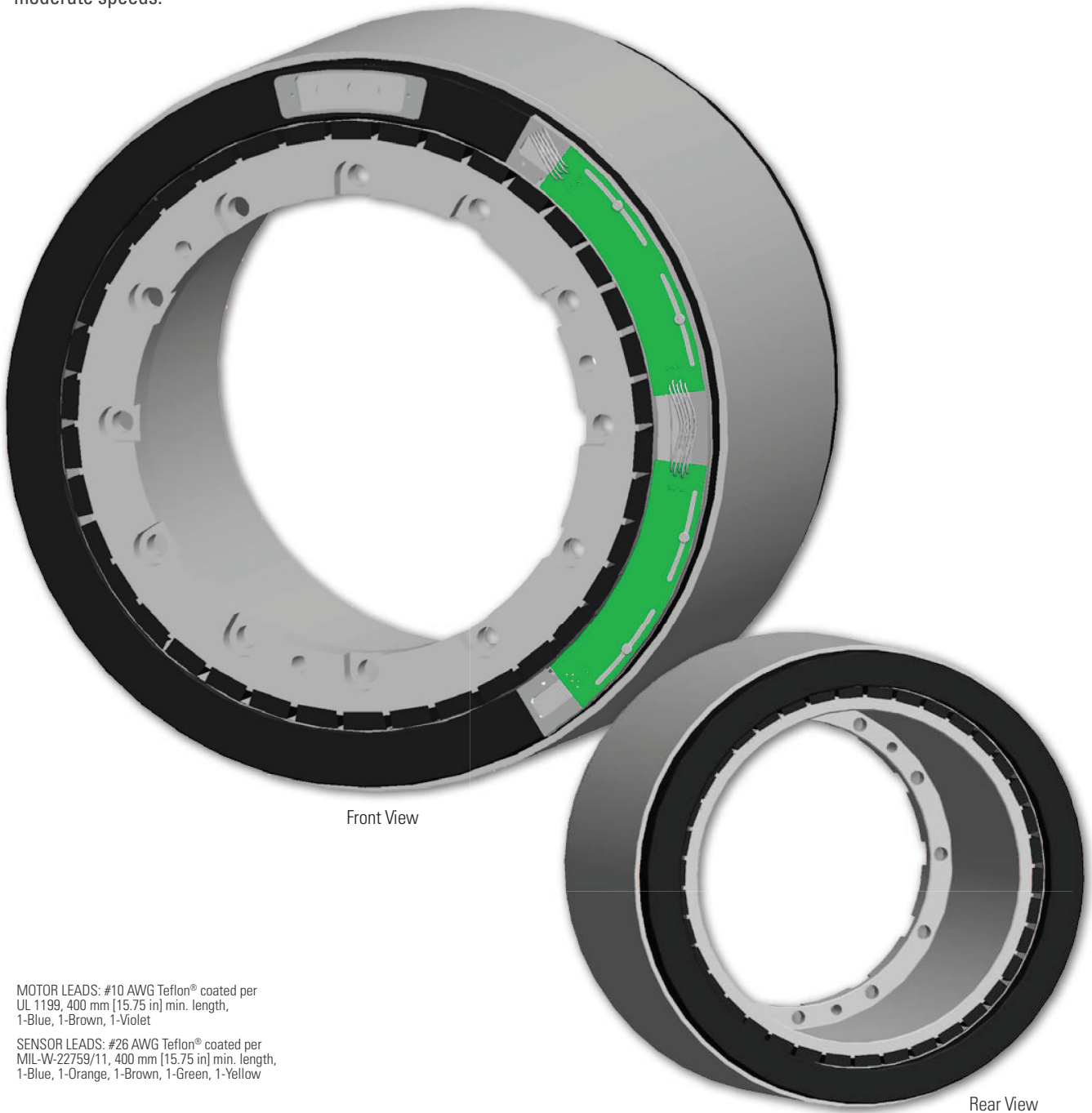


# KBM 118 Frameless Motors

The KBM(S)-118 series provides a classic torque motor footprint - large diameter with a short axial length. With a skewed stator, low cogging, and low harmonic distortion these motors produce extremely smooth rotation. In addition, the high pole count and excellent torque / volume ratio makes the KBM(S)-118 an ideal fit for direct drive applications requiring high torque at low to moderate speeds.



Front View

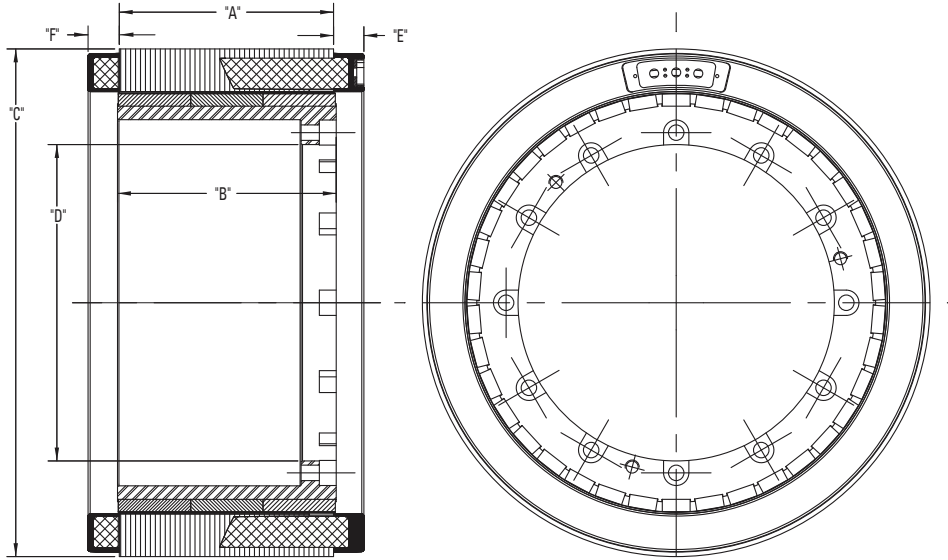
Rear View

MOTOR LEADS: #10 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 118 Outline Drawings

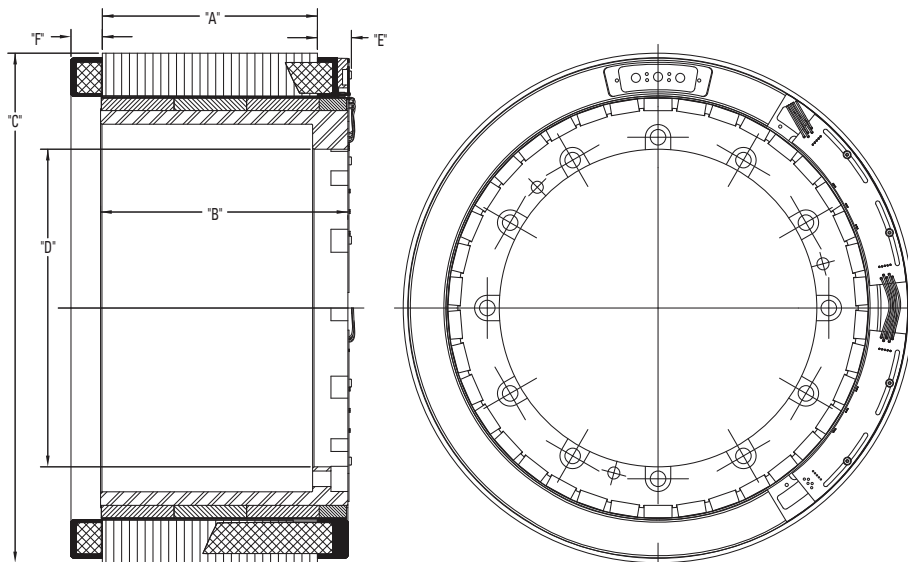
**KBM 118**



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-118X01	101.60 [4.000]	104.14 [4.100]	361.11 [14.217]	225.04 [8.860]	21.59 [.850]	22.23 [.875]
KBM-118X02	152.40 [6.000]	155.58 [6.125]	361.11 [14.217]	225.04 [8.860]	21.59 [.850]	22.23 [.875]
KBM-118X03	203.20 [8.000]	207.26 [8.160]	361.11 [14.217]	225.04 [8.860]	21.59 [.850]	22.23 [.875]
KBM-118X04	254.00 [10.000]	258.69 [10.185]	361.11 [14.217]	225.04 [8.860]	21.59 [.850]	22.23 [.875]

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 118**

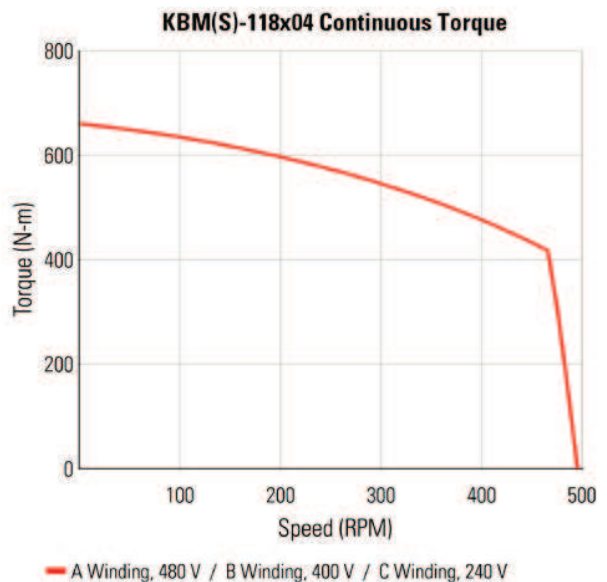
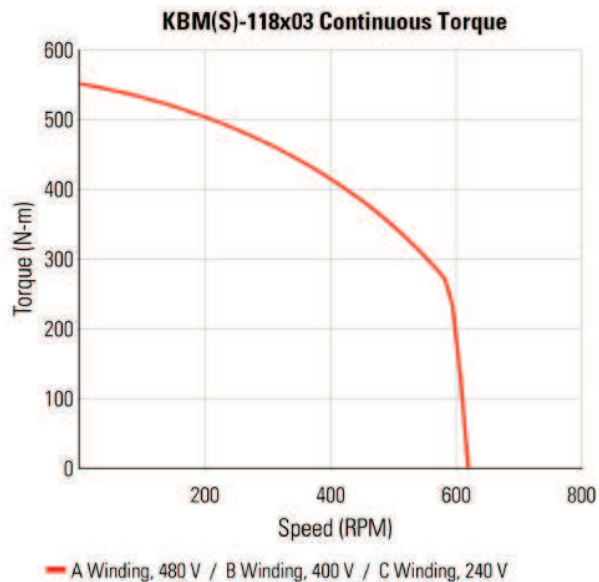
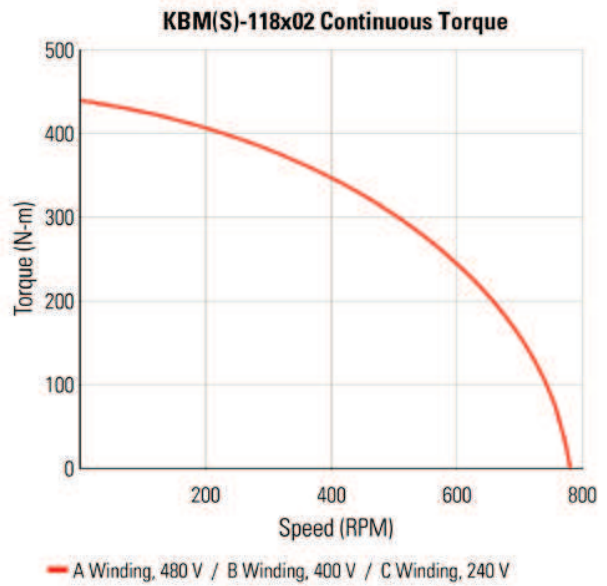
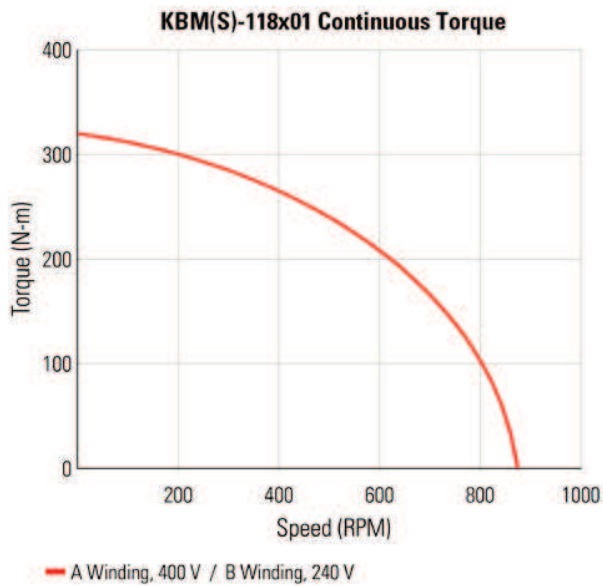


Model Number	"A" mm[inch]	"B" mm[inch]	Ø "C" mm[inch]	Ø "D" mm[inch]	"E" MAX mm[inch]	"F" MAX mm[inch]
KBMS-118X01	101.60 [4.000]	123.83 [4.875]	361.11 [14.217]	225.04 [8.860]	26.03 [1.025]	22.23 [.875]
KBMS-118X02	152.40 [6.000]	175.26 [6.900]	361.11 [14.217]	225.04 [8.860]	26.03 [1.025]	22.23 [.875]
KBMS-118X03	203.20 [8.000]	226.70 [8.925]	361.11 [14.217]	225.04 [8.860]	26.03 [1.025]	22.23 [.875]
KBMS-118X04	254.00 [10.000]	278.13 [10.950]	361.11 [14.217]	225.04 [8.860]	26.03 [1.025]	22.23 [.875]

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 118 Performance Curves

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



# KBM 118 Performance Data

## KBM(S) Frameless Motor Series

KBM(S)-118XXX PERFORMANCE DATA & MOTOR PARAMETERS													
Motor Parameter	Symbol	Units	KBM(S)-118X01-X		KBM(S)-118X02-X			KBM(S)-118X03-X			KBM(S)-118X04-X		
			A	B	A	B	C	A	B	C	A	B	C
Continuous Stall Torque at 25°C Amb. (1)	Tc	N-m	325	325	446	446	446	560	560	560	672	672	672
		lb-ft	239	239	329	329	329	413	413	413	495	495	495
Continuous Current	Ic	Arms	43.7	76.5	47.0	57.0	94.5	44.0	54.0	89.5	42.8	51.5	86.0
Peak Stall Torque (25°C winding temp)	Tp	N-m	994	994	1451	1451	1451	1932	1932	1932	2400	2400	2400
		lb-ft	733	733	1070	1070	1070	1425	1425	1425	1770	1770	1770
Peak Current	Ip	Arms	151	265	171	206	343	171	206	343	171	206	343.0
Rated Continuous Output Power at 25°C Amb. (1)	P Rated	Watts	9000	9000	10350	10350	10350	17000	17000	17000	19850	19850	19850
	HP Rated	HP	12.1	12.1	13.9	13.9	13.9	22.8	22.8	22.8	26.6	26.6	26.6
Speed at Rated Power	N Rated	RPM	785	785	710	710	710	535	535	535	420	420	420
Torque Sensitivity (2)	Kt	N-m / Arms	7.58	4.33	9.66	8.05	4.83	12.8	10.7	6.40	16.0	13.4	8.00
		lb-ft / Arms	5.59	3.20	7.13	5.94	3.56	9.46	7.88	4.72	11.8	9.8	5.90
Back EMF Constant (3)	Kb	Vpk / kRPM	648	371	826	689	413	1096	913	547	1371	1142	684
Motor Constant	Km	N-m/√watt	11.8	11.8	14.6	14.6	14.6	17.1	17.1	17.1	19.4	19.4	19.4
		lb-ft /√watt	8.70	8.70	10.8	10.8	10.8	12.6	12.6	12.6	14.3	14.3	14.3
Resistance (line to line)	Rm	Ohms	0.276	0.088	0.292	0.191	0.073	0.373	0.259	0.093	0.455	0.298	0.112
Inductance	Lm	mH	2.5	0.82	2.7	1.9	0.70	4.3	3.0	1.1	4.5	3.0	1.2
Inertia (KBM)	Jm	Kg-m <sup>2</sup>	0.267		0.396			0.542			0.648		
		lb-ft-s <sup>2</sup>	0.197		0.292			0.400			0.478		
Weight (KBM)	Wt	Kg	37.1		53.5			71.7			88.5		
		lb	81.8		118			158			195		
Inertia (KBMS)	Jm	Kg-m <sup>2</sup>	0.315		0.403			0.591			0.698		
		lb-ft-s <sup>2</sup>	0.232		0.297			0.436			0.515		
Weight (KBMS)	Wt	Kg	39.2		56.2			73.9			90.7		
		lb	86.4		124			163			200		
Max Static Friction	Tf	N-m	6.39		9.57			12.8			16.0		
		lb-ft	4.71		7.06			9.42			11.8		
Cogging Friction (peak-to-peak)	Tcog	N-m	3.16		4.79			6.39			8.13		
		lb-ft	2.33		3.53			4.71			6.00		
Viscous Damping	Fi	N-m/ kRPM	38.8		59.7			81.3			100		
		lb-ft / kRPM	28.6		44.0			60.0			74.0		
Thermal Resistance (4)	TPR	°C / watt	0.110		0.089			0.078			0.069		
Number of Poles	P	-	38		38			38			38		
Recommended Drive	AKD-█		04807	09607	04807	09607	09607	04807	09607	09607	04807	09607	09607
Voltage Req'd at Rated Output	Vac Input	VAC	400	240	480	400	240	480	400	240	480	400	240
Peak Stall Torque (5) (Motor with AKD servo drive)	Tp Drive	N-m	700	760	890	1380	895	1261	1835	1184	1470	2282	1485
		lb-ft	516	560	656	1017	660	930	1352	874	1084	1682	1095

- \* 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](http://www.kollmorgen.com).