



**MARATHON ELECTRIC
SYNCHRONOUS AC GENERATOR
TYPICAL DYNAMIC CHARACTERISTICS**

Base Model 431CSL6206

Winding: WC1902

Date: 6/16/08

kW (kVA)	1800 RPM			60 Hertz			12 Leads		
	3 Phase			0.8 Power Factor			Dripproof or Open Enclosure		
	Class B	Class F		Class H					
Voltage*	80° C ① Continuou s	90° C ① Lloyds	95° C ① ABS	105° C ② British Standard	105° C ① Continuou s	130° C ① Standby	125° C ② British Standard	125° C ① Continuous	150° C ① Standby
240/480	165 (206)	180 (225)	186 (233)	200 (250)	200 (250)	215 (269)	205 (256)	211 (264)	225 (281)
230/460	170 (213)	185 (231)	190 (238)	200 (250)	200 (250)	220 (275)	205 (256)	215 (269)	225 (281)
220/440	172 (215)	185 (231)	191 (239)	200 (250)	200 (250)	220 (275)	205 (256)	212 (265)	226 (283)
208/416	170 (213)	180 (225)	183 (229)	191 (239)	191 (239)	210 (263)	197 (246)	202 (253)	217 (271)
190/380	156 (195)	165 (206)	170 (213)	176 (220)	176 (220)	191 (239)	182 (228)	185 (231)	200 (250)

① Rise by resistance method, Mil-Std-705, Method 680.1t

② Rating per BS 5000.

Submittal Data: 240/480 Volts*, 250 kVA, 1800 RPM, 60 Hz, 3 Phase					
Mil-Std-705B			Mil-Std-705B		
Method	Description	Value	Method	Description	Value
301.1b	Insulation Resistance	> 1.5 Meg	505.3b	Overspeed	2250 RPM
302.1a	High Potential Test		507.1c	Phase Sequence CCW-ODE	ABC
	Main Stator	2000 Volts	508.1c	Voltage Balance, L-L or L-N	0.2%
	Main Rotor	1500 Volts	601.4a	L-L Harmonic Maximum - Total	5.0%
	Exciter Stator	1500 Volts		(Distortion Factor)	
	Exciter Rotor	1500 Volts	601.4a	L-L Harmonic Maximum - Single	3.0%
	PMG Stator	1500 Volts**	601.1c	Deviation Factor	5.0%
401.1a	Stator Resistance, Line to Line		--	TIF (1960 Weightings)	<50
	High Wye Connection	0.0371 Ohms	625.1c	Mechanical Strength (High Wye	
	Rotor Resistance	0.679 Ohms		Connection, Sustained 3 Phase	
	Exciter Stator	18.5 Ohms		Short Circuit Current) ⁽³⁾	< 300%
	Exciter Rotor	0.116 Ohms	652.1a	Shaft Current	< 0.1 ma
	PMG Stator	2.1 Ohms**	652.1a	Main Stator Capacitance to	
410.1a	No Load Exciter Field Amps			Ground	0.011 mfd
	at 480 Volts Line to Line	0.68 A DC			
420.1a	Short Circuit Ratio	0.53			
421.1a	Xd Synchronous Reactance	2.766 pu			
422.1a	X2 Negative Sequence				
	Reactance	0.188 pu	--	Generator Frame	431
423.1a	X0 Zero Sequence Reactance	0.037 pu	--	Type	Ext. Voltage Regulated, Brushless
425.1a	X'd Transient Reactance	0.141 pu	--	Insulation	Class H
426.1a	X" d Subtransient Reactance	0.138 pu	--	Coupling - Single Bearing	Flexible
--	Xq Quadrature Synchronous		--	Amortisseur Windings	Full
	Reactance	1.193 pu	--	Cooling Air Volume	1200 CFM
427.1a	T'd Transient Short Circuit		--	Exciter	Rotating
	Time Constant	0.061 sec.	--	Voltage Regulator	SE350***
428.1a	T" d Subtransient Short Circuit		--	Voltage Regulation	1%***
	Time Constant	0.019 sec.	--	Sensing	1 Phase***
430.1a	T'do Transient Open Circuit				
	Time Constant	1.02 sec.			
432.1a	Ta Short Circuit Time				
	Constant of Armature Winding	0.019 sec.			

⁽³⁾ Excitation support system or PMG required to sustain short circuit currents.

* Voltage refers to wye (star) connection, unless otherwise specified.

**Not supplied as standard equipment.

***DVR[®]2000 voltage regulator supplied with PMG option. DVR[®]2000 voltage regulation 1/4%, 1 or 3 Phase sensing.

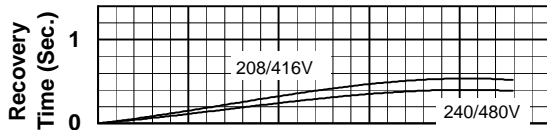


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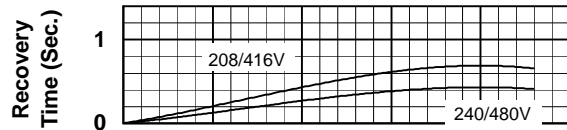
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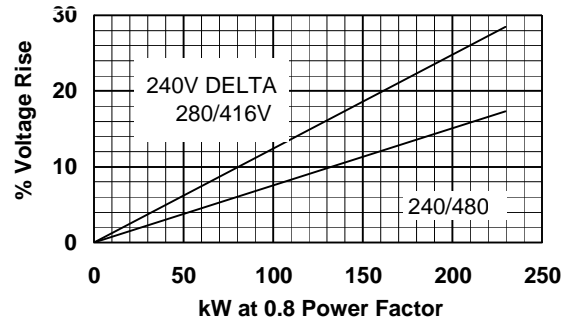
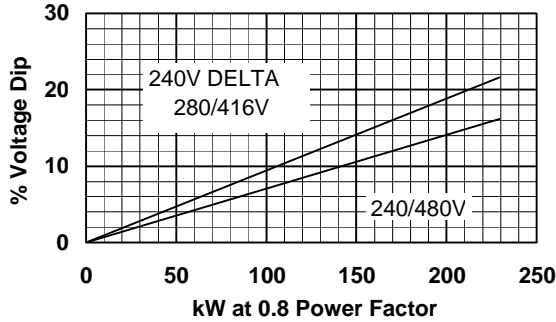
60 HERTZ



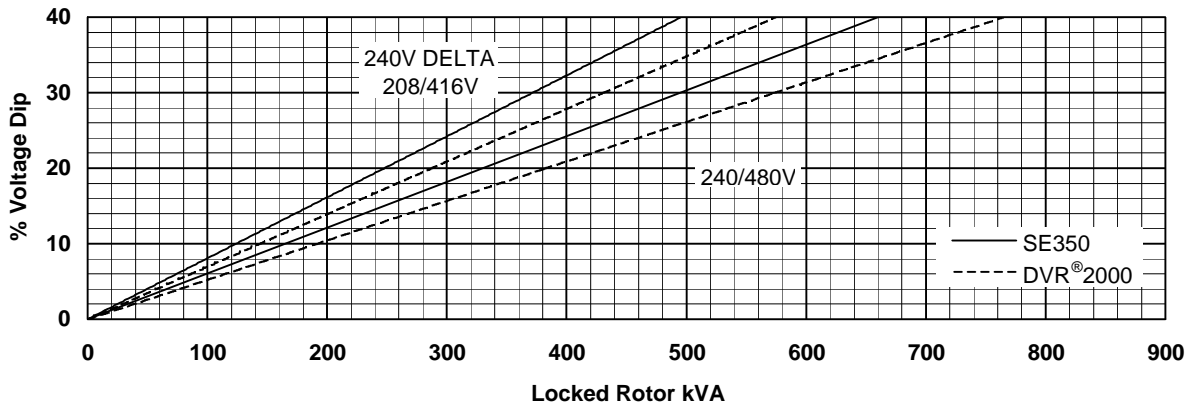
LOAD APPLICATION



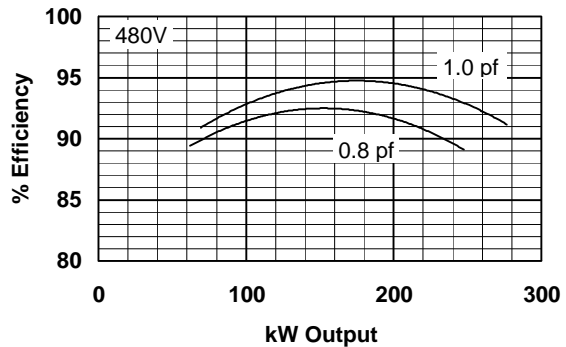
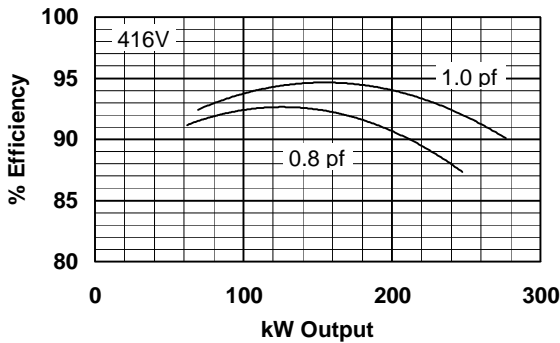
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TYPICAL MOTOR STARTING CHARACTERISTICS



TYPICAL GENERATOR EFFICIENCY



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