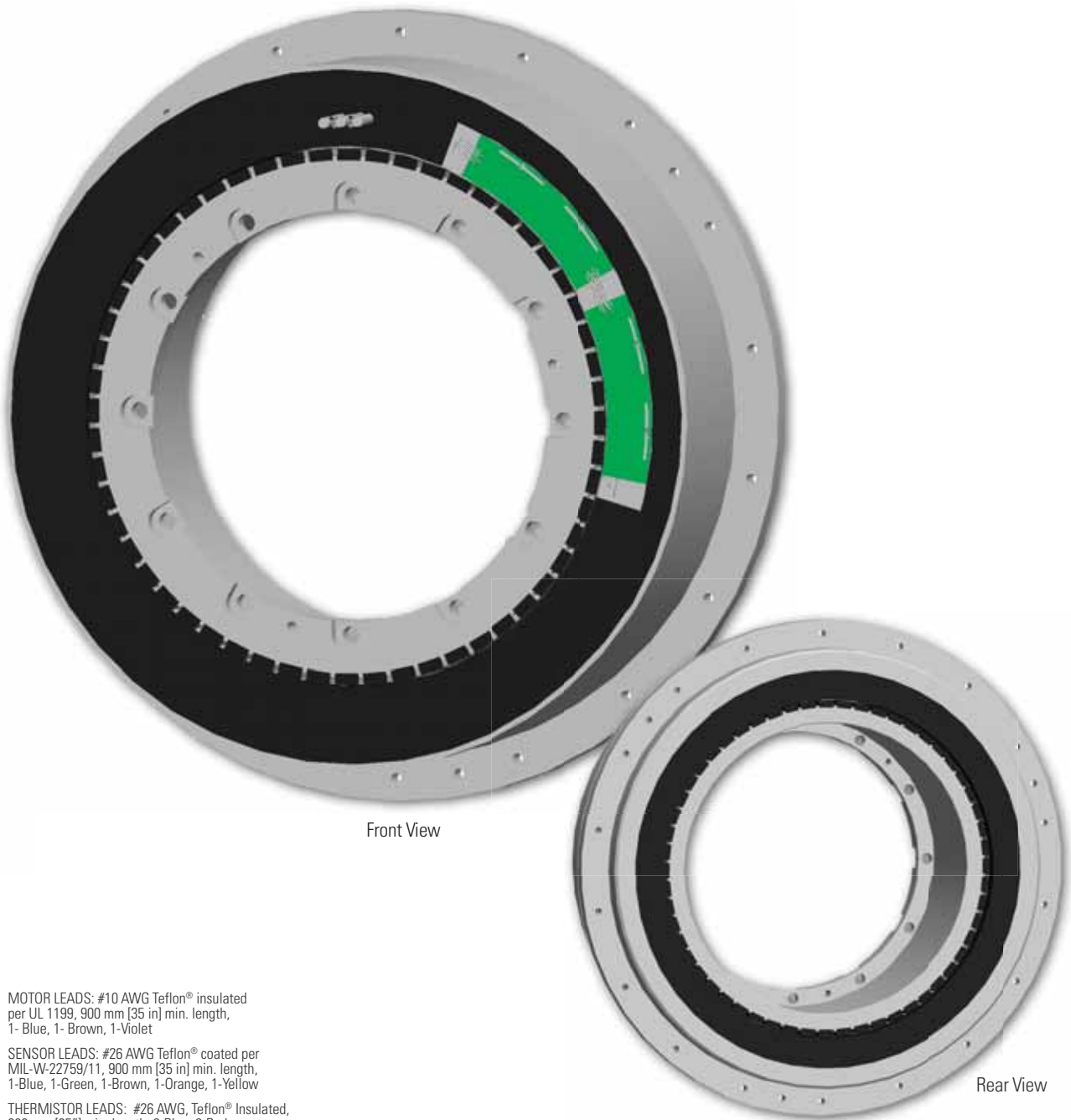


KBM 163 Frameless Motors

K B M 1 6 3

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

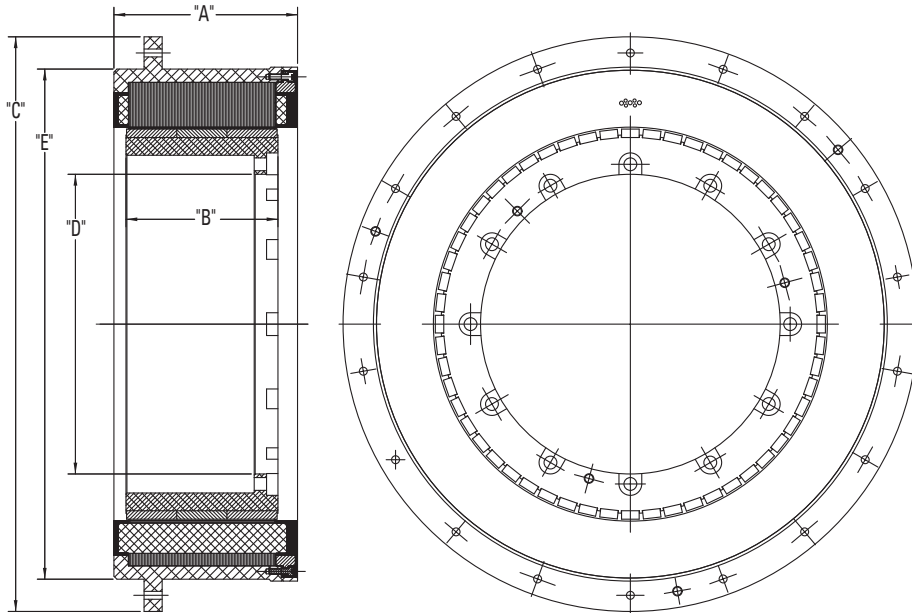
MOTOR LEADS: #10 AWG Teflon® insulated per UL 1199, 900 mm [35 in] min. length, 1- Blue, 1- Brown, 1- Violet

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

THERMISTOR LEADS: #26 AWG, Teflon® Insulated, 900 mm [35"] min. length, 2-Blue, 2-Red

KBM 163 Outline Drawings

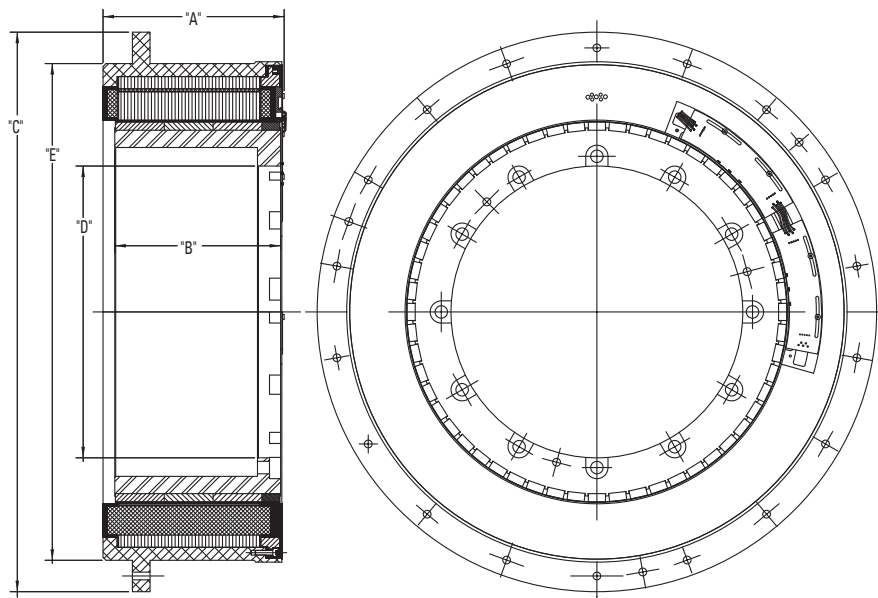
KBM 163



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]			
KBM-163X03	244.14 [9.612]	213.11 [8.390]			

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]			
KBMS-163X03	244.14 [9.612]	232.41 [9.150]			

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

KBM 163 Performance Data

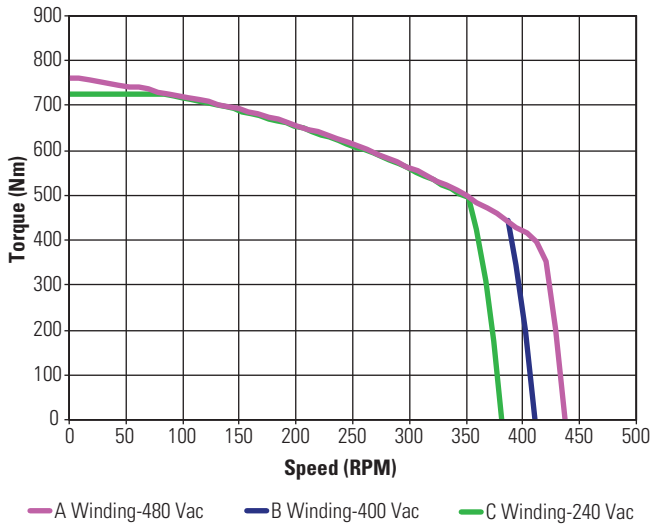
KBM(S)-163XXX PERFORMANCE DATA & MOTOR PARAMETERS												
Motor Parameter	Symbol	Units	TOL	KBM(S)-163X01-X			KBM(S)-163X02-X			KBM(S)-163X03-X		
				A	B	C	A	B	C	A	B	C
Continuous Stall Torque at 25°C Amb. (1)	Tc	Nm	NOM	764	764	764	1084	1084	1084	1329	1329	1329
		lb-ft		564	564	564	800	800	800	981	981	981
Continuous Current	Ic	Arms	NOM	41.5	47.0	74.5	39.5	44.0	73.0	38.6	44.0	70.0
Peak Stall Torque (25°C winding temp)	Tp	Nm	NOM	1966	1966	1966	2915	2915	2915	3932	3932	3932
		lb-ft		1450	1450	1450	2150	2150	2150	2900	2900	2900
Peak Current	Ip	Arms	NOM	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	Nm / Arms	+/-10%	18.8	16.7	10.4	28.2	25.1	15.7	36.2	32.2	20.1
		lb-ft / Arms		13.8	12.3	7.69	20.8	18.5	11.6	26.7	23.7	14.8
Back EMF Constant	Kb	Vrms/kRPM	+/- 10%	1134	1008	630	1707	1517	948	2188	1945	1216
Motor Constant	Km	Nm/√watt	+/-10%	25.2	25.6	25.5	32.3	32.3	32.3	38.2	38.2	38.2
		lb-ft /√watt		18.6	18.9	18.8	24.0	24.0	24.0	28.2	28.2	28.2
Resistance (line to line)	Rm	Ohms	+/- 10%	0.370	0.286	0.111	0.509	0.394	0.155	0.640	0.495	0.195
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	Nm		9.49			14.2			19.0		
		lb-ft		7.00			10.5			14.0		
Cogging Friction (peak-to-peak)	Tcog	Nm		4.07			5.42			8.13		
		lb-ft		3.00			4.00			6.00		
Viscous Damping	Fi	Nm/ kRPM		182			294			407		
		lb-ft / kRPM		134			217			300		
Thermal Resistance (3)	TPR	°C / watt		0.092			0.075			0.065		
Number of Poles	P	-		56			56			56		
Recommended Kollmorgen S700 Drive				S748	S772	S772	S748	S772	S772	S748	S772	S772
Voltage Req'd at Rated Output	Vac Input	Vac		480	400	240	480	400	240	480	400	240
Peak Stall Torque (4) (Motor with Drive)	Tp Drive	Nm	+/-10%	1461	1775	1242	2198	2740	1867	2817	3427	2393
		lb-ft		1078	1309	916	1621	2021	1377	2078	2528	1765
Cont. Stall Torque (4) (Motor with Drive)	Tc Drive	Nm	+/-10%	764	764	727	1084	1084	1070	1329	1329	1329
		lb-ft		564	564	536	800	800	789	981	981	981

- 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) Peak & Continuous Torques may be limited by drive current, see www.kollmorgen.com for complete drive ratings.

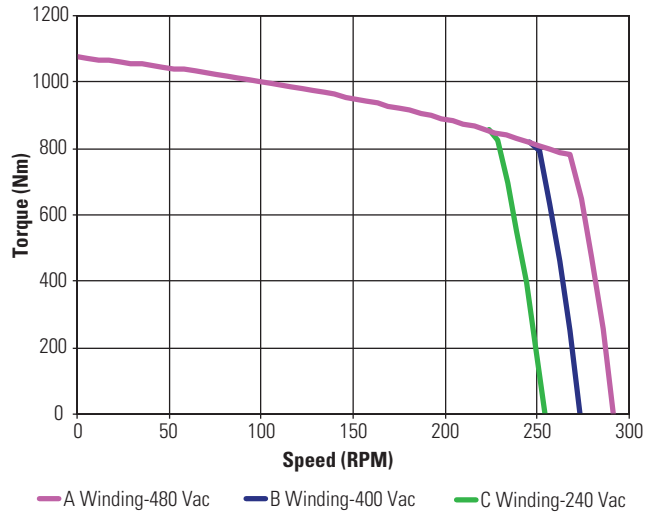
KBM 163 Performance Curves

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

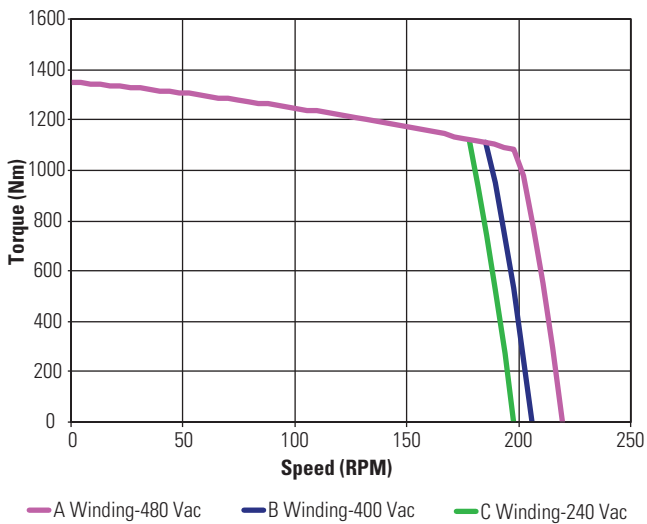
**KBM(S)-163X01
ContinuousTorque**



**KBM(S)-163X02
ContinuousTorque**



**KBM(S)-163X03
ContinuousTorque**



Low Voltage optimized windings available.