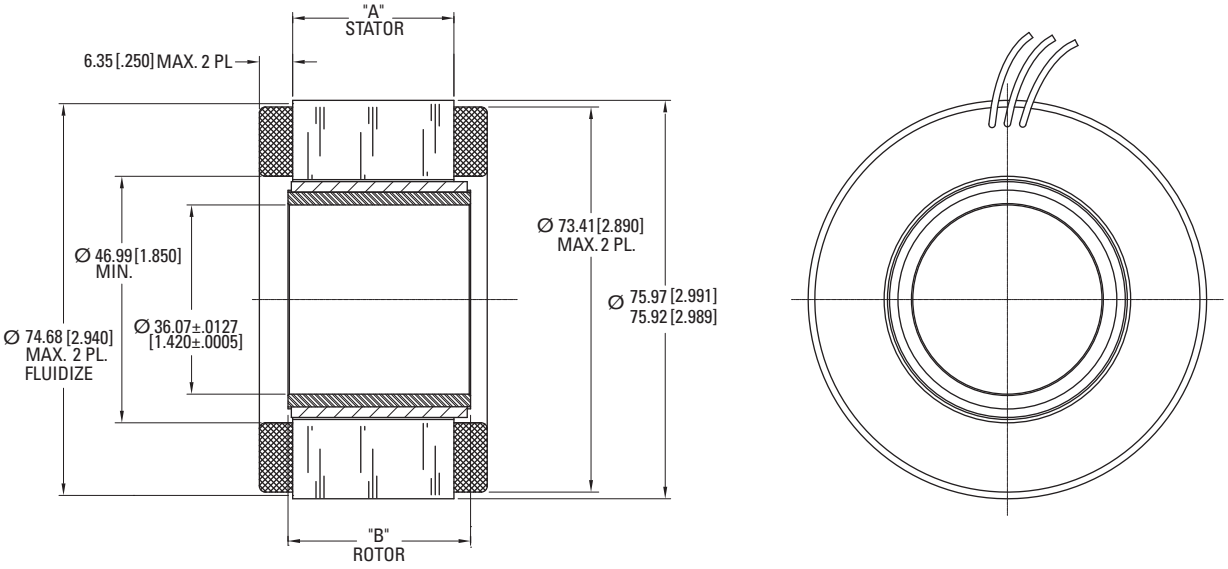
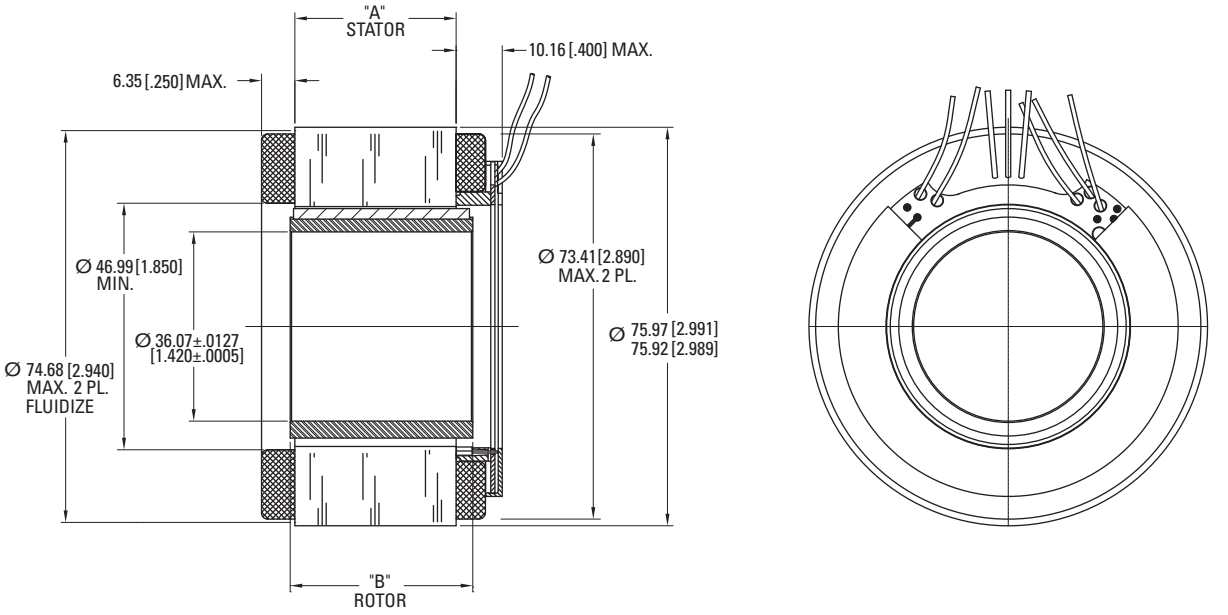
TBM 76 Series Outline Drawings

TBM 76



TBMS 76



MOTOR LEADS:
#18 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)-7615	15.24 [0.600]	19.30 [0.760]
TBM(S)-7631	30.73 [1.210]	38.40 [1.370]
TBM(S)-7646	46.23 [1.820]	50.29 [1.980]

TBM 76 Series Performance Data

TBM(S) 76 Series Performance Data and Motor Parameters

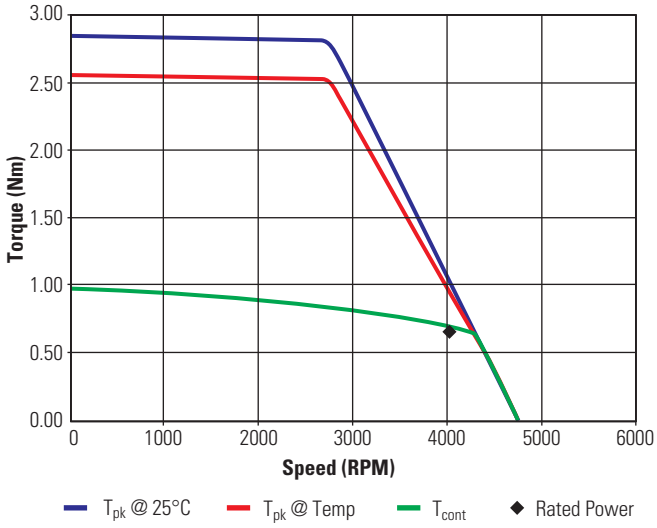
Motor Parameter	Symbol	Units	TOL	TBM(S)-7615-X		TBM(S)-7631-X		TBM(S)-7646-X	
				A	B	A	B	A	B
Continuous Stall Torque*	Tc	N-m	NOM	0.996	0.996	1.69	1.69	2.39	2.25
		oz-in		141	141	239	239	338	319
Continuous Current	Ic	Adc	NOM	10.8	15.1	11.1	13.6	12.7	15.0
		Arms		8.82	12.3	9.06	11.1	10.4	12.2
Peak Stall Torque* (25°C winding temp)	Tp	N-m	NOM	2.86	2.15	5.06	4.34	6.89	5.65
		oz-in		405	305	716	615	975	800
Peak Current	Ip	Adc	NOM	36.0	36.0	36.0	36.0	36.0	36.0
		Arms		29.4	29.4	29.4	29.4	29.4	29.4
Rated Cont Power*	P Rated	Watts	NOM	280	230	325	210	380	230
Speed at Rated Power	N Rated	RPM	NOM	4025	2600	2375	1300	1900	1100
Design Voltage	Vbus	Vdc	NOM	48.0	24.0	48.0	24.0	48.0	24.0
	Vac	Vrms	NOM	33.9	17.0	33.9	17.0	33.9	17.0
Torque Sensitivity at Temp*	Kt (hot)	N-m / Adc	+/-10%	0.095	0.068	0.158	0.132	0.194	0.156
		oz-in / Adc		13.5	9.68	22.4	18.6	27.5	22.0
		N-m / Arms	+/-10%	0.117	0.084	0.193	0.161	0.238	0.191
		oz-in / Arms		16.5	11.9	27.4	22.8	33.7	27.0
Back EMF at Temp*	Kb (hot)	Vpk / kRPM	+/-10%	9.98	7.15	16.5	13.8	20.4	16.3
		Vrms / kRPM		7.05	5.06	11.7	9.74	14.4	11.5
Torque Sensitivity at 25°C	Kt (cold)	N-m / Adc	+/-10%	0.105	0.075	0.174	0.145	0.213	0.172
		oz-in / Adc		14.9	10.6	24.6	20.5	30.3	24.2
		N-m / Arms	+/-10%	0.129	0.092	0.212	0.177	0.262	0.210
		oz-in / Arms		18.2	13.0	30.1	25.1	37.1	29.7
Back EMF	Kb (cold)	Vpk / kRPM	+/-10%	11.0	7.87	18.2	15.1	22.4	17.9
		Vrms/kRPM		7.76	5.56	12.9	10.7	15.8	12.7
Motor Constant	Km	N-m/√watt	+/-10%	0.175	0.176	0.279	0.287	0.370	0.352
		oz-in/√watt		24.9	25.1	39.5	40.5	52.5	49.8
Resistance at 25°C	Rm	Ohms	+/- 10%	0.356	0.180	0.388	0.256	0.333	0.237
Inductance	Lm	mH	+/- 30%	0.37	0.19	0.55	0.39	0.58	0.37
Inertia*	Jm	Kg-m²		3.04E-05		5.64E-05		8.19E-05	
		oz-in-s²		4.31E-03		7.98E-03		1.16E-02	
Weight*	Wt	grams		400		704		1027	
		oz		14.1		24.8		36.2	
Max Static Friction	Tf	N-m		0.032		0.050		0.068	
		oz-in		4.49		7.09		9.70	
Cogging Friction (Peak-to-Peak)	Tcog	N-m		0.013		0.017		0.020	
		oz-in		1.79		2.35		2.90	
Viscous Damping	Fi	N-m/ kRPM		6.65E-03		1.68E-02		2.97E-02	
		oz-in / kRPM		9.46E-01		2.38		4.21	
Thermal Resistance*	TPR	°C / watt		2.11		1.83		1.62	
Number of Poles	P	-		12		12		12	

*Notes

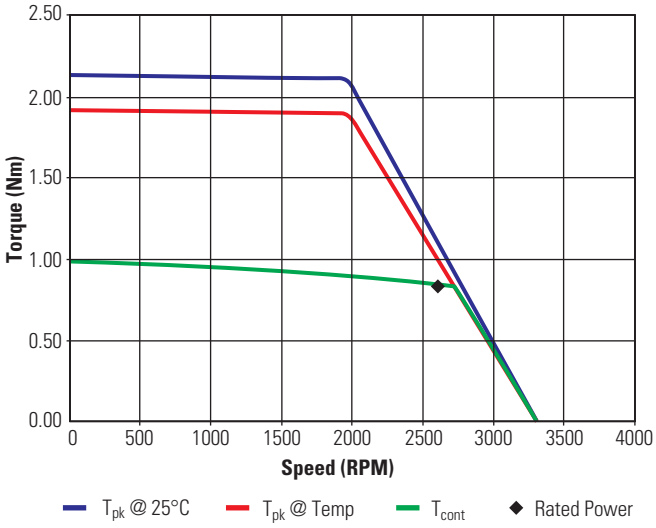
1) Continuous Stall Torque and Rated Power assume ambient temperature of 25°C
2) Winding temp = 155°C for Kt and Kb hot
3) Inertia and weight assume max thru-bore
4) TPR assumes motor is housed and mounted to a 7.0" x 7.5" x 0.375" heat sink or equivalent
5) Peak Torques limited by lead wire gauge

TBM 76 Series Performance Curves

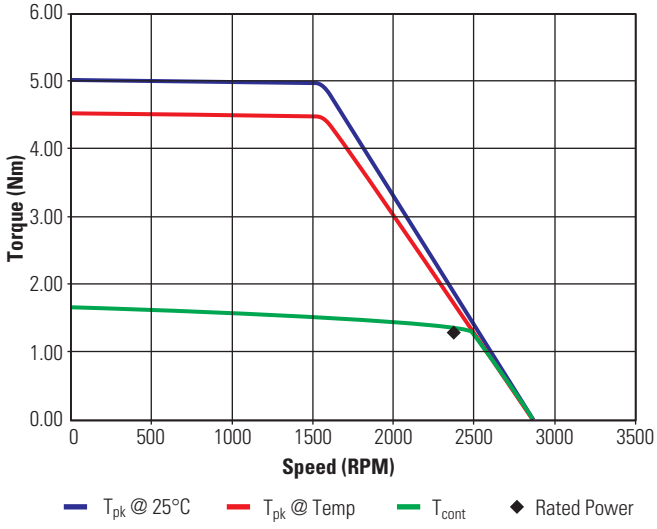
TBM(S)-7615-A
48 Vdc – 6 step



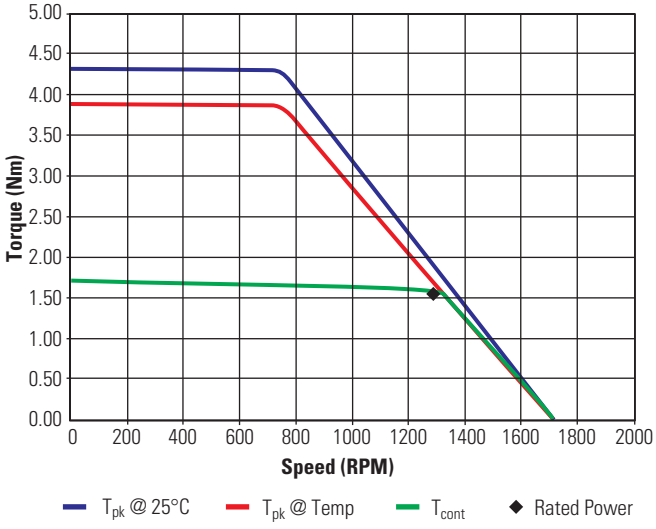
TBM(S)-7615-B
24 Vdc – 6 step



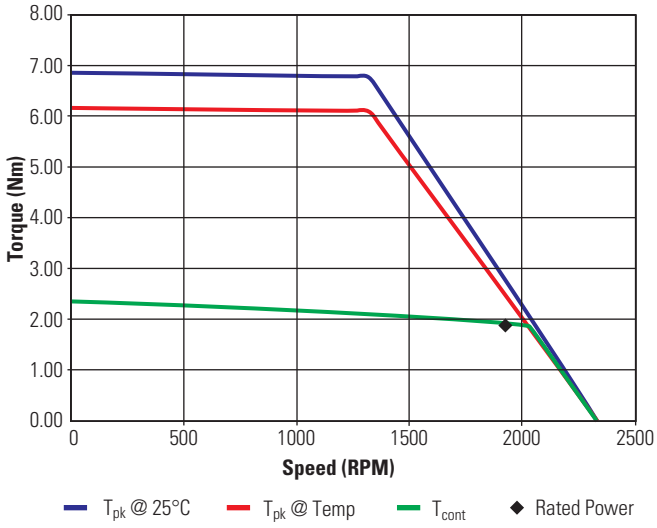
TBM(S)-7631-A
48 Vdc – 6 step



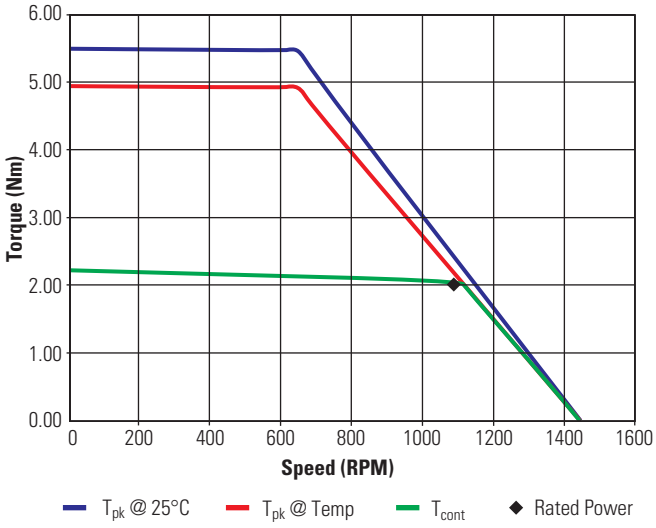
TBM(S)-7631-B
24 Vdc – 6 step



TBM(S)-7646-A
48 Vdc – 6 step



TBM(S)-7646-B
24 Vdc – 6 step



Notes: