THREE-PHASE SYNCHRONOUS GENERATOR 20141201

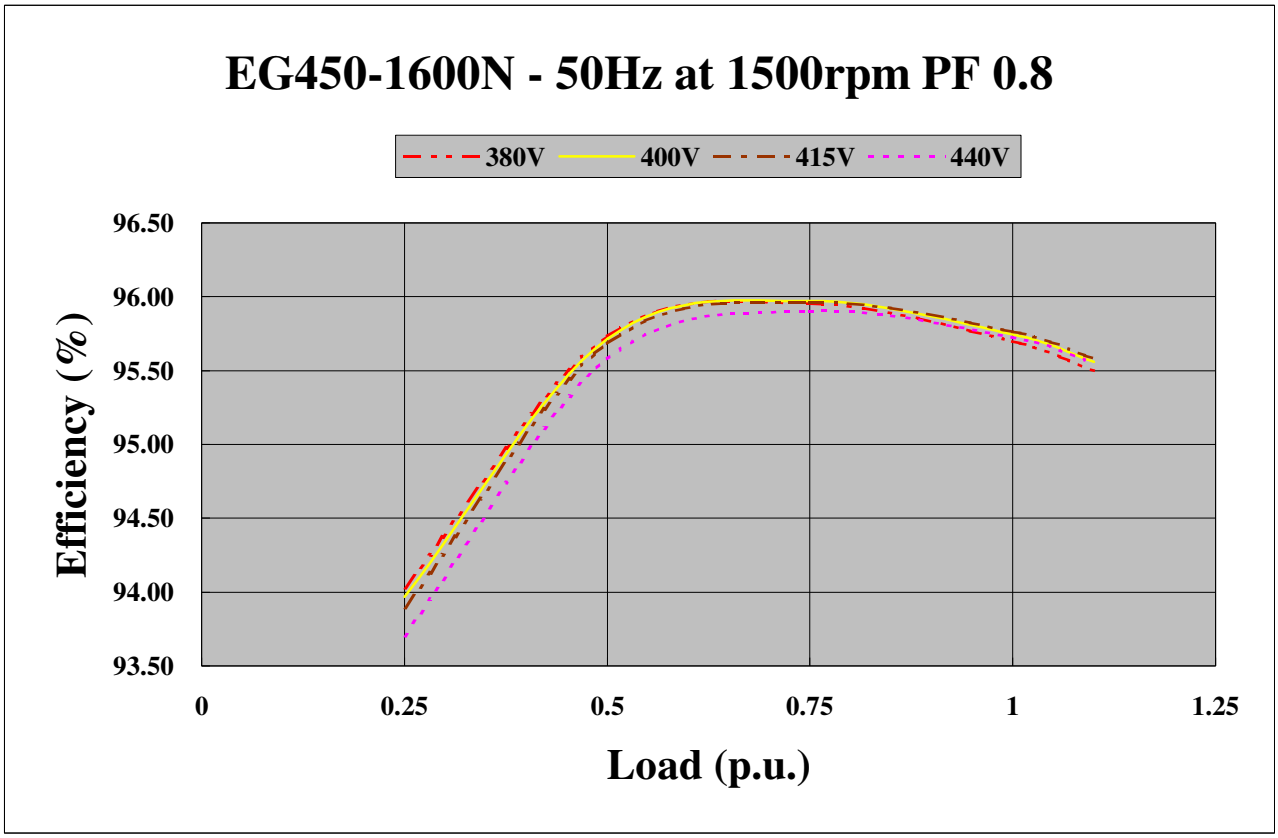
Datasheet For 50Hz @ 1500rpm / 60Hz @ 1800rpm

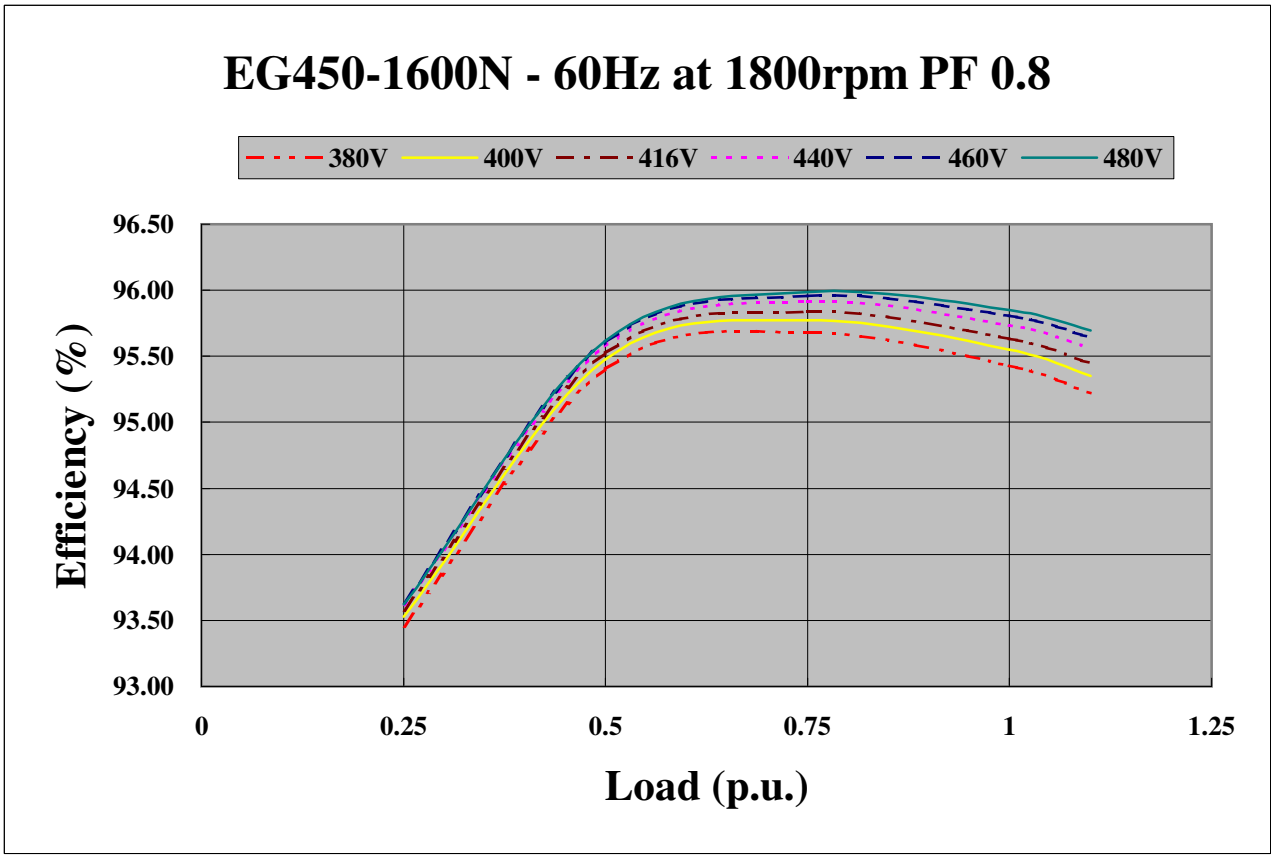
EG450-1600N

Frequency	Hz	50				60					
Rated capacity (kVA)	S	1900	2000	2075	2200	2090	2200	2288	2420	2530	2640
Rated power (kW)	P	1520	1600	1660	1760	1672	1760	1830	1936	2024	2112
Voltage (V)	U	380	400	415	440	380	400	416	440	460	480
Short-circuit ratio	Kcc	0. 394	0. 438	0. 481	0. 571	0. 282	0. 299	0. 314	0. 339	0. 365	0. 398
Reactance											
Direct axis synchronous reactance	Xd	2. 933	2. 786	2. 686	2. 533	3. 872	3. 678	3. 536	3. 344	3. 198	3. 065
Direct axis transient reactance saturated	X'd	0. 138	0. 131	0. 126	0. 119	0. 182	0. 173	0. 166	0. 157	0. 15	0. 144
Direct axis subtransient reactance saturated	X"d	0. 099	0. 094	0. 091	0. 086	0. 131	0. 124	0. 119	0. 113	0. 108	0. 104
Quadrature axis synchronous reactance	Xq	1. 306	1. 24	1. 196	1. 128	1. 724	1. 637	1. 574	1. 489	1. 424	1. 364
Quadrature axis subtransient reactance	X"q	0. 122	0. 116	0. 112	0. 106	0. 161	0. 153	0. 147	0. 139	0. 133	0. 128
Negative sequence reactance saturated	X2	0. 11	0. 11	0. 1	0. 1	0. 15	0. 14	0. 13	0. 13	0. 12	0. 12
Zero sequence reactance unsaturated	X0	0. 006	0. 006	0. 006	0. 005	0. 008	0. 008	0. 008	0. 007	0. 007	0. 007
Time constant											
Open circuit time constant	T'd0	2. 966	2. 966	2. 966	2. 966	2. 966	2. 966	2. 966	2. 966	2. 966	2. 966
Short-circuit transient time constant	T'd	0. 139	0. 139	0. 139	0. 139	0. 139	0. 139	0. 139	0. 139	0. 139	0. 139
Subtransient time constant	T"d	0. 003	0. 003	0. 003	0. 003	0. 003	0. 003	0. 003	0. 003	0. 003	0. 003
Armature time constant	Ta	0. 027	0. 027	0. 027	0. 027	0. 027	0. 027	0. 027	0. 027	0. 027	0. 027
No load losses	W	18011	18898	19593	20809	24222	25570	26275	27385	28357	29373
Heat dissipation at full load at Class H	W	68319	71090	73473	78578	80069	82000	83592	86222	88602	91444
Efficiency											
PF=0.8 Efficiency of 25% load	%	94.03	93.97	93.90	93.70	93.45	93.53	93.58	93.62	93.64	93.62
50% load	%	95.73	95.72	95.69	95.58	95.40	95.48	95.53	95.58	95.61	95.62
75% load	%	95.95	95.97	95.96	95.90	95.68	95.77	95.84	95.91	95.96	95.98
100% load	%	95.70	95.75	95.76	95.73	95.43	95.55	95.63	95.74	95.81	95.85
110% load	%	95.50	95.56	95.58	95.56	95.22	95.35	95.45	95.56	95.64	95.70
PF=1 Efficiency of 25% load	%	94.41	94.36	94.30	94.15	93.79	93.86	93.90	93.95	93.96	93.96
50% load	%	96.31	96.30	96.28	96.22	95.95	96.01	96.04	96.09	96.12	96.13
75% load	%	96.73	96.75	96.75	96.73	96.44	96.51	96.56	96.61	96.65	96.68
100% load	%	96.72	96.76	96.78	96.79	96.44	96.53	96.59	96.66	96.71	96.76
110% load	%	96.63	96.68	96.71	96.73	96.36	96.45	96.51	96.60	96.66	96.71
No load excitation current	io(A)	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Full load excitation current	ic(A)	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
Full load excitation voltage	uc(V)	48	48	48	48	48	48	48	48	48	48
Short circuit current capacity	%	>300I_N 10s(with PMG or Auxiliary winding)									
Recovery time	Tr	1s									
Waveform : TIF		<50									
Waveform : THD		<3%									
Waveform : THF		<2%									
Winding pitch		2/3									
Steady state voltage regulation		+/-1%									
A.V.R. model		EVC600									
Duty		Continuous									
Number of poles		4									
Class of insulation		H									
Altitude		≤1000m									
Rated power factor		0.8									
Excitation		Brushless									
Stator winding		6ends									
Rotor		With damping cage									
Overload	%	110% rated load for 2 hour per 24 hour									
Stator winding resistance (20℃)	ohm	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006
Rotor winding resistance (20℃)	ohm	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987
Exciter resistance (20℃)	ohm	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Cooling air requirement	m^3/min	130	130	130	130	158	158	158	158	158	158
Energy storage constant (H)	sec.	0.409	0.388	0.374	0.353	0.561	0.533	0.512	0.484	0.463	0.444
Method of cooling		IC 01									
Ambient temperature		40℃									
Sense of rotation		Clockwise-DE									
Type of construction		Single / Double bearing									
Degree of protection / enclosure		IP21 or IP23									
Maximum overspeed		2250 rpm 2minutes									

THREE-PHASE SYNCHRONOUS

THREE PHASE EFFICIENCY CRUVES 20121201

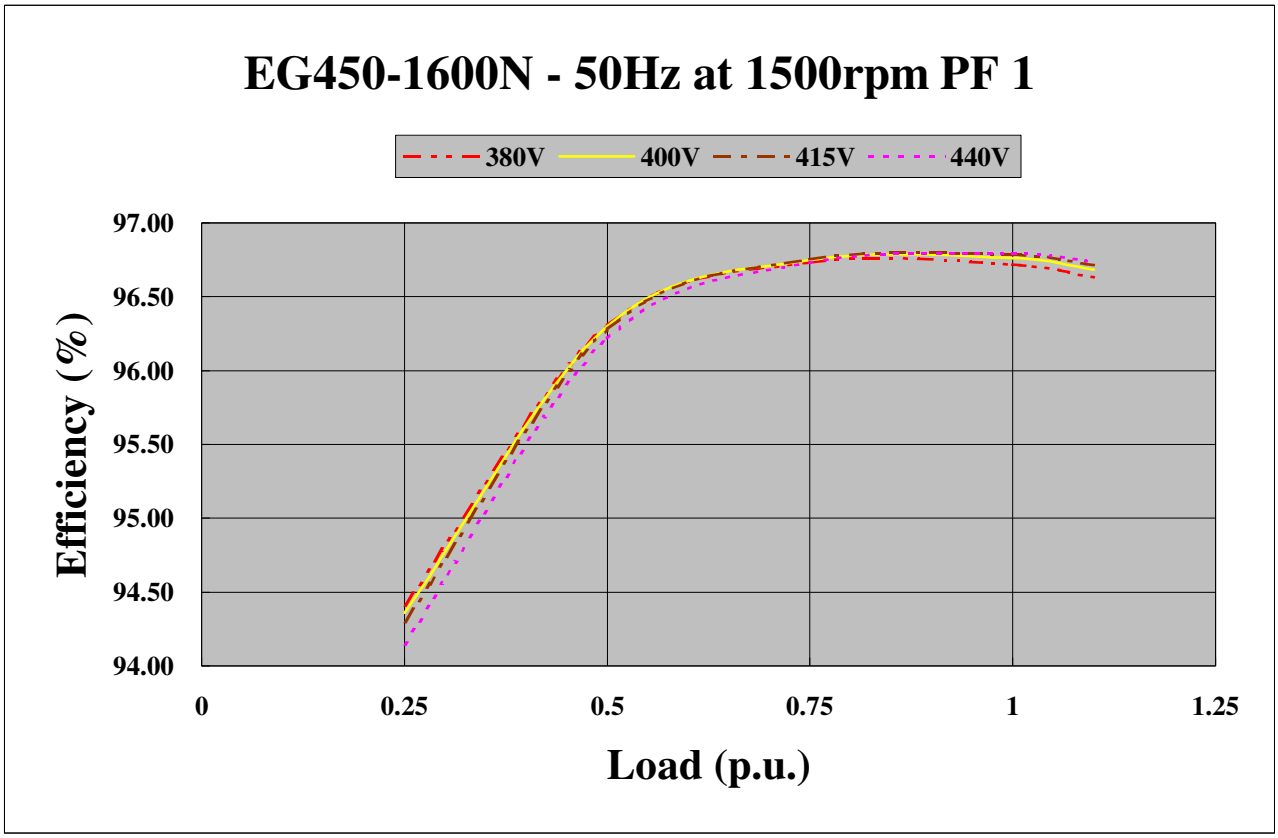


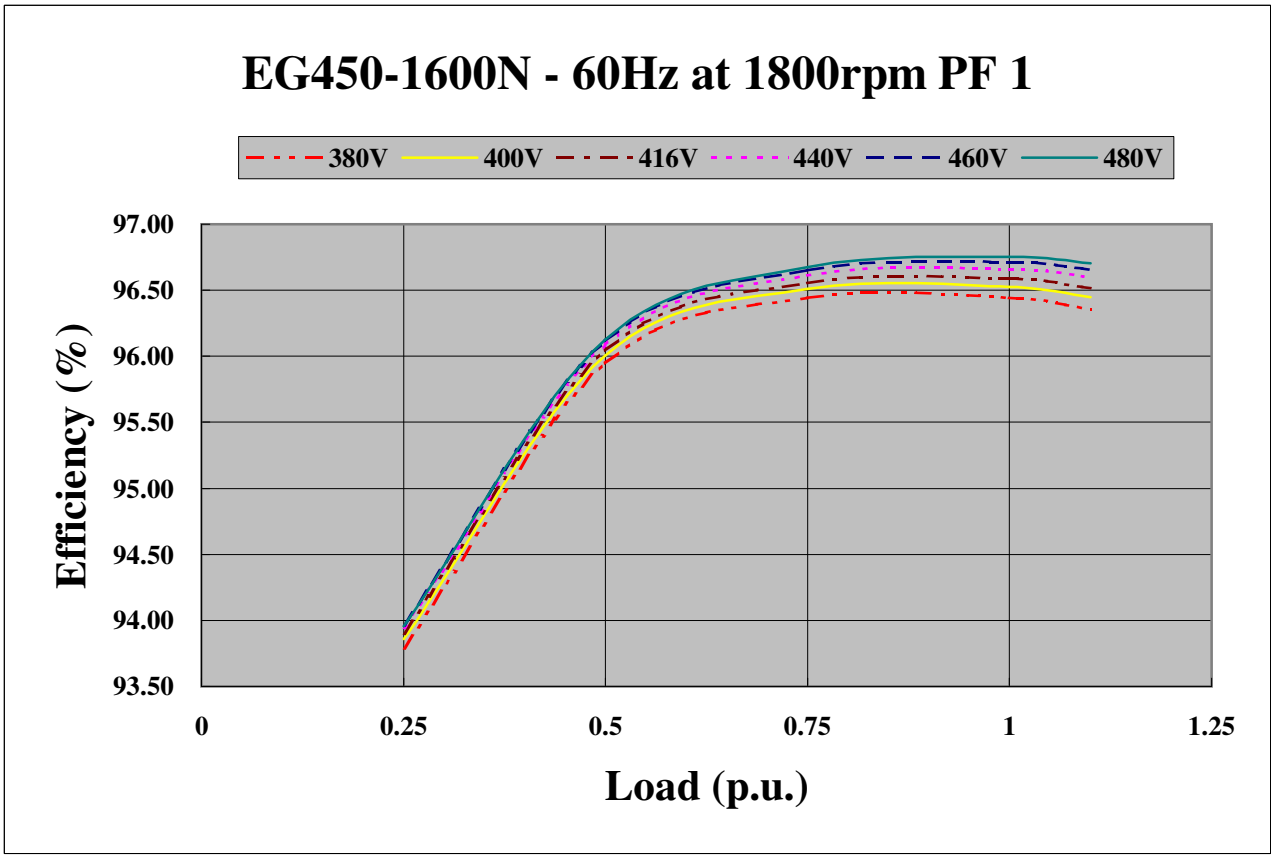


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THREE-PHASE SYNCHRONOUS

THREE PHASE EFFICIENCY CRUVES 20121201

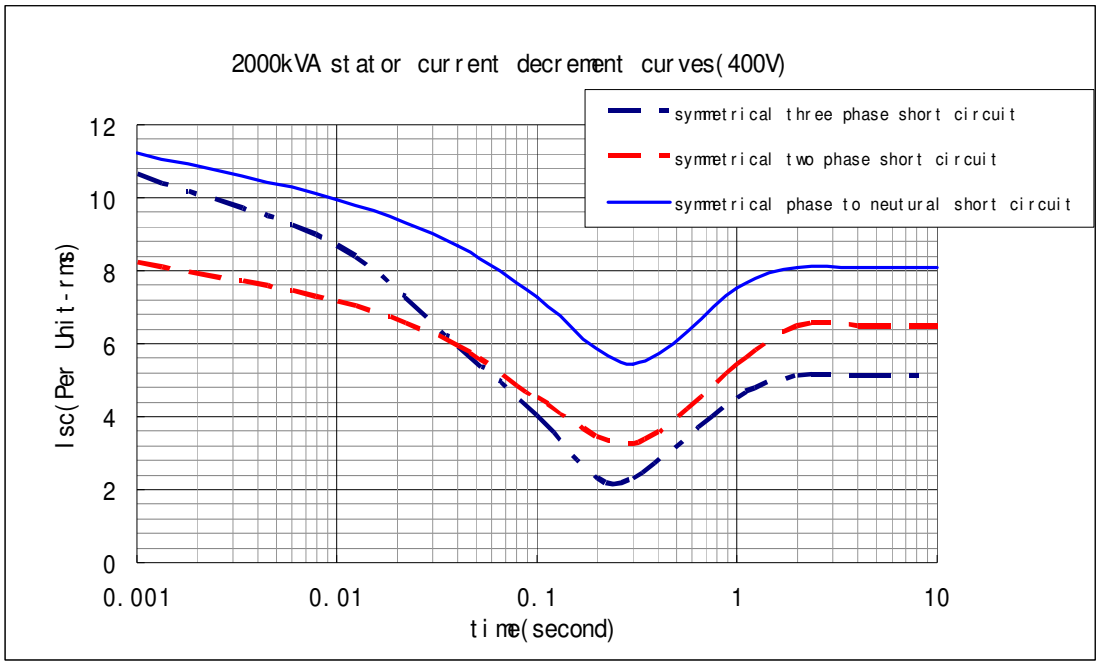




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THREE-PHASE SYNCHRONOUS GENERATOR
STATOR CURRENT DECREMENT CURVES

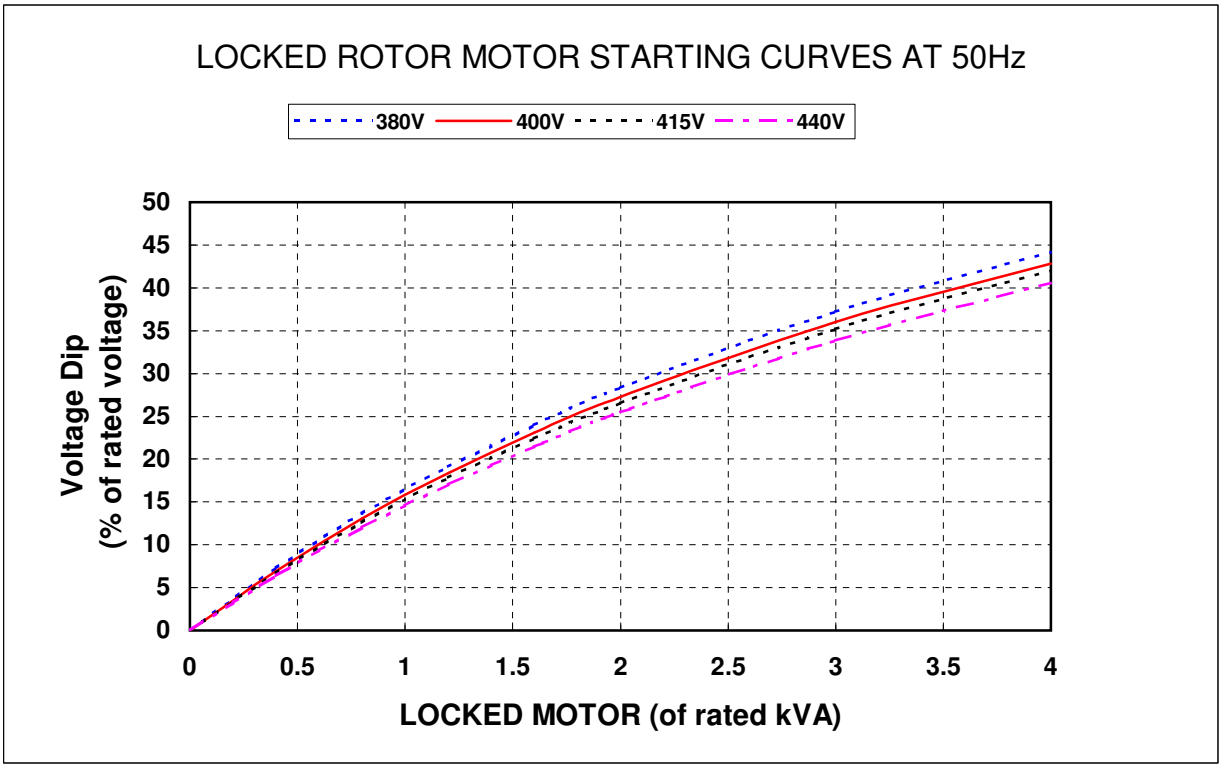
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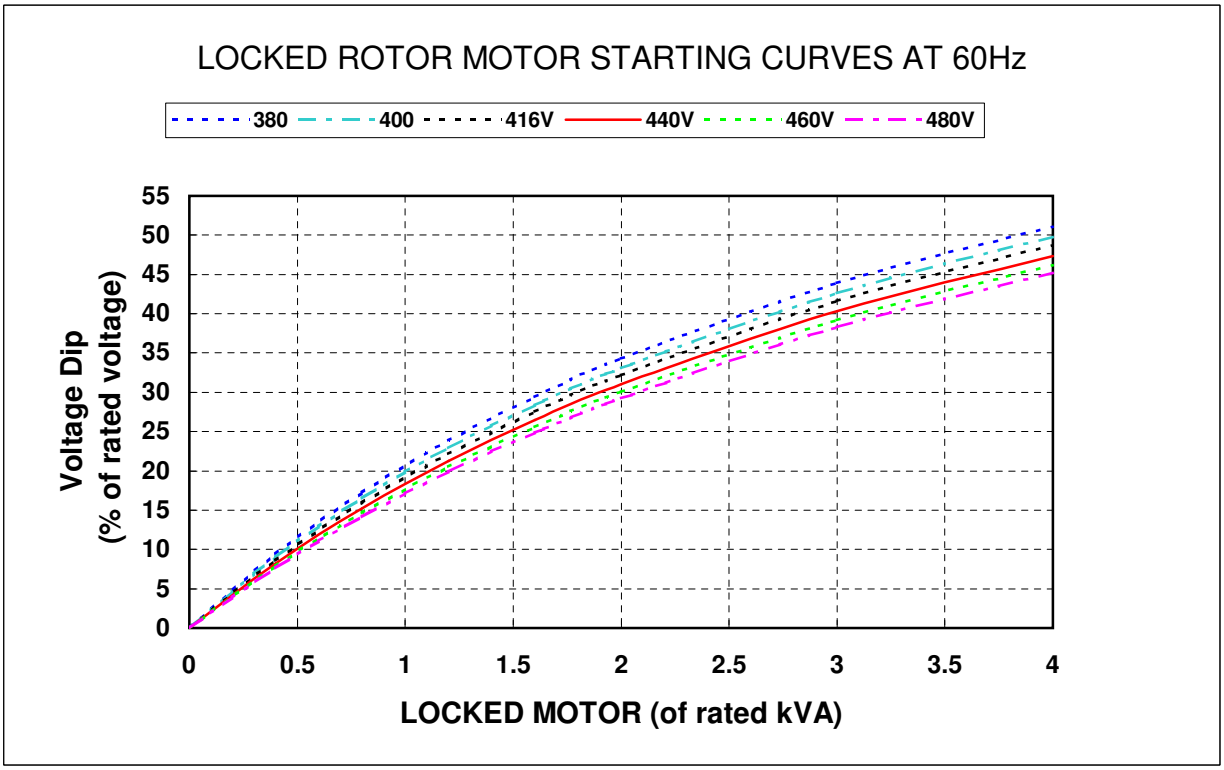


with PMG or Auxiliary winding

THREE PHASE SYNCHRONROUS GENERATOR

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