

TAIYO BRUSHLESS AC GENERATOR

LX-G LX-E SERIES

12.5 THROUGH 725kVA

FEATURES OF LX-G/E SERIES

- EXCELLENT ELECTRICAL CHARACTERISTICS CAPABLE OF CORRESPONDING TO NON-LINEAR LOAD
- SUSTAINED SHORT CIRCUIT CAPABILITY (LX-E)
- EXCELLENT INSULATION WITH A HIGH PERFORMANCE
- HIGHLY RELIABLE AND STABLE
- EASY MAINTENANCE AND INSPECTION
- MULTI-FUNCTIONAL MODEL SUITABLE FOR ITS PURPOSE AND USE



Dependable, high quality power.



STANDARD SPECIFICATIONS

Type	: Self ventilated
Excitation	: Brushless
Ratings	: Continuous / Standby
Frequency	: 50 Hz and 60 Hz
No. of pole	: 4 – pole
Insulation	: Class H
No. of phase	: 3
No. of wire	: 12 (LX-26B~40CS) : 4 (LX-46A~61B)
Power factor	: 80 % (lagging)
Coupling	: SAE adaptor and Coupling
Ambient Temp	: 40°C
Altitude	: 1000m
Applicable Standards	: IEC, BS, NEMA

(Any other specifications are available on customers' request)

OPTIONS (extra cost)

- Parts for parallel operation (AVR, CCT)
- * · Space heater
- * · LX-26B~40CS 4 wires option.
- * · LX-46A~61B 12 wires option.
- * · Thermocouple

(Note : The asterisk * Must be specified at time of ordering)

STANDARD VOLTAGE SELECTION TABLE

Hz	Voltage (V)			
50Hz	415/240	400/231	380/219	—
60Hz	480/277	460/266	440/254	416/240

ELECTRICAL CHARACTERISTICS AND PERFORMANCE

VOLTAGE REGULATION

Regulation is $\pm 1.0\%$ of the rated voltage over the entire range from no-load to full load. Voltage adjust rheostat provides $\pm 5\%$ adjustment of the rated voltage.

WAVE FORM

Specially designed generators produce an excellent wave form limiting total distortion factor to 3% when no-load or 3-phase balanced linear load.

RESPONSE

The instantaneous voltage regulation within 30%, when load (100% impedance) corresponding to 100% (power factor below 0.4) of the rated current is suddenly give to A.C. Generator which is operating with no-load at the rated frequency.

VOLTAGE STABILITY

The steady state voltage stability remains within $\pm 0.25\%$ of rated voltage.

THF AND TIF FACTORS

All generators have a THF better than 2% and a TIF 50% or less.

INSULATION

The main rotor and stator of the generator are insulated by standard materials of the superior class H.

RADIO INTERFERENCE

Radio interference suppression is well under commercial standards.

PHASE SEQUENCE

Phase sequence is T1-T2-T3 (U-V-W) for counterclockwise rotation viewed from the anti-coupling side.

UNDER-SPEED PROTECTION

V/Hz voltage regulator provides under-speed protection circuit, which protects the regulator and the generator at less than rated operational speed.

ROTOR SPEED

The rotor is dynamically balanced upto 25% over speed.

OVER LOAD

The generator is capable of carrying a 2-hour overload of 10% rated current in 24-hour operation.

PARALLEL OPERATION

Damper windings provides stable parallel operation and minimizes damping current losses. It also limits increase of 3rd harmonic voltage with increase in load. The generator also resists against 20% of negative phase current.

SUSTAINED SHORT CIRCUIT CAPABILITY

LX-E excitation system will sustain a short circuit current in the order of 300% at 60Hz, 250% at 50Hz or more full load current to operate protective devices during fault conditions.

MECHANICAL CONSTRUCTION

STATOR

The stator frame is fabricated with mild steel plate or cast iron of round construction, of which, is designed to provide rigidity and strength so as to resist excessive mechanical and electrical shocks.

ROTOR

The rotor shaft is made of high quality carbon steel, and is designed and manufactured to be mechanically durable. The rotor has a salient pole revolving field type with the main field core made of high quality silicon steel plates. The field core elements, exciter rotor, rotary rectifier and cooling fan are integrated above the same shaft.

BEARING

For the bearing of the anti-coupling side, high precision ball bearing is used.

VENTILATION

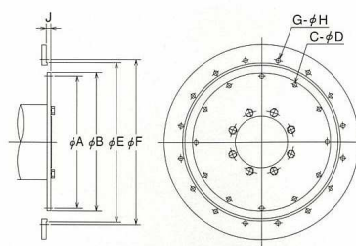
Cooling air is provided by the cooling fan of the rotor through suction ports to exhaust outlet comply with IC 01 of IEC.

RECONNECTABLE LEAD WIRES

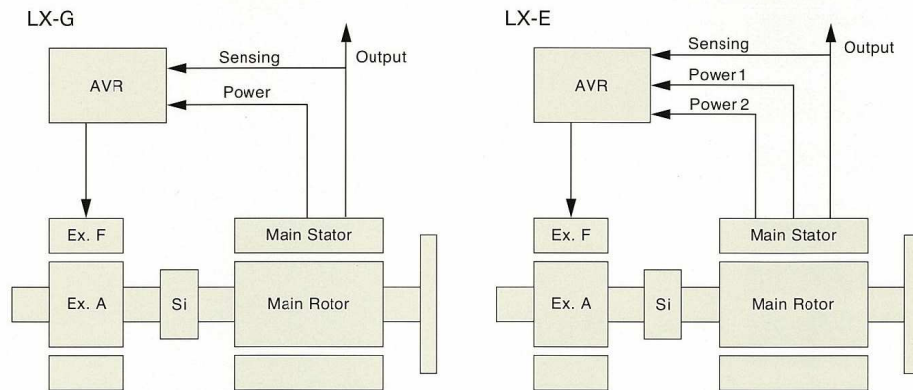
4, 10 or 12 lead wires available.
It enables to use at various voltage.

SAE ADAPTORS AND COUPLINGS DETAILS

SAE COUPLING SIZE	A	B	C	D	E	F	G	H	J
#0-18	542.9	571.5	12	18	647.7	679.5	16	14	15.7
#0-14	438.2	466.7	8	14	647.7	679.5	16	14	25.4
#1-14	438.2	466.7	8	14	511.2	530.2	12	13	25.4
#2-11 1/2	333.4	352.4	8	11	447.7	466.7	12	12	39.6
#3-11 1/2	333.4	352.4	8	11	409.6	428.6	12	12	39.6
#3-10	295.3	314.3	8	11	409.6	428.6	12	12	53.8
#4-10	295.3	314.3	8	11	361.9	381.0	12	12	53.8
#4-7 1/2	222.3	241.3	8	10	361.9	381.0	12	12	30.2
#5-7 1/2	222.3	241.3	8	10	314.3	333.4	8	12	30.2



EXCITATION SYSTEM



Standard excitation system is adopted for LX-G series. Excitation system for LX-E series have AVR which supply excitation current to the Exciter field. The power for this AVR is supplied Auxiliary winding and controlled by the sensing input diverged from the generator output. After DC power was supplied to exciter field, output from exciter armature is supplied to main field coils through the 3-phase bridge rotary rectifier.

AVR : Automatic Voltage Regulator
Ex.F : Exciter Field
Ex.A : Exciter Armature
Si : Rotating rectifier

POWER RATING

3 Phase 4 Pole

(OUTPUT 0.8 PF)

50Hz MODEL	CONTINUOUS (40°C ambient)				STANDBY (27°C ambient)			
	H/125°C		F/105°C		H/150°C		F/130°C	
	kVA	kW	kVA	kW	kVA	kW	kVA	kW
LX 26B	12.5	10	12	9.6	13.5	10.8	13	10.4
LX 26D	15	12	14.5	11.6	16.5	13.2	15.5	12.4
LX 26G	21	16.8	20.5	16.4	23	18.4	22.5	18
LX 30CL	31	24.8	30	24	33.5	26.8	32	25.6
LX 30DL	40	32	37.5	30	43.5	34.8	41	32.8
LX 34DL	55	44	50	40	59	47	56	45
LX 40A	68	54	65	52	72	58	70	56
LX 40BL	85	68	80	64	92	74	88	70
LX 40CS	106	85	100	80	116	93	110	88
LX 46A	145	116	137	110	160	128	150	120
LX 46B	175	140	165	132	190	152	180	144
LX 46C	205	164	195	156	220	176	210	168
LX 53C	255	204	245	196	275	220	265	212
LX 53D	320	256	300	240	345	276	325	260
LX 53E	381	305	362	290	412	330	394	315
LX 61A	470	376	450	360	510	408	480	384
LX 61B	575	460	550	440	625	500	587	470

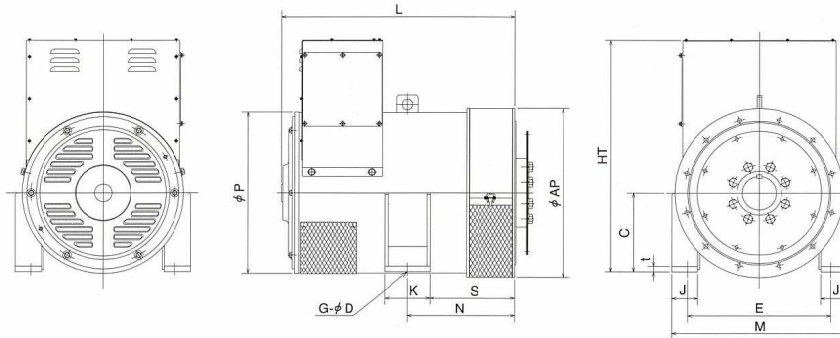
60Hz MODEL	CONTINUOUS (40°C ambient)				STANDBY (27°C ambient)			
	H/125°C		F/105°C		H/150°C		F/130°C	
	kVA	kW	kVA	kW	kVA	kW	kVA	kW
LX 26B	15.6	12.5	15	12	16.9	13.5	16.3	13
LX 26D	19.4	15.5	18.1	14.5	21.3	17	20	16
LX 26G	26.3	21	25	20	28.1	22.5	26.9	21.5
LX 30CL	37.5	30	35	28	40.6	32.5	38.1	30.5
LX 30DL	48.1	38.5	46.3	37	52.5	42	50	40
LX 34DL	65	52	61	49	70	56	66	53
LX 40A	81	65	75	60	88	70	83	66
LX 40BL	105	84	100	80	114	91	109	87
LX 40CS	134	107	128	102	144	115	138	110
LX 46A	169	135	160	128	185	148	175	140
LX 46B	205	164	195	156	220	176	210	168
LX 46C	235	188	228	182	250	200	245	196
LX 53C	313	250	300	240	344	275	325	260
LX 53D	370	296	350	280	400	320	375	300
LX 53E	481	385	450	360	520	416	488	390
LX 61A	606	485	570	456	656	525	625	500
LX 61B	720	576	675	540	770	616	731	585

◦ 416V ratings, multiply above ratings by 0.95.

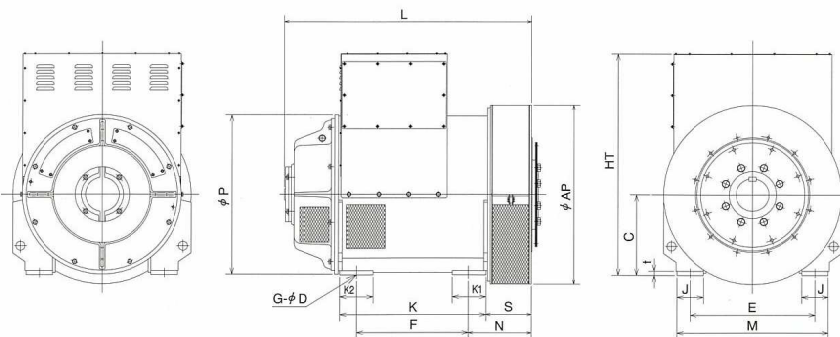
DIMENSIONS

LX-G/E SERIES

26B~46C



53C~61B



Dimensions and weight are approximate only.

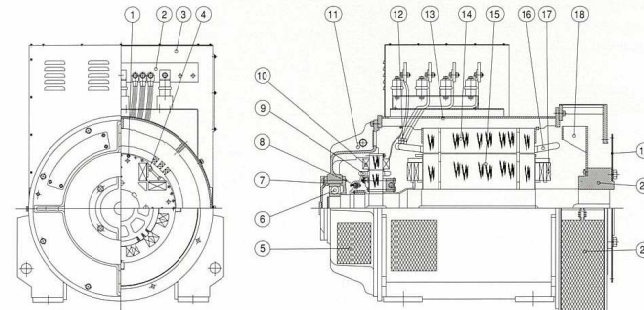
BURUSHLESS A.C. GENERATOR

LX-G/E SERIES

DIMENSIONS

MODEL	SAE COUPLING SIZE	L	M	C	E	J	t	N	F	S	K	K1	K2	AP	P	HT	G	D	MASS (kg)
26B	#4-7 1/2	514	300	160	250	50	13	230	—	181	98	—	—	405	308	470	2	15	120
26D	#4-7 1/2	514	300	160	250	50	13	230	—	181	98	—	—	405	308	470	2	15	130
26G	#4-7 1/2	540	330	160	250	65	16	243	—	193	100	—	—	414	324	470	2	15	155
30CL	#3-11 1/2	507	340	180	279	65	16	215	—	160	110	—	—	460	360	520	2	15	195
30DL	#3-11 1/2	537	340	180	279	65	16	234	—	179	110	—	—	460	360	520	2	15	210
34DL	#3-11 1/2	603	440	200	380	65	16	272	—	217	110	—	—	472	408	570	2	15	280
40A	#3-11 1/2	609	500	225	410	75	16	278	—	213	130	—	—	493	460	670	2	19	320
40BL	#3-11 1/2	664	500	225	410	75	16	305	—	240	130	—	—	493	460	670	2	19	375
40CS	#3-11 1/2	776	500	225	410	75	16	350	—	275	150	—	—	493	460	670	2	19	460
46A	#1-14	805	540	280	470	75	16	380	—	305	150	—	—	580	570	800	2	24	560
46B	#1-14	885	540	280	470	75	16	420	—	345	150	—	—	580	570	800	2	24	675
46C	#1-14	920	540	280	470	75	16	430	—	355	150	—	—	580	570	800	2	24	710
53C	#1-14	918	640	320	540	100	16	250	380	189	510	125	125	720	622	900	4	24	925
53D	#1-14	968	640	320	540	100	16	250	430	189	560	125	125	720	622	900	4	24	1000
53E	#1-14	1123	640	320	540	100	16	250	585	189	715	125	125	720	622	900	4	24	1215
61A	#1-14	1108	680	360	560	120	19	285	500	205	657	150	150	800	714	990	4	24	1435
61B	#1-14	1175	680	360	560	120	19	285	565	205	724	150	150	800	714	990	4	24	1595

GENERAL LOCATIONS



No.	NAME OF PARTS
1.	DAMPER BAR
2.	TERMINAL BAR
3.	TERMINAL BOX
4.	COIL SUPPORTER
5.	VENTILATION COVER
6.	BEARING
7.	BEARING SHIELD
8.	ROTATING RECTIFIER
9.	ARMATURE COIL FOR EXCITER
10.	FIELD COIL FOR EXCITER
11.	END BRACKET
12.	LEAD WIRE
13.	FRAME
14.	STATOR CORE
15.	ROTOR CORE
16.	STATOR WINDING
17.	ROTOR WINDING
18.	FAN
19.	COUPLING PLATE
20.	COUPLING BOSS
21.	VENTILATION COVER



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GUNMA FACTORY
APPROVED TO ISO9001



GIFU FACTORY
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