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03

AR-DW-Series
WATER SOURCE HEAT PUMP

MAX. Hot Water Temp. 80℃
Combined Cooling & Heating

Heating capacity : 21 KW-385 KW





TYPICAL APPLICATION AREAS

- House
- Apartment / Hotel
- Shopping mall/Suprmarket
- Office building
- Hospital / School
- Manufacturing plant
- Chemical plant / Food factory
- Pharmaceutical plant
- Green house
- Livestock farming plants Dwelling

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APPLICATION FIELD OF HEAT PUMP

Civil buildings, Public buildings	Purpose
Residence	Heating, Domestic hot water
School	Heating, Domestic hot water
Hospitals, clinics	Heating, Domestic hot water
Museums, libraries, gymnasiums	Heating, Domestic hot water
Airport ，Station	Heating, Domestic hot water
Commercial field	**Purpose**
Office building	Heating,Domestic hot water
Hotels, Apartments, Resorts	Heating, Domestic hot water
Shopping malls, Supermarkets	Heating, Domestic hot water
Restaurants, Bars	Heating, Domestic hot water
SPA、Sauna	Heating, Domestic hot water
Agriculture and Subsidiary Areas	**Purpose**
Greenhouse	Heat preservation, Heating
Seed breeding houses	Heat preservation, Heating/Drying
Deeply processed agricultural products	Heating,Dehydration, Drying
Farming plants	Heat preservation, Heating
Slaughtering and Meat Processing	Process hot water
Chemical industry	**Purpose**
Petrol chemical plant	Preheating,Heating, Purification, Separation and Distillation
Chemical Fiber Plant	Heat preservation,Heating,Evaporation,Distillation
Oleochemical industry	Heat preservation,Heating,Distillation
Fertilizer and feed plants	Preheating, Heating and Drying Process
Manufacturing field	**Purpose**
Paper mills, Textile mills, Printing plants	Preheating,Heating,Drying and Cooking
Food factory, Dairy factory, Brewery	Preheating,Heating,Fermentation and Disinfection
Crafts and Ceramics	Drying process
Wood processing,Furniture, Floor board	Drying process
Painting Factory	Surface treatment drying, curing
Electroplating factory	Electroplating process

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Futureproof and efficient cooling&heating technology for all requirements

In industrialized countries,industrial and commercial cooling and heat supply for the largest proportion of energy consumption,therefore has the greatest savings potential.

Taking industry as an example,in many industrial production processes, there is a demand for heating and cooling,in generally,the solution is to provide a heat source through a boiler or other heater,while using a chiller to provide a cold source,In this process, a large amount of energy is consumed by boiler and chiller,resulting in continued high production costs,the same situation also occurs during the commercial operation,how to reduce energy consumption and reduce production/ operational costs is a continuing concern for every owners.

ARO has innovative heat pump technology,our combined heating and cooling heat pump system has been applied successfully all over the world, to provide efficient/clean energy for plants and commercial sites, COP up to 7.3 and save more than 70% energy for users, which made an important contribution to the sustainable protection of energy reserves and environmental protection.



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Application

In many large hotels and commercial buildings, there is usually a large demand for cold water (air conditioning) and hot water(Domestic hot water),The traditional solution is that use chiller to provide cold water and use boiler to provide hot water, but the two equipments will consume a lot of energy in use and increase the operating cost of users. The use of AR-DW series heat pump will effectively reduce energy consumption and save a lot of operation cost.

AR-DW series heat pump with cold and hot combined function,It can produce cold water while producing hot water,These cold water can be used as air-conditioned cold water (independent provide / integrated into air-conditioned cold water pipe),This will enable heat pumps to replace both chillers and boilers under certain application conditions.

Cold and hot combined of AR-DW series heat pump,the COP≧5.2 (CW7℃ / HW60℃),In the projects put into operation, comparative analysis through continuous monitoring data, the energy saving of heat pump compared with chiller and boiler is more than 70%, and the operating cost is greatly reduced.

- Heat pump uses environmentally friendly refrigerants, will not have adverse effects on the environment, in line with the highest level of environmental protection requirements.
- Safty use conditions, no fire, explosion and other safety hazards.

AR-DW Series heat pumps has been put into use in hotels and commercial buildings in many regions, and continues to reduce energy consumption for users, reduce operating costs, more users will choose heat pumps in the future.



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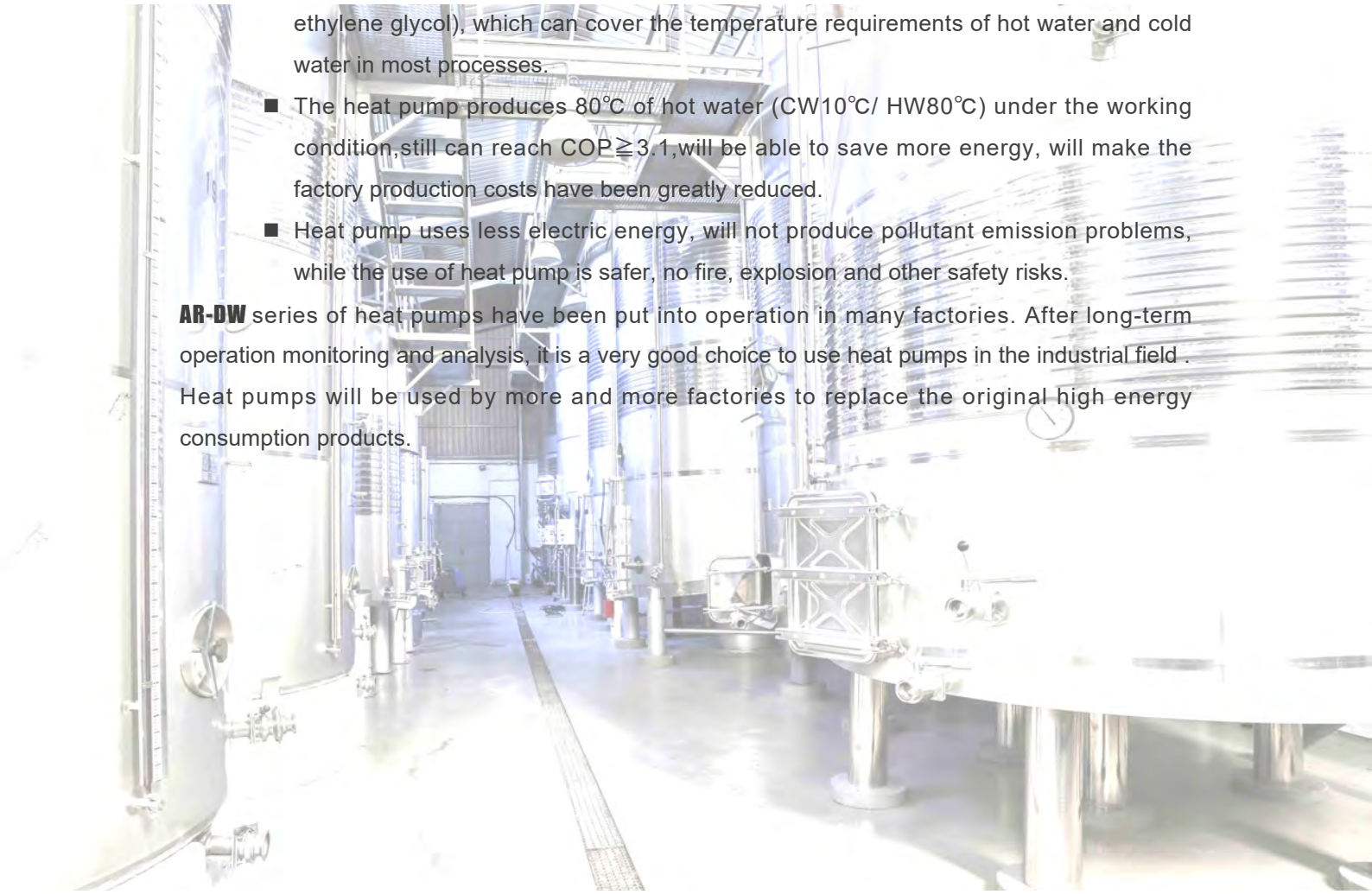
Application

Many factories need both process cold water (including water / brine / ethylene glycol solution) and process hot water to meet production needs,For a long time, factories use (chillers / brine machines) and (boilers / electric heaters) to supply cold and hot water, respectively.The use of more equipment increases the investment costs of the plant,At the same time, more energy consumption in the process of use will also lead to the factory production costs can not be reduced, more equipment means more frequent failure rate, will also bring hidden dangers to the continuous production of the factory.

The use of heat pump will be able to solve these problems.

- Heat pump with cold/hot combined function,can provide process hot water and process cold water at the same time.After reasonable matching, the water cooler and boiler can be replaced, which avoids the problems of high investment cost and high failure rate caused by the use of many kinds of equipment.
- The heat pump can produce up to 80℃ of hot water and -10℃ of solution (brine / ethylene glycol), which can cover the temperature requirements of hot water and cold water in most processes.
- The heat pump produces 80℃ of hot water (CW10℃/ HW80℃) under the working condition,still can reach COP≧3.1,will be able to save more energy, will make the factory production costs have been greatly reduced.
- Heat pump uses less electric energy, will not produce pollutant emission problems, while the use of heat pump is safer, no fire, explosion and other safety risks.

AR-DW series of heat pumps have been put into operation in many factories. After long-term operation monitoring and analysis, it is a very good choice to use heat pumps in the industrial field . Heat pumps will be used by more and more factories to replace the original high energy consumption products.



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BASIC INFORMATION

Model Number Nomenclature

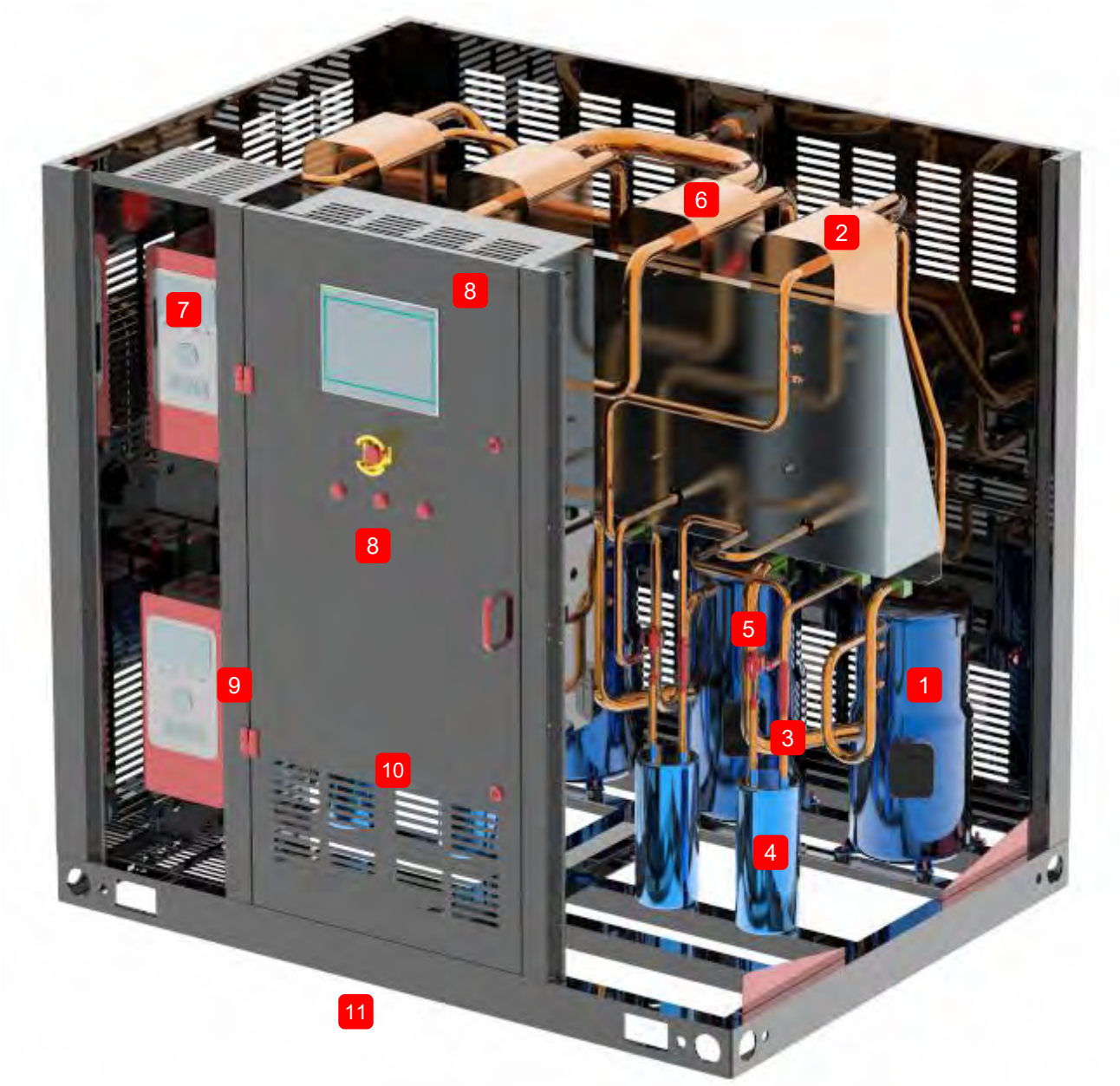
AR-DW	20	S	M	A	S	-I	00
01	02	03	04	05	06	07	08

01 Series code
02 Heating capacity code(kW)
03 Working mode code
S：Combined cooling&heating type
C：Heating only type
04 Refrigerant code
M：R134a **U**：R1234ze
05 Power Supply code
A：380-420V/3N-50Hz **B**：220-240V/1N-50Hz **C**：220-240V/3N-50Hz **D**：380-420V/3N-60Hz
E：220-230V/3N-60Hz **F**：460V/3N-60Hz **G**：220-230V/1N-60Hz
06 Auxiliary function code
S：Standard **P**：Built-in water pump
07 Compressor type code
I：Invariable frequency compressor
V：VFD compressor
08 Other custom function code
00-09(Manufacturer's internal code)



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PRODUCT STRUCTURE



1	Compressor	2	Condenser	3	Filter
4	Reservoir	5	Expansion valve	6	Evaporator
7	Inverter（Optional）	8	Electrical box		

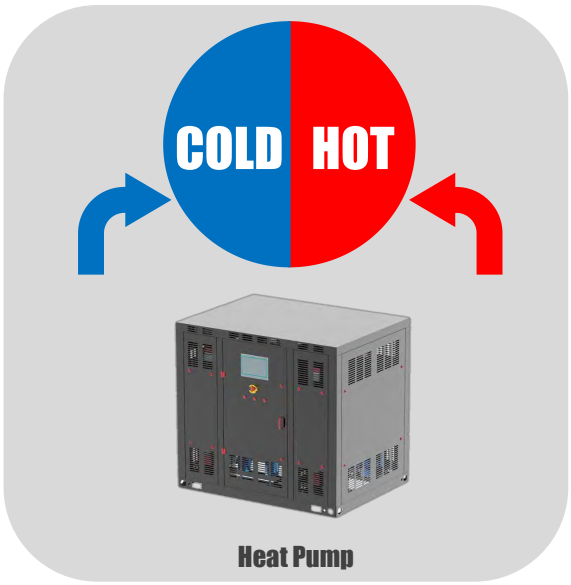
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PRODUCT FEATURES

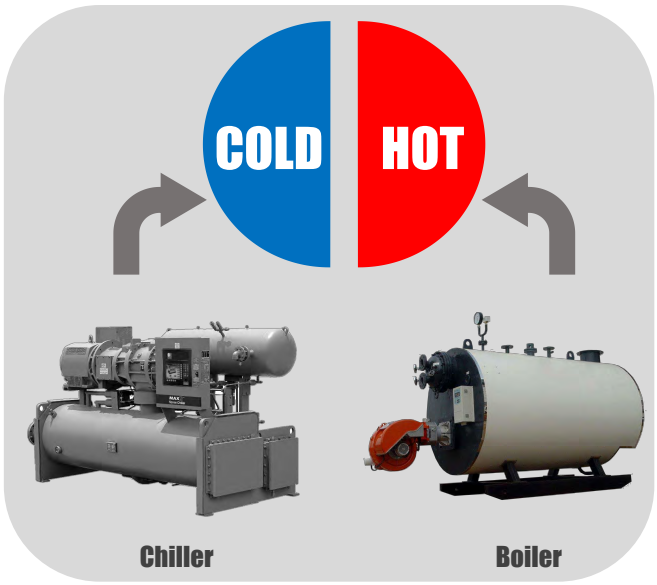
01 Combined Cooling & Heating

MAX. hot water temp. 80℃， MIN. chilled water temp. -10℃

- AR-DW Series heat pump has the function of combined cooling and heating supply，can stable output 70℃(Max 80℃- Limited chilled water temp. 10 ℃)hot water,while providing not less than 5℃ chilled water.
- A heat pump can realize the functions of boiler and chiller simultaneously，it can be used to replace boilers and water chillers in the process of practical application,or use it in combination.



Heat Pump

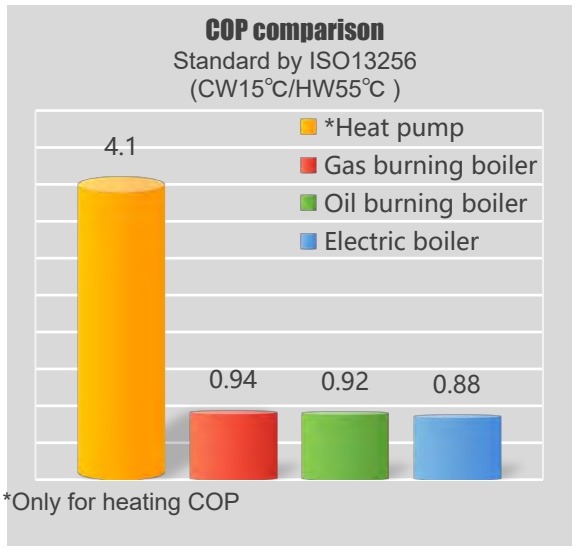


Chiller

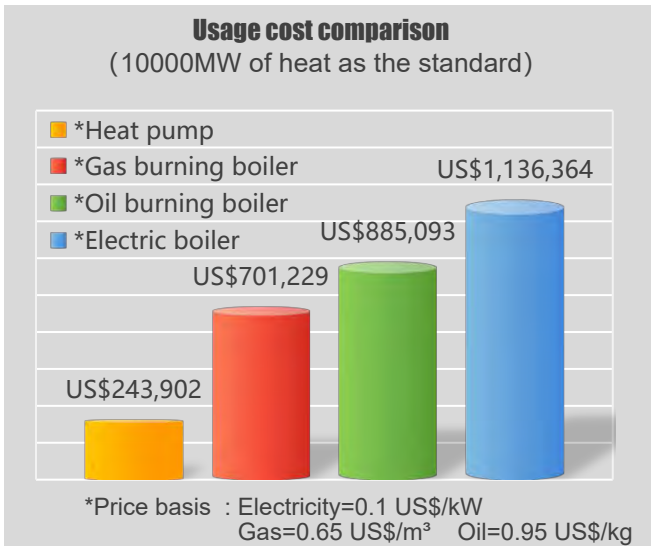
Boiler

02 High COP , Saving more cost

- AR-DW Series heat pump with the leading technology,Reach higher COP(only heating COP ＞**4.1**, combiend cooling&heating COP＞**5.2**),Save more than 70% of operating costs for users.



*Only for heating COP



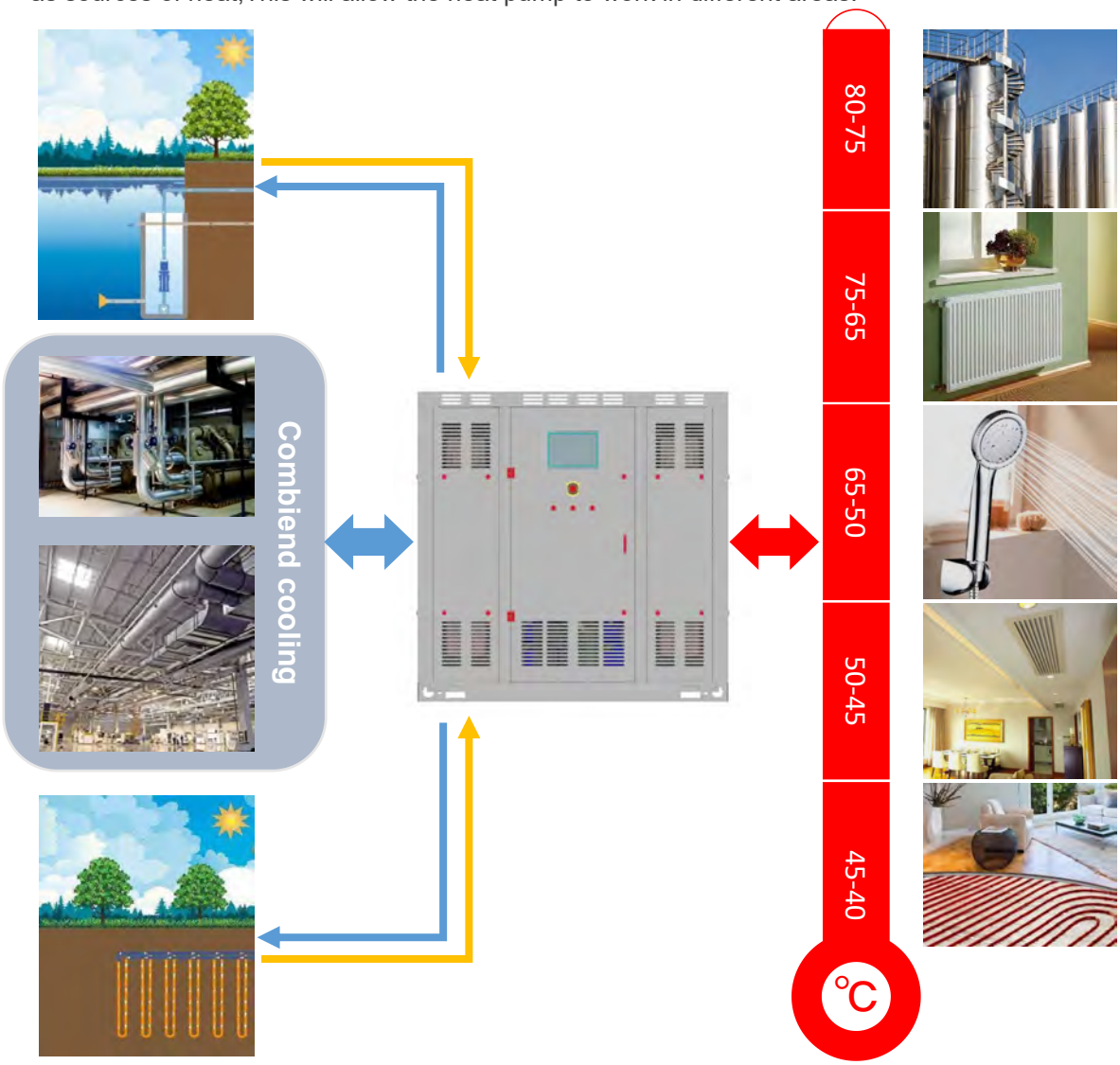
*Price basis : Electricity=0.1 US$/kW
Gas=0.65 US$/m³ Oil=0.95 US$/kg

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PRODUCT FEATURES

03 More Options， Wider use area

- Heat pump can supply 40℃-80℃hot water， It basically meets the requirements of hot water temperature under different service conditions, and makes the application of heat pump more extensive.
- Under the working condition of cold and heat combined supply,heat pumps produce hot and cold water meantime(Min.-10℃ solutions),While meeting hot water requirements, cold water can be incorporated into the building air conditioning system as cold water for air conditioning or as process cold water for the plant.Using hot and cold combined type heat pumps in places that require hot and cold water at the same time will be the most energy-efficient solution.
- Under the working condition of heating only, the heat pump can obtain low level thermal energy widely,including but not limited to the use of surface water sources (lakes, rivers, seawater), groundwater sources, soil sources and sewage sources (domestic sewage, industrial wastewater) as sources of heat,This will allow the heat pump to work in different areas.



PRODUCT FEATURES

04 Environmental protection refrigerant, reduce the impact on the environment

- Use HFC R134a refrigerant (ODP=0,GWP=1300) for heat pump.
- Also can select HFO R1234ze refrigerant (ODP=0,GWP < 1) for heat pump,this will achieve full protection of the environment，Meet the highest standards of environmental protection.





05 VFD load output (Optional)

- Using VFD compressor, can achieve 25Hz -100Hz load output, to provide heat quickly, And partial load will be much higher COP,can save 30%-45% of operating cost.



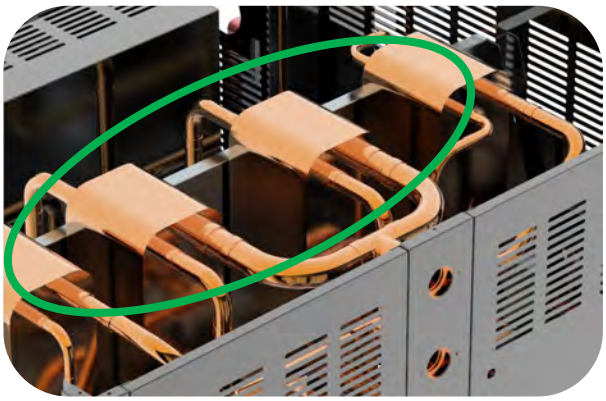


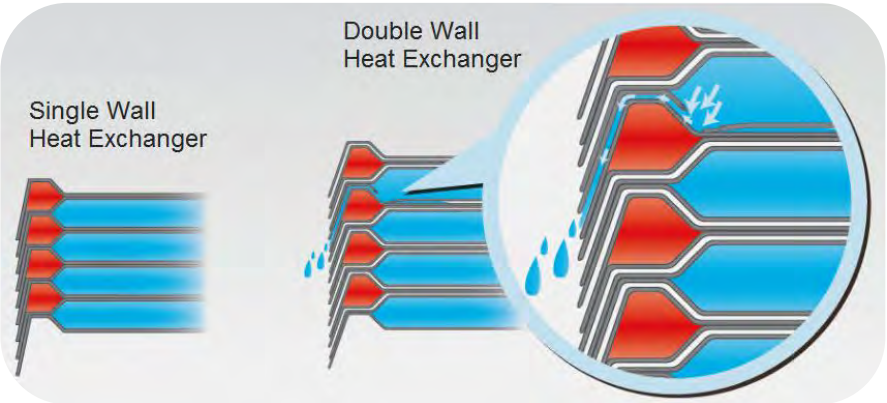
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PRODUCT FEATURES

06 The safest water heat exchange system (Optional)

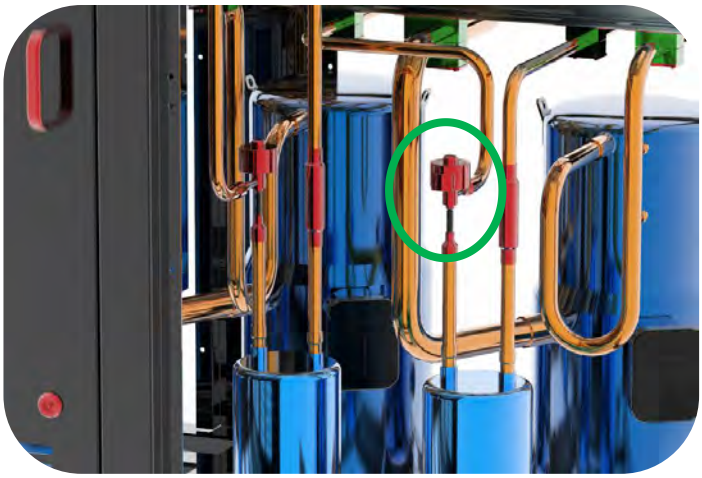
- Optional double wall heat exchanger,can insulate leakage between heat pump refrigerant system and water system,avoid cross-contamination,to maximum guarantees the safety of heat pumps and user water systems.
- When there is a slight leak, you can visually find the leak point, easy to quickly repair.

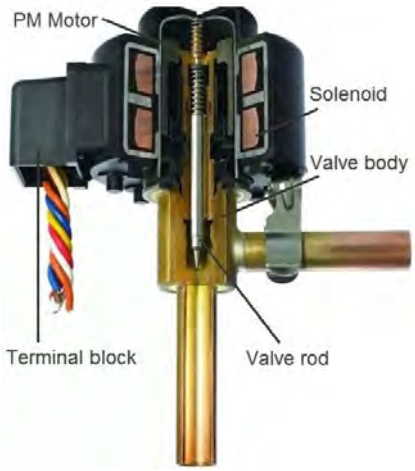




07 High precision EEV (Optional)

- Use EEV, match VFD load output, can accurately control water temperature.
- Protect the heat pump can operate stablely under extreme conditions.





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PRODUCT FEATURES

08 PLC Control System， Graphical HMI

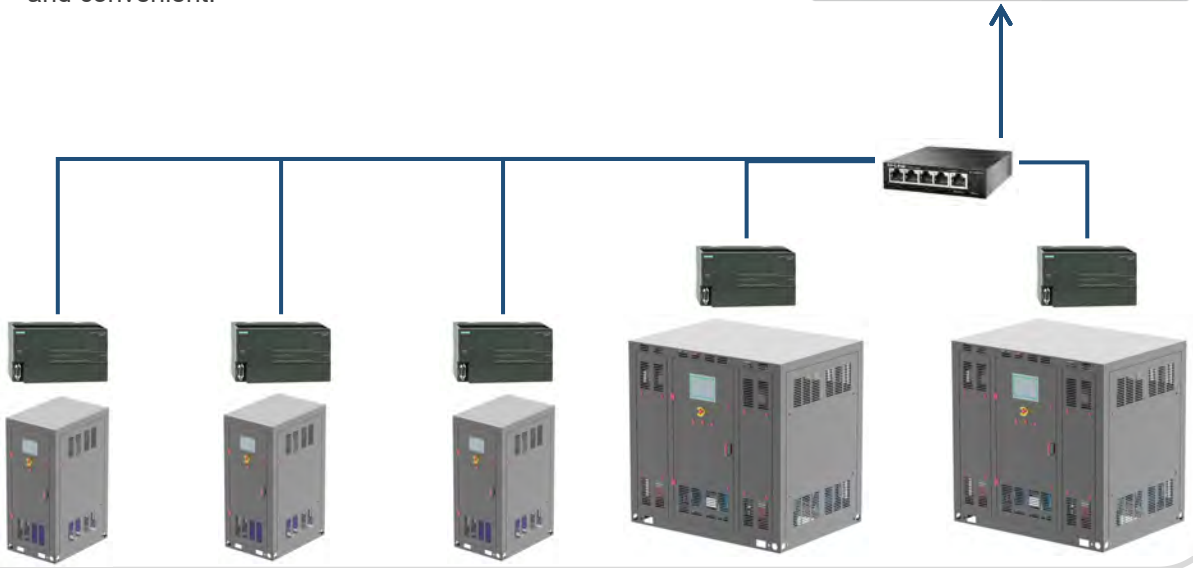
- Standard industrial PLC controller with powerful function and high stability.
  - Complete control and protection functions.
  - Automatic operation control system,automatic fault diagnosis and alarm function.
  - Better anti-interference ability, Higher security.
  - Strong logic processing power,Flexible implementation of various control requirements.
  - With remote control function, it is convenient to realize centralized control.



- 10" HD man-machine interface and graphical display system.
  - Graphical display of heat pump operating state.
  - Detailed display of running data.
  - Easy touch operating system.

- PLC control system facilitates centralized management and enables group or individual control according to user- freely set requirements,In the subsequent use process, when the user needs to add / adjust the control function, our engineer can realize these new requirements by modifying the control program, which will make the user's use more flexible and convenient.



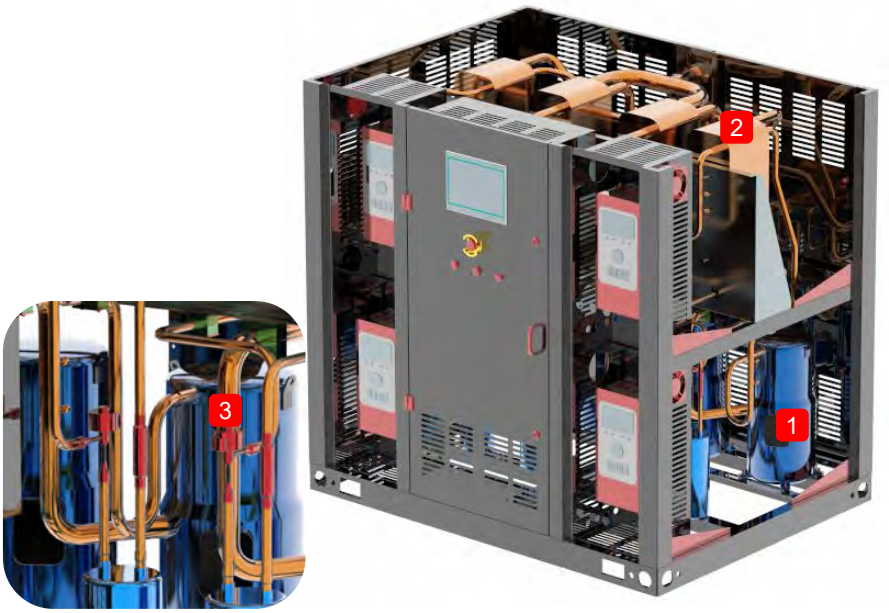


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PRODUCT CUSTOMIZATION

Power Supply Optional

A：380-420V/3N-50Hz(Standard)
B：220-240V/1N-50Hz
C：220-240V/3N-50Hz
D：380-420V/3N-60Hz
E：220-230V/3N-60Hz
F：440-480V/3N-60Hz
G：220-230V/1N-60Hz



Refrigerant Optional

M: R134a (Standard) GWP=1300	The environment-friendly refrigerant,can produce high temperature hot water efficiently.
U: R1234ze GWP < 1	The latest environment-friendly refrigerant, in line with the highest environmental standards.

Compressor Optional 1

Scroll compressor (Standard)	VFD scroll compressor
	
● Stable performance output. ● Adaptation to more use environments. ● High cost-performance ratio. ● Low failure rate.	● High precision variable load output. ● Rapid cooling/heating. ● COP increased to 15%~20% in partial load condition

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PRODUCT CUSTOMIZATION

Hot / Chilled(Source) Water Heat Exchanger Optional 2

Brazed Plate Heat Exchanger (Standard)	Nickel Brazed Plate Heat Exchanger	Double Wall Heat Exchanger
		
● Highest heat exchange efficiency. ● Minimum size structure. ● High cost-performance ratio.	● Good corrosion resistant performance. ● Suitable for pure water.	● The highest hygienic grade. ● The safest water heat exchanger.

Expansion Valve Optional 3

Thermal Expansion Valve (Standard)	Electronic Expansion Valve
	
● Mechanical structure, stable performance. ● MOP protection function.	● High-precision adjustment. ● Quick response. ● More comprehensive system protection function.

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PRODUCT PARAMETERS

Combined Cooling & Heating Type

(Rated per GB/T19409-2013 standard)
Hot water inlet/outlet 60℃/70℃
Chilled (Source) water inlet/outlet 15℃/10℃

AR-DW (***)S/C		Unit	20	25	30	40	50	60	80
Heating capacity		kW	21.1	23.9	32.1	42.2	47.7	64.2	84.4
Cooling capacity (C type N/A)		kW	13.1	14.8	19.1	26.1	29.6	38.3	52.3
Electrical	Power supply		380-400V/3N～/50Hz						
	Rating input power	kW	8.0	9.1	12.9	16.1	18.2	25.9	32.1
	Rating current	A	14.8	16.9	23.9	29.9	33.7	48.0	59.5
	Max running current	A	20.3	24.0	32.1	40.6	48.0	64.2	81.2
Compressor	Type		Hermetic scroll compressor						
	Qty	Set	1	1	1	2	2	2	4
	Starting method		Direct Start						
	Capacity adjustment	Class	N/A	N/A	N/A	2	2	2	4
Chilled(Source) water heat exchanger	Type		Brazed Plate Heat Exchanger						
	Water flow	m³/h	2.3	2.5	3.3	4.5	5.1	6.6	9.0
	Water pressure drop	kPa	29	31	31	32	35	34	36
	Connection pipe	DN	40	40	40	50	50	50	65
	Working pressure	MPa	1.6						
Hot water heat exchanger	Type		Brazed Plate Heat Exchanger						
	Water flow	m³/h	3.6	4.1	5.5	7.2	8.2	11.0	14.5
	Water pressure drop	kPa	32	35	34	31	41	42	41
	Connection pipe	DN	40	40	40	50	50	50	65
	Working pressure	MPa	1.6						
Refrigeration	Type		R134a						
	Charge(Total)	kg	4.0	4.5	6.0	8.0	9.0	12.0	16.0
Outline dimension	Length	mm	600			700			1400
	Width	mm	800			1000			1200
	Height	mm	1600			1600			1600
Weight	Shipping weight	kg	220	250	280	400	450	500	800
	Operating weight	kg	240	270	310	440	490	560	880

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PRODUCT PARAMETERS

Combined Cooling & Heating Type

(Rated per GB/T19409-2013 standard)
Hot water inlet/outlet 60℃/70℃
Chilled (Source) water inlet/outlet 15℃/10℃

AR-DW(***)S/C		Unit	100	120	160	200	240	320	400
Heating capacity		kW	95.4	128.3	143.1	192.5	256.7	320.8	385.0
Cooling capacity (C type N/A)		kW	59.1	76.6	88.7	114.9	153.1	191.4	229.7
Electrical	Power supply		380-400V/3N～/50Hz						
	Rating input power	kW	36.3	51.8	54.5	77.6	103.5	129.4	155.3
	Rating current	A	67.3	96.0	101.0	143.8	191.8	239.8	287.7
	Max running current	A	96.0	128.4	144.0	192.6	256.8	321.0	385.2
Compressor	Type		Hermetic scroll compressor						
	Qty	Set	4	4	6	8	8	12	12
	Starting method		Direct Start						
	Capacity adjustment	Class	4	4	6	8	8	6	6
Chilled(Source) water heat exchanger	Type		Brazed Plate Heat Exchanger						
	Water flow	m³/h	10.2	13.2	15.3	19.8	26.3	32.9	39.5
	Water pressure drop	kPa	33	36	35	37	39	42	44
	Connection pipe	DN	65	65	65	80	80	100	100
	Working pressure	MPa	1.6						
Hot water heat exchanger	Type		Brazed Plate Heat Exchanger						
	Water flow	m³/h	16.4	22.0	24.6	33.1	44.1	55.1	66.2
	Water pressure drop	kPa	43	45	44	49	48	48	51
	Connection pipe	DN	65	65	65	80	80	100	100
	Working pressure	MPa	1.6						
Refrigeration	Type		R134a						
	Charge(Total)	kg	18	24	27	36	48	60	72
Outline dimension	Length	mm	1400		2000	2400		3000	
	Width	mm	1200		1200				
	Height	mm	1600		1600				
Weight	Shipping weight	kg	850	1000	1400	1700	1900	2200	2400
	Operating weight	kg	930	1120	1520	1850	2080	2420	2650

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VARIABLE WORKING CONDITION DATA 1/14

AR-DW 20 S/C				Hot water outlet temp.								
	℃			80	75	70	65	60	55	50	45	40
		℉		175	167	158	150	140	131	122	113	104
Chilled(Source) Water Outlet Temp.	-10	14	POWER(KW)			6.8	6.1	5.4	4.8	4.4	4.0	3.7
			HEAT(KW)			11.4	11.7	11.9	12.1	12.2	12.3	12.4
			COOL(KW)	Standard unit		4.5	5.6	6.5	7.2	7.8	8.3	8.7
			TOTAL COP			2.3	2.9	3.4	4.0	4.6	5.1	5.7
	-5	23	POWER(KW)			7.2	6.5	5.8	5.2	4.7	4.3	4.0
			HEAT(KW)	Call manufacturer		13.4	13.7	14.0	14.2	14.4	14.6	14.8
			COOL(KW)			6.2	7.3	8.2	9.0	9.7	10.3	10.8
			TOTAL COP			2.7	3.3	3.8	4.5	5.1	5.8	6.4
	0	32	POWER(KW)		9.4	7.5	6.8	6.1	5.5	5.0	4.6	4.2
			HEAT(KW)		16.4	15.7	16.0	16.3	16.6	16.9	17.3	17.6
			COOL(KW)		7.0	8.2	9.3	10.3	11.1	11.9	12.7	13.4
			TOTAL COP		2.5	3.2	3.7	4.4	5.0	5.8	6.6	7.4
	5	41	POWER(KW)		9.7	7.8	7.0	6.4	5.8	5.2	4.8	4.4
			HEAT(KW)		18.9	18.3	18.6	19.0	19.4	19.8	20.3	20.9
			COOL(KW)		9.2	10.5	11.6	12.7	13.6	14.6	15.6	16.5
			TOTAL COP		2.9	3.7	4.3	5.0	5.7	6.6	7.5	8.5
	10	50	POWER(KW)	9.8	8.9	8.0	7.3	6.6	6.0	5.5	5.0	4.6
			HEAT(KW)	20.2	20.7	21.1	21.6	22.0	22.6	23.2	23.9	24.7
			COOL(KW)	10.4	11.8	13.1	14.3	15.4	16.6	17.7	18.9	20.1
			TOTAL COP	3.1	3.7	4.3	4.9	5.7	6.5	7.4	8.5	9.7
	15	59	POWER(KW)	10.0	9.1	8.3	7.6	6.9	6.4	5.8	5.3	4.9
			HEAT(KW)	23.3	23.8	24.3	24.9	25.5	26.2	27.0	28.0	29.1
			COOL(KW)	13.3	14.6	16.0	17.3	18.6	19.9	21.2	22.7	24.2
			TOTAL COP	3.6	4.2	4.8	5.6	6.3	7.3	8.3	9.5	10.9
	20	68	POWER(KW)	10.3	9.4	8.7	8.0	7.3	6.8	6.2	5.7	5.3
			HEAT(KW)	26.6	27.2	27.9	28.6	29.4	30.4	31.4	32.6	34.0
			COOL(KW)	16.3	17.8	19.2	20.6	22.1	23.6	25.2	26.9	28.7
			TOTAL COP	4.2	4.8	5.4	6.2	7.0	8.0	9.1	10.4	11.9
	25	77	POWER(KW)	10.7	9.9	9.1	8.5	7.9	7.3	6.8	6.3	5.8
			HEAT(KW)	30.4	31.1	31.9	32.8	33.8	35.0	36.4	37.9	39.6
			COOL(KW)	19.7	21.2	22.8	24.3	26.0	27.7	29.6	31.6	33.8
			TOTAL COP	4.7	5.3	6.0	6.8	7.6	8.6	9.7	11.1	12.6
	30	86	POWER(KW)	11.2	10.4	9.7	9.1	8.5	8.0	7.5	7.0	6.5
			HEAT(KW)	34.5	35.4	36.4	37.5	38.8	40.3	41.9	43.8	45.9
			COOL(KW)	23.4	25.0	26.7	28.4	30.3	32.3	34.5	36.8	39.4
			TOTAL COP	5.2	5.8	6.5	7.2	8.1	9.1	10.2	11.5	13.1

Energy Solutions since 1946

VARIABLE WORKING CONDITION DATA 2/14

AR-DW 25 S/C				Hot Water Outlet Temp.								
	℃			80	75	70	65	60	55	50	45	40
		℉		175	167	158	150	140	131	122	113	104
Chilled(Source) Water Outlet Temp.	-10	14	POWER(KW)			7.7	6.9	6.1	5.5	5.0	4.5	4.2
			HEAT(KW)			12.9	13.2	13.5	13.7	13.8	13.9	14.0
			COOL(KW)	Standard unit		5.1	6.4	7.4	8.2	8.9	9.4	9.8
			TOTAL COP			2.3	2.9	3.4	4.0	4.6	5.1	5.7
	-5	23	POWER(KW)			8.2	7.3	6.5	5.9	5.3	4.9	4.5
			HEAT(KW)	Call manufacturer		15.2	15.5	15.8	16.1	16.3	16.5	16.7
			COOL(KW)			7.0	8.2	9.3	10.2	10.9	11.6	12.2
			TOTAL COP			2.7	3.3	3.8	4.5	5.1	5.8	6.5
	0	32	POWER(KW)		10.7	8.5	7.6	6.9	6.2	5.6	5.2	4.7
			HEAT(KW)		18.5	17.8	18.1	18.5	18.8	19.1	19.5	19.9
			COOL(KW)		7.9	9.3	10.5	11.6	12.6	13.5	14.4	15.2
			TOTAL COP		2.5	3.2	3.7	4.4	5.0	5.8	6.6	7.4
	5	41	POWER(KW)		11.0	8.8	7.9	7.2	6.5	5.9	5.4	5.0
			HEAT(KW)		21.4	20.6	21.1	21.5	21.9	22.4	23.0	23.7
			COOL(KW)		10.4	11.9	13.1	14.3	15.4	16.5	17.6	18.7
			TOTAL COP		2.9	3.7	4.3	5.0	5.7	6.6	7.5	8.5
	10	50	POWER(KW)	11.1	10.0	9.1	8.2	7.5	6.8	6.2	5.7	5.2
			HEAT(KW)	22.9	23.4	23.9	24.4	25.1	25.5	26.2	27.0	28.0
			COOL(KW)	11.8	13.3	14.8	16.1	17.4	18.7	20.0	21.3	22.7
			TOTAL COP	3.1	3.7	4.3	4.9	5.7	6.5	7.4	8.5	9.7
	15	59	POWER(KW)	11.3	10.3	9.4	8.6	7.8	7.2	6.6	6.0	5.5
			HEAT(KW)	26.3	26.9	27.5	28.1	28.8	29.6	30.6	31.6	32.9
			COOL(KW)	15.0	16.6	18.1	19.5	21.0	22.5	24.0	25.6	27.3
			TOTAL COP	3.6	4.2	4.8	5.6	6.3	7.3	8.3	9.5	10.9
	20	68	POWER(KW)	11.6	10.7	9.8	9.0	8.3	7.6	7.0	6.5	6.0
			HEAT(KW)	30.1	30.8	31.5	32.3	33.3	34.3	35.5	36.9	38.5
			COOL(KW)	18.5	20.1	21.7	23.3	25.0	26.7	28.5	30.4	32.5
			TOTAL COP	4.2	4.8	5.4	6.2	7.0	8.0	9.1	10.4	11.9
	25	77	POWER(KW)	12.1	11.2	10.3	9.6	8.9	8.2	7.7	7.1	6.6
			HEAT(KW)	34.3	35.2	36.1	37.1	38.3	39.6	41.1	42.8	44.8
			COOL(KW)	22.3	24.0	25.7	27.5	29.4	31.4	33.5	35.7	38.2
			TOTAL COP	4.7	5.3	6.0	6.8	7.6	8.6	9.7	11.1	12.6
	30	86	POWER(KW)	12.6	11.8	11.0	10.3	9.6	9.0	8.4	7.9	7.4
			HEAT(KW)	39.1	40.0	41.2	42.4	43.9	45.6	47.4	49.5	51.9
			COOL(KW)	26.4	28.2	30.1	32.1	34.3	36.5	39.0	41.6	44.5
			TOTAL COP	5.2	5.8	6.5	7.2	8.1	9.1	10.2	11.5	13.1

ARO
Energy Solutions since 1946

VARIABLE WORKING CONDITION DATA 3/14

AR-DW 30 S/C				Hot water outlet temp.								
	℃			80	75	70	65	60	55	50	45	40
		℉		175	167	158	150	140	131	122	113	104
Chilled(Source) Water Outlet Temp.	-10	14	POWER(KW)			11.0	9.8	8.7	7.8	7.1	6.5	6.0
			HEAT(KW)			17.7	18.0	18.3	18.4	18.5	18.6	18.7
			COOL(KW)	Standard unit		6.6	8.2	9.6	10.6	11.5	12.1	12.7
			TOTAL COP			2.2	2.7	3.2	3.7	4.2	4.8	5.3
	-5	23	POWER(KW)			11.6	10.4	9.3	8.4	7.6	6.9	6.4
			HEAT(KW)	Call manufacturer		20.8	21.1	21.3	21.6	21.8	22.0	22.3
			COOL(KW)			9.1	10.7	12.0	13.2	14.2	15.1	15.9
			TOTAL COP			2.6	3.1	3.6	4.1	4.7	5.3	6.0
	0	32	POWER(KW)		15.2	12.1	10.9	9.8	8.9	8.0	7.3	6.7
			HEAT(KW)		25.4	24.1	24.5	24.8	25.2	25.5	25.9	26.4
			COOL(KW)		10.2	12.0	13.6	15.0	16.3	17.5	18.6	19.7
			TOTAL COP		2.3	3.0	3.5	4.1	4.7	5.3	6.1	6.8
	5	41	POWER(KW)		15.6	12.5	11.3	10.2	9.3	8.4	7.7	7.1
			HEAT(KW)		29.1	27.9	28.3	28.8	29.3	29.8	30.5	31.3
			COOL(KW)		13.5	15.4	17.0	18.5	20.0	21.4	22.8	24.2
			TOTAL COP		2.7	3.4	4.0	4.6	5.3	6.1	6.9	7.9
	10	50	POWER(KW)	15.8	14.3	12.9	11.7	10.7	9.7	8.9	8.1	7.4
			HEAT(KW)	31.1	31.6	32.1	32.6	33.5	34.0	34.8	35.8	36.9
			COOL(KW)	15.6	17.3	19.1	20.9	22.8	24.2	25.9	27.6	29.5
			TOTAL COP	3.0	3.4	4.0	4.6	5.3	6.0	6.8	7.8	8.9
	15	59	POWER(KW)	16.1	14.7	13.4	12.2	11.2	10.2	9.4	8.6	7.9
			HEAT(KW)	35.5	36.1	36.8	37.5	38.4	39.3	40.5	41.8	43.3
			COOL(KW)	19.7	21.5	23.4	25.3	27.2	29.1	31.1	33.2	35.4
			TOTAL COP	3.4	3.9	4.5	5.1	5.9	6.7	7.6	8.7	10.0
	20	68	POWER(KW)	16.6	15.2	14.0	12.8	11.8	10.9	10.0	9.3	8.5
			HEAT(KW)	40.4	41.3	42.1	43.1	44.2	45.4	46.9	48.6	50.6
			COOL(KW)	24.1	26.0	28.1	30.2	32.3	34.6	36.9	39.4	42.1
			TOTAL COP	3.9	4.4	5.0	5.7	6.5	7.3	8.3	9.5	10.9
	25	77	POWER(KW)	17.2	15.9	14.7	13.6	12.7	11.7	10.9	10.1	9.4
			HEAT(KW)	45.9	47.0	48.1	49.3	50.7	52.4	54.3	56.4	58.9
			COOL(KW)	29.0	31.1	33.3	35.7	38.1	40.6	43.4	46.3	49.5
			TOTAL COP	4.4	4.9	5.5	6.2	7.0	7.9	9.0	10.2	11.6
	30	86	POWER(KW)	18.0	16.8	15.7	14.3	13.2	12.9	12.0	11.3	10.5
			HEAT(KW)	52.1	53.4	54.8	56.3	59.1	60.2	62.5	65.2	68.2
			COOL(KW)	34.3	36.6	39.1	42.0	45.9	47.3	50.5	53.9	57.7
			TOTAL COP	4.8	5.4	6.0	6.9	8.0	8.4	9.4	10.6	12.0

ARO
Energy Solutions since 1946

VARIABLE WORKING CONDITION DATA 4/14

AR-DW 40 S/C				Hot water outlet temp.								
	℃			80	75	70	65	60	55	50	45	40
		℉		175	167	158	150	140	131	122	113	104
Chilled(Source) Water Outlet Temp.	-10	14	POWER(KW)			13.7	12.1	10.8	9.7	8.8	8.0	7.4
			HEAT(KW)			22.7	23.4	23.9	24.2	24.4	24.6	24.7
			COOL(KW)	Standard unit		9.1	11.2	13.0	14.5	15.7	16.6	17.3
			TOTAL COP			2.3	2.9	3.4	4.0	4.6	5.1	5.7
	-5	23	POWER(KW)			14.5	12.9	11.6	10.4	9.4	8.6	7.9
			HEAT(KW)	Call manufacturer		26.9	27.5	28.0	28.4	28.8	29.2	29.6
			COOL(KW)			12.4	14.6	16.4	18.0	19.4	20.6	21.6
			TOTAL COP			2.7	3.3	3.8	4.5	5.1	5.8	6.4
	0	32	POWER(KW)		18.8	15.1	13.5	12.2	11.0	10.0	9.1	8.4
			HEAT(KW)		32.8	31.5	32.1	32.7	33.3	33.9	34.5	35.3
			COOL(KW)		13.9	16.4	18.6	20.5	22.3	23.9	25.4	26.9
			TOTAL COP		2.5	3.2	3.7	4.4	5.0	5.8	6.6	7.4
	5	41	POWER(KW)		19.4	15.6	14.0	12.7	11.5	10.5	9.6	8.8
			HEAT(KW)		37.9	36.5	37.3	38.0	38.8	39.7	40.7	41.8
			COOL(KW)		18.5	21.0	23.2	25.3	27.3	29.2	31.1	33.1
			TOTAL COP		2.9	3.7	4.3	5.0	5.7	6.6	7.5	8.5
	10	50	POWER(KW)	19.6	17.7	16.1	14.6	13.3	12.1	11.0	10.1	9.2
			HEAT(KW)	40.5	41.3	42.2	43.1	44.0	45.2	46.4	47.8	49.4
			COOL(KW)	20.9	23.6	26.1	28.5	30.8	33.1	35.4	37.7	40.2
			TOTAL COP	3.1	3.7	4.3	4.9	5.6	6.5	7.4	8.5	9.7
	15	59	POWER(KW)	20.0	18.2	16.6	15.2	13.9	12.7	11.7	10.7	9.8
			HEAT(KW)	46.5	47.5	48.6	49.8	51.0	52.4	54.1	56.0	58.1
			COOL(KW)	26.5	29.3	31.9	34.5	37.1	39.7	42.4	45.3	48.4
			TOTAL COP	3.6	4.2	4.8	5.6	6.3	7.3	8.3	9.5	10.9
	20	68	POWER(KW)	20.6	18.9	17.3	15.9	14.7	13.5	12.5	11.5	10.6
			HEAT(KW)	53.3	54.4	55.7	57.2	58.8	60.7	62.8	65.3	68.0
			COOL(KW)	32.7	35.6	38.4	41.3	44.2	47.2	50.4	53.8	57.5
			TOTAL COP	4.2	4.8	5.4	6.2	7.0	8.0	9.1	10.4	11.9
	25	77	POWER(KW)	21.3	19.7	18.3	16.9	15.7	14.6	13.5	12.6	11.6
			HEAT(KW)	60.8	62.2	63.8	65.6	67.7	70.1	72.7	75.8	79.2
			COOL(KW)	39.4	42.5	45.5	48.7	52.0	55.5	59.2	63.2	67.6
			TOTAL COP	4.7	5.3	6.0	6.8	7.6	8.6	9.7	11.1	12.6
	30	86	POWER(KW)	22.4	20.9	19.5	18.2	17.1	16.0	14.9	14.0	13.0
			HEAT(KW)	69.1	70.8	72.8	75.1	77.7	80.6	83.9	87.6	91.8
			COOL(KW)	46.7	50.0	53.3	56.9	60.6	64.6	68.9	73.7	78.8
			TOTAL COP	5.2	5.8	6.5	7.2	8.1	9.1	10.2	11.5	13.1

ARO
Energy Solutions since 1946

VARIABLE WORKING CONDITION DATA 5/14

AR-DW 50 S/C				Hot water outlet temp.								
	℃			80	75	70	65	60	55	50	45	40
		℉		175	167	158	150	140	131	122	113	104
Chilled(Source) Water Outlet Temp.	-10	14	POWER(KW)			15.5	13.7	12.2	11.0	9.9	9.1	8.4
			HEAT(KW)			25.7	26.4	27.0	27.3	27.6	27.8	28.0
			COOL(KW)	Standard unit		10.2	12.7	14.7	16.4	17.7	18.8	19.6
			TOTAL COP			2.3	2.9	3.4	4.0	4.6	5.1	5.7
	-5	23	POWER(KW)			16.3	14.6	13.1	11.8	10.7	9.7	9.0
			HEAT(KW)	Call manufacturer		30.4	31.1	31.6	32.1	32.6	33.0	33.5
			COOL(KW)			14.1	16.5	18.6	20.3	21.9	23.2	24.5
			TOTAL COP			2.7	3.3	3.8	4.5	5.1	5.8	6.5
	0	32	POWER(KW)		21.3	17.0	15.3	13.8	12.4	11.3	10.3	9.5
			HEAT(KW)		37.1	35.6	36.3	36.9	37.6	38.3	39.0	39.9
			COOL(KW)		15.7	18.5	21.0	23.2	25.2	27.0	28.7	30.4
			TOTAL COP		2.5	3.2	3.7	4.4	5.0	5.8	6.6	7.4
	5	41	POWER(KW)		21.9	17.6	15.9	14.4	13.0	11.9	10.8	9.9
			HEAT(KW)		42.8	41.3	42.1	43.0	43.9	44.9	46.0	47.3
			COOL(KW)		20.9	23.7	26.3	28.6	30.9	33.0	35.2	37.4
			TOTAL COP		2.9	3.7	4.3	5.0	5.7	6.6	7.5	8.5
	10	50	POWER(KW)	22.1	20.0	18.2	16.5	15.0	13.6	12.5	11.4	10.4
			HEAT(KW)	45.7	46.7	47.7	48.7	50.2	51.1	52.5	54.1	55.9
			COOL(KW)	23.6	26.7	29.6	32.3	34.9	37.4	40.0	42.7	45.5
			TOTAL COP	3.1	3.7	4.3	4.9	5.7	6.5	7.4	8.5	9.7
	15	59	POWER(KW)	22.6	20.6	18.8	17.2	15.7	14.4	13.2	12.1	11.1
			HEAT(KW)	52.6	53.7	54.9	56.2	57.7	59.3	61.2	63.3	65.7
			COOL(KW)	30.0	33.1	36.1	39.1	42.0	44.9	48.0	51.2	54.7
			TOTAL COP	3.6	4.2	4.8	5.6	6.3	7.3	8.3	9.5	10.9
	20	68	POWER(KW)	23.3	21.3	19.6	18.0	16.6	15.3	14.1	13.0	11.9
			HEAT(KW)	60.2	61.6	63.0	64.7	66.5	68.6	71.0	73.8	76.9
			COOL(KW)	37.0	40.2	43.4	46.6	49.9	53.3	57.0	60.8	65.0
			TOTAL COP	4.2	4.8	5.4	6.2	7.0	8.0	9.1	10.4	11.9
	25	77	POWER(KW)	24.1	22.3	20.6	19.1	17.8	16.5	15.3	14.2	13.1
			HEAT(KW)	68.7	70.3	72.1	74.2	76.5	79.2	82.2	85.7	89.6
			COOL(KW)	44.6	48.0	51.5	55.0	58.8	62.7	66.9	71.5	76.5
			TOTAL COP	4.7	5.3	6.0	6.8	7.6	8.6	9.7	11.1	12.6
	30	86	POWER(KW)	25.3	23.6	22.0	20.6	19.3	18.1	16.9	15.8	14.7
			HEAT(KW)	78.1	80.1	82.3	84.9	87.8	91.1	94.8	99.1	103.8
			COOL(KW)	52.8	56.5	60.3	64.3	68.5	73.1	78.0	83.3	89.1
			TOTAL COP	5.2	5.8	6.5	7.2	8.1	9.1	10.2	11.5	13.1

Energy Solutions since 1946

VARIABLE WORKING CONDITION DATA 6/14

AR-DW 60 S/C				Hot water outlet temp.								
	℃			80	75	70	65	60	55	50	45	40
		℉		175	167	158	150	140	131	122	113	104
Chilled(Source) Water Outlet Temp.	-10	14	POWER(KW)			22.1	19.6	17.4	15.6	14.1	12.9	11.9
			HEAT(KW)			35.3	36.0	36.5	36.8	37.1	37.2	37.3
			COOL(KW)	Standard unit		13.3	16.5	19.1	21.2	22.9	24.3	25.4
			TOTAL COP			2.2	2.7	3.2	3.7	4.2	4.8	5.3
	-5	23	POWER(KW)			23.3	20.8	18.6	16.8	15.2	13.9	12.8
			HEAT(KW)	Call manufacturer		41.6	42.2	42.7	43.1	43.6	44.0	44.5
			COOL(KW)			18.3	21.4	24.1	26.4	28.3	30.1	31.7
			TOTAL COP			2.6	3.1	3.6	4.1	4.7	5.3	6.0
	0	32	POWER(KW)		30.4	24.3	21.8	19.6	17.7	16.1	14.7	13.5
			HEAT(KW)		50.8	48.3	49.0	49.6	50.3	51.0	51.9	52.9
			COOL(KW)		20.4	24.0	27.2	30.0	32.6	35.0	37.2	39.4
			TOTAL COP		2.3	3.0	3.5	4.1	4.7	5.3	6.1	6.8
	5	41	POWER(KW)		31.2	25.1	22.6	20.5	18.6	16.9	15.4	14.1
			HEAT(KW)		58.3	55.8	56.6	57.5	58.5	59.7	61.0	62.6
			COOL(KW)		27.1	30.7	34.0	37.1	40.0	42.8	45.6	48.4
			TOTAL COP		2.7	3.4	4.0	4.6	5.3	6.1	6.9	7.9
	10	50	POWER(KW)	31.5	28.6	25.9	23.5	21.4	19.4	17.7	16.2	14.9
			HEAT(KW)	62.1	63.1	64.2	65.3	67.0	67.9	69.6	71.5	73.8
			COOL(KW)	31.2	34.6	38.3	41.8	45.7	48.5	51.8	55.3	58.9
			TOTAL COP	3.0	3.4	4.0	4.6	5.3	6.0	6.8	7.8	8.9
	15	59	POWER(KW)	32.2	29.4	26.8	24.5	22.4	20.5	18.8	17.2	15.8
			HEAT(KW)	71.0	72.3	73.6	75.1	76.7	78.7	80.9	83.6	86.6
			COOL(KW)	39.3	42.9	46.8	50.6	54.4	58.2	62.2	66.4	70.8
			TOTAL COP	3.4	3.9	4.5	5.1	5.9	6.7	7.6	8.7	10.0
	20	68	POWER(KW)	33.1	30.4	27.9	25.7	23.6	21.8	20.1	18.5	17.0
			HEAT(KW)	80.9	82.5	84.2	86.1	88.3	90.9	93.9	97.3	101.2
			COOL(KW)	48.2	52.1	56.3	60.4	64.7	69.1	73.8	78.8	84.2
			TOTAL COP	3.9	4.4	5.0	5.7	6.5	7.3	8.3	9.5	10.9
	25	77	POWER(KW)	34.3	31.8	29.4	27.3	25.3	23.5	21.8	20.2	18.7
			HEAT(KW)	91.9	94.0	96.1	98.6	101.4	104.7	108.5	112.8	117.8
			COOL(KW)	58.0	62.2	66.7	71.3	76.1	81.2	86.7	92.6	99.0
			TOTAL COP	4.4	4.9	5.5	6.2	7.0	7.9	9.0	10.2	11.6
	30	86	POWER(KW)	36.0	33.6	31.4	28.6	26.4	25.7	24.1	22.5	21.0
			HEAT(KW)	104.2	106.8	109.5	112.6	118.2	120.4	125.1	130.4	136.4
			COOL(KW)	68.6	73.2	78.1	84.0	91.8	94.6	101.0	107.9	115.4
			TOTAL COP	4.8	5.4	6.0	6.9	8.0	8.4	9.4	10.6	12.0

ARO
Energy Solutions since 1946

VARIABLE WORKING CONDITION DATA 7/14

AR-DW 80 S/C				Hot water outlet temp.								
	℃			80	75	70	65	60	55	50	45	40
		℉		175	167	158	150	140	131	122	113	104
Chilled(Source) Water Outlet Temp.	-10	14	POWER(KW)			27.4	24.3	21.6	19.4	17.5	16.0	14.8
			HEAT(KW)			45.5	46.8	47.7	48.4	48.8	49.2	49.5
			COOL(KW)	Standard unit		18.1	22.5	26.1	29.0	31.3	33.2	34.7
			TOTAL COP			2.3	2.9	3.4	4.0	4.6	5.1	5.7
	-5	23	POWER(KW)			28.9	25.8	23.1	20.8	18.9	17.2	15.9
			HEAT(KW)	Call manufacturer		53.8	55.0	56.0	56.8	57.6	58.3	59.2
			COOL(KW)			24.9	29.2	32.9	36.0	38.7	41.1	43.3
			TOTAL COP			2.7	3.3	3.8	4.5	5.1	5.8	6.4
	0	32	POWER(KW)		37.7	30.1	27.0	24.3	22.0	20.0	18.2	16.7
			HEAT(KW)		65.5	62.9	64.2	65.4	66.5	67.7	69.0	70.5
			COOL(KW)		27.9	32.8	37.2	41.0	44.5	47.7	50.8	53.8
			TOTAL COP		2.5	3.2	3.7	4.4	5.0	5.8	6.6	7.4
	5	41	POWER(KW)		38.8	31.1	28.1	25.4	23.0	21.0	19.2	17.5
			HEAT(KW)		75.7	73.0	74.5	76.0	77.6	79.4	81.4	83.7
			COOL(KW)		37.0	41.9	46.4	50.6	54.6	58.4	62.2	66.2
			TOTAL COP		2.9	3.7	4.3	5.0	5.7	6.6	7.5	8.5
	10	50	POWER(KW)	39.2	35.5	32.1	29.2	26.5	24.1	22.0	20.1	18.4
			HEAT(KW)	80.9	82.7	84.4	86.2	88.0	90.4	92.8	95.6	98.9
			COOL(KW)	41.7	47.2	52.3	57.1	61.7	66.2	70.8	75.5	80.5
			TOTAL COP	3.1	3.7	4.3	4.9	5.6	6.5	7.4	8.5	9.7
	15	59	POWER(KW)	40.0	36.5	33.3	30.4	27.8	25.4	23.3	21.4	19.6
			HEAT(KW)	93.1	95.1	97.2	99.6	102.0	104.9	108.2	112.0	116.3
			COOL(KW)	53.0	58.6	63.9	69.1	74.2	79.5	84.9	90.6	96.7
			TOTAL COP	3.6	4.2	4.8	5.6	6.3	7.3	8.3	9.5	10.9
	20	68	POWER(KW)	41.2	37.8	34.7	31.9	29.4	27.0	24.9	23.0	21.1
			HEAT(KW)	106.5	108.9	111.5	114.4	117.7	121.4	125.7	130.5	136.1
			COOL(KW)	65.4	71.1	76.8	82.5	88.3	94.4	100.8	107.6	115.0
			TOTAL COP	4.2	4.8	5.4	6.2	7.0	8.0	9.1	10.4	11.9
	25	77	POWER(KW)	42.7	39.5	36.5	33.9	31.4	29.2	27.1	25.1	23.2
			HEAT(KW)	121.5	124.4	127.6	131.2	135.4	140.1	145.5	151.6	158.5
			COOL(KW)	78.8	84.9	91.1	97.4	104.0	110.9	118.4	126.5	135.2
			TOTAL COP	4.7	5.3	6.0	6.8	7.6	8.6	9.7	11.1	12.6
	30	86	POWER(KW)	44.7	41.7	39.0	36.4	34.1	31.9	29.9	27.9	26.0
			HEAT(KW)	138.2	141.7	145.6	150.2	155.3	161.2	167.8	175.2	183.6
			COOL(KW)	93.4	99.9	106.7	113.7	121.2	129.2	137.9	147.3	157.6
			TOTAL COP	5.2	5.8	6.5	7.2	8.1	9.1	10.2	11.5	13.1

Energy Solutions since 1946

VARIABLE WORKING CONDITION DATA 8/14

AR-DW 100 S/C				Hot water outlet temp.								
	℃			80	75	70	65	60	55	50	45	40
		℉		175	167	158	150	140	131	122	113	104
Chilled(Source) Water Outlet Temp.	-10	14	POWER(KW)			31.0	27.4	24.4	21.9	19.8	18.1	16.8
			HEAT(KW)			51.4	52.9	53.9	54.7	55.2	55.6	56.0
			COOL(KW)	Standard unit		20.5	25.4	29.5	32.8	35.4	37.5	39.2
			TOTAL COP			2.3	2.9	3.4	4.0	4.6	5.1	5.7
	-5	23	POWER(KW)			32.7	29.2	26.1	23.5	21.3	19.5	18.0
			HEAT(KW)	Call manufacturer		60.8	62.2	63.3	64.2	65.1	66.0	66.9
			COOL(KW)			28.1	33.0	37.1	40.7	43.8	46.5	48.9
			TOTAL COP			2.7	3.3	3.8	4.5	5.1	5.8	6.5
	0	32	POWER(KW)		42.6	34.0	30.6	27.5	24.9	22.6	20.6	18.9
			HEAT(KW)		74.1	71.1	72.6	73.9	75.2	76.5	78.0	79.7
			COOL(KW)		31.5	37.1	42.0	46.4	50.3	54.0	57.4	60.8
			TOTAL COP		2.5	3.2	3.7	4.4	5.0	5.8	6.6	7.4
	5	41	POWER(KW)		43.8	35.2	31.8	28.7	26.1	23.7	21.7	19.8
			HEAT(KW)		85.6	82.6	84.3	86.0	87.8	89.8	92.0	94.6
			COOL(KW)		41.8	47.4	52.5	57.2	61.7	66.0	70.4	74.8
			TOTAL COP		2.9	3.7	4.3	5.0	5.7	6.6	7.5	8.5
	10	50	POWER(KW)	44.3	40.1	36.3	33.0	30.0	27.3	24.9	22.8	20.8
			HEAT(KW)	91.5	93.4	95.4	97.5	100.4	102.2	104.9	108.1	111.8
			COOL(KW)	47.2	53.4	59.1	64.5	69.7	74.9	80.0	85.4	91.0
			TOTAL COP	3.1	3.7	4.3	4.9	5.7	6.5	7.4	8.5	9.7
	15	59	POWER(KW)	45.3	41.2	37.6	34.3	31.4	28.7	26.3	24.2	22.1
			HEAT(KW)	105.2	107.5	109.8	112.4	115.3	118.6	122.3	126.6	131.5
			COOL(KW)	59.9	66.2	72.2	78.1	83.9	89.8	96.0	102.4	109.3
			TOTAL COP	3.6	4.2	4.8	5.6	6.3	7.3	8.3	9.5	10.9
	20	68	POWER(KW)	46.5	42.7	39.2	36.0	33.2	30.6	28.2	26.0	23.9
			HEAT(KW)	120.5	123.1	126.0	129.3	133.0	137.3	142.1	147.6	153.9
			COOL(KW)	73.9	80.4	86.8	93.3	99.9	106.7	113.9	121.6	130.0
			TOTAL COP	4.2	4.8	5.4	6.2	7.0	8.0	9.1	10.4	11.9
	25	77	POWER(KW)	48.3	44.6	41.3	38.3	35.5	33.0	30.6	28.4	26.3
			HEAT(KW)	137.4	140.6	144.2	148.4	153.1	158.4	164.5	171.4	179.2
			COOL(KW)	89.1	96.0	102.9	110.1	117.5	125.4	133.9	143.0	152.9
			TOTAL COP	4.7	5.3	6.0	6.8	7.6	8.6	9.7	11.1	12.6
	30	86	POWER(KW)	50.6	47.2	44.1	41.2	38.6	36.1	33.8	31.6	29.4
			HEAT(KW)	156.2	160.2	164.7	169.8	175.6	182.2	189.7	198.1	207.6
			COOL(KW)	105.6	113.0	120.6	128.6	137.0	146.1	155.9	166.5	178.2
			TOTAL COP	5.2	5.8	6.5	7.2	8.1	9.1	10.2	11.5	13.1

ARO
Energy Solutions since 1946

VARIABLE WORKING CONDITION DATA 9/14

AR-DW 120 S/C				Hot water outlet temp.								
	℃			80	75	70	65	60	55	50	45	40
		℉		175	167	158	150	140	131	122	113	104
Chilled(Source) Water Outlet Temp.	-10	14	POWER(KW)			44.1	39.1	34.8	31.2	28.2	25.8	23.9
			HEAT(KW)			70.6	72.1	73.0	73.7	74.1	74.4	74.7
			COOL(KW)	Standard unit		26.5	32.9	38.2	42.5	45.9	48.6	50.8
			TOTAL COP			2.2	2.7	3.2	3.7	4.2	4.8	5.3
	-5	23	POWER(KW)			46.6	41.6	37.3	33.5	30.4	27.8	25.6
			HEAT(KW)	Call manufacturer		83.2	84.3	85.4	86.3	87.1	88.0	89.0
			COOL(KW)			36.6	42.7	48.1	52.7	56.7	60.2	63.4
			TOTAL COP			2.6	3.1	3.6	4.1	4.7	5.3	6.0
	0	32	POWER(KW)		60.7	48.5	43.5	39.2	35.4	32.2	29.4	27.0
			HEAT(KW)		101.5	96.5	98.0	99.3	100.6	102.1	103.8	105.7
			COOL(KW)		40.8	48.0	54.4	60.1	65.2	69.9	74.4	78.8
			TOTAL COP		2.3	3.0	3.5	4.1	4.7	5.3	6.1	6.8
	5	41	POWER(KW)		62.4	50.1	45.3	40.9	37.1	33.8	30.9	28.3
			HEAT(KW)		116.6	111.6	113.3	115.1	117.1	119.3	122.0	125.2
			COOL(KW)		54.1	61.4	68.0	74.1	79.9	85.6	91.2	96.9
			TOTAL COP		2.7	3.4	4.0	4.6	5.3	6.1	6.9	7.9
	10	50	POWER(KW)	63.0	57.1	51.8	47.0	42.7	38.9	35.5	32.5	29.7
			HEAT(KW)	124.2	126.3	128.3	130.6	134.0	135.9	139.2	143.0	147.5
			COOL(KW)	62.4	69.1	76.6	83.6	91.3	97.0	103.7	110.6	117.8
			TOTAL COP	3.0	3.4	4.0	4.6	5.3	6.0	6.8	7.8	8.9
	15	59	POWER(KW)	64.4	58.8	53.6	48.9	44.7	41.0	37.5	34.4	31.5
			HEAT(KW)	142.0	144.6	147.2	150.1	153.5	157.4	161.9	167.1	173.2
			COOL(KW)	78.7	85.8	93.6	101.2	108.7	116.4	124.3	132.7	141.7
			TOTAL COP	3.4	3.9	4.5	5.1	5.9	6.7	7.6	8.7	10.0
	20	68	POWER(KW)	66.2	60.8	55.9	51.4	47.3	43.6	40.2	37.0	34.0
			HEAT(KW)	161.7	165.0	168.4	172.2	176.7	181.8	187.7	194.6	202.4
			COOL(KW)	96.5	104.2	112.5	120.8	129.4	138.2	147.6	157.6	168.4
			TOTAL COP	3.9	4.4	5.0	5.7	6.5	7.3	8.3	9.5	10.9
	25	77	POWER(KW)	68.7	63.6	58.8	54.5	50.6	47.0	43.6	40.4	37.4
			HEAT(KW)	183.8	187.9	192.2	197.2	202.9	209.5	217.1	225.7	235.5
			COOL(KW)	116.0	124.4	133.4	142.6	152.3	162.5	173.4	185.2	198.1
			TOTAL COP	4.4	4.9	5.5	6.2	7.0	7.9	9.0	10.2	11.6
	30	86	POWER(KW)	72.0	67.2	62.8	57.2	52.8	51.5	48.2	45.0	41.9
			HEAT(KW)	208.3	213.6	219.0	225.3	236.5	240.7	250.1	260.8	272.7
			COOL(KW)	137.1	146.4	156.2	168.1	183.7	189.3	202.0	215.8	230.8
			TOTAL COP	4.8	5.4	6.0	6.9	8.0	8.4	9.4	10.6	12.0

ARO
Energy Solutions since 1946

VARIABLE WORKING CONDITION DATA 10/14

AR-DW 160 S/C				Hot water outlet temp.								
	℃			80	75	70	65	60	55	50	45	40
		℉		175	167	158	150	140	131	122	113	104
Chilled(Source) Water Outlet Temp.	-10	14	POWER(KW)			46.4	41.2	36.7	32.9	29.7	27.2	25.1
			HEAT(KW)			77.1	79.3	80.9	82.0	82.8	83.4	83.9
			COOL(KW)	Standard unit		30.7	38.1	44.2	49.2	53.1	56.3	58.8
			TOTAL COP			2.3	2.9	3.4	4.0	4.6	5.1	5.7
	-5	23	POWER(KW)			49.0	43.8	39.2	35.3	32.0	29.2	26.9
			HEAT(KW)	Call manufacturer		91.2	93.3	94.9	96.4	97.7	98.9	100.4
			COOL(KW)			42.2	49.5	55.7	61.0	65.6	69.7	73.4
			TOTAL COP			2.7	3.3	3.8	4.5	5.1	5.8	6.5
	0	32	POWER(KW)		63.9	51.1	45.8	41.3	37.3	33.9	30.9	28.4
			HEAT(KW)		111.2	106.7	108.8	110.8	112.8	114.8	117.0	119.6
			COOL(KW)		47.2	55.6	63.0	69.6	75.5	80.9	86.1	91.2
			TOTAL COP		2.5	3.2	3.7	4.4	5.0	5.8	6.6	7.4
	5	41	POWER(KW)		65.7	52.8	47.6	43.1	39.1	35.6	32.5	29.7
			HEAT(KW)		128.4	123.9	126.4	128.9	131.6	134.6	138.0	141.9
			COOL(KW)		62.7	71.1	78.8	85.8	92.6	99.1	105.5	112.2
			TOTAL COP		2.9	3.7	4.3	5.0	5.7	6.6	7.5	8.5
	10	50	POWER(KW)	66.4	60.1	54.5	49.4	44.9	40.9	37.4	34.2	31.3
			HEAT(KW)	137.2	140.2	143.1	146.2	150.6	153.2	157.4	162.2	167.7
			COOL(KW)	70.8	80.0	88.7	96.8	104.6	112.3	120.0	128.0	136.4
			TOTAL COP	3.1	3.7	4.3	4.9	5.7	6.5	7.4	8.5	9.7
	15	59	POWER(KW)	67.9	61.9	56.4	51.5	47.1	43.1	39.5	36.2	33.2
			HEAT(KW)	157.8	161.2	164.8	168.6	173.0	177.9	183.5	189.9	197.2
			COOL(KW)	89.9	99.3	108.4	117.2	125.9	134.8	144.0	153.7	164.0
			TOTAL COP	3.6	4.2	4.8	5.6	6.3	7.3	8.3	9.5	10.9
	20	68	POWER(KW)	69.8	64.0	58.8	54.1	49.8	45.9	42.3	38.9	35.8
			HEAT(KW)	180.7	184.7	189.1	194.0	199.6	205.9	213.1	221.4	230.8
			COOL(KW)	110.9	120.6	130.3	139.9	149.8	160.0	170.9	182.4	195.0
			TOTAL COP	4.2	4.8	5.4	6.2	7.0	8.0	9.1	10.4	11.9
	25	77	POWER(KW)	72.4	66.9	61.9	57.4	53.3	49.5	45.9	42.6	39.4
			HEAT(KW)	206.1	210.9	216.4	222.5	229.6	237.6	246.7	257.1	268.7
			COOL(KW)	133.7	144.0	154.4	165.1	176.3	188.1	200.8	214.5	229.4
			TOTAL COP	4.7	5.3	6.0	6.8	7.6	8.6	9.7	11.1	12.6
	30	86	POWER(KW)	75.9	70.8	66.1	61.8	57.8	54.2	50.7	47.4	44.1
			HEAT(KW)	234.3	240.2	247.0	254.7	263.4	273.3	284.5	297.2	311.4
			COOL(KW)	158.4	169.5	180.9	192.9	205.5	219.2	233.9	249.8	267.2
			TOTAL COP	5.2	5.8	6.5	7.2	8.1	9.1	10.2	11.5	13.1

ARO
Energy Solutions since 1946

VARIABLE WORKING CONDITION DATA 11/14

AR-DW 200 S/C				Hot water outlet temp.								
	℃			80	75	70	65	60	55	50	45	40
		℉		175	167	158	150	140	131	122	113	104
Chilled(Source) Water Outlet Temp.	-10	14	POWER(KW)			66.2	58.7	52.2	46.8	42.4	38.7	35.8
			HEAT(KW)			106.0	108.1	109.6	110.5	111.2	111.6	112.0
			COOL(KW)	Standard unit		39.8	49.4	57.3	63.7	68.8	72.9	76.2
			TOTAL COP			2.2	2.7	3.2	3.7	4.2	4.8	5.3
	-5	23	POWER(KW)			69.9	62.4	55.9	50.3	45.6	41.7	38.4
			HEAT(KW)	Call manufacturer		124.7	126.5	128.1	129.4	130.7	132.0	133.5
			COOL(KW)			54.9	64.1	72.2	79.1	85.0	90.3	95.1
			TOTAL COP			2.6	3.1	3.6	4.1	4.7	5.3	6.0
	0	32	POWER(KW)		91.1	72.8	65.3	58.8	53.2	48.3	44.1	40.5
			HEAT(KW)		152.3	144.8	146.9	148.9	150.9	153.1	155.6	158.6
			COOL(KW)		61.2	72.1	81.6	90.1	97.8	104.9	111.6	118.1
			TOTAL COP		2.3	3.0	3.5	4.1	4.7	5.3	6.1	6.8
	5	41	POWER(KW)		93.7	75.2	67.9	61.4	55.7	50.7	46.3	42.4
			HEAT(KW)		174.9	167.3	169.9	172.6	175.6	179.0	183.0	187.7
			COOL(KW)		81.2	92.1	102.0	111.2	119.9	128.3	136.7	145.3
			TOTAL COP		2.7	3.4	4.0	4.6	5.3	6.1	6.9	7.9
	10	50	POWER(KW)	94.6	85.7	77.6	70.5	64.1	58.3	53.2	48.7	44.6
			HEAT(KW)	186.3	189.4	192.5	195.8	201.0	203.8	208.8	214.6	221.3
			COOL(KW)	93.6	103.7	114.9	125.4	137.0	145.5	155.5	165.9	176.8
			TOTAL COP	3.0	3.4	4.0	4.6	5.3	6.0	6.8	7.8	8.9
	15	59	POWER(KW)	96.7	88.1	80.4	73.4	67.1	61.4	56.3	51.6	47.3
			HEAT(KW)	213.0	216.8	220.8	225.2	230.2	236.0	242.8	250.7	259.8
			COOL(KW)	118.0	128.7	140.4	151.8	163.1	174.6	186.5	199.1	212.5
			TOTAL COP	3.4	3.9	4.5	5.1	5.9	6.7	7.6	8.7	10.0
	20	68	POWER(KW)	99.4	91.2	83.8	77.1	70.9	65.4	60.2	55.5	51.0
			HEAT(KW)	242.6	247.5	252.6	258.3	265.0	272.7	281.6	291.9	303.6
			COOL(KW)	144.7	156.3	168.8	181.3	194.0	207.3	221.4	236.4	252.6
			TOTAL COP	3.9	4.4	5.0	5.7	6.5	7.3	8.3	9.5	10.9
	25	77	POWER(KW)	103.0	95.4	88.3	81.8	75.9	70.5	65.4	60.7	56.1
			HEAT(KW)	275.6	281.9	288.3	295.8	304.3	314.2	325.6	338.5	353.3
			COOL(KW)	174.0	186.6	200.1	213.9	228.4	243.7	260.1	277.9	297.1
			TOTAL COP	4.4	4.9	5.5	6.2	7.0	7.9	9.0	10.2	11.6
	30	86	POWER(KW)	108.0	100.8	94.2	85.8	79.2	77.2	72.2	67.5	62.9
			HEAT(KW)	312.5	320.4	328.5	337.9	354.7	361.1	375.2	391.1	409.1
			COOL(KW)	205.7	219.6	234.3	252.1	275.5	283.9	303.0	323.6	346.2
			TOTAL COP	4.8	5.4	6.0	6.9	8.0	8.4	9.4	10.6	12.0

Energy Solutions since 1946

VARIABLE WORKING CONDITION DATA 12/14

AR-DW 240 S/C				Hot water outlet temp.								
	℃			80	75	70	65	60	55	50	45	40
		℉		175	167	158	150	140	131	122	113	104
Chilled(Source) Water Outlet Temp.	-10	14	POWER(KW)			88.2	78.2	69.7	62.4	56.5	51.6	47.7
			HEAT(KW)			141.3	144.1	146.1	147.4	148.2	148.8	149.3
			COOL(KW)	Standard unit		53.1	65.9	76.4	84.9	91.7	97.2	101.6
			TOTAL COP			2.2	2.7	3.2	3.7	4.2	4.8	5.3
	-5	23	POWER(KW)			93.2	83.2	74.5	67.1	60.8	55.6	51.2
			HEAT(KW)	Call manufacturer		166.3	168.6	170.8	172.5	174.2	176.0	178.0
			COOL(KW)			73.2	85.5	96.2	105.4	113.4	120.4	126.8
			TOTAL COP			2.6	3.1	3.6	4.1	4.7	5.3	6.0
	0	32	POWER(KW)		121.5	97.0	87.1	78.4	70.9	64.4	58.8	54.0
			HEAT(KW)		203.1	193.1	195.9	198.6	201.3	204.2	207.5	211.5
			COOL(KW)		81.6	96.1	108.8	120.2	130.4	139.8	148.8	157.5
			TOTAL COP		2.3	3.0	3.5	4.1	4.7	5.3	6.1	6.8
	5	41	POWER(KW)		124.9	100.3	90.5	81.9	74.3	67.6	61.7	56.5
			HEAT(KW)		233.2	223.1	226.6	230.2	234.1	238.7	244.0	250.3
			COOL(KW)		108.3	122.8	136.0	148.3	159.9	171.1	182.3	193.8
			TOTAL COP		2.7	3.4	4.0	4.6	5.3	6.1	6.9	7.9
	10	50	POWER(KW)	126.1	114.2	103.5	93.9	85.4	77.8	71.0	64.9	59.4
			HEAT(KW)	248.4	252.5	256.7	261.1	268.0	271.8	278.4	286.1	295.1
			COOL(KW)	124.8	138.3	153.1	167.2	182.6	194.0	207.4	221.2	235.7
			TOTAL COP	3.0	3.4	4.0	4.6	5.3	6.0	6.8	7.8	8.9
	15	59	POWER(KW)	128.9	117.5	107.2	97.8	89.5	81.9	75.1	68.8	63.1
			HEAT(KW)	284.0	289.1	294.3	300.2	306.9	314.7	323.8	334.2	346.4
			COOL(KW)	157.3	171.6	187.2	202.4	217.5	232.8	248.7	265.4	283.3
			TOTAL COP	3.4	3.9	4.5	5.1	5.9	6.7	7.6	8.7	10.0
	20	68	POWER(KW)	132.5	121.7	111.7	102.7	94.6	87.1	80.3	74.0	68.1
			HEAT(KW)	323.5	330.0	336.7	344.4	353.3	363.6	375.5	389.2	404.8
			COOL(KW)	193.0	208.4	225.0	241.7	258.7	276.4	295.1	315.2	336.8
			TOTAL COP	3.9	4.4	5.0	5.7	6.5	7.3	8.3	9.5	10.9
	25	77	POWER(KW)	137.3	127.1	117.7	109.1	101.2	94.0	87.2	80.9	74.8
			HEAT(KW)	367.5	375.9	384.4	394.3	405.8	419.0	434.1	451.4	471.0
			COOL(KW)	232.0	248.7	266.7	285.2	304.6	325.0	346.9	370.5	396.2
			TOTAL COP	4.4	4.9	5.5	6.2	7.0	7.9	9.0	10.2	11.6
	30	86	POWER(KW)	144.0	134.5	125.6	114.4	105.6	102.9	96.3	90.0	83.9
			HEAT(KW)	416.6	427.2	438.0	450.6	473.0	481.5	500.2	521.5	545.5
			COOL(KW)	274.3	292.7	312.5	336.2	367.4	378.6	403.9	431.5	461.6
			TOTAL COP	4.8	5.4	6.0	6.9	8.0	8.4	9.4	10.6	12.0

ARO
Energy Solutions since 1946

VARIABLE WORKING CONDITION DATA 13/14

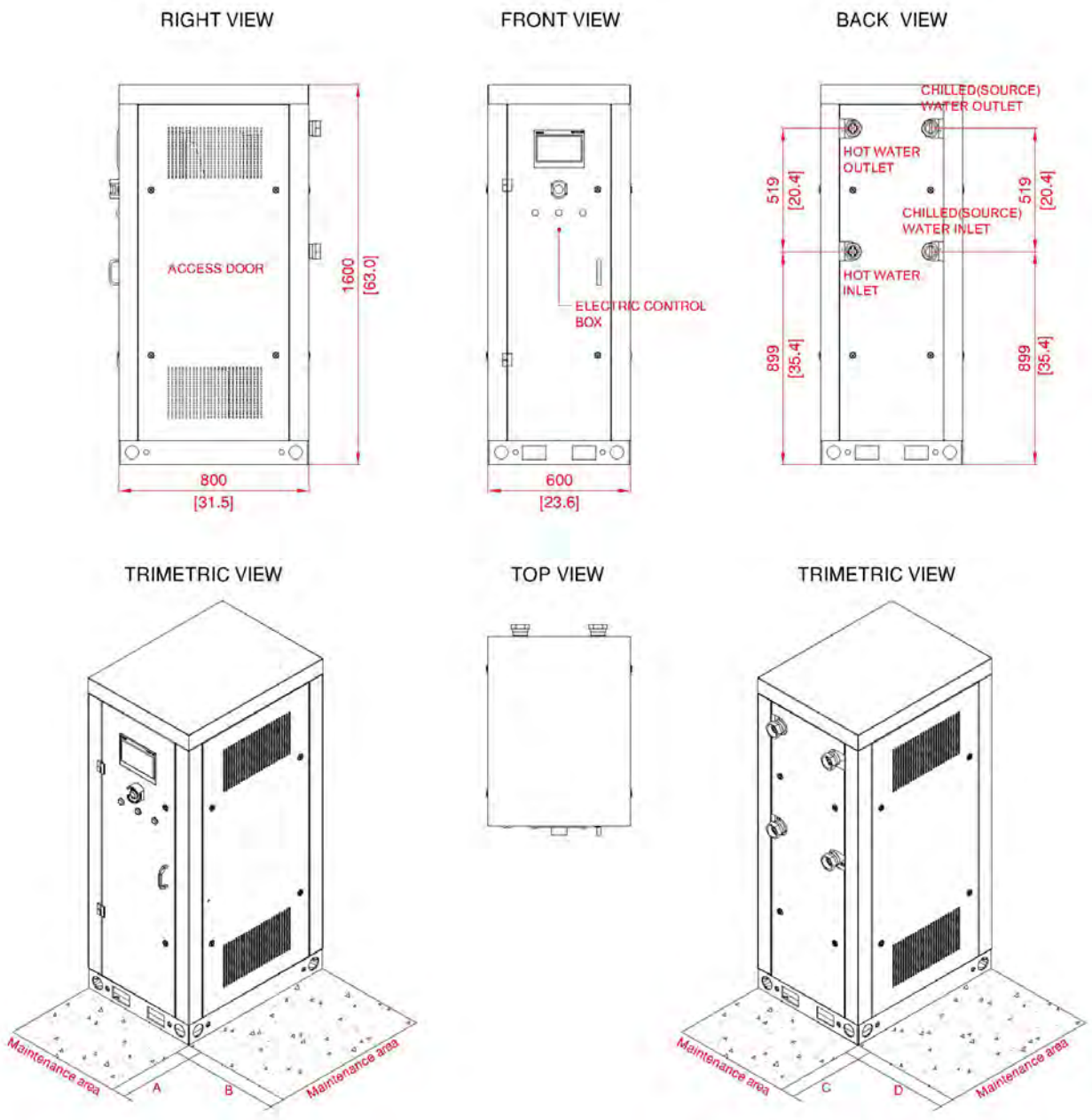
AR-DW 320 S/C				Hot water outlet temp.								
	℃			80	75	70	65	60	55	50	45	40
		℉		175	167	158	150	140	131	122	113	104
Chilled(Source) Water Outlet Temp.	-10	14	POWER(KW)			110.3	97.8	87.1	78.1	70.6	64.5	59.7
			HEAT(KW)			176.6	180.1	182.6	184.2	185.3	186.0	186.6
			COOL(KW)	Standard unit		66.3	82.4	95.5	106.2	114.7	121.5	127.0
			TOTAL COP			2.2	2.7	3.2	3.7	4.2	4.8	5.3
	-5	23	POWER(KW)			116.4	103.9	93.1	83.9	76.0	69.4	64.0
			HEAT(KW)	Call manufacturer		207.9	210.8	213.4	215.7	217.8	220.0	222.5
			COOL(KW)			91.5	106.9	120.3	131.8	141.7	150.5	158.5
			TOTAL COP			2.6	3.1	3.6	4.1	4.7	5.3	6.0
	0	32	POWER(KW)		151.8	121.3	108.9	98.0	88.6	80.5	73.5	67.5
			HEAT(KW)		253.8	241.4	244.9	248.2	251.6	255.2	259.4	264.4
			COOL(KW)		102.0	120.1	136.0	150.2	163.0	174.8	186.0	196.9
			TOTAL COP		2.3	3.0	3.5	4.1	4.7	5.3	6.1	6.8
	5	41	POWER(KW)		156.1	125.4	113.1	102.4	92.8	84.5	77.1	70.7
			HEAT(KW)		291.5	278.9	283.2	287.7	292.7	298.4	305.0	312.9
			COOL(KW)		135.4	153.5	170.1	185.4	199.8	213.9	227.9	242.2
			TOTAL COP		2.7	3.4	4.0	4.6	5.3	6.1	6.9	7.9
	10	50	POWER(KW)	157.6	142.8	129.4	117.4	106.8	97.2	88.7	81.1	74.3
			HEAT(KW)	310.5	315.6	320.8	326.4	335.0	339.7	348.0	357.6	368.9
			COOL(KW)	156.0	172.8	191.4	209.0	228.3	242.5	259.2	276.5	294.6
			TOTAL COP	3.0	3.4	4.0	4.6	5.3	6.0	6.8	7.8	8.9
	15	59	POWER(KW)	161.1	146.9	134.0	122.3	111.8	102.4	93.8	86.1	78.9
			HEAT(KW)	355.0	361.4	367.9	375.3	383.7	393.4	404.7	417.8	433.0
			COOL(KW)	196.6	214.5	234.0	253.0	271.8	291.0	310.9	331.8	354.2
			TOTAL COP	3.4	3.9	4.5	5.1	5.9	6.7	7.6	8.7	10.0
	20	68	POWER(KW)	165.6	152.1	139.7	128.4	118.2	108.9	100.4	92.5	85.1
			HEAT(KW)	404.4	412.6	420.9	430.5	441.6	454.5	469.3	486.5	506.1
			COOL(KW)	241.2	260.5	281.3	302.1	323.4	345.6	368.9	394.0	421.0
			TOTAL COP	3.9	4.4	5.0	5.7	6.5	7.3	8.3	9.5	10.9
	25	77	POWER(KW)	171.7	158.9	147.1	136.4	126.5	117.5	109.1	101.1	93.5
			HEAT(KW)	459.4	469.9	480.6	492.9	507.2	523.7	542.6	564.2	588.8
			COOL(KW)	289.9	310.9	333.4	356.6	380.7	406.2	433.6	463.1	495.2
			TOTAL COP	4.4	4.9	5.5	6.2	7.0	7.9	9.0	10.2	11.6
	30	86	POWER(KW)	180.0	168.1	157.0	143.0	132.0	128.6	120.4	112.5	104.8
			HEAT(KW)	520.8	534.0	547.6	563.2	591.2	601.8	625.3	651.9	681.9
			COOL(KW)	342.8	365.9	390.6	420.2	459.2	473.2	504.9	539.4	577.0
			TOTAL COP	4.8	5.4	6.0	6.9	8.0	8.4	9.4	10.6	12.0

ARO
Energy Solutions since 1946

VARIABLE WORKING CONDITION DATA 14/14

AR-DW 400 S/C				Hot water outlet temp.								
	℃			80	75	70	65	60	55	50	45	40
		℉		175	167	158	150	140	131	122	113	104
Chilled(Source) Water Outlet Temp.	-10	14	POWER(KW)			132.3	117.3	104.5	93.7	84.7	77.4	71.6
			HEAT(KW)			211.9	216.2	219.1	221.1	222.3	223.2	224.0
			COOL(KW)	Standard unit		79.6	98.8	114.6	127.4	137.6	145.8	152.4
			TOTAL COP			2.2	2.7	3.2	3.7	4.2	4.8	5.3
	-5	23	POWER(KW)			139.7	124.7	111.8	100.6	91.2	83.3	76.8
			HEAT(KW)	Call manufacturer		249.5	253.0	256.1	258.8	261.3	264.0	267.0
			COOL(KW)			109.8	128.2	144.4	158.2	170.1	180.6	190.2
			TOTAL COP			2.6	3.1	3.6	4.1	4.7	5.3	6.0
	0	32	POWER(KW)		182.2	145.5	130.6	117.6	106.3	96.5	88.1	80.9
			HEAT(KW)		304.6	289.6	293.9	297.9	301.9	306.3	311.3	317.2
			COOL(KW)		122.4	144.1	163.2	180.3	195.6	209.7	223.1	236.3
			TOTAL COP		2.3	3.0	3.5	4.1	4.7	5.3	6.1	6.8
	5	41	POWER(KW)		187.3	150.4	135.8	122.8	111.4	101.4	92.6	84.8
			HEAT(KW)		349.8	334.7	339.8	345.3	351.2	358.0	366.0	375.5
			COOL(KW)		162.4	184.2	204.1	222.4	239.8	256.7	273.5	290.7
			TOTAL COP		2.7	3.4	4.0	4.6	5.3	6.1	6.9	7.9
	10	50	POWER(KW)	189.1	171.4	155.3	140.9	128.1	116.7	106.5	97.4	89.1
			HEAT(KW)	372.6	378.8	385.0	391.7	402.0	407.7	417.5	429.1	442.6
			COOL(KW)	187.2	207.4	229.7	250.8	273.9	291.0	311.1	331.8	353.5
			TOTAL COP	3.0	3.4	4.0	4.6	5.3	6.0	6.8	7.8	8.9
	15	59	POWER(KW)	193.3	176.3	160.7	146.8	134.2	122.9	112.6	103.3	94.6
			HEAT(KW)	426.0	433.7	441.5	450.3	460.4	472.1	485.6	501.4	519.6
			COOL(KW)	236.0	257.4	280.8	303.6	326.2	349.2	373.0	398.1	425.0
			TOTAL COP	3.4	3.9	4.5	5.1	5.9	6.7	7.6	8.7	10.0
	20	68	POWER(KW)	198.7	182.5	167.6	154.1	141.9	130.7	120.5	111.0	102.1
			HEAT(KW)	485.2	495.1	505.1	516.6	530.0	545.4	563.2	583.7	607.3
			COOL(KW)	289.5	312.6	337.5	362.5	388.1	414.7	442.7	472.7	505.2
			TOTAL COP	3.9	4.4	5.0	5.7	6.5	7.3	8.3	9.5	10.9
	25	77	POWER(KW)	206.0	190.7	176.5	163.6	151.8	141.0	130.9	121.3	112.2
			HEAT(KW)	551.3	563.8	576.7	591.5	608.7	628.5	651.2	677.1	706.5
			COOL(KW)	347.9	373.1	400.1	427.9	456.8	487.5	520.3	555.7	594.3
			TOTAL COP	4.4	4.9	5.5	6.2	7.0	7.9	9.0	10.2	11.6
	30	86	POWER(KW)	215.9	201.7	188.4	171.6	158.4	154.4	144.5	135.0	125.8
			HEAT(KW)	624.9	640.8	657.1	675.8	709.5	722.2	750.4	782.3	818.2
			COOL(KW)	411.4	439.1	468.7	504.2	551.1	567.8	605.9	647.3	692.4
			TOTAL COP	4.8	5.4	6.0	6.9	8.0	8.4	9.4	10.6	12.0

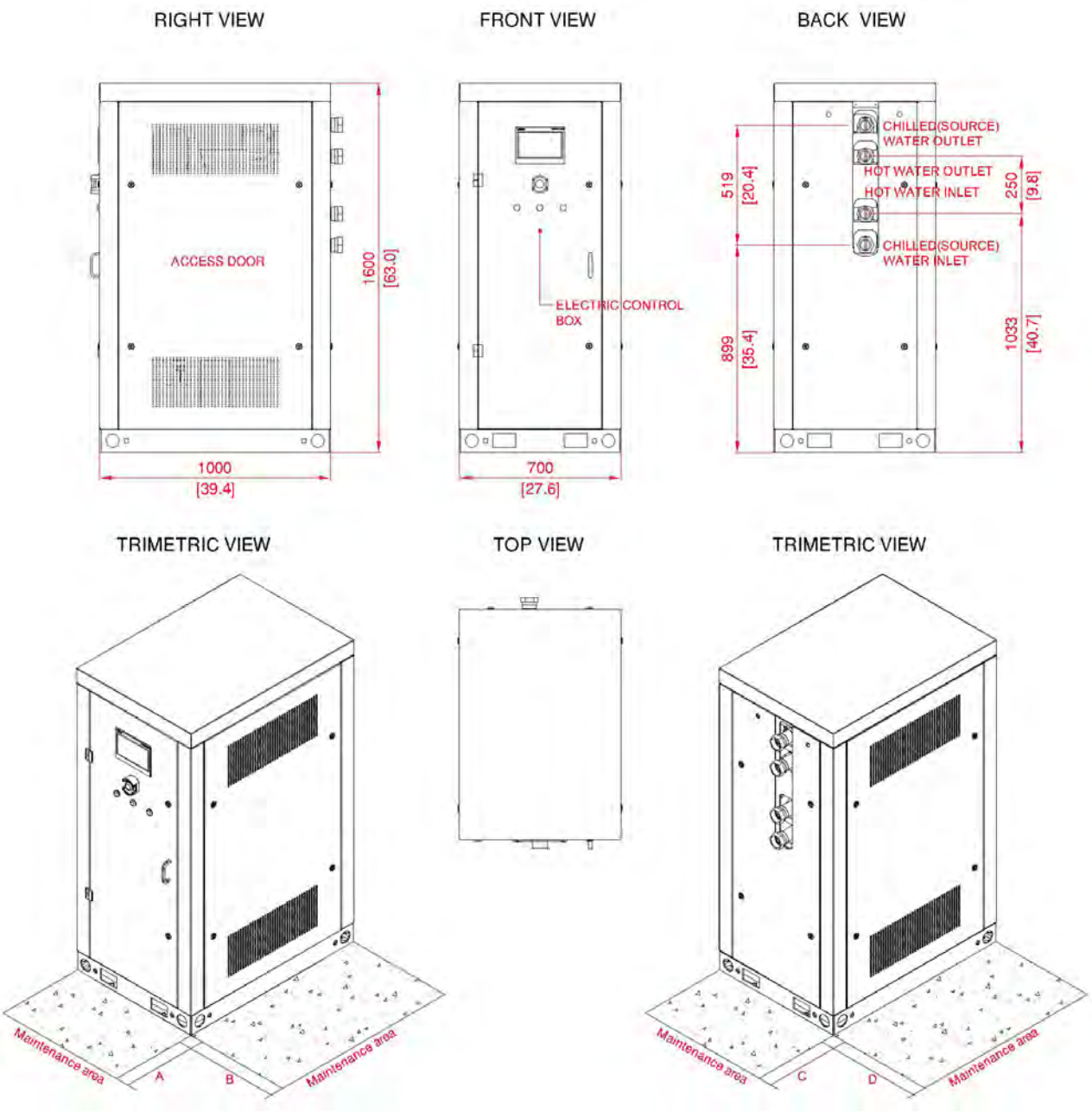
OUTLINE DIMENSION -1 mm(inch)



Maintenance Area Size

Model	Unit (mm)			
	A	B	C	D
AR-DW20S/C	500	600	600	600
AR-DW25S/C	500	600	600	600
AR-DW30S/C	500	600	600	600

OUTLINE DIMENSION -2 mm(inch)



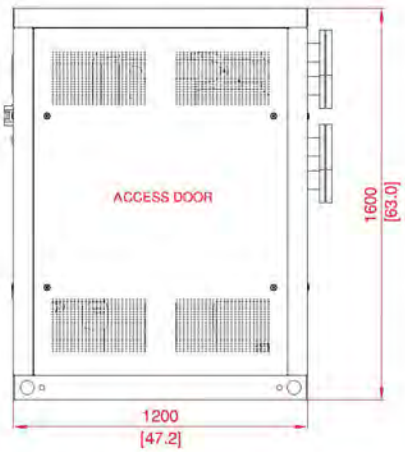
Maintenance Area Size

Model	Unit (mm)			
	A	B	C	D
AR-DW40S/C	600	700	600	700
AR-DW50S/C	600	700	600	700
AR-DW60S/C	600	800	600	800

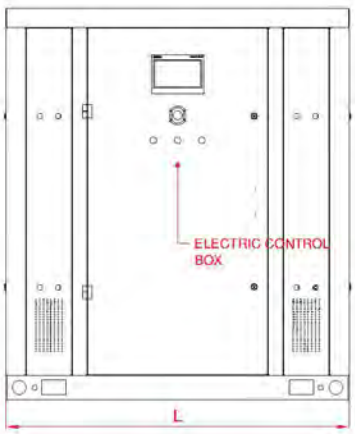
Energy Solutions since 1946

OUTLINE DIMENSION -3 mm(inch)

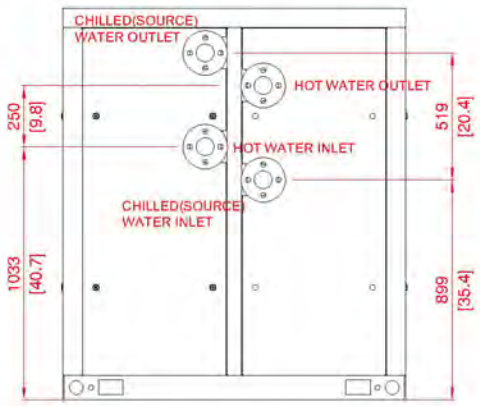
RIGHT VIEW



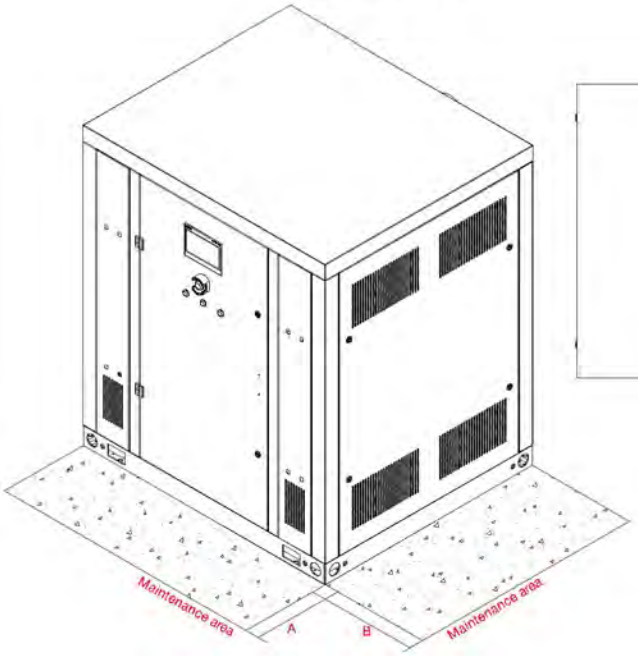
FRONT VIEW



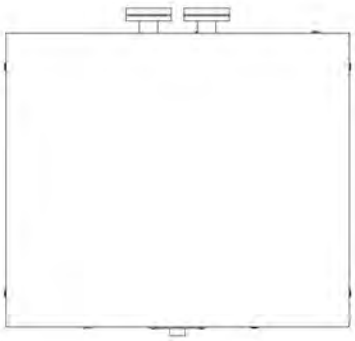
BACK VIEW



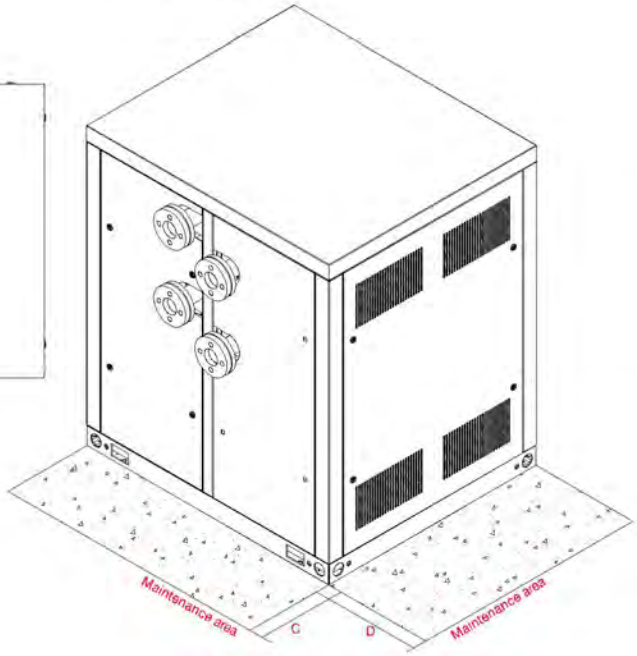
TRIMETRIC VIEW



TOP VIEW



TRIMETRIC VIEW



Dimension Data

Model	Unit (mm/inch)
	L
AR-DW80S/C	1400/55.1
AR-DW100S/C	1400/55.1
AR-DW120S/C	1400/55.1
AR-DW160S/C	2000/78.7

Maintenance Area Size

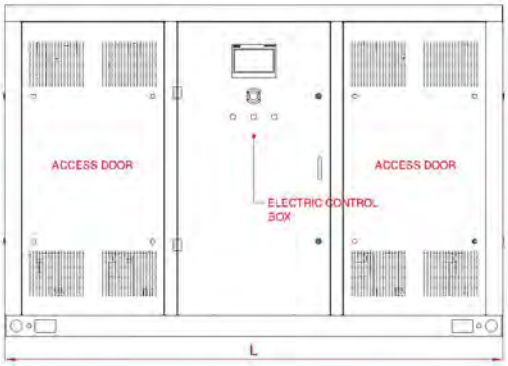
Model	Unit (mm)			
	A	B	C	D
AR-DW80S/C	800	700	800	700
AR-DW100S/C	800	800	900	800
AR-DW120S/C	800	800	900	800
AR-DW160S/C	800	800	1000	800

OUTLINE DIMENSION -4 mm(inch)

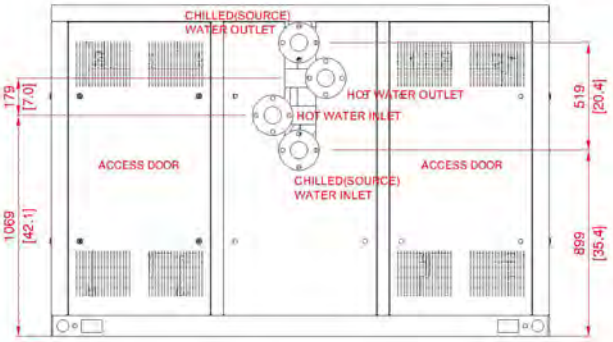
RIGHT VIEW



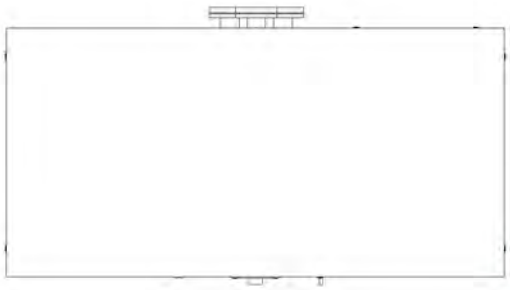
FRONT VIEW



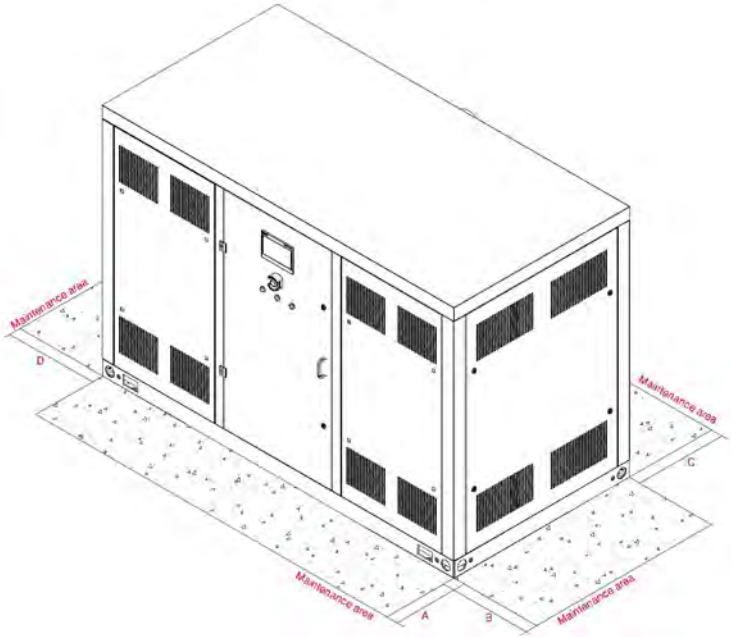
BACK VIEW



TOP VIEW



TRIMETRIC VIEW



Dimension Data

Model	Unit (mm/inch)
	L
AR-DW200S/C	2400/94.5
AR-DW240S/C	2400/94.5
AR-DW320S/C	3000/118.1
AR-DW400S/C	3000/118.1

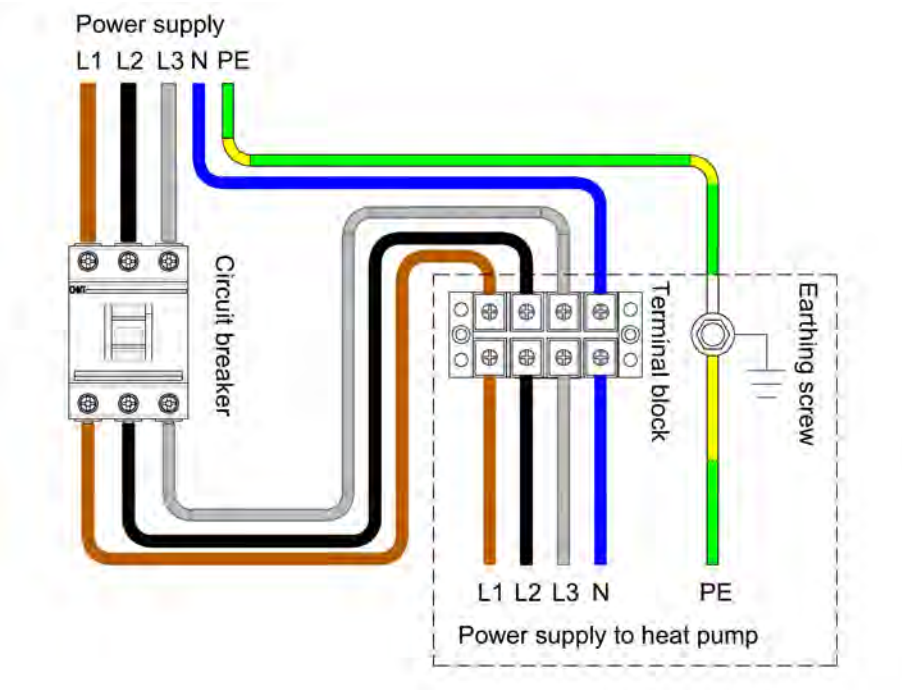
Maintenance Area Size

Model	Unit (mm)			
	A	B	C	D
AR-DW200S/C	900	900	1000	900
AR-DW240S/C	900	900	1000	900
AR-DW320S/C	1000	1000	1200	1000
AR-DW400S/C	1000	1000	1200	1000

Energy Solutions since 1946

ELECTRICAL INSTALLATION

Wiring schematic diagram
3PH-(380-420)V-50Hz



Wiring specification data

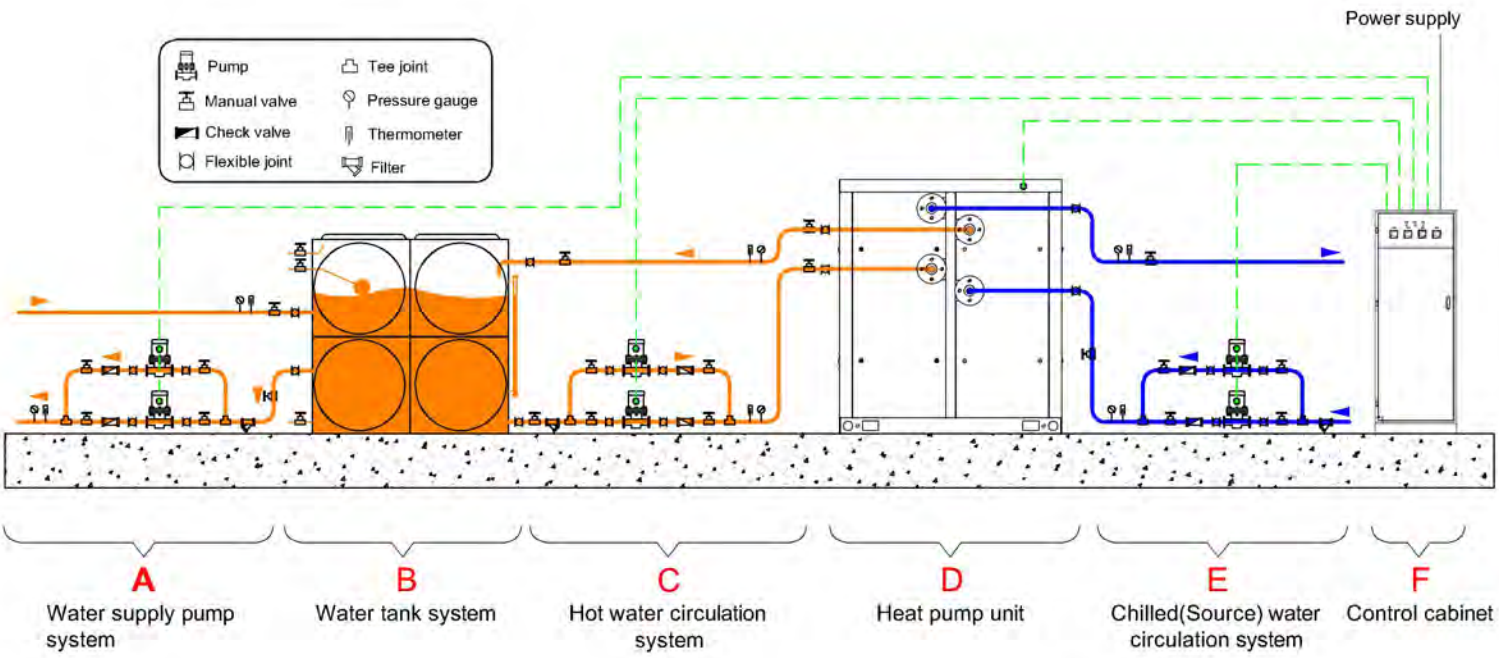
AR-DW (***)S/C	Model	20	25	30	40	50	60	80
Power line（mm²）	L1 / L2 / L3	4	4	6	10	10	16	25
Null / Earthing line（mm²）	N / PE	2.5	2.5	4	6	6	10	10
Circuit breaker（A）		20	30	40	40	50	75	100
AR-DW (***)S/C	**Model**	**100**	**120**	**160**	**200**	**240**	**320**	**400**
Power line（mm²）	L1 / L2 / L3	35	50	50	95	120	185	95*2
Null / Earthing line（mm²）	N / PE	16	25	25	50	70	95	95*1
Circuit breaker（A）		100	150	150	200	300	400	400

1. The manufacturer can provide a variety of power supply systems, please confirm with the manufacturer before purchasing
2. It is recommended to use the YJV cable, and when the cable length exceeds 50 m, appropriately increase the cable diameter
3. The on-site wiring shall be subject to the accompanying circuit diagram
4. Electrical installation and use must comply with local electrical standards and regulations
5. The unit must be grounded reliably
6. The cable and circuit breakers in the above table are suitable for use area with ambient temperature of 0℃ - 43 ℃ and the elevation ≤2000m,other please consult the manufacturer

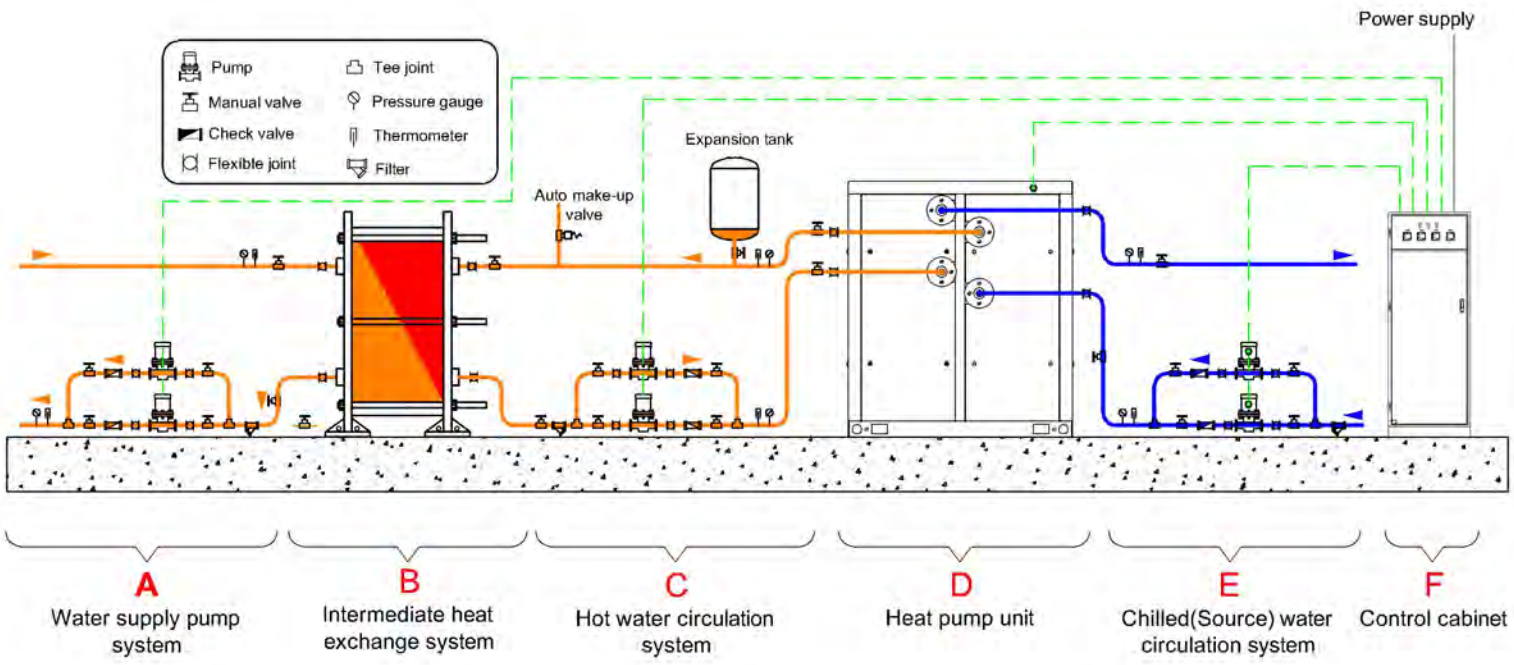
TYPICAL INSTALLATION

Double circuit water supply system
For multiple needs

The manufacturer can provide a complete of engineering accessories for building a heat pump system



Double circuit water supply system
For single needs
For special needs



Energy Solutions since 1946



Our product range includes providing customer-specific solutions and matching services.



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