

Performance and core specifications

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

20–42.5 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. 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 D51/D61 windings are available. Operating PF: 0.8–1.0; derating is required below 0.8.

THD <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	SX460	THF	<2%
THD	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 %
KR184B	0.137	83.7	84.7
KR184C	0.155	84.2	85.2
KR184FS	0.165	85.2	85.9
KR184F	0.184	85.8	86.7
KR184GS	0.211	86.2	86.9
KR184G	0.246	86.7	87.3
KR184H	0.256	87.1	87.7
KR184J	0.266	87.6	88.2
KR184K	0.280	88.0	88.4

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				Special 1-phase	
		380V	400V	415V	440V	380V	400V	415V	440V	PF 0.8	PF 1.0
KR184B	kVA	20	20	20	19	22.4	22.4	22.4	20.9	13.6	16
	kW	16	16	16	15.2	17.9	17.9	17.9	16.7	10.9	16
KR184C	kVA	22.5	22.5	22.5	21.4	25	25	25	23.5	15.3	18
	kW	18	18	18	17	20	20	20	18.8	12	18
KR184FS	kVA	25	25	25	23.8	28	28	28	26	17	20
	kW	20	20	20	19	22.4	22.4	22.4	20.9	13.6	20
KR184F	kVA	27.5	27.5	27.5	26	30.8	30.8	30.8	28.7	18.7	22
	kW	22	22	22	21	24.6	24.6	24.6	23.0	15	22
KR184GS	kVA	31	31	31	30	35	35	35	32.7	21.3	25
	kW	25	25	25	24	28	28	28	26.1	17	25
KR184G	kVA	35	35	35	33.3	39.2	39.2	39.2	36.6	23.8	28
	kW	28	28	28	26.6	31.4	31.4	31.4	29.3	19	28
KR184H	kVA	37.5	37.5	37.5	35.6	42	42	42	39	25.5	30
	kW	30	30	30	28.5	33.6	33.6	33.6	31.4	20.4	30
KR184J	kVA	40	40	40	38	44.8	44.8	44.8	41.8	27	32
	KW	32	32	32	30	35.8	35.8	35.8	33.4	21.8	32
KR184K	kVA	42.5	42.5	42.5	40	47.6	47.6	47.6	44.4	29	34
	kW	34	34	34	32	38	38	38	35.5	23	34

WINDING CONNECTION VOLTAGES

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

Special 1-phase winding: 220 / 230 / 240 V; continuous rating at 125K rise and 40°C ambient.

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				Special 1-phase	
		416V	440V	460V	480V	416V	440V	460V	480V	PF 0.8	PF 1.0
KR184B	kVA	21.5	23.0	24.0	24.0	23.7	25.3	26.4	26.4	15.3	18
	kW	17.2	18.4	19.2	19.2	18.9	20	21.1	21.1	12.2	18
KR184C	kVA	24.2	25.9	27.0	27.0	26.6	28.5	29.7	29.7	17.2	20
	kW	19.4	20.7	21.6	21.6	21.3	22.8	23.8	23.8	13.8	20
KR184FS	kVA	26.9	28.8	30.0	30.0	29.6	31.6	33.0	33.0	19	23
	kW	21.5	23.0	24.0	24.0	23.7	25.3	26.4	26.4	15	23
KR184F	kVA	29.6	31.6	33.0	33.0	32.5	34.8	36.3	36.3	21	25
	kW	23.7	25.3	26.4	26.4	26	27.8	29.0	29.0	17	25
KR184GS	kVA	33.6	35.9	37.5	37.5	37	39.5	41.3	41.3	24	28
	kW	27	28.8	30.0	30.0	29.6	31.6	33.0	33.0	19	28
KR184G	kVA	37.6	40.3	42.0	42.0	41.4	44.3	46.2	46.2	26.8	32
	kW	30	32.2	33.6	33.6	33.1	35.4	37.0	37.0	21.4	32
KR184H	kVA	40.3	43.1	45.0	45.0	44.3	47.4	49.5	49.5	28.7	34
	kW	32.3	34.5	36.0	36.0	35.5	38	39.6	39.6	23	34
KR184J	kVA	43	46.0	48.0	48.0	47.3	50.6	52.8	52.8	30.6	36
	kW	34.4	36.8	38.4	38.4	37.8	40.5	42.2	42.2	24.5	36
KR184K	kVA	45.7	48.9	51.0	51.0	50	53.8	56.1	56.1	33	38
	kW	36.6	39.1	40.8	40.8	40	43	44.9	44.9	26	38

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

Special 1-phase winding: 220 / 230 / 240 V; continuous rating at 125K rise and 40°C ambient.

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
KR184B	0.45	221	17.2	10.5	126	11.1	1.08	0.71	10	13.0	555	13.2
KR184C	0.45	221	17.0	10.2	126	10.8	1.05	0.66	10	12.0	523	15.2
KR184FS	0.42	239	18.1	10.7	136	11.4	1.11	0.68	10	12.2	536	18.2
KR184F	0.46	217	16.3	9.6	124	10.1	0.99	0.58	8	10.4	461	20.0
KR184GS	0.44	229	16.9	9.8	130	10.3	1.01	0.57	8	9.9	446	24.0
KR184G	0.44	227	16.6	9.5	129	10.1	0.98	0.53	7	9.0	411	26.0
KR184H	0.42	239	17.4	9.9	135	10.5	1.02	0.54	7	9.1	419	31.0
KR184J	0.45	225	16.2	9.2	127	9.7	0.95	0.49	6	8.1	372	33.0
KR184K	0.45	221	15.9	9.0	125	9.5	0.92	0.46	6	7.5	348	35.8

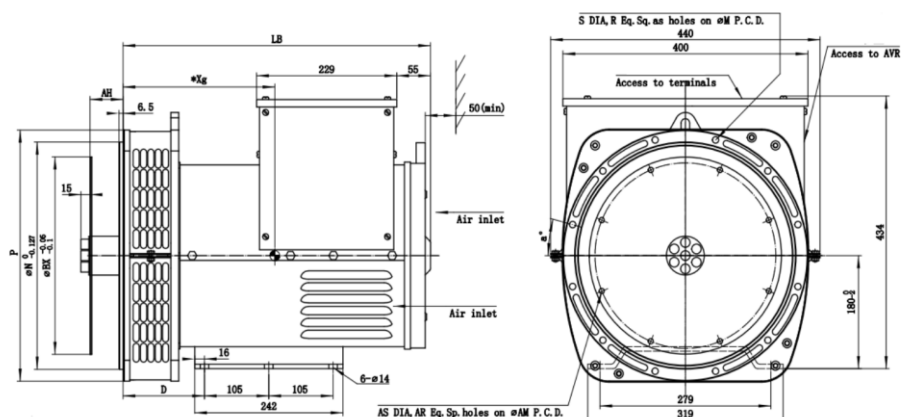
60 HZ AT 440 V

Model	Kcc	Xd	X'd	X''d	Xq	X''q	X2	X0	T'd	T''d	T'do	Ta
KR184B	0.38	263	20.5	12.5	150	13.3	1.29	0.9	10	12.9	661	13.2
KR184C	0.38	263	20.2	12.1	150	12.9	1.25	0.79	10	11.9	622	15.2
KR184FS	0.35	285	21.6	12.8	160	12.8	1.32	0.8	10	12.1	337	17.2
KR184F	0.39	259	19.4	11.4	147	12.1	1.17	0.69	8	10.3	549	19.9
KR184GS	0.37	272	20.1	11.7	155	12.3	1.20	0.67	8	9.8	531	22.8
KR184G	0.37	271	19.8	11.3	154	12.0	1.17	0.63	7	8.9	489	26.2
KR184H	0.35	284	20.7	11.8	160	12.5	1.21	0.64	7	9.1	498	29.0
KR184J	0.37	267	19.3	10.9	152	11.6	1.13	0.58	6	8.0	443	31.8
KR184K	0.38	263	18.9	10.7	149	11.3	1.10	0.55	6	7.4	414	33.8

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 SAE 2	LB SAE 3	LB SAE 4&5	Xg mm	Weight kg	Package L × W × H mm
KR184B	478	451	438.5	177	112	677*504*620
KR184C	478	451	438.5	185	119	677*504*620
KR184FS	508	481	468.5	192	124	677*504*620
KR184F	508	481	468.5	200	131	677*504*620
KR184GS	533	506	493.5	212	143	677*504*620
KR184G	573	546	533.5	225	158	747*504*620
KR184H	573	546	533.5	230	163	747*504*620
KR184J	613	586	573.5	240	172	747*504*620
KR184K	613	586	573.5	250	181	747*504*620

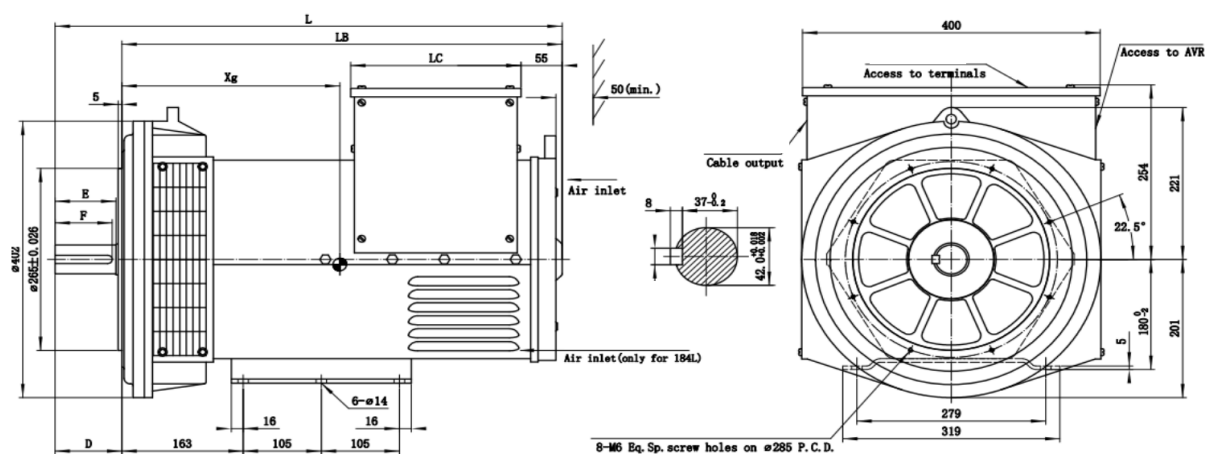
FLANGE DIMENSIONS IN mm

S.A.E	P	N	M	R-øS	W	D	a°
#2	490	447.675	466.725	12-ø11	6	172	15°
#3	440	409.575	428.625	8-ø11	6	145	15°
#4	400	361.95	381	8-ø11	5	133	15°
#5	400	314.325	333.375	8-ø11	5	133	22.5°

COUPLING DISC DIMENSIONS IN mm

S.A.E	BX	AM	AR-øAS	AH
#6.5	215.9	200.025	6-ø9	30.2
#7.5	241.3	222.25	8-ø9	30.2
#8	263.525	244.475	6-ø11	62
#10	314.325	295.275	8-ø11	53.8
#11.5	352.425	333.375	8-ø11	39.6

Double bearing outline and dimensions



MOUNTING DIMENSIONS IN mm

Model	L	LB	LC	D	E	F	Xg
KR184B	562	472	229	90	82	77	233
KR184C	642	552	229	90	82	77	247
KR184FS	642	552	229	90	82	77	263
KR184F	642	552	229	90	82	77	273
KR184GS	642	552	229	90	82	77	293
KR184G	702	612	274	118	110	100	307
KR184H	702	612	274	118	110	100	313
KR184J	702	612	274	118	110	100	320
KR184K	702	612	274	118	110	100	313

WEIGHT AND PACKAGING

Model	Weight kg	Package L × W × H mm
KR184B	112	737*504*620
KR184C	122	737*504*620
KR184FS	125	737*504*620
KR184F	131	737*504*620
KR184GS	141	737*504*620
KR184G	161	807*504*620
KR184H	166	807*504*620
KR184J	174	807*504*620
KR184K	182	807*504*620