4-PHASE MOTOR DATA SHEET

ITEM	MOTOR PARAMETER	UNITS	SYMBOL	5111	5112	5113
1	DAMPING CONSTANT $(K_T K_E/R_T)$	N · m/(rad/s)	K_D	2.17×10^{-3}	2.97×10^{-3}	4.07×10^{-3}
2	MOTOR CONSTANT $(K_T/\sqrt{R_T})$	N · m/$\sqrt{W}$	K_M	46.6×10^{-3}	54.5×10^{-3}	63.8×10^{-3}
3	MECHANICAL TIME CONST. (J/K_D)	ms	T_M	9.45	9.10	8.40
4	ELECTRICAL TIME CONST. (L/R_T)	ms	T_E	0.257	0.281	0.333
5	MOMENT OF INERTIA	kg · m^2	J	20.5×10^{-6}	26.9×10^{-6}	38.1×10^{-6}
6	VISCOUS DAMPING	N · m/(rad/s)	D_F	13×10^{-6}	15×10^{-6}	17×10^{-6}
7	FRICTION TORQUE	N · m	T_F	3.0×10^{-3}	3.7×10^{-3}	4.0×10^{-3}
8	MOTOR MASS	kg	M	0.60	0.80	0.95
9	THERMAL TIME CONSTANT	min	T_{TH}	15	19	25
10	THERMAL IMPEDENCE (WDG-AMBIENT)	°C/W	R_{TH}	3.2	3.0	3.0
11	MAXIMUM WINDING TEMP.	°C	Θ_{MX}	155	155	155

5111

ITEM	WINDING PARAMETER	UNITS	SYMBOL	WDG #1	WDG #2	WDG #3	WDG #4
15	TORQUE CONSTANT	N · m/A	K_T	33.0×10^{-3}	51.7×10^{-3}	66.0×10^{-3}	103×10^{-3}
16	BACK EMF CONSTANT	V/(rad/s)	K_E	33.0×10^{-3}	51.7×10^{-3}	66.0×10^{-3}	103×10^{-3}
17	STATOR RESISTANCE	ohms	R_T	0.495	1.23	1.98	4.92
18	STATOR INDUCTANCE	mH	L	0.128	0.316	0.509	1.26

5112

ITEM	WINDING PARAMETER	UNITS	SYMBOL	WDG #1	WDG #2	WDG #3	WDG #4
15	TORQUE CONSTANT	N · m/A	K_T	40.5×10^{-3}	66.4×10^{-3}	81.0×10^{-3}	133×10^{-3}
16	BACK EMF CONSTANT	V/(rad/s)	K_E	40.5×10^{-3}	66.4×10^{-3}	81.0×10^{-3}	133×10^{-3}
17	STATOR RESISTANCE	ohms	R_T	0.590	1.49	2.36	5.94
18	STATOR INDUCTANCE	mH	L	0.165	0.417	0.662	1.67

5113

ITEM	WINDING PARAMETER	UNITS	SYMBOL	WDG #1	WDG #2	WDG #3	WDG #4
15	TORQUE CONSTANT	N · m/A	K_T	56.0×10^{-3}	87.5×10^{-3}	112×10^{-3}	175×10^{-3}
16	BACK EMF CONSTANT	V/(rad/s)	K_E	56.0×10^{-3}	87.5×10^{-3}	112×10^{-3}	175×10^{-3}
17	STATOR RESISTANCE	ohms	R_T	0.770	1.78	3.00	7.12
18	STATOR INDUCTANCE	mH	L	0.256	0.593	1.03	2.37