



THREE-PHASE SYNCHRONOUS GENERATOR

Datasheet For 50Hz @ 1500rpm / 60Hz @ 1800rpm

EG500M-1800N

Frequency	HZ	50				60			
Rated capacity (kVA)	S	2137.5	2250	2250	2250	2335	2475	2587.5	2700
Rated power (kW)	P	1710	1800	1800	1800	1868	1980	2070	2160
Voltage (V)	U	380	400	415	440	415	440	460	480
Efficiency of 25% load	%	91.8	91.9	91.9	91.7	91	91.2	91.4	91.5
50% load	%	95	95.1	95.1	95	94.6	94.8	94.9	94.9
75% load	%	95.7	95.8	95.9	95.9	95.6	95.7	95.8	95.9
100% load	%	95.9	96.4	96.1	96.2	95.8	96.3	96.1	96.2
Reactance at Class H									
Short-circuit ratio	Kcc	0.324	0.351	0.391	0.468	0.287	0.309	0.328	0.351
Direct axis synchronous reactance	Xd	3.481	3.307	3.072	2.733	3.826	3.608	3.451	3.307
Quadrature axis synchronous reactance	Xq	1.521	1.445	1.343	1.194	1.672	1.577	1.508	1.445
Direct axis transient reactance saturated	X'd	0.131	0.124	0.115	0.103	0.144	0.135	0.13	0.124
Direct axis subtransient reactance saturated	X''d	0.101	0.096	0.09	0.08	0.112	0.105	0.101	0.096
Quadrature axis subtransient reactance saturated	X''q	0.132	0.125	0.116	0.103	0.145	0.137	0.131	0.125
Zero sequence reactance unsaturated	X0	0.005	0.005	0.004	0.004	0.006	0.005	0.005	0.005
Leakage reactance	X1	0.06	0.057	0.053	0.047	0.066	0.062	0.059	0.057
Negative sequence reactance saturated	X2	0.12	0.11	0.1	0.09	0.13	0.12	0.12	0.11
Open circuit time constant	T'd0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Short-circuit transient time constant	T'd	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Subtransient time constant	T''d	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Armature time constant	Ta	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027
No load excitation current	io(A)	1	1	1	1	1	1	1	1
Full load excitation current	ic(A)	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
Full load excitation voltage	uc(V)	55	55	55	55	55	55	55	55
No load losses	W	19490	20270	20990	28190	22410	29340	30260	31080
Heat dissipation at full load at Class H	W	73851	75391	73634	71880	81896	83360	84679	86023
Short circuit current capacity	%	>300							
Recovery time	s	1							
Waveform : TIF		<50							
Waveform : THD		<2%							
Winding pitch		2/3							
Voltage regulation		+/- 1%							
A.V.R. model		WT-3							
Duty		Continuous							
Number of poles		4							
Class of insulation		H							
Temperature rise		≤125K							
Altitude		≤1000m							
Rated power factor		0.8							
Excitation		Brushless							
Stator winding		6ends							
Rotor		With damping cage							
Overload	%	110% rated load for 1 hour							
Stator winding resistance (20°C)	ohm	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006
Rotor winding resistance (20°C)	ohm	1.071	1.071	1.071	1.071	1.071	1.071	1.071	1.071
Exciter resistance (20°C)	ohm	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Cooling air requirement	m ³ /min	186	186	186	186	223	223	223	223
Energy storage constant (H)	sec.	0.283	0.283	0.283	0.283	0.3921	0.3705	0.3544	0.3396
Method of cooling		IC 01							
Ambient temperature		40°C							
Sense of rotation		Counter-clockwise							
Type of construction		Single / Double bearing							
Degree of protection / enclosure		IP21 or IP23							
Maximum overspeed	rpm	2160							