



Overview - Precision Line

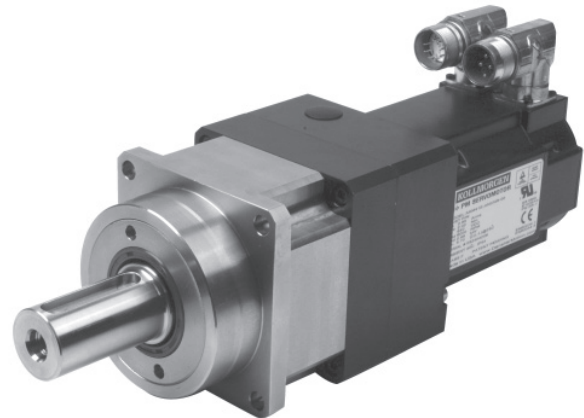
Precision Line

Specifications

- Up to 935 Nm of peak torque
- 4 arc-min of backlash (1 stage)
- 5 arc-min of backlash (2 stage)
- Helical cut gears
- Double supported planet pins for ruggedness

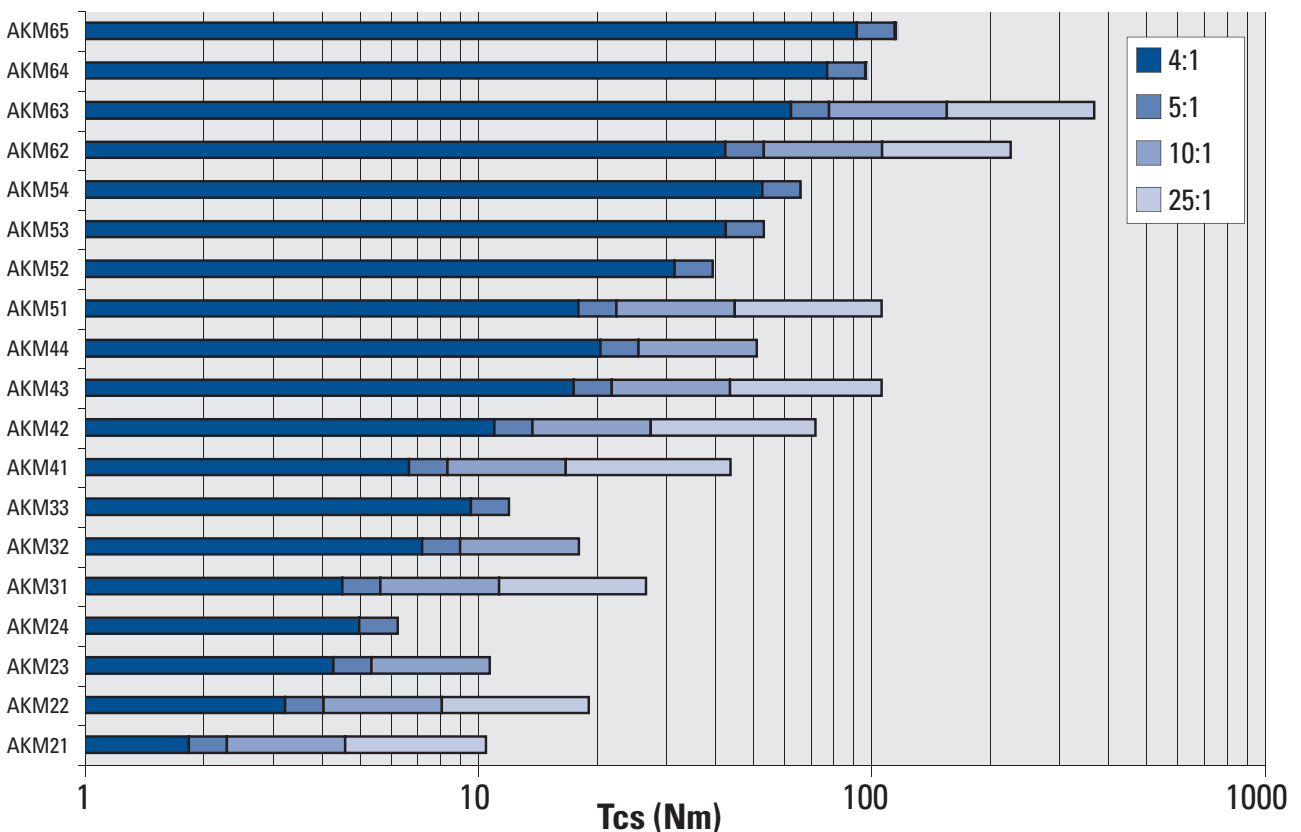
Value

- Premium torque capacity and precision at a competitive price point
- No additional price adder for assembly of components



For applications with higher dynamic or accuracy needs

Precision Line Continuous Torque



AKM Gearmotor Selection Guide

Performance Data - Precision Line

Model	Max Supply Voltage	Tcs		Tp		Min. Gearmotor Inertia		Max. Gearmotor Inertia	
		Nm	lb-in	Nm	lb-in	Kg-m ²	lb-in-s ²	Kg-m ²	lb-in-s ²
	3Ø VAC								
AKM21	480	10.5	92.7	32.8	291	4.91E-04	4.35E-03	1.67E-02	1.48E-01
AKM22	480	19.1	169	60.7	537	5.78E-04	5.11E-03	2.01E-02	1.78E-01
AKM23	480	10.7	94.9	35.7	316	6.66E-04	5.89E-03	3.16E-03	2.80E-02
AKM24	480	6.2	55.3	22.2	196	7.52E-04	6.66E-03	1.00E-03	8.85E-03
AKM31	480	26.8	237	88.3	782	1.26E-03	1.12E-02	4.00E-02	3.54E-01
AKM32	480	18.1	160	66.8	591	1.68E-03	1.49E-02	8.60E-03	7.61E-02
AKM33	480	12.0	106	47.0	416	2.10E-03	1.86E-02	3.07E-03	2.72E-02
AKM41	480	43.9	388	138	1220	3.82E-03	3.38E-02	1.19E-01	1.06E+00
AKM42	480	72.2	639	252	2230	4.85E-03	4.29E-02	1.59E-01	1.41E+00
AKM43	480	107	943	355	3140	5.87E-03	5.20E-02	1.99E-01	1.76E+00
AKM44	480	51.3	454	188	1660	6.90E-03	6.10E-02	3.63E-02	3.21E-01
AKM51	480	107	943	261	2310	8.00E-03	7.08E-02	2.82E-01	2.50E+00
AKM52	480	39.6	350	101	892	1.25E-02	1.10E-01	1.90E-02	1.68E-01
AKM53	480	53.4	472	138	1230	1.71E-02	1.52E-01	2.62E-02	2.32E-01
AKM54	480	66.2	586	177	1560	2.16E-02	1.91E-01	3.32E-02	2.94E-01
AKM62	480	226	2010	661	5850	3.75E-02	3.32E-01	1.31E+00	1.16E+01
AKM63	480	370	1050	935	8280	4.91E-02	4.35E-01	1.77E+00	1.56E+01
AKM64	480	96.6	855	249	2200	6.10E-02	5.40E-01	9.16E-02	8.10E-01
AKM65	480	115	1020	300	2660	7.44E-02	6.59E-01	1.13E-01	9.96E-01

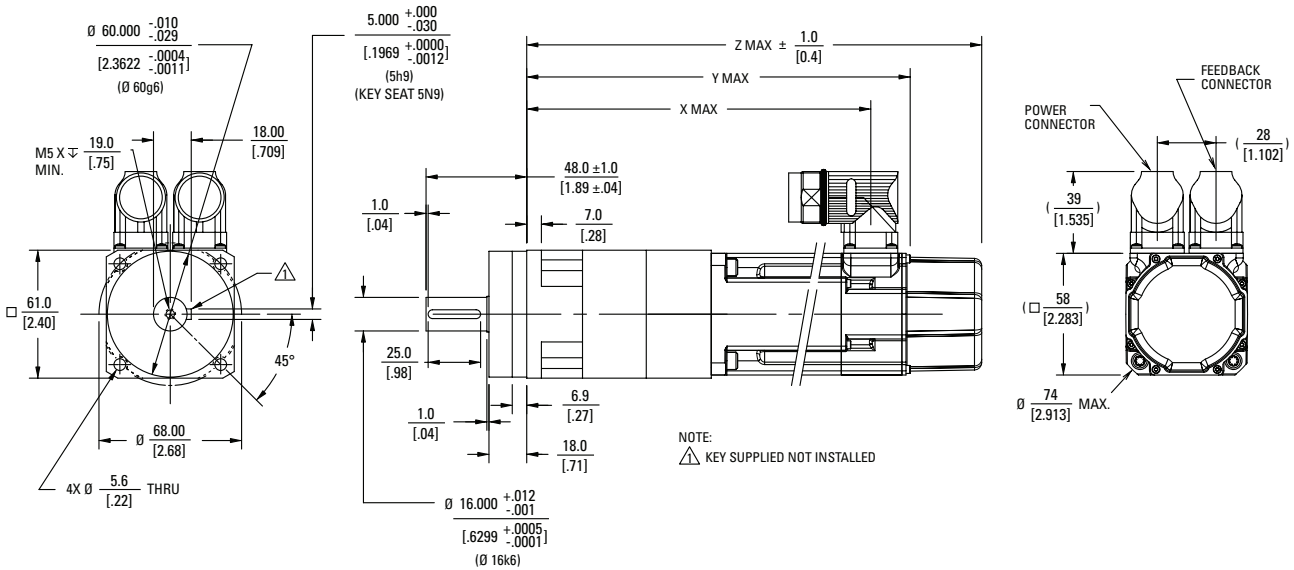
Note: Performance data is based on sinusoidal current commutation using a Kollmorgen drive. System selection should be determined using Micron's MOTIONEERING® system sizing software. Over 1500 AKM gearmotor systems are available for selection. See more details on page 25.

Model	Maximum Accel Torque for Ratio:							
	4		5		10		25	
	Nm	lb-in	Nm	lb-in	Nm	lb-in	Nm	lb-in
AKM21	60.0	531	60.0	531	32.9	291	70.0	620
AKM22	60.0	531	60.0	531	32.9	291	70.0	620
AKM23	60.0	531	60.0	531	32.9	291	-	-
AKM24	60.0	531	60.0	531	-	-	-	-
AKM31	113	999	111	986	58.6	518	126	113
AKM32	113	999	111	986	58.6	518	-	-
AKM33	113	999	111	986	-	-	-	-
AKM41	301	2670	303	2680	170	1500	370	3270
AKM42	301	2670	303	2680	170	1500	370	3270
AKM43	301	2670	303	2680	170	1500	370	3270
AKM44	301	2670	303	2680	170	1500	-	-
AKM51	301	2670	303	2680	170	1500	370	3270
AKM52	301	2670	303	2680	-	-	-	-
AKM53	301	2670	303	2680	-	-	-	-
AKM54	301	2670	303	2680	-	-	-	-
AKM62	719	6360	720	6370	404	3580	867	7670
AKM63	719	6360	720	6370	404	3580	867	7670
AKM64	719	6360	720	6370	-	-	-	-
AKM65	719	6360	720	6370	-	-	-	-

• If no value is given, then the system combination must be purchased separately, and is not part of the gearmotor standard offer.



Outline - Precision Line AKM2x



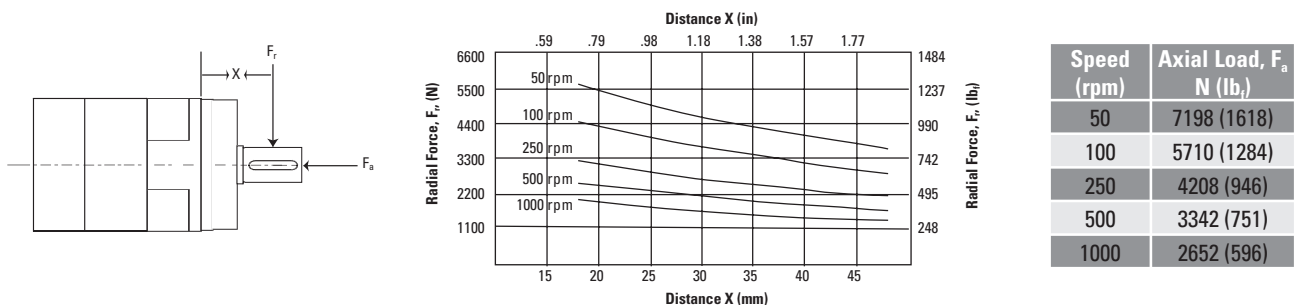
• Refer to the AKM Selection Guide for details about other connector options and feedback availability.

Model/Ratio	"Y" Max. (non-brake)		"Z" Max. (with brake)		"X" Max.	
	4:1 to 10:1	25:1	4:1 to 10:1	25:1	4:1 to 10:1	25:1
AKM21x	183.4 (7.22)	231.8 (9.13)	217.5 (8.56)	265.9 (10.5)	164.1 (6.46)	212.5 (8.37)
AKM22x	202.4 (7.97)	-	236.5 (9.31)	-	183.1 (7.21)	-
AKM23x	221.4 (8.72)	-	255.5 (10.1)	-	202.1 (7.96)	-
AKM24x	240.4 (9.46)	-	274.5 (10.8)	-	221.1 (8.70)	-

- Dimensions are in mm (inches)
- Product designed in metric
- English conversions provided for reference only

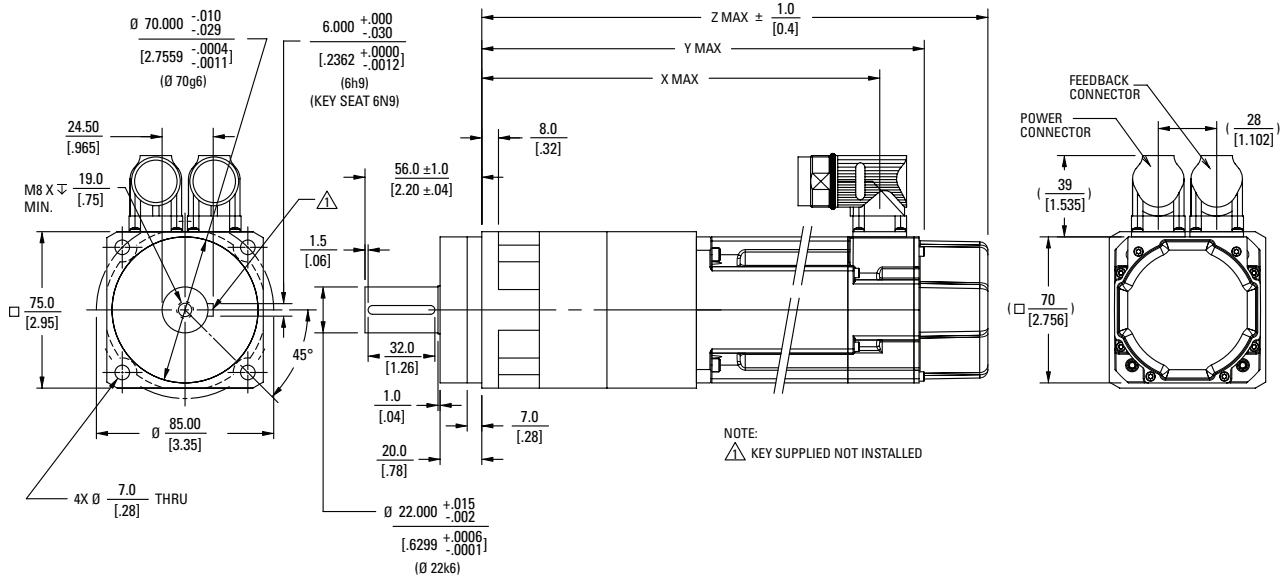
Radial and Axial Load Ratings

This graph displays the allowable radial load at a given distance (X) from the mounting surface based on an L_{10} life of 20,000 hours for the mean output speed n_{mout} .



AKM Gearmotor Selection Guide

Outline - Precision Line AKM3x



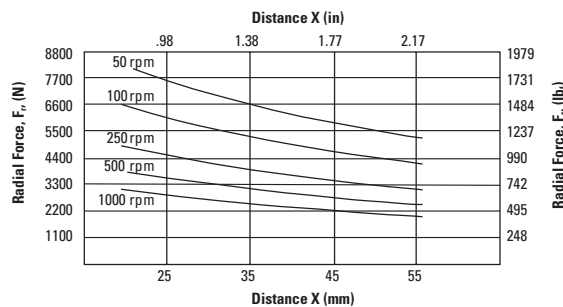
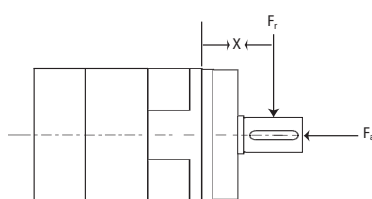
- Refer to the AKM Selection Guide for details about other connector options and feedback availability.

Model/Ratio	"Y" Max. (non-brake)		"Z" Max. (with brake)		"X" Max.	
	4:1 to 10:1	25:1	4:1 to 10:1	25:1	4:1 to 10:1	25:1
AKM31x	212.7 (8.37)	269.7 (10.6)	243.2 (9.57)	300.2 (11.8)	190.8 (7.51)	247.8 (9.76)
AKM32x	243.7 (9.59)	-	274.2 (10.8)	-	221.8 (8.73)	-
AKM33x	274.7 (10.8)	-	305.2 (12.0)	-	252.8 (9.95)	-

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Radial and Axial Load Ratings

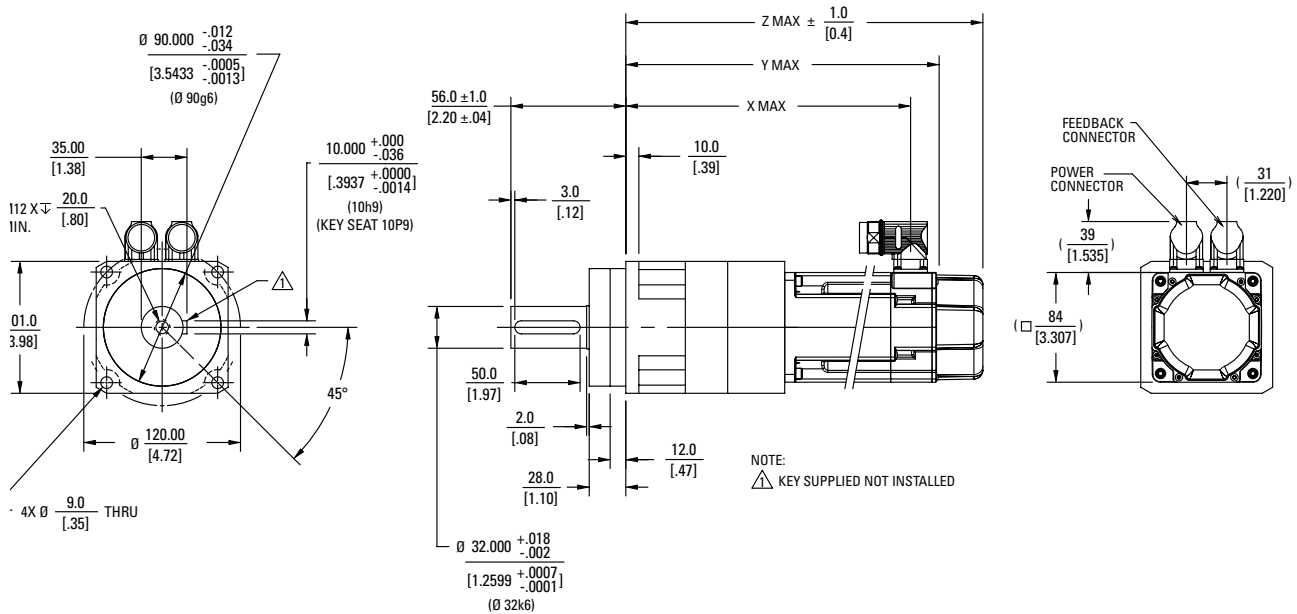
This graph displays the allowable radial load at a given distance (X) from the mounting surface based on an L₁₀ life of 20,000 hours for the mean output speed n_{mout}.



Speed (rpm)	Axial Load, F _a N (lb.)
50	9903 (2227)
100	7863 (1768)
250	5793 (1303)
500	4599 (1034)
1000	3650 (821)



Outline - Precision Line AKM4x



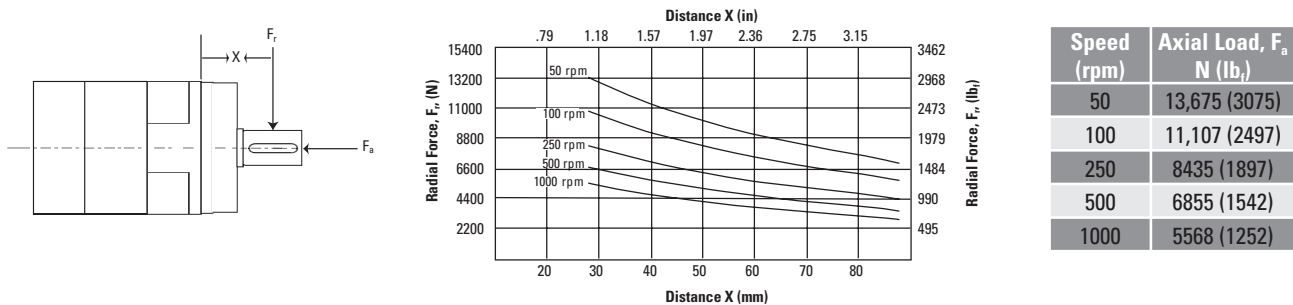
• Refer to the AKM Selection Guide for details about other connector options and feedback availability.

Model/Ratio	"Y" Max. (non-brake)		"Z" Max. (with brake)		"X" Max.	
	4:1 to 10:1	25:1	4:1 to 10:1	25:1	4:1 to 10:1	25:1
AKM41x	240.5 (9.47)	308.5 (12.1)	274.0 (10.8)	342.0 (13.5)	218.1 (8.59)	286.1 (11.3)
AKM42x	269.5 (10.6)	337.5 (13.3)	303.0 (11.9)	371.0 (14.6)	247.1 (9.73)	315.1 (12.4)
AKM43x	298.5 (11.8)	366.5 (14.4)	332.0 (13.1)	400.0 (15.7)	276.1 (10.9)	344.1 (13.5)
AKM44x	327.5 (12.9)	-	361.0 (14.2)	-	305.1 (12.0)	-

- Dimensions are in mm (inches)
- Product designed in metric
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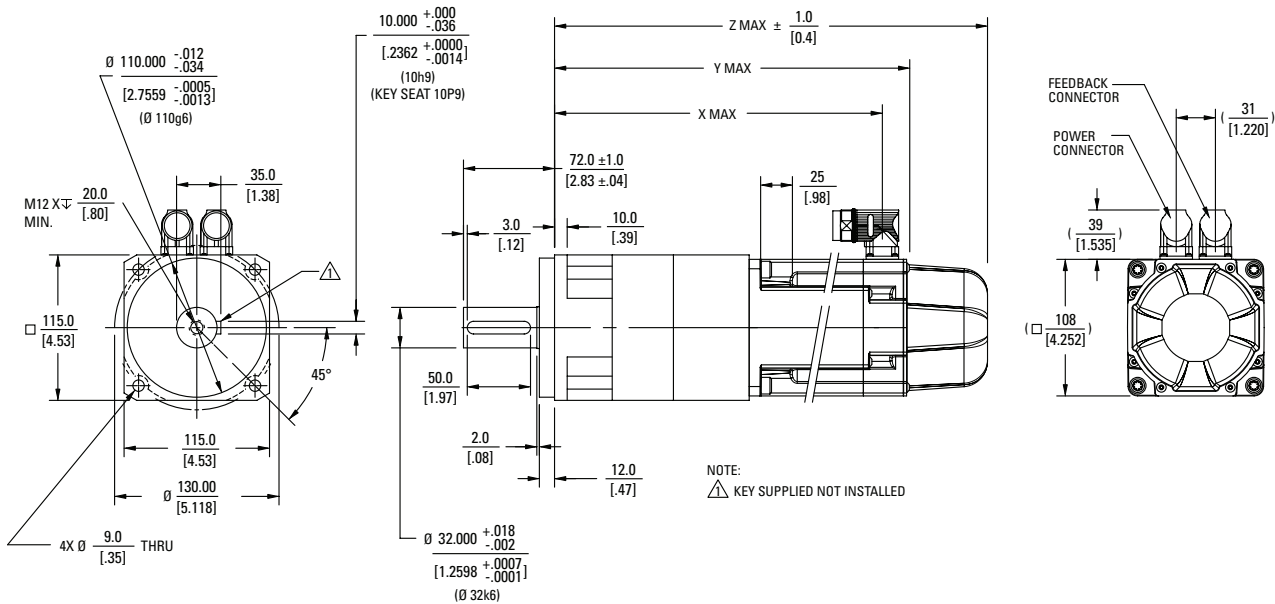
Radial and Axial Load Ratings

This graph displays the allowable radial load at a given distance (X) from the mounting surface based on an L_{10} life of 20,000 hours for the mean output speed n_{mout} .



AKM Gearmotor Selection Guide

Outline - Precision Line AKM5x



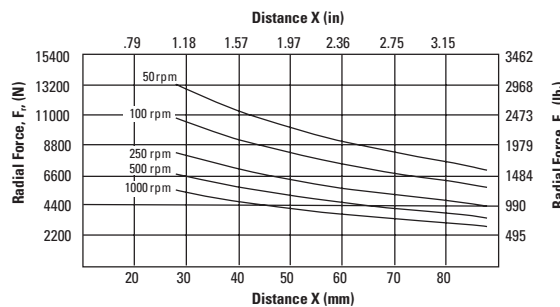
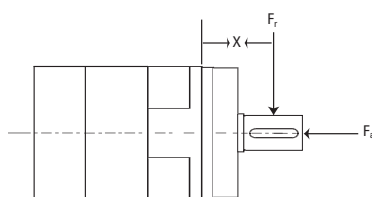
• Refer to the AKM Selection Guide for details about other connector options and feedback availability.

Model/Ratio	Resolver, SFD, Incremental Encoder				Sine Encoder				Any	
	"Y" Max. (non-brake)	"Z" Max. (with brake)	"Y" Max. (non-brake)	"Z" Max. (with brake)	"Y" Max. (non-brake)	"Z" Max. (with brake)	"Y" Max. (non-brake)	"Z" Max. (with brake)	"X" Max.	"X" Max.
AKM51x	265.2 (10.4)	333.2 (13.1)	310.2 (12.2)	378.2 (14.9)	283.7 (11.2)	351.7 (13.8)	326.7 (12.9)	394.7 (15.5)	243 (9.57)	311 (12.2)
AKM52x	296.2 (11.7)	-	341.2 (13.4)	-	314.7 (12.4)	-	357.7 (14.1)	-	274 (10.8)	-
AKM53x	327.2 (12.9)	-	372.2 (14.7)	-	345.7 (13.6)	-	388.7 (15.3)	-	305 (12.0)	-
AKM54x	358.2 (14.1)	-	403.2 (15.9)	-	376.7 (14.8)	-	419.7 (16.5)	-	336 (13.2)	-

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Radial and Axial Load Ratings

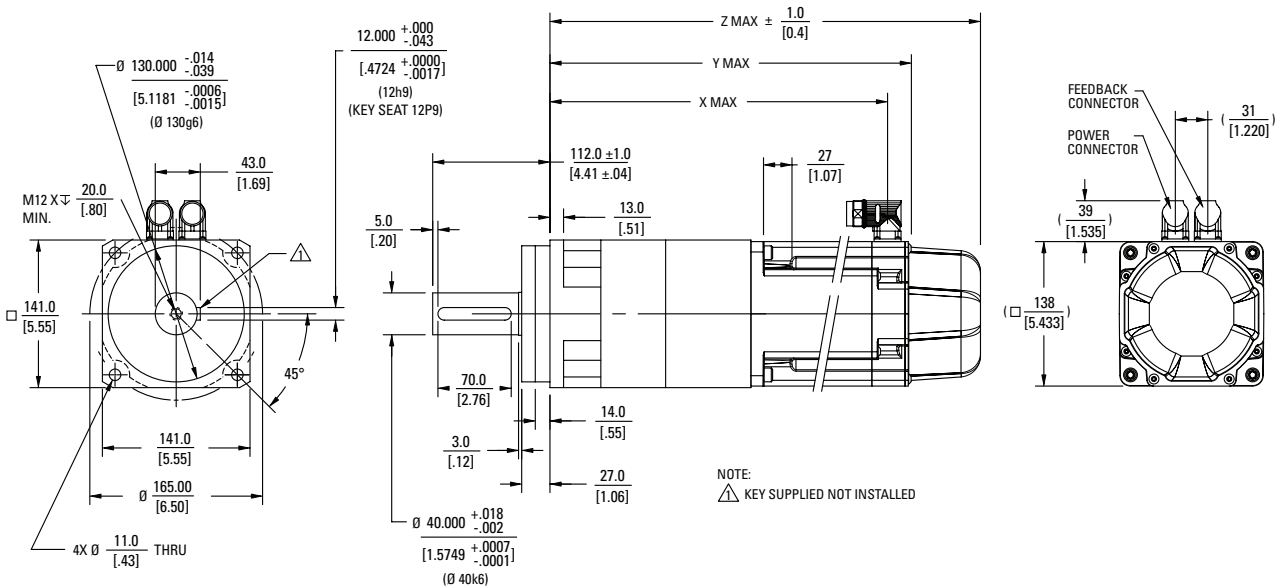
This graph displays the allowable radial load at a given distance (X) from the mounting surface based on an L₁₀ life of 20,000 hours for the mean output speed n_{mout}.



Speed (rpm)	Axial Load, F _a N (lb _f)
50	13,675 (3075)
100	11,107 (2497)
250	8435 (1897)
500	6855 (1542)
1000	5568 (1252)



Outline - Precision Line AKM6x



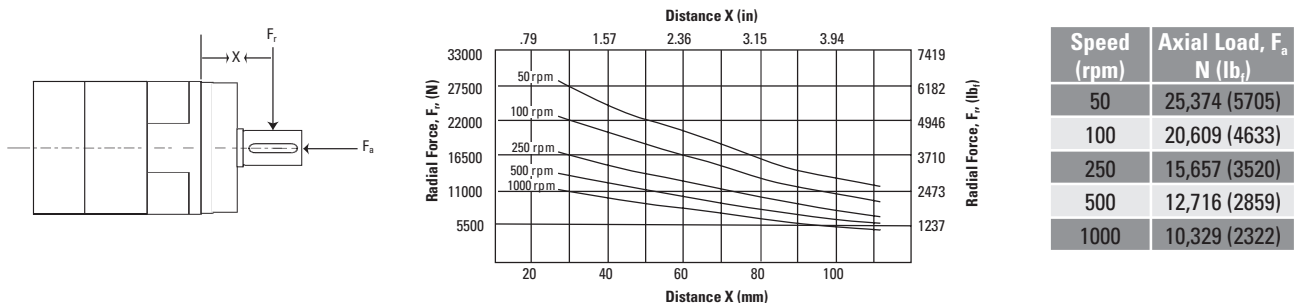
• Refer to the AKM Selection Guide for details about other connector options and feedback availability.

	Resolver, SFD, Incremental Encoder				Sine Encoder				Any	
	"Y" Max. (non-brake)		"Z" Max. (with brake)		"Y" Max. (non-brake)		"Z" Max. (with brake)		"X" Max.	
Model/Ratio	4:1 to 10:1	25:1	4:1 to 10:1	25:1	4:1 to 10:1	25:1	4:1 to 10:1	25:1	4:1 to 10:1	25:1
AKM62x	345.7 (13.6)	430.2 (16.9)	392.7 (15.5)	477.2 (18.8)	364.2 (14.3)	448.7 (17.7)	411.7 (16.2)	496.2 (19.5)	322.5 (12.7)	407.0 (16.0)
AKM63x	370.7 (14.6)	455.2 (17.9)	417.7 (16.4)	502.2 (19.8)	389.2 (15.3)	473.7 (18.6)	436.7 (17.2)	521.2 (20.5)	347.5 (13.7)	432.0 (17.0)
AKM64x	395.7 (15.6)	-	442.7 (17.4)	-	414.2 (16.3)	-	461.7 (18.2)	-	372.5 (14.7)	-
AKM65x	420.7 (16.6)	-	467.7 (18.4)	-	439.2 (17.3)	-	486.7 (19.2)	-	397.5 (15.6)	-

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Radial and Axial Load Ratings

This graph displays the allowable radial load at a given distance (X) from the mounting surface based on an L₁₀ life of 10,000 hours for the mean output speed n_{mount}.



Notes

Notes

MOTIONEERING® - System Sizing Software

Optimally sizing your system is a complex process. At Thomson, we've built our reputation by helping customers elegantly solve challenging applications. Our engineers have spent years working closely with customers to develop this skill, and we want to put this experience to work for you. Our desire to share this experience led us to develop our innovative application sizing software, Micron MOTIONEERING, and now we're making it even better.

Thomson is pleased to announce that the Micron MOTIONEERING sizing software has been expanded. The intricacies and complexities of sizing a gearmotor have been accounted for in the software and now enable you to seamlessly integrate the new AKM Gearmotor into your machine. Simply model your application in Micron MOTIONEERING, and you'll be able to apply the optimal gearmotor solution just like a conventional servo. Your local Field Sales Engineer can help you maximize your benefit by using this tool.

At Thomson, we pride ourselves on helping you build a better machine, faster. Micron MOTIONEERING is yet another example of how we help you win every day.

Get it today at: www.micronmotioneering.com

www.thomsonlinear.com