



THREE-PHASE SYNCHRONOUS GENERATOR 20170101

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

EG500-1720N

Frequency	Hz	50				60					
Rated capacity (kVA)	S	2043	2150	2230	2365	2145	2258	2348	2483	2596	2709
Rated power (kW)	P	1634	1720	1784	1892	1716	1806	1878	1986	2077	2167
Voltage (V)	U	380	400	415	440	380	400	416	440	460	480
Short-circuit ratio	Kcc	0.362	0.397	0.429	0.492	0.274	0.291	0.304	0.327	0.35	0.378
Reactance											
Direct axis synchronous reactance	Xd	3.174	3.015	2.906	2.741	4.001	3.799	3.652	3.454	3.304	3.165
Direct axis transient reactance saturated	X'd	0.121	0.115	0.111	0.104	0.152	0.145	0.139	0.132	0.126	0.121
Direct axis subtransient reactance saturated	X''d	0.094	0.089	0.086	0.081	0.119	0.113	0.108	0.102	0.098	0.094
Quadrature axis synchronous reactance	Xq	1.389	1.319	1.272	1.2	1.75	1.663	1.598	1.512	1.446	1.385
Quadrature axis subtransient reactance	X''q	0.122	0.116	0.112	0.105	0.154	0.146	0.14	0.133	0.127	0.122
Negative sequence reactance saturated	X2	0.11	0.1	0.1	0.09	0.14	0.13	0.12	0.12	0.11	0.11
Zero sequence reactance unsaturated	X0	0.005	0.004	0.004	0.004	0.006	0.006	0.005	0.005	0.005	0.005
Time constant											
Open circuit time constant	T'd0	3.244	3.244	3.244	3.244	3.244	3.244	3.244	3.244	3.244	3.244
Short-circuit transient time constant	T'd	0.124	0.124	0.124	0.124	0.124	0.124	0.124	0.124	0.124	0.124
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	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024
No load losses	W	22054	22054	23652	24879	31141	31936	33130	33651	35212	36228
Heat dissipation at full load at Class H	W	72215	74497	76370	80177	82518	84152	85531	87686	89723	91979
Efficiency											
PF=0.8 Efficiency of 25% load	%	93.93	93.93	93.91	93.84	92.73	92.87	92.95	93.06	93.13	93.17
50% load	%	95.78	95.81	95.81	95.79	95.15	95.26	95.33	95.42	95.48	95.52
75% load	%	96.03	96.08	96.11	96.12	95.59	95.70	95.78	95.89	95.95	96.01
100% load	%	95.77	95.85	95.89	95.93	95.41	95.55	95.64	95.77	95.86	95.93
110% load	%	95.56	95.65	95.71	95.76	95.22	95.37	95.47	95.61	95.71	95.79
PF=1 Efficiency of 25% load	%	94.13	94.13	94.12	94.06	93.06	93.18	93.27	93.37	93.44	93.48
50% load	%	96.18	96.20	96.21	96.20	95.69	95.78	95.84	95.92	95.97	96.01
75% load	%	96.64	96.68	96.70	96.72	96.35	96.44	96.50	96.58	96.64	96.68
100% load	%	96.63	96.69	96.73	96.78	96.43	96.53	96.60	96.69	96.76	96.82
110% load	%	96.54	96.61	96.66	96.71	96.36	96.47	96.54	96.65	96.72	96.78
No load excitation current	io(A)	1	1	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	4.2	4.2
Full load excitation voltage	uc(V)	55	55	55	55	55	55	55	55	55	55
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°C)	ohm	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006
Rotor winding resistance (20°C)	ohm	0.945	0.945	0.945	0.945	0.945	0.945	0.945	0.945	0.945	0.945
Exciter resistance (20°C)	ohm	10.3	10.3	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	223	223
Energy storage constant (H)	sec.	0.446	0.424	0.409	0.385	0.612	0.582	0.559	0.529	0.506	0.485
Method of cooling		IC 01									
Ambient temperature		40°C									
Sense of rotation		Clockwise-DE									
Type of construction		Single / Double bearing									
Degree of protection / enclosure		IP21 or IP23									
Maximum overspeed		2250 rpm 2minutes									