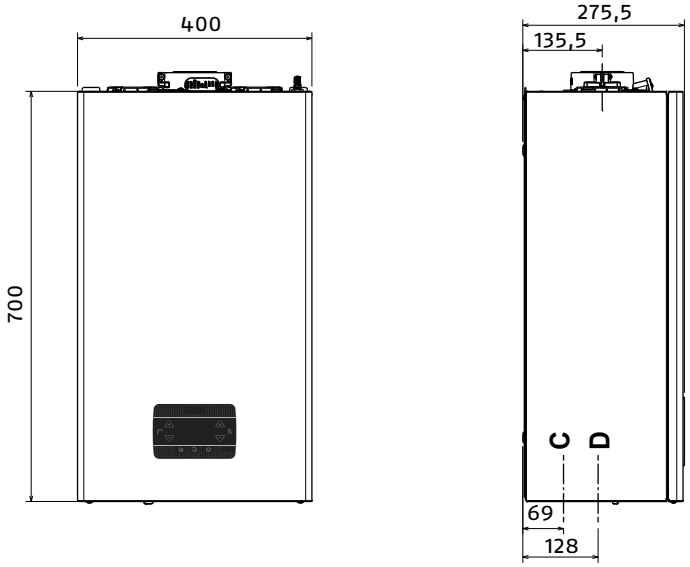
HEAT PUMP OUTDOOR UNIT



HEAT PUMP INDOOR UNIT: HYBRID HYDRAULIC KIT



BOILER: START KIS



TECHNICAL DATA

OUTDOOR UNIT AND INDOOR UNIT	UoM	RIELLO ADAPTO 3.5 & HYBRID HYDRAULIC KIT
NOMINAL PERFORMANCE ACCORDING TO EN14511 – HEATING*		
Inlet water temperature: 30°C Outlet water temperature: 35°C / 45°C / 55°C		
Capacity	kW	3,5 / 3,59 / 3,6
COP	–	4,4 / 3,7 / 2,7
NOMINAL PERFORMANCE ACCORDING TO EN14511 – COOLING**		
Water inlet temperature: 12°C Water outlet temperature: 7°C / 18°C		
Capacity	kW	3,5 / 3,6
EER	–	3,0 / 4,6
REFRIGERATION LINES		
Liquid connections	Ø	1/4''
Gas connections	Ø	3/8''
Total length (max-min)	m	25 - 3
Max length with precharged gas	m	5
Max height difference between outdoor and indoor units	m	10
ELECTRICAL FEATURES		
Voltage/Frequency (nominal voltage)	V / Ph / Hz	220-240 / 1 / 50
Maximum power consumption (peak)	W	1850
Power consumption (peak)	A	9
REFRIGERANT GAS		
TYPE	–	R32
GWP	–	675
Pre-charged quantity	kg	0,71
Maximum charge	kg	0,95
Gas limit pressure	MPa	4,3
Liquid pressure limit	MPa	1,7
SOUND LEVELS		
Outdoor unit sound pressure	dB (A)	60,5
Sound power	dB (A)	65
OTHER PARAMETERS		
Outdoor unit air flow rate	m³/h	2200
Air-water unit outdoor temperature - cooling	°C	25~60
Air-water unit outdoor temperature - heating	°C	5~25

*Air inlet dry bulb temperature: 7°C
**Dry bulb temperature at air inlet: 35°C

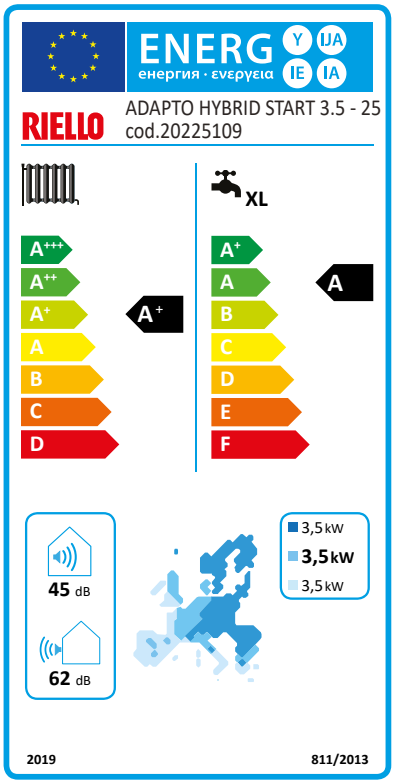
BOILER	UoM	START 25 KIS	START 30 KIS
ENERGY LABEL SPECIFICATIONS (IN ACCORDANCE WITH THE ERP DIRECTIVE)			
Seasonal heating energy efficiency (ηs)	%	93	93
DOMESTIC HOT WATER			
DHW production at ΔT=25°C / 30°C / 35°C	l/min	14,3 / 11,9 / 10,2	17,2 / 14,3 / 12,3
HYDRAULIC AND GAS CONNECTIONS			
Heating flow - Return / Gas inlet	Ø	3/4 ''	3/4 ''
Inlet - DHW outlet / cylinder flow - Return	Ø	1/2 ''	1/2 ''
OTHER TECHNICAL SPECIFICATIONS			
Heating thermal input (max-min)	kW	20,0 - 3,1	25,0 - 3,95
Nominal DHW heat input (max-min)	kW	25,0 - 3,1	30,0 - 3,95
OTHER PARAMETERS			
Indoor sound power level (LWA)	dB (A)	50	53
FLUE GAS SYSTEMS			
Max length for concentric flues (Ø60-100mm)	m	5,85	4,85
Maximum length for twin flues (Ø80-80mm)	m	33+33(A)	27+27(B)

(A) Up to 52+52 m with adjustable splitter available as an accessory
(B) Up to 45+45 m with adjustable splitter available as an accessory

FOR ALL OTHER TECHNICAL DATA, REFER TO THE SYSTEM MANUAL SUPPLIED WITH THE HYBRID HYDRAULIC KIT.

SYSTEM	UoM	RIELLO ADAPTO HYBRID START 3,5 – 25	RIELLO ADAPTO HYBRID START 3,5 – 30
ACCORDING TO EN14825			
HEATING 55°C*			
Pdesignh	kW	3,5	3,5
SCOP	–	2,84	2,84
Eta s	%	111	111
Energy efficiency class	D → A+++**	A+	A+
HEATING 35°C*			
Pdesignh	kW	3,5	3,5
SCOP	–	3,84	3,84
Eta s	%	151	151
Energy efficiency class	D → A+++**	A++	A++
DOMESTIC HOT WATER			
Eta wh	%	84	84
Size	–	XL	XL
DHW efficiency class	F → A+***	A	A

* Data relating to average climatic conditions
** The energy efficiency class range for this system category is from D to A+++
*** The energy efficiency class range for this category of systems is from F to A+



FOR ALL OTHER TECHNICAL DATA, REFER TO THE SYSTEM MANUAL SUPPLIED WITH THE HYBRID HYDRAULIC KIT.

RIELLO

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RIELLO ADAPTO HYBRID

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Carrier