THREE-PHASE SYNCHRONOUS GENERATOR

UNA337-B

Datasheet For 4 Poles - 50Hz @ 1500rpm / 60Hz @ 1800rpm

Ambient Temperature	40°C	**Excitation**	Brushless	**Short Circuit Current Capacity (with AUX OR PMG**	≥300%
Temperature Rise	125K	**Winding Pitch**	2 / 3	**Method of Cooling**	IC01
Service Duty	Continuous	**Power Factor**	0.8	**Direction of Rotation (viewing from Drive End)**	CW
Phase	3	**Insulation Class**	Class H	**Maximum Over-speed**	2250 rpm
Pole	4	**Waveform : TIF**	<50	**Degree of Protection**	IP23
Voltage Regulation Accuracy	+/- 0.5%	**Waveform : THF**	<2%	**Radio interference**	Class B Group 1
AVR Model	ETC-01	**Altitude**	≤1000 m.a.s.l	**Total Harmonic Content**	< 3% - At no load

Electrical and Mechanical Characteristic

Frequency	**Hz**	**50**			**60**				
Round per minute	**rpm**	**1500**			**1800**				
Voltage (Y Connection) - Series Star	**V**	380	**400**	415	380	416	440	460	480
Voltage (YY Connection) - Parallel Star	**V**	190	**200**	208	190	208	220	230	240
Voltage (Δ Connection) - Series Delta	**V**	220	**230**	240	220	240	254	266	277
Voltage (ΔΔ Connection) - Parallel Delta	**V**	110	**115**	120	110	120	127	133	138
Rated power at Class H (125K) temperature rise	**kVA**	47.5	**50.0**	48.0	47.5	52.0	55.0	57.5	60.0
	kW	38	**40**	38.4	38	41.6	44	46	48
Efficiency at Class H (P.F.=0.8)	**100%**	87.0	**87.1**	87.2	86.9	87.0	87.2	87.4	87.6
	75%	88.2	**88.3**	88.4	88.2	88.3	88.5	88.7	88.9
	50%	87.7	**87.8**	87.9	87.6	87.7	87.9	88.1	88.3
Efficiency at Class H (P.F.=1.0)	**100%**	90.2	**90.3**	90.4	90.3	90.4	90.6	90.8	91
	75%	91.4	**91.5**	91.6	91.6	91.7	91.9	92.1	92.3
	50%	90.9	**91**	91.1	91.1	91.2	91.4	91.6	91.8

Short-circuit ratio	**Kcc**	0.3200	**0.3360**	0.3770	0.2660	0.2910	0.3080	0.3220	0.3360
Direct axis synchronous reactance unsaturated	**Xd**	3.1326	**2.9760**	2.6542	3.7588	3.4312	3.2463	3.1076	2.9760
Quadrature axis synchronous reactance unsaturated	**Xq**	1.8926	**1.7980**	1.6036	2.2710	2.0730	1.9613	1.8775	1.7980
Direct axis transient reactance saturated	**X'd**	0.2821	**0.2680**	0.2390	0.3385	0.3090	0.2923	0.2798	0.2680
Direct axis subtransient reactance saturated	**X"d**	0.2505	**0.2380**	0.2123	0.3006	0.2744	0.2596	0.2485	0.2380
Quadrature axis subtransient reactance saturated	**X"q**	0.2611	**0.2480**	0.2212	0.3132	0.2859	0.2705	0.2590	0.2480
Zero sequence reactance unsaturated	**X0**	0.0453	**0.0430**	0.0383	0.0543	0.0496	0.0469	0.0449	0.0430
Leakage reactance	**X_L**	0.1937	**0.1840**	0.1641	0.2324	0.2121	0.2007	0.1921	0.1840
Negative sequence reactance saturated	**X2**	0.2568	**0.2440**	0.2176	0.3082	0.2813	0.2662	0.2548	0.2440

Open circuit time constant (sec.)	**T'do**	0.7940
Short-circuit transient time constant (sec.)	**T'd**	0.0370
Subtransient time constant (sec.)	**T"d**	0.0092
Armature time constant (sec.)	**Tα**	0.0112
No load excitation current	**io(A)**	0.5 / 0.5
Full load excitation current	**ic(A)**	2.1 / 2
Full load excitation voltage	**uc(V)**	44 / 42
Stator Winding Resistance (20°C)	**ohm**	0.2062
Rotor Winding Resistance (20°C)	**ohm**	0.8602
Exciter Stator Resistance (20°C)	**ohm**	15.9281
Exciter Rotor Phase resistance	**ohm**	0.07139
Cooling air requirement	**m^3/sec**	0.211 / 0.253

Configuration	**Single Bearing**	**Double Bearing**
Type of Construction	**B2 - SAE**	**IM B34**
Inertia (J) [kgm2]	0.796	0.744
Total Weight	232	247
Drive end bearing / Lubrication	Not supply	6315 C3-2Z / Prelubricated - sealed for life
Non-drive end bearing / Lubrication	6310 C3-2Z / Prelubricated - sealed for life	
Voltage Recovery Time - sec.	1.0	
Stator winding	DOUBLE LAYER CONCENTRIC	
Number of Terminal	12	
Rotor	with damping cage	
Overload	110% rated load for 1 hour	

STANDARD COMPLIANCE - IEC 60034-1; CEI 2-3; BS 4999-5000; VDE 0530; NF 51-100,111; OVE M-10, NEMA MG 1.22.