www.withairmall.com

The Energy Solutions of
Withair Chillers Catalogue 2017

Withair®

Take Control of Your Energy Future !

Withair offers a wide range of clean energy products and solutions to meet the needs of your projects.

- **Ongoing innovation with cutting-edge products**
- **Over 20 years of experience**
- **Production 100% Made in China**
- **Guaranteed support and spare parts**
- **Support in design**
- **Documentation for incentives**
- **Two-year guarantee**
- **Free training course**

About Withair

Withair® is one leading manufacturer in sustainable energy solutions supplying HVACR products & services for cooling, heating, hot water, ventilation, industrial refrigeration and heat recovery that reflect today's demand for sustainable construction, comfortable indoor climate and industrial cooling process application. and specialize in heating & cooling system, air quality system and new energy development and utilization,now it has three factories,manufacturing different kinds of products, and committed to providing the first-class products & system solutions for customers.

At Withair®, our aim is to support the growth, profit, and sustainability goals of our clients by delivering innovative solutions with n x value.we gain a deep understanding of our client's needs and business objectives first and foremost by gaining and leveraging our technical knowledge, innovative thinking, and vast equipment resources. from heating & cooling solutions and air quality management,to energy performance and efficiency determination,Withair® delivers the results.

Withair® operates in a strongly impacting sector in the energy field, and its primary objectives include committing resources to continuous technological research and improvement of production processes, with the aim of streamlining products and raise users' awareness on the actual soundness of ensuing energy savings.

Withair® products & solutions combine utmost efficiency with minimum energy consumption and strict respect of the environment, the idea proved to be a winning one in just a few years, Withair® became the leader in the sector !

Low energy consumption systems

Use of clean energy

Use of environmentally-friendly cooling gases

ZERO direct CO2 emissions in the environment

Water-Cooled Chillers - Cut energy consumption and emissions by Withair® Chilled Water Systems

Withair® chillers were developed based on decades of knowledge and rich experience, includes air-cooled chillers and water-cooled chillers, ranging in capacities from 2 to 1,000+ tons. Withair® chillers are relied upon for both comfort and special process cooling applications in every corner of the world.

Withair® chiller plays a critical role in creating the right environment to ensure the health, comfort and industrial production. Withair® chillers not only serve HVACR systems and industry-type process cooling at factories that deliver the right temperature for the space, but they also help minimize operating costs with superior energy efficiency levels, low sound levels and with minimal environmental impact.

Withair® offers complete, factory-assembled screw and scroll compressor water cooled chiller that offer ease of installation with wiring and microprocessor controllers providing maximum operating efficiency.

Withair® compact chillers install easily and quickly into most building layouts, making them ideal choices for retrofit or new building designs.

Medium/Low Temperature Water-Cooled Water Chiller

Medium/Low Temperature Water-Cooled Water Chiller

—— Product Description ——

Withair® is proud to offer an extensive line of water-cooled screw chillers ranging from 33 to 1,000+ tons. The water-cooled screw chillers feature a variety of models and options engineered to fit a wide range of applications. Withair® water-cooled screw chillers are ideal for customers who are focused on high energy efficiency, superior reliability and long equipment life. Withair® products within the unique portfolio are designed to help lower environmental impact with next-generation, low global warming potential refrigerants and high-efficiency operation.

Withair® the medium and low temperature chiller is based on this year's design of low temperature water-cooled chillers by key technicians of this company. It integrates the advanced technology of products in same category, and is a highly effective, energy saving and environment protecting fifth generation chiller designed and developed by this company. The application of advanced technology promotes the product to an international leading status.The equipment can provide -45℃~0℃ medium and low temperatures and a secondary refrigerant that may be applied to any place where there is a demand for varieties of medium and low temperature cold sources. This can assist with the production process of any industry,i.e. pharmaceutical, chemistry, metallurgy, electronic and food, etc., and act as the cold source mainframe of large size refrigerators and ice stadiums.

The heat recovery products can keep water at 50℃~60℃ and play a role of saving energy.

—— The Key Advantages Include ——

● Multiple system independent design technology, independent control, non-interference in each other.
● Under the circumstances, each compressor in the refrigeration systems at the minimum load (25%), the startup of the Y- △ for voltage reduction may decrease the start current and have an impact on the electric network.
● Heat recovery technology for waste heat utilization
Through the heat collector technology outfitted in this equipment, it may keep water at 40℃~60℃. Here, based on the requirements of water sources of different water quality levels, the maximum recovery rate reaches over 70% and can save the integrated energy.
● Application of High Effective Refrigeration Compressor
An imported highly-effective semi-hermetic screw compressor economizer shall be adopted. The main features of the compressor are as follows:
* International well-known brand screw refrigeration compressor with American and European patent technology.
* Third generation nonsymmetrical tooth-type screw of the most advanced line with high efficiency of 5:6.
*Semi-hermetic design, where only three moving components are required and small component quantity, low fault rate and easy maintenance are featured as well.
*Grading or continuous energy adjustment may be actualized, which are convenient and flexible in control, and high in energy saving effect.
*The non-spacing multiple thrust bearing and radial bearing, from the well-known companies, SKF and FAG, are precise in structure and high in reliability.
*The double-layer three-dimensional oil separation filer has an excellent effect in oil filtering and may assure the compressor to be at a normal working state and that the heat exchanger is working effectively.
* The pump-free style of inbuilt pressure difference lubricant supply and lubrication system is energy saving, highly effective and reliable.
*The motor, which features a specific fluorine resistance and low iron loss, is equipped with a reliable motor overheating protection device for the assurance of the motor in highly effective and reliable state of working.
*Under the circumstance of low temperature, the liquid cold media spray system and heat pump shall be provided, which may reduce the working load and exhaust emission temperature effectively for key parts. This also improves the reliability of the compressor while in operation.

● Application of Economizer Technology

By making full use of the screw chiller's functions with interface to the economizer, part of the solution from the condenser may cool most of the rest solution through a throttling and pressure reduction process. This will improve the refrigerating effect of the chiller by increasing the super-cooling temperature as well as improving the volumetric efficiency. It will also improve the efficiency and reliability of the compressor by a conversion process of the screw chiller from the single grade compression to the second grade compression.

● Functional Components with High Reliability

* Except for two machines made in China, they are all imported and marked with famous brands. These are reliable in quality and last for a long lifetime, i.e. compressor, electric elements and oil separator, etc.

● Flexibility Control System

Adopting Siemens PLC control technology, system running parameters adopts the design of open mode, the user can be adjusted according to the unit operation environment and technological requirements for real-time parameters, achieve the best match between unit output and the actual load, run the economy.

Adopting touch screen man-machine interface operation, Chinese/English show either. Can have: automatic/manual start, on/off function,parameter setting function, running state display function, fault display/record function, parameter record function, total run time records, and other functions, fully meet the market needs of the refrigeration and air conditioning.

● Varieties of Secondary Refrigerants Optional

Mellow type secondary refrigerants, i.e. three-element mixing solution as glycol, water solution and alcohol, (40% of glycol, 40% of water and 20% of alcohol) may be applied upon the request of customers. The evaporator may be developed in accordance with anti-corrosion requirements in design where the cacl2 water solution shall be used as the secondary refrigerant.

● Application of Environmental Protection Refrigerant

The varieties of environmental protection refrigerants HFC404a and HFC507a may be applied for the purpose of satisfying the environment protection requirements of the international community.

● Application of Quadratic Oil Separator

It is necessary for the medium and low temperature chiller to be applied with a high viscidity refrigerating oil (usually between 220~320) for the assurance of maintaining the normal viscidity of the bearing lubricant while in operation. Where the pressure is big, exhaust emission temperature is very high and the load of the bearing is quite large. Once such high viscidity refrigerating oil enters the evaporator, the internal temperature is within a range of -5℃～-40℃, and the viscidity of the lubricant become very high. The lubricant may adhere to the internal

surface of the heat exchanging tube, and form a layer of thick oil film that can cause severe influence over the heat exchanging effect and lead oil missing upon the compressor at ease. That's why a quadratic oil separator is settled between the emission and the condenser of the compressor. This oil separator improves the refrigeration effect and promotes the reliability of the product in operation through minimizing the amount of lubricant that enters the evaporator.

● Application of Solution Spray Technology

Cold media in a liquid state shall be introduced from the middle section to the refrigerating compressor's compression room due to the low evaporation pressure, large compression rate, high exhaust emission temperature and the bearing's mass load for the purposes of reducing the exhaust emission temperature (no more than 105℃). This will

● Emergency Switch of Auto/Manual

For the purpose of maintaining a continuous supply of the process cold sources, under the circumstance of a touch screen error occurring,an emergency switch (Auto/Manual) should be used and the power on/off shall be under control by button. There will be no influence brought to production.

—— Technical Data ——

Model W02C2-			16ML	22ML	28ML	33ML	38ML	44ML	52ML	57ML	63ML	68ML	76ML
Nominal cooling capacity		kW	58.2	77.5	100.8	116.4	134.3	155	183.4	201.6	222.8	238.7	268.6
		10^3kcal/h	50	66.6	86.7	100.1	115.5	133.3	157.7	173.3	191.6	205.2	231
		US RT	16.5	22	28.7	33.1	38.2	44.1	52.1	57.3	63.3	67.9	76.4
		10^3Btu/h	1,985.80	2,644.30	3,439.30	3,971.60	4,582.30	5,288.60	6,257.60	6,878.60	7,601.90	8,144.40	9,164.60
Power supply		V/P/Hz	380/3/50										
Rated current		A	46.2	60.5	77	92.4	100.7	121	135.6	154	172.4	177.7	201.4
IPLV		W/W	1.9	1.9	2	1.9	2.2	1.9	2	2	1.9	2	2
Input power		kW	27.5	36	45.8	55	59.9	72	80.6	91.6	102.4	105.7	119.8
Compressor	type		Semi-hermetic Double Dcrew Type										
	starting mode		Y-△										
Evaporator	type		Dry Type Shell and Tube										
	water flow rate	m^3/h	12	15.9	20.7	23.9	27.6	31.9	37.7	41.5	45.8	49.1	55.3
	pressure drop	kPa	50~80										
Condenser	type		Horizontal Type Shell and Tube										
	water flow rate	m^3/h	14.8	19.6	25.3	29.5	33.5	39.1	45.5	50.5	56	59.3	66.9
	pressure drop	kPa	40~70										
Refrigerant	type		HFC R404A										
	flow control		Thermal Expansion Valve or Electronic Expansion Valve										
	number of circuits		1	1	1	2	1	2	1	2	2	1	2
Piping Connections	condenser	DN	65	65	65	65	80	65	100	65	65	125	80
	evaporator	DN	65	65	65	80	80	100	100	100	100	125	125
	drain valve		1/2"										
Safe protection device			3Phase Over current Relay, High-Pressure Switch, Low-Pressure Switch, Oil Heater, Internal Thermostat for Compressor Motor, Fusible Plug, Freeze Protection Thermostat,Reverse Phase Protection Relay, Discharge Gas Thermostat, Operation Hour-Meter and Pressure Relief Valve.										
Cooling capacity control		——	Continuous Capacity Control										
		%	0-25-50-75-100										
Dimension	length	mm	2,300	2,450	2,930	2,500	2,960	2,700	2,960	3,200	3,400	3,040	3,430
	width	mm	750	750	830	900	900	980	980	1,010	1,050	1,030	1,110
	height	mm	1,300	1,300	1,330	1,300	1,530	1,550	1,610	1,590	1,600	1,730	1,760
Unit weight		kg	700	760	970	1,050	1,130	1,590	1,500	1,810	2,100	1,880	2,450
Working weight		kg	780	870	1,100	1,300	1,300	1,800	1,740	2,070	2,370	2,170	2,750

Notes:

1. The working condition: entering water temperature of evaporator is -5°C, leaving water temperature is -10°C; Condenser Water Inlet/Outlet Temperature 30℃/35℃;
2. Standard unit's refrigerant is glycol water. water flow rate of evaporator will increase 15% while use calcium chloride water to refrigerant.
3. The flow rate will be changed to the different operating conditions, the pipe diameter can be adjust, the velocity of flow is controlled to 1.5m/s~2.5m/s.
4. Glycol water is not recommended when the water outlet temperature of evaporator is lower than -30℃.
5. All models, sizes, dimensions, and specifications are subject to change without prior notice, please refer to nameplates for the most accurate specifications

Model W02C2-			80ML	85ML	94ML	100ML	105ML	114ML	122ML	125ML	135ML	144ML	160ML
Nominal cooling capacity		kW	283.7	300.8	331.4	353.2	369.5	401.6	429.4	442.4	477.4	506.6	565.4
		10^3kcal/h	243.9	258.6	285	303.7	317.7	345.3	369.2	380.4	410.5	435.6	486.2
		US RT	80.7	85.5	94.2	100.4	105.1	114.2	122.1	125.8	135.7	144	160.8
		10^3Btu/h	9,679.80	10,263.30	11,307.40	12,051.20	12,607.30	13,702.60	14,651.10	15,094.70	16,288.90	17,285.20	19,291.40
Power supply		V/P/Hz	380/3/50										
Rated current		A	209.8	226.4	246.4	261.3	275.1	298	324.4	324.4	355.4	370.8	412
IPLV		W/W	2	2	2	2	2	2	2	2	2	2.1	2.1
Input power		kW	124.8	134.8	146.6	155.4	163.7	177.2	188.6	193	211.4	220.6	245.1
Compressor	type		Semi-hermetic Double Dcrew Type										
	starting mode		Y-△										
Evaporator	type		Dry Type Shell and Tube										
	water flow rate	m^3/h	58.4	61.9	68.2	72.7	76	82.6	88.3	91	98.2	104.2	116.3
	pressure drop	kPa	50~80										
Condenser	type		Horizontal Type Shell and Tube										
	water flow rate	m^3/h	70.4	75	82.3	87.6	91.8	99.7	106.4	109.4	118.6	125.3	139.6
	pressure drop	kPa	40~70										
Refrigerant	type		HFC R404A										
	flow control		Thermal Expansion Valve or Electronic Expansion Valve										
	number of circuits		1	2	1	1	1	2	1	2	2	1	1
Piping Connections	condenser	DN	2*125	4*80	2*125	2*150	2*150	4*100	2*150	4*125	4*125	2*150	2*150
	evaporator	DN	2*125	2*125	2*125	2*150	2*150	2*150	2*150	2*150	2*150	2*150	2*150
	drain valve		1/2"										
Safe protection device			Three-Phase Overcurrent Relay, High-Pressure Switch, Low-Pressure Switch, Oil Heater, Internal Thermostat for Compressor Motor, Fusible Plug, Freeze Protection Thermostat,Reverse Phase Protection Relay, Discharge Gas Thermostat, Operation Hour-Meter and Pressure Relief Valve.										
Cooling capacity control		——	Continuous Capacity Control										
		%	0-25-50-75-100										
Dimension	length	mm	3,040	3,430	3,240	3,300	3,300	3,950	3,700	3,950	3,950	3,700	4,200
	width	mm	1,100	1,110	1,120	1,040	1,040	1,200	1,040	1,200	1,200	1,040	1,200
	height	mm	1,780	1,700	1,840	1,960	1,960	1,935	2,010	1,935	1,935	2,020	2,170
Unit weight		kg	2,100	2,650	2,300	2,500	2,600	3,280	2,900	3,560	3,950	3,150	3,560
Working weight		kg	2,430	2,900	2,680	2,880	3,000	3,900	3,300	4,230	4,700	3,730	4,200

Notes:

1. The working condition: entering water temperature of evaporator is -5°C, leaving water temperature is -10°C; Condenser Water Inlet/Outlet Temperature 30℃/35℃;
2. Standard unit's refrigerant is glycol water. water flow rate of evaporator will increase 15% while use calcium chloride water to refrigerant.
3. The flow rate will be changed to the different operating conditions, the pipe diameter can be adjust, the velocity of flow is controlled to 1.5m/s~2.5m/s.
4. Glycol water is not recommended when the water outlet temperature of evaporator is lower than -30℃.
5. All models, sizes, dimensions, and specifications are subject to change without prior notice, please refer to nameplates for the most accurate specifications

Model W02C2-			161ML	188ML	201ML	210ML	244ML	268ML	288ML	322ML	403ML	474ML	530ML
Nominal cooling capacity		kW	567.4	662.8	708.4	739	858.8	943	1,013.20	1,130.80	1,416.80	1,668.40	1,862.40
		10^3kcal/h	487.9	569.9	609.1	635.4	738.4	810.8	871.2	972.3	1,218.20	1,434.60	1,601.40
		US RT	161.3	188.5	201.4	210.1	244.2	268.1	288.1	321.5	402.8	474.4	529.5
		10^3Btu/h	19,359.70	22,614.70	24,170.60	25,214.70	29,302.30	32,175.20	34,570.40	38,582.90	48,341.20	56,925.80	63,545.10
Power supply		V/P/Hz	380/3/50										
Rated current		A	419.6	492.8	524.2	550.2	634	696.4	741.6	824	1,048.40	1,227.80	1,357.00
IPLV		W/W	2	2	2	2	2	2	2.1	2.1	2	2	2.1
Input power		kW	249.6	293.2	311.8	327.4	377.2	414.2	441.2	490.2	623.8	730.2	807.2
Compressor	type		Semi-hermetic Double Dcrew Type										
	starting mode		Y-△										
Evaporator	type		Dry Type Shell and Tube										
	water flow rate	m^3/h	116.7	136.3	145.7	152	176.7	194	208.4	232.6	291.5	343.2	383.1
	pressure drop	kPa	60~90										
Condenser	type		Horizontal Type Shell and Tube										
	water flow rate	m^3/h	140.7	164.7	175.7	183.7	212.9	233.8	250.5	279.2	351.5	413.2	459.8
	pressure drop	kPa	40~70										
Refrigerant	type		HFC R404A										
	flow control		Thermal Expansion Valve or Electronic Expansion Valve										
	number of circuits		2	2	1	2	2	2	2	2	2	2	2
Piping Connections	condenser	DN	4*125	4*125	2*200	4*150	4*150	4*150	4*150	4*150	4*200	4*200	4*200
	evaporator	DN	2*200	2*200	2*200	2*250	2*200	2*200	2*200	2*250	2*250	2*300	2*300
	drain valve		1/2"										
Safe protection device			Three-Phase Overcurrent Relay, High-Pressure Switch, Low-Pressure Switch, Oil Heater, Internal Thermostat for Compressor Motor, Fusible Plug, Freeze Protection Thermostat,Reverse Phase Protection Relay, Discharge Gas Thermostat, Operation Hour-Meter and Pressure Relief Valve.										
Cooling capacity control		——	Continuous Capacity Control										
		%	0-25-50-75-100										
Dimension	length	mm	3,950	3,950	5,000	4,100	4,560	4,700	4,700	5,250	5,000	5,650	5,650
	width	mm	1,300	1,340	2,200	1,340	1,470	1,470	1,470	1,600	5,000	5,200	5,200
	height	mm	2,050	2,170	2,650	2,260	2,290	2,290	2,310	2,420	2,650	2,650	2,650
Unit weight		kg	4,200	4,600	5,150	5,300	5,900	5,800	6,800	7,680	10,800	12,500	13,800
Working weight		kg	5,100	5,530	5,900	6,290	6,900	7,100	8,180	8,600	12,500	14,500	16,200

Notes:

1. The working condition: entering water temperature of evaporator is -5°C, leaving water temperature is -10°C; Condenser Water Inlet/Outlet Temperature 30℃/35℃;
2. Standard unit's refrigerant is glycol water. water flow rate of evaporator will increase 15% while use calcium chloride water to refrigerant.
3. The flow rate will be changed to the different operating conditions, the pipe diameter can be adjust, the velocity of flow is controlled to 1.5m/s~2.5m/s.
4. Glycol water is not recommended when the water outlet temperature of evaporator is lower than -30℃.
5. All models, sizes, dimensions, and specifications are subject to change without prior notice, please refer to nameplates for the most accurate specifications

Model W02C2-			366ML	402ML	432ML	482ML	536ML	576ML	643ML
Nominal cooling capacity		kW	1,288.20	1,414.50	1,519.80	1,696.20	1,886.00	2,026.40	2,261.60
		10^3kcal/h	1,107.70	1,216.30	1,306.80	1,458.50	1,621.70	1,742.40	1,944.60
		US RT	366.3	402.2	432.1	482.3	536.3	576.2	643
		10^3Btu/h	43,953.40	48,262.70	51,855.60	57,874.30	64,350.30	69,140.80	77,165.80
Power supply		V/P/Hz	380/3/50						
Rated current		A	951	1,044.60	1,112.40	1,236.00	1,392.80	1,483.20	1,648.00
IPLV		W/W	2	2	2.1	2.1	2	2.1	2.1
Input power		kW	565.8	621.3	661.8	735.3	828.4	882.4	980.4
Compressor	type		Semi-hermetic Double Dcrew Type						
	starting mode		Y-△						
Evaporator	type		Dry Type Shell and Tube						
	water flow rate	m^3/h	265	291	312.6	348.9	388	416.9	465.2
	pressure drop	kPa	50~80						
Condenser	type		Horizontal Type Shell and Tube						
	water flow rate	m^3/h	319.3	350.7	375.8	418.8	467.6	501	558.4
	pressure drop	kPa	40~70						
Refrigerant	type		HFC R404A						
	flow control		Thermal Expansion Valve or Electronic Expansion Valve						
	number of circuits		3	3	3	3	4	4	4
Piping Connections	condenser	DN	150	150	150	150	200	200	200
	evaporator	DN	150	150	150	150	200	200	250
	drain valve		1/2"						
Safe protection device			Three-Phase Overcurrent Relay, High-Pressure Switch, Low-Pressure Switch, Oil Heater, Internal Thermostat for Compressor Motor, Fusible Plug, Freeze Protection Thermostat,Reverse Phase Protection Relay, Discharge Gas Thermostat, Operation Hour-Meter and Pressure Relief Valve.						
Cooling capacity control		——	Continuous Capacity Control						
		%	0-25-50-75-100						
Dimension	length	mm	5,600	5,600	5,600	5,900	5,600	5,600	5,900
	width	mm	2,350	2,350	2,350	2,350	2,350	2,350	2,350
	height	mm	2,700	2,800	2,800	2,800	2,800	2,800	2,800
Unit weight		kg	9,300	10,000	10,900	12,200	13,900	15,000	16,900
Working weight		kg	11,000	12,000	12,800	14,200	16,000	17,100	19,000

Notes:

1. The working condition: entering water temperature of evaporator is -5°C, leaving water temperature is -10°C; Condenser Water Inlet/Outlet Temperature 30℃/35℃;
2. Standard unit's refrigerant is glycol water. water flow rate of evaporator will increase 15% while use calcium chloride water to refrigerant.
3. The flow rate will be changed to the different operating conditions, the pipe diameter can be adjust, the velocity of flow is controlled to 1.5m/s~2.5m/s.
4. Glycol water is not recommended when the water outlet temperature of evaporator is lower than -30℃.
5. All models, sizes, dimensions, and specifications are subject to change without prior notice, please refer to nameplates for the most accurate specifications

—— Delivery & Packaging ——

- 100% test before deliverying products.
- Products catalogue, installation & operation manual will be sent together.
- Tracking number will be sent to customer as soon as we ship the products.
- Item shipped in 25 working days against payment depends on the quantity.
- Four steps of pakacges, plastic film, foam, carton and plywood for stable transporation.
- Ocean shipping, railway shipment and air transportation are acceptable according to customer demand.

—— You May Like ——

Water Chiller +

Cooling Tower +

Air Handling Unit +

Fan Coil Unit +

Thermostat

Feel free to contact us to receive further information about our products and energy solutions.

Notes:

Withair, your perfect partner for successful projects.

01/2017 - The technical data in this document are not binding.
Withair reserves the right to introduce at any time whatever modifications deemed necessary for improving the product.

Withair Group (China) Limited
Withair (Nanjing) Industries Co.,Ltd
No.200 Lushan Road,Jianye District,Nanjing,210019,China.
Tel: +86 139 159 28183 - Fax: +86 25 86696286
E-mail: info@withairmall.com
Website: www.withairmall.com

Please follow our social networks