THREE-PHASE SYNCHRONOUS GENERATOR 20170101

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

EG355-560N

Frequency	Hz	50				60					
Rated capacity (kVA)	S	665	700	726	770	732	770	801	847	886	924
Rated power (kW)	P	532	560	581	616	586	616	641	678	709	739
Voltage (V)	U	380	400	415	440	380	400	416	440	460	480
Short-circuit ratio	Kcc	0.398	0.433	0.469	0.552	0.29	0.307	0.322	0.345	0.367	0.394
Reactance											
Direct axis synchronous reactance	Xd	2.839	2.697	2.599	2.452	3.746	3.56	3.425	3.238	3.094	2.966
Direct axis transient reactance saturated	X'd	0.129	0.123	0.118	0.111	0.17	0.162	0.156	0.147	0.141	0.135
Direct axis subtransient reactance saturated	X"d	0.101	0.096	0.093	0.087	0.133	0.127	0.122	0.115	0.11	0.106
Quadrature axis synchronous reactance	Xq	1.267	1.204	1.16	1.095	1.672	1.589	1.529	1.446	1.381	1.324
Quadrature axis subtransient reactance	X"q	0.14	0.133	0.128	0.121	0.184	0.175	0.169	0.159	0.152	0.146
Negative sequence reactance saturated	X2	0.12	0.11	0.11	0.1	0.16	0.15	0.15	0.14	0.13	0.13
Zero sequence reactance unsaturated	X0	0.006	0.006	0.006	0.005	0.008	0.008	0.008	0.007	0.007	0.007
Time constant											
Open circuit time constant	T'd0	2.285	2.285	2.285	2.285	2.285	2.285	2.285	2.285	2.285	2.285
Short-circuit transient time constant	T'd	0.104	0.104	0.104	0.104	0.104	0.104	0.104	0.104	0.104	0.104
Subtransient time constant	T"d	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Armature time constant	Ta	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
No load losses	W	5923	6253	6512	6965	7665	7959	8205	8591	8930	9284
Heat dissipation at full load at Class H	W	29218	30067	30819	32541	34467	35035	35569	36411	37164	37963
Efficiency											
PF=0.8 Efficiency of 25% load	%	93.54	93.50	93.44	93.24	93.01	93.08	93.13	93.19	93.21	93.21
50% load	%	95.25	95.27	95.26	95.17	94.91	95.01	95.07	95.15	95.20	95.23
75% load	%	95.37	95.44	95.47	95.44	95.06	95.19	95.28	95.40	95.47	95.54
100% load	%	94.79	94.90	94.96	94.98	94.44	94.62	94.74	94.90	95.02	95.11
110% load	%	94.44	94.57	94.64	94.68	94.06	94.26	94.40	94.58	94.71	94.82
PF=1 Efficiency of 25% load	%	94.05	94.01	93.96	93.80	93.48	93.54	93.59	93.63	93.66	93.65
50% load	%	96.06	96.07	96.07	96.01	95.70	95.77	95.82	95.88	95.92	95.94
75% load	%	96.49	96.54	96.56	96.56	96.17	96.27	96.33	96.41	96.47	96.52
100% load	%	96.27	96.35	96.39	96.43	95.94	96.06	96.15	96.26	96.34	96.41
110% load	%	96.08	96.17	96.23	96.29	95.74	95.87	95.97	96.09	96.19	96.27
No load excitation current	io(A)	1	1	1	1	1	1	1	1	1	1
Full load excitation current	ic(A)	3	3	3	3	3	3	3	3	3	3
Full load excitation voltage	uc(V)	45	45	45	45	45	45	45	45	45	45
Short circuit current capacity	%	>300I_N 10s(with PMG)									
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		EVC600/EVC800									
Duty		Continuous									
Number of poles		4									
Class of insulation		H									
Altitude		≤1000m									
Rated power factor		0.8									
Excitation		Brushless									
Stator winding		6ends									
Rotor		With damping cage									
Overload	%	110% rated load for 2 hour per 24 hour									
Stator winding resistance (20℃)	ohm	0.0032	0.0032	0.0032	0.0032	0.0032	0.0032	0.0032	0.0032	0.0032	0.0032
Rotor winding resistance (20℃)	ohm	1.080	1.080	1.080	1.080	1.080	1.080	1.080	1.080	1.080	1.080
Exciter resistance (20℃)	ohm	10.64	10.64	10.64	10.64	10.64	10.64	10.64	10.64	10.64	10.64
Cooling air requirement	m^3/min	68.9	68.9	68.9	68.9	82.7	82.7	82.7	82.7	82.7	82.7
Energy storage constant (H)	sec.	0.210	0.199	0.192	0.181	0.275	0.261	0.251	0.237	0.227	0.124
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									