



Fujian Kwise Generator CO.,LTD

L314A Range

200kW - 360 kW

APPLICATION AND STANDARD

Kwise 4-pole alternators are designed for delivering superior efficiencies in defense, telecoms, airports, hospitals, buildings and oil exploration, industrial and mining continuous or standby power applications.

Alternators are in compliance to the main domestic and international standards and regulations: GB755, BS5000, IEC 60034, VED0530, CSAC22.2 100, NEMA MG-1.22. Alternators are designed, manufactured and marked in ISO 9001 environments.

ELECTRICAL FEATURES

Automatic voltage regulator: KWISE 4 Pole generators are fitted with reliable and performant AVR's, adapted to KWISE excitation systems, and their transistors have a fulfilling perfect voltage regulation function

Short circuit capacity: KWISE propose two choices of excitation systems, depending on the customer needs:

A) SELF-EXCITATION system, without short-circuit capacity.

B) PMG, with a short-circuit capacity of 3 times the nominal current for 10 seconds.

Transient features: Transient voltage dip for rated step load at 0.4 power factor is less than 15%, Recovery time is less than 1.5s.

Parallel operation: All 4 Pole alternators can operate in parallel with other alternators or with the mains, when they are equipped with the appropriate devices (AVR, current transformer...).

Overload acceptance: 4 Pole alternators can be overloaded according to NEMA.

Single Phase operation: 4 Pole alternators LA314 can be reconnected for single phase use.

Waveform: Total harmonic distortion (THD) at no load or linear load is less than 5% according to IEC. TIF/Telephone influence factor according to NEMA is less than 50.

Frequency: 4 Pole alternators may operate either 50 or 60 Hz. The standard winding (B31, B32) is suitable both for 50 and 60Hz.

Power factor: 4 Pole alternator are designed to operate between 0.8 and 1 power factor. A derating is necessary when power factor is below 0.8 (see derating chart).

MECHANICAL FEATURES

Forms: 4 Pole alternator can be provided in single bearing or double bearing configurations according to customer requirements. Adaptors and coupling discs are available to fit the major engines.

Balancing: All the rotors are dynamically balanced strictly according to ISO1940. The double bearing rotors are dynamically balanced with a half key.

Insulation and protection: 4 Pole alternator are class H insulated. The standard winding protection can accept up to 95% relative humidity and is suitable for indoors marine applications. Specific added coatings can be proposed for particularly harsh environments.

Enclosure: Standard enclosure is IP23.

Direction of rotation: 4 pole alternators LA314 can operate in both directions.

Terminal box and connectors: 4 Pole alternators have a large terminal box which allows easy access for re-connection or to the AVR. Current transformers and other optional modules can be fitted within the box.

Bearings: Sealed for life bearings up to all KWISE 4 Pole alternators.

Overspeed: The maximum overspeed is 2250rpm (1.25 times the 60Hz rated speed).

Mechanical structure: Steel frame. Aluminium, cast iron or steel housings and flanges depending on models.



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Common Data

Ambient temp	40°C	Temp rise	125K	Short circuit capacity	/
Altitude	1000m	Voltage regulation	±1%	Cooling method	IC01
Insulation class	Class H	Excitation system	self excitation	Direction of rotation	clockwise
Duty	S1	Winding pitch	2/3	Over speed	2250rpm
Phase	3	Power factor	0.8	Protection	IP23
Pole	4	TIF	<50	Frequency	50/60Hz
AVR	SX440	THF	<2%	THD	<3%

Electrical Data

50Hz/1500RPM		WindingB31/0.8 Power Factor							
Duty/Temp Rise/Ambient T°		Cont./125K/40°C				Standby/150K/40°C			
Phase		3 Phase				3Phase			
Voltage	Y	380V	400V	415V	440V	380V	400V	415V	440V
	Δ	220V	230V	240V		220V	230V	240V	
	YY				220V				220V
L314A200D1	KVA	250	250	250	250	275	275	275	275
	KW	200	200	200	200	220	220	220	220
L314A220D2	KVA	275	275	275	263	303	303	303	289
	KW	220	220	220	210	242	242	242	231
L314A240D3	KVA	300	300	300	285	330	330	330	314
	KW	240	240	240	228	264	264	264	251
L314A250D4	KVA	313	313	313	294	344	344	344	323
	KW	250	250	250	235	275	275	275	259
L314A260D5	KVA	325	325	325	305	358	358	358	336
	KW	260	260	260	244	286	286	286	268
L314A280D6	KVA	350	350	350	325	385	385	385	358
	KW	280	280	280	260	308	308	308	286
L314A300E7	KVA	375	375	375	350	413	413	413	385
	KW	300	300	300	280	330	330	330	308
L314A320E8	KVA	400	400	400	369	440	440	440	406
	KW	320	320	320	295	352	352	352	325
L314A360E9	KVA	450	450	450	419	495	495	495	461
	KW	360	360	360	335	396	396	396	369

*Other Voltage:Consult the factory



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Electrical Data

60Hz/1800RPM		WindingB32/0.8 Power Factor							
Duty/Temp Rise/Ambient T°		Cont./125K/40°C				Standby/150K/40°C			
Phase		3 Phase				3Phase			
Voltage	Y	416V	440V	460V	480V	416V	440V	460V	480V
	Δ	240V				240V			
	YY	208V	220V	230V	240V	208V	220V	230V	240V
L314A200D1	KVA	300	300	300	300	330	330	330	330
	KW	240	240	240	240	264	264	264	264
L314A220D2	KVA	330	330	330	330	363	363	363	363
	KW	264	264	264	264	290	290	290	290
L314A240D3	KVA	360	360	360	360	381	381	381	381
	KW	288	288	288	288	305	305	305	305
L314A250D4	KVA	375	375	375	375	413	413	413	413
	KW	300	300	300	300	330	330	330	330
L314A260D5	KVA	390	390	390	390	429	429	429	429
	KW	312	312	312	312	343	343	343	343
L314A280D6	KVA	420	420	420	420	462	462	462	462
	KW	336	336	336	336	370	370	370	370
L314A300E7	KVA	450	450	450	450	495	495	495	495
	KW	360	360	360	360	396	396	396	396
L314A320E8	KVA	480	480	480	480	528	528	528	528
	KW	384	384	384	384	422	422	422	422
L314A360E9	KVA	540	540	540	540	593	593	593	593
	KW	432	432	432	432	474	474	474	474

*Other Voltage:Consult the factory

Inertia & Efficiency

Model	L314A	200D1	220D2	240D3	250D4	260D5	280D6	300E7	320E8	360E9
Inertia(SB).J	kgm^2	3.731	4.047	4.281	4.606	4.865	5.245	5.701	6.217	6.629
Efficiency(100%Load)	%	94.1	94.2	94.3	94.4	94.5	94.6	94.7	94.8	94.9



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Reactance-time constant(s)

50Hz @ 400V	L314A	200D1	220D2	240D3	250D4	260D5	280D6	300E7	320E8	360E9
Short-circuit ratio	Kcc	0.352	0.354	0.356	0.375	0.397	0.412	0.427	0.444	0.463
Direct-axis synchro. reactance unsaturated	Xd	2.840	2.825	2.810	2.665	2.520	2.430	2.340	2.250	2.160
Direct-axis transient reactance saturated	X'd	0.180	0.180	0.180	0.175	0.170	0.160	0.150	0.140	0.130
Direct-axis subtransient reactance saturated	X''d	0.130	0.130	0.130	0.125	0.120	0.115	0.110	0.105	0.100
Quadrature-axis synchro. Reactance unsaturated	Xq	2.440	2.400	2.360	2.260	2.160	2.085	2.010	1.935	1.860
Quadrature-axis subtransient reactance saturated	X''q	0.360	0.350	0.340	0.320	0.300	0.285	0.270	0.255	0.240
Negative sequence reactance saturated	X2	0.250	0.245	0.240	0.220	0.200	0.195	0.190	0.185	0.180
Zero sequence reactance	X0	0.090	0.090	0.090	0.085	0.080	0.080	0.080	0.080	0.080
Short-circuit transient time constant	T'd	0.07s	0.07s	0.07s	0.08s	0.08s	0.085s	0.085s	0.085s	0.085s
Subtransient time constant	T''d	0.018s	0.018s	0.018s	0.019s	0.019s	0.020s	0.020s	0.020s	0.020s
No-load transient time constant	T'do	1.65s	1.65s	1.65s	1.7s	1.7s	1.75s	1.75s	1.75s	1.75s
Armature time constant	Ta	0.017s	0.017s	0.017s	0.018s	0.018s	0.019s	0.019s	0.019s	0.019s

60Hz @ 400V	L314A	200D1	220D2	240D3	250D4	260D5	280D6	300E7	320E8	360E9
Short-circuit ratio	Kcc	0.290	0.297	0.305	0.314	0.325	0.332	0.339	0.374	0.355
Direct-axis synchro. reactance unsaturated	Xd	3.450	3.365	3.280	3.180	3.080	3.015	2.950	2.885	2.820
Direct-axis transient reactance saturated	X'd	0.220	0.210	0.200	0.190	0.180	0.175	0.170	0.165	0.160
Direct-axis subtransient reactance saturated	X''d	0.150	0.145	0.140	0.135	0.130	0.125	0.120	0.115	0.110
Quadrature-axis synchro. Reactance unsaturated	Xq	2.980	2.890	2.800	2.695	2.590	2.600	2.610	2.620	2.630
Quadrature-axis subtransient reactance saturated	X''q	0.400	0.385	0.370	0.365	0.360	0.375	0.390	0.405	0.420
Negative sequence reactance saturated	X2	0.280	0.270	0.260	0.255	0.250	0.255	0.260	0.265	0.270
Zero sequence reactance	X0	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
Short-circuit transient time constant	T'd	0.07s	0.07s	0.08s	0.08s	0.08s	0.085s	0.085s	0.085s	0.085s
Subtransient time constant	T''d	0.018s	0.018s	0.019s	0.019s	0.019s	0.020s	0.020s	0.020s	0.020s
No-load transient time constant	T'do	1.65s	1.65s	1.7s	1.7s	1.7s	1.75s	1.75s	1.75s	1.75s
Armature time constant	Ta	0.017s	0.017s	0.018s	0.018s	0.018s	0.019s	0.019s	0.019s	0.019s

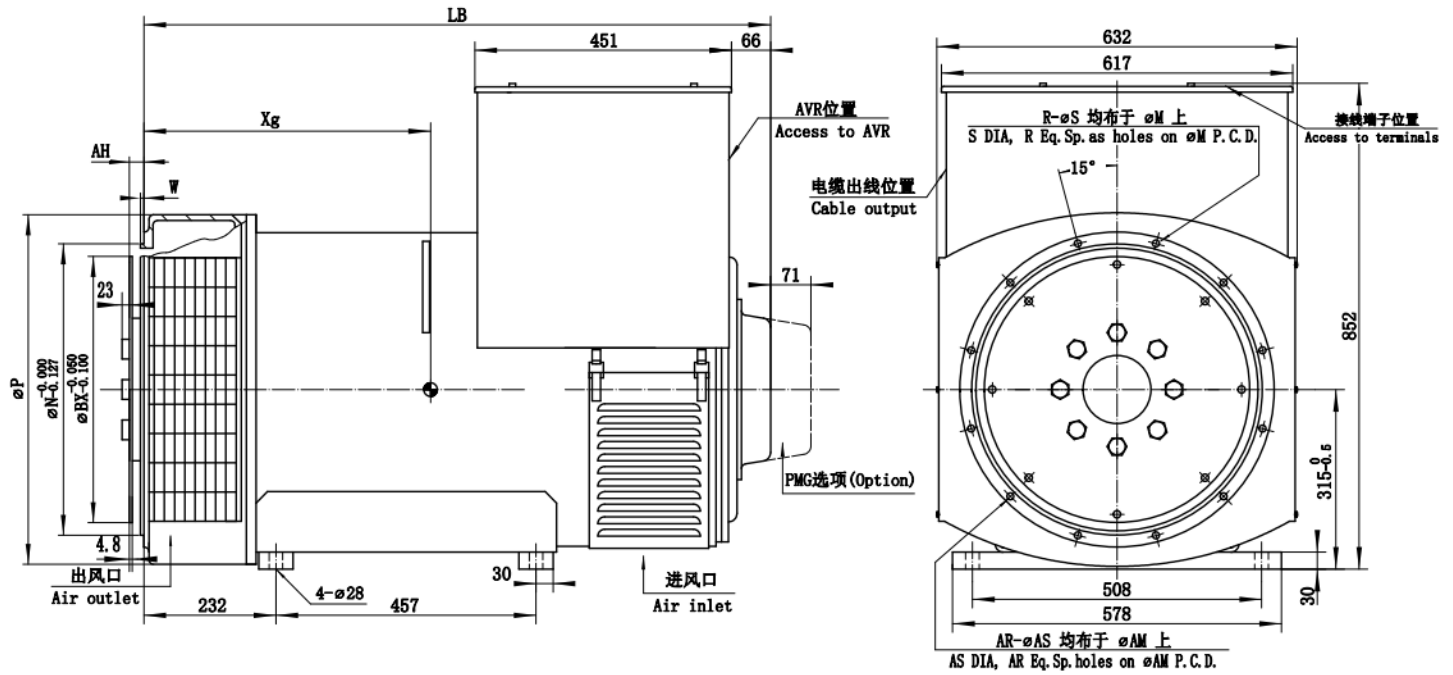


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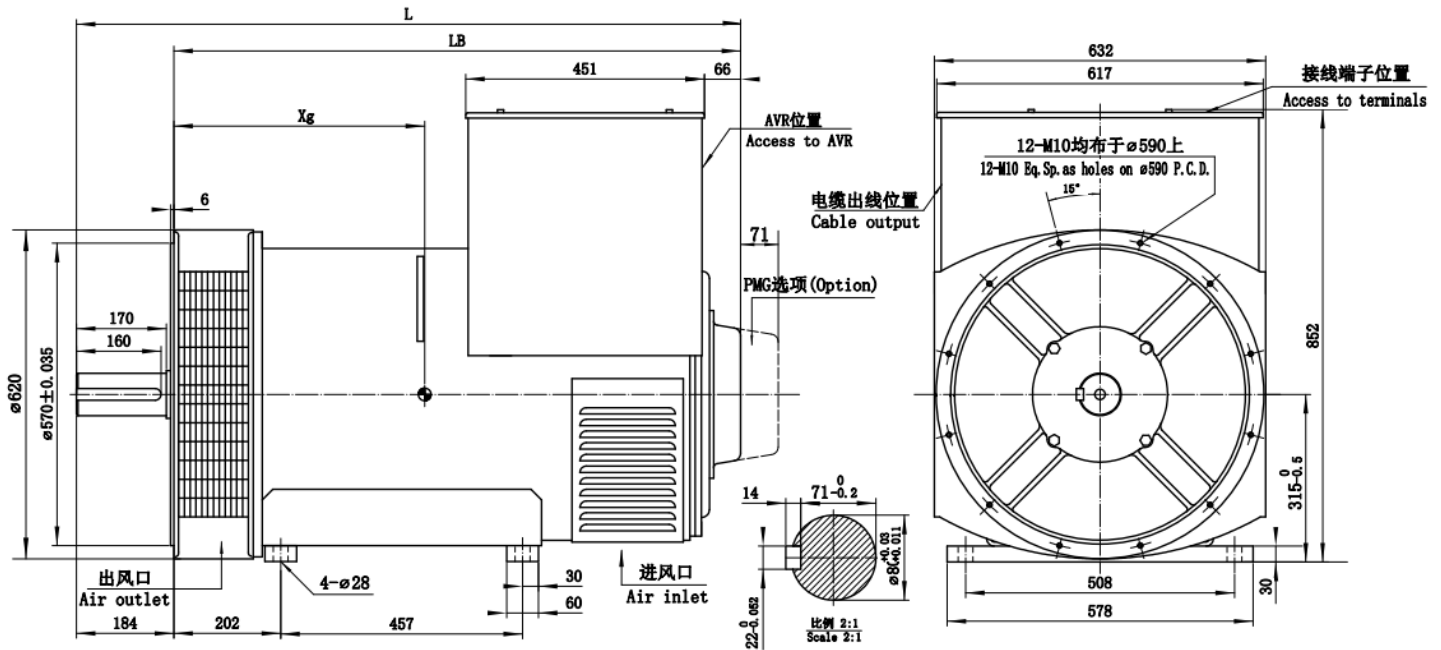
Outline Drawing (Single Bearing)



Dimensions(mm)				
Model	LB	*Xg	Net W.	Packing
	mm	mm	kg	L x W x H(mm)
L314A200D1	1101	463	698	1326*786*1063
L314A220D2	1101	472	764	1326*786*1063
L314A240D3	1101	483	807	1326*786*1063
L314A250D4	1101	494	826	1326*786*1063
L314A260D5	1101	504	870	1326*786*1063
L314A280D6	1101	515	928	1326*786*1063
L314A300E7	1191	530	969	1416*786*1063
L314A320E8	1191	542	1067	1416*786*1063
L314A360E9	1191	553	1165	1416*786*1063

Flange (mm)							Coupling Discs (mm)				
S.A.E	P	N	M	R-φS	W	a°	S.A.E	BX	AM	AR-φAS	AH
#0	711	647.7	679.45	16-φ14	6	11.25°	#11.5	352.425	333.38	8-φ11	39.6
#1/2	680	584.2	619.125	12-φ14	6	15°	#14	466.725	438.15	8-φ14	25.4
#1	617	511.175	530.225	12-φ12	6	15°	#18	571.5	542.925	6-φ17	15.7

Outline Drawing (Double Bearing)



Dimensions(mm)					
Model	L	LB	*Xg	Net W.	Packing
	mm	mm	mm	kg	L x W x H(mm)
L314A200D1	1255	1071	433	713	1416*786*1063
L314A220D2	1255	1071	442	779	1416*786*1063
L314A240D3	1255	1071	453	882	1416*786*1063
L314A250D4	1255	1071	465	846	1416*786*1063
L314A260D5	1255	1071	474	885	1416*786*1063
L314A280D6	1255	1071	485	943	1416*786*1063
L314A300E7	1345	1161	500	984	1466*786*1063
L314A320E8	1345	1161	512	1082	1466*846*1193
L314A360E9	1345	1161	523	1180	1466*846*1193