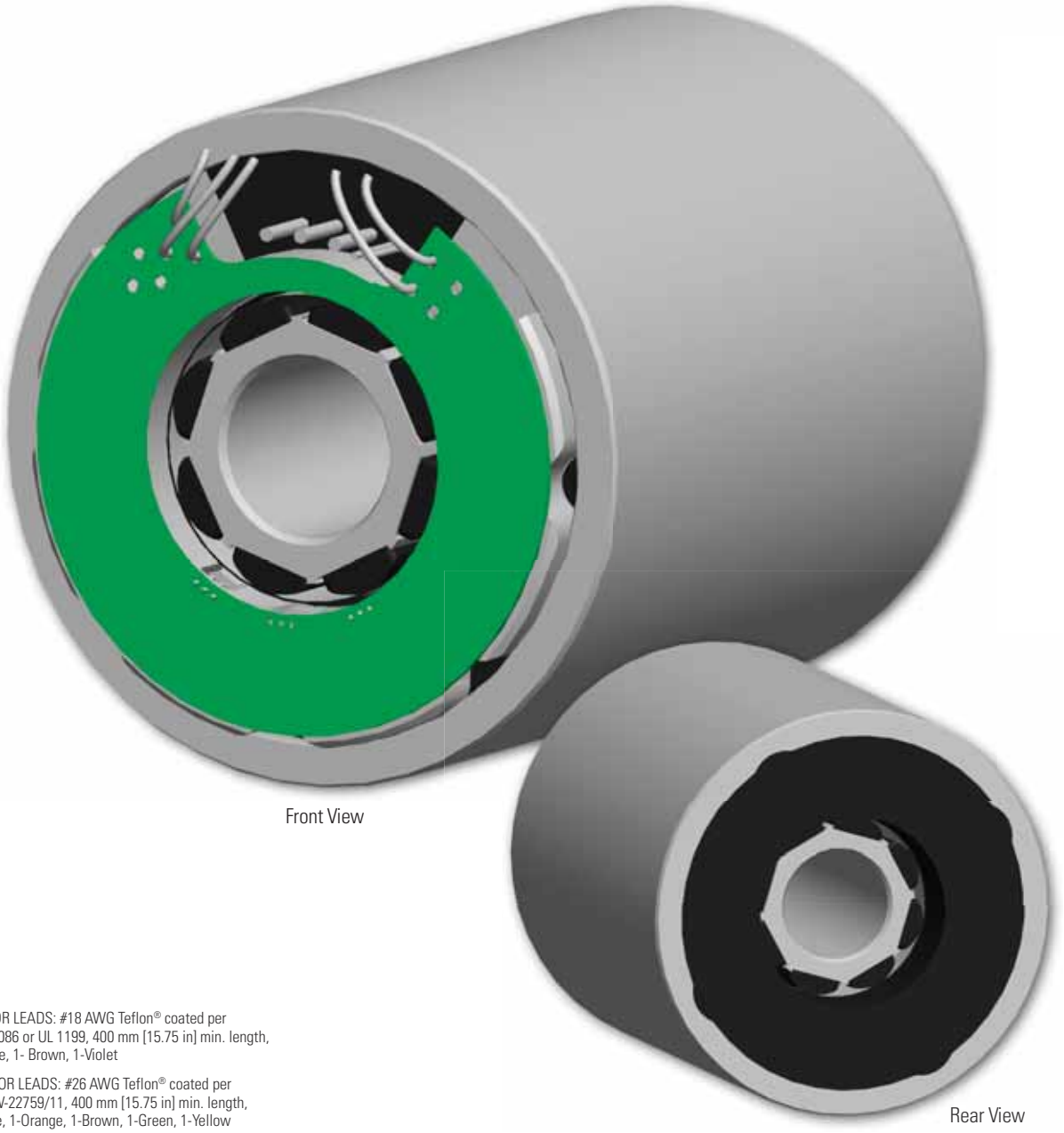
KBM 14 Frameless Motors

The KBM(S)-14 series is designed to operate over a broad speed range with high acceleration. Designed for maximum torque density with minimal cogging by using a variable air gap, the KBM(S)-14 is an ideal choice to meet or exceed your compact frameless motor application needs.



Front View

Rear View

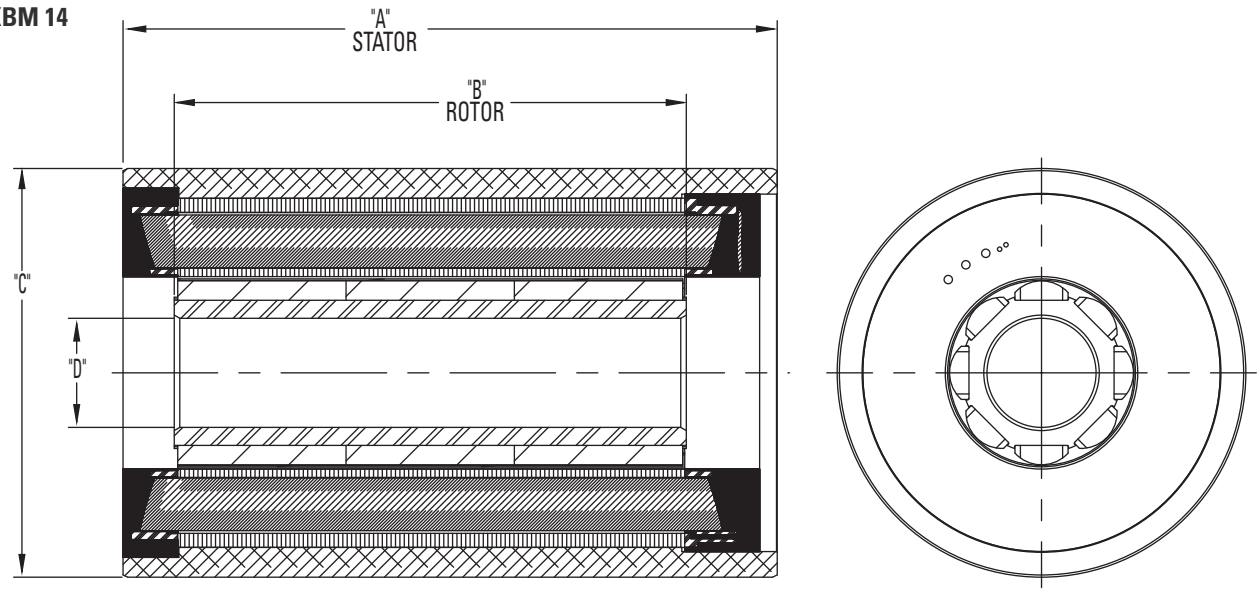
MOTOR LEADS: #18 AWG Teflon® coated per
UL 10086 or UL 1199, 400 mm [15.75 in] min. length,
1- Blue, 1- Brown, 1-Violet

SENSOR LEADS: #26 AWG Teflon® coated per
MIL-W-22759/11, 400 mm [15.75 in] min. length,
1-Blue, 1-Orange, 1-Brown, 1-Green, 1-Yellow

THERMISTOR LEADS: #26 AWG Teflon® coated, UL Rated 600 Vdc,
150C Min, 400 mm [15.75"] min. length, 1-Blue, 1-Black

KBM 14 Outline Drawings

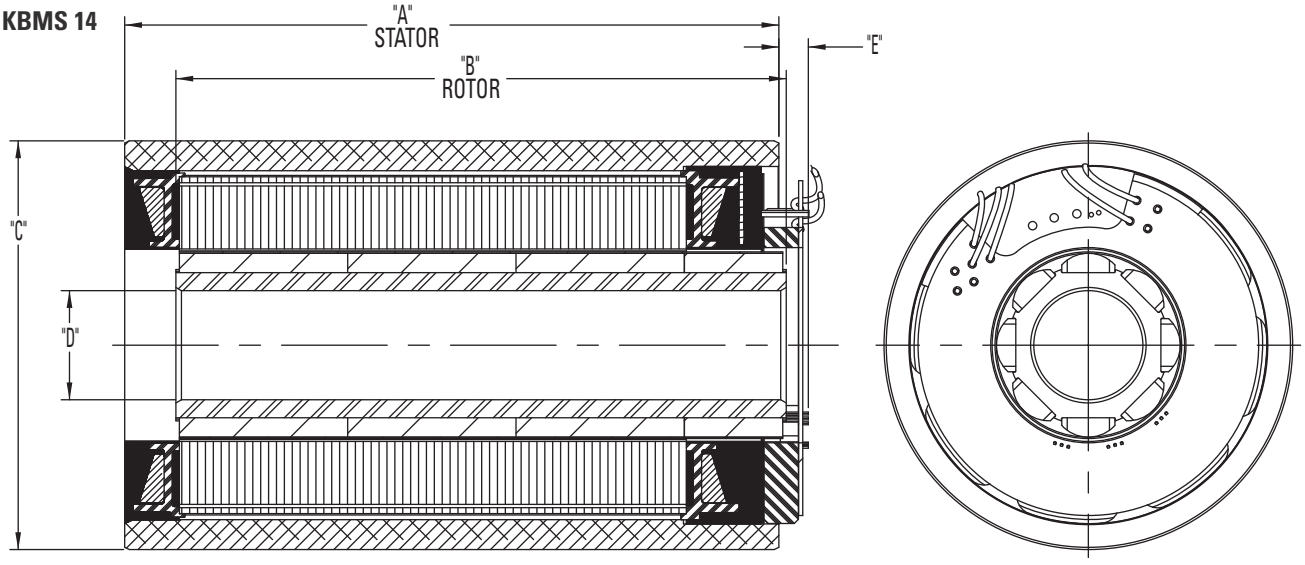
KBM 14



Model Number	"A" mm[inch]	"B" mm[inch]	Ø "C" mm[inch]	Ø "D" mm[inch]
KBM-14X01	58.00 [2.283]	32.16 [1.266]	74.963 [2.9513]	20.010 [0.7878]
KBM-14X02	89.00 [3.504]	63.04 [2.482]		
KBM-14X03	120.00 [4.724]	93.93 [3.698]		

All dimensions are nominal. For more detailed and interactive 3D models with 2D product views, visit www.kollmorgen.com/kbm

KBMS 14



Model Number	"A" mm[inch]	"B" mm[inch]	Ø "C" mm[inch]	Ø "D" mm[inch]	"E" MAX mm[inch]
KBMS-14X01	58.00 [2.283]	50.19 [1.976]	74.963 [2.9513]	20.010 [0.7878]	5.75 [.226]
KBMS-14X02	89.00 [3.504]	81.08 [3.192]			
KBMS-14X03	120.00 [4.724]	111.96 [4.408]			

All dimensions are nominal. For more detailed and interactive 3D models with 2D product views, visit www.kollmorgen.com/kbm

KBM 14 Performance Data

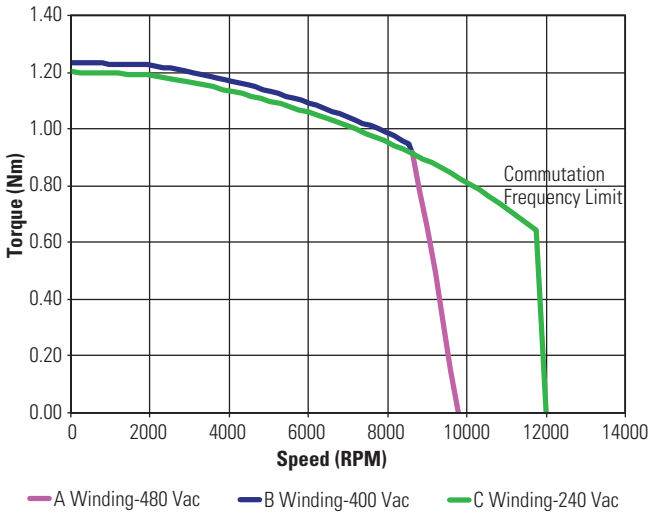
KBM(S)-14XXX PERFORMANCE DATA & MOTOR PARAMETERS																
Motor Parameter	Symbol	Units	TOL	KBM(S)-14X01-X			KBM(S)-14X02-X					KBM(S)-14X03-X				
				A	B	C	A	B	C		D	A	B		C	
Continuous Stall Torque at 25°C Amb. (1)	Tc	Nm	NOM	1.22	1.25	1.21	2.08	2.08	2.11		2.17	2.82	2.87		2.92	
		lb-ft		0.897	0.919	0.890	1.53	1.53	1.56		1.60	2.08	2.12		2.15	
Continuous Current	Ic	Arms	NOM	1.53	3.25	6.25	1.59	2.42	3.10		5.97	1.64	2.81		6.04	
Peak Stall Torque (25°C winding temp)	Tp	Nm	NOM	3.28	3.43	3.59	6.67	6.83	6.98		7.31	10.1	10.5		10.5	
		lb-ft		2.42	2.53	2.65	4.92	5.04	5.15		5.39	7.46	7.72		7.76	
Peak Current	Ip	Arms	NOM	4.32	9.63	19.4	5.39	8.57	10.9		21.8	6.12	10.9		24.5	
Rated Continuous Output Power at 25°C Amb. (1)	P Rated	Watts		735	700	915	845	1000	585	1000	975	875	1215	1175	1230	
	HP Rated	HP		0.986	0.956	1.22	1.13	1.35	0.786	1.34	1.30	1.18	1.63	1.58	1.65	
Speed at Rated Power	N Rated	RPM		7950	12000	13500	4900	7700	10250	8000	8900	3600	6500	5225	6600	
Torque Sensitivity (2)	Kt	Nm / Arms	+/-10%	0.815	0.394	0.199	1.34	0.882	0.699		0.374	1.78	1.05		0.498	
		lb-ft / Arms		0.601	0.290	0.147	0.990	0.650	0.516		0.276	1.31	0.776		0.367	
Back EMF Constant	Kb	Vpk / kRPM	+/- 10%	49.3	23.8	12.0	81.1	53.3	42.3		22.6	107.4	63.7		30.1	
Motor Constant	Km	Nm/√watt	+/-10%	0.144	0.148	0.143	0.225	0.224	0.227		0.235	2.79	2.79		2.87	
		lb-ft /√watt		0.106	0.109	0.106	0.166	0.165	0.168		0.173	2.06	2.06		2.12	
Resistance (line to line)	Rm	Ohms	+/- 10%	21.4	4.74	1.29	23.8	10.3	6.30		1.69	26.6	9.01		1.96	
Inductance	Lm	mH		38	8.6	2.4	47	20	13		3.6	54	19		4.1	
Inertia (KBM)	Jm	Kg-m²		2.41E-5			4.88E-5					7.31E-5				
		lb-ft-s²		1.78E-5			3.60E-5					5.39E-5				
Weight (KBM)	Wt	Kg		0.898			1.59					2.98				
		lb		1.98			3.50					6.58				
Inertia (KBMS)	Jm	Kg-m²		3.36E-5			5.56E-5					8.81E-5				
		lb-ft-s²		2.48E-5			4.10E-5					6.50E-5				
Weight (KBMS)	Wt	Kg		1.00			1.68					3.08				
		lb		2.20			3.70					6.78				
Max Static Friction	Tf	Nm		2.71E-2			4.75E-2					7.73E-2				
		lb-ft		2.00E-2			3.50E-2					5.70E-2				
Cogging Friction (peak-to-peak)	Tcog	Nm		1.72E-2			3.25E-2					5.78E-2				
		lb-ft		1.27E-2			2.40E-2					4.26E-2				
Viscous Damping	Fi	Nm/ kRPM		1.88E-3			2.82E-3					3.76E-3				
		lb-ft / kRPM		1.39E-3			2.08E-3					2.77E-3				
Thermal Resistance (3)	TPR	°C / watt		1.11			0.920					0.780				
Number of Poles	P	-		8			8					8				
Recommended AKD Drive				00307	00607	01206	00307	00307	00607		01206	00307	00307		01206	
Voltage Req'd at Rated Output	Vac Input	Vac		480	400	240	480	480	480	400	240	480	480	400	240	
Peak Stall Torque (4) (Motor with Drive)	Tp Drive	Nm	+/- 10%	3.28	3.43	3.59	6.67	6.83	6.98	6.98	7.31	10.11	8.90	8.90	10.5	
		lb-ft		2.42	2.53	2.65	4.92	5.04	5.15	5.15	5.39	7.46	6.56	6.56	7.76	
Cont. Stall Torque (4) (Motor with Drive)	Tc Drive	Nm	+/- 10%	1.22	1.25	1.21	2.08	2.08	2.11	2.11	2.17	2.82	2.87	2.87	2.92	
		lb-ft		0.897	0.919	0.890	1.53	1.53	1.56	1.56	1.60	2.08	2.12	2.12	2.15	

Notes
1) Winding temperature = 155°C at continuous stall, at rated output, and for performance curves.
2) To calculate no-load Kt and Kb at 25°C, multiply by 1.064.
3) TPR assumes motor is housed and mounted to a 10" x 10" x 1/4" heat sink or equivalent.
4 Peak torque may be limited by AKD servo drive current, see www.kollmorgen.com for complete drive ratings.

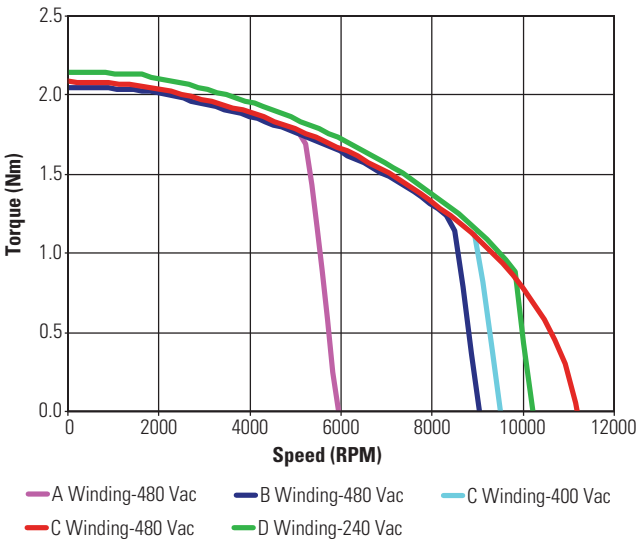
KBM 14 Performance Curves

Continuous duty capability for 130°C rise in a 25°C ambient using recommended AKD servo drive and sinusoidal commutation.

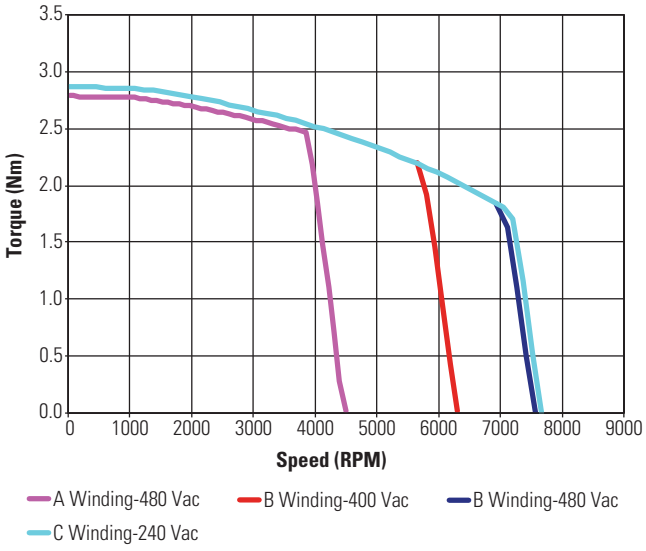
KBM(S)-14X01
ContinuousTorque



KBM(S)-14X02
ContinuousTorque



KBM(S)-14X03
ContinuousTorque



Low Voltage optimized windings available.