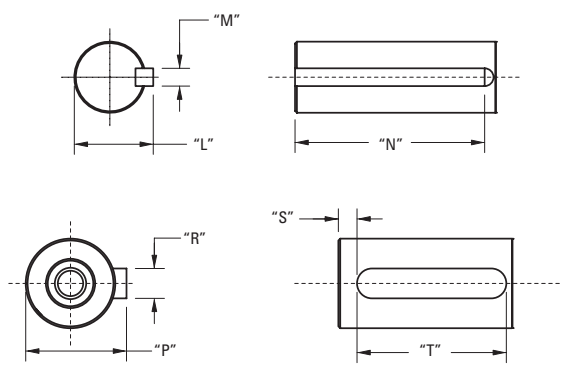
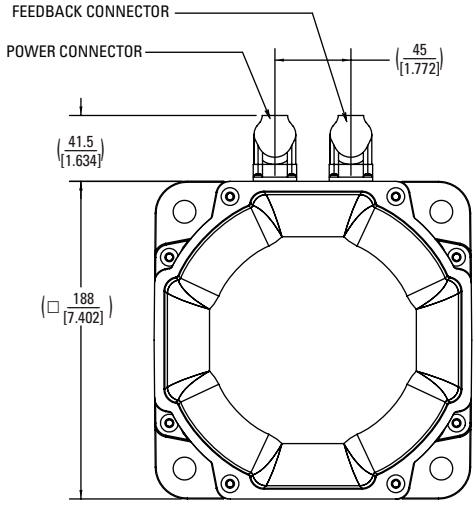
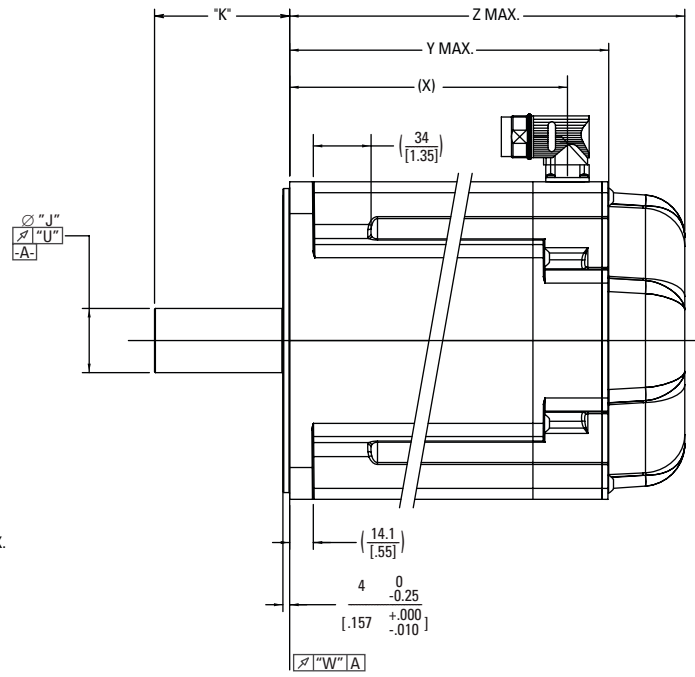
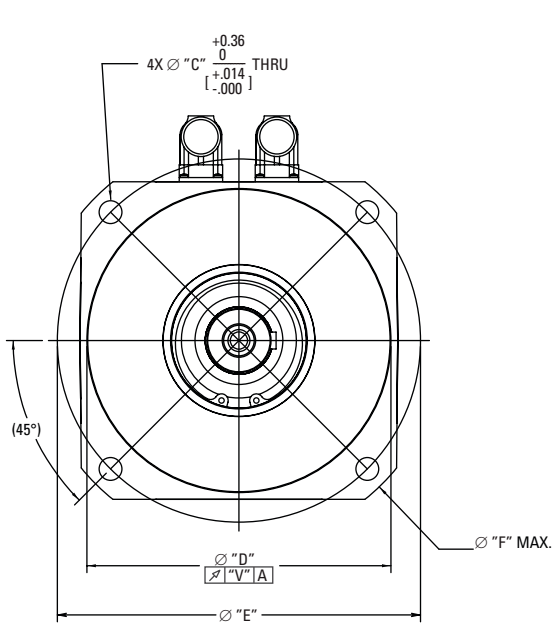


AKM7x Outline Drawings

AKM7x OUTLINE DRAWINGS

AKM7x Frame



AKM7x Dimension Data

AKM7x Dimension Data

Mounting Code	"C"	"D"	"E"	"F"	"H"	"J"	"K"	"L"
AC	13.50 [.531]	180 ^{+0.014} _{-0.011} [7.0866] j6 ^{+0.0005} _{-0.0004}	215.00 [8.465]	–	D M12 DIN 332	38 ^{+0.018} _{+0.002} [1.496] k6 ^{+0.0007} _{+0.0001}	80 [3.15]	–
AN	13.50 [.531]	180 ^{+0.014} _{-0.011} [7.0866] j6 ^{+0.0005} _{-0.0004}	215.00 [8.465]	–	D M12 DIN 332	38 ^{+0.018} _{+0.002} [1.496] k6 ^{+0.0007} _{+0.0001}	80 [3.15]	–
GC	13.50 [.531]	180 ^{+0.014} _{-0.011} [7.0866] j6 ^{+0.0005} _{-0.0004}	215.00 [8.465]	–	D M12 DIN 332	32 ^{+0.018} _{+0.002} [1.5298] k6 ^{+0.0007} _{+0.0001}	58.5 [2.30]	–
GN	13.50 [.531]	180 ^{+0.014} _{-0.011} [7.0866] j6 ^{+0.0005} _{-0.0004}	215.00 [8.465]	–	D M12 DIN 332	32 ^{+0.018} _{+0.002} [1.5298] k6 ^{+0.0007} _{+0.0001}	58.5 [2.30]	–
KK	13.50 [.531]	114.3 ⁰ _{-0.025} [4.5000] h6 ^{+0.0000} _{-0.0010}	200 [7.874]	225 [8.858]	–	35 ⁺⁰ _{+0.016} [1.3779] h6 ^{+0.0000} _{+0.0005}	79 [3.11]	38 ⁰ _{-0.29} [1.496] h6 ^{+0.000} _{-0.11}

Mounting Code	"M"	"N"	"P"	"R"	"S"	"T"	"U"	"V"	"W"
AC	–	–	41 ⁰ _{-0.29} [1.614] N9 ^{+0.000} _{-0.011}	10 ⁰ _{-0.036} [.3937] N9 ^{+0.0000} _{-0.0014}	5.00 [.197]	70 ⁰ _{-0.30} [2.756] N9 ^{+0.000} _{-0.012}	0.050 [.0019]	0.100 [.0039]	0.100 [.0039]
AN	–	–	–	–	–	–	0.050 [.0019]	0.100 [.0039]	0.100 [.0039]
GC	–	–	35 ⁰ _{-0.29} [1.378] N9 ^{+0.000} _{-0.011}	108 ⁰ _{-0.036} [.3937] N9 ^{+0.0000} _{-0.0014}	4 [.157]	50 ⁰ _{-0.30} [1.969] N9 ^{+0.000} _{-0.012}	0.050 [.0019]	0.100 [.0039]	0.100 [.0039]
GN	–	–	–	–	–	–	0.050 [.0019]	0.100 [.0039]	0.100 [.0039]
KK	10 ⁰ _{-0.036} [.3937] h6 ^{+0.0000} _{-0.0014}	70 ⁰ _{-0.30} [2.756] h6 ^{+0.000} _{-0.12}	–	–	–	–	0.050 [.0019]	0.100 [.0039]	0.100 [.0039]

MODEL	Z MAX SINE ENCODER (NO BRAKE)	Z MAX SINE ENCODER (W/ BRAKE)	(X)	Y MAX	Z MAX (W/ BRAKE)
AKM72	201.7 [7.94]	253.3 [9.97]	164.5 [6.48]	192.5 [7.58]	234.5 [9.23]
AKM73	235.7 [9.38]	287.3 [11.31]	198.5 [7.81]	226.5 [8.92]	268.5 [10.57]
AKM74	269.7 [10.62]	321.3 [12.65]	232.5 [9.15]	260.5 [10.26]	302.5 [11.91]

Note 1: Dimensions are in mm [inches].

Note 2: Product designed in metric. English conversions provided for reference only.

AKM7x Performance Data

AKM7x Performance Data – Up to 640 Vdc

Parameters	Tol	Symbol	Units	AKM72			AKM73			AKM74		
				L	P	Q	L	P	Q	L	P	Q
Max Rated DC Bus Voltage	Max	V _{bus}	Vdc	640	640	640	640	640	640	640	640	640
Continuous Torque (Stall) for ΔT winding = 100°C ①②⑦⑧⑨	Nom	T _{cs}	Nm	30	29.4	29.5	42	41.6	41.5	53.0	52.5	52.2
			lb-in	266	260	261	372	368	367	469	465	426
Continuous Current (Stall) for ΔT winding = 100°C ①②⑦⑧⑨	Nom	I _{cs}	A _{rms}	11.5	18.7	23.5	12.1	19.5	24.5	12.9	18.5	26.1
Continuous Torque (Stall) for ΔT winding = 60°C ②	Nom	T _{cs}	Nm	24	23.5	23.6	33.6	33.3	33.2	42.4	42.0	41.8
			lb-in	212	208	209	297	295	294	375	372	370
Max Mechanical Speed ⑤	Nom	N _{max}	rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000
Peak Torque ①②	Nom	T _p	Nm	79.5	78.5	78.4	113	111	111	143	142	141
			lb-in	704	695	694	1000	985	982	1269	1253	1250
Peak Current	Nom	I _p	A _{rms}	34.5	56.1	70.5	36.3	58.6	73.5	38.7	55.5	78.3
Rated Torque (speed) ①②⑦⑧⑨⑩		T _{rtd}	Nm	-	-	-	-	-	-	-	-	-
			lb-in	-	-	-	-	-	-	-	-	-
Rated Speed		N _{rtd}	rpm	-	-	-	-	-	-	-	-	-
Rated Power (speed) ①②⑦⑧⑨		P _{rtd}	kW	-	-	-	-	-	-	-	-	-
			Hp	-	-	-	-	-	-	-	-	-
Rated Torque (speed) ①②⑦⑧⑨⑩		T _{rtd}	Nm	-	-	-	-	-	-	-	-	-
			lb-in	-	-	-	-	-	-	-	-	-
Rated Speed		N _{rtd}	rpm	-	-	-	-	-	-	-	-	-
Rated Power (speed) ①②⑦⑧⑨		P _{rtd}	kW	-	-	-	-	-	-	-	-	-
			Hp	-	-	-	-	-	-	-	-	-
Rated Torque (speed) ①②⑦⑧⑨⑩		T _{rtd}	Nm	-	23.8	23.3	-	34.7	33.4	-	-	42.8
			lb-in	-	211	205	-	307	296	-	-	379
Rated Speed		N _{rtd}	rpm	-	1800	2000	-	1300	1500	-	-	1200
Rated Power (speed) ①②⑦⑧⑨		P _{rtd}	kW	-	4.49	4.86	-	4.72	5.25	-	-	5.38
			Hp	-	6.01	6.52	-	6.33	7.04	-	-	7.21
Rated Torque (speed) ①②⑦⑧⑨⑩		T _{rtd}	Nm	25.3	20.1	16.3	34.4	28.5	25.2	43.5	39.6	31.5
			lb-in	224	178	144	304	252	223	385	350	279
Rated Speed		N _{rtd}	rpm	1500	3000	4000	1400	2400	3000	1200	1800	2500
Rated Power (speed) ①②⑦⑧⑨		P _{rtd}	kW	3.97	6.31	6.83	5.04	7.16	7.92	5.47	7.46	8.25
			Hp	5.32	8.46	9.16	6.76	9.60	10.6	7.33	10.0	11.1
Rated Torque (speed) ①②⑦⑧⑨⑩		T _{rtd}	Nm	24.3	18.2	14.1	33.8	26.3	22.0	41.5	35.9	27.3
			lb-in	215	161	125	299	233	195	367	318	242
Rated Speed		N _{rtd}	rpm	1800	3500	4500	1500	2800	3500	1400	2000	3000
Rated Power (speed) ①②⑦⑧⑨		P _{rtd}	kW	4.58	6.67	6.65	5.31	7.71	8.07	6.08	7.52	8.58
			Hp	6.14	8.94	8.91	7.12	10.3	10.8	8.16	10.1	11.5

See following page for notes.

AKM7x Performance Data – Up to 640 Vdc (Continued)

Parameters	Tol	Symbol	Units	AKM72			AKM73			AKM74		
				L	P	Q	L	P	Q	L	P	Q
Torque Constant ①	±10%	K _t	Nm/A _{rms}	2.6	1.58	1.3	3.5	2.13	1.7	4.14	2.84	2.0
			lb-in/A _{rms}	23.0	14.0	11.5	31.0	18.9	15	36.6	25.1	17.7
Back EMF Constant ②	±10%	K _e	V/k _r rpm	169	102	81.2	225	137	109	266	183	129
Motor Constant	Nom	K _m	N-m/√W	2.21	2.18	2.08	2.93	2.82	2.67	3.51	3.38	3.27
			lb-in/√W	19.6	19.3	18.4	25.9	25.0	23.6	31.0	29.9	28.9
Resistance (line-line) ⑥	±10%	R _m	ohm	0.92	0.35	0.26	0.95	0.38	0.25	0.93	0.47	0.25
Inductance (line-line)		L	mH	13.6	5.0	3.2	15.7	5.9	3.7	16.4	7.7	3.8
Inertia (includes Resolver feedback) ③	±10%	J _m	kg-cm ²	65			92			120		
			lb-in-s ²	0.057			0.082			0.11		
Optional Brake Inertia (additional)	±10%	J _m	kg-cm ²	1.64			1.64			1.64		
			lb-in-s ²	1.46 x 10 ⁻³			1.46 x 10 ⁻³			1.46 x 10 ⁻³		
Weight		W	kg	19.7			26.7			33.6		
			lb	43.4			58.8			74.0		
Static Friction ①⑩		T _f	Nm	0.16			0.24			0.33		
			lb-in	1.4			2.1			2.9		
Viscous Damping ①		K _{dv}	Nm/k _r rpm	0.06			0.13			0.2		
			lb-in/k _r rpm	0.5			1.2			1.8		
Thermal Time Constant		TCT	minutes	46			53			60		
Thermal Resistance		R _{thw-a}	°C/W	0.39			0.33			0.30		
Pole Pairs				5			5			5		
Heat Sink Size				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 All data referenced to sinusoidal commutation.
- ③ Add parking brake if applicable for total inertia.
- ④ Motor with standard heat sink.
- ⑤ May be limited at some values of V_{bus}.
- ⑥ Measured at 25°C.
- ⑦ Brake motor option reduces continuous torque ratings by 1 Nm.
- ⑧ Non-Resolver feedback options reduce continuous torque ratings by:
AKM72 = 2.0 Nm AKM73 = 2.7 Nm AKM74 = 3.4 Nm
- ⑨ Motors with non-resolver feedback and brake option, reduce continuous torque by:
AKM72 = 3.9 Nm AKM73 = 5.1 Nm AKM74 = 6.2 Nm
- ⑩ For motors with optional shaft seal, reduce torque shown by 0.25 Nm (2.21 lb-in), and increase T_f by the same amount.

Additional Notes: See system data beginning on page 14 for typical torque/speed performance.

Additional windings can be found through our online Motioneering sizing and selection software tool. See page 73 for more information.