

MARATHON ELECTRIC MAGNAPLUS GENERATORS

Section 3600

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Basic Model 431PSL6204

Test Report No. WC1901

Date: 1-1-00

TYPICAL SUBMITTAL DATA

kW (kVA)	1800 RPM			60 Hertz			12 Leads		
	3 Phase			0.8 Power Factor			Dripproof or Open Enclosure		
	Class B	Class F			Class H				
	80° C ①	90° C ①	95° C ①	105° C † British Standard	105° C ①	130° C ①	125° C † British Standard	125° C ①	150° C ①
Voltage*	Continuous	Lloyds	ABS	Continuous	Standby	Standby	Continuous	Standby	Standby
240/480	143 (179)	155 (194)	160 (200)	170 (213)	170 (213)	181 (226)	170 (213)	180 (225)	190 (238)
230/460	144 (180)	155 (194)	160 (200)	170 (213)	170 (213)	182 (228)	171 (214)	180 (225)	188 (235)
220/440	143 (179)	155 (194)	160 (200)	167 (209)	167 (209)	180 (225)	168 (210)	177 (221)	185 (231)
208/416	142 (178)	152 (190)	156 (195)	165 (206)	165 (206)	176 (220)	165 (206)	175 (219)	182 (228)
190/380	136 (170)	145 (181)	150 (188)	155 (194)	155 (194)	167 (209)	156 (195)	165 (206)	172 (215)

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

† Rating per BS 5000.

Submittal Data: 240/480 Volts*, 219 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 (Distortion Factor)	5.0%
	Exciter Stator	1500 Volts	601.4a	L-L Harmonic Maximum - Single	3.0%
	Exciter Rotor	1500 Volts	601.1c	Deviation Factor	5.0%
	PMG Stator	1500 Volts**	---	TIF (1960 Weightings)	<50
401.1a	Stator Resistance, Line to Line		625.1c	Mechanical Strength (High Wye Connection, Sustained 3 Phase Short Circuit Current) ⁽³⁾	< 300%
	High Wye Connection	0.049 Ohms	652.1a	Shaft Current	< 0.1 ma
	Rotor Resistance	0.656 Ohms	652.1a	Main Stator Capacitance to Ground	0.013 mfd
	Exciter Stator	18.5 Ohms			
	Exciter Rotor	0.116 Ohms			
	PMG Stator	2.1 Ohms**			
410.1a	No Load Exciter Field Amps at 480 Volts Line to Line	0.64 A DC			
420.1a	Short Circuit Ratio	0.43			
421.1a	Xd Synchronous Reactance	2.788 pu			
422.1a	X2 Negative Sequence Reactance	0.407 pu			
423.1a	X0 Zero Sequence Reactance	0.024 pu			
425.1a	X'd Transient Reactance	0.178 pu			
426.1a	X"d Subtransient Reactance	0.161 pu			
--	Xq Quadrature Synchronous Reactance	1.371 pu			
427.1a	T'd Transient Short Circuit Time Constant	0.062 sec.			
428.1a	T"d Subtransient Short Circuit Time Constant	0.013 sec.			
430.1a	T'do Transient Open Circuit Time Constant	1.46 sec.			
432.1a	Ta Short Circuit Time Constant of Armature Winding	0.017 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.

**Additional Prototype Mil-Std Methods
are Available on Request.**

--	Generator Frame	431
--	Type	Ext. Voltage Regulated, Brushless
--	Insulation	Class H
--	Coupling - Single Bearing	Flexible
--	Amortisseur Windings	Full
--	Cooling Air Volume	1100 CFM
--	Exciter	Rotating
--	Voltage Regulator	SE350***
--	Voltage Regulation	1%***
--	Sensing	1 Phase***

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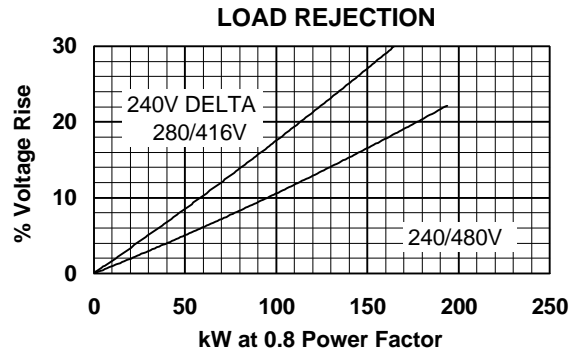
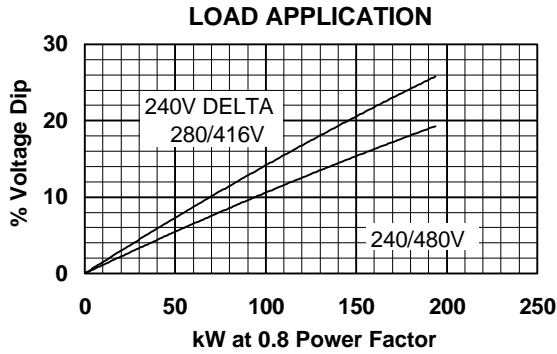
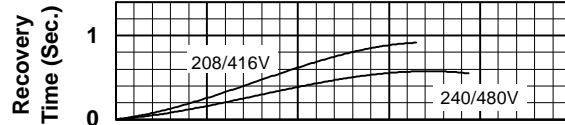
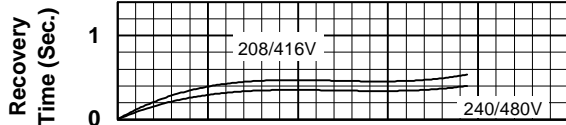
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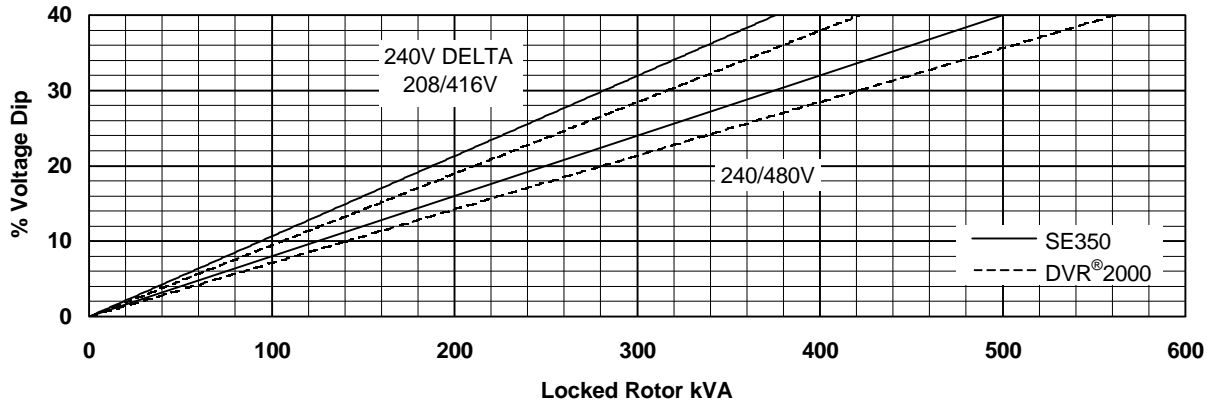
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TYPICAL DYNAMIC CHARACTERISTICS

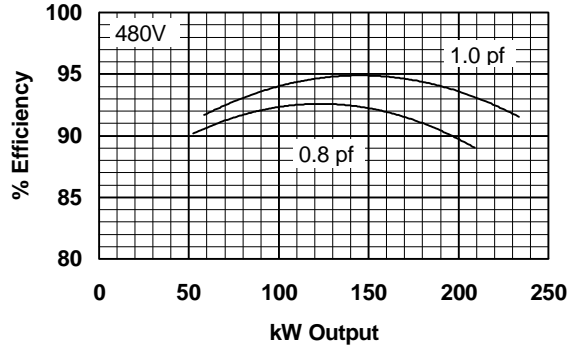
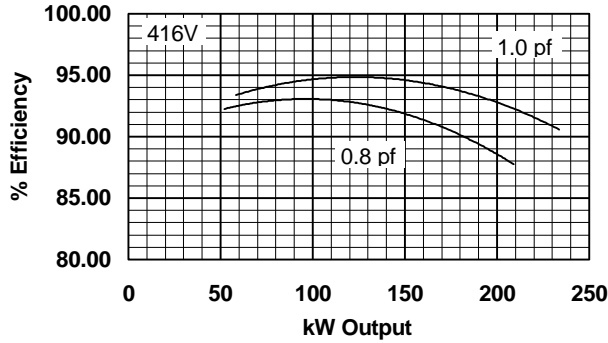
60 HERTZ



TYPICAL MOTOR STARTING CHARACTERISTICS



TYPICAL GENERATOR EFFICIENCY



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