THREE-PHASE SYNCHRONOUS GENERATOR

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

EG280L-180N

Frequency	HZ	50				60			
Rated capacity (kVA)	S	225	225	225	225	257.5	267.5	275	280
Rated power (kW)	P	180	180	180	180	206	214	220	224
Voltage (V)	U	380	400	415	440	415	440	460	480
Efficiency of 25% load	%	87.4	87.4	87.3	86.9	87.4	87.6	87.7	87.7
50% load	%	91.5	91.7	91.8	91.6	91.6	91.9	92	92.1
75% load	%	92.3	92.5	92.7	92.7	92.4	92.7	92.9	93
100% load	%	92.1	92.4	92.6	92.8	92.3	92.6	92.9	93.1
Reactance at Class H									
Short-circuit ratio	Kcc	0.346	0.399	0.445	0.551	0.288	0.318	0.348	0.385
Direct axis synchronous reactance	Xd	3.375	3.046	2.83	2.518	3.886	3.592	3.378	3.159
Quadrature axis synchronous reactance	Xq	1.555	1.404	1.304	1.16	1.791	1.655	1.557	1.456
Direct axis transient reactance saturated	X'd	0.1	0.091	0.084	0.075	0.116	0.107	0.101	0.094
Direct axis subtransient reactance saturated	X"d	0.096	0.087	0.081	0.072	0.111	0.102	0.096	0.09
Quadrature axis subtransient reactance saturated	X"q	0.161	0.145	0.135	0.12	0.186	0.172	0.161	0.151
Zero sequence reactance unsaturated	X0	0.006	0.006	0.005	0.005	0.007	0.006	0.006	0.006
Leakage reactance	X1	0.076	0.068	0.064	0.057	0.087	0.081	0.076	0.071
Negative sequence reactance saturated	X2	0.13	0.12	0.11	0.1	0.15	0.14	0.13	0.12
Open circuit time constant	T'd0	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Short-circuit transient time constant	T'd	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052
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	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
No load excitation current	io(A)	1	1	1	1	1	1	1	1
Full load excitation current	ic(A)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Full load excitation voltage	uc(V)	33	33	33	33	33	33	33	33
No load losses	W	2260	2380	2470	2650	3130	3280	3420	3540
Heat dissipation at full load at Class H	W	15525	14784	14363	13966	17185	17002	16916	16679
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		12ends							
Rotor		With damping cage							
Overload	%	110% rated load for 1 hour							
Stator winding resistance (20℃)	ohm	0.0143	0.0143	0.0143	0.0143	0.0143	0.0143	0.0143	0.0143
Rotor winding resistance (20℃)	ohm	0.702	0.702	0.702	0.702	0.702	0.702	0.702	0.702
Exciter resistance (20℃)	ohm	8.57	8.57	8.57	8.57	8.57	8.57	8.57	8.57
Cooling air requirement	m^3/min	38.7	38.7	38.7	38.7	46.4	46.4	46.4	46.4
Energy storage constant (H)	sec.	0.1310	0.1310	0.1310	0.1310	0.1787	0.1698	0.1617	0.1543
Method of cooling		IC 01							
Ambient temperature		40℃							
Sense of rotation		Counter-clockwise							
Type of construction		Single / Double bearing							
Degree of protection / enclosure		IP21 or IP23							
Maximum overspeed	rpm	2160							