KLIMA-THERM

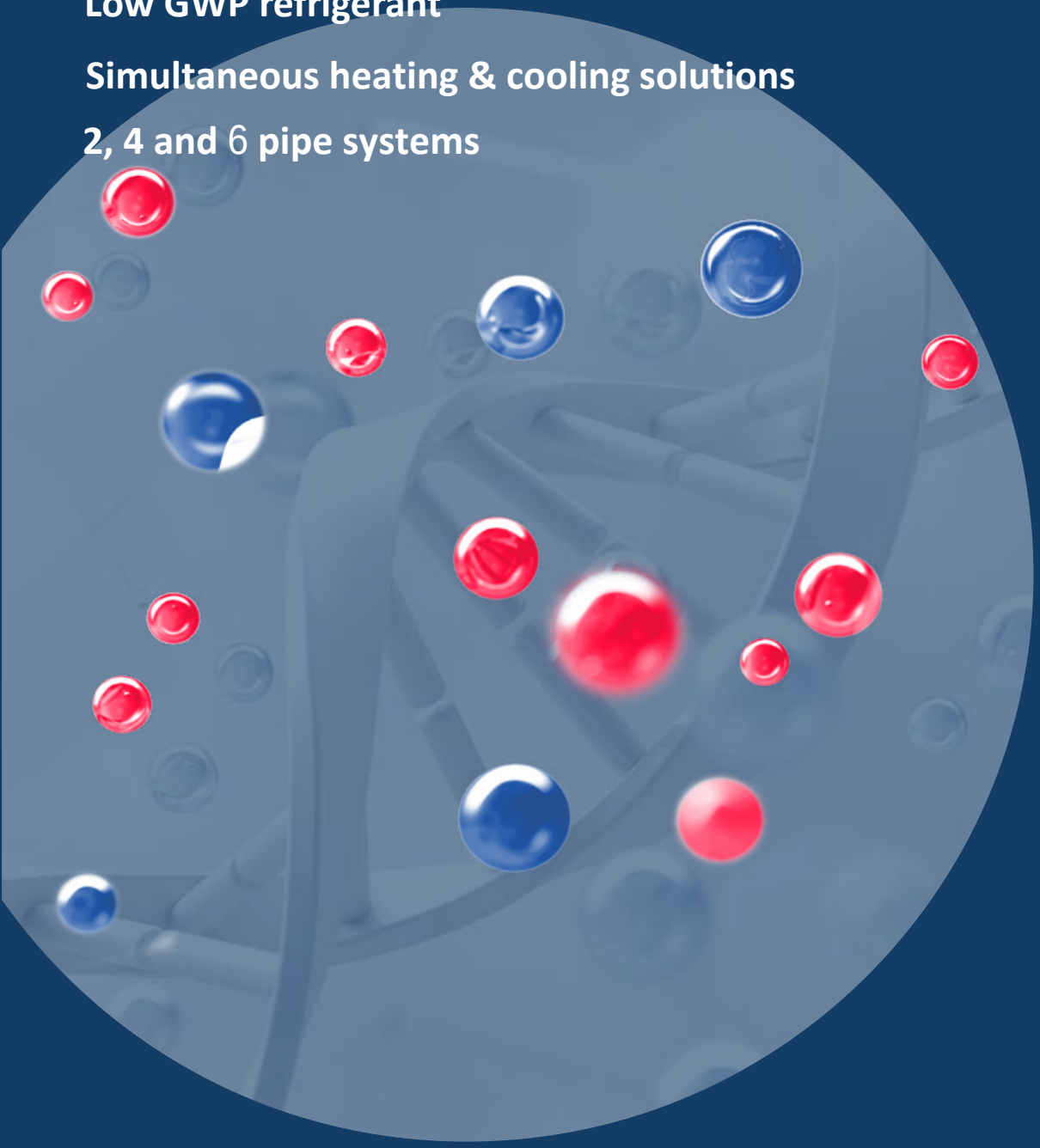
The Cooling & Heat Recovery Experts

EXP POLYVALENT HEAT PUMPS

Low GWP refrigerant

Simultaneous heating & cooling solutions

2, 4 and 6 pipe systems



TECHNICAL SUPPORT, INSTALLATION, SERVICE AND MAINTENANCE

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Innovation is in the Rhoss DNA

Multi-purpose units are advanced heat pumps, equipped with total recovery for the production of cold and hot water simultaneously or independently throughout the year.

They were introduced to the market more than 20 years ago and were immediately successful due to their **efficiency, versatility and flexibility** in all areas of application.

EXP Systems multi-purpose units may find their natural place in **4-pipe systems**, where there is a need for air conditioning and heating throughout the year, rather than in **2-pipe systems**, where there may be a demand to satisfy opposite loads in the summer season and only heating in the winter season.

There is an increasing focus by design offices on energy efficiency issues of the building-plant system: multi-purpose units can be the key to achieving the set goals.

Multi-purpose units, which have always been part of Rhoss' offer, have followed the technological development of refrigeration units in recent years. From the change of refrigerant gases to the current low GWP with reduced environmental impact, through the technological evolution of components with energy-efficient inverter solutions, to the increase in functional working ranges for the production of increasingly hot water for the most diverse uses.

GREEN TECHNOLOGY

Eco-friendly solution

EXP Systems is designed with the environment in mind because it represents the efficient evolution of the electric heat pump, in line with the strictest European directives. The high yields in the heat recovery mode increase the difference compared to traditional systems, thereby reducing direct and indirect emissions that contribute to the greenhouse effect.

Efficiency and sustainability

EXP Systems allow you to create a complete air-conditioning system with domestic hot water production even for sanitary use, thereby obtaining a double result with a single unit and a single charge, the energy supplied by the compressor, to guarantee high performance in terms of energy efficiency.

Flexibility and versatility

EXP Systems is a fourth generation heat pump that produces hot and cold water in a combined or independent way for 4-pipe and 2-pipe systems with domestic hot water production.

EXP Systems adapts to the various installation needs of the system thanks to its countless configurations and accessories that make it a plug&play unit.

Reliable unit

EXP Systems thanks to its innovative management logic, meets cooling and heating demands, minimising compressor stops and restarts with a consequent beneficial effect on the life of all components in the cooling circuit.

KLIMA-THERM

ECO EXP : the efficient and eco-friendly solution from 45 up to 1285 kW

Maximum sustainable efficiency

The new EasyPACK ECO EXP, WinPACK ECO EXP, WinPOWER ECO EXP, EasyFLOW ECO EXP and WinFLOW ECO EXP ranges represent the **most eco-friendly solutions** in the HVAC market to date. Designed to guarantee **maximum efficiency** in any operating mode, it uses the new **ecological gas R454B** with a drastic reduction in the GWP (Global Warming Potential) compared to traditional gases.

R454B eco-friendly gas

The refrigerant R454B (31.1% R1234yf + 68.9% R32) with a GWP of 466 is a perfect eco-friendly alternative to R410A gas: 77% reduction in GWP. This refrigerant gas is present in the multi-purpose EasyPACK, WinPACK, WinPOWER, EasyFLOW and WinFLOW ranges, making ECO EXP products perfect in terms of performance, efficiency and eco-sustainability.

ECO EXP for every application

ECO EXP ranges are the right solution in all modern systems, increasingly more attentive to energy savings and respect for the environment. Rhoss can offer a complete and flexible solution for **all types of 2 and 4 pipe applications** (tertiary, hospital, hotel area, etc.), meeting all power requirements **from 45 up to 1285 kW**.

Refrigerants and the relative Global Warming Potential

Rhoss has long started to apply the process of harmonisation with the new “green” gases, testing and experimenting with new solutions, without precluding any possibility.

All the ranges in the catalogue that Rhoss provides solutions for with low GWP refrigerant are distinguished by a specific mark.

The gradual phase-down of high GWP refrigerants is also accompanied by the demand for increasingly efficient and low-consumption products as required by the European Ecodesign Directive. This provides the specifications for an environmentally friendly design of all energy-using products and through Regulations 813/2013 and 2016/2281 it imposed minimum seasonal winter (SCOP) and summer (SEER) efficiency requirements for the introduction of chillers and heat pumps on the European market. The product performance tables, therefore, indicate the SEER and SCOP indexes, in line with the requirements of the directive.

The following table indicates some examples of refrigerant gases and related GWP.

Refrigerants	GWP	Low GWP
R407C	1774	
R134a	1430	
R410A	2088	
R513A	630	✔
R452B	697	✔
R1234ze	1,37	✔
R32	675	✔
R454B	465	✔
R515B	288	✔
R290	0,02	✔

EasyPACK ECO EXP

- From 67 to 134 kW
- Units designed with 2 circuits and 2 compressors in a compact and functional design
- Temperature of the produced water up to 60°C
- SEER up to 4.1 with FIEC accessory (EC fans) and SCOP up to 3.72, TER up to 7.86
- Plug&play unit thanks to integrated hydronic groups
- Integrated sequencer for precise management of the load up to 4 units

WinPACK ECO EXP

- From 136 to 334 kW
- Units designed with 2 circuits and 4 compressors for perfect load modulation
- SEER up to 4.33 with EEO and FIEC accessories (EC fans), SCOP up to 3.73, TER up to 7.85
- Plug&play unit thanks to integrated hydronic groups
- Integrated sequencer for precise management of the load up to 4 units

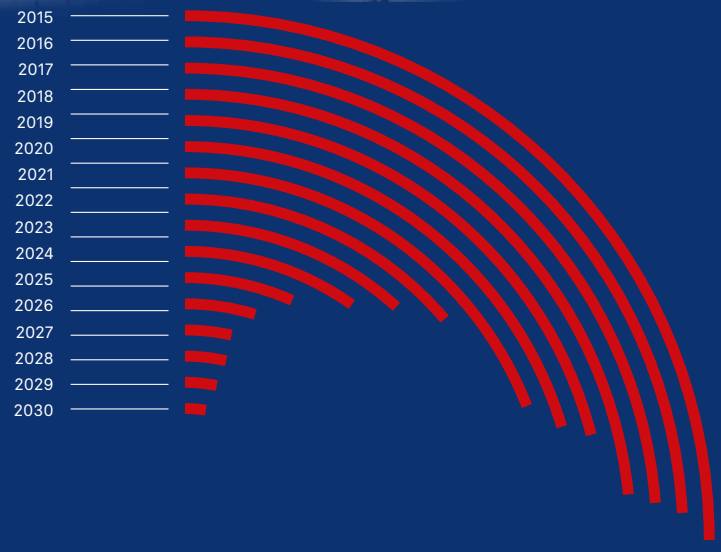
WinPOWER ECO EXP

- From 353 to 1285 kW
- EXP technology also for 6-pipe systems
- Units designed with 2-4 circuits and 4-12 compressors for perfect load modulation
- Extended operating limits
- SEER up to 5.29 with FIEC accessory (EC fans), SCOP up to 3.89, TER up to 8.18
- Plug&play unit thanks to integrated hydronic groups
- Integrated sequencer for precise management of the load up to 4 units

EasyFLOW ECO EXP
WinFLOW ECO EXP

- From 45 to 374 kW
- Water-cooled units designed with 1-2 circuits and 2-4 compressors
- Extended operating limits
- SEER up to 6.3, SCOP up to 6.79, TER up to 7.83
- Plug&play unit thanks to integrated hydronic groups
- Integrated sequencer for precise management of the load up to 4 units

79%
reduction of CO_2
thanks to the elimination of HFCs



Reference volume (100%) corresponding to the annual average of the equivalent total amount of CO_2 introduced into the EU from 2009 to 2012.

We have a complete solution for any type of application

EXP Systems units were designed to operate in **2, 4 and 6-pipe systems** in the new ranges.

This flexibility allows it to be used in several types of construction, thereby allowing any subsequent change in the intended use.

The heart of the system is represented by the new electronic control and the control logic designed by Rhoss to meet all the system requirements in the 2 operating modes: **AUTOMATIC** and **SELECT**.

2-pipe systems AUTOMATIC or SELECT mode

Often in residential applications - in homes with individual systems or apartment blocks with centralised systems - in hotels, nursing homes, gyms and accommodation facilities in general, air conditioning and air handling requirements are accompanied by the need to produce domestic hot water.

EXP Systems, in its 2-pipe system configuration, performs this task with **maximum flexibility all year long**. EasyPACK-I EXP, WinPOWER EXP units also have the option to produce **hot water up to 70°C** in another heat exchanger in any operating mode.

4 or 6-pipe systems AUTOMATIC mode all year round

In office buildings and the service sectors, modern conditioning systems increasingly require the **simultaneous production of hot and chilled water**.

Improved thermal insulation in buildings, the increase in the thermal loads due to the lighting and the presence of large windows, lead to the system having to cool certain areas while having to heat others during spring and autumn. In this case, when the

EXP Systems unit is configured for 4-pipe systems, it represents a very convenient, complete solution.

In EasyPACK-I EXP, WinPOWER EXP units also have the option to produce **hot water up to 70°C** in another heat exchanger in order to meet modern 6-pipe system requirements.

Units for 2, 4 and 6-pipe systems

2-pipe systems

Summer season AUTOMATIC

cooling and domestic hot water

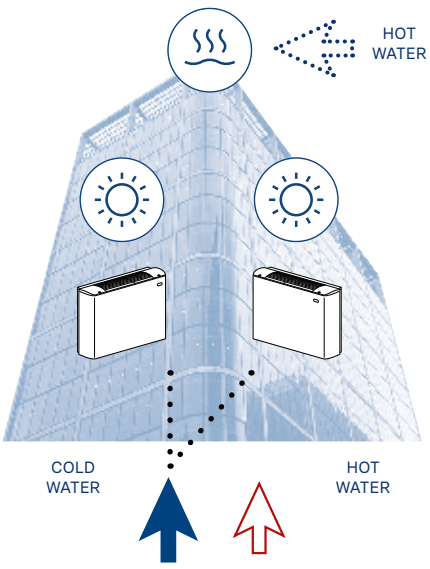
Winter season SELECT

heating and domestic hot water

4 or 6-pipe systems

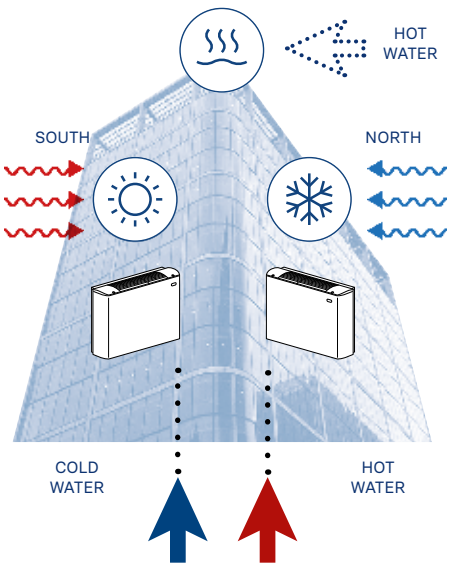
Summer season

cooling



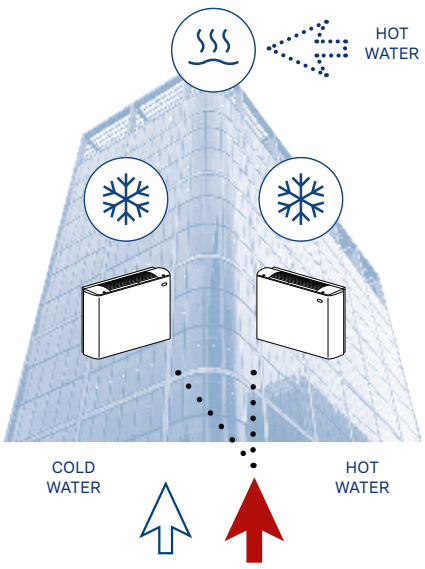
Mid Seasons

cooling and heating



Winter season

heating



Overview of multi-purpose products

Air-cooled - Axial fans | Inverter scroll fans

EasyPACK-I EXP

Cooling capacity: 64,4-125,9 kW

Heating capacity: 71-133.2 kW

- Multi-purpose units with inverter compressors
- TER up to 7.89
- Extended operating limits
- Integrated MASTER/SLAVE control

Air-cooled - Axial fans | Hermetic scroll fans

Compact-Y EXP MD

Cooling capacity: 33.8÷61.6 kW

Heating capacity: 39,4-68,3 kW

- Integrated MASTER/SLAVE control

EasyPACK ECO EXP

Cooling capacity: 67,2-133,8 kW

Heating capacity: 71,0-136,9 kW

- Efficient and eco-friendly range in R454B
- Temperature of the produced water up to 60°C
- TER up to 7.86
- Extended operating limits
- Integrated MASTER/SLAVE control

WinPACK ECO EXP

Cooling capacity: 135,7-333,6 kW

Heating capacity: 144,3-351,4 kW

- Multi-purpose units with TER up to 7,96
- R454B refrigerant gas
- Integrated MASTER/SLAVE control

WinPACK EXP

Cooling capacity: 137,7-339,6 kW

Heating capacity: 150,3-372,4 kW

- Multi-purpose units with TER up to 7,9
- Integrated MASTER/SLAVE control

WinPOWER ECO EXP

Cooling capacity: 352,7-1283,2 kW

Heating capacity: 363,3-1290,8 kW

- Multi-purpose units with TER up to 8,25
- Extended operating limits
- SEER up to 5.29 with FIEC accessory (EC fans) and SCOP up to 3.89
- R454B eco-friendly gas

Water-cooled | Hermetic scrolls

EasyFlow EXP
WinFLOW EXP

Cooling capacity: 46,6-373,8 kW

Heating capacity: 49,3-435,7 kW

- Multi-purpose units with TER up to 7,64
- Applications with well water, water mains, geothermal probes or dry cooler.
- Extended operating limits
- Touch interface (optional)
- Integrated MASTER/SLAVE control

EasyFLOW ECO EXP
WinFLOW ECO EXP

Cooling capacity: 44,9-365,2 kW

Heating capacity: 53,1-424,8 kW

- Multi-purpose units with TER up to 7,83
- Efficient and eco-friendly range in R454B
- Applications with well water, water mains, geothermal probes or dry cooler.
- Extended operating limits
- Touch interface (optional)
- Integrated MASTER/SLAVE control

Klima-Therm and Rhoss, a perfect partnership that lasts for over a decade

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OVER 40 YEARS OF INNOVATION IN THE UK HVAC INDUSTRY

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