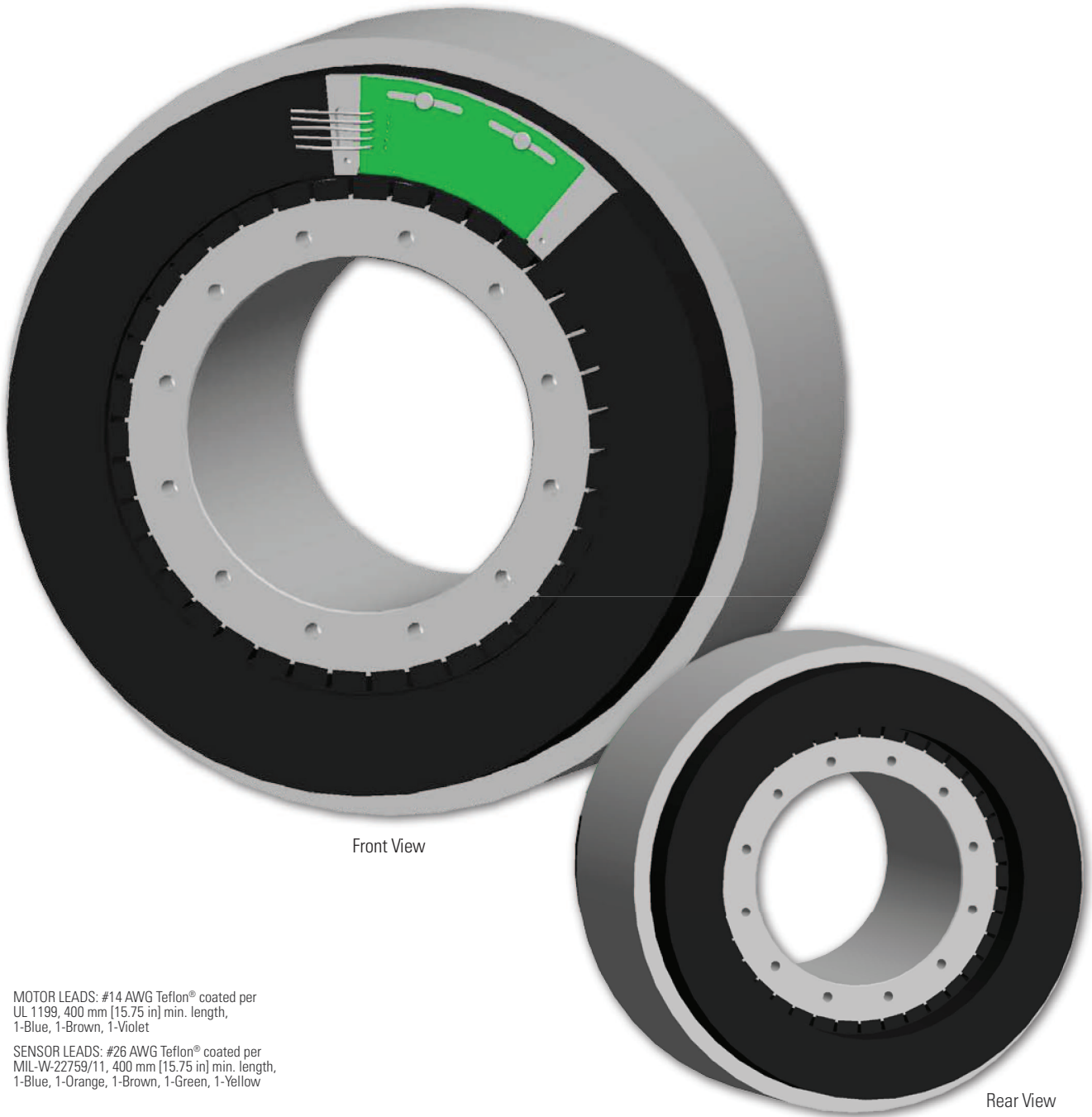


# KBM 60 Frameless Motors

The KBM(S)-60 series has a patented slot / pole combination offering extremely high continuous torque capability while still maintaining very low total harmonic distortion. The higher pole count and excellent torque / volume ratio makes the KBM(S)-60 an ideal fit for direct drive applications requiring high torque at low to moderate speeds.

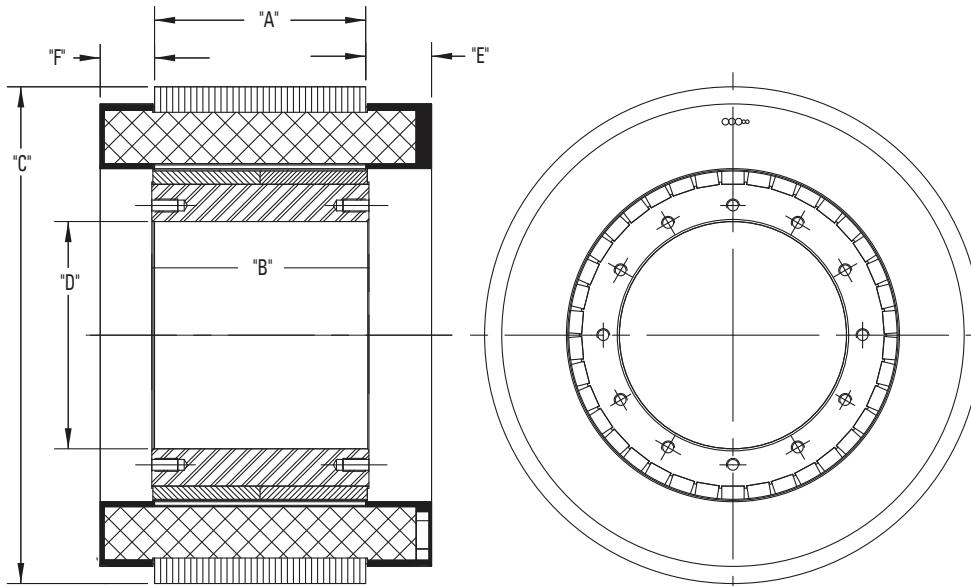


MOTOR LEADS: #14 AWG Teflon® coated per UL 1199, 400 mm [15.75 in] min. length, 1-Blue, 1-Brown, 1-Violet

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 60 Outline Drawings

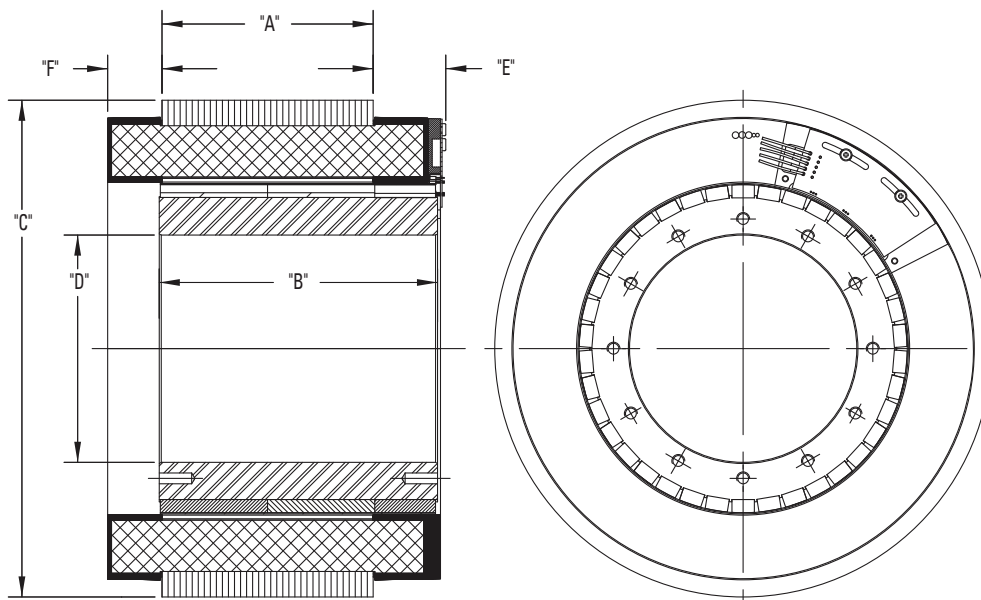
**KBM 60**



Model Number	"A" mm[inch]	"B" mm[inch]	Ø "C" mm[inch]	Ø "D" mm[inch]	"E" MAX mm[inch]	"F" MAX mm[inch]
KBM-60X01	48.11 [1.894]	50.88 [2.003]	229.85 [9.049]	105.05 [4.136]	30.48 [1.200]	25.15 [.990]
KBM-60X02	97.71 [3.847]	100.48 [3.956]	229.85 [9.049]	105.05 [4.136]	30.48 [1.200]	25.15 [.990]
KBM-60X03	147.32 [5.800]	150.09 [5.909]	229.85 [9.049]	105.05 [4.136]	30.48 [1.200]	25.15 [.990]

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 60**

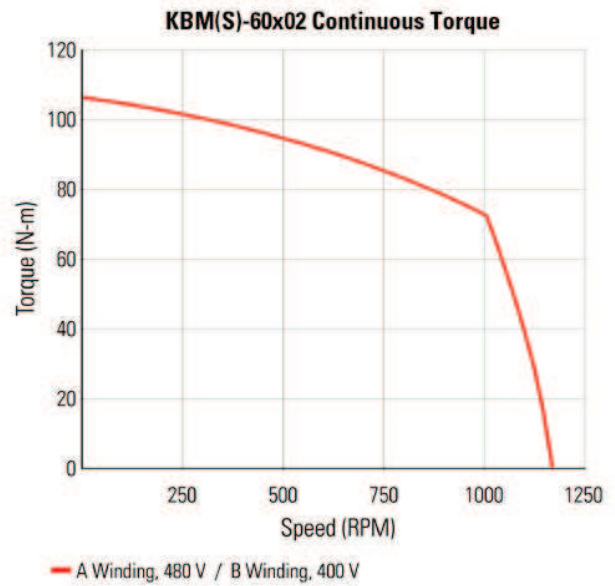
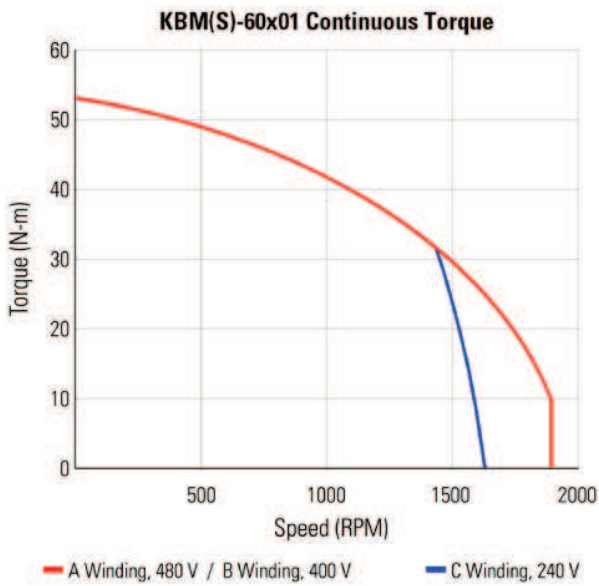


Model Number	"A" mm[inch]	"B" mm[inch]	Ø "C" mm[inch]	Ø "D" mm[inch]	"E" MAX mm[inch]	"F" MAX mm[inch]
KBMS-60X01	48.11 [1.894]	78.99 [3.110]	229.85 [9.049]	105.05 [4.136]	33.65 [1.325]	25.15 [.990]
KBMS-60X02	97.71 [3.847]	128.78 [5.070]	229.85 [9.049]	105.05 [4.136]	33.65 [1.325]	25.15 [.990]
KBMS-60X03	147.32 [5.800]	178.31 [7.020]	229.85 [9.049]	105.05 [4.136]	33.65 [1.325]	25.15 [.990]

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 60 Performance Curves

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



# KBM 60 Performance Data

## KBM(S) Frameless Motor Series

KBM(S)-60XXX PERFORMANCE DATA & MOTOR PARAMETERS									
Motor Parameter	Symbol	Units	KBM(S)-60X01-X			KBM(S)-60X02-X		KBM(S)-60X03-X	
			A	B	C	A	B	A	B
Continuous Stall Torque at 25°C Amb. (1)	Tc	N-m	53.9	53.9	53.9	108	108	154	154
		lb-ft	39.8	39.8	39.8	79.7	79.7	114	114
Continuous Current	Ic	Arms	13.7	16.9	22.7	16.3	19.6	18.6	24.0
Peak Stall Torque (25°C winding temp)	Tp	N-m	127	127	127	255	255	393	393
		lb-ft	93.8	93.8	93.8	188	188	290	290
Peak Current	Ip	Arms	40.0	50.4	78.0	50.4	60.4	63.3	76.8
Rated Continuous Output Power at 25°C Amb. (1)	P Rated	Watts	4165	4165	4580	6985	6985	8350	8420
	HP Rated	HP	5.58	5.58	6.14	9.36	9.36	11.2	11.3
Speed at Rated Power	N Rated	RPM	1600	1600	1300	885	885	720	730
Torque Sensitivity (2)	Kt	N-m / Arms	4.04	3.27	2.43	6.79	5.66	8.50	7.01
		lb-ft / Arms	2.98	2.41	1.80	5.01	4.17	6.27	5.17
Back EMF Constant (3)	Kb	Vpk / kRPM	345	280	208	581	484	727	600
Motor Constant	Km	N-m/√watt	3.44	3.44	3.44	5.78	5.78	7.46	7.39
		lb-ft /√watt	2.54	2.54	2.54	4.26	4.26	5.50	5.45
Resistance (line to line)	Rm	Ohms	0.916	0.590	0.335	0.921	0.638	0.867	0.600
Inductance	Lm	mH	8.0	5.1	2.8	11	7.6	11	7.5
Inertia (KBM)	Jm	Kg-m <sup>2</sup>	1.63E-3			3.17E-2		4.75E-2	
		lb-ft-s <sup>2</sup>	1.20E-2			2.34E-2		3.50E-2	
Weight (KBM)	Wt	Kg	13.2			25.2		37.2	
		lb	29.0			55.6		82.0	
Inertia (KBMS)	Jm	Kg-m <sup>2</sup>	2.56E-2			4.20E-2		5.29E-2	
		lb-ft-s <sup>2</sup>	1.89E-2			3.10E-2		3.90E-2	
Weight (KBMS)	Wt	Kg	15.3			27.9		39.8	
		lb	33.8			61.4		87.7	
Max Static Friction	Tf	N-m	1.36			2.71		4.07	
		lb-ft	1.00			2.00		3.00	
Cogging Friction (peak-to-peak)	Tcog	N-m	1.02			2.03		3.05	
		lb-ft	0.750			1.50		2.25	
Viscous Damping	Fi	N-m/ kRPM	0.230			0.461		0.691	
		lb-ft / kRPM	0.170			0.340		0.510	
Thermal Resistance (4)	TPR	°C / watt	0.336			0.236		0.192	
Number of Poles	P	-	38			38		38	
Recommended Drive	AKD-■	■	02407	02407	02406	02407	02407	02407	04807
Voltage Req'd at Rated Output	Vac Input	VAC	480	400	240	480	400	480	400
Peak Stall Torque (5) (Motor with AKD servo drive)	Tp Drive	N-m	127	121	106	248	221	330	393
		lb-ft	93.8	89.2	78.2	183	163	243	290

- \* 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 12" x 12" x 3/4" 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).