

ELWOOD HIGH PERFORMANCE MOTORS

W-SERIES MOTOR DATA

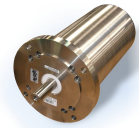
http://www.elwood.com/dW_Mtr_Data.pdf

MOTOR MODEL		W-3016	W-4030-P	W-4030-M	W-4050	W-4075	W-B330H	W-B420G	W-B440G	W-B460F
MECHANICAL DATA (1)										
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 _{0-PK}	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 _{rms}	230	230	230	230	230	460	460	460	460
Rotor Moment of Inertia	kg-m ²	0.00080	0.00250	0.00250	0.00460	0.00680	0.00009	0.0003	0.0005	0.00075
	lb-in-s ²	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 ²	0.00089	0.00330	0.00330	0.00540	0.00760	0.0001	0.0004	0.0006	0.0008
	lb-in-s ²	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
WINDING DATA (1)										
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 _T , Sine Wave Torque Constant (2)	Nm/A _{0-PK}	0.28	0.5	0.25	0.5	0.74	0.74	0.88	0.88	1.12
	lb-in/A _{0-PK}	2.5	4.4	2.2	4.4	6.6	6.5	7.9	7.9	9.9
K _T , Square Wave Torque Constant (3)	Nm/A _{0-PK}	0.31	0.54	0.27	0.54	0.81	0.80	0.95	0.95	1.21
	lb-in/A _{0-PK}	2.7	4.8	2.4	4.8	7.2	7.1	8.6	8.6	10.5
K _E , Voltage Constant (4)	V _{0-PK} /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			

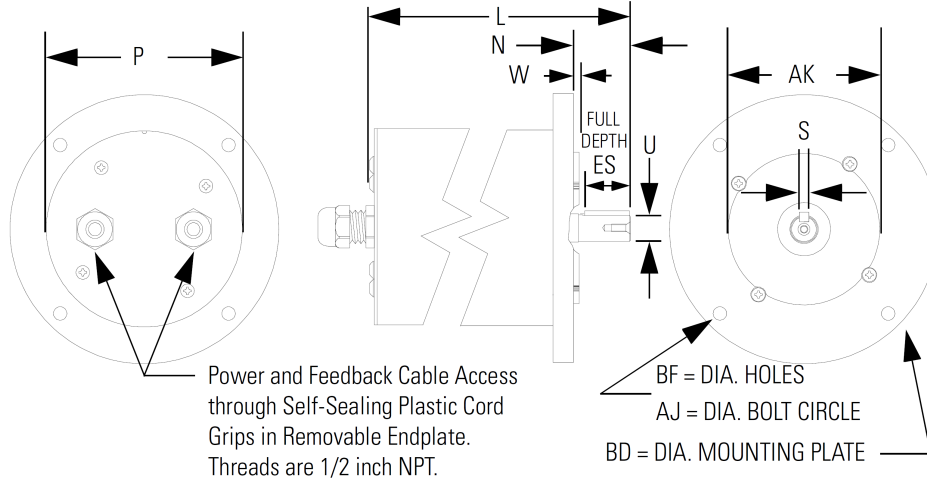
STORAGE AND OPERATING CONDITIONS	
Ambient Temperature	Operating: 0° to 40°C (32° to 104°F) Storage: -30° to 70°C (-25° to 158°F)
Relative Humidity	5% to 95% non-condensing

THERMOSTAT RATINGS	
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.

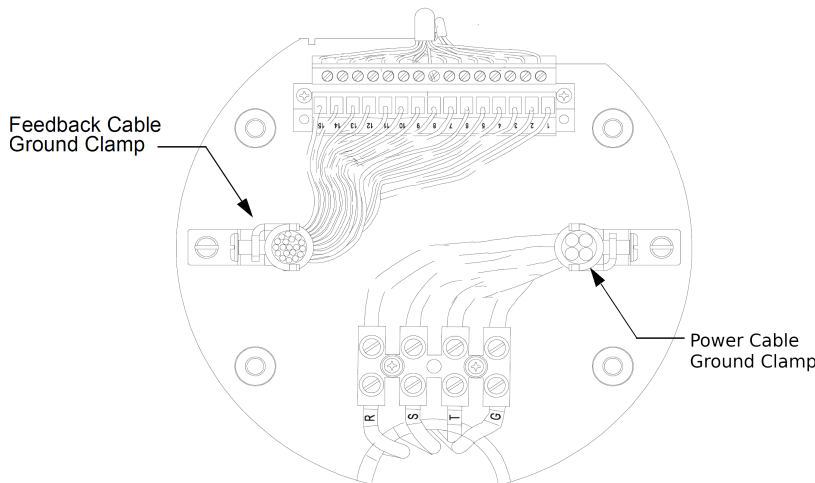


DIMENSIONAL DATA:

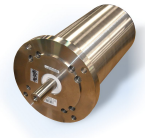


Motor Model	AJ mm/in	AK mm/in	BD mm/in	BF mm/in	ES mm/in	L mm/in	L (w/ Brake) mm/in	N mm/in	P mm/in	S mm/in	U mm/in	W mm/in	Key mm	Shaft End Thread mm
W-3016	125.7/4.95	80/3.15	142.2/5.6	7.1/28	20.0/7.79	305/12.0	355/14.0	30/1.18	102/4.02	5/20	14/55	3/12	5x5x20	M4x0.7
W-4030	145.0/5.71	110/4.33	163/6.4	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	431/17.0	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	20.0/7.79	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	431/17.0	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

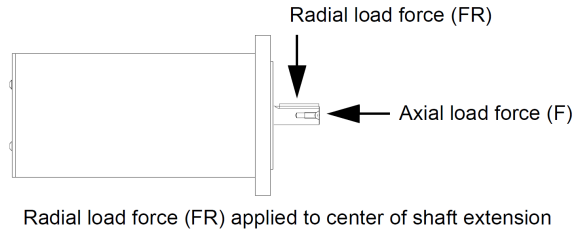
CONNECTIONS:



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



LOAD FORCES ON SHAFT:



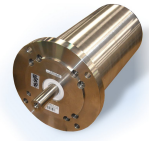
The following table represents load factors that provide a 20,000 hour L10 bearing fatigue life for W-Series motors. These load factors do not account for possible application-specific life reduction factors that may occur, such as bearing contamination from external sources.

Radial Load and Axial Load Force Ratings

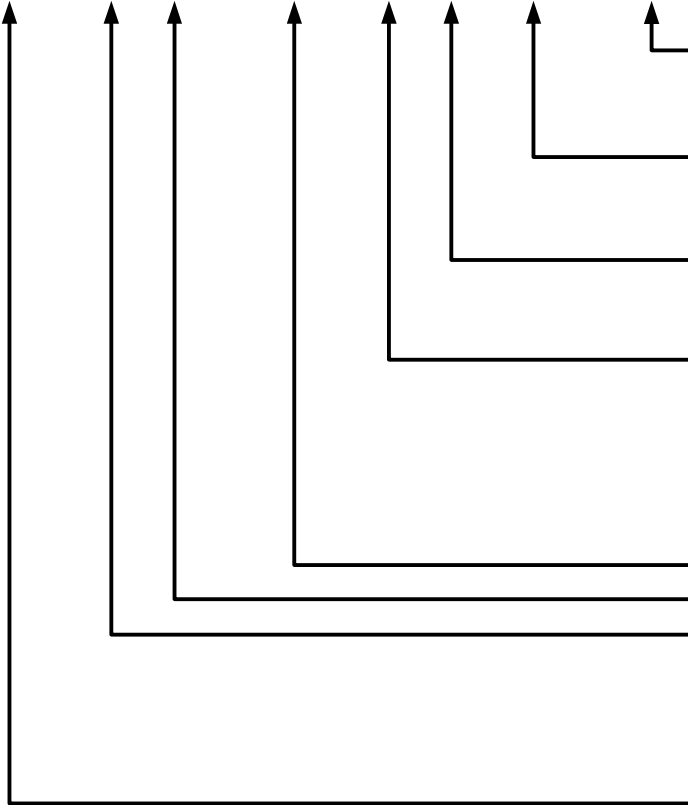
Motor	500 rpm		1000 rpm		2000 rpm		3000 rpm	
	kg	(lbs)	kg	(lbs)	kg	(lbs)	kg	(lbs)
W-3016	57.2	(126)	45.8	(101)	35.8	(79)	31.3	(69)
W-4030	76.7	(169)	69	(152)	54.4	(120)	47.6	(105)
W-4050	93	(205)	74.4	(164)	58.5	(129)	51.3	(113)
W-4075	97.5	(215)	78.5	(173)	62.1	(137)	53.5	(118)

When motor shaft has no radial load, axial load rating = 100% of radial load rating listed above.

When motor shaft has both a radial load and an axial load, axial load rating = 44% of radial load rating listed above.



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



OPTIONS (FACTORY ASSIGNED):

<BLANK> = NO OPTIONS

xx = Factory assigned option, consult factory

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)

U=512cyc/rev 1Vpp SIN/COS

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