



THREE-PHASE SYNCHRONOUS GENERATOR 20170101

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

EG400-800N

Frequency	Hz	50					60				
Rated capacity (kVA)	S	950	1000	1038	1100	1045	1100	1144	1210	1265	1320
Rated power (kW)	P	760	800	830	880	836	880	915	968	1012	1056
Voltage (V)	U	380	400	415	440	380	400	416	440	460	480
Short-circuit ratio	Kcc	0.543	0.614	0.685	0.855	0.382	0.406	0.428	0.464	0.502	0.558
Reactance											
Direct axis synchronous reactance	Xd	2.173	2.064	1.99	1.877	2.868	2.725	2.619	2.477	2.369	2.271
Direct axis transient reactance saturated	X'd	0.092	0.088	0.085	0.08	0.122	0.116	0.111	0.105	0.101	0.097
Direct axis subtransient reactance saturated	X''d	0.067	0.064	0.062	0.058	0.089	0.084	0.081	0.077	0.073	0.07
Quadrature axis synchronous reactance	Xq	0.96	0.912	0.879	0.829	1.267	1.204	1.157	1.094	1.047	1.003
Quadrature axis subtransient reactance	X''q	0.086	0.082	0.079	0.074	0.114	0.108	0.104	0.098	0.094	0.09
Negative sequence reactance saturated	X2	0.08	0.07	0.07	0.07	0.1	0.1	0.09	0.09	0.08	0.08
Zero sequence reactance unsaturated	X0	0.004	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.004
Time constant											
Open circuit time constant	T'd0	2.522	2.522	2.522	2.522	2.522	2.522	2.522	2.522	2.522	2.522
Short-circuit transient time constant	T'd	0.107	0.107	0.107	0.107	0.107	0.107	0.107	0.107	0.107	0.107
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	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014
No load losses	W	10473	11082	11559	12393	13365	13906	14359	15071	15696	16348
Heat dissipation at full load at Class H	W	38414	40165	41825	45921	44734	45774	46646	48098	49492	51230
Efficiency											
PF=0.8 Efficiency of 25% load	%	93.07	92.93	92.78	92.32	92.55	92.62	92.65	92.68	92.67	92.60
50% load	%	95.19	95.13	95.05	94.77	94.88	94.96	95.01	95.06	95.08	95.06
75% load	%	95.48	95.47	95.43	95.22	95.22	95.32	95.39	95.47	95.52	95.52
100% load	%	95.19	95.22	95.20	95.04	94.92	95.06	95.15	95.27	95.34	95.37
110% load	%	94.95	95.00	94.99	94.84	94.67	94.82	94.93	95.06	95.14	95.19
PF=1 Efficiency of 25% load	%	93.53	93.38	93.28	92.90	92.95	93.01	93.04	93.07	93.06	93.01
50% load	%	95.88	95.78	95.78	95.60	95.54	95.60	95.63	95.67	95.69	95.68
75% load	%	96.42	96.33	96.40	96.29	96.13	96.21	96.26	96.32	96.35	96.37
100% load	%	96.42	96.45	96.46	96.40	96.14	96.23	96.30	96.38	96.44	96.47
110% load	%	96.32	96.36	96.38	96.34	96.03	96.13	96.21	96.30	96.37	96.41
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	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019
Rotor winding resistance (20°C)	ohm	0.739	0.739	0.739	0.739	0.739	0.739	0.739	0.739	0.739	0.739
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.	0.318	0.302	0.291	0.274	0.416	0.395	0.380	0.359	0.344	0.329
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									