



# THREE-PHASE SYNCHRONOUS GENERATOR

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

## EG400L-800N

Frequency	HZ	50				60			
Rated capacity (kVA)	S	1000	1000	1000	1000	1149	1190	1226	1250
Rated power (kW)	P	800	800	800	800	919	952	981	1000
Voltage (V)	U	380	400	415	440	415	440	460	480
Efficiency of 25% load	%	90.3	89.8	89.1	88.6	90.4	90.3	90.1	89.7
50% load	%	94	93.8	93.5	93.2	94.1	94.1	94	93.9
75% load	%	94.8	94.8	94.6	94.6	95	95	95	95
100% load	%	95	95	95	95	95.1	95.2	95.3	95.3
Reactance at Class H									
Short-circuit ratio	Kcc	0.538	0.664	0.786	0.94	0.423	0.48	0.544	0.638
Direct axis synchronous reactance	Xd	2.286	2.063	1.917	1.705	2.642	2.435	2.296	2.149
Quadrature axis synchronous reactance	Xq	1.004	0.906	0.842	0.749	1.16	1.069	1.008	0.944
Direct axis transient reactance saturated	X'd	0.097	0.087	0.081	0.072	0.112	0.103	0.097	0.091
Direct axis subtransient reactance saturated	X''d	0.071	0.064	0.059	0.053	0.082	0.075	0.071	0.066
Quadrature axis subtransient reactance saturated	X''q	0.09	0.081	0.076	0.067	0.104	0.096	0.091	0.085
Zero sequence reactance unsaturated	X0	0.004	0.004	0.004	0.003	0.005	0.005	0.004	0.004
Leakage reactance	X1	0.038	0.034	0.032	0.028	0.044	0.04	0.038	0.035
Negative sequence reactance saturated	X2	0.08	0.07	0.07	0.06	0.09	0.09	0.08	0.08
Open circuit time constant	T'd0	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Short-circuit transient time constant	T'd	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
Subtransient time constant	T''d	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Armature time constant	Ta	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014
No load excitation current	io(A)	1	1	1	1	1	1	1	1
Full load excitation current	ic(A)	4	4	4	4	4	4	4	4
Full load excitation voltage	uc(V)	45	45	45	45	45	45	45	45
No load losses	W	10550	11160	11830	12300	13980	14840	15670	16330
Heat dissipation at full load at Class H	W	42460	42017	42549	42283	47148	47475	48381	49098
Short circuit current capacity	%	>300							
Recovery time	s	1							
Waveform : TIF		<50							
Waveform : THD		<2%							
Winding pitch		2/3							
Voltage regulation		+/- 1%							
A.V.R. model		WT-2							
Duty		Continuous							
Number of poles		4							
Class of insulation		H							
Temperature rise		≤125K							
Altitude		≤1000m							
Rated power factor		0.8							
Excitation		Brushless							
Stator winding		6ends							
Rotor		With damping cage							
Overload	%	110% rated load for 1 hour							
Stator winding resistance (20°C)	ohm	0.00194	0.00194	0.00194	0.00194	0.00194	0.00194	0.00194	0.00194
Rotor winding resistance (20°C)	ohm	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
Cooling air requirement	m <sup>3</sup> /min	106.0	106.0	106.0	106.0	127.2	127.2	127.2	127.2
Energy storage constant ( H )	sec.	0.20925	0.20925	0.20925	0.20925	0.29008	0.27708	0.26202	0.2511
Method of cooling		IC 01							
Ambient temperature		40°C							
Sense of rotation		Counter-clockwise							
Type of construction		Single / Double bearing							
Degree of protection / enclosure		IP21 or IP23							
Maximum overspeed	rpm	2160							