



THREE-PHASE SYNCHRONOUS GENERATOR

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

EG355M-450N

Frequency	HZ	50				60			
Rated capacity (kVA)	S	535	562.5	562.5	562.5	646	670	690	704
Rated power (kW)	P	428	450	450	450	517	536	552	563
Voltage (V)	U	380	400	415	440	415	440	460	480
Efficiency of 25% load	%	89.1	89.2	89.2	88.9	89	89.3	89.4	89.5
50% load	%	92.9	93	93	93	92.9	93.1	93.3	93.3
75% load	%	93.6	93.7	93.8	93.9	93.7	93.9	94.1	94.2
100% load	%	93.4	93.6	93.8	94	93.7	94.08	94.1	94.3
Reactance at Class H									
Short-circuit ratio	Kcc	0.32	0.349	0.39	0.477	0.284	0.304	0.325	0.349
Direct axis synchronous reactance	Xd	3.505	3.326	3.09	2.749	3.84	3.628	3.461	3.326
Quadrature axis synchronous reactance	Xq	1.588	1.507	1.4	1.246	1.74	1.644	1.568	1.507
Direct axis transient reactance saturated	X'd	0.178	0.169	0.157	0.14	0.195	0.184	0.176	0.169
Direct axis subtransient reactance saturated	X''d	0.142	0.135	0.125	0.112	0.156	0.147	0.14	0.135
Quadrature axis subtransient reactance saturated	X''q	0.194	0.184	0.171	0.152	0.212	0.2	0.191	0.184
Zero sequence reactance unsaturated	X0	0.008	0.007	0.007	0.006	0.009	0.008	0.008	0.007
Leakage reactance	X1	0.082	0.078	0.073	0.065	0.09	0.085	0.081	0.078
Negative sequence reactance saturated	X2	0.17	0.16	0.15	0.13	0.18	0.17	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	0.103	0.103	0.103	0.103	0.103	0.103	0.103	0.103
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	0.018	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	3	3	3	3	3	3	3
Full load excitation voltage	uc(V)	45	45	45	45	45	45	45	45
No load losses	W	4240	4460	4640	5010	6020	6290	6500	6730
Heat dissipation at full load at Class H	W	30048	30615	29591	28520	31279	31876	32178	32823
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	0.104	0.104	0.104	0.104	0.104	0.104	0.104	0.104
Rotor winding resistance (20°C)	ohm	0.928	0.928	0.928	0.928	0.928	0.928	0.928	0.928
Exciter resistance (20°C)	ohm	10.64	10.64	10.64	10.64	10.64	10.64	10.64	10.64
Cooling air requirement	m ³ /min	68.9	68.9	68.9	68.9	82.7	82.7	82.7	82.7
Energy storage constant (H)	sec.	0.1132	0.1132	0.1132	0.1132	0.1571	0.1482	0.1416	0.1358
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							