

# DB-9000 MATRIX SERIES SPECIFICATIONS

## MOTOR CHARACTERISTICS @ 25° C

Specification	Units	DB-9000 G-1ES	DB-9000 H-1ES	DB-9000 I-1ES	DB-9000 J-1ES	DB-9000 K-1ES
Peak Torque, $T_p$	oz-in	5102	10232	15338	25560	30665
Motor Constant, $K_M$	oz-in / $\sqrt{W}$	176	304	405	568	636
Number of Poles		32	32	32	32	32
Number of Phases		3"Y"	3"Y"	3"Y"	3"Y"	3"Y"
Weight	oz (nom)	75	131	192	304	357
Motor Inertia, $J_M$	oz-in-s <sup>2</sup>	0.518	1.01	1.50	2.47	2.96
Friction Torque, $T_f$	oz-in	53	112	171	289	348
Electrical Time Constant, $T_E$	ms	1.24	1.94	2.35	2.76	2.93
Mechanical Time Constant, $T_M$	ms	2.36	1.55	1.29	1.09	1.04
*Temperature Rise, TPR <sup>1</sup>	°C / W	1.3	0.99	0.79	0.57	0.50
Sensors		No	No	No	No	No

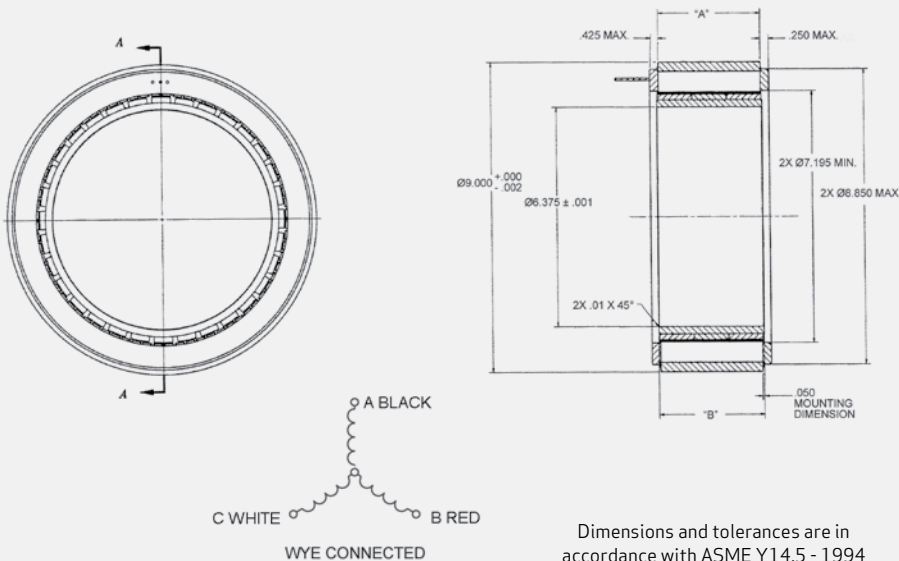
## MOTOR WINDING CONSTANTS

Specification	Units	DB-9000 G-1ES	DB-9000 H-1ES	DB-9000 I-1ES	DB-9000 J-1ES	DB-9000 K-1ES
**Torque Sensitivity, $K_T$	oz-in/amp $\pm$ 10%	255	512	767	1278	1533
Back EMF, $K_E$	V per rad/s $\pm$ 10%	1.80	3.61	5.42	9.03	10.8
Terminal Resistance, $R_M$	ohms $\pm$ 10%	2.09	2.83	3.58	5.07	5.81
Terminal Inductance, $L_M$	mH $\pm$ 30%	2.6	5.5	8.4	14	17
Voltage, Stalled at Peak Torque, $V_p$	volts	41.8	56.6	71.6	101	116
Amps at Peak Torque, $I_p$	amps	20	20	20	20	20

<sup>1</sup>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 a more accurate estimate of the motor's TPR.

<sup>2</sup>Stack lengths from 0.25 to 18.00 inches (6.35 to 457.2 mm) with  $K_T$  to 1062 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-9000-G-1ES	0.450	0.550
DB-9000-H-1ES	0.950	1.050
DB-9000-I-1ES	1.450	1.550
DB-9000-J-1ES	2.450	2.550
DB-9000-K-1ES	2.950	3.050