

ALTERNATOR

VGU450 Range

_ Rev.B _

APPLICATION AND STANDARDS

Widly used for homes, VGall shops and offices as a prime power supply or ba ckup
Comply with standards of IEC60034,NEMA MG1-22,IS08528,CSA C22.2-100 , VDE 0530, GB755

ELECTRICAL FEATURES

The high efficiency semiconductors of the AVR ensure positive build-up from initial low levels of residual voltage. 2/3 winding pitch, effective control of harmonics.

12 leads, a chieve a variety of voltage output

High efficiency and strong motor start ability with PMG

Be capable of running at overload up to 10% for 1 hour every 12 hours.

Variety of excitation and voltage regulation system to meet different loads.

MECHANICAL FEATURES

Be protected to IP23, and IP44 is optional

Sealed for life bearings

Both single bearing and double bearing configurations are available

Steel sheet terminal box, which provides enough spa ce for customer's reconnection

The rotor is dynamic ally balanced a ccording to ISO 1940. A half-key balanced for double bearings.

INSULATION AND IMPREGNATION

H class insulation

The VPI (Va cuum Pressure Impregnation) equipped to ensure the electric al insulation and me chanic al strength. The

"Anti-Harsh" winding is optional to meet the needs of harsh environment

The "ARAP" - Auxiliary Regulation Adopted Principle is optional

COMMON DATA

INSULATION	ALTITUDE	OVERSPEED	PROTECTION	LEADS	PITCH	AVR	VOLTAGE REGULATION	WAVEFORM DISTORTION	TIF	THF
H/ H	<=1000m	2250 rpm	IP23	6	2 / 3	MX321	± 1%	<1.5% NO LOAD	<50	<2%

RATING TABLE

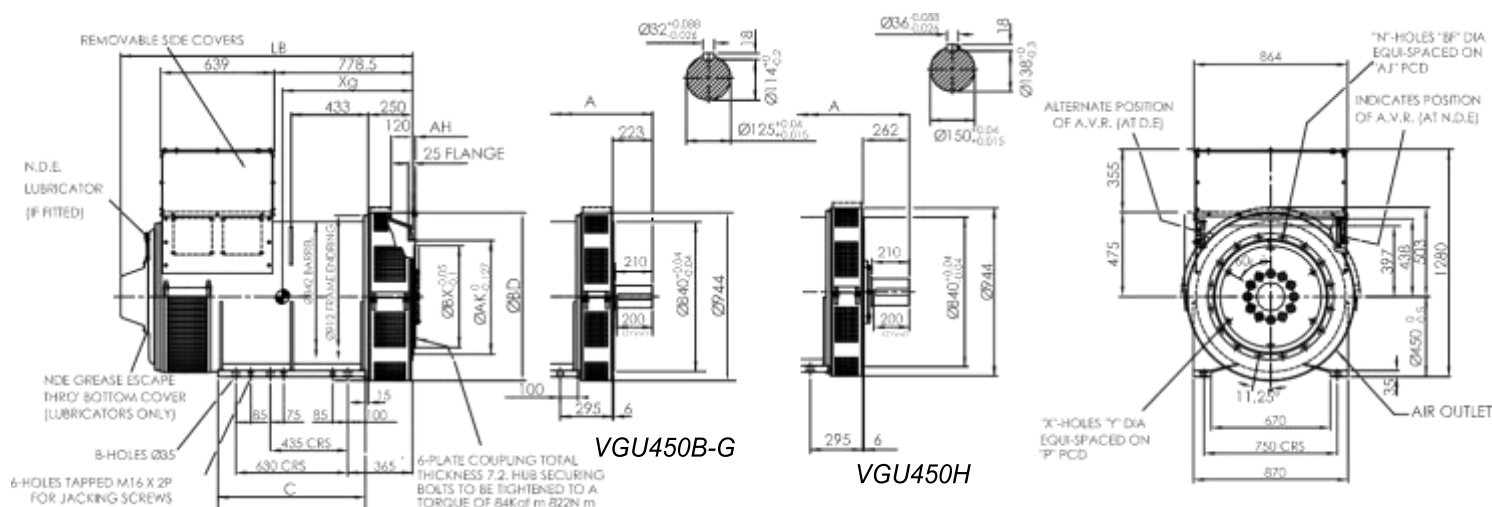
FREQ.	50Hz/ 1500RPM / PF 0.8											60Hz/ 1800RPM / PF 0.8										
TEMP.	125°C/ 40°C PRIME POWER										163°C/27°C Standby	Effi.	125°C/ 40°C PRIME POWER								163°C/27°C Standby	Effi.
STAR	380	400	415	440	400	400	416	440	460	480	480	480	416	440	460	480	480	480	480	480	480	480
DELTA	220	230	240	254	230	230	240	254	266	277	277	277	240	254	266	277	277	277	277	277	277	277
RATING	kVA	kW	kVA	kW	kVA	kW	kVA	kW	kVA	kW	%	kVA	kW	kVA	kW	kVA	kW	kVA	kW	kVA	kW	%
VGU450B	1230	984	1280	1024	1280	1024	1240	992	1350	1080	94.4	1380	1104	1500	1200	1520	1216	1530	1224	1635	1308	94.2
VGU450C	1380	1104	1420	1136	1420	1136	1380	1104	1510	1208	94.9	1530	1224	1630	1304	1670	1336	1700	1360	1815	1452	94.9
VGU450D	1510	1208	1560	1248	1560	1248	1550	1240	1670	1336	95.4	1715	1372	1820	1456	1880	1504	1900	1520	2032	1626	95.4
VGU450E	1620	1296	1680	1344	1680	1344	1625	1300	1775	1420	96.2	1824	1459	1940	1552	1980	1584	2030	1624	2187	1750	96.3
VGU450F	1850	1480	1905	1524	1905	1524	1865	1492	2040	1632	95.8	2078	1662	2220	1776	2270	1816	2315	1852	2486	1989	95.9
VGU450G	2030	1624	2100	1680	2100	1680	2050	1640	2260	1808	96.0	2359	1887	2510	2008	2580	2064	2650	2120	2793	2234	96.1
VGU450H	2140	1712	2205	1764	2205	1764	2180	1744	2390	1912	96.0	2435	1948	2540	2032	2650	2120	2790	2232	2954	2363	96.1

REACTANCE-TIME CONSTANT(s) H CLASS

VGU450 B/ C/D/E/F/ G/H

50Hz @ 400V		VGU450B	VGU450C	VGU450D	VGU450E	VGU450F	VGU450G	VGU450H		
Xd	Direct axis synchro. rea ctance unsaturated	3.55	3.54	3.22	3.13	3.22	2.95	3.75		
X'd	Direct axis transient rea ctance saturated	0.23	0.22	0.21	0.19	0.19	0.18	0.22		
X''d	Direct axis sub transient rea ctance saturated	0.16	0.17	0.15	0.15	0.14	0.13	0.15		
Xq	Quadra. Axis synchro. rea ctance unsaturated	2.27	2.28	2.08	2.02	2.05	1.92	2.4		
X''q	Quadra. Axis sub transient rea ctance saturated	0.33	0.32	0.29	0.29	0.29	0.28	0.27		
X2	Negative sequence rea ctance unsaturated	0.23	0.23	0.22	0.27	0.21	0.19	0.22		
Xo	Zero sequence rea ctance unsaturated	0.03	0.03	0.03	0.02	0.03	0.02	0.04		
T'd	Short-Circuit transient time constan t	0.13s	0.13s	0.13s	0.13s	0.14s	0.15s	0.16s		
T''d	Sub transient time constan t	0.01s	0.01s	0.01s	0.01s	0.02s	0.02s	0.01s		
T'do	Open circuit time constan t	2.15s	2.15s	2.24s	2.32s	2.43s	2.54s	2.89s		
Ta	Armature time constan t	0.02s	0.02s	0.02s	0.02s	0.02s	0.02s	0.02s		
Kcc	Short circuit rati o	0.282	0.282	0.311	0.319	0.311	0.339	0.267		

OUTLINE DRAWING



DATA TABLE-DOUBLE BEARING

Dimension (mm)	Double BRG		Weight		Packing
	MODEL	A	Net(kg)	Gross(kg)	L x W x H (mm)
	VGU450B	1795	2785	2885	2000x1100x1550
	VGU450C	1795	2785	2885	2000x1100x1550
	VGU450D	1795	3043	3143	2000x1100x1550
	VGU450E	1945	3343	3443	2000x1100x1550
	VGU450F	1945	3581	3681	2000x1100x1550
	VGU450G	2069	3865	3985	2100x1100x1550
	VGU450J	2132	4079	4179	2100x1100x1550

DATA TABLE-SINGLE BEARING

Dimension (mm)	SAE 00 / 0				Weight		Packing
	MODEL	LB	Xg	C	Net(kg)	Gross(kg)	L x W x H (mm)
	VGU450B	1643	710	830	2760	2860	2000x1100x1550
	VGU450C	1643	710	830	2760	2860	2000x1100x1550
	VGU450D	1643	710	830	3018	3118	2000x1100x1550
	VGU450E	1793	710	830	3318	3418	2000x1100x1550
	VGU450F	1793	710	830	3556	3656	2000x1100x1550
	VGU450G	1878	825	1000	3840	3940	2000x1100x1550
	VGU450H	1940	850	1000	4054	4154	2000x1100x1550

Flange (mm)						Disc(mm)					
SAE#	BD	AK	AJ	BF	N	SAE#	BX	P	X	Y	AH
SAE 0	944	647.70	679.45	14	16	24	733.42	692.15	12	20.7	0
SAE 00	944	787.40	850.90	14	16	21	673.10	641.35	12	16.7	0
						18	571.50	542.92	6	16.7	15.7