THREE-PHASE SYNCHRONOUS GENERATOR 20141201

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

EG225-90N

Frequency	Hz	50				60					
Rated capacity (kVA)	S	106.9	112.5	116.7	123.8	117.6	123.8	128.7	136.1	142.3	148.5
Rated power (kW)	P	85.5	90.0	93.4	99.0	94.1	99	103	108.9	113.8	118.8
Voltage (V)	U	380	400	415	440	380	400	416	440	460	480
Short-circuit ratio	Kcc	0.36	0.393	0.423	0.503	0.26	0.276	0.289	0.311	0.331	0.357
Reactance											
Direct axis synchronous reactance	Xd	3.216	3.055	2.945	2.777	4.247	4.033	3.879	3.666	3.508	3.361
Direct axis transient reactance saturated	X'd	0.118	0.112	0.108	0.102	0.156	0.148	0.142	0.135	0.129	0.123
Direct axis subtransient reactance saturated	X"d	0.109	0.103	0.1	0.094	0.144	0.136	0.131	0.124	0.119	0.114
Quadrature axis synchronous reactance	Xq	1.462	1.389	1.339	1.263	1.931	1.834	1.764	1.667	1.595	1.528
Quadrature axis subtransient reactance	X"q	0.186	0.176	0.17	0.16	0.245	0.233	0.224	0.211	0.202	0.194
Negative sequence reactance saturated	X2	0.15	0.14	0.13	0.13	0.19	0.18	0.18	0.17	0.16	0.15
Zero sequence reactance unsaturated	X0	0.006	0.005	0.005	0.005	0.007	0.007	0.007	0.006	0.006	0.006
Time constant											
Open circuit time constant	T'd0	1.296	1.296	1.296	1.296	1.296	1.296	1.296	1.296	1.296	1.296
Short-circuit transient time constant	T'd	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048
Subtransient time constant	T"d	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Armature time constant	Ta	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
No load losses	W	1246	1312	1364	1455	1635	1694	1743	1821	1888	1959
Heat dissipation at full load at Class H	W	9575	10054	10591	12020	11411	11185	11479	11482	11710	12175
Efficiency											
PF=0.8 Efficiency of 25% load	%	91.01	90.53	89.98	88.58	91.45	91.47	91.32	91.20	90.99	90.61
50% load	%	92.25	92.03	91.72	90.80	92.94	93.18	93.19	93.31	93.30	93.14
75% load	%	91.42	91.34	91.14	90.42	91.51	91.93	92.05	92.34	92.46	92.43
100% load	%	89.93	89.95	89.81	89.17	89.19	89.85	89.97	90.46	90.67	90.70
110% load	%	88.95	89.01	88.90	88.29	87.74	88.41	88.65	89.17	89.45	89.55
PF=1 Efficiency of 25% load	%	92.00	91.58	91.11	89.93	92.54	92.44	92.26	92.13	91.92	91.65
50% load	%	93.99	93.83	93.62	93.00	95.05	95.14	95.12	95.20	95.18	95.13
75% load	%	93.82	93.80	93.71	93.34	94.56	94.78	94.85	95.08	95.19	95.27
100% load	%	93.05	93.13	93.11	92.89	93.32	93.65	93.76	94.14	94.32	94.54
110% load	%	92.39	92.51	92.54	92.37	92.21	92.61	92.79	93.21	93.46	93.70
No load excitation current	io(A)	0.9	0.9	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	3	3
Full load excitation voltage	uc(V)	23	23	23	23	23	23	23	23	23	23
Short circuit current capacity	%	>300I_N 10s(with PMG or Auxiliary winding）									
Recovery time	Tr	1 s									
Waveform : TIF		<50									
Waveform : THD		<3%									
Waveform : THF		<2%									
Winding pitch		2/3									
Steady state voltage regulation		+/- 1%									
A.V.R. model		EVC300									
Duty		Continuous									
Number of poles		4									
Class of insulation		H									
Altitude		≤1000m									
Rated power factor		0.8									
Excitation		Brushless									
Stator winding		12ends									
Rotor		With damping cage									
Overload	%	110% rated load for 2 hour per 24 hour									
Stator winding resistance (20℃)	ohm	0.0448	0.0448	0.0448	0.0448	0.0448	0.0448	0.0448	0.0448	0.0448	0.0448
Rotor winding resistance (20℃)	ohm	0.437	0.437	0.437	0.437	0.437	0.437	0.437	0.437	0.437	0.437
Exciter resistance (20℃)	ohm	7.118	7.118	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	26.8	26.8
Energy storage constant (H)	sec.	0.139	0.132	0.127	0.120	0.182	0.173	0.166	0.157	0.150	0.144
Method of cooling		IC 01									
Ambient temperature		40℃									
Sense of rotation		Clockwise-DE									
Type of construction		Single / Double bearing									
Degree of protection / enclosure		IP21 or IP23									
Maximum overspeed		2250 rpm 2minutes									