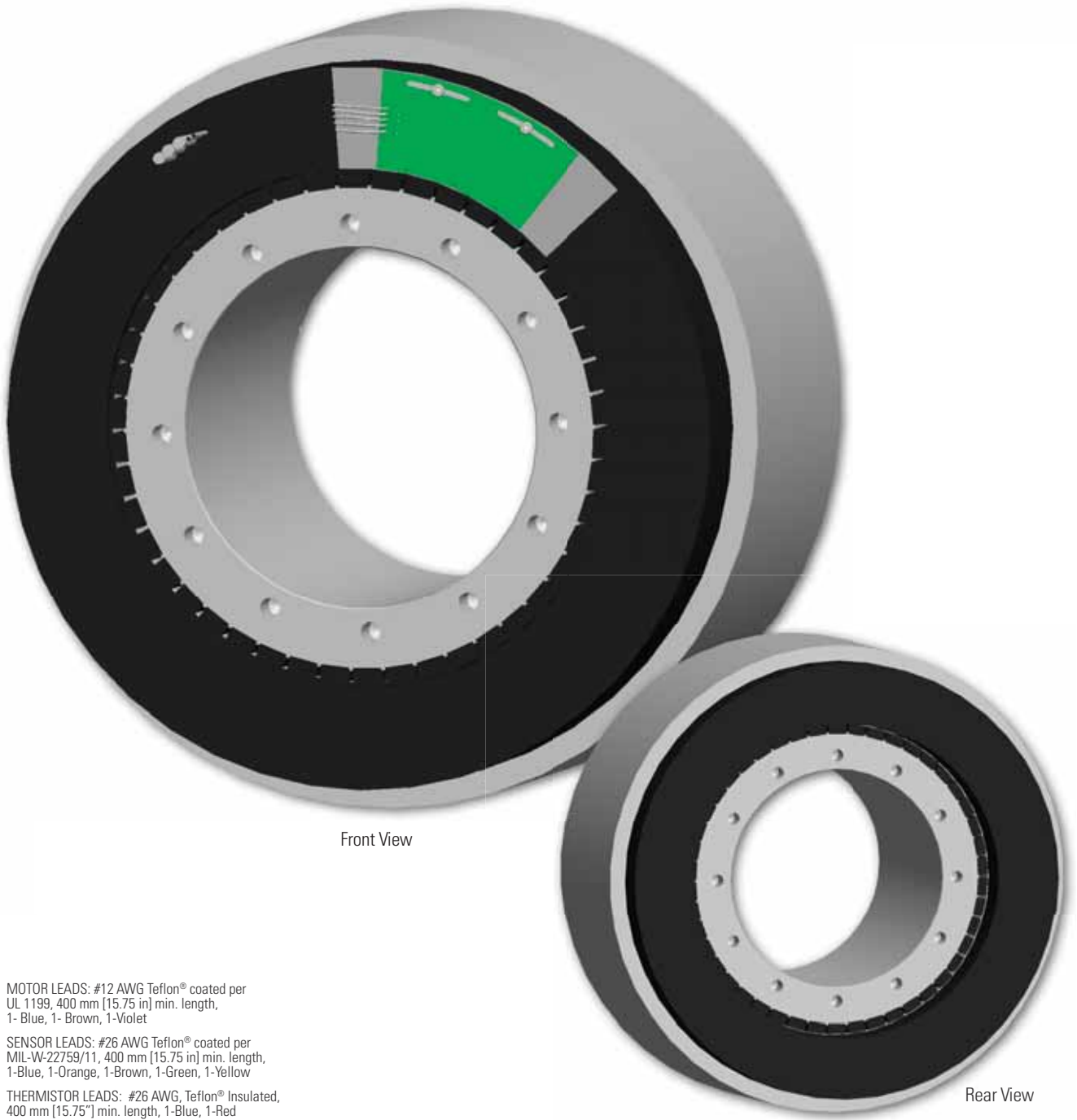


# KBM 88 Frameless Motors

The KBM(S)-88 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)-88 an ideal fit for direct drive applications requiring high torque at low to moderate speeds.



Front View

Rear View

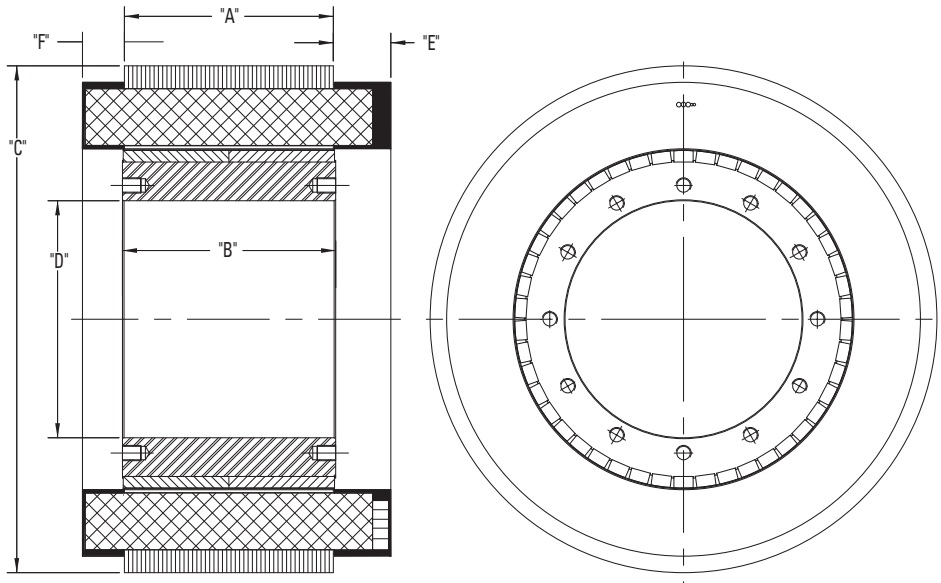
MOTOR LEADS: #12 AWG Teflon® coated per UL 1199, 400 mm [15.75 in] min. length, 1-Blue, 1-Brown, 1-Violet

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

THERMISTOR LEADS: #26 AWG, Teflon® Insulated, 400 mm [15.75"] min. length, 1-Blue, 1-Red

# KBM 88 Outline Drawings

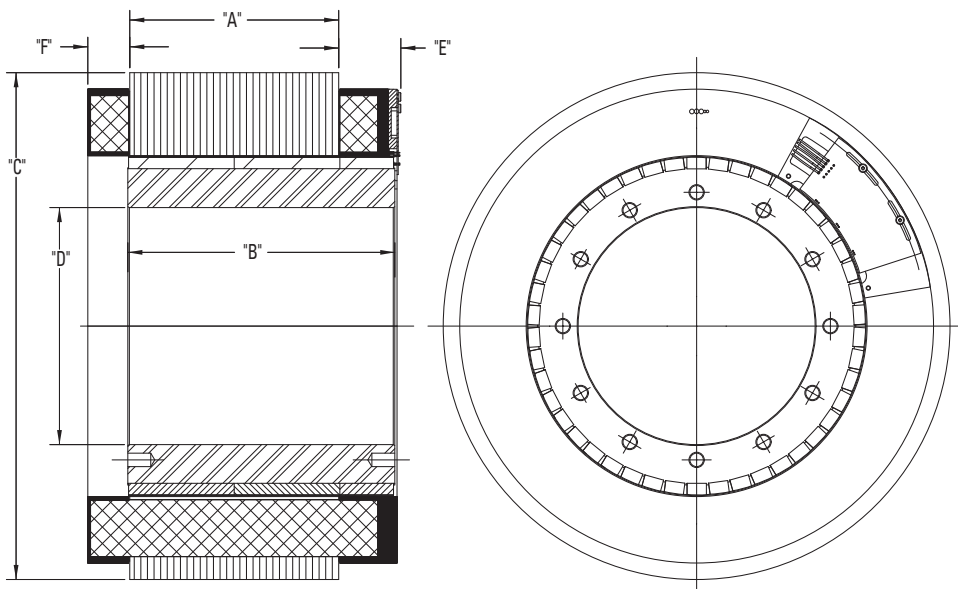
## KBM 88



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-88X00	33.66 [1.325]	36.37 [1.432]	331.46 [13.049]	155.01 [6.103]	37.59 [1.480]	27.43 [1.080]
KBM-88X01	67.56 [2.660]	70.36 [2.770]				
KBM-88X02	136.65 [5.380]	139.44 [5.490]				
KBM-88X03	205.74 [8.100]	208.53 [8.210]				

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 88



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-88X00	33.66 [1.325]	71.37 [2.810]	331.46 [13.049]	155.01 [6.103]	40.64 [1.600]	27.43 [1.080]
KBMS-88X01	67.56 [2.660]	105.41 [4.150]				
KBMS-88X02	136.65 [5.380]	174.63 [6.875]				
KBMS-88X03	205.74 [8.100]	243.84 [9.600]				

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 88 Performance Data

KBM(S)-88XXX PERFORMANCE DATA & MOTOR PARAMETERS										
Motor Parameter	Symbol	Units	TOL	KBM(S)-88X00-X			KBM(S)-88X01-X			
				A	B	C	A	B	C	D
Continuous Stall Torque at 25°C Amb. (1)	Tc	Nm	NOM	102	102	102	205	209	205	207
		lb-ft		75.1	75.1	75.1	151	154	151	153
Continuous Current	Ic	Arms	NOM	17.0	20.5	34.0	17.1	32.1	7.50	40.2
Peak Stall Torque (25°C winding temp)	Tp	Nm	NOM	197	197	197	390	390	390	390
		lb-ft		145	145	145	288	288	288	288
Peak Current	Ip	Arms	NOM	40.0	48.3	80.2	40.0	75.4	17.8	94.7
Rated Continuous Output Power at 25°C Amb. (1)	P Rated	Watts		5460	5460	5460	8250	6600	3870	6600
	HP Rated	HP		7.32	7.32	7.32	11.1	8.85	5.19	8.85
Speed at Rated Power	N Rated	RPM		1000	1000	1000	520	940	205	940
Torque Sensitivity (2)	Kt	Nm / Arms	+/-10%	6.08	5.06	3.04	12.2	6.57	27.7	5.18
		lb-ft / Arms		4.48	3.74	2.24	9.00	4.85	20.5	3.82
Back EMF Constant	Kb	Vrms/kRPM	+/- 10%	368	306	184	738	397	1677	313
Motor Constant	Km	Nm/√watt	+/-10%	6.10	6.10	6.10	10.3	10.5	10.2	10.4
		lb-ft /√watt		4.50	4.50	4.50	7.62	7.75	7.60	7.70
Resistance (line to line)	Rm	Ohms	+/- 10%	0.660	0.460	0.165	0.930	0.261	4.90	0.164
Inductance	Lm	mH		6.5	4.5	1.6	13	3.7	67	2.3
Inertia (KBM)	Jm	Kg-m <sup>2</sup>		5.26E-02			9.84E-2			
		lb-ft-s <sup>2</sup>		3.88E-02			7.26E-2			
Weight (KBM)	Wt	Kg		15.7			37.6			
		lb		34.6			83.0			
Inertia (KBMS)	Jm	Kg-m <sup>2</sup>		0.103			0.146			
		lb-ft-s <sup>2</sup>		7.62E-02			0.108			
Weight (KBMS)	Wt	Kg		21.0			42.6			
		lb		46.4			94.0			
Max Static Friction	Tf	Nm		1.08			2.17			
		lb-ft		0.800			1.60			
Cogging Friction (Peak-to-Peak)	Tcog	Nm		0.810			1.63			
		lb-ft		0.600			1.20			
Viscous Damping	Fi	Nm/ kRPM		0.385			0.773			
		lb-ft / kRPM		0.284			0.570			
Thermal Resistance (3)	TPR	°C / watt		0.305			0.215			
Number of Poles	P	-		46			46			
Recommended Kollmorgen AKD Drive				02407	02407		02407		01207	
Recommended Kollmorgen S700 Drive						S748		S748		S748
Voltage Req'd at Rated Output	Vac Input	Vac		480	400	240	480	480	480	400
Peak Stall Torque (4) (Motor with Drive)	Tp Drive	Nm	+/-10%	197	197	197	390	390	390	390
		lb-ft		145	145	145	288	288	288	288
Cont. Stall Torque (4) (Motor with Drive)	Tc Drive	Nm	+/-10%	102	102	102	205	209	205	207
		lb-ft		75.1	75.1	75.1	151	154	151	153

- 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 20" x 20" x 3/4" heat sink or equivalent.
  - 4) Peak & Continuous Torques may be limited by drive current, see [www.kollmorgen.com](http://www.kollmorgen.com) for complete drive ratings.

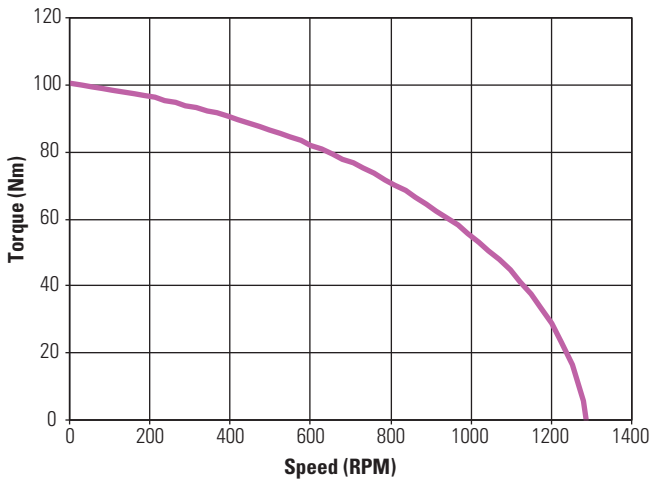
KBM(S)-88XXX PERFORMANCE DATA & MOTOR PARAMETERS									
Motor Parameter	Symbol	Units	TOL	KBM(S)-88X02-X			KBM(S)-88X03-X		
				A	B	C	A	B	C
Continuous Stall Torque at 25°C Amb. (1)	Tc	Nm	NOM	385	385	385	538	545	545
		lb-ft		284	284	284	397	402	402
Continuous Current	Ic	Arms	NOM	15.1	32.1	37.9	18.2	35.5	45.2
Peak Stall Torque (25°C winding temp)	Tp	Nm	NOM	789	789	789	1200	1200	1200
		lb-ft		582	582	582	885	885	885
Peak Current	Ip	Arms	NOM	40.0	75.4	89.0	53.1	106	134
Rated Continuous Output Power at 25°C Amb. (1)	P Rated	Watts		7950	13430	13430	10450	16000	16000
	HP Rated	HP		10.7	18.0	18.0	14.0	21.4	21.4
Speed at Rated Power	N Rated	RPM		235	550	550	225	425	425
Torque Sensitivity (2)	Kt	Nm / Arms	+/-10%	25.7	12.1	10.3	30.0	15.5	12.8
		lb-ft / Arms		19.0	8.95	7.59	22.1	11.5	9.4
Back EMF Constant	Kb	Vrms/kRPM	+/- 10%	1556	734	622	1812	940	772
Motor Constant	Km	Nm/√watt	+/-10%	16.3	16.3	16.3	20.6	20.9	20.9
		lb-ft /√watt		12.0	12.0	12.0	15.2	15.4	15.4
Resistance (line to line)	Rm	Ohms	+/- 10%	1.66	0.369	0.262	1.41	0.370	0.250
Inductance	Lm	mH		29	6.4	4.6	26	7.0	4.7
Inertia (KBM)	Jm	Kg-m <sup>2</sup>		0.198			0.298		
		lb-ft-s <sup>2</sup>		0.146			0.220		
Weight (KBM)	Wt	Kg		72.6			106		
		lb		160			234		
Inertia (KBMS)	Jm	Kg-m <sup>2</sup>		0.247			0.315		
		lb-ft-s <sup>2</sup>		0.182			0.232		
Weight (KBMS)	Wt	Kg		77.6			111		
		lb		171			245		
Max Static Friction	Tf	Nm		4.34			6.51		
		lb-ft		3.20			4.80		
Cogging Friction (Peak-to-Peak)	Tcog	Nm		3.25			4.88		
		lb-ft		2.40			3.60		
Viscous Damping	Fi	Nm/ kRPM		1.53			2.30		
		lb-ft / kRPM		1.13			1.70		
Thermal Resistance (3)	TPR	°C / watt		0.152			0.124		
Number of Poles	P	-		46			46		
Recommended Kollmorgen AKD Drive				02407			02407		
Recommended Kollmorgen S700 Drive					S748	S748		S748	S748
Voltage Req'd at Rated Output	Vac Input	Vac		480	480	400	480	480	400
Peak Stall Torque (4) (Motor with Drive)	Tp Drive	Nm	+/-10%	789	789	789	1153	1160	1050
		lb-ft		582	582	582	850	856	774
Cont. Stall Torque (4) (Motor with Drive)	Tc Drive	Nm	+/-10%	385	385	385	538	545	545
		lb-ft		284	284	284	397	402	402

- 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 20" x 20" x 3/4" heat sink or equivalent.  
4) Peak & Continuous Torques may be limited by drive current, see www.kollmorgen.com for complete drive ratings.

# KBM 88 Performance Curves

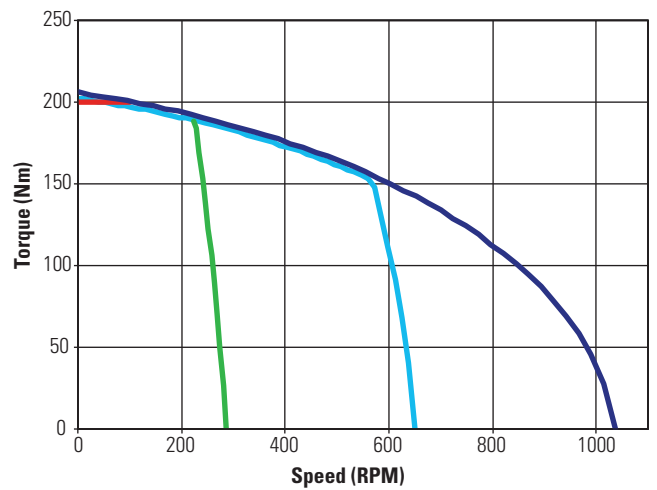
Continuous duty capability for 130°C rise in a 25°C ambient using recommended AKD, or S700, servo drive and sinusoidal commutation.

**KBM(S)-88X00  
ContinuousTorque**



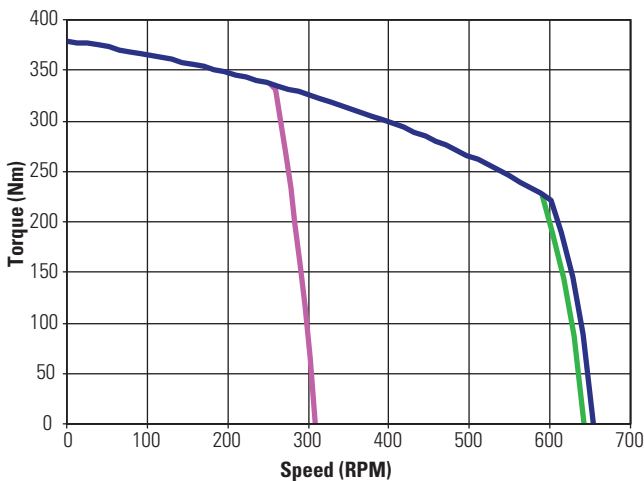
— A Winding-480 Vac / B Winding-400 Vac / C Winding-240 Vac

**KBM(S)-88X01  
ContinuousTorque**



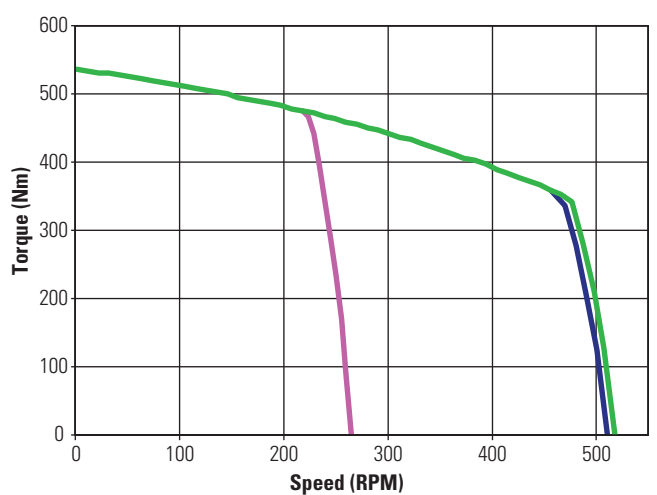
— A Winding-480 Vac — B Winding-480 Vac — C Winding-480 Vac — D Winding-400 Vac

**KBM(S)-88X02  
ContinuousTorque**



— A Winding-400 Vac — B Winding-480 Vac — C Winding-400 Vac

**KBM(S)-88X03  
ContinuousTorque**



— A Winding-480 Vac — B Winding-480 Vac — C Winding-400 Vac

Low Voltage optimized windings available.