ROBUR®
caring for the environment

K18 LIGHT YEARS AHEAD

AIM HIGH IN HEATING YOUR HOME!

K18

ErP A++

Absorption Heat Pump powered by natural gas
and air-source renewable energy for heating

A super efficient heat pump that uses air, a renewable energy source always available, to heat your home.
It is gas fired, simply. K18 is at the top of energy labelling: A++
Easy to install, it is the all-in-one solution, without the complexity of integration with solar thermal systems.

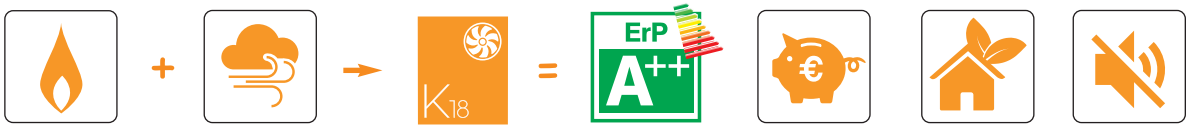
K18 SIMPLE AND INNOVATIVE, for a responsible choice

For your home, K18!

It is a unique and high-value solution: it is compliant with future regulations concerning energy efficiency, rational use of energy and use of renewable energy.

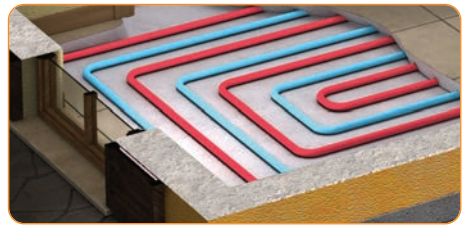
It is a versatile unit, suitable for both new and existing buildings as it fits also in heating systems with high temperature emitters (radiators).
K18 can replace or integrate an existing gas boiler in the easiest and quickest way.

It is the ideal choice for new houses with low temperature distribution systems (floor heating or fan coils).



HEATING

RADIATORS



FLOOR HEATING

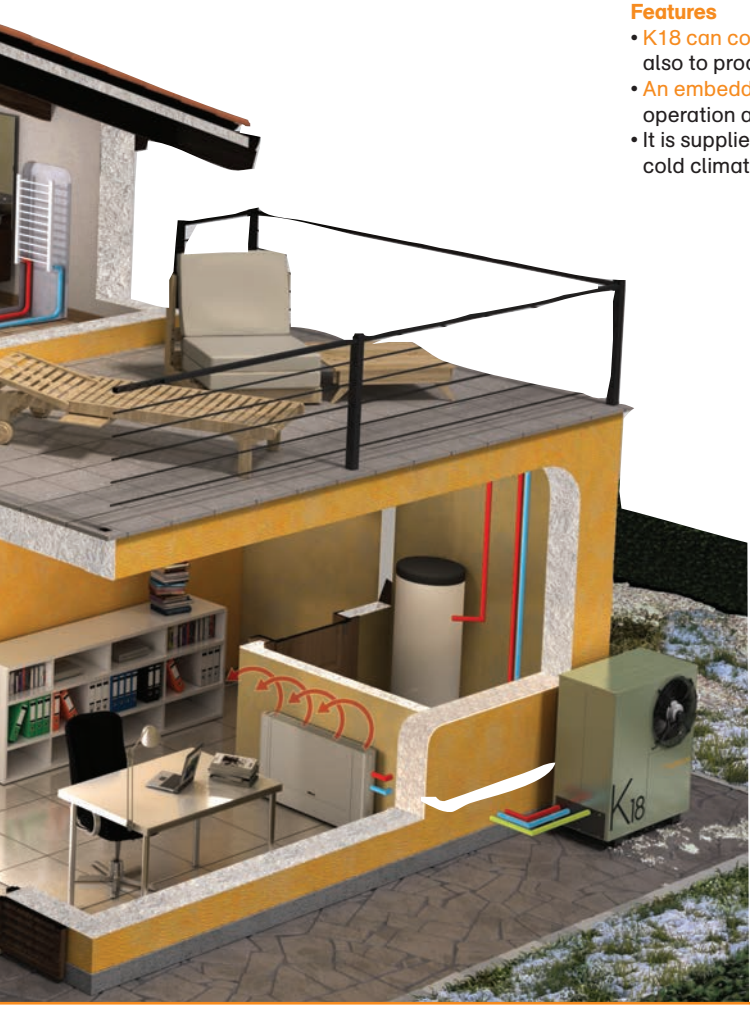
DOMESTIC HOT WATER

Versions

- Available with or without high efficiency modulating water pump.
- Outdoor installation.

Features

- K18 can control an auxiliary heat generator, such as an existing or a new boiler, also to produce domestic hot water, either instantaneously or through storage.
- An embedded weather compensation control mode enables more efficient operation and higher energy savings.
- It is supplied with antifreeze function without electric heaters, also suitable for cold climates.



Tested and certified by

Through the HEAT4EU project, under the EU's Seventh Framework Programme for Research and Technological Development, the European Commission endorsed Robur heat pump technology as one of the most innovative heating technologies for existing residential buildings.

POLITECNICO DI MILANO

Fraunhofer

ENEA

e·on Ruhrgas

British Gas

GRDF

ENGIE

K18 because...

RENEWABLE ENERGY 40%

Thanks to the environmental energy, heating costs are reduced by half

K18 is simple as a boiler, but it is far more: K18 is super efficient because it uses at best the energy of air, always available, securing a solid saving every year!

Space heating power demand (seasonal)

Gas absorption heat pump Robur	Electric heat pump	Condensing boiler	Standard boiler
Renewable energy: AIR	Renewable energy: AIR	Renewable energy: NONE	Renewable energy: NONE
1,494 €	1,944 €	2,052 €	3,240 €

• Heating power demand 18 kW • Winter Season Period: 1800 hours • Typical Climatic Data of the Northern Italy Area • Average Air Winter Temperature: 6,7°C (Milan, according to National Normatives) • Average Water Delivery Temperature 50 °C • Electricic Grid Efficiency, according to Eurostat Data • Electricity Energy Cost: 0,21 €/kWh • Natural Gas Cost: 0,70 €/m³

It is the easy choice for your home

K18 is the all-in-one solution, easy to install, saving the complexity of the integration on field with solar thermal systems. No flue pipes. Easy maintenace. It uses a natural refrigerant, not affected by F-Gas restrictions.

It is the quietest heat pump on the market

Environmental and Energy Efficiency Declaration for each customer

www.robur.com

FAC-SIMILE

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Robur declares that
<<Customer>>
has chosen K18
for his domestic heating system

Per each kW of natural gas used,
K18 adds 0.5 kW of renewable energy
for free, 24 hours a day.

Compared to a boiler, every year one single K18 unit:

- uses 7,805 kWh of renewable energy
- cuts CO_2 emissions by 3 Tons
  equivalent to those produced by 1 car
  or absorbed by 430 trees
- saves 1.2 Tons of Oil Equivalent

Benito Guerra
Robur Chairman

K18 performances & accessories

HEATING MODE [1]			
ErP enegy class (55 °C application)			**A++**
Working point A7/W35 [2]	G.U.E. gas utilization efficiency [3]	%	169
	heating capacity	kW	18.9
Working point A7/W50 [4]	G.U.E. gas utilization efficiency [5]	%	157
	heating capacity	kW	17.6
Max outlet water temperature	heating	°C	65
	domestic hot water (DHW)	°C	70
BURNER CHARACTERISTICS			
Max thermal input		kW	11.2
Max G20 natural gas consumption [6]		m^3/h	1.2
ELECTRICAL CHARACTERISTICS			
Voltage			230V–50Hz
Nominal max electrical power [7]		W	280
INSTALLATION DETAILS			
Weight in operation		kg	210
Sound pressure Lp at 5 metres [8] free field, direction factor: 2	max speed fan	dB(A)	43.0
	min speed fan	dB(A)	40.0
Connections	water	" M	3/4
	gas	" M	3/8 - 1/2
Size	width	mm	1,130
	depth [9]	mm	606
	height	mm	1,360

[1] As per calculation methods of EN12309.
[2] Outdoor temperature 7 °C, outlet hot water temperature 35 °C.
[3] Equivalent to COP 4.22 on energy conversion factor of 2.5.
[4] Outdoor temperature 7 °C, outlet hot water temperature 50 °C.
[5] Equivalent to COP 3.92 on energy conversion factor of 2.5.
[6] NCV 34.02MJ/m^3 (9,45 kWh/m^3) at 15 °C- 1013 mbar.
[7] Water pump electrical consumtpion not included.
[8] Lw sound power 65 dB(A) at max speed fan, 62 dB(A) at min speed fan. Sound power values measured according to EN ISO 9614.
[9] Exhaust pipe not included.

Due to continuous product innovation and development, Robur reserves the right to change the product specifications without prior notice.

DESIGN THERMAL OUTPUT- kW

Outdoor project temperature °C	High temperature distribution terminals (hot water outlet temperature 55 °C)	Low temperature distribution terminals (hot water outlet temperature 35 °C)
-25	11.8	13,0
-20	12.0	14.0
-15	12.5	15.0
-10	13.0	16.9
-5	14.0	17.7
0	15.0	18.0
5	16.0	18.5
10	17.0	19.0

A wide range of accessories is also available, such as:
- **System's electronic device** to manage: K18, boiler integration, heating loop and DHW production.
- **Expansion card** for electronic device
- **Basic room unit** (to be connected to the system's electronic device).
- **Thermostat** with three different temperature levels (day, night, antifreeze).
- **Buffer tank** for domestic hot water production (200 l, 3 sqm coil).
- **Buffer tank** for domestic hot water production (300 l, 4 sqm coil).
- **3-way valve** for heating / domestic hot water management.
- **Outdoor temperature probe.**
- **Water temperature probe.**
- **High efficiency modulating water pump** with total head of 7.5 m at 1,500 l / h water flow.
- **High efficiency modulating water pump** with total head of 10.5 m at 1,500 l / h water flow.
- **Kit of 4 anti-vibration pads.**

K18 keeps the promises

"The Robur heat pump has been tested, it is efficient, reliable and extremely quiet. If you have to replace a boiler, replace it with a gas absorption heat pump!

Paul Lemmens, Technical Officer DG Research and Innovation

"E.ON was in charge of performance monitoring of K18 installed in this German home. Evidences are clear: energy consumption and cost reduction are higher than 38% by the integration of renewable energy. Performances are always constant, thus helping maintaining high indoor comfort.

Dr. Matthias Brune and Angelo Martino, Energy Networks E.ON Technologies GmbH
K18 installed at private home Bottrop, Germany

"The Robur heat pump installed in my home has achieved significant energy savings over our gas boiler, complete reliability and kept my wife warm all through the year!

Kevin Lowe, British Gas Manager - Heat4U Project Partner

"GRDF has supported k18 development since the very beginning. Within HEAT4U project, we have carried out tests together with crigen in a dedicated facility and at an end user residence. This product represents a substantial step forward for the esisting detached and semi-detached homes. The combination of natural gas with renewable energy is a performing solution to guarantee the energy transition expected in europe.

Alain Mille, GrDF Researches Manager

"CRIGEN is proud to have participated and supported the technical development and validation of K18. Addressing the market of detached and semi-detached homes has proven to be a challenge; within HEAT4U project a real technology leap was performed. the results achieved during the field tests showed that k18 is an efficient and reliable product. A new era in heat pump technology has now begun.

Bernard Blez, senior vice president of CRIGEN R&D Center, ENGIE

"I chose K18 because it uses a significant rate of renewable energy and it is powered by natural gas. No change in electricity supply has been required: this meant a clear and reliable forecasting of costs, because I could estimate the savings starting from my current gas bill.

Enea Federici, Cingia de Botti (CR) - Italy

"For our home we wanted an easy-to-use, but efficient and eco-friendly heating system. Our installer suggested the installation of K18. System retrofit was not required and Robur has kept the promises.

Daniela Faccanoni, Fino del Monte (BG) - Italy

"I was looking for a distinguishing solution to my customers, achieving the following requirements: comfort, simplicity and energy efficiency. With the K18 heat pump we felt in love at first sight. I've chosen K18 also for my heating system.
I tried it, I recommend it to my customers

Roberto Calza, installer

"Our K18 perfectly fits outdoors. And it is so quiet that we can enjoy our garden listening the sounds of nature. In addition the former plant room became my hobby room. K18 is highly recommended... also to my customers.

Marcello Delsale, installer

Codice: X-DPL250 - Rev.02 - 05-2016

CARING FOR THE ENVIRONMENT: INSPIRING OUR INNOVATION.

This is one of the most exciting moments in Robur history.

A 60-years history dedicated to the environment, to the beauty and to well-made things.

This is why we are proud to introduce a world premiere, the fruit of our passion and our commitment: the absorption heat pump technology powered by natural gas and renewable energy for the domestic segment.

A well-made technology for those who like to stand out.

This is our contribution to the beginning of a new era in the European heating market, of which we can all be the first witnesses.

And we believe in it!

Benito Guerra, Robur President

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60
1956-2016

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THE SUCCESS COMES FROM AFAR

1956
Market introduction of new gas burner tips.

1976
Market introduction of new "on-off-switch" gas unit heaters for industrial heating.

1982
Integration of space heating with robur gas radiators.

1991
Market introduction of new gas chillers: "The flame that cools".

2004
Market introduction of new GAHP - Gas Absorption Heat Pumps for light commercial application.

March 2016
Official market introduction K18 for residential application.