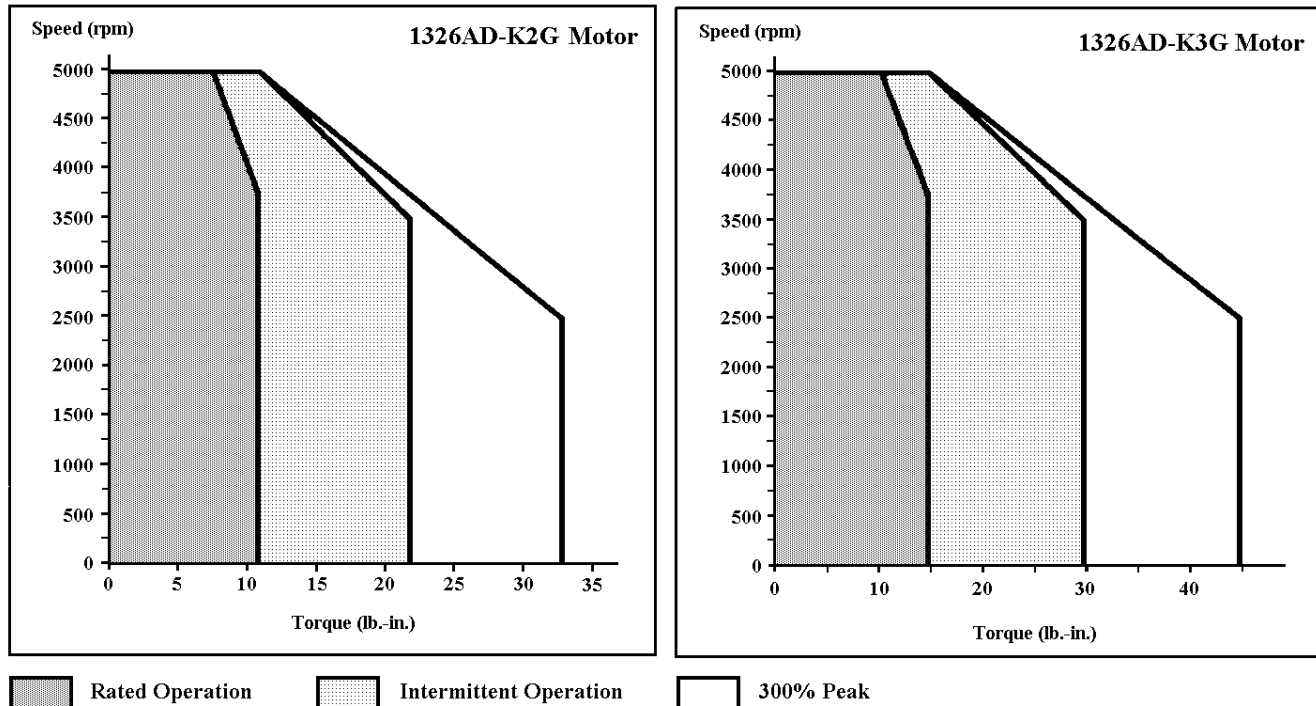


# 1326AD Rare-Earth AC Servomotors: Data, Dimensions and Cabling

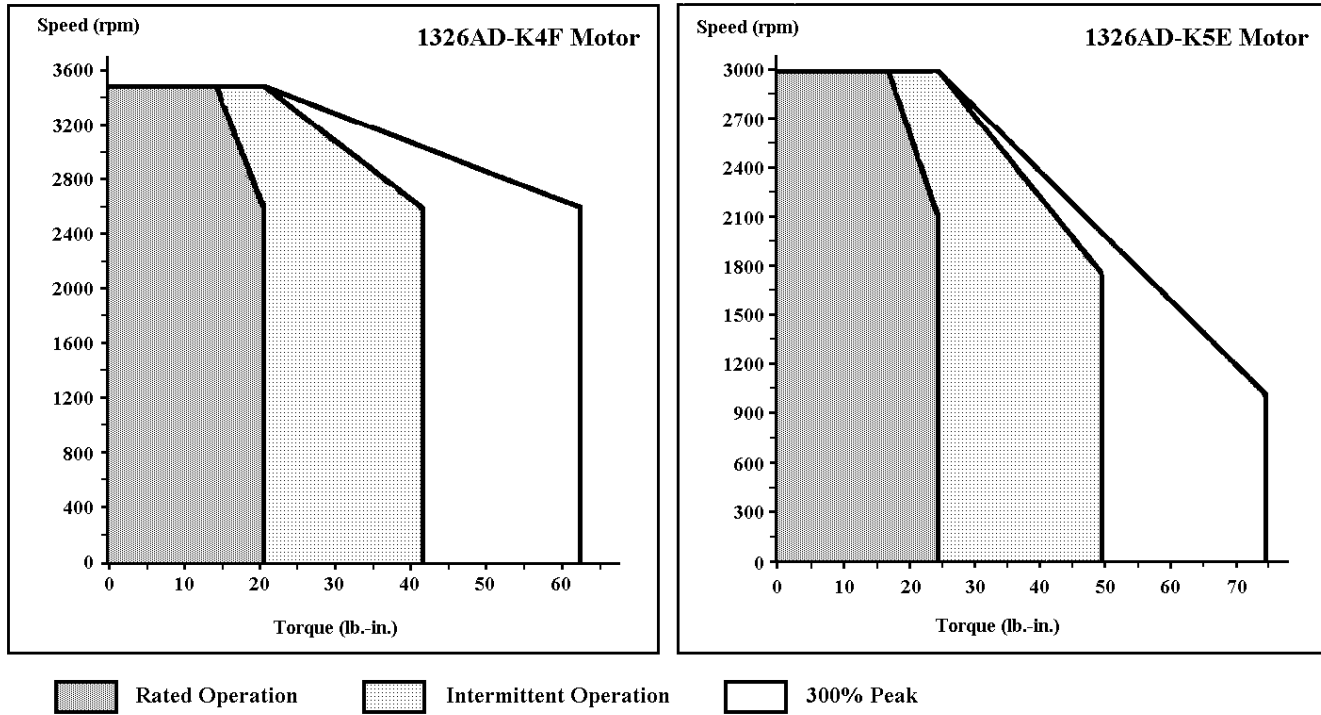
1326AD-K2G and K3G Motor Performance Curves



Category	Parameter	Symbol	Units	1326AD-K2G-xx	1326AD-K3G-xx
<b>General</b>	RMS Continuous Torque <sup>1</sup>	T <sub>CS</sub>	lb.-in.(N-m)	11.0(1.24)	15.0(1.69)
	Peak Torque <sup>1,6</sup>	T <sub>PK</sub>	lb.-in.(N-m)	33.0(3.73)	45.5(5.14)
	Maximum Continuous Rated Current(RMS) <sup>1</sup>	I <sub>CS</sub>	amperes	4.8	4.9
	Maximum Current at Peak Torque <sup>1,6</sup>	I <sub>PK</sub>	amperes	14.4	14.7
	Inertia	J <sub>M</sub>	lb.-in.-s <sup>2</sup> (kg-m <sup>2</sup> )	4.5(0.51) x 10 <sup>-4</sup>	6.2(0.70) x 10 <sup>-4</sup>
	Damping Coefficient <sup>2</sup>	KD <sub>V</sub>	lb.-in.(N-m)/krpm	0.04(0.0045)	0.06(0.0068)
	Static Friction (Maximum)	T <sub>f</sub>	lb.-in.(N-m)	0.23(0.03)	0.31(0.035)
	Operational Speed		rpm	5000	5000
	Maximum Continuous Output Power <sup>1</sup>		kW	0.52	0.53
	Terminal Resistance <sup>2</sup>		ohms	1.8	1.7
<b>Thermal</b>	Thermal Resistance <sup>2</sup>	R <sub>TH</sub>	degrees C/watt	0.93	0.84
	Thermal Time Constant <sup>2</sup>	T <sub>TH</sub>	minutes	20.0	23.0
<b>Winding</b>	Torque Constant, ±10% <sup>3</sup>	K <sub>T</sub>	lb.-in.(N-m)/A	2.3(0.26)	3.3(0.37)
	Voltage Constant, ±10% <sup>3</sup>	K <sub>e</sub>	volts/1000 rpm	19.4	26.0
	Phase to Phase Inductance, ±10% <sup>2</sup>	L <sub>a</sub>	millihenry	5.8	7.0
	Phase to Phase Resistance, ±10% <sup>2</sup>	R	ohms	1.8	1.7
<b>Mechanical</b>	Motor Weight	W	lbs.(kg)	5.5(2.5)	7.1(3.2)

- 1) 100°C case, 75°C rise
- 2) at 25°C ambient
- 3) L-L RMS value of sinusoidal waveform
- 4) nominal line
- 5) for all 1326AD-Kxx motors, use only 1389-AA045-A01 (200% peak torque), 1389-AA09-A01 (300% peak torque) or 1391B-AA15-A12 (300% peak torque)
- 6) 200% operational = 2 x continuous, 300% operation = 3 x continuous

### 1326AD-K4F and K5E Motor Performance Curves



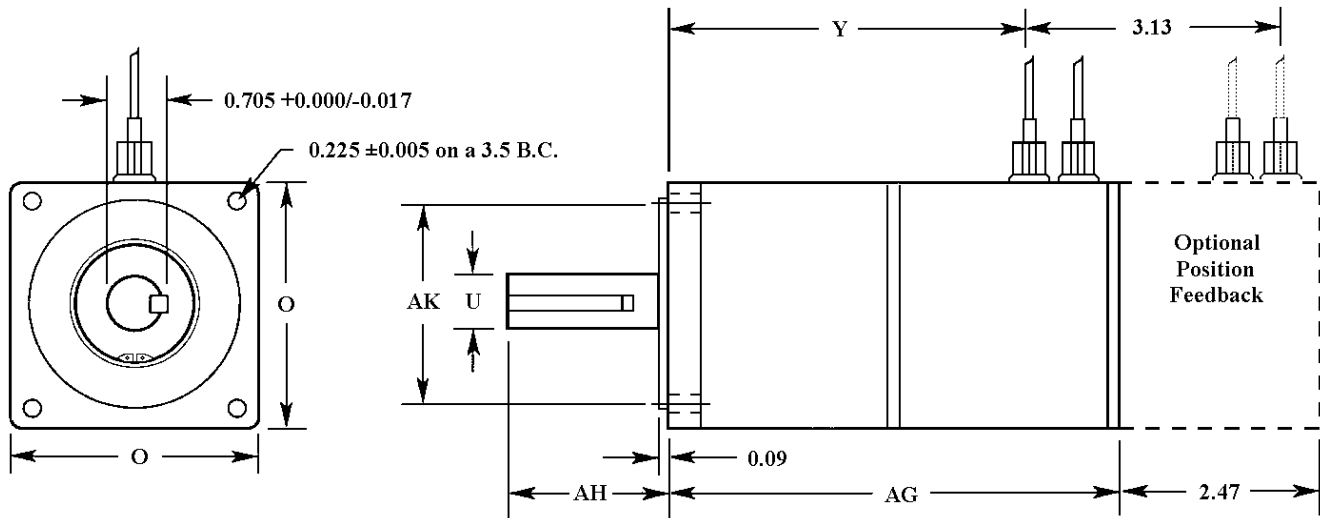
Category	Parameter	Symbol	Units	1326AD-K4F-xx	1326AD-K5E-xx
<b>General</b>	RMS Continuous Torque <sup>1</sup>	T <sub>CS</sub>	lb.-in.(N-m)	21.0(2.37)	25.0(2.82)
	Peak Torque <sup>1,6</sup>	T <sub>PK</sub>	lb.-in.(N-m)	63.0(7.12)	75.0(8.47)
	Maximum Continuous Rated Current(RMS) <sup>1</sup>	I <sub>CS</sub>	amperes	4.9	4.8
	Maximum Current at Peak Torque <sup>1,6</sup>	I <sub>PK</sub>	amperes	14.7	14.4
	Inertia	J <sub>M</sub>	lb.-in.-s <sup>2</sup> (kg-m <sup>2</sup> )	8.0(0.90) x 10 <sup>-4</sup>	9.9(1.12) x 10 <sup>-4</sup>
	Damping Coefficient <sup>2</sup>	KD <sub>V</sub>	lb.-in.(N-m)/krpm	0.09(0.01)	0.11(0.010)
	Static Friction (Maximum)	T <sub>f</sub>	lb.-in.(N-m)	0.39(0.04)	0.47(0.05)
	Operational Speed		rpm	3500	3000
	Maximum Continuous Output Power <sup>1</sup>		kW	0.67	0.60
	Terminal Resistance <sup>2</sup>		ohms	2.0	2.3
<b>Thermal</b>	Thermal Resistance <sup>2</sup>	R <sub>TH</sub>	degrees C/watt	0.76	0.70
	Thermal Time Constant <sup>2</sup>	T <sub>TH</sub>	minutes	26.0	29.0
<b>Winding</b>	Torque Constant, ±10% <sup>3</sup>	K <sub>T</sub>	lb.-in.(N-m)/A	4.3(0.46)	5.0(0.56)
	Voltage Constant, ±10% <sup>3</sup>	K <sub>c</sub>	volts/1000 rpm	35.0	43.0
	Phase to Phase Inductance, ±10% <sup>2</sup>	L <sub>a</sub>	millihenry	9.0	11.0
	Phase to Phase Resistance, ±10% <sup>2</sup>	R	ohms	2.0	2.3
<b>Mechanical</b>	Motor Weight	W	lbs.(kg)	8.7(3.9)	10.2(4.6)

- 1) 100°C case, 75°C rise
- 2) at 25°C ambient
- 3) L-L RMS value of sinusoidal waveform
- 4) nominal line
- 5) for all 1326AD-Kxx motors, use only 1389-AA045-A01 (200% peak torque), 1389-AA09-A01 (300% peak torque) or 1391B-AA15-A12 (300% peak torque)
- 6) 200% operational = 2 x continuous, 300% operation = 3 x continuous

## Motor Dimensions

The following figures provide approximate dimensions for the 1326AD flange and face mount motors, respectively.

### Motor Dimensions - NEMA Inch Flange Mount

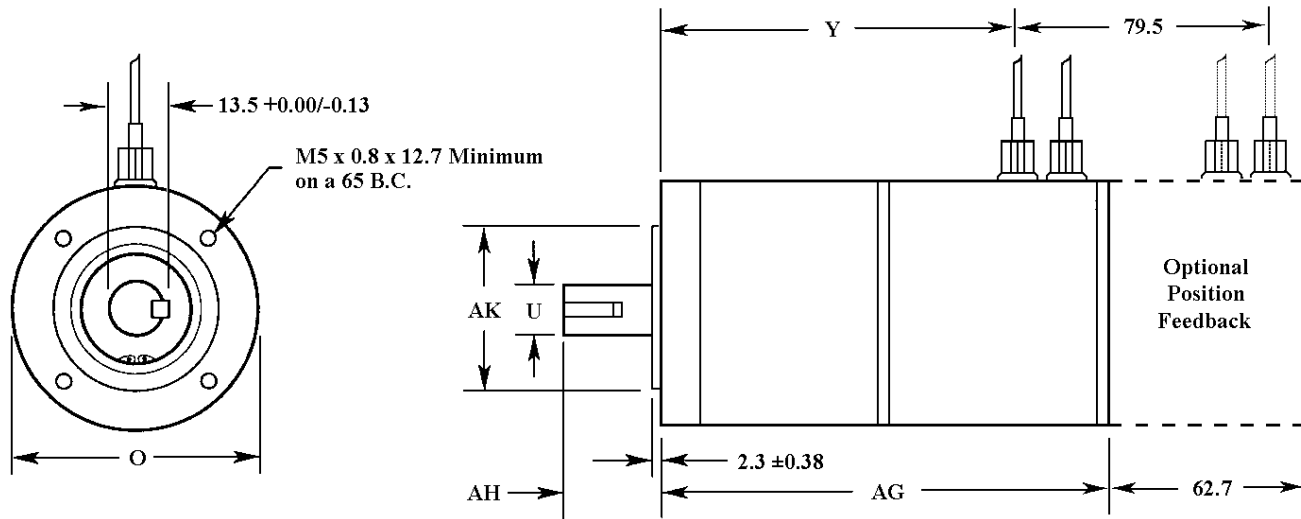


Dimensions are in inches

Catalog Number	AG	AH <sup>1</sup>	AK <sup>2</sup>	O	U <sup>3</sup>	Y	Key <sup>4</sup>
1326AD-K2x-11	7.94	1.125	2.500	3.00	0.625	6.5	0.1875 Sq. x 0.750
1326AD-K3x-11	8.94	1.125	2.500	3.00	0.625	7.5	0.1875 Sq. x 0.750
1326AD-K4x-11	9.94	1.125	2.500	3.00	0.625	8.5	0.1875 Sq. x 0.750
1326AD-K5x-11	10.94	1.125	2.500	3.00	0.625	9.5	0.1875 Sq. x 0.750
Pilot Eccentricity		0.002 T.I.R.					
Shaft Runout		0.002 T.I.R.					
Shaft Endplay		0.005 T.I.R.					
Maximum Face Runout		0.002 T.I.R.					

- 1)  $\pm 0.03$
- 2)  $+0.000, -0.002$
- 3)  $+0.0000/-0.0005$
- 4)  $+0.000, -0.020 \times \pm 0.010$

### Motor Dimensions - Metric "C" Face Mount



Dimensions are in inches

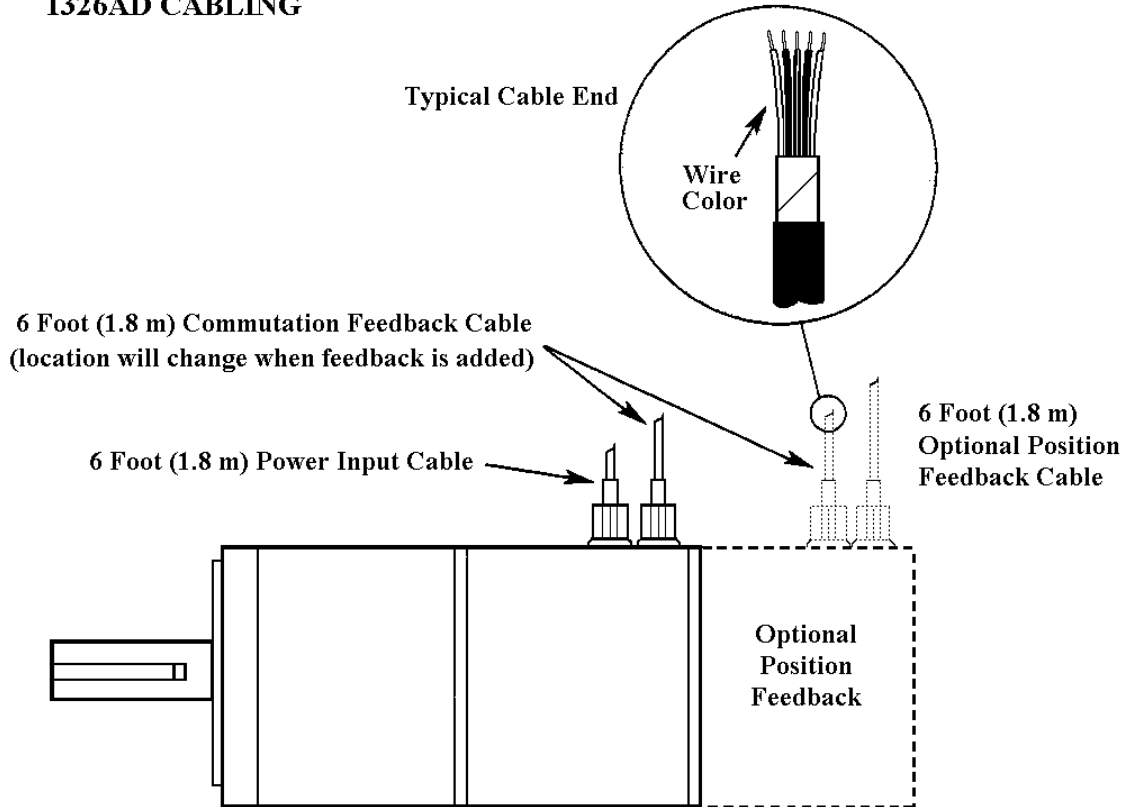
Catalog Number	AG	AH <sup>1</sup>	AK <sup>2</sup>	O	U <sup>3</sup>	Y	Key <sup>4</sup>
1326AD-K2x-31	202	30	50	76.2	12	165	0.4 Sq. x 20.0
1326AD-K3x-31	227	30	50	76.2	12	191	0.4 Sq. x 20.0
1326AD-K4x-31	253	30	50	76.2	12	216	0.4 Sq. x 20.0
1326AD-K5x-31	278	30	50	76.2	12	241	0.4 Sq. x 20.0

Pilot Eccentricity	0.050 T.I.R.
Shaft Runout	0.050 T.I.R.
Shaft Endplay	0.127 T.I.R.
Maximum Face Runout	0.050 T.I.R.

- 1)  $\pm 0.75$
- 2)  $+0.00, -0.05$
- 3)  $+0.000/-0.013$
- 4)  $+0.00, -0.05 \times \pm 0.025$

# Cable Wiring Information

## 1326AD CABLING



## Commutation Cable

Wire Color	Gauge	Description	Servo Control Connection	
			1389-AAxx Terminal #	1391-AAxx Terminal #
Red/White	#22	Rotor 1	TB2-1	TB1-10
Black/White	#22	Rotor 2	TB2-2	TB1-9
Shield - Drain	#22	Shield	TB2-3	TB1-8
Red	#22	Stator 1 (Sine)	TB2-4	TB1-7
Black	#22	Stator 2 (Sine)	TB2-5	TB1-6
Shield - Drain	#22	Shield	TB2-6	TB1-5
Yellow	#22	Stator 4 (Cosine)	TB2-7	TB1-4
Blue	#22	Stator 2 (Cosine)	TB2-8	TB1-3
Shield - Drain	#22	Shield	TB2-9	TB2-1
Brown	#22	Not Used	—	—
Green	#22	Not Used	—	—
Yellow	#22	Not Used	—	—
Shield - Drain	#22	Shield	TB2-10	TB1-1 to Ground Stud

## Motor Power Cable

Wire Color	Gauge	Description	Servo Control Connection	
			1389-AAxx Terminal #	1391-AAxx Terminal #
Blue	#18	Phase A	TB3-1	TB5-1
Brown	#18	Phase B	TB3-2	TB5-2
Violet	#18	Phase C	TB3-3	TB5-3
Green	#18	Ground	Ground Stud	Ground Stud
White	#24	Thermal Switch	N/A	N/A
White	#24	Thermal Switch	N/A	N/A
Shield - Drain	—	Drain	Ground Stud	Ground Stud

## Secondary Resolver Position Feedback Cable - Option

Wire Color	Description	Gauge
Red/White	Rotor 1	#22
Black/White	Rotor 2	#22
Shield - Drain	Shield	
Red	Stator 1 (Sine)	#22
Black	Stator 3 (Sine)	#22
Shield - Drain	Shield	
Brown	Stator 2 (Cosine)	#22
Green	Stator 4 (Cosine)	#22
Yellow	Not Used	#22
Shield - Drain	Shield	
Yellow	Not Used	#22
Blue	Not Used	#22
Shield - Drain	Shield	#22

## Encoder Position Feedback Cable - Optional

Wire Color	Description	Gauge
Red/White	Channel A	#22
Black/White	Channel A (NOT)	#22
Shield - Drain	Shield	
Yellow	Channel B	#22
Blue	Channel B (NOT)	#22
Shield - Drain	Shield	
Green	Channel Z	#22
Brown	Channel Z (NOT)	#22
Yellow	Not Used	#22
Shield - Drain	Shield	
Red	+5V DC	#22
Black	+5V DC Return	#22
Shield - Drain	Shield	