www.withairmall.com

The Energy Solutions of
Withair Solar Air Conditioning System 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

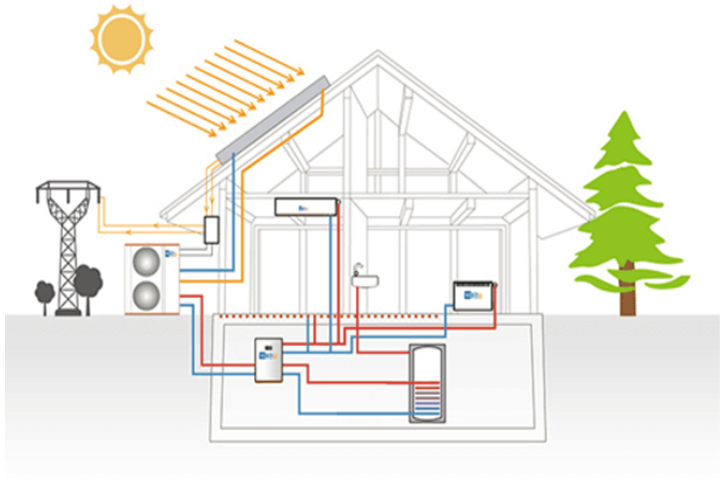
ZERO direct CO2 emissions in the environment

Solar Air Conditioning System - Take advantage of the sun to reduce your heating and hot water costs.

By using the principle of Reverse Carnot Cycle, the refrigerant of the solar heat storage evaporator absorb solar energy low temperature evaporation, and discharge high temperature and pressure refrigerant steam entering high temperature condenser to release heat by compressor, the condensed fluid is cooled by the expansion valve under the effect of high and low pressure difference and absorb heat and evaporates in the evaporator, which finish a heat pump cycle.

Heat pump raise temperature by solar energy heat exchanger, overcome the low efficiency problem of traditional solar heating and make solar energy stable and efficient output, so, solar energy storage heat pump is the best choice of cold region instead of coal-fired boiler.

WithAir® Solar Energy Heat Pumps System



WithAir® Energy Storage System

Solar Air Conditioning System

Solar Air Conditioning System

—— Product Description ——

PV components creat DC power, DC power direcly in to Withair® intelligent driver, then drive the Withair® air source heat pump.
When the Withair® intelligent driver detects insufficient solar power, municipal power will be used by automaically.
When the WithAir® intelligent driver that there is surplus solar power or air source heat pump is not running, we could convert DC power to AC power by the Withair® intelligent driver for civilian function or sold to the grid.

Withair® Solar Central Air Conditioning System can use the solar energy to realize cooling in the summer, heating in the winter and hot water in all year round.
Cooling in the Summer is making use of lithium bromide absorption chiller which is driven by the solar collected to produce a 7°C chilled water to cool the room through fan coil.
Heating in Winter is making use of solar collector to raise the temperature of circulating water up to 35°C~45°C, then circulating through the pump, providing heating to the room through the terrestrial heating pipe or fan coil.
Hot water is making use of solar collector to heat the water temperature of water tank to 50°C for supplying the hot water.
The system is suitable for the regions and contries that have four distinct seasons or cooling in the summer, heating in the winter.

—— The Key Advantages Include ——

● More than 75% efficiency
* Use efficiency evaporator of plate solar collector with 360° heat transfer structure design.
* Adopt unique improve temperature technology.
* Under low temperature climate, the evaporation temperature of plate solar collector evaporator ≥10° C.
* Evaporator of plate solar collector efficiency is higher 75%.

● 100% energy conservation and environmental protection
* Make full use of the free energy of solar energy and air souce energy, raise heat source from the low temperature to high temperature, so, 100% energy saving.
* Solar energy and air source energy are green & renewable energy, 100% environmental protection.

● 100% safe and reliable
* Use HFC R134a refrigerant (the freezing point temperature of 101.3),medium, which completely solve the anti-freezing problem of the plate solar collector in winter.
* Refrigerant with high and low pressure protection.
* System with multiple protection devices, e.g:overload protection,short phase protection,phases sequence protection,anti-freeze protection,ect.
* Adopt air source energy as auxiliary heat source, the system stable running, not affected by changes in the intensity of solar radiation,to avoid the pure solar heating source unstable faults.

● 100% intelligent control
Humanized operation interface, easy to set the operation mode (cooling, heating, hot water and energy storage), operation time and operation mode.

—— Technical Data ——

Solar PV Air-Cooled Heat Pumps

Model W04HP-			4PV	7PV	11PV	18PV	35PV	53PV	69PV	87PV	105PV
Cooling capacity		kW	11.5	23	35	58	115	175	230	290	350
		Ton	3.5	7	10.5	17.8	34.6	52.9	68.7	86.6	104.7
		10^3kcal/h	9.9	19.8	30.1	49.9	98.9	150.5	197.8	249.4	300.9
		Btu/h	39,238	78,476	119,420	197,896	392,380	597,100	784,760	989,480	1,194,200
Heating capacity		kW	10.6	20.8	31.7	52.4	104.1	157.9	210.0	263.1	315.8
		Ton	3	5.9	9	14.9	29.6	44.9	59.7	74.8	89.8
		10^3kcal/h	9.1	17.8	27.2	45.1	89.5	135.8	180.5	226.2	271.6
		Btu/h	36,000	70,800	108,000	178,800	355,200	538,800	716,400	897,600	1,077,600
PV array	PV area	m^2	48	99.5	149.2	248.6	497.3	745.9	994.6	1243.2	1491.9
	Rated voltage	DC	700V+30V (OCV of the solar PV array)								
		AC	380V/3Ph/50(60)Hz								
	PV+EP power input	kW	3.8	7.8	11.9	19.7	39	59.3	78	98.3	118.6
Chilled water /hot water	Flow rate	m^3/h	2.0	4.0	6.0	10.0	20.0	30.0	40.0	50.0	60.0
	Inlet/outlet Temp.	°C	12/7								
	Inlet/outlet pipe	DN	32	32	40	50	65	65	80	100	100
	Pressure drop	kPa	60	30	30	40	50	50	50	50	50
Dimension	Length	mm	1,005	1,005	1,292	1,700	2,100	2,400	2,900	3,100	3,200
	Width	mm	635	635	1,245	1,500	1,560	1,900	2,200	2,450	2,600
	Height	mm	1,285	1,400	1,840	1,700	1,900	2,000	2,100	2,400	2,525
Weight	Net weight	kg	175	220	330	750	1,800	2,550	3,300	3,600	2,850
	Gross weight	kg	191	240	350	780	1,900	3,100	3,500	3,900	4,250

The data in the above table test as following:

1. WithAir® PV Air-Cooled Heat Pump & Chiller could be set use solar PV cooling or heating model and only electricity cooling or heating model;
2. WithAir® PV Air-Cooled Heat Pump & Chiller take advantage of solar PV for cooling first, when the solar radiation is enough use electricity to be backup energy, cooling capacity change from 100% to 0%, accordingly, electricity power change from 0% to 100%;
3. Fouling factor for chilled water :0.086m^2°C/kW;
4. The data in this table are for reference only, please following the nameplate parameter of this product.

PV Solar Energy Air Source Heat Pump Water Heater

Model W04WH-			3PV	6PV	11PV	16PV	23PV	31PV
Heating capacity		kW	10.9	19.7	38.7	55.2	80.5	108.0
		Ton	3.1	5.6	11	15.7	22.9	30.7
		10^3kcal/h	9.4	16.9	33.3	47.5	69.3	92.8
		Btu/h	38,345	69,268	136,062	194,198	283,257	379,737
PV array	PV area	m^2	32.6	58.4	119.5	160.3	239.1	320.6
	Rated voltage	DC	700V+30V (OCV of the solar PV array)					
		AC	380V/3Ph/50(60)Hz					
	PV power input	kW	2.4	4.3	8.8	11.8	17.6	23.6
	Electric power input	kW	2.4	4.3	8.8	11.8	17.6	23.6
Hot water	Flow rate	L/h	235.0	420.0	820.0	980.0	1650.0	1980.0
	Inlet/outlet Temp.	°C	55					
	Inlet/outlet pipe	DN	32	32	32	50	50	50
	Pressure drop	kPa	60	30	30	40	50	50
Dimension	Length	mm	795	810	810	1,500	1,700	2,000
	Width	mm	655	1,090	1,090	1,150	1,500	1,100
	Height	mm	1,600	1,600	1,700	1,700	1,700	1,900
Weight	Net weight	kg	90	140	185	280	495	780
	Gross weight	kg	100	155	210	310	530	820

The data in the above table test as following:

1. The flow rate of hot water is design by the local water tempeature increase 40°C;
2. All the parameters design by situation: dry bulb temperature 20°C,wet bulb temperature 15°C;
3. WithAir® PV Air Sourc Heat Pump Water Heater could be use solar PV model and only electricity model;
4. The data in this table are for reference only, please following the nameplate parameter of this product.

Solar PV Chiller

Model W04C-			4PV	7PV	11PV	18PV	35PV	53PV	69PV	87PV	105PV
Cooling capacity		kW	11.5	23	35	58	115	175	230	290	350
		Ton	3.5	7	10.5	17.8	34.6	52.9	68.7	86.6	104.7
		10^3kcal/h	9.9	19.8	30.1	49.9	98.9	150.5	197.8	249.4	300.9
		Btu/h	39,238	78,476	119,420	197,896	392,380	597,100	784,760	989,480	1,194,200
PV array	PV area	m^2	32.6	65.2	97.8	163	326	489	652	815	978
	Rated voltage	DC	700V+30V (OCV of the solar PV array)								
		AC	380V/3Ph/50(60)Hz								
	PV+EP power input	kW	2.6	5.1	7.8	12.9	25.6	38.9	51.1	64.4	77.8
Cooling water	Flow rate	m^3/h	2.4	4.8	7.4	12.2	24.2	36.8	48.4	61.0	73.6
	Inlet/outlet Temp.	°C	30/35								
	Inlet/outlet pipe	DN	32	40	40	50	65	80	100	100	125
	Pressure drop	kPa	40	40	40	50	50	50	60	60	60
Chilled water	Flow rate	m^3/h	2.0	4.0	6.0	10.0	20.0	30.0	40.0	50.0	60.0
	Inlet/outlet Temp.	°C	15/10 (12/7)								
	Inlet/outlet pipe	DN	32	32	40	50	65	65	80	100	100
	Pressure drop	kPa	60	30	30	40	50	50	50	50	50
Dimension	Length	mm	1,350	1,350	1,450	1,600	2,100	2,400	2,550	2,800	2,900
	Width	mm	970	990	1,040	1,140	1,100	1,150	1,250	1,350	1,350
	Height	mm	1,480	1,580	1,650	1,650	1,650	1,850	1,850	1,950	1,950
Weight	Net weight	kg	210	280	320	780	1,150	1,500	2,000	2,150	2,200
	Gross weight	kg	240	320	350	820	1,200	1,550	2,150	2,350	2,450

The data in the above table test as following:

1. WithAir® PV Air-Cooled Heat Pump & Chiller could be set use solar PV cooling or heating model and only electricity cooling or heating model;
2. WithAir® PV Air-Cooled Heat Pump & Chiller take advantage of solar PV for cooling first, when the solar radiation is enough use electricity to be backup energy, cooling capacity change from 100% to 0%, accordingly, electricity power change from 0% to 100%;
3. Fouling factor for chilled water :0.086m^2°C/kW;
4. The data in this table are for reference only, please following the nameplate parameter of this product.

Hybrid Heat Pumps (Solar & Geothermal energy)

Model W04AC-				2GPV	3GPV	6GPV
Cooling capacity	Nominal	only by heat pump	kW	5.5	10.2	20.8
	Rated input power		kW	0.82	1.73	3.2
	Rated current		A	6	11.7	8.7
	Max.current		A	9.5	17.7	13.6
Floor heating	Rated heating	only by solar energy	kW	7	14.3	28.9
	Rated input power		kW	1	1.9	3.8
	Rated heating	only by heat pump	kW	5.4	10.5	13.3
	Rated input power		kW	1.1	1.96	3.9
Fan coil unit	Rated heating	only by solar energy	kW	6.4	13.2	26.5
	Rated input power		kW	1.2	2.3	4.7
	Rated heating	only by heat pump	kW	5	9.8	19.6
	Rated input power		kW	1.1	2.2	4.5
PVT heating evaporator	Installation type			Rooftop		
	Dimension	L*W*H	mm	2000*1000*50		
	Solar evaporator qty		piece	5/6	10/12	20/24
	Solar evaporator area		m^2	10/12	20/24	40/48
	Solar panel coating			Magnetron sputtering blue titanium		
	Solar panel cover			High-transparent toughened glass		
	PV peak value	single piece	W	320		
	Weight		kg	37.6		
Heat Pump	Power supply		V/Ph/Hz	220/1/50	220/1/50	380/3/50
	Refrigerant			R134a		
	Compressor			Rotary/scroll		
	Safe Protection Devices			High/low pressure switch,overload protection,counter clockwise and short phase protection(power phases sequence protection),lack water(water-flow switch),anti-freeze protection,ect		
	Dimension (L*W*H)		mm	600*500*400	800*700*650	800*700*650
	Weight		kg	32	86	165

The data in the above table test as following:

1.For heating(fan coil unit):

Only by solar energy working condition: solar panel core temperature :15℃, user side inlet/outlet water temperature:40℃/45℃;

Only by ground source heat pump working condition: source side inlet/outlet water temperature:5℃/10℃, user side inlet/outlet water temperature:40℃/45℃;

2.For heating(heating floor):

Only by solar energy working condition: solar panel core temperature :15℃, inlet/outlet water temperature:31℃/36℃;

Only by ground source heat pump working condition: source side inlet/outlet water temperature:5℃/10℃, user side inlet/outlet water temperature:31℃/36℃;

3.For cooling working condition:source side inlet/outlet water temperature:25℃/20℃, user side inlet/outlet water temperature.12℃/7℃;

4.PV peak value: solar radiation intensity1000W/m2

5.The data in this table are for reference only, please following the nameplate parameter of this product.

Hybrid Heat Pumps (Solar & Air Source)

Model W04AC-				1APV	2GPV	4GPV
Cooling capacity	Nominal	only by heat pump	kW	3.1	7	15
	Rated input power		kW	0.91	2.1	4.2
	Rated current		A	6	11.7	8.8
	Max.current		A	9.5	18.9	14.5
Floor heating	Rated heating	only by solar energy	kW	7	12.9	25.3
	Rated input power		kW	1.2	1.9	3.8
	Rated heating	only by heat pump	kW	3.1	6.2	12.1
	Rated input power		kW	0.95	1.6	3.5
Fan coil unit	Rated heating	only by solar energy	kW	5.9	12	21.5
	Rated input power		kW	1.2	2.2	4.7
	Rated heating	only by heat pump	kW	2.8	5.5	11
	Rated input power		kW	1.03	1.9	3.8
PVT heating evaporator	Installation type			Rooftop		
	Dimension	L*W*H	mm	2000*1000*50		
	Solar evaporator qty		piece	5/6	10/12	20/24
	Solar evaporator area		m^2	10/12	20/24	40/48
	Solar panel coating			Magnetron sputtering blue titanium		
	Solar panel cover			High-transparent toughened glass		
	PV peak value	single piece	W	320		
	Weight		kg	37.6		
Heat Pump	Power supply		V/Ph/Hz	220/1/50	220/1/50	380/3/50
	Refrigerant			R134a		
	Compressor			Rotary/scroll		
	Safe Protection Devices			High/low pressure switch,overload protection,counter clockwise and short phase protection(power phases sequence protection),lack water(water-flow switch),anti-freeze protection,ect		
	Dimension (L*W*H)		mm	755*375*1290	680*680*880	755*695*1065
	Weight		kg	45	62	93

The data in the above table test as following:

1.For heating(fan coil unit):

Only by solar energy working condition: solar panel core temperature :15℃, user side inlet/outlet water temperature:40℃/45℃;

Only by heat pump working condition: ambient temperature :-10℃, user side inlet/outlet water temperature:40℃/45℃;

2.For heating(heating floor):

Only by solar energy working condition: solar panel core temperature :10℃, inlet/outlet water temperature:31℃/36℃;

Only by heat pump working condition: ambient temperature :-10℃, user side inlet/outlet water temperature:33℃/38℃;

3.For cooling working condition:ambient temperature(DB/WB):35℃/24℃,user side inlet/outlet water temperature.12℃/7℃;

4.PV peak value: solar radiation intensity1000W/m2

5.The data in this table are for reference only, please following the nameplate parameter of this product.

—— 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.

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.

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