



THREE-PHASE SYNCHRONOUS GENERATOR

UNA477-H

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-02	Altitude	≤1000 m.a.s.l	Total Harmonic Content	< 3% - At no load

Electrical and Mechanical Characteristic

Frequency	Hz	50			60				
		1500			1800				
Round per minute	rpm								
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	760	800	770	760	830	880	920	960
	kW	608	640	616	608	664	704	736	768
Efficiency at Class H (P.F.=0.8)	100%	94.8	94.9	94.9	94.9	95.0	95.1	95.2	95.4
	75%	95.1	95.2	95.2	95.1	95.2	95.3	95.4	95.6
	50%	94.5	94.6	94.6	94.8	94.9	95.0	95.1	95.3
Efficiency at Class H (P.F.=1.0)	100%	95.6	95.7	95.7	96.0	96.1	96.2	96.3	96.5
	75%	95.8	95.9	95.9	96.2	96.3	96.4	96.5	96.7
	50%	95.2	95.3	95.3	95.9	96.0	96.1	96.2	96.4
Short-circuit ratio	Kcc	0.33	0.34	0.38	0.27	0.30	0.31	0.32	0.34
Direct axis synchronous reactance unsaturated	Xd	3.059	2.906	2.598	3.670	3.342	3.259	3.170	2.906
Quadrature axis synchronous reactance unsaturated	Xq	1.609	1.529	1.367	1.931	1.759	1.565	1.668	1.529
Direct axis transient reactance saturated	X'd	0.188	0.179	0.160	0.226	0.206	0.180	0.195	0.179
Direct axis subtransient reactance saturated	X''d	0.147	0.140	0.125	0.177	0.161	0.141	0.153	0.140
Quadrature axis subtransient reactance saturated	X''q	0.182	0.173	0.155	0.219	0.199	0.176	0.189	0.173
Zero sequence reactance unsaturated	X0	0.026	0.025	0.022	0.032	0.029	0.026	0.027	0.025
Leakage reactance	X _L	0.100	0.095	0.085	0.120	0.109	0.094	0.104	0.095
Negative sequence reactance saturated	X2	0.165	0.157	0.140	0.198	0.181	0.158	0.171	0.157
Open circuit time constant (sec.)	T'do	2.1920							
Short-circuit transient time constant (sec.)	T'd	0.0980							
Subtransient time constant (sec.)	T''d	0.0148							
Armature time constant (sec.)	Tα	0.0291							
No load excitation current	io(A)	0.6			0.6				
Full load excitation current	ic(A)	2.1			2				
Full load excitation voltage	uc(V)	53			50				
Stator Winding Resistance (20°C)	ohm	0.003193							
Rotor Winding Resistance (20°C)	ohm	1.484							
Exciter Stator Resistance (20°C)	ohm	18.54							
Exciter Rotor Phase resistance	ohm	0.0375							
Cooling air requirement	m ³ /sec	1.105			1.326				

Configuration	Single Bearing	Double Bearing
Type of Construction	B2 - SAE	IM B34
Inertia (J) [kgm2]	12.06	11.95
Total Weight	1621	1652
Drive end bearing / Lubrication	Not supply	6322 C3-2Z / Prelubricated - sealed for life
Non-drive end bearing / Lubrication	6316 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.

Data and Technical Specification are subject to change in order to update or improve the products, without prior notice