



## THREE-PHASE SYNCHRONOUS GENERATOR

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

# EG225S-50N

Frequency	HZ	50				60			
Rated capacity (kVA)	S	63	63	63	63	73	75	76	79
Rated power (kW)	P	50	50	50	50	58	60	61	63
Voltage (V)	U	380	400	415	440	415	440	460	480
Efficiency of 25% load	%	81.4	80.8	80	78.4	82.2	82.3	82.1	81.7
50% load	%	87.4	87.3	87	86.2	88	88.2	88.2	88.1
75% load	%	88.6	88.7	88.7	88.3	89.1	89.4	89.6	89.6
100% load	%	88.4	88.8	88.9	88.9	88.9	89.3	89.6	89.7
Reactance at Class H									
Short-circuit ratio	Kcc	0.442	0.53	0.617	0.779	0.35	0.396	0.448	0.504
Direct axis synchronous reactance	Xd	2.796	2.523	2.344	2.085	3.263	3.003	2.793	2.649
Quadrature axis synchronous reactance	Xq	1.281	1.156	1.074	0.956	1.495	1.376	1.28	1.214
Direct axis transient reactance saturated	X'd	0.123	0.111	0.103	0.092	0.144	0.132	0.123	0.117
Direct axis subtransient reactance saturated	X''d	0.115	0.103	0.096	0.086	0.134	0.123	0.115	0.109
Quadrature axis subtransient reactance saturated	X''q	0.185	0.167	0.155	0.138	0.216	0.199	0.185	0.175
Zero sequence reactance unsaturated	X0	0.005	0.004	0.004	0.004	0.006	0.005	0.005	0.005
Leakage reactance	X1	0.083	0.075	0.069	0.062	0.097	0.089	0.083	0.078
Negative sequence reactance saturated	X2	0.15	0.14	0.13	0.11	0.17	0.16	0.15	0.14
Open circuit time constant	T'd0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Short-circuit transient time constant	T'd	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046
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	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008
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	860	920	960	1040	1170	1230	1290	1360
Heat dissipation at full load at Class H	W	6548	6325	6256	6262	7271	7182	7080	7211
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	0.0881	0.0881	0.0881	0.0881	0.0881	0.0881	0.0881	0.0881
Rotor winding resistance (20°C)	ohm	0.303	0.303	0.303	0.303	0.303	0.303	0.303	0.303
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 <sup>3</sup> /min	22.3	22.3	22.3	22.3	26.8	26.8	26.8	26.8
Energy storage constant ( H )	sec.	0.1558	0.1558	0.1558	0.1558	0.2116	0.2039	0.1934	0.1869
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							