



EIP SYSTEMS
EXcellence in Polyvalent Technology

Efficient, reliable,
increasingly
more ecological
solutions.





The first range of EXP Systems polyvalent units with R454B gas able to reduce GWP by 78% compared to the R410A gas. Performance, efficiency, flexibility and attention for the environment in the modern 2 and 4 -pipe HVAC systems.



The inverter technology applied to the EXP Systems polyvalent units is currently the most advanced technological system to offer precision and energy savings.

Hundreds of systems built in the last 20 years with polyvalent units in residential and commercial buildings, office buildings, industrial complexes, hospitals, clinics and accommodation in general.

Efficient technology

EXP Systems allow you to create a complete air-conditioning system with domestic hot water production, 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.

Versatile system

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.

Reliable unit

Thanks to its innovative management logic, EXP Systems meets cooling and heating needs, minimising the stops and starts of the compressors, with a resulting beneficial effect on the life of all the components of the cooling circuit.

INNOVATION IN THE RHOSS DNA

20 years' experience for the
assurance of a quality product

The assurance of a quality product is obtained through careful testing in the R&D Lab, one of the largest testing labs in Europe.

Every Rhoss unit is subjected to rigorous operating tests before being launched on the market, simulating the most extreme operating conditions.

EXP Systems is the multi-purpose ecological system designed by RHOSS to satisfy cold and hot water demands simultaneously or independently with a single unit. It is designed for use in 2, 4 and 6-pipe systems, any time of the year.

A complete range with air and water cooled models from 5 to 700 kW, with TER* index even higher than 8.

The offer includes new Class A models ensuring high efficiency with partial loads.

Flexible installation

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.

Eco-friendly solution

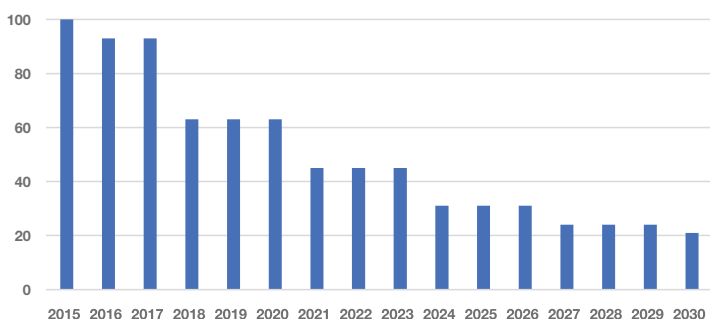
EXP Systems can be defined as a polyvalent eco-friendly unit designed with the environment in mind because it represents the efficient evolution of the electric heat pump, in line with the strictest European directives. The high yields in the heat recovery mode further increase the difference compared to traditional systems, thereby reducing direct and indirect emissions that contribute to the greenhouse effect.



EFFICIENCY, TECHNOLOGY and ECOLOGY: the three key words for a sustainable future.

Rhoss has always been careful to create comfort, and invests and studies new solutions to be applied to equipment dedicated to the HVAC world: efficiency and technology are firm points in the development of new products in order to make them more and more compatible with the environment that we live in.

The progressive elimination of fluorinated refrigerants (HFCs), established by the new EU regulation, provides for a gradual reduction of the quantities placed on the market, expressed as the equivalent in tons of CO₂. This should lead to a 79% reduction in HFC consumption by 2030.



Reference volume (100%) corresponding to the annual average of the equivalent total amount of CO₂ introduced into the EU from 2009 to 2012.

The application of this legislation will lead to the introduction and increasingly massive use of new low-GWP (Global Warming Potential) gases, consistent with the evolution of technology.

In fact, in the world market of refrigerants, depending on what technology is used, there are many solutions that allow for a reduction in GWP, with respect to gases traditionally used in the HVAC sector.

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

Refrigerant	GWP (UNI EN 378-1 2017)
R407C	1774
R134a	1450
R410A	2088
R513A	631
R1233zd	4.5
R1234ze	7
R32/R452 B	675
R454 B	466

Rhoss has long started this process of harmonisation with the new "green" gases, testing and experimenting with new solutions, without precluding any possibility.

That is why WinPACK ECO EXP was created – the new air-cooled range with a scroll compressor and R454B gas that has zero impact on potential ozone layer destruction and extremely low impact on global warming.

RHOSS: the for an sustain

CAREFUL MANAGEMENT

for better plant accuracy and precision thanks to new software designed and developed by expert technicians.

HIGH EFFICIENCY CONCEPT

to increase energy savings and the Rhoss green vision in the multiple operating modes of the EXP unit.

INVERTER TECHNOLOGY

to be one step ahead with innovative solutions at the system's service.



aware, choice nable future

DEDICATED COMPONENTS

to further improve the performance and reliability of units using the new, reduced GWP ecological gases.

POLYVALENT TECHNOLOGY

as market leader in the last 20 years.



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.

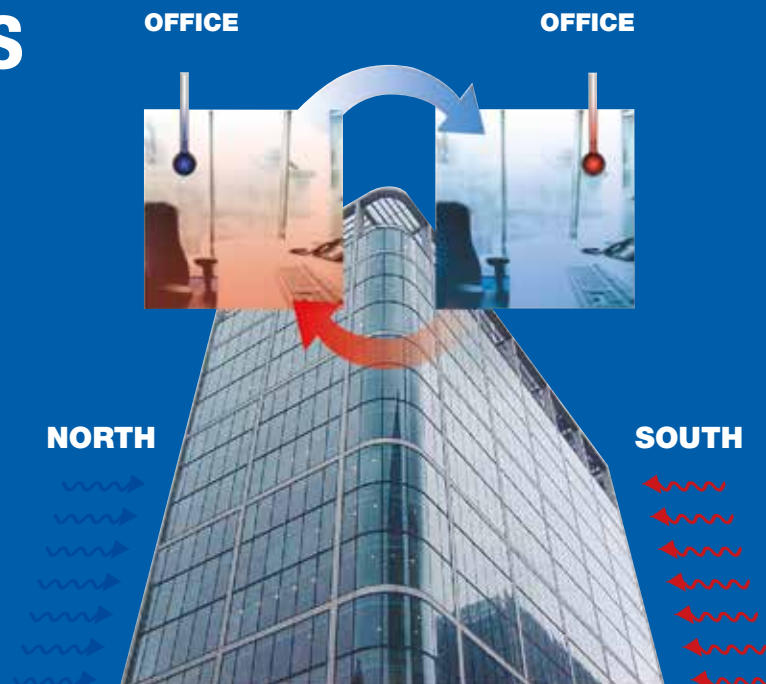
WinPACK ECO EXP

- The first range of polyvalent units in R454B
- EXP technology for 2/4-pipe systems
- Units designed with 2 circuits and 4 compressors for perfect load modulation
- New scroll compressors with high efficiency levels at partial loads
- TER up to 8
- Super-silenced, low acoustic emission version
- Standard electronic expansion valve
- Plug&play unit thanks to integrated hydronic groups
- Integrated sequencer for precise management of the load up to 4 units

EasyPACK-I EXP

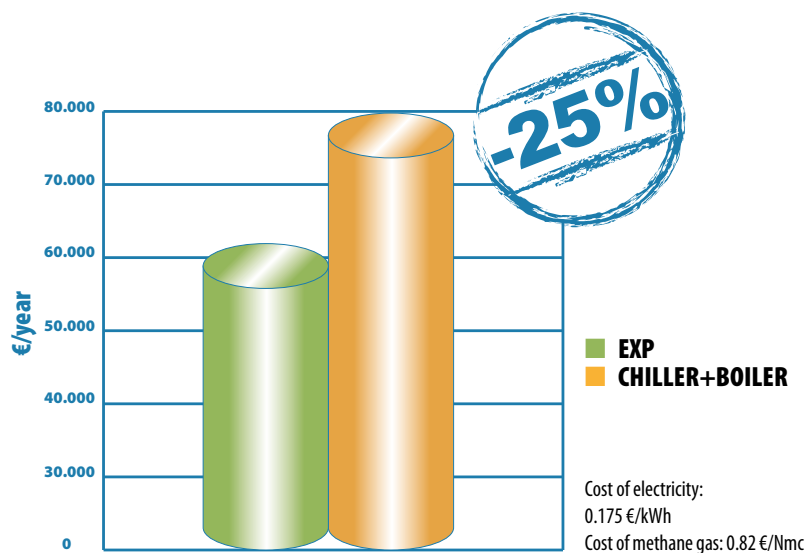
- Polyvalent unit range with inverter compressor 1+i configuration
- Precise load modulation for applications in the medium-sized service industry, offices and hotels
- EXP technology for 2/4 and 6-pipe systems with an extra heat exchanger producing high temperature hot water
- Units designed with 2 cooling circuits to guarantee maximum flexibility
- New scroll inverter and ON/OFF compressors with IDV technology and high, partial-load efficiency levels
- SCOP up to 4.03
- Super-silenced, low acoustic emission version
- Standard electronic expansion valve
- Plug&play unit, thanks to integrated hydronic groups, with a compact, functional design
- Integrated sequencer for precise management of the load up to 4 units

The intelligent solution for real energy savings



EXP Systems is the intelligent solution for conditioning needs in systems where the demand for heating is combined in a simultaneous or independent manner with the demand for cooling. The units adapt to the different system types guaranteeing unique flexibility and versatility.

Choosing the best unit for your system is easy as you can count on 52 air-cooled models plus 23 water-cooled ones with scroll screw technology and respectively R410A / R454 B and R134a refrigerant gases.

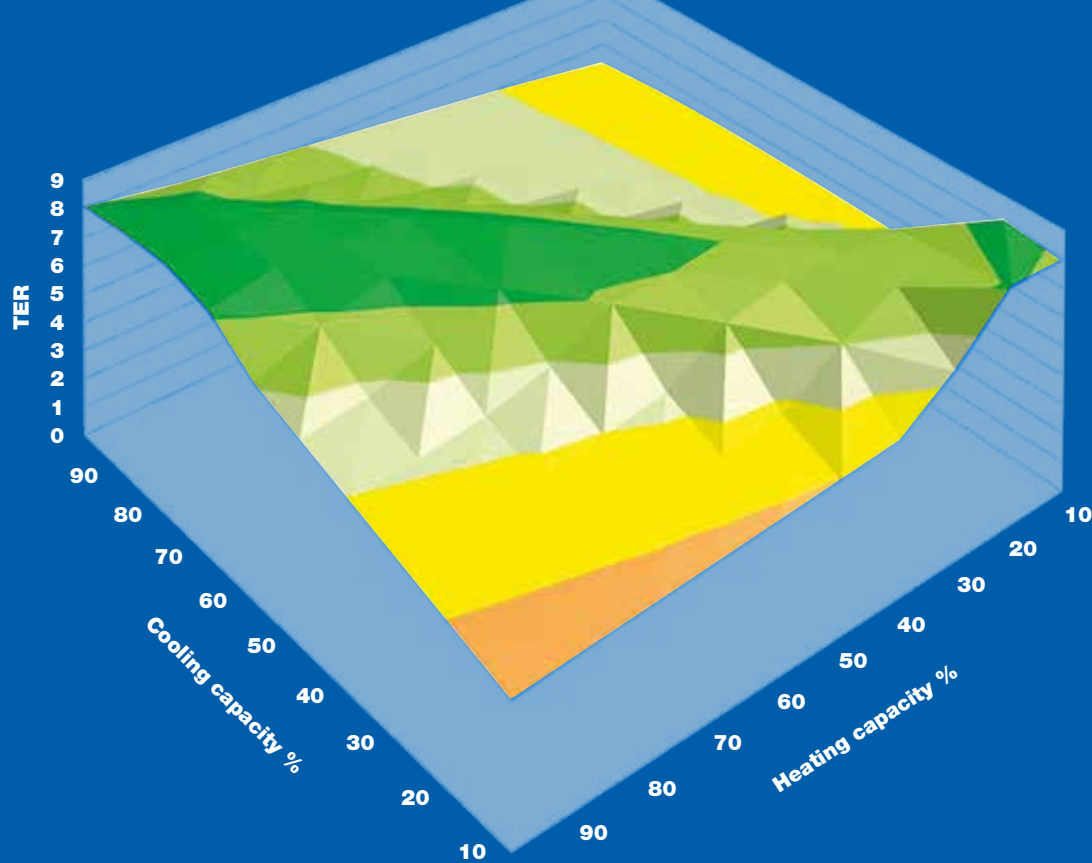


Analysis carried out on an office building in Milan, comparing the annual consumption of a polyvalent EXP Systems TXAVBZ 2550 550 kW unit with that of a traditional system with a water chiller for summer/winter conditioning and a boiler for heating.



EXP Systems, currently the technology guaranteeing the most efficient solution in operations combined with the production of hot and cold water and the TER index representing the value that best characterises it.

The TER, ratio between the sum of the cooling and heating capacity supplied and power absorbed, reaches maximum levels when the loads are balanced.



The graph highlights the TER trend for an EXP Systems TXAETY 6520 unit in a typical 4-pipe system based on the load required. Reference conditions: cold water 7°C, hot water 45°C and outdoor air temperature 15°C.

The units of the ranges EasyPACK EXP, WinPACK ECO EXP, Y-FLOW EXP and WinPOWER EXP equipped with the revolutionary AF+ (Adaptive Function Plus), Rhoss patent, enable set point adjustment based on the system load for additional energy saving.

TER: Total Efficiency Ratio

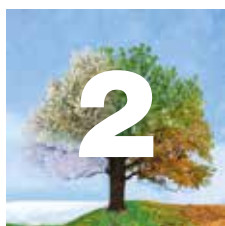
The real efficiency measurement



The 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 throughout the year



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.

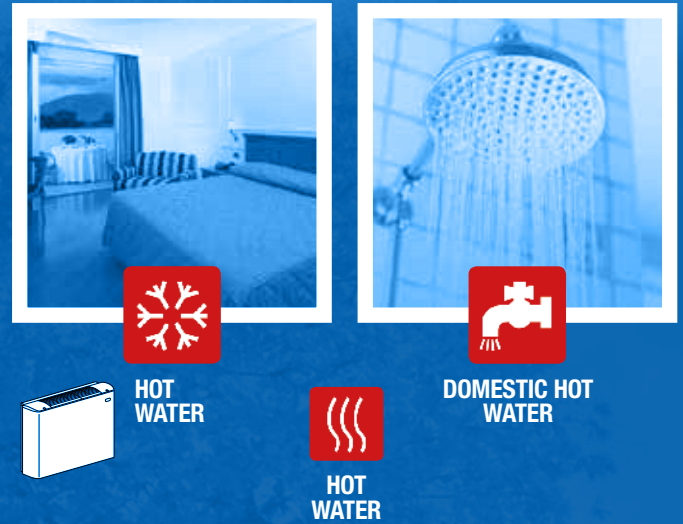
In EasyPACK-I EXP, WinPOWER EXP units also have the option to produce hot water up to 70°C in another heat exchanger in order to meet modern 6-pipe system requirements.

EXP Systems units for 2, 4 and 6-pipe systems

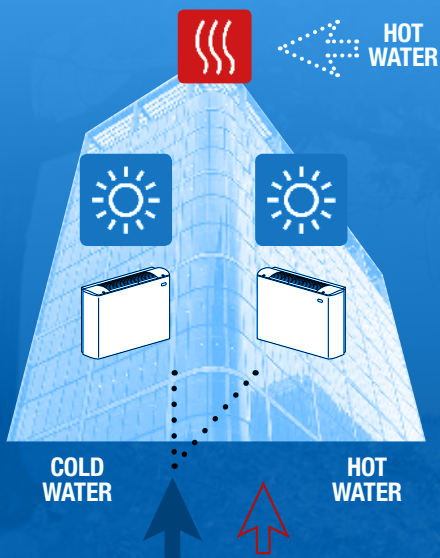
Summer season "AUTOMATIC"
cooling and domestic hot water



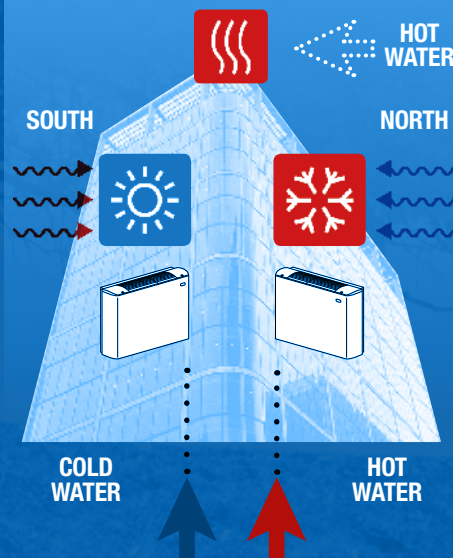
Winter season "SELECT"
heating and domestic hot water



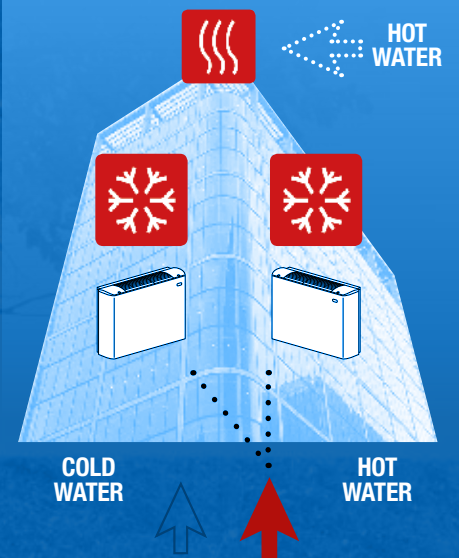
Summer season
cooling



Mid Seasons
cooling and heating



Winter season
heating



RHOSS R&D Lab: Witness Test for customised solutions

In continually evolving systems with personalised requests linked to installation, Rhoss provides support and advice for the units best suited to the project.

Competent technicians for the subject and technical commercial figure follow the market and its trends, proposing solutions.

Rhoss offers the possibility to conduct tests on the EXP Systems unit setting up the test in its R&D Lab. This enables simulation and control by the customer of the EXP Systems unit in the real operating conditions for which it was chosen and purchased.

From idea to installation:

- 1** **Consultancy and technical support for the designer**
- 2** **Choice of units in real operating conditions**
- 3** **Assessment of construction options and accessories for the system**
- 4** **Witness Test for the real simulation of unit performances in its final intended use**
- 5** **Unit start up by qualified personnel all over the world**



9001:2015



14001:2015

RHOSS Spa supplies quality goods designed for environmental comfort. With the same commitment, it pays attention to environmental issues, considering correct management and efficient control of its environmental aspects of prime importance, engaging in Environmental Protection and in full compliance with the standards in force and with specific requirements. For this reason, Management has decided to implement an environmental certification system, based on the requirements of the international standard UNI EN ISO 14001, applying it to all the activities carried out within the company and especially to its production activities.

The business organisation and operations are based on a Quality Management System. The Quality System currently implemented with the new ISO 9001-2015 version has rules and practices established and agreed with the entire Organisation.



EUROVENT certification for CHILLERS, HEAT PUMPS AND FAN-COILS

Rhoss participates in Eurovent certification programs for chillers, heat pumps, polyvalent units and fan coils.

The performances of Rhoss products are guaranteed by tests carried out by a third party credited certification body.

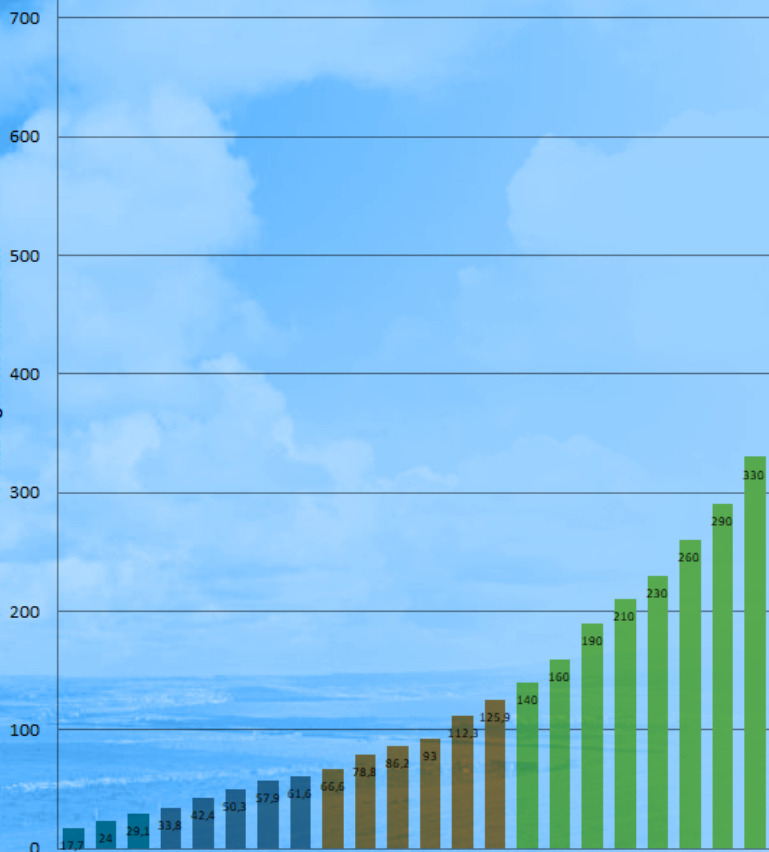


LEED certification - Leadership in Energy & Environmental Design

Rhoss participates in the LEED building certification protocol. The international system is based on the whole building's life cycle from design and construction, to management and maintenance.

The complete range of EXP Systems polyvalent units

Potenza frigorifera nominale kW



WinPACK ECO EXP

The new WinPACK ECO EXP range is currently the most ecological HVAC market solution.

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.

WinPACK ECO EXP is the right choice in all modern systems, increasingly more attentive to energy savings and respect for the environment.

The EXP Systems ranges

EXP Systems is above all for Rhoss a design philosophy consolidated in over 20 years.

Ranges include solutions with screw and scroll compressors, with R134a, R454 B and R410A gas, air and water cooled to match the multiple application types.

The EXP Systems units are designed to achieve high level energy efficiencies and guarantee operating ranges enabling all-year-round operations.

Hot water production up to 70°C

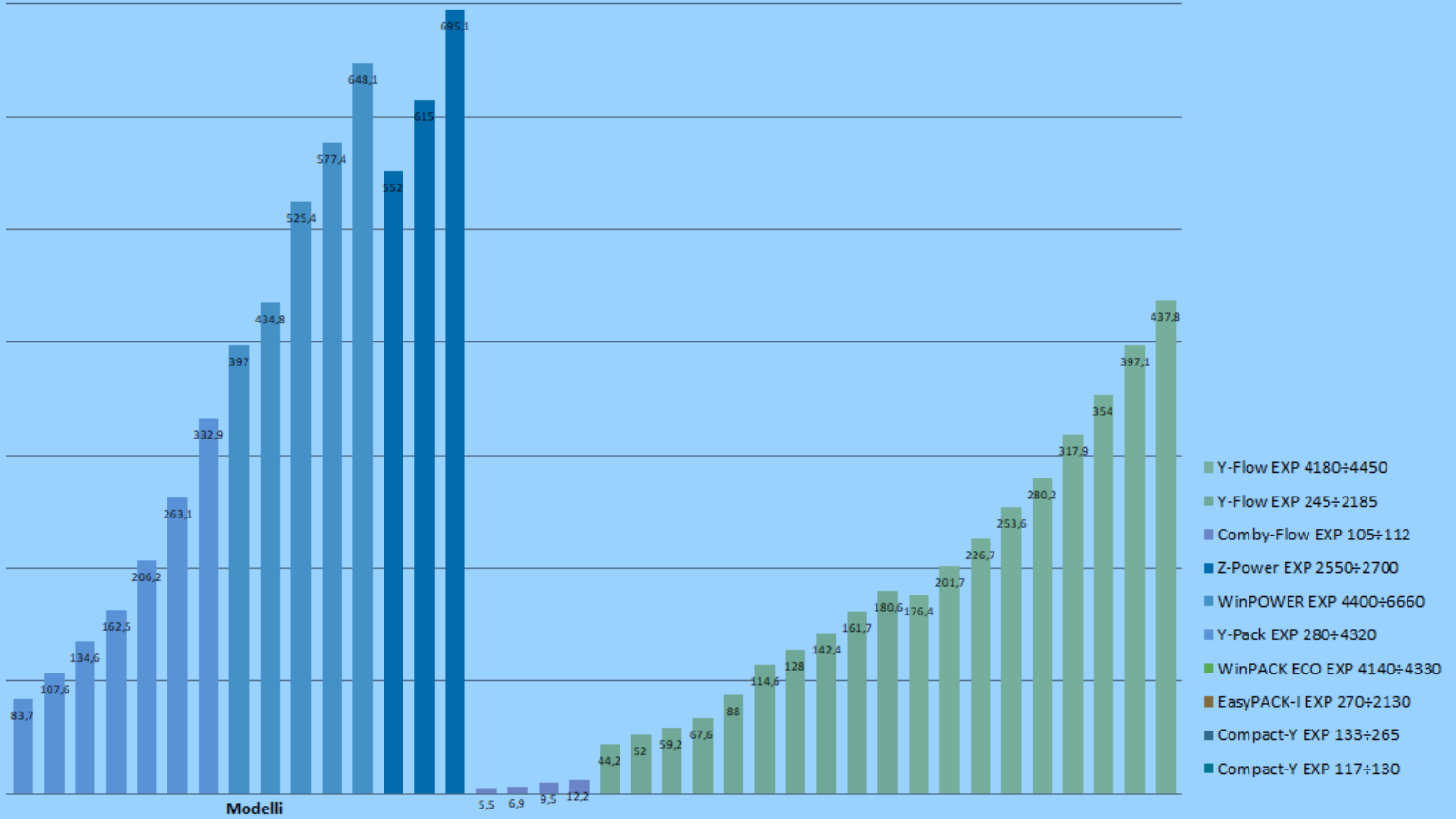
EXP Systems polyvalent units can produce hot water up to 60°C (*) with broad operating limits to respond to the most modern system needs.

Air cooled units, semi-hermetic screw compressors and cooling gas R134a when operating in winter, reach outdoor air temperature limits of -10°C with hot water production up to 50°C.

Latest generation units, air cooled, scroll compressors and refrigerant gas R410A, were designed to produce hot water up to 45°C during winter operations and with an outdoor temperature of -10°C.

EasyPACK-I EXP and WinPOWER EXP units are able to manage 6-pipe systems and can produce water up to 70°C in the dedicated heat exchanger.

(*) Limits vary based on ranges and heating capacity



Compact-Y EXP - TXAEY 117-130



Range 17.7-29.1 kW (*)

- Scroll compressors
- Extremely compact units
- Plug&Play installation

Compact-Y EXP - TXAEY 133-265



Range 33.8-61.6 kW (*)

- Scroll compressors
- Compact units
- Pump and Tank&Pump set-ups

EasyPACK-I EXP - TXAIY 270-2130



Range 64.4-125.9 kW (*)

- Scroll Inverter compressors
- Bi-circuit unit for systems with 2, 4 and 6 pipes
- Integrated Master/Slave control

WinPACK ECO EXP - TXAEU 4140-4330



Range 133.7-333.6 kW (*)

- Scroll compressors and "low GWP" R454B gas
- TER up to 8
- Units for systems with 2, 4 and 6 pipes

Y-Pack EXP - TXAEY 280-4320



Range 80.7-332.9 kW (*)

- Scroll compressors and R410A gas
- TER up to 8.18
- Brushless EC fans

WinPOWER EXP - TXAEY 4400-6660



Range 361.2-648.1 kW (*)

- Scroll compressors in tandem-trio configuration
- Super-silenced version
- Units for systems with 2, 4 and 6 pipes

Z-Power EXP - TXAVZ 2550-2700



Range 408-698 kW (*)

- Screw compressors and R134a gas
- TER up to 8.21
- Shell and tube exchangers

Comby-Flow EXP - TXHEY 105-112



Range 5-12 kW (**)

- Scroll compressors and R410A gas
- Extremely compact units
- Plug&Play installation

Y-Flow EXP - TXHEY 245-4450



Range 47-462.6 kW (**)

- Scroll compressors and R410A gas
- Compact units
- Wide range of set-ups and accessories

Where EXP Systems can be used

A solution for heating, cooling and the production of domestic hot water

- in new buildings
- in existing buildings with complete or partial replacement of the heating system

Suited for medium or low temperature terminals

Ideal for:



**HOTELS
RESTAURANTS
GUESTHOUSES**



**RESIDENTIAL
APPLICATIONS
COLLECTIVE RESIDENTIAL
APPLICATIONS**



**WELLNESS CENTRES
GYMS**



**HOSPITALS
CLINICS
NURSING HOMES**



SERVICE SECTOR



SHOPPING CENTRES



Bureaux R&D - Cesson Sevigne - FRANCE



Kingston College - London - UK



Veterinary Clinic - Padua - ITALY



Frere Hospital, East London - SOUTH AFRICA



University student centre - Trento - ITALY



Hospital - Skopje - MACEDONIA



Business Park- Frankfurt - GERMANY



Aeronautical company - Bari - ITALY



Edificio Centro Costanera - CHILE



ARPAE Headquarters- Ferrara - ITALY

PROJECT PORTFOLIO



RhossOfficial



RhossOfficialChannel



Rhoss

RHOSS S.P.A.

Via Oltre Ferrovia, 32 - 33033 Codroipo (UD) - Italy
tel. +39 0432 911611 - rhoss@rhoss.it
www.rhoss.it - www.rhoss.com

Italy Sales Departments:

Codroipo (UD)
33033 Via Oltre Ferrovia, 32
tel. +39 0432 911611

Nova Milanese (MB)

20834 Via Venezia, 2 - p. 2
tel. +39 039 6898394

RHOSS France

Bat. Cap Ouest - 19 Chemin de la Plaine - 69390 Vourles - France
tel. +33 (0)4 81 65 14 06 - exportsales@rhoss.it
www.rhoss.com

RHOSS Deutschland GmbH

Hölzlestraße 23, D-72336 Balingen, OT Engstlatt - Germany
tel. +49 (0)7433 260270 - info@rhoss.de
www.rhoss.com

RHOSS Ibérica Climatización, S.L.

Frederic Mompou, 3 Pta. 6ª Dpcho. B 1 - 08960 Sant Just Desvern – Barcelona
tel. +34 691 498 827 - rhossiberica@rhossiberica.com
www.rhoss.com