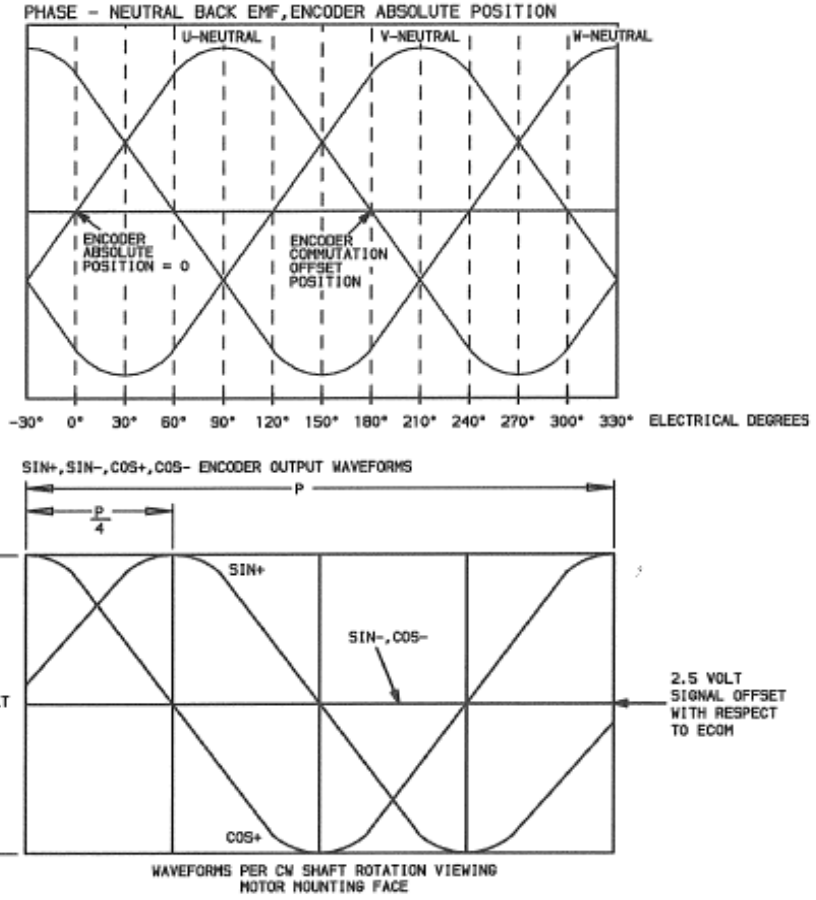
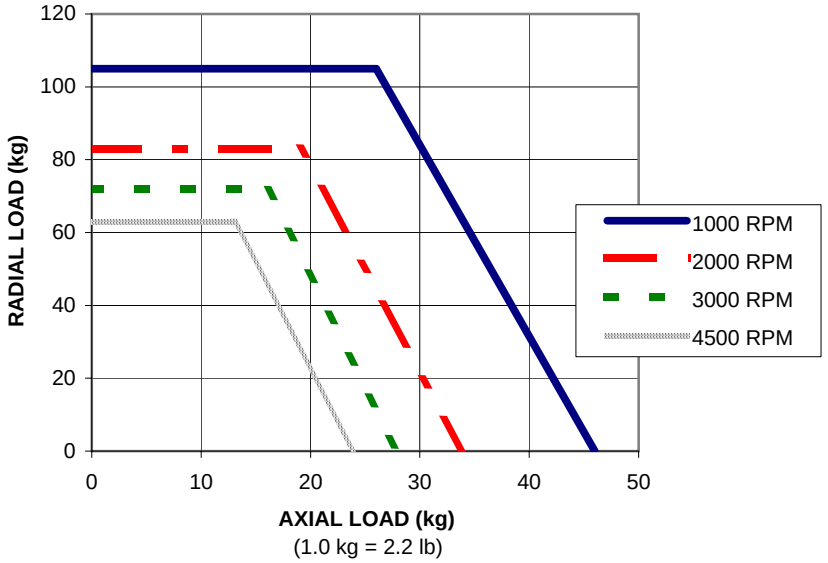


SHAFT LOAD RATING for 20,000 hour L10 bearing life
and RADIAL LOAD applied mid-way along shaft extension



NOTES:

Rockwell Automation	CONFIDENTIAL AND PROPRIETARY INFORMATION THIS DOCUMENT CONTAINS CONFIDENTIAL AND PROPRIETARY INFORMATION OF ROCKWELL AUTOMATION, INC. AND MAY NOT BE USED, COPIED OR DISCLOSED TO OTHERS, EXCEPT WITH THE AUTHORIZED WRITTEN PERMISSION OF ROCKWELL AUTOMATION, INC.	Engineering Specification Electrical **MPM-A1302F-MJ74AA** Dr. Scott Johnson Date 08-26-09	Sheet 1 of 5 Size **A**	**10000073869**	Ver **01**

General Specifications:

1. Motor type: 3 phase, wye winding, permanent magnet rotor, totally enclosed, non-ventilated.

2. Motor poles:	8
3. Operating Speed, max	4500 RPM
4. Base speed (max speed at peak torque), Ref:	3100 RPM
5. Operating voltage at base speed:	220 VAC RMS
6. Continuous stall torque, max, at max winding temperature in a 40C ambient:	5.99 Nm (53 lb-in)
7. Winding temperature, max, in a 40C ambient:	140 degrees C
8. Continuous stall current, max:	17.28 Amps 0 to peak
9. Heatsink size, aluminum, attached to front mounting flange for continuous torque specifications:	305 x 305 x 12.7mm (12 x 12 x 0.5 inch)
10. Peak stall torque, max:	13.5 Nm (119 lb-in)
11. Peak stall current, max:	50.28 Amps 0 to peak
12. Rated Speed (Speed at max continous power)	4000
13. Continuous output rating, max at rated speed:	1.65 kW (2.21 hp)
14. Continuous torque, max, at rated speed:	3.9 Nm (35 lb-in)
15. Continuous current, Ref, at rated speed:	10.5 Amps 0 to peak
16. Operating voltage, Ref (Not for direct connection to AC line):	240 VAC RMS
17. Insulation class:	155C (Class F)
18. Housing temperature, max:	125C (257F)
19. Ke, +/-10%, phase to phase at 25C +/- 5C:	50 V/kRPM 0 to peak
20. Kt (sine), Ref, at 25C +/- 5C:	0.41 Nm/Amp (3.66 lb-in/Amp) 0 to peak
21. Winding resistance, +/- 10%, phase to phase at 25C +/- 5C:	0.591 ohms
22. Winding inductance, Ref, phase to phase:	5.09 mH
23. Dielectric rating of motor power connections (U,V,W), to ground for 1 second:	1800 VAC RMS 50/60 Hz
24. Audible noise, Ref, at 1 meter distance:	XX dBA
25. Rotor inertia, +/- 10%:	0.000983 kg-m² (0.00870 lb-in-sec²)
26. Rotor balancing quality grade:	G-6.3
27. Friction torque, Ref:	0.114 Nm (1.01 lb-in)
28. Friction torque, Ref, with shaft seal option installed:	0.14 Nm (1.2 lb-in)
29. Cogging torque, Ref:	0.037 Nm (0.33 lb-in) peak to peak
30. Thermal resistance, Ref, winding to ambient:	0.57 degrees C/watt
31. Thermal time constant, Ref, winding to ambient:	26.5 minutes
32. Product weight, Ref:	8.6 kg (19 lb)
33. Shipping weight, Ref:	9.94 kg (21.9 lb)
34. Operating ambient temperature:	0C to 40C (32F to 104F)

Notes:

1. "Ref" denotes untoleranced specifications, provided for reference only.
2. Speed, torque and current specifications are for operation with Allen Bradley drives.

General Specifications, continued:

35. Storage ambient temperature:	-30C to 70C (-22F to 158F)
36. Relative humidity, non-condensing:	5% to 95%
37. Liquid / dust protection:	IP66
38. Shock, max, 6 msec duration:	20 g peak
39. Vibration, max, 30 to 2000 Hz:	2.5 g peak
40. Shaft material:	Steel, 1144
41. Paint, color:	Black

42. Shaft, key (if provided), front mounting surface, and connector mating surfaces are not painted.

Feedback Specifications:

1. SIN, COS waveform output:	1024 sinusoids/rev
2. SIN, COS waveform amplitude, ± 10%:	1.0 VAC peak to peak
3. SIN -, COS - voltage offset with respect to ECOM ±0.3 VDC:	2.5 VDC
4. EPWR 5V (encoder power) input voltage:	4.5 to 12.0 VDC
5. EPWR 5V continuous input current,max, at 5.0 VDC:	125 mADC
6. EPWR 5V inrush input current, max, when connected to Kinetix6000 drive:	3.2 ADC
7. EPWR 9V (encoder power) input voltage:	N/A
8. EPWR 9V continuous input current,max, at 9.0 VDC:	N/A
9. EPWR 9V inrush input current, max, when connected to Kinetix6000 drive:	N/A
10. TS+, TS- thermostat operating voltage, max:	250 Volts
11. TS+, TS- thermostat continuous current, max, at 0.6 power factor:	1.6 Amps
12. TS+, TS- thermostat continuous current, max, at 1.0 power factor:	2.5 Amps
13. DATA+, DATA- signal type, rate, asynchronous:	RS 485, 9600 baud

14. Communication hierarchy: Encoder is slave, communication is externally initiated.

15. Single turn absolute position value range:	0 to 32,767 (15 bit)

16. Absolute position data: Binary, value increases with CW shaft rotation viewing motor mounting face.
17. Data (byte) format: Start bit, 8 data bits, parity bit, stop bit.

18. Memory storage capacity, EEPROM:	128 bytes

19. Encoder temperature data: Binary value of encoder temperature in degrees C.

Notes:

1. "Ref" denotes untoleranced specifications, provided for reference only.

Brake Specifications:

1. Type: Spring-set holding brake, releases when voltage applied.
2. Holding torque, max: ..... 10.2 Nm (90 lb-in)
3. Voltage input, +15/-10%, may be applied either polarity: ..... 24 VDC
4. Current input, +/- 10%, at 24 VDC, at 25C +/- 5C: ..... 0.64 ADC
5. Coil resistance, +/-10%, at 25C +/- 5C: ..... 38 Ohms
6. Coil resistance, +/-10%, with motor operating at max continuous stall torque rating in a 40C ambient: ..... 42 Ohms
7. Release time delay (when voltage applied), Ref: ..... 110 msec
8. Engage time delay, (when voltage removed), Ref, with diode used as arc suppression device in external control circuit: ..... 160 msec
9. Engage time delay, (when voltage removed), Ref, with MOV used as arc suppression device in external control circuit: ..... 25 msec
10. Rotational backlash, Ref, with brake engaged: ..... 48 arc minutes
11. Dielectric rating of brake connections (MBRK+, MBRK-) to ground for 1 second: ..... 1200 VAC RMS 50/60 Hz

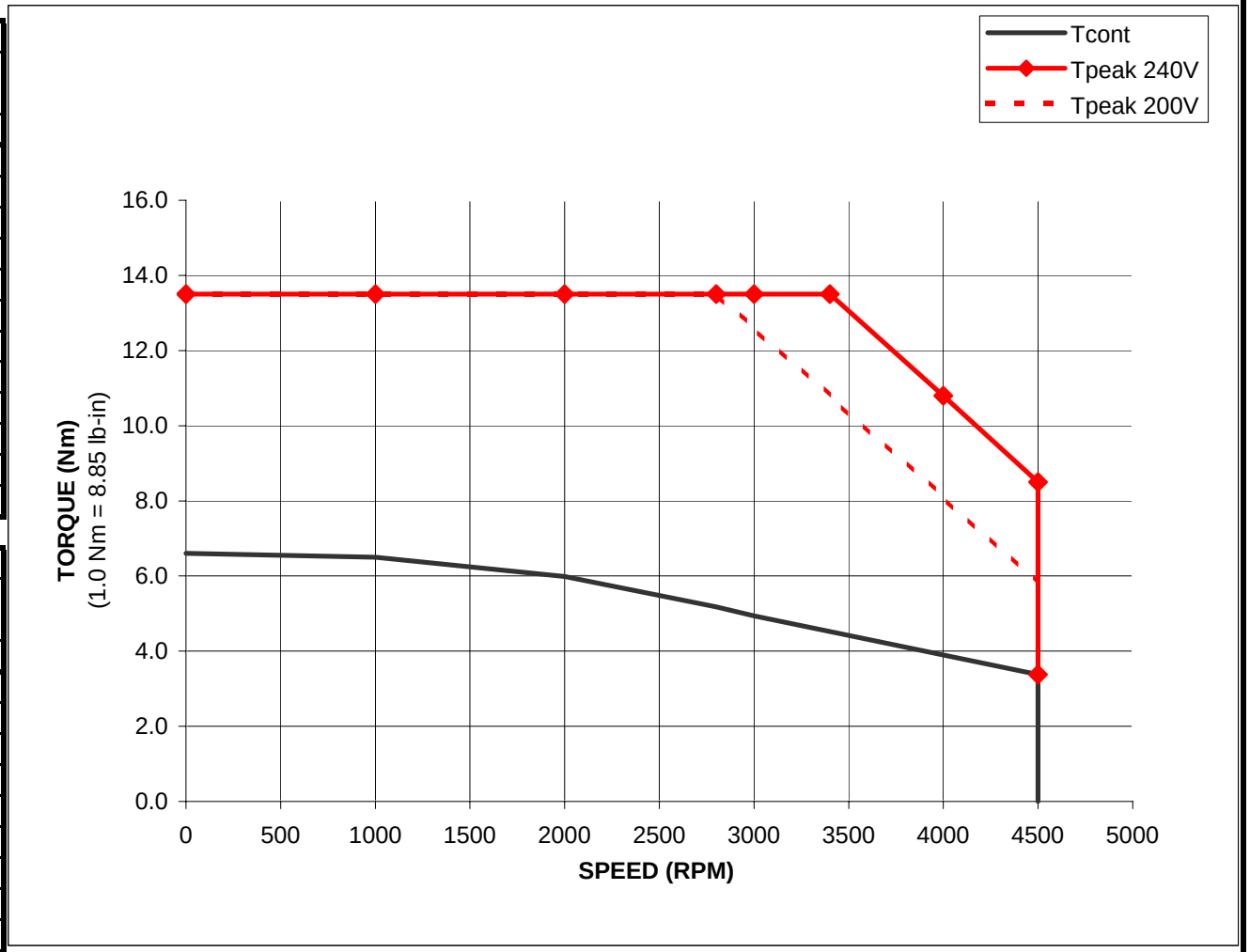
Notes:

1. "Ref" denotes untoleranced specifications, provided for reference only.

MPM-A1302F-Mxx4xx Performance with 2094-AC16-M03, 3 Phase at 240 VAC Drive Input, 40C Motor Ambient

SPEED RPM	TORQUE		
	Tcont	Tpeak 240V	Tpeak 200V
	Nm	Nm	Nm
0	6.6	13.5	13.5
1000	6.5	13.5	13.5
2000	5.99	13.5	13.5
2800	5.18	13.5	13.5
3000	4.94	13.5	12.6
3400	4.52	13.5	10.8
4000	3.9	10.8	8.1
4500	3.38	8.5	5.8
4500	0	3.38	#N/A
#N/A	#N/A	#N/A	#N/A
#N/A	#N/A	#N/A	#N/A
#N/A	#N/A	#N/A	#N/A

SPEED RPM	TORQUE		
	Tcont	Tpeak 240V	Tpeak 200V
	lb-in	lb-in	lb-in
0	58.4	119.5	119.5
1000	57.5	119.5	119.5
2000	53.0	119.5	119.5
2800	45.8	119.5	119.5
3000	43.7	119.5	111.5
3400	40.0	119.5	95.6
4000	34.5	95.6	71.7
4500	29.9	75.2	51.3
4500	0.0	29.9	#N/A
#N/A	#N/A	#N/A	#N/A
#N/A	#N/A	#N/A	#N/A
#N/A	#N/A	#N/A	#N/A



Notes:

1. Nm torque values shown are converted from tested lb-in data.

Engineering Specification Electrical

MPM-A1302F-MJ74AA

Dr. Scott Johnson | Date 08-26-09