



THREE-PHASE SYNCHRONOUS GENERATOR

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

EG400S-640N

Frequency	HZ	50				60			
Rated capacity (kVA)	S	760	800	800	800	919	953	980	1000
Rated power (kW)	P	608	640	640	640	735	762	784	800
Voltage (V)	U	380	400	415	440	415	440	460	480
Efficiency of 25% load	%	89.9	89.9	89.7	89	89.5	89.7	89.8	89.8
50% load	%	93.6	93.6	93.6	93.3	93.4	93.6	93.7	93.7
75% load	%	94.4	94.5	94.5	94.4	94.4	94.6	94.7	94.7
100% load	%	94.4	94.5	94.6	94.7	94.5	94.7	94.9	94.9
Reactance at Class H									
Short-circuit ratio	Kcc	0.395	0.433	0.491	0.628	0.347	0.374	0.4	0.433
Direct axis synchronous reactance	Xd	2.844	2.702	2.51	2.233	3.125	2.947	2.819	2.702
Quadrature axis synchronous reactance	Xq	1.262	1.199	1.114	0.991	1.387	1.308	1.251	1.199
Direct axis transient reactance saturated	X'd	0.132	0.125	0.116	0.104	0.145	0.137	0.131	0.125
Direct axis subtransient reactance saturated	X''d	0.099	0.094	0.087	0.078	0.109	0.102	0.098	0.094
Quadrature axis subtransient reactance saturated	X''q	0.125	0.119	0.111	0.098	0.138	0.13	0.124	0.119
Zero sequence reactance unsaturated	X0	0.006	0.005	0.005	0.004	0.006	0.006	0.006	0.005
Leakage reactance	X1	0.056	0.053	0.049	0.044	0.062	0.058	0.056	0.053
Negative sequence reactance saturated	X2	0.11	0.11	0.1	0.09	0.12	0.12	0.11	0.11
Open circuit time constant	T'd0	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Short-circuit transient time constant	T'd	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
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	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016
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	7440	7890	8290	8820	10540	10950	11360	11860
Heat dissipation at full load at Class H	W	35931	36962	36247	35890	38497	39243	39962	40847
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	0.0029	0.0029	0.0029	0.0029	0.0029	0.0029	0.0029	0.0029
Rotor winding resistance (20°C)	ohm	0.598	0.598	0.598	0.598	0.598	0.598	0.598	0.598
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 ³ /min	106.0	106.0	106.0	106.0	127.2	127.2	127.2	127.2
Energy storage constant (H)	sec.	0.2179	0.2179	0.2179	0.2179	0.3019	0.2852	0.2728	0.2614
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							