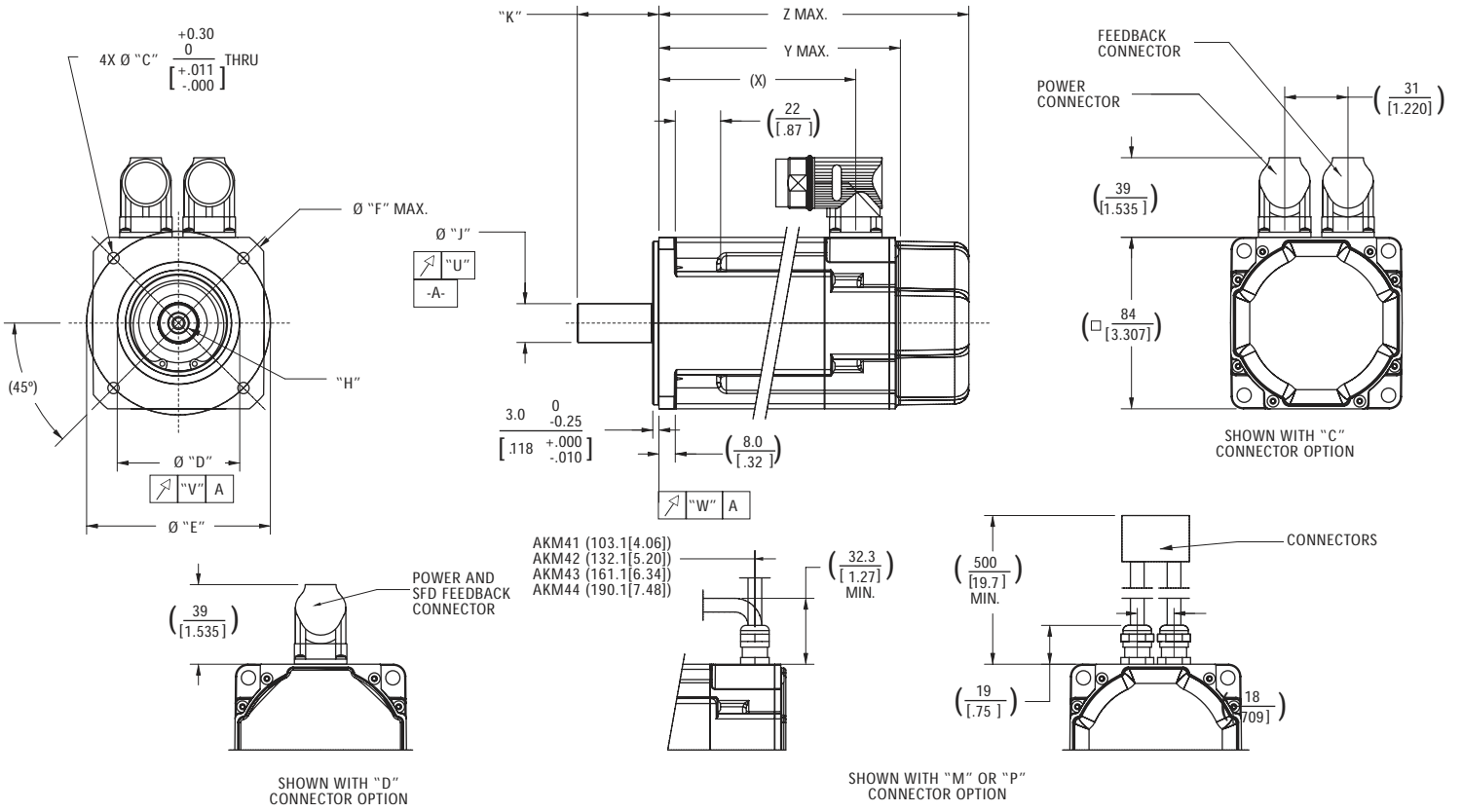


Performance Data - AKM4x Frame

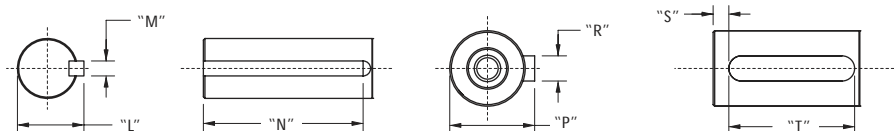


MOUNTING CODE	"C"	"D"	"E"	"F"	"H"	"J"	"K"	"L"	"M"	"N"
AC	7 [.276]	80 $\begin{matrix} +0.012 \\ -0.007 \\ [3.1496 \text{ } +0.0004] \end{matrix}$ j6	100 [3.937]	-	D M6 DIN 332	19 $\begin{matrix} +0.015 \\ -0.002 \\ [0.7480 \text{ } +0.0006] \end{matrix}$ k6	40.0 [1.57]	-	-	-
AN	7 [.276]	80 $\begin{matrix} +0.012 \\ -0.007 \\ [3.1496 \text{ } +0.0004] \end{matrix}$ j6	100 [3.937]	-	D M6 DIN 332	19 $\begin{matrix} +0.015 \\ -0.002 \\ [0.7480 \text{ } +0.0006] \end{matrix}$ k6	40.0 [1.57]	-	-	-
BK	5.54 [.218]	73.025 $\begin{matrix} 0 \\ -0.051 \\ [2.8750 \text{ } +0.0000] \end{matrix}$ j6	98.43 [3.875]	-	-	15.875 $\begin{matrix} 0 \\ -0.013 \\ [0.6250 \text{ } +0.0000] \end{matrix}$	52.40 ± 0.79 [2.063 ± .031]	17.92 $\begin{matrix} 0 \\ -0.43 \\ [0.706 \text{ } +0.000] \end{matrix}$	4.762 $\begin{matrix} 0 \\ -0.050 \\ [0.1875 \text{ } +0.0000] \end{matrix}$	34.93 ± 0.25 [1.375 ± .010]
CC	5.54 [.218]	60 $\begin{matrix} +0.012 \\ -0.007 \\ [2.3622 \text{ } +0.0004] \end{matrix}$ j6	90 [3.543]	109 [4.291]	D M6 DIN 332	19 $\begin{matrix} +0.015 \\ -0.002 \\ [0.7480 \text{ } +0.0006] \end{matrix}$ k6	40.0 [1.57]	-	-	-
CN	5.54 [.218]	60 $\begin{matrix} +0.012 \\ -0.007 \\ [2.3622 \text{ } +0.0004] \end{matrix}$ j6	90 [3.543]	109 [4.291]	D M6 DIN 332	19 $\begin{matrix} +0.015 \\ -0.002 \\ [0.7480 \text{ } +0.0006] \end{matrix}$ k6	40.0 [1.57]	-	-	-
EK	5.54 [.218]	73.025 $\begin{matrix} 0 \\ -0.051 \\ [2.8750 \text{ } +0.0000] \end{matrix}$ j6	98.43 [3.875]	-	-	12.700 $\begin{matrix} 0 \\ -0.013 \\ [0.5000 \text{ } +0.0000] \end{matrix}$	31.75 ± 0.25 [1.250 ± .010]	14.09 $\begin{matrix} 0 \\ -0.43 \\ [0.555 \text{ } +0.000] \end{matrix}$	3.175 $\begin{matrix} 0 \\ -0.050 \\ [0.1250 \text{ } +0.0000] \end{matrix}$	19.05 ± 0.25 [0.750 ± .010]

MOUNTING CODE	"P"	"R"	"S"	"T"	"U"	"V"	"W"
AC	21.5 $\begin{matrix} 0 \\ -0.13 \\ [0.846 \text{ } +0.000] \end{matrix}$	6 $\begin{matrix} 0 \\ -0.03 \\ [0.236 \text{ } +0.000] \end{matrix}$ N9	4.00 [1.57]	32 $\begin{matrix} 0 \\ -0.30 \\ [1.260 \text{ } +0.000] \end{matrix}$	0.040 [.0015]	0.080 [.0031]	0.080 [.0031]
AN	-	-	-	-	0.040 [.0015]	0.080 [.0031]	0.080 [.0031]
BK	-	-	-	-	0.051 [.0020]	0.10 [.004]	0.10 [.004]
CC	21.5 $\begin{matrix} 0 \\ -0.13 \\ [0.846 \text{ } +0.000] \end{matrix}$	6 $\begin{matrix} 0 \\ -0.03 \\ [0.236 \text{ } +0.000] \end{matrix}$ N9	4.00 [1.57]	32 $\begin{matrix} 0 \\ -0.30 \\ [1.260 \text{ } +0.000] \end{matrix}$	0.040 [.0015]	0.080 [.0031]	0.080 [.0031]
CN	-	-	-	-	0.040 [.0015]	0.080 [.0031]	0.080 [.0031]
EK	-	-	-	-	0.051 [.0020]	0.10 [.004]	0.10 [.004]

(X)	Y MAX.	Z MAX. (W/ BRAKE)	MODEL
96.4 [3.80]	118.8 [4.68]	152.3 [6.00]	AKM41
125.4 [4.94]	147.8 [5.82]	181.3 [7.14]	AKM42
154.4 [6.08]	176.8 [6.96]	210.3 [8.28]	AKM43
183.4 [7.22]	205.8 [8.10]	239.3 [9.42]	AKM44

Dimensions are in mm [inches].
Product designed in metric.
English conversions provided for reference only.



Performance Data - AKM4x Frame

AKM4x - Up to 640 VDC

See system data beginning on page 8 for typical torque/speed performance.

PARAMETER	Tol	SYMBOL	UNITS	AKM41			AKM42				AKM43			AKM44		
				C	E	H	C	E	G	J	E	G	K	E	G	J
Max Rated DC Bus Voltage	Max	V _{bus}	V _{dc}	640	640	320	640	640	640	320	640	640	320	640	640	640
Continuous Torque (Stall) for ΔT winding = 100°C ①②⑦⑧⑨	Nom	T _{cs}	N-m lb-in	1.95 17.3	2.02 17.9	2.06 18.2	3.35 29.6	3.42 30.3	3.53 31.2	3.56 31.5	4.70 41.6	4.80 42.5	4.90 43.4	5.76 51.0	5.88 52.0	6.00 53.1
Continuous Current (Stall) for ΔT winding = 100°C ①②⑦⑧⑨	Nom	I _{cs}	A _{rms}	1.46	2.85	5.60	1.40	2.74	4.80	8.40	2.76	4.87	9.60	2.9	5.0	8.8
Continuous Torque (Stall) for ΔT winding = 60°C ②	Nom	T _{cs}	N-m lb-in	1.56 13.8	1.62 14.3	1.65 14.6	2.68 23.7	2.74 24.2	2.82 25.0	2.85 25.2	3.76 33.3	3.84 34.0	3.92 34.7	4.61 40.8	4.70 41.6	4.80 42.5
Max Mechanical Speed ⑤	Nom	N _{max}	rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
Peak Torque ①②	Nom	T _p	N-m lb-in	6.12 54.2	6.28 55.6	6.36 56.3	11.1 98.8	11.3 99.7	11.5 102	11.6 103	15.9 141	16.1 142	16.3 144	19.9 176	20.2 179	20.4 181
Peak Current	Nom	I _p	A _{rms}	5.8	11.4	22.4	5.61	11.0	19.2	33.7	11.0	19.5	38.3	11.4	20.0	35.2
75VDC	Rated Torque (speed) ①②⑦⑧⑨	T _{rtd}	N-m lb-in	-	-	1.99 17.6	-	-	-	-	-	-	-	-	-	-
	Rated Speed	N _{rtd}	rpm	-	-	1000	-	-	-	-	-	-	-	-	-	-
	Rated Power (speed) ①②⑦⑧⑨	P _{rtd}	kW Hp	-	-	0.21 0.28	-	-	-	-	-	-	-	-	-	-
160VDC	Rated Torque (speed) ①②⑦⑧⑨	T _{rtd}	N-m lb-in	-	1.94 17.2	1.86 16.5	-	-	-	3.03 26.8	-	-	4.08 36.1	-	-	-
	Rated Speed	N _{rtd}	rpm	-	1200	3000	-	-	-	3000	-	-	2500	-	-	-
	Rated Power (speed) ①②⑦⑧⑨	P _{rtd}	kW Hp	-	0.24 0.33	0.58 0.78	-	-	-	0.95 1.28	-	-	1.07 1.43	-	-	-
320VDC	Rated Torque (speed) ①②⑦⑧⑨	T _{rtd}	N-m lb-in	1.88 16.6	1.82 16.1	1.62 14.3	-	3.12 27.6	2.90 25.7	2.38 21.1	4.24 37.5	4.00 35.4	2.62 23.2	5.22 46.2	4.90 43.4	3.84 34.0
	Rated Speed	N _{rtd}	rpm	1200	3000	6000	-	1800	3500	6000	1500	2500	6000	1200	2000	4000
	Rated Power (speed) ①②⑦⑧⑨	P _{rtd}	kW Hp	0.24 0.32	0.57 0.77	1.02 1.36	-	0.59 0.79	1.06 1.42	1.50 2.00	0.67 0.89	1.05 1.40	1.65 2.21	0.66 0.88	1.03 1.38	1.61 2.16
560VDC	Rated Torque (speed) ①②⑦⑧⑨	T _{rtd}	N-m lb-in	1.77 15.7	1.58 14.0	-	3.10 27.4	2.81 24.9	2.35 20.8	-	3.92 34.7	3.01 26.6	-	4.80 42.5	3.76 33.3	2.75 24.3
	Rated Speed	N _{rtd}	rpm	3000	6000	-	1500	3500	6000	-	2500	5000	-	2000	4000	6000
	Rated Power (speed) ①②⑦⑧⑨	P _{rtd}	kW Hp	0.56 0.75	0.99 1.33	-	0.49 0.65	1.03 1.38	1.48 1.98	-	1.03 1.38	1.58 2.11	-	1.01 1.35	1.57 2.11	1.73 2.32
640VDC	Rated Torque (speed) ①②⑦⑧⑨	T _{rtd}	N-m lb-in	1.74 15.4	1.58 14.0	-	3.02 26.7	2.72 24.1	2.35 20.8	-	3.76 33.3	2.57 22.7	-	4.56 40.4	3.19 28.2	2.75 24.3
	Rated Speed	N _{rtd}	rpm	3500	6000	-	2000	4000	6000	-	3000	6000	-	2500	5000	6000
	Rated Power (speed) ①②⑦⑧⑨	P _{rtd}	kW Hp	0.64 0.85	0.99 1.33	-	0.63 0.85	1.14 1.53	1.48 1.98	-	1.18 1.58	1.61 2.16	-	1.19 1.60	1.67 2.24	1.73 2.32
Torque Constant ①	±10%	K _t	N-m/A _{rms} lb-in/A _{rms}	1.34 11.9	0.71 6.3	0.37 3.3	2.40 21.2	1.26 11.2	0.74 6.5	0.43 3.8	1.72 15.2	0.99 8.8	0.52 4.6	2.04 18.1	1.19 10.5	0.69 6.1
Back EMF constant ⑥	±10%	K _e	V/k _r rpm	86.3	45.6	23.7	154	80.9	47.5	27.5	111	63.9	33.2	132	76.6	44.2
Resistance (line-line) ⑥	±10%	R _m		21.7	5.7	1.51	27.52	7.22	2.38	0.80	8.04	2.61	0.70	8.08	2.65	0.88
Inductance (line-line)		L	mH	66.1	18.4	5.0	97.4	26.8	9.2	3.1	32.6	10.8	2.9	33.9	11.5	3.8
Inertia		J _m	kg-cm ² lb-in-s ²		0.81			1.5				2.1			2.7	
(includes Resolver feedback) ③						7.2E-04			1.3E-03			1.8E-03			2.4E-03	
Optional Brake Inertia		J _m	kg-cm ² lb-in-s ²		0.068			0.068				0.068			0.068	
(additional)						6.0E-05			6.0E-05			6.0E-05			6.0E-05	
Weight		W	kg lb		2.44			3.39				4.35			5.3	
					5.4			7.5				9.6			11.7	
Static Friction ①⑩		T _f	N-m lb-in		0.014			0.026				0.038			0.05	
					0.12			0.23				0.34			0.44	
Viscous Damping ①		K _{dv}	N-m/k _r rpm lb-in/k _r rpm		0.009			0.013				0.017			0.021	
					0.08			0.12				0.15			0.19	
Thermal Time Constant		TCT	minutes		13			17				20			24	
Thermal Resistance		R _{thw-a}	°C/W		1.04			0.89				0.78			.71	
Pole Pairs					5			5				5			5	
Heatsink Size				10x10x1/4" Aluminum Plate			10x10x1/4" Aluminum Plate				10x10x1/4" Aluminum Plate			10x10x1/4" Aluminum Plate		

Notes:

- Motor winding temperature rise, ΔT=100°C, at 40°C ambient.
- All data referenced to sinusoidal commutation.
- Add parking brake if applicable for total inertia.
- Motor with standard heatsink.
- May be limited at some values of V_{bus}.
- Measured at 25°C.

7. Brake motor option reduces continuous torque ratings by 0.12 N-m.

8. Non-Resolver feedback options reduces continuous ratings by:
 AKM41 = 0.1 N-m
 AKM43 = 0.2 N-m

AKM42 = 0.1 N-m
 AKM44 = 0.3 N-m

9. Motors with non-Resolver feedback and Brake option, reduce continuous torque by:

AKM41 = 0.22 N-m
 AKM43 = 0.55 N-m

AKM42 = 0.36 N-m
 AKM44 = 0.76 N-m

10. For motors with optional shaft seal, reduce torque shown by 0.071 N-m (0.63lb-in), and increase T_f by the same amount.