



## THREE-PHASE SYNCHRONOUS GENERATOR

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

# EG315M-300N

Frequency	HZ	50				60			
Rated capacity (kVA)	S	375	375	375	375	430	446.25	460	468.75
Rated power (kW)	P	300	300	300	300	344	357	368	375
Voltage (V)	U	380	400	415	440	415	440	460	480
Efficiency of 25% load	%	88.6	88.8	88.9	88.7	88.5	88.8	89	89.1
50% load	%	92.5	92.7	92.8	92.9	92.5	92.8	92.9	93.1
75% load	%	93.2	93.5	93.7	93.8	93.3	93.6	93.8	93.9
100% load	%	93.1	93.4	93.7	93.9	93.2	93.6	93.8	94
Reactance at Class H									
Short-circuit ratio	Kcc	0.28	0.319	0.354	0.424	0.237	0.26	0.28	0.307
Direct axis synchronous reactance	Xd	4.037	3.643	3.385	3.011	4.657	4.3	4.055	3.795
Quadrature axis synchronous reactance	Xq	1.831	1.653	1.535	1.366	2.113	1.95	1.84	1.722
Direct axis transient reactance saturated	X'd	0.15	0.135	0.125	0.112	0.173	0.159	0.15	0.141
Direct axis subtransient reactance saturated	X''d	0.136	0.122	0.114	0.101	0.157	0.145	0.136	0.128
Quadrature axis subtransient reactance saturated	X''q	0.205	0.185	0.172	0.153	0.237	0.219	0.206	0.193
Zero sequence reactance unsaturated	X0	0.008	0.007	0.007	0.006	0.009	0.009	0.008	0.008
Leakage reactance	X1	0.096	0.086	0.08	0.071	0.11	0.102	0.096	0.09
Negative sequence reactance saturated	X2	0.17	0.15	0.14	0.13	0.2	0.18	0.17	0.16
Open circuit time constant	T'd0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Short-circuit transient time constant	T'd	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076
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	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
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	3030	3190	3310	3530	4300	4470	4640	4810
Heat dissipation at full load at Class H	W	22303	21062	20273	19353	25020	24573	24408	23936
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	0.0070	0.0070	0.0070	0.0070	0.0070	0.0070	0.0070	0.0070
Rotor winding resistance (20°C)	ohm	0.644	0.644	0.644	0.644	0.644	0.644	0.644	0.644
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 <sup>3</sup> /min	54.8	54.8	54.8	54.8	65.8	65.8	65.8	65.8
Energy storage constant ( H )	sec.	0.1293	0.1293	0.1293	0.1293	0.1746	0.1677	0.1605	0.1552
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							