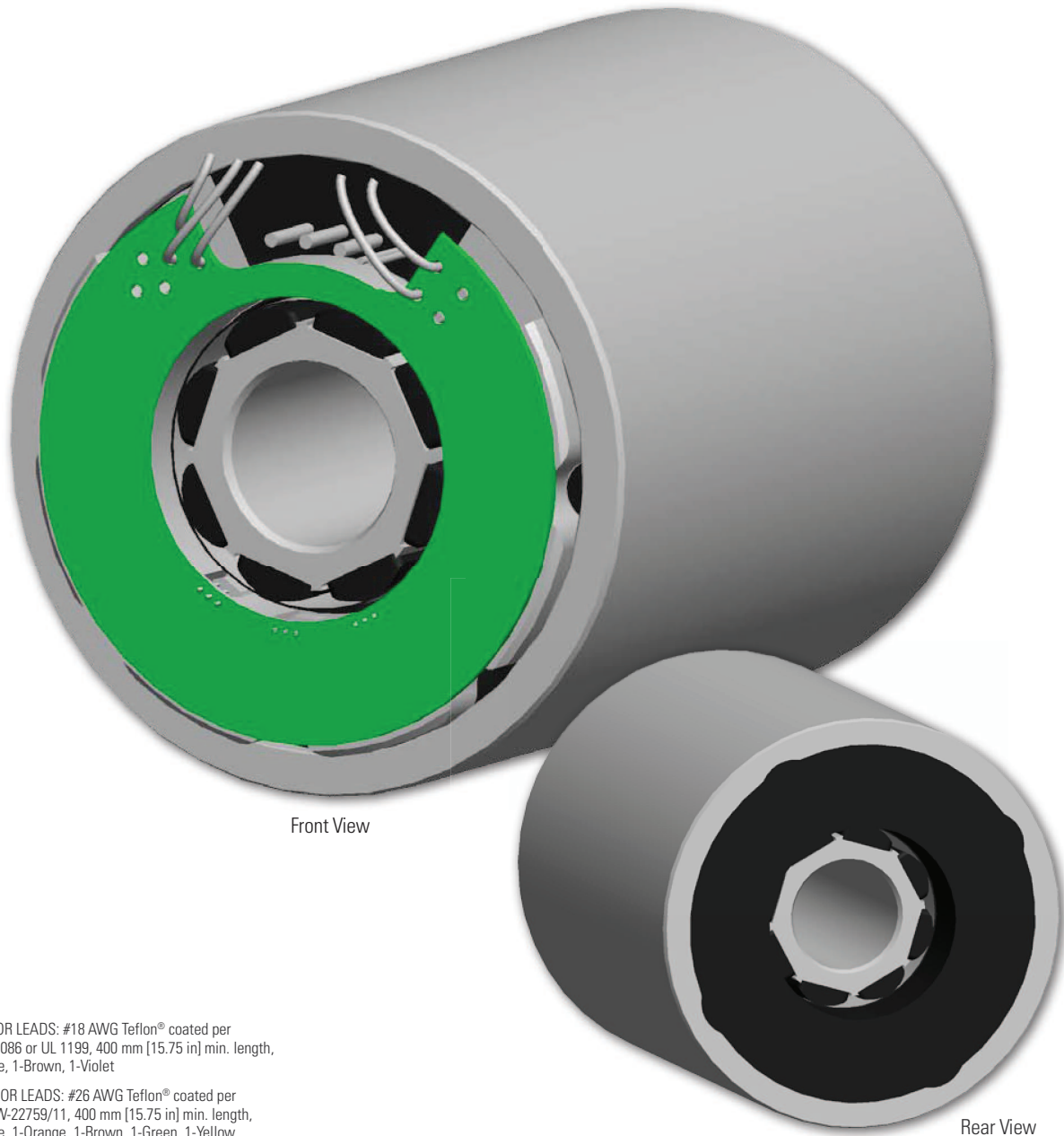


# KBM 14 Frameless Motors

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

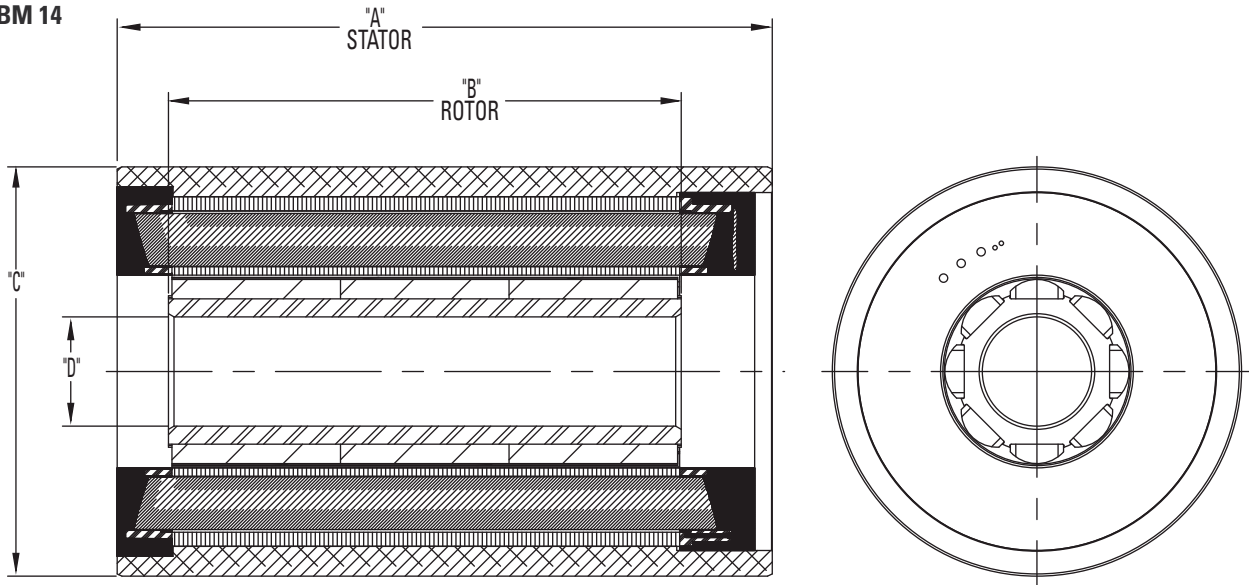
Rear View

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

# KBM 14 Outline Drawings

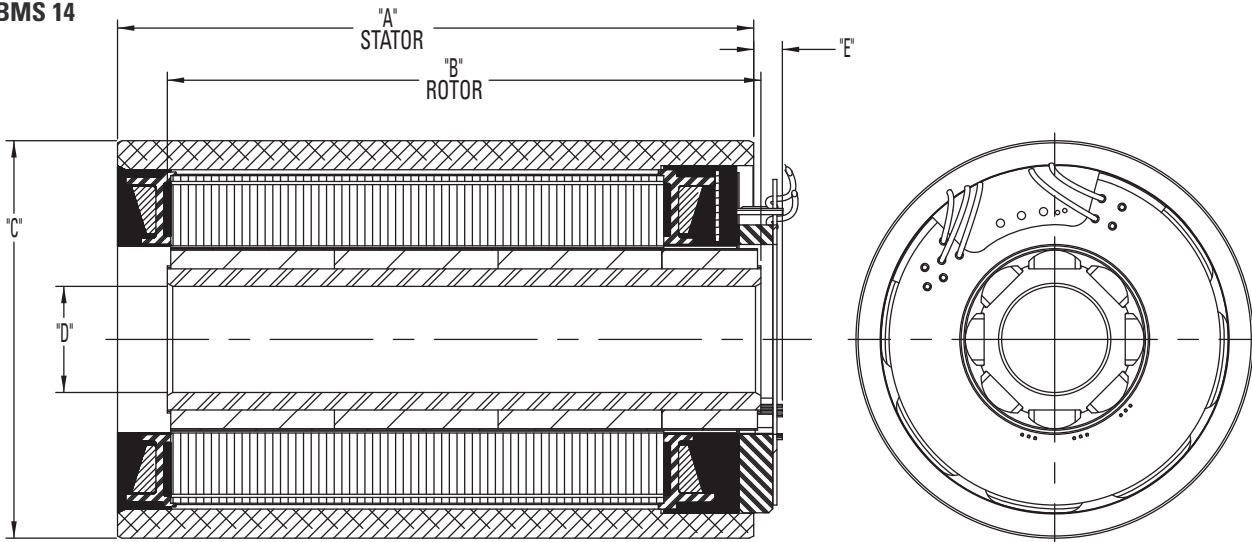
**KBM 14**



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]	74.963 [2.9513]	20.010 [0.7878]
KBM-14X03	120.00 [4.724]	93.93 [3.698]	74.963 [2.9513]	20.010 [0.7878]

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

**KBMS 14**

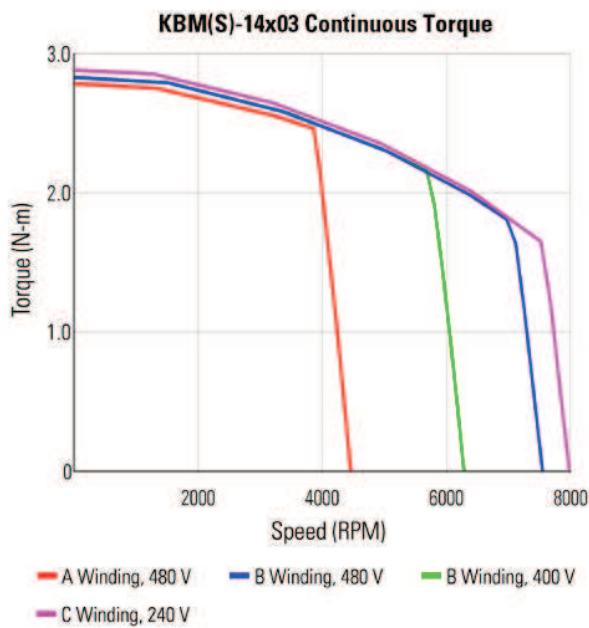
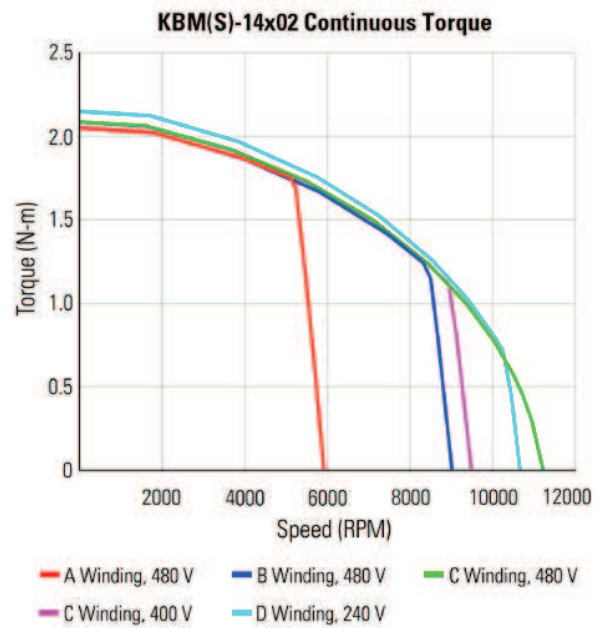
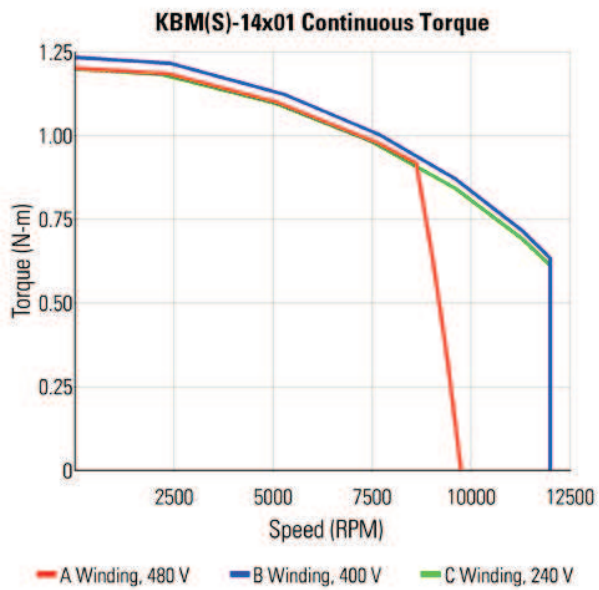


Model Number	"A" mm[inch]	"B" mm[inch]	Ø "C" mm[inch]	Ø "D" mm[inch]	"E" MAX mm[inch]
KBMS-14X01	58.00 [2.283]	50.19 [1.976]	74.963 [2.9513]	20.010 [0.7878]	5.75 [.226]
KBMS-14X02	89.00 [3.504]	81.08 [3.192]	74.963 [2.9513]	20.010 [0.7878]	5.75 [.226]
KBMS-14X03	120.00 [4.724]	111.96 [4.408]	74.963 [2.9513]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

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

# 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 14 Performance Data

## KBM(S) Frameless Motor Series

KBM(S)-14XXX PERFORMANCE DATA & MOTOR PARAMETERS														
Motor Parameter	Symbol	Units	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	N-m	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	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	N-m	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	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	N-m / Arms	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 (3)	Kb	Vpk / kRPM	69.7	33.6	17.0	115	75.4	59.8	31.9	152	90.0	42.6		
Motor Constant	Km	N-m/√watt	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	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-m <sup>2</sup>	2.41E-5			4.88E-5				7.31E-5				
		lb-ft-s <sup>2</sup>	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-m <sup>2</sup>	3.36E-5			5.56E-5				8.81E-5				
		lb-ft-s <sup>2</sup>	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	N-m	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	N-m	1.72E-2			3.25E-2				5.78E-2				
		lb-ft	1.27E-2			2.40E-2				4.26E-2				
Viscous Damping	Fi	N-m/ kRPM	1.88E-3			2.82E-3				3.76E-3				
		lb-ft/ kRPM	1.39E-3			2.08E-3				2.77E-3				
Thermal Resistance (4)	TPR	°C / watt	1.11			0.920				0.780				
Number of Poles	P	-	8			8				8				
Recommended Drive	AKD- <span style="font-family: monospace;">_ _ _ _ _</span>		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 (5) (Motor with AKD servo drive)	Tp Drive	N-m	3.28	3.43	3.59	6.67	6.83	6.98	6.98	7.31	10.1	9.08	9.08	10.5
		lb-ft	2.42	2.53	2.65	4.92	5.04	5.15	5.15	5.39	7.46	12.3	12.3	7.76

\* 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) Back EMF is peak (not RMS).  
 4) TPR assumes motor is housed and mounted to a 10" x 10" x 1/4" heat sink or equivalent.  
 5) Peak torque may be limited by AKD servo drive current, see page 11 for drive ratings or visit [www.kollmorgen.com](http://www.kollmorgen.com).