AWGW SERIES OIL-FREE GAS BEARING WATER-COOLED CHILLER

AirWellTech
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Product Overview

AWGW Series Air Bearing Variable Frequency Centrifugal Water-Cooled Chiller is a permanent magnet synchronous variable frequency centrifugal chiller developed with a centrifugal compressor supported by hydrodynamic air foil bearings as the core component.



When the compressor is running, the bearings support the rotor via gas buoyancy without any metal-to-metal friction. The whole unit delivers energy-efficient, high-performance and ultra-quiet operation, making it particularly suitable forenergy-saving renovation projects of large air conditioning systems.

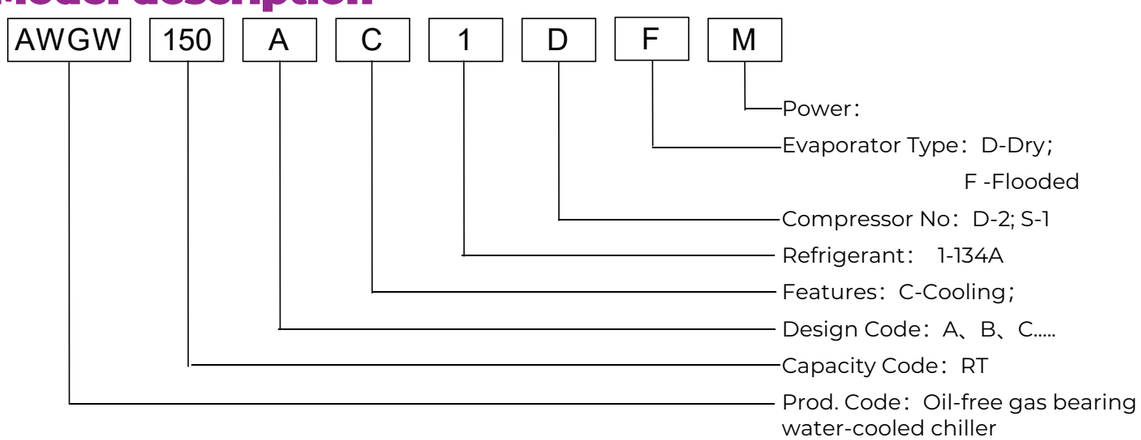
Features

- Adopting air-bearing structure, the compressor operates without mechanical friction, resulting in low noise and minimal mechanical loss.
- The unit eliminates the lubrication oil system. No pre-lubrication is required before startup, and regular bearing maintenance is unnecessary, cutting down operation and maintenance costs significantly.
- Oil-free operation prevents heat exchange tubes from being covered by oil film which would reduce heat transfer efficiency

Application

It is widely applied in large commercial office buildings, hotels, cinemas, shopping malls and schools, as well as industrial sectors including chemical industry, nuclear power, food and beverage, catering to both comfort air conditioning and process cooling applications.

Model description



Specifications

Model AWGW***...			65	90	140	190	240	290	340	400
Nominal cooling capacity	KW		214.5	316.5	492	668	834	1006	1150	1372
	x10³Kcal/h		184.5	272.2	423	575	717	865	989	1180
	USRT		61	90	140	190	237	286	327	390
Nominal Power	KW		38.8	56.4	87.8	116	144	172	203	237
COP			5.53	5.61	5.6	5.78	5.78	5.85	5.67	5.79
Nominal current	A		66	90	140	185	231	265	323	344
Max. operating current	A		83	119	188	247	292	360	433	445
Power supply			380V/3N~/50Hz							
Capacity control			25%~100% Stepless capacity regulation							
Compressor	Type		Hydrodynamic Air Foil Centrifugal Refrigeration Compressor							
	Start-up method		VFD soft startup							
	Qty	Unit	1	1	1	1	1	1	1	1
Condenser	Type		Water cooled shell and tube							
	water flow	m³/h	43.5	64.2	100	134.8	168	203	233	277
	Resistance	KPa	67	69	73	84	93	93	93	95
	Connection Size		DN80	DN100	DN125	DN150	DN150	DN200	DN200	DN200
Evaporator	Type		Water cooled shell and tube							
	water flow	m³/h	36.9	54.4	84.6	115	143.5	173	198	236
	Resistance	KPa	65	68	71	80	88	89	89	92
	Connection Size		DN80	DN100	DN125	DN150	DN200	DN200	DN200	DN200
Dimension	Length	mm	2035		3100		3800		3900	
	Width	mm	1305		1500		1800		2000	
	Hight	mm	1835		2150		2150		2350	
Weight	Net	Kg	2000	2400	2850	3300	3500	3600	4600	4800
	Run	Kg	2200	2640	3150	3630	3850	3960	5060	5280

Note:

- Nominal working condition for cooling: inlet/outlet water temperature(evaporator):12/7℃, inlet/outlet water temperature(condenser):30/35℃;
- The evaporator water side fouling coefficient is 0.018㎡·℃/kW ; while condenser water side fouling coefficient is 0.044 ㎡·℃/kW.
- Power supply: 380V/3Ph/50Hz, Allowable fluctuation of voltage±10%, variable-frequency soft starting
- The water pressure drop of evaporator and condenser does not include any external pipes and parts resistance.
- The dimension and weight data in the table is just for reference, if you need the detailed dimension, please contact with the company.