



THREE-PHASE SYNCHRONOUS GENERATOR 20170101

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

EG400-1000N

Frequency	Hz	50				60					
Rated capacity (kVA)	S	1187.5	1250	1297	1375	1306	1375	1430	1513	1581	1650
Rated power (kW)	P	950	1000	1038	1100	1045	1100	1144	1210	1265	1320
Voltage (V)	U	380	400	415	440	380	400	416	440	460	480
Short-circuit ratio	Kcc	0.422	0.468	0.523	0.643	0.3	0.319	0.335	0.361	0.39	0.425
Reactance											
Direct axis synchronous reactance	Xd	2.762	2.624	2.529	2.385	3.645	3.463	3.33	3.148	3.011	2.886
Direct axis transient reactance saturated	X'd	0.117	0.111	0.107	0.101	0.154	0.147	0.141	0.133	0.127	0.122
Direct axis subtransient reactance saturated	X''d	0.085	0.081	0.078	0.073	0.112	0.107	0.102	0.097	0.093	0.089
Quadrature axis synchronous reactance	Xq	1.219	1.158	1.116	1.053	1.609	1.529	1.47	1.39	1.329	1.274
Quadrature axis subtransient reactance	X''q	0.109	0.103	0.1	0.094	0.144	0.137	0.131	0.124	0.119	0.114
Negative sequence reactance saturated	X2	0.1	0.09	0.09	0.08	0.13	0.12	0.12	0.11	0.11	0.1
Zero sequence reactance unsaturated	X0	0.005	0.005	0.005	0.005	0.007	0.007	0.006	0.006	0.006	0.006
Time constant											
Open circuit time constant	T'd0	2.767	2.767	2.767	2.767	2.767	2.767	2.767	2.767	2.767	2.767
Short-circuit transient time constant	T'd	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117
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	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
No load losses	W	10404	11001	11469	12288	13336	13866	14311	15009	15622	16261
Heat dissipation at full load at Class H	W	46893	48582	50424	54288	54699	55948	56995	58669	60242	61932
Efficiency											
PF=0.8 Efficiency of 25% load	%	93.99	93.93	93.82	93.54	93.52	93.58	93.62	93.66	93.66	93.65
50% load	%	95.56	95.56	95.51	95.35	95.28	95.36	95.41	95.46	95.49	95.50
75% load	%	95.67	95.71	95.68	95.58	95.42	95.52	95.59	95.68	95.73	95.77
100% load	%	95.30	95.37	95.37	95.30	95.03	95.16	95.25	95.38	95.45	95.52
110% load	%	95.03	95.12	95.13	95.07	94.75	94.90	95.01	95.15	95.24	95.31
PF=1 Efficiency of 25% load	%	94.42	94.37	94.28	94.05	93.90	93.96	93.99	94.02	94.03	94.02
50% load	%	96.22	96.22	96.19	96.09	95.91	95.96	96.00	96.05	96.07	96.08
75% load	%	96.57	96.60	96.59	96.55	96.30	96.37	96.42	96.48	96.52	96.56
100% load	%	96.48	96.53	96.55	96.54	96.20	96.30	96.36	96.45	96.51	96.56
110% load	%	96.35	96.42	96.44	96.45	96.07	96.18	96.25	96.35	96.41	96.47
No load excitation current	io(A)	1	1	1	1	1	1	1	1	1	1
Full load excitation current	ic(A)	4	4	4	4	4	4	4	4	4	4
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°C)	ohm	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017
Rotor winding resistance (20°C)	ohm	0.833	0.833	0.833	0.833	0.833	0.833	0.833	0.833	0.833	0.833
Exciter resistance (20°C)	ohm	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2
Cooling air requirement	m ³ /min	106	106	106	106	127.2	127.2	127.2	127.2	127.2	127.2
Energy storage constant (H)	sec.	0.264	0.251	0.242	0.228	0.345	0.328	0.316	0.298	0.285	0.273
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									