

WAVEFORMS PER CW SHAFT ROTATION VIEWING
MOTOR MOUNTNG FACE

2.5 VOLT
SIGNAL OFFSET
WITH RESPECT
TO COMMON

RADIAL LOAD CAPACITY (Kgs) - NO AXIAL LOAD - FOR L10 LIFE OF 10,000 HOURS				
Radial Load Capacity at the End of the Shaft (Kgs)				
2500 RPM	1750 RPM	1150 RPM	850 RPM	
350	390	450	500	
AXIAL THRUST CAPACITY (Kgs) - NO RADIAL LOAD - FOR L10 LIFE OF 10,000 HOURS				
Horizontal Mounting Load Capacity at the End of the Shaft (Kgs)				
2500 RPM	1750 RPM	1150 RPM	850 RPM	
250	290	330	360	

01	1021552	VS	RELEASED		
REV	ECN	BY	REVISION DESCRIPTION	CHKR	DATE
PREPARED BY			DATE	DESIGN ENGINEER	DATE
VS			4/4/2006		
TITLE					
ES, ELEC, HPK-B1609E-MC44AA					
Allen-Bradley			PART NO.		
			L16M5217ESE		
			A SIZE	SHEET	1 OF 4

Notes: Print or enlarge waveforms for improved clarity.
For additional specifications see L16M5217ESM.

Specifications:

1. Motor type: 4 pole, 3 phase, asynchronous, ventilated
2. Base speed: 2965 RPM.
3. Maximum speed: 5000 RPM.
4. Continuous stall torque: 156 Nm (1381 lb-in) max at 155C winding temperature in a 40C
5. Peak stall torque: 270 Nm (2390 lb-in) max.
6. Continuous output rating: 48.4 kW (hp) max at 2965 RPM. Continuous current @ 2970 RPM 124.4 Amps 0 to peak max.(88.2 Amps.RMS)
7. Operating voltage: 460 VAC RMS Ref. (Not for direct connection to AC line).
8. Continuous stall current: 124.4 Amps 0 to peak max.(88.2 Amps.RMS)
9. Magnetizing current: 31.4 Amps. RMS ref.
10. Peak stall current: 217 Amps 0 to peak max.(154 Amps. RMS)
11. Insulation class: 180 (H).
12. Housing temperature: 125C max.
13. Winding resistance: .065 Nom. Ohms, phase to phase at 20C to 30C.
14. Winding inductance: 5.8 mH, phase to phase Ref.
15. Dielectric rating of motor power connections (U,V,W), and thermostat connections (TS+, TS-) to ground: 2350 VAC RMS 50/60 Hz for 1 second.
16. Rotor inertia: .147 kg-m² Ref.
18. Product weight: 240 kg (530 lb) Ref.
19. Operating ambient temperature: 0C to 40C (32F to 104F).
20. Storage ambient temperature: -30C to 70C (-22F to 158F).
21. Relative humidity: 5% to 95% non-condensing.
22. Liquid / dust protection: IP54 with blower installed.
23. Shock: 10 g peak max, 6 msec duration (18 occurrences tested).
24. Vibration: 2.5 g peak max, 30 to 2000 Hz.
25. Shaft material: Steel, grade 1040/1045.
26. Paint: Black. Shaft, key (if provided), flange mounting surface, and connectors are not painted.

Equivalent circuit parameters

X1: .288 Ohms/phs Ref at 20C to 30C.
X1: .319 Ohms/phs Ref at 20C to 30C.
Xm : 7.23 Ohms/phs Ref at 20C to 30C
R1: .0326 Ohms/phs Ref at 20C to 30C
R2: .0227 Ohms/phs Ref at 20C to 30C

BRAKE: 460VAC 20Nm max. holding torque

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

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Feedback Specifications:

Electrical Hardware:

1. SIN, COS waveform output: 1024 sinusoids/rev.
2. SIN, COS waveform amplitude: 0.9 to 1.1 Volts peak to peak.
3. SIN -, COS - voltage offset with respect to power input common: 2.2 to 2.8 VDC.
4. +5VDC voltage input: 4.5 to 12.0 VDC.
5. +5VDC current input: 125 mA DC max continuous, 1.0 A DC max inrush.
6. TS+, TS- thermostat operating voltage: 250 Volts max.
7. TS+, TS- thermostat operating current: 1.6/2.5 Amps max at 0.6/1.0 power factor.

Serial Communication:

1. DATA+, DATA- signal type, rate: RS 485, 9600 baud, asynchronous.
2. Communication hierarchy: Encoder is slave, communication is externally initiated.
3. Single turn absolute position value range: 0 to 32,767 steps (12 bit).
4. Multi-turn absolute shaft revolution value range: 0 to 32,767 revolutions (12bit).
5. Absolute position data: Binary, value increases with CW shaft rotation viewing motor mounting face.
6. Data (byte) format: Start bit, 8 data bits, parity bit, stop bit.
7. Memory storage capacity: 128 bytes, EEPROM.
8. Encoder temperature data: Binary value of encoder temperature in degrees C.

Note: "Ref" denotes untoleranced specifications, provided for reference only.

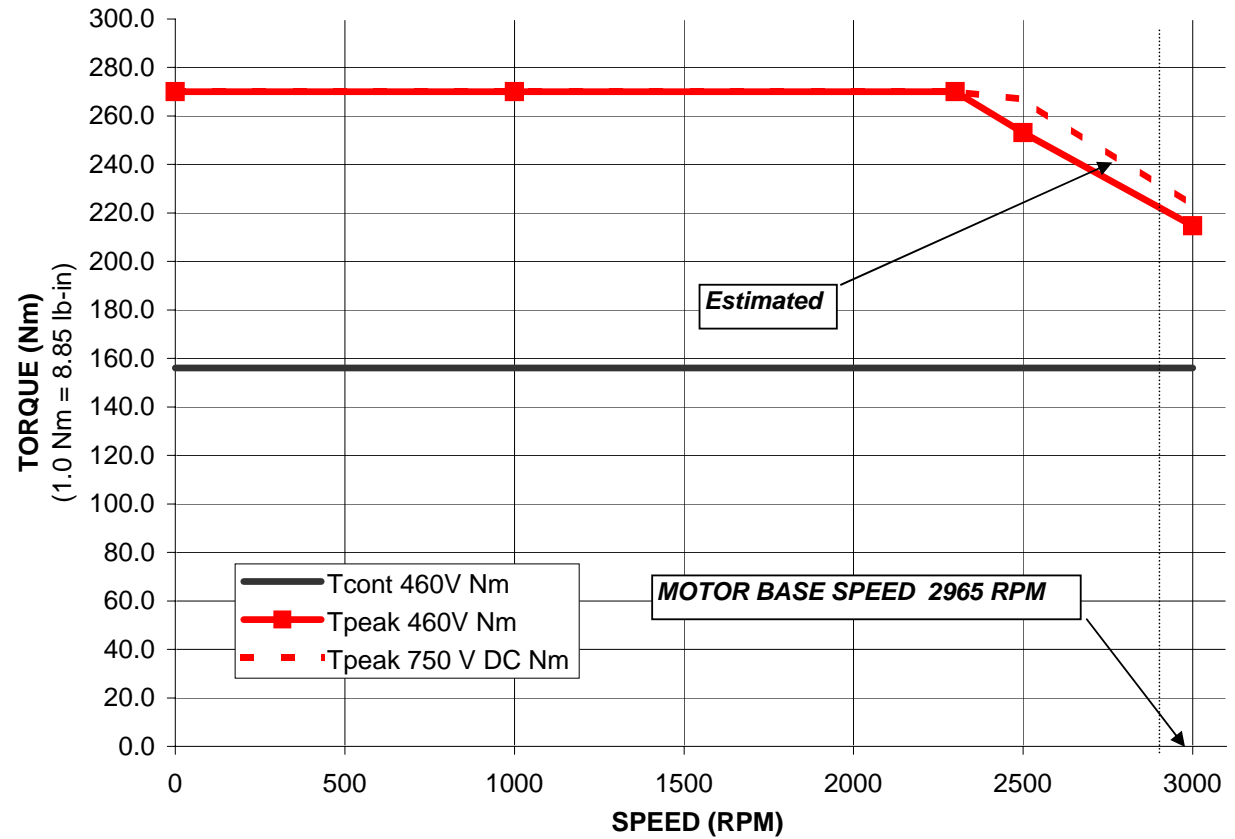
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SPEED RPM	TORQUE		
	Tcont 460V	Tpeak 460V	Tpeak 750 V DC
	Nm	Nm	Nm
0	156.0	270.1	270.1
1000	156.0	270.1	270.1
2300	156.0	270.1	270.1
2500	156.0	253.1	267.0
3000	156.0	214.7	222.6

SPEED RPM	TORQUE		
	Tcont 460V	Tpeak 460V	Tpeak 750 V DC
	lb-in	lb-in	lb-in
0	1381.0	2390	2390
1000	1381.0	2390	2390
2300	1381.0	2390	2390
2500	1381.0	2240	2390
3000	1381.0	1900	1970

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

**HPK-B1609E-MC44AA Performance with 2099-BM09
at 460 VAC and 750 V DC Drive Input, 40C Motor Ambient**



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