

focs water

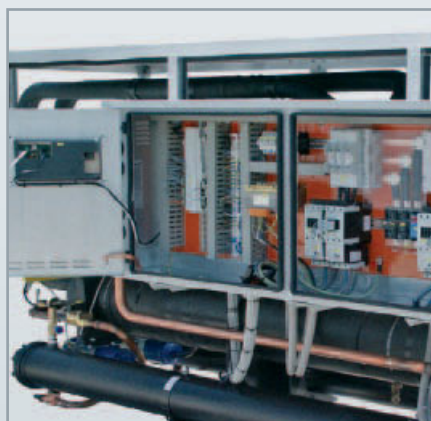
Liquid chillers from 87 kW to 2432 kW
heat pumps from 100 kW to 2749 kW
water-cooled
with R-134a



High energy efficiency



Total reliability



Absolute versatility



foCS water

A complete series of water/water liquid chillers and heat pumps with screw compressors and asymmetric dry-expansion evaporator featuring high energy efficiency rates.



FOCS WATER 0401-1902

Cooling capacity
from 87 kW to 447 kW

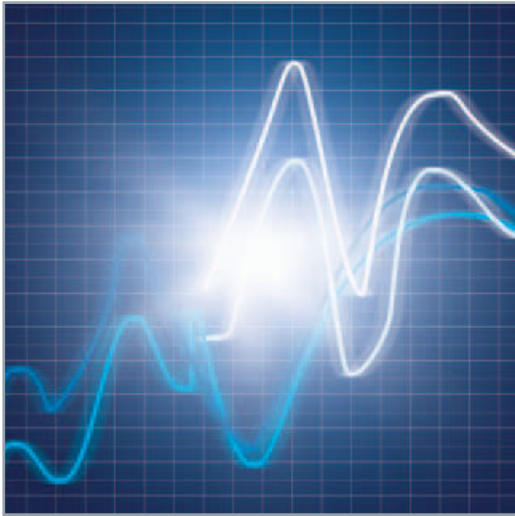
Heating capacity
from 100 kW to 509 kW

FOCS WATER 1001-9604

Cooling capacity
from 233 kW to 2432 kW

Heating capacity
from 274 kW to 2749 kW





High energy efficiency

The units in the FOCS WATER series have been developed to provide outstanding energy efficiency in all operating conditions.

When working at part loads, representing the operating requirements of the system for over 90% of the time, the FOCS WATER units boast an extremely elevated IPLV.

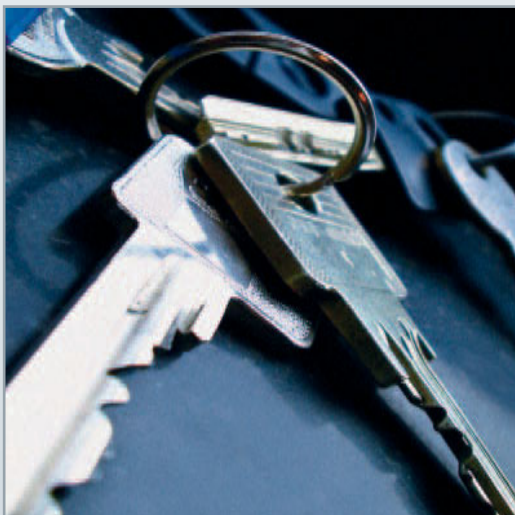
These outstanding results come from the company's awareness of the critical nature of power consumption and the constant research and development activities focused on energy savings.



Total reliability

All the components of FOCS WATER units are subject to strict quality controls and are fitted with all the devices required to ensure both efficiency and maximum reliability.

Just like all Climaveneta units, the FOCS WATER units are certified ISO 9001 and comply with directive 97/23/EC.

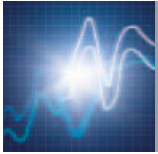


Absolute versatility

The FOCS WATER units are available in over 40 sizes covering from 87 kW to 2432 kW range.

This versatility is supported by several accessories for adapting the units to all requirements in order to be used in the most complex and special installations.

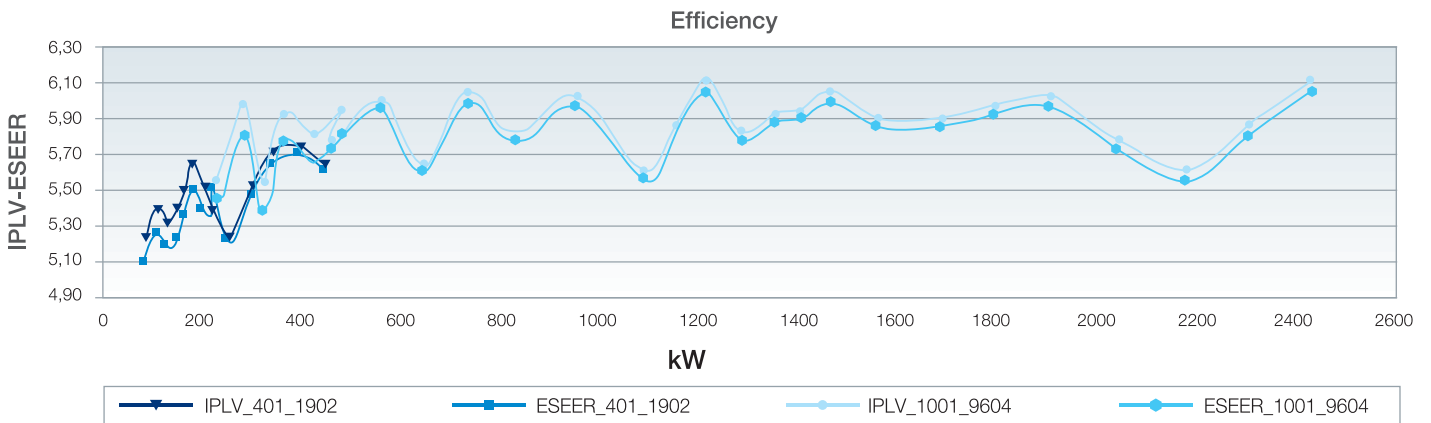
These advantages are completed by a range of partial and total heat recovery units, as well as heat pumps with water-side inversion cycle.



High energy efficiency

Record-breaking performance with record-breaking savings

The high efficiency, outcome of an accurate design of refrigeration circuit, generates major reductions in system operating costs, significantly improving profitability and lowering running costs.



ESEER			IPLV		
Load	Water temp.	Weight	Load	Water temp.	Weight
100%	30°C	3 %	100%	29,4°C	1 %
75%	26°C	33 %	75%	23,9°C	42 %
50%	22°C	41 %	50%	18,3°C	45 %
25%	18°C	23 %	25%	18,3°C	12 %

Weight= quantity of energy produced in the respective load conditions

The graph shows the IPLV and ESEER indices of the entire FOCS WATER range.

The IPLV (Integrated Part Load Value) index is defined by ARI (America Refrigeration Institute) standards.

Evaporator outlet water: 6,7°C constant
Temperature difference at full load: 5°C

The ESEER (European Seasonal Energy Efficiency Ratio) index as proposed by EECAC (Energy Efficiency and Certification of Central Air Conditioners).

Evaporator outlet water: 6,7°C
Temperature difference at full load: 5°C

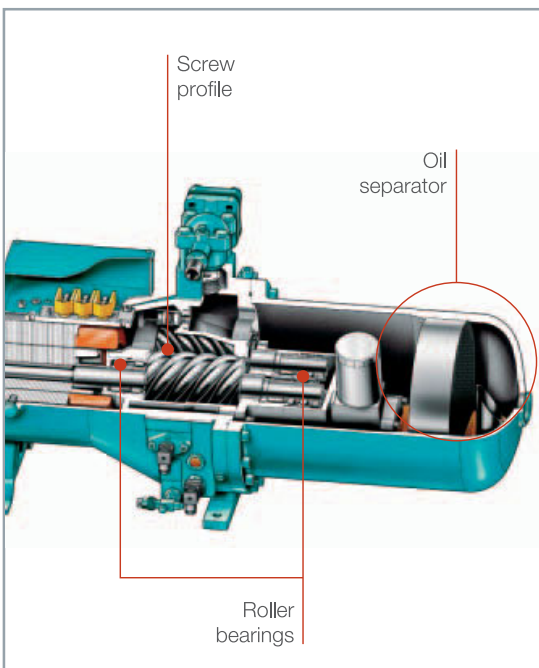
New generation stepless adjustment screw compressor

An improved generation of screw compressors featuring an extremely compact structure and optimised for R134a has allowed the volumetric displacement to be substantially increased without modifying the shape of the compressor. Elevated cooling capacities can thus be achieved with improved volumetric efficiency.

Screw profile: dual rotor design. Compared with a traditional screw compressor, the profile has been modified so that the increased volumetric flow rate requires just a 10% increase in size, a fundamental aspect of rotors. It was therefore possible to modify the body without affecting the external shape of the compressor.

Roller bearings: thanks to the favourable torque load and the reduced pressure difference, the bearings work in easier conditions and therefore last longer.

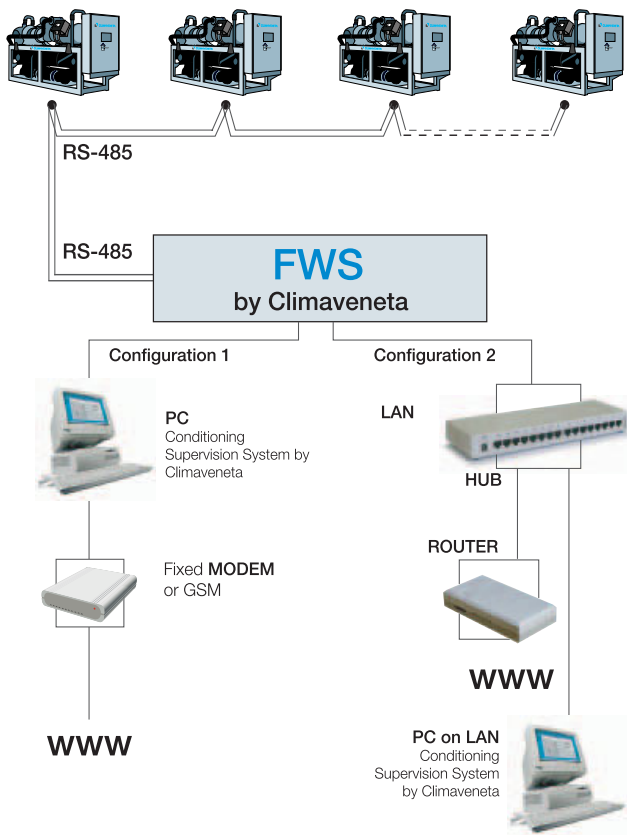
Oil separator: the compressors contain an integrated three-stage oil separator which can guarantee extremely high separation levels, in spite of the increase in volumetric flow. This is achieved thanks to the fact that the limited density of the vapour and the outlet temperature of the R134a allow outstanding oil separation.





Total reliability

Just like all other Climaveneta products, the FOCS WATER series are characterized for their very high reliability. TÜV certification, together with systematic quality controls performed on the units and on each of their components guarantee the excellent performance of this series.



Enhanced controls

Special control algorithms optimise energy saving and guarantee maximum system reliability. The dedicated software designed by Climaveneta allows compressors start/stop management with hourly rotation + FIFO, management of available resources, variation and control of operating parameters, monitoring of critical temperatures and phase sequences. The controller offers modulating control of unit capacity from 100% to a minimum which, depending on its size, can be as little as 12.5%.

An additional device which allows FOCS WATER units to be connected together for a total management of a system is also available.

Compatibility

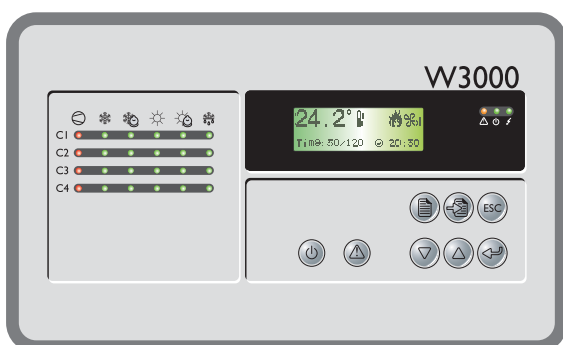
Compatible with the supervision systems of Climaveneta, De'Longhi and many other BMS systems available in the market: METASYS®, MODBUS®, LONWORKS®, SIEMENS®, TREND®.

FWS supervision

The controller is also compatible with the innovative Climaveneta FWS (Field Web Server) supervision system.

Service

The new "black box" logs data relative to 200 variables, acquired every 30 seconds during the 10 minutes preceding an event, for 400 separate events. The software is compatible with the Climaveneta Service programme: through a remote Internet link it is possible to monitor the unit, implement preventive and corrective action and consequently offer a more effective and higher quality of service.



User interface

The unit control works with all Climaveneta monitoring system and with most used BMS systems in the market. It is positioned in an easily accessible area on the outside of the unit and protected by a transparent cover. It integrates a graphics display with a multilanguage menu for reading and setting parameters, a synoptic panel which, by now a traditional feature of Climaveneta, offers an immediate view of compressor status.



Absolute versatility

The capability of a unit to adapt to all kind of systems is fundamental for optimising performances and allowing the system to constantly provide high levels of comfort. The FOCS WATER units have been designed to guarantee excellent versatility of use thanks to a wide range of sizes, the availability of many special versions and models and a vast series of accessories.



Sizes

The FOCS WATER units are available in over 40 sizes, from 87 kW to 2432 kW, for a complete coverage of all market requirements.

Versions

Model with partial heat recovery (D)

This version can recover 20% of condensation heat to produce domestic hot water

Model with total heat recovery (R)

This version can recover all condensation heat to produce domestic hot water

Model with heat pump (H)

FOCS- WATER H is the heat pump version with water-side inversion cycle



55 °C of hot water

The three listed versions provide hot water at 55°C both for heating and for the production of domestic hot water.

Total soundproofing

Thanks to their integral casing (optional), these FOCS WATER units reduce noise levels by 8 dB(A) compared with the standard version

Electronic valve

The electronic thermostatic valve (optional) optimises adjustment and fully exploits the continual power modulation of the compressor achieved by a slide valve.

General technical data

FOCS WATER sizes 0401-1902

FOCS WATER	0401	0501	0551	0651	0751	0802	0851	0951	1002	1102	1302	1502	1702	1902	
Cooling capacity (1) [kW]	87	107	130	147	165	173	198	221	217	251	298	340	393	447	
Total power input (1) [kW]	20	24	28	33	37	38	43	50	49	56	66	74	85	100	
EER total	4,35	4,46	4,64	4,45	4,46	4,56	4,60	4,42	4,43	4,48	4,52	4,59	4,62	4,47	
FOCS WATER D	0401	0501	0551	0651	0751	0802	0851	0951	1002	1102	1302	1502	1702	1902	
Cooling capacity (1) [kW]	90	111	135	153	171	184	205	229	225	260	309	353	408	464	
Recovery capacity (2) [kW]	17	22	25	29	33	35	38	44	44	50	59	66	76	89	
Total power input (1) [kW]	19	24	27	32	36	38	41	48	47	54	63	72	82	96	
EER total	4,74	4,63	5,00	4,78	4,75	4,84	5,00	4,77	4,79	4,81	4,90	4,90	4,98	4,83	
FOCS WATER R	0401	0501	0551	0651	0751	0802	0851	0951	1002	1102	1302	1502	1702	1902	
Cooling capacity (3) [kW]	77	95	116	131	147	158	175	197	194	223	265	304	348	397	
Recovery capacity (3) [kW]	100	123	148	168	189	202	223	252	249	287	339	387	445	509	
Total power input (3) [kW]	23	29	34	39	44	47	51	59	59	68	79	89	102	118	
EER total	3,35	3,28	3,41	3,36	3,34	3,36	3,43	3,34	3,29	3,28	3,35	3,42	3,41	3,36	
FOCS WATER H	0401	0501	0551	0651	0751	0802	0851	0951	1002	1102	1302	1502	1702	1902	
Heating capacity (4) [kW]	100	123	148	168	189	202	223	252	249	287	339	387	445	509	
Total power input (4) [kW]	23	29	34	39	44	47	51	59	59	68	79	89	102	118	
COP total	4,35	4,24	4,35	4,31	4,30	4,30	4,37	4,27	4,22	4,22	4,29	4,35	4,36	4,31	
Sound power level [dB(A)]	91	92	94	94	94	94	94	94	95	97	97	97	97	97	
Sound pressure level (5) [dB(A)]	74	75	77	77	77	77	77	77	78	80	80	80	80	80	
Dimensions	A [mm]	2300	2500	2500	2500	2500	3200	3200	3200	3200	3200	3500	3500	3500	3500
	B [mm]	1000	1000	1000	1000	1000	1200	1000	1000	1200	1200	1200	1200	1200	1200
	H [mm]	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1800	1800	1800	1800
Weight (6) [kg]	800	840	1160	1180	1190	1470	1270	1350	1490	1930	2220	2260	2320	2720	

FOCS WATER sizes 1001-9604

FOCS WATER	1001	1201	1301	1351	1601	1801	2002	2402	2602	2702	3202	3602	4202	4502	4802	5003	5203	5403	5414	5904	6404	6804	7204	7804	8404	9004	9604
Cooling capacity (1) [kW]	233	283	321	362	424	479	480	559	643	733	826	953	1089	1153	1218	1283	1353	1403	1466	1560	1687	1797	1908	2043	2176	2306	2432
Total power input (1) [kW]	51	60	68	74	89	102	99	119	137	148	176	204	233	242	251	278	291	306	297	325	354	381	408	436	465	484	503
EER total	4,57	4,72	4,72	4,89	4,76	4,70	4,65	4,70	4,69	4,95	4,69	4,67	4,67	4,76	4,64	4,62	4,65	4,58	4,94	4,80	4,77	4,72	4,67	4,69	4,68	4,76	4,83
FOCS WATER D	1001	1201	1301	1351	1601	1801	2002	2402	2602	2702	3202	3602	4202	4502	4802	5003	5203	5403	5414	5904	6404	6804	7204	7804	8404	9004	9604
Cooling capacity (1) [kW]	242	294	333	376	440	497	478	580	667	760	857	989	1130	1196	1262	1331	1403	1456	1521	1619	1750	1865	1977	2119	2259	2393	2523
Recovery capacity (2) [kW]	45	53	61	66	79	91	88	106	122	132	157	182	208	216	224	248	260	273	265	290	316	340	364	389	415	432	449
Total power input (1) [kW]	49	58	66	71	86	99	95	115	132	143	170	197	224	233	243	268	281	295	286	313	342	368	394	421	449	467	485
EER total	4,94	5,07	5,05	5,30	5,12	5,02	5,03	5,04	5,05	5,31	5,04	5,02	5,04	5,13	5,19	4,97	4,99	4,94	5,32	5,17	5,12	5,07	5,02	5,03	5,03	5,12	5,20
FOCS WATER R	1001	1201	1301	1351	1601	1801	2002	2402	2602	2702	3202	3602	4202	4502	4802	5003	5203	5403	5414	5904	6404	6804	7204	7804	8404	9004	9604
Cooling capacity (3) [kW]	215	254	286	324	377	430	409	502	573	655	736	855	971	1030	1089	1147	1212	1260									
Recovery capacity (3) [kW]	274	323	362	408	477	547	519	639	726	824	935	1090	1231	1303	1374	1463	1545	1613	1647	1759	1899	2041	2181	2322	2462	2606	2749
Total power input (3) [kW]	62	73	81	89	106	125	117	146	162	179	211	250	277	290	304	336	355	375	358	391	424	462	501	528	553	581	608
EER total	3,47	3,48	3,53	3,64	3,56	3,44	3,50	3,44	3,54	3,66	3,49	3,42	3,51	3,55	3,58	3,41	3,41	3,36									
FOCS WATER H	1001	1201	1301	1351	1601	1801	2002	2402	2602	2702	3202	3602	4202	4502	4802	5003	5203	5403	5414	5904	6404	6804	7204	7804	8404	9004	9604
Heating capacity (4) [kW]	274	323	362	408	477	547	519	639	726	824	935	1090	1231	1303	1374	1463	1545	1613	1647	1759	1899	2041	2181	2322	2462	2606	2749
Total power input (4) [kW]	62	73	81	89	106	125	117	146	162	179	211	250	277	290	304	336	355	375	358	391	424	462	501	528	553	581	608
COP total	4,42	4,42	4,47	4,56	4,50	4,38	4,44	4,38	4,48	4,60	4,43	4,36	4,44	4,49	4,52	4,35	4,35	4,30	4,60	4,50	4,48	4,42	4,35	4,41	4,45	4,49	4,52
Sound power level [dB(A)]	94	97	97	97	97	97	97	99	99	99	99	99	99	99	99	101	101	101	102	102	102	102	102	102	102	102	102
Sound pressure level (5) [dB(A)]	77	80	80	80	80	80	80	81	81	81	81	81	81	81	81	82	82	82	83	83	83	83	83	83	83	83	83
Dimensions	A [mm]	2650	3530	3530	3530	3530	3720	3720	4500	4500	4500	4500	4500	4500	4500	4420	4420	4420	4500	4500	4500	4500	4500	4500	4500	4500	4500
	B [mm]	905	905	905	905	905	905	1150	1150	1150	1150	1150	1150	1150	1150	1700	1700	1700	2250	2250	2250	2250	2250	2250	2250	2250	2250
	H [mm]	1700	1750	1750	1750	1930	1930	1950	1950	1950	1950	1950	2050	2140	2140	2100	2100	2100	2050	2300	2300	2300	2300	2300	2300	2300	2300
Weight [kg]	1590	2050	2080	2100	3050	3070	3140	3820	4100	4130	5240	5920	6340	6390	6430	7890	7930	7960	8450	9550	11590	11640	11690	12110	12530	12610	12690

NOTES

- (1) Evaporator water (in/out) = 12°C / 7°C - Condenser water (in/out) = 30°C / 35°C
- (2) Desuperheater water (in/out) = 40°C / 45°C
- (3) Evaporator water (in/out) = 12°C / 7°C - Recuperator water = 40°C / 45°C
- (4) Condenser water (in/out) = 40°C / 45°C - Evaporator water = 12°C / 7°C
- (5) Sound pressure level at 1 m
- (6) Operating weight of FOCS WATER version: FOCS WATER H

VERSIONS

- Model with partial heat recovery (D)
- Model with total heat recovery (R)
- Model with heat pump and water-side inversion cycle (H)

ACCESSORIES

- Soundproof boxes
- Rubber vibration dampers
- Compressor suction shut-off valve
- Oversized evaporator insulation
- Condensers in Cu/Ni
- Flanged evaporator connectors
- Evaporator water flow switch (supplied separately)
- Pressure switch valve for well water (14/30 °C)
- Compressor circuit breakers
- Voltage free contact for compressors function signalling
- Remote keyboard (supplied separately)
- Pump relay
- Numbered cables
- Electronic expansion valve

