

# DB-14540 MATRIX SERIES SPECIFICATIONS

## MOTOR CHARACTERISTICS @ 25° C

Specification	Units	DB-14540 A-1ES	DB-14540 B-1ES	DB-14540 C-1ES	DB-14540 D-1ES	DB-14540 E-1ES
Peak Torque, $T_p$	oz-in	21674	43273	67041	86523	108319
Motor Constant, $K_M$	oz-in / $\sqrt{W}$	324	579	812	976	1142
Number of Poles		32	32	32	32	32
Number of Phases		3"Y"	3"Y"	3"Y"	3"Y"	3"Y"
Weight	oz (nom)	171	312	464	584	720
Motor Inertia, $J_M$	oz-in-s <sup>2</sup>	5.22	8.52	13.7	17.0	20.8
Friction Torque, $T_f$	oz-in	64	128	200	256	320
Electrical Time Constant, $T_E$	ms	1.03	1.66	2.09	2.35	2.55
Mechanical Time Constant, $T_M$	ms	7.05	3.59	2.95	2.53	2.26
*Temperature Rise, TPR'	°C / W	0.74	0.57	0.46	0.39	0.34
Sensors		No	No	No	No	No

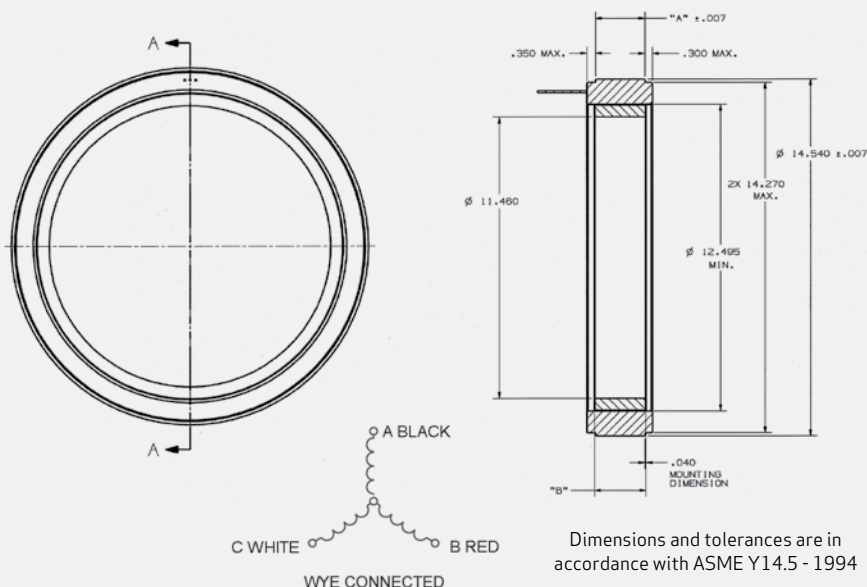
## MOTOR WINDING CONSTANTS

Specification	Units	DB-14540 A-1ES	DB-14540 B-1ES	DB-14540 C-1ES	DB-14540 D-1ES	DB-14540 E-1ES
**Torque Sensitivity, $K_T$	oz-in/amp $\pm$ 10%	639	1265	1955	2515	3149
Back EMF, $K_E$	V per rad/s $\pm$ 10%	4.52	8.94	13.8	17.8	22.2
Terminal Resistance, $R_M$	ohms $\pm$ 10%	3.90	4.77	5.80	6.64	7.60
Terminal Inductance, $L_M$	mH $\pm$ 30%	4.0	7.9	12	16	19
Voltage, Stalled at Peak Torque, $V_p$	volts	132	163	199	228	261
Amps at Peak Torque, $I_p$	amps	33.9	34.2	34.3	34.4	34.4

\*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.

\*\*Stack lengths from 0.25 to 18.00 inches (6.35 to 457.2 mm) with KT 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	"C" Inches
DB-14540-A-1ES	0.520	0.715	1.20
DB-14540-B-1ES	1.020	1.165	1.700
DB-14540-C-1ES	1.570	1.873	2.250
DB-14540-D-1ES	2.020	2.323	2.700
DB-14540-E-1ES	2.520	2.839	3.200