MARATHON ELECTRIC GENERATORS

TYPICAL SUBMITTAL DATA

MODEL : 743RSL4050

BASE MODEL: 743RSL4050 **Winding H-SG 740051**

Submittal Data: 415 Volts*, 1309.6 kW, 1637 kVA, 0.8 P.F., 1500 RPM, 50 Hz, 3 Phase

10/24/2001

Kilowatt ratings at	**1500 RPM**		**50 Hertz**		**4 BARS**	**Standard 3 phase**		
kW (kVA)	**3 Phase**		**0.8 Power Factor**			**Dripproof or Open Enclosure**		
	Class B	**Class F**					**Class H**		
Voltage*	**80º C ① Continuous**	**90º C ① Lloyds**	**95º C ① ABS**	**105º C British Standard**	**105º C Continuous**	**130º C ① Standby**	**125º C British Standard**	**125º C Continuous**	**150º C ① Standby**
440	870 (1088)	970 (1213)	1010 (1263)	1080 (1350)	1080 (1350)	1170 (1463)	1140 (1425)	1170 (1463)	1250 (1563)
415	950 (1188)	1040 (1300)	1080 (1350)	1150 (1438)	1150 (1438)	1230 (1538)	1200 (1500)	1230 (1538)	1310 (1638)
400	990 (1238)	1070 (1338)	1000 (1250)	1160 (1450)	1160 (1450)	1250 (1563)	1200 (1500)	1240 (1550)	1310 (1638)
380	950 (1188)	1010 (1263)	960 (1200)	1090 (1363)	1090 (1363)	1200 (1500)	1170 (1463)	1170 (1463)	1250 (1563)
346	895 (1119)	950 (1188)	910 (1138)	1030 (1288)	1030 (1288)	1110 (1388)	1090 (1363)	1090 (1363)	1150 (1438)

①Rise by resistance method, Mil-Std-705, Method 680.1b. *British Standard Rating per BS 5000*

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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	0.20%
	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	0.0023 Ohms	---	THF (IEC, BS & NEMA Weightings)	< 2 %
	Rotor Resistance	0.889 Ohms	652.1a	Shaft Current	< 0.1 ma
	Exciter Stator	22 Ohms			
	Exciter Rotor	0.043 Ohms	---	Main Stator Capacitance to ground	0.06 mfd
	PMG Stator	2.1 Ohms			
410.1a	No Load Exciter Field Amps	0.73 A DC			
	at 415 Volts Line to Line			**Additional Prototype Mil-Std Methods**	
420.1a	Short Circuit Ratio	0.579		**are Available on Request.**	
421.1a	Xd Synchronous Reactance	2.33 p.u.	--	Generator Frame	743
		0.245 ohms	--	Type	MAGNAMAXDVR
422.1a	X2 Negative Sequence React.	0.207 pu	--	Insulation	Class H
		0.022 ohms	--	Coupling - Single Bearing	Flexible
423.1a	X0 Zero Sequence Reactance	0.061 pu	--	Amortisseur Windings	Full
		0.006 ohms	--	Excitation	Ext. Voltage Regulated, Brushless
425.1a	X'd Transient Reactance	0.146 pu	--	Voltage Regulator	DVR2000
		0.015 ohms	--	Voltage Regulation	0.25%
426.1a	X"d Subtransient Reactance	0.11 pu			
		0.012 ohms			
--	Xq Quadrature Synch. React.	1.13 pu	--	Cooling Air Volume	2789 CFM
		0.119 ohms			
427.1a	T'd Transient Short Circuit		--	Heat rejection rate	4064 Btu's/min
	Time Constant	0.162 sec.			
428.1a	T"d Subtransient Short Circuit		--	Full load current	2277 amps
	Time Constant	0.011 sec.			
430.1a	T'do Transient Open Circuit		--	Minimum Input hp required	1851.3
	Time Constant	2.88 sec.		Efficiency at rated load :	94.8%
432.1a	Ta Short Circuit Time				
	Constant of Armature Winding	0.028 sec.	--	Full load torque	6480 Lb-ft

(3) Excitation support system or PMG required to sustain short circuit currents.
** Voltages refer to wye (star) connection, unless otherwise specified.*

Data rev. : 06/01/92
Version : 2001.2

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TYPICAL DYNAMIC CHARACTERISTICS

MODEL : 743RSL4050

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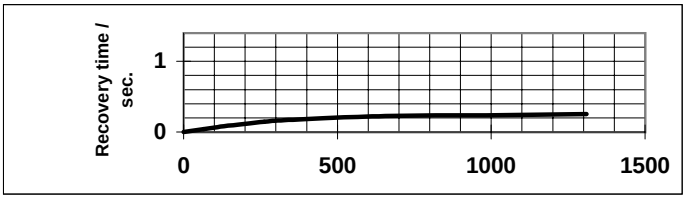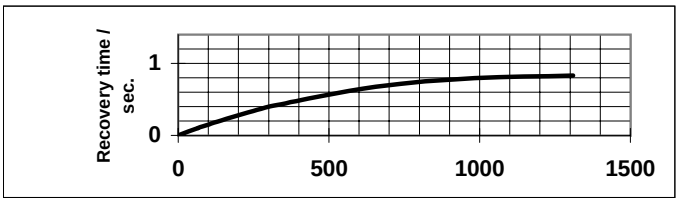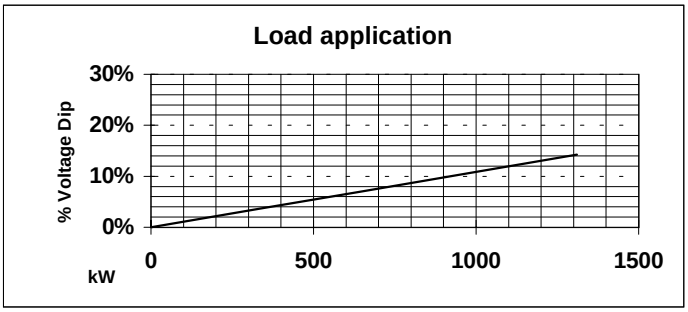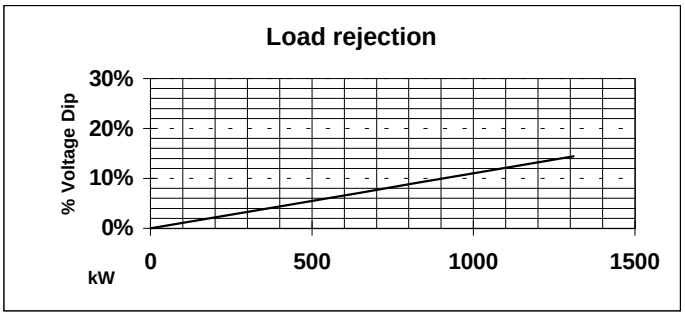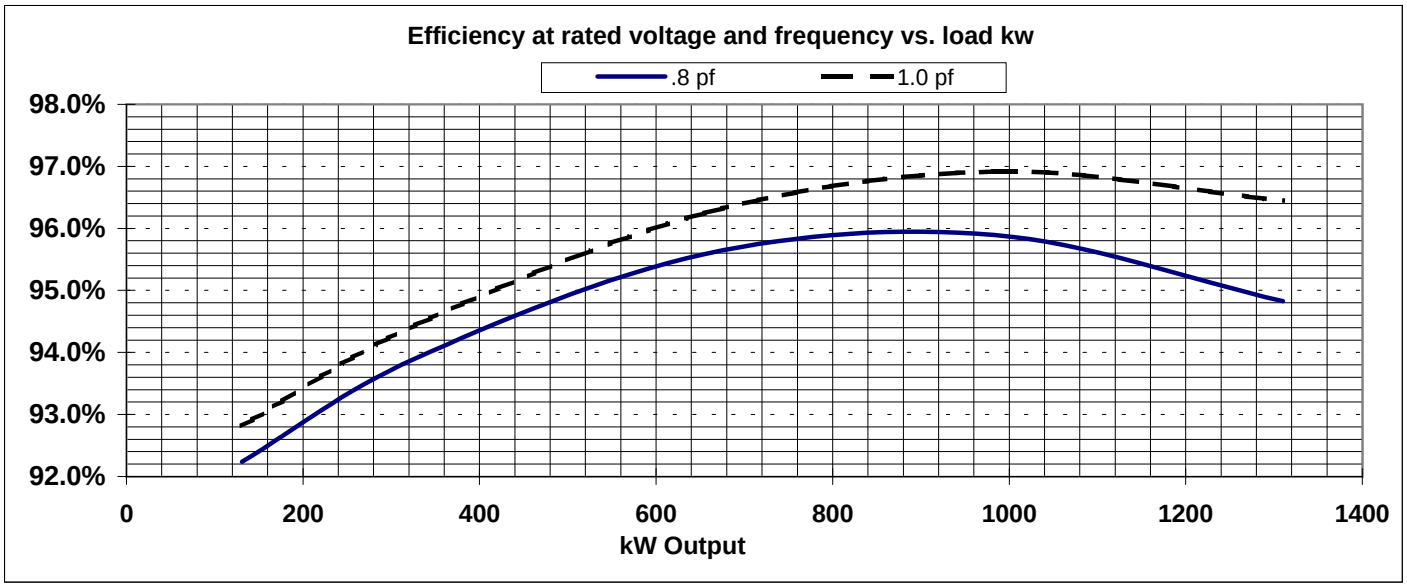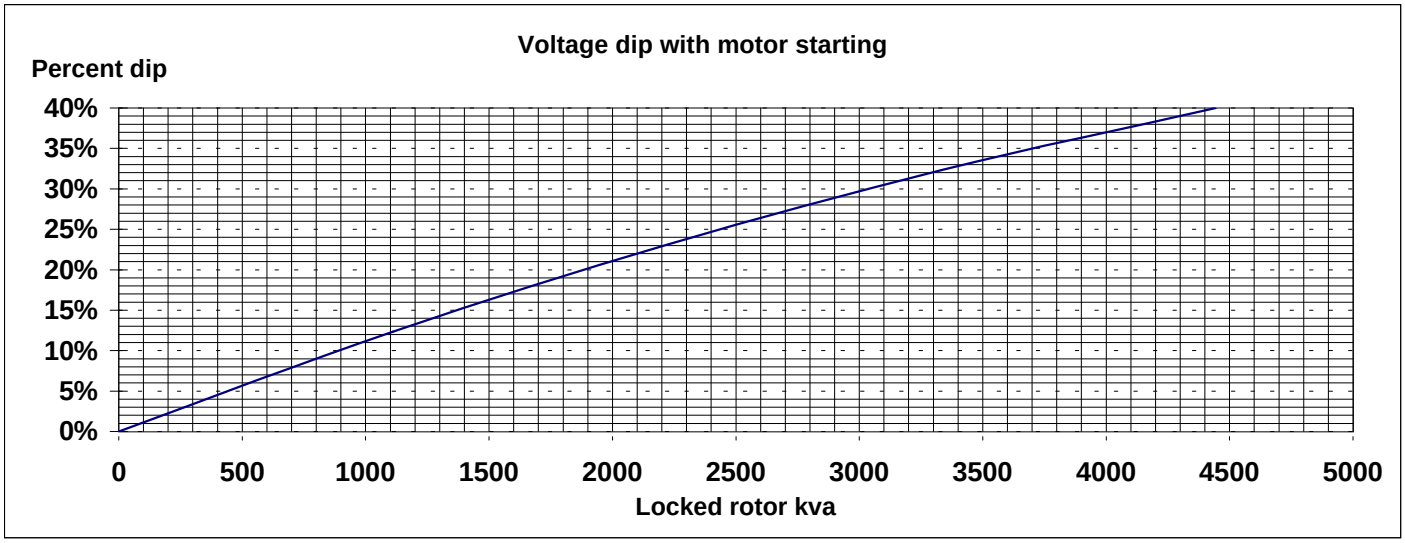
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