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Water-cooled Scroll Heat Pump

Professional HVAC Fan &Motors Manufacturer

Ningbo Longwell Electric Technology CO, LTD
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Product Display

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Product Characteristic

The water-cooled scroll heat pump is an efficient heat pump system used for air conditioning and heating applications. It combines water cooling and scroll compression technology to provide high energy conversion and temperature control capabilities.

The main components of this heat pump system include a scroll compressor, condenser, evaporator, and expansion valve. It circulates refrigerant between indoor and outdoor units, transferring heat through the compression and expansion processes. In cooling mode, the heat pump absorbs heat from indoors and releases it outdoors. In heating mode, it absorbs heat from outdoors and releases it indoors.

Compared to air-cooled systems, the water-cooled scroll heat pump is more efficient in high-temperature environments, as it can utilize lower ambient temperatures for cooling and heating. This makes it particularly effective in hot climates or high-temperature conditions.

The water-cooled scroll heat pump is widely used in various places, such as hotels, restaurants, shopping malls, schools, hospitals, theaters, sports arenas, entertainment centers, commercial buildings, office buildings, and industrial and mining enterprises. It features a compact and aesthetically pleasing design, ease of maintenance, and the capability for unattended operation, providing users with an efficient and energy-saving solution for air conditioning and heating.

Model	RLSW-(B)R	35	40	70	80	100	120	160	200	240
Power supply		380V/50Hz								
Compressor qty		1	1	2	2	3	3	4	5	6
Nominal cooling capacity(Kw)		34.3	40.4	60	80.8	112.9	121.2	161.6	202	242.4
Input power of cooling(Kw)		6	7.2	12	14.4	18	21.6	28.8	21.6	86.4
Nominal heating capacity(Kw)		38.3	45.1	76.6	90.2	114.9	135.3	180.4	225.5	270.6
Input power of heating(Kw)		8.2	9.8	16.4	19.6	24.6	29.4	39.2	58.8	58.8
Max.running current(A)		18.8	22.2	37.6	44.4	56.4	66.6	88.8	111	133.2
Cable diameter(copper wire distance ≤ 20 meters) mm²		3×4 +2×2.5	3×4 +2×2.5	3×6 +2×4	3×10 +2×6	3×16 +2×10	3×16 +2×10	3×25 +2×16	3×35 +2×16	3×50 +2×25
Compressor type		Hermetic scroll								
Starting mode		Direct								
Refrigerant		R22/R407C								
Refrigerant charge(kg)		6.5	6.5	13	13	20	20	26	32	40
Refrigerant control device		Thermostatic expansion valve								
Evaporator	Type	(Plate type)Tube in tube type								
	Water pressure drop(KPa)	70								
	Water pipe Dia.DN	50	50	50	65	65	65	80	80	80
	Connection	Threaded connect								
	Chilled water flow(m³/h)	5.9	6.9	11.8	13.9	19.4	20.8	27.8	34.7	41.7
	Well water flow(m³/h)	3.5	4.2	7.1	8.3	11.6	12.5	16.6	20.8	25
Condenser type	Type	(Plate type)Tube in tube type								
	Water pressure drop(KPa)	70								
	Water pipe Dia.DN	50	50	50	50	50	50	50	50	50
	Well water flow(m³/h)	3.5	4.2	7.1	8.3	11.6	12.5	16.6	20.8	25
	Hot water flow(m³/h)	5.9	6.9	11.8	13.9	19.4	20.8	27.8	34.7	41.7
Protection device		High and low voltage protection, antifreeze protection, temperature control,reverse phase and phase loss protection,high and low voltage protection,high pressure exhaust temperature protection,built-in motor overheat protection, overcurrent protection,check valve, safety valve								
Dimensions	L	1400	1400	1800	1800	2400	2400	2400	2800	3200
	W	655	655	700	700	800	800	950	950	950
	H	1100	1100	1350	1350	1400	1400	1450	1450	1450
Net weight(kg)		270	285	410	495	680	690	920	1080	1220
Running weight(kg)		325	340	490	610	820	830	1050	1190	1480
Noise(dBA)		72	72	72	72	72	72	72	72	72

Remarks
Cooling conditions: user side inlet/outlet water temperature: 12℃/7℃; ground water inlet/outlet water temperature: 18℃/29℃.
Heating conditions: user side inlet/outlet water temperature: 40℃/-℃; ground water inlet/outlet water temperature: 15℃/-℃.

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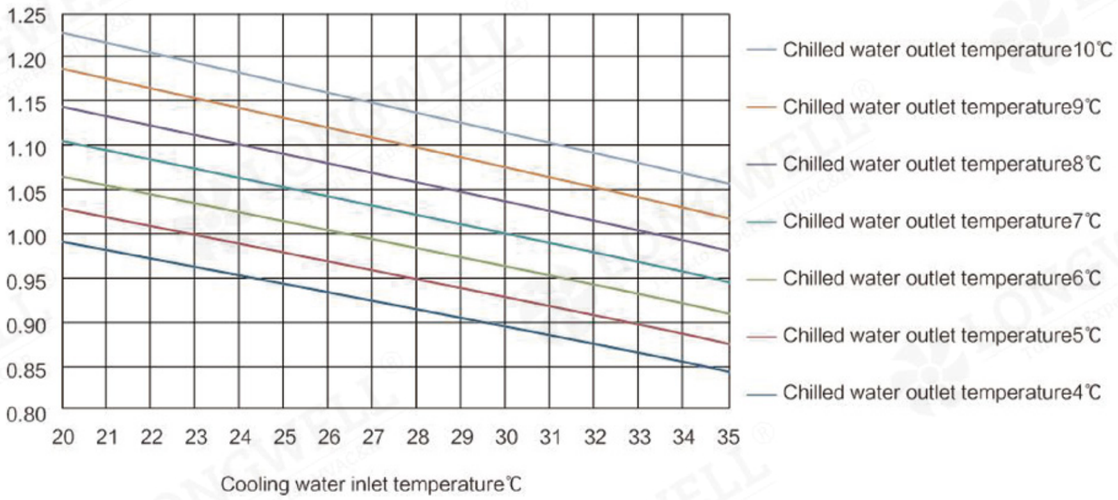
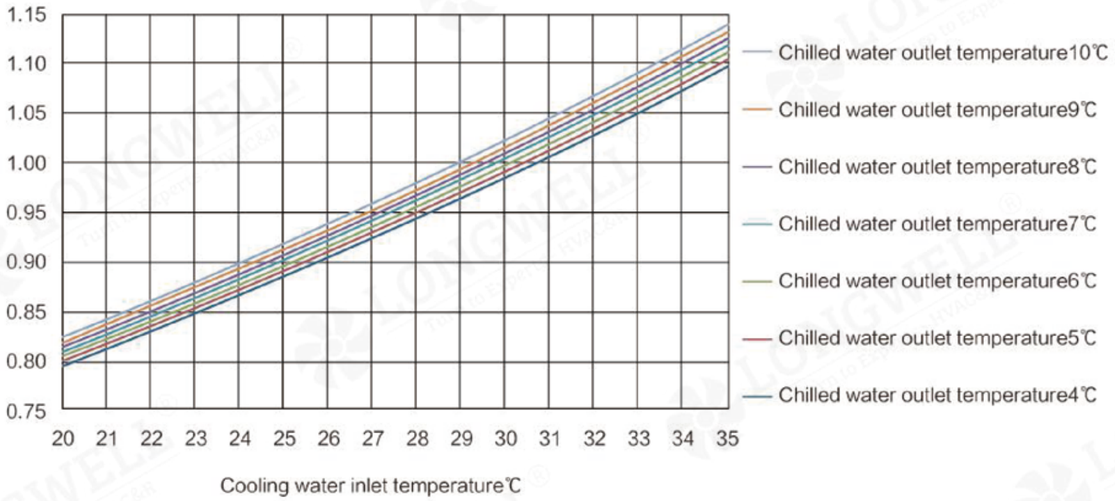
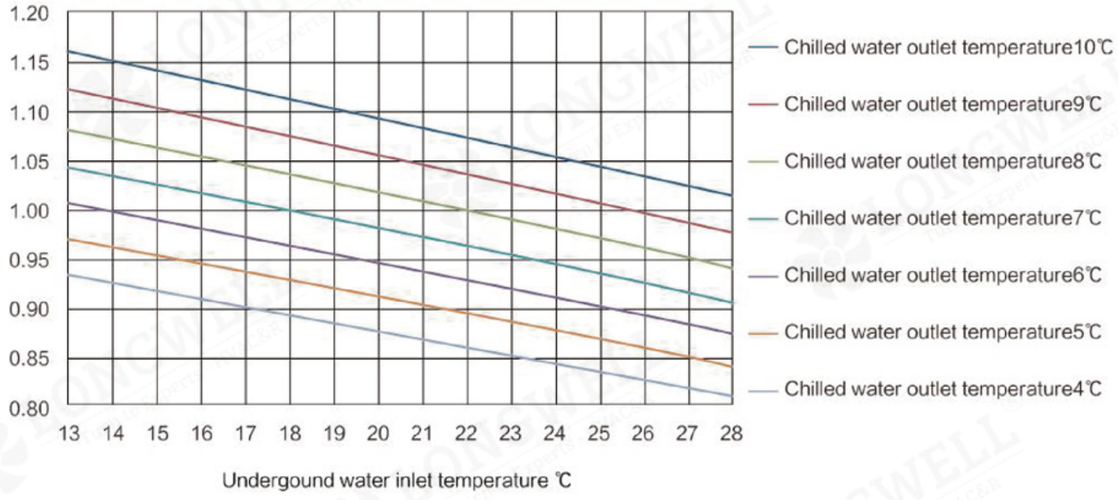
Correction factor curve of cooling capacity at cooling tower working condition



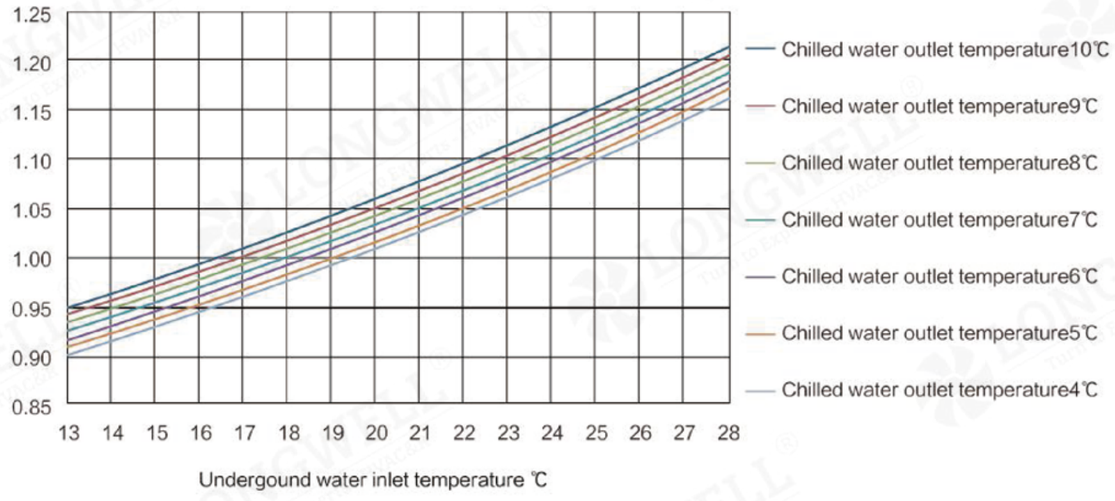
Correction factor curve of input power at cooling tower working condition



Correction factor curve of input power at underground water working condition(Cooling)



Correction factor curve of cooling capacity at underground water working condition



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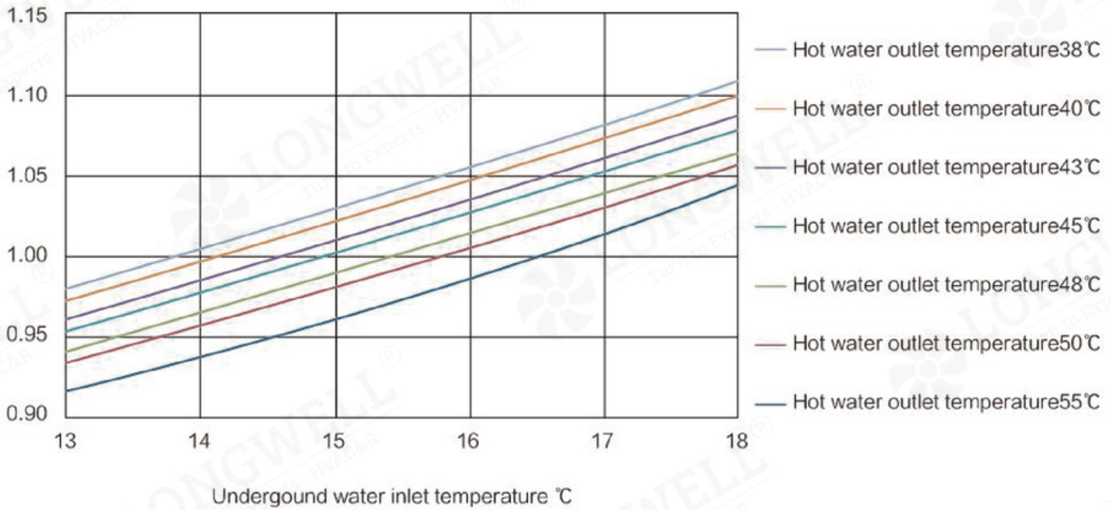
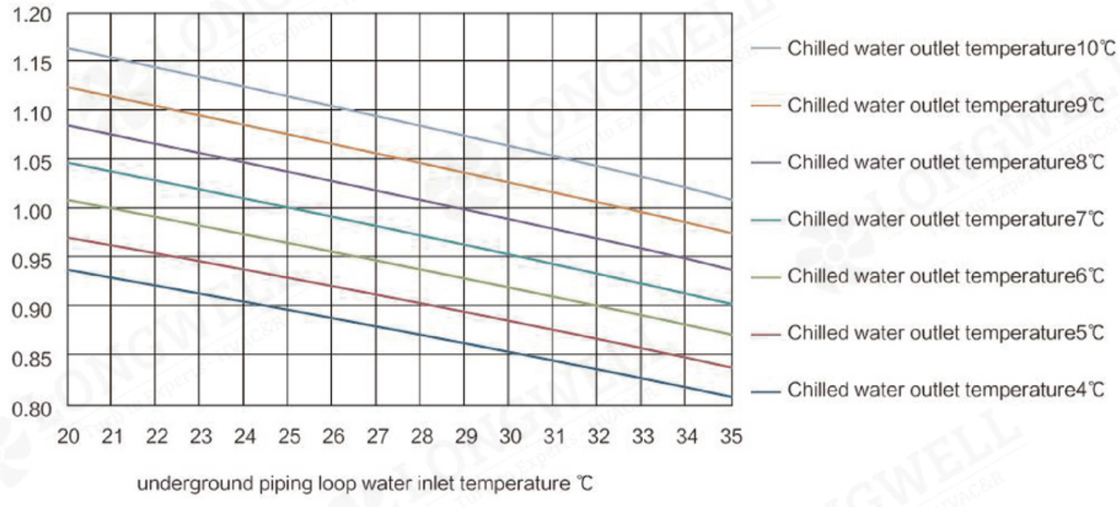
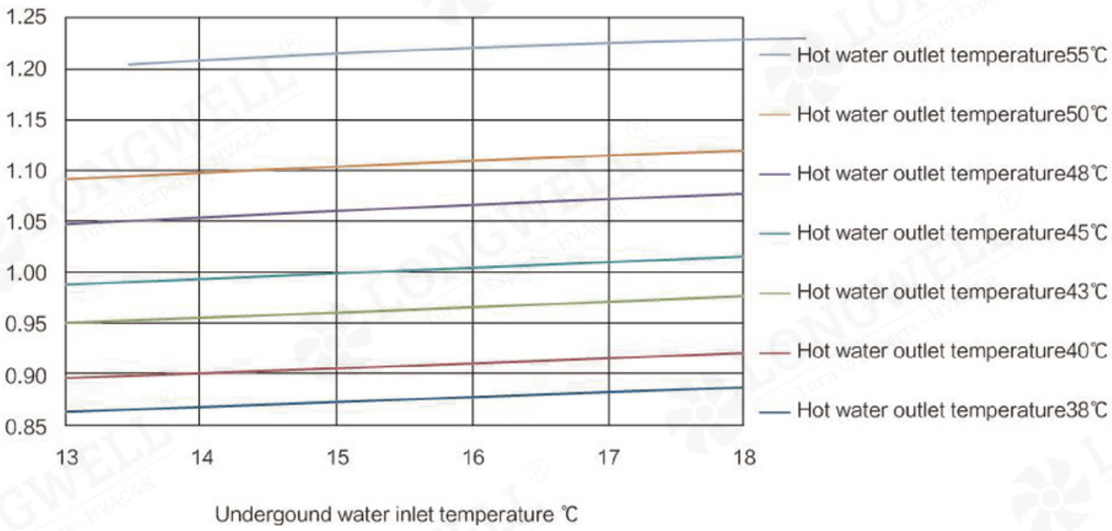
Correction factor curve of heating capacity at underground water working condition



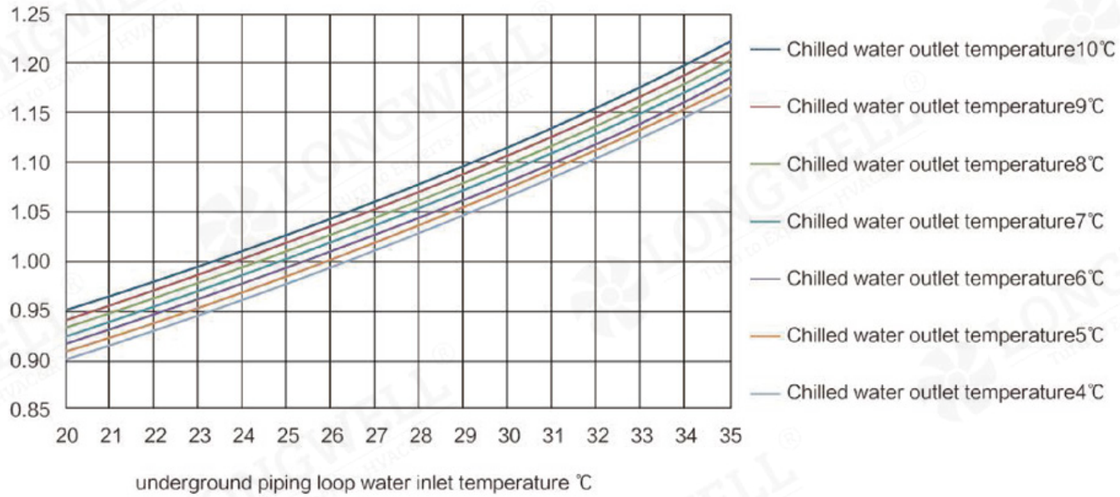
Correction factor curve of cooling capacity at buried pipe type working condition



Correction factor curve of input power at underground water working condition(Heating)



Correction factor curve of input power at buried pipe type working condition



Control Method

Microcomputer control features:
(1) Control the chilled water host with the cold water return water or outlet water temperature.
(2) When the load reaches the set stop value of the unit, it will automatically stop and start automatically.
(3) LCD display screen.
(4) Inlet and return water temperature display and setting, operating status, compressor operating time.
(5) Accept remote start and stop signals.

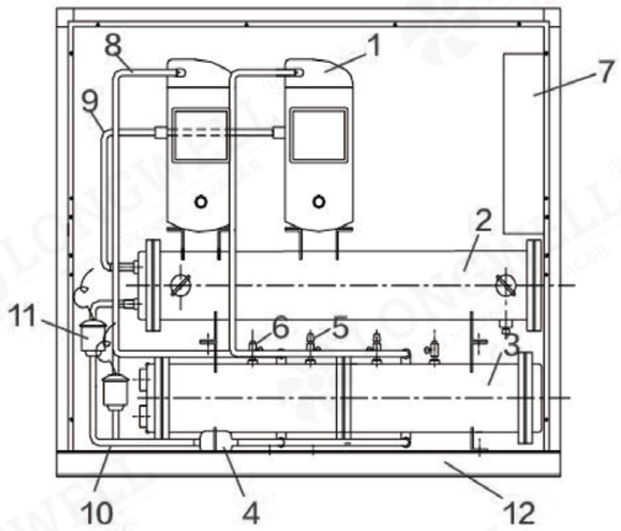
Safety Facilities

Safety valve/High and low voltage switch/Antifreeze temperature protection
Oil heater/Temperature control/Pressure gauge/Overload protector/Power protector

Optional Accessories

Built-in hydraulic module or separate hydraulic module

Structure Diagram



No.	Parts
1	Compressor
2	Shell&tube type evaporator
3	Shell&tube type condenser
4	Dry filter
5	Vent valve
6	Safety valve
7	Control box
8	High-pressure pipe
9	Return gas pipe
10	Liquid pipe
11	Expansion vale
12	Base