Fujian Kwise Generator CO.,LTD

S454G Range

1120kW - 2000 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.

Waveform: Total harmonic distorsion(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: SG454 are only available for clockwise running. (See from the driving end).

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.

Fujian Kwise Generator CO.,LTD

4 Pole

KWISE OF CASIC KWISE OF THE WORLD

Common Data

Ambient temp	40℃	Temp rise	125K	Short circuit capacity	≧300%
Altitude	1000m	Voltage regulation	±0.5%	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	MX341B	THF	<2%	THD	<3%

Electrical Data

50Hz/1500RPM		**WindingB31/0.8 Power Factor**							
Duty/Temp Rise/Ambient T°		Cont./125K/40℃				Standby/150K/40℃			
Phase		3 Phase				3Phase			
Voltage	Y	380V	**400V**	415V	440V	380V	400V	415V	440V
	Δ	220V	**230V**	240V		220V	230V	240V	
S454G1120B1	KVA	1400	**1400**	1400	1400	1540	1540	1540	1540
	KW	1120	**1120**	1120	1120	1232	1232	1232	1232
S454G1250B2	KVA	1563	**1563**	1563	1563	1719	1719	1719	1719
	KW	1250	**1250**	1250	1250	1375	1375	1375	1375
S454G1350C3	KVA	1688	**1688**	1688	1625	1857	1857	1857	1788
	KW	1350	**1350**	1350	1300	1485	1485	1485	1430
S454G1520C4	KVA	1900	**1900**	1863	1825	2090	2090	2049	2008
	KW	1520	**1520**	1490	1460	1672	1672	1639	1606
S454G1650D5	KVA	2013	**2063**	2013	1963	2214	2269	2214	2159
	KW	1610	**1650**	1610	1570	1771	1815	1771	1727
S454G1800D6	KVA	2200	**2250**	2200	2150	2420	2475	2420	2365
	KW	1760	**1800**	1760	1720	1936	1980	1936	1892
S454G1900E7	KVA	2319	**2375**	2319	2263	2550	2613	2550	2489
	KW	1855	**1900**	1855	1810	2040	2090	2040	1991
S454G2000E8	KVA	2438	**2500**	2438	2388	2681	2750	2681	2626
	KW	1950	**2000**	1950	1910	2145	2200	2145	2101

***Other Voltage:Consult the factory**

Fujian Kwise Generator CO.,LTD

4 Pole

KWISE OF CASIC KWISE OF THE WORLD

Electrical Data

60Hz/1800RPM		WindingB32/0.8 Power Factor							
Duty/Temp Rise/Ambient T°		Cont./125K/40℃				Standby/150K/40℃			
Phase		3 Phase				3Phase			
Voltage	Y	416V	**440V**	460V	480V	416V	440V	460V	480V
	Δ	240V				240V			
S454G1120B1	KVA	1525	**1575**	1680	1680	1678	1733	1848	1848
	KW	1220	**1260**	1344	1344	1342	1386	1478	1478
S454G1250B2	KVA	1700	**1750**	1876	1876	1870	1925	2064	2064
	KW	1360	**1400**	1500	1500	1496	1540	1650	1650
S454G1350C3	KVA	1850	**1900**	2026	2026	2035	2090	2229	2229
	KW	1480	**1520**	1620	1620	1628	1672	1782	1782
S454G1520C4	KVA	2063	**2125**	2280	2280	2269	2338	2508	2508
	KW	1650	**1700**	1824	1824	1815	1870	2006	2006
S454G1650D5	KVA	2225	**2288**	2476	2476	2448	2517	2724	2724
	KW	1780	**1830**	1980	1980	1958	2013	2178	2178
S454G1800D6	KVA	2675	**2500**	2700	2700	2943	2750	2970	2970
	KW	2140	**2000**	2160	2160	2354	2200	2376	2376
S454G1900E7	KVA	2563	**2663**	2850	2850	2819	2929	3135	3135
	KW	2050	**2130**	2280	2280	2255	2343	2508	2508
S454G2000E8	KVA	2700	**2800**	3000	3000	2970	3080	3300	3300
	KW	2160	**2240**	2400	2400	2376	2464	2640	2640

***Other Voltage:Consult the factory**

Inertia & Efficiency

Model	S454G	1120B1	1250B2	1350C3	1520C4	1650D5	1800D6	1900E7	2000E8
Inertia(SB).J	kgm^2	37.434	41.972	45.434	51.013	55.287	60.64	62.650	65.040
Efficiency(100%Load)	%	96	96.1	96.2	96.2	96.3	96.3	96.4	96.4

Fujian Kwise Generator CO.,LTD

4 Pole

KWISE OF CASIC KWISE OF THE WORLD

Reactance-time constant(s)

50Hz @ 400V	S454G	1120B1	1250B2	1350C3	1520C4	1650D5	1800D6	1900E7	2000E8
Short-circuit ratio	Kcc	0.360	0.364	0.377	0.391	0.474	0.366	0.298	0.284
Direct-axis synchro. reactance unsaturated	Xd	2.780	2.750	2.655	2.560	2.110	2.735	3.360	3.455
Direct-axis transient reactance saturated	X'd	0.240	0.230	0.220	0.210	0.170	0.180	0.190	0.200
Direct-axis subtransient reactance saturated	X"d	0.170	0.160	0.155	0.150	0.130	0.130	0.130	0.140
Quadrature-axis synchro. Reactance unsaturated	Xq	2.050	2.040	1.970	1.900	1.560	1.865	2.170	2.240
Quadrature-axis subtransient reactance saturated	X"q	0.210	0.250	0.265	0.280	0.230	0.235	0.240	0.255
Negative sequence reactance saturated	X2	0.200	0.230	0.235	0.240	0.190	0.195	0.200	0.210
Zero sequence reactance	X0	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030
Short-circuit transient time constant	T'd	0.29s	0.30s	0.31s	0.33s	0.33s	0.28s	0.18s	0.21s
Subtransient time constant	T"d	0.03s	0.03s	0.03s	0.03s	0.03s	0.025s	0.014s	0.02s
No-load transient time constant	T'do	2.98s	3.16s	3.31s	3.41s	3.49s	3.45s	3.4s	3.4s
Armature time constant	Ta	0.05s	0.066s	0.72s	0.08s	0.08s	0.071s	0.063s	0.065s

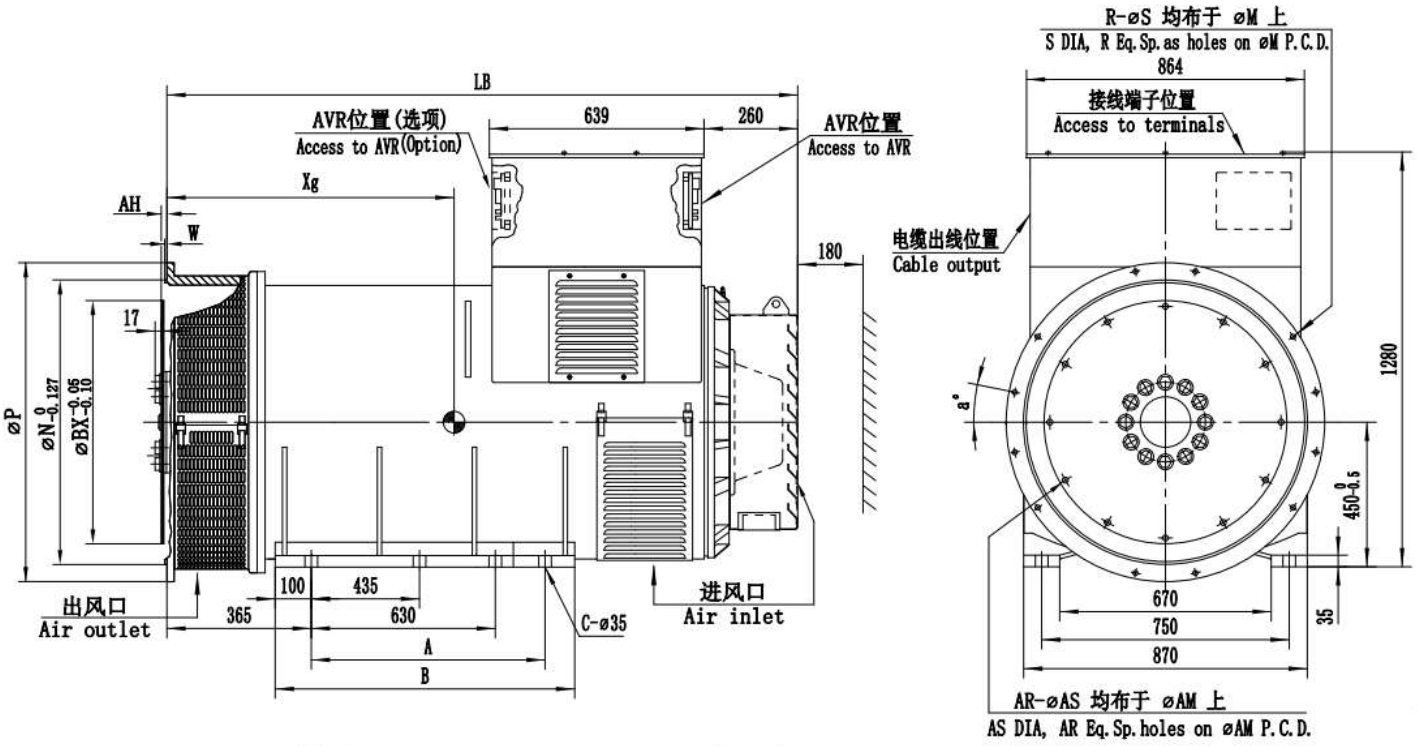
60Hz @ 440V	S454G	1120B1	1250B2	1350C3	1520C4	1650D5	1800D6	1900E7	2000E8
Short-circuit ratio	Kcc	0.305	0.310	0.317	0.325	0.402	0.322	0.268	0.254
Direct-axis synchro. reactance unsaturated	Xd	3.280	3.230	3.155	3.080	2.490	3.110	3.730	3.840
Direct-axis transient reactance saturated	X'd	0.260	0.250	0.245	0.240	0.200	0.205	0.210	0.220
Direct-axis subtransient reactance saturated	X"d	0.190	0.180	0.180	0.180	0.160	0.155	0.150	0.160
Quadrature-axis synchro. Reactance unsaturated	Xq	2.430	2.400	2.340	2.280	1.840	2.125	2.410	2.510
Quadrature-axis subtransient reactance saturated	X"q	0.250	0.270	0.300	0.330	0.270	0.265	0.260	0.270
Negative sequence reactance saturated	X2	0.240	0.250	0.260	0.270	0.230	0.225	0.220	0.230
Zero sequence reactance	X0	0.030	0.030	0.030	0.030	0.30	0.035	0.040	0.040
Short-circuit transient time constant	T'd	0.29s	0.30s	0.31s	0.33s	0.33s	0.28s	0.18s	0.21s
Subtransient time constant	T"d	0.03s	0.03s	0.03s	0.03s	0.03s	0.03s	0.025s	0.02s
No-load transient time constant	T'do	2.98s	3.16s	3.31s	3.41s	3.49s	3.45s	3.40s	3.4s
Armature time constant	Ta	0.05s	0.066s	0.72s	0.08s	0.08s	0.071s	0.063s	0.065s

Fujian Kwise Generator CO.,LTD

4 Pole

KWISE OF CASIC KWISE OF THE WORLD

Outline Drawing（Single Bearing）



Dimensions	LB	*Xg	A	B	C	Net W.	Packing
Model	mm	mm	mm	mm	mm	kg	L x W x H(mm)
S454G1120B1	1705	683	--	830	6	2750	1930*1050*1580
S454G1250B2	1705	696	--	830	6	3100	1930*1050*1580
S454G1350C3	1855	735	--	830	6	3310	2040*1050*1580
S454G1520C4	1855	748	--	830	6	3550	2040*1050*1580
S454G1650D5	1940	843	800	1000	8	3840	2200*1050*1580
S454G1800D6	1940	868	800	1000	8	4050	2200*1050*1580
S454G1900E7	2055	873	800	1000	8	4750	2300*1050*1580
S454G2000E8	2055	895	800	1000	8	5015	2300*1050*1580

Flange (mm)						
S.A.E	P	N	M	R-øS	W	a°
#00	940	787.3	850.9	16-ø14	6	11.25°
#0	940	647.7	679.45	16-ø14	6	11.25°

Coupling Discs (mm)				
S.A.E	BX	AM	AR-øAS	AH
#18	571.5	542.9	6-ø17	15.7
#21	673.1	641.35	12-ø17	0
#24	733.3	692	12-ø21	0

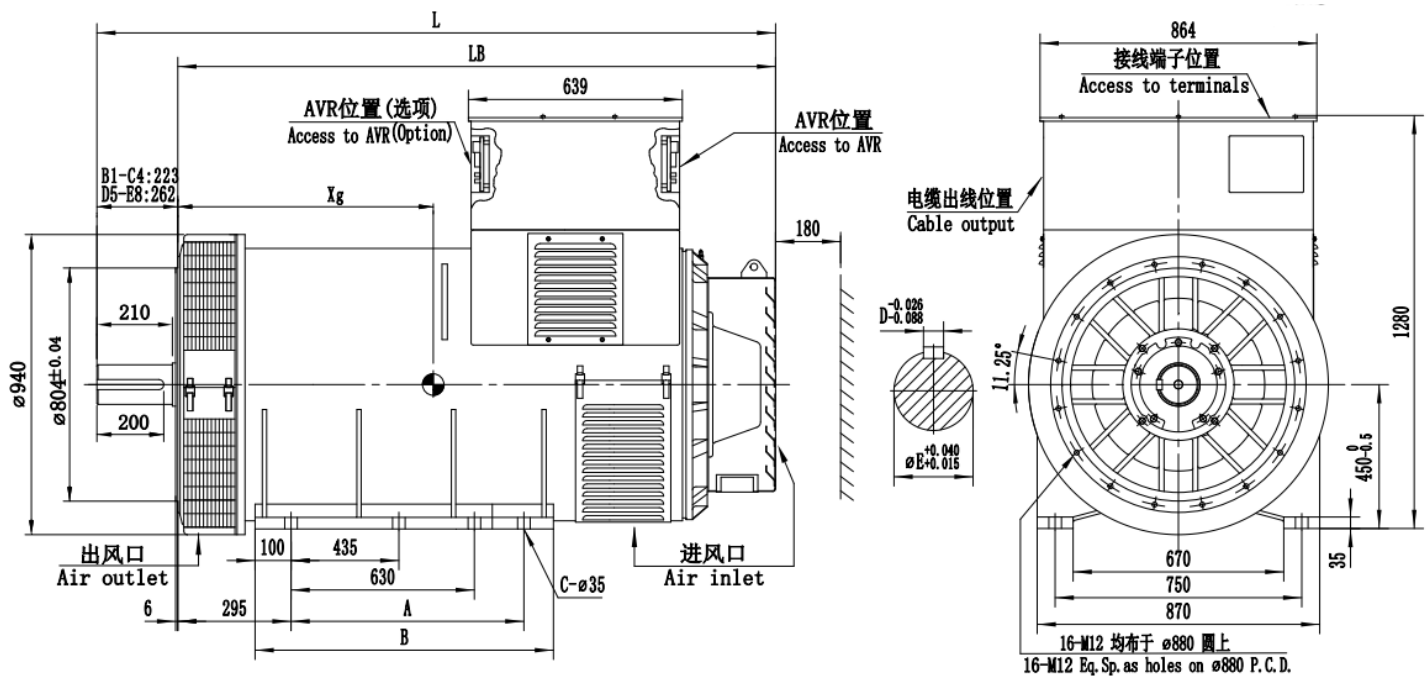
Web：www.fjkwise.com Email:sales@fjkwise.com Tel:+86 591 87557372

Fujian Kwise Generator CO.,LTD

4 Pole

KWISE OF CASIC KWISE OF THE WORLD

Outline Drawing（Double Bearing）



Dimensions	L	LB	*Xg	A	B	C	D	E	Net W.	Packing
Model	mm	mm	mm	mm	mm	mm	mm	mm	kg	L x W x H(mm)
S454G1120B1	1857	1634	683	--	830	6	32	125	2700	2040*1050*1580
S454G1250B2	1857	1634	696	--	830	6	32	125	2959	2040*1050*1580
S454G1350C3	2007	1784	735	--	830	6	32	125	3259	2200*1050*1580
S454G1520C4	2007	1784	748	--	830	6	32	125	3500	2200*1050*1580
S454G1650D5	2132	1870	843	800	1000	8	36	150	3807	2300*1050*1580
S454G1800D6	2132	1870	868	800	1000	8	36	150	4018	2300*1050*1580
S454G1900E7	2247	1980	873	800	1000	8	36	150	4705	2420*1050*1580
S454G2000E8	2247	1980	878	800	1000	8	36	150	4965	2420*1050*1580