



THREE-PHASE SYNCHRONOUS GENERATOR

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

EG315M-280N

Frequency	HZ	50				60			
Rated capacity (kVA)	S	350	350	350	350	401.25	416.25	428.75	436.25
Rated power (kW)	P	280	280	280	280	321	333	343	349
Voltage (V)	U	380	400	415	440	415	440	460	480
Efficiency of 25% load	%	87.7	88.1	88.3	88.5	87.5	87.9	88.2	88.5
50% load	%	91.8	92.1	92.4	92.6	91.7	92.1	92.3	92.6
75% load	%	92.5	92.9	93.1	93.5	92.5	92.9	93.2	93.4
100% load	%	92.3	92.7	93.1	93.5	92.4	92.8	93.1	93.4
Reactance at Class H									
Short-circuit ratio	Kcc	0.221	0.248	0.27	0.312	0.192	0.207	0.221	0.239
Direct axis synchronous reactance	Xd	4.982	4.496	4.177	3.716	5.747	5.303	4.998	4.67
Quadrature axis synchronous reactance	Xq	2.267	2.046	1.9	1.691	2.614	2.413	2.274	2.125
Direct axis transient reactance saturated	X'd	0.19	0.171	0.159	0.141	0.223	0.202	0.19	0.178
Direct axis subtransient reactance saturated	X''d	0.172	0.155	0.144	0.128	0.301	0.183	0.173	0.161
Quadrature axis subtransient reactance saturated	X''q	0.259	0.234	0.217	0.193	0.299	0.276	0.26	0.243
Zero sequence reactance unsaturated	X0	0.01	0.009	0.009	0.008	0.012	0.011	0.01	0.01
Leakage reactance	X1	0.122	0.11	0.102	0.091	0.141	0.13	0.122	0.114
Negative sequence reactance saturated	X2	0.22	0.19	0.18	0.16	0.3	0.23	0.22	0.2
Open circuit time constant	T'd0	1.9	1.9	1.9	1.9	2.1	1.9	1.9	1.9
Short-circuit transient time constant	T'd	0.076	0.076	0.076	0.076	0.266	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	0.018	0.018	0.018	0.018	0.022	0.018	0.018	0.018
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	2620	2730	2820	2990	3840	3970	4070	4190
Heat dissipation at full load at Class H	W	23457	21887	20913	19561	29398	25720	25342	24662
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	0.0084	0.0084	0.0084	0.0084	0.0084	0.0084	0.0084	0.0084
Rotor winding resistance (20°C)	ohm	0.609	0.609	0.609	0.609	0.609	0.609	0.609	0.609
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.	0.1313	0.1313	0.1313	0.1313	0.173	0.1675	0.1609	0.1557
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							