# MARATHON ELECTRIC GENERATORS

## TYPICAL SUBMITTAL DATA

**MODEL : 742RSL4048**

**BASE MODEL: 742RSL4048** **Winding H-SG 740043**

**Submittal Data: 480 Volts*, 1300 kW, 1625 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** | 1000 (1250) | 1100 (1375) | 1130 (1413) | 1200 (1500) | 1200 (1500) | 1300 (1625) | 1200 (1500) | 1260 (1575) | 1300 (1625) |
| **460** | 1020 (1275) | 1100 (1375) | 1020 (1275) | 1190 (1488) | 1190 (1488) | 1290 (1613) | 1210 (1513) | 1260 (1575) | 1290 (1613) |
| **440** | 1000 (1250) | 1060 (1325) | 1000 (1250) | 1140 (1425) | 1140 (1425) | 1240 (1550) | 1220 (1525) | 1220 (1525) | 1280 (1600) |
| **416** | 950 (1188) | 1010 (1263) | 940 (1175) | 1100 (1375) | 1100 (1375) | 1180 (1475) | 1160 (1450) | 1160 (1450) | 1250 (1563) |
| **380** | 900 (1125) | 955 (1194) | 890 (1113) | 1030 (1288) | 1030 (1288) | 1030 (1288) | 1030 (1288) | 1030 (1288) | 1030 (1288) |

*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 | 0.003 Ohms |
| | Rotor Resistance | 0.776 Ohms |
| | Exciter Stator | 22 Ohms |
| | Exciter Rotor | 0.043 Ohms |
| | PMG Stator | 2.1 Ohms |
| 410.1a | No Load Exciter Field Amps | 0.79 A DC |
| | at 480 Volts Line to Line | |
| 420.1a | Short Circuit Ratio | 0.617 |
| 421.1a | Xd Synchronous Reactance | 2.25 p.u. |
| | | 0.319 ohms |
| 422.1a | X2 Negative Sequence React. | 0.212 pu |
| | | 0.03 ohms |
| 423.1a | X0 Zero Sequence Reactance | 0.063 pu |
| | | 0.009 ohms |
| 425.1a | X'd Transient Reactance | 0.163 pu |
| | | 0.023 ohms |
| 426.1a | X"d Subtransient Reactance | 0.119 pu |
| | | 0.017 ohms |
| -- | Xq Quadrature Synch. React. | 1.1 pu |
| | | 0.156 ohms |
| 427.1a | T'd Transient Short Circuit | |
| | Time Constant | 0.162 sec. |
| 428.1a | T"d Subtransient Short Circuit | |
| | Time Constant | 0.001 sec. |
| 430.1a | T'do Transient Open Circuit | |
| | Time Constant | 2.55 sec. |
| 432.1a | Ta Short Circuit Time | |
| | Constant of Armature Winding | 0.027 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 | 0.047 mfd |

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

| | | |
|---|---|---|
| -- | Generator Frame | 742 |
| -- | 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 | 3430 CFM |
| -- | Heat rejection rate | 4121 Btu's/min |
| -- | Full load current | 1955 amps |
| -- | Minimum Input hp required | 1839.8 |
| | Efficiency at rated load : | 94.7% |
| -- | Full load torque | 5366 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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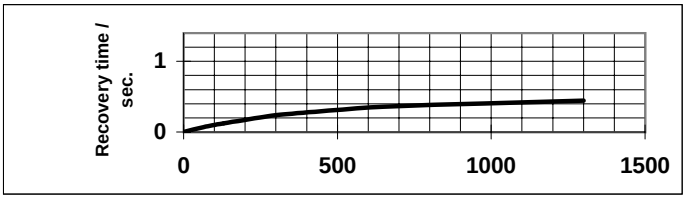
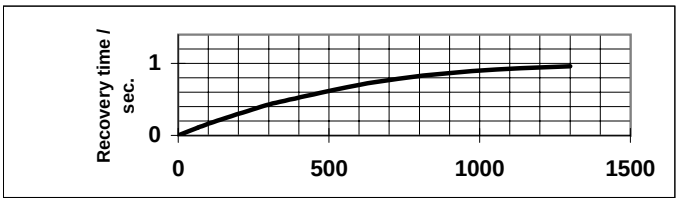
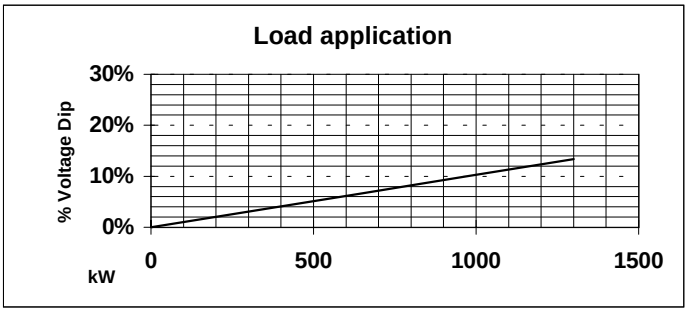
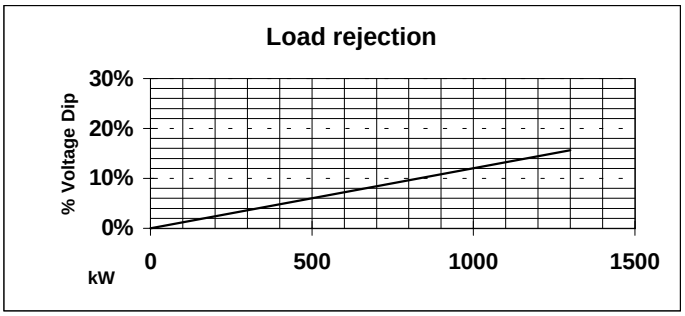
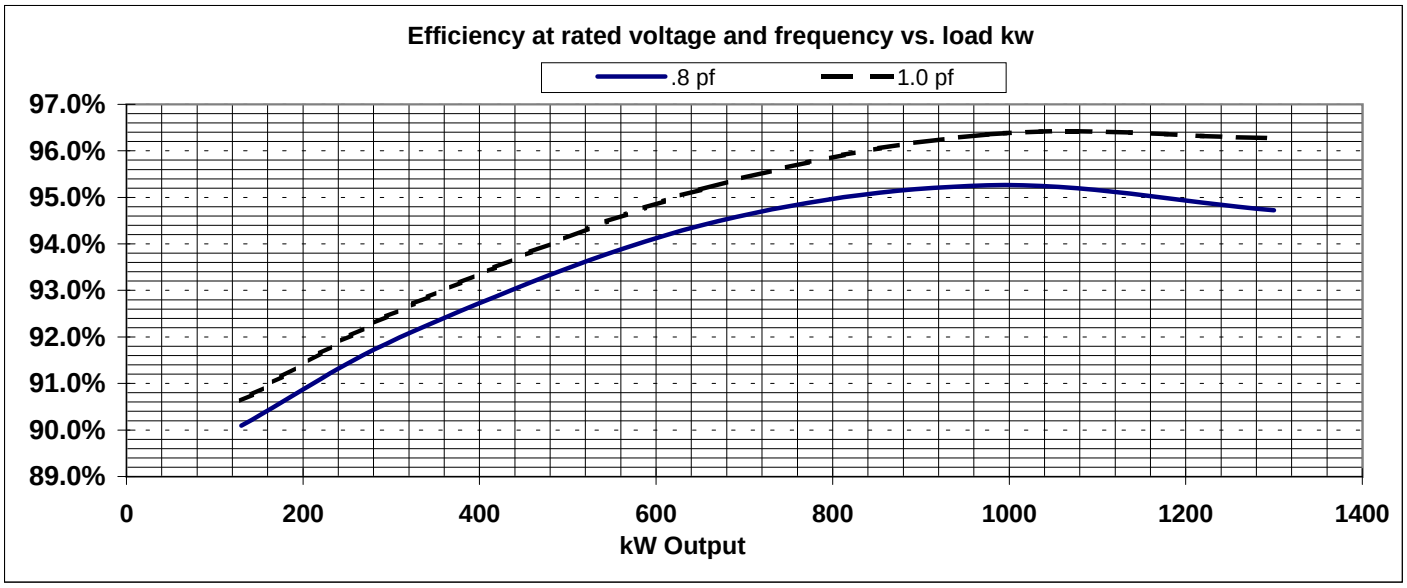
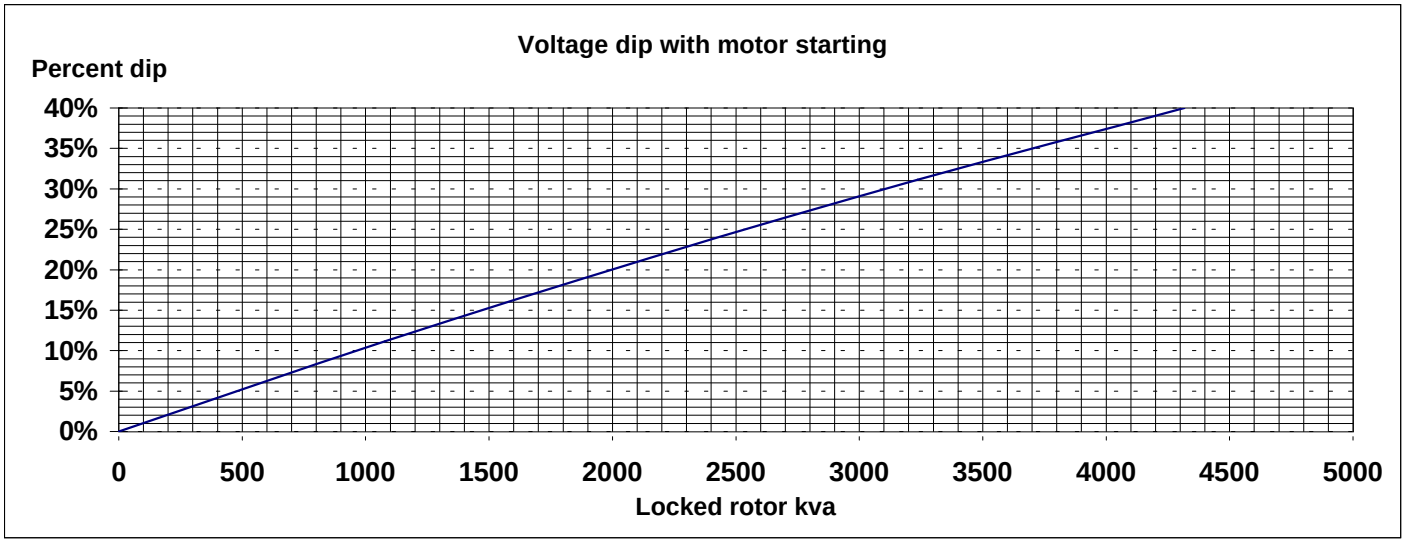
## TYPICAL DYNAMIC CHARACTERISTICS

**MODEL : 742RSL4048**

**BASE MODEL: 742RSL4048** **Winding H-SG 740043**

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