



THREE-PHASE SYNCHRONOUS GENERATOR

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

EG315L-400N

Frequency	HZ	50				60			
Rated capacity (kVA)	S	500	500	500	500	573.75	595	612.5	625
Rated power (kW)	P	400	400	400	400	459	476	490	500
Voltage (V)	U	380	400	415	440	415	440	460	480
Efficiency of 25% load	%	90.2	90.3	90.3	90	90.2	90.4	90.5	90.6
50% load	%	93.6	93.7	93.8	93.8	93.6	93.8	93.9	94
75% load	%	94.2	94.4	94.5	94.6	94.3	94.5	94.6	94.8
100% load	%	94	94.3	94.5	94.7	94.2	94.5	94.6	94.8
Reactance at Class H									
Short-circuit ratio	Kcc	0.279	0.322	0.36	0.445	0.234	0.258	0.28	0.309
Direct axis synchronous reactance	Xd	4.121	3.719	3.455	3.073	4.757	4.389	4.134	3.874
Quadrature axis synchronous reactance	Xq	1.876	1.693	1.573	1.4	2.166	1.999	1.882	1.764
Direct axis transient reactance saturated	X'd	0.147	0.133	0.124	0.11	0.17	0.157	0.148	0.139
Direct axis subtransient reactance saturated	X''d	0.133	0.12	0.112	0.099	0.154	0.142	0.134	0.125
Quadrature axis subtransient reactance saturated	X''q	0.203	0.183	0.17	0.152	0.235	0.216	0.204	0.191
Zero sequence reactance unsaturated	X0	0.008	0.008	0.007	0.006	0.01	0.009	0.009	0.008
Leakage reactance	X1	0.092	0.083	0.077	0.069	0.107	0.098	0.093	0.087
Negative sequence reactance saturated	X2	0.17	0.15	0.14	0.13	0.19	0.18	0.17	0.16
Open circuit time constant	T'd0	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Short-circuit transient time constant	T'd	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093
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	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
No load excitation current	io(A)	1	1	1	1	1	1	1	1
Full load excitation current	ic(A)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Full load excitation voltage	uc(V)	40	40	40	40	40	40	40	40
No load losses	W	3640	3830	4000	4310	5020	5280	5490	5690
Heat dissipation at full load at Class H	W	25396	23998	23191	22297	28416	27917	27751	27315
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°C)	ohm	0.0051	0.0051	0.0051	0.0051	0.0051	0.0051	0.0051	0.0051
Rotor winding resistance (20°C)	ohm	0.875	0.875	0.875	0.875	0.875	0.875	0.875	0.875
Exciter resistance (20°C)	ohm	9.856	9.856	9.856	9.856	9.856	9.856	9.856	9.856
Cooling air requirement	m ³ /min	54.8	54.8	54.8	54.8	65.8	65.8	65.8	65.8
Energy storage constant (H)	sec.	0.1076	0.1076	0.1076	0.1076	0.1482	0.1408	0.1347	0.1291
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							