

**ELWOOD HIGH PERFORMANCE MOTORS**

**W-SERIES MOTOR DATA**

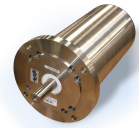
[http://www.elwood.com/dw\\_Mtr\\_Data.pdf](http://www.elwood.com/dw_Mtr_Data.pdf)

MOTOR MODEL		W-3016	W-4030-P	W-4030-M	W-4050	W-4075	W-B330H	W-B420G	W-B440G	W-B460F
<b>MECHANICAL DATA (1)</b>										
Rated Torque, Cont (Stall)	Nm	1.7	2.8	2.8	5.4	7.2	1.6	2.3	4.2	6
	lb-in	15.0	24.8	24.8	47.8	63.7	13.5	21.0	42	60
Peak Torque (Stall)	Nm	5.1	8.4	8.4	16.2	21.6	4.2	5.5	14.3	16.4
	lb-in	45.1	74.3	74.3	143.4	191.2	37.5	48.8	126.0	145.5
Rated Current	A <sub>0-PK</sub>	7.2	7.6	15.6	12.9	11.3	1.6	2.0	4.1	4.7
Rated Power	kW	0.6	0.7	0.7	1.7	2.2	0.7	0.9	1.8	2.2
	hp	0.8	0.9	0.9	2.2	2.9	0.9	1.2	2.4	2.9
Rated Voltage (Drive Supply)	V <sub>rms</sub>	230	230	230	230	230	460	460	460	460
Rotor Moment of Inertia	kg-m <sup>2</sup>	0.000080	0.000250	0.000250	0.000460	0.000680	0.00009	0.0003	0.0005	0.00075
	lb-in-s <sup>2</sup>	0.00072	0.00220	0.00220	0.00410	0.00600	0.0008	0.0027	0.0046	0.0066
Rotor Moment of Inertia Brake Motors	kg-m <sup>2</sup>	0.000089	0.000330	0.000330	0.000540	0.000760	0.0001	0.0004	0.0006	0.0008
	lb-in-s <sup>2</sup>	0.00079	0.00290	0.00290	0.00480	0.00670	0.00087	0.0034	0.0053	0.0073
Motor Shipping Weight	kg	4.1	6.8	6.8	9.7	12.9	4.3	8.1	11.7	13.8
	lb	11.0	18.2	18.2	26.0	34.6	9.5	17.8	25.7	30.4
Motor Shipping Weight Brake Motors	kg	4.9	8.8	8.8	11.8	14.9	5.8	10.1	13.7	15.8
	lb	13.1	23.6	23.6	31.6	39.9	12.8	22.2	30.1	34.8
Damping	Nm/krpm	0.014	0.034	0.034	0.045	0.068	0.01	0.02	0.03	0.03
	lb-in/krpm	0.12	0.3	0.3	0.4	0.6	0.1	0.2	0.2	0.3
Friction Torque	Nm	0.028	0.034	0.034	0.068	0.140	0.02	0.04	0.06	0.08
	lb-in	0.25	0.3	0.3	0.6	1.2	0.2	0.3	0.5	0.7
Max. Operating Speed	rpm	4000	3000	3000	3000	3000	4000	3750	3500	3000
<b>WINDING DATA (1)</b>										
Winding Voltage (Drive Line voltage)	VAC	230	230	230	230	230	460	460	460	460
Poles		6	6	6	6	6	6	6	6	6
K <sub>T</sub> , Sine Wave Torque Constant (2)	Nm/A <sub>0-PK</sub>	0.28	0.5	0.25	0.5	0.74	0.74	0.88	0.88	1.12
	lb-in/A <sub>0-PK</sub>	2.5	4.4	2.2	4.4	6.6	6.5	7.9	7.9	9.9
K <sub>T</sub> , Square Wave Torque Constant (3)	Nm/A <sub>0-PK</sub>	0.31	0.54	0.27	0.54	0.81	0.80	0.95	0.95	1.21
	lb-in/A <sub>0-PK</sub>	2.7	4.8	2.4	4.8	7.2	7.1	8.6	8.6	10.5
K <sub>E</sub> , Voltage Constant (4)	V <sub>0-PK</sub> /kRPM	34	60	30	60	90	89	107	107	136
Winding Resistance Phase to Phase at 25±5°C	Ω ±10%	1.30	2.00	0.50	0.69	0.90	10.2	6.9	2.5	2.2
Winding Inductance Phase to Phase	mH	3.4	9.0	1.9	3.3	5.4	24.0	27.0	10.0	12.0
Thermal Resistance	°C/Watt	0.89	0.79	0.79	0.57	0.48	0.79	0.84	0.49	0.39
Dielectric Rating		Power Leads (R,S,T) to Ground:1500 VACrms 50/60 Hz for 1 minute.								
(1) Specifications are at 25°C unless otherwise noted.							(3) 0-Peak value of per phase square wave Amperes			
(2) 0-Peak value of per phase sine wave Amperes							(4) Volts 0-Peak, Line-Line / kRPM			

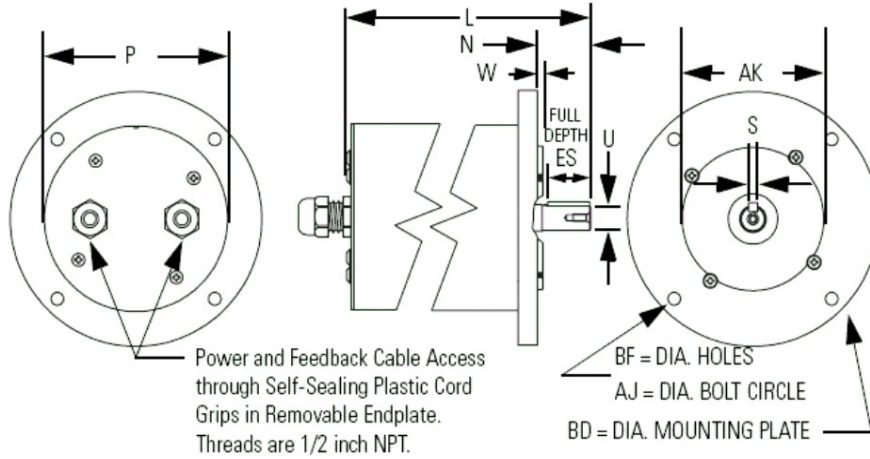
<b>STORAGE AND OPERATING CONDITIONS</b>	
Ambient Temperature	Operating: 0° to 40°C (32° to 104°F) Storage: -30° to 70°C (-25° to 158°F)
Relative Humidity	5% to 95% non-condensing

<b>THERMOSTAT RATINGS</b>	
Rated Voltage	0-250 Volts DC or 50/60 Hz AC*
Rated Current	2.5 Amps @ Power Factor of 1.0
	1.6 Amps @ Power Factor of 0.6
Maximum Switching Current	5 Amps
Contact Resistance	<0.10 Ohms maximum
Contacts	Normally closed
Insulation Dielectric	Mylar Nomex capable of withstanding 1500 VAC RMS 50/60 Hz for 1 minute
Opening Temperature (+/- 5°C)	140°C

\*The thermostat is normally used as a switch for a 15VDC logic signal.

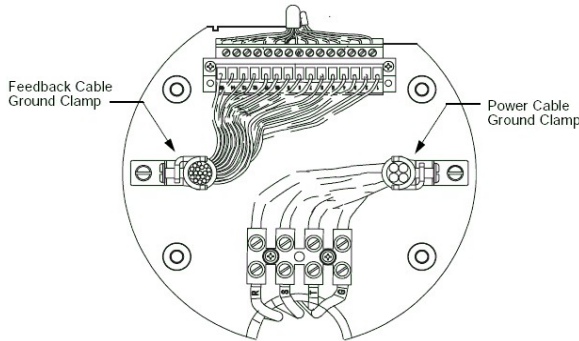


**DIMENSIONAL DATA:**

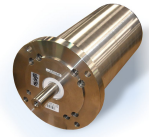


Motor Model	AJ mm/in	AK mm/in	BD mm/in	BF mm/in	ES mm/in	L mm/in	L (w/ Brake) mm/in	N mm/in	P mm/in	S mm/in	U mm/in	W mm/in	Key mm	Shaft End Thread mm
W-3016	125.7/4.95	80/3.15	142.0/5.6	7.1/28	20.0/79	305/12.0	344/13.6	30/1.18	102/4.02	5/20	14/55	3/12	5x5x20	M4x0.7
W-4030	145.0/5.71	110/4.33	162.8/6.4	10/39	40.0/1.57	317/12.5	370/14.6	50/1.97	126/4.96	6/24	19/75	3/12	6x6x40	M6x1
W-4050	145.0/5.71	110/4.33	162.8/6.4	10/39	40.0/1.57	368/14.5	421/16.6	50/1.97	126/4.96	6/24	19/75	3/12	6x6x40	M6x1
W-4075	145.0/5.71	110/4.33	162.8/6.4	10/39	40.0/1.57	419/16.5	472/18.6	50/1.97	126/4.96	6/24	19/75	3/12	6x6x40	M6x1
W-B330H	125.7/4.95	80/3.15	142.0/5.6	7.1/28	20.0/79	316/12.4	355/14.0	30/1.18	102/4.02	5/20	14/55	3/12	5x5x20	M4x0.7
W-B420G	145.0/5.71	110/4.33	162.8/6.4	10/39	40.0/1.57	317/12.5	370/14.6	50/1.97	126/4.96	6/24	19/75	3/12	6x6x40	M6x1
W-B440G	145.0/5.71	110/4.33	162.8/6.4	10/39	40.0/1.57	368/14.5	421/16.6	50/1.97	126/4.96	6/24	19/75	3/12	6x6x40	M6x1
W-B460F	145.0/5.71	110/4.33	162.8/6.4	10/39	40.0/1.57	419/16.5	472/18.6	50/1.97	126/4.96	6/24	19/75	3/12	6x6x40	M6x1

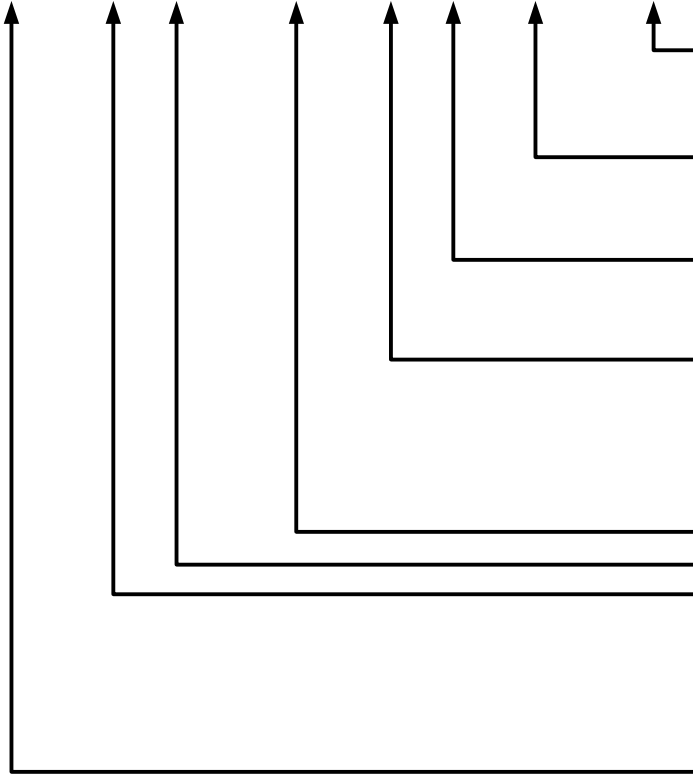
**CONNECTIONS:**



W-Series Motor Feedback			Rockwell U3k (CN2)		W-Series Motor Power	
Terminal	Signal	Kinexix (MF)		Terminal	Lead	
1	A	AM+ / 1		1	Phase R (U)	
2	A-	AM- / 2		2	Phase S (V)	
3	B	BM + / 3		3	Phase T (W)	
4	B-	BM- / 4		4	Ground	
5	+	IM+ / 5				
6	-	IM- / 10				
7	Ground	Conn. Shield				
8	ABS	N/C				
9	+5VDC	E <sub>com</sub> -5 <sub>W</sub> / 14				
10	Common	ECOM / 6				
11	Hall B	S2 / 13				
12	Hall C	S3 / 8				
13	Thermo	ECOM / 6				
14	Thermo	TS / 11				
15	Hall A	S1 / 12				



**W - 3 016 - N - H 00 AA - AA**



OPTIONS (FACTORY ASSIGNED):

<BLANK> = NO OPTIONS

AA = PREP'D FOR AIR PURGE

SEAL MATERIAL OPTIONS

AA = TEFLON SHAFT SEAL FOR ABOVE FOOD LINE

AB = VITON SHAFT SEAL

OPTIONS

00 = STANDARD

04 = 24VDC HOLDING BRAKE, SPRING-SET

FEEDBACK

H = 2000ppr INC. ENCODER (STANDARD)

K = 5000ppr INC. ENCODER

M=MULTI-TURN ABSOLUTE, HIPERFACE (SRM50)

S=SINGLE-TURN ABSOLUTE, HIPERFACE (SRS50)

MOTOR WINDING KE (REFER TO MOTOR DATA, P.1)

STACK LENGTH (REFER TO MOTOR DATA, P.1)

FRAME SIZE - WINDING VOLTAGE CLASS

3 = 102mm BODY - 230Vac

B3 = 102mm BODY - 460Vac

4 = 126mm BODY - 230Vac

B4 = 126mm BODY - 460Vac

SERIES DESIGNATOR

W = WASHDOWN