

# AKM2G™ Servo Motors

The Next Generation of Servo Motors Offering Industry Leading Performance with a Compact Footprint



**KOLLMORGEN**®

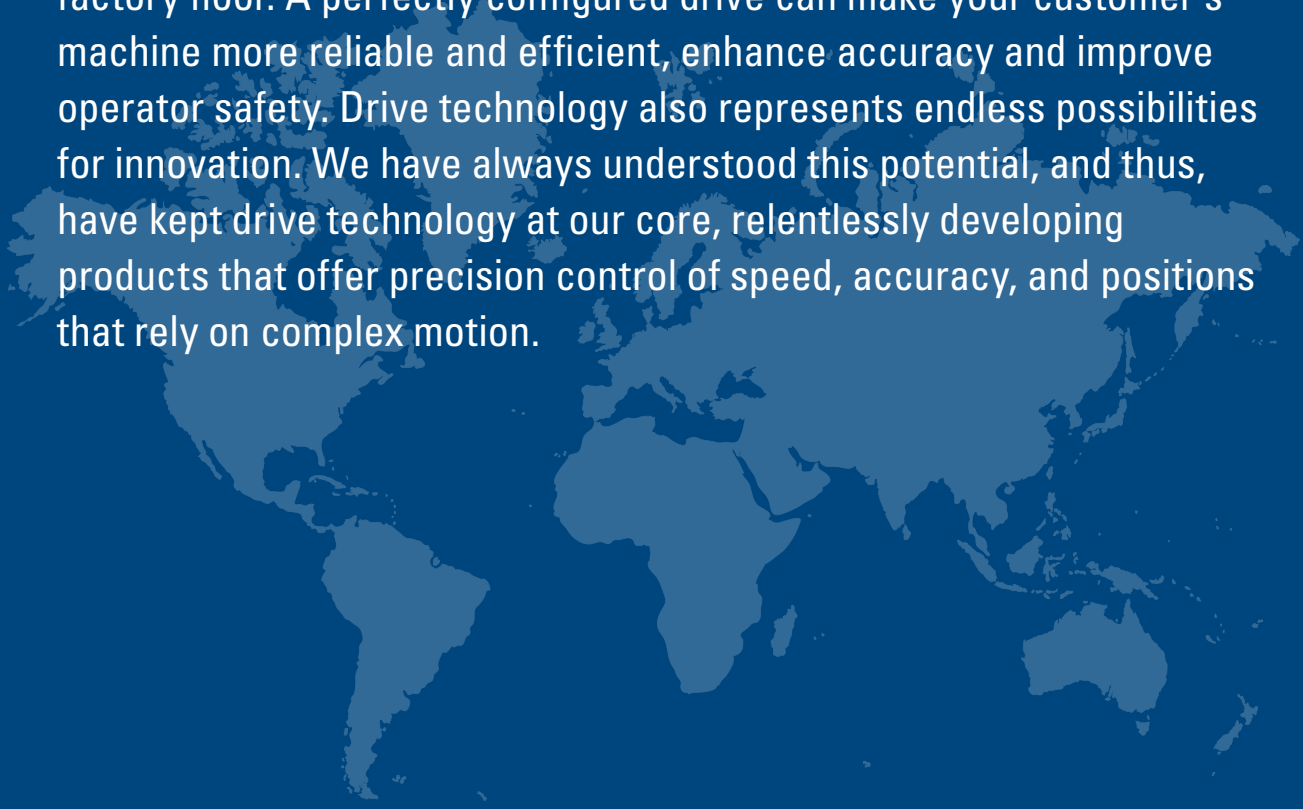
*Because Motion Matters™*

# Kollmorgen.

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

The steadily growing demands of the marketplace are leading to ever-increasing pressures. Time constraints. Demands for better performance. Having to think about the next-generation machine even before the current one is built. While expectations are enormous, budgets are not. Kollmorgen's innovative automation and drive solutions and broad range of quality products help design engineers not only overcome these challenges but also build truly differentiated machines. Because it all comes down to the drive!

A powerful drive can distinctly differentiate a machine and deliver a marketplace advantage through increased productivity and performance. This translates to overall increased efficiency on the factory floor. A perfectly configured drive can make your customer's machine more reliable and efficient, enhance accuracy and improve operator safety. Drive technology also represents endless possibilities for innovation. We have always understood this potential, and thus, have kept drive technology at our core, relentlessly developing products that offer precision control of speed, accuracy, and positions that rely on complex motion.



## The Advantages of AKM2G Servo Motors

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- With the same size, the AKM2G offers in average 30% more torque
  - Installation of motors in the tightest space
  - Ultimate motor efficiency over IE4 requirements
  - Low cogging high dynamic motor design
- 
- Quick start-up and plug-and-play detection
  - AKM2G windings optimized for AKD2G
  - Lower system cost due to single cable and perfect fit motor and drive
  - Extended speed range using field weakening operation
  - Precise positioning and low velocity ripple
- 
- Ready for Industry 4.0 using data transfer and storage in motor feedback
  - Fail safe brake for vertical axis
  - Innovative temperature sensor for optimal usage of rated temperature range by effective overload protection
  - Compact effective design due to improved heat transfer at once with loss reduction
- 
- Scalable single cable solution with SFD3 and Hiperface DSL
  - Fast and reliable plug with bayonet lock
  - Fast mounting using direct access to the screws from the rear
- 
- 23 frame size and design length combinations perfect fit for your application
  - Flexible feedback, winding and mount options
  - New IP67 shaft seal options for dry run and lubricated operation
  - Designed for simplified Co-Engineered solutions
  - CE, UL, RoHS, REACH and EAC conform
- 
- Highest torque density on the market
  - Optimized system performance AKM2G und AKD2G
  - Future oriented servo technology
  - Ease-of-use servo system
  - Flexible in standard, easy to customize design

# AKM<sup>®</sup> 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
- Ready for Industry 4.0 using data transfer / storage in motor feedback
- High efficiency electromagnetic design and materials to achieve IE-4 efficiency
- Shaft, mounting and connector options for optimal flexibility
- Energy saving holding brake option
- CE, UL, RoHS, REACH and EAC conform

#### Connector Options:

- Speedtec
- ytec

#### Cable Options:

- Single Cable SFD3 / Hiperface DSL / ENDAT 2.2
- Dual Cable Variant for Resolver

Average continuous torque increases of 30% or greater

Low friction shaft seal option for IP67 protection class

#### Feedback Options:

- SFD3
- Hiperface DSL
- ENDAT 2.2
- Resolver

Energy Saving Holding Brake Option

#### Thermal Sensor Options:

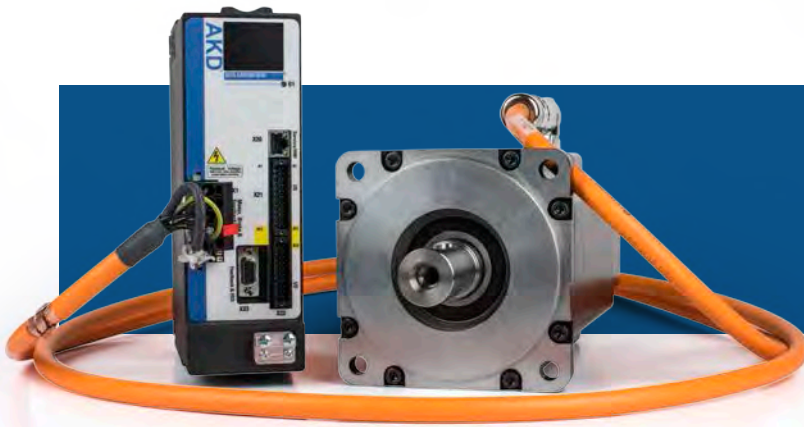
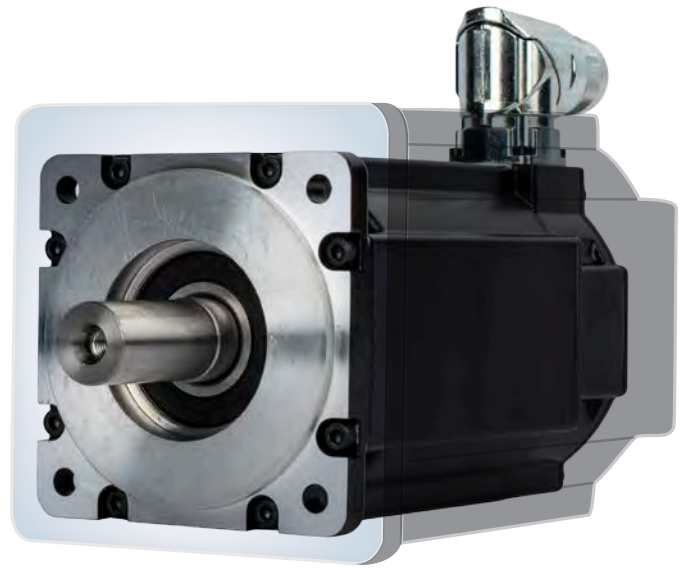
- PT-1000 + Thermistor PTC
- PT-1000
- Thermistor PTC
- KTY84-130

# Get 30% more torque without increasing the size of the motor

For new machine designs, the AKM2G allows customers to decrease the size, footprint, and complexity of the machine, while still getting the power and performance they need.

The AKM2G drops right into existing machine designs to increase performance, when compared to competing motors, without increasing the size of the motor.

The AKM2G features six sizes with performance levels between 0.3 and 10kW. It will offer selectable options such as feedbacks, mounting configurations, and performance capabilities. Due to the modular structure of their products, Kollmorgen is better equipped than competitors to adapt motors to the requirements of a specific application in parallel with standard production needs. Machine builders are then able to choose from a wider range of standard models that leverage Kollmorgen's extensive product and application knowledge.



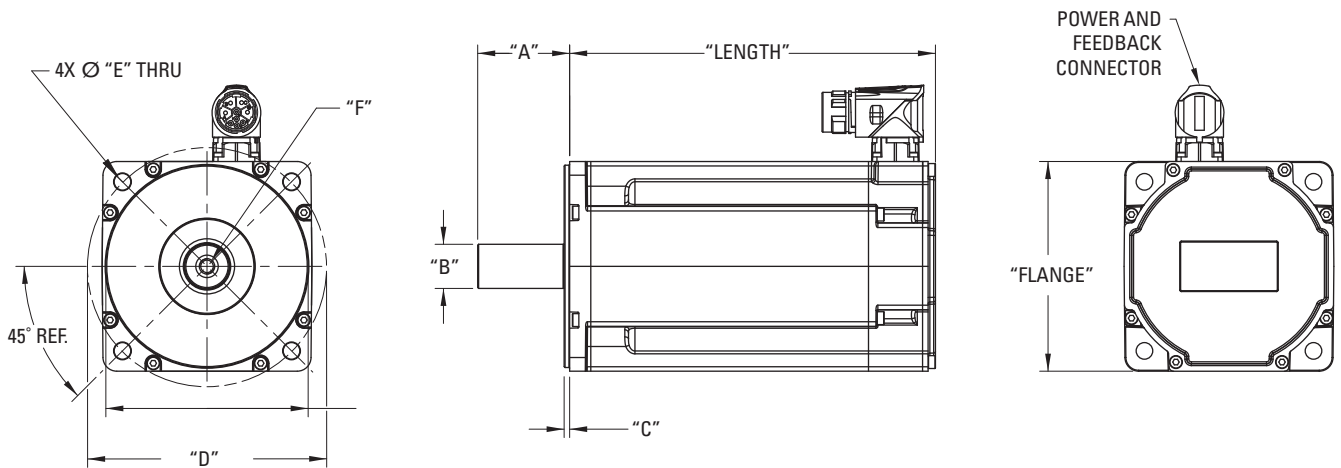
AKM2G motors are optimized for use with the Kollmorgen AKD® Servo Drive and the forthcoming AKD® 2G family of new generation servo drives, but are also capable of providing all their design benefits in conjunction with the customer's choice of servo drives.

Kollmorgen has been offering single-cable technology since 1995.



*AKM2G Series Servo Motor Family*

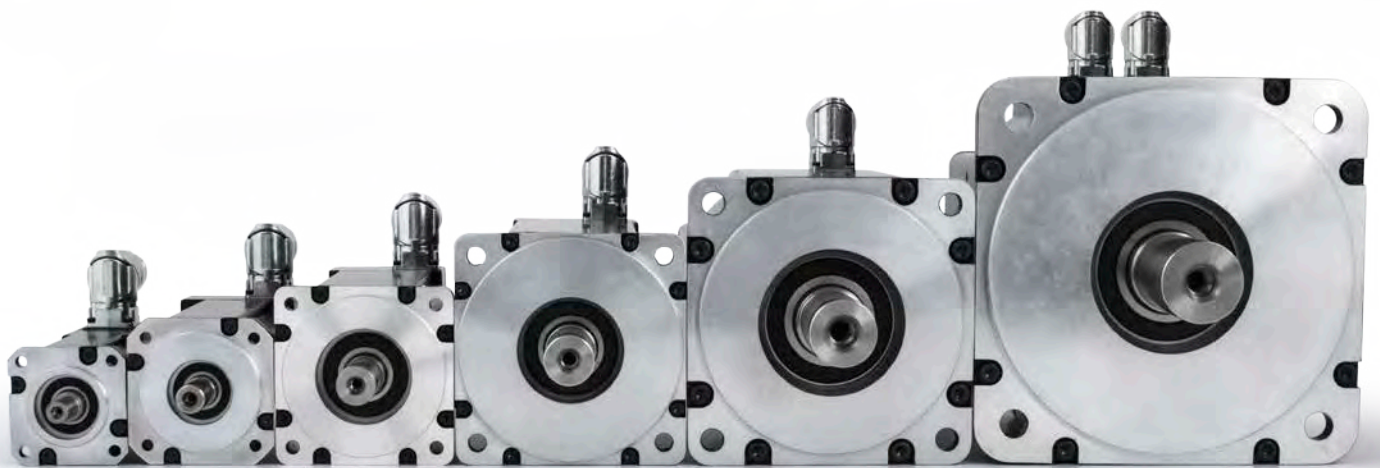
**AKM2G Servo Motor Dimensional Overview\***



AKM2G Series	Flange IEC (mm)	Length (mm)					A (mm)	Ø B (mm)	C (mm)	Ø D (mm)	Ø E (mm)	F
		Stacks										
		1	2	3	4	5						
AKM2G2x	58	111	130	149	168	-	23.0	11.0	2.50	63.0	5.59	M4 DIN 332
w/ Brake		150	169	189	208	-						
AKM2G3x	72	121	153	184	-	-	30.0	14.0	2.50	75.0	5.59	M5 DIN 332
w/ Brake		163	194	225	-	-						
AKM2G4x	88	125	151	177	203	-	40.0	19.0	3.00	100.0	6.71	M6 DIN 332
w/ Brake		172	199	225	251	-						
AKM2G5x	114	143	172	202	231	-	50.0	24.0	3.00	130.0	9.11	M8 DIN 332
w/ Brake		200	229	259	288	-						
AKM2G6x	142	-	168	190	212	234	58.0	32.0	3.50	165.0	11.35	M12 DIN 332
w/ Brake		-	234	256	278	300						
AKM2G7x	192	169	203	237	271	-	80.0	38.0	4.00	215.0	13.85	M12 DIN 332
w/ Brake		247	281	315	349	-						

Nominal dimensions shown. See individual motor schematics for tolerances and complete dimensions.

\*Preliminary technical data – please consult factory for final technical data and product availability



## AKM2G Performance Data\*

Parameters	Sym	Units	Frame														
			AKM2G-2x					AKM2G-3x					AKM2G-4x				
			1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Continuous Torque at Stall	T <sub>C</sub>	Nm	0.65	1.10	1.49	1.80	–	1.72	2.92	3.84	–	–	2.82	5.17	7.13	8.64	–
Rated Speed	N <sub>rtd</sub>	rpm	8000	8000	8000	8000	–	8000	8000	8000	–	–	6000	6000	6000	5600	–
Rotor Inertia	J <sub>m</sub>	kg-cm <sup>2</sup>	0.093	0.15	0.22	0.28	–	0.43	0.81	1.20	–	–	0.7738	1.3597	1.9455	2.5314	–

Parameters	Sym	Units	Frame														
			AKM2G-5x					AKM2G-6x					AKM2G-7x				
			1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Continuous Torque at Stall	T <sub>C</sub>	Nm	6.75	11.8	16.0	19.9	–	–	15.9	22.1	27.3	32.0	23.8	44.2	61.4	75.2	–
Rated Speed	N <sub>rtd</sub>	rpm	6000	5800	5300	4600	–	–	6000	5000	4300	3800	5000	3500	3200	3000	–
Rotor Inertia	J <sub>m</sub>	kg-cm <sup>2</sup>	2.53	4.58	6.64	8.70	–	–	9.10	12.99	16.87	20.76	25.86	46.78	67.71	88.63	–

Kollmorgen will continue to offer the other AKM® servo motors with rated power range between 0.075 and 19.5 kW, as well as food-grade, wash-down, and the innovative AKMH™ Hygienic Stainless Steel motors for wash-down and food grade applications where machine builders and customers require the highest performance and most durable product in the harshest of environments.



## AKM2G Nomenclature\* **AKM2G-31A-ANCNR-00**

	Available Motor						
1 Motor Series	AKM2G						
2 Flange (mm)	2	3	4	5	6	7	
	58	72	88	114	142	192	
3 Rotor Stack Length							
1 = 1 stack	•	•	•	•	•	•	•
2 = 2 stacks	•	•	•	•	•	•	•
3 = 3 stacks	•	•	•	•	•	•	•
4 = 4 stacks	•	•	•	•	•	•	•
5 = 5 stacks	•	•	•	•	•	•	•
4 Motor Winding							
A, B, C...	•	•	•	•	•	•	•
5 Mount							
Metric IEC	•	•	•	•	•	•	•

	Available Options						
Motor Series	AKM2G						
Flange	2	3	4	5	6	7	
6 Shaft							
C = Closed Keyway	•	•	•	•	•	•	•
N = Smooth	•	•	•	•	•	•	•
7 Connector							
C = Dual right angle M23	•	•	•	•	•	•	•
D = Single right angle M23	•	•	•	•	•	•	•
H = Dual right angle M40	•	•	•	•	•	•	•
J = Single right angle M40	•	•	•	•	•	•	•
Y = y-tec® connector	•	•	•	•	•	•	•
8 Brake							
N = No Brake	•	•	•	•	•	•	•
2 = 24 V DC brake	•	•	•	•	•	•	•

	Available Options						
Motor Series	AKM2G						
Flange (mm)	2	3	4	5	6	7	
9 Feedback Device							
R = Resolver	•	•	•	•	•	•	•
CA = Smart Feedback Device (SFD3)	•	•	•	•	•	•	•
GU = Multi-turn hiperface DSL (cap.)	•	•	•	•	•	•	•
LD = Multi-turn inductive ENDAT 2.2	•	•	•	•	•	•	•
10 Thermal Sensor							
0 = PT-1000 + Thermistor PTC	•	•	•	•	•	•	•
1 = PT-1000	•	•	•	•	•	•	•
2 = Thermistor PTC	•	•	•	•	•	•	•
3 = KTY84-130 (or equivalent)	•	•	•	•	•	•	•
11 Shaft Seal/Customization							
0 = No seal	•	•	•	•	•	•	•
V = Viton spring lip seal (wet enviro.)	•	•	•	•	•	•	•
T = Mineral filled PTFE (dry enviro.)	•	•	•	•	•	•	•

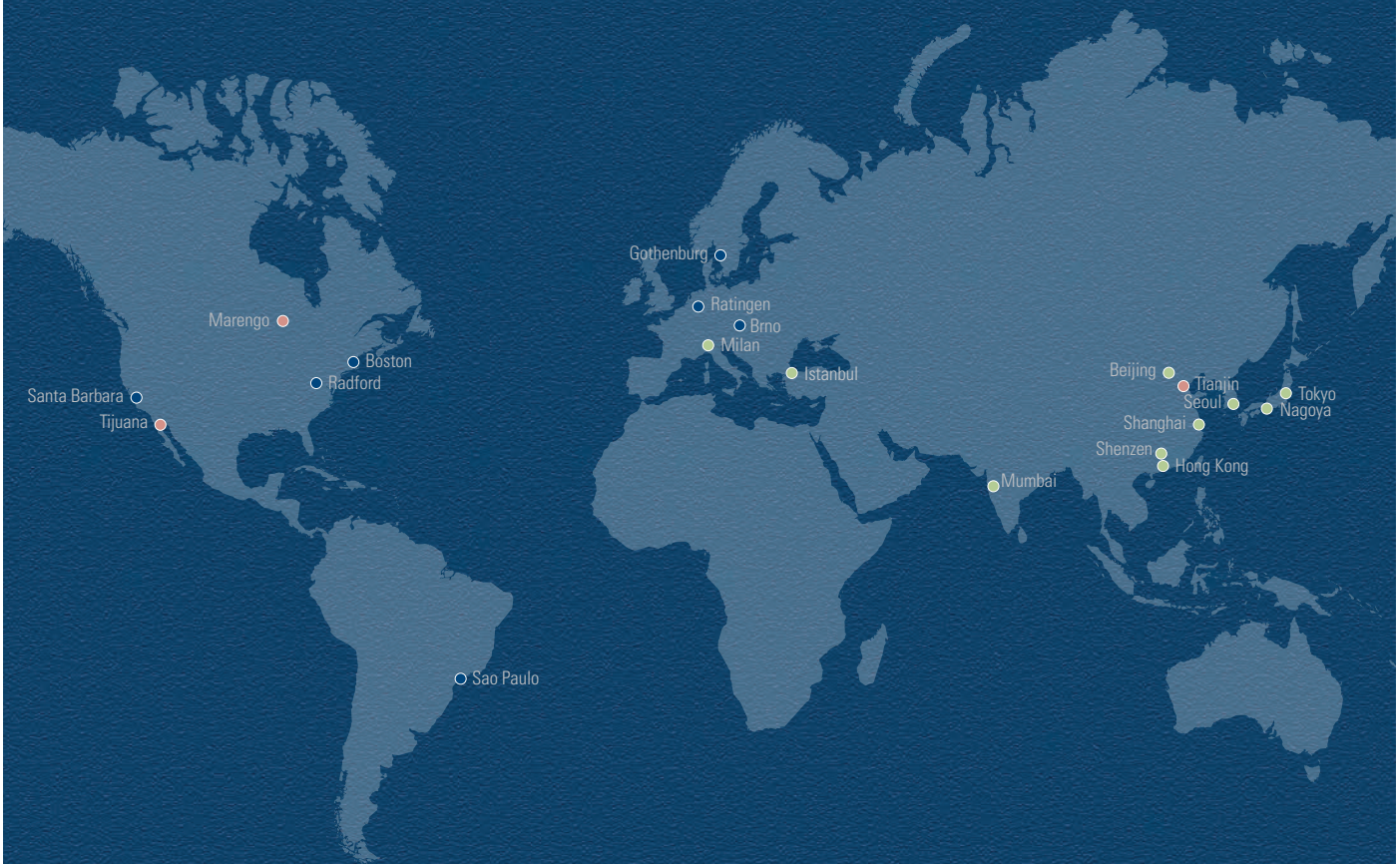
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## About Kollmorgen

Kollmorgen is a leading provider of motion systems and components for machine builders. Through world-class knowledge in motion, industry-leading quality and deep expertise in linking and integrating standard and custom products, Kollmorgen delivers breakthrough solutions that are unmatched in performance, reliability and ease-of-use, giving machine builders an irrefutable marketplace advantage.

For assistance with your application needs visit [www.kollmorgen.com](http://www.kollmorgen.com) for a global contact list.

- Application Centers
- Global Design & Manufacturing
- Global Manufacturing



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