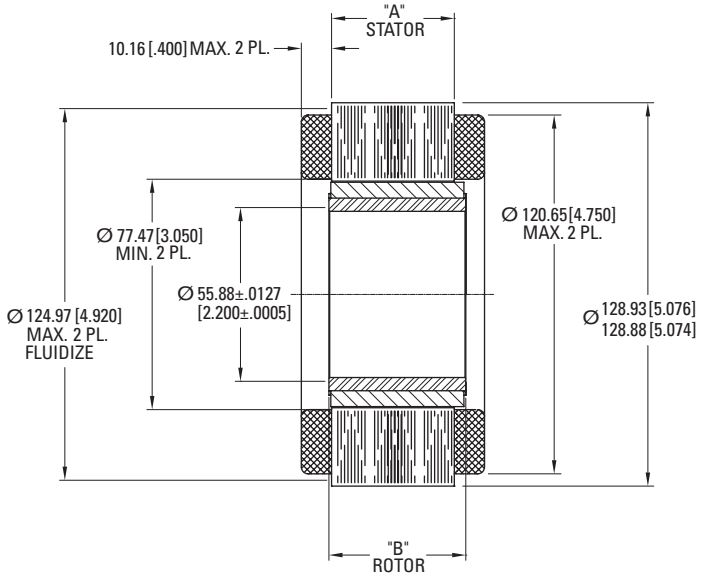
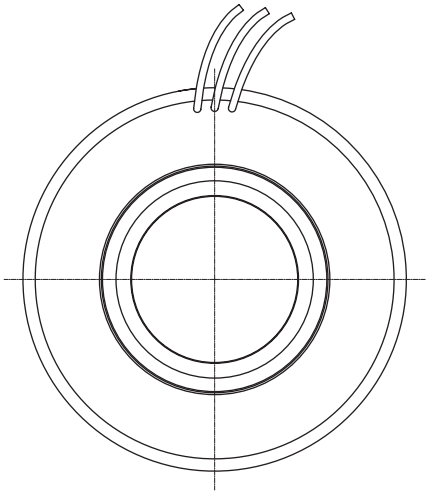
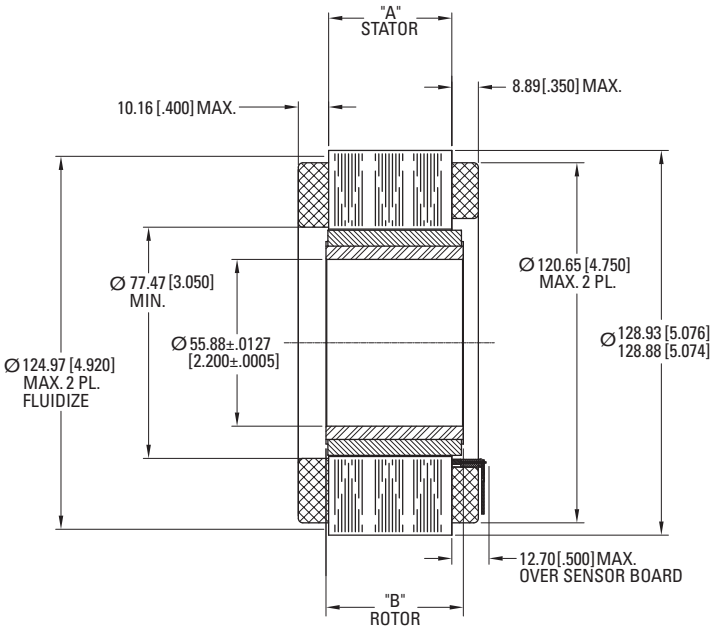
TBM 129 Series Outline Drawings

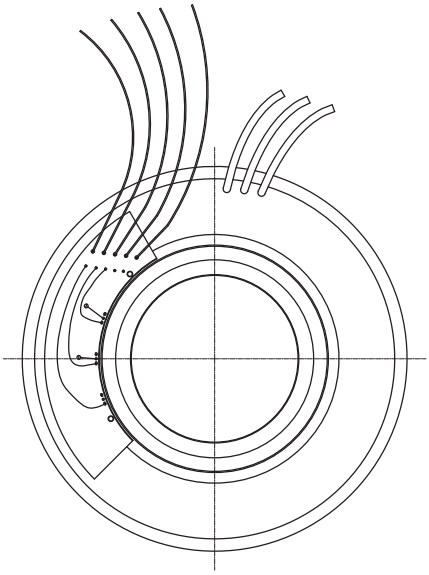
TBM 129





TBMS 129





MOTOR LEADS:
#16 AWG, TEFLON COATED, PER MIL-W-22759/11
3 LEADS - 6 INCHES MIN. LONG EACH
1-RED, 1-WHITE, & 1-BLACK

SENSOR LEADS:
#26 AWG, TYPE "ET", TEFLON COATED, PER MIL-W-16878
5 LEADS 6 INCHES MIN. LONG EACH
1-BLUE, 1-BROWN, 1-GREEN, 1-ORANGE, & 1-YELLOW

MODEL NUMBER	"A" mm [inch]	"B" mm [inch]
TBM(S)-12913	13.33 [0.525]	17.40 [0.685]
TBM(S)-12941	41.28 [1.625]	45.35 [1.785]
TBM(S)-12955	54.61 [2.150]	58.67 [2.310]

TBM 129 Series Performance Data

TBM(S) 129 Series Performance Data and Motor Parameters

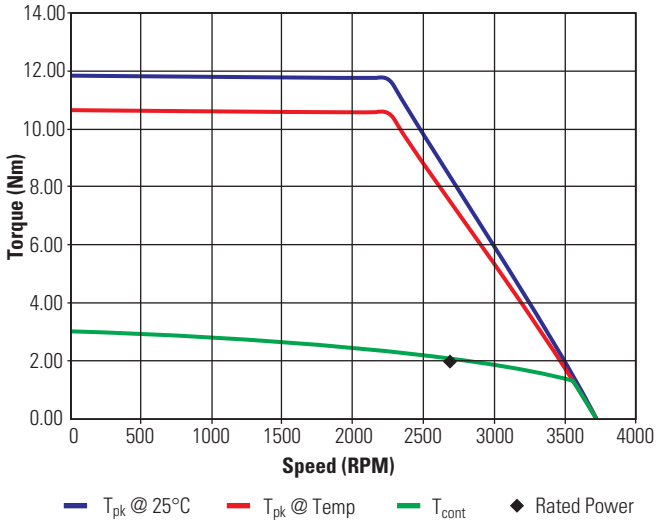
Motor Parameter	Symbol	Units	TOL	TBM(S)-12913-X		TBM(S)-12941-X		TBM(S)-12955-X	
				A	B	A	B	A	B
Continuous Stall Torque*	Tc	N-m	NOM	3.12	3.12	8.27	8.27	10.3	10.3
		Lb-Ft		2.30	2.30	6.10	6.10	7.60	7.60
Continuous Current	Ic	Adc	NOM	12.5	21.5	16.8	19.5	16.1	18.3
		Arms		10.2	17.6	13.7	15.9	13.1	14.9
Peak Stall Torque* (25°C winding temp)	Tp	N-m	NOM	11.9	8.07	29.6	25.0	39.4	33.9
		Lb-Ft		8.75	5.95	21.9	18.4	29.0	25.0
Peak Current	Ip	Adc	NOM	57.0	57.0	57.0	57.0	57.0	57.0
		Arms		46.5	46.5	46.5	46.5	46.5	46.5
Rated Cont Power*	P Rated	Watts	NOM	560	572	900	640	940	600
Speed at Rated Power	N Rated	RPM	NOM	2700	2600	1600	860	1225	640
Design Voltage	Vbus	Vdc	NOM	100	48.0	100	48.0	100	48.0
	Vac	Vrms	NOM	70.7	33.9	70.7	33.9	70.7	33.9
Torque Sensitivity at Temp*	Kt (hot)	N-m / Adc	+/-10%	0.256	0.154	0.520	0.445	0.681	0.583
		Lb-Ft / Adc		0.189	0.113	0.383	0.328	0.502	0.430
		N-m / Arms	+/-10%	0.314	0.188	0.637	0.545	0.834	0.714
		Lb-Ft / Arms		0.231	0.139	0.470	0.402	0.615	0.527
Back EMF at Temp*	Kb (hot)	Vpk / kRPM	+/-10%	26.8	16.1	54.4	46.4	71.3	61.0
		Vrms / kRPM		19.0	11.4	38.5	32.8	50.4	43.1
Torque Sensitivity at 25°C	Kt (cold)	N-m / Adc	+/-10%	0.282	0.169	0.572	0.490	0.749	0.641
		Lb-Ft / Adc		0.208	0.124	0.421	0.361	0.552	0.473
		N-m / Arms	+/-10%	0.345	0.207	0.701	0.600	0.917	0.785
		Lb-Ft / Arms		0.254	0.153	0.517	0.442	0.677	0.580
Back EMF	Kb (cold)	Vpk / kRPM	+/-10%	29.5	17.7	59.9	51.0	78.4	67.1
		Vrms/kRPM		20.9	12.5	42.3	36.1	55.5	47.4
Motor Constant	Km	N-m/√watt	+/-10%	0.470	0.488	1.14	1.12	1.38	1.35
		Lb-Ft/√watt		0.347	0.358	0.843	0.826	1.02	1.00
Resistance at 25°C	Rm	Ohms	+/- 10%	0.359	0.121	0.250	0.191	0.294	0.224
Inductance	Lm	mH	+/- 30%	0.77	0.28	1.2	0.86	1.5	1.1
Inertia*	Jm	Kg-m²		2.71E-04		7.21E-04		9.37E-04	
		Lb-Ft-s²		2.00E-04		5.32E-04		6.91E-04	
Weight*	Wt	Kg		1.32		3.25		4.15	
		Lbs		2.90		7.17		9.14	
Max Static Friction	Tf	N-m		0.127		0.346		0.450	
		Lb-Ft		0.0938		0.255		0.332	
Cogging Friction (Peak-to-Peak)	Tcog	N-m		0.071		0.216		0.285	
		Lb-Ft		0.0521		0.159		0.210	
Viscous Damping	Fi	N-m/ kRPM		4.78E-02		2.83E-01		4.13E-01	
		Lb-Ft / kRPM		3.53E-02		0.21		0.30	
Thermal Resistance*	TPR	°C / watt		1.55		1.20		1.14	
Number of Poles	P	-		12		12		12	

*Notes

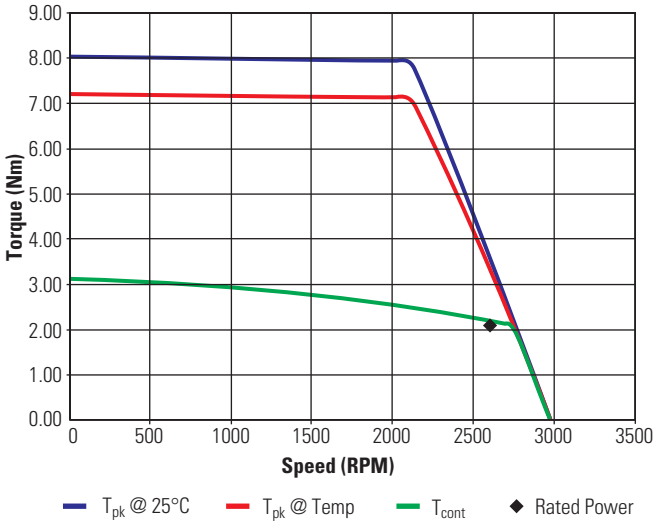
1) Continuous Stall Torque and Rated Power assume ambient temperature of 25°C
2) Winding temp = 155°C for Kt and Kb hot
3) Inertia and weight assume max thru-bore
4) TPR assumes motor is housed and mounted to a 7.0" x 7.5" x 0.375" heat sink or equivalent
5) Peak Torques limited by lead wire gauge

TBM 129 Series Performance Curves

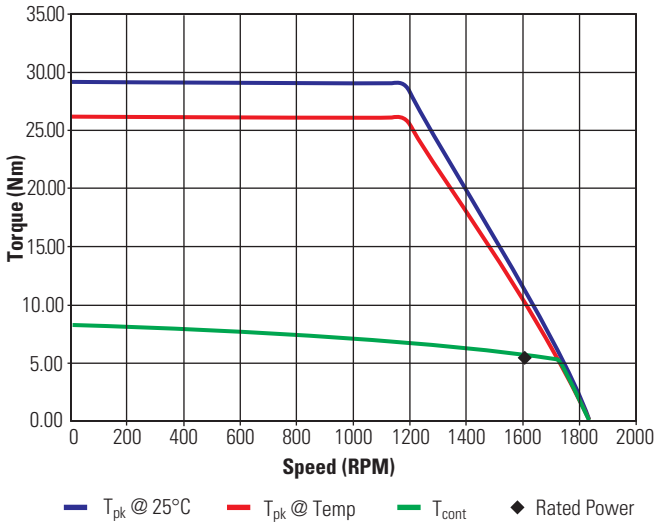
TBM(S)-12913-A
100 Vdc – 6 step



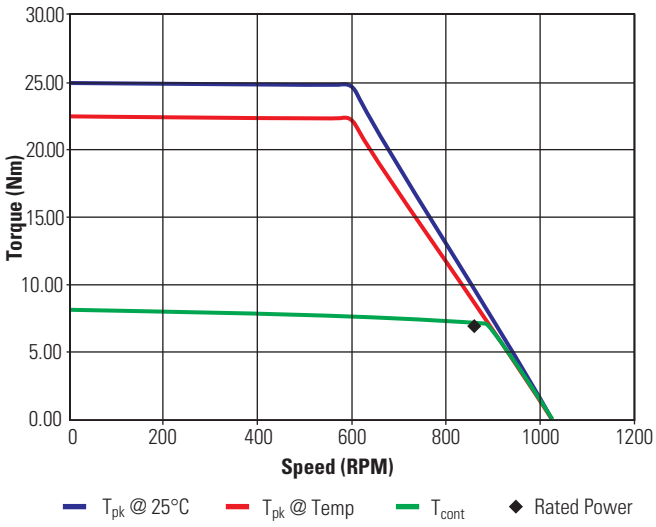
TBM(S)-12913-B
48 Vdc – 6 step



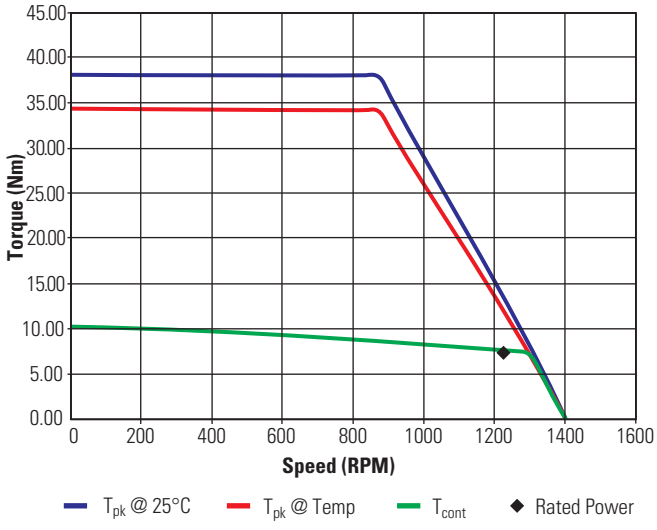
TBM(S)-12941-A
100 Vdc – 6 step



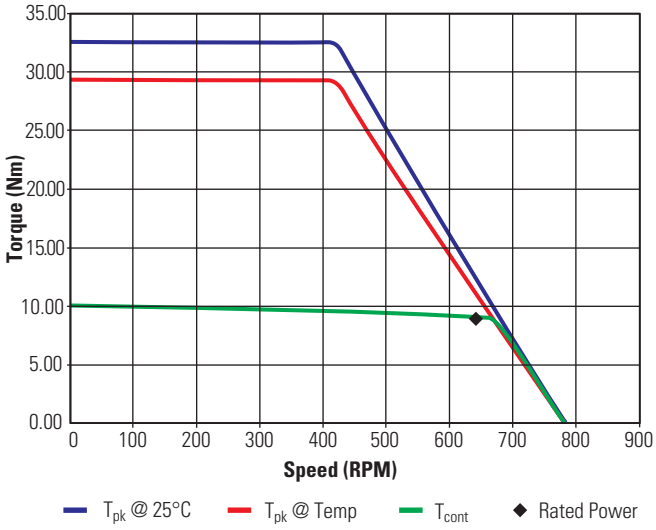
TBM(S)-12941-B
48 Vdc – 6 step



TBM(S)-12955-A
100 Vdc – 6 step



TBM(S)-12955-B
48 Vdc – 6 step



Notes: