TAHVIEHSAM
Cooling System Solutions

www.tahviehsam.com

EUROKLIMAT®
SINCE 1963

Give life to building, bring us back to nature

EKSC Series ST Units
Screw-type Water-cooled Chilled Water Unit

R134a

EKSC Series ST Screw-type Water-cooled Chillers

Model: EKSC080~EKSC400
Cooling capacity: 279.2kW~1408.8kW
Heating capacity: 339.7kW~1670.5kW
Total heat recovery capacity: 307.5kW~1524.3kW
Refrigerant: R134a

www.euroklimat.com

EUROKLIMAT Air Conditioner, Environmental & Energy-saving Technology from Europe.

EUROKLIMAT (EK) was established in 1963 in Italy. For the past half a century, it has become famous as an energy-saving air-conditioning manufacturer in Italy and globally. Continuous innovation, new product development and top manufacturing quality are the driving force behind this growth.

EUROKLIMAT (EK) pursues the ideals of protecting the environment, providing physical comfort and adopting energy-saving into the whole process of product R&D, manufacturing and service. Our products covering residential, commercial and close control air-conditioner are manufactured according to the global generally accepted standards.

2007 Berlin-Allianz Assurance

2006-2007 Helsinki- Nokia R&D Centers Worldwide Headquarters

Wahaha Group

Huaian Lianshui Airport

Jiujiang Viewquest Electronics Inc. (Canno Taiwan)

Shanghai Shenzhou New Energy Development Co., Ltd.

Avic Shenyang Aircraft Corporation

China Afforestation Zhengzhou Virescence Expo

Liuzhou Diwang International Commerce Center

China Afforestation Zhengzhou Virescence Expo

Daguang Freeway

361° (China) Co., Ltd.

Suzhou Yixiang City

EKSC Series ST Units

Screw-type Water-cooled Chilled Water Unit

EKSC series screw-type water-cooled chillers feature a leading-edge screw unit design, inherit EK air conditioning innovations over 40 years and integrate 13 patents. Equipped with a double screw compressor and a high-efficiency heat exchanger developed by EK, the units work at the optimal efficiency with the help of a state-of-the-art control system. Thanks to an innovative condensate heat recovery technology, the units can be used for multiple purposes to save energy, and best apply to places that have many buildings and require central air conditioning and hot water systems, such as high-rank hotels, office buildings, schools, hospitals, and factories.

Nomenclature

EKSC	090	A	R	3	ST	SR - F	AA
1	2	3	4	5	6	7 8	9

1.	EKSC	EK Screw-type Water-cooled Chillers
2.	090	Cooling capacity code (USRT)
3.	A	Design S/N
4.	R	Functional type R: cooling & heating; omitted in cooling-only units
5.	3	Refrigerant code: 3: R134a; R22 by default.
6.	ST	Product design functions: ST: standard
7.	SR	Special features; omitted in standard models SR: Standard total heat recovery
8.	F	Power supply features: F: 380 V/3~/50 Hz
9.	AA	Detailed description on product specification changes

>>> Features

R134a Double Screw Compressor - Energy Saving with Low Nois

- Compressor
  By leveraging advanced double screw compressor designs of EK, EK double screw compressors take the lead in "EU safety regulation - CEmark", "EU pressure container - PED", "USA national certification for laboratories - UL", "CRAA" and other domestic and international certifications. This is a strong proof that these compressors are efficient, reliable, safe, and durable.

- Stepless modulation
  The unit features a slide valve workload increase/decrease mechanism and highly-reliable solenoids of international name brands for stepless capacity modulation within a range of 12.5% ~ 100%. The unit capacity can be precisely modulated to meet actual needs, bringing about higher efficiency, more comfort and lower power consumption.

- Double-layered shell
  With a double-layered shell made from gray cast iron, precisely tooled using M/C tools and measured using precision 3-D instruments, the precision and clearance of the compressor is assured to meet high-efficiency operation requirements. The double-layered shell not only meets pressure resistance requirements, but also helps to reduce noise. With a robust and rigid design, the compressor is bound to operate for a long time without breaking down.

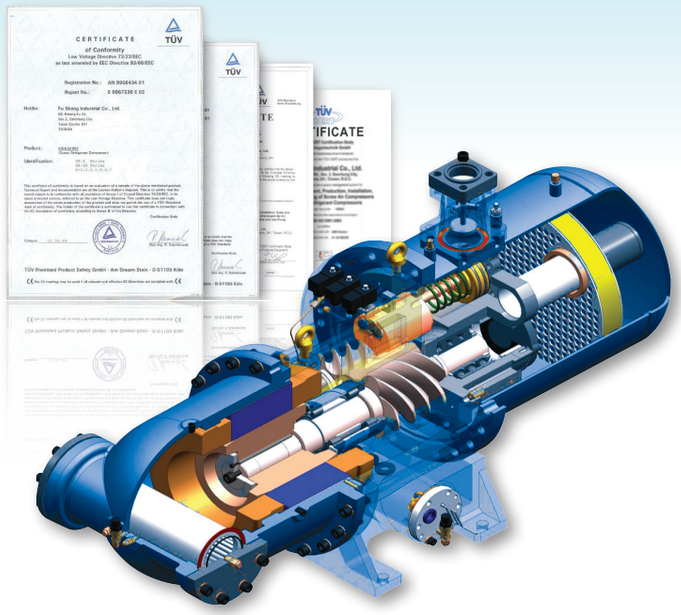
- Simple oil return without oil pump
  The oil circuit features a simple and unique design (no oil pump) to eliminate the risk of freeze-crack on heat exchanging pipes.

- Inlet air filter
  The units feature a double-layered inlet air filter with high rigidness and low pressure loss for all-round protection. With a unique breakdown design, the filter can be dismounted for cleaning without disassembling the inlet air circuit. This makes unit maintenance much more convenient.

- Oil filter
  At the bottom of the unit shell, there is a chilling oil trough with an oil filter made up of high-density and washable metal screens. The units also feature digital pressure drop protection to facilitate daily maintenance and operation inspection.

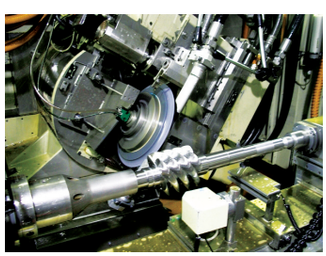
- Bearing
  The male/female rotors are securely supported by large axial and radial bearings of high quality for stability and durability. With an optimum oil circuit and mechanical design, all bearings are fully lubricated by lubricant filled through pressure drop. This greatly improves the service life of bearings.

- Oil separator
  With 3 internal oil filtering sections and high-density oil filtering screens, the innovative oil separator is designed for optimum air-oil separation performance - 99.7%.

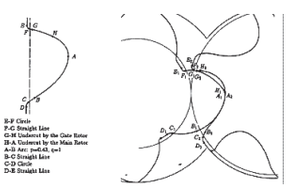


- Motor
  The reliability of the compressor is assured a by a 2-electrode 3-phase high-efficiency induction motor of international name brand with an insulation grade of F, a built-in PTC thermistor and an INT69 protection module to accurately monitor winding temperature. Both low-voltage startup and direct startup are applicable. With a unique internal heat sink design, the motor can operate for a long time within the full range of rated compressor workload.

- Patented rotor design
  Featuring a patented design of unsymmetrical 5:6 teeth and shaped using a high-precision rotor grinder, the rotor is precise and stable in terms of quality, and keeps an optimum clearance for highest efficiency during continuous operation.



High-speed rotor grinder for EK double screw compressor



Patented line type of EK double screw compressor

Line type measurement for EK double screw compressor

High heat exchange efficiency with European patented heat exchanger

- The units are EU and ASME certified and features patented refrigerant allocation design. With efficient internal-threaded copper tubes as the heat exchanging medium, the heat exchanger greatly enhances heat transfer between the water and refrigerant, thus lowering power consumption and operation cost.

- An efficient baffle plate is used to prevent refrigerant chilling medium bypass. A computerized flow control and tens of years of quality heat exchanger design experience ensure optimum heat exchange efficiency between the refrigerant and chilling medium.
- The temperature drop between the refrigerant evaporation point and chilling medium outlet is constantly around 1.5°C. The heat exchange efficiency is the same or higher than flooded heat exchangers.
- The refrigerant is only 1/3 of that in common heat exchangers, which eliminates the risk of leakage and makes the unit more environment-friendly and reliable.
- To facilitate on-site installation, standard pipe connection for heat exchangers is groove-yoke connection (with stub tube). Each evaporator and condenser are equipped with separate air and water discharge devices.

Precise Control, Reliable Operation

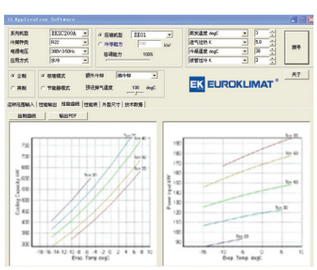
- The temperature fluctuation of outlet chilled water can be as precise ±0.2°C. In addition, various sensors in the system can promptly transmit accurate signals and data to the controller for timely system protection and more reliable operation.
- Three levels of password protection can prevent outsiders from messing up the system by mistake, thus ensuring safe and reliable unit operation.
- Compressors start up one by one, generating a small startup current and impact on the power grid.
- Multiple protection features ensure safe unit operation.

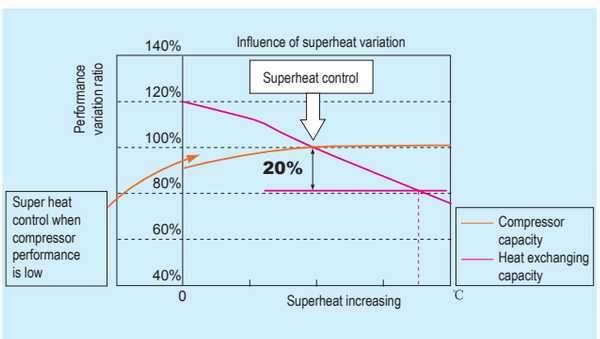
Name brand electronic expansion valve ensuring precise control

Full series of units feature electronic expansion valves for optimum superheating control, bringing about high unit performance.
With precise PID throttle control by the electronic expansion valve, the refrigerant can be well controlled and outlet air from the compressor can be monitored for compressor protection.

Best integration and all-round energy saving

The unit process and layout are optimized in every detail to realize best system integration. The leading-edge model selection system of EK can be used to simulate performance parameters for various working conditions to ensure that the best model is selected.





Note: if the superheat decreases or it is unstable, compressor may work less effectively, or even break down due to liquid pressure as the refrigerant cannot properly evaporate; if the superheat increases, the performance of water-side heat exchanger may be degraded.

>>> Features

Compact Structure, Safe and Convenient

- The unit features a compact structure, integrated startup and control system, extended handle for the general switch, and auto-lock protection after the general switch is closed for safer cabinet door access.
- The whole unit is compact and tidy, featuring a graceful exterior and small volume. This facilitates transportation and reduces the area of equipment room. A little pipelining and wiring are all that needed during installation. Therefore, both installation cost and period are significantly reduced.

R134a Environment-friendly and Energy-saving Refrigeran

The units feature a new-generation design and R134 environment-friendly refrigerant, and work with high efficiency both in partial and full workload. They are energy efficient and do not cause ozone depletion.

Electronic Expansion Valve VS. Thermostatic Expansion Valve VS. Throttle Orifice Plate

Item	Electronic expansion valve	Thermostatic expansion valve	Throttle orifice plate
Precision	High; electronic expansion valve features an actuator of double-electrode double-phase step motor for high precision control.	Low; the actuator is a film which may deform due to manufacture precision and installation, thus degrading valve precision.	Low; controlled by two levels of orifice plates and unchangeable;
Modulation range	Large; applicable to multiple compressors and large workload variations, especially for heat pump conditions, in which case an opening of 10%~100% can be precisely controlled.	Narrow; modulation range is limited by deformation range of the film connect to valve needle and displacement of valve needle.	Narrow; only within a range of 20%
Superheat control	Can be installed at evaporator outlet, or compressor inlet to control superheat of induction air and compressor efficiency.	Mediocre; only controls superheat of evaporator outlet.	Fixed and unchangeable
Preset value for superheat	Flexible; can be customized according product features.	Unchangeable; usually set to 5°C, 6°C or 8°C in factory.	Fixed and unchangeable
Superheat control for reliability	High; superheat value is configured on controller; actual temperature is calculated according to data sent from control points by sensors.	Low; superheat values are set according to standard working conditions; the superheat degree of filling medium may shift away from preset value, as its properties may change due to condensing pressure variations under non-standard working conditions; this may cause system efficiency and performance fluctuations.	Low; fixed and unchangeable
Smartness	High; real-time modulation.	Fixed mode	Fixed mode
Responsiveness	Fast; fully open/close only takes seconds; the pace can also be customized.	Slow; driving by thermal properties of filling medium, thermostatic expansion valve takes minutes to open/close and respond to variations; the superheat (SH) includes static superheat (SS) and opening superheat (OS); static overheat causes the valve to delay its opening up.	Major
Control features	All-round; commanded by controller or other features; e.g. under normal evaporating conditions, if condensing pressure gets too high, the valve may close by a proper degree to reduce refrigerant flow and condenser workload, therefore reducing condensing pressure and maintain effective and reliable unit operation.	Mono-functional; thermostatic expansion valve only opens up when evaporating pressure is lower than the preset value.	Mono-functional and unchangeable

Smart Control

- With a large LCD and direct digital control features, the specially-designed EK central controller greatly improves operation efficiency by providing operation monitor, data recording, easy operation and protection for units. The central controller is a microprocessor system installed, wired and tested in the factory. With a high-resolution LCD and touch screen (optional), you can easily and clearly view a series of technical data with a single click. In addition, the controller provides menus in two languages - Chinese and English.
- The LCD can display multiple operation parameters for chilled water units, sub-systems and the whole system on the same screen at the same time. The operator can also view current operation status of chilled water units from the screen.
- To prevent unauthorized changes to settings, the operator needs a password to access the controller.

320x240 pixel large touch screen

Information Display

The Control Center monitors system operation on a continual basis, and displays the operation status and any error information.

Status information including:

- Compressor ON/OFF
- Valve opening degree
- Temperature points (multiple)
- Pressure points (multiple)
- Unit workload
- Unit operation status
- Pump status

Warning information including:

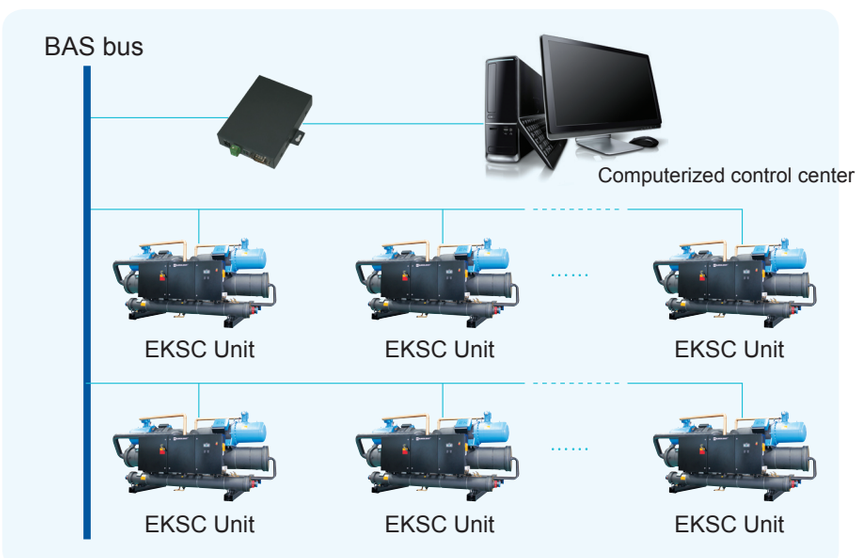
- Freeze alarm
- Errors of various pressure/ temperature sensors
- Valve error
- Various protection warnings (compressor/pump overload, etc)

User Interface

Language:	Chinese/English
Operation:	key pressing
Display:	high-resolution LCD display of 4.4 inch
Interface display:	2 words × 8 rows (English) or 11 characters × 4 rows (Chinese)
Security:	multiple levels of passwords - user/service representative/factory
Control precision:	±0.2°C

Centralized control

Based on Web Browser from Microsoft, the industry-leading central control solution of EK units is applicable to chilling pump systems, cooling pump systems and cooling towers, and can provide access to multiple users at the same time.



>>> Features

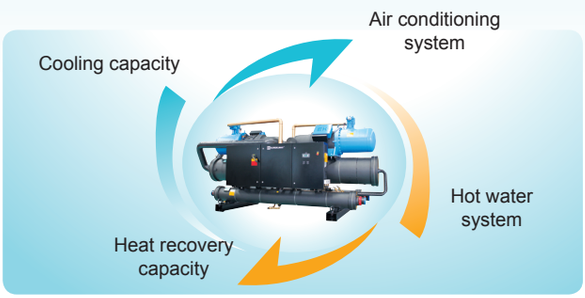
Features of a heat recovery system

Free hot water, energy saving and environment friendly

When working at the cooling mode, the unit can provide hot water up to 55°C free of charge using waste heat. This saves fuels for common hot water equipment, reduces waste heat and CO_2 emission, and is therefore highly energy efficient and environment friendly.

Higher EER with total heat recovery technology

Featuring a leading-edge total heat recovery technology, the condenser has a built-in heat recovery device with a high efficiency. This reduces the heat load in the condenser, improves heat exchange and cooling efficiency of the unit, and minimizes energy consumption.
The heat recovery device is built inside the condenser, and does not increase the dimensions of a unit. It is highly corrosion-proof, and can provide clean and sanitary hot water.

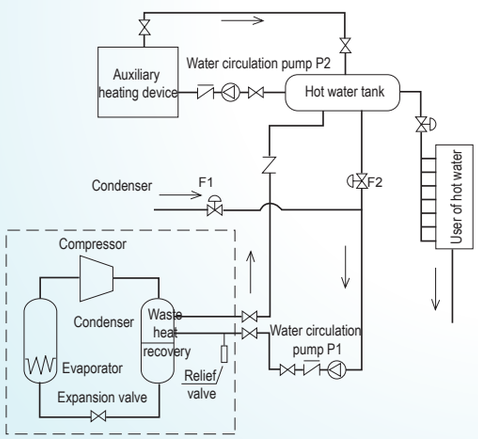


Hot water system illustration

Direct water refill

Water system control description (components outside the dashed lines are to be purchased by the customer)

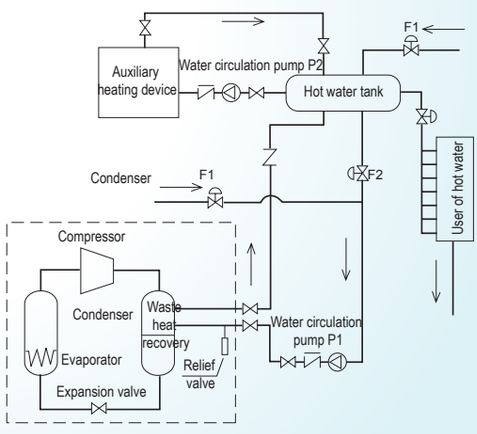
- When the water level in the hot water tank reaches the lower limit, the system refills water to the waste heat recovery device which heats the water, and stores the water in the hot water tank. After the water level in the hot water tank reaches the upper limit, hot water in the hot water tank enters the heat recovery device and is heated repeatedly.
- ON/OFF of circulation pump P1: After the water temperature in the hot water tank reaches a specified value, the circulation pump stops working.
- If a lot of hot water is required and the recycled heat is insufficient to heat the water, the auxiliary heating device is started to provide additional heat.



Pre-heat water refill

Water system control description (components outside the dashed lines are to be purchased by the customer)

- When the water level in the hot water tank reaches the lower limit, the system refills water in the hot water tank. After the water level in the hot water tank reaches the upper limit, hot water in the hot water tank enters the heat recovery device and is heated repeatedly.
- ON/OFF of circulation pump P1: After the water temperature in the hot water tank reaches a specified value, the circulation pump stops working.
- If a lot of hot water is required and the recycled heat is insufficient to heat the water, the auxiliary heating device is started to provide additional heat.



EUROKLIMAT®

>>> Specifications

Specifications (EKSC080~EKSC200 R134a refrigerant)

Model			EKSC080	EKSC100	EKSC115	EKSC125	EKSC135	EKSC145	EKSC160	EKSC170	EKSC180	EKSC190	EKSC200
Cooling	Cooling capacity	U.S.RT	79.4	98.0	114.3	122.9	135.4	143.2	159.3	169.6	180.1	188.1	200.3
		kW	279.2	344.7	402	432.2	476.2	503.7	560.1	596.4	633.5	661.7	704.4
		x10^{4}kcal/h	24.0	29.6	34.6	37.2	41.0	43.3	48.2	51.3	54.5	56.9	60.6
	Input power	kW	55.9	67.3	77.5	80.6	85.0	91.3	105.7	103.8	110.9	114.0	121.9
	COP	kW/kW	4.99	5.12	5.19	5.36	5.60	5.52	5.30	5.75	5.71	5.80	5.78
	Chilled water flow	m^3/h	48.0	59.3	69.1	74.3	81.9	86.6	96.3	102.6	109.0	113.8	121.2
	Pressure drop of chilled water	kPa	74	64	59	75	62	65	54	69	65	65	73
	Cooling water flow	m^3/h	57.6	70.9	82.5	88.2	96.5	102.3	114.5	120.4	128.0	133.4	142.1
	Pressure drop of cooling water	kPa	40	58	58	41	41	40	41	59	41	60	41
Heating*	Heating capacity	U.S.RT	96.6	118.9	138.6	148.6	159.9	174.8	197.0	207.4	212.1	220.8	237.5
		kW	339.7	418.1	487.4	522.5	562.4	614.6	693	729.3	746.1	776.4	835.3
		x10^{4}kcal/h	29.2	36.0	41.9	44.9	48.4	52.9	59.6	62.7	64.2	66.8	71.8
	Input power	kW	67.9	82.6	94.9	100.9	107.8	117.4	133.4	138.6	143.0	144.0	157.1
	COP	kW/kW	5.00	5.06	5.14	5.18	5.22	5.24	5.19	5.26	5.22	5.39	5.32
	Hot water flow rate	m^3/h	58.4	71.9	83.8	89.9	96.7	105.7	119.2	125.4	128.3	133.5	143.7
	Hot water pressure drop	kPa	41	60	60	43	41	43	44	64	41	60	42
	Water source flow rate	m^3/h	46.7	57.7	67.5	72.5	78.2	85.5	96.3	101.6	103.7	106.7	116.7
	Water source pressure drop	kPa	70	61	56	71	57	63	54	68	59	57	68
Cooling + total heat recovery*	Cooling capacity	U.S.RT	66.8	82.5	96.6	103.7	111.9	122.4	137.7	145.4	149.5	161.1	169.1
		kW	235	290.2	339.6	364.8	393.6	430.6	484.4	511.4	525.8	566.5	594.8
		x10^{4}kcal/h	20.2	25.0	29.2	31.4	33.8	37.0	41.7	44.0	45.2	48.7	51.2
	Heat recovery capacity	U.S.RT	87.4	107.6	125.4	134.4	144.6	158.1	178.2	187.5	198.2	203.4	216.7
		kW	307.5	378.4	441	472.7	508.7	555.9	626.8	659.4	697.1	715.3	762.1
		x10^{4}kcal/h	26.4	32.5	37.9	40.7	43.7	47.8	53.9	56.7	60.0	61.5	65.5
	Input power	kW	66.8	81.2	93.3	99.2	105.9	115.3	131.2	136.2	140.5	142.9	153.5
	Cooling COP	kW/kW	3.52	3.57	3.64	3.68	3.72	3.73	3.69	3.75	3.74	3.96	3.87
	Heat recovery COP	kW/kW	4.60	4.66	4.73	4.77	4.80	4.82	4.78	4.84	4.96	5.01	4.96
	Total COP	kW/kW	8.12	8.23	8.37	8.44	8.52	8.56	8.47	8.60	8.70	8.97	8.84
	Chilled water flow	m^3/h	40.4	49.9	58.4	62.7	67.7	74.1	83.3	88.0	90.4	113.3	102.3
	Pressure drop of chilled water	kPa	52	45	42	53	42	48	40	51	45	64	52
	Hot water flow rate	m^3/h	52.9	65.1	75.9	81.3	87.5	95.6	107.8	113.4	119.9	123	131.1
	Hot water pressure drop	kPa	34	49	49	35	34	35	36	52	36	51	35
Compressor	Type		Semi-closed double-screw compressor										
	Qty.		1	1	1	1	1	1	1	1	1	1	1
Startup type			Y-Δ										
Capacity modulation		%	25%-100% stepless modulation										
Power supply			380V/3~/50Hz										
Condenser	Type		Water-cooled shell-tube type										
	Qty.		1	1	1	1	1	1	1	1	1	1	1
Evaporator	Type		Dry shell-tube type										
	Qty.		1	1	1	1	1	1	1	1	1	1	1
Refrigerant type			R134a										
Lubricant	Code		EK02										
	Filling	L	13x1	13x1	19x1	19x1	23x1	23x1	23x1	23x1	23x1	23x1	25x1
Temperature control			PID control over water temperature										
Outer diameter of chilled water inlet/outlet pipe		φ(mm)	139.7	139.7	139.7	139.7	139.7	139.7	139.7	139.7	139.7	168.3	168.3
Outer diameter of cooling water inlet/outlet pipe		φ(mm)	114.3	114.3	114.3	139.7	139.7	139.7	139.7	139.7	168.3	168.3	168.3
Heat-insulation material			PID control over water temperature										
Weight of a single indoor unit		kg	1450	1470	1840	1860	2430	2460	2710	2890	3140	3060	3340
Operating weight		kg	1690	1710	2240	2260	2840	2860	3120	3290	3740	3760	3940
Rated current (cooling)		A	95	115	116	124	138	142	157	173	175	195	201
Rated current (heating*)		A	116	141	162	172	184	200	228	237	242	246	260
Rated current (cooling + heat recovery*)		A	114	139	159	169	181	197	224	233	238	244	255
Startup current		A	287	343	545	545	660	660	749	749	749	749	850
Max. startup current (cooling)		A	287	343	545	545	660	660	749	749	749	749	850
Max. startup current (heating*)		A	287	343	545	545	660	660	749	749	749	749	850
L x W x H		mm	3200x1200x1400			3600x1400x1520	3500x1450x1650		3700x1450x1720		3900x1520x1800	3800x1520x1850	

Note:
- Working conditions for nominal cooling capacity: inlet/outlet water temperature in the evaporator: 12/7°C; inlet/outlet water temperature in the condenser 30/35°C.
- Working conditions for nominal heating capacity: water flow in the above table; inlet/outlet water temperature in the condenser: 40/45°C; inlet/outlet water temperature in the evaporator 15/10°C (note: antifreeze is required when water temperature in the water circuit is lower than 3°C in winter).
- Working conditions for nominal cooling + total heat recovery capacity: inlet/outlet water temperature in the evaporator ~/7 °C; inlet/outlet water temperature in the condenser 40/45°C.
- Heating capacity parameters in the table are measured only for heat pump units. Cooling only units do not have this parameter.
- In the parameter table, parameters marked with "cooling + total heat recovery*" are applicable to only to total heat recovery units, and are not applicable to cooling only or heat pump units.
- The pressure drops of evaporators and condensers do not include resistance from external water pipes and parts.
- For on-site electric wiring, see the name plate or installation menu of the unit.

>>> Specifications

Specifications (EKSC215~EKSC400 R134a refrigerant)

Model			EKSC215	EKSC230	EKSC245	EKSC270	EKSC285	EKSC300	EKSC320	EKSC340	EKSC360	EKSC380	EKSC400
Cooling	Cooling capacity	U.S.RT	212.3	228.6	245.8	270.8	286.5	302.5	318.5	339.1	360.3	376.3	400.6
		kW	746.7	804	864.4	952.4	1007.5	1064	1120.2	1251.3	1285.7	1323.4	1408.8
		x10^{4}kcal/h	64.2	69.1	74.3	81.9	86.6	91.5	96.3	102.6	109.0	113.8	121.2
	Input power	kW	144.8	155.0	161.1	170.0	182.7	200.4	211.4	217.6	225.1	228.0	243.7
	COP	kW/kW	5.16	5.19	5.37	5.60	5.51	5.31	5.30	5.75	5.71	5.80	5.78
	Chilled water flow	m^3/h	128.4	138.3	148.7	163.8	173.3	183.0	192.7	205.1	217.9	227.6	242.3
	Pressure drop of chilled water	kPa	56	58	43	73	57	60	66	72	54	56	63
	Cooling water flow	m^3/h	153.3	164.9	176.4	193.1	204.7	217.5	229.0	240.8	256.1	266.8	284.2
	Pressure drop of cooling water	kPa	40	58	58	41	40	41	58	59	41	40	40
Heating*	Heating capacity	U.S.RT	257.5	277.2	297.2	319.8	349.5	369.2	394.1	414.8	424.3	441.5	475.0
		kW	905.5	974.9	1045.1	1124.8	1229.3	1298.4	1386	1458.7	1492.3	1552.8	1670.5
		x10^{4}kcal/h	77.9	83.8	89.9	96.7	105.7	111.7	119.2	125.4	128.3	133.5	143.7
	Input power	kW	177.5	189.9	201.8	215.5	234.7	248.4	266.8	277.1	286.0	288.0	314.3
	COP	kW/kW	5.10	5.13	5.18	5.22	5.24	5.23	5.19	5.26	5.22	5.39	5.31
	Hot water flow rate	m^3/h	155.7	167.7	179.8	193.5	211.4	223.3	238.4	250.9	256.7	267.1	287.3
	Hot water pressure drop	kPa	41	60	60	41	43	43	63	64	41	40	41
	Water source flow rate	m^3/h	125.2	135.0	145.0	156.4	171.1	180.6	192.5	203.2	207.5	217.5	233.3
	Water source pressure drop	kPa	53	55	41	67	56	58	66	71	49	51	58
Cooling + total heat recovery*	Cooling capacity	U.S.RT	179.1	193.1	207.5	223.8	244.8	258.4	275.4	290.8	299.0	322.1	338.3
		kW	629.8	679.2	729.7	787.2	861.1	908.8	968.7	1022.7	1051.5	1133	1189.7
		x10^{4}kcal/h	54.2	58.4	62.8	67.7	74.1	78.2	83.3	88.0	90.4	97.4	102.3
	Heat recovery capacity	U.S.RT	233.0	250.8	268.8	289.3	316.1	333.9	356.4	375.0	396.4	406.8	433.4
		kW	819.4	882	945.4	1017.4	1111.8	1174.4	1253.6	1318.8	1394.1	1430.6	1524.3
		x10^{4}kcal/h	70.5	75.9	81.3	87.5	95.6	101.0	107.8	113.4	119.9	123.0	131.1
	Input power	kW	174.5	186.6	198.3	211.9	230.7	244.4	262.4	272.5	281.1	285.8	307
	Cooling COP	kW/kW	3.61	3.64	3.68	3.71	3.73	3.72	3.69	3.75	3.74	3.96	3.88
	Heat recovery COP	kW/kW	4.70	4.73	4.77	4.80	4.82	4.81	4.78	4.84	4.96	5.01	4.97
	Total COP	kW/kW	8.30	8.37	8.45	8.52	8.55	8.52	8.47	8.59	8.70	8.97	8.84
	Chilled water flow	m^3/h	108.3	116.8	125.5	135.4	148.1	156.3	166.6	175.9	180.9	194.9	204.6
	Pressure drop of chilled water	kPa	40	41	31	50	42	44	49	53	37	41	45
	Hot water flow rate	m^3/h	140.9	151.7	162.6	175.0	191.2	202.0	215.6	226.8	239.8	246.1	262.2
	Hot water pressure drop	kPa	34	49	49	34	35	35	51	52	36	34	34
Compressor	Type		Semi-closed double-screw compressor										
	Qty.		2	2	2	2	2	2	2	2	2	2	2
Startup type			Y-Δ										
Capacity modulation		%	12.5%-100% stepless modulation										
Power supply			380V/3~/50Hz										
Condenser	Type		Water-cooled shell-tube type										
	Qty.		2	2	2	2	2	2	2	2	2	2	2
Evaporator	Type		Dry shell-tube type										
	Qty.		1	1	1	1	1	1	1	1	1	1	1
Refrigerant type			R134a										
Lubricant	Code		EK02										
	Filling	L	13+19	19x2	19x2	23x2	23x2	23x2	23x2	23x2	23x2	23x2	25x2
Temperature control			PID control over water temperature										
Outer diameter of chilled water inlet/outlet pipe		φ(mm)	168.3	168.3	168.3	168.3	168.3	168.3	168.3	168.3	219.1	219.1	219.1
Outer diameter of cooling water inlet/outlet pipe		φ(mm)	139.7	114.3	114.3	139.7	139.7	139.7	139.7	139.7	168.3	168.3	168.3
Heat-insulation material			PID control over water temperature										
Weight of a single indoor unit		kg	3340	3570	3610	4290	4430	4740	4800	5160	5600	5640	5840
Operating weight		kg	3840	4180	4220	5010	5180	5550	5620	5960	6790	6830	7030
Rated current (cooling)		A	231	231	248	276	284	305	314	346	351	390	402
Rated current (heating*)		A	303	324	345	368	401	424	455	473	483	492	521
Rated current (cooling + heat recovery*)		A	298	319	339	362	394	417	448	465	475	488	509
Startup current		A	343	545	545	660	660	749	749	749	749	749	850
Max. startup current (cooling)		A	459	661	669	798	802	902	906	922	925	944	1051
Max. startup current (heating*)		A	495	707	718	844	861	961	977	986	991	995	1111
L x W x H		mm	3950x1520x2100	3880x1520x1900			3800x1560x2100				4400x1560x2230		

Note:
- Working conditions for nominal cooling capacity: inlet/outlet water temperature in the evaporator: 12/7°C; inlet/outlet water temperature in the condenser 30/35°C.
- Working conditions for nominal heating capacity: water flow in the above table; inlet/outlet water temperature in the condenser: 40/45°C; inlet/outlet water temperature in the evaporator 15/10°C (note: antifreeze is required when water temperature in the water circuit is lower than 3°C in winter).
- Working conditions for nominal cooling + total heat recovery capacity: inlet/outlet water temperature in the evaporator ~/7 °C; inlet/outlet water temperature in the condenser 40/45°C.
- Heating capacity parameters in the table are measured only for heat pump units. Cooling only units do not have this parameter.
- In the parameter table, parameters marked with "cooling + total heat recovery*" are applicable to only to total heat recovery units, and are not applicable to cooling only or heat pump units.
- The pressure drops of evaporators and condensers do not include resistance from external water pipes and parts.
- For on-site electric wiring, see the name plate or installation menu of the unit.

EUROKLIMAT®

Measurement Conversion Table

Length	m	mm	in	ft	mile
	1	$1x10^{3}$	39.37	3.281	$6.214x10^{-4}$
	0.3048	304.8	12	1	$1.578x10^{-5}$
	$1x10^{-3}$	1	0.0394	$3.281x10^{-3}$	$6.214x10^{-7}$
	0.0254	25.4	1	0.08333	$1.578x10^{-5}$
	$1.609x10^{3}$	$1.609x10^{6}$	63.36	5280	1
Area	m^2	hm^2	in^2	ft^2	$milk^2$
	1	$1x10^{-4}$	$1.55x10^{3}$	10.76	$3.861x10^{-7}$
	0.0929	$9.29x10^{-6}$	144	1	$3.587x10^{-8}$
	$2.59x10^{6}$	258.9	$4.0145x10^{9}$	$2.7878x10^{7}$	1
Volume	m^3	L	US gal	UK gal	ft^3
	1	1000	264.17	219.97	35.315
	$1x10^{-3}$	1	0.2642	0.22	0.0353
	$3.785x10^{-3}$	3.7854	1	0.8327	0.1337
	$4.546x1^{-3}$	4.546	1.20095	1	0.1605
	$2.832x10^{-2}$	28.316	7.481	6.229	1
Weight	g	kg	t	lb	oz
	1	$1x10^{-3}$	$1x10^{-6}$	$2.205x10^{-3}$	0.0353
	$1x10^{3}$	1	$1x10^{-3}$	2.205	35.274
	$1x10^{6}$	$1x10^{3}$	1	$2.205x10^{3}$	$3.527x10^{4}$
	453.592	0.4536	$4.536x10^{-4}$	1	16
	28.35	0.0283	$2.83x10^{-5}$	0.0625	1
Pressure	Pa	mmH_2O	atm	lb/in^2	in.Hg
	1	0.102	$9.8692x10^{-6}$	$1.4504x10^{-4}$	$2.953x10^{-4}$
	9.807	1	$9.678x10^{-5}$	$1.422x10^{-3}$	$2.89x10^{-3}$
	101325	10332	1	14.696	29.921
	6894.8	703.06	0.068	1	2.036
	3386.39	345.32	0.0334	0.4911	1
Energy	J	kJ	kW•h	kcal	Btu
	1	$1x10^{-3}$	$2.778x10^{-7}$	$2.389x10^{-4}$	$9.478x10^{-4}$
	$1x10^{3}$	1	$2.778x10^{-4}$	0.2389	0.9478
	$3.6x10^{6}$	3600	1	860.1	3411
	4186.8	4.1868	$1.163x10^{-3}$	1	3.968
	1055.1	1.0551	$2.93x10^{-4}$	0.252	1
Power	W	kW	kcal/h	Btu/h	RT(US)
	1	$1x10^{-3}$	0.8604	3.412	$2.843x10^{-4}$
	$1x10^{3}$	1	860.4	3412	0.2843
	1.163	$1.1622x10^{-3}$	1	3.9657	$3.30x10^{-4}$
	0.293	$2.93x10^{-4}$	0.2522	1	$8.33x10^{-5}$
	3517	3.517	3024	12000	1
Flow	L/s	m^3/s	m^3/h	ft^3/s	UK gal/s
	1	1x10-3	3.6	0.0353	0.22
	$1x10^{3}$	1	3600	35.3147	219.97
	0.2778	$2.778x10^{-4}$	1	$9.81x10^{-3}$	0.611
	28.317	0.0283	101.941	1	6.2288
	4546	$4.546x10^{-3}$	16.416	0.1605	1

TAHVIEHSAM
Cooling System Solutions

www.tahviehsam.com

EK Iran's Distributor
Tahvieh Sam Industrial Group
Add: Tahvieh Sam Blg., NO.26, East 14th St., Beyhaghi Blv.,Arjantin Sq., Tehran, Iran
Tel: +9821 88526010
Fax: +9821 88526034
Email: info@tahviehsam.ir

EK China
Guangdong EuroKlimat Air-Conditioning & Refrigeration Co.,Ltd.
Add: EuroKlimat Industrial Park, Huangjiang Dongguan Guangdong China 523766
Tel: +86 769 8366 0888
Fax: +86 769 8362 2528

EK Italy
Add: Euroklimat S.p.A. via Liguria, 8 - 127010 Siziano (PV)
Tel: (39).0382610282
Fax: (39).0382617782

ISO9001：2008 corporate certification

ISO14001：2004 Environmental management system certification

Product Manufacturing license (XK06-015-00361)

CNAS L5123
State-certified Lab

EK EUROKLIMAT®
SINCE 1983

www.euroklimat.com

EKSCST31111-Catalog-AA