XMF0150010-X0X OREGON STATE UNIVERSITY

SIZE CONSTANTS at 20.000°C

Parameter	Symbol	Unit	VALUE
Maximum Rated Torque	Tr	lbft	9.927
		Nm	13.459
Maximum Continuous Stall Torque (Temp.Rise = 110.0 °C at 24.2 A[rms])	Tc	lbft	2.371
		Nm	3.214
Motor Constant [Sqw. drive]	Km	lbft/sqrt.W	0.308
		Nm/sqrt.W	0.418
Electrical Time Constant	Te	ms	2.488
Mechanical Time Constant	Tm	ms	3.607
Angular Acceleration (theoretical)		rad/s²	21362
Thermal Resistance *	TPR	°C/W	1.300
Maximum Cogging Torque	Tf	lbft	0.156
		Nm	0.212
Viscous Damping Coefficient (Infinite Source Impedance)	Dv	lbft/rpm	1.768E-05
		Nm/rpm	2.397E-05
Hysteresis Drag Torque	Th	lbft	0.017
		Nm	0.022
Rotor Inertia Frameless	Jm	lbfts²	4.647E-04
		kg-m²	6.300E-04
Motor Weight Frameless	Wt	lb	2.476
		kg	1.123
No. of Poles		P	16

* TPR Assumes motor mounted to aluminum heat sink
10.000 10.000 0.250 inches (Still air)

Winding Constants at 20.000°C

Parameter	Symbol	Unit	VALUE
Design Voltage	Vp	V [dc]	50.000
Peak Torque,+/-25%	Tp	lbft	9.927
		Nm	13.459
Peak Current,+/-15% [Demag Limit]	Ip	A[pk]	110.082
Torque Constant +/-10%	Kt	lbft/A[pk]	0.090
[Torque/peak current; Squarewave]		Nm/A[pk]	0.12226
No Load Speed	Snl	rpm	3711.382
		rad/s	388.655
EMF Constant +/-10%	Kb	V/krpm	13.472
[Peak line-line EMF]		V-s/rad	0.12865
Terminal Resistance +/-12%	Rm	ohm	0.0672
Terminal Inductance +/-30%	Lm	mH	0.167

RMS TORQUE PERFORMANCE (Rated Load)

Design Voltage		Vp	V [dc]	50.000
Continuous Power Output		Power	W	722.207
			hp	0.968
Temperature Rise:	110.454°C	Torque	lbft	2.035
COOLING : {Still air}			Nm	2.759
		Speed	rpm	2500.000
Ambient temperature	20.000°C	Iphase	A [peak]	26.896
			A [rms]	21.183
Squarewave Drive		I(dc-link)	A [dc]	16.143
		Efficiency	%	89.474

UNHOUSED	MECHANICAL	
Stator Stack OD	6.693 inch	170.002 mm
Stator Stack Length (UNmachined)	0.390 inch	9.906 mm
Stator ID	4.366	
No. of Phases	3	
Phase Connection	WYE	
Parallel paths	2	
Length Over Coil (Maximum)	1.200 inch	30.480 mm
End Turns OD (Maximum)	5.866 inch	148.996 mm
End Turns ID (Maximum)	4.385 inch	111.379 mm
Lead Wire Gage	14 AWG	
Lead Wire Length	12.000 inch	304.800 mm
ROTOR OD	4.306 inch	109.372 mm
Rotor ID	3.701 inch	94.005 mm
Rotor Axial Length "B"	0.545 inch	13.843 mm
No. of Poles	16	