

AKM[®] 2G Servo Motor Selection Guide



with AKD[®] Family 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 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.

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 Altra Industrial Motion. A key driver in the growth of all Altra divisions is the Altra 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

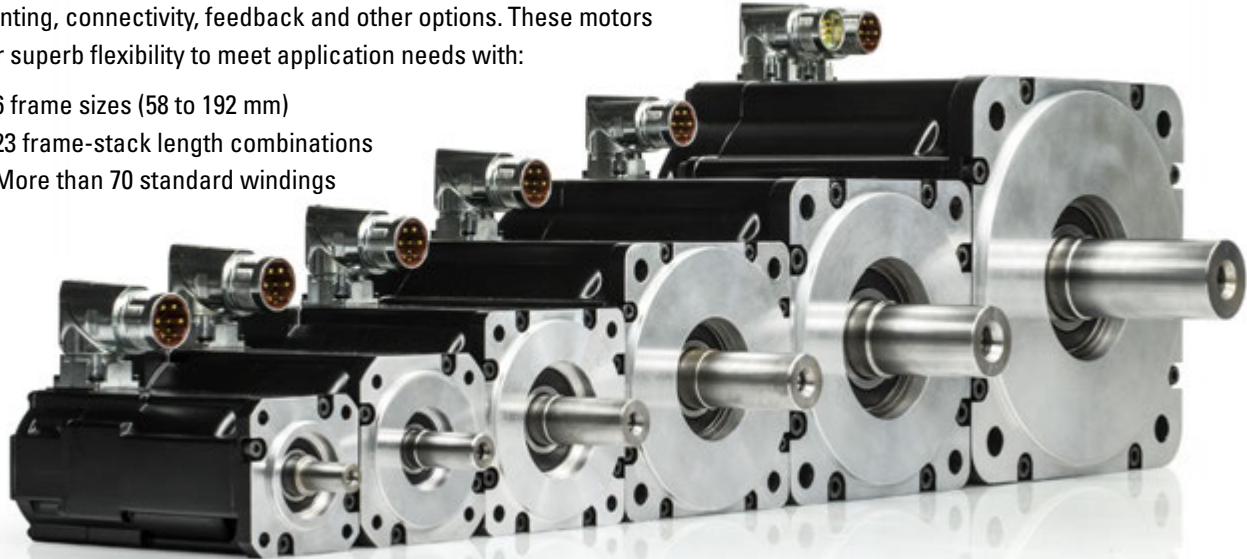
Smaller Footprint	Reduce machine space <ul style="list-style-type: none"> • For equivalent torque it is possible to use a smaller size motor than competitive motors. • The range of AKM2G sizes provides for optimizing for length or flange square depending on which dimension is most critical. • Use of the smaller motor saves space achieving equivalent performance in a smaller footprint machine or saving space for other machine elements.
Increased Torque	Higher performance <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • 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. AKM2G motors can be operated on DC voltages and voltages of less than 120Vac; for these applications please contact Kollmorgen Customer Support for assistance with sizing and selection

Feedback

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

Mounting

Multiple mounting standards are available to meet common International standards.

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 Absolute Digital Encoders 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, ULC, and CE requirements and include thermistors.

Additional Options:

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

Kollmorgen Cables Offer the Complete Solution



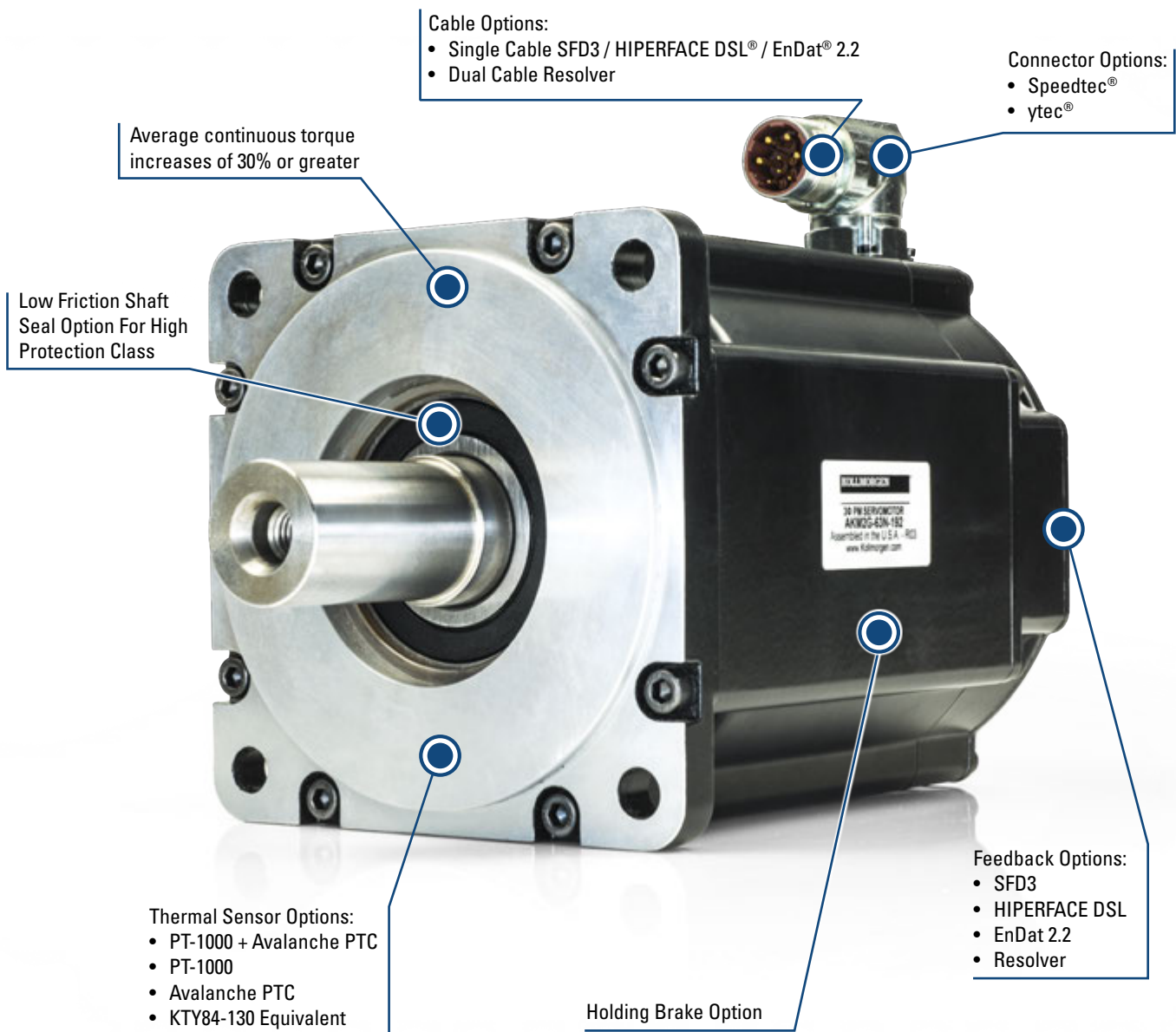
Kollmorgen offers complete cable solutions for connecting drives and motors. This includes static, low cost cable sets for simple applications to high bend, high flex, hybrid cables that combine feedback and power in one cable. Not sure which cable offering would best suit your needs? No problem. See the Kollmorgen 2G Cable Guide, or 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: 0.206 - 1.16 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 (feedback dependent).



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 (feedback dependent).



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 (feedback dependent).



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 (feedback dependent).



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 (feedback dependent), including optional holding brakes.



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

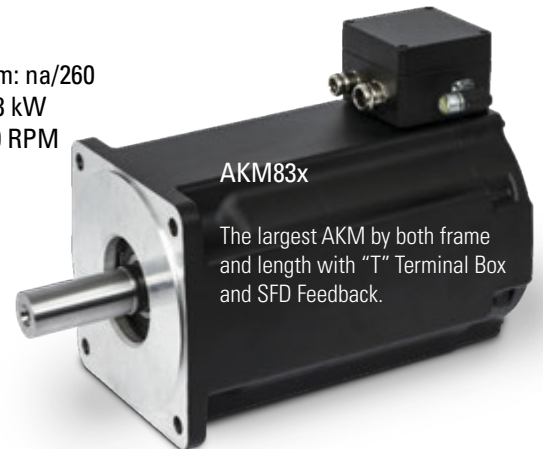
Flange NEMA/mm: na/188
 Power: 3.97 - 8.58 kW
 Max Speed: 6000 RPM
 Stacks: 3



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-xxxx-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-xxxx-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.

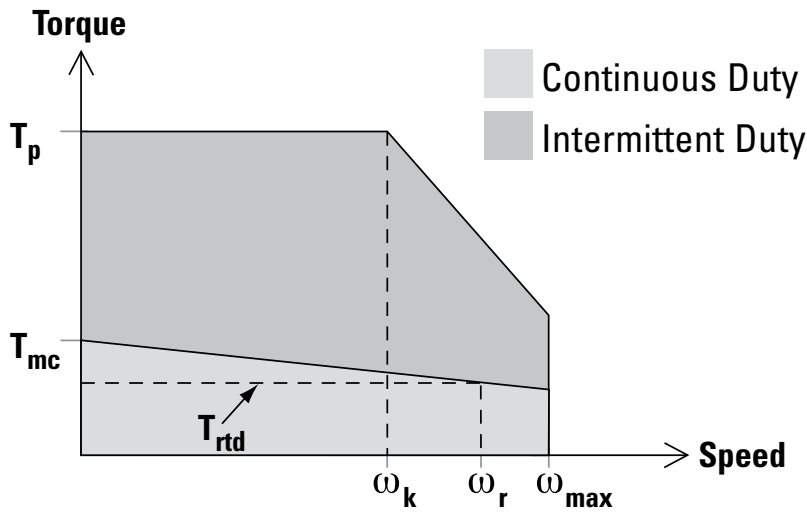
Application Examples:	Food and beverages industries; cutting, packing, and filling without direct contact with food; motor positioned laterally or below the food.
Standards:	UL, CE, RoHS, FDA
Surface:	White 2K FDA compliant paint**
Immunity:	Against tested industrial cleaning agents*, corrosion-resistant
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, or the Kollmorgen website Performance Curve Generator.

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 limit 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 limit 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 limit 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.

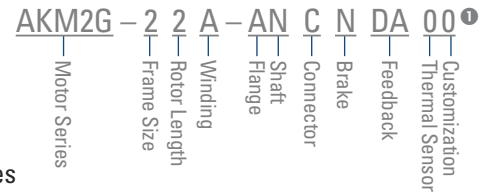
AKM[®]2G / AKD[®] Family System Performance

System Performance – AKM2G Servo Motors driven by AKD2G and AKD Servo Drives

AKM2G Servo Motor ^①	AKD2G/AKD Servo Drive ^①	Frame Size mm	Max Cont.Torque Tmc Nm (lb-in)	Peak Torque at stall Tps Nm (lb-in)	Rated Speed Nrt'd RPM	Max System Speed ^② RPM	Power Prtd watts	Inertia (Jm) Kg-cm ² (lb-in-s ²)	
120V	AKM2G-21D	AKD2G-SPx-6V03x/AKD-x00306	58	0.641 (5.67)	2.50 (22.1)	4300	8000	266	0.093 (8.23E-05)
	AKM2G-21E	AKD2G-SPx-6V03x/AKD-x00306	58	0.645 (5.71)	2.10 (18.6)	5600	8000	339	0.093 (8.23E-05)
	AKM2G-21E	AKD2G-SPx-6V06x/AKD-x00606	58	0.645 (5.71)	2.53 (22.4)	5600	8000	339	0.093 (8.23E-05)
	AKM2G-21G	AKD2G-SPx-6V06x/AKD-x00606	58	0.652 (5.77)	2.56 (22.7)	8000	8000	458	0.093 (8.23E-05)
	AKM2G-22C	AKD2G-SPx-6V03x/AKD-x00306	58	1.12 (9.89)	4.11 (36.4)	1800	8000	204	0.155 (1.37E-04)
	AKM2G-22D	AKD2G-SPx-6V03x/AKD-x00306	58	1.12 (9.91)	4.16 (36.8)	2700	8000	300	0.155 (1.37E-04)
	AKM2G-22E	AKD2G-SPx-6V03x/AKD-x00306	58	1.12 (9.93)	3.40 (30.1)	3600	8000	392	0.155 (1.37E-04)
	AKM2G-22E	AKD2G-SPx-6V06x/AKD-x00606	58	1.12 (9.93)	4.39 (38.9)	3600	8000	392	0.155 (1.37E-04)
	AKM2G-23D	AKD2G-SPx-6V03x/AKD-x00306	58	1.50 (13.2)	5.85 (51.8)	1800	8000	272	0.217 (1.92E-04)
	AKM2G-23E	AKD2G-SPx-6V03x/AKD-x00306	58	1.50 (13.2)	4.54 (40.2)	2700	8000	398	0.217 (1.92E-04)
	AKM2G-23E	AKD2G-SPx-6V06x/AKD-x00606	58	1.50 (13.2)	5.84 (51.7)	2700	8000	398	0.217 (1.92E-04)
	AKM2G-23F	AKD2G-SPx-6V06x/AKD-x00606	58	1.52 (13.4)	5.94 (52.6)	4000	8000	576	0.217 (1.92E-04)
	AKM2G-24D	AKD2G-SPx-6V03x/AKD-x00306	58	1.82 (16.1)	7.13 (63.1)	1500	8000	277	0.279 (2.47E-04)
	AKM2G-24E	AKD2G-SPx-6V03x/AKD-x00306	58	1.83 (16.2)	5.57 (49.3)	2300	8000	417	0.279 (2.47E-04)
	AKM2G-24E	AKD2G-SPx-6V06x/AKD-x00606	58	1.83 (16.2)	7.16 (63.4)	2300	8000	417	0.279 (2.47E-04)
	AKM2G-24F	AKD2G-SPx-6V06x/AKD-x00606	58	1.86 (16.4)	7.24 (64.1)	3400	8000	603	0.279 (2.47E-04)
	AKM2G-31C	AKD2G-SPx-6V03x/AKD-x00306	72	1.68 (14.9)	4.54 (40.2)	1000	8000	175	0.426 (3.77E-04)
	AKM2G-31D	AKD2G-SPx-6V03x/AKD-x00306	72	1.69 (15.0)	6.01 (53.2)	1500	8000	263	0.426 (3.77E-04)
	AKM2G-31E	AKD2G-SPx-6V03x/AKD-x00306	72	1.72 (15.2)	4.90 (43.4)	2300	8000	404	0.426 (3.77E-04)
	AKM2G-31E	AKD2G-SPx-6V06x/AKD-x00606	72	1.72 (15.2)	6.06 (53.6)	2300	8000	404	0.426 (3.77E-04)
	AKM2G-32E	AKD2G-SPx-6V03x/AKD-x00306	72	2.83 (25.0)	8.68 (76.8)	1300	8000	378	0.813 (7.20E-04)
	AKM2G-32E	AKD2G-SPx-6V06x/AKD-x00606	72	2.83 (25.0)	10.3 (91.5)	1300	8000	378	0.813 (7.20E-04)
	AKM2G-32G	AKD2G-SPx-6V06x/AKD-x00606	72	2.93 (25.9)	10.6 (94.3)	2300	8000	680	0.813 (7.20E-04)
	AKM2G-33G	AKD2G-SPx-6V06x/AKD-x00606	72	3.84 (34.0)	14.4 (128)	1600	8000	622	1.20 (1.06E-03)
	AKM2G-33H	AKD2G-SPx-6V06x/AKD-x00606	72	3.89 (34.5)	11.6 (102)	2250	8000	866	1.20 (1.06E-03)
	AKM2G-33H	AKD2G-SPx-6V12x/AKD-x01206	72	3.89 (34.5)	14.6 (129)	2250	8000	866	1.20 (1.06E-03)
	AKM2G-41D	AKD2G-SPx-6V03x/AKD-x00306	88	2.87 (25.4)	7.20 (63.7)	900	6000	267	0.774 (6.85E-04)
	AKM2G-41E	AKD2G-SPx-6V03x/AKD-x00306	88	2.89 (25.5)	6.61 (58.5)	1200	6000	357	0.774 (6.85E-04)
	AKM2G-41E	AKD2G-SPx-6V06x/AKD-x00606	88	2.89 (25.5)	7.26 (64.3)	1200	6000	357	0.774 (6.85E-04)
	AKM2G-41G	AKD2G-SPx-6V06x/AKD-x00606	88	2.89 (25.6)	7.25 (64.2)	2100	6000	613	0.774 (6.85E-04)
	AKM2G-42H	AKD2G-SPx-6V06x/AKD-x00606	88	5.17 (45.7)	12.9 (114)	1500	6000	790	1.36 (1.20E-03)
	AKM2G-42H	AKD2G-SPx-6V12x/AKD-x01206	88	5.17 (45.7)	14.4 (127)	1500	6000	790	1.36 (1.20E-03)
	AKM2G-43I	AKD2G-SPx-6V12x/AKD-x01206	88	7.07 (62.6)	21.1 (187)	1400	6000	1000	1.95 (1.73E-03)
	AKM2G-44H	AKD2G-SPx-6V06x/AKD-x00606	88	8.59 (76.0)	22.4 (199)	900	6000	790	2.53 (2.24E-03)
	AKM2G-44H	AKD2G-SPx-6V12x/AKD-x01206	88	8.59 (76.0)	27.0 (239)	900	6000	790	2.53 (2.24E-03)
	AKM2G-44J	AKD2G-SPx-6V12x/AKD-x01206	88	8.59 (76.0)	26.9 (238)	1200	6000	1040	2.53 (2.24E-03)
	AKM2G-51H	AKD2G-SPx-6V06x/AKD-x00606	114	6.86 (60.7)	15.7 (139)	1100	6000	780	2.52 (2.23E-03)
	AKM2G-51I	AKD2G-SPx-6V06x/AKD-x00606	114	6.45 (57.1)	15.3 (135)	1200	6000	850	2.52 (2.23E-03)
	AKM2G-51I	AKD2G-SPx-6V12x/AKD-x01206	114	6.88 (60.9)	15.7 (139)	1200	6000	850	2.52 (2.23E-03)
	AKM2G-51K	AKD2G-SPx-6V12x/AKD-x01206	114	6.89 (60.9)	15.6 (138)	2100	6000	1440	2.52 (2.23E-03)
	AKM2G-52K	AKD2G-SPx-6V12x/AKD-x01206	114	12.1 (107)	28.9 (256)	1200	6000	1470	4.58 (4.05E-03)
	AKM2G-52L	AKD2G-SPx-6V12x/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	AKD2G-SPx-6V12x/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	AKD2G-SPx-6V12x/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	AKD2G-SPx-6V12x/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	AKD2G-SPx-6V12x/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)	

① For complete AKM2G, AKD, and AKD2G model nomenclature, refer to pages 66, 80, and 81 respectively.

② Max mechanical speeds: 8000 RPM for AKM2G-2,3 and 6000 RPM for AKM2G-4, 5, 6, 7.



System Performance – AKM2G Servo Motors driven by AKD2G and AKD Servo Drives

AKM2G Servo Motor ¹	AKD2G/AKD Servo Drive ¹	Frame Size mm	Max Cont.Torque Tmc Nm (lb-in)	Peak Torque at stall Tps Nm (lb-in)	Rated Speed Nrt'd RPM	Max System Speed ² RPM	Power Prtd watts	Inertia (Jm) Kg-cm ² (lb-in-s ²)	
240 V	AKM2G-21D	AKD2G-SPx-6V03x/AKD-x00306	58	0.640 (5.66)	2.50 (22.1)	8000	8000	449	0.093 (8.23E-05)
	AKM2G-21E	AKD2G-SPx-6V03x/AKD-x00306	58	0.644 (5.70)	2.10 (18.6)	8000	8000	449	0.093 (8.23E-05)
	AKM2G-21E	AKD2G-SPx-6V06x/AKD-x00606	58	0.644 (5.70)	2.53 (22.4)	8000	8000	449	0.093 (8.23E-05)
	AKM2G-22C	AKD2G-SPx-6V03x/AKD-x00306	58	1.12 (9.88)	4.37 (38.7)	4200	8000	448	0.155 (1.37E-04)
	AKM2G-22D	AKD2G-SPx-6V03x/AKD-x00306	58	1.12 (9.89)	4.16 (36.8)	6100	8000	616	0.155 (1.37E-04)
	AKM2G-22E	AKD2G-SPx-6V03x/AKD-x00306	58	1.12 (9.92)	3.40 (30.1)	8000	8000	759	0.155 (1.37E-04)
	AKM2G-22E	AKD2G-SPx-6V06x/AKD-x00606	58	1.12 (9.92)	4.39 (38.9)	8000	8000	759	0.155 (1.37E-04)
	AKM2G-23D	AKD2G-SPx-6V03x/AKD-x00306	58	1.49 (13.2)	5.85 (51.8)	4100	8000	579	0.217 (1.92E-04)
	AKM2G-23E	AKD2G-SPx-6V03x/AKD-x00306	58	1.49 (13.2)	4.54 (40.2)	5800	8000	772	0.217 (1.92E-04)
	AKM2G-23E	AKD2G-SPx-6V06x/AKD-x00606	58	1.49 (13.2)	5.84 (51.7)	5800	8000	772	0.217 (1.92E-04)
	AKM2G-23F	AKD2G-SPx-6V06x/AKD-x00606	58	1.51 (13.4)	5.94 (52.6)	8000	8000	980	0.217 (1.92E-04)
	AKM2G-24D	AKD2G-SPx-6V03x/AKD-x00306	58	1.82 (16.1)	7.13 (63.1)	3500	8000	607	0.279 (2.47E-04)
	AKM2G-24E	AKD2G-SPx-6V03x/AKD-x00306	58	1.83 (16.2)	5.57 (49.3)	4900	8000	808	0.279 (2.47E-04)
	AKM2G-24E	AKD2G-SPx-6V06x/AKD-x00606	58	1.83 (16.2)	7.16 (63.4)	4900	8000	808	0.279 (2.47E-04)
	AKM2G-24F	AKD2G-SPx-6V06x/AKD-x00606	58	1.85 (16.4)	7.24 (64.1)	7200	8000	1080	0.279 (2.47E-04)
	AKM2G-31C	AKD2G-SPx-6V03x/AKD-x00306	80	1.68 (14.9)	5.99 (53.0)	2400	8000	412	0.426 (3.77E-04)
	AKM2G-31D	AKD2G-SPx-6V03x/AKD-x00306	80	1.69 (15.0)	6.01 (53.2)	3500	8000	594	0.426 (3.77E-04)
	AKM2G-31E	AKD2G-SPx-6V03x/AKD-x00306	80	1.71 (15.2)	4.90 (43.4)	5000	8000	832	0.426 (3.77E-04)
	AKM2G-31E	AKD2G-SPx-6V06x/AKD-x00606	80	1.71 (15.2)	6.06 (53.6)	5000	8000	832	0.426 (3.77E-04)
	AKM2G-32D	AKD2G-SPx-6V03x/AKD-x00306	80	2.82 (25.0)	10.4 (91.8)	2200	8000	628	0.813 (7.20E-04)
	AKM2G-32E	AKD2G-SPx-6V03x/AKD-x00306	80	2.82 (24.9)	8.68 (76.8)	2900	8000	811	0.813 (7.20E-04)
	AKM2G-32E	AKD2G-SPx-6V06x/AKD-x00606	80	2.82 (24.9)	10.3 (91.5)	2900	8000	811	0.813 (7.20E-04)
	AKM2G-32G	AKD2G-SPx-6V06x/AKD-x00606	80	2.92 (25.8)	10.6 (94.3)	4700	8000	1280	0.813 (7.20E-04)
	AKM2G-33E	AKD2G-SPx-6V03x/AKD-x00306	80	3.87 (34.3)	11.2 (99.4)	2300	8000	878	1.20 (1.06E-03)
	AKM2G-33E	AKD2G-SPx-6V06x/AKD-x00606	80	3.87 (34.3)	14.6 (129)	2300	8000	878	1.20 (1.06E-03)
	AKM2G-33G	AKD2G-SPx-6V06x/AKD-x00606	80	3.83 (33.9)	14.4 (128)	3350	8000	1210	1.20 (1.06E-03)
	AKM2G-33H	AKD2G-SPx-6V06x/AKD-x00606	80	3.88 (34.3)	11.6 (102)	4600	8000	1540	1.20 (1.06E-03)
	AKM2G-33H	AKD2G-SPx-6V12x/AKD-x01206	80	3.88 (34.3)	14.6 (129)	4600	8000	1540	1.20 (1.06E-03)
	AKM2G-41D	AKD2G-SPx-6V03x/AKD-x00306	88	2.86 (25.3)	7.20 (63.7)	2100	6000	607	0.774 (6.85E-04)
	AKM2G-41E	AKD2G-SPx-6V03x/AKD-x00306	88	2.88 (25.5)	6.61 (58.5)	2700	6000	773	0.774 (6.85E-04)
	AKM2G-41E	AKD2G-SPx-6V06x/AKD-x00606	88	2.88 (25.5)	7.26 (64.3)	2700	6000	773	0.774 (6.85E-04)
	AKM2G-41G	AKD2G-SPx-6V06x/AKD-x00606	88	2.88 (25.5)	7.25 (64.2)	4500	6000	1210	0.774 (6.85E-04)
	AKM2G-42D	AKD2G-SPx-6V03x/AKD-x00306	88	5.06 (44.8)	14.3 (127)	1200	6000	620	1.36 (1.20E-03)
	AKM2G-42E	AKD2G-SPx-6V03x/AKD-x00306	88	5.10 (45.1)	12.6 (112)	1600	6000	830	1.36 (1.20E-03)
	AKM2G-42E	AKD2G-SPx-6V06x/AKD-x00606	88	5.10 (45.1)	14.4 (127)	1600	6000	830	1.36 (1.20E-03)
	AKM2G-42H	AKD2G-SPx-6V06x/AKD-x00606	88	5.15 (45.6)	12.9 (114)	3200	6000	1560	1.36 (1.20E-03)
	AKM2G-42H	AKD2G-SPx-6V12x/AKD-x01206	88	5.15 (45.6)	14.4 (128)	3200	6000	1560	1.36 (1.20E-03)
	AKM2G-43G	AKD2G-SPx-6V06x/AKD-x00606	88	7.00 (62.0)	21.0 (186)	1900	6000	1320	1.95 (1.73E-03)
	AKM2G-43I	AKD2G-SPx-6V12x/AKD-x01206	88	7.05 (62.4)	21.1 (187)	3000	6000	1950	1.95 (1.73E-03)
	AKM2G-44E	AKD2G-SPx-6V03x/AKD-x00306	88	8.50 (75.2)	22.0 (195)	900	6000	783	2.53 (2.24E-03)
AKM2G-44E	AKD2G-SPx-6V06x/AKD-x00606	88	8.51 (75.3)	26.9 (238)	900	6000	783	2.53 (2.24E-03)	
AKM2G-44H	AKD2G-SPx-6V06x/AKD-x00606	88	8.56 (75.8)	22.4 (199)	2000	6000	1660	2.53 (2.24E-03)	
AKM2G-44H	AKD2G-SPx-6V12x/AKD-x01206	88	8.56 (75.8)	27.0 (239)	2000	6000	1660	2.53 (2.24E-03)	
AKM2G-44J	AKD2G-SPx-6V12x/AKD-x01206	88	8.56 (75.8)	26.9 (238)	2600	6000	2060	2.53 (2.24E-03)	
AKM2G-51H	AKD2G-SPx-6V06x/AKD-x00606	114	6.85 (60.6)	15.7 (139)	2400	6000	1620	2.52 (2.23E-03)	
AKM2G-51I	AKD2G-SPx-6V06x/AKD-x00606	114	6.45 (57.1)	15.3 (135)	2700	6000	1800	2.52 (2.23E-03)	
AKM2G-51I	AKD2G-SPx-6V12x/AKD-x01206	114	6.86 (60.7)	15.7 (139)	2700	6000	1800	2.52 (2.23E-03)	
AKM2G-51K	AKD2G-SPx-6V12x/AKD-x01206	114	6.86 (60.7)	15.6 (138)	4500	6000	2720	2.52 (2.23E-03)	
AKM2G-52H	AKD2G-SPx-6V06x/AKD-x00606	114	11.4 (101)	28.1 (249)	1500	6000	1800	4.58 (4.05E-03)	
AKM2G-52H	AKD2G-SPx-6V12x/AKD-x01206	114	12.0 (107)	29.0 (257)	1500	6000	1800	4.58 (4.05E-03)	
AKM2G-52K	AKD2G-SPx-6V12x/AKD-x01206	114	12.1 (107)	28.9 (256)	2500	6000	2830	4.58 (4.05E-03)	
AKM2G-52L	AKD2G-SPx-6V12x/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	AKD2G-SPx-6V06x/AKD-x00606	114	16.3 (144)	41.8 (370)	1000	6000	1650	6.64 (5.88E-03)	
AKM2G-53L	AKD2G-SPx-6V12x/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	AKD2G-SPx-6V12x/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, and AKD2G model nomenclature, refer to pages 66, 80, and 81 respectively.
² Max mechanical speeds: 8000 RPM for AKM2G-2,3 and 6000 RPM for AKM2G-4, 5, 6, 7.

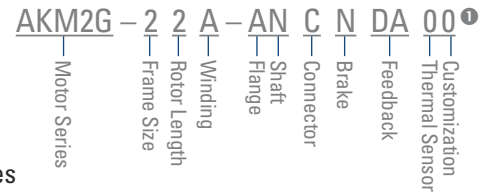
AKM[®]2G / AKD[®] Family System Performance

System Performance – AKM2G Servo Motors driven by AKD2G and AKD Servo Drives

AKM2G Servo Motor ^①	AKD2G/AKD Servo Drive ^①	Frame Size mm	Max Cont.Torque Tmc Nm (lb-in)	Peak Torque at stall Tps Nm (lb-in)	Rated Speed Nrt'd RPM	Max System Speed ^② RPM	Power Prtd watts	Inertia (Jm) Kg-cm ² (lb-in-s ²)	
240 V	AKM2G-54L	AKD2G-SPx-6V12x/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	AKD2G-SPx-6V12x/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	AKD2G-SPx-6V12x/AKD-x01206	142	15.4 (136)	37.6 (332)	1700	6000	2560	9.10 (8.05E-03)
	AKM2G-62L	AKD2G-SPx-6V12x/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	AKD2G-SPx-6V12x/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	AKD2G-SPx-6V12x/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	AKD2G-SPx-6V12x/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	AKD2G-SPx-6V12x/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	AKD2G-SPx-6V12x/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	AKD2G-SPx-7V03x/AKD-x00307	58	0.638 (5.65)	2.50 (22.1)	8000	8000	440	0.093 (8.23E-05)
	AKM2G-22C	AKD2G-SPx-7V03x/AKD-x00307	58	1.11 (9.87)	4.37 (38.7)	7500	8000	721	0.155 (1.37E-04)
	AKM2G-22D	AKD2G-SPx-7V03x/AKD-x00307	58	1.12 (9.88)	4.16 (36.8)	8000	8000	746	0.155 (1.37E-04)
	AKM2G-23D	AKD2G-SPx-7V03x/AKD-x00307	58	1.49 (13.2)	5.85 (51.8)	7300	8000	913	0.217 (1.92E-04)
	AKM2G-23E	AKD2G-SPx-7V03x/AKD-x00307	58	1.49 (13.2)	4.54 (40.2)	8000	8000	953	0.217 (1.92E-04)
	AKM2G-23E	AKD2G-SPx-7V06x/AKD-x00607	58	1.49 (13.2)	5.84 (51.7)	8000	8000	953	0.217 (1.92E-04)
	AKM2G-24D	AKD2G-SPx-7V03x/AKD-x00307	58	1.82 (16.1)	7.13 (63.1)	6100	8000	948	0.279 (2.47E-04)
	AKM2G-24E	AKD2G-SPx-7V03x/AKD-x00307	58	1.83 (16.2)	5.57 (49.3)	8000	8000	1120	0.279 (2.47E-04)
	AKM2G-24E	AKD2G-SPx-7V06x/AKD-x00607	58	1.83 (16.2)	7.16 (63.4)	8000	8000	1120	0.279 (2.47E-04)
	AKM2G-24F	AKD2G-SPx-7V06x/AKD-x00607	58	1.85 (16.4)	7.24 (64.1)	8000	8000	1090	0.279 (2.47E-04)
	AKM2G-31C	AKD2G-SPx-7V03x/AKD-x00307	80	1.68 (14.9)	5.99 (53.0)	4300	8000	713	0.426 (3.77E-04)
	AKM2G-31D	AKD2G-SPx-7V03x/AKD-x00307	80	1.69 (14.9)	6.00 (53.1)	6100	8000	972	0.426 (3.77E-04)
	AKM2G-31E	AKD2G-SPx-7V03x/AKD-x00307	80	1.71 (15.1)	4.90 (43.4)	8000	8000	1200	0.426 (3.77E-04)
	AKM2G-31E	AKD2G-SPx-7V06x/AKD-x00607	80	1.71 (15.1)	6.06 (53.6)	8000	8000	1200	0.426 (3.77E-04)
	AKM2G-32D	AKD2G-SPx-7V03x/AKD-x00307	80	2.82 (24.9)	10.4 (91.8)	3900	8000	1060	0.813 (7.20E-04)
	AKM2G-32E	AKD2G-SPx-7V03x/AKD-x00307	80	2.81 (24.9)	8.68 (76.8)	5000	8000	1290	0.813 (7.20E-04)
	AKM2G-32E	AKD2G-SPx-7V06x/AKD-x00607	80	2.81 (24.9)	10.3 (91.5)	5000	8000	1290	0.813 (7.20E-04)

① For complete AKM2G, AKD, and AKD2G model nomenclature, refer to pages 66, 80, and 81 respectively.

② Max mechanical speeds: 8000 RPM for AKM2G-2,3 and 6000 RPM for AKM2G-4, 5, 6, 7.



System Performance – AKM2G Servo Motors driven by AKD2G and AKD Servo Drives

AKM2G Servo Motor ①	AKD2G/AKD Servo Drive ①	Frame Size mm	Max Cont.Torque T _{mc} Nm (lb-in)	Peak Torque at stall T _{ps} Nm (lb-in)	Rated Speed N _{rtd} RPM	Max System Speed ② RPM	Power Prtd watts	Inertia (Jm) Kg-cm ² (lb-in-s ²)	
400 V	AKM2G-32G	AKD2G-SPx-7V06x/AKD-x00607	80	2.90 (25.7)	10.6 (94.3)	7600	8000	1720	0.813 (7.20E-04)
	AKM2G-33E	AKD2G-SPx-7V03x/AKD-x00307	80	3.86 (34.2)	11.2 (99.4)	4000	8000	1390	1.20 (1.06E-03)
	AKM2G-33E	AKD2G-SPx-7V06x/AKD-x00607	80	3.86 (34.2)	14.6 (129)	4000	8000	1390	1.20 (1.06E-03)
	AKM2G-33G	AKD2G-SPx-7V06x/AKD-x00607	80	3.82 (33.8)	14.4 (128)	5800	8000	1720	1.20 (1.06E-03)
	AKM2G-33H	AKD2G-SPx-7V06x/AKD-x00607	80	3.85 (34.1)	11.6 (102)	8000	8000	1570	1.20 (1.06E-03)
	AKM2G-33H	AKD2G-SPx-7V12x/AKD-x01207	80	3.84 (34.0)	14.6 (129)	8000	8000	1570	1.20 (1.06E-03)
	AKM2G-41D	AKD2G-SPx-7V03x/AKD-x00307	88	2.86 (25.3)	7.20 (63.7)	3800	6000	1040	0.774 (6.85E-04)
	AKM2G-41E	AKD2G-SPx-7V03x/AKD-x00307	88	2.87 (25.4)	6.61 (58.5)	4800	6000	1270	0.774 (6.85E-04)
	AKM2G-41E	AKD2G-SPx-7V06x/AKD-x00607	88	2.87 (25.4)	7.26 (64.3)	4800	6000	1270	0.774 (6.85E-04)
	AKM2G-41G	AKD2G-SPx-7V06x/AKD-x00607	88	2.87 (25.4)	7.25 (64.2)	6000	6000	1430	0.774 (6.85E-04)
	AKM2G-42D	AKD2G-SPx-7V03x/AKD-x00307	88	5.05 (44.7)	14.3 (127)	2100	6000	1050	1.36 (1.20E-03)
	AKM2G-42E	AKD2G-SPx-7V03x/AKD-x00307	88	5.09 (45.0)	12.6 (112)	2700	6000	1330	1.36 (1.20E-03)
	AKM2G-42E	AKD2G-SPx-7V06x/AKD-x00607	88	5.09 (45.0)	14.4 (127)	2700	6000	1330	1.36 (1.20E-03)
	AKM2G-42H	AKD2G-SPx-7V06x/AKD-x00607	88	5.13 (45.4)	12.9 (114)	5600	6000	2270	1.36 (1.20E-03)
	AKM2G-42H	AKD2G-SPx-7V12x/AKD-x01207	88	5.12 (45.3)	14.4 (128)	5600	6000	2270	1.36 (1.20E-03)
	AKM2G-43D	AKD2G-SPx-7V03x/AKD-x00307	88	6.97 (61.7)	20.7 (183)	1600	6000	1120	1.95 (1.73E-03)
	AKM2G-43G	AKD2G-SPx-7V06x/AKD-x00607	88	6.98 (61.8)	21.0 (186)	3200	6000	2050	1.95 (1.73E-03)
	AKM2G-43I	AKD2G-SPx-7V12x/AKD-x01207	88	7.00 (61.9)	21.1 (187)	5300	6000	2680	1.95 (1.73E-03)
	AKM2G-44E	AKD2G-SPx-7V03x/AKD-x00307	88	8.49 (75.1)	22.0 (195)	1700	6000	1420	2.53 (2.24E-03)
	AKM2G-44E	AKD2G-SPx-7V06x/AKD-x00607	88	8.49 (75.1)	26.9 (238)	1700	6000	1420	2.53 (2.24E-03)
	AKM2G-44H	AKD2G-SPx-7V06x/AKD-x00607	88	8.53 (75.5)	22.4 (199)	3500	6000	2560	2.53 (2.24E-03)
	AKM2G-44H	AKD2G-SPx-7V12x/AKD-x01207	88	8.51 (75.3)	27.0 (239)	3500	6000	2560	2.53 (2.24E-03)
	AKM2G-44J	AKD2G-SPx-7V12x/AKD-x01207	88	8.50 (75.2)	26.9 (238)	4500	6000	2840	2.53 (2.24E-03)
	AKM2G-51H	AKD2G-SPx-7V06x/AKD-x00607	114	6.83 (60.4)	15.7 (139)	4200	6000	2590	2.52 (2.23E-03)
	AKM2G-51I	AKD2G-SPx-7V06x/AKD-x00607	114	6.45 (57.1)	15.3 (135)	4600	6000	2770	2.52 (2.23E-03)
	AKM2G-51I	AKD2G-SPx-7V12x/AKD-x01207	114	6.83 (60.5)	15.7 (139)	4600	6000	2770	2.52 (2.23E-03)
	AKM2G-51K	AKD2G-SPx-7V12x/AKD-x01207	114	6.81 (60.3)	15.6 (138)	6000	6000	2930	2.52 (2.23E-03)
	AKM2G-52H	AKD2G-SPx-7V06x/AKD-x00607	114	11.4 (101)	28.1 (249)	2700	6000	3020	4.58 (4.05E-03)
	AKM2G-52H	AKD2G-SPx-7V12x/AKD-x01207	114	12.0 (106)	29.0 (257)	2700	6000	3020	4.58 (4.05E-03)
	AKM2G-52K	AKD2G-SPx-7V12x/AKD-x01207	114	12.0 (106)	28.9 (256)	4400	6000	4140	4.58 (4.05E-03)
	AKM2G-52L	AKD2G-SPx-7V12x/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	AKD2G-SPx-7V06x/AKD-x00607	114	16.3 (144)	41.8 (370)	1800	6000	2810	6.64 (5.88E-03)
	AKM2G-53L	AKD2G-SPx-7V12x/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	AKD2G-SPx-7V12x/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	AKD2G-SPx-7V12x/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	AKD2G-SPx-7V12x/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	AKD2G-SPx-7V12x/AKD-x01207	142	15.3 (135)	37.6 (332)	3000	6000	4050	9.10 (8.05E-03)
	AKM2G-62L	AKD2G-SPx-7V12x/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	AKD2G-SPx-7V12x/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	AKD2G-SPx-7V12x/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	AKD2G-SPx-7V12x/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, and AKD2G model nomenclature, refer to pages 66, 80, and 81 respectively.

② Max mechanical speeds: 8000 RPM for AKM2G-2,3 and 6000 RPM for AKM2G-4, 5, 6, 7.

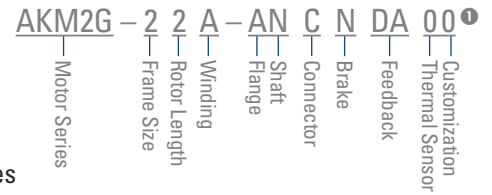
AKM[®]2G / AKD[®] Family System Performance

System Performance – AKM2G Servo Motors driven by AKD2G and AKD Servo Drives

AKM2G Servo Motor ^①	AKD2G/AKD Servo Drive ^①	Frame Size mm	Max Cont.Torque Tmc Nm (lb-in)	Peak Torque at stall Tps Nm (lb-in)	Rated Speed Nrt'd RPM	Max System Speed ^② RPM	Power Prtd watts	Inertia (Jm) Kg-cm ² (lb-in-s ²)	
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	AKD2G-SPx-7V12x/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	AKD2G-SPx-7V12x/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	AKD2G-SPx-7V12x/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	AKD2G-SPx-7V03x/AKD-x00307	58	0.638 (5.64)	2.50 (22.1)	8000	8000	436	0.093 (8.23E-05)
	AKM2G-22C	AKD2G-SPx-7V03x/AKD-x00307	58	1.11 (9.86)	4.37 (38.7)	8000	8000	751	0.155 (1.37E-04)
	AKM2G-22D	AKD2G-SPx-7V03x/AKD-x00307	58	1.11 (9.87)	4.16 (36.8)	8000	8000	737	0.155 (1.37E-04)
	AKM2G-23D	AKD2G-SPx-7V03x/AKD-x00307	58	1.49 (13.2)	5.85 (51.8)	8000	8000	963	0.217 (1.92E-04)
	AKM2G-23E	AKD2G-SPx-7V03x/AKD-x00307	58	1.49 (13.2)	4.54 (40.2)	8000	8000	937	0.217 (1.92E-04)
	AKM2G-23E	AKD2G-SPx-7V06x/AKD-x00607	58	1.49 (13.2)	5.84 (51.7)	8000	8000	937	0.217 (1.92E-04)
	AKM2G-24D	AKD2G-SPx-7V03x/AKD-x00307	58	1.82 (16.1)	7.13 (63.1)	7400	8000	1070	0.279 (2.47E-04)
	AKM2G-24E	AKD2G-SPx-7V03x/AKD-x00307	58	1.82 (16.1)	5.57 (49.3)	8000	8000	1100	0.279 (2.47E-04)
	AKM2G-24E	AKD2G-SPx-7V06x/AKD-x00607	58	1.82 (16.1)	7.16 (63.4)	8000	8000	1100	0.279 (2.47E-04)
	AKM2G-24F	AKD2G-SPx-7V06x/AKD-x00607	58	1.85 (16.3)	7.24 (64.1)	8000	8000	1060	0.279 (2.47E-04)
	AKM2G-31C	AKD2G-SPx-7V03x/AKD-x00307	80	1.68 (14.8)	5.99 (53.0)	5200	8000	844	0.426 (3.77E-04)
	AKM2G-31D	AKD2G-SPx-7V03x/AKD-x00307	80	1.68 (14.9)	6.00 (53.1)	7300	8000	1120	0.426 (3.77E-04)
	AKM2G-31E	AKD2G-SPx-7V03x/AKD-x00307	80	1.70 (15.1)	4.90 (43.4)	8000	8000	1160	0.426 (3.77E-04)
	AKM2G-31E	AKD2G-SPx-7V06x/AKD-x00607	80	1.70 (15.1)	6.06 (53.6)	8000	8000	1160	0.426 (3.77E-04)
	AKM2G-32D	AKD2G-SPx-7V03x/AKD-x00307	80	2.81 (24.9)	10.4 (91.8)	4700	8000	1230	0.813 (7.20E-04)
	AKM2G-32E	AKD2G-SPx-7V03x/AKD-x00307	80	2.80 (24.8)	8.68 (76.8)	6100	8000	1490	0.813 (7.20E-04)
	AKM2G-32E	AKD2G-SPx-7V06x/AKD-x00607	80	2.80 (24.8)	10.3 (91.5)	6100	8000	1490	0.813 (7.20E-04)
	AKM2G-33E	AKD2G-SPx-7V03x/AKD-x00307	80	3.86 (34.1)	11.2 (99.4)	4800	8000	1580	1.20 (1.06E-03)
	AKM2G-33E	AKD2G-SPx-7V06x/AKD-x00607	80	3.86 (34.1)	14.6 (129)	4800	8000	1580	1.20 (1.06E-03)
	AKM2G-33G	AKD2G-SPx-7V06x/AKD-x00607	80	3.81 (33.7)	14.4 (128)	7000	8000	1770	1.20 (1.06E-03)
	AKM2G-41D	AKD2G-SPx-7V03x/AKD-x00307	88	2.85 (25.3)	7.20 (63.7)	4600	6000	1220	0.774 (6.85E-04)
	AKM2G-41E	AKD2G-SPx-7V03x/AKD-x00307	88	2.87 (25.4)	6.61 (58.5)	5900	6000	1470	0.774 (6.85E-04)
	AKM2G-41E	AKD2G-SPx-7V06x/AKD-x00607	88	2.87 (25.4)	7.26 (64.3)	5900	6000	1470	0.774 (6.85E-04)
	AKM2G-41G	AKD2G-SPx-7V06x/AKD-x00607	88	2.86 (25.3)	7.25 (64.2)	6000	6000	1370	0.774 (6.85E-04)
	AKM2G-42D	AKD2G-SPx-7V03x/AKD-x00307	88	5.04 (44.6)	14.3 (127)	2600	6000	1280	1.36 (1.20E-03)
	AKM2G-42E	AKD2G-SPx-7V03x/AKD-x00307	88	5.08 (45.0)	12.6 (112)	3300	6000	1580	1.36 (1.20E-03)
	AKM2G-42E	AKD2G-SPx-7V06x/AKD-x00607	88	5.08 (45.0)	14.4 (127)	3300	6000	1580	1.36 (1.20E-03)
	AKM2G-42H	AKD2G-SPx-7V06x/AKD-x00607	88	5.12 (45.3)	12.9 (114)	6000	6000	2230	1.36 (1.20E-03)
	AKM2G-42H	AKD2G-SPx-7V12x/AKD-x01207	88	5.10 (45.2)	14.4 (128)	6000	6000	2230	1.36 (1.20E-03)
	AKM2G-43D	AKD2G-SPx-7V03x/AKD-x00307	88	6.97 (61.7)	20.7 (183)	1900	6000	1310	1.95 (1.73E-03)
	AKM2G-43G	AKD2G-SPx-7V06x/AKD-x00607	88	6.97 (61.7)	21.0 (186)	3900	6000	2350	1.95 (1.73E-03)
	AKM2G-43I	AKD2G-SPx-7V12x/AKD-x01207	88	6.98 (61.7)	21.1 (187)	6000	6000	2530	1.95 (1.73E-03)
	AKM2G-44E	AKD2G-SPx-7V03x/AKD-x00307	88	8.48 (75.1)	22.0 (195)	2100	6000	1720	2.53 (2.24E-03)
AKM2G-44E	AKD2G-SPx-7V06x/AKD-x00607	88	8.48 (75.1)	26.9 (238)	2100	6000	1720	2.53 (2.24E-03)	
AKM2G-44H	AKD2G-SPx-7V06x/AKD-x00607	88	8.51 (75.3)	22.4 (199)	4300	6000	2850	2.53 (2.24E-03)	
AKM2G-44H	AKD2G-SPx-7V12x/AKD-x01207	88	8.49 (75.2)	27.0 (239)	4300	6000	2850	2.53 (2.24E-03)	
AKM2G-44J	AKD2G-SPx-7V12x/AKD-x01207	88	8.47 (75.0)	26.9 (238)	5400	6000	2780	2.53 (2.24E-03)	
AKM2G-51H	AKD2G-SPx-7V06x/AKD-x00607	114	6.82 (60.4)	15.7 (139)	5100	6000	2960	2.52 (2.23E-03)	

① For complete AKM2G, AKD, and AKD2G model nomenclature, refer to pages 66, 80, and 81 respectively.

② Max mechanical speeds: 8000 RPM for AKM2G-2,3 and 6000 RPM for AKM2G-4, 5, 6, 7.



System Performance – AKM2G Servo Motors driven by AKD2G and AKD Servo Drives

AKM2G Servo Motor ¹	AKD2G/AKD Servo Drive ¹	Frame Size mm	Max Cont.Torque Tmc Nm (lb-in)	Peak Torque at stall Tps Nm (lb-in)	Rated Speed Nrt'd RPM	Max System Speed ² RPM	Power Prtd watts	Inertia (Jm) Kg-cm ² (lb-in-s ²)	
480 V	AKM2G-51I	AKD2G-SPx-7V06x/AKD-x00607	114	6.45 (57.1)	15.3 (135)	5700	6000	3160	2.52 (2.23E-03)
	AKM2G-51I	AKD2G-SPx-7V12x/AKD-x01207	114	6.82 (60.3)	15.7 (139)	5700	6000	3160	2.52 (2.23E-03)
	AKM2G-52H	AKD2G-SPx-7V06x/AKD-x00607	114	11.4 (101)	28.1 (249)	3200	6000	3440	4.58 (4.05E-03)
	AKM2G-52H	AKD2G-SPx-7V12x/AKD-x01207	114	12.0 (106)	29.0 (257)	3200	6000	3440	4.58 (4.05E-03)
	AKM2G-52K	AKD2G-SPx-7V12x/AKD-x01207	114	11.9 (106)	28.9 (256)	5300	6000	4340	4.58 (4.05E-03)
	AKM2G-53H	AKD2G-SPx-7V06x/AKD-x00607	114	16.2 (144)	41.8 (370)	2200	6000	3320	6.64 (5.88E-03)
	AKM2G-53L	AKD2G-SPx-7V12x/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	AKD2G-SPx-7V12x/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	AKD2G-SPx-7V12x/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	AKD2G-SPx-7V12x/AKD-x01207	142	15.3 (135)	37.6 (332)	3700	6000	4590	9.10 (8.05E-03)
	AKM2G-62L	AKD2G-SPx-7V12x/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	AKD2G-SPx-7V12x/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	AKD2G-SPx-7V12x/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	AKD2G-SPx-7V12x/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	AKD2G-SPx-7V12x/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	AKD2G-SPx-7V12x/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	AKD2G-SPx-7V12x/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, and AKD2G model nomenclature, refer to pages 66, 80, and 81 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

Parameters	Tol	Symbol	Units	AKM2G-21			AKM2G-22			AKM2G-23			AKM2G-24		
				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	0.636	0.642	0.649	1.11	1.11	1.11	1.48	1.48	1.50	1.80	1.81	1.83
			lb-in	5.62	5.68	5.75	9.80	9.81	9.86	13.1	13.1	13.3	16.0	16.0	16.2
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	0.494	0.498	0.503	0.859	0.861	0.863	1.150	1.151	1.168	1.40	1.41	1.43
			lb-in	4.37	4.41	4.45	7.60	7.62	7.64	10.2	10.2	10.3	12.4	12.5	12.6
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	1.78	1.79	1.79	3.33	3.33	3.34	4.69	4.69	4.74	5.93	5.95	6.00
			lb-in	15.7	15.8	15.9	29.4	29.5	29.5	41.5	41.5	41.9	52.5	52.6	53.1
Peak Current	Nom	I _p	A _{rms}	8.66	10.9	16.7	6.62	9.49	11.7	8.44	11.7	16.3	8.45	11.7	16.4
Rated Torque (speed) ①②③		T _{rtd}	Nm	0.583	0.568	0.545	1.09	1.07	1.06	1.45	1.42	1.39	1.76	1.74	1.71
			lb-in	5.16	5.02	4.82	9.67	9.51	9.38	12.8	12.5	12.3	15.6	15.4	15.2
Rated Speed		N _{rtd}	rpm	4800	6200	8000	1800	2900	3800	1800	2800	4100	1500	2300	3400
Rated Power (speed) ①②③		P _{rtd}	kW	0.293	0.369	0.456	0.206	0.326	0.422	0.273	0.416	0.599	0.277	0.419	0.610
			Hp	0.393	0.494	0.612	0.276	0.438	0.565	0.366	0.557	0.803	0.371	0.562	0.818
Rated Torque (speed) ①②③		T _{rtd}	Nm	0.534	0.534	-	1.04	0.991	0.955	1.37	1.29	1.22	1.67	1.60	1.47
			lb-in	4.73	4.73	-	9.21	8.77	8.45	12.1	11.4	10.8	14.8	14.1	13.0
Rated Speed		N _{rtd}	rpm	8000	8000	-	4400	6600	8000	4300	6200	8000	3600	5100	7300
Rated Power (speed) ①②③		P _{rtd}	kW	0.448	0.448	-	0.480	0.685	0.800	0.615	0.839	1.02	0.629	0.853	1.13
			Hp	0.600	0.600	-	0.643	0.919	1.07	0.825	1.12	1.37	0.844	1.14	1.51
Rated Torque (speed) ①②③		T _{rtd}	Nm	0.525	-	-	0.956	0.938	-	1.23	1.19	-	1.51	1.39	1.36
			lb-in	4.64	-	-	8.46	8.30	-	10.9	10.5	-	13.4	12.3	12.0
Rated Speed		N _{rtd}	rpm	8000	-	-	7800	8000	-	7600	8000	-	6300	8000	8000
Rated Power (speed) ①②③		P _{rtd}	kW	0.439	-	-	0.781	0.786	-	0.977	0.993	-	0.999	1.16	1.14
			Hp	0.589	-	-	1.048	1.05	-	1.31	1.33	-	1.34	1.56	1.52
Rated Torque (speed) ①②③		T _{rtd}	Nm	0.520	-	-	0.944	0.928	-	1.20	1.17	-	1.42	1.36	1.32
			lb-in	4.60	-	-	8.36	8.21	-	10.6	10.3	-	12.59	12.06	11.68
Rated Speed		N _{rtd}	rpm	8000	-	-	8000	8000	-	8000	8000	-	7600	8000	8000
Rated Power (speed) ①②③		P _{rtd}	kW	0.435	-	-	0.791	0.777	-	1.00	0.978	-	1.13	1.14	1.11
			Hp	0.584	-	-	1.06	1.04	-	1.35	1.31	-	1.52	1.53	1.48

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 V_{bus}.
- ⑤ See de-rate curves for the de-rate of different motor options

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

Parameters	Tol	Symbol	Units	AKM2G-21			AKM2G-22			AKM2G-23			AKM2G-24		
				D	E	G	C	D	E	D	E	F	D	E	F
Torque Constant ①	±10%	K _t	Nm/Arms	0.296	0.238	0.157	0.676	0.472	0.384	0.710	0.512	0.373	0.863	0.627	0.451
			lb-in/Arms	2.62	2.10	1.39	5.99	4.18	3.40	6.28	4.53	3.30	7.64	5.55	3.99
Back EMF Constant ②	±10%	K _e	V _{rms} /krpm	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-m/√W	0.0895	0.0902	0.0911	0.144	0.144	0.145	0.187	0.187	0.190	0.225	0.226	0.229
			lb-in/√W	0.792	0.798	0.807	1.28	1.28	1.28	1.66	1.66	1.68	1.99	2.00	2.03
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)		L _{qll}	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)		L _{dll}	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		L _{isat}	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-cm ²	0.093			0.155			0.217			0.279		
			lb-in-s ²	8.23E-05			1.37E-04			1.92E-04			2.47E-04		
Optional Brake Inertia (additional)	±10%	J _m	kg-cm ²	0.040			0.040			0.040			0.040		
			lb-in-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	0.006			0.011			0.015			0.019		
			lb-in	0.05			0.10			0.13			0.17		
Viscous Damping ①		K _{dv}	Nm/krpm	0.0015			0.0030			0.0045			0.0060		
			lb-in/krpm	0.013			0.027			0.040			0.053		
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-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.

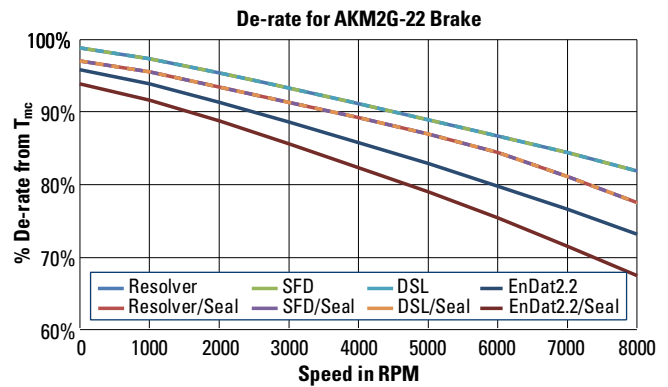
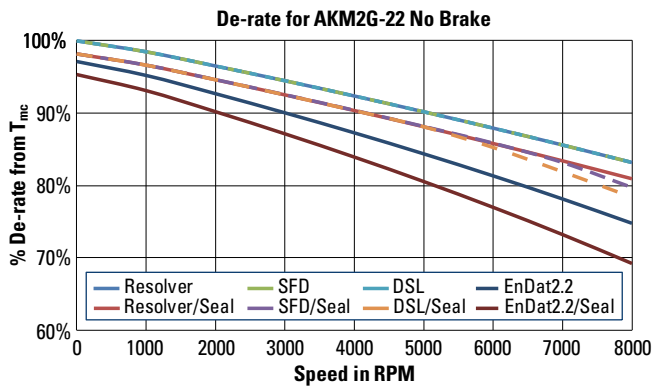
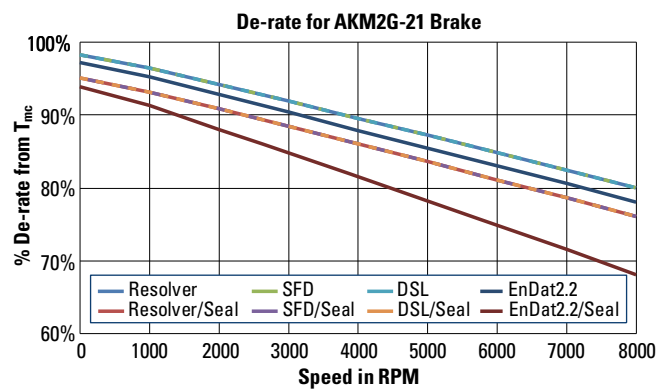
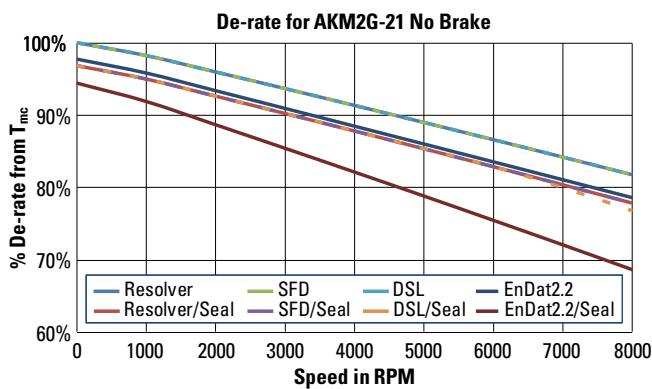
AKM2G-2x De-rate Curves*

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, or the Kollmorgen website Performance Curve Generator.

AKM2G-2X DE-RATE CURVES

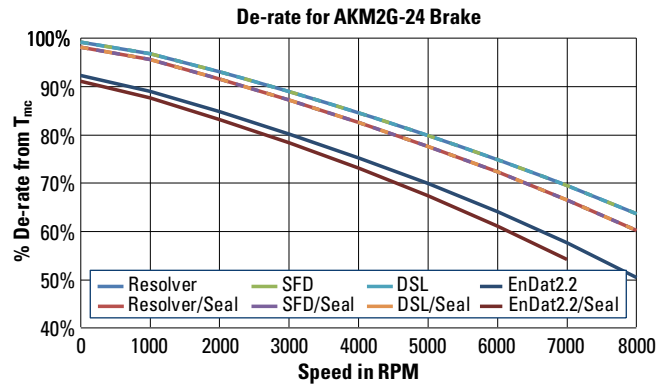
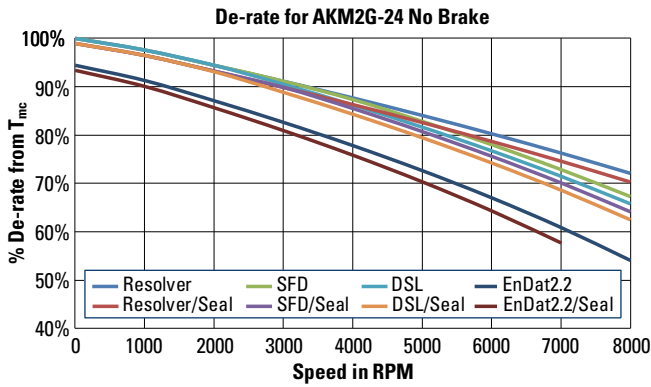
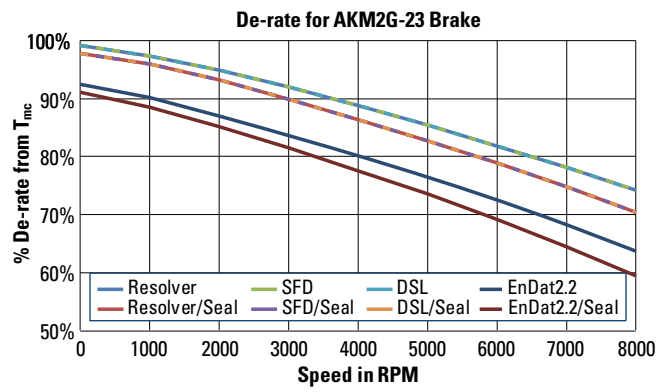
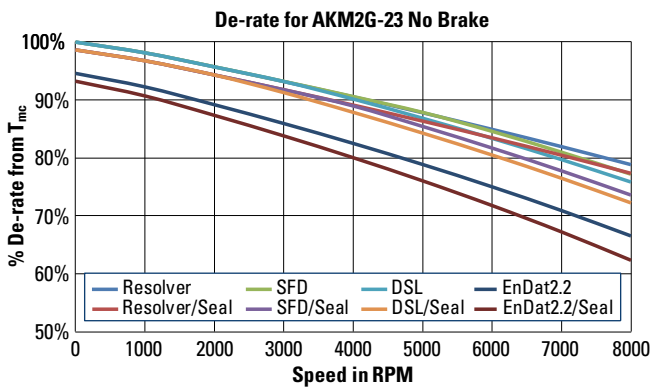


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* De-rate information for general estimation only. Use the on-line Performance Curve Generator located at <http://pcgh.kollmorgen.com/> for the most accurate information for your motor, or refer to Kollmorgen's Motioneering Software Tool available for download at <https://www.kollmorgen.com/en-us/service-and-support/technical/motioneering/motioneering/>

AKM2G - 2 2 A - AN C N DA 00*

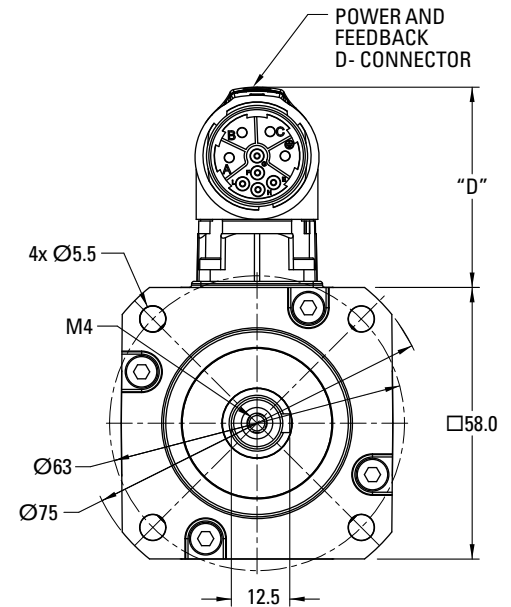
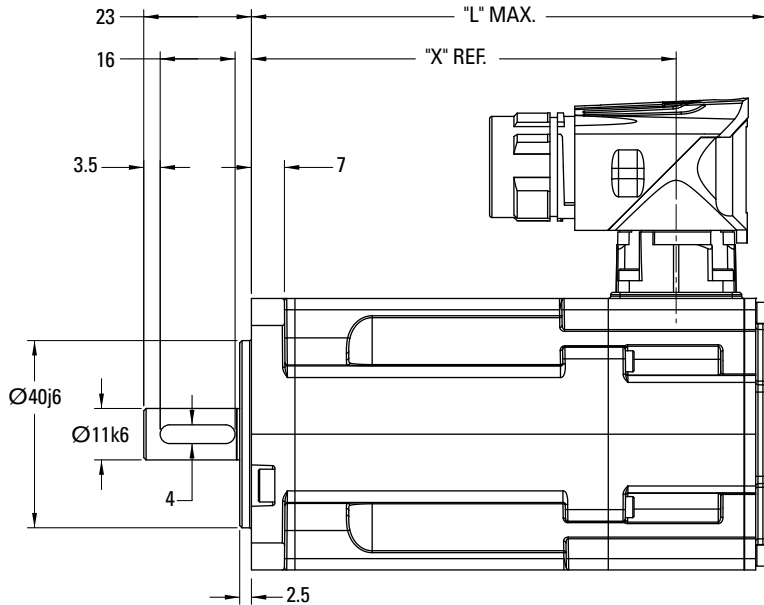
Motor Series Rotor Length Frame Size Winding Shaft Flange Connector Brake Feedback Thermal Sensor Customization*



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

AKM2G-2x Drawings

AKM2G-2x Single D- Connector Frame

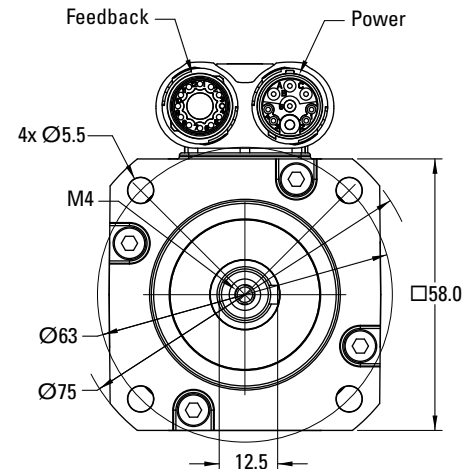
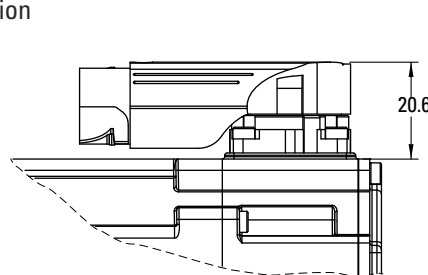


D- Connector Feedback	"D"
SFD3	42.8
DSL & EnDat	44.1

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

Model	No Brake			Brake		
	X	Resolver / SFD	DSL/ EnDat 2.2	X	Resolver / SFD	DSL/ EnDat 2.2
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*
Motor Series Rotor Length Frame Size Winding Shaft Flange Connector Brake Feedback Customization Thermal Sensor

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

AKM2G-3x Performance Data

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

Parameters	Tol	Symbol	Units	AKM2G-31			AKM2G-32			AKM2G-33		
				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	5.99	6.00	6.06	10.4	10.3	10.6	14.6	14.4	14.6
			lb-in	53.0	53.1	53.6	91.7	91.6	94.2	129	128	129
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
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
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
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
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, $\Delta T = 100^\circ \text{C}$, 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)

Parameters	Tol	Symbol	Units	AKM2G-31			AKM2G-32			AKM2G-33		
				C	D	E	D	E	G	E	G	H
Torque Constant ①	±10%	K _t	Nm/Arms	1.16	0.836	0.601	1.33	1.05	0.701	1.33	0.924	0.683
			lb-in/Arms	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} /krpm	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-m/√W	0.205	0.206	0.209	0.326	0.325	0.337	0.429	0.426	0.431
			lb-in/√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)		L _{qll}	mH	46.9	24.2	12.5	24.7	15.3	6.8	15.1	7.3	4.0
Inductance D-Axis (line-line)		L _{dll}	mH	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory
Inductance Saturation Current		L _{isat}	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-cm ²	0.426			0.813			1.200		
			lb-in-s ²	3.77E-04			7.20E-04			1.06E-03		
Optional Brake Inertia (additional)	±10%	J _m	kg-cm ²	0.120			0.120			0.120		
			lb-in-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/krpm	0.0039			0.0078			0.0117		
			lb-in/krpm	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-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.

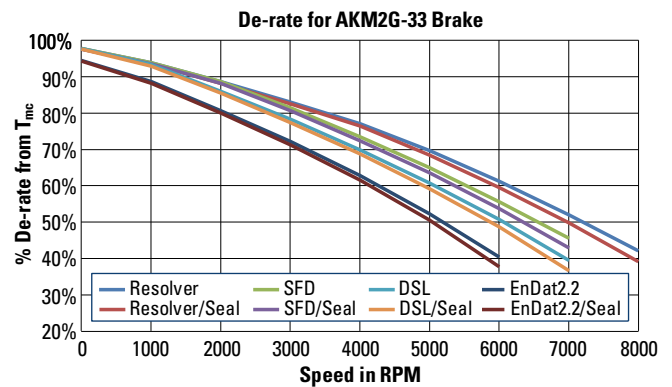
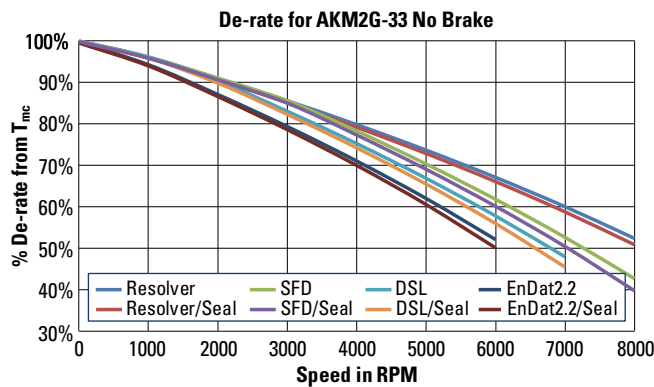
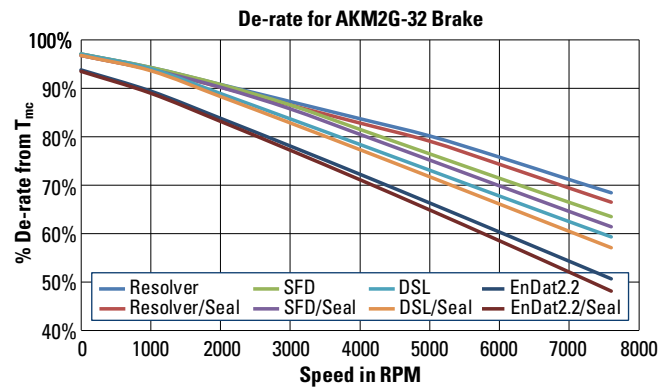
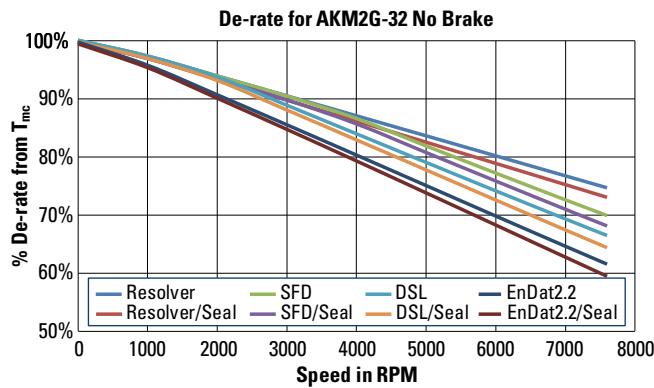
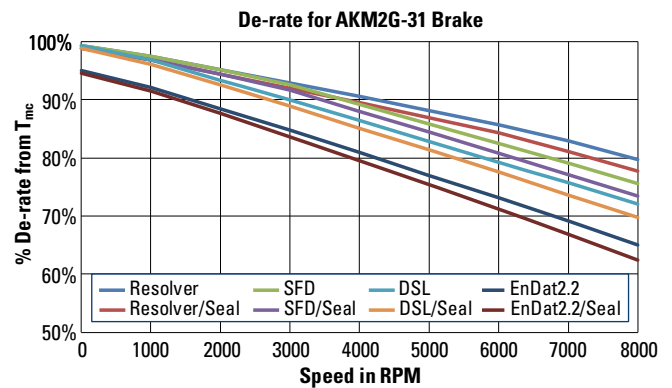
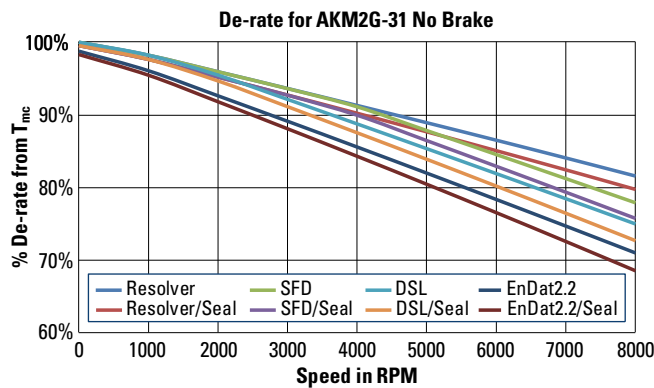
*Complete AKM2G series model nomenclature can be found on page 66.

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, or the Kollmorgen website Performance Curve Generator.



* De-rate information for general estimation only. Use the on-line Performance Curve Generator located at <http://pcgh.kollmorgen.com/> for the most accurate information for your motor, or refer to Kollmorgen's Motioneering Software Tool available for download at <https://www.kollmorgen.com/en-us/service-and-support/technical/motioneering/motioneering/>

AKM2G-4x Performance Data

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

Parameters	Tol	Symbol	Units	AKM2G-41			AKM2G-42			AKM2G-43			AKM2G-44		
				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
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
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
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
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, $\Delta T = 100^\circ \text{C}$, 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)

Parameters	Tol	Symbol	Units	AKM2G-41			AKM2G-42			AKM2G-43			AKM2G-44		
				D	E	G	D	E	H	D	G	I	E	H	J
Torque Constant ①	±10%	K _t	Nm/Arms	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-in/Arms	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} /krpm	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-m/√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-in/√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)		L _{qll}	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)		L _{dll}	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		L _{isat}	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-cm ²	0.774			1.36			1.95			2.53		
			lb-in-s ²	6.85E-04			1.20E-03			1.72E-03			2.24E-03		
Optional Brake Inertia (additional)	±10%	J _m	kg-cm ²	0.360			0.36			0.36			0.360		
			lb-in-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/krpm	0.00450			0.009			0.0125			0.0163		
			lb-in/krpm	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-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.

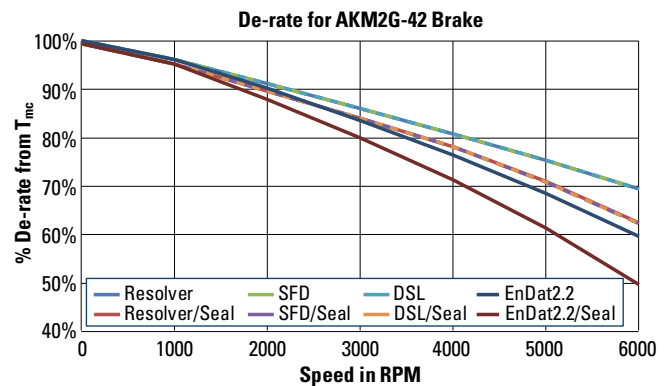
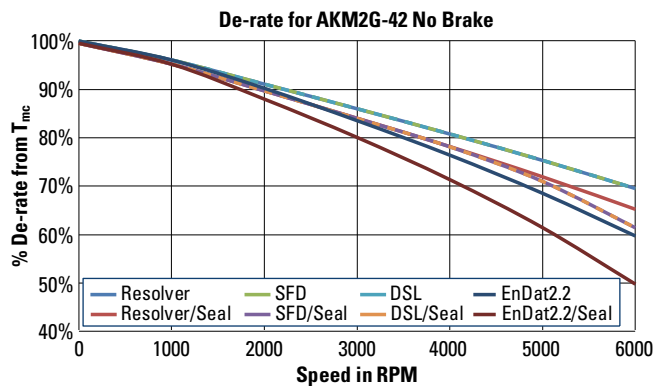
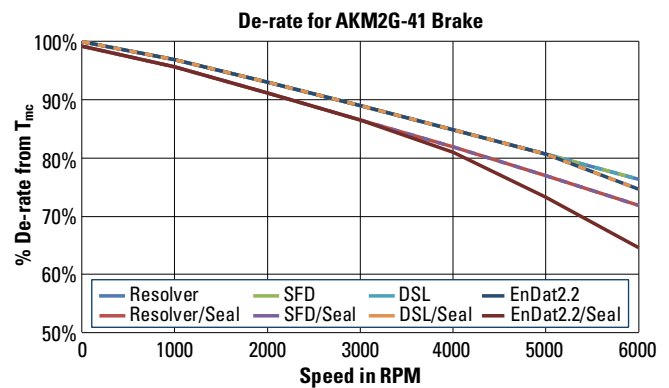
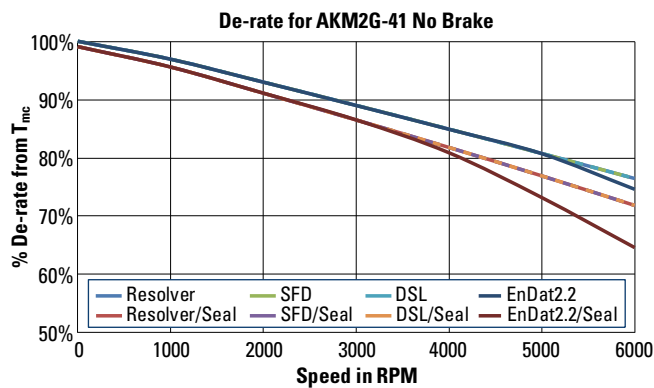
*Complete AKM2G series model nomenclature can be found on page 66.

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, or the Kollmorgen website Performance Curve Generator.

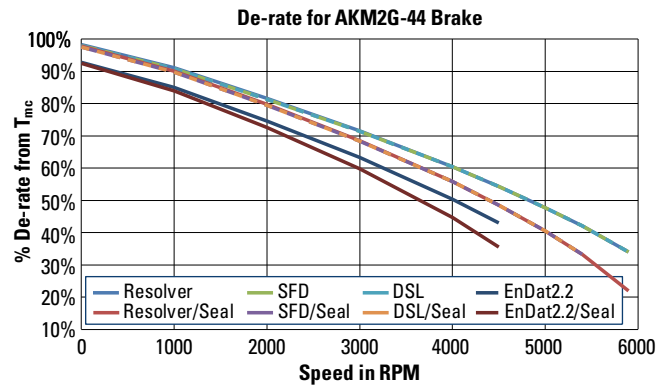
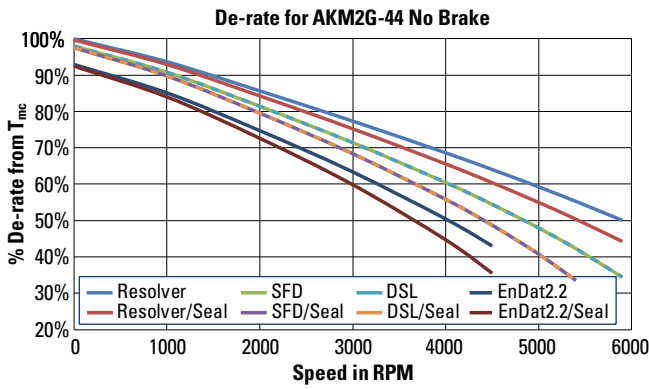
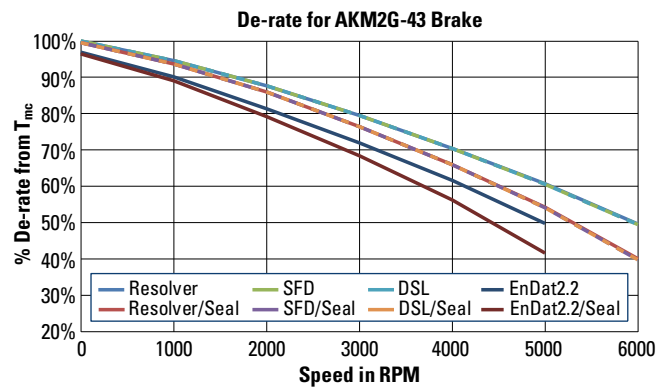
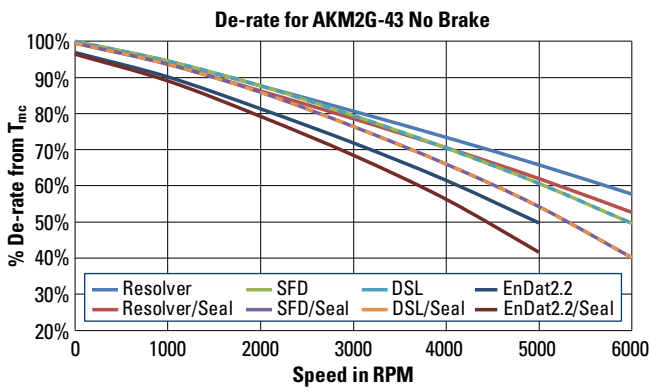


Continued on following page

* De-rate information for general estimation only. Use the on-line Performance Curve Generator located at <http://pcgh.kollmorgen.com/> for the most accurate information for your motor, or refer to Kollmorgen's Motioneering Software Tool available for download at <https://www.kollmorgen.com/en-us/service-and-support/technical/motioneering/motioneering/>

AKM2G - 4 2 A - AN C N DA 00*

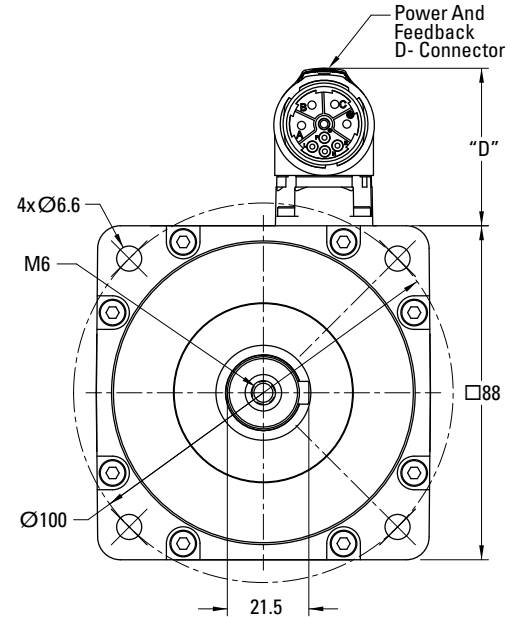
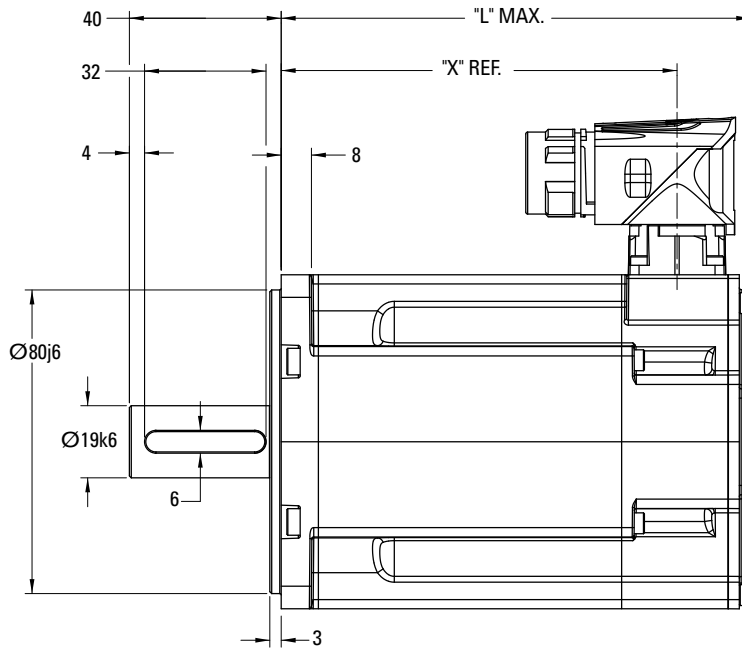
Motor Series Rotor Length Winding Shaft Flange Connector Brake Feedback Thermal Sensor Customization*



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

AKM2G-4x Drawings

AKM2G-4x Single Connector Frame

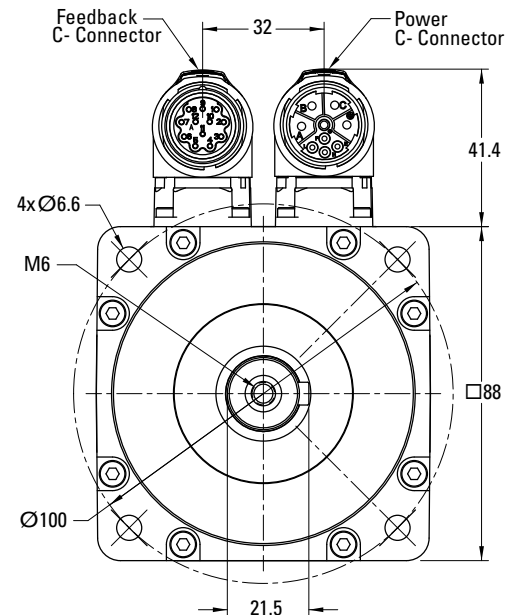


D- Connector Feedback	"D"
SFD3	41.4
DSL & EnDat	42.8

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

Model	No Brake			Brake		
	X	Resolver / SFD	DSL/ EnDat 2.2	X	Resolver / SFD	DSL/ EnDat 2.2
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*
Motor Series Rotor Length Frame Size Winding Shaft Flange Connector Brake Feedback Customization Thermal Sensor

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

AKM2G-5x Performance Data

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

Parameters	Tol	Symbol	Units	AKM2G-51			AKM2G-52			AKM2G-53			AKM2G-54		
				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
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
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
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
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, $\Delta T = 100^\circ \text{C}$, 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)

Parameters	Tol	Symbol	Units	AKM2G-51			AKM2G-52			AKM2G-53			AKM2G-54		
				H	I	K	H	K	L	H	L	M	L	M	N
Torque Constant ①	±10%	K _t	Nm/Arms	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-in/Arms	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} /krpm	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-m/√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-in/√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)		L _{qll}	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)		L _{dll}	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		L _{isat}	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-cm ²	2.52			4.58			6.64			8.70		
			lb-in-s ²	2.23E-03			4.06E-03			5.88E-03			7.70E-03		
Optional Brake Inertia (additional)	±10%	J _m	kg-cm ²	1.20			1.20			1.20			1.20		
			lb-in-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/krpm	0.0125			0.0232			0.033			0.0427		
			lb-in/krpm	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-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.

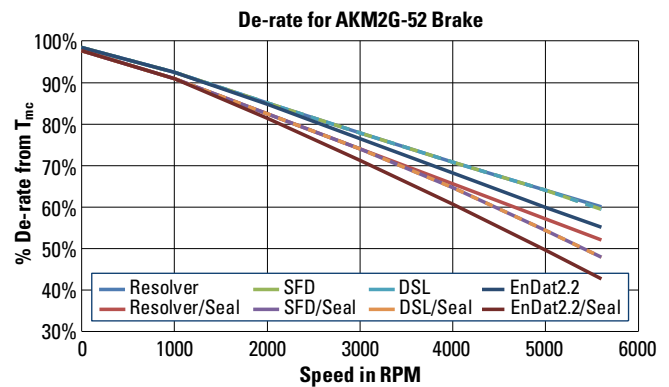
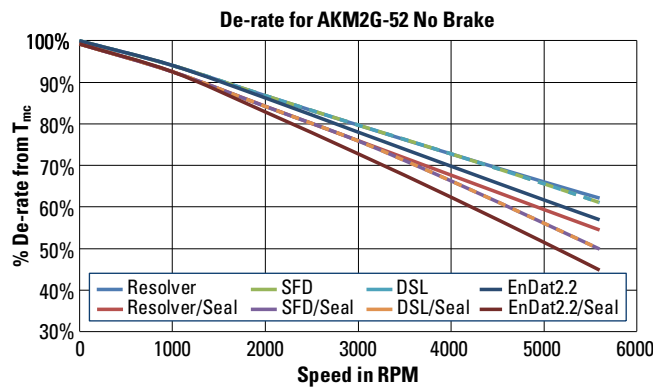
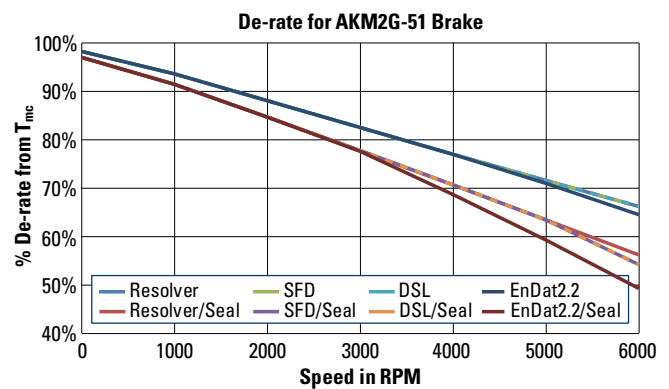
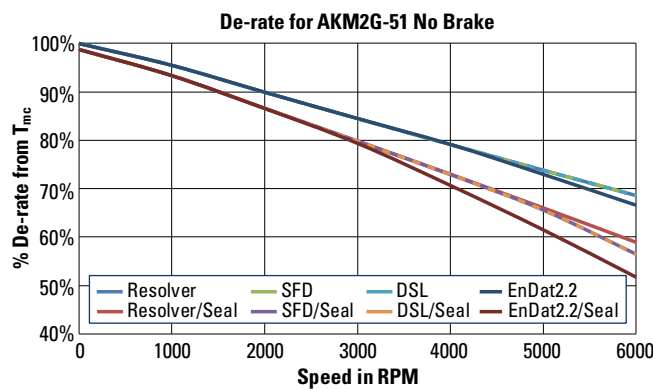
*Complete AKM2G series model nomenclature can be found on page 66.

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, or the Kollmorgen website Performance Curve Generator.

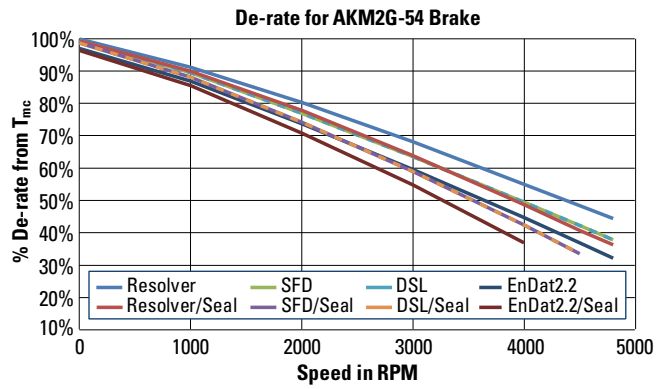
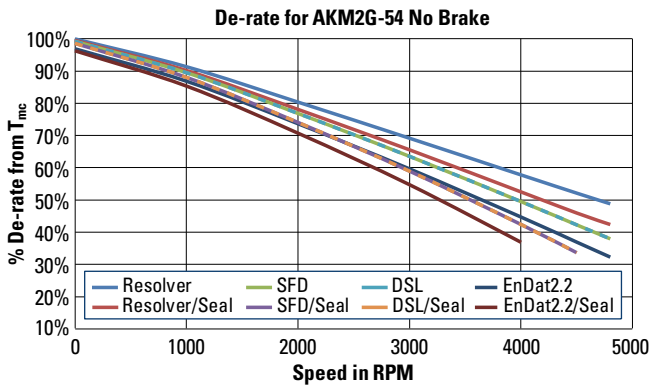
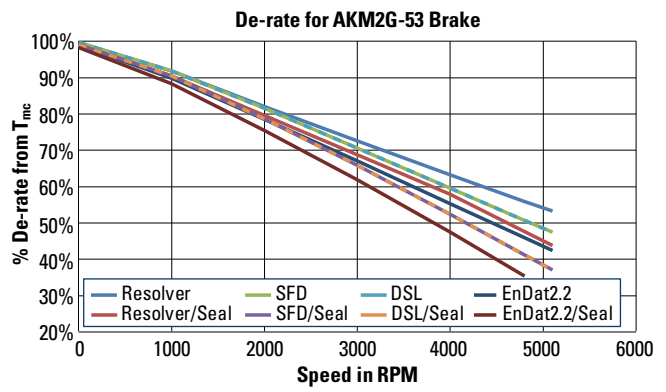
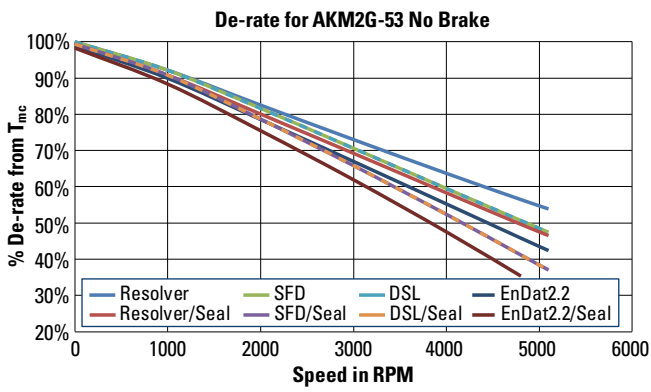


Continued on following page

* De-rate information for general estimation only. Use the on-line Performance Curve Generator located at <http://pcgh.kollmorgen.com/> for the most accurate information for your motor, or refer to Kollmorgen's Motioneering Software Tool available for download at <https://www.kollmorgen.com/en-us/service-and-support/technical/motioneering/motioneering/>

AKM2G - 5 2 A - AN C N DA 00*

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

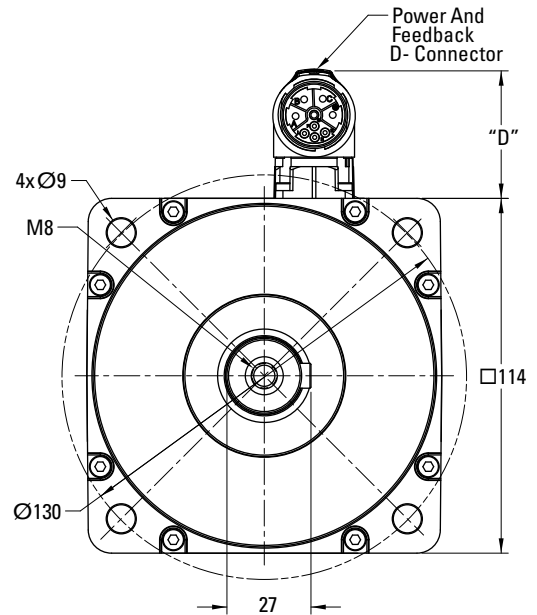
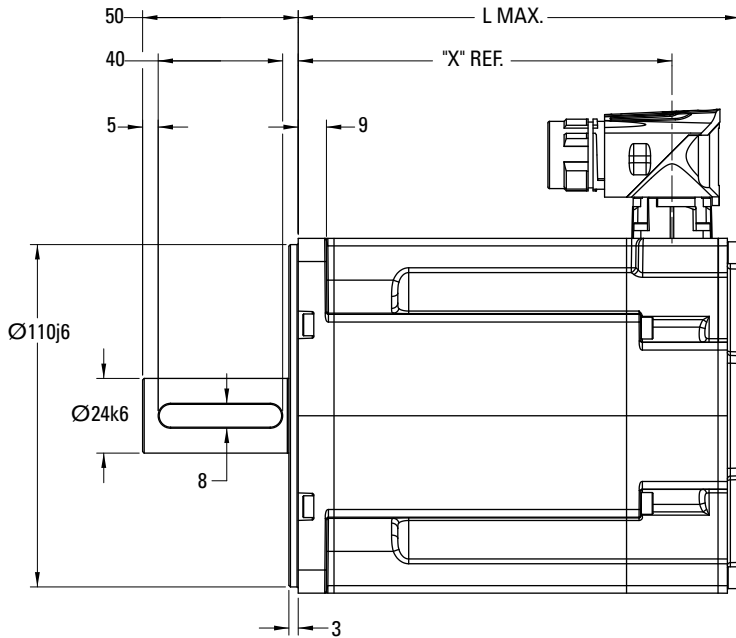


*Complete AKM2G series model nomenclature can be found on page 66.

AKM2G-5x Drawings

AKM2G-5X OUTLINE DRAWINGS

AKM2G-5x Single Connector Frame

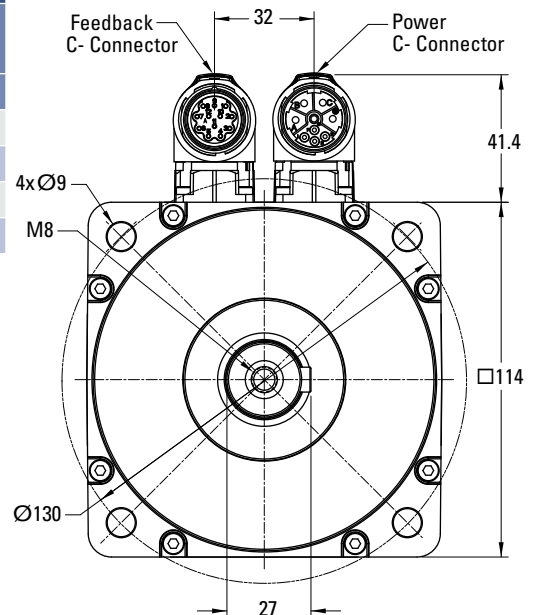


D- Connector Feedback	"D"
SFD3	41.4
DSL & EnDat	42.8

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

Model	No Brake			Brake		
	X	Resolver / SFD	DSL/ EnDat 2.2	X	Resolver / SFD	DSL/ EnDat 2.2
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*
Motor Series Rotor Length Frame Size Winding Shaft Flange Connector Brake Feedback Customization Thermal Sensor

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

AKM2G-6x Performance Data

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

Parameters	Tol	Symbol	Units	AKM2G-62			AKM2G-63			AKM2G-64			AKM2G-65			
				K	L	M	H	K	M	N	L	M	N	L	M	N
Max Rated Equivalent Line Voltage	Max	Vbus	Vac	480	480	400	480	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	21.7	21.5	21.4	21.4	27.0	26.9	26.8	32.6	32.6	32.7
			lb-in	135	134	134	192	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	6.11	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	17.0	16.9	16.9	16.9	21.3	21.3	21.2	25.8	25.8	25.9
			lb-in	106	106	106	150	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	55.1	54.7	54.5	54.5	70.7	70.5	70.3	86.8	86.8	87.0
			lb-in	332	331	331	487	484	482	482	626	624	622	768	768	770
Peak Current	Nom	I _p	A _{rms}	28.0	34.9	43.7	18.3	29.4	45.5	50.5	34.1	47.5	53.3	37.1	45.9	56.9
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	-	-	-
Rated Torque (speed) ①②③		T _{rtd}	Nm	14.4	13.8	13.1	21.5	20.5	19.2	18.7	25.7	24.6	23.8	31.1	30.3	29.5
			lb-in	127	122	116	191	181	170	166	227	217	211	275	268	261
Rated Speed		N _{rtd}	rpm	1700	2200	2800	750	1300	2100	2300	1200	1700	2000	1100	1400	1700
Rated Power (speed) ①②③		P _{rtd}	kW	2.56	3.19	3.85	1.69	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	2.27	3.74	5.65	6.05	4.33	5.86	6.68	4.80	5.96	7.04
Rated Torque (speed) ①②③		T _{rtd}	Nm	12.9	11.5	9.6	20.6	18.9	15.6	14.1	23.4	20.5	18.9	28.5	26.7	23.6
			lb-in	114	102	85	182	167	138	125	207	182	167	252	236	209
Rated Speed		N _{rtd}	rpm	3000	3900	5000	1300	2200	3600	4100	2100	3000	3400	1900	2400	3100
Rated Power (speed) ①②③		P _{rtd}	kW	4.05	4.70	5.03	2.80	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	3.75	5.84	7.89	8.14	6.91	8.65	9.01	7.60	8.99	10.28
Rated Torque (speed) ①②③		T _{rtd}	Nm	11.9	9.84	-	20.1	17.8	12.84	-	21.9	17.7	15.2	26.8	24.3	19.6
			lb-in	105	87.1	-	178	158	113.7	-	194	156.3	134	237	215	173
Rated Speed		N _{rtd}	rpm	3700	4800	-	1600	2700	4500	-	2600	3700	4200	2300	2900	3800
Rated Power (speed) ①②③		P _{rtd}	kW	4.59	4.95	-	3.37	5.03	6.05	-	5.95	6.84	6.67	6.46	7.38	7.79
			Hp	6.16	6.63	-	4.52	6.75	8.12	-	7.98	9.18	8.95	8.67	9.90	10.44

Notes:

- ① Motor winding temperature rise, $\Delta T = 100^\circ \text{C}$, 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 - 6 2 A - AN C N DA 00*
 Motor Series Frame Size Rotor Length Winding Shaft Flange Connector Brake Feedback Thermal Sensor Customization

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

Parameters	Tol	Symbol	Units	AKM2G-62			AKM2G-63				AKM2G-64			AKM2G-65		
				K	L	M	H	K	M	N	L	M	N	L	M	N
Torque Constant ①	±10%	K _t	Nm/Arms	1.64	1.31	1.04	3.56	2.20	1.41	1.27	2.38	1.70	1.51	2.65	2.14	1.73
			lb-in/Arms	14.5	11.6	9.2	31.5	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} /krpm	111	88.3	70.3	240	149	95.5	86.0	161	115.2	102.4	179	144	117
Motor Constant ⑥	Nom	K _m	N-m/√W	1.25	1.25	1.24	1.66	1.65	1.65	1.65	1.99	1.98	1.98	2.28	2.29	2.30
			lb-in/√W	11.1	11.0	11.0	14.7	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	3.07	1.18	0.491	0.398	0.955	0.491	0.389	0.896	0.584	0.378
Inductance Q-Axis (line-line)		L _{qll}	mH	17.4	11.0	7.0	51.6	19.8	8.2	6.6	16.9	8.7	6.8	16.4	10.7	7.0
Inductance D-Axis (line-line)		L _{dll}	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	Contact Factory
Inductance Saturation Current		L _{isat}	Arms	250	314	394	175	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	Contact Factory
Inertia (includes Resolver feedback) ③	±10%	J _m	kg-cm ²	9.10			13.0				16.9			20.8		
			lb-in-s ²	8.05E-03			1.15E-02				1.49E-02			1.84E-02		
Optional Brake Inertia (additional)	±10%	J _m	kg-cm ²	3.60			3.60				3.60			3.60		
			lb-in-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/krpm	0.0370			0.053				0.0680			0.0840		
			lb-in/krpm	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-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.

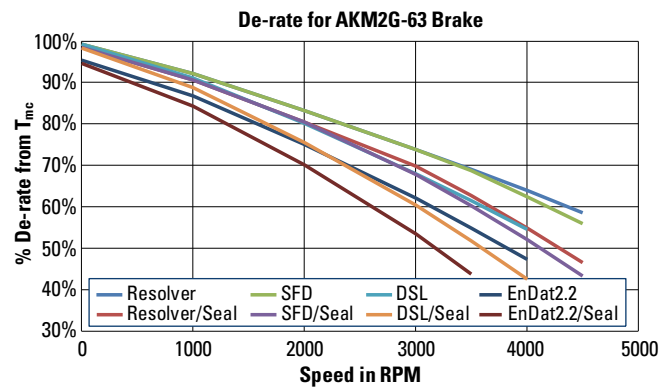
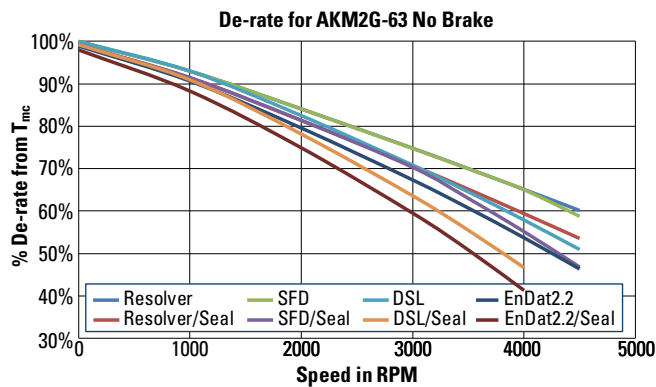
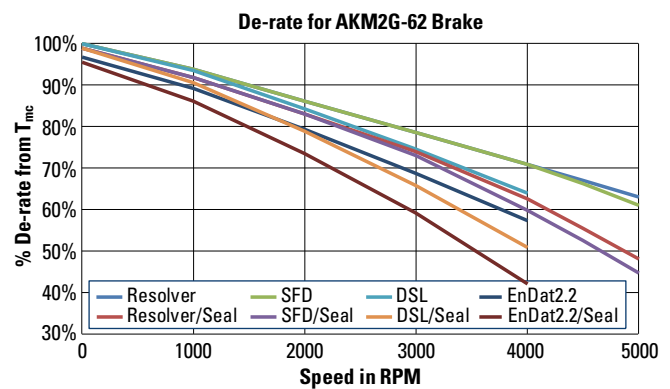
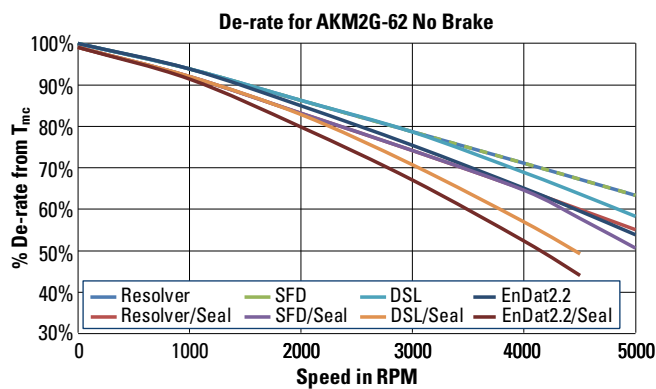
*Complete AKM2G series model nomenclature can be found on page 66.

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, or the Kollmorgen website Performance Curve Generator.

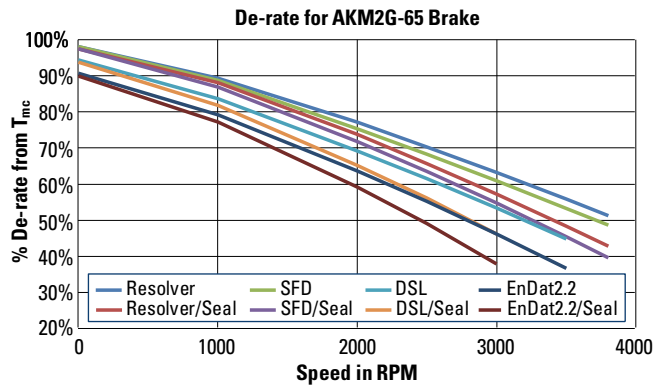
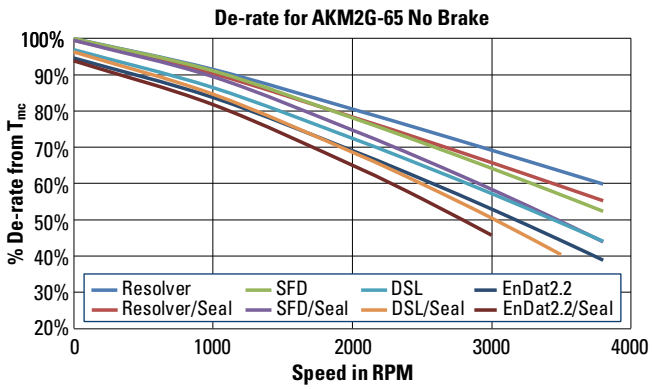
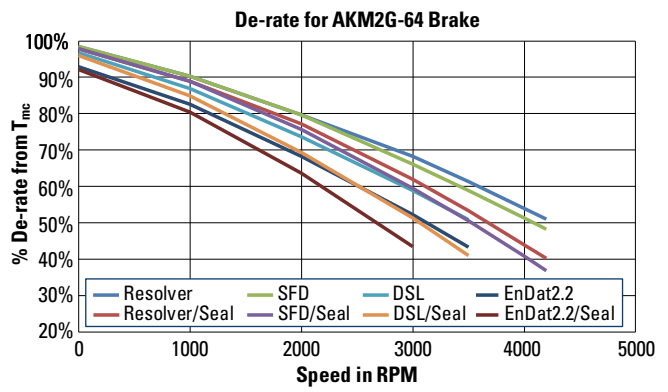
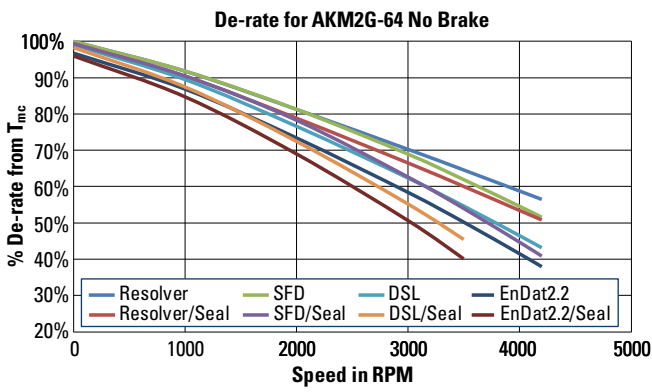


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* De-rate information for general estimation only. Use the on-line Performance Curve Generator located at <http://pcgh.kollmorgen.com/> for the most accurate information for your motor, or refer to Kollmorgen's Motioneering Software Tool available for download at <https://www.kollmorgen.com/en-us/service-and-support/technical/motioneering/motioneering/>

AKM2G - 6 2 A - AN C N DA 00*

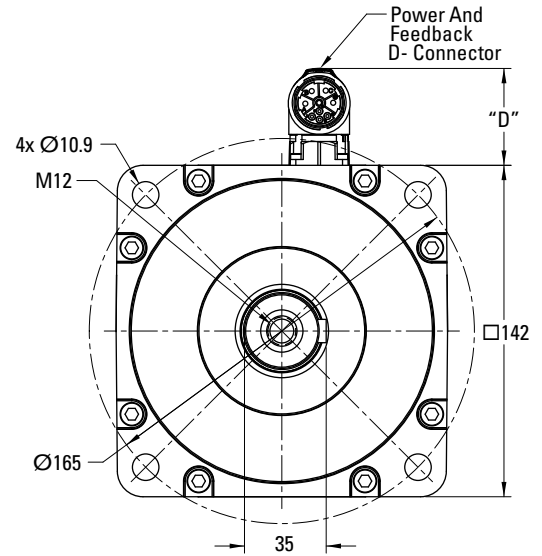
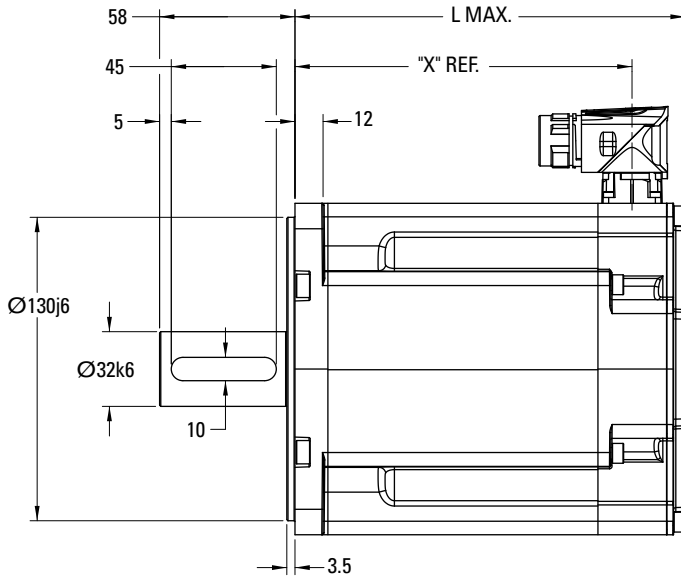
Motor Series
Frame Size
Rotor Length
Winding
Shaft Flange
Connector
Brake
Feedback
Thermal Sensor
Customization*



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

AKM2G-6x Drawings

AKM2G-6x Single Connector Frame

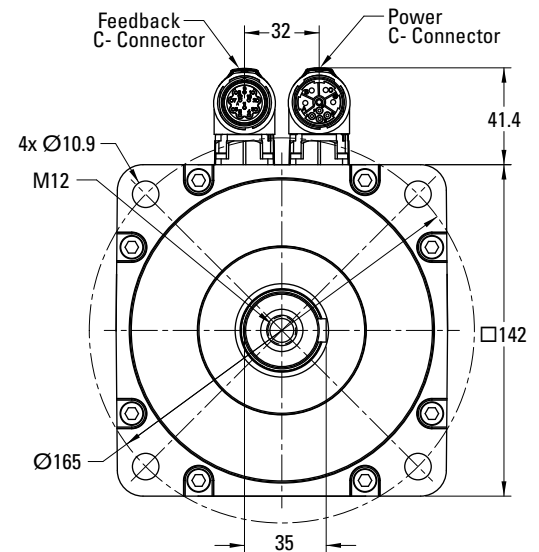


D- Connector Feedback	"D"
SFD3	41.4
DSL & EnDat	42.8

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

Model	No Brake			Brake		
	X	Resolver / SFD	DSL/ EnDat 2.2	X	Resolver / SFD	DSL/ EnDat 2.2
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*
Motor Series Rotor Length Frame Size Winding Shaft Flange Connector Brake Feedback Customization Thermal Sensor

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

AKM2G-7x Performance Data

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

Parameters	Tol	Symbol	Units	AKM2G-71			AKM2G-72				AKM2G-73			AKM2G-74		
				L	N	P	L	N	P	R	L	N	Q	P	Q	R
Max Rated Equivalent Line Voltage	Max	Vbus	Vac	480	480	400	480	480	480	240	480	480	480	480	480	480
Max Continuous Torque for ΔT winding = 100°C ①②③⑤	Nom	T _{cs}	Nm	22.9	22.8	23.0	40.5	41.1	40.7	40.5	56.6	57.9	57.1	72.2	71.7	71.3
			lb-in	202	201	204	359	364	360	359	501	512	505	639	635	631
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	37.0	11.6	17.6	27.4	23.1	28.8	32.5
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	32.2	44.7	45.9	45.6	57.7	57.7	57.5
			lb-in	160	160	161	284	289	287	285	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	6000
Peak Torque ①②③	Nom	T _p	Nm	49.5	49.3	49.8	89.3	90.4	89.6	89.4	127.3	129.6	128.1	164.6	163.8	162.9
			lb-in	438	436	440	791	800	793	791	1127	1147	1134	1457	1450	1442
Peak Current	Nom	I _p	A _{rms}	30.2	43.3	52.8	30.8	46.9	53.0	92.4	29.0	43.9	68.5	57.8	72.1	81.1
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	2.97	-	-	-	-	-	-	-	-	-	-
			Hp	-	3.25	3.99	-	-	-	-	-	-	-	-	-	-
Rated Torque (speed) ①②③		T _{rtd}	Nm	21.2	19.9	19.0	38.7	37.4	36.1	28.6	-	54.6	50.0	66.5	64.0	61.5
			lb-in	188	176	168	342	331	319	253	-	484	442	589	566	544
Rated Speed		N _{rtd}	rpm	1500	2200	2700	900	1400	1600	2800	-	900	1500	1000	1250	1450
Rated Power (speed) ①②③		P _{rtd}	kW	3.34	4.58	5.36	3.64	5.48	6.05	8.38	-	5.15	7.85	6.96	8.37	9.34
			Hp	4.47	6.14	7.19	4.89	7.35	8.11	11.2	-	6.91	10.5	9.34	11.2	12.5
Rated Torque (speed) ①②③		T _{rtd}	Nm	19.0	15.2	12.1	36.1	31.9	29.0	-	52.5	49.5	38.9	58.1	50.7	45.1
			lb-in	168	135	107	319	283	257	-	465	438	344	514	448	399
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	5.17	6.38	6.18	5.86	8.03	8.51	-	5.77	8.29	10.6	10.3	11.7	11.8
			Hp	6.94	8.55	8.29	7.85	10.8	11.4	-	7.74	11.1	14.2	13.9	15.7	15.8
Rated Torque (speed) ①②③		T _{rtd}	Nm	17.5	12.0	-	34.2	28.4	24.2	-	50.6	46.6	30.8	52.4	41.7	34.0
			lb-in	155	106	-	303	251	215	-	448	412	273	464	369	301
Rated Speed ⑥		N _{rtd}	rpm	3200	4900	-	1900	2900	3400	-	1300	1900	3200	2100	2700	3000
Rated Power (speed) ①②③		P _{rtd}	kW	5.87	6.14	-	6.81	8.63	8.6	-	6.89	9.3	10.3	11.5	11.8	10.7
			Hp	7.87	8.23	-	9.13	11.6	11.6	-	9.24	12.4	13.9	15.5	15.8	14.3

Notes:

- ① Motor winding temperature rise, $\Delta T = 100^\circ \text{C}$, 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)

Parameters	Tol	Symbol	Units	AKM2G-71			AKM2G-72				AKM2G-73			AKM2G-74		
				L	N	P	L	N	P	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	1.10	4.90	3.30	2.09	3.14	2.50	2.21
			lb-in/A _{rms}	16.9	11.7	9.7	29.3	19.5	17.0	9.8	43.3	29.2	18.5	27.8	22.1	19.5
Back EMF Constant ②	±10%	K _e	V _{rms} /k _r rpm	127	88.3	73.3	221	147	129	73.6	328	221	140	210	167	148
Motor Constant ⑥	Nom	K _m	N-m/√W	1.69	1.69	1.71	2.77	2.83	2.80	2.79	3.59	3.68	3.66	4.39	4.38	4.37
			lb-in/√W	15.0	15.0	15.2	24.5	25.0	24.8	24.7	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	0.104	1.24	0.537	0.217	0.341	0.217	0.170
Inductance Q-Axis (line-line)		L _{qll}	mH	17.6	8.5	5.8	22.6	10.0	7.7	2.5	31.2	14.2	5.7	9.2	5.9	4.6
Inductance D-Axis (line-line)		L _{dll}	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	Contact Factory
Inductance Saturation Current		Lisat	Arms	86	124	149	100	149	171	299	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	Contact Factory
Inertia (includes Resolver feedback) ③	±10%	J _m	kg-cm ²	25.9			46.8				67.7			88.6		
			lb-in-s ²	2.29E-02			4.14E-02				5.99E-02			7.84E-02		
Optional Brake Inertia (additional)	±10%	J _m	kg-cm ²	12.3			12.3				12.3			12.3		
			lb-in-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 _r rpm	0.0865			0.173				0.260			0.346		
			lb-in/k _r 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-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.

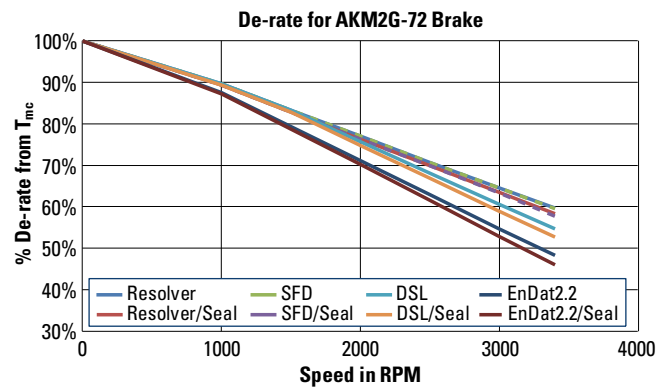
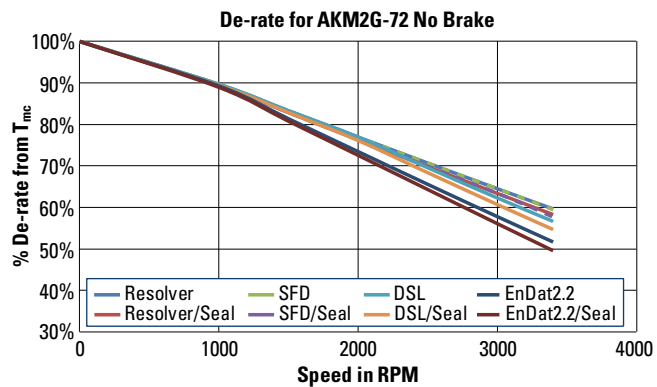
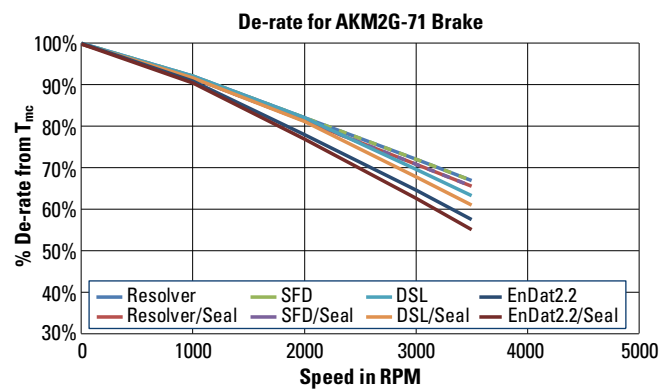
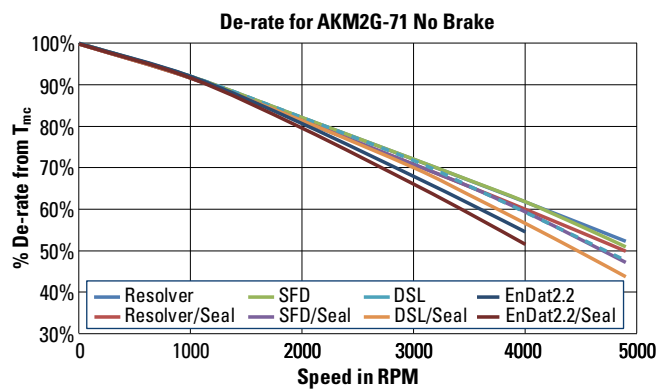
AKM2G-7x De-rate Curves*

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, or the Kollmorgen website Performance Curve Generator.

AKM2G-7X DE-RATE CURVES

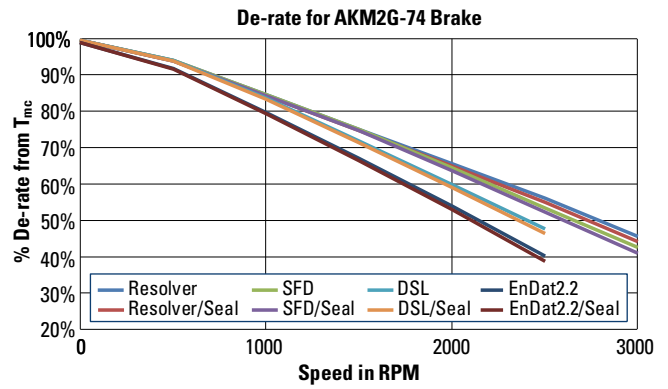
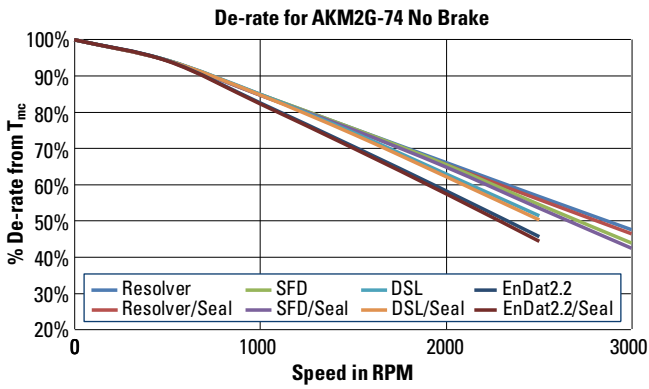
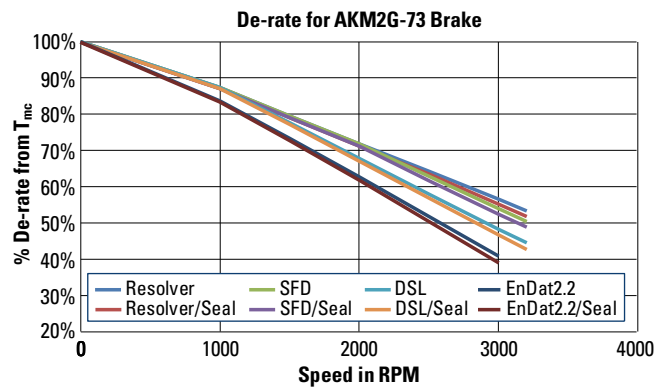
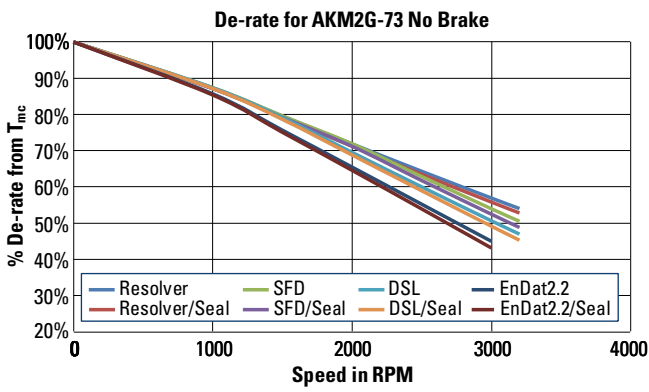


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* De-rate information for general estimation only. Use the on-line Performance Curve Generator located at <http://pcgh.kollmorgen.com/> for the most accurate information for your motor, or refer to Kollmorgen's Motioneering Software Tool available for download at <https://www.kollmorgen.com/en-us/service-and-support/technical/motioneering/motioneering/>

AKM2G - 7 2 A - AN C N DA 00*

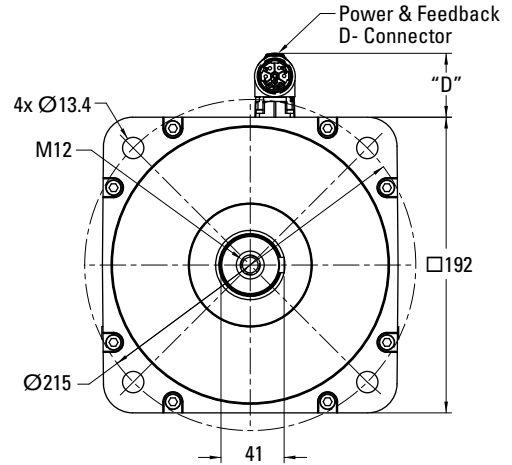
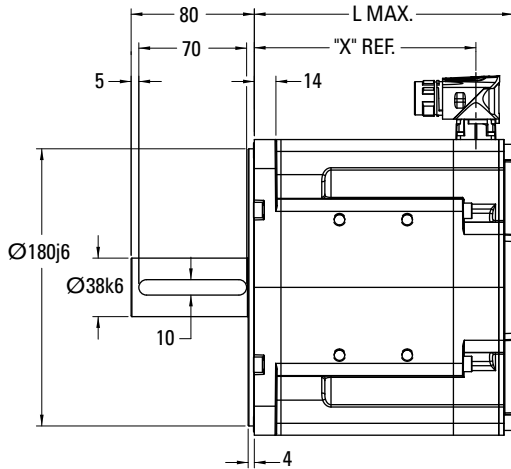
Motor Series
Frame Size
Rotor Length
Winding
Shaft Flange
Connector
Brake
Feedback
Thermal Sensor
Customization



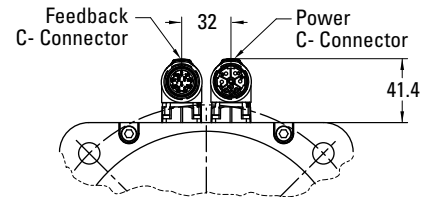
*Complete AKM2G series model nomenclature can be found on page 66.

AKM2G-7x Drawings

AKM2G-7x Small Connector Frame



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

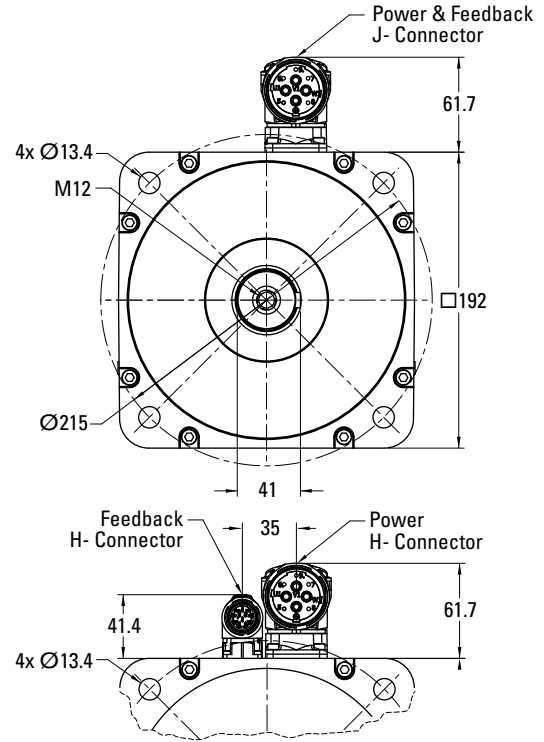
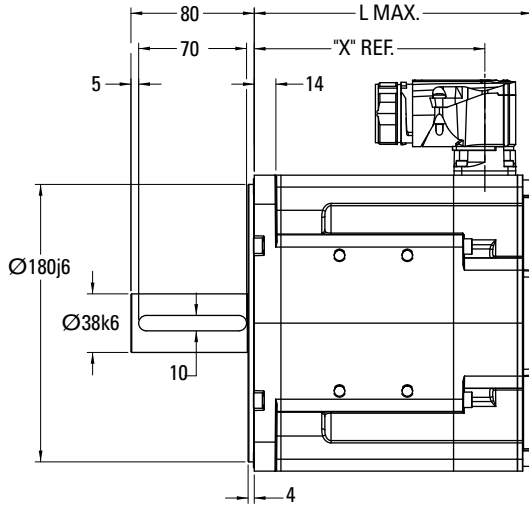


Small Connector	No Brake			Brake		
		Resolver / SFD	DSL/ EnDat 2.2		Resolver / SFD	DSL/ EnDat 2.2
Model	X	L	L	X	L	L
AKM2G-71	143.9	169.1	181.1	221.35	246.55	258.55
AKM2G-72	177.85	203.05	215.05	255.35	280.55	292.55
AKM2G-73	211.8	237	249	289.3	314.5	326.5
AKM2G-74	245.75	270.95	282.95	323.25	348.45	360.45

AKM2G - 7 2 A - AN C N DA 00*

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

AKM2G-7x Large Connector Frame

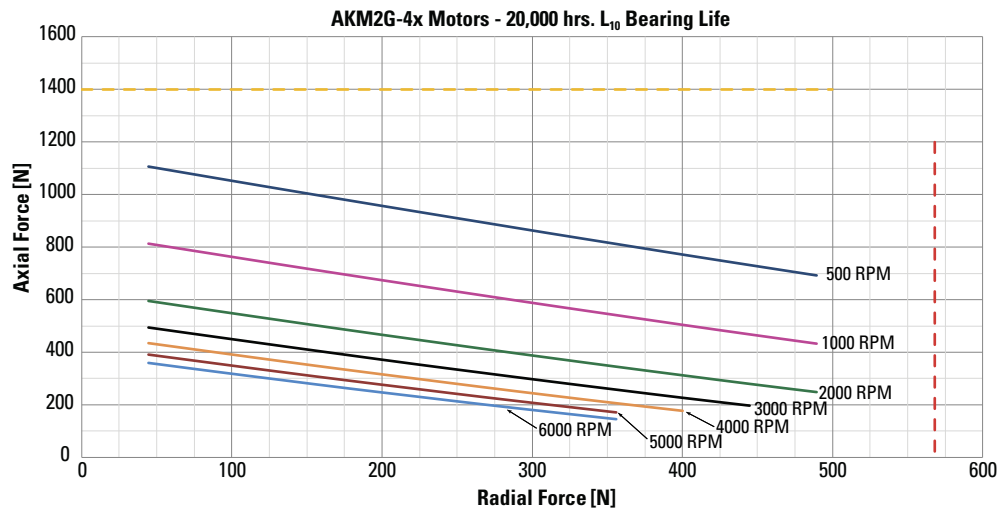
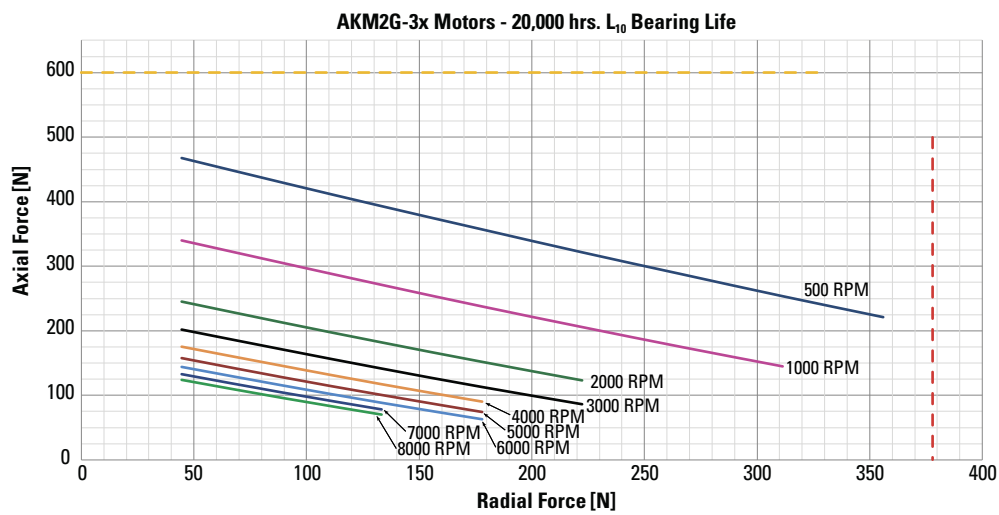
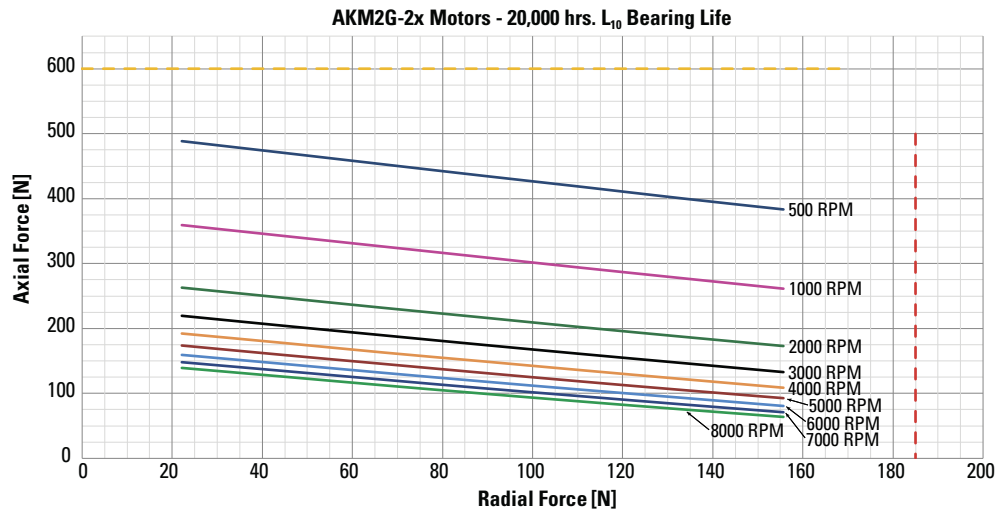


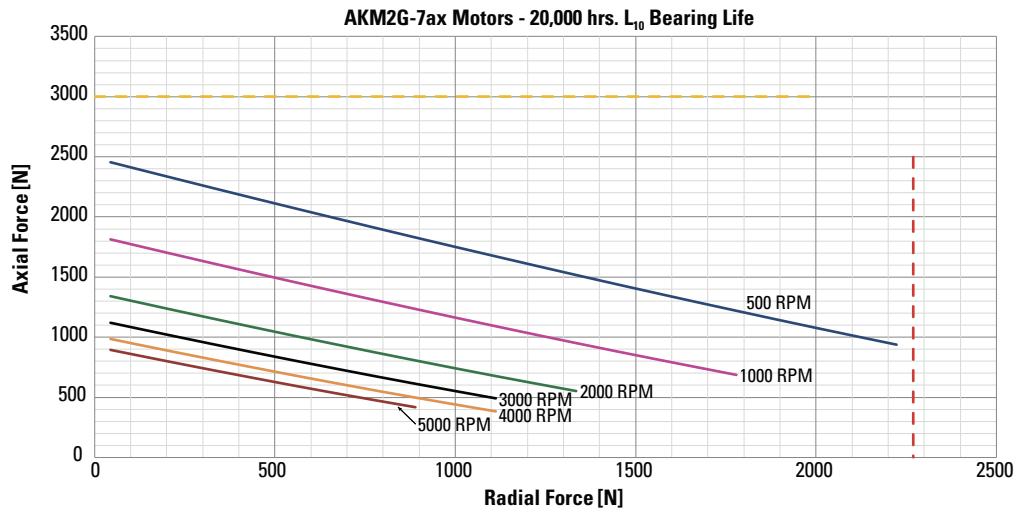
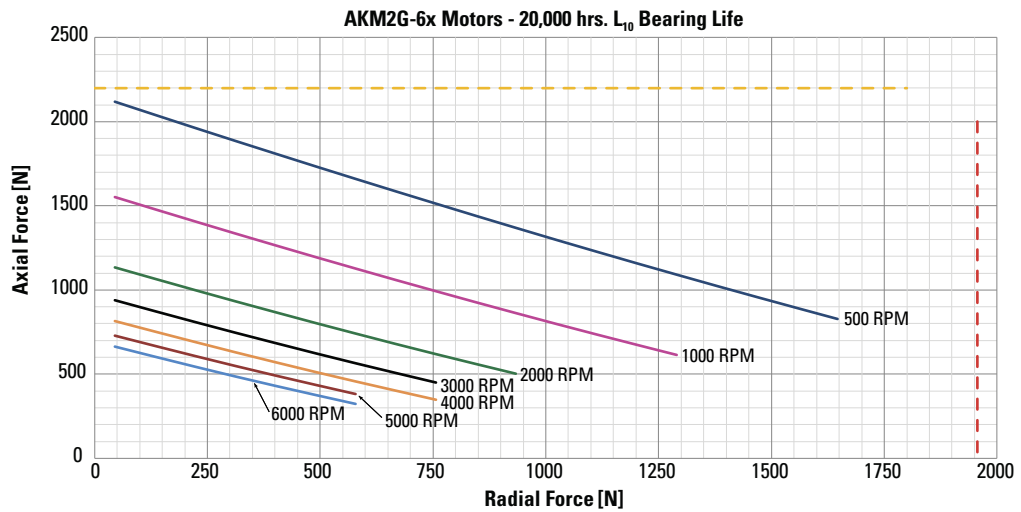
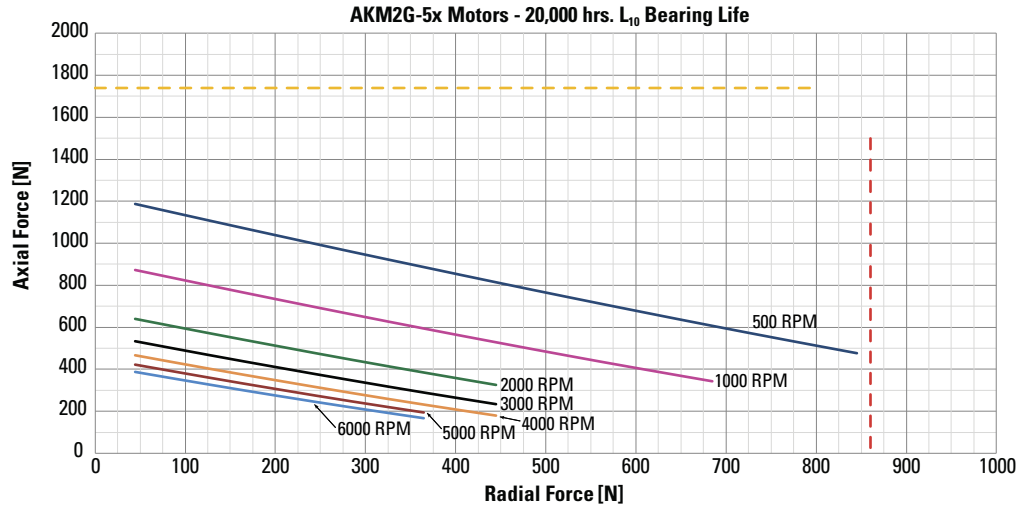
Large Connector	No Brake			Brake		
		Resolver / SFD	DSL		Resolver / SFD	DSL
Model	X	L	L	X	L	L
AKM2G-71	149.6	181.1	181.1	227.1	258.55	258.55
AKM2G-72	183.55	215.05	215.05	261.05	292.55	292.55
AKM2G-73	217.5	249	249	295	326.5	326.5
AKM2G-74	251.45	282.95	282.95	328.95	360.45	360.45



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

L10 Bearing Fatigue and Shaft Loading





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:

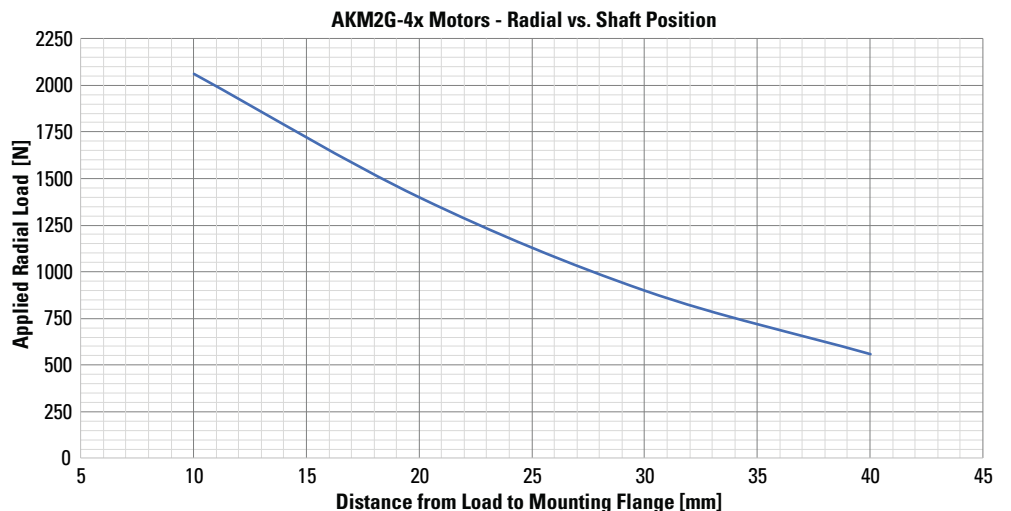
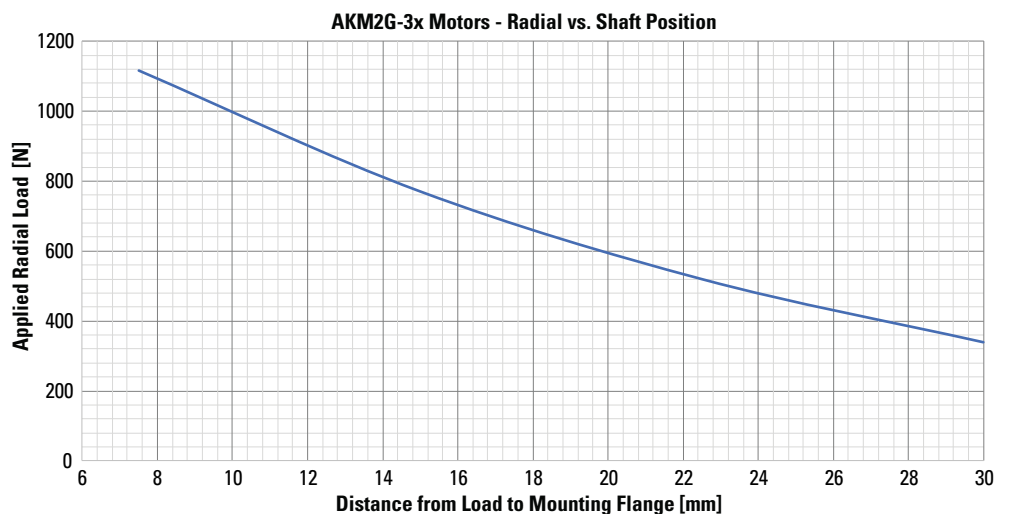
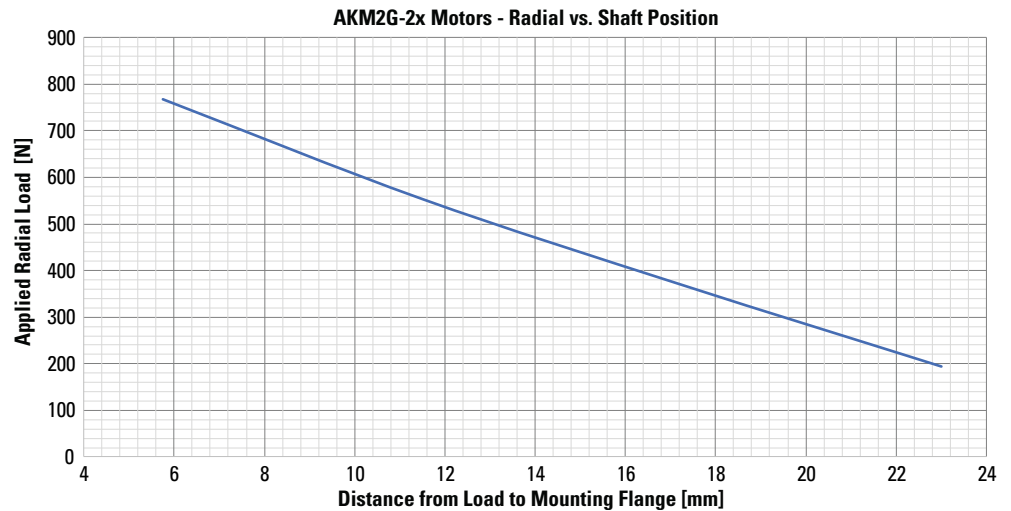
1. Motors are operated with peak torque of the longest member of the frame size.
2. Fully reversed load applied to the end of the smallest diameter standard mounting shaft extension.
3. Infinite life with 99% reliability.
4. Safety factor = 2.

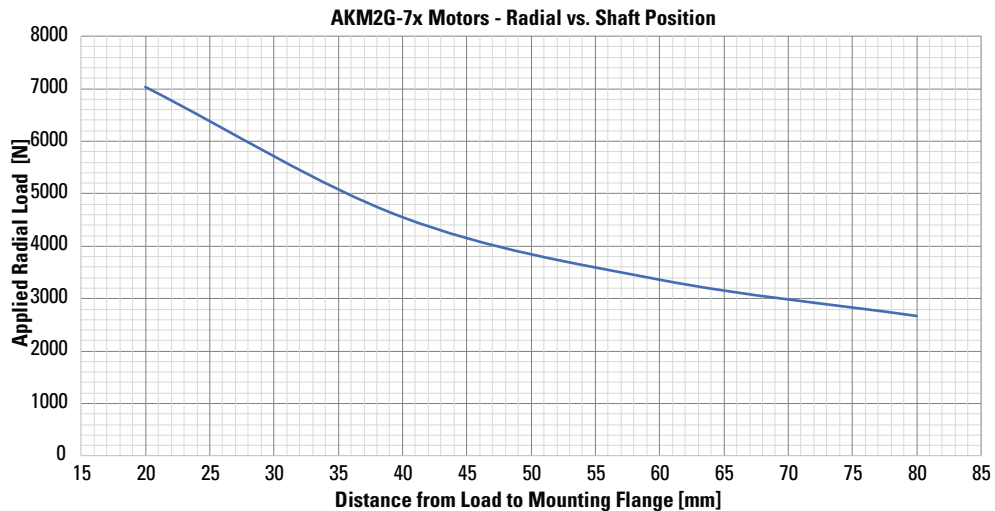
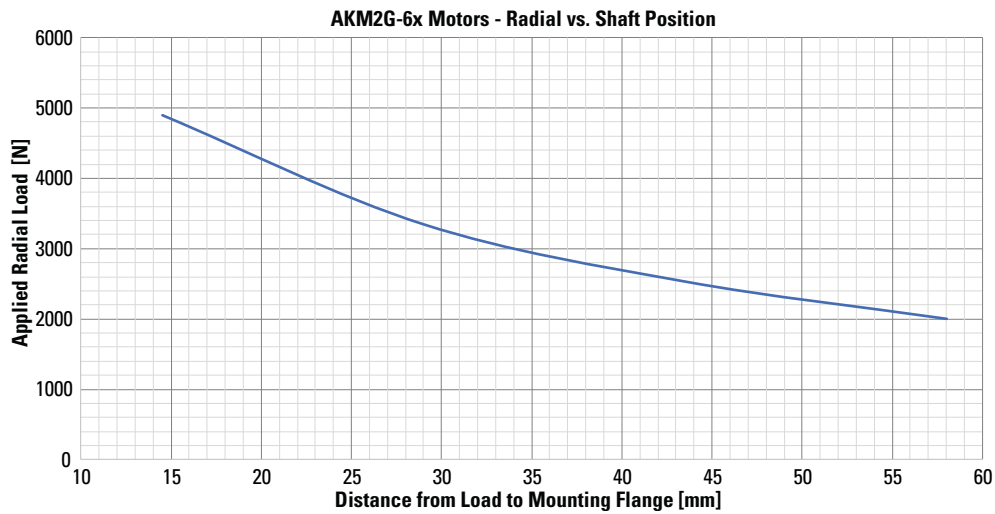
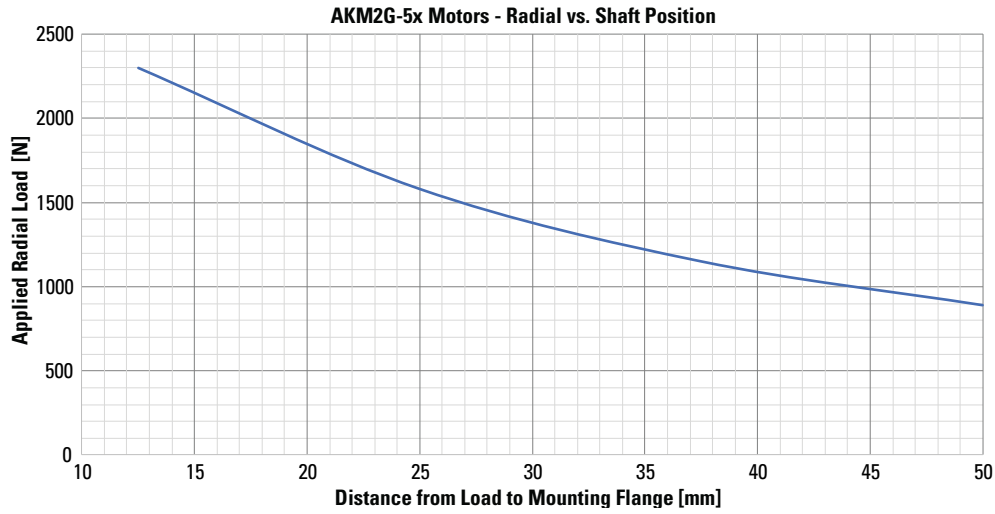
Mineral-filled PTFE Teflon® Shaft Seals

There is a normal break-in period for our Mineral-filled PTFE 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 mineral-filled PTFE 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.





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.

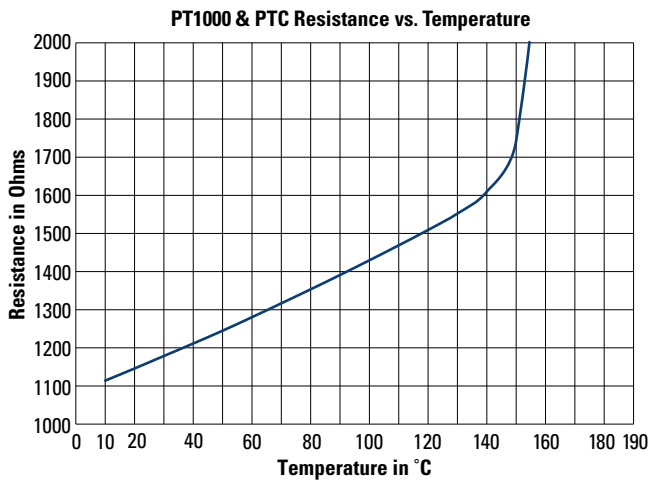
The motor can be delivered with a PT-1000, PTC, or KTY 84-130 equivalent sensors optionally (see Thermal Sensor options 1, 2, 3).

With digital feedback systems SFD3 (CA), Hiperface DSL (GU) and EnDat 2.2 (LD) the temperature sensor status is transmitted digitally and evaluated in the drive.

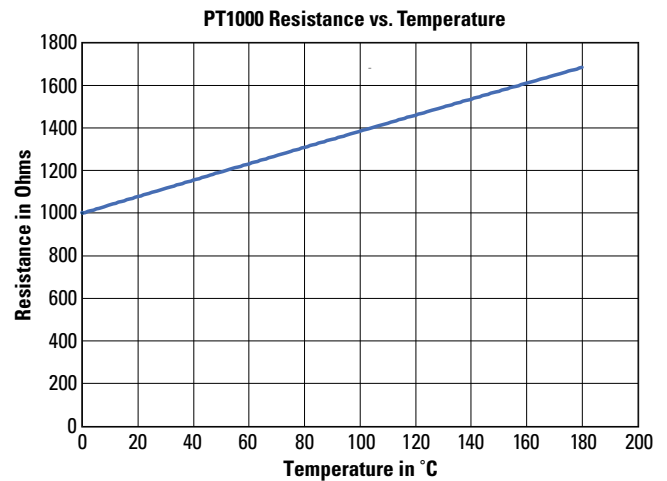
Provided that our configured feedback cables are used, the sensor is integrated into the monitoring system of the digital servo amplifiers.

Thermal Device Options: Resistance vs. Temperature Graphs

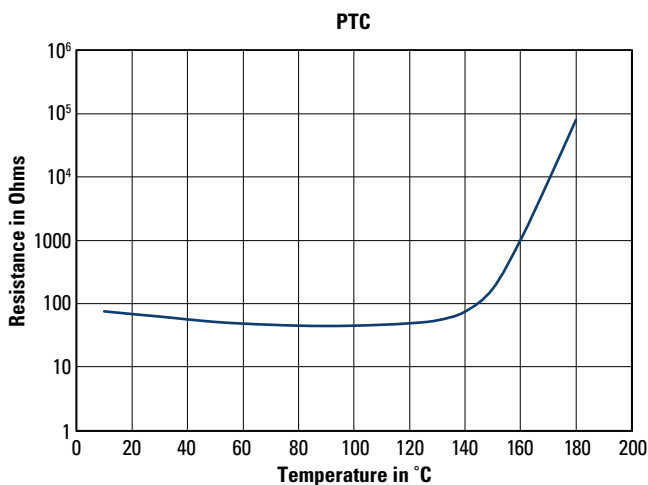
Standard Option



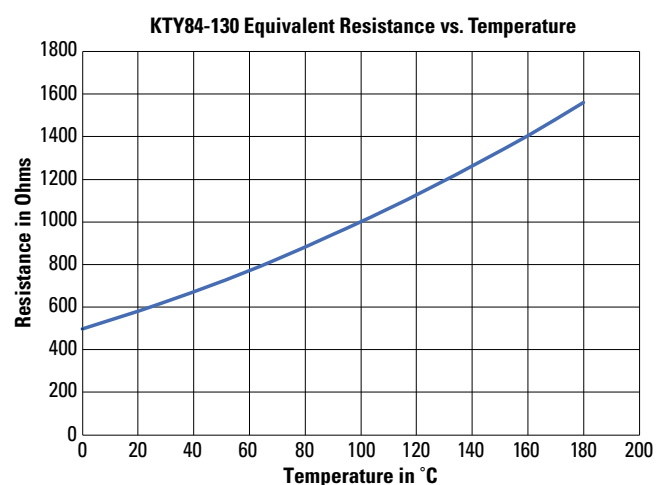
Option 1



Option 2



Option 3



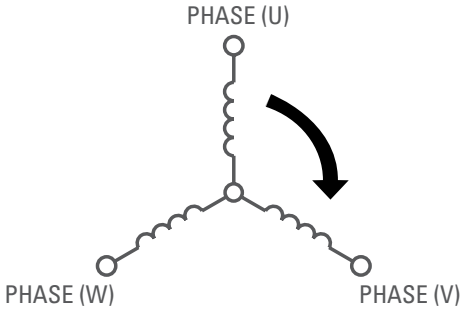
Notes

A large grid of graph paper for taking notes, consisting of 20 columns and 30 rows of small squares.

Feedback Options

Phasing Diagram - All Motors

Motor Winding Configuration



General note:

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.

AKM2G Servo Motor Feedback Summary with AKD Family Servo Drives

Feedback Device	Motor ID Support ³	Type	Compatible AKM2Gx	Accuracy ^{1,2} (arc-sec)	RMS Noise ¹ (arc-sec)	Resolution	Absolute Revs
SFD3 (CA)	Yes	Inductive	AKM2G 2-7	±585"	±9.9"	24 bits	1
HIPERFACE DSL® (GU)	Yes	Capacitive	AKM2G 2-7	±240"	±20"	17 bits	4096
EnDat® 2.2 (LD)	Yes	Inductive	AKM2G 2,3,4	±120"	See Note 4	19 bits	4096
			AKM2G 5,6,7	±65"			
Resolver (R-)	No	Inductive	AKM2G 2-7	±540"	N/A	24 bits for AKD/AKD2G	1

Note 1: AKD/AKD2G drives have a resolver measurement accuracy of ±45", for a drive w/ motor accuracy of ±585" and RMS Noise of ±9.9".

Note 2: Accuracy refers to overall system accuracy once installed in the motor. Noise refers to the RMS position noise when at stand-still.

Note 3: Motor ID support means electronic motor nameplate data is included, allowing for plug-and-play commissioning.

Note 4: At the time of printing, this information was not available. Please contact Kollmorgen Customer Support for the latest update.

With AKD and AKD2G drives, all received positions are interpolated to a 32-bit resolution per revolution.

Servo Motor Feedback Combinations

AKM2G Family of Servo Motors with Smart Feedback Device, Gen 3 (SFD3)

The SFD3 Feedback uses a single motor cable, requiring just one cable between the drive and motor. The feedback has both power and communication on a single wire pair, reducing overall wiring costs. In addition, the device includes onboard memory for an electronic motor datasheet.

Angle Measurement:

Resolution: 24 bits
 Accuracy: $< \pm 45$ arc-sec 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 using differential Manchester encoding
 Update period: New position sample every 51.28 μ s
 Error detection: 5 bit CRC and running parity check

Power Supply:

Supply at drive: any between 7 V - 12 V accepted
 Nominal supply current: 120 mA
 Worst case supply: 150 mA

Environmental:

Operating ambient: -20 to 120° C
 Humidity: 10% to 90% non-condensing
 Storage temperature: -40 to 135° C

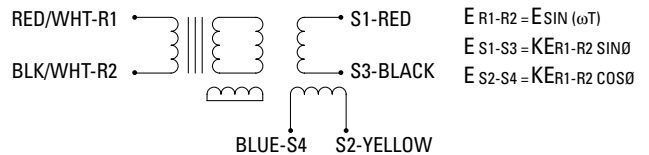
Resolver (Feedback)

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	N/A	0.5 \pm 10%	0.5 \pm 10%
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 Digital Feedback 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-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-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 Watts ±7%	Current ¹ @24 V, 20°C ADC	Inertia Adder		Closing Time (engage) msec	Opening Time (release) msec	Backlash ²	
	Nm	lb-in	Kg	lb			kg-cm ²	lb-in-sec ²			Maximum deg.	Typical deg.
AKM2G-2	2	17.7	0.45	1.0	11.4	0.47	0.04	3.5E-05	10	40	1	0.32
AKM2G-3	3.3	29.205	0.72	1.6	12.6	0.53	0.12	1.1E-04	17	55	1	0.6
AKM2G-4	7	62.0	1.36	3.0	14.7	0.61	0.36	3.2E-04	20	85	1	0.55
AKM2G-5	16	141.6	2.6	5.7	20.8	0.87	1.2	1.1E-03	50	110	1	0.6
AKM2G-6	32	283.2	4.5	10.0	29.5	1.23	3.6	3.2E-03	70	150	1	0.25
AKM2G-7	80	708	9.1	20.1	37.6	1.57	12.3	1.1E-02	65	300	1	0.2

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.

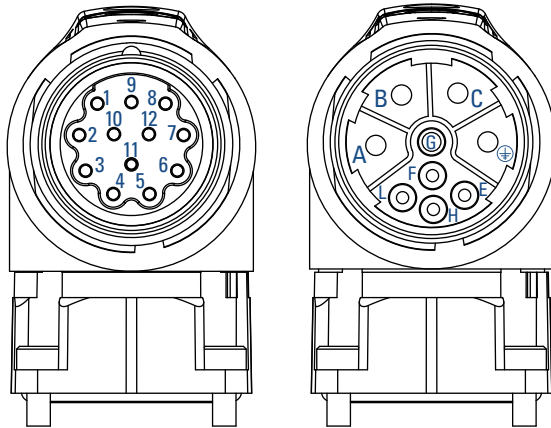
Note 1: Operating Voltage: 24 Vdc ± 10%.

Note 2: Maximum backlash is calculated using worst-case tolerancing, and typical backlash is calculated using statistical tolerancing.

AKM2G Servo Motor Connector Pinouts

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

C- Dual Connector Option



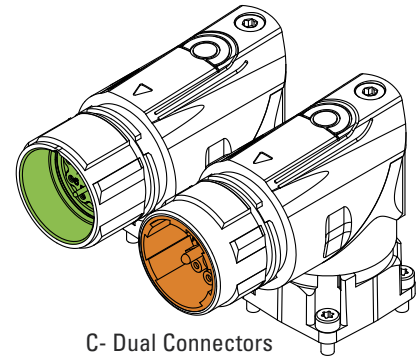
Resolver Connector

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.



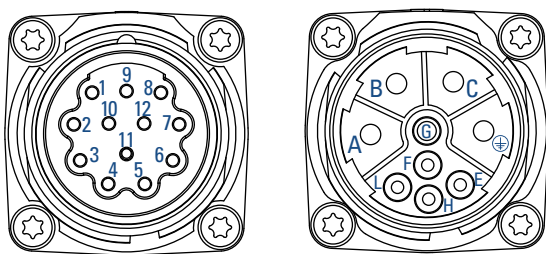
C- Dual Connectors

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



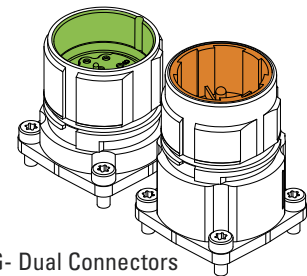
Resolver Connector

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.



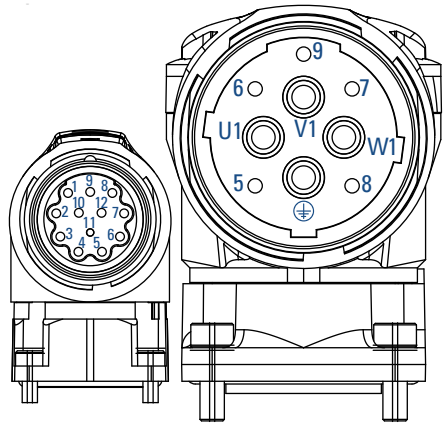
G- Dual Connectors

Power Connector

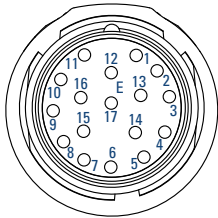
Pin	Function
A	U
⊕	PE
C	W
B	V
F	Brake +
G	Brake -
E	N/C
H	N/C
L	N/C

Shield Connected to Motor
Ground Internal to Motor

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



Resolver Connector Power Connector

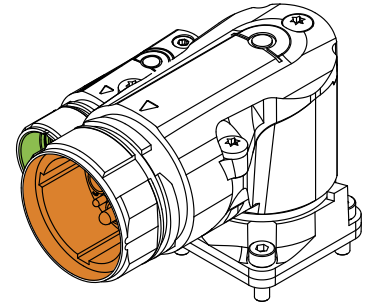


EnDat®
Connector

Pin	Function
1	B -
2	PE
3	A -
4	Vcc 5 Vdc
5	DATA
6	N/C
7	Thermal Sensor +
8	Clock
9	B +
10	Un Sense (Common)
11	A +
12	Up Sense (VCC)
13	DATA
14	Thermal Sensor -
15	Clock
16	N/C
17	N/C

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.



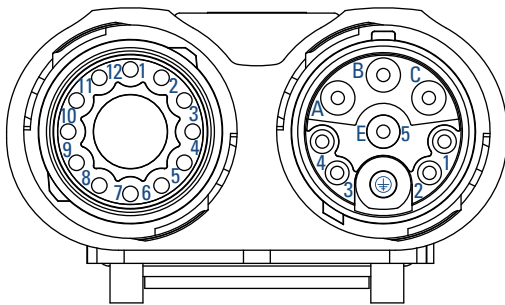
H- Dual Connectors

Power Connector

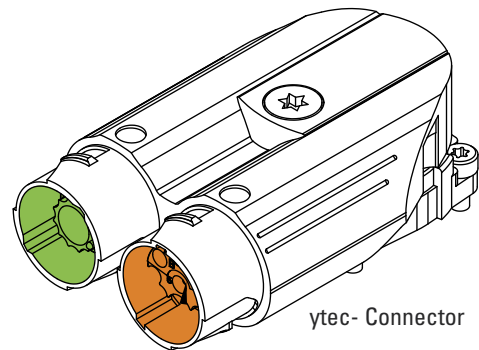
Pin	Function
U1	U
V1	V
W1	W
⊕	PE
5	Brake +
6	N/C
7	N/C
8	Brake -
9	N/C

Shield Connected to Motor Ground Internal to Motor

ytec®- Connector Pinout – AKM2G2 only



Resolver Power + Brake



ytec- Connector

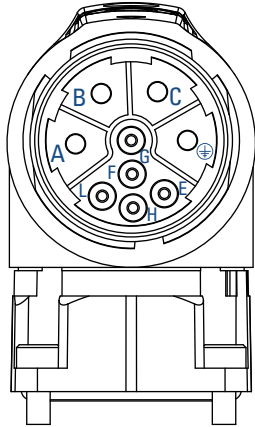
Pin	Function	Pin	Function
1	N/C	7	S2, cos+
2	TH+	8	S1, sin+
3	S4, cos-	9	R1, ref+
4	S3, sin-	10	N/C
5	R2, ref-	11	N/C
6	TH-	12	N/C

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

AKM2G Servo Motor Connector Pinouts

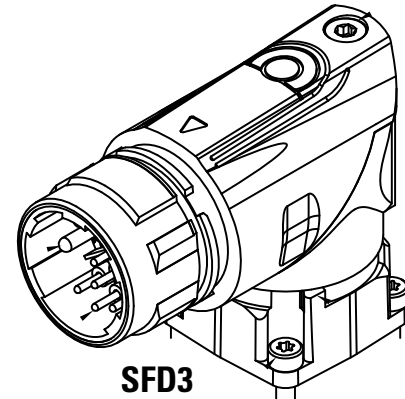
D- Connector Pinouts – Hybrid combined power and feedback for SFD3, DSL, and EnDat for all AKM2G < 20 Amps Continuous

D- Dual Power + SFD3 Connector Option

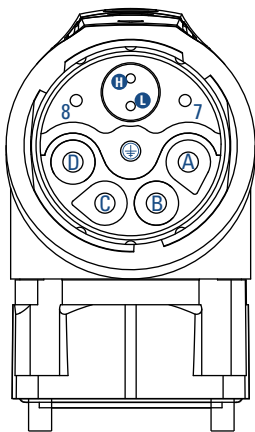


Power + SFD3

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

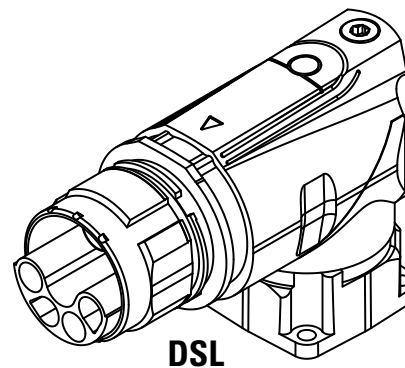


D- Dual Power + HIPERFACE DSL® Connector Option

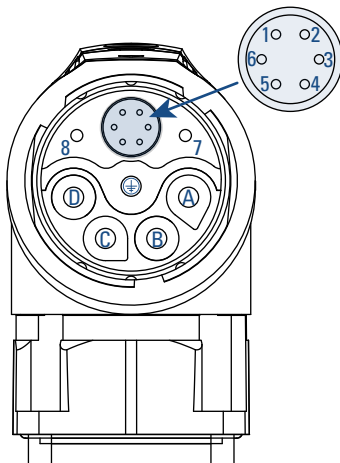


Power + DSL

Pin	Function
A	Phase U
B	Phase V
C	Phase W
D	N/C
⊕	PE
8	Brake +
7	Brake -
L	DSL -
H	DSL +

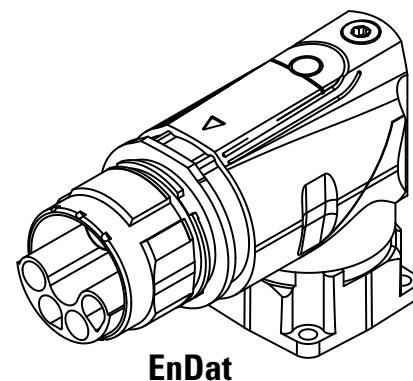


D- Dual Power + EnDat® Connector Option



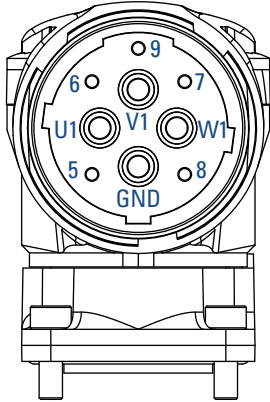
Power + EnDat

Pin	Function
A	Phase U
B	Phase V
C	Phase W
D	N/C
⊕	PE
8	Brake +
7	Brake -
1	Up
2	0 V
3	Data
4	Data
5	Clock
6	Clock



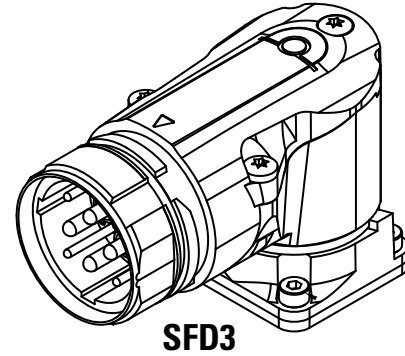
J- Connector Pinouts – Hybrid combined power and feedback for SFD3 and DSL for AKM2G7 > 20 Amps Continuous

J- Dual Power + SFD3 Connector Option

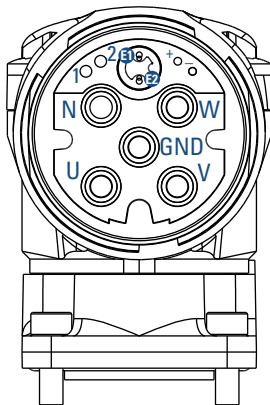


Power + SFD3

Pin	Function
U1	Phase U
W1	Phase W
V1	Phase V
GND	PE
5	Brake +
6	SFD +
7	SFD -
8	Brake -
9	N/C

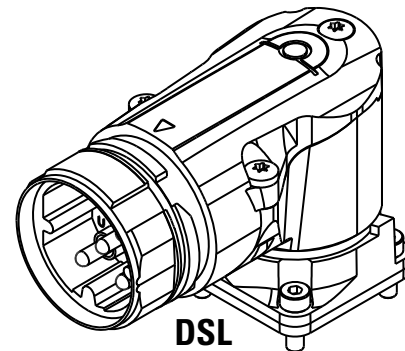


J- Dual Power + HIPERFACE DSL® Connector Option



Power + DSL

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



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 Mineral filled PTFE seal (Teflon[®])
- V Viton[®] shaft seal
- x Special

Thermal Sensor

- 0 PT-1000 + PTC
- 1 PT-1000
- 2 PTC
- 3 KTY84-130 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

Note: Options shown in blue text are considered standard.

Feedback Unit Options

Code	Description	Connector Type	Compatible AKM2Gx	Size	Motor ID Support ³	Accuracy ^{1,2} (arc-sec)	RMS Noise ¹ (arc-sec)	Resolution	Absolute revs.	Compatible Drives
CA	SFD3	D	AKM2G2-4	15	Yes	±585"	±9.9"	24 bits	1	AKD/AKD2G
		D	AKM2G5-7 > 20A	21						
		J	AKM2G7 > 20A	21						
GU	HIPERFACE DSL [®]	D	AKM2G2-7 ≤ 20A	EEM37	Yes	±240"	±20"	17 bits	4096	AKD/AKD2G
		J	AKM2G7 > 20A							
LD	EnDat [®] 2.2	D	AKM2G2-4	EQI 1131	Yes	±120"	See Note 4	19 bits	4096	AKD/AKD2G
		H	AKM2G7 ≤ 20A	EQI 1331		±65"				
R-	Resolver	Y	AKM2G2	15	No	±540"	N/A	24 bits for AKD/AKD2G	1	All
		C/G	AKM2G3-4							
		C/G	AKM2G5-7 ≤ 20A	21						
		H	AKM2G7 > 20A							

Note 1: AKD/AKD2G drives have a resolver measurement accuracy of ±45", for a drive w/ motor accuracy of ±585" and RMS Noise of ±9.9".

Note 2: Accuracy refers to overall system accuracy once installed in the motor. Noise refers to the RMS position noise when at stand-still.

Note 3: Motor ID support means electronic motor nameplate data is included, allowing for plug-and-play commissioning.

Note 4: At the time of printing, this information was not available. Please contact Kollmorgen Customer Support for the latest update.

With AKD and AKD2G drives, all received positions are interpolated to a 32-bit resolution per revolution.

Connector Options

Model Designation	Connection	Compatible AKM2Gx	Position of connection
C	2 SpeedTec [®] M23	AKM2G3 - AKM2G7 ≤ 20 Amps	Angular, rotatable, motor mounted
D*	1 htec [®] 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 htec [®] 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.

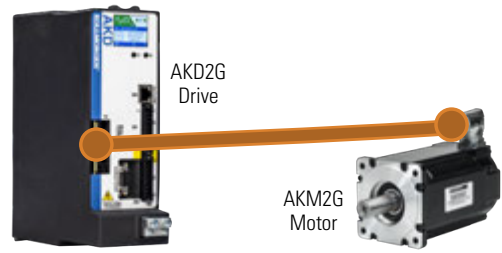
Connector Description

Connector	Usage	Contacts - Pins Power/Signal	Max. Current [A] Power/Signal	Max. Cross Section [mm ²] Power/Signal	Protection Class
M23 SpeedTec [®] right angle connectors (Size 1)	Power & Brake	4 / 5	20 / 10	4 / 1.5	IP65
	Resolver	- / 12	- / 10	- / 0.5	IP65
	DSL	5 / 2 / 2	20 / 10	4 / 1.5	IP65
	SFD3	4 / 5	20 / 10	4 / 1.5	IP65
	EnDat	5 / 4 / 6	20 / 10	4 / 1.5	IP65
M40 (Size 1.5)	Power & Brake	4 / 5	75 / 30	16 / 4	IP65
	SFD3	4 / 5	75 / 30	16 / 4	IP65
	DSL	5 / 4 / 2	75 / 30	16 / 4	IP65
ytec [®]	Power & Brake	4 / 5	14 / 3.6	1.5 / 0.75	IP65
	Resolver	- / 12	- / 5	- / 0.75	IP65

Kollmorgen 2G Cable Lookup Tables

AKD[®]2G Servo Drive Section

Hybrid Single Cable Options



Smart Feedback Device (SFD3) – AKM[®]2G motor to AKD[®]2G drive

Motor Feedback	Drive	Motor Connector	Current Rating ¹	Hybrid Cable (PUR) ²	Hybrid Cable (PVC) ³
SFD3 (CA)	AKD2G-SPx-6V03x AKD2G-SPx-6V06x AKD2G-SPx-6V12x AKD2G-SPx-7V03x AKD2G-SPx-7V06x AKD2G-SPx-7V12x	SpeedTec [®] (D)	Rms<15	H2-21-015-A1-00-XXXX00	H6-21-015-A1-00-XXXX00

HIPERFACE DSL[®] – AKM[®]2G motor to AKD[®]2G drive

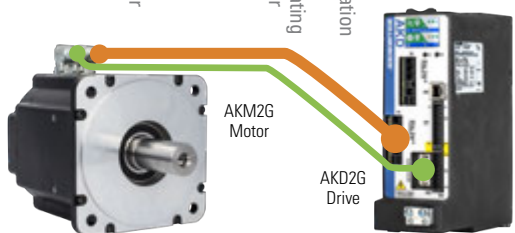
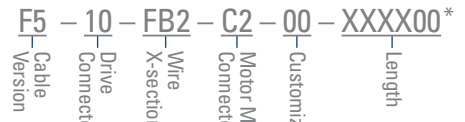
Motor Feedback	Drive	Motor Connector	Current Rating ¹	Hybrid Cable (PUR) ²	Hybrid Cable (PVC) ³
HIPERFACE DSL (GU)	AKD2G-SPx-6V03x AKD2G-SPx-6V06x AKD2G-SPx-6V12x AKD2G-SPx-7V03x AKD2G-SPx-7V06x AKD2G-SPx-7V12x	htec [®] (D)	Rms<15	H2-21-015-B1-00-XXXX00	H6-21-015-B1-00-XXXX00

EnDat[®] 2.2 – AKM[®]2G motor to AKD[®]2G drive

Motor Feedback	Drive	Motor Connector	Current Rating ¹	Hybrid Cable (PUR) ²	Hybrid Cable (PVC) ³
EnDat 2.2 (LD) ⁴	AKD2G-SPx-6V03x AKD2G-SPx-6V06x AKD2G-SPx-6V12x AKD2G-SPx-7V03x AKD2G-SPx-7V06x AKD2G-SPx-7V12x	htec [®] (D)	Rms<15	H2-21-015-B2-00-XXXX00	NA

Notes:

1. Current ratings used on a IEC 60364-5-52 standard
2. PUR cables have a Polyurethane cable jacket material typically used in Europe
3. PVC cables have a Polyvinyl Chloride cable jacket material typically used in North America
4. Hybrid EnDat 2.2 - 22 cable requires X23 connector on AKD2G drive and only can be used with the X1 connector.



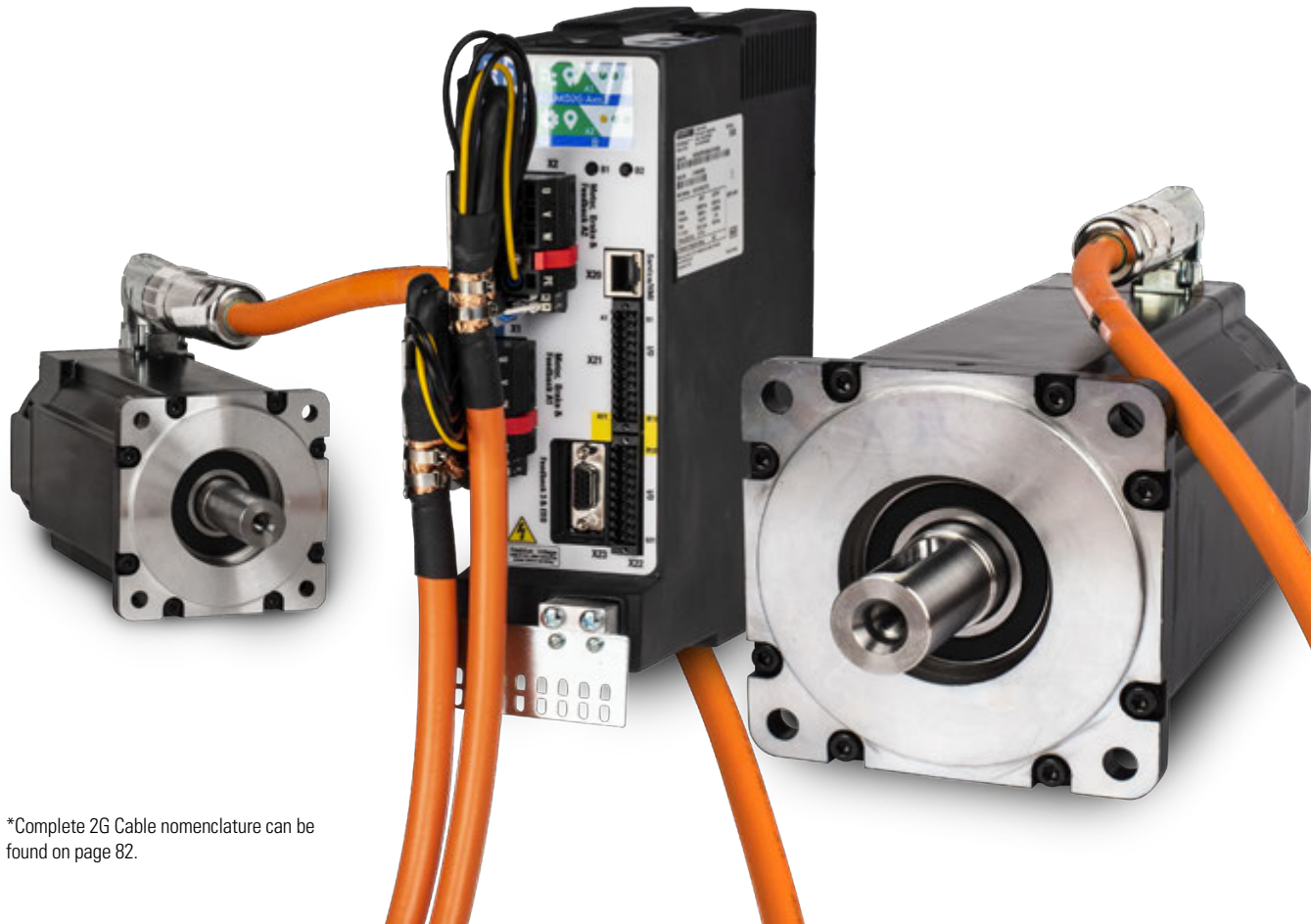
AKD[®]2G Servo Drive Section

Dual Cable Options – Power and Feedback

Resolver – AKM[®]2G motor to AKD[®]2G drive

Motor Feedback	Drive	Motor Connector	Current Rating ¹	Brake Option	Power Cable (PUR) ² + 00-XXXX00	Power Cable (PVC) ³ + 00-XXXX00	Feedback Cable (PUR) ² + 00-XXXX00	Feedback Cable (PVC) ³ + 00-XXXX00
Resolver (R-)	AKD2G-SPx-6V03x AKD2G-SPx-6V06x AKD2G-SPx-6V12x	ytec [®] (Y)	Rms<15	No Brake	P1-21-015-C1-	P5-21-015-C1-	F1-10-FB2-C2-	F5-10-FB2-C2-
				Brake	P2-21-015-C1-	P6-21-015-C1-		
	AKD2G-SPx-7V03x AKD2G-SPx-7V06x AKD2G-SPx-7V12x	SpeedTec [®] (C or G)	Rms<15	No Brake	P1-21-015-A1-	P5-21-015-A1-	F1-10-FB2-A2-	F5-10-FB2-A2-
				Brake	P2-21-015-A1-	P6-21-015-A1-		

1. Current ratings used on a IEC 60364-5-52 standard
2. To utilize full current rating of AKD-x0240x please use the htec M40 motor connector (J)
3. PUR cables have a Polyurethane cable jacket material typically used in Europe
4. PVC cables have a Polyvinyl Chloride cable jacket material typically used in North America

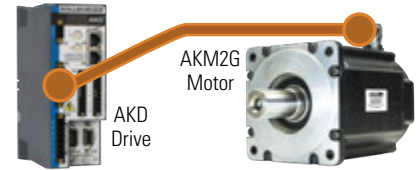


*Complete 2G Cable nomenclature can be found on page 82.

Kollmorgen 2G Cable Lookup Tables

AKD® Servo Drive Section

Hybrid Single Cable Options



Smart Feedback Device (SFD3) – AKM®2G motor to AKD® drive

Voltage	Motor Feedback	Drive	Motor Connector	Current Rating ¹	Hybrid (PUR) ³	Hybrid Cable (PVC) ⁴
120-240	SFD3 (CA)	AKD-x00306 AKD-x00606	SpeedTec® (D)	Rms<15	H2-11-015-A1-00-XXXX00	H6-11-015-A1-00-XXXX00
			SpeedTec (D)	Rms<20 ²	H2-12-025-A1-00-XXXX00	H6-12-025-A1-00-XXXX00
		AKD-x01206 AKD-x02406	SpeedTec (J)	Rms<27	H2-12-040-A4-00-XXXX00	–
				Rms<34	H2-12-060-A4-00-XXXX00	–
240-480	SFD3 (CA)	AKD-x00307 AKD-x00607 AKD-x01207	SpeedTec (D)	Rms<15	H2-12-015-A1-00-XXXX00	H6-12-015-A1-00-XXXX00
			SpeedTec (D)	Rms<20 ²	H2-12-025-A1-00-XXXX00	H6-12-025-A1-00-XXXX00
		AKD-x02407	SpeedTec (J)	Rms<27	H2-12-040-A4-00-XXXX00	–
				Rms<34	H2-12-060-A4-00-XXXX00	–
				Rms<34	H2-13-060-A4-00-XXXX00	–
		AKD-X04807	SpeedTec (J)	Rms<34	H2-13-060-A4-00-XXXX00	–

HIPERFACE DSL® – AKM®2G motor to AKD® drive

Voltage	Motor Feedback	Drive	Motor Connector	Current Rating ¹	Hybrid (PUR) ³	Hybrid Cable (PVC) ⁴
120-240	HIPERFACE DSL (GU)	AKD-x00306 AKD-x00606	htec® (D)	Rms<15	H2-11-015-B1-00-XXXX00	H6-11-015-B1-00-XXXX00
			htec (D)	Rms<20 ²	H2-12-025-B1-00-XXXX00	H6-12-025-B1-00-XXXX00
		AKD-x01206 AKD-x02406	htec (J)	Rms<27	H2-12-040-B3-00-XXXX00	–
				Rms<34	H2-12-060-B3-00-XXXX00	–
240-480	HIPERFACE DSL (GU)	AKD-x00307 AKD-x00607 AKD-x01207	htec (D)	Rms<15	H2-12-015-B1-00-XXXX00	H6-12-015-B1-00-XXXX00
			htec (D)	Rms<20 ²	H2-12-025-B1-00-XXXX00	H6-12-025-B1-00-XXXX00
		AKD-x02407	htec (J)	Rms<27	H2-12-040-B3-00-XXXX00	–
				Rms<34	H2-12-060-B3-00-XXXX00	–
				Rms<34	H2-13-060-B3-00-XXXX00	–
		AKD-X04807	htec (J)	Rms<34	H2-13-060-B3-00-XXXX00	–

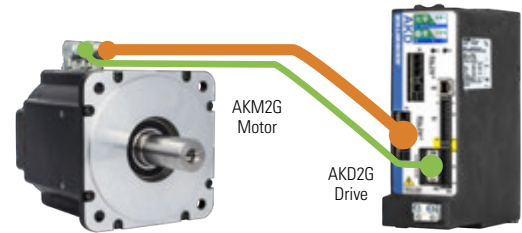
Notes:

1. Current ratings used on a IEC 60364-5-52 standard
2. To utilize full current rating of AKD-x0240x please use the htcc M40 motor connector (J)
3. PUR cables have a Polyurethane cable jacket material typically used in Europe
4. PVC cables have a Polyvinyl Chloride cable jacket material typically used in North America

Kollmorgen 2G Cable Lookup Tables

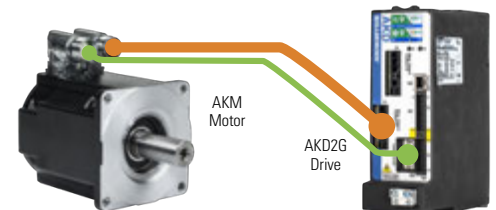
AKD®2G Servo Drive Section

Dual Cable Options – Power and Feedback



Resolver – AKM®2G motor to AKD®2G drive

Motor Feedback	Drive	Motor Connector	Current Rating ¹	Brake Option	Power Cable (PUR) ² + 00-XXXX00	Power Cable (PVC) ³ + 00-XXXX00	Feedback Cable (PUR) ² + 00-XXXX00	Feedback Cable (PVC) ³ + 00-XXXX00
Resolver (R-)	AKD2G-SPx-6V03x AKD2G-SPx-6V06x AKD2G-SPx-6V12x	ytec® (Y)	Rms<15	No Brake	P1-21-015-C1-	P5-21-015-C1-	F1-10-FB2-C2-	F5-10-FB2-C2-
				Brake	P2-21-015-C1-	P6-21-015-C1-		
	AKD2G-SPx-7V03x AKD2G-SPx-7V06x AKD2G-SPx-7V12x	SpeedTec® (C or G)	Rms<15	No Brake	P1-21-015-A1-	P5-21-015-A1-	F1-10-FB2-A2-	F5-10-FB2-A2-
				Brake	P2-21-015-A1-	P6-21-015-A1-		



Resolver – AKM® motor to AKD®2G drive

Motor Feedback	Drive	Motor Connector	Current Rating ¹	Brake Option	Power Cable (PUR) ² + 00-XXXX00	Power Cable (PVC) ³ + 00-XXXX00	Feedback Cable (PUR) ² + 00-XXXX00	Feedback Cable (PVC) ³ + 00-XXXX00
Resolver (R-)	AKD2G-SPx-6V03x AKD2G-SPx-6V06x AKD2G-SPx-6V12x	ytec (Y)	Rms<15	No Brake	P1-21-015-C1-	P5-21-015-C1-	F1-10-FB2-C2-	F5-10-FB2-C2-
				Brake	P2-21-015-C1-	P6-21-015-C1-		
	AKD2G-SPx-7V03x AKD2G-SPx-7V06x AKD2G-SPx-7V12x	SpeedTec (C or G)	Rms<15	No Brake	P1-21-015-A5-	P5-21-015-A5-	F1-10-FB2-A2-	F5-10-FB2-A2-
				Brake	P2-21-015-A5-	P6-21-015-A5-		

Smart Feedback Device – AKM® motor to AKD®2G drive

Motor Feedback	Drive	Motor Connector	Current Rating ¹	Brake Option	Power Cable (PUR) ² + 00-XXXX00	Power Cable (PVC) ³ + 00-XXXX00	Feedback Cable (PUR) ² + 00-XXXX00	Feedback Cable (PVC) ³ + 00-XXXX00
Smart Feedback Device (C-)	AKD2G-SPx-6V03x AKD2G-SPx-6V06x AKD2G-SPx-6V12x	ytec (Y)	Rms<15	No Brake	P1-21-015-C1-	P5-21-015-C1-	F1-18-FB3-C2-	F5-18-FB3-C2-
				Brake	P2-21-015-C1-	P6-21-015-C1-		
	AKD2G-SPx-7V03x AKD2G-SPx-7V06x AKD2G-SPx-7V12x	SpeedTec (C or G)	Rms<15	No Brake	P1-21-015-A5-	P5-21-015-A5-	F1-18-FB3-A2-	F5-18-FB3-A2-
				Brake	P2-21-015-A5-	P6-21-015-A5-		

Notes:

1. Current ratings used on a IEC 60364-5-52 standard
2. PUR cables have a Polyurethane cable jacket material typically used in Europe
3. PVC cables have a Polyvinyl Chloride cable jacket material typically used in North America

*Complete 2G Cable nomenclature can be found on page 82.

▶ AKD® 2G Servo Drive

The newest member of the AKD family is our most powerful yet. Along with increased power, the AKD2G is simplified and includes integrated Safe Motion that increases Ease-of-Use

The new AKD2G servo drive introduces the Kollmorgen Servo-on-a-Chip: A powerful compute engine that can control 2 axes simultaneously and up to 28 I/O. While we were at it, we streamlined the design by optimizing the AKD2G for single-cable motors.



Dual-Axis AKD2G Servo Drive

The Benefits of AKD®2G Servo Drive

-
- Flexible
 - One and two axis variants available
 - Modular design allows the user to specify only the features needed
 - Supports a variety of feedback devices—SFD & HIPERFACE® DSL standard;
 - optional feedbacks include EnDat2.2, BiSS 1.0, Analog Sine/Cos encoder, incremental encoder, resolver and more
 - Multiple bus choices for system optimization, including EtherCAT®, and CANopen®
 - SIL-qualified over-voltage, current, and temperature detection provided for added dependability
 - Dual-channel STO for each axis
 - Industry-leading power density for greater flexibility in mounting
 - Fits into a 10" deep control panel
-
- Easy to Use
 - Plug-and-play compatibility with Kollmorgen controls and motors
 - WorkBench GUI, acclaimed for customer experience and usability
 - Hybrid Motor-Power connector is optimized for single-cable motors:
 - No adaptors, no D-sub, no splitters
 - Cage-clamp spring terminal connectors on I/O allow for fast and easy installation
 - Optically-isolated I/O reduces noise, and eliminates need for additional hardware
-
- Fast
 - Accommodates changing load conditions immediately:
 - Current loop updates in 1.28 μ s, nearly 50x the speed of our nearest competitors
 - Velocity and position loops lead the market at 62.5 μ s and 125 μ s, respectively
 - Servo on a Chip™ includes dual-core ARM™ A9, 800 MHz μ P, 1.5 M gates
 - AI-based auto-tuning with a click of a button gets you started quickly
 - Wizard-based tuning uses advanced Bode Plot tool to help you efficiently manual-tune when desired
 - Fast data acquisition with TCP/IP Ethernet service channel
-

AKD[®] 2G Servo Drive

AKD[®] 2G Means Unparalleled Connectivity

Base Model:

The base model of Kollmorgen's AKD2G includes all of the performance described previously, and is optimized to interface to a single-connector motor with Kollmorgen's Smart Feedback or HIPERFACE[®] DSL. It also offers 16 I/O, 160x128-pixel graphical display, removable SD card, and your choice of motionbusses.

Extended I/O Variant

The extended I/O variant offers everything on the base model, plus I/O expansion.

This I/O expansion includes the 15-pin D-sub for legacy feedbacks or dual-loop operation; it also includes an additional 12 I/O for a total of 28 I/O. The options fit in the same package as the base model.



Dual-Axis AKD2G 480 Vac Dual-Axis AKD2G 240 Vac
(shown with optional feedback and I/O expansion)

Modes of Operation

- Analog (torque or velocity)
- Step-and-direction
- Programmable indexing
- Motionbus control



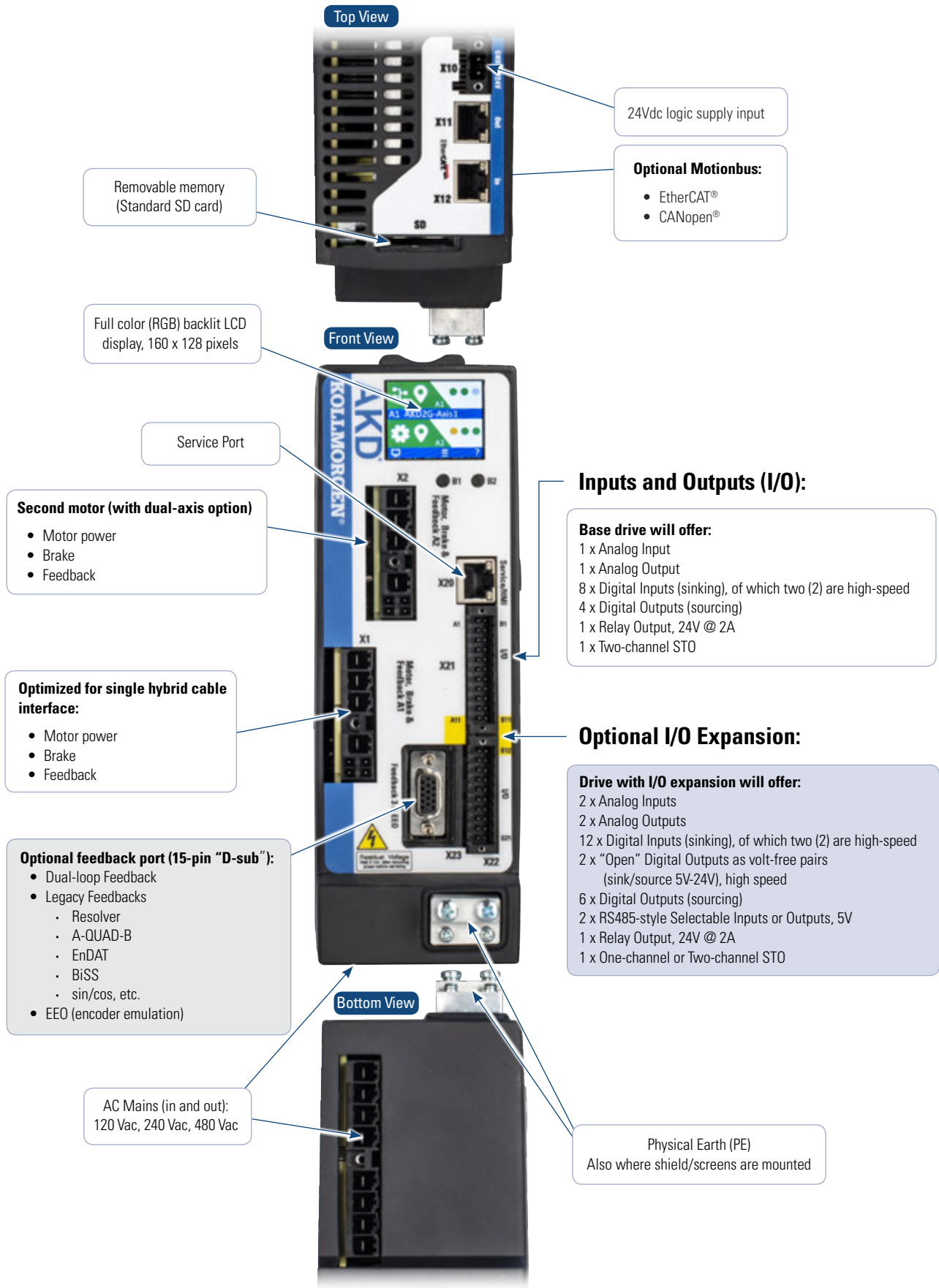
General Specifications

120/240 Vac	Continuous Current	Peak Current	Typical Shaft Power	Internal Regen		Height	Width	Depth	Depth w/ cable bend radius
	(Arms)	(Arms)	(kW)	(W)	(Ω)	mm (in)	mm (in)	mm (in)	mm (in)
AKD2G-SPx-6V03S	3	9	1	100	15	233 (9.15)	75 (2.95)	180 (7.09)	225 (8.86)
AKD2G-SPx-6V06S	6	18	2						
AKD2G-SPx-6V12S	12	30	4						
AKD2G-SPx-6V03D	3 & 3	9 & 9	1 & 1						
AKD2G-SPx-6V06D	6 & 6	18 & 18	2 & 2						

240/480 Vac	Continuous Current	Peak Current	Typical Shaft Power	Internal Regen		Height	Width	Depth	Depth w/ cable bend radius
	(Arms)	(Arms)	(kW)	(W)	(Ω)	mm (in)	mm (in)	mm (in)	mm (in)
AKD2G-SPx-7V03S	3	9	2	100	33	270 (10.6)	75 (2.95)	180 (7.09)	225 (8.86)
AKD2G-SPx-7V06S	6	18	4						
AKD2G-SPx-7V12S	12	30	8						
AKD2G-SPx-7V03D	3 & 3	9 & 9	2 & 2						
AKD2G-SPx-7V06D	6 & 6	18 & 18	4 & 4						

Note: For complete AKD model nomenclature, refer to page 80.

AKD® 2G Drive Connector Layout



▶ 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

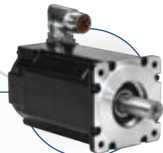
AKD[®] Servo Drive

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.

AKD[®] SERVO DRIVE



AKMH[™] Hygienic Stainless Steel Motors



AKM & AKM[®] 2G Servo Motors



Frameless Brushless Direct Drive Motors



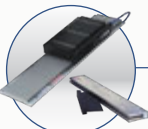
AKD[®]-N Decentralized Servo Drive



Cartridge DDR[®] Motors



Housed DDR[®] Motors



Direct Drive Linear Motors



Linear Actuators



Multi-Axis Precision Tables



AKD[®] Servo Drive



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

Best-in-Class Components

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



Industry-leading power density

48A @ 480V

AKD® SERVO DRIVE

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 81.
 Note 2: Additional AKD information can be found online.



AKD[®] Family Servo Drive Nomenclature

AKD[®]2G Servo Drive

AKD2G – S P E – 7V 06 S – A 1 F3 – 0000 – A

AKD2G Series
AKD 2nd Generation

Format

S = Servo IP20

Drive Version

P = Position Indexer with motion tasks

Connectivity Options

N = Analog

E = EtherCAT[®]

C = CANopen

Voltage

6V = 120/240 Vac 1Ø/3Ø

7V = 240/480 Vac 3Ø

Current Rating

003 = 3 Amp

006 = 6 Amp

012 = 12 Amp

Connectors

A = with connectors
(except X1/X2 and X23)

Customization

0000 = Standard

Options

00 = Standard

F3 = X23 (Feedback 3)

I0 = X22 (I/O)

DX = X22+X23

Functional Safety

1 = STO, digital I/O SIL2 PLd

Platform Revision

A = MAP Revision A

Axis Count

S = Single Axis

D = Dual Axis

Note: Options shown in blue text are considered standard.

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 Extension)

N = Decentralized drive (Requires DB, DF, or DS Extension)

P = Position indexer (motion tasking)

T = AKD BASIC Language Programmable drive (Requires IC or NB Extension)

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 | Version N: 07 = 560/680 Vdc)

Variants

0000 = Standard

Connectivity*

AN = Analog command

CN = CANopen®

EC = EtherCAT®

EI = EtherNet/IP™

PN - PROFINET®

SQ = SynqNet®

Drive Version Availability

B, P, T

P

C, M, N, P

P

P

B

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

Extension

CB = Without extension (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

Note: Options shown in blue text are considered standard.

Kollmorgen 2G Cable Nomenclature

Kollmorgen 2G Cables

H2 – 12 – 015 – A1 – 00 – XXXX00

Cable Version

Cable Jacket Material – PUR

- F2 Mid-flex Feedback Cable PUR
- H2 Mid-flex Hybrid PUR with brake
- P1 Power Cable PUR
- P2 Power Cable PUR with brake

Cable Jacket Material – PVC

- F5 Mid-flex Feedback Cable PVC
- H6 Mid-flex Hybrid PVC with brake
- P5 Mid-flex Power Cable PVC
- P6 Mid-flex Power Cable PVC with brake

Connector Type

If Feedback, connector type [connector type and pinout]

- 10 AKD, AKD2G, 15 Pin D-Sub, 45° angle, Resolver
- 12 AKD, AKD2G, 15 Pin D-Sub, 45 degree angle, EnDat® 2.1, BiSS B
- 14 AKD, AKD2G, 15 Pin D-sub, 45 degree angle, HIPERFACE®
- 18 AKD, AKD2G, 15 Pin D-sub, 45 degree angle, SFDG2
- 20 AKD, AKD2G, 15 Pin D-sub, 45 degree angle, Comcoder, Sine Enc. w/ Halls
- 41 S300/S700 Resolver 9 pin D-sub
- 42 S300/S700 Encoder 15 pin D-sub (EnDat® 2.2, Biss C)
- 43 S300/S700 Encoder 15 pin D-sub (Sine Encoder w Halls)

If Power or Hybrid drive connector type

- 11 AKD-x00306, -x00606 (Power and Hybrids with HDSL, SFD3)
- 12 AKD-x01206, -x02406 (Power and Hybrids with HDSL, SFD3)
- AKD-x00307, -x00607, -x01207, -x02407 (Power and Hybrids with HDSL, SFD3)
- 13 AKD-x04807 (Power and Hybrids with HDSL, SFD3)
- 14 AKD-x00306, -x00606 (Hybrids with EnDat 2.2)
- 15 AKD-x01206, -x02406 (Hybrids with EnDat 2.2)
- AKD-x00307, -x00607, -x01207, -x02407 (Hybrids with EnDat 2.2)
- 21 AKD2G-x00306, -x00606, -x01206
- AKD2G-x00307, -x00607, -x01207, -x02406, -x02407
- 33 AKD-N DB (Hybrid cable)
- 34 AKD-N DF/DS (Power cable)
- 41 S300 MV (Power or Hybrid w/ SFDG3, DSL)
- 42 S300 HV (Power or Hybrid w/ SFDG3, DSL)
- 43 S300 MV (Hybrid with EnDat 2.2-22)
- 44 S300 HV (Hybrid with EnDat 2.2-22)
- 46 S701-S724 connector (Power or Hybrid w/ SFDG3, HDSL)
- 47 S701-S724 connector (Hybrid with EnDat 2.2-22)
- 48 S748/S772 flying leads
- 00 Underminated (Blunt Cut)
- SP Specials

Length (no less than 100 mm increments)

- xxxx00 Length in mm
- Standard lengths: 1, 3, 6, 9, 12, 25
- Example:
- 6 m cable = 006000
- 25 m cable = 025000

Options

- 00 Standard Option Set

Motor Mating Connector Type

Hybrid/Power Connectors

- A1 AKM2G, M23 SpeedTec® (9)
- A4 AKM2G, M40 SpeedTec (9)
- A5 AKM1G, M23 SpeedTec (8)
- B1 AKM2G, M23 htec (9) standard keying, DSL
- B2 AKM2G, M23 htec (13) (rotated keying, EnDat 2.2)
- B3 AKM2G, M40 htec (11) (standard keying, DSL)
- C1 AKM/AKM2G, M15 ytec® (9)
- C4 AKM, M15 itec (9) (SFD3)
- W5 AKM, M23 Hummel Washdown (8)

Feedback Connectors

- A2 AKM/AKM2G, M23 SpeedTec (12)
- A3 AKM/AKM2G, M23 SpeedTec (17)
- C2 AKM/AKM2G, M15 ytec (12)
- C3 AKM/AKM2G, M15 ytec (15)
- UB Underminated (Blunt cut)
- UF Underminated (flying leads)

Cable Type

If Feedback, type [cable construction, not pinout]

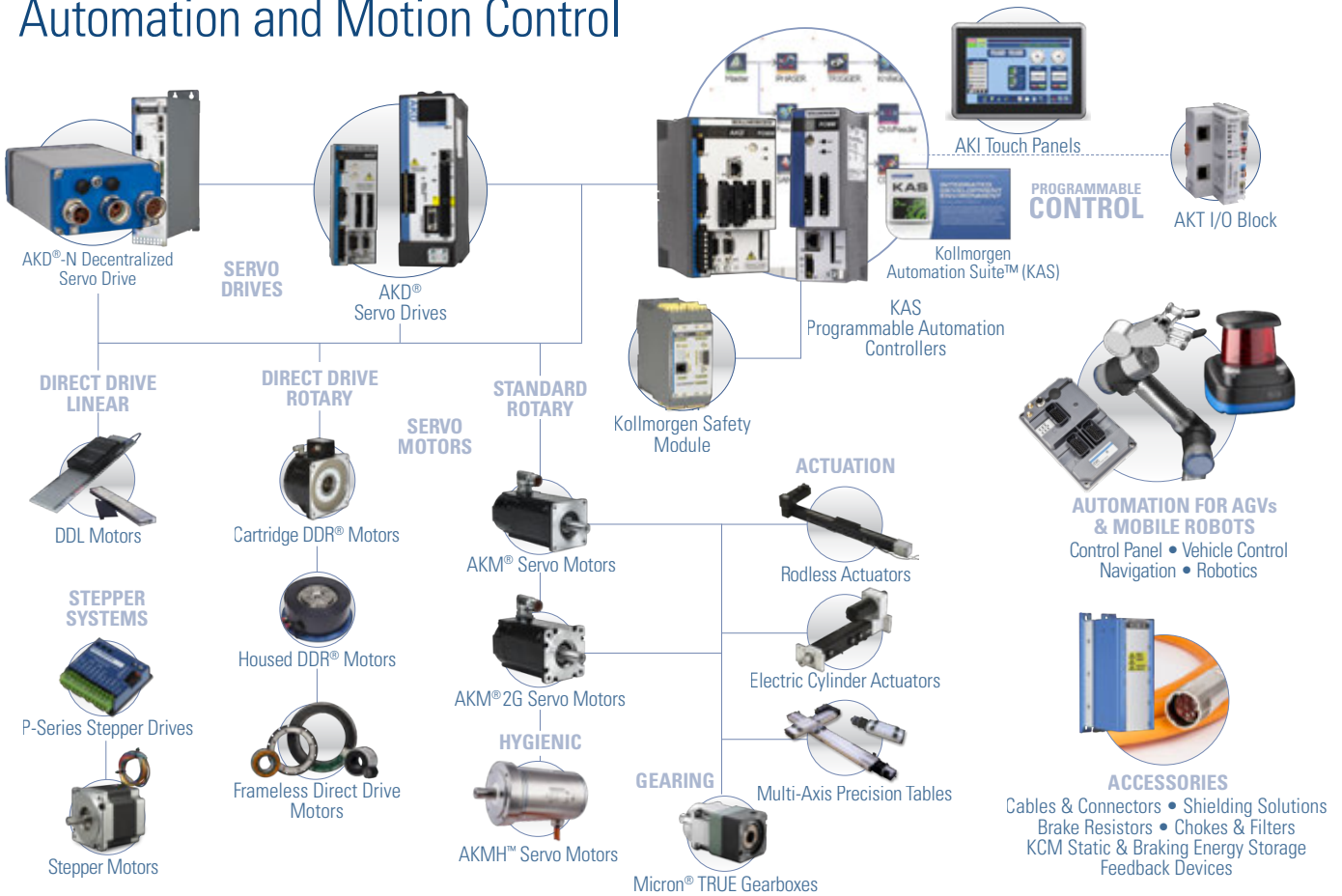
- FB1 4 Conductor
- FB2 8 Conductor
- FB3 6 Conductor
- FB4 16 Conductor
- FB5 14 Conductor
- FB6 10 Conductor
- FB7 12 Conductor

If Power or Hybrid drive connector type

- 010 1.0 mm²
- 015 1.5 mm²
- 025 2.5 mm²
- 040 4.0 mm²
- 060 6.0 mm²
- 100 10.0 mm²

Kollmorgen Solutions

Automation and Motion Control



Self-Help Tools

Motioneering® Online



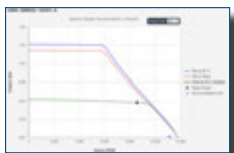
Size and select the right product for your application needs

Drawing Generator



Provide TBM/KBM/AKM 2D and 3D drawings in many popular formats

Performance Curve Generator



Optimize TBM/KBM/AKM windings using customer supplied environmental and drive information

Product Selector



Choose right product for your application needs

Kollmorgen Developer Network



Find Answers to many key technical questions or start your own session

Stepper Optimizer



Select the most efficient stepper solution for your application

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**,
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www.kollmorgen.com for a global contact list.



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