

Performance and core specifications

4-pole alternators for continuous or standby diesel generator sets in buildings, hospitals, airports, telecoms and industry.

450–750 kVA

50 Hz continuous

4 POLES

1500 / 1800 rpm

50 / 60 Hz

B31 / B32 winding

IP23

Class H insulation

EXCITATION AND DYNAMIC PERFORMANCE

Transistor-based AVR regulation (KR440). Self-excitation has no sustained short-circuit capability; optional PMG supplies 3 times nominal current for 10 seconds.

At 60% rated current and PF 0.4: transient voltage dip <15%; recovery from a 15% dip <1.5 s.

Parallel operation with alternators or mains requires suitable AVR and current transformers.

Overload capability follows NEMA.

WINDING AND POWER QUALITY

Standard B31 / B32 windings operate at 50 or 60 Hz. Single-phase reconnection or dedicated windings are available. Operating PF: 0.8–1.0; derating is required below 0.8.

THD 1.2%~2.5% at no-load or linear load per IEC; TIF <50 per NEMA.

MECHANICAL CONSTRUCTION

Single- or double-bearing configurations with engine adaptors and coupling discs. Rotors balanced to ISO 1940; double-bearing rotors use half-key balancing. Sealed-for-life bearings; steel frame with cast-iron or steel housings and flanges, depending on model.

Class H insulation; winding protection accepts up to 95% relative humidity. Additional coatings are available for harsh environments. Accessible terminal box accommodates AVR, reconnection, CTs and optional modules.

Bidirectional operation is stated in the source; its general-parameter table specifies clockwise rotation. Maximum overspeed: 2250 rpm, or $1.25 \times$ rated speed at 60 Hz.

STANDARDS

GB 755, BS 5000, IEC 60034, VDE 0530, CSA C22.2-100 and NEMA MG-1.22. Design, manufacture and marking under ISO 9001.

General parameters and efficiency

Parameter	Value	Parameter	Value
Ambient temperature	40°C	Temperature rise	125K
Short-circuit current multiple	/	Altitude	1000 m
Voltage regulation	±1%	Cooling method	IC01
Insulation class	Class H	Exciter system	Brushless self-excitation
Direction of rotation	Clockwise	Duty type	S1
Winding pitch	2/3	Maximum speed	2250 rpm
Phases	3	Power factor	0.8
Protection grade	IP23	Number of poles	4
TIF	<50	Frequency	50/60 Hz
AVR model	KR440	THF	<2%
THD	1.2%~2.5%		

MOMENT OF INERTIA AND FULL LOAD EFFICIENCY

Model	Inertia J kg·m ²	50 Hz / 400 V Efficiency %	60 Hz / 440 V Efficiency %
KR534C	6.639	95.0	95.4
KR534D	7.599	95.3	95.5
KR534ES	7.981	95.6	95.4
KR534E	8.278	95.8	95.8
KR534FS	8.811	96.0	96.1
KR534G	9.520	96.3	96.4
KR534H	9.782	96.2	96.3
KR534K	10.272	96.5	96.5

Inertia values apply to single-bearing units. Efficiency values are at 100% load.

50 Hz electrical ratings

1500 rpm • Standard winding: 3-phase, power factor 0.8.

Continuous: 125K rise / 40°C ambient.

Standby: 163K rise / 27°C ambient.

Model	Unit	Continuous				Standby			
		380V	400V	415V	440V	380V	400V	415V	440V
KR534C	kVA	450	450	450	428	504	504	504	470
	kW	360	360	360	342	403	403	403	376
KR534D	kVA	500	500	500	475	560	560	560	523
	kW	400	400	400	380	448	448	448	418
KR534ES	kVA	563	563	563	534	630	630	630	588
	kW	450	450	450	428	504	504	504	470
KR534E	kVA	600	600	600	570	672	672	672	627
	kW	480	480	480	456	538	538	538	502
KR534FS	kVA	625	625	625	594	700	700	700	653
	kW	500	500	500	475	560	560	560	523
KR534G	kVA	675	675	675	641	756	756	756	705
	kW	540	540	540	513	605	605	605	564
KR534H	kVA	700	700	700	665	784	784	784	732
	kW	560	560	560	532	627	627	627	585
KR534K	kVA	750	750	750	713	840	840	840	784
	kW	600	600	600	570	672	672	672	627

WINDING CONNECTION VOLTAGES

Connection	Voltage options
Star Y	380V / 400V / 415V / 440V
Delta Δ	220V / 230V / 240V
Parallel star YY	220V (Y = 440 V)

Only 12-wire alternators can realise these connections. For other voltages, consult the factory.

60 Hz electrical ratings

1800 rpm • Standard winding: 3-phase, power factor 0.8.

Continuous: 125K rise / 40°C ambient.

Standby: 163K rise / 27°C ambient.

Model	Unit	Continuous				Standby			
		416V	440V	460V	480V	416V	440V	460V	480V
KR534C	kVA	484	518	540	540	532	569	594	594
	kW	387	414	432	432	426	455	475	475
KR534D	kVA	538	575	600	600	591	633	660	660
	kW	430	460	480	480	473	506	528	528
KR534ES	kVA	605	647	675	675	665	712	743	743
	kW	484	518	540	540	532	569	594	594
KR534E	kVA	645	690	720	720	710	759	792	792
	kW	516	552	576	576	568	607	634	634
KR534FS	kVA	672	719	750	750	739	791	825	825
	kW	538	575	600	600	591	633	660	660
KR534G	kVA	726	776	810	810	798	854	891	891
	kW	581	621	648	648	639	683	713	713
KR534H	kVA	753	805	840	840	828	886	924	924
	kW	602	644	672	672	662	708	739	739
KR534K	kVA	806	863	900	900	887	949	990	990
	kW	645	690	720	720	710	759	792	792

WINDING CONNECTION VOLTAGES

Connection	Voltage options
Star Y	416V / 440V / 460V / 480V
Delta Δ	240V (Y = 416 V)
Parallel star YY	208V / 220V / 230V / 240V

Only 12-wire alternators can realise these connections. For other voltages, consult the factory.

Reactance and time constants

Reactance in %; time constants in ms. Kcc is the short-circuit ratio.

50 HZ AT 400 V

Model	Kcc	X _d	X' _d	X'' _d	X _q	X'' _q	X ₂	X ₀	T' _d	T'' _d	T' _{do}	T _a
KR534C	0.22	444	28.4	19.7	262	27.1	2.34	1.30	64	8	2795	72
KR534D	0.25	404	25.4	17.5	238	24.1	2.08	1.11	54	7	2390	85
KR534ES	0.27	372	23.5	16.1	220	22.0	1.91	0.98	46	6	2011	100
KR534E	0.24	410	25.1	17.1	242	23.7	2.04	1.00	47	6	2152	104
KR534FS	0.26	388	23.4	15.8	229	22.1	1.90	0.87	43	5	1965	108
KR534G	0.28	356	21.3	14.3	209	20.0	1.72	0.78	36	4	1653	126
KR534H	0.27	369	22.1	14.9	217	20.7	1.78	0.81	37	5	1714	131
KR534K	0.24	419	25.0	16.7	246	23.4	2.00	0.90	40	5	1870	150

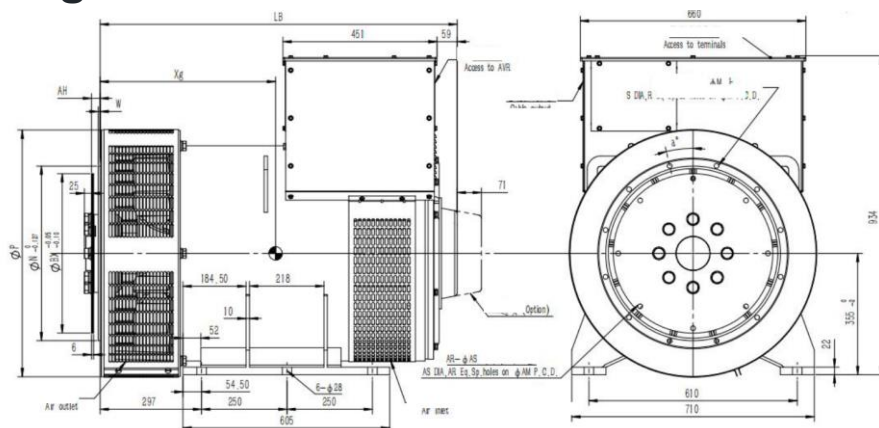
60 HZ AT 440 V

Model	Kcc	X _d	X' _d	X'' _d	X _q	X'' _q	X ₂	X ₀	T' _d	T'' _d	T' _{do}	T _a
KR534C	0.19	529	33.8	23.5	312	32.2	2.78	1.55	64	8	3326	72
KR534D	0.21	481	30.2	20.8	283	28.7	2.48	1.32	54	7	2844	84
KR534ES	0.23	444	30.3	19.9	262	26.2	2.31	1.17	17	2	834	101
KR534E	0.20	488	29.9	20.3	288	28.2	2.43	1.19	47	6	2561	103
KR534FS	0.22	462	27.8	18.8	272	26.3	2.26	1.04	42	5	2339	107
KR534G	0.25	407	24.5	16.4	240	22.9	1.97	0.90	34	4	1894	120
KR534H	0.23	439	26.3	17.7	258	24.7	2.12	0.97	37	5	2039	130
KR534K	0.20	498	29.7	19.9	293	27.8	2.38	1.07	40	5	2226	149

SYMBOL DEFINITIONS

Code	Parameter	Code	Parameter
Kcc	Short circuit ratio	X ₂	Negative sequence saturation reactance
X _d	Direct axis synchronous unsaturated reactance	X ₀	Zero sequence unsaturated reactance
X' _d	Direct Axis Transient Saturation Reactance	T' _d	Short-circuit transient time constant
X'' _d	Direct Axis Subtransient Saturation Reactance	T'' _d	Subtransient time constant
X _q	Quadrature axis Synchronous Unsaturated Reactance	T' _{do}	Open circuit time constant
X'' _q	Quadrature Subtransient Saturation Reactance	T _a	Armature time constant

Single bearing outline and dimensions



MOUNTING DIMENSIONS

Model	LB mm	Xg mm	Weight kg	Package L × W × H mm
KR534C	1037	478	1073	1237*846*1170
KR534D	1037	495	1096	1237*846*1170
KR534ES	1092	523	1174	1337*846*1170
KR534E	1137	533	1229	1337*846*1170
KR534FS	1137	545	1257	1337*846*1170
KR534G	1197	575	1349	1432*846*1170
KR534H	1197	575	1372	1432*846*1170
KR534K	1227	590	1416	1432*846*1170

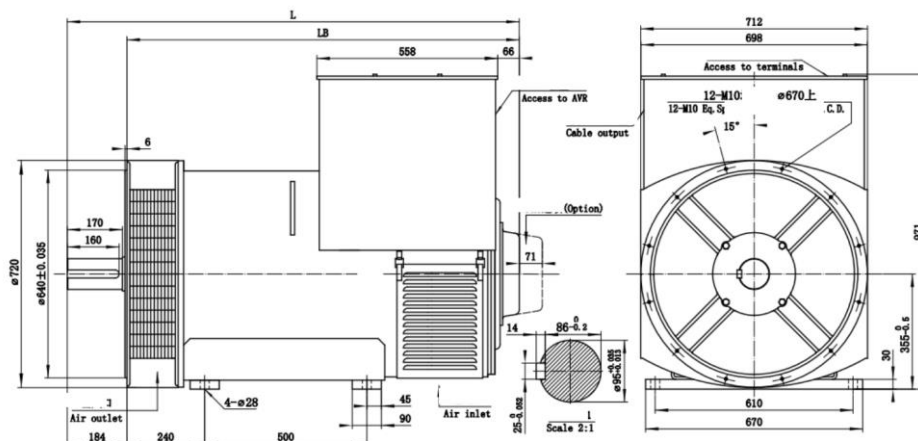
FLANGE DIMENSIONS IN mm

S.A.E	P	N	M	R-øS	W	a°
#00	882	787.4	850.9	16-ø14	7	11.25°
#0	722	647.7	679.45	16-ø14	6	11.25°
#1/2	722	584.2	619.125	12-ø14	6	15°
#1	722	511.175	530.225	12-ø12	6	15°

COUPLING DISC DIMENSIONS IN mm

S.A.E	BX	AM	AR-øAS	AH
#14	466.725	438.15	8-ø14	25.40
#18	571.5	542.925	6-ø17	15.7
#21	673.1	641.35	12-ø18	0

Double bearing outline and dimensions



MOUNTING DIMENSIONS IN mm

Model	L	LB	Xg mm
KR534C	1393	1209	498
KR534D	1393	1209	518
KR534ES	1393	1209	528
KR534E	1393	1209	538
KR534FS	1393	1209	548
KR534G	1468	1284	563
KR534H	1468	1284	573
KR534K	1468	1284	583

WEIGHT AND PACKAGING

Model	Weight kg	Package L × W × H mm
KR534C	1073	1387*846*1130
KR534D	1096	1387*846*1130
KR534ES	1174	1487*846*1130
KR534E	1229	1487*846*1130
KR534FS	1257	1487*846*1130
KR534G	1363	1582*846*1130
KR534H	1372	1582*846*1130
KR534K	1442	1582*846*1130