

eracs-q / eracs-r

Multi-use "Energy Raiser" units and "Energy Saver"
heat pumps with total heat recovery - air cooled -
From 195 kW to 660 kW



A single unit for heating, cooling
and domestic hot water production

11 sizes in
4 versions

Heat pump operation
down to -10°C



eracs-q / eracs-r

A single unit for heating, cooling and domestic hot water production

Increasingly more complex applications such as shopping centres, office blocks, hotels and sport facilities typically need to heat and cool simultaneously.

Climaveneta offers an advanced solution to these needs with integrated and rational multi-use units able to perform all heating and cooling functions eliminating redundancies and inefficiencies typical of traditional systems based on chillers and boilers.

ERACS-Q

Multi-use unit for 4-pipe systems



The ERACS-Q series multi-use units are able to simultaneously meet hot and cold water production requests and are thus a valid alternative to traditional systems based on chillers and boilers for applications such as office blocks, pools and shopping centres.

The use of the exclusive w3000 “large” controller allows to provide chilled- or hot water supplies, or their combination, automatically adjusted according to load conditions.

The simultaneous availability of the two water supplies does not require any summer/winter changeover.



ERACS-R

Heat pumps with total recovery for 2-pipe systems



The ERACS-R series “Energy Saver” units are dedicated to two pipe systems and allow to provide water supplies for both sanitary purpose and space heating or cooling.

The unit requires summer/winter changeover: in summer mode, the unit can provide chilled water or hot sanitary water or their combination. In winter mode, the unit can provide water supply for either space heating or sanitary use; in such mode, the two supplies are subject to prioritization and can not be simultaneous.



Advantages

The innovative philosophy of ERACS units, combines the will to meet at best the real needs of modern applications, with the innovative construction approach of this series. ERACS-Q and ERACS-R are, in fact, the result of Climaveneta's know-how and extensive experience in creating units able to always ensure the maximum comfort quality, high energy efficiency and total reliability.



Heat pumps down -10°C

All ERACS units can work in heat pump mode down to -5°C outdoor air temperature (in such case with water supply at 45°C maximum). They are available also in the LT version, for lower outdoor temperature, featuring specific design of the coils and of the refrigerant circuitry, plus dedicated settings for the controller. This allows to stretch above mentioned limit to -10°C outdoor temperature.



Pumps with smart defrost

All ERACS units are available in the heat pump version. Through the innovative control of traditional heat pump units, Climaveneta has developed SMART DEFROST: A defrost control logic that reduces both unit downtime and energy used for defrosting to a minimum.



55°C Water temperature

All ERACS units can be successfully integrated into different space heating solutions, plus (ERACS-R only) offering a suitable source of sanitary water. Hot water supply can reach 55°C, with nominal conditions on the evaporator side, while still ensuring up to 45°C supply at the lowest outdoor temperature.



11 sizes for 4 versions from 195 kW to 660 kW

The wide range of sizes faithfully responds to all system needs.

All sizes are available in 4 versions:

B: Standard unit

LT: Low outdoor air temperature unit

LN: Low noise unit

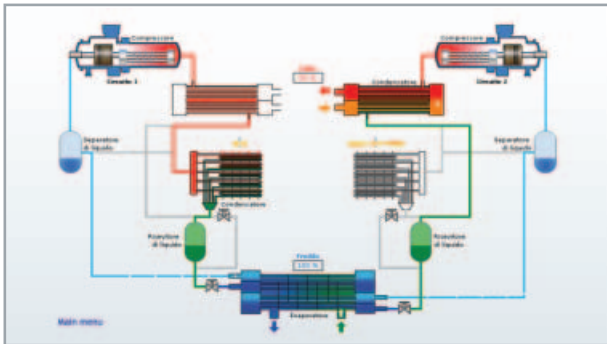
SL: Super low noise unit

eracs-q / eracs-r



Operating logic

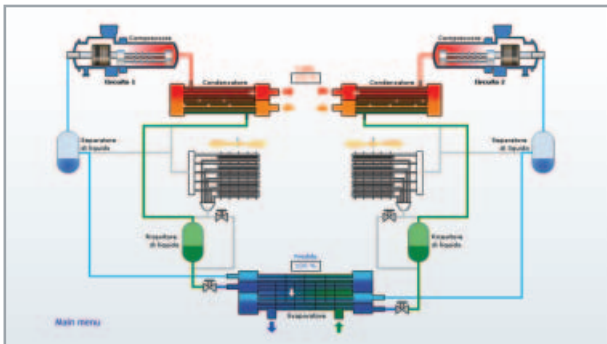
One of the strengths of ERACS units is the high number of situations that enable to flexibly control overall distributed power and its distribution among the various functions according to the actual load requirements. Two out of the numerous operating modes for each unit are described below.



ERACS-Q:

100% cooling and 50% heating requirement

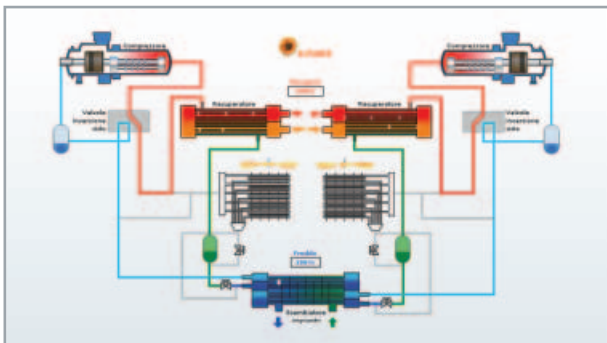
The first circuit works like a chiller with air condensation while the second works as a liquid heat pump. All cooling energy is used (100%). The second circuit's heat energy (50%) is used while the energy in the first is dissipated in the air condenser. Both compressors are operating.



ERACS-Q:

100% cooling and 100% heating requirement

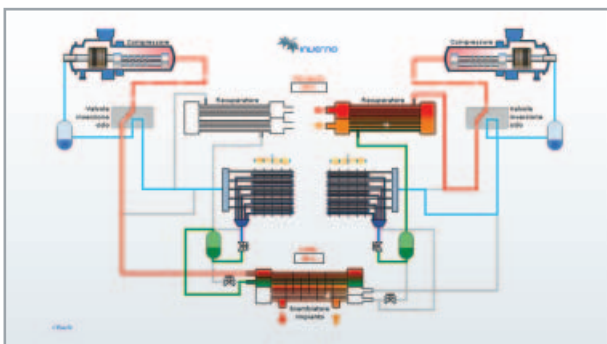
On this case, the two circuits work as liquid heat pump. All cooling energy (100%) is provided to the evaporator while all heat energy (100%) is provided to water condensers. Both compressors are operating. Fans are off.



ERACS-R:

100% cooling and 100% heating requirement

On this case, both circuits work as liquid heat pump. All cooling energy (100%) is provided to the evaporator while all heat energy (100%) is provided through heat recovery. Both compressors are operating. Fans are off.



ERACS-R:

50% heating and 50% recovery requirement

Both circuits function as air-source heat pumps. The heating power produced in the first circuit is made available to the condenser, while the cooling power produced by the second circuit is made available to the recuperator. All the cooling power is dispersed into the air. Both compressors are in operation.



Advanced control

The advanced ERACS unit operating modes are enabled first of all by their electronic control units. In fact, each unit has a "W3000 large" controller and can also use the GR3000 device, that centrally controls several units. Lastly, like all Climaveneta machines, ERACS can also be supervised using the FWS 3000 supervision system.



W3000 large: Complete regulation

L'automate W3000 dispose d'un afficheur graphique LCD avec un menu multilingue qui permet de lire toutes les données importantes et les différents états du groupe et d'agir sur les principaux paramètres de fonctionnement. Des algorithmes de régulation spécifiques permettent la gestion de l'installation avec un maximum d'efficacité et d'économies d'énergie, tout particulièrement dans le cas des groupes à deux circuits. La régulation étagée des compresseurs à vis se base sur la température de retour d'eau du circuit principal, par l'intermédiaire d'algorithmes de type proportionnel ou proportionnel + intégral. La demande simultanée d'eau chaude et froide est satisfaite grâce à la prise en charge spécifique des deux circuits frigorifiques.



GR 3000: Centralized control

The device centrally controls a series of units, always ensuring:

- excellent coordination of operating time and available heating/cooling capacity,
- higher reliability thanks to better of resources
- achievement the best energy efficiency



FWS 3000 - Climaveneta Field Web Server

Units can be connected via serial port to the innovative Climaveneta FWS (Field Web Server) supervision system as well as to main BMS systems available on the market.

This permits real-time unit monitoring, operating value settings and alarm control.



Remote control and data log

The unit controller can communicate with the Climaveneta Service program: Preventive and corrective measures can be taken to offer a more efficient and higher quality service, also thanks to possibility of either local or remote control.

Furthermore, the "black box" records operating variables detected before each alarm event while the alarm log saves up to 200 alarm events.



Maximum versatility

The ERACS series comes in a wide range of models and versions to most fully meet every system and application need, offering the highest reliability and design flexibility.



Models

ERACS-Q

Standard multi-use unit for 4-pipe systems

ERACS-R

Heat pump for 2-pipe systems with total recovery for domestic hot water production.



ERACS-Q versions

ERACS-Q B

Standard unit version

ERACS-Q LT

Low outdoor air temperature version

ERACS-Q LN

Low noise unit

ERACS-Q SL

Super low noise unit



ERACS-R versions

ERACS-R B

Standard unit version

ERACS-R LT

Low outdoor air temperature version

ERACS-R LN

Low noise unit

ERACS-R SL

Super low noise unit



Low noise versions

Two noise reduction versions are available for all sizes: Low noise and super low noise. Low noise levels are achieved by reducing fan speed.

Correct unit operations are guaranteed by optimising circuitry and generous coils sizes. Compressors and cooling circuit components are assembled with insulating enclosures.



Technical data

ERACS-Q - ERACS-R			1062	1162	1362	1562	1762	1962	2022	2222	2422	2622	2722
Cooling													
Cooling capacity	(1)	kW	195	238	276	307	359	385	454	492	522	585	660
Total absorbed power	(1)	kW	74	96	109	114	139	155	170	181	187	215	223
EER	(1)		2,6	2,5	2,5	2,7	2,6	2,5	2,7	2,7	2,8	2,7	3,0
Heating													
Heating capacity	(2)	kW	212	259	301	332	389	418	491	531	568	613	695
Total absorbed power	(2)	kW	70	90	102	108	131	141	163	174	185	195	213
COP	(2)		3,0	3,0	3,0	3,1	3,0	3,0	3,0	3,0	3,1	3,1	3,3
Cooling with recovery													
Cooling capacity	(1)	kW	199	244	284	312	368	401	461	497	525	601	669
Total absorbed power	(1)	kW	62	78	89	95	115	125	141	149	158	176	186
Heat recovery capacity	(1)	kW	258	318	368	402	475	518	594	638	673	766	843
Sound power level	(3)	dB(A)	96	97	97	98	98	98	99	100	101	101	101
Sound pressure level	(4)	dB(A)	77	78	78	78	78	78	79	80	80	80	80
Dimensions													
A	(5)	mm	4610	4610	4610	5610	5610	5610	6300	7200	7200	7200	8800
B	(5)	mm	2220	2220	2220	2220	2220	2220	2260	2260	2260	2260	2260
H		mm	2150	2150	2430	2430	2430	2430	2350	2350	2350	2350	2350
Weight		kg	3390	3900	4610	4910	5120	5700	6990	7470	7620	8030	8630

Data refers to:

- 1) Evaporator water (in/out) 12/7 °C | Condenser air (in) 35°C
- 2) Condenser water (in/out) 40/45 °C | Evaporator air 7°C / 87% R.H.
- 3) Sound power measured according to ISO 3744 and Eurovent 8/1 regulations
- 4) Sound pressure in free field on a reflecting plane.
Average value on the condenser coil side, 1 meter away from the external surface and 1 meter above the unit support base.
- 5) Clearance around the unit
Electrical panel side 1500 mm
Opposite side from electrical panel 1500 mm
Condensation coil side 2,000 mm

Data included in this document is subject to change without prior notice and refer to units designed for the European market.

