XMF0150010-X0X OREGON STATE UNIVERSITY

SIZE CONSTANTS at 20.000°C

Parameter	Symbol	Unit	VALUE
Maximum Rated Torque	Tr	lbft	9.930
		Nm	13.463
Maximum Continuous Stall Torque (Temp.Rise = 110.0 °C at 33.3 A[rms])	Tc	lbft	2.639
		Nm	3.578
Motor Constant [Sqw. drive]	Km	lbft/sqrt.W	0.354
		Nm/sqrt.W	0.480
Electrical Time Constant	Te	ms	3.080
Mechanical Time Constant	Tm	ms	4.806
Angular Acceleration (theoretical)		rad/s²	12137
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	1.769E-05
		Nm/rpm	2.398E-05
Hysteresis Drag Torque	Th	lbft	0.017
		Nm	0.022
Rotor Inertia Frameless	Jm	lbfts²	8.182E-04
		kg-m²	1.109E-03
Motor Weight Frameless	Wt	lb	3.229
		kg	1.464
No. of Poles		P	16

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

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Winding Constants at 20.000°C

Parameter	Symbol	Unit	VALUE
Design Voltage	Vp	V [dc]	50.000
Peak Torque,+/-25%	Tp	lbft	9.930
		Nm	13.463
Peak Current,+/-15% [Demag Limit]	Ip	A[pk]	135.983
Torque Constant +/-10%	Kt	lbft/A[pk]	0.073
[Torque/peak current; Squarewave]		Nm/A[pk]	0.09900
No Load Speed	Snl	rpm	4583.305
		rad/s	479.963
EMF Constant +/-10%	Kb	V/krpm	10.909
[Peak line-line EMF]		V-s/rad	0.10417
Terminal Resistance +/-12%	Rm	ohm	0.0355
Terminal Inductance +/-30%	Lm	mH	0.109

RMS TORQUE PERFORMANCE (Rated Load)

Design Voltage		Vp	V [dc]	50.000
Continuous Power Output		Power	W	824.207
			hp	1.105
Temperature Rise:	110.108°C	Torque	lbft	2.322
COOLING : {Still air}			Nm	3.148
		Speed	rpm	2500.000
Ambient temperature	20.000°C	Iphase	A [peak]	38.712
			A [rms]	28.838
Squarewave Drive		I(dc-link)	A [dc]	18.178
		Efficiency	%	90.681

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	2.913 inch	74.000 mm
Rotor Axial Length "B"	0.545 inch	13.843 mm
No. of Poles	16	