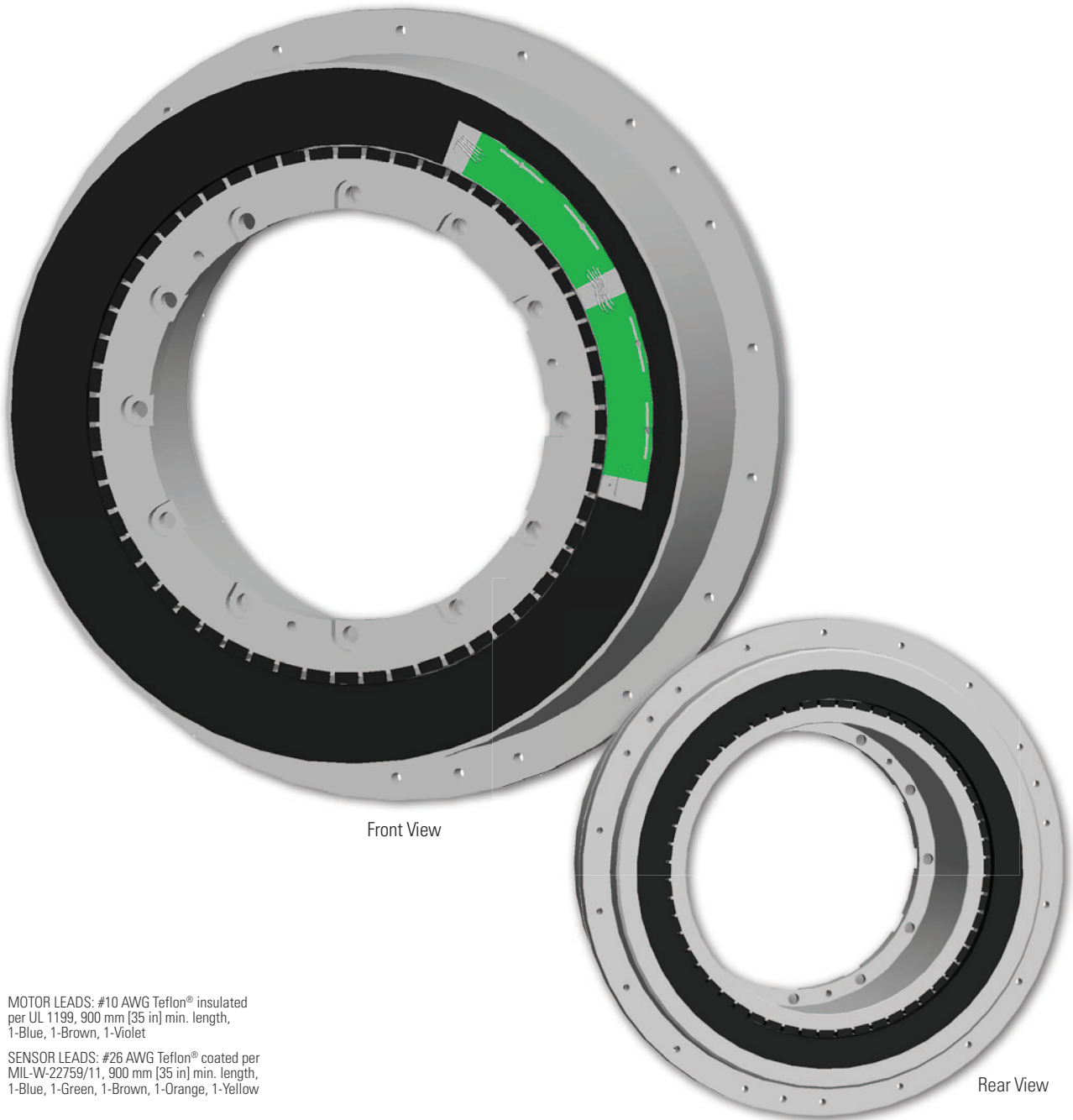


KBM 163 Frameless Motors

The KBM(S)-163 series provides a classic torque motor footprint - large diameter with short axial length, high pole count, and large rotor thru-bore. Aluminum armature sleeve and steel rotor hub provide pilot diameter engagement surfaces and bolted mounting joints for simple installation. With very low cogging, low total harmonic distortion, and high torque capacity, the KBM(S)-163 is a great performer in the most demanding applications.



Front View

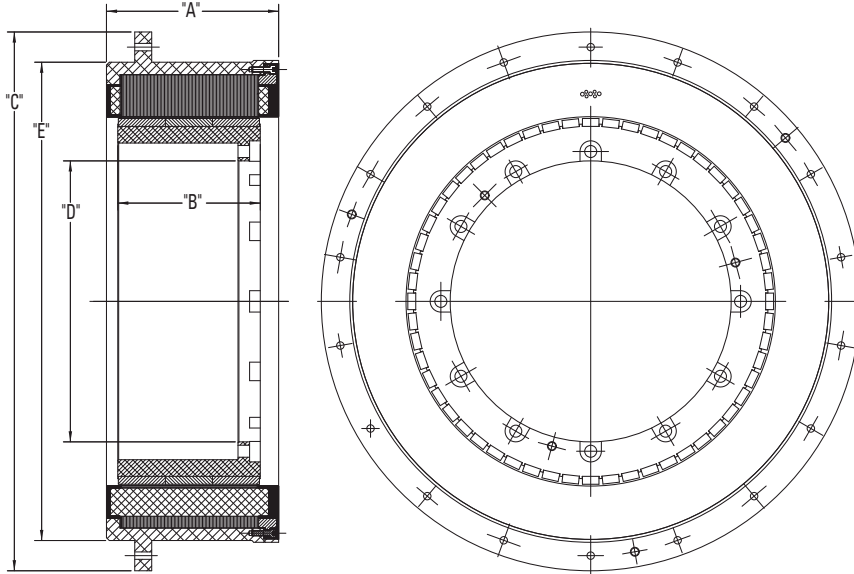
Rear View

MOTOR LEADS: #10 AWG Teflon® insulated per UL 1199, 900 mm [35 in] min. length, 1-Blue, 1-Brown, 1-Violet

SENSOR LEADS: #26 AWG Teflon® coated per MIL-W-22759/11, 900 mm [35 in] min. length, 1-Blue, 1-Green, 1-Brown, 1-Orange, 1-Yellow

KBM 163 Outline Drawings

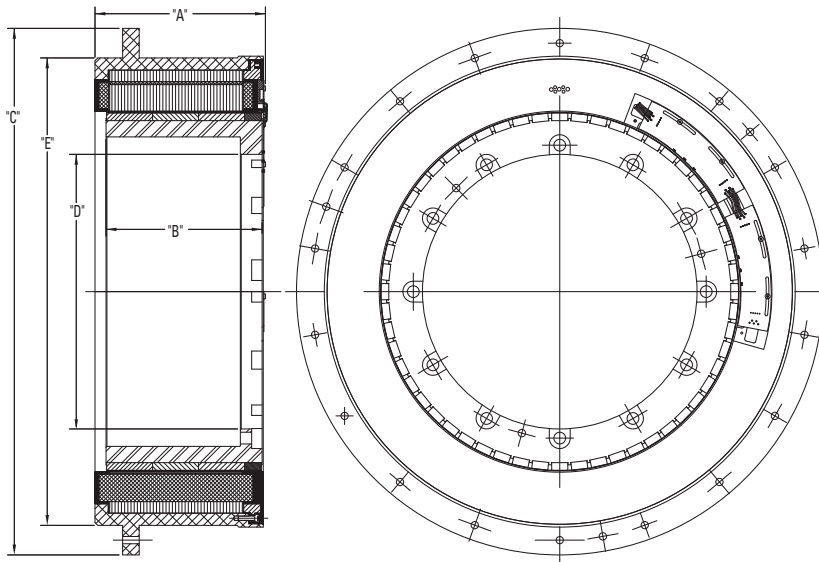
KBM 163



Model Number	"A" mm[inch]	"B" mm[inch]	Ø "C" mm[inch]	Ø "D" mm[inch]	Ø "E" mm[inch]
KBM-163X01	142.54 [5.612]	106.93 [4.210]	605.0 [23.82]	315.50 [12.421]	537.08 [21.145]
KBM-163X02	193.34 [7.612]	160.02 [6.300]	605.0 [23.82]	315.50 [12.421]	537.08 [21.145]
KBM-163X03	244.14 [9.612]	213.11 [8.390]	605.0 [23.82]	315.50 [12.421]	537.08 [21.145]

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

KBMS 163

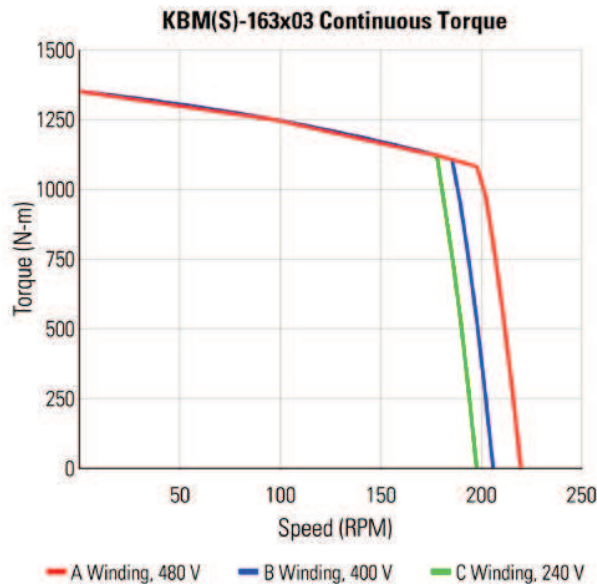
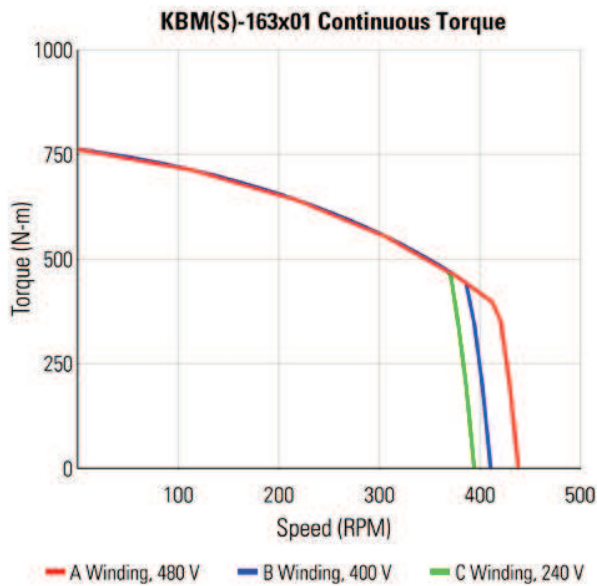


Model Number	"A" mm[inch]	"B" mm[inch]	Ø "C" mm[inch]	Ø "D" mm[inch]	Ø "E" mm[inch]
KBMS-163X01	142.54 [5.612]	126.24 [4.970]	605.0 [23.82]	315.50 [12.421]	537.08 [21.145]
KBMS-163X02	193.34 [7.612]	179.32 [7.060]	605.0 [23.82]	315.50 [12.421]	537.08 [21.145]
KBMS-163X03	244.14 [9.612]	232.41 [9.150]	605.0 [23.82]	315.50 [12.421]	537.08 [21.145]

All dimensions are nominal. For additional dimensional data, 2D and 3D drawings, visit www.kollmorgen.com/kbm

KBM 163 Performance Curves

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



KBM 163 Performance Data

KBM(S) Frameless Motor Series

KBM(S)-163XXX PERFORMANCE DATA & MOTOR PARAMETERS											
Motor Parameter	Symbol	Units	KBM(S)-163X01-X			KBM(S)-163X02-X			KBM(S)-163X03-X		
			A	B	C	A	B	C	A	B	C
Continuous Stall Torque at 25°C Amb. (1)	Tc	N-m	776	776	776	1090	1090	1090	1376	1376	1376
		lb-ft	572	572	572	804	804	804	1015	1015	1015
Continuous Current	Ic	Arms	43.3	49.0	78.5	40.6	46.0	73.0	38.6	44.0	70.0
Peak Stall Torque (25°C winding temp)	Tp	N-m	1966	1966	1966	2915	2915	2915	3932	3932	3932
		lb-ft	1450	1450	1450	2150	2150	2150	2900	2900	2900
Peak Current	Ip	Arms	140	158	253	140	158	253	140	157	253
Rated Continuous Output Power at 25°C Amb. (1)	P Rated	Watts	17300	17400	17300	20100	19120	18065	20100	18810	17420
	HP Rated	HP	23.2	23.3	23.2	26.9	25.6	24.2	26.9	25.2	23.4
Speed at Rated Power	N Rated	RPM	375	350	335	245	225	215	180	165	160
Torque Sensitivity (2)	Kt	N-m / Arms	18.1	16.1	10.1	27.2	24.2	15.1	36.2	32.2	20.1
		lb-ft / Arms	13.4	11.9	7.4	20.1	17.8	11.1	26.7	23.7	14.8
Back EMF Constant (3)	Kb	Vpk / kRPM	1552	1379	860	2326	2067	1292	3094	2750	1719
Motor Constant	Km	N-m/√watt	25.6	25.6	25.6	32.5	32.5	32.5	38.2	38.2	38.2
		lb-ft /√watt	18.9	18.9	18.9	24.0	24.0	24.0	28.2	28.2	28.2
Resistance (line to line)	Rm	Ohms	0.336	0.267	0.104	0.467	0.372	0.145	0.598	0.476	0.185
Inductance	Lm	mH	4.2	3.3	1.3	6.3	5.0	1.9	8.4	6.6	2.6
Inertia (KBM)	Jm	Kg-m ²	1.06			1.57			1.68		
		lb-ft-s ²	0.785			1.16			1.24		
Weight (KBM)	Wt	Kg	90.7			131			161		
		lb	200			288			355		
Inertia (KBMS)	Jm	Kg-m ²	1.23			1.72			1.83		
		lb-ft-s ²	0.905			1.27			1.35		
Weight (KBMS)	Wt	Kg	96.2			136			166		
		lb	212			300			365		
Max Static Friction	Tf	N-m	9.49			14.2			19.0		
		lb-ft	7.00			10.5			14.0		
Cogging Friction (peak-to-peak)	Tcog	N-m	4.07			5.42			8.13		
		lb-ft	3.00			4.00			6.00		
Viscous Damping	Fi	N-m/ kRPM	182			294			407		
		lb-ft / kRPM	134			217			300		
Thermal Resistance (4)	TPR	°C / watt	0.092			0.075			0.065		
Number of Poles	P	-	56			56			56		
Recommended Drive	AKD-■ _ _ _ _ _		04807	09607	09607	04807	09607	09607	04807	09607	09607
Voltage Req'd at Rated Output	Vac Input	VAC	480	400	240	480	400	240	480	400	240
Peak Stall Torque (5) (Motor with AKD servo drive)	Tp Drive	N-m	1583	1966	1710	2375	2915	2520	3165	3932	3400
		lb-ft	1168	1450	1260	1752	2150	1857	2334	2900	2507

* 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 the motor is housed and mounted to a heat sink.
 5) Peak torque may be limited by AKD servo drive current, see page 11 for drive ratings or visit www.kollmorgen.com.