

Performance and core specifications

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

250–450 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 (SX440). 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	SX440	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 %
KR434C	3.469	94.1	94.3
KR434D	3.745	94.5	94.6
KR434DH	3.941	94.4	94.4
KR434E	4.225	94.5	94.6
KR434ES	4.206	94.5	94.6
KR434FS	4.628	94.7	94.9
KR434G	4.962	94.7	94.9
KR434F	5.439	94.8	94.9
KR434K	6.071	94.9	94.7

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
KR434C	kVA	250	250	250	238	280	280	280	261
	kW	200	200	200	190	224	224	224	209
KR434D	kVA	275	275	275	261	308	308	308	287
	kW	220	220	220	209	246	246	246	230
KR434DH	kVA	300	300	300	285	336	336	336	314
	kW	240	240	240	228	269	269	269	251
KR434E	kVA	313	313	313	297	350	350	350	327
	kW	250	250	250	238	280	280	280	261
KR434ES	kVA	325	325	325	309	364	364	364	340
	kW	260	260	260	247	291	291	291	272
KR434FS	kVA	350	350	350	333	392	392	392	366
	kW	280	280	280	266	314	314	314	293
KR434G	kVA	375	375	375	356	420	420	420	392
	kW	300	300	300	285	336	336	336	314
KR434F	kVA	400	400	400	380	448	448	448	418
	kW	320	320	320	304	358	358	358	334
KR434K	kVA	450	450	450	428	504	504	504	470
	kW	360	360	360	342	403	403	403	376

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
KR434C	kVA	269	288	300	300	296	316	330	330
	kW	215	230	240	240	237	253	264	264
KR434D	kVA	296	316	330	330	325	348	363	363
	kW	237	253	264	264	260	278	290	290
KR434DH	kVA	323	345	360	360	355	380	396	396
	kW	258	276	288	288	284	304	317	317
KR434E	kVA	336	359	375	375	370	395	413	413
	kW	269	288	300	300	296	316	330	330
KR434ES	kVA	349	374	390	390	384	411	429	429
	kW	280	299	312	312	307	329	343	343
KR434FS	kVA	376	403	420	420	414	443	462	462
	kW	301	322	336	336	331	354	370	370
KR434G	kVA	403	431	450	450	443	474	495	495
	kW	323	345	360	360	355	380	396	396
KR434F	kVA	430	460	480	480	473	506	528	528
	kW	344	368	384	384	378	405	422	422
KR434K	kVA	484	518	540	540	532	569	594	594
	kW	387	414	432	432	426	455	475	475

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	Xd	X'd	X''d	Xq	X''q	X2	X0	T'd	T''d	T'do	Ta
KR434C	0.24	418	27.9	18.8	240	24.9	2.19	1.22	103	13	4283	32
KR434D	0.22	462	31.9	21.8	265	27.9	2.49	1.44	111	14	4475	46
KR434DH	0.25	393	25.5	16.9	225	22.5	1.97	1.00	84	11	3604	41
KR434E	0.24	424	27.3	18.1	243	24.1	2.11	1.06	88	11	3807	43
KR434ES	0.22	455	29.2	19.3	261	25.7	2.25	1.11	93	12	4011	47
KR434FS	0.25	401	26.8	17.9	230	23.1	2.05	1.08	79	10	3274	58
KR434G	0.23	431	27.7	18.2	247	24.0	2.11	1.03	80	10	3471	56
KR434F	0.25	399	25.0	16.2	228	21.8	1.90	0.85	68	9	3036	59
KR434K	0.24	418	27.9	18.8	240	24.9	2.19	1.22	103	13	4283	32

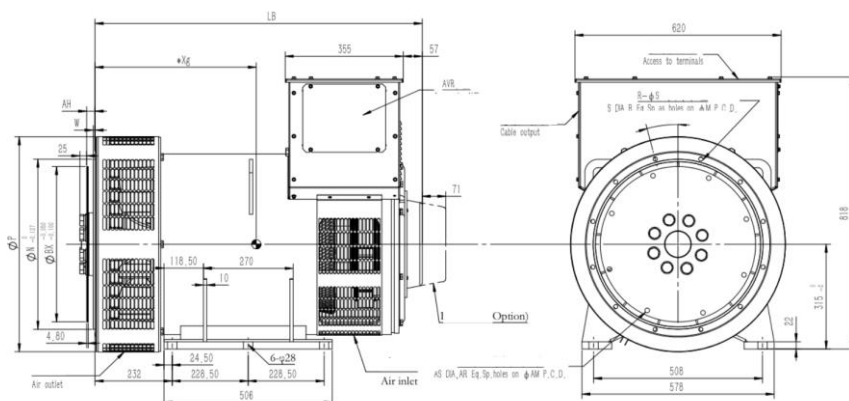
60 HZ AT 440 V

Model	Kcc	Xd	X'd	X''d	Xq	X''q	X2	X0	T'd	T''d	T'do	Ta
KR434C	0.22	462	31.9	21.8	265	27.9	2.49	1.44	111	14	4475	43
KR434D	0.18	549	38.0	25.9	316	33.3	2.96	1.72	110	14	5326	45
KR434DH	0.21	468	30.3	20.1	268	26.8	2.35	1.19	83	10	4289	40
KR434E	0.20	504	32.5	21.5	289	28.7	2.51	1.26	88	11	4530	42
KR434ES	0.18	541	34.8	23.0	310	30.6	2.68	1.32	92	11	4773	46
KR434FS	0.21	477	31.9	21.3	274	27.5	2.44	1.29	78	10	3897	58
KR434G	0.19	534	34.1	22.4	306	29.5	2.59	1.25	80	10	4191	59
KR434F	0.21	475	29.7	19.3	273	25.9	2.26	1.01	67	8	3613	55
KR434K	0.19	524	33.1	21.4	296	28.5	2.49	1.15	80	10	4091	60

SYMBOL DEFINITIONS

Code	Parameter	Code	Parameter
Kcc	Short circuit ratio	X2	Negative sequence saturation reactance
Xd	Direct axis synchronous unsaturated reactance	X0	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
Xq	Quadrature axis Synchronous Unsaturated Reactance	T'do	Open circuit time constant
X''q	Quadrature Subtransient Saturation Reactance	Ta	Armature time constant

Single bearing outline and dimensions



MOUNTING DIMENSIONS

Model	LB mm	Xg mm	Weight kg	Package L × W × H mm
KR434C	886	395	660	960*786*1060
KR434D	886	408	702	960*786*1060
KR434DH	936	423	741	1010*786*1060
KR434E	936	428	759	1010*786*1060
KR434ES	936	433	721	1010*786*1060
KR434FS	986	453	783	1090*786*1060
KR434G	986	458	801	1090*786*1060
KR434F	1021	475	875	1090*786*1060
KR434K	1081	505	983	1150*786*1060

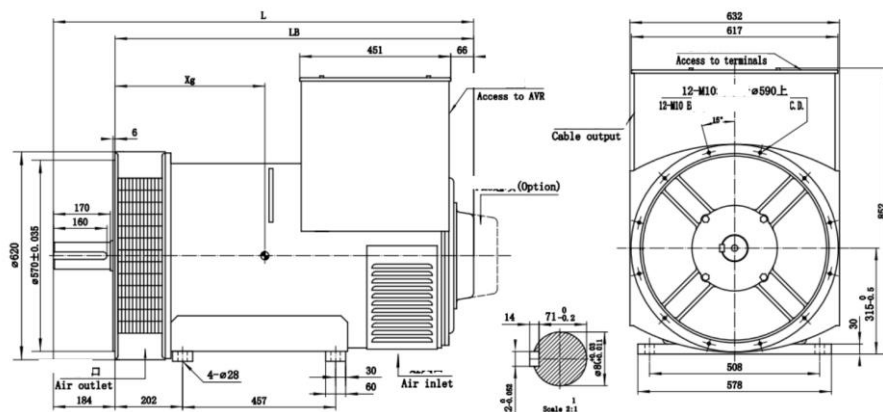
FLANGE DIMENSIONS IN mm

S.A.E	P	N	M	R-øS	W	a°
#0	711	647.7	679.45	16-ø14	6	11.25°
#1/2	646	584.2	619.125	12-ø14	6	15°
#1	646	511.175	530.225	12-ø12	6	15°

COUPLING DISC DIMENSIONS IN mm

S.A.E	BX	AM	AR-øAS	AH
#11.5	352.425	333.38	8-ø11	39.6
#14	466.725	438.15	8-ø14	25.4
#18	571.5	542.925	6-ø17	15.7

Double bearing outline and dimensions



MOUNTING DIMENSIONS IN mm

Model	L	LB	Xg mm
KR434C	1255	1071	433
KR434D	1255	1071	442
KR434DH	1255	1071	453
KR434E	1255	1071	465
KR434ES	1255	1071	474
KR434FS	1255	1071	485
KR434G	1345	1071	500
KR434F	1345	1161	512
KR434K	1345	1161	528

WEIGHT AND PACKAGING

Model	Weight kg	Package L × W × H mm
KR434C	675	1050*786*1040
KR434D	717	1050*786*1040
KR434DH	756	1100*786*1040
KR434E	774	1100*786*1040
KR434ES	736	1100*786*1040
KR434FS	798	1180*786*1040
KR434G	816	1180*786*1040
KR434F	890	1180*786*1040
KR434K	998	1240*786*1040