

# MARATHON ELECTRIC MAGNAPLUS GENERATORS

Section 3600

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Basic Model 431PSL6204

Test Report No. WC1901

Date: 1-1-00

## TYPICAL SUBMITTAL DATA

Kilowatt ratings at kW (kVA)	1500 RPM			50 Hertz			12 Leads		
	3 Phase			0.8 Power Factor			Dripproof or Open Enclosure		
	Class B	Class F			Class H				
Voltage*	80° C ① Continuous	90° C ① Lloyds	95° C ① ABS	105° C British Standard	105° C ① Continuous	130° C ① Standby	125° C British Standard	125° C ① Continuous	150° C ① Standby
220/440	100 (125)	112 (140)	114 (143)	121 (151)	121 (151)	133 (166)	125 (156)	130 (163)	138 (173)
208/415	112 (140)	120 (150)	124 (155)	132 (165)	132 (165)	141 (176)	133 (166)	140 (175)	146 (183)
200/400	113 (141)	122 (153)	128 (160)	132 (165)	132 (165)	144 (180)	135 (169)	140 (175)	148 (185)
190/380	115 (144)	124 (155)	128 (160)	133 (166)	133 (166)	144 (180)	135 (169)	141 (176)	148 (185)
173/346	113 (141)	121 (151)	124 (155)	130 (163)	130 (163)	140 (175)	131 (164)	137 (171)	144 (180)

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

Rating per BS 5000.

Submittal Data: 208/415 Volts*, 175 kVA, 1500 RPM, 50 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	1875 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) <sup>(3)</sup>	< 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	0.71 A DC			
420.1a	Short Circuit Ratio	0.66			
421.1a	Xd Synchronous Reactance	2.383 pu			
422.1a	X2 Negative Sequence Reactance	0.374 pu			
423.1a	X0 Zero Sequence Reactance	0.04 pu			
425.1a	X'd Transient Reactance	0.153 pu			
426.1a	X''d Subtransient Reactance	0.138 pu			
--	Xq Quadrature Synchronous Reactance	1.223 pu			
427.1a	T'd Transient Short Circuit Time Constant	0.049 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.			

<sup>(3)</sup> 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<sup>®</sup>2000 voltage regulator supplied with PMG option. DVR<sup>®</sup>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	915 CFM
--	Exciter	Rotating
--	Voltage Regulator	SE350***
--	Voltage Regulation	1%***
--	Sensing	1 Phase***

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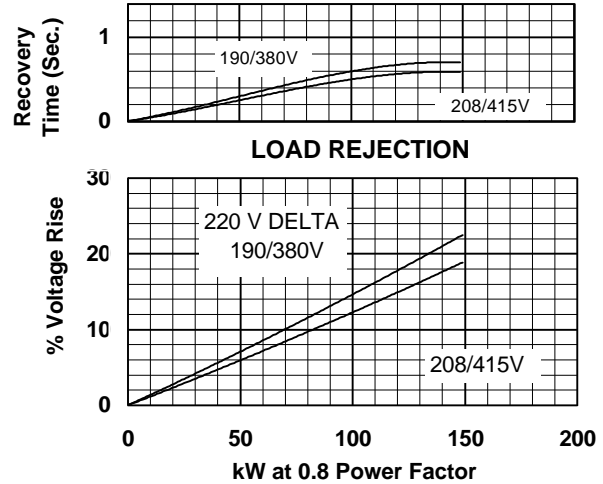
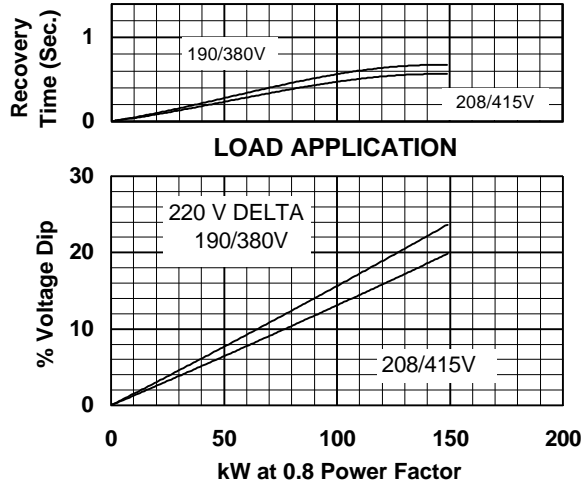
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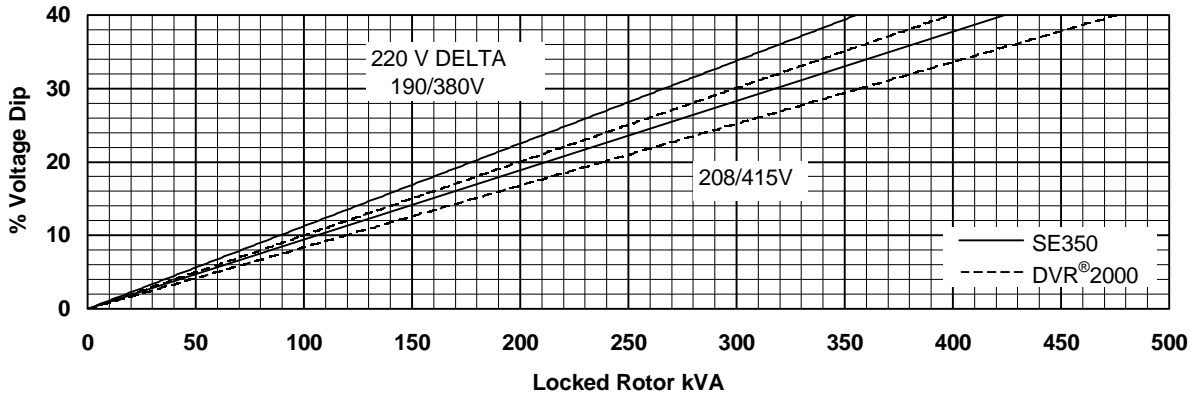
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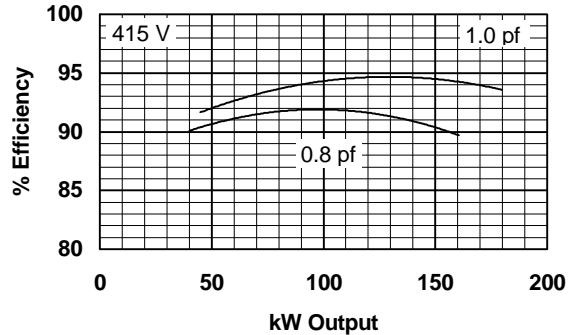
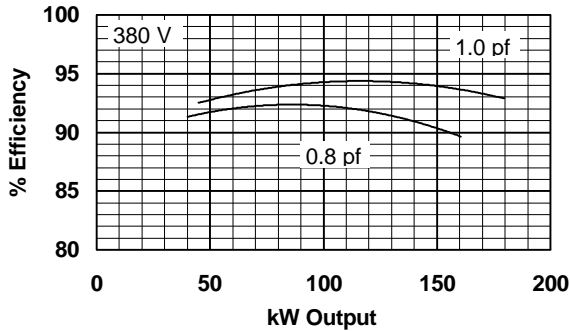
## TYPICAL DYNAMIC CHARACTERISTICS 50 HERTZ



## TYPICAL MOTOR STARTING CHARACTERISTICS



## TYPICAL GENERATOR EFFICIENCY



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