

DB-1500 MATRIX™ SERIES SPECIFICATIONS

MOTOR CHARACTERISTICS @ 25° C

Specification	Units	DB-1500 J-1ES	DB-1500 K-1ES	DB-1500 L-1ES	DB-1500 M-1ES	DB-1500 N-1ES	DB-1500 P-1ES	DB-1500 Q-1ES	DB1500 R-1ES
Peak Torque, T_p	oz-in	21	43	64	85	106	126	170	212
Motor Constant, K_M	oz-in / \sqrt{W}	2.76	4.85	6.51	8.18	9.47	10.56	12.82	14.66
Number of Poles		8	8	8	8	8	8	8	8
Number of Phases		3"Y"	3"Y"	3"Y"	3"Y"	3"Y"	3"Y"	3"Y"	3"Y"
Weight	oz (nom)	2.7	4.0	5.4	6.7	8.0	9.3	12	15
Motor Inertia, J_M	oz-in-s ²	9.08E-05	1.80E-04	2.68E-04	3.58E-04	4.46E-04	5.27E-04	7.14E-04	8.91E-04
Friction Torque, T_F	oz-in	0.4	0.8	1.1	1.5	1.9	2.3	3.0	3.8
Electrical Time Constant, T_E	ms	0.28	0.44	0.54	0.63	0.69	0.72	0.78	0.82
Mechanical Time Constant, T_M	ms	1.68	1.09	0.895	0.759	0.703	0.670	0.617	0.589
*Temperature Rise, TPR'	°C / W	13.4	9.8	7.8	6.5	5.6	4.9	3.9	3.3
Sensors		No	No	No	No	No	No	No	No

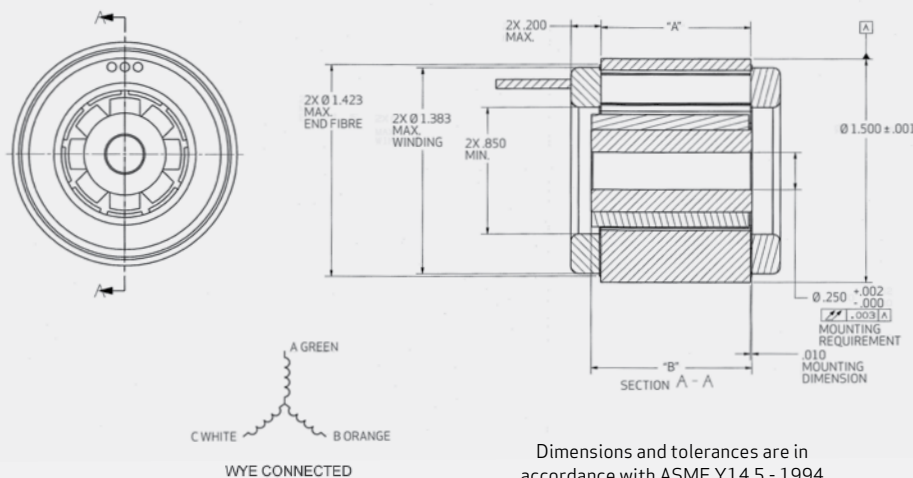
MOTOR WINDING CONSTANTS

Specification	Units	DB-1500 J-1ES	DB-1500 K-1ES	DB-1500 L-1ES	DB-1500 M-1ES	DB-1500 N-1ES	DB-1500 P-1ES	DB-1500 Q-1ES	DB-1500 R-1ES
**Torque Sensitivity, K_T	oz-in/amp \pm 10%	1.43	2.85	4.24	5.66	7.05	8.37	11.3	14.1
Back EMF, K_E	V per rad/s \pm 10%	0.010	0.020	0.030	0.040	0.050	0.059	0.080	0.100
Terminal Resistance, R_M	ohms \pm 10%	0.268	0.346	0.424	0.479	0.554	0.628	0.777	0.925
Terminal Inductance, L_M	mH \pm 30%	0.076	0.15	0.23	0.30	0.38	0.46	0.61	0.76
Voltage, Stalled at Peak Torque, V_p	volts	4.0	5.2	6.4	7.2	8.3	9.4	1.7	13.9
Amps at Peak Torque, I_p	amps	15	15	15	15	15	15	15	15

*TPR as listed on the data sheets, is for an unmounted condition unless otherwise noted. Mounted TPR values are often 50% or less than the unmounted TPR. For air flow, the TPR may be less than 25% the unmounted 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 more accurate estimate of the motor's TPR.

**Stack lengths from 0.25 to 2.5 inches (6.35 to 63.5 mm). The frame size represented is only a small sampling of the total range manufactured. Consult factory for additional designs. Refer to our online documentation for product updates.

MECHANICAL DIMENSIONS (INCHES)



MOUNTING DIMENSIONS

Modular	"A" Inches	"B" Inches
DB-1500-J-1ES	0.250	0.310
DB-1500-K-1ES	0.500	0.575
DB-1500-L-1ES	0.750	0.835
DB-1500-M-1ES	1.000	1.100
DB-1500-N-1ES	1.250	1.360
DB-1500-P-1ES	1.500	1.625
DB-1500-Q-1ES	2.00	2.150
DB-1500-R-1ES	2.500	2.675