



THREE-PHASE SYNCHRONOUS GENERATOR

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

EG225S-40N

Frequency	HZ	50				60			
Rated capacity (kVA)	S	50	50	50	50	57.5	60	61.25	62.5
Rated power (kW)	P	40	40	40	40	46	48	49	50
Voltage (V)	U	380	400	415	440	415	440	460	480
Efficiency of 25% load	%	79.6	79	78	76.2	80.6	80.6	80.4	79.9
50% load	%	86.1	85.9	85.5	84.6	86.7	86.9	86.9	86.8
75% load	%	87.3	87.4	87.3	87	87.9	88.2	88.4	88.4
100% load	%	87	87.4	87.5	87.5	87.6	88.1	88.4	88.5
Reactance at Class H									
Short-circuit ratio	Kcc	0.441	0.528	0.615	0.776	0.352	0.395	0.445	0.507
Direct axis synchronous reactance	Xd	2.806	2.533	2.353	2.093	3.247	3.014	2.815	2.638
Quadrature axis synchronous reactance	Xq	1.292	1.166	1.083	0.964	1.495	1.388	1.296	1.215
Direct axis transient reactance saturated	X'd	0.136	0.123	0.114	0.101	0.157	0.146	0.136	0.128
Direct axis subtransient reactance saturated	X''d	0.127	0.115	0.106	0.095	0.147	0.136	0.127	0.119
Quadrature axis subtransient reactance saturated	X''q	0.2	0.18	0.167	0.149	0.231	0.214	0.2	0.188
Zero sequence reactance unsaturated	X0	0.005	0.004	0.004	0.004	0.006	0.005	0.005	0.004
Leakage reactance	X1	0.094	0.084	0.078	0.07	0.108	0.1	0.094	0.088
Negative sequence reactance saturated	X2	0.16	0.15	0.14	0.12	0.19	0.18	0.16	0.15
Open circuit time constant	T'd0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Short-circuit transient time constant	T'd	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045
Subtransient time constant	T''d	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Armature time constant	Ta	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007
No load excitation current	io(A)	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Full load excitation current	ic(A)	3	3	3	3	3	3	3	3
Full load excitation voltage	uc(V)	23	23	23	23	23	23	23	23
No load losses	W	730	780	810	870	1010	1060	1100	1160
Heat dissipation at full load at Class H	W	5956	5746	5693	5699	6517	6514	6455	6465
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-2							
Duty		Continuous							
Number of poles		4							
Class of insulation		H							
Temperature rise		≤125K							
Altitude		≤1000m							
Rated power factor		0.8							
Excitation		Brushless							
Stator winding		12ends							
Rotor		With damping cage							
Overload	%	110% rated load for 1 hour							
Stator winding resistance (20°C)	ohm	0.1283	0.1283	0.1283	0.1283	0.1283	0.1283	0.1283	0.1283
Rotor winding resistance (20°C)	ohm	0.244	0.244	0.244	0.244	0.244	0.244	0.244	0.244
Exciter resistance (20°C)	ohm	7.118	7.118	7.118	7.118	7.118	7.118	7.118	7.118
Cooling air requirement	m ³ /min	22.3	22.3	22.3	22.3	26.8	26.8	26.8	26.8
Energy storage constant (H)	sec.	0.1826	0.1826	0.1826	0.1826	0.2534	0.239	0.2286	0.2191
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							