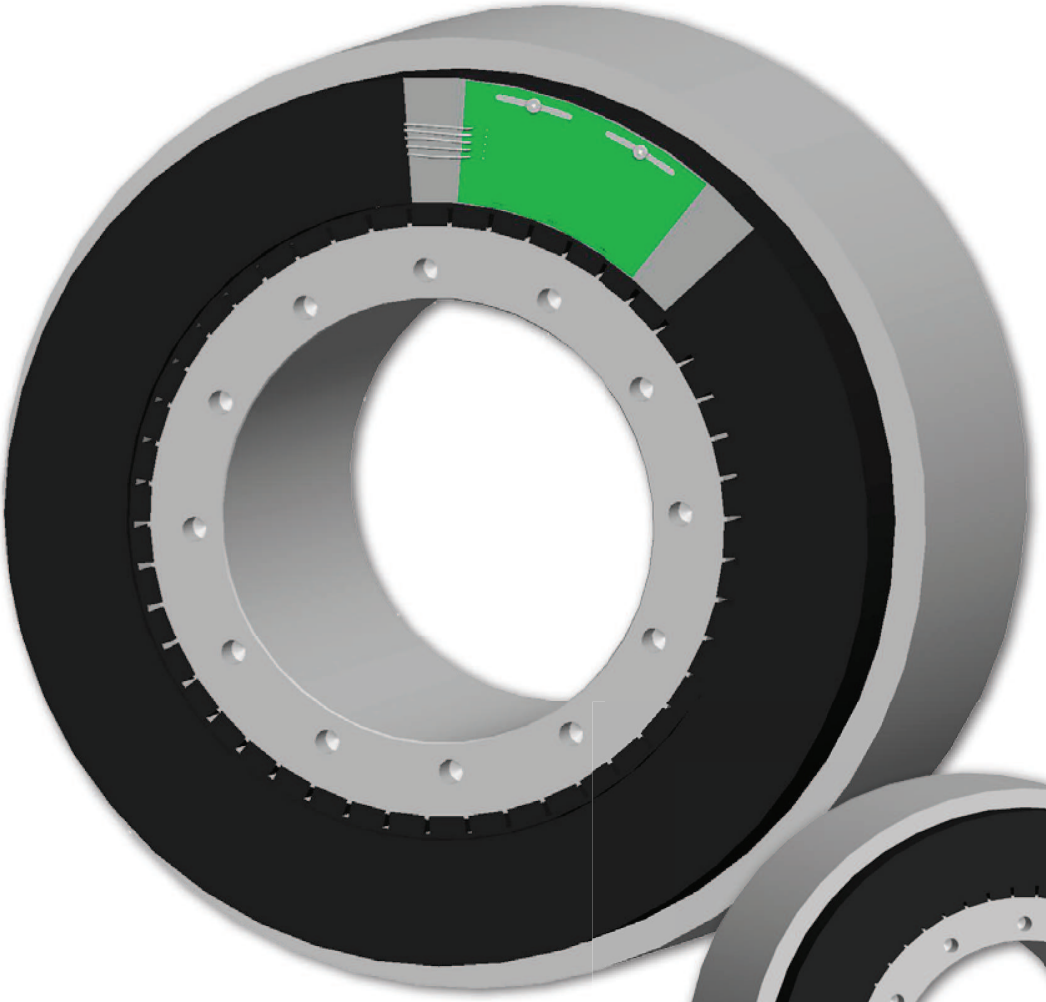
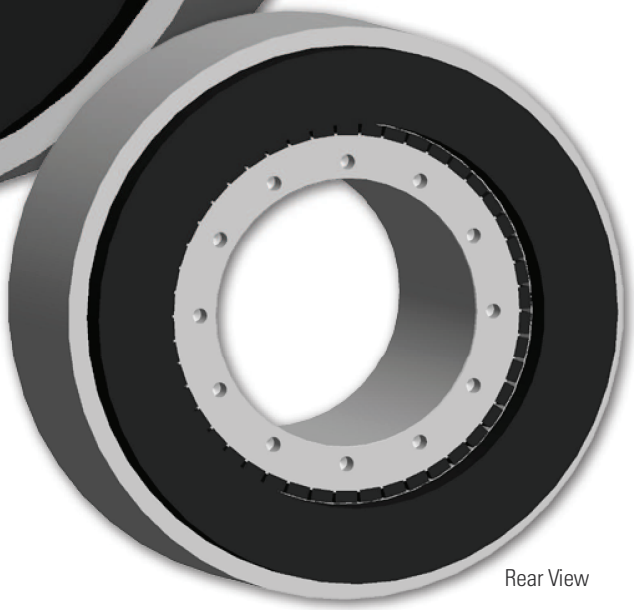
KBM 88 Frameless Motors

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



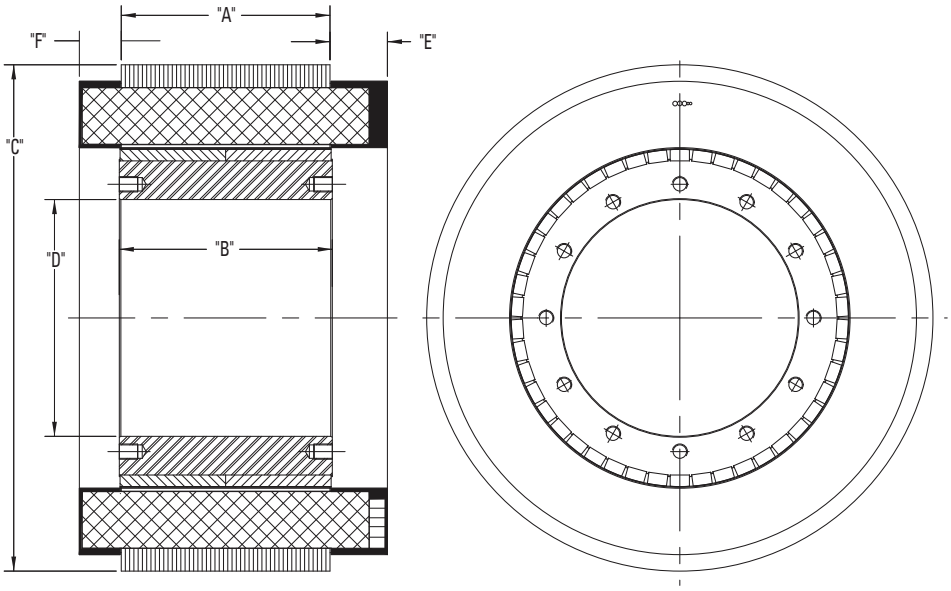
Rear View

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

KBM 88 Outline Drawings

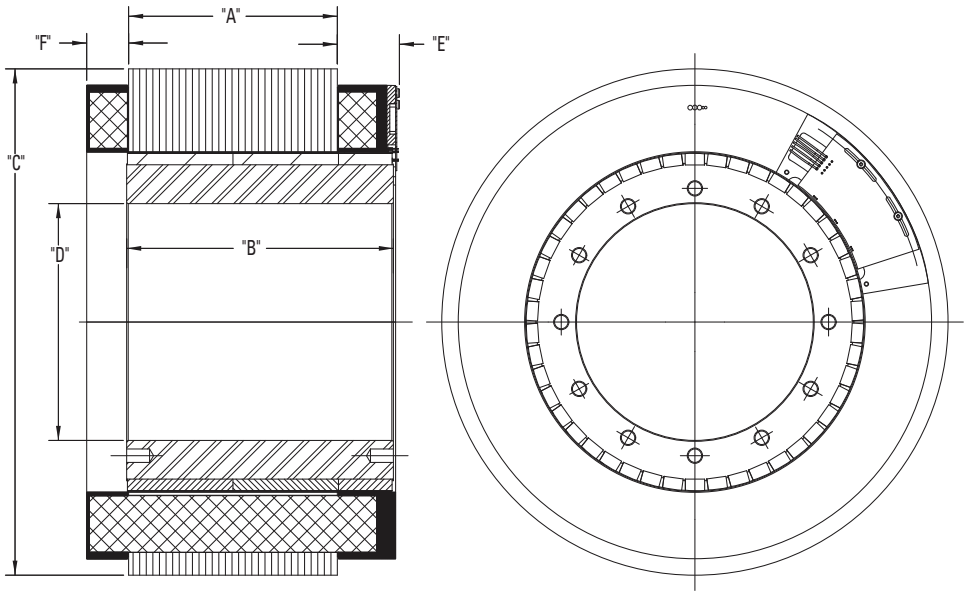
KBM 88



Model Number	"A" mm[inch]	"B" mm[inch]	∅ "C" mm[inch]	∅ "D" mm[inch]	"E" MAX mm[inch]	"F" MAX mm[inch]
KBM-88X01	67.56 [2.660]	70.36 [2.770]	331.46 [13.049]	155.01 [6.103]	37.59 [1.480]	27.43 [1.080]
KBM-88X02	136.65 [5.380]	139.44 [5.490]	331.46 [13.049]	155.01 [6.103]	37.59 [1.480]	27.43 [1.080]
KBM-88X03	205.74 [8.100]	208.53 [8.210]	331.46 [13.049]	155.01 [6.103]	37.59 [1.480]	27.43 [1.080]

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

KBMS 88

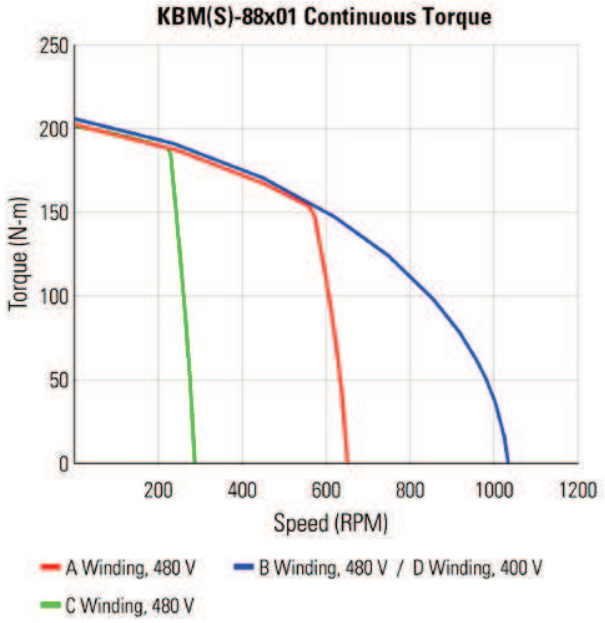


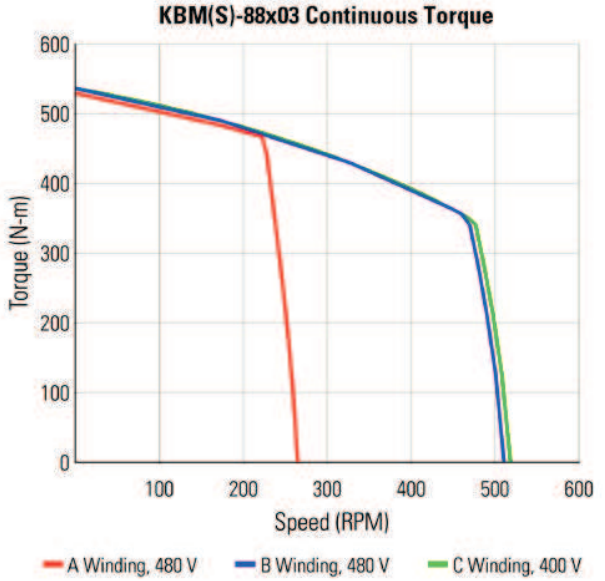
Model Number	"A" mm[inch]	"B" mm[inch]	∅ "C" mm[inch]	∅ "D" mm[inch]	"E" MAX mm[inch]	"F" MAX mm[inch]
KBMS-88X01	67.56 [2.660]	105.41 [4.150]	331.46 [13.049]	155.01 [6.103]	40.64 [1.600]	27.43 [1.080]
KBMS-88X02	136.65 [5.380]	174.63 [6.875]	331.46 [13.049]	155.01 [6.103]	40.64 [1.600]	27.43 [1.080]
KBMS-88X03	205.74 [8.100]	243.84 [9.600]	331.46 [13.049]	155.01 [6.103]	40.64 [1.600]	27.43 [1.080]

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

KBM 88 Perfomance Curves

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





KBM 88 Perfomance Data

KBM(S) Frameless Motor Series

KBM(S)-88XXX PERFORMANCE DATA & MOTOR PARAMETERS												
Motor Parameter	Symbol	Units	KBM(S)-88X01-X				KBM(S)-88X02-X			KBM(S)-88X03-X		
			A	B	C	D	A	B	C	A	B	C
Continuous Stall Torque at 25°C Amb. (1)	Tc	N-m	205	209	205	207	385	385	385	538	545	545
		lb-ft	151	154	151	153	284	284	284	397	402	402
Continuous Current	Ic	Arms	17.1	32.1	7.50	40.2	15.1	32.1	37.9	18.2	35.5	45.2
Peak Stall Torque (25°C winding temp)	Tp	N-m	414	414	414	414	789	789	789	1200	1200	1200
		lb-ft	305	305	305	305	582	582	582	885	885	885
Peak Current	Ip	Arms	40.0	75.4	17.8	94.7	40.0	75.4	89.0	53.1	106	134
Rated Continuous Output Power at 25°C Amb. (1)	P Rated	Watts	8250	6600	3870	6600	7950	13430	13430	10450	16000	16000
	HP Rated	HP	11.1	8.85	5.19	8.85	10.7	18.0	18.0	14.0	21.4	21.4
Speed at Rated Power	N Rated	RPM	520	940	205	940	235	550	550	225	425	425
Torque Sensitivity (2)	Kt	N-m / Arms	12.2	6.57	27.7	5.18	25.7	12.1	10.3	30.0	15.5	12.8
		lb-ft / Arms	9.00	4.85	20.5	3.82	19.0	8.95	7.59	22.1	11.5	9.4
Back EMF Constant (3)	Kb	Vpk / kRPM	1044	562	2372	443	2201	1037	880	2563	1329	1092
Motor Constant	Km	N-m/√watt	10.3	10.5	10.2	10.4	16.3	16.3	16.3	20.6	20.9	20.9
		lb-ft /√watt	7.62	7.75	7.60	7.70	12.0	12.0	12.0	15.2	15.4	15.4
Resistance (line to line)	Rm	Ohms	0.930	0.261	4.90	0.164	1.66	0.369	0.262	1.41	0.370	0.250
Inductance	Lm	mH	13	3.7	67	2.3	29	6.4	4.6	26	7.0	4.7
Inertia (KBM)	Jm	Kg-m²	9.84E-2				0.198			0.298		
		lb-ft-s²	7.26E-2				0.146			0.220		
Weight (KBM)	Wt	Kg	37.6				72.6			106		
		lb	83.0				160			234		
Inertia (KBMS)	Jm	Kg-m²	0.146				0.247			0.315		
		lb-ft-s²	0.108				0.182			0.232		
Weight (KBMS)	Wt	Kg	42.6				77.6			111		
		lb	94.0				171			245		
Max Static Friction	Tf	N-m	2.17				4.34			6.51		
		lb-ft	1.60				3.20			4.80		
Cogging Friction (peak-to-peak)	Tcog	N-m	1.63				3.25			4.88		
		lb-ft	1.20				2.40			3.60		
Viscous Damping	Fi	N-m/ kRPM	0.773				1.53			2.30		
		lb-ft / kRPM	0.570				1.13			1.70		
Thermal Resistance (4)	TPR	°C / watt	0.215				0.152			0.124		
Number of Poles	P	-	46				46			46		
Recommended Drive	AKD-■_ _ _ _ _		02407	04807	01207	04807	02407	04807	04807	02407	04807	04807
Voltage Req'd at Rated Output	Vac Input	VAC	480	480	480	400	480	480	400	480	480	400
Peak Stall Torque (5) (Motor with AKD servo drive)	Tp Drive	N-m	414	414	414	414	789	789	789	1150	1120	1018
		lb-ft	305	305	305	305	582	582	582	848	826	750

* 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 20" x 20" 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.