

Performance in Explosive Atmospheres



Hazardous Location Motors
UL, ATEX and IECEx Certified

KOLLMORGEN

A REGAL REXNORD BRAND

The Certifications You Need. The Performance You Demand.

Motors for use in hazardous locations must be engineered to prevent the ignition of potentially explosive atmospheres and must be certified by the responsible governing body in each region where the motor is used.

Kollmorgen offers motors certified to UL, ATEX and IECEx standards for hazardous locations, meeting regulatory requirements in countries around the world. Typical applications include mining, oil and natural gas refining, pharmaceutical production, food processing, industrial paint booths, textile mills, and many other industrial settings where ignitable gases, dusts, fibers or flyings may be present.

Key safety features include motor enclosures capable of withstanding an internal explosion, flame paths that prevent any internal flame or spark from reaching the outside environment, and surface temperatures that never become hot enough to ignite hazardous materials, even when the motor is in an overload condition or when it is covered by a layer of hazardous dust.

All motors for use in explosive atmospheres are designed and built to Kollmorgen's uncompromising quality standards to ensure years of reliable operation in harsh and rugged industrial environments.

For complete details and specifications, and to order, visit www.kollmorgen.com/en-us/products/motors/explosion-proof

AKME Series Brushless Servo Motor



TPS 25 ATEX 124440 0005 X
 Gas, Zone 2: II 3G EX ec mc IIC T4 Gc
 Dust, Zone 22: II 3D EX tc IIIC T130°C Dc
IECEx TPS 25.0065X



AKME hazardous location servo motors are built on the proven performance of the AKM servo motor platform, with additional design features to achieve ATEX and IECEx certification for use in explosive atmospheres in Zones 2 and 22 for gas and dust. To suit a wide range of applications, these motors are available in frame sizes 2-7 to work with drives powered by 48, 75 Vdc, 120, 240 or 400 Vac, speeds up to 5,000 rpm, and with a complete selection of absolute feedback positioning devices.

Matched with Kollmorgen AKD, AKD2G and Kollmorgen Essentials™ (KED) servo drives, AKME servo motors deliver optimum torque density, responsiveness and precision in a complete, feature-rich motion solution for areas that may occasionally be exposed to combustible gases or dusts.

AKME Series

Frame Size	AKME2	AKME3	AKME4	AKME5	AKME6	AKME7
Stack Length	1, 2, 3, 4	1, 2, 3	1, 2, 3, 4	1, 2, 3, 4	2, 3, 4, 5	2, 3, 4
Rated Voltage (Vrms)	48-75Vdc, 120-400Vac	48-75Vdc, 120-400Vac	75Vdc, 120-400Vac	75Vdc, 120-400Vac	75Vdc, 240-400Vac	240-400Vac
Max con. stall torque (Nm) *	1.3	2.8	5.8	14.1	24.4	52.0
Max peak torque (Nm)	4.8	10.1	20.1	38.2	65.0	143.0
Max rated speed (rpm)	5000	5000	4500	3500	2500	2500
Max rated power (kw)	0.6	1.2	1.5	3.5	4.8	7.6

* @ 40°C ambient

EB & EBH Series Brushless Servo Motors



UL, File E120721
Class I, Divisions 1 & 2,
Groups C & D



ATEX, File ITS12ATEX17548X
Ex II 2 G Ex d IIB T3 Gb $-40^{\circ}\text{C} \leq T_a \leq +40^{\circ}\text{C}$
IECEX ETL 12.0006X



Goldline EB and EBH servo motors offer superior torque density and high maximum speeds. The EB Series is available with a voltage range up to 230 Vac, while the EBH Series has a higher voltage range up to 480 Vac. Both series are available in speeds up to 7,500 rpm. These motors include rugged resolver feedback, a built-in thermostat and Class F* insulation. They are ideally suited for use in applications that require highly dynamic motion, including variable speeds and varying loads, and in locations where flammable vapors or gases create a potentially hazardous environment.

EB Series

Frame Size	EB10x	EB20x	EB40x	EB60x	EB80x
Stack length	2,4,6	2,4,6	2,4,6	2,4,6	2,4,6
Windings	A,B	A,B,C,D	A,B,C,D	A,B,C,D	A,B,C
Rated voltage (Vrms)	230	230	230	230	230
Max cont. stall torque (Nm)*	2.22	6.44	18.6	44.8	108.5
Max peak torque (Nm)*	6.36	19.96	49.5	131.9	362
Max rated speed (rpm)	7500	7000	5000	4300	3000
Max rated power (hp)	2	4.53	9.6	14.2	21.2

* @ 40°C ambient

EBH Series

Frame Size	EBH12x	EBH22x	EBH42x	EBH62x	EBH82x
Stack length	2,4,6	2,4,6	2,4,6	2,4,6	2,4,6
Windings	A, B	A, B, C, D, E	A, B, C, D	A, B, C, D, E	A, B, C, D
Rated voltage (Vrms)	480	480	480	480	460
Max cont. stall torque (Nm)*	1.89	5.59	15.80	36.7	93.5
Max peak torque (Nm)*	6.35	20.2	49.5	126.0	322.8
Max rated speed (rpm)	7500	7000	5000	4500	3000
Max rated power (hp)	1.57	4.0	7.89	11.56	16.2

* @ 40°C ambient

EB motors can be ordered in either cULus or ATEX/IECEX + cETLus configurations. EBH motors can only be ordered with ATEX/IECEX configurations. These configurations, and their corresponding certifications, are mutually exclusive. UL configurations do not have ATEX/IECEX. ATEX/IECEX+cETLus have the ETL listed mark instead of the UL listed mark, using equivalent UL and CSA standards.

ATEX/IECEX certification is not available for EB80x sizes.

PMDC EP Series Brush Permanent Magnet DC Motors



UL, File E56538
Class I, Divisions 1 & 2, Groups C & D
Class II, Division 1 & 2, Groups F & G
Class III, Divisions 1 & 2



PMDC EP (explosion proof) motors are brushed, permanent magnet DC motors for use in fixed-speed, constant load applications. They are available in a NEMA 56C frame size with a TENV (totally enclosed, non-ventilated) configuration and are capable of power ranges from 1/4 to 3/4 hp.

Anti-cog magnets allow for smooth low-speed operation, and these motors feature high overcurrent capacity and dynamic braking capabilities. A long, reliable operational life is ensured through Class H insulation; a polyester-impregnated armature; rugged, fused commutator; large sealed bearings; and long-life, constant-force brush springs with field replaceable brushes.

PMDC EP Series

						Parameters						
HP	Model Number	Product Code	NEMA	Enclosure	Continuous Current (A)	Continuous Torque (lb _r -in)	Peak Current (A)	Torque Constant (lb _r -in/A)	Resistance (Ω)	Inertia (lb _r -in/A)	Inductance (mH)	
90V	1/4	EP3624-1434-7-56BC-CU	FGE0212	56C	TENV	2.6	9.0	52.0	4.07	2.63	4.0	10.5
	1/3	EP3632-1435-7-56BC-CU	FGE0242	56C	TENV	3.5	12.0	71.0	3.94	1.76	5.0	6.6
	1/2	EP3640-1436-7-56BC-CU	FGE0213	56C	TENV	4.7	18.0	87.0	4.24	1.03	6.4	5.1
	3/4	EP3758-5151-7-56BC-CU	FGE0248	56C	TENV	7.0	27.0	113.0	4.15	0.74	8.0	3.8
180V	1/4	EP3624-5269-7-56BC-CU	FGE0261	56C	TENV	1.3	9.0	26.0	8.10	10.50	4.0	51.80
	1/2	EP3644-5214-7-56BC-CU	FGE0262	56C	TENV	2.3	18.0	34.0	8.10	4.00	6.7	24.20
	3/4	EP3752-5215-7-56BC-CU	FGE0263	56C	TENV	3.3	27.0	38.0	8.10	3.10	11.4	17.40
12V	1/3	EP3620-1954-7-56BC-CU	FGE0243	56C	TENV	28.0	12.0	n/a	0.52	0.04	3.5	0.18
24V	1/3	EP3624-2757-7-56BC-CU	FGE0245	56C	TENV	13.4	12.0	n/a	1.02	0.16	4.0	0.66
	3/4	EP3648-4952-7-56BC-CU	FGE0244	56C	TENV	28.2	27.0	n/a	1.02	0.06	7.1	0.22

AC Synchronous Motors



UL, File E32246
Class I, Divisions 1 & 2, Group D



These hazardous-duty synchronous motors provide torque up to 1,500 oz-in (1059 N-cm) and are available in NEMA 42 and 66 frame sizes (110 mm and 170 mm). They run at 72 rpm with a 120 Vac or 240 Vac, 60 Hz power supply, or 60 rpm with a 240 Vac, 50 Hz power supply.

120 Volt, 60 Hz, Single Phase, 72 rpm							Phase Shifting				
Model	Torque (min)		Load Inertia*		Amps	Wiring Diagram	Resistor			Capacitor (330VAC)	
	oz-in	N-cm	lb-in ²	kg-cm ²			Kit Number	Ohms	Watts	Kit Number	µF
X250	250	177	3	8.8	0.6	RC	201052-013	150	50	201053-010	6.5
X700	700	494	10	30	1.1	RC	201052-027	150	100	201053-032	12.5
X1100	1,100	777	9	26	3	RC	201052-025	100	160	201053-026	17.5
X1500	1,500	1,059	12	35	3	RC	201052-020	55	375	201053-014	30

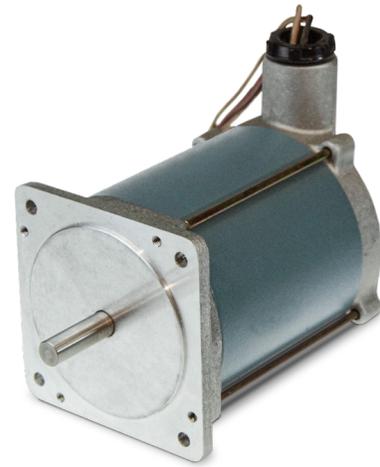
240 Volt, 60 Hz, Single Phase, 72 rpm							Phase Shifting				
Model	Torque (min)		Load Inertia*		Amps	Wiring Diagram	Resistor			Capacitor (330VAC)	
	oz-in	N-cm	lb-in ²	kg-cm ²			Kit Number	Ohms	Watts	Kit Number	µF
X252	250	177	3	8.8	0.4	RC	201052-015	500	50	201053-012	1.75
X1102	1,100	777	9	26	1.5	RC	201052-026	400	160	201053-028	4
X1502	1,500	1,059	12	35	1.5	RC	201052-018	250	200	201053-016	8
X1500	1,500	1,059	12	35	3	RC	201052-020	55	375	201053-014	30

240 Volt, 60 Hz, Single Phase, 60 rpm							Phase Shifting				
Model	Torque (min)		Load Inertia*		Amps	Wiring Diagram	Resistor			Capacitor (330VAC)	
	oz-in	N-cm	lb-in ²	kg-cm ²			Kit Number	Ohms	Watts	Kit Number	µF
X252	250	177	3	8.8	0.4	RC	201052-015	500	50	201053-012	1.75
X1102	1,100	777	9	26	1.5	RC	201052-026	400	160	201053-029	6
X1502	1,500	1,059	12	35	1.5	RC	201052-018	250	200	201053-019	9
X1500	1,500	1,059	12	35	3	RC	201052-020	55	375	201053-014	30

* This is the maximum rigidly attached load inertia the motor will reliably start. If the load is attached to the motor with a coupling that has a 5° flex, the motor can start loads up to seven times listed.

Stepper MX Series

 UL, File E32246 (MX9) and E120721 (MX11)
Class I, Divisions 1 & 2, Group D



Explosion proof MX Series stepper motors are available in NEMA 34 and 42 frame sizes (90 and 110 mm). They move in 200 steps per revolution (1.8° step angle) and provide minimum holding torques from 1.27 to 9.82 N-m (180 to 1,390 oz-in).

MX Series steppers are available with bipolar windings and a choice of stack lengths, providing speeds up to 3,000 rpm to meet the velocity demands of most high-torque application

MX9 Series Stepper Motors, NEMA 34

Motor Model Number	Config.			Holding Torque (2 phases on) oz-in (Nm) +/-10%	Rated Current/Phase Amps DC	Phase Resistance Ohms +/-10%	Phase Inductance mH Typical	Thermal Resistance Mounted °C/Watt	Rotor Inertia oz-in-s ² (kg-m ² x 10 ³)	Weight lb (kg)	Shaft Loading	
	Parallel	Series	Unipolar								Radial Force lb (N)	Axial Force lb (N)
	MX91-FF-206U		•		180 (1.27)	3.0	1.0	10	2.9	0.0095 (0.067)	6.0 (2.7)	25 (111)
MX91-FF-402U		•		4.0		0.72	6.0					
MX91-FF-403U		•		6.0		0.18	1.5					
MX92-FF-206U		•		370 (2.61)	4.0	1.0	11	1.7	0.0174 (0.123)	9.0 (4.1)	25 (111)	50 (222)
MX92-FF-401U		•			7.0	0.28	2.8					
MX93-FF-206U		•		550 (3.88)	4.0	0.90	13	2.1	0.0265 (0.187)	11 (5.0)	25 (111)	50 (222)
MX93-FF-401U		•			5.0	0.65	8.0					
MX93-FF-402U		•			7.0	0.16	2.0					

MX11 Series Stepper Motors, NEMA 42

Motor Model Number	Config.			Holding Torque (2 phases on) oz-in (Nm) +/-10%	Rated Current/Phase Amps DC	Phase Resistance Ohms +/-10%	Phase Inductance mH Typical	Thermal Resistance Mounted °C/Watt	Rotor Inertia oz-in-s ² (kg-m ² x 10 ³)	Weight lb (kg)	Shaft Loading	
	Parallel	Series	Unipolar								Radial Force lb (N)	Axial Force lb (N)
	MX111		•		850 (6.0)	1.1	3.6	16	7.4	0.55 (393)	10 (4.5)	25 (111)
MX112		•		1390 (9.82)	2.7	2.5	2.5	1.8	0.114 (806)	18 (8.2)	25 (111)	50 (222)



About Kollmorgen

Kollmorgen, a Regal Rexnord brand, has more than 100 years of motion experience, proven in the industry's highest-performing, most reliable motors, drives, linear actuators, AGV control solutions and automation platforms. We deliver breakthrough solutions that are unmatched in performance, reliability and ease of use, giving machine builders an irrefutable marketplace advantage.

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