AKM® 2G Servo Motor
Selection Guide

with AKD® Servo Drive Systems

KOLLMORGEN®

Because Motion Matters™

Kollmorgen: Your partner. In Motion.

Every solution comes from a real understanding of the challenges facing machine designers and users.

Innovators consistently rate Kollmorgen as one of their best motion systems manufacturing partners. Whether you are looking for classic servo motors, direct-drive servo motors, stepper motors, drives & amplifiers, gearing, actuation, or CNC & multi-axis motion controllers, Kollmorgen is one of the few companies in the world who actually designs and manufactures all of these products.

Our customers are leaders in many industries such as Aerospace & Defense, Printing, Packaging & Converting, Food & Beverage Processing, Medical Imaging, In Vitro Diagnostics & Laboratory Automation, Pharmaceutical Manufacturing, Material Forming and Cutting, Oil & Gas, and Robotics. Kollmorgen is also a leader in Warehouse Automation, including complete AGV systems, software, awareness and autonomy.

Our Automation Solutions can be found on Mars and in space, ships and submarines, O&G drilling and metrology, surgical robots and laser eye surgery, even inside artificial hearts. These are just a few applications that demand high-performance and high-quality while satisfying their specific needs.

Because motion matters, it's our focus: Motion can distinctly differentiate a machine and deliver a marketplace advantage by increasing its performance and dramatically improving overall equipment effectiveness (OEE).

High-performance motion can make your customer's machine more reliable and energy-efficient, enhance accuracy and improve operator safety. Motion also represents endless possibilities for innovation.

We've always understood this potential, and thus have kept motion at our core and in our Vision, Mission & Values, relentlessly developing products that offer precise control of torque, velocity and position accuracy in machines that rely on complex motion.

KOLLMORGEN®

Because Motion Matters™

Removing the Barriers of Design, Sourcing, and Time

At Kollmorgen, we know that OEM engineers can achieve a lot more when obstacles aren't in the way. So, we clear obstacles in three important ways:

Integrating Standard and Custom Products

The optimal solution is often not clear-cut. Our application expertise allows us to modify standard products or develop totally custom solutions across our whole product portfolio so that designs can take flight.

Providing Motion Solutions, Not Just Components

As companies reduce their supplier base and have less engineering manpower, they need a total system supplier with a wide range of integrated solutions. Kollmorgen offers complete solutions as well as motion subsystems that combine programming software, engineering services and best-in-class motion components.

Global Footprint

With direct sales, engineering support, manufacturing facilities, and distributors spanning the Americas, Europe, the Middle East, and Asia, we're close to OEMs worldwide. Our proximity helps speed delivery and lend support where and when they're needed.

Financial and Operational Stability

Kollmorgen is part of Fortive. A key driver in the growth of all Fortive divisions is the Fortive Business System, which relies on the principle of "kaizen" – or continuous improvement. Using world-class tools, cross-disciplinary teams of exceptional people evaluate processes and develop plans that result in superior performance.

Kollmorgen: Your partner. In Motion.

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AKM® Servo Motor Family

Kollmorgen's AKM family of servo motors gives you unprecedented choice and flexibility from a wide range of standard products so you can select the best servo motor for your application. By pairing AKM servo motors with our family of plug-and-play AKD® servo drives, selecting the right motion control products has never been easier. Pick from thousands of servo motor/servo drive combinations outlined in this selection guide, the AKM Servo Motor Selection Guide, or go to our website to find the best solution for your application.

Standard AKM/AKM®2G servo motors and AKD servo drives offer the best of both worlds – the exact specifications of a custom solution with the faster delivery times and lower cost of a standard catalog product. For your truly unique motion control applications, work with our engineering team to customize a solution for your machine design. Either way, standard product or customized, we can help you choose the motion control solution that meets your exact requirements.

The Benefits of AKM2G Servo Motor

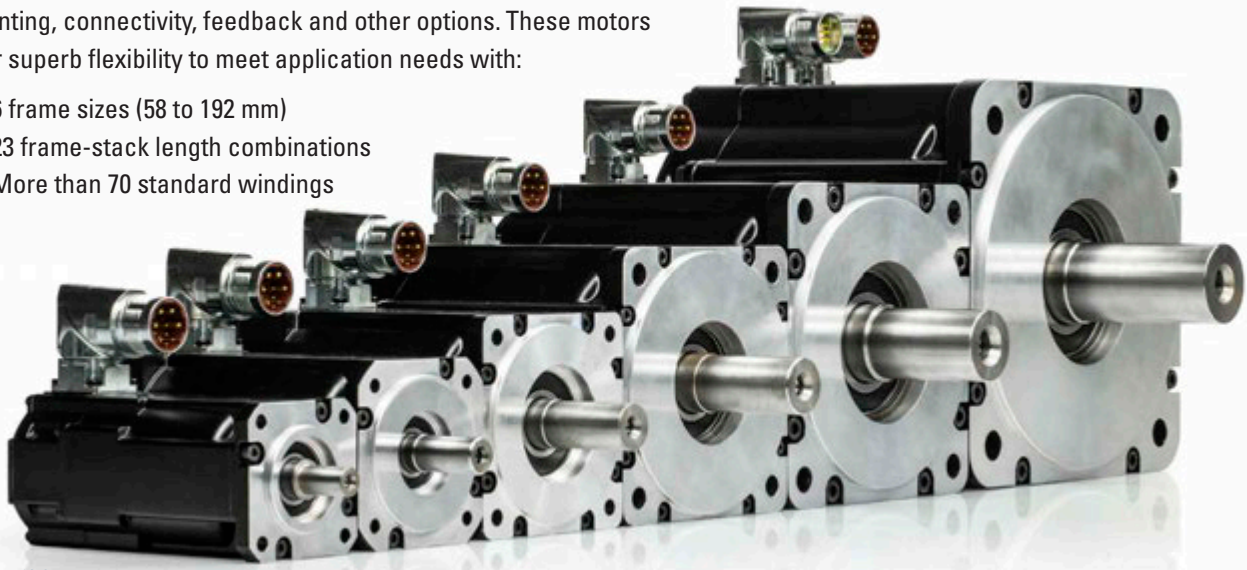
Smaller Footprint	**Reduce machine space** • For equivalent torque it is possible to use a smaller size motor than competitive motors. • The range of AKM2G sizes provides for optimizing for length or flange square depending on which dimension is most critical. • Use of the smaller motor saves space achieving equivalent performance in a smaller footprint machine or saving space for other machine elements.
Increased Torque	**Higher performance** • For a given frame size the AKM2G provides an average continuous torque increase of 30% compared to competitive motors of equivalent size. • Higher torque in the same package size increases machine performance (greater throughput, move heavier loads, etc.).
Wider Speed Range	**Faster operation** • For many AKM2G sizes the maximum speeds are higher than competitive motors. • Higher speeds ⇨ operate machines faster ⇨ greater throughput.
Greater Flexibility	**More options to match needs** • AKM2G is designed to support a wider array of feedback, brake, thermal sensor and shaft seal options – this greater flexibility means a higher probability of meeting application requirements with a standard product. • The AKM2G design has the potential for greater CoEngineering (modification) thanks to the new housing design. With a more flexible design for CoEngineering addressing applications not covered by catalog standards is increased.
Higher Efficiency	**Reduce energy consumption** • AKM2G has lower equivalent resistance than competitive solutions. For equivalent motor frame sizes AKM2G will typically be more energy efficient (2-5%). • Energy consumption is reduced with AKM2G compared to competitors.

AKM®2G Servo Motor Series

AKM2G Motors Offer Extremely High Torque Density and High Acceleration

The AKM2G high-performance motor series offers a wide range of mounting, connectivity, feedback and other options. These motors offer superb flexibility to meet application needs with:

- 6 frame sizes (58 to 192 mm)
- 23 frame-stack length combinations
- More than 70 standard windings



Features

Torque
0.64 to 72 Nm maximum continuous torque (5.6 to 640 lb-in) in 23 frame/stack combinations. Specific torques are often available from multiple frame sizes to optimize mounting and inertia matching capabilities.

Speed
Speeds up to 8000 rpm meet high speed application requirements. Windings tailored to lower speeds are also available.

Voltage
AKM2G motors can be applied to all standard global voltages. Windings are specifically tailored to work with drives powered by 120, 240, 400 or 480 Vac.

Mounting
Multiple mounting standards are available to meet common International standards.

Feedback
AKM2G motors include resolver, Digital Sine Encoder, or SFD (Smart Feedback Device) feedback options to meet specific application requirements.

Smoothness
Smooth performance results from low-cog, low-harmonic distortion magnetic designs.

Connectivity
Rotatable IP65 connectors, or straight connectors are both available to provide flexibility. Single connectors/plugs (combined power and feedback) are also available to minimize motor and cable cost (SFD and Sine Encoder only).

Thermal
Windings are rated conservatively at 100°C rise over a 40°C ambient while using 155°C (class F) insulation materials. Motors meet applicable UL, CSA, and CE requirements and include thermistors.

Additional Options:

- Holding brakes
- Shaft sealing options available
- Feedback devices
- Shaft and mounting variations
- Custom windings
- Thermal sensor options

Kollmorgen Cables Offer the Complete Solution

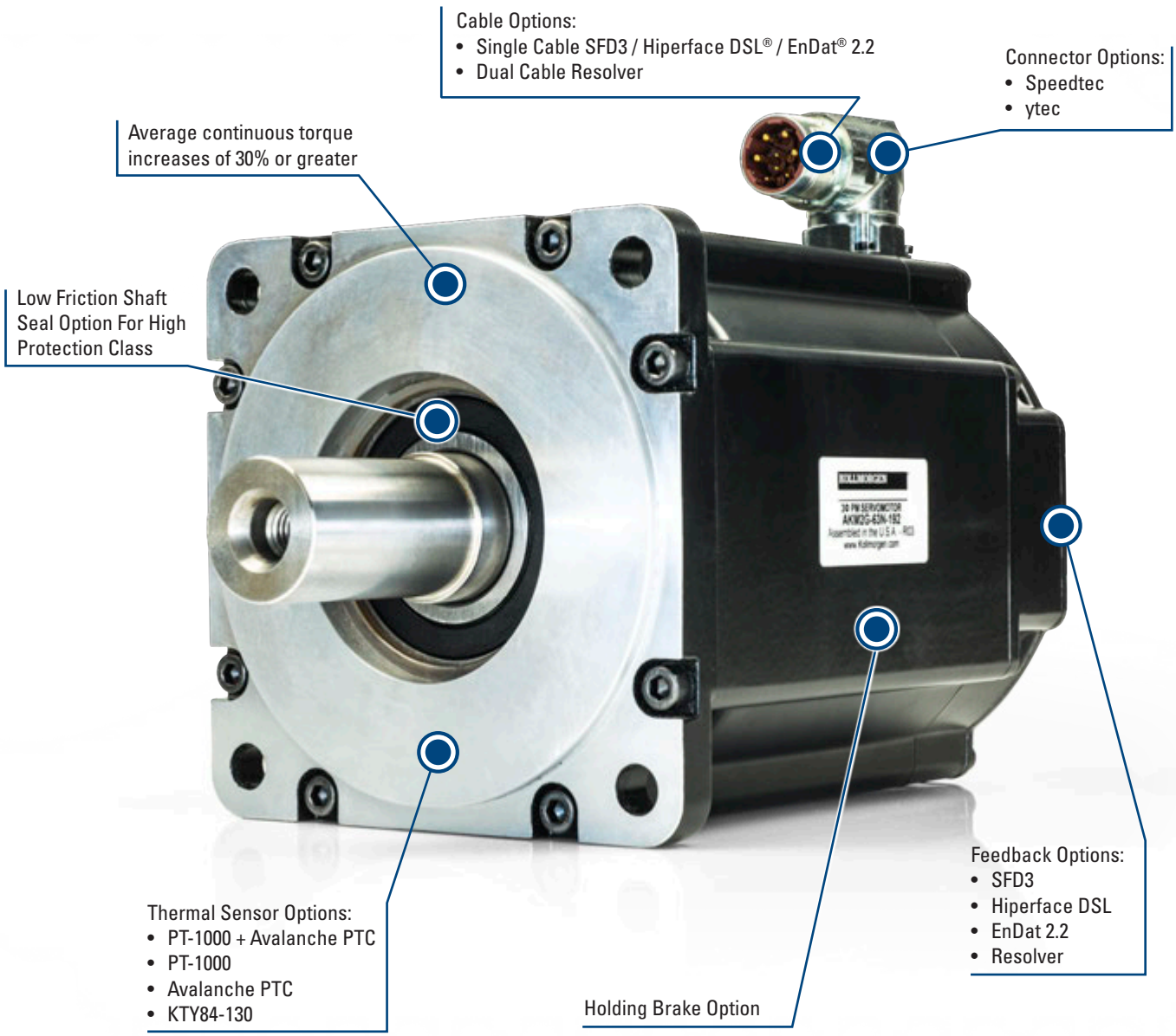
Kollmorgen offers complete cable solutions for connecting drives and motors. This includes static, low cost cable sets for simple applications to high bend, high flex, hybrid cables that combine feedback and power in one cable. Not sure which cable offering would best suit your needs? No problem. Kollmorgen Customer Support is available to discuss cable options and what makes the most sense for your machine.

AKM®2G represents the latest evolution of the industry leading AKM motor product family.

With average continuous torque increases of 30%, OEMs and users can achieve substantial machine performance increases without increasing the size of the motor.

The improved torque density allows a smaller motor to be used which reduces the machine footprint without sacrificing performance.

- Extensive Selection of Feedback options to match application and performance requirements
- Shaft, mounting and connector options for optimal flexibility
- Holding Brake option



AKM® Servo Motor Family Options

AKM®2G Servo Motors

Higher Power Density **Performance – Efficiency**

AKM2G-2x

Flange: 58 mm
Power: 0.204 - 1.12 kW
Max Speed: 8000 RPM
Stacks: 4

The smallest AKM2G. For dual cable connection with resolvers the compact YTEC connector is used.

AKM2G-3x

Flange: 72 mm
Power: 0.175 - 1.77 kW
Max Speed: 8000 RPM
Stacks: 3

Available with motor-mounted rotatable single or dual cable connectors.

AKM2G-4x

Flange: 88 mm
Power: 0.267 - 2.85 kW
Max Speed: 6000 RPM
Stacks: 4

Available with motor-mounted rotatable single or dual cable connectors.

AKM2G-5x

Flange: 114 mm
Power: 0.78 - 5.28 kW
Max Speed: 6000 RPM
Stacks: 4

Available with motor-mounted rotatable single or dual cable connectors.

AKM2G-6x

Flange: 142 mm
Power: 1.56 - 7.79 kW
Max Speed: 6000 RPM
Stacks: 4

Available with motor-mounted rotatable single or dual cable connectors.

AKM2G-7x

Flange: 192 mm
Power: 2.42 - 11.8 kW
Max Speed: 6000 RPM
Stacks: 4

Provides torque levels previously seen only in larger size motors. Offered with motor-mounted rotatable single or dual cable connectors including optional holding brakes. This is available even on the highest torque models.

The entire lineup of AKM2G and AKM servo motors, excluding AKM8, offer a motor-mounted rotatable single connector for Kollmorgen's exclusive third generation Smart Feedback Device (SFD3), and industry standard multi-turn digital encoders like Hiperface DSL and EnDat, as well as incorporating optional brake support.

AKM® Servo Motors

Broader Power Range — Durability – Economy

AKM1

Flange NEMA/mm: 17/40
Power: 0.08 - 0.30 kW
Max Speed: 8000 RPM
Stacks: 3

The AKM11x, the smallest by both stack and length with "M" option connectivity and Smart Feedback Device (SFD)

AKM2

Flange NEMA/mm: 23/58
Power: 0.10 - 0.94 kW
Max Speed: 8000 RPM
Stacks: 4

The AKM21x frame size shown with "D" motor-mounted rotatable single connector, Commutating Encoder and optional holding brake.

AKM3

Flange NEMA/mm: na/70
Power: 0.09 - 1.31 kW
Max Speed: 8000 RPM
Stacks: 3

The AKM33x frame size shown with "D" motor-mounted rotatable single connector and SFD feedback.

AKM4

Flange NEMA/mm: 34/84
Power: 0.21 - 1.73 kW
Max Speed: 6000 RPM
Stacks: 4

The AKM42x frame size shown with "D" motor-mounted rotatable single connector and SFD feedback.

AKM5

Flange NEMA/mm: 42/108
Power: 0.56 - 3.87 kW
Max Speed: 6000 RPM
Stacks: 4

The AKM51x frame size shown with "C" motor-mounted rotatable double connectors and optional holding brake.

AKM6

Flange NEMA/mm: na/138
Power: 1.17 - 6.24 kW
Max Speed: 6000 RPM
Stacks: 4

The AKM65x frame size shown with "C" motor-mounted rotatable double connectors and optional holding brake.

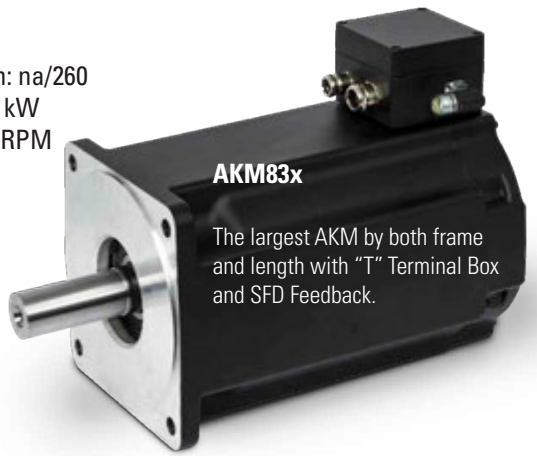
AKM7

Flange NEMA/mm: na/188
Power: 3.97 - 8.58 kW
Max Speed: 6000 RPM
Stacks: 3

The AKM74x frame size shown with "C" option connectivity and holding brake

AKM8

Flange NEMA/mm: na/260
Power: 12.4 - 19.8 kW
Max Speed: 3000 RPM
Stacks: 3



AKM83x

The largest AKM by both frame and length with "T" Terminal Box and SFD Feedback.

This Selection Guide focuses on the AKM2G product in detail; refer to the AKM Selection guide for detailed information on AKM motors.

AKM® Servo Motor Family Options

AKM® Washdown and Food Grade

These motor variants are used in applications that are subject to strict hygiene regulations in which it is essential that the formation of nuclei and corrosion are avoided and in which machines must be cleaned cyclically. These motors are based on the standard types AKM2 – AKM6 with special modifications for use in the food-processing industry, in the packaging industry, or even outdoors. An option for AKM Washdown and Washdown Food motors is to coat the flange.

AKM Washdown

Part Numbers:

AKMxxx-xxxxx-0W: Washdown with unpainted flange
AKMxxx-Wxxxx-0W: Washdown with painted flange

Note: The AKM Washdown motors must not come into contact with any unpacked food.

Application Area:	Harsh Environments, Outdoors
Application Examples:	Transport in the food and packaging area without contact with food, radar stations, and wind turbines
Standards:	UL, CE, RoHS
Surface:	Gray 2K paint
Immunity:	Against tested industrial cleaning agents*, corrosion-resistant
Degree of Protection:	IP67
Shaft:	303 Stainless steel (CSN417029)
Rotary Shaft Seal:	PTFE
Lubricant:	Industrial bearing grease, non-food-grade
Connector:	Stainless steel, smooth surface
Screws:	Stainless steel
Name Plate:	Engraved, additional name plate in the package

AKM Washdown Food Grade

Part Numbers:

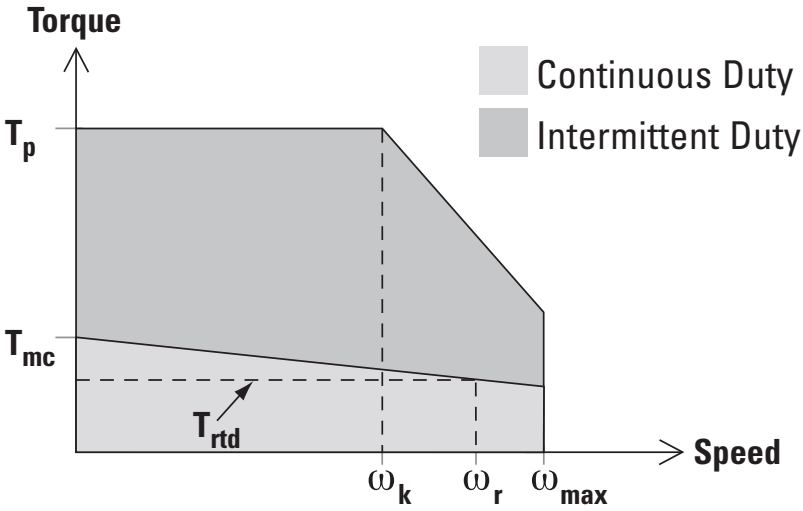
AKMxxx-xxxxx-0F: Washdown with unpainted flange
AKMxxx-Wxxxx-0F: Washdown with painted flange

Note: The surface of the washdown food motor has passed all tests as per FDA Global Migration for indirect contact with food. Any direct contact with unpacked food is not permitted.

Application Examples:	Food and beverages industries; cutting, packing, and filling without direct contact with food; motor positioned laterally or below the food.
Standards:	UL, CE, RoHS, FDA
Surface:	White 2K FDA compliant paint**
Immunity:	Against tested industrial cleaning agents*, corrosion-resistant
Degree of Protection:	IP67
Shaft:	303 Stainless steel (CSN417029)
Rotary Shaft Seal:	PTFE as per FDA
Lubricant:	Food grade as per FDA
Connector:	Stainless steel, smooth surface
Screws:	Stainless steel
Name Plate:	Engraved, additional name plate in the package

* Resistance of the AKM Washdown and AKM Washdown Food Grade surfaces to the following industrial cleaning agents has been tested: P3-topactive DES, P3-topactive LA, P3-topax 56, P3-topax 66, P3-topax 91
**Meets FDA global migration standards

AKM®2G Systems Overview



Definitions

T_p	-	Peak torque
T_{mc}	-	Maximum Continuous Torque
T_{rtd}	-	Continuous rated torque (torque at rated power)
ω_{max}	-	Maximum speed
ω_r	-	Rated speed (speed at rated power)
ω_k	-	Speed at knee in peak envelope (intersection of system peak torque with voltage limit line)

For detailed speed/torque curves, please refer to Kollmorgen's Motioneering Application Sizing programs.

How to Build a Servo Drive and Motor System

System torque/speed information on the following pages is designed to help you select the optimum brushless servo motor/drive combination. The nominal values in this data illustrate performance for the recommended motor/controller systems.

Drive and Motor Performance Curves

The performance characteristics of a brushless servo system (motor/drives combination) are described by a torque/speed operating envelope. As shown above, the shaded areas of the curve indicate the continuous duty and intermittent duty zones of the system.

Continuous Duty Zone

The continuous duty zone is bordered by the maximum continuous torque line up to the intersection with the intermittent duty line. The continuous torque line is set by either the motor's maximum rated temperature, or the drives' rated continuous current output, whichever is less. The system voltage line is set by the voltage rating of the drives, the line voltage supplied, and the motor winding. The system can operate on a continuous basis anywhere within this area, assuming the ambient temperature is 40°C or less.

Intermittent Duty Zone

The intermittent duty zone is bordered by the peak torque line and the system voltage line. The peak torque line is set by either the drives' peak current rating, which the drive can produce for a limited time, or the maximum rated peak current for the motor, whichever is less. Refer to the Rating Data on the pages that follow. Note: Higher torque levels may be achievable at higher power levels.

Consult Kollmorgen Customer Support for more details. The system voltage line is set by the voltage rating of the drive, the line voltage applied and the motor winding. Operation in the intermittent zone must be limited to a duty cycle that will produce an RMS system torque falling within the continuous duty area. The RMS torque value is a function of the magnitude of the intermittent torque and the percentage of the time spent at that torque.

De-rate Calculations

De-rate curves shown for each motor (refer to pages 20-21, 26,30-31,36-37,42-43, and 48-49) assume continuous operation at the selected speed and at maximum rated temperature. Operating intermittently and/or at less than rated temperatures will reduce the De-rate. Kollmorgen Customer Support is available to discuss the specifics of your application and optimum sizing.

AKM®2G / AKD® System Performance

AKM2G Servo Motor with AKD Servo Drive System Performance

	AKM2G Servo Motor❶	AKD Servo Drive	Frame Size mm	Max Cont.Torque Tmc Nm (lb-in)	Peak Torque at stall Tps Nm (lb-in)	Rated Speed Nrtd RPM	Max System Speed❷ RPM	Power Prtd watts	Inertia (Jm) Kg-cm² (lb-in-s²)
120 V	AKM2G-21D	AKD-x00306	58	0.641 (5.67)	2.50 (22.1)	4300	8000	266	0.093 (8.23E-05)
	AKM2G-21E	AKD-x00306	58	0.645 (5.71)	2.10 (18.6)	5600	8000	339	0.093 (8.23E-05)
	AKM2G-21E	AKD-x00606	58	0.645 (5.71)	2.53 (22.4)	5600	8000	339	0.093 (8.23E-05)
	AKM2G-21G	AKD-x00606	58	0.652 (5.77)	2.56 (22.7)	8000	8000	458	0.093 (8.23E-05)
	AKM2G-22C	AKD-x00306	58	1.12 (9.89)	4.11 (36.4)	1800	8000	204	0.155 (1.37E-04)
	AKM2G-22D	AKD-x00306	58	1.12 (9.91)	4.16 (36.8)	2700	8000	300	0.155 (1.37E-04)
	AKM2G-22E	AKD-x00306	58	1.12 (9.93)	3.40 (30.1)	3600	8000	392	0.155 (1.37E-04)
	AKM2G-22E	AKD-x00606	58	1.12 (9.93)	4.39 (38.9)	3600	8000	392	0.155 (1.37E-04)
	AKM2G-23D	AKD-x00306	58	1.50 (13.2)	5.85 (51.8)	1800	8000	272	0.217 (1.92E-04)
	AKM2G-23E	AKD-x00306	58	1.50 (13.2)	4.54 (40.2)	2700	8000	398	0.217 (1.92E-04)
	AKM2G-23E	AKD-x00606	58	1.50 (13.2)	5.84 (51.7)	2700	8000	398	0.217 (1.92E-04)
	AKM2G-23F	AKD-x00606	58	1.52 (13.4)	5.94 (52.6)	4000	8000	576	0.217 (1.92E-04)
	AKM2G-24D	AKD-x00306	58	1.82 (16.1)	7.13 (63.1)	1500	8000	277	0.279 (2.47E-04)
	AKM2G-24E	AKD-x00306	58	1.83 (16.2)	5.57 (49.3)	2300	8000	417	0.279 (2.47E-04)
	AKM2G-24E	AKD-x00606	58	1.83 (16.2)	7.16 (63.4)	2300	8000	417	0.279 (2.47E-04)
	AKM2G-24F	AKD-x00606	58	1.86 (16.4)	7.24 (64.1)	3400	8000	603	0.279 (2.47E-04)
	AKM2G-31C	AKD-x00306	72	1.68 (14.9)	4.54 (40.2)	1000	8000	175	0.426 (3.77E-04)
	AKM2G-31D	AKD-x00306	72	1.69 (15.0)	6.01 (53.2)	1500	8000	263	0.426 (3.77E-04)
	AKM2G-31E	AKD-x00306	72	1.72 (15.2)	4.90 (43.4)	2300	8000	404	0.426 (3.77E-04)
	AKM2G-31E	AKD-x00606	72	1.72 (15.2)	6.06 (53.6)	2300	8000	404	0.426 (3.77E-04)
	AKM2G-32E	AKD-x00306	72	2.83 (25.0)	8.68 (76.8)	1300	8000	378	0.813 (7.20E-04)
	AKM2G-32E	AKD-x00606	72	2.83 (25.0)	10.3 (91.5)	1300	8000	378	0.813 (7.20E-04)
	AKM2G-32G	AKD-x00606	72	2.93 (25.9)	10.6 (94.3)	2300	8000	680	0.813 (7.20E-04)
	AKM2G-33G	AKD-x00606	72	3.84 (34.0)	14.4 (128)	1600	8000	622	1.20 (1.06E-03)
	AKM2G-33H	AKD-x00606	72	3.89 (34.5)	11.6 (102)	2250	8000	866	1.20 (1.06E-03)
	AKM2G-33H	AKD-x01206	72	3.89 (34.5)	14.6 (129)	2250	8000	866	1.20 (1.06E-03)
	AKM2G-41D	AKD-x00306	88	2.87 (25.4)	7.20 (63.7)	900	6000	267	0.774 (6.85E-04)
	AKM2G-41E	AKD-x00306	88	2.89 (25.5)	6.61 (58.5)	1200	6000	357	0.774 (6.85E-04)
	AKM2G-41E	AKD-x00606	88	2.89 (25.5)	7.26 (64.3)	1200	6000	357	0.774 (6.85E-04)
	AKM2G-41G	AKD-x00606	88	2.89 (25.6)	7.25 (64.2)	2100	6000	613	0.774 (6.85E-04)
	AKM2G-42H	AKD-x00606	88	5.17 (45.7)	12.9 (114)	1500	6000	790	1.36 (1.20E-03)
	AKM2G-42H	AKD-x01206	88	5.17 (45.7)	14.4 (127)	1500	6000	790	1.36 (1.20E-03)
	AKM2G-43I	AKD-x01206	88	7.07 (62.6)	21.1 (187)	1400	6000	1000	1.95 (1.73E-03)
	AKM2G-44H	AKD-x00606	88	8.59 (76.0)	22.4 (199)	900	6000	790	2.53 (2.24E-03)
	AKM2G-44H	AKD-x01206	88	8.59 (76.0)	27.0 (239)	900	6000	790	2.53 (2.24E-03)
	AKM2G-44J	AKD-x01206	88	8.59 (76.0)	26.9 (238)	1200	6000	1040	2.53 (2.24E-03)
	AKM2G-51H	AKD-x00606	114	6.86 (60.7)	15.7 (139)	1100	6000	780	2.52 (2.23E-03)
	AKM2G-51I	AKD-x00606	114	6.45 (57.1)	15.3 (135)	1200	6000	850	2.52 (2.23E-03)
	AKM2G-51I	AKD-x01206	114	6.88 (60.9)	15.7 (139)	1200	6000	850	2.52 (2.23E-03)
	AKM2G-51K	AKD-x01206	114	6.89 (60.9)	15.6 (138)	2100	6000	1440	2.52 (2.23E-03)
	AKM2G-52K	AKD-x01206	114	12.1 (107)	28.9 (256)	1200	6000	1470	4.58 (4.05E-03)
	AKM2G-52L	AKD-x01206	114	11.4 (101)	24.8 (220)	1500	6000	1800	4.58 (4.05E-03)
	AKM2G-52L	AKD-x02406	114	12.1 (107)	28.9 (256)	1500	6000	1800	4.58 (4.05E-03)
	AKM2G-53L	AKD-x01206	114	15.4 (136)	34.8 (308)	1100	6000	1800	6.64 (5.88E-03)
	AKM2G-53L	AKD-x02406	114	16.3 (144)	41.4 (366)	1100	6000	1800	6.64 (5.88E-03)
	AKM2G-53M	AKD-x01206	114	13.6 (120)	31.5 (279)	1300	6000	2090	6.64 (5.88E-03)
	AKM2G-53M	AKD-x02406	114	16.2 (144)	41.5 (367)	1300	6000	2090	6.64 (5.88E-03)
	AKM2G-54M	AKD-x01206	114	16.4 (145)	39.4 (349)	1100	6000	2220	8.70 (7.70E-03)
	AKM2G-54M	AKD-x02406	114	20.3 (180)	54.7 (484)	1100	6000	2220	8.70 (7.70E-03)
	AKM2G-54N	AKD-x02406	114	20.3 (179)	53.9 (477)	1200	6000	2400	8.70 (7.70E-03)
	AKM2G-62L	AKD-x01206	142	15.4 (136)	33.7 (298)	1000	6000	1560	9.10 (8.05E-03)
	AKM2G-62L	AKD-x02406	142	15.4 (136)	37.4 (331)	1000	6000	1560	9.10 (8.05E-03)
	AKM2G-62M	AKD-x02406	142	15.3 (135)	37.4 (331)	1300	6000	1990	9.10 (8.05E-03)
	AKM2G-63M	AKD-x02406	142	21.6 (191)	54.5 (482)	1000	6000	2190	13.0 (1.15E-02)
	AKM2G-63N	AKD-x02406	142	21.6 (191)	52.5 (465)	1100	6000	2390	13.0 (1.15E-02)
	AKM2G-64N	AKD-x02406	142	27.2 (241)	64.8 (574)	900	6000	2470	16.9 (1.50E-02)
	AKM2G-71N	AKD-x02406	192	23.0 (204)	49.3 (436)	1050	6000	2420	25.9 (2.29E-02)
	AKM2G-71P	AKD-x02406	192	23.3 (206)	46.4 (410)	1300	6000	2980	25.9 (2.29E-02)

❶ For complete AKM2G, AKD model nomenclature, refer to pages 66 and 74 respectively.
❷ Max mechanical speeds: 8000 RPM for AKM2G-2,3 and 6000 RPM for AKM2G-4, 5, 6, 7.

AKM2G – 2 2 A – AN C N DA 00[1]

Motor Series | Frame Size | Rotor Length | Winding | Flange | Shaft | Connector | Brake | Feedback | Thermal Sensor | Customization

AKM2G Servo Motor with AKD Servo Drive System Performance

	AKM2G Servo Motor[1]	AKD Servo Drive	Frame Size mm	Max Cont.Torque Tmc Nm (lb-in)	Peak Torque at stall Tps Nm (lb-in)	Rated Speed Nrtd RPM	Max System Speed[2] RPM	Power Prtd watts	Inertia (Jm) Kg-cm² (lb-in-s²)
240 V	AKM2G-21D	AKD-x00306	58	0.640 (5.66)	2.50 (22.1)	8000	8000	449	0.093 (8.23E-05)
	AKM2G-21E	AKD-x00306	58	0.644 (5.70)	2.10 (18.6)	8000	8000	449	0.093 (8.23E-05)
	AKM2G-21E	AKD-x00606	58	0.644 (5.70)	2.53 (22.4)	8000	8000	449	0.093 (8.23E-05)
	AKM2G-22C	AKD-x00306	58	1.12 (9.88)	4.37 (38.7)	4200	8000	448	0.155 (1.37E-04)
	AKM2G-22D	AKD-x00306	58	1.12 (9.89)	4.16 (36.8)	6100	8000	616	0.155 (1.37E-04)
	AKM2G-22E	AKD-x00306	58	1.12 (9.92)	3.40 (30.1)	8000	8000	759	0.155 (1.37E-04)
	AKM2G-22E	AKD-x00606	58	1.12 (9.92)	4.39 (38.9)	8000	8000	759	0.155 (1.37E-04)
	AKM2G-23D	AKD-x00306	58	1.49 (13.2)	5.85 (51.8)	4100	8000	579	0.217 (1.92E-04)
	AKM2G-23E	AKD-x00306	58	1.49 (13.2)	4.54 (40.2)	5800	8000	772	0.217 (1.92E-04)
	AKM2G-23E	AKD-x00606	58	1.49 (13.2)	5.84 (51.7)	5800	8000	772	0.217 (1.92E-04)
	AKM2G-23F	AKD-x00606	58	1.51 (13.4)	5.94 (52.6)	8000	8000	980	0.217 (1.92E-04)
	AKM2G-24D	AKD-x00306	58	1.82 (16.1)	7.13 (63.1)	3500	8000	607	0.279 (2.47E-04)
	AKM2G-24E	AKD-x00306	58	1.83 (16.2)	5.57 (49.3)	4900	8000	808	0.279 (2.47E-04)
	AKM2G-24E	AKD-x00606	58	1.83 (16.2)	7.16 (63.4)	4900	8000	808	0.279 (2.47E-04)
	AKM2G-24F	AKD-x00606	58	1.85 (16.4)	7.24 (64.1)	7200	8000	1080	0.279 (2.47E-04)
	AKM2G-31C	AKD-x00306	80	1.68 (14.9)	5.99 (53.0)	2400	8000	412	0.426 (3.77E-04)
	AKM2G-31D	AKD-x00306	80	1.69 (15.0)	6.01 (53.2)	3500	8000	594	0.426 (3.77E-04)
	AKM2G-31E	AKD-x00306	80	1.71 (15.2)	4.90 (43.4)	5000	8000	832	0.426 (3.77E-04)
	AKM2G-31E	AKD-x00606	80	1.71 (15.2)	6.06 (53.6)	5000	8000	832	0.426 (3.77E-04)
	AKM2G-32D	AKD-x00306	80	2.82 (25.0)	10.4 (91.8)	2200	8000	628	0.813 (7.20E-04)
	AKM2G-32E	AKD-x00306	80	2.82 (24.9)	8.68 (76.8)	2900	8000	811	0.813 (7.20E-04)
	AKM2G-32E	AKD-x00606	80	2.82 (24.9)	10.3 (91.5)	2900	8000	811	0.813 (7.20E-04)
	AKM2G-32G	AKD-x00606	80	2.92 (25.8)	10.6 (94.3)	4700	8000	1280	0.813 (7.20E-04)
	AKM2G-33E	AKD-x00306	80	3.87 (34.3)	11.2 (99.4)	2300	8000	878	1.20 (1.06E-03)
	AKM2G-33E	AKD-x00606	80	3.87 (34.3)	14.6 (129)	2300	8000	878	1.20 (1.06E-03)
	AKM2G-33G	AKD-x00606	80	3.83 (33.9)	14.4 (128)	3350	8000	1210	1.20 (1.06E-03)
	AKM2G-33H	AKD-x00606	80	3.88 (34.3)	11.6 (102)	4600	8000	1540	1.20 (1.06E-03)
	AKM2G-33H	AKD-x01206	80	3.88 (34.3)	14.6 (129)	4600	8000	1540	1.20 (1.06E-03)
	AKM2G-41D	AKD-x00306	88	2.86 (25.3)	7.20 (63.7)	2100	6000	607	0.774 (6.85E-04)
	AKM2G-41E	AKD-x00306	88	2.88 (25.5)	6.61 (58.5)	2700	6000	773	0.774 (6.85E-04)
	AKM2G-41E	AKD-x00606	88	2.88 (25.5)	7.26 (64.3)	2700	6000	773	0.774 (6.85E-04)
	AKM2G-41G	AKD-x00606	88	2.88 (25.5)	7.25 (64.2)	4500	6000	1210	0.774 (6.85E-04)
	AKM2G-42D	AKD-x00306	88	5.06 (44.8)	14.3 (127)	1200	6000	620	1.36 (1.20E-03)
	AKM2G-42E	AKD-x00306	88	5.10 (45.1)	12.6 (112)	1600	6000	830	1.36 (1.20E-03)
	AKM2G-42E	AKD-x00606	88	5.10 (45.1)	14.4 (127)	1600	6000	830	1.36 (1.20E-03)
	AKM2G-42H	AKD-x00606	88	5.15 (45.6)	12.9 (114)	3200	6000	1560	1.36 (1.20E-03)
	AKM2G-42H	AKD-x01206	88	5.15 (45.6)	14.4 (128)	3200	6000	1560	1.36 (1.20E-03)
	AKM2G-43G	AKD-x00606	88	7.00 (62.0)	21.0 (186)	1900	6000	1320	1.95 (1.73E-03)
	AKM2G-43I	AKD-x01206	88	7.05 (62.4)	21.1 (187)	3000	6000	1950	1.95 (1.73E-03)
	AKM2G-44E	AKD-x00306	88	8.50 (75.2)	22.0 (195)	900	6000	783	2.53 (2.24E-03)
	AKM2G-44E	AKD-x00606	88	8.51 (75.3)	26.9 (238)	900	6000	783	2.53 (2.24E-03)
	AKM2G-44H	AKD-x00606	88	8.56 (75.8)	22.4 (199)	2000	6000	1660	2.53 (2.24E-03)
	AKM2G-44H	AKD-x01206	88	8.56 (75.8)	27.0 (239)	2000	6000	1660	2.53 (2.24E-03)
	AKM2G-44J	AKD-x01206	88	8.56 (75.8)	26.9 (238)	2600	6000	2060	2.53 (2.24E-03)
	AKM2G-51H	AKD-x00606	114	6.85 (60.6)	15.7 (139)	2400	6000	1620	2.52 (2.23E-03)
	AKM2G-51I	AKD-x00606	114	6.45 (57.1)	15.3 (135)	2700	6000	1800	2.52 (2.23E-03)
	AKM2G-51I	AKD-x01206	114	6.86 (60.7)	15.7 (139)	2700	6000	1800	2.52 (2.23E-03)
	AKM2G-51K	AKD-x01206	114	6.86 (60.7)	15.6 (138)	4500	6000	2720	2.52 (2.23E-03)
	AKM2G-52H	AKD-x00606	114	11.4 (101)	28.1 (249)	1500	6000	1800	4.58 (4.05E-03)
	AKM2G-52H	AKD-x01206	114	12.0 (107)	29.0 (257)	1500	6000	1800	4.58 (4.05E-03)
	AKM2G-52K	AKD-x01206	114	12.1 (107)	28.9 (256)	2500	6000	2830	4.58 (4.05E-03)
	AKM2G-52L	AKD-x01206	114	11.4 (101)	24.8 (220)	3200	6000	3420	4.58 (4.05E-03)
	AKM2G-52L	AKD-x02406	114	12.0 (106)	28.9 (256)	3200	6000	3420	4.58 (4.05E-03)
	AKM2G-53H	AKD-x00606	114	16.3 (144)	41.8 (370)	1000	6000	1650	6.64 (5.88E-03)
	AKM2G-53L	AKD-x01206	114	15.4 (136)	34.8 (308)	2400	6000	3530	6.64 (5.88E-03)
	AKM2G-53L	AKD-x02406	114	16.2 (144)	41.4 (366)	2400	6000	3530	6.64 (5.88E-03)
	AKM2G-53M	AKD-x01206	114	13.6 (120)	31.5 (279)	2800	6000	3970	6.64 (5.88E-03)
	AKM2G-53M	AKD-x02406	114	16.2 (143)	41.5 (367)	2800	6000	3970	6.64 (5.88E-03)

[1] For complete AKM2G, AKD model nomenclature, refer to pages 66 and 74 respectively.
[2] Max mechanical speeds: 8000 RPM for AKM2G-2,3 and 6000 RPM for AKM2G-4, 5, 6, 7.

AKM® 2G / AKD® System Performance

AKM2G Servo Motor with AKD Servo Drive System Performance

	AKM2G Servo Motor❶	AKD Servo Drive	Frame Size mm	Max Cont.Torque Tmc Nm (lb-in)	Peak Torque at stall Tps Nm (lb-in)	Rated Speed Nrtd RPM	Max System Speed❷ RPM	Power Prtd watts	Inertia (Jm) Kg-cm² (lb-in-s²)
240 V	AKM2G-54L	AKD-x01206	114	20.3 (179)	52.3 (463)	1600	6000	3090	8.70 (7.70E-03)
	AKM2G-54L	AKD-x02406	114	20.3 (179)	54.8 (485)	1600	6000	3090	8.70 (7.70E-03)
	AKM2G-54M	AKD-x01206	114	16.4 (145)	39.4 (349)	2300	6000	4130	8.70 (7.70E-03)
	AKM2G-54M	AKD-x02406	114	20.2 (179)	54.7 (484)	2300	6000	4130	8.70 (7.70E-03)
	AKM2G-54N	AKD-x02406	114	20.2 (179)	53.9 (477)	2600	6000	4490	8.70 (7.70E-03)
	AKM2G-62K	AKD-x01206	142	15.4 (136)	37.6 (332)	1700	6000	2560	9.10 (8.05E-03)
	AKM2G-62L	AKD-x01206	142	15.3 (135)	33.7 (298)	2200	6000	3190	9.10 (8.05E-03)
	AKM2G-62L	AKD-x02406	142	15.3 (135)	37.4 (331)	2200	6000	3190	9.10 (8.05E-03)
	AKM2G-62M	AKD-x02406	142	15.2 (135)	37.4 (331)	2800	6000	3850	9.10 (8.05E-03)
	AKM2G-63K	AKD-x01206	142	21.7 (192)	54.8 (485)	1300	6000	2790	13.0 (1.15E-02)
	AKM2G-63M	AKD-x02406	142	21.5 (191)	54.5 (482)	2100	6000	4210	13.0 (1.15E-02)
	AKM2G-63N	AKD-x02406	142	21.5 (190)	52.5 (465)	2300	6000	4510	13.0 (1.15E-02)
	AKM2G-63N	AKD-x04807	142	21.5 (190)	54.5 (483)	2300	6000	4510	13.0 (1.15E-02)
	AKM2G-64L	AKD-x01206	142	27.2 (241)	63.9 (566)	1200	6000	3230	16.9 (1.50E-02)
	AKM2G-64L	AKD-x02406	142	27.2 (241)	70.7 (626)	1200	6000	3230	16.9 (1.50E-02)
	AKM2G-64M	AKD-x02406	142	27.1 (240)	70.5 (624)	1700	6000	4370	16.9 (1.50E-02)
	AKM2G-64N	AKD-x02406	142	27.1 (240)	64.8 (574)	2000	6000	4980	16.9 (1.50E-02)
	AKM2G-64N	AKD-x04807	142	27.1 (240)	70.3 (623)	2000	6000	4980	16.9 (1.50E-02)
	AKM2G-65L	AKD-x01206	142	31.7 (280)	73.0 (646)	1100	6000	3580	20.8 (1.84E-02)
	AKM2G-65L	AKD-x02406	142	32.9 (291)	86.8 (768)	1100	6000	3580	20.8 (1.84E-02)
	AKM2G-65M	AKD-x02406	142	32.8 (291)	86.8 (768)	1400	6000	4440	20.8 (1.84E-02)
	AKM2G-65N	AKD-x02406	142	33.0 (292)	75.8 (671)	1700	6000	5250	20.8 (1.84E-02)
	AKM2G-65N	AKD-x04807	142	33.0 (292)	87.0 (770)	1700	6000	5250	20.8 (1.84E-02)
	AKM2G-71L	AKD-x01206	192	22.7 (201)	49.2 (436)	1500	6000	3340	25.9 (2.29E-02)
	AKM2G-71L	AKD-x02406	192	23.0 (203)	49.5 (438)	1500	6000	3340	25.9 (2.29E-02)
	AKM2G-71N	AKD-x02406	192	22.9 (203)	49.3 (436)	2200	6000	4580	25.9 (2.29E-02)
	AKM2G-71P	AKD-x02406	192	23.2 (205)	46.3 (410)	2700	6000	5370	25.9 (2.29E-02)
	AKM2G-71P	AKD-x04807	192	23.2 (205)	49.7 (440)	2700	6000	5370	25.9 (2.29E-02)
	AKM2G-72L	AKD-x01206	192	39.5 (349)	87.6 (775)	900	6000	3640	46.8 (4.14E-02)
	AKM2G-72L	AKD-x02406	192	40.7 (361)	89.3 (790)	900	6000	3640	46.8 (4.14E-02)
	AKM2G-72N	AKD-x02406	192	41.5 (367)	90.3 (799)	1400	6000	5480	46.8 (4.14E-02)
	AKM2G-72P	AKD-x02406	192	41.0 (363)	82.9 (734)	1600	6000	6050	46.8 (4.14E-02)
	AKM2G-72P	AKD-x04807	192	41.0 (363)	89.5 (792)	1600	6000	6050	46.8 (4.14E-02)
	AKM2G-73N	AKD-x02406	192	58.3 (516)	129 (1150)	900	6000	5150	67.7 (5.99E-02)
	AKM2G-73Q	AKD-x02406	192	49.9 (442)	95.3 (843)	1500	6000	7850	67.7 (5.99E-02)
	AKM2G-73Q	AKD-x04807	192	57.7 (510)	128 (1130)	1500	6000	7850	67.7 (5.99E-02)
	AKM2G-74P	AKD-x02406	192	72.8 (644)	141 (1250)	1000	6000	6960	88.6 (7.84E-02)
	AKM2G-74P	AKD-x04807	192	72.8 (644)	164 (1460)	1000	6000	6960	88.6 (7.84E-02)
	AKM2G-74Q	AKD-x02406	192	59.6 (527)	115 (1020)	1250	6000	8370	88.6 (7.84E-02)
	AKM2G-74Q	AKD-x04807	192	72.5 (642)	164 (1450)	1250	6000	8370	88.6 (7.84E-02)
	AKM2G-74R	AKD-x04807	192	72.2 (639)	163 (1440)	1450	6000	9340	88.6 (7.84E-02)
400 V	AKM2G-21D	AKD-x00307	58	0.638 (5.65)	2.50 (22.1)	8000	8000	440	0.093 (8.23E-05)
	AKM2G-22C	AKD-x00307	58	1.11 (9.87)	4.37 (38.7)	7500	8000	721	0.155 (1.37E-04)
	AKM2G-22D	AKD-x00307	58	1.12 (9.88)	4.16 (36.8)	8000	8000	746	0.155 (1.37E-04)
	AKM2G-23D	AKD-x00307	58	1.49 (13.2)	5.85 (51.8)	7300	8000	913	0.217 (1.92E-04)
	AKM2G-23E	AKD-x00307	58	1.49 (13.2)	4.54 (40.2)	8000	8000	953	0.217 (1.92E-04)
	AKM2G-23E	AKD-x00607	58	1.49 (13.2)	5.84 (51.7)	8000	8000	953	0.217 (1.92E-04)
	AKM2G-24D	AKD-x00307	58	1.82 (16.1)	7.13 (63.1)	6100	8000	948	0.279 (2.47E-04)
	AKM2G-24E	AKD-x00307	58	1.83 (16.2)	5.57 (49.3)	8000	8000	1120	0.279 (2.47E-04)
	AKM2G-24E	AKD-x00607	58	1.83 (16.2)	7.16 (63.4)	8000	8000	1120	0.279 (2.47E-04)
	AKM2G-24F	AKD-x00607	58	1.85 (16.4)	7.24 (64.1)	8000	8000	1090	0.279 (2.47E-04)
	AKM2G-31C	AKD-x00307	80	1.68 (14.9)	5.99 (53.0)	4300	8000	713	0.426 (3.77E-04)
	AKM2G-31D	AKD-x00307	80	1.69 (14.9)	6.00 (53.1)	6100	8000	972	0.426 (3.77E-04)
	AKM2G-31E	AKD-x00307	80	1.71 (15.1)	4.90 (43.4)	8000	8000	1200	0.426 (3.77E-04)
	AKM2G-31E	AKD-x00607	80	1.71 (15.1)	6.06 (53.6)	8000	8000	1200	0.426 (3.77E-04)
	AKM2G-32D	AKD-x00307	80	2.82 (24.9)	10.4 (91.8)	3900	8000	1060	0.813 (7.20E-04)
	AKM2G-32E	AKD-x00307	80	2.81 (24.9)	8.68 (76.8)	5000	8000	1290	0.813 (7.20E-04)
	AKM2G-32E	AKD-x00607	80	2.81 (24.9)	10.3 (91.5)	5000	8000	1290	0.813 (7.20E-04)

❶ For complete AKM2G, AKD model nomenclature, refer to pages 66 and 74 respectively.
❷ Max mechanical speeds: 8000 RPM for AKM2G-2,3 and 6000 RPM for AKM2G-4, 5, 6, 7.

AKM2G – 2 2 A – AN C N DA 00[1]

Motor Series | Frame Size | Rotor Length | Winding | Flange | Shaft | Connector | Brake | Feedback | Thermal Sensor | Customization

AKM2G Servo Motor with AKD Servo Drive System Performance

	AKM2G Servo Motor[1]	AKD Servo Drive	Frame Size mm	Max Cont.Torque Tmc Nm (lb-in)	Peak Torque at stall Tps Nm (lb-in)	Rated Speed Nrtd RPM	Max System Speed[2] RPM	Power Prtd watts	Inertia (Jm) Kg-cm² (lb-in-s²)
400 V	AKM2G-32G	AKD-x00607	80	2.90 (25.7)	10.6 (94.3)	7600	8000	1720	0.813 (7.20E-04)
	AKM2G-33E	AKD-x00307	80	3.86 (34.2)	11.2 (99.4)	4000	8000	1390	1.20 (1.06E-03)
	AKM2G-33E	AKD-x00607	80	3.86 (34.2)	14.6 (129)	4000	8000	1390	1.20 (1.06E-03)
	AKM2G-33G	AKD-x00607	80	3.82 (33.8)	14.4 (128)	5800	8000	1720	1.20 (1.06E-03)
	AKM2G-33H	AKD-x00607	80	3.85 (34.1)	11.6 (102)	8000	8000	1570	1.20 (1.06E-03)
	AKM2G-33H	AKD-x01207	80	3.84 (34.0)	14.6 (129)	8000	8000	1570	1.20 (1.06E-03)
	AKM2G-41D	AKD-x00307	88	2.86 (25.3)	7.20 (63.7)	3800	6000	1040	0.774 (6.85E-04)
	AKM2G-41E	AKD-x00307	88	2.87 (25.4)	6.61 (58.5)	4800	6000	1270	0.774 (6.85E-04)
	AKM2G-41E	AKD-x00607	88	2.87 (25.4)	7.26 (64.3)	4800	6000	1270	0.774 (6.85E-04)
	AKM2G-41G	AKD-x00607	88	2.87 (25.4)	7.25 (64.2)	6000	6000	1430	0.774 (6.85E-04)
	AKM2G-42D	AKD-x00307	88	5.05 (44.7)	14.3 (127)	2100	6000	1050	1.36 (1.20E-03)
	AKM2G-42E	AKD-x00307	88	5.09 (45.0)	12.6 (112)	2700	6000	1330	1.36 (1.20E-03)
	AKM2G-42E	AKD-x00607	88	5.09 (45.0)	14.4 (127)	2700	6000	1330	1.36 (1.20E-03)
	AKM2G-42H	AKD-x00607	88	5.13 (45.4)	12.9 (114)	5600	6000	2270	1.36 (1.20E-03)
	AKM2G-42H	AKD-x01207	88	5.12 (45.3)	14.4 (128)	5600	6000	2270	1.36 (1.20E-03)
	AKM2G-43D	AKD-x00307	88	6.97 (61.7)	20.7 (183)	1600	6000	1120	1.95 (1.73E-03)
	AKM2G-43G	AKD-x00607	88	6.98 (61.8)	21.0 (186)	3200	6000	2050	1.95 (1.73E-03)
	AKM2G-43I	AKD-x01207	88	7.00 (61.9)	21.1 (187)	5300	6000	2680	1.95 (1.73E-03)
	AKM2G-44E	AKD-x00307	88	8.49 (75.1)	22.0 (195)	1700	6000	1420	2.53 (2.24E-03)
	AKM2G-44E	AKD-x00607	88	8.49 (75.1)	26.9 (238)	1700	6000	1420	2.53 (2.24E-03)
	AKM2G-44H	AKD-x00607	88	8.53 (75.5)	22.4 (199)	3500	6000	2560	2.53 (2.24E-03)
	AKM2G-44H	AKD-x01207	88	8.51 (75.3)	27.0 (239)	3500	6000	2560	2.53 (2.24E-03)
	AKM2G-44J	AKD-x01207	88	8.50 (75.2)	26.9 (238)	4500	6000	2840	2.53 (2.24E-03)
	AKM2G-51H	AKD-x00607	114	6.83 (60.4)	15.7 (139)	4200	6000	2590	2.52 (2.23E-03)
	AKM2G-51I	AKD-x00607	114	6.45 (57.1)	15.3 (135)	4600	6000	2770	2.52 (2.23E-03)
	AKM2G-51I	AKD-x01207	114	6.83 (60.5)	15.7 (139)	4600	6000	2770	2.52 (2.23E-03)
	AKM2G-51K	AKD-x01207	114	6.81 (60.3)	15.6 (138)	6000	6000	2930	2.52 (2.23E-03)
	AKM2G-52H	AKD-x00607	114	11.4 (101)	28.1 (249)	2700	6000	3020	4.58 (4.05E-03)
	AKM2G-52H	AKD-x01207	114	12.0 (106)	29.0 (257)	2700	6000	3020	4.58 (4.05E-03)
	AKM2G-52K	AKD-x01207	114	12.0 (106)	28.9 (256)	4400	6000	4140	4.58 (4.05E-03)
	AKM2G-52L	AKD-x01207	114	11.4 (101)	24.8 (220)	5600	6000	4350	4.58 (4.05E-03)
	AKM2G-52L	AKD-x02407	114	12.0 (106)	28.9 (256)	5600	6000	4350	4.58 (4.05E-03)
	AKM2G-53H	AKD-x00607	114	16.3 (144)	41.8 (370)	1800	6000	2810	6.64 (5.88E-03)
	AKM2G-53L	AKD-x01207	114	15.4 (136)	34.8 (308)	4200	6000	4770	6.64 (5.88E-03)
	AKM2G-53L	AKD-x02407	114	16.1 (143)	41.4 (366)	4200	6000	4770	6.64 (5.88E-03)
	AKM2G-53M	AKD-x01207	114	13.6 (120)	31.5 (279)	4800	6000	4900	6.64 (5.88E-03)
	AKM2G-53M	AKD-x02407	114	16.1 (142)	41.5 (367)	4800	6000	4900	6.64 (5.88E-03)
	AKM2G-54L	AKD-x01207	114	20.1 (178)	52.3 (463)	2800	6000	4660	8.70 (7.70E-03)
	AKM2G-54L	AKD-x02407	114	20.2 (179)	54.8 (485)	2800	6000	4660	8.70 (7.70E-03)
	AKM2G-54M	AKD-x01207	114	16.4 (145)	39.4 (349)	3900	6000	5280	8.70 (7.70E-03)
	AKM2G-54M	AKD-x02407	114	20.1 (178)	54.7 (484)	3900	6000	5280	8.70 (7.70E-03)
	AKM2G-54N	AKD-x02407	114	20.0 (177)	53.9 (477)	4500	6000	5200	8.70 (7.70E-03)
	AKM2G-62K	AKD-x01207	142	15.3 (135)	37.6 (332)	3000	6000	4050	9.10 (8.05E-03)
	AKM2G-62L	AKD-x01207	142	15.2 (135)	33.7 (298)	3900	6000	4700	9.10 (8.05E-03)
	AKM2G-62L	AKD-x02407	142	15.2 (135)	37.4 (331)	3900	6000	4700	9.10 (8.05E-03)
	AKM2G-62M	AKD-x02407	142	15.1 (134)	37.4 (331)	5000	6000	5030	9.10 (8.05E-03)
	AKM2G-63K	AKD-x01207	142	21.6 (191)	54.8 (485)	2200	6000	4350	13.0 (1.15E-02)
	AKM2G-63M	AKD-x02407	142	21.4 (190)	54.5 (482)	3600	6000	5880	13.0 (1.15E-02)
	AKM2G-63N	AKD-x02407	142	21.4 (189)	52.5 (465)	4100	6000	6070	13.0 (1.15E-02)
	AKM2G-63N	AKD-x04807	142	21.4 (189)	54.5 (483)	4100	6000	6070	13.0 (1.15E-02)
	AKM2G-64L	AKD-x01207	142	27.1 (240)	63.9 (566)	2100	6000	5150	16.9 (1.50E-02)
	AKM2G-64L	AKD-x02407	142	27.1 (240)	70.7 (626)	2100	6000	5150	16.9 (1.50E-02)
	AKM2G-64M	AKD-x02407	142	27.0 (239)	70.5 (624)	3000	6000	6450	16.9 (1.50E-02)
	AKM2G-64N	AKD-x02407	142	26.9 (238)	64.8 (574)	3400	6000	6720	16.9 (1.50E-02)
	AKM2G-64N	AKD-x04807	142	26.9 (238)	70.3 (623)	3400	6000	6720	16.9 (1.50E-02)
	AKM2G-65L	AKD-x01207	142	31.7 (280)	73.0 (646)	1900	6000	5670	20.8 (1.84E-02)
	AKM2G-65L	AKD-x02407	142	32.7 (290)	86.8 (768)	1900	6000	5670	20.8 (1.84E-02)
	AKM2G-65M	AKD-x02407	142	32.7 (289)	86.8 (768)	2400	6000	6710	20.8 (1.84E-02)

[1] For complete AKM2G, AKD model nomenclature, refer to pages 66 and 74 respectively.
[2] Max mechanical speeds: 8000 RPM for AKM2G-2,3 and 6000 RPM for AKM2G-4, 5, 6, 7.

AKM®2G / AKD® System Performance

AKM2G Servo Motor with AKD Servo Drive System Performance

	AKM2G Servo Motor[1]	AKD Servo Drive	Frame Size mm	Max Cont.Torque Tmc Nm (lb-in)	Peak Torque at stall Tps Nm (lb-in)	Rated Speed Nrtd RPM	Max System Speed[2] RPM	Power Prtd watts	Inertia (Jm) Kg-cm² (lb-in-s²)
400 V	AKM2G-65N	AKD-x02407	142	32.8 (290)	75.8 (671)	3100	6000	7670	20.8 (1.84E-02)
	AKM2G-65N	AKD-x04807	142	32.8 (290)	87.0 (770)	3100	6000	7670	20.8 (1.84E-02)
	AKM2G-71L	AKD-x01207	192	22.7 (201)	49.2 (436)	2600	6000	5180	25.9 (2.29E-02)
	AKM2G-71L	AKD-x02407	192	22.9 (203)	49.5 (438)	2600	6000	5180	25.9 (2.29E-02)
	AKM2G-71N	AKD-x02407	192	22.8 (202)	49.3 (436)	4000	6000	6390	25.9 (2.29E-02)
	AKM2G-71P	AKD-x02407	192	23.0 (204)	46.3 (410)	4900	6000	6170	25.9 (2.29E-02)
	AKM2G-71P	AKD-x04807	192	23.0 (204)	49.7 (440)	4900	6000	6170	25.9 (2.29E-02)
	AKM2G-72L	AKD-x01207	192	39.5 (349)	87.6 (775)	1550	6000	5860	46.8 (4.14E-02)
	AKM2G-72L	AKD-x02407	192	40.6 (359)	89.3 (790)	1550	6000	5860	46.8 (4.14E-02)
	AKM2G-72N	AKD-x02407	192	41.2 (365)	90.3 (799)	2400	6000	8030	46.8 (4.14E-02)
	AKM2G-72P	AKD-x02407	192	40.7 (361)	82.9 (733)	2800	6000	8510	46.8 (4.14E-02)
	AKM2G-72P	AKD-x04807	192	40.7 (361)	89.5 (792)	2800	6000	8510	46.8 (4.14E-02)
	AKM2G-73L	AKD-x01207	192	56.6 (501)	127 (1130)	1050	6000	5770	67.7 (5.99E-02)
	AKM2G-73N	AKD-x02407	192	58.0 (513)	129 (1150)	1600	6000	8290	67.7 (5.99E-02)
	AKM2G-73Q	AKD-x02407	192	49.9 (442)	95.2 (843)	2600	6000	10600	67.7 (5.99E-02)
	AKM2G-73Q	AKD-x04807	192	57.2 (506)	128 (1130)	2600	6000	10600	67.7 (5.99E-02)
	AKM2G-74P	AKD-x02407	192	72.3 (640)	141 (1250)	1700	6000	10300	88.6 (7.84E-02)
	AKM2G-74P	AKD-x04807	192	72.3 (640)	164 (1460)	1700	6000	10300	88.6 (7.84E-02)
	AKM2G-74Q	AKD-x02407	192	59.6 (527)	115 (1020)	2200	6000	11700	88.6 (7.84E-02)
	AKM2G-74Q	AKD-x04807	192	71.9 (637)	164 (1450)	2200	6000	11700	88.6 (7.84E-02)
	AKM2G-74R	AKD-x04807	192	71.5 (633)	163 (1440)	2500	6000	11800	88.6 (7.84E-02)
480 V	AKM2G-21D	AKD-x00307	58	0.638 (5.64)	2.50 (22.1)	8000	8000	436	0.093 (8.23E-05)
	AKM2G-22C	AKD-x00307	58	1.11 (9.86)	4.37 (38.7)	8000	8000	751	0.155 (1.37E-04)
	AKM2G-22D	AKD-x00307	58	1.11 (9.87)	4.16 (36.8)	8000	8000	737	0.155 (1.37E-04)
	AKM2G-23D	AKD-x00307	58	1.49 (13.2)	5.85 (51.8)	8000	8000	963	0.217 (1.92E-04)
	AKM2G-23E	AKD-x00307	58	1.49 (13.2)	4.54 (40.2)	8000	8000	937	0.217 (1.92E-04)
	AKM2G-23E	AKD-x00607	58	1.49 (13.2)	5.84 (51.7)	8000	8000	937	0.217 (1.92E-04)
	AKM2G-24D	AKD-x00307	58	1.82 (16.1)	7.13 (63.1)	7400	8000	1070	0.279 (2.47E-04)
	AKM2G-24E	AKD-x00307	58	1.82 (16.1)	5.57 (49.3)	8000	8000	1100	0.279 (2.47E-04)
	AKM2G-24E	AKD-x00607	58	1.82 (16.1)	7.16 (63.4)	8000	8000	1100	0.279 (2.47E-04)
	AKM2G-24F	AKD-x00607	58	1.85 (16.3)	7.24 (64.1)	8000	8000	1060	0.279 (2.47E-04)
	AKM2G-31C	AKD-x00307	80	1.68 (14.8)	5.99 (53.0)	5200	8000	844	0.426 (3.77E-04)
	AKM2G-31D	AKD-x00307	80	1.68 (14.9)	6.00 (53.1)	7300	8000	1120	0.426 (3.77E-04)
	AKM2G-31E	AKD-x00307	80	1.70 (15.1)	4.90 (43.4)	8000	8000	1160	0.426 (3.77E-04)
	AKM2G-31E	AKD-x00607	80	1.70 (15.1)	6.06 (53.6)	8000	8000	1160	0.426 (3.77E-04)
	AKM2G-32D	AKD-x00307	80	2.81 (24.9)	10.4 (91.8)	4700	8000	1230	0.813 (7.20E-04)
	AKM2G-32E	AKD-x00307	80	2.80 (24.8)	8.68 (76.8)	6100	8000	1490	0.813 (7.20E-04)
	AKM2G-32E	AKD-x00607	80	2.80 (24.8)	10.3 (91.5)	6100	8000	1490	0.813 (7.20E-04)
	AKM2G-33E	AKD-x00307	80	3.86 (34.1)	11.2 (99.4)	4800	8000	1580	1.20 (1.06E-03)
	AKM2G-33E	AKD-x00607	80	3.86 (34.1)	14.6 (129)	4800	8000	1580	1.20 (1.06E-03)
	AKM2G-33G	AKD-x00607	80	3.81 (33.7)	14.4 (128)	7000	8000	1770	1.20 (1.06E-03)
	AKM2G-41D	AKD-x00307	88	2.85 (25.3)	7.20 (63.7)	4600	6000	1220	0.774 (6.85E-04)
	AKM2G-41E	AKD-x00307	88	2.87 (25.4)	6.61 (58.5)	5900	6000	1470	0.774 (6.85E-04)
	AKM2G-41E	AKD-x00607	88	2.87 (25.4)	7.26 (64.3)	5900	6000	1470	0.774 (6.85E-04)
	AKM2G-41G	AKD-x00607	88	2.86 (25.3)	7.25 (64.2)	6000	6000	1370	0.774 (6.85E-04)
	AKM2G-42D	AKD-x00307	88	5.04 (44.6)	14.3 (127)	2600	6000	1280	1.36 (1.20E-03)
	AKM2G-42E	AKD-x00307	88	5.08 (45.0)	12.6 (112)	3300	6000	1580	1.36 (1.20E-03)
	AKM2G-42E	AKD-x00607	88	5.08 (45.0)	14.4 (127)	3300	6000	1580	1.36 (1.20E-03)
	AKM2G-42H	AKD-x00607	88	5.12 (45.3)	12.9 (114)	6000	6000	2230	1.36 (1.20E-03)
	AKM2G-42H	AKD-x01207	88	5.10 (45.2)	14.4 (128)	6000	6000	2230	1.36 (1.20E-03)
	AKM2G-43D	AKD-x00307	88	6.97 (61.7)	20.7 (183)	1900	6000	1310	1.95 (1.73E-03)
	AKM2G-43G	AKD-x00607	88	6.97 (61.7)	21.0 (186)	3900	6000	2350	1.95 (1.73E-03)
	AKM2G-43I	AKD-x01207	88	6.98 (61.7)	21.1 (187)	6000	6000	2530	1.95 (1.73E-03)
	AKM2G-44E	AKD-x00307	88	8.48 (75.1)	22.0 (195)	2100	6000	1720	2.53 (2.24E-03)
	AKM2G-44E	AKD-x00607	88	8.48 (75.1)	26.9 (238)	2100	6000	1720	2.53 (2.24E-03)
	AKM2G-44H	AKD-x00607	88	8.51 (75.3)	22.4 (199)	4300	6000	2850	2.53 (2.24E-03)
	AKM2G-44H	AKD-x01207	88	8.49 (75.2)	27.0 (239)	4300	6000	2850	2.53 (2.24E-03)
	AKM2G-44J	AKD-x01207	88	8.47 (75.0)	26.9 (238)	5400	6000	2780	2.53 (2.24E-03)
	AKM2G-51H	AKD-x00607	114	6.82 (60.4)	15.7 (139)	5100	6000	2960	2.52 (2.23E-03)

[1] For complete AKM2G, AKD model nomenclature, refer to pages 66 and 74 respectively.
[2] Max mechanical speeds: 8000 RPM for AKM2G-2,3 and 6000 RPM for AKM2G-4, 5, 6, 7.

AKM2G – 2 2 A – AN C N DA 00[1]

Motor Series | Frame Size | Rotor Length | Winding | Flange | Shaft | Connector | Brake | Feedback | Thermal Sensor | Customization

AKM2G Servo Motor with AKD Servo Drive System Performance

	AKM2G Servo Motor[1]	AKD Servo Drive	Frame Size mm	Max Cont.Torque Tmc Nm (lb-in)	Peak Torque at stall Tps Nm (lb-in)	Rated Speed Nrtd RPM	Max System Speed[2] RPM	Power Prtd watts	Inertia (Jm) Kg-cm² (lb-in-s²)
480 V	AKM2G-51I	AKD-x00607	114	6.45 (57.1)	15.3 (135)	5700	6000	3160	2.52 (2.23E-03)
	AKM2G-51I	AKD-x01207	114	6.82 (60.3)	15.7 (139)	5700	6000	3160	2.52 (2.23E-03)
	AKM2G-52H	AKD-x00607	114	11.4 (101)	28.1 (249)	3200	6000	3440	4.58 (4.05E-03)
	AKM2G-52H	AKD-x01207	114	12.0 (106)	29.0 (257)	3200	6000	3440	4.58 (4.05E-03)
	AKM2G-52K	AKD-x01207	114	11.9 (106)	28.9 (256)	5300	6000	4340	4.58 (4.05E-03)
	AKM2G-53H	AKD-x00607	114	16.2 (144)	41.8 (370)	2200	6000	3320	6.64 (5.88E-03)
	AKM2G-53L	AKD-x01207	114	15.4 (136)	34.8 (308)	5100	6000	4610	6.64 (5.88E-03)
	AKM2G-53L	AKD-x02407	114	16.1 (142)	41.4 (366)	5100	6000	4610	6.64 (5.88E-03)
	AKM2G-54L	AKD-x01207	114	20.1 (178)	52.3 (463)	3400	6000	5080	8.70 (7.70E-03)
	AKM2G-54L	AKD-x02407	114	20.1 (178)	54.8 (485)	3400	6000	5080	8.70 (7.70E-03)
	AKM2G-54M	AKD-x01207	114	16.4 (145)	39.4 (348)	4800	6000	4920	8.70 (7.70E-03)
	AKM2G-54M	AKD-x02407	114	20.0 (177)	54.7 (484)	4800	6000	4920	8.70 (7.70E-03)
	AKM2G-62K	AKD-x01207	142	15.3 (135)	37.6 (332)	3700	6000	4590	9.10 (8.05E-03)
	AKM2G-62L	AKD-x01207	142	15.2 (134)	33.7 (298)	4800	6000	4950	9.10 (8.05E-03)
	AKM2G-62L	AKD-x02407	142	15.2 (135)	37.4 (331)	4800	6000	4950	9.10 (8.05E-03)
	AKM2G-63K	AKD-x01207	142	21.5 (190)	54.8 (485)	2700	6000	5030	13.0 (1.15E-02)
	AKM2G-63M	AKD-x02407	142	21.4 (189)	54.5 (482)	4500	6000	6050	13.0 (1.15E-02)
	AKM2G-64L	AKD-x01207	142	27.0 (239)	63.9 (566)	2600	6000	5950	16.9 (1.50E-02)
	AKM2G-64L	AKD-x02407	142	27.1 (240)	70.7 (626)	2600	6000	5950	16.9 (1.50E-02)
	AKM2G-64M	AKD-x02407	142	26.9 (238)	70.5 (624)	3700	6000	6840	16.9 (1.50E-02)
	AKM2G-64N	AKD-x02407	142	26.8 (237)	64.8 (574)	4200	6000	6670	16.9 (1.50E-02)
	AKM2G-64N	AKD-x04807	142	26.8 (237)	70.3 (623)	4200	6000	6670	16.9 (1.50E-02)
	AKM2G-65L	AKD-x01207	142	31.7 (280)	73.0 (646)	2300	6000	6460	20.8 (1.84E-02)
	AKM2G-65L	AKD-x02407	142	32.7 (289)	86.8 (768)	2300	6000	6460	20.8 (1.84E-02)
	AKM2G-65M	AKD-x02407	142	32.6 (289)	86.8 (768)	2900	6000	7380	20.8 (1.84E-02)
	AKM2G-65N	AKD-x02407	142	32.7 (289)	75.8 (671)	3800	6000	7790	20.8 (1.84E-02)
	AKM2G-65N	AKD-x04807	142	32.7 (289)	87.0 (770)	3800	6000	7790	20.8 (1.84E-02)
	AKM2G-71L	AKD-x01207	192	22.7 (201)	49.2 (436)	3200	6000	5880	25.9 (2.29E-02)
	AKM2G-71L	AKD-x02407	192	22.9 (202)	49.5 (438)	3200	6000	5880	25.9 (2.29E-02)
	AKM2G-71N	AKD-x02407	192	22.7 (201)	49.3 (436)	4900	6000	6120	25.9 (2.29E-02)
	AKM2G-72L	AKD-x01207	192	39.5 (349)	87.6 (775)	1900	6000	6810	46.8 (4.14E-02)
	AKM2G-72L	AKD-x02407	192	40.5 (358)	89.3 (790)	1900	6000	6810	46.8 (4.14E-02)
	AKM2G-72N	AKD-x02407	192	41.1 (364)	90.3 (799)	2900	6000	8620	46.8 (4.14E-02)
	AKM2G-72P	AKD-x02407	192	40.6 (359)	82.9 (733)	3400	6000	8600	46.8 (4.14E-02)
	AKM2G-72P	AKD-x04807	192	40.6 (359)	89.5 (792)	3400	6000	8600	46.8 (4.14E-02)
	AKM2G-73L	AKD-x01207	192	56.5 (500)	127 (1130)	1300	6000	6890	67.7 (5.99E-02)
	AKM2G-73N	AKD-x02407	192	57.8 (512)	129 (1150)	1900	6000	9300	67.7 (5.99E-02)
	AKM2G-73Q	AKD-x02407	192	49.9 (442)	95.2 (843)	3200	6000	10300	67.7 (5.99E-02)
	AKM2G-73Q	AKD-x04807	192	57.0 (504)	128 (1130)	3200	6000	10300	67.7 (5.99E-02)
	AKM2G-74P	AKD-x02407	192	72.1 (638)	141 (1250)	2100	6000	11500	88.6 (7.84E-02)
	AKM2G-74P	AKD-x04807	192	72.1 (638)	164 (1460)	2100	6000	11500	88.6 (7.84E-02)
	AKM2G-74Q	AKD-x02407	192	59.6 (527)	115 (1020)	2700	6000	11700	88.6 (7.84E-02)
	AKM2G-74Q	AKD-x04807	192	71.6 (634)	164 (1450)	2700	6000	11700	88.6 (7.84E-02)
	AKM2G-74R	AKD-x04807	192	71.2 (630)	163 (1440)	3000	6000	10500	88.6 (7.84E-02)

[1] For complete AKM2G, AKD model nomenclature, refer to pages 66 and 74 respectively.
[2] Max mechanical speeds: 8000 RPM for AKM2G-2,3 and 6000 RPM for AKM2G-4, 5, 6, 7.

AKM2G-2x Performance Data

AKM2G-2x Performance Data – Up to 480 Vac voltage

					AKM2G-21			AKM2G-22			AKM2G-23			AKM2G-24		
	Parameters	Tol	Symbol	Units	D	E	G	C	D	E	D	E	F	D	E	F
	Max Rated Equivalent Line Voltage	Max	V_{bus}	Vac	480	240	120	480	480	240	480	480	240	480	480	480
	Max Continuous Torque for ΔT winding = 100°C ①②③⑤	Nom	T_{mc}	Nm	0.638	0.644	0.652	1.11	1.11	1.12	1.49	1.49	1.51	1.82	1.82	1.85
				lb-in	5.65	5.70	5.77	9.86	9.87	9.92	13.2	13.2	13.4	16.1	16.1	16.3
	Continuous Current for ΔT winding = 100°C ①②③	Nom	I_{mc}	A_{rms}	2.17	2.73	4.18	1.65	2.37	2.93	2.11	2.92	4.07	2.11	2.92	4.11
	Max Continuous Torque for ΔT winding = 60°C ②③⑤	Nom	T_{mc}	Nm	0.497	0.501	0.506	0.863	0.865	0.868	1.157	1.158	1.175	1.41	1.42	1.44
				lb-in	4.40	4.43	4.48	7.64	7.66	7.68	10.2	10.2	10.4	12.5	12.6	12.7
	Max Mechanical Speed ④	Nom	N_{max}	rpm	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000
	Peak Torque ①②③	Nom	T_p	Nm	2.50	2.52	2.55	4.37	4.37	4.39	5.86	5.85	5.93	7.11	7.14	7.22
				lb-in	22.1	22.3	22.6	38.7	38.7	38.9	51.8	51.7	52.5	63.0	63.2	63.9
	Peak Current	Nom	I_p	A_{rms}	8.66	10.9	16.7	6.62	9.49	11.7	8.45	11.7	16.3	8.45	11.7	16.4
120 Vac	Rated Torque (speed) ①②③		T_{rtd}	Nm	0.591	0.577	0.547	1.08	1.06	1.04	1.44	1.41	1.37	1.76	1.73	1.69
				lb-in	5.23	5.11	4.84	9.57	9.39	9.20	12.8	12.5	12.2	15.6	15.3	15.0
	Rated Speed		N_{rtd}	rpm	4300	5600	8000	1800	2700	3600	1800	2700	4000	1500	2300	3400
	Rated Power (speed) ①②③		P_{rtd}	kW	0.266	0.339	0.458	0.204	0.300	0.392	0.272	0.398	0.576	0.277	0.417	0.603
				Hp	0.357	0.454	0.614	0.273	0.402	0.526	0.365	0.534	0.772	0.372	0.559	0.809
240 Vac	Rated Torque (speed) ①②③		T_{rtd}	Nm	0.536	0.536	-	1.02	0.964	0.906	1.35	1.27	1.17	1.66	1.58	1.43
				lb-in	4.75	4.74	-	9.01	8.53	8.02	11.9	11.2	10.4	14.6	13.9	12.7
	Rated Speed		N_{rtd}	rpm	8000	8000	-	4200	6100	8000	4100	5800	8000	3500	4900	7200
	Rated Power (speed) ①②③		P_{rtd}	kW	0.449	0.449	-	0.448	0.616	0.759	0.579	0.772	0.980	0.607	0.808	1.08
				Hp	0.602	0.602	-	0.600	0.826	1.02	0.777	1.03	1.31	0.813	1.08	1.45
400 Vac	Rated Torque (speed) ①②③		T_{rtd}	Nm	0.525	-	-	0.918	0.890	-	1.19	1.14	-	1.48	1.34	1.31
				lb-in	4.65	-	-	8.12	7.88	-	10.6	10.1	-	13.1	11.8	11.6
	Rated Speed		N_{rtd}	rpm	8000	-	-	7500	8000	-	7300	8000	-	6100	8000	8000
	Rated Power (speed) ①②③		P_{rtd}	kW	0.440	-	-	0.721	0.746	-	0.913	0.953	-	0.948	1.12	1.09
				Hp	0.590	-	-	0.967	1.00	-	1.22	1.28	-	1.27	1.50	1.47
480 Vac	Rated Torque (speed) ①②③		T_{rtd}	Nm	0.520	-	-	0.896	0.879	-	1.15	1.12	-	1.39	1.31	1.27
				lb-in	4.60	-	-	7.93	7.78	-	10.2	9.9	-	12.27	11.62	11.23
	Rated Speed		N_{rtd}	rpm	8000	-	-	8000	8000	-	8000	8000	-	7400	8000	8000
	Rated Power (speed) ①②③		P_{rtd}	kW	0.436	-	-	0.751	0.737	-	0.963	0.937	-	1.07	1.10	1.06
				Hp	0.584	-	-	1.01	0.99	-	1.29	1.26	-	1.44	1.47	1.43

Notes:

① Motor winding temperature rise, ΔT = 100° C, at 40° C ambient.
② All data referenced to sinusoidal commutation.
③ Motor with resolver feedback and standard heat sink.
④ May be limited at some values of Vbus.
⑤ See de-rate curves for the de-rate of different motor options

AKM2G-2x Performance Data – Up to 480 Vac voltage (Continued)

				AKM2G-21			AKM2G-22			AKM2G-23			AKM2G-24		
Parameters	**Tol**	**Symbol**	**Units**	**D**	**E**	**G**	**C**	**D**	**E**	**D**	**E**	**F**	**D**	**E**	**F**
Torque Constant ①	±10%	K_t	Nm/A_{rms}	0.297	0.238	0.157	0.674	0.470	0.383	0.707	0.510	0.372	0.860	0.626	0.450
			$lb\text{-}in/A_{rms}$	2.63	2.11	1.39	5.97	4.16	3.39	6.26	4.52	3.29	7.61	5.54	3.98
Back EMF Constant ②	±10%	K_e	V_{rms}/k_{rpm}	19.5	15.6	10.3	44.2	30.9	25.1	46.1	33.3	24.2	55.7	40.5	29.1
Motor Constant ⑥	Nom	K_m	$N\text{-}m/\sqrt{W}$	0.090	0.090	0.091	0.144	0.144	0.144	0.186	0.187	0.189	0.224	0.225	0.228
			$lb\text{-}in/\sqrt{W}$	0.794	0.799	0.808	1.27	1.27	1.28	1.65	1.65	1.67	1.98	1.99	2.02
Resistance (line-line) ②	±10%	R_m	Ohm	7.30	4.63	1.97	14.7	7.11	4.69	9.60	4.99	2.57	9.84	5.15	2.58
Inductance Q-Axis (line-line)		Lqll	mH	16.3	10.5	4.55	37.9	18.5	12.2	26.5	13.8	7.32	28.4	15.0	7.75
Inductance D-Axis (line-line)		Ldll	mH	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory
Inductance Saturation Current		Lisat	Arms	15	19	29	13	19	24	19	27	37	21	29	41
Maximum Demagnetization Current		Midpeak	Arms	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory
Inertia (includes Resolver feedback) ③	±10%	J_m	$kg\text{-}cm^2$	0.093			0.155			0.217			0.279		
			$lb\text{-}in\text{-}s^2$	8.23E-05			1.37E-04			1.92E-04			2.47E-04		
Optional Brake Inertia (additional)	±10%	J_m	$kg\text{-}cm^2$	0.040			0.040			0.040			0.040		
			$lb\text{-}in\text{-}s^2$	3.54E-05			3.54E-05			3.54E-05			3.54E-05		
Weight without brake ④		W	kg	1.1			1.4			1.7			2.0		
			lb	2.4			3.1			3.7			4.4		
Static Friction ①⑤		T_f	Nm	0.0040			0.004			0.004			0.004		
			lb-in	0.04			0.04			0.04			0.04		
Viscous Damping ①		K_{dv}	Nm/k_{rpm}	0.0017			0.0033			0.0050			0.0067		
			$lb\text{-}in/k_{rpm}$	0.015			0.030			0.044			0.059		
Thermal Time Constant		TCT	minutes	9.6			10.8			11.9			13.0		
Coil Thermal Time Constant		MCT_f0		Contact Factory			Contact Factory			Contact Factory			Contact Factory		
Thermal Resistance ①		$R_{thw\text{-}a}$	K/W	1.33			1.14			1.07			1.04		
Pole Pairs		PP		3			3			3			3		
Heat Sink Size				10"x10"x1/4" Aluminum Plate			10"x10"x1/4" Aluminum Plate			10"x10"x1/4" Aluminum Plate			10"x10"x1/4" Aluminum Plate		

Notes:
① Motor winding temperature rise, ΔT = 100° C, at 40° C ambient.
② Measured at 25° C.
③ Add parking brake if applicable for total inertia.
④ Brake motor adds 0.45 kg [1.0 lbs]
⑤ Shaft seal increases Static Friction by 0.020 Nm [0.21 lb-in]
⑥ This value is calculated from the Torque Constant and Resistance. Refer to those values and notes ① & ② for additional details.

*Complete AKM2G series model nomenclature can be found on page 66.

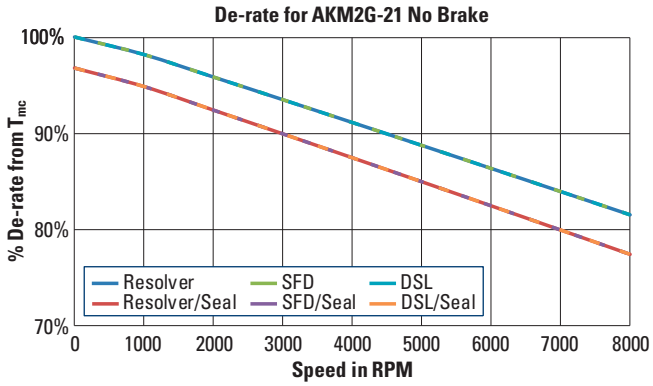
AKM2G-2x De-rate Curves

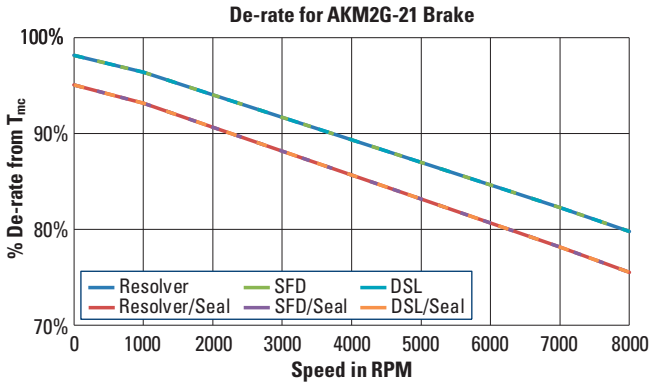
De-rate is calculated by multiplying the torque value (T_{mc}) by the percentage De-rate for the appropriate feedback either with or without shaft seal at the desired speed point. Also, use the correct De-rate graph for the motor based on whether it will have a brake or no brake. Refer to De-rate Calculations in the AKM2G Systems Overview on page 11 for additional details about De-rate calculations.

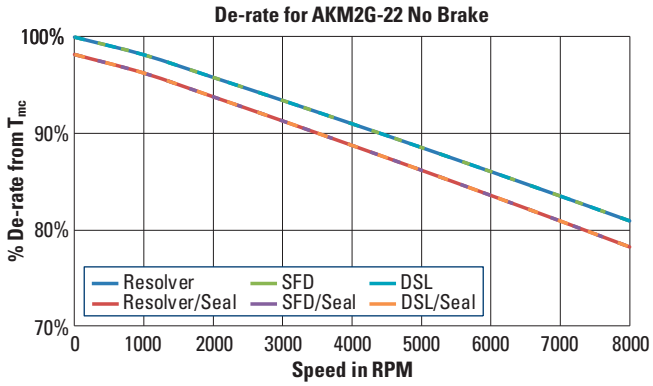
Example:

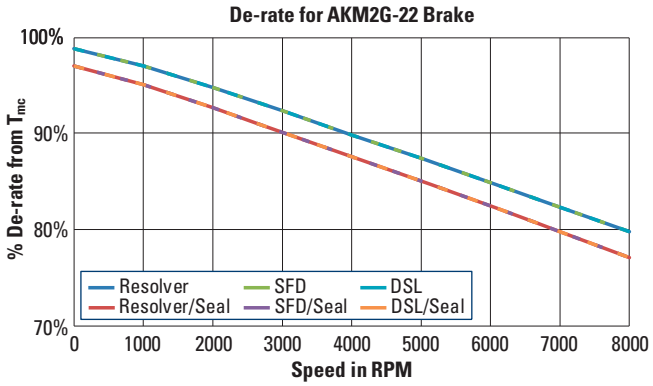
For an AKM2G-21 motor with an SFD feedback with shaft seal and no brake operating at 3000 RPM there is a 10.1% De-rate. Multiply the motor torque value (T_{mc}) by .899 for the rated torque at 3000 RPM. For ease of interpretation of the graph using a De-rate that is a rounded approximation is acceptable. For exact values refer to Kollmorgen's Motioneering Application Sizing programs.

For EnDAT motor De-rate information, please contact the factory.









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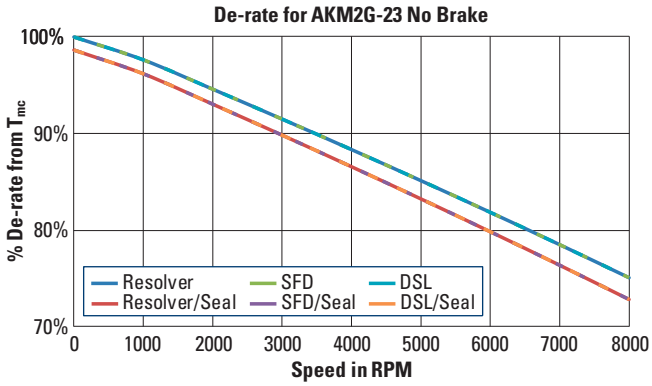
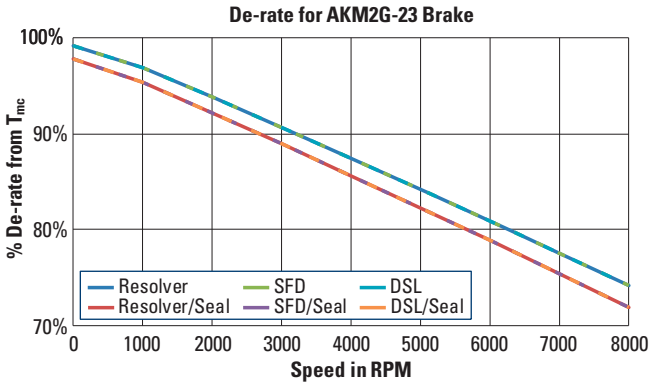
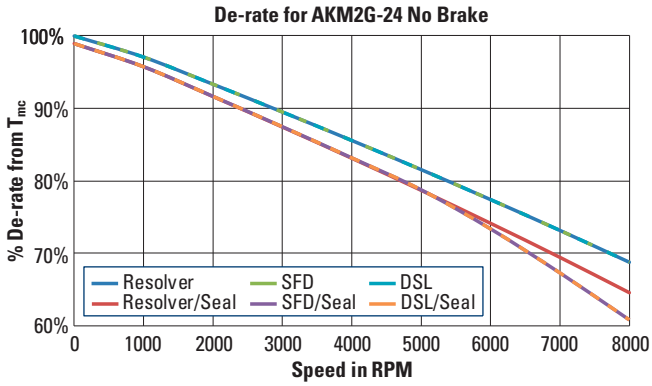
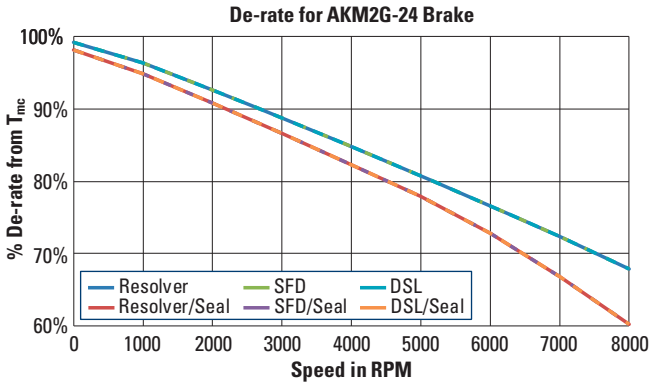




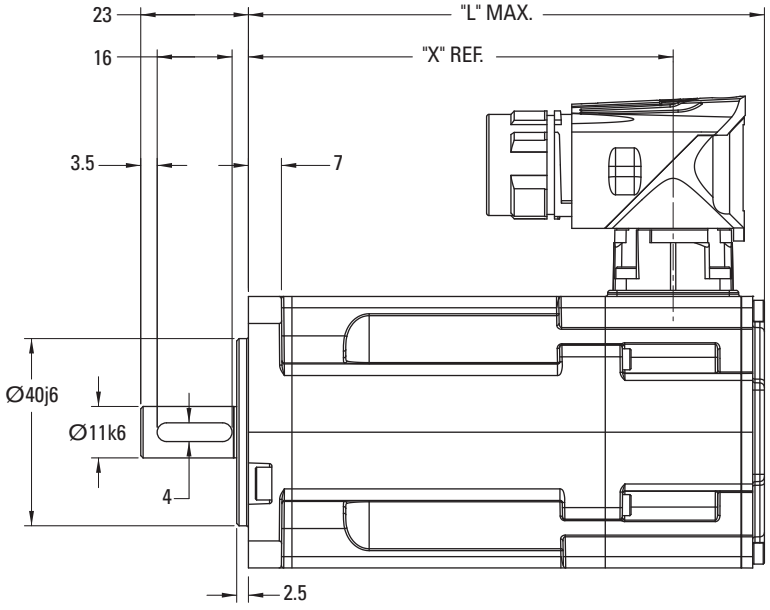


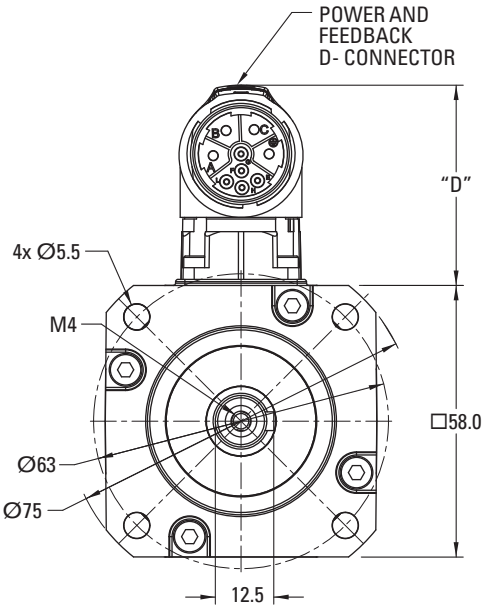


*Complete AKM2G series model nomenclature can be found on page 66.

AKM2G-2x Drawings

AKM2G-2x Single D- Connector Frame



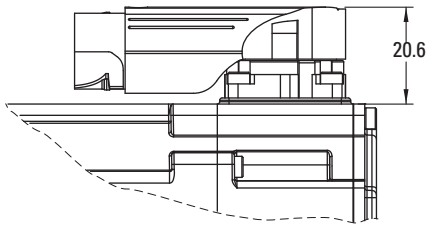


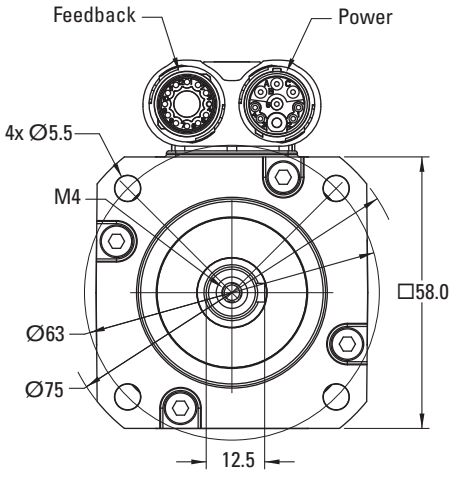
D- Connector Feedback	"D"
SFD3	42.8
DSL & EnDat	43.7

AKM2G-2x "X" and "L" Dimensions

	No Brake			Brake		
		Resolver / SFD	Encoder		Resolver / SFD	Encoder
Model	X	L	L	X	L	L
AKM2G-21	90.75	111.15	118.15	129.75	150.15	157.15
AKM2G-22	110	130.4	137.4	149	169.4	176.4
AKM2G-23	129.25	149.65	156.65	168.25	188.65	195.65
AKM2G-24	148.5	168.9	175.9	187.5	207.9	214.9

AKM2G-2x Dual ytec- Connector Option





Notes

AKM2G – 2 2 A – AN C N DA 00*

- AKM2G: Motor Series
- 2: Frame Size
- 2: Rotor Length
- A: Winding
- AN: Flange
- C: Shaft
- N: Connector
- DA: Brake
- 00: Feedback
- *: Thermal Sensor, Customization

*Complete AKM2G series model nomenclature can be found on page 66.

AKM2G-3x Performance Data

AKM2G-3x Performance Data – Up to 480 Vac voltage

					AKM2G-31			AKM2G-32			AKM2G-33		
	Parameters	Tol	Symbol	Units	C	D	E	D	E	G	E	G	H
	Max Rated Equivalent Line Voltage	Max	Vbus	Vac	480	480	480	480	480	400	480	480	400
	Max Continuous Torque for ΔT winding = 100°C ①②③⑤	Nom	T_{cs}	Nm	1.68	1.68	1.70	2.81	2.80	2.90	3.86	3.81	3.85
				lb-in	14.9	14.9	15.1	24.8	24.8	25.7	34.1	33.7	34.1
	Continuous Current for ΔT winding = 100°C ①②③	Nom	I_{cs}	A_{rms}	1.48	2.06	2.90	2.17	2.75	4.24	2.99	4.24	5.80
	Max Continuous Torque for ΔT winding = 60°C ②③⑤	Nom	T_{cs}	Nm	1.30	1.31	1.33	2.18	2.18	2.26	3.00	2.97	3.01
				lb-in	11.5	11.6	11.7	19.3	19.3	20.0	26.5	26.3	26.7
	Max Mechanical Speed ④	Nom	N_{max}	rpm	8000	8000	8000	8000	8000	8000	8000	8000	8000
	Peak Torque ①②③	Nom	T_p	Nm	6.02	6.03	6.09	10.4	10.4	10.7	14.7	14.5	14.7
				lb-in	53.2	53.4	53.9	92.2	92.0	94.7	130	128	130
	Peak Current	Nom	I_p	A_{rms}	5.90	8.23	11.6	8.66	11.0	17.0	12.0	16.9	23.2
120 Vac	Rated Torque (speed) ①②③		T_{rtd}	Nm	1.67	1.67	1.68	-	2.78	2.82	-	3.71	3.68
				lb-in	14.8	14.8	14.8	-	24.6	25.0	-	32.8	32.5
	Rated Speed		N_{rtd}	rpm	1000	1500	2300	-	1300	2300	-	1600	2250
	Rated Power (speed) ①②③		P_{rtd}	kW	0.175	0.263	0.404	-	0.378	0.680	-	0.622	0.866
				Hp	0.235	0.352	0.542	-	0.507	0.912	-	0.833	1.16
240 Vac	Rated Torque (speed) ①②③		T_{rtd}	Nm	1.64	1.62	1.59	2.72	2.67	2.60	3.64	3.44	3.20
				lb-in	14.5	14.3	14.1	24.1	23.6	23.0	32.2	30.4	28.3
	Rated Speed		N_{rtd}	rpm	2400	3500	5000	2200	2900	4700	2300	3350	4600
	Rated Power (speed) ①②③		P_{rtd}	kW	0.412	0.594	0.832	0.628	0.811	1.28	0.878	1.21	1.54
				Hp	0.553	0.796	1.12	0.842	1.09	1.72	1.18	1.62	2.07
400 Vac	Rated Torque (speed) ①②③		T_{rtd}	Nm	1.58	1.52	1.43	2.58	2.46	2.17	3.33	2.83	1.88
				lb-in	14.0	13.5	12.7	22.9	21.8	19.2	29.5	25.1	16.6
	Rated Speed		N_{rtd}	rpm	4300	6100	8000	3900	5000	7600	4000	5800	8000
	Rated Power (speed) ①②③		P_{rtd}	kW	0.713	0.972	1.20	1.06	1.29	1.72	1.39	1.72	1.57
				Hp	0.956	1.30	1.61	1.42	1.73	2.31	1.87	2.31	2.11
480 Vac	Rated Torque (speed) ①②③		T_{rtd}	Nm	1.55	1.46	1.39	2.50	2.33	-	3.14	2.42	-
				lb-in	13.7	12.9	12.3	22.1	20.6	-	27.8	21.4	-
	Rated Speed		N_{rtd}	rpm	5200	7300	8000	4700	6100	-	4800	7000	-
	Rated Power (speed) ①②③		P_{rtd}	kW	0.844	1.12	1.16	1.23	1.49	-	1.58	1.77	-
				Hp	1.13	1.50	1.56	1.65	1.99	-	2.11	2.38	-

Notes:

① Motor winding temperature rise, ΔT = 100° C, at 40° C ambient.
② All data referenced to sinusoidal commutation.
③ Motor with resolver feedback and standard heat sink.
④ May be limited at some values of Vbus.
⑤ See de-rate curves for the de-rate of different motor options

AKM2G-3x Performance Data – Up to 480 Vac voltage (Continued)

				AKM2G-31			AKM2G-32			AKM2G-33		
Parameters	**Tol**	**Symbol**	**Units**	**C**	**D**	**E**	**D**	**E**	**G**	**E**	**G**	**H**
Torque Constant ①	±10%	K_t	Nm/A_{rms}	1.16	0.836	0.601	1.33	1.05	0.701	1.33	0.924	0.683
			$lb\text{-}in/A_{rms}$	10.3	7.399	5.318	11.8	9.26	6.20	11.7	8.18	6.04
Back EMF Constant ②	±10%	K_e	V_{rms}/k_{rpm}	75.6	54.4	39.1	86.1	67.7	45.4	85.6	59.7	44.1
Motor Constant ⑥	Nom	K_m	$N\text{-}m/\sqrt{W}$	0.205	0.206	0.209	0.326	0.325	0.337	0.429	0.426	0.431
			$lb\text{-}in/\sqrt{W}$	1.82	1.83	1.85	2.88	2.88	2.99	3.80	3.77	3.82
Resistance (line-line) ②	±10%	R_m	Ohm	21.4	10.9	5.49	11.14	6.90	2.87	6.35	3.14	1.67
Inductance Q-Axis (line-line)		LqII	mH	46.9	24.2	12.5	24.7	15.3	6.8	15.1	7.3	4.0
Inductance D-Axis (line-line)		LdII	mH	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory
Inductance Saturation Current		Lisat	Arms	20	28	39	36	46	68	54.4	78.0	105.5
Maximum Demagnetization Current		Midpeak	Arms	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory
Inertia (includes Resolver feedback) ③	±10%	J_m	$kg\text{-}cm^2$	0.426			0.813			1.200		
			$lb\text{-}in\text{-}s^2$	3.77E-04			7.20E-04			1.06E-03		
Optional Brake Inertia (additional)	±10%	J_m	$kg\text{-}cm^2$	0.120			0.120			0.120		
			$lb\text{-}in\text{-}s^2$	1.06E-04			1.06E-04			1.06E-04		
Weight without brake ④		W	kg	1.8			2.5			3.3		
			lb	4.0			5.6			7.2		
Static Friction ①⑤		T_f	Nm	0.013			0.023			0.031		
			lb-in	0.12			0.20			0.27		
Viscous Damping ①		K_{dv}	Nm/k_{rpm}	0.0039			0.0078			0.0117		
			$lb\text{-}in/k_{rpm}$	0.035			0.069			0.104		
Thermal Time Constant		TCT	minutes	17			21			25		
Coil Thermal Time Constant		MCT_f0		Contact Factory			Contact Factory			Contact Factory		
Thermal Resistance ①		$R_{thw\text{-}a}$	K/W	0.980			0.868			0.795		
Pole Pairs		PP		4			4			4		
Heat Sink Size				10"x10"x1/4" Aluminum Plate			10"x10"x1/4" Aluminum Plate			10"x10"x1/4" Aluminum Plate		

Notes:
① Motor winding temperature rise, ΔT = 100° C, at 40° C ambient.
② Measured at 25° C.
③ Add parking brake if applicable for total inertia.
④ Brake motor adds 0.72 kg [1.6 lbs]
⑤ Shaft seal increases Static Friction by 0.017 Nm [0.15 lb-in]
⑥ This value is calculated from the Torque Constant and Resistance. Refer to those values and notes ① & ② for additional details.

*Complete AKM2G series model nomenclature can be found on page 66.

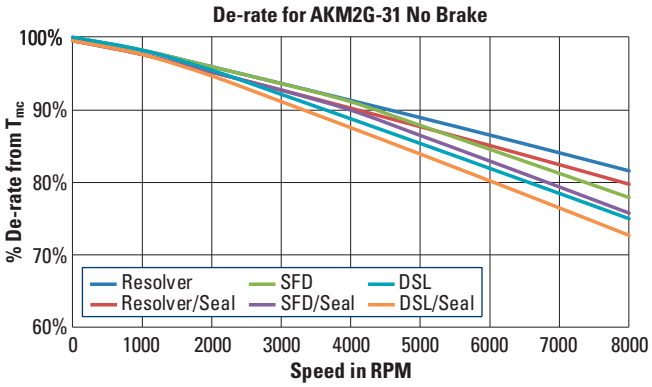
AKM2G-3x De-rate Curves

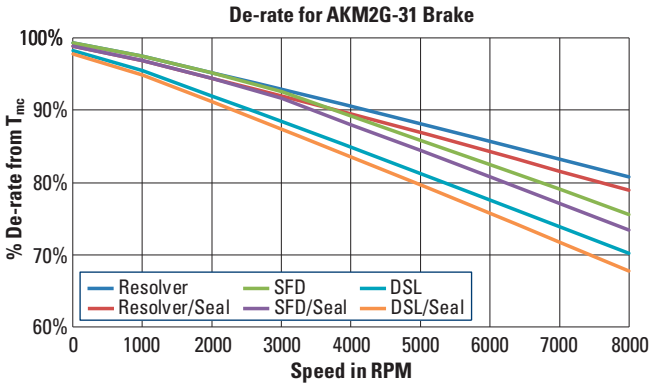
De-rate is calculated by multiplying the torque value (T_{mc}) by the percentage De-rate for the appropriate feedback either with or without shaft seal at the desired speed point. Also, use the correct De-rate graph for the motor based on whether it will have a brake or no brake. Refer to De-rate Calculations in the AKM2G Systems Overview on page 11 for additional details about De-rate calculations.

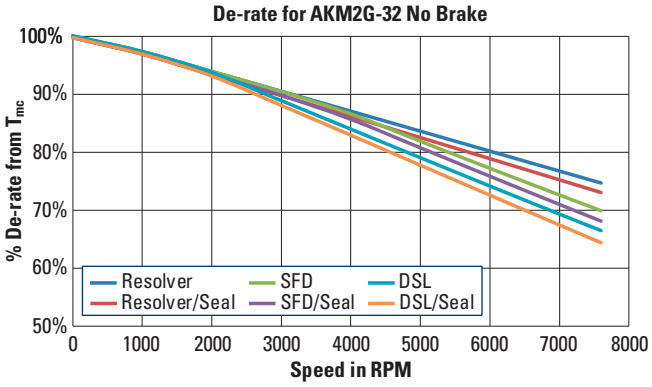
Example:

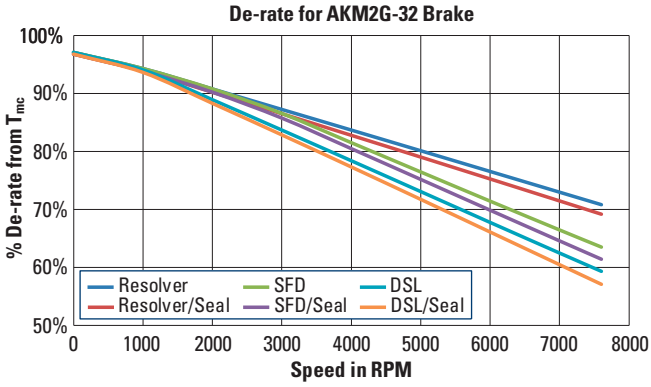
For an AKM2G-31 motor with an SFD feedback with shaft seal and no brake operating at 3000 RPM there is a 7.3% De-rate. Multiply the motor torque value (T_{mc}) by .927 for the rated torque at 3000 RPM. For ease of interpretation of the graph using a De-rate that is a rounded approximation is acceptable. For exact values refer to Kollmorgen's Motioneering Application Sizing programs.

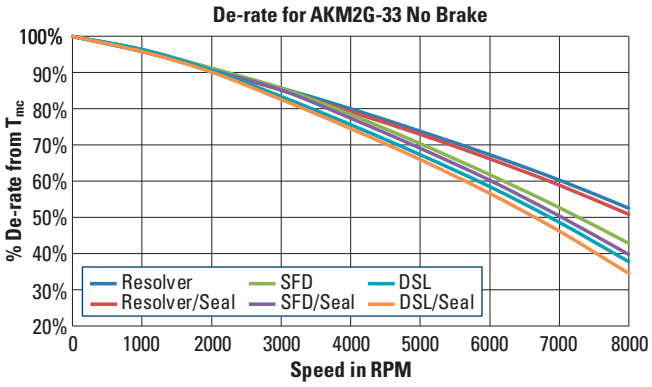
For EnDAT motor De-rate information, please contact the factory.

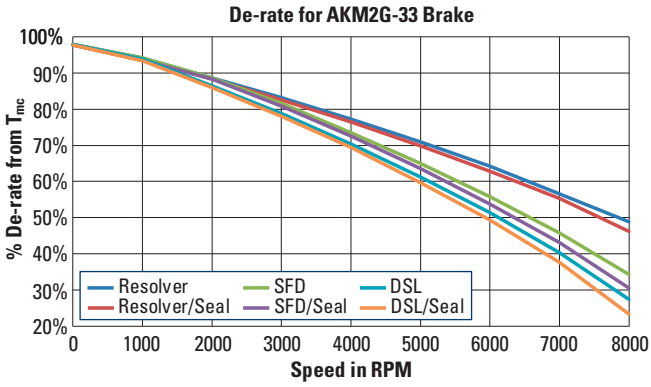










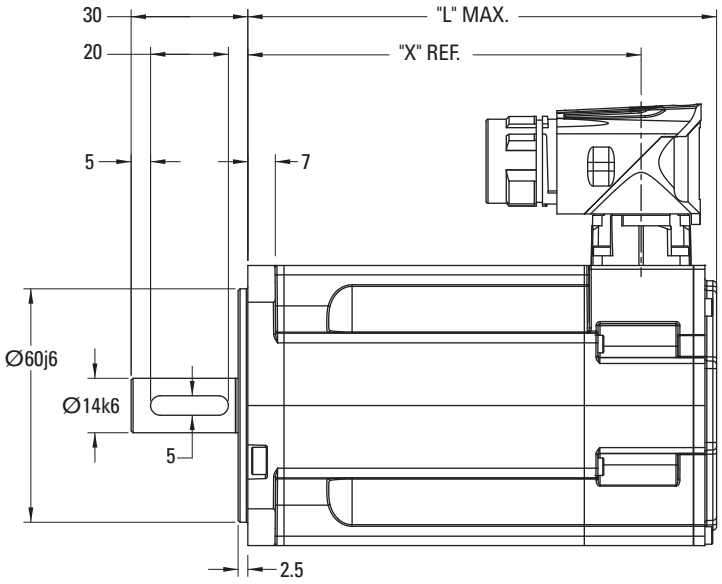


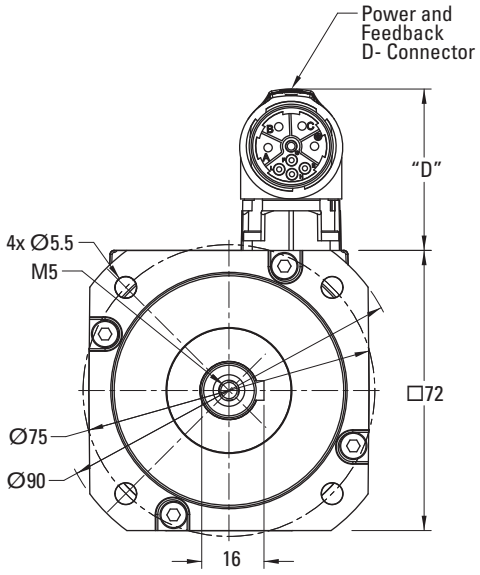
AKM2G-3x Drawings

AKM2G – 3 2 A – AN C N DA 00*

- AKM2G: Motor Series
- 3: Frame Size
- 2: Rotor Length
- A: Winding
- AN: Shaft Flange
- C: Connector
- N: Brake
- DA: Feedback
- 00*: Customization Thermal Sensor

AKM2G-3x Single Connector Frame



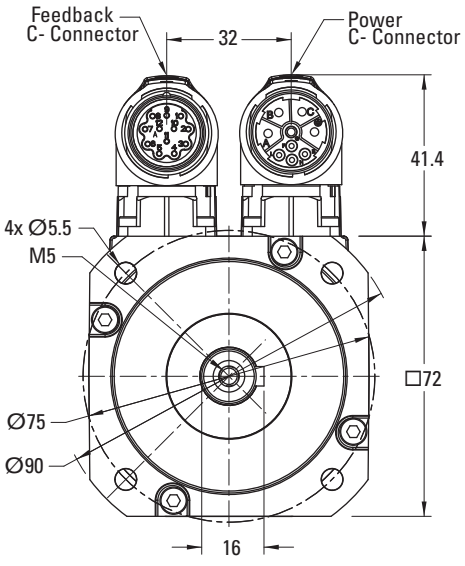


D- Connector Feedback	"D"
SFD3	41.4
DSL & EnDat	42.8

AKM2G-3x "X" and "L" Dimensions

	No Brake			Brake		
		Resolver / SFD	Encoder		Resolver / SFD	Encoder
Model	X	L	L	X	L	L
AKM2G-31	101.1	121.4	129.4	142.3	162.6	170.6
AKM2G-32	132.25	152.55	160.55	173.45	193.75	201.75
AKM2G-33	163.4	183.7	191.7	204.6	224.9	232.9

AKM2G-3x Dual Connector Option



*Complete AKM2G series model nomenclature can be found on page 66.

AKM2G-4x Performance Data

AKM2G-4x Performance Data – Up to 480 Vac voltage

					AKM2G-41			AKM2G-42			AKM2G-43			AKM2G-44		
	Parameters	Tol	Symbol	Units	D	E	G	D	E	H	D	G	I	E	H	J
	Max Rated Equivalent Line Voltage	Max	Vbus	Vac	480	480	480	480	480	480	480	480	480	480	480	480
	Max Continuous Torque for ΔT winding = 100°C ①②③⑤	Nom	T_{cs}	Nm	2.85	2.87	2.86	5.04	5.08	5.12	6.97	6.97	6.98	8.48	8.51	8.47
				lb-in	25.2	25.4	25.3	44.6	45.0	45.3	61.7	61.7	61.8	75.0	75.3	75.0
	Continuous Current for ΔT winding = 100°C ①②③	Nom	I_{cs}	A_{rms}	2.32	2.92	4.53	2.27	2.88	5.64	2.33	4.52	7.14	2.99	5.87	7.30
	Max Continuous Torque for ΔT winding = 60°C ②③⑤	Nom	T_{cs}	Nm	2.22	2.24	2.24	3.93	3.97	4.02	5.44	5.46	5.51	6.63	6.69	6.70
				lb-in	19.7	19.8	19.9	34.8	35.1	35.6	48.1	48.3	48.8	58.6	59.2	59.3
	Max Mechanical Speed ④	Nom	N_{max}	rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
	Peak Torque ①②③	Nom	T_p	Nm	7.25	7.26	7.26	14.35	14.40	14.44	21.1	21.1	21.1	26.9	27.0	26.9
				lb-in	64.2	64.2	64.2	127.0	127.4	127.8	187	187	187	238	239	238
	Peak Current	Nom	I_p	A_{rms}	9.27	11.7	18.1	9.07	11.5	22.6	9.31	18.1	28.6	11.97	23.5	29.2
120 Vac	Rated Torque (speed) ①②③		T_{rtd}	Nm	2.84	2.84	2.79	-	-	5.00	-	-	6.81	-	8.39	8.28
				lb-in	25.1	25.1	24.7	-	-	44.3	-	-	60.3	-	74.2	73.3
	Rated Speed		N_{rtd}	rpm	900	1200	2100	-	-	1500	-	-	1400	-	900	1200
	Rated Power (speed) ①②③		P_{rtd}	kW	0.267	0.357	0.613	-	-	0.79	-	-	1.00	-	0.79	1.04
				Hp	0.358	0.478	0.823	-	-	1.05	-	-	1.34	-	1.06	1.40
240 Vac	Rated Torque (speed) ①②③		T_{rtd}	Nm	2.76	2.73	2.57	4.94	4.93	4.65	-	6.61	6.21	8.31	7.92	7.58
				lb-in	24.4	24.2	22.7	43.8	43.6	41.1	-	58.5	55.0	73.5	70.1	67.0
	Rated Speed		N_{rtd}	rpm	2100	2700	4500	1200	1600	3200	-	1900	3000	900	2000	2600
	Rated Power (speed) ①②③		P_{rtd}	kW	0.607	0.773	1.21	0.62	0.83	1.56	-	1.32	1.95	0.783	1.66	2.06
				Hp	0.814	1.04	1.62	0.83	1.11	2.09	-	1.76	2.62	1.05	2.22	2.77
400 Vac	Rated Torque (speed) ①②③		T_{rtd}	Nm	2.62	2.52	2.28	4.79	4.71	3.87	6.67	6.10	4.83	7.99	6.98	6.04
				lb-in	23.2	22.3	20.1	42.4	41.7	34.3	59.0	54.0	42.7	70.7	61.8	53.4
	Rated Speed		N_{rtd}	rpm	3800	4800	6000	2100	2700	5600	1600	3200	5300	1700	3500	4500
	Rated Power (speed) ①②③		P_{rtd}	kW	1.04	1.27	1.43	1.05	1.33	2.27	1.12	2.05	2.68	1.42	2.56	2.84
				Hp	1.40	1.70	1.92	1.41	1.78	3.04	1.50	2.74	3.59	1.91	3.43	3.81
480 Vac	Rated Torque (speed) ①②③		T_{rtd}	Nm	2.53	2.38	2.19	4.69	4.56	3.56	6.58	5.76	4.02	7.80	6.32	4.92
				lb-in	22.4	21.1	19.4	41.5	40.4	31.5	58.2	51.0	35.6	69.1	56.0	43.6
	Rated Speed		N_{rtd}	rpm	4600	5900	6000	2600	3300	6000	1900	3900	6000	2100	4300	5400
	Rated Power (speed) ①②③		P_{rtd}	kW	1.22	1.47	1.37	1.28	1.58	2.23	1.31	2.35	2.53	1.72	2.85	2.78
				Hp	1.63	1.97	1.84	1.71	2.11	3.00	1.75	3.15	3.39	2.30	3.82	3.73

Notes:

① Motor winding temperature rise, ΔT = 100° C, at 40° C ambient.
② All data referenced to sinusoidal commutation.
③ Motor with resolver feedback and standard heat sink.
④ May be limited at some values of Vbus.
⑤ See de-rate curves for the de-rate of different motor options

AKM2G-4x Performance Data – Up to 480 Vac voltage (Continued)

				AKM2G-41			AKM2G-42			AKM2G-43			AKM2G-44		
Parameters	**Tol**	**Symbol**	**Units**	**D**	**E**	**G**	**D**	**E**	**H**	**D**	**G**	**I**	**E**	**H**	**J**
Torque Constant ①	±10%	K_t	Nm/A_{rms}	1.24	0.99	0.64	2.24	1.77	0.913	3.01	1.55	0.983	2.85	1.46	1.17
			$lb\text{-}in/A_{rms}$	11.0	8.76	5.64	19.8	15.7	8.1	26.7	13.7	8.7	25.2	12.9	10.3
Back EMF Constant ②	±10%	K_e	V_{rms}/k_{rpm}	82.2	65.6	42.2	149.2	118.2	60.8	202	104	65.9	192	98.5	78.8
Motor Constant ⑥	Nom	K_m	$N\text{-}m/\sqrt{W}$	0.327	0.329	0.330	0.52	0.53	0.53	0.678	0.681	0.687	0.800	0.808	0.809
			$lb\text{-}in/\sqrt{W}$	2.89	2.91	2.92	4.63	4.67	4.73	6.00	6.03	6.08	7.08	7.15	7.16
Resistance (line-line) ②	±10%	R_m	Ohm	9.61	6.04	2.49	12.19	7.52	1.94	13.2	3.46	1.36	8.45	2.18	1.39
Inductance Q-Axis (line-line)		Lqll	mH	56.5	36.0	14.9	81.9	51.4	13.6	95.5	25.3	10.2	63.6	16.7	10.7
Inductance D-Axis (line-line)		Ldll	mH	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory
Inductance Saturation Current		Lisat	Arms	11.9	15.0	23.3	13.4	16.9	32.9	15.0	29.1	45.9	21.0	41.0	51.3
Maximum Demagnetization Current		Midpeak	Arms	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory
Inertia (includes Resolver feedback) ③	±10%	J_m	$kg\text{-}cm^2$	0.774			1.36			1.95			2.53		
			$lb\text{-}in\text{-}s^2$	6.85E-04			1.20E-03			1.72E-03			2.24E-03		
Optional Brake Inertia (additional)	±10%	J_m	$kg\text{-}cm^2$	0.360			0.36			0.36			0.360		
			$lb\text{-}in\text{-}s^2$	3.19E-04			3.19E-04			3.19E-04			3.19E-04		
Weight without brake ④		W	kg	2.90			3.86			4.81			5.76		
			lb	6.39			8.5			10.6			12.7		
Static Friction ①⑤		T_f	Nm	0.0230			0.030			0.0380			0.0450		
			lb-in	0.2036			0.27			0.336			0.398		
Viscous Damping ①		K_{dv}	Nm/k_{rpm}	0.00450			0.009			0.0125			0.0163		
			$lb\text{-}in/k_{rpm}$	0.0398			0.08			0.111			0.144		
Thermal Time Constant		TCT	minutes	17			22			27			32		
Coil Thermal Time Constant		MCT_f0		Contact Factory			Contact Factory			Contact Factory			Contact Factory		
Thermal Resistance ①		$R_{thw\text{-}a}$	K/W	0.880			0.725			0.637			0.598		
Pole Pairs		PP		5			5			5			5		
Heat Sink Size				10"x10"x1/4" Aluminum Plate			10"x10"x1/4" Aluminum Plate			10"x10"x1/4" Aluminum Plate			10"x10"x1/4" Aluminum Plate		

Notes:
① Motor winding temperature rise, ΔT = 100° C, at 40° C ambient.
② Measured at 25° C.
③ Add parking brake if applicable for total inertia.
④ Brake motor adds 1.36 kg [3.0 lbs]
⑤ Shaft seal increases Static Friction by 0.023 Nm [0.20 lb-in]
⑥ This value is calculated from the Torque Constant and Resistance. Refer to those values and notes ① & ② for additional details.

*Complete AKM2G series model nomenclature can be found on page 66.

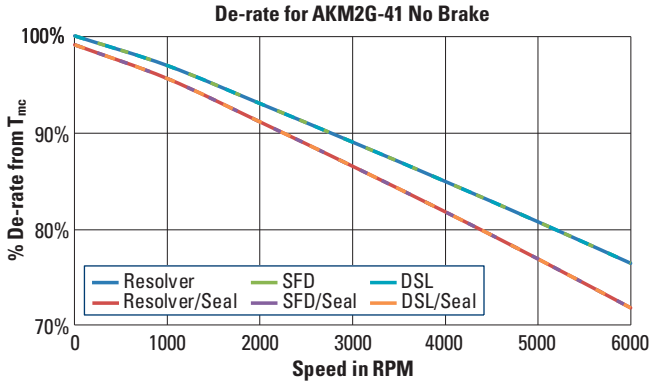
AKM2G-4x De-rate Curves

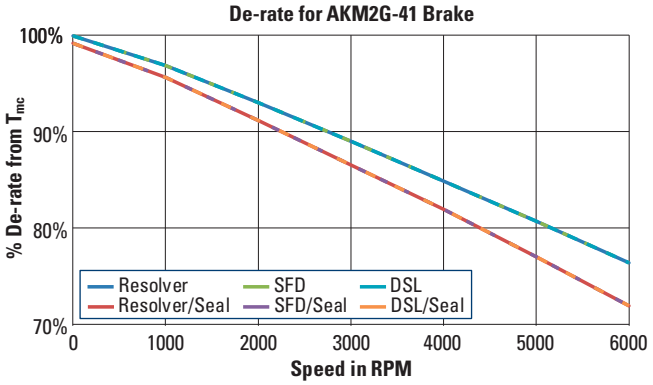
De-rate is calculated by multiplying the torque value (T_{mc}) by the percentage De-rate for the appropriate feedback either with or without shaft seal at the desired speed point. Also, use the correct De-rate graph for the motor based on whether it will have a brake or no brake. Refer to De-rate Calculations in the AKM2G Systems Overview on page 11 for additional details about De-rate calculations.

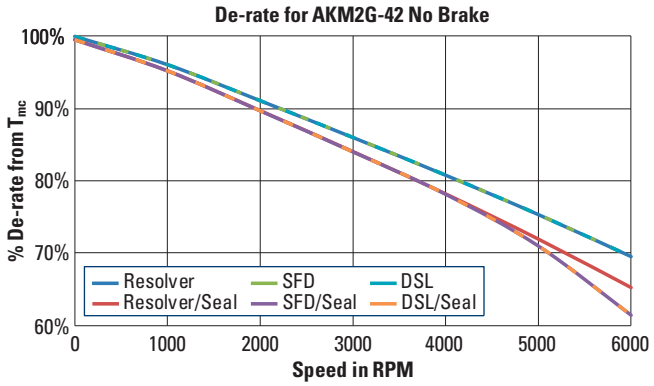
Example:

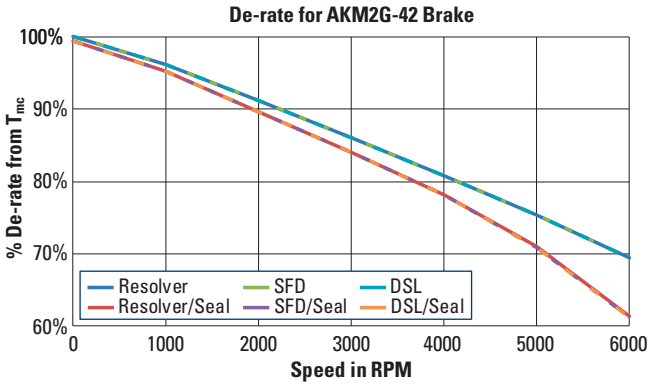
For an AKM2G-41 motor with an SFD feedback with shaft seal and no brake operating at 3000 RPM there is a 13.5% De-rate. Multiply the motor torque value (T_{mc}) by .865 for the rated torque at 3000 RPM. For ease of interpretation of the graph using a De-rate that is a rounded approximation is acceptable. For exact values refer to Kollmorgen's Motioneering Application Sizing programs.

For EnDAT motor De-rate information, please contact the factory.









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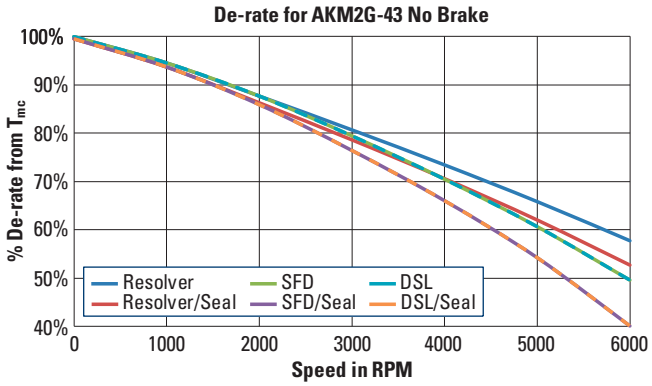
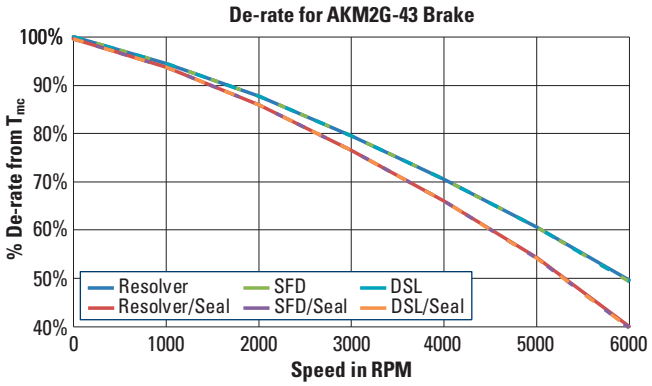
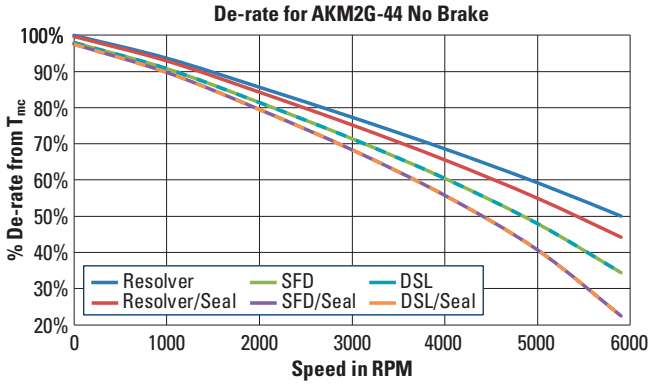
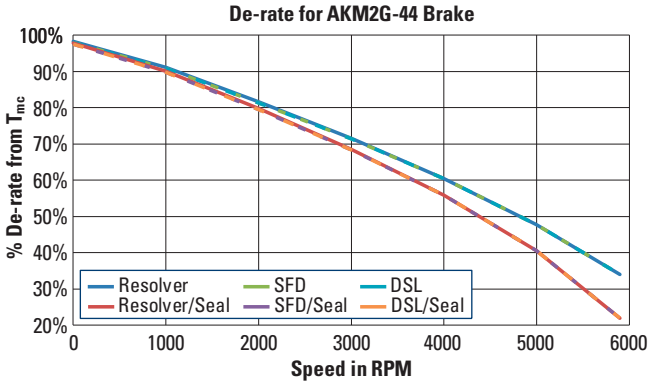
AKM2G – 4 2 A – AN C N DA 00*

Motor Series | Frame Size | Rotor Length | Winding | Flange | Shaft | Connector | Brake | Feedback | Thermal Sensor | Customization





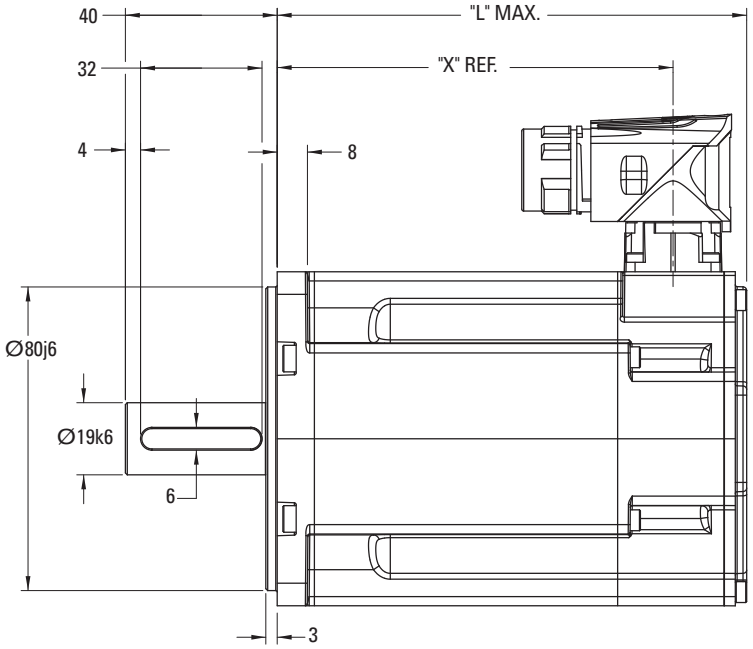


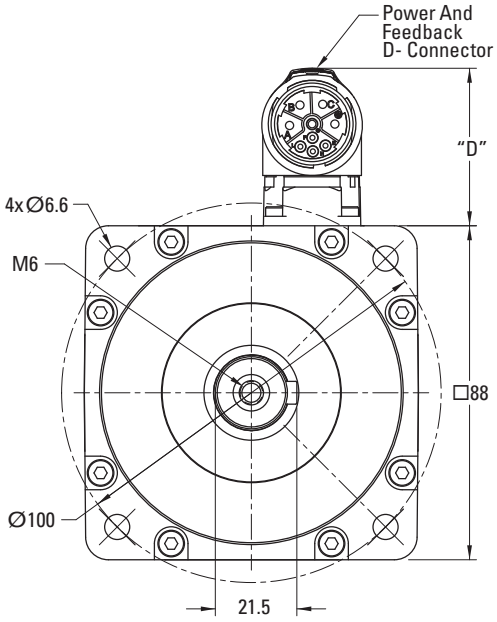


*Complete AKM2G series model nomenclature can be found on page 66.

AKM2G-4x Drawings

AKM2G-4x Single Connector Frame



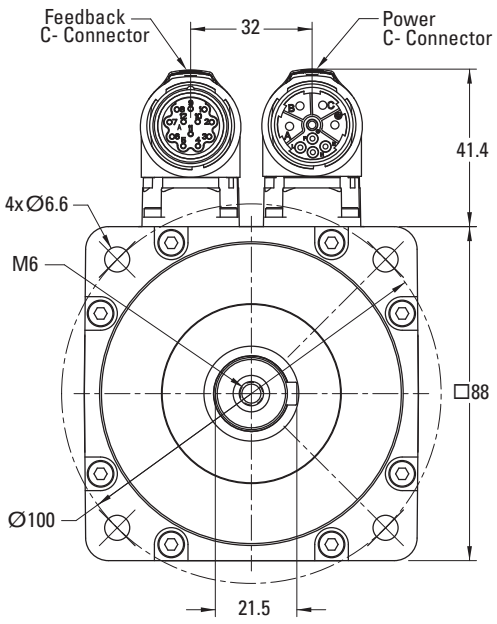


D- Connector Feedback	"D"
SFD3	41.4
DSL & EnDat	42.8

AKM2G-4x "X" and "L" Dimensions

	No Brake			Brake		
		Resolver / SFD	Encoder		Resolver / SFD	Encoder
Model	X	L	L	X	L	L
AKM2G-41	104.3	124.6	132.6	152.1	172.4	180.4
AKM2G-42	130.55	150.85	158.85	178.35	198.65	206.65
AKM2G-43	156.8	177.1	185.1	204.6	224.9	232.9
AKM2G-44	183.05	203.35	211.35	230.85	251.15	259.15

AKM2G-4x Dual Connector Option



Notes

AKM2G – 4 2 A – AN C N DA 00*

- AKM2G: Motor Series
- 4: Frame Size
- 2: Rotor Length
- A: Winding
- AN: Flange
- C: Shaft
- N: Connector
- DA: Brake
- 00: Feedback
- *: Thermal Sensor, Customization

*Complete AKM2G series model nomenclature can be found on page 66.

AKM2G-5x Performance Data

AKM2G-5x Performance Data – Up to 480 Vac voltage

					AKM2G-51			AKM2G-52			AKM2G-53			AKM2G-54		
	Parameters	Tol	Symbol	Units	H	I	K	H	K	L	H	L	M	L	M	N
	Max Rated Equivalent Line Voltage	Max	Vbus	Vac	480	480	400	480	480	400	480	480	400	480	480	400
	Max Continuous Torque for ΔT winding = 100°C ①②③⑤	Nom	T_{cs}	Nm	6.82	6.83	6.81	12.0	11.9	11.93	16.2	16.0	16.1	20.1	20.0	20.0
				lb-in	60.4	60.4	60.3	106	106	106	144	142	142	178	177	177
	Continuous Current for ΔT winding = 100°C ①②③	Nom	I_{cs}	A_{rms}	5.78	6.35	10.2	6.30	10.0	12.5	5.69	12.5	14.2	10.6	14.5	16.3
	Max Continuous Torque for ΔT winding = 60°C ②③⑤	Nom	T_{cs}	Nm	5.33	5.35	5.36	9.40	9.43	9.42	12.7	12.7	12.7	15.9	15.9	15.9
				lb-in	47.2	47.3	47.4	83.2	83.4	83.4	113	113	112	141	141	141
	Max Mechanical Speed ④	Nom	N_{max}	rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
	Peak Torque ①②③	Nom	T_p	Nm	15.7	15.7	15.7	29.0	29.0	28.9	41.8	41.4	41.4	54.8	54.7	54.7
				lb-in	139	139	139	257	256	256	370	366	367	485	484	484
	Peak Current	Nom	I_p	A_{rms}	17.3	19.0	30.5	18.9	30.1	37.6	17.1	37.6	42.5	31.7	43.9	48.8
120 Vac	Rated Torque (speed) ①②③		T_{rtd}	Nm	6.73	6.72	6.54	-	11.7	11.5	-	15.6	15.4	-	19.3	19.1
				lb-in	59.6	59.5	57.9	-	103	102	-	138	136	-	171	169
	Rated Speed		N_{rtd}	rpm	1100	1200	2100	-	1200	1500	-	1100	1300	-	1100	1200
	Rated Power (speed) ①②③		P_{rtd}	kW	0.78	0.85	1.44	-	1.47	1.80	-	1.80	2.09	-	2.22	2.40
				Hp	1.04	1.13	1.93	-	1.97	2.42	-	2.41	2.81	-	2.98	3.22
240 Vac	Rated Torque (speed) ①②③		T_{rtd}	Nm	6.44	6.38	5.77	11.5	10.8	10.2	15.7	14.1	13.5	18.4	17.2	16.5
				lb-in	57.0	56.5	51.1	102	95.6	90.4	139	124	120	163	152	146
	Rated Speed		N_{rtd}	rpm	2400	2700	4500	1500	2500	3200	1000	2400	2800	1600	2300	2600
	Rated Power (speed) ①②③		P_{rtd}	kW	1.62	1.80	2.72	1.80	2.83	3.42	1.65	3.53	3.97	3.09	4.13	4.49
				Hp	2.17	2.42	3.65	2.42	3.79	4.59	2.21	4.74	5.33	4.14	5.54	6.02
400 Vac	Rated Torque (speed) ①②③		T_{rtd}	Nm	5.89	5.74	4.67	10.7	9.00	7.42	14.9	10.9	9.74	15.9	12.9	11.0
				lb-in	52.1	50.8	41.3	94.5	79.6	65.7	132	96.1	86.2	141	114	97.6
	Rated Speed		N_{rtd}	rpm	4200	4600	6000	2700	4400	5600	1800	4200	4800	2800	3900	4500
	Rated Power (speed) ①②③		P_{rtd}	kW	2.59	2.77	2.93	3.02	4.14	4.35	2.81	4.77	4.90	4.66	5.28	5.20
				Hp	3.47	3.71	3.94	4.05	5.56	5.83	3.77	6.40	6.57	6.25	7.08	6.97
480 Vac	Rated Torque (speed) ①②③		T_{rtd}	Nm	5.53	5.29	-	10.3	7.81	-	14.4	8.64	-	14.3	9.80	-
				lb-in	49.0	46.8	-	90.7	69.1	-	128	76.5	-	126	86.7	-
	Rated Speed		N_{rtd}	rpm	5100	5700	-	3200	5300	-	2200	5100	-	3400	4800	-
	Rated Power (speed) ①②③		P_{rtd}	kW	2.96	3.16	-	3.44	4.34	-	3.32	4.61	-	5.08	4.92	-
				Hp	3.96	4.24	-	4.61	5.82	-	4.46	6.19	-	6.81	6.60	-

Notes:

① Motor winding temperature rise, ΔT = 100° C, at 40° C ambient.
② All data referenced to sinusoidal commutation.
③ Motor with resolver feedback and standard heat sink.
④ May be limited at some values of Vbus.
⑤ See de-rate curves for the de-rate of different motor options

AKM2G-5x Performance Data – Up to 480 Vac voltage (Continued)

				AKM2G-51			AKM2G-52			AKM2G-53			AKM2G-54		
Parameters	**Tol**	**Symbol**	**Units**	**H**	**I**	**K**	**H**	**K**	**L**	**H**	**L**	**M**	**L**	**M**	**N**
Torque Constant ①	±10%	K_t	Nm/A_{rms}	1.19	1.08	0.674	1.91	1.20	0.956	2.87	1.29	1.14	1.91	1.38	1.24
			$lb\text{-}in/A_{rms}$	10.5	9.57	5.96	16.9	10.6	8.46	25.4	11.4	10.1	16.9	12.2	11.0
Back EMF Constant ②	±10%	K_e	V_{rms}/k_{rpm}	80.2	73.1	45.6	129	80.9	64.7	194	87.1	77.1	130	93.3	83.8
Motor Constant ⑥	Nom	K_m	$N\text{-}m/\sqrt{W}$	0.637	0.638	0.640	1.02	1.03	1.03	1.32	1.32	1.32	1.57	1.57	1.57
			$lb\text{-}in/\sqrt{W}$	5.63	5.65	5.66	9.07	9.09	9.09	11.7	11.7	11.6	13.9	13.9	13.9
Resistance (line-line) ②	±10%	R_m	Ohm	2.31	1.91	0.740	2.32	0.902	0.578	3.15	0.635	0.500	0.991	0.514	0.416
Inductance Q-Axis (line-line)		Lqll	mH	20.8	17.2	6.70	24.5	9.6	6.1	35.5	7.15	5.60	11.6	6.0	4.9
Inductance D-Axis (line-line)		Ldll	mH	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory
Inductance Saturation Current		Lisat	Arms	65.4	71.8	115.1	81	130	163	81.3	181	205	163	226	251
Maximum Demagnetization Current		Midpeak	Arms	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory
Inertia (includes Resolver feedback) ③	±10%	J_m	$kg\text{-}cm^2$	2.52			4.58			6.64			8.70		
			$lb\text{-}in\text{-}s^2$	2.23E-03			4.06E-03			5.88E-03			7.70E-03		
Optional Brake Inertia (additional)	±10%	J_m	$kg\text{-}cm^2$	1.20			1.20			1.20			1.20		
			$lb\text{-}in\text{-}s^2$	1.06E-03			1.06E-03			1.06E-03			1.06E-03		
Weight without brake ④		W	kg	5.13			7.03			8.89			10.8		
			lb	11.3			15.5			19.6			23.8		
Static Friction ①⑤		T_f	Nm	0.0300			0.0560			0.0830			0.110		
			lb-in	0.266			0.496			0.735			0.974		
Viscous Damping ①		K_{dv}	Nm/k_{rpm}	0.0125			0.0232			0.033			0.0427		
			$lb\text{-}in/k_{rpm}$	0.111			0.205			0.292			0.378		
Thermal Time Constant		TCT	minutes	25			32			38			43		
Coil Thermal Time Constant		MCT_f0		Contact Factory			Contact Factory			Contact Factory			Contact Factory		
Thermal Resistance ①		$R_{thw\text{-}a}$	K/W	0.585			0.488			0.440			0.399		
Pole Pairs		PP		5			5			5			5		
Heat Sink Size				12"x12"x1/2" Aluminum Plate			12"x12"x1/2" Aluminum Plate			12"x12"x1/2" Aluminum Plate			12"x12"x1/2" Aluminum Plate		

Notes:
① Motor winding temperature rise, ΔT = 100° C, at 40° C ambient.
② Measured at 25° C.
③ Add parking brake if applicable for total inertia.
④ Brake motor adds 2.6 kg [5.7 lbs]
⑤ Shaft seal increases Static Friction by 0.07 Nm [0.62 lb-in]
⑥ This value is calculated from the Torque Constant and Resistance. Refer to those values and notes ① & ② for additional details.

*Complete AKM2G series model nomenclature can be found on page 66.

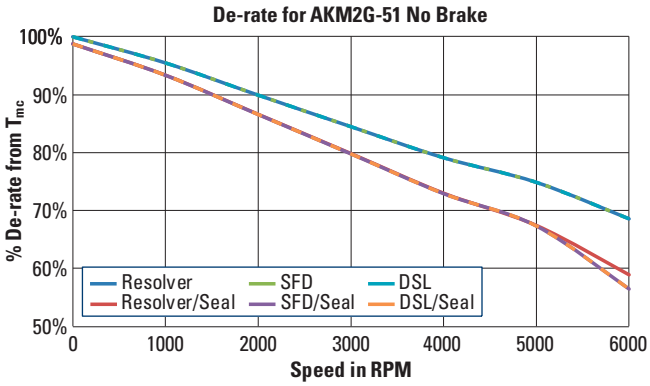
AKM2G-5x De-rate Curves

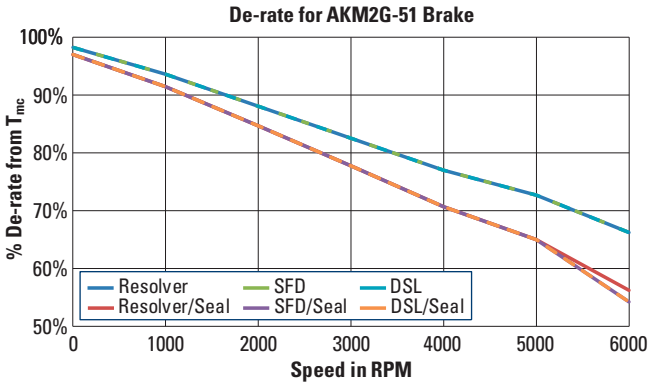
De-rate is calculated by multiplying the torque value (T_{mc}) by the percentage De-rate for the appropriate feedback either with or without shaft seal at the desired speed point. Also, use the correct De-rate graph for the motor based on whether it will have a brake or no brake. Refer to De-rate Calculations in the AKM2G Systems Overview on page 11 for additional details about De-rate calculations..

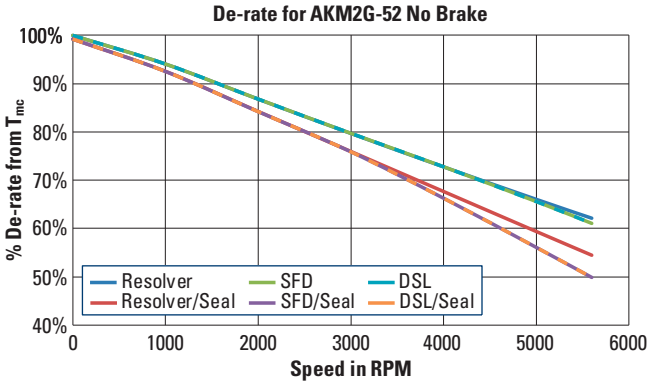
Example:

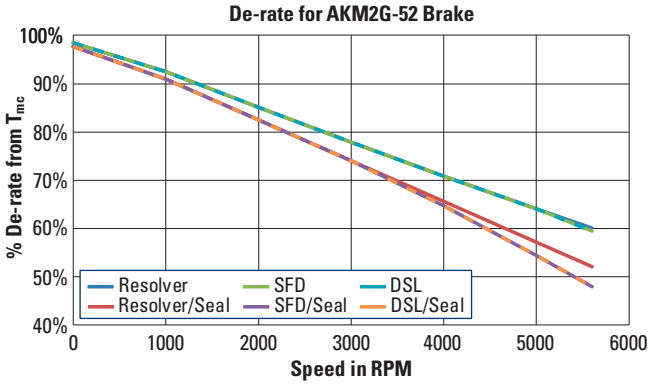
For an AKM2G-51 motor with an SFD feedback with shaft seal and no brake operating at 3000 RPM there is a 19.1% De-rate. Multiply the motor torque value (T_{mc}) by .809 for the rated torque at 3000 RPM. For ease of interpretation of the graph using a De-rate that is a rounded approximation is acceptable. For exact values refer to Kollmorgen's Motioneering Application Sizing programs.

For EnDAT motor De-rate information, please contact the factory.









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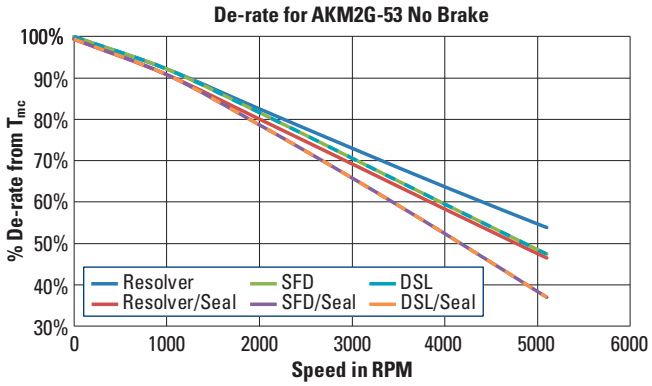
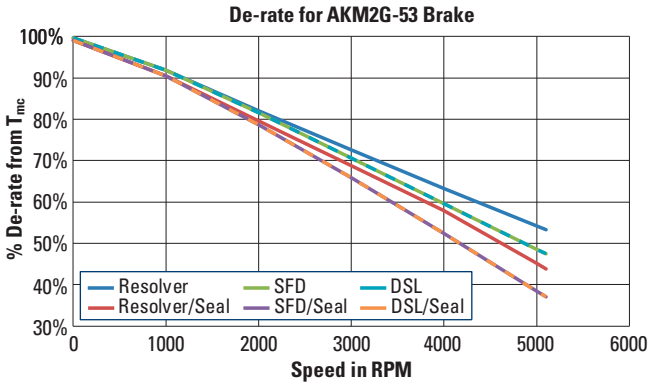
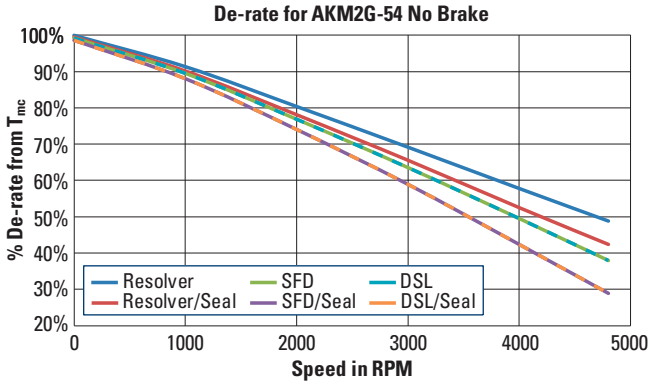
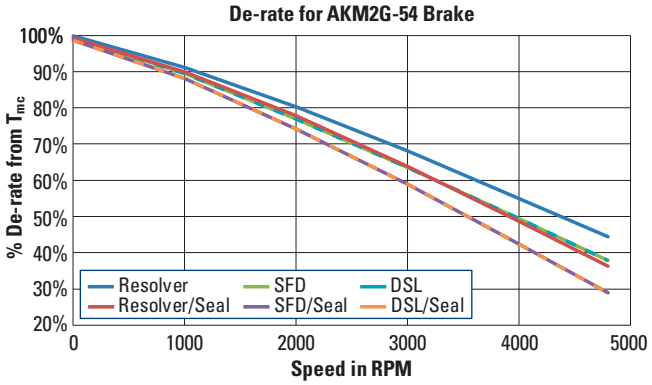




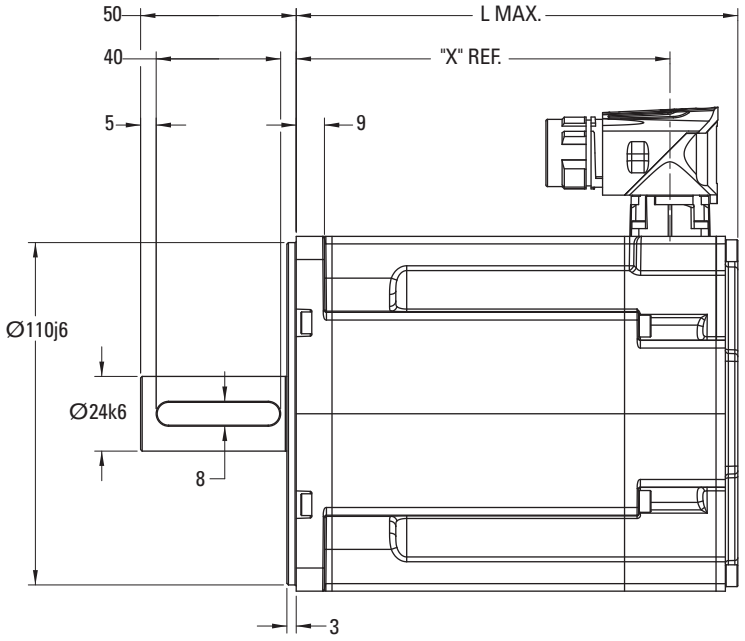


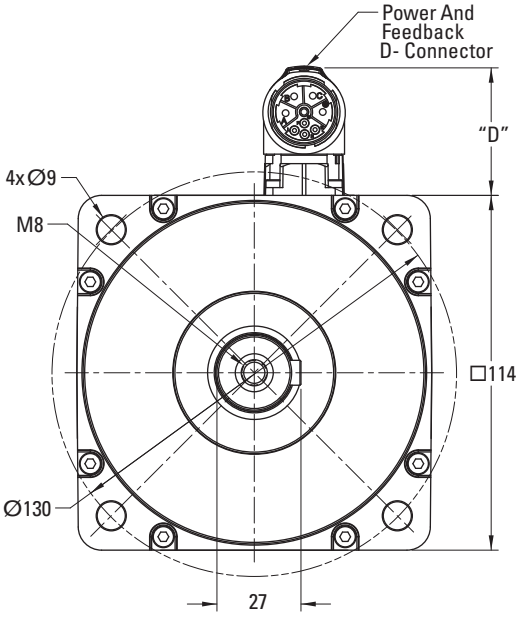


*Complete AKM2G series model nomenclature can be found on page 66.

AKM2G-5x Drawings

AKM2G-5x Single Connector Frame



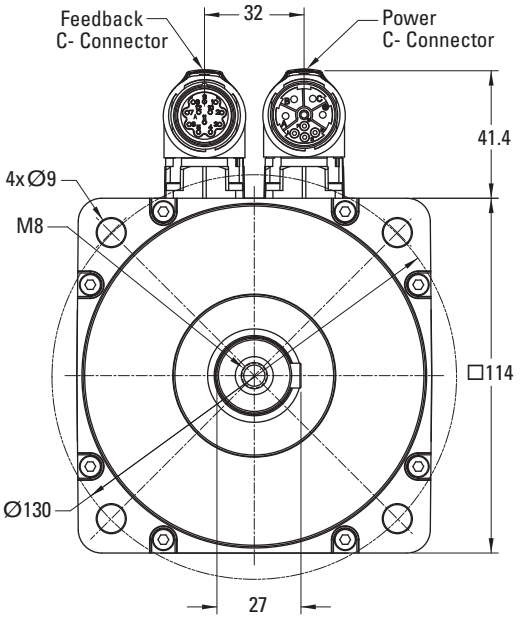


D- Connector Feedback	"D"
SFD3	41.4
DSL & EnDat	42.8

AKM2G-5x "X" and "L" Dimensions

	No Brake			Brake		
		Resolver / SFD	Encoder		Resolver / SFD	Encoder
Model	X	L	L	X	L	L
AKM2G-51	120.1	142.8	148.4	177.1	199.8	205.4
AKM2G-52	149.5	172.2	177.8	206.5	229.2	234.8
AKM2G-53	178.9	201.6	207.2	235.9	258.6	264.2
AKM2G-54	208.3	231	236.6	265.3	288	293.6

AKM2G-5x Dual Connector Option



Notes

AKM2G – 5 2 A – AN C N DA 00*

- AKM2G: Motor Series
- 5: Frame Size
- 2: Rotor Length
- A: Winding
- AN: Flange
- C: Shaft
- N: Connector
- DA: Brake
- 00: Feedback
- *: Thermal Sensor
- Customization

*Complete AKM2G series model nomenclature can be found on page 66.

AKM2G-6x Performance Data

AKM2G-6x Performance Data – Up to 480 Vac voltage

					AKM2G-62			AKM2G-63			AKM2G-64			AKM2G-65		
	Parameters	Tol	Symbol	Units	K	L	M	K	M	N	L	M	N	L	M	N
	Max Rated Equivalent Line Voltage	Max	Vbus	Vac	480	480	400	480	480	400	480	480	480	480	480	480
	Max Continuous Torque for ΔT winding = 100°C ①②③⑤	Nom	T_{cs}	Nm	15.3	15.2	15.1	21.5	21.4	21.4	27.0	26.9	26.8	32.6	32.6	32.7
				lb-in	135	134	134	190	189	189	239	238	237	289	289	289
	Continuous Current for ΔT winding = 100°C ①②③	Nom	I_{cs}	A_{rms}	9.32	11.6	14.6	9.79	15.2	16.8	11.4	15.8	17.8	12.4	15.3	19.0
	Max Continuous Torque for ΔT winding = 60°C ②③⑤	Nom	T_{cs}	Nm	12.0	12.0	11.9	16.9	16.9	16.9	21.3	21.3	21.2	25.8	25.8	25.9
				lb-in	106	106	106	150	149	149	188	188	188	228	228	230
	Max Mechanical Speed ④	Nom	N_{max}	rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
	Peak Torque ①②③	Nom	T_p	Nm	37.6	37.4	37.4	54.7	54.5	54.5	70.7	70.5	70.3	86.8	86.8	87.0
				lb-in	332	331	331	484	482	482	626	624	622	768	768	770
	Peak Current	Nom	I_p	A_{rms}	28.0	34.9	43.7	29.4	45.5	50.5	34.1	47.5	53.3	37.1	45.9	56.9
120 Vac	Rated Torque (speed) ①②③		T_{rtd}	Nm	-	14.9	14.6	-	20.9	20.7	-	-	26.2	-	-	-
				lb-in	-	132	130	-	185	183	-	-	232	-	-	-
	Rated Speed		N_{rtd}	rpm	-	1000	1300	-	1000	1100	-	-	900	-	-	-
	Rated Power (speed) ①②③		P_{rtd}	kW	-	1.56	1.99	-	2.19	2.39	-	-	2.47	-	-	-
				Hp	-	2.09	2.67	-	2.93	3.20	-	-	3.32	-	-	-
240 Vac	Rated Torque (speed) ①②③		T_{rtd}	Nm	14.4	13.8	13.1	20.5	19.2	18.7	25.7	24.6	23.8	31.1	30.3	29.5
				lb-in	127	122	116	181	170	166	227	217	211	275	268	261
	Rated Speed		N_{rtd}	rpm	1700	2200	2800	1300	2100	2300	1200	1700	2000	1100	1400	1700
	Rated Power (speed) ①②③		P_{rtd}	kW	2.56	3.19	3.85	2.79	4.21	4.51	3.23	4.37	4.98	3.58	4.44	5.25
				Hp	3.43	4.27	5.16	3.74	5.65	6.05	4.33	5.86	6.68	4.80	5.96	7.04
400 Vac	Rated Torque (speed) ①②③		T_{rtd}	Nm	12.9	11.5	9.6	18.9	15.6	14.1	23.4	20.5	18.9	28.5	26.7	23.6
				lb-in	114	102	85	167	138	125	207	182	167	252	236	209
	Rated Speed		N_{rtd}	rpm	3000	3900	5000	2200	3600	4100	2100	3000	3400	1900	2400	3100
	Rated Power (speed) ①②③		P_{rtd}	kW	4.05	4.70	5.03	4.35	5.88	6.07	5.15	6.45	6.72	5.67	6.71	7.67
				Hp	5.42	6.31	6.74	5.84	7.89	8.14	6.91	8.65	9.01	7.60	8.99	10.28
480 Vac	Rated Torque (speed) ①②③		T_{rtd}	Nm	11.9	9.84	-	17.8	12.84	-	21.9	17.7	15.2	26.8	24.3	19.6
				lb-in	105	87.1	-	158	113.7	-	194	156.3	134	237	215	173
	Rated Speed		N_{rtd}	rpm	3700	4800	-	2700	4500	-	2600	3700	4200	2300	2900	3800
	Rated Power (speed) ①②③		P_{rtd}	kW	4.59	4.95	-	5.03	6.05	-	5.95	6.84	6.67	6.46	7.38	7.79
				Hp	6.16	6.63	-	6.75	8.12	-	7.98	9.18	8.95	8.67	9.90	10.44

Notes:

① Motor winding temperature rise, ΔT = 100° C, at 40° C ambient.
② All data referenced to sinusoidal commutation.
③ Motor with resolver feedback and standard heat sink.
④ May be limited at some values of Vbus.
⑤ See de-rate curves for the de-rate of different motor options

AKM2G-6x Performance Data – Up to 480 Vac voltage (Continued)

				AKM2G-62			AKM2G-63			AKM2G-64			AKM2G-65		
Parameters	**Tol**	**Symbol**	**Units**	**K**	**L**	**M**	**K**	**M**	**N**	**L**	**M**	**N**	**L**	**M**	**N**
Torque Constant ①	±10%	K_t	Nm/A_{rms}	1.64	1.31	1.04	2.20	1.41	1.27	2.38	1.70	1.51	2.65	2.14	1.73
			$lb\text{-}in/A_{rms}$	14.5	11.6	9.2	19.5	12.5	11.3	21.1	15.1	13.4	23.4	18.9	15.3
Back EMF Constant ②	±10%	K_e	V_{rms}/k_{rpm}	111	88.3	70.3	149	95.5	86.0	161	115.2	102.4	179	144	117
Motor Constant ⑥	Nom	K_m	$N\text{-}m/\sqrt{W}$	1.25	1.25	1.24	1.65	1.65	1.65	1.99	1.98	1.98	2.28	2.29	2.30
			$lb\text{-}in/\sqrt{W}$	11.1	11.0	11.0	14.6	14.6	14.6	17.6	17.6	17.5	20.2	20.2	20.4
Resistance (line-line) ②	±10%	R_m	Ohm	1.15	0.732	0.468	1.18	0.491	0.398	0.955	0.491	0.389	0.896	0.584	0.378
Inductance Q-Axis (line-line)		Lqll	mH	17.4	11.0	7.0	19.8	8.2	6.6	16.9	8.7	6.8	16.4	10.7	7.0
Inductance D-Axis (line-line)		Ldll	mH	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory
Inductance Saturation Current		Lisat	Arms	250	314	394	282	439	488	349	488	549	394	488	603
Maximum Demagnetization Current		Midpeak	Arms	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory
Inertia (includes Resolver feedback) ③	±10%	J_m	$kg\text{-}cm^2$	9.10			13.0			16.9			20.8		
			$lb\text{-}in\text{-}s^2$	8.05E-03			1.15E-02			1.49E-02			1.84E-02		
Optional Brake Inertia (additional)	±10%	J_m	$kg\text{-}cm^2$	3.60			3.60			3.60			3.60		
			$lb\text{-}in\text{-}s^2$	3.19E-03			3.19E-03			3.19E-03			3.19E-03		
Weight without brake ④		W	kg	10.0			12.3			14.5			16.8		
			lb	22.0			27.0			32.0			37.0		
Static Friction ①⑤		T_f	Nm	0.0400			0.060			0.0800			0.100		
			lb-in	0.354			0.531			0.708			0.885		
Viscous Damping ①		K_{dv}	Nm/k_{rpm}	0.0370			0.053			0.0680			0.0840		
			$lb\text{-}in/k_{rpm}$	0.327			0.469			0.602			0.743		
Thermal Time Constant		TCT	minutes	40			50			60			75		
Coil Thermal Time Constant		MCT_f0		Contact Factory			Contact Factory			Contact Factory			Contact Factory		
Thermal Resistance ①		$R_{thw\text{-}a}$	K/W	0.448			0.393			0.359			0.324		
Pole Pairs		PP		5			5			5			5		
Heat Sink Size				18"x18"x1/2" Aluminum Plate			18"x18"x1/2" Aluminum Plate			18"x18"x1/2" Aluminum Plate			18"x18"x1/2" Aluminum Plate		

Notes:
① Motor winding temperature rise, ΔT = 100° C, at 40° C ambient.
② Measured at 25° C.
③ Add parking brake if applicable for total inertia.
④ Brake motor adds 4.5 kg [10.0 lbs]
⑤ Shaft seal increases Static Friction by 0.12 Nm [1.06 lb-in]
⑥ This value is calculated from the Torque Constant and Resistance. Refer to those values and notes ① & ② for additional details.

*Complete AKM2G series model nomenclature can be found on page 66.

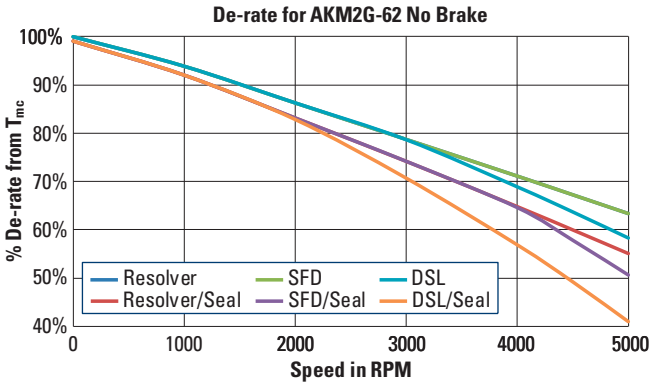
AKM2G-6x De-rate Curves

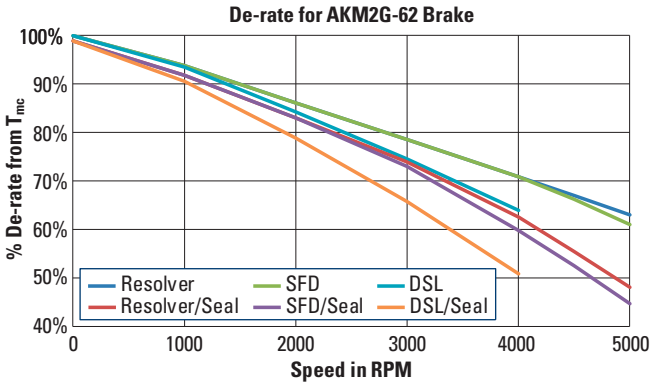
De-rate is calculated by multiplying the torque value (T_{mc}) by the percentage De-rate for the appropriate feedback either with or without shaft seal at the desired speed point. Also, use the correct De-rate graph for the motor based on whether it will have a brake or no brake. Refer to De-rate Calculations in the AKM2G Systems Overview on page 11 for additional details about De-rate calculations.

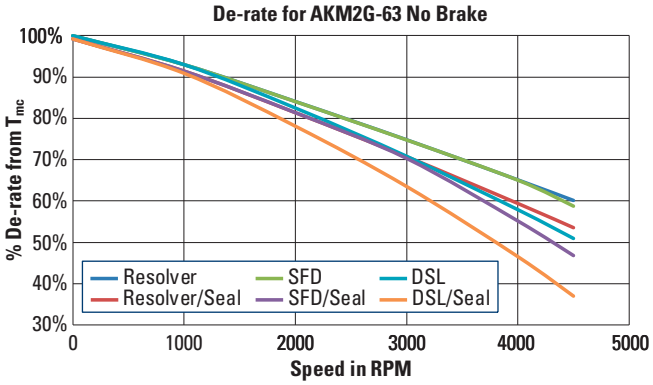
Example:

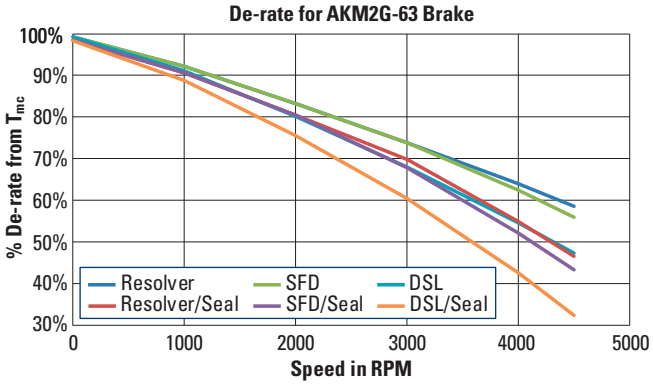
For an AKM2G-62 motor with an SFD feedback with shaft seal and no brake operating at 3000 RPM there is a 25.8% De-rate. Multiply the motor torque value (T_{mc}) by .742 for the rated torque at 3000 RPM. For ease of interpretation of the graph using a De-rate that is a rounded approximation is acceptable. For exact values refer to Kollmorgen's Motioneering Application Sizing programs.

For EnDAT motor De-rate information, please contact the factory.









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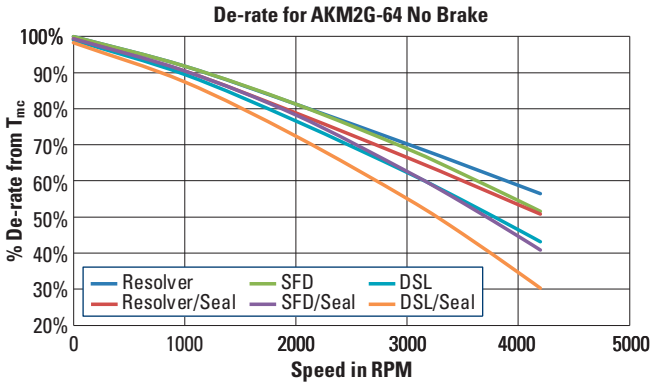
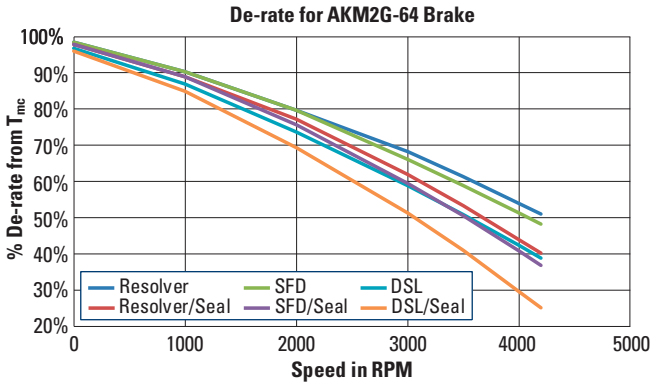
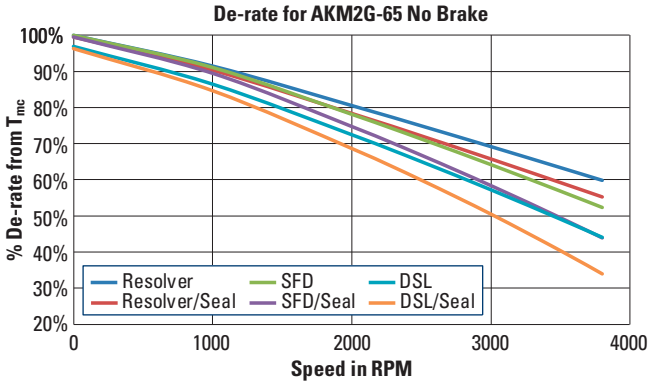
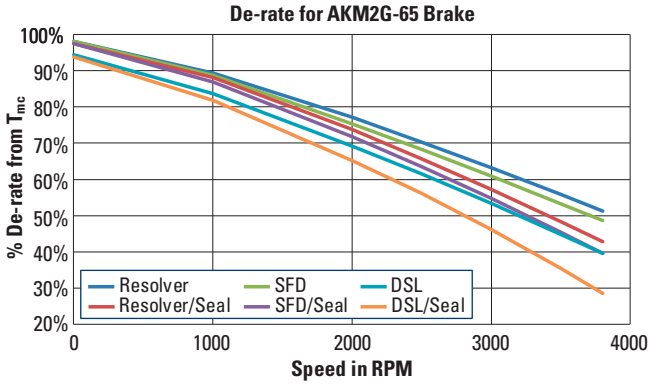
AKM2G – 6 2 A – AN C N DA 00*

Motor Series | Frame Size | Rotor Length | Winding | Flange | Shaft | Connector | Brake | Feedback | Thermal Sensor | Customization





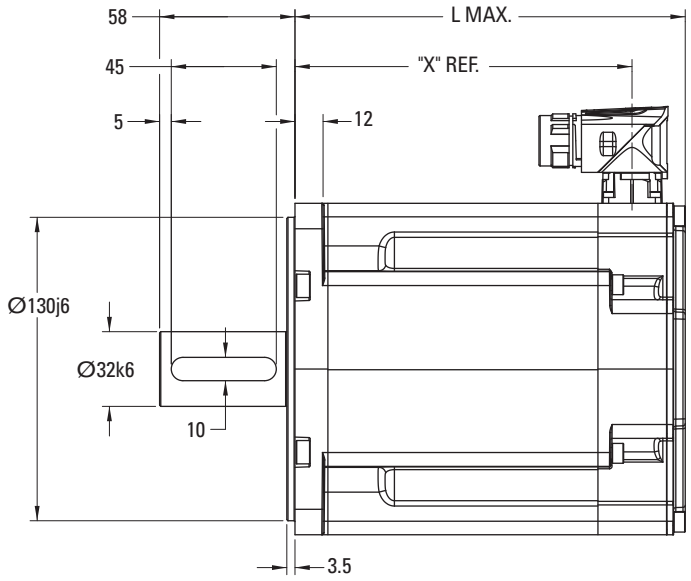


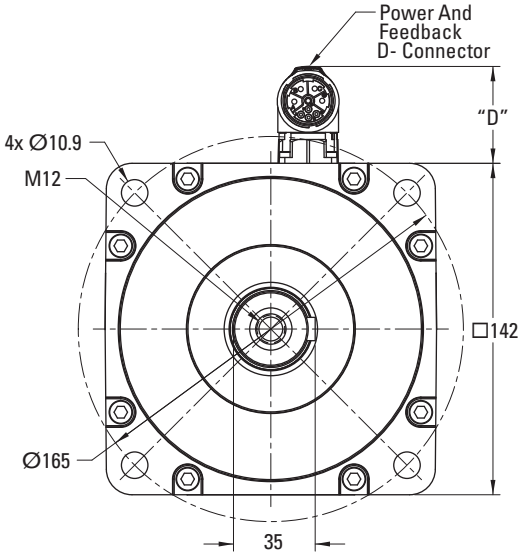


*Complete AKM2G series model nomenclature can be found on page 66.

AKM2G-6x Drawings

AKM2G-6x Single Connector Frame



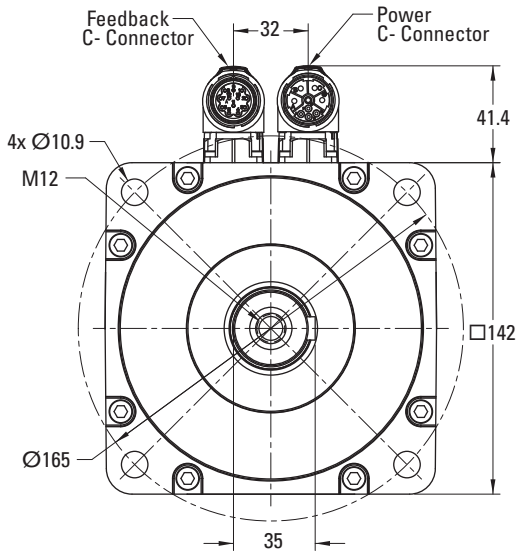


D- Connector Feedback	"D"
SFD3	41.4
DSL & EnDat	42.8

AKM2G-6x "X" and "L" Dimensions

	No Brake			Brake		
		Resolver / SFD	Encoder		Resolver / SFD	Encoder
Model	X	L	L	X	L	L
AKM2G-62	144.4	168.1	178.4	210.1	233.8	244.1
AKM2G-63	166.45	190.15	200.45	232.15	255.85	266.15
AKM2G-64	288.5	212.2	222.5	254.2	277.9	288.2
AKM2G-65	210.55	234.25	244.55	276.25	299.95	310.25

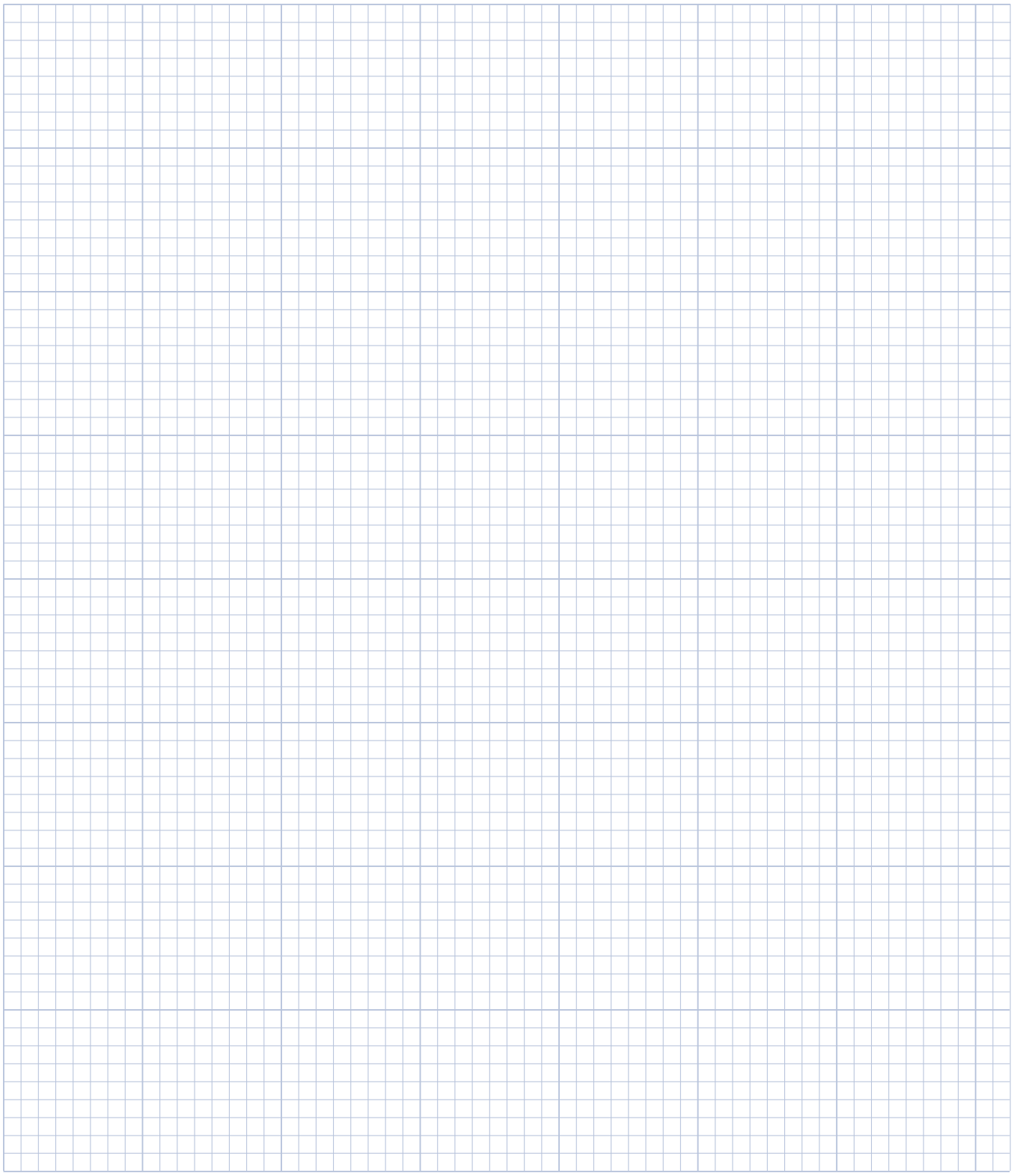
AKM2G-6x Dual Connector Option



Notes

AKM2G – 6 2 A – AN C N DA 00*

- AKM2G: Motor Series
- 6: Frame Size
- 2: Rotor Length
- A: Winding
- AN: Flange
- C: Shaft
- N: Connector
- DA: Brake
- 00: Feedback
- *: Thermal Sensor, Customization



*Complete AKM2G series model nomenclature can be found on page 66.

AKM2G-7x Performance Data

AKM2G-7x Performance Data – Up to 480 Vac voltage

					AKM2G-71			AKM2G-72			AKM2G-73			AKM2G-74		
	Parameters	Tol	Symbol	Units	L	N	P	L	N	P	L	N	Q	P	Q	R
	Max Rated Equivalent Line Voltage	Max	Vbus	Vac	480	480	400	480	480	400	480	480	480	480	480	480
	Max Continuous Torque for ΔT winding = 100°C ①②③⑤	Nom	T_{cs}	Nm	22.9	22.7	23.0	40.5	41.1	40.6	56.6	57.8	57.0	72.1	71.6	71.2
				lb-in	202	201	204	358	364	359	501	512	504	638	634	630
	Continuous Current for ΔT winding = 100°C ①②③	Nom	I_{cs}	A_{rms}	12.1	17.3	21.1	12.3	18.7	21.2	11.6	17.6	27.3	23.1	28.8	32.4
	Max Continuous Torque for ΔT winding = 60°C ②③⑤	Nom	T_{cs}	Nm	18.0	18.0	18.2	32.0	32.7	32.4	44.7	45.9	45.6	57.7	57.7	57.5
				lb-in	160	160	161	284	289	287	396	406	404	511	510	509
	Max Mechanical Speed ④	Nom	N_{max}	rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
	Peak Torque ①②③	Nom	T_p	Nm	49.4	49.2	49.7	89.3	90.3	89.5	127.2	129.5	127.9	164.5	163.6	162.7
				lb-in	438	436	440	790	799	792	1126	1146	1132	1456	1448	1440
	Peak Current	Nom	I_p	A_{rms}	30.2	43.3	52.8	30.8	46.8	53.0	29.0	43.9	68.3	57.7	72.0	81.0
120 Vac	Rated Torque (speed) ①②③		T_{rtd}	Nm	-	22.0	21.9	-	-	-	-	-	-	-	-	-
				lb-in	-	195	193	-	-	-	-	-	-	-	-	-
	Rated Speed		N_{rtd}	rpm	-	1050	1300	-	-	-	-	-	-	-	-	-
	Rated Power (speed) ①②③		P_{rtd}	kW	-	2.42	2.98	-	-	-	-	-	-	-	-	-
				Hp	-	3.25	3.99	-	-	-	-	-	-	-	-	-
240 Vac	Rated Torque (speed) ①②③		T_{rtd}	Nm	21.3	19.9	19.0	38.7	37.4	36.1	-	54.6	50.0	66.5	64.0	61.5
				lb-in	188	176	168	342	331	319	-	484	442	589	566	544
	Rated Speed		N_{rtd}	rpm	1500	2200	2700	900	1400	1600	-	900	1500	1000	1250	1450
	Rated Power (speed) ①②③		P_{rtd}	kW	3.34	4.58	5.37	3.64	5.48	6.05	-	5.15	7.85	6.96	8.37	9.34
				Hp	4.48	6.15	7.20	4.89	7.35	8.11	-	6.91	10.5	9.34	11.2	12.5
400 Vac	Rated Torque (speed) ①②③		T_{rtd}	Nm	19.0	15.3	12.0	36.1	31.9	29.0	52.5	49.5	38.8	58.1	50.6	44.9
				lb-in	168	135	106	319	283	257	465	438	343	514	448	398
	Rated Speed ⑥		N_{rtd}	rpm	2600	4000	4900	1550	2400	2800	1050	1600	2600	1700	2200	2500
	Rated Power (speed) ①②③		P_{rtd}	kW	5.18	6.39	6.17	5.86	8.03	8.51	5.77	8.29	10.6	10.3	11.7	11.8
				Hp	6.95	8.57	8.27	7.86	10.8	11.4	7.74	11.1	14.2	13.9	15.6	15.8
480 Vac	Rated Torque (speed) ①②③		T_{rtd}	Nm	17.5	11.9	-	34.2	28.4	24.2	50.6	46.6	30.6	52.3	41.4	33.5
				lb-in	155	106	-	303	251	214	448	412	271	463	367	296
	Rated Speed ⑥		N_{rtd}	rpm	3200	4900	-	1900	2900	3400	1300	1900	3200	2100	2700	3000
	Rated Power (speed) ①②③		P_{rtd}	kW	5.88	6.12	-	6.81	8.62	8.6	6.89	9.3	10.3	11.5	11.7	10.5
				Hp	7.88	8.21	-	9.13	11.6	11.5	9.24	12.4	13.7	15.4	15.7	14.1

Notes:

① Motor winding temperature rise, ΔT = 100° C, at 40° C ambient.
② All data referenced to sinusoidal commutation.
③ Motor with resolver feedback and standard heat sink.
④ May be limited at some values of Vbus.
⑤ See de-rate curves for the de-rate of different motor options
⑥ Rated speed for motors equipped with a brake are limited to 3500 RPM.

AKM2G-7x Performance Data – Up to 480 Vac voltage (Continued)

				AKM2G-71			AKM2G-72			AKM2G-73			AKM2G-74		
Parameters	**Tol**	**Symbol**	**Units**	**L**	**N**	**P**	**L**	**N**	**P**	**L**	**N**	**Q**	**P**	**Q**	**R**
Torque Constant ①	±10%	K_t	Nm/A_{rms}	1.90	1.32	1.10	3.31	2.20	1.93	4.90	3.30	2.09	3.14	2.50	2.21
			$lb\text{-}in/A_{rms}$	16.9	11.7	9.7	29.3	19.5	17.0	43.3	29.2	18.5	27.8	22.1	19.5
Back EMF Constant ②	±10%	K_e	V_{rms}/k_{rpm}	127	88.3	73.3	221	147	129	328	221	140	210	167	148
Motor Constant ⑥	Nom	K_m	$N\text{-}m/\sqrt{W}$	1.69	1.69	1.71	2.77	2.83	2.80	3.59	3.68	3.66	4.39	4.38	4.37
			$lb\text{-}in/\sqrt{W}$	15.0	15.0	15.2	24.5	25.0	24.8	31.7	32.6	32.4	38.8	38.8	38.7
Resistance (line-line) ②	±10%	R_m	Ohm	0.845	0.407	0.274	0.950	0.405	0.315	1.24	0.537	0.217	0.341	0.217	0.170
Inductance Q-Axis (line-line)		Lqll	mH	17.6	8.5	5.8	22.6	10.0	7.7	31.2	14.2	5.7	9.2	5.9	4.6
Inductance D-Axis (line-line)		Ldll	mH	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory
Inductance Saturation Current		Lisat	Arms	86	124	149	100	149	171	101	149	236	210	264	299
Maximum Demagnetization Current		Midpeak	Arms	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory
Inertia (includes Resolver feedback) ③	±10%	J_m	$kg\text{-}cm^2$	25.9			46.8			67.7			88.6		
			$lb\text{-}in\text{-}s^2$	2.29E-02			4.14E-02			5.99E-02			7.84E-02		
Optional Brake Inertia (additional)	±10%	J_m	$kg\text{-}cm^2$	12.3			12.3			12.3			12.3		
			$lb\text{-}in\text{-}s^2$	1.09E-02			1.09E-02			1.09E-02			1.09E-02		
Weight without brake ④		W	kg	16.8			22.9			29.0			35.2		
			lb	37.0			50.5			64.0			77.5		
Static Friction ①⑤		T_f	Nm	0.135			0.158			0.236			0.315		
			lb-in	1.19			1.40			2.09			2.79		
Viscous Damping ①		K_{dv}	Nm/k_{rpm}	0.0865			0.173			0.260			0.346		
			$lb\text{-}in/k_{rpm}$	0.766			1.53			2.30			3.06		
Thermal Time Constant		TCT	minutes	38			43			49			56		
Coil Thermal Time Constant		MCT_f0		Contact Factory			Contact Factory			Contact Factory			Contact Factory		
Thermal Resistance ①		$R_{thw\text{-}a}$	K/W	0.360			0.307			0.264			0.237		
Pole Pairs		PP		4			4			4			4		
Heat Sink Size				18"x18"x1/2" Aluminum Plate			18"x18"x1/2" Aluminum Plate			18"x18"x1/2" Aluminum Plate			18"x18"x1/2" Aluminum Plate		

Notes:
① Motor winding temperature rise, ΔT = 100° C, at 40° C ambient.
② Measured at 25° C.
③ Add parking brake if applicable for total inertia.
④ Brake motor adds 9.1 kg [20 lbs]
⑤ Shaft seal increases Static Friction by 0.25 Nm [2.2 lb-in]
⑥ This value is calculated from the Torque Constant and Resistance. Refer to those values and notes ① & ② for additional details.

*Complete AKM2G series model nomenclature can be found on page 66.

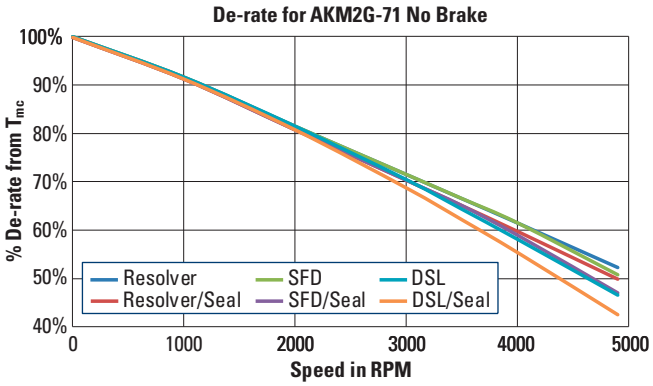
AKM2G-7x De-rate Curves

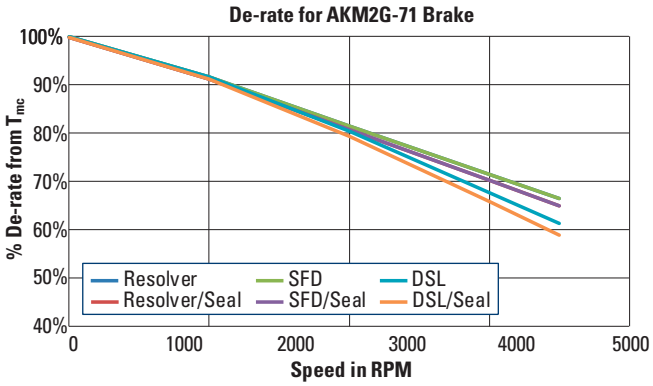
De-rate is calculated by multiplying the torque value (T_{mc}) by the percentage De-rate for the appropriate feedback either with or without shaft seal at the desired speed point. Also, use the correct De-rate graph for the motor based on whether it will have a brake or no brake. Refer to De-rate Calculations in the AKM2G Systems Overview on page 11 for additional details about De-rate calculations.

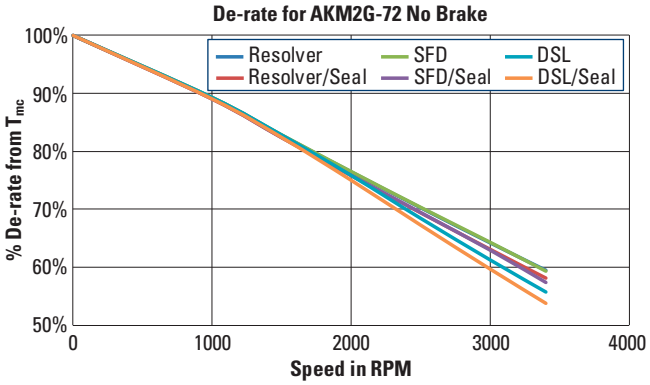
Example:

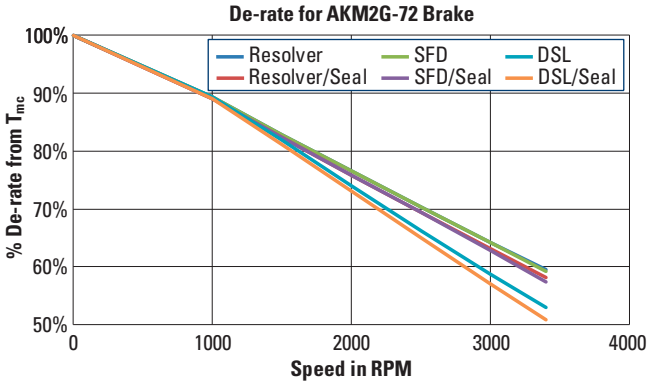
For an AKM2G-71 motor with an SFD feedback with shaft seal and no brake operating at 3000 RPM there is a 24.8% De-rate. Multiply the motor torque value (T_{mc}) by .752 for the rated torque at 3000 RPM. For ease of interpretation of the graph using a De-rate that is a rounded approximation is acceptable. For exact values refer to Kollmorgen's Motioneering Application Sizing programs.

For EnDAT motor De-rate information, please contact the factory.









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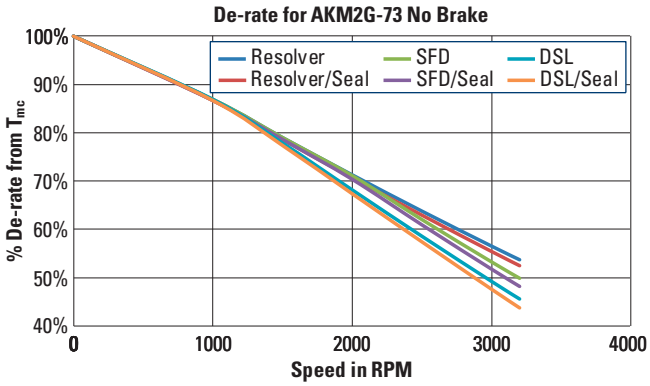
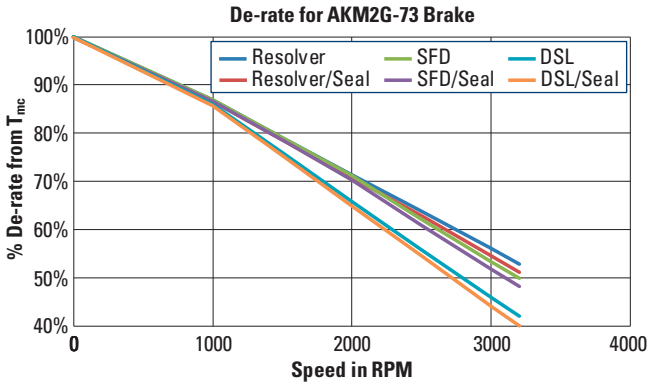
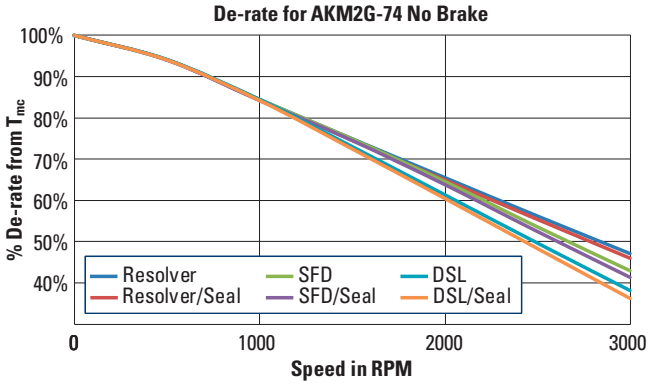
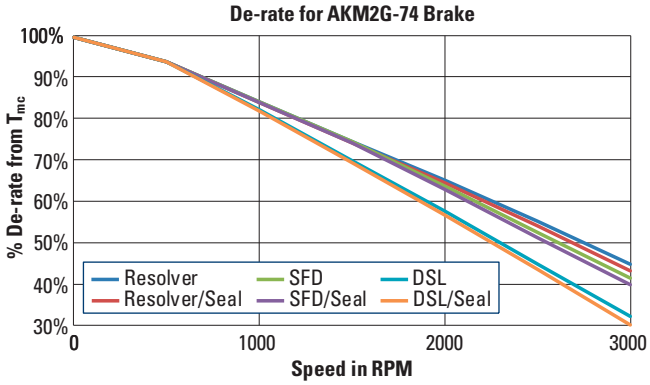




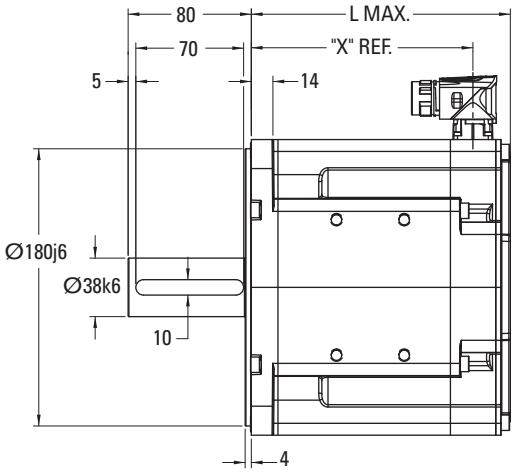


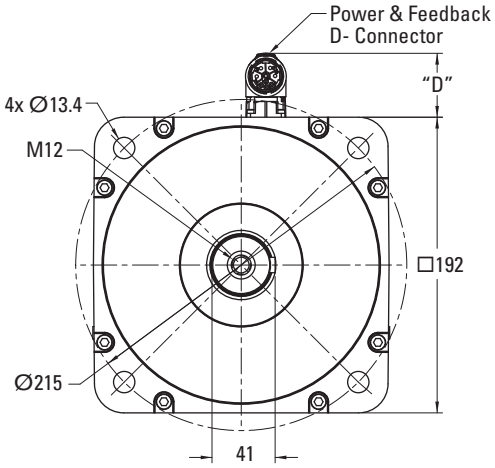


*Complete AKM2G series model nomenclature can be found on page 66.

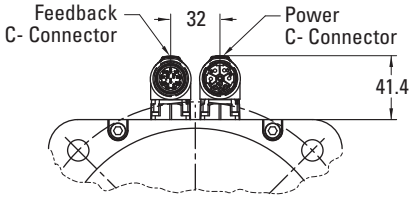
AKM2G-7x Drawings

AKM2G-7x Small Connector Frame



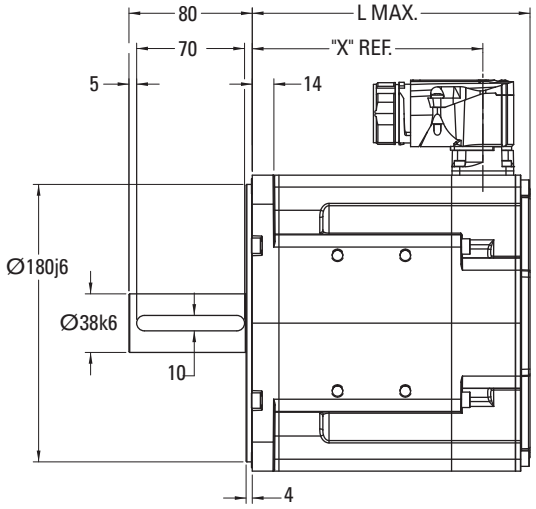


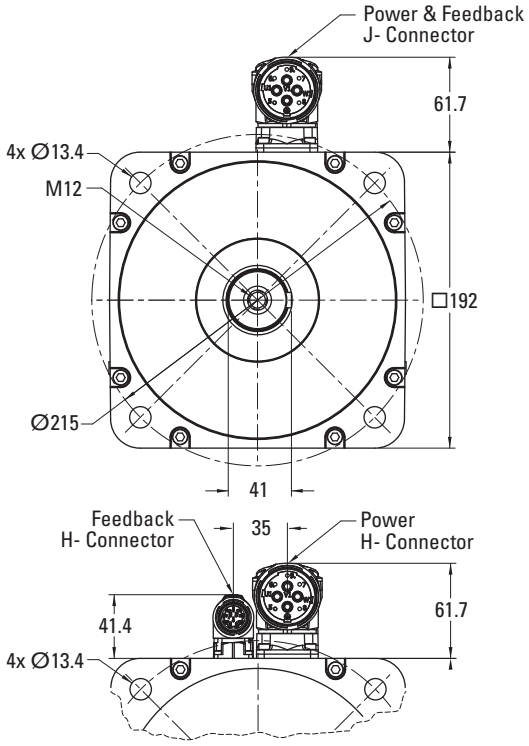
D- Connector Feedback	"D"
SFD3	41.4
DSL & EnDat	42.8



Small Connector	No Brake			Brake		
		Resolver / SFD	Encoder		Resolver / SFD	Encoder
Model	X	L	L	X	L	L
AKM2G-71	143.9	169.1	181.1	221.35	246.55	258.55
AKM2G-72	177.85	203.05	215.05	255.35	280.55	292.55
AKM2G-73	211.8	237	249	289.3	314.5	326.5
AKM2G-74	245.75	270.95	282.95	323.25	348.45	360.45

AKM2G-7x Large Connector Frame

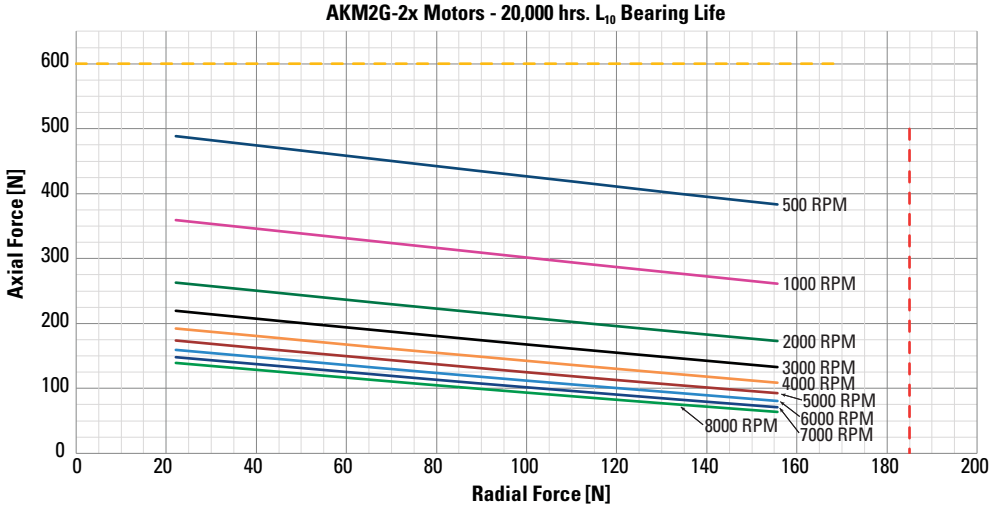


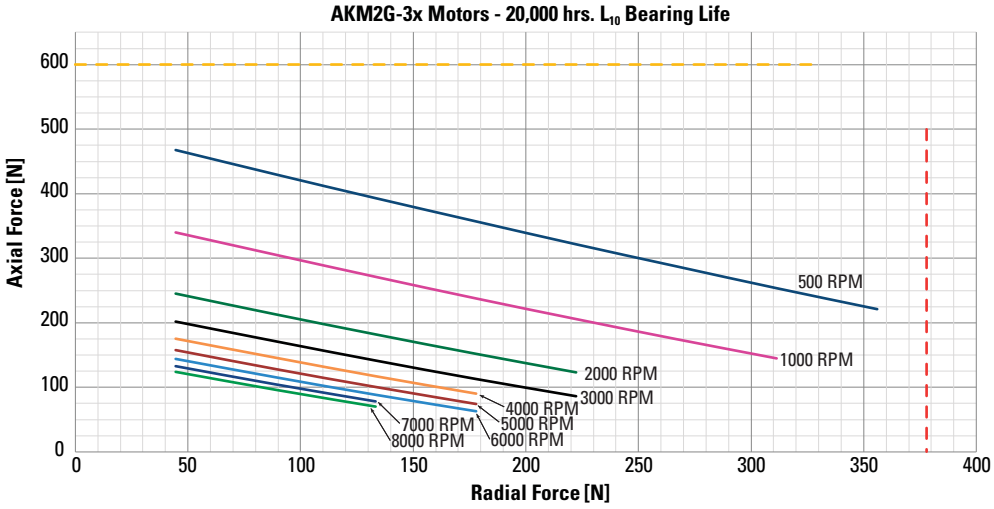


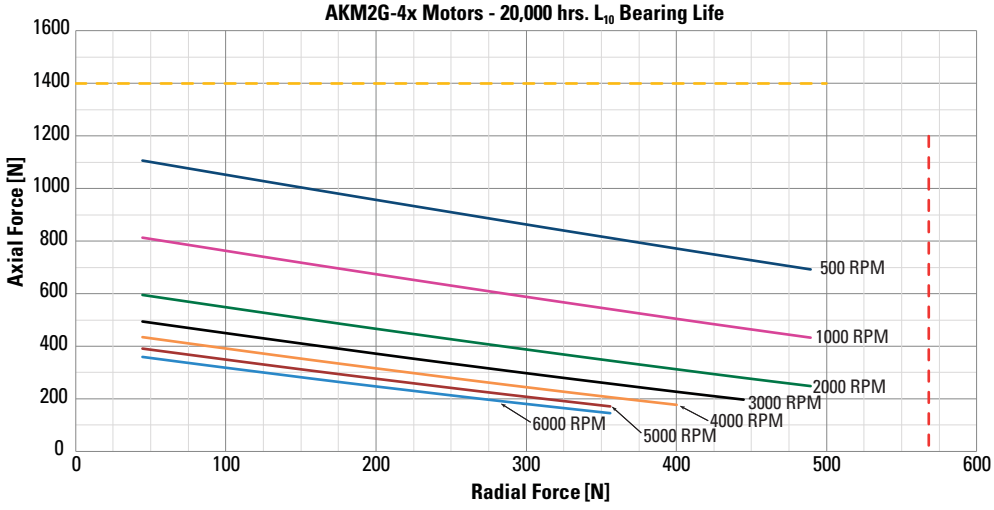
Large Connector	No Brake			Brake		
		Resolver / SFD	Encoder		Resolver / SFD	Encoder
Model	X	L	L	X	L	L
AKM2G-71	149.6	181.1	181.1	227.1	258.55	258.55
AKM2G-72	183.55	215.05	215.05	261.05	292.55	292.55
AKM2G-73	217.5	249	249	295	326.5	326.5
AKM2G-74	251.45	282.95	282.95	328.95	360.45	360.45

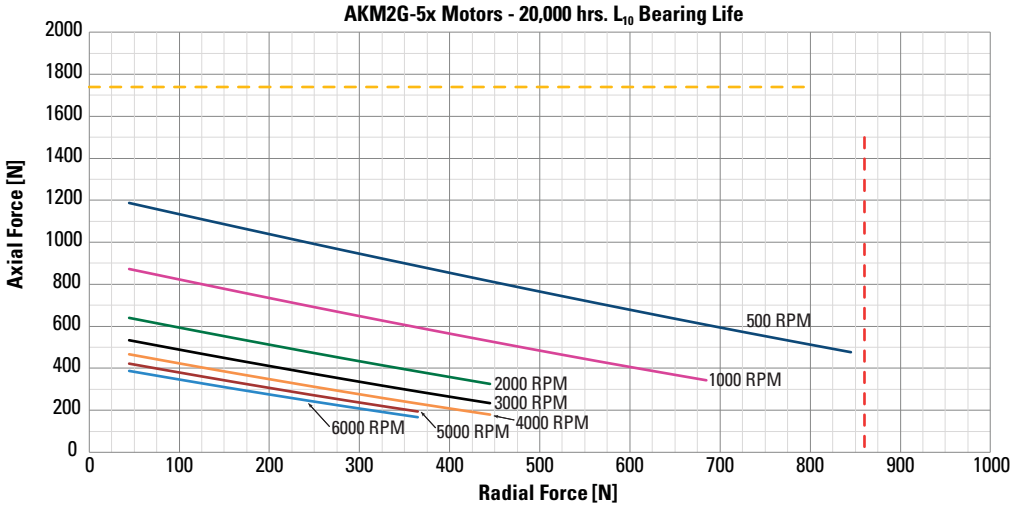
*Complete AKM2G series model nomenclature can be found on page 66.

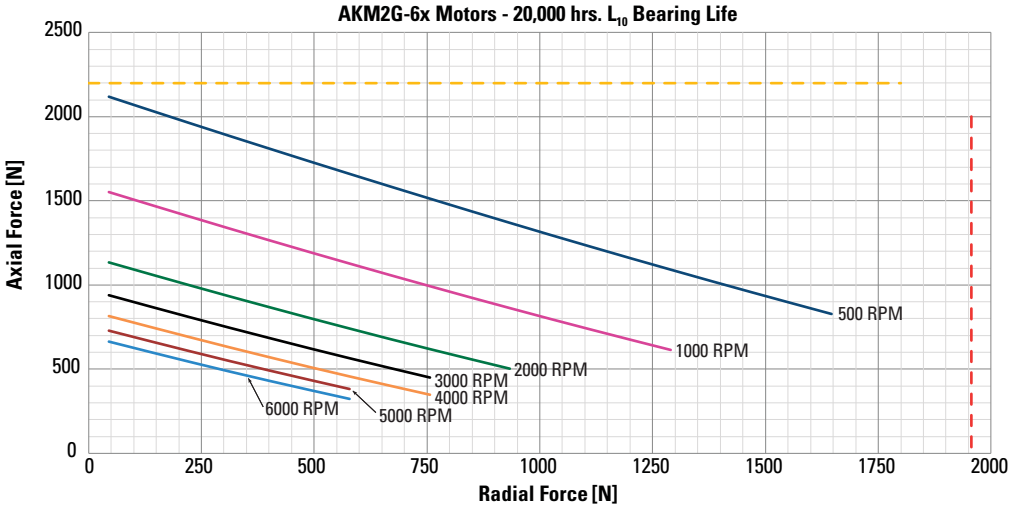
L10 Bearing Fatigue and Shaft Loading

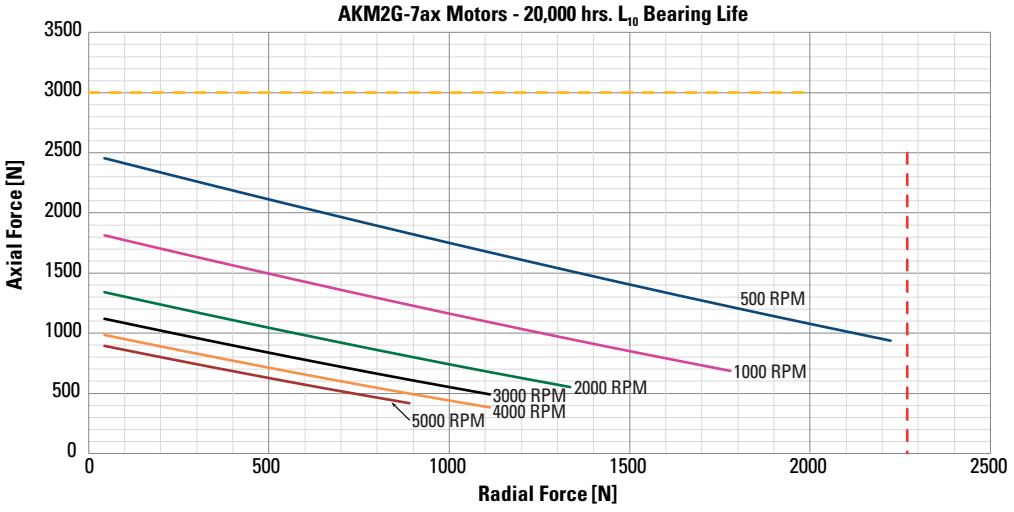







AKM2G-5x Motors - 20,000 hrs. L10 Bearing Life
Axial Force [N]
Radial Force [N]
0
200
400
600
800
1000
1200
1400
1600
1800
2000
0
100
200
300
400
500
600
700
800
900
1000
500 RPM
1000 RPM
2000 RPM
3000 RPM
4000 RPM
5000 RPM
6000 RPM


AKM2G-6x Motors - 20,000 hrs. L10 Bearing Life
Axial Force [N]
Radial Force [N]
0
500
1000
1500
2000
2500
0
250
500
750
1000
1250
1500
1750
2000
500 RPM
1000 RPM
2000 RPM
3000 RPM
4000 RPM
5000 RPM
6000 RPM


AKM2G-7ax Motors - 20,000 hrs. L10 Bearing Life
Axial Force [N]
Radial Force [N]
0
500
1000
1500
2000
2500
3000
3500
0
500
1000
1500
2000
2500
500 RPM
1000 RPM
2000 RPM
3000 RPM
4000 RPM
5000 RPM

L10 Bearing Fatigue and Shaft Loading

Shaft Loading

Motor	Max. Radial Force (N)	Max. Axial Force (N)
AKM2G-2	195	600
AKM2G-3	340	600
AKM2G-4	560	1400
AKM2G-5	890	1740
AKM2G-6	2000	2200
AKM2G-7	2670	3000

The maximum radial load ratings reflect the following assumptions:

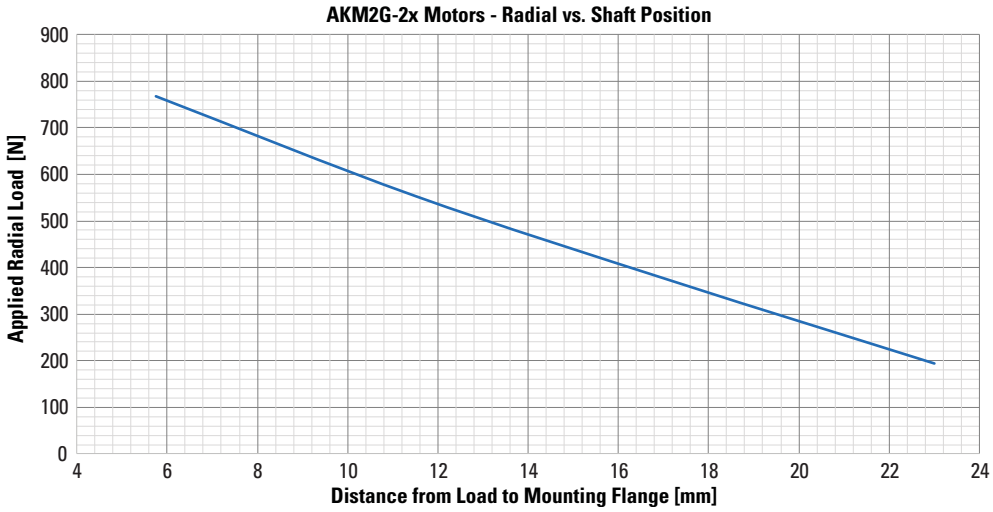
1. Motors are operated with peak torque of the longest member of the frame size.
2. Fully reversed load applied to the end of the smallest diameter standard mounting shaft extension.
3. Infinite life with 99% reliability.
4. Safety factor = 2.

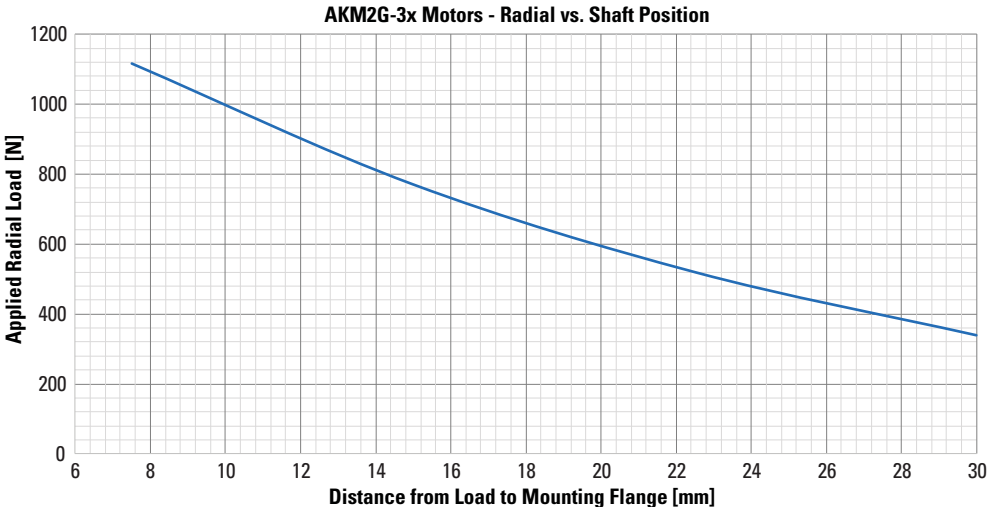
Teflon Shaft Seals

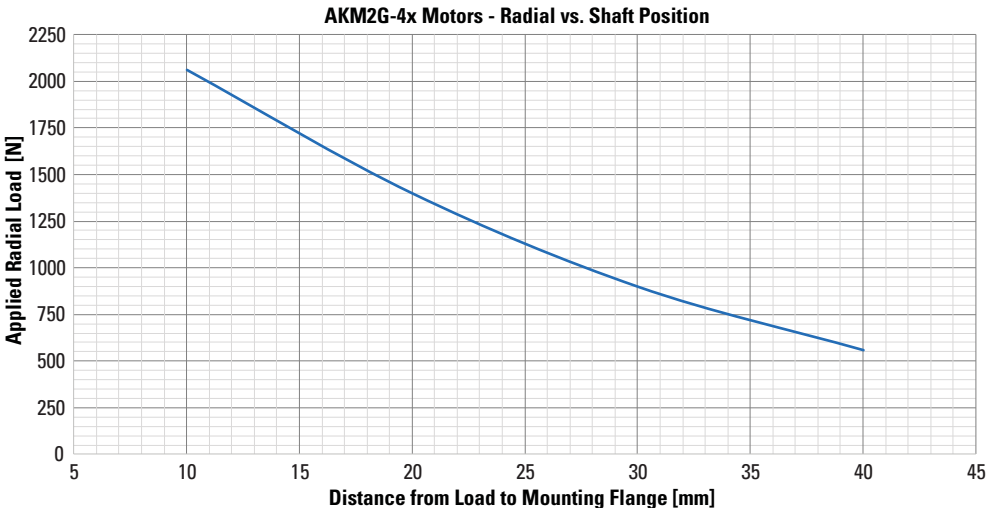
There is a normal break-in period for our Teflon® shaft seals. Best conditions during the break-in period would be at the operational temperature and speed that would be typical for the application.

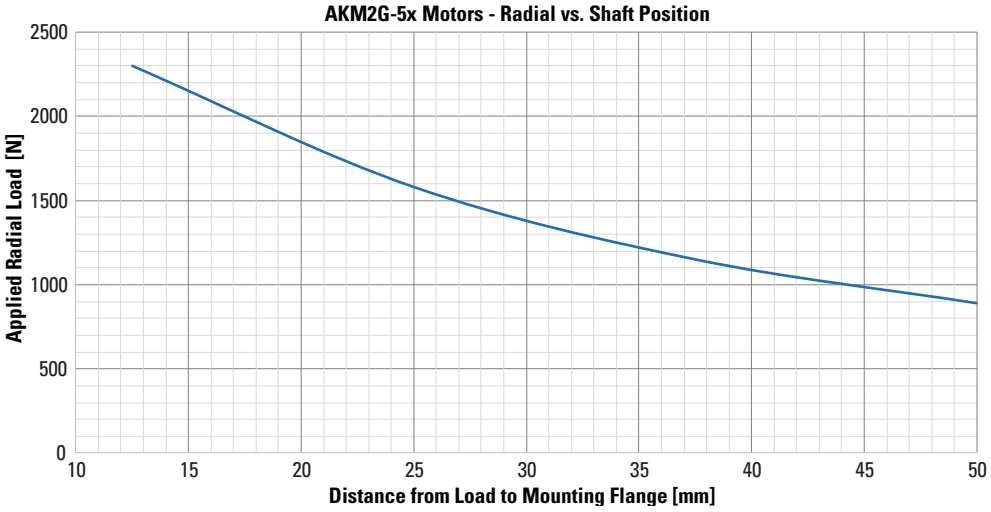
During the break-in period, some "shedding" of Teflon material is normal. The debris is not a sign of seal deterioration or failure. The material "shed" should be reduced with usage.

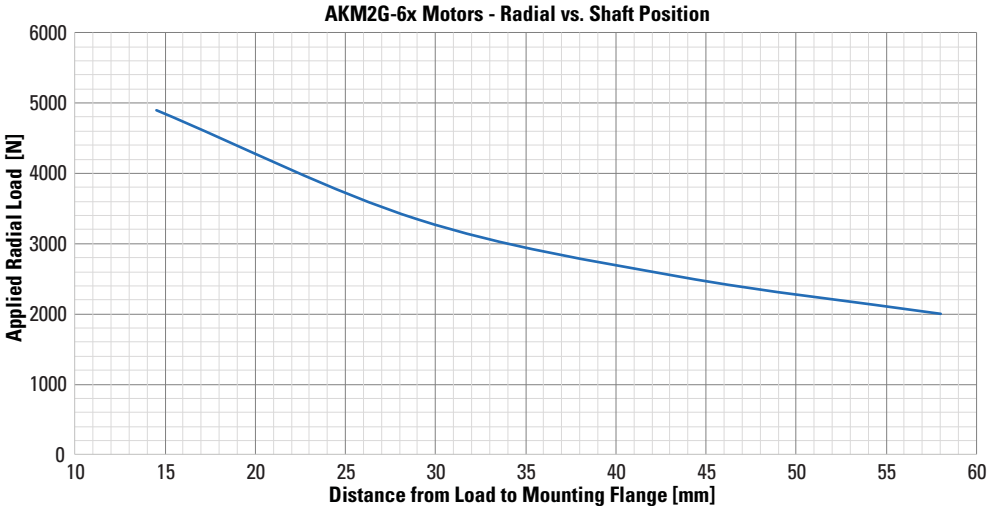
Typically, a few hours at operational speed is enough to break-in the shaft seal.

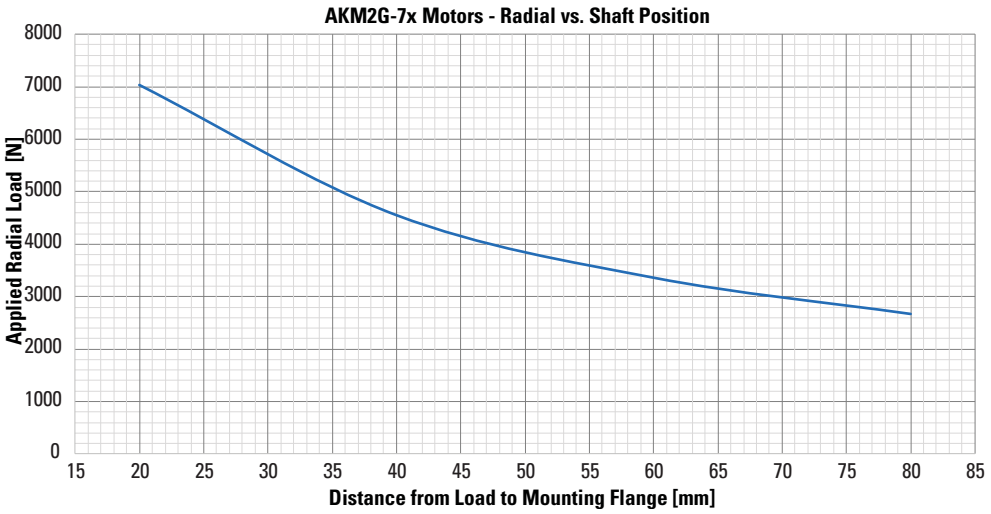







AKM2G-5x Motors - Radial vs. Shaft Position
Applied Radial Load [N]
2500
2000
1500
1000
500
0
10
15
20
25
30
35
40
45
50
Distance from Load to Mounting Flange [mm]


AKM2G-6x Motors - Radial vs. Shaft Position
Applied Radial Load [N]
6000
5000
4000
3000
2000
1000
0
10
15
20
25
30
35
40
45
50
55
60
Distance from Load to Mounting Flange [mm]


AKM2G-7x Motors - Radial vs. Shaft Position
Applied Radial Load [N]
8000
7000
6000
5000
4000
3000
2000
1000
0
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
Distance from Load to Mounting Flange [mm]

Thermal Sensor Protective Devices

The standard version of each motor is fitted with an electrically isolated PT-1000+ PTC. The thermal sensors do not provide any protection against short, heavy overloading.

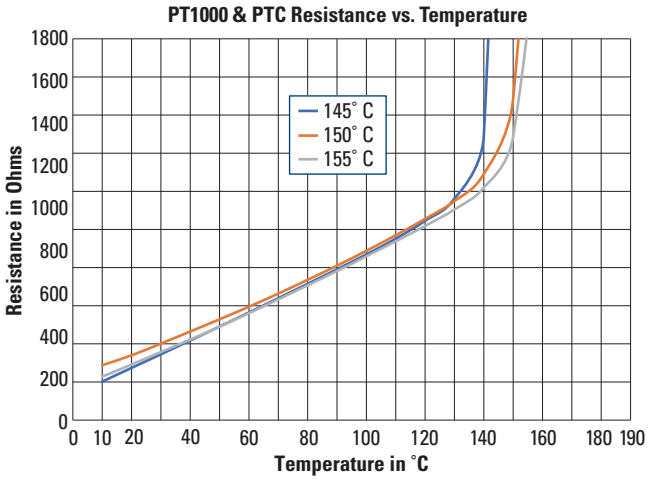
The motor can be delivered with a PT-1000, PTC, or KTY 84-130 equivalent sensors optionally (see Thermal Sensor options 1, 2, 3).

With digital feedback system SFD3, CA the temperature sensor status is transmitted digitally and evaluated in the drive.

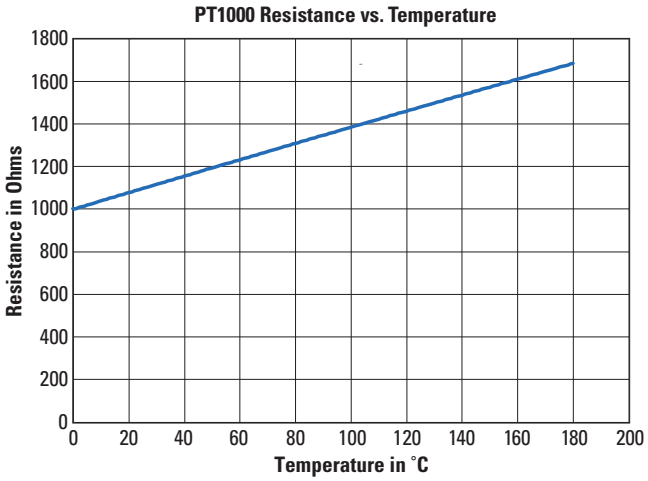
Provided that our configured feedback cables are used, the sensor is integrated into the monitoring system of the digital servo amplifiers.

Thermal Device Options: Resistance vs. Temperature Graphs

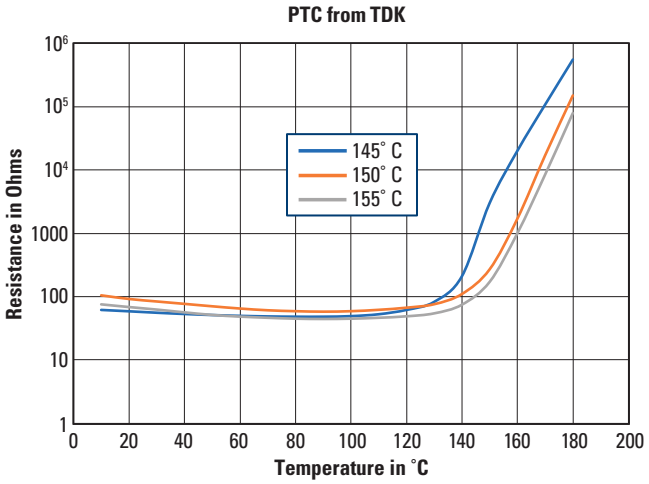
Standard Option



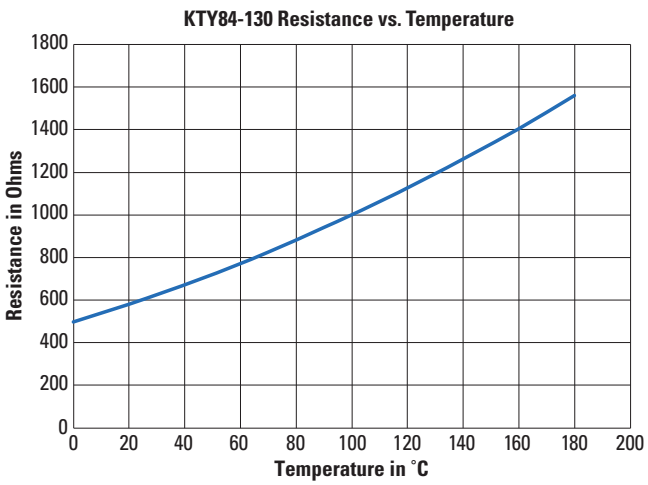
Option 1



Option 2



Option 3

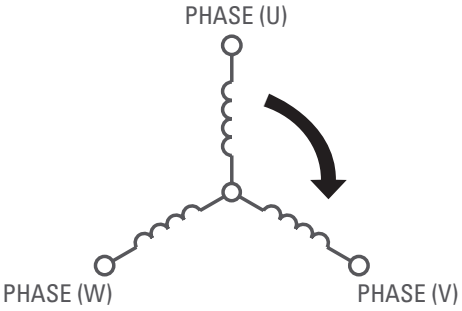


Notes

Feedback Options

Phasing Diagram - All Motors

Motor Winding Configuration



General notes:

1. When motor is rotated CW (viewed from drive shaft end), these waveforms result:
   Voltage U , leads V , leads W.
   Voltage U-W leads Voltage V-W by 60° electrical.
2. PTC thermistor (155°C ± 5°C switching temperature) installed.
   Resistance at 25°C: ≤550 ohms.
   Switching Resistance: ≥1330 ohms within ±5°C of switch temperature.
3. Optional KTY84-130 equivalent Nominal Resistance at 25°C, 603 ohms.
4. When optional shaft seal is included on front shaft extension, note that static friction stated in catalog or on winding data sheet is measured without shaft seal installed.
5. Standard outline drawings showing mounting dimensions and standard winding information are available on our website or by calling the Kollmorgen Customer Support at 1-540-633-3545, or through email at support@kollmorgen.com.

Feedback Summary for AKM2G Servo Motor with AKD Servo Drive

Feedback Device/ (Motor designation)	Plug & Play, Motor ID[2]	AKM2G Models	Device Resolution Cycles or Lines/rev	Resolution after AKD Interpolation[3]: counts (arc-min)	System Accuracy: Arc-min (±)
Resolver (R-)	N	AKM2G 2-7	1	65536 (0.330)	8
SFD3[2]	Y	AKM2G 2-7	16,777,216 (0.00129 arc-min)	N/A	16
Hiperface DSL Capacitive[1,2]	Y	AKM2G 2-7	32	2,097152 (0.0103)	4.66
EnDat 2.2 Inductive enc. Multi- turn[1,2] (LD)	Y	AKM2G 2,3,4	16	1,048,576 (0.0206)	8
		AKM2G 5,6,7	32	2,097,152 (0.0103)	4.66

Note 1: Provides 4096 turns of absolute positioning.
Note 2: These feedback devices include electronic motor nameplate data allowing plug-and-play commissioning, eliminating the need for drive parameter set-up and servo loop tuning in most applications.
Note 3: AKD interpolation for sinusoidal feedback devices is 2^{16}, however the resulting usable resolution for positioning may be much less for very high resolution systems.

Servo Motor Feedback Combinations

AKM2G Family of Servo Motors with Smart Feedback Device (SFD3)

The SFD3 Feedback communicates with the drive over a two-wire interface. Two wires supply +5V power at <150 mA and is an RS-485 digital communications link. The device includes EEPROM memory to save motor parameters.

Angle Measurement:
Resolution: 2^{24} = 16,777,216 counts per rev
= 0.0013 arc-min
Accuracy: < ± 0.75 arc-min electrical + sensor error
Size 15 sensor ± 9 arc-min net (AKM2G 2,3,4)
Size 21 sensor ± 9 arc-min net (AKM2G 5,6,7)
Electrical Noise: < 2^{-17} Rev rms at full bandwidth
Bandwidth: > 2000 Hz at -3 dB
> 1000 Hz at -45° phase lag
Max Tracking Rate: > 50,000 RPM
Velocity Ripple: < 0.2% p-p electronics only
Size 15 sensor < 1.5% p-p net (AKM2G 2,3,4)
Size 21 sensor < 1.5% p-p net (AKM2G 5,6,7)
Velocity Noise: < 4 RPM rms at full bandwidth

Digital Communications:
Baud Rate: 2.5 MBaud
Signaling: RS-485 differential, 8 bit data with odd parity compatible with standard UARTs
Update Period: Once every 62.5 uSec new position sample
Error Detection: 5 bit CRC in addition to parity check
EEPROM Memory: Does a data dump when the unit powers up.

Power Supply:
Supply at Drive: 5.0 V ± 0.25 V (±5%)
Supply at SFD3 in motor: 4.25 V to 5.25 V
Nominal Supply Current: 120 mA
Worst Case Supply: 150 mA
Cable Resistance: +5V, Rtn: < 3.3 Ohm net

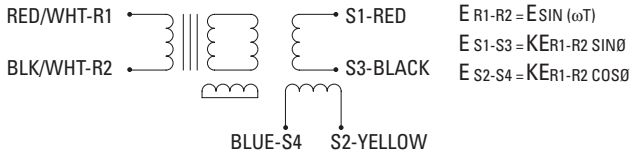
Environmental:
Operating Ambient: -20 to 120° C
Humidity: 10% to 90% non-condensing
Storage Temperature: -40 to 135°C

Resolver (Feedback)

Resolver Data	Units	AKM2G 2, 3, 4	AKM2G 5, 6, 7
		1 Speed	1 Speed
Input Voltage	V_{RMS}	7.0	7.0
	k Hz	10	10
Input Current Max.	mA	50	50
Transformation Ratio	10%	0.5	0.5
Null Voltage	mV_{RMS}	30	30
Max. Error (pk-pk)	MINS.	18	18
Phase Shift	Degrees	0	0
Operating Temperature	°C	-55° to 155°	-55° to 155°
Rotor Inertia Max.	kg-cm^2	0.046	0.497

Resolver Alignment
With positive DC current into phase W and out of phase V (U floats) the resolver is aligned to electrical ±5 counts. ie. Voltage S1-S3 set to null voltage S2-S4 max in phase with reference (R1-R2).

Resolver Winding Configuration



Servo Motor Feedback Combinations

Absolute Sine Encoder Options

Hiperface DSL

Type		Multi-Turn "GU"
Frame Size		AKM2G 2, 3, 4, 5, 6, 7
Number of Absolute Ascertainable Revolutions		4096
Supply Voltage Range		7 to 12
Current Consumption	mA MAX.	150
Operating Temperature	°C MIN/MAX	-40/115
Inertia	$g\text{-}cm^2$	1
Output Interface		SICK HIPERFACE DSL
Type		EEM37

EnDat Inductive

Type		Multi-Turn "LD"	
Frame Size		AKM2G 2, 3, 4	AKM2G 5, 6, 7
Revolutions		4096	4096
Input Voltage	Vdc	3.6 to 14	3.6 to 14
Current Consumption	mA Typical	5 V: 115 (without load)	5 V: 115 (without load)
Operating Temperature	°C MIN/MAX	-40/115	-40/115
Inertia	$kg\text{-}m^2$	$0.3x10^{-6}$	$2.6x10^{-6}$
Output Interface		HEIDENHAIN EnDat 2.2/22	
Type		EQI 1131	EQI1331

Brake Option

Failsafe, Holding Brake

The holding brake is designed to provide static holding torque to the motor shaft with the brake coil de-energized. The brake must first be released (coil energized) prior to commanding motor rotation as determined by its drop-out time. The brake is intended for holding or "parking" of a stationary motor. It is not intended for dynamic braking. There should be absolutely no motion of the rotor when power is removed from the brake coil.

AKM2G Motor Brake Specifications

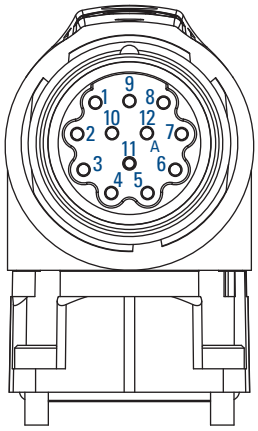
Motor Family	Minimum Static Torque @120°C		Weight Adder		Power Consumption Nominal	Current[1] @24 V, 20°C	Inertia Adder		Closing Time (engage)	Opening Time (release)	Backlash[2]	
											Maximum	Typical
	Nm	lb-in	Kg	lb	Watts ±7%	ADC	kg-cm^2	lb-in-sec^2	msec	msec	deg.	deg.
AKM2G-2	2	17.7	0.45	1.0	11.4	0.47	0.04	3.5E-05	10	40	0.32	1
AKM2G-3	3.3	29.205	0.72	1.6	12.6	0.53	0.12	1.1E-04	17	55	0.6	1
AKM2G-4	7	62.0	1.36	3.0	14.7	0.61	0.36	3.2E-04	20	85	0.55	1
AKM2G-5	16	141.6	2.6	5.7	20.8	0.87	1.2	1.1E-03	50	110	0.6	1
AKM2G-6	32	283.2	4.5	10.0	29.5	1.23	3.6	3.2E-03	70	150	0.25	1
AKM2G-7	80	708	9.1	20.1	37.6	1.57	12.3	1.1E-02	65	300	0.2	1

Contamination of the motor internal compartment by oil or other foreign materials will result in failure of the brake. Check the suitability of motor sealing for the working environment.
Note 1: Operating Voltage: 24 Vdc ± 10%.
Note 2: Maximum backlash is calculated using worst-case tolerancing, and typical backlash is calculated using statistical tolerancing.

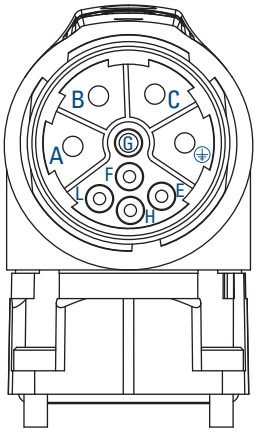
Servo Motor Connector Options

C & G Dual Connector Options – AKM2G size 3 to size 7 <20 Amps Continuous resolver only

C- Dual Connector Option



Resolver Connector

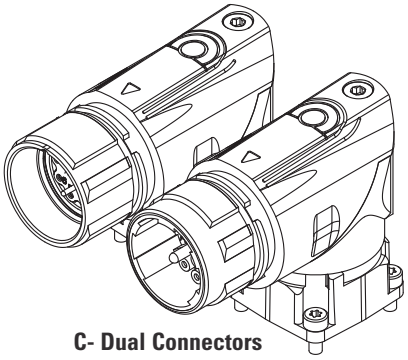


Power Connector

Resolver Connector

Pin	Function
1	N/C
2	Thermal Sensor +
3	S4, COS-
4	S3, SIN-
5	R2, REF-
6	Thermal Sensor –
7	S2, COS+
8	S1, SIN+
9	R1, REF+
10	N/C
11	N/C
12	N/C

Shield is Not Connected at Motor End
On motor mounted connectors, the thermal sensor lead colors are (+) Blue, (–) Black.



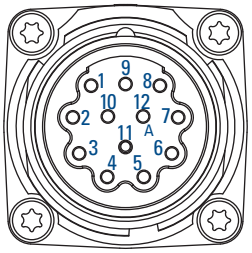
C- Dual Connectors

Power Connector

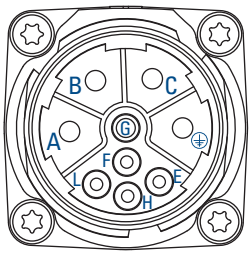
Pin	Function
A	U
⏚	PE
C	W
B	V
F	Brake +
G	Brake -
E	N/C
H	N/C
L	N/C

Shield Connected to Motor
Ground Internal to Motor

G- Dual Connector Option



Resolver Connector

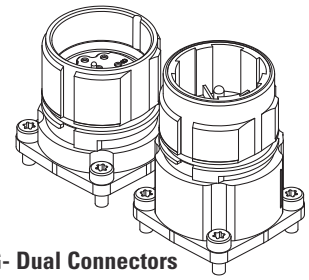


Power Connector

Resolver Connector

Pin	Function
1	N/C
2	Thermal Sensor +
3	S4, COS-
4	S3, SIN-
5	R2, REF-
6	Thermal Sensor –
7	S2, COS+
8	S1, SIN+
9	R1, REF+
10	N/C
11	N/C
12	N/C

Shield is Not Connected at Motor End
On motor mounted connectors, the thermal sensor lead colors are (+) Blue, (–) Black.



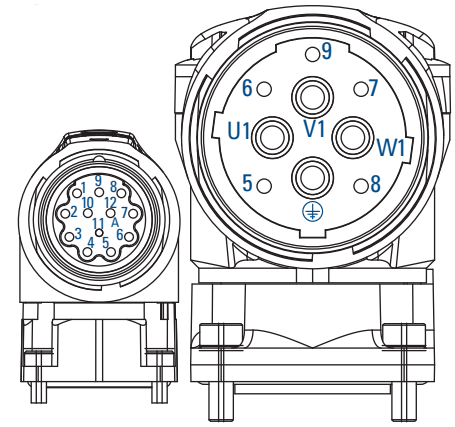
G- Dual Connectors

Power Connector

Pin	Function
A	U
⏚	PE
C	W
B	V
F	Brake +
G	Brake -
E	N/C
H	N/C
L	N/C

Shield Connected to Motor
Ground Internal to Motor

H- Dual Connector Option – AKM2G7 > 20 Amps Continuous resolver motors



Resolver Connector Power Connector

Resolver

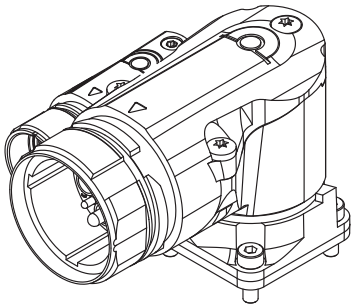
Pin	Function
1	N/C
2	Thermal Sensor +
3	S4, COS-
4	S3, SIN-
5	R2, REF-
6	Thermal Sensor –
7	S2, COS+
8	S1, SIN+
9	R1, REF+
10	N/C
11	N/C
12	N/C

Power Connector

Pin	Function
U1	U
V1	PE
W1	W
⏚	Ground
5	Brake +
6	–
7	–
8	Brake –
9	–

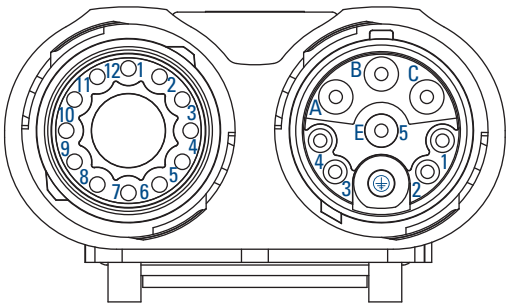
Shield Connected to Motor
Ground Internal to Motor

Shield is Not Connected at Motor End
On motor mounted connectors, the thermal sensor lead colors are (+) Blue, (–) Black.

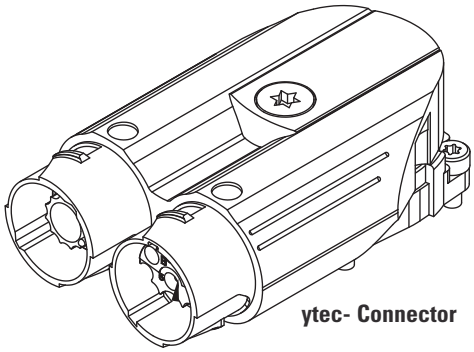


H- Dual Connectors

ytec®- Connector Option – AKM2G2 only



Resolver Power + Brake



ytec- Connector

Resolver Connector

Pin	Function	Pin	Function
1	N/C	7	S2, cos+
2	TH+	8	S1, sin+
3	S4, cos-	9	R1, ref+
4	S3, sin-	10	N/C
5	R2, ref-	11	N/C
6	TH-	12	N/C

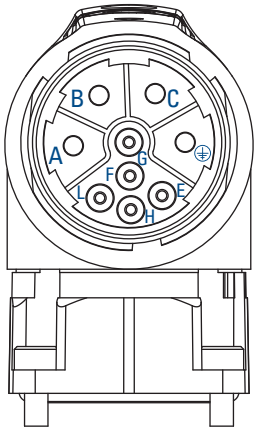
Power Connector

Pin	Function	Pin	Function
1	BR+	A	U
2	BR-	B	W
3	N/C	C	V
4	N/C	E	N/C
5	N/C	G	PE

Servo Motor Connector Options

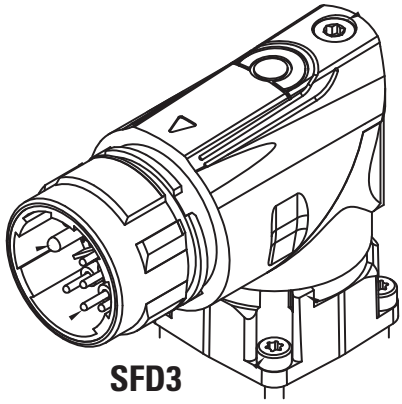
D- Connector Options – Hybrid combined power and feedback for SFD3, DSL, and EnDat for size 7 > 20 Amps Continuous

D- Dual Power + SFD3 Connector Option

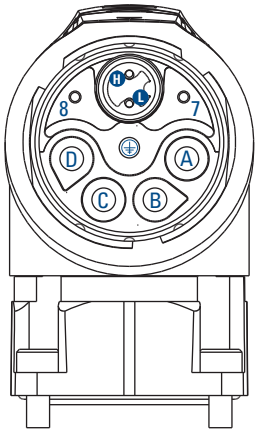


Power + SFD3

Pin	Function
A	Phase U
B	Phase V
C	Phase W
⏚	Ground
E	N/C
F	Brake +
G	Brake –
H	SFD +
L	SFD –

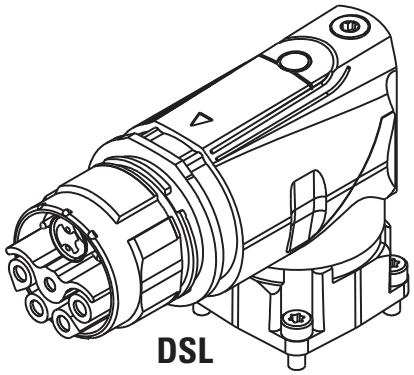


D- Dual Power + Hiperface DSL Connector Option

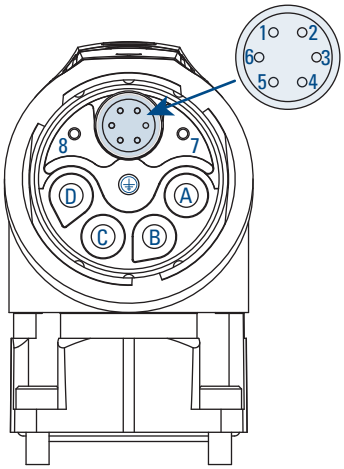


Power + DSL

Pin	Function
A	Phase U
B	Phase V
C	Phase W
D	–
⏚	Ground
8	Brake +
7	Brake -
L	DSL -
H	DSL +

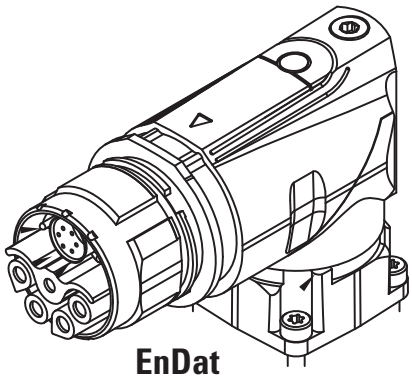


D- Dual Power + EnDat Connector Option



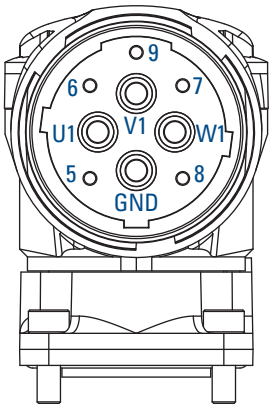
Power + EnDat

	Pin	Function
	A	Phase U
	B	Phase V
	C	Phase W
	D	–
	⏚	Ground
	8	Brake +
	7	Brake -
Ethernet	1	Up
Ethernet	2	0 V
Ethernet	3	Data
Ethernet	4	Data
Ethernet	5	Clock
Ethernet	6	Clock



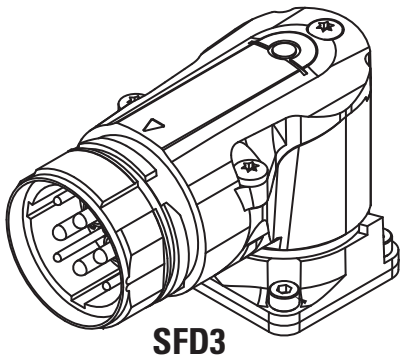
J- Connector Options – Hybrid combined power and feedback for SFD3, DSL, and EnDat for size 7 > 20 Amps Continuous

J- Dual Power + SFD3 Connector Option

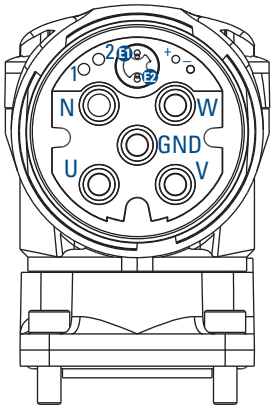


Power + SFD3

Pin	Function
U1	Phase U
W1	Phase W
V1	Phase V
GND	Ground
5	Brake +
6	SFD +
7	SFD –
8	Brake –
9	–

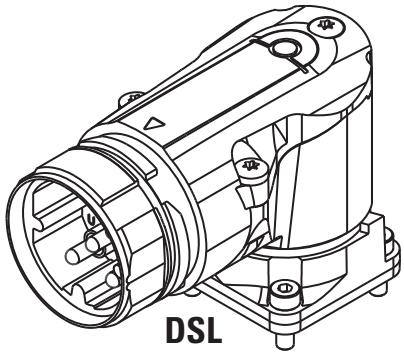


J- Dual Power + Hiperface DSL Connector Option

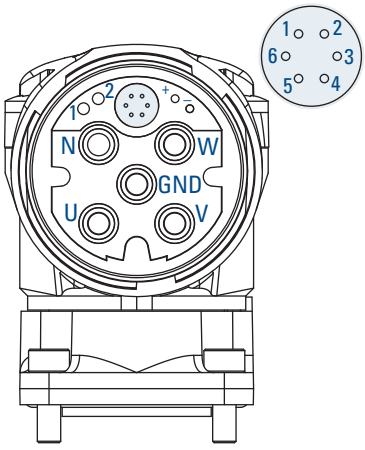


Power + DSL

Pin	Function
U	Phase U
W	Phase W
V	Phase V
N	–
GND	Ground
1	Brake +
2	Brake -
+	N/C
-	N/C
E2	DSL -
E1	DSL +

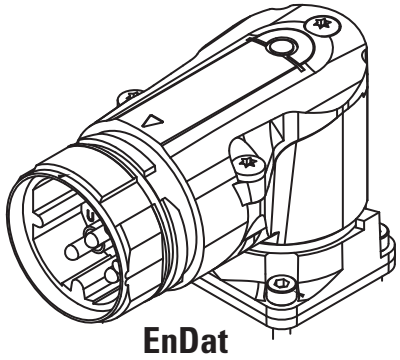


J- Dual Power + EnDat Connector Option



Power + EnDat

	Pin	Function
	U	Phase U
	W	Phase W
	V	Phase V
	N	-
	GND	Ground
	1	Brake +
	2	Brake -
	+	N/C
	-	N/C
Ethernet	1	Up
Ethernet	2	0 V
Ethernet	3	Data
Ethernet	4	Data
Ethernet	5	Clock
Ethernet	6	Clock



AKM2G Servo Motor Nomenclature

AKM®2G Brushless Servo Motor

AKM2G – 6 2 A – A N C N DA 0 0

AKM2G Series

Flange Size

2	58mm
3	72 mm
4	88 mm
5	114 mm
6	142 mm
7	192 mm

Rotor Length

1
2
3
4
5

Winding Type

A to Z

S Special

Mount

A IEC with accuracy N

Shaft

C Keyway
N Smooth shaft
S Special

Customization

0 Standard
T Teflon® shaft seal
V Viton® shaft seal
x Special

Thermal Sensor

0 PT-1000 + PTC
1 PT-1000
2 PTC
3 KTY84-130 (or equivalent)
S Special

Feedback Device

For all options see following page

S Special

Brake

2 24 V holding brake
N Without brake
S Special

Connections

For all options see following page

S Special

Feedback Unit Options

Code	Description	Connector Type	Compatible AKM2Gx	Type	Remarks	Lines per rev.	# of revs.	Compatible Drives
CA	SFD3	D	AKM2G2-7 ≤ 20A	Size 10/15/21	Single turn, inductive, 2 lines	11 bit	1	AKD
		J	AKM2G7 > 20A					
GU	Hiperface DSL	D	AKM2G2-7 ≤ 20A	EEM37	Multi-turn Capacitive	17 bit	4096	AKD
		J	AKM2G7 > 20A					
LD	EnDat 2.2	D	AKM2G2-7 ≤ 20A	AKM2G2-4 EQI 1131	Multi-turn Inductive	19 bit	4096	AKD
		J	AKM2G7 > 20A	AKM2G5-7 EQI 1331				
R-	Resolver	Y	AKM2G2	Size 10/15/21	Single turn, inductive	2 poles	1	All
		C	AKM2G3-7 ≤ 20A					
		H	AKM2G7 > 20A					

Connector Options

Model Designation	Connection	Compatible AKM2Gx	Position of connection
C	2 SpeedTec® M23	AKM2G3 - AKM2G7 ≤ 20 Amps	Angular, rotatable, motor mounted
D*	1 Hybrid M23	AKM2G2 - AKM2G7 ≤ 20 Amps	Angular, rotatable, motor mounted
G	2 SpeedTec® M23	AKM2G3 - AKM2G7 ≤ 20 Amps	Straight, motor mounted
H	1 M40 Power, 1 M23 Feedback	AKM2G7 > 20 Amps	Angular, rotatable, motor mounted
J*	1 Hybrid Connector M40	AKM2G7 > 20 Amps	Angular, rotatable, motor mounted
Y	1 ytec Connector	AKM2G2	Rotatable, motor mounted

* Hybrid connectors valid for SFD3, DSL, and EnDat Feedback only.

Connector Description

Connector	Usage	Contacts - Pins Power/Signal	Max. Current [A] Power/Signal	Max. Cross Section [mm²] Power/Signal	Protection Class
M23 SpeedTec right angle connectors (Size 1)	Power & Brake	4 / 5	20 / 10	4 / 1.5	IP65
	Feedback	- / 12	- / 10	- / 0.5	IP65
	Feedback	- / 17	- / 9	- / 0.5	IP65
	Hybrid1*	4 / 5	20 / 10	4 / 1.5	IP65
M40 (Size 1.5)	Power & Brake	4 / 5	75 / 30	16 / 4	IP65
	Hybrid1	4 / 5	75 / 30	16 / 4	IP65
ytec	Power & Brake	4 / 5	14 / 3.6	1.5 / 0.75	IP65
	Feedback	- / 12	- / 5	- / 0.75	IP65
	Feedback	- / 15	- / 5	- / 0.75	IP65

*Hybrid1 means: Power and SFD3, DSL, or EnDat Feedback (plus brake) on the same connector and in one cable.

Kollmorgen Recommended Cables

Dual Cables

Drives:	All AKD Drives	Motor	Feedback Cable
Resolver		AKM2G-xxx-xxYxRx (y-tec)	F5-10-FB2-C2-00-xxxx00
		AKM2G-xxx-xxCxRx (Speed-tec)	F5-10-FB2-A2-00-xxxx00
		AKM2G-xxx-xxGxRx (Speed-tec)	F5-10-FB2-A2-00-xxxx00

Drives:	AKD-x003-06 AKD-x006-06	Motor	Power Cable
Low Power Cables (For use with drives 6A or less at 240V)		AKM2G-xxx-xxYNxx	P5-11-015-C1-00-xxxx00
		AKM2G-xxx-xxY2xx	P6-11-015-C1-00-xxxx00
		AKM2G-xxx-xxCNxx	P5-11-025-A1-00-xxxx00
		AKM2G-xxx-xxC2xx	P6-11-025-A1-00-xxxx00
		AKM2G-xxx-xxGNxx	P5-11-025-A1-00-xxxx00
		AKM2G-xxx-xxG2xx	P6-11-025-A1-00-xxxx00

Drives:	AKD-x003-07 AKD-x006-07 AKD-x012-xx AKD-x024-xx AKD-x048-07	Motor	Power Cable
High Power Cables (For drives operating at greater than 240V and/or 12A)		AKM2G-xxx-xxYNxx	P5-12-015-C1-00-xxxx00
		AKM2G-xxx-xxY2xx	P6-12-015-C1-00-xxxx00
		AKM2G-xxx-xxCNxx	P5-12-025-A1-00-xxxx00
		AKM2G-xxx-xxC2xx	P6-12-025-A1-00-xxxx00
		AKM2G-xxx-xxGNxx	P5-12-025-A1-00-xxxx00
		AKM2G-xxx-xxG2xx	P6-12-025-A1-00-xxxx00
		AKM2G-xxP-xxxNxx	P5-12-060-A4-00-xxxx00
		AKM2G-xxP-xxx2xx	P6-12-060-A4-00-xxxx00
		AKM2G-xxQ-xxxNxx	P2-13-100-A4-00-xxxx00
		AKM2G-xxQ-xxx2xx	
		AKM2G-xxR-xxxNxx	
		AKM2G-xxR-xxx2xx	

Hybrid Cables (Power and Feedback in the same cable)

Drives:	AKD-x003-06 AKD-x006-06	Motor	Cable
Low Power Cables (For use with drives 6A or less at 240V)		AKM2G-xxx-xxxxCA	H6-11-025-A1-00-xxxx00
		AKM2G-xxx-xxxxGU	H6-11-025-B1-00-xxxx00
		AKM2G-xxx-xxxxLD	H2-14-015-B2-00-xxxx00

Drives:	AKD-x003-07 AKD-x006-07	Motor	Cable
High Power Cables (For drives operating at greater than 240V and equal to or less than 6A)		AKM2G-xxx-xxxxCA	H6-12-025-A1-00-xxxx00
		AKM2G-xxx-xxxxGU	H6-12-025-B1-00-xxxx00
		AKM2G-xxx-xxxxLD	H6-12-015-B2-00-xxxx00

Drives:	AKD-x012-xx	Motor	Cable
High Power Cables (For drives operating at 12A)		AKM2G-xxx-xxxxCA	H6-12-025-A1-00-xxxx00
		AKM2G-xxx-xxxxGU	H6-12-025-B1-00-xxxx00
		AKM2G-xxx-xxxxLD	H6-12-040-B2-00-xxxx00

Drives:	AKD-x024-xx	Motor	Cable
High Power Cables (For drives operating at 24A)		AKM2G-xxx-xxxxCA	H2-12-040-A1-00-xxxx00
		AKM2G-xxx-xxxxGU	H2-12-040-B1-00-xxxx00
		AKM2G-xxx-xxxxLD	H6-12-040-B2-00-xxxx00

Drives:	AKD-x048-xx	Motor	Cable
High Power Cables (For drives operating at greater than 24A)		AKM2G-xxQ-xxxxCA	H2-13-060-A4-00-xxxx00
		AKM2G-xxQ-xxxxGU	H2-13-060-B3-00-xxxx00
		AKM2G-xxR-xxxxCA	H2-13-100-A4-00-xxxx00
		AKM2G-xxR-xxxxGU	H2-13-100-B3-00-xxxx00
		AKM2G-xxR-xxxxLD	H2-13-100-B4-00-xxxx00

AKD-N Cables

Drives:	AKD-N003 AKD-N006 AKD-N012	Motor	Cable
Hybrid Cable (AKD-N Drives)		AKM2G-xxx-xxxxCA	H6-33-025-A1-00-xxx00
		AKM2G-xxQ-xxxxGU	H6-33-025-B1-00-xxx00

For complete AKM2G, AKD model nomenclature, refer to pages 66 and 74 respectively.

AKD® Servo Drive

Our AKD series is a complete range of Ethernet-based servo drives that are fast, feature-rich, flexible and integrate quickly and easily into any application. AKD ensures plug-and-play commissioning for instant, seamless access to everything in your machine. And, no matter what your application demands, AKD offers industry-leading servo performance, communication options, and power levels, all in a smaller footprint.

This robust, technologically advanced family of drives delivers optimized performance when paired with our best-in-class components, producing higher quality results at greater speeds and more uptime. With Kollmorgen servo components, we can help you increase your machine's overall equipment effectiveness (OEE) by 50%.

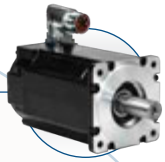
The Benefits of AKD Servo Drive

• Optimized Performance in Seconds	• Auto-tuning is one of the best and fastest in the industry • Automatically adjusts all gains, including observers • Immediate and adaptive response to dynamic loads • Precise control of all motor types • Compensation for stiff and compliant transmission and couplings
• Greater Throughput and Accuracy	• Up to 27-bit-resolution feedback yields unmatched precision and excellent repeatability • Very fast settling times result from a powerful dual processor system that executes industry-leading and patent pending servo algorithms with high resolution • Advanced servo techniques such as high-order observer and bi-quad filters yield industry-leading machine performance • Highest bandwidth torque-and-velocity loops. Fastest digital current loop in the market
• Easy-to-use Graphical User Interface (GUI) for Faster Commissioning and Troubleshooting	• Six-channel real-time software oscilloscope commissions and diagnoses quickly • Multi-function Bode Plot allows users to quickly evaluate performance • Auto-complete of programmable commands saves looking up parameter names • One-click capture and sharing of program plots and parameter settings allow you to send machine performance data instantly • Widest range of programming options in the industry
• Flexible and Scalable to Meet any Application	• 3 to 48 Arms continuous current; 9 to 96 Arms peak • Very high power density enables an extremely small package • True plug-and-play with all standard Kollmorgen servo motors and actuators • Supports a variety of single and multi-turn feedback devices – Smart Feedback Device (SFD/SFD3), EnDat 2.2, EnDat 2.1, BiSS, analog Sine/Cos encoder, incremental encoder, HIPERFACE®, and resolver • Tightly integrated Ethernet motion buses without the need to add large hardware: EtherCAT®, SynqNet®, Modbus® TCP, EtherNet/IP™, PROFINET® RT, SERCOS® III, and CANopen® • Scalable programmability from base torque-and-velocity through multi-axis master

AKD® Servo Drive

The AKD servo drive delivers cutting-edge technology and performance with one of the most compact footprints in the industry. These feature-rich drives provide a solution for nearly any application, from basic torque-and-velocity applications, to indexing, to multi-axis programmable motion with embedded Kollmorgen Automation Suite™. The versatile AKD sets the standard for power density and performance.

AKMH™ Hygienic Stainless Steel Motors



AKM & AKM® 2G Servo Motors

Frameless Brushless Direct Drive Motors

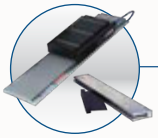
AKD®-N Decentralized Servo Drive

Control of motors with AKD® PDMM programmable multi-axis master

Cartridge DDR® Motors

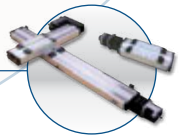
AKD® Servo Drive

Housed DDR® Motors



Direct Drive Linear Motors

Linear Actuators



Multi-Axis Precision Tables

Best-in-Class Components

AKD works seamlessly with Kollmorgen motors and actuators–well-known for quality, reliability, and performance.

Industry-leading power density

General Specifications

120 / 240 Vac 1 & 3 Phase (85 -265 V)	Continuous Current (Arms)	Peak Current (Arms)	Drive Continuous Output Power Capacity (Watts)	Internal Regen (Watts)	(Ohms)	Height mm (in)	Width mm (in)	Depth mm (in)	Depth with Cable Bend Radius mm (in)
AKD-x00306	3	9	1100	0	0	168 (6.61)	59 (2.32)	156 (6.14)	184 (7.24)
AKD-x00606	6	18	2000	0	0	168 (6.61)	59 (2.32)	156 (6.14)	184 (7.24)
AKD-x01206	12	30	4000	100	15	196 (7.72)	78 (3.07)	187 (7.36)	215 (8.46)
AKD-x02406	24	48	8000	200	8	247 (9.72)	100 (3.94)	228 (8.98)	265 (10.43)

240/480 Vac 3 Phase (187-528 V)	Continuous Current (Arms)	Peak Current (Arms)	Drive Continuous Output Power Capacity (Watts)	Internal Regen (Watts)	(Ohms)	Height mm (in)	Width mm (in)	Depth mm (in)	Depth with Cable Bend Radius mm (in)
AKD-x00307	3	9	2000	100	33	256 (10.08)	70 (2.76)	185 (7.28)	221 (8.70)
AKD-x00607	6	18	4000	100	33	256 (10.08)	70 (2.76)	185 (7.28)	221 (8.70)
AKD-x01207	12	30	8000	100	33	256 (10.08)	70 (2.76)	185 (7.28)	221 (8.70)
AKD-x02407	24	48	16,000	200	23	306 (12.01)	105 (4.13)	228 (8.98)	264 (10.39)
AKD-x04807	48	96	35,000	–	–	385 (15.16)	185 (7.28)	225 (8.86)	260 (10.23)

Note 1: For complete AKD model nomenclature, refer to page 74.
Note 2: Additional AKD information can be found online.

AKD Servo Drive Nomenclature

AKD® Servo Drive

AKD – B 003 06 – NB AN – 0000

AKD Series

Version

B = Base drive
C = Central power supply for AKD-N (Requires CB Extention)
N = Decentralized drive (Requires DB, DF, or DS Extention)
P = Position indexer (motion tasking)
T = AKD BASIC Language Programmable drive (Requires IC or NB Extention)
M = Multi-axis Master Drive (Requires M1 or MC Extension option and EC Connectivity option)

Current Rating

003 = 3 Amp
006 = 6 Amp
010 = 10kW (for AKD-C, this field refers to power.)
012 = 12 Amp
024 = 24 Amp
048 = 48 Amp

Voltage

06 = 120/240 Vac 1Ø/3Ø (24 Amp Drive: 240 Vac 3Ø only)
07 = 240/480 Vac 3Ø (Version C: 07 = 400/480 Vac 3Ø I Version N: 07 = 560/680 Vdc)

Extension

CB = Without extention (AKD-C version only)
DB = Hybrid motor cable (AKD-N version only)
DF = Additional EtherCAT® port + feedback connector (AKD-N version only)
DS = Local STO + feedback connector (AKD-N version only)
IC = Expanded I/O version and SD card slot (AKD-T version only)
M1 = High performance multi-axis controller
MC = Standard multi-axis controller
NB = Without extensions

Connectivity*

	Drive Version Availability
AN = Analog command	B, P, T
CN = CANopen®	P
EC = EtherCAT®	C, M, N, P
EI = EtherNet/IP™	P
PN - PROFINET®	P
SQ = SynqNet®	B

*Motion Tasking is included as a free upgrade with CN, EC, EI and PN

Variants

0000 = Standard

Note: Options shown in blue text are considered standard.

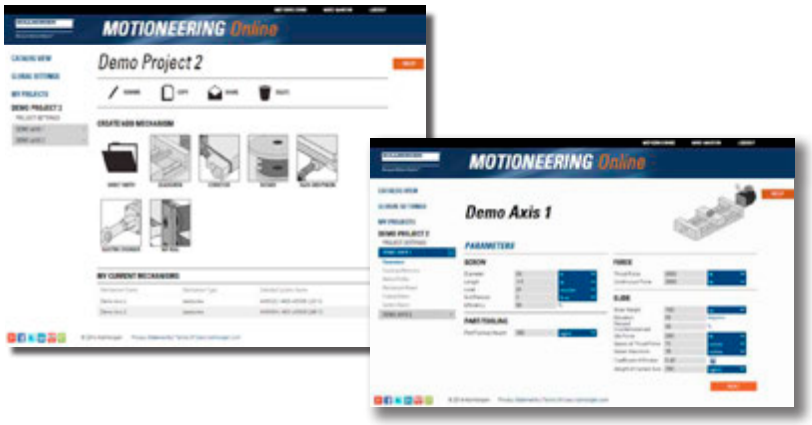
MOTIONEERING® Online

MOTIONEERING® Online – Kollmorgen has revamped, modernized and put online one of the most respected applications sizing programs of the last 20 years. You now can access this application sizing and selection tool wherever you have access to the internet. MOTIONEERING Online is just a start of a series of releases that will empower you to optimize solutions for your toughest applications. Sizing frameless motors and drive systems has never been easier. Using a mechanism project concept for collecting and saving multiple axes of load information, MOTIONEERING® Online can automatically calculate application results and compare against a catalog of systems - recommending the most optimized set of Kollmorgen system solutions available.

Versatile units-of-measure selection options for mechanism and motion profile data-entry, with the ability to convert data into other available units, makes this a convenient international tool. A user-friendly Help file teaches program functions and algorithms used to provide results.

Mechanism Projects

- Direct Entry, lead screw, conveyor
- Rack and pinion, nip rolls
- Direct Drive Rotary
- Electric Cylinder
- Direct data entry



Solution Set Search Screen

- Color-coded indication of system's ability to meet application requirements
- Review system components specifications
- Save, print, or create a pdf application report
- Evaluate system performance curve with application points

MOTIONEERING® Online Features:

- Inertia Calculator - lets you build up inertia based on odd shapes by additive or subtractive methods
- Custom Motion Profile - easy to add entire segments or copy segments to repeat
- Environmental Factor - takes into account your ambient temperature
- Project by Project Units - You can tailor your units on a project by project basis, or use the global units settings

MOTIONEERING Online Supported Browsers

- IE, Chrome, Firefox, Safari

www.kollmorgen.com/motioneering

About Kollmorgen

Since its founding in 1916, Kollmorgen's innovative solutions have brought big ideas to life, kept the world safer, and improved peoples' lives. Today, its world-class knowledge of motion systems and components, industry-leading quality, and deep expertise in linking and integrating standard and custom products continually delivers breakthrough motion solutions that are unmatched in performance, reliability, and ease-of-use. This gives machine builders around the world an irrefutable marketplace advantage and provides their customers with ultimate peace-of-mind.

For assistance with your application needs in North America, contact us at: 540-633-3545, support@kollmorgen.com or visit www.kollmorgen.com for a global contact list.

KOLLMORGEN®

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