

# DB-5000 MATRIX SERIES SPECIFICATIONS

## MOTOR CHARACTERISTICS @ 25° C

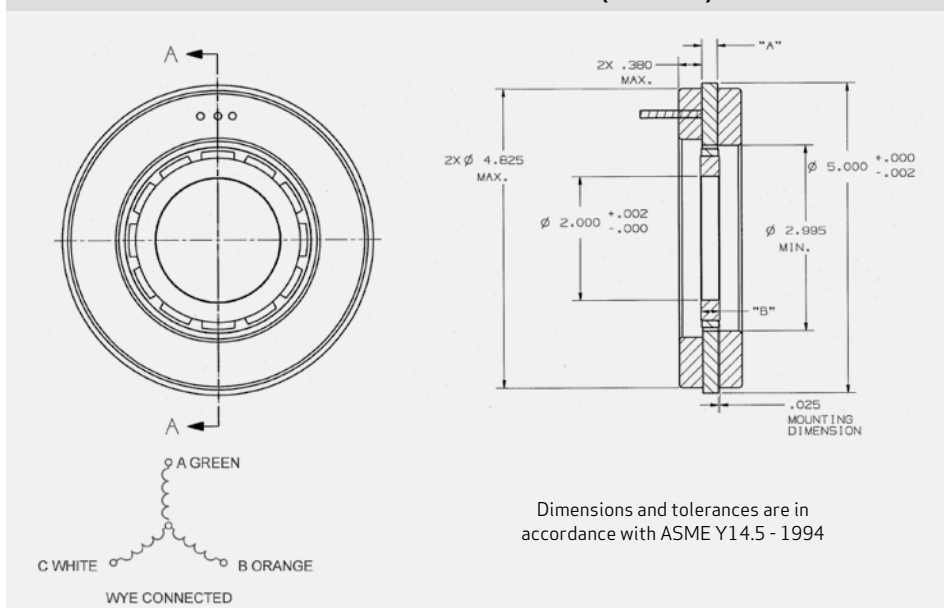
Specification	Units	DB-5000 A-1ES	DB-5000 B-1ES	DB-5000 C-1ES	DB-5000 D-1ES	DB-5000 E-1ES	DB-5000 F-1ES	DB-5000 G-1ES	DB-5000 H-1ES
Peak Torque, $T_p$	oz-in	578	1207	2298	3444	4536	5644	6768	9024
Motor Constant, $K_M$	oz-in / $\sqrt{W}$	22.2	42.5	71.6	97.3	118.0	137.0	155.0	186.0
Number of Poles		12	12	12	12	12	12	12	12
Number of Phases		3"Y"	3"Y"	3"Y"	3"Y"	3"Y"	3"Y"	3"Y"	3"Y"
Weight	oz (nom)	31	48	74	104	135	165	200	255
Motor Inertia, $J_M$	oz-in-s <sup>2</sup>	1.89E-02	3.84E-02	7.10E-02	1.04E-01	1.36E-01	1.69E-01	2.03E-01	2.68E-01
Friction Torque, $T_f$	oz-in	4.5	10	19	28	38	47	56	76
Electrical Time Constant, $T_E$	ms	1.4	2.5	3.7	4.5	5.1	5.5	5.9	6.3
Mechanical Time Constant, $T_M$	ms	5.45	3.02	1.96	1.55	1.38	1.27	1.20	1.10
*Temperature Rise, TPR'	°C / W	2.7	2.3	1.7	1.4	1.2	1.0	0.9	0.8
Sensors		No	No	No	No	No	No	No	No

## MOTOR WINDING CONSTANTS

Specification	Units	DB-5000 A-1ES	DB-5000 B-1ES	DB-5000 C-1ES	DB-5000 D-1ES	DB-5000 E-1ES	DB-5000 F-1ES	DB-5000 G-1ES	DB-5000 H-1ES
**Torque Sensitivity, $K_T$	oz-in/amp $\pm$ 10%	72	151	287	430	567	705	846	1128
Back EMF, $K_E$	V per rad/s $\pm$ 10%	0.509	1.07	2.03	3.04	4.00	4.98	5.97	7.97
Terminal Resistance, $R_M$	ohms $\pm$ 10%	10.6	12.6	16.1	19.6	23.0	26.5	29.9	36.8
Terminal Inductance, $L_M$	mH $\pm$ 30%	14	32	60	89	118	147	175	233
Voltage, Stalled at Peak Torque, $V_p$	volts	84.6	101	129	156	184	212	239	295
Amps at Peak Torque, $I_p$	amps	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0

\*TPR as listed on the data sheets, is for an un-mounted condition unless otherwise noted. Mounted TPR values are often 50% or less than the un-mounted TPR. For air flow, the TPR may be less than 25% the un-mounted amount and for fluid cooling it may be 10% or less. Many factors affect the TPR value and its change relative to the mounting or external cooling applied. Consult the factory for an more accurate estimate of the motor's TPR.  
 \*\*Stack lengths from 0.25 to 10.00 inches (6.35 to 254 mm) with  $K_t$  to 125 N.m/amp Consult factory for additional designs. Refer to our online documentation for product updates.

## MECHANICAL DIMENSIONS (INCHES)



## MOUNTING DIMENSIONS

Modular	"A" Inches	"B" Inches
DB-5000-A-1ES	.250	.300
DB-5000-B-1ES	.550	.600
DB-5000-C-1ES	1.050	1.100
DB-5000-D-1ES	1.550	1.600
DB-5000-E-1ES	2.050	2.100
DB-5000-F-1ES	2.550	2.610
DB-5000-G-1ES	3.050	3.125
DB-5000-H-1ES	4.050	4.125