MARATHON ELECTRIC GENERATORS

TYPICAL SUBMITTAL DATA

MODEL : 743RSL4050

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

Submittal Data: 480 Volts*, 1500 kW, 1875 kVA, 0.8 P.F., 1800 RPM, 60 Hz, 3 Phase

10/24/2001

Kilowatt ratings at	**1800 RPM**		**60 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**
480	1220 (1525)	1320 (1650)	1220 (1525)	1430 (1788)	1430 (1788)	1500 (1875)	1430 (1788)	1500 (1875)	1520 (1900)
460	1210 (1513)	1290 (1613)	1200 (1500)	1390 (1738)	1390 (1738)	1500 (1875)	1430 (1788)	1480 (1850)	1530 (1913)
440	1160 (1450)	1240 (1550)	1150 (1438)	1340 (1675)	1340 (1675)	1450 (1813)	1420 (1775)	1420 (1775)	1500 (1875)
416	1110 (1388)	1180 (1475)	1100 (1375)	1270 (1588)	1270 (1588)	1370 (1713)	1340 (1675)	1340 (1675)	1410 (1763)
380	1020 (1275)	1080 (1350)	1020 (1275)	1160 (1450)	1160 (1450)	1160 (1450)	1160 (1450)	1160 (1450)	1160 (1450)

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

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Mil-Std-705B

Method	Description	Value
301.1b	Insulation Resistance	>1.5 Meg
302.1a	High Potential Test	
	Main Stator	2000 Volts
	Main Rotor	1500 Volts
	Exciter Stator	1500 Volts
	Exciter Rotor	1500 Volts
	PMG Stator	1500 Volts
401.1a	Stator Resistance, Line to Line	
	High Wye Connection	0.0023 Ohms
	Rotor Resistance	0.889 Ohms
	Exciter Stator	22 Ohms
	Exciter Rotor	0.043 Ohms
	PMG Stator	2.1 Ohms
410.1a	No Load Exciter Field Amps	0.62 A DC
	at 480 Volts Line to Line	
420.1a	Short Circuit Ratio	0.484
421.1a	Xd Synchronous Reactance	2.67 p.u.
		0.328 ohms
422.1a	X2 Negative Sequence React.	0.226 pu
		0.028 ohms
423.1a	X0 Zero Sequence Reactance	0.067 pu
		0.008 ohms
425.1a	X'd Transient Reactance	0.16 pu
		0.02 ohms
426.1a	X"d Subtransient Reactance	0.121 pu
		0.015 ohms
--	Xq Quadrature Synch. React.	1.1 pu
		0.135 ohms
427.1a	T'd Transient Short Circuit	
	Time Constant	0.162 sec.
428.1a	T"d Subtransient Short Circuit	
	Time Constant	0.011 sec.
430.1a	T'do Transient Open Circuit	
	Time Constant	2.88 sec.
432.1a	Ta Short Circuit Time	
	Constant of Armature Winding	0.028 sec.

Mil-Std-705B

Method	Description	Value
505.3b	Overspeed	2250 RPM
507.1c	Phase Sequence CCW-ODE	ABC
508.1c	Voltage Balance, L-L or L-N	0.20%
601.4a	L-L Harmonic Maximum - Total	5.0%
	(Distortion Factor)	
601.4a	L-L Harmonic Maximum - Single	3.0%
601.1c	Deviation Factor	5.0%
---	TIF (1960 Weightings)	< 50
---	THF (IEC, BS & NEMA Weightings)	< 2 %
652.1a	Shaft Current	< 0.1 ma
---	Main Stator Capacitance to ground	0.06 mfd

Additional Prototype Mil-Std Methods are Available on Request.

--	Generator Frame	743
--	Type	MAGNAMAXDVR
--	Insulation	Class H
--	Coupling - Single Bearing	Flexible
--	Amortisseur Windings	Full
--	Excitation	Ext. Voltage Regulated, Brushless
--	Voltage Regulator	DVR2000
--	Voltage Regulation	0.25%
--	Cooling Air Volume	3329 CFM
--	Heat rejection rate	4468 Btu's/min
--	Full load current	2255 amps
--	Minimum Input hp required	2116.0
	Efficiency at rated load :	95.0%
--	Full load torque	6172 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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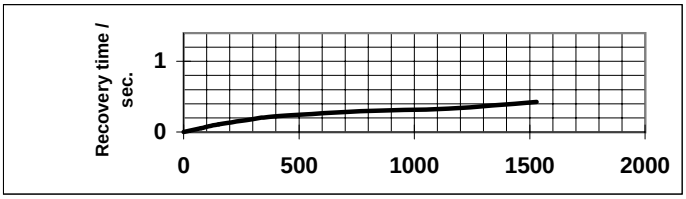
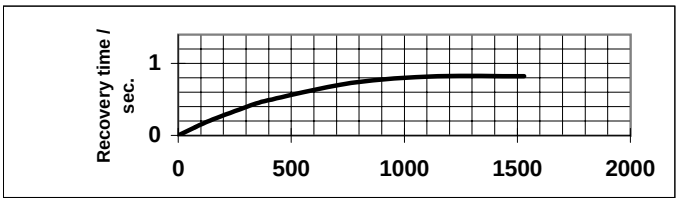
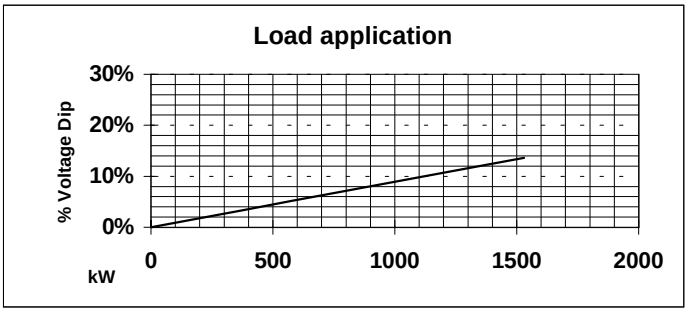
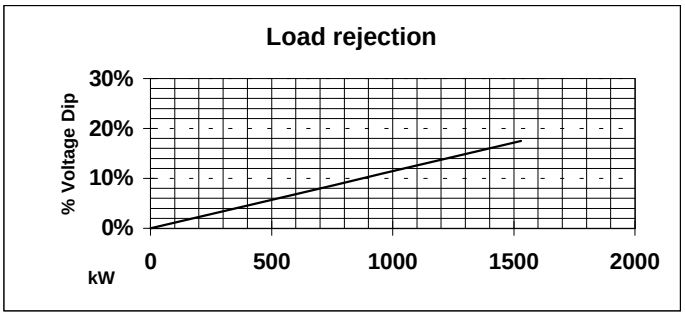
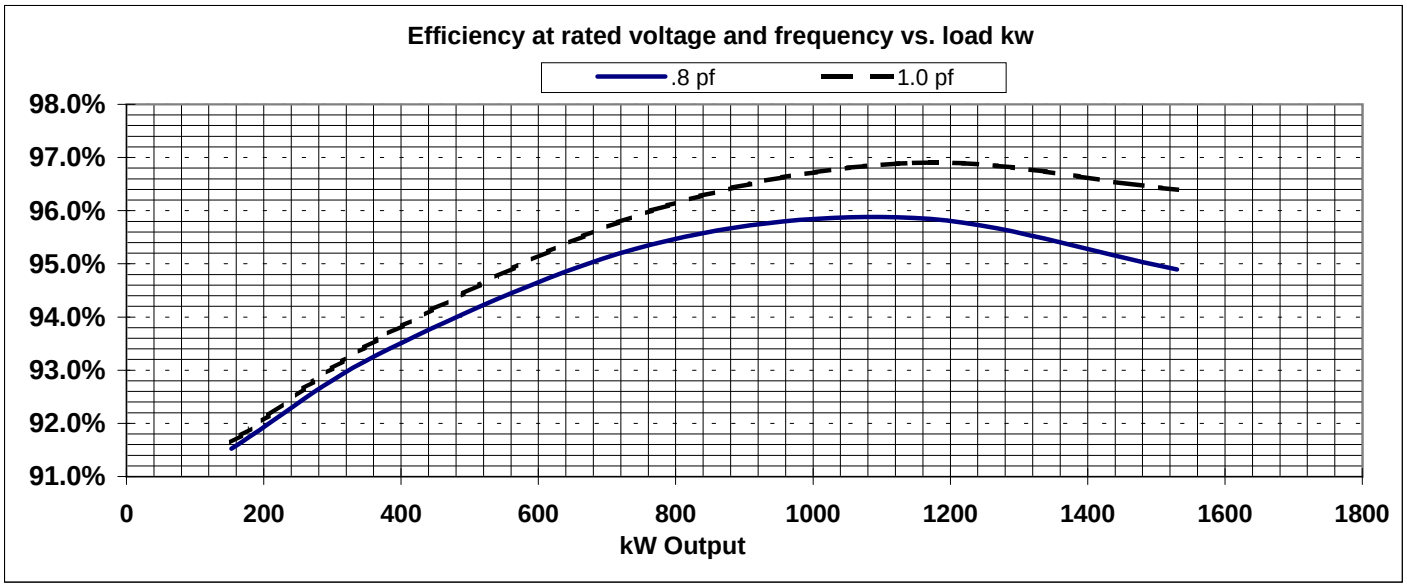
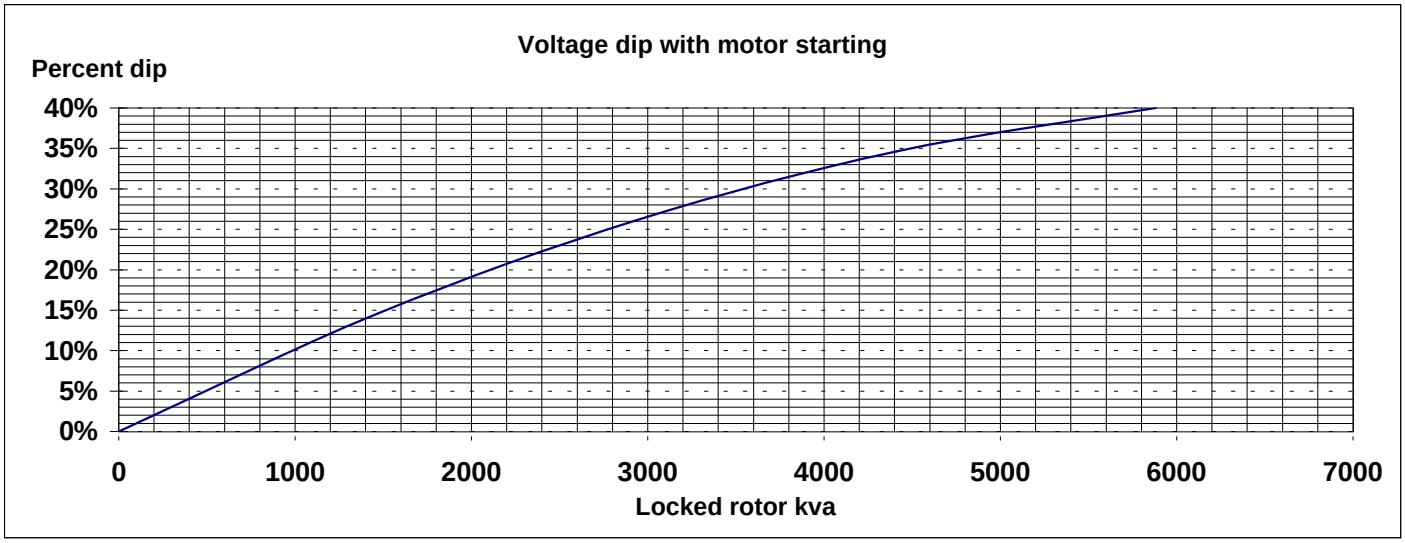
TYPICAL DYNAMIC CHARACTERISTICS

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